

**REPUBLIC OF LEBANON
THE COUNCIL FOR DEVELOPMENT AND
RECONSTRUCTION**

**Supply and Installation of Medical Equipment, Medical & Surgical
Instruments and Furniture to Sarafand Governmental Hospital**

FINANCED BY THE ISLAMIC DEVELOPMENT BANK (IDB)

**VOLUME II OF IV
TECHNICAL SPECIFICATIONS
COVER PAGE**

Issued on: June 2026



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TECHNICAL SPECIFICATIONS
PREAMBLE**

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1. Explanatory Notes

- The Technical Specifications (Volume II) shall be interpreted as guidelines for the type and quality of the equipment required. The specifications texts are therefore covering a wide range of equipment types and ancillaries. They do not relate to any specific manufacturer. In some cases, specific figures have been given. Such information should be considered as guidelines. The equipment offered however, shall be compliant with international standards and quality.
- If brand names, products, or catalog numbers are mentioned in Technical Specifications (Volume II) or in any other tender documents, it is considered as an example and the bidder could submit any brands with equivalent specifications.
- The Bidder shall provide one proposal only for each item that is listed in the specifications, as a complete, fully functional unit, with all ancillaries and accessories necessary for its normal and safe use “No variant is allowed”. All ancillaries that are needed beyond normal operation, and all additional accessories to be listed and priced, with the item offered, as optional.
- When in the specifications, “a complete set of – “is mentioned, then the bidder shall list, specify and price all the items included in the set offered.
- The Bidder shall submit a filled compliance sheet in both Excel and Signed PDF formats.
- Supporting Documentation Requirements:
 - The Bidder shall provide complete technical datasheets with proof supporting each response.
 - In the technical specifications document, the Bidder shall clearly specify the reference document name together with the exact page number where the requirements is fulfilled.
 - The Bidder shall highlight the relevant parts in the technical datasheets provided to facilitate verification.
- It is important that the Bidder specifies and prices the application software and hardware that will be provided with the total system for its normal operation, and any other software and hardware that will be offered as options.
- All dimensions and ratings in the specifications for medical equipment are indicative for required sizes, weights, and functions.
- The bidder shall provide actual dimensions and ratings with this offer.
- In view of the rapid technological development and in case a new model for a required medical equipment is commercialized after the date of the bid opening, the Bidder shall provide the latest model of equipment made available in the market to replace what has been represented in his offer at no extra cost.
- Before the tenderer prepares the Bid, he should inspect the existing facility and the architectural and engineering drawings for the planned facility and completely familiarize itself with all conditions affecting the equipment and the pre-installation requirement. Failure to do so shall not relieve the tenderer of any of the cost requirements to complete the work and prepare the site.
- Where appropriate, such as for certain types of diagnostic imaging systems, the tenderer shall provide shielding design.
- The successful Bidder shall provide before installation, site preparation and layout drawings for all major equipment including layout of the connection with the nearest electromechanical points needed. A complete and detailed description of contractor obligations for facility preparation that will be required for each system.
- He shall provide a description of installation planning, design, and construction services provided. This shall include, but not limited to, shielding, electrical, mechanical, environmental conditions, structural (ceiling, wall and floor loading) and access requirements. Completion of this work is an essential part of the medical equipment acceptance.
- All items must be compatible to be connected to the existing sockets.



- Coordination of works:
 - The supplier shall be responsible for coordinating the works with the Contractors of Civil, Architectural and Electromechanical works for the good performance and finishing of the project.

2. Supplier's Responsibility for Civil & MEP Works:

- For CSSD equipment (sterilizers, washer disinfectors, etc.), Imaging equipment (including CT, MRI, R/F, routine X-ray, Cath Lab, etc.), Operating Room equipment, Specialized Clinics equipment (e.g., Dental), and other heavy or specialized systems, the Supplier shall provide and execute all necessary civil and MEP works required for the proper installation, safe operation, and full functionality of the equipment.
- All costs associated with delivery, installation, testing, and commissioning — including, but not limited to: site preparation, civil and MEP works (e.g., reinforced concrete pads, floor/wall/ceiling supports), radiation shielding, utilities connections, coordination with other trades, and the repair of any damages caused during installation — shall be deemed included in the Bid Price.

3. Manual and Documentation Requirements.

- Provide hardcopies and softcopies of the user manual in English and French.
- Provide hardcopies and softcopies of the service/maintenance manual and calibration instructions in English and French.
- Provide laminated cleaning and disinfection instructions with each device.
- Provide laminated summarized instructions for use and calibration (if any) in English and French.
- Provide a preventive maintenance checklist to the biomedical department.
- Provide ALL level passwords (user, maintenance, calibration).
- Share and make accessible ALL hidden menus (user, maintenance, calibration).

4. Training

The Bidder shall specify, in detail, the training component in his offer, which shall cover the detailed schedule of the necessary training sessions and educational workshops for the relevant staff on the clinical operation safe and competent handling of major equipment and systems, and the associated costs. A detailed description of the in-service training to be provided for the clinical personal and technical training for biomedical engineering personnel. This should be included a description of program length and format and content.

5. Standards

All medical electric and electronic equipment and other shall comply with all relevant standards i.e. IEC601-1 (General Requirement for Safety) and IEC-601-1-2(EMC/ Electromagnetic Capability).

Any medical equipment with country of origin from European Committee, USA, Japan, Canada or Australia should have either CE or FDA Certificate, and any medical equipment with country of origin from outside European Committee, USA, Japan, Canada or Australia must have both CE and FDA Certificates.

All relevant documentation and valid certificates of conformity to the standards shall be presented in the Bid.

If these systems, as quoted, do not comply with the standards upon their issuances, it is the tenderer's responsibility to assure compliance, at no cost to the client.

The CDR reserves the right to consider any item without such certified of conformity as non-responsive.



6. Electricity

- All Electrical supplies are at 220 single phase/ 380 three phase, 50Hz.
- All computerized and electronic equipment shall be provided with surge protection.
 - Electrical Safety:
 - a. The unit should be provided with a line (power) cord of acceptable durability, quality, length, and capacity and should be secured with adequate strain reliefs.
 - b. The unit should include, power plugs that are sufficient for the maximum voltage and current of the unit.
 - c. The chassis should be grounded and grounding resistance should be as per applicable code.
 - d. If the unit is double, it should be so labeled.
 - e. Electrical leakage current from the chassis of the unit should not exceed the maximum permissible current as per IEC 601-1
 - Line Voltage Variation
 - a. All computerized and electronic equipment shall be provided with surge unit, the unit should operate satisfactorily at line voltages from $\pm 10\%$ of the nominal line voltage of 220 Volts single phase or 380 Volts three phases.
 - b. The unit should not be damaged by voltages from $\pm 20\%$ of the nominal line voltage specified above.



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**VOLUME II OF IV
TECHNICAL SPECIFICATIONS
LOT I**

Issued on: June 2026



Item Description	Supplier Specifications
PACKAGE (C) - SPECIALIZED CLINICS	
C10 ENT Unit Complete with instrument Qty: 1	
Comprising of the following parts: ➤ <u>Patient Chair:</u> ▪ Motorized height adjustment with smooth, quiet operation. ▪ Tilting up to horizontal axis for patient positioning. ▪ Upholstery: seamless, antimicrobial, medical-grade, easy-clean vinyl. ▪ Adjustable headrest, retractable footrest, and upholstered folding armrests. ▪ Safe working load: ≥ 175 kg. ➤ <u>ENT Workstation:</u> General Construction ▪ All-steel, powder-coated casing, resistant to corrosion and disinfectants. ▪ Lateral functional support for easy access. ▪ Upper deposit with ≥ 4 small trays. ▪ Integrated shelf for instruments and separate deposit for used instruments. ▪ Plexiglas splash protector. Instrument & Storage System ▪ ≥ 4 trays for organized storage. ▪ ≥ 3 instrument cabinets, steel construction, with: - Aluminum trays - Deposit for used instruments - One shallow drawer	

Item Description	Supplier Specifications
- One deep drawer - ≥ 4 large instrument trays for bulk storage - Drawers self-closing and soft-closing mechanism. Suction & Irrigation System ▪ Suction unit, flow rate ≥ 35 L/min, with fine adjustment. ▪ One-liter autoclavable suction bottle with overflow safety. ▪ ≥ 6 stainless steel suction tips (various sizes). ▪ Automatic suction tube rinsing system with selectable temperature (30°C, 37°C, 44°C). Water Warmer & Irrigation ▪ Maintains constant 37°C $\pm 1^\circ\text{C}$ with electronic thermostat and overheating protection. ▪ Integrated water filter. ▪ Caloric test capability with warm water (option for air caloric test desirable). ▪ Irrigation handles with interchangeable tips (short, medium, angled). ▪ Maxillary duct irrigation hose connection. Lighting & Optical Integration ▪ Integrated LED light system with ≥ 2 outputs, fiber optic cables ≥ 2 m length. ▪ Illumination intensity: $\geq 50,000$ lux at 300 mm. ▪ LED lifespan: $\geq 50,000$ hours. ▪ Electric mirror pre-warmer and anti-fog system. ▪ Cold airflow system to prevent misting. ▪ Storage hook for headlamp. ENT-Specific Attachments ▪ Flexible nasalaryngofibroscope - Outer diameter ≤ 4 mm. - Length ≥ 300 mm. - Deflection $\geq 120^\circ/120^\circ$. - Working channel ≥ 2 mm. - Complete with HD camera head, video processor, light source, and recording capability. ▪ HF surgery unit integrated, output ≥ 100 W, modes: cut & coagulation. ▪ Compressed air device with: - ≥ 2 medicament sprays - 1 powder blower	

Item Description	Supplier Specifications
- Pulitzer adapter - Spray holders ▪ Holder for ear funnels. ▪ At least 19" HD Screen monitor, mounted on unit. Controls & Utilities ▪ Central electronic control panel for all workstation functions. ▪ Master switch for automatic water supply ON/OFF. ▪ Mains supply unit with connection box and full installation kit. Consumables & Dispensers ▪ Tongue depressor dispenser and supply (500pcs disposable tongue depressors) ▪ Cotton swabs dispenser (500 pcs cotton swabs) ➤ <u>ENT Microscope:</u> ▪ Complete with all accessories required for ENT examinations. ▪ Mounted on a mobile stand with lockable castors. ▪ Double pantograph arm for smooth positioning. ▪ Straight binocular head and ergonomic tube for ENT use. ▪ 5-step magnification changer for quick switching. ▪ Objective lenses: focal length range 250–400 mm. ▪ Manual fine focus and zoom via handle. ▪ Illumination: LED $\geq 50,000$ lux, lifespan $\geq 50,000$ hours. ▪ Integrated Yellow and Green filters. ▪ Autoclavable light caps.	

Item Description	Supplier Specifications
C20 Ophthalmic unit complete with instruments Qty : 1  ➤ General Requirements: ▪ Ergonomic, computer-integrated ophthalmic workstation. ▪ Space-efficient engineering with clean, contemporary styling. ▪ Flexible configuration to integrate examination chair, slit lamp, indirect ophthalmoscope, vision tester, and accessories ➤ Main Unit Features: ▪ Smooth-operating instrument delivery system. ▪ Conveniently located control panel for all integrated equipment. ▪ Spacious desktop with molded surface for easy cleaning. ▪ Counterbalanced vision tester arms. ▪ Overhead examination lamp. ▪ 3-well instrument charger with indirect ophthalmoscope and transilluminator holders. ▪ Additional storage compartments. ▪ Base cabinet made from high-pressure laminate with chased finish. ▪ Two integrated 220V power outlets with ON/OFF control. ▪ Low-voltage convenience outlet with separate ON/OFF switches. ▪ Manual electronic control panel for chair up/down adjustment. ➤ Examination Chair: ▪ Power supplied from the main ophthalmic unit. ▪ Electric lift with 8" (20.3 cm) vertical travel stroke. ▪ Foot pedal control. ▪ Adjustable backrest inclination.	

Item Description	Supplier Specifications
▪ Locking rotation mechanism. ▪ Sliding armrest. ▪ Fixed headrest. ▪ Adjustable footrest. ▪ Choice of upholstery colors. ➤ <u>Slit Lamp:</u> ▪ Type: Stereoscopic Microscope. ▪ Magnification: - 2-step magnification via objective lens rotation. - Eyepiece magnification: 10× (optional 16×). - Magnification ratio: 10×, 16× (with optional 16×, 25.6×). - Field of View (mm): 18, 14.5 (optional 11.25, 9). - Papillary Adjustment (Diopter Range): - Papillary adjustment: -5 to +3 diopters. ▪ Illumination: LED Light ≥ 10 W ▪ Slit Projection & Beam: - Slit projection magnification: 1.23×. - Slit width (mm): 0 to 14. - Slit length (mm): 1, 2, 3, 5, 8, 10, and 14. - Aperture diameter (mm): 1, 2, 3, 5, 8, 10, 14. - Slit rotation: 0° to 180°. - Filters: cobalt blue, red-free. ▪ Base movements: - Longitudinal: 90 mm. - Lateral: 100 mm. - Fine movement: 15 mm. - Chinrest vertical movement: 80 mm. - Optional fixation target: red LED. ➤ <u>Indirect Ophthalmoscope:</u> ▪ Synchronized illumination and observation beams. ▪ Stand-by position for optics. ▪ Lightweight construction. ▪ Multi-coated optics for optimal transmission in UV and IR ranges. ▪ 3 aperture sizes with integrated red-free and cobalt blue filters.	

Item Description	Supplier Specifications
▪ Adjustable for various pupil sizes. ▪ Electrically powered via table connection, with dimmer control integrated into table. ➤ <u>Digital Vision Chart:</u> ▪ Medical-grade LCD/LED monitor, $\geq 22''$ diagonal, high resolution (Full HD or better). ▪ Anti-glare, flicker-free, with wide viewing angle $\geq 170^\circ$. ▪ Brightness ≥ 250 cd/m², adjustable to simulate day/night conditions ▪ Digital Snellen chart with randomizable optotypes to avoid memorization. ▪ User-friendly setting interface to customize the language, working distance, R/G test; brightness adjustment; mirror function, and standby time. ▪ Configurable for different testing distances (2 m – 6 m). ▪ Multiple presentation modes: single line, single optotype, full chart. ▪ Size progression compliant with international standards (LogMAR / Snellen). ▪ Wireless remote control for chart navigation and randomization. ▪ Wall-mountable, supply all necessary accessories needed ▪ At least 1 set of polarized glasses for test use.	

Item Description	Supplier Specifications
C21 Keratometer Qty : 1  ➤ General Requirements: ▪ A combined autorefractor and keratometer providing accurate objective refraction with subjective refinement capability, in a mobile instrument. ▪ Auto-alignment and auto-measurement mode preferred. ▪ Display: Integrated Minimum 5.7-inch LCD Monitor. ▪ Recording: Built-in thermal printer. ➤ Measurement: ▪ Refraction Measurement Range: - Hyperopia: 0 to +22 D (steps selectable: 0.12 D or 0.25 D). - Myopia: 0 to -25 D (steps selectable: 0.12 D or 0.25 D). - Astigmatism: 0 to ± 7 D (steps selectable: 0.12 D or 0.25 D). - Axis Range: 0° to 180° (1° steps). - Method of Relaxation: Automatic fogging. - Data Storage: Minimum 10 measurements per eye. ▪ Corneal Curvature (Keratometry) Measurement: - Radius Range: 5.00 to 10.00 mm (0.01 mm steps). - Diopter Range: 67.50 D to 33.75 D (conversion factor = 1.3375) - Astigmatism Measurement Range: 0 to ± 7 D (0.12 D steps) - Axis Range: 0° to 180° (1° steps) - Data Storage: Minimum 10 readings per eye; in R/K mode, representative value printing available	

Item Description	Supplier Specifications
➤ <u>Mechanical Movement Ranges:</u> ▪ Forward/Backward: ± 22 mm ▪ Horizontal: ± 43 mm ▪ Vertical: ± 17 mm ▪ Chin Rest Adjustment: ± 30 mm vertical range ➤ Connectivity ▪ VGA, RS-232 Interface, USB ➤ Accessories ▪ Supplied with: dust cover, printer paper rolls, power cable, and user manual in English	

Item Description	Supplier Specifications
C22 Trial Lenses Box Qty : 1  ➤ General Requirements: ▪ All lenses shall be corrected curve lenses, 25 mm diameter (except: Sphere -20.00 D = 19 mm; -18.00 D = 21 mm; -16.00 D = 22 mm). ▪ Lenses shall be color-coded for easy identification: Minus Lenses (Red), Plus Lenses (Black), Accessories (Grey) ▪ Lenses mounted in unbreakable lightweight anodized aluminum mounts. ▪ Supplied in a durable carry-on case with secure compartments for all lenses and accessories. ➤ Lens Set Composition: ▪ Spherical Lenses (-): - Singles: -20.00, -18.00, -16.00, -14.00, -13.00 D - Pairs: -12.00 to -4.00 D in 0.50 D steps - Pairs: -3.75 to -0.75 D in 0.25 D steps - Pairs: -0.62, -0.50, -0.37, -0.25, -0.12 D ▪ Spherical Lenses (+): - Singles: +20.00, +18.00, +16.00, +15.00, +14.00, +13.50, +13.00 D - Pairs: +12.50 to +4.00 D in 0.50 D steps - Pairs: +3.75 to +0.75 D in 0.25 D steps - Pairs: +0.62, +0.50, +0.37, +0.25, +0.12 D ▪ Cylindrical Lenses (-): - Pairs: -6.00, -5.00 D	

Item Description	Supplier Specifications
- Pairs: -4.50 to -3.00 D in 0.50 D steps - Pairs: -2.75 to -0.25 D in 0.25 D steps - Pairs: -0.12 D ▪ Cylindrical Lenses (+): - Pairs: +6.00, +5.00 D - Pairs: +4.50 to +3.00 D in 0.50 D steps - Pairs: +2.75 to +0.25 D in 0.25 D steps - Pairs: +0.12 D ▪ Prisms: - Singles: 10, 8, 6, 5, 4, 3 Δ - Pairs: 2, 1, 0.5 Δ ➤ <u>Trial Frames:</u> ▪ Pediatric Trial Frame - P.D. adjustment range: 48 mm to 64 mm - Variable horizontal bridge - Fully adjustable temple length and angle - Lightweight and durable construction for pediatric use ▪ Adult Trial Frame - P.D. adjustment range: 54 mm to 80 mm - Variable horizontal bridge - Fully adjustable temple length and angle - Lightweight adjustable adult trial frame ➤ Accessories: ▪ Frosted glass ▪ Red Maddox rod ▪ Green glass ▪ Red glass ▪ Cross line lenses (2 pcs) ▪ Stenopaic slit ▪ Pin hole disc ▪ Plain glass ▪ Occluder	

Item Description	Supplier Specifications
C 30 Dental Unit Complete Qty : 1  This section describes the requirements for a dental unit; The unit should consist at least: ➤ Dental Chair Unit ➤ Dental Instrument cabinet ➤ Dental X-ray tube ➤ Digital X-ray Sensor ➤ Benchtop Steam Sterilizer ➤ Dental Curing Light ➤ Dental Ultrasonic Cleaner ➤ Amalgamator ➤ Dental Chair for Dentist ➤ Dental Compressor ➤ Dental Vacuum Pump ➤ Casework for the room	

Item Description	Supplier Specifications
➤ <u>Dental Chair Unit:</u> ▪ The dental chair must be designed to endure daily clinical use. ▪ The unit must include locking mechanisms for arms, consoles, and other movable components to prevent accidental movement. ▪ Fully electrically operated chair with ergonomic design and adjustable height, backrest, and headrest. ▪ Upholstery must be durable, easy to clean, and resistant to disinfectants. ▪ It should have a double articulating headrest with seesaw movement. ▪ It should be provided with soft cervical support. ▪ It should have latest overhead delivery system. ▪ Chair capacity to support a weight at least 180 Kg. ▪ The main console should include touchscreen or membrane keypad interface for easy operation. ▪ It should have two 3-way syringes (tip autoclavable, with spare tips), one on main console unit and the other on the assistant side. ▪ The unit should have the following handpieces: - Two high-speed air rotor terminals, supplied with two high-speed rotor handpieces (clean head type, ~350,000 RPM) with two spare cartridges. - One fiber optic terminal for fiber optic turbine handpieces. - One air motor/micro motor terminal, supplied with a high-torque micro motor (foot-controlled, 2,000–40,000 RPM) with forward/reverse function and auto cut-off for overload protection. - The micro motor shall be supplied with autoclavable straight and contra-angle handpieces suitable for operation up to 40,000 RPM. ▪ It should have LED light cure unit with minimum intensity of 1200 mW/cm². ▪ All handpieces/terminals should be kept on autoclavable pads. ▪ To be provided with a customized cover (original or locally made) to stabilize and protect the terminals when not in use. ▪ Main console should have infection control system with non-retraction valves to prevent cross-contamination ▪ 8 spare autoclavable pads should be supplied. ▪ Arm of unit should be pneumatically locked. ▪ The chair must have a rigid structure to ensure durability and longevity. ▪ Materials used should resist corrosion, wear, and damage. ▪ All air tubing of the delivery system can be disinfected internally after every dental procedure. ▪ It should have one in-built piezo ultrasonic scaler (frequency range between 28 to 36 KHz).	

Item Description	Supplier Specifications
▪ The scaler to be supplied with 10 tips. ▪ It should have integrated operating LED light (30,000–50,000 Lux) with adjustable brightness. ▪ The arm for the operating light should have lock mechanism. ▪ It should have rotatable water system with locking mechanism and removable spittoon. ▪ It should have medium vacuum suction and high suction (motorized suction). ▪ It should have at least the two programmable working positions: - Spitting position. - Last working position with light ON and OFF automatically, return to zero position with light OFF automatically. ▪ It should have emergency stop control with luminous indication. ▪ Programmable bowl water and cup filler water. ▪ LED-based X-ray viewer ▪ It should have multi-functional foot control base (with adhesive base or equivalent stabilizing mechanism). ▪ The dental chair should be designed to work with a well-defined optimal range for water and air pressure (supplier to specify the range). ▪ The dental chair should include water bottle and flexible connection system to be used in case of empty main water tank. ▪ The dental chair should include water and air pressure reducers with adequate pressure gauges and filters (to be specified). ➤ <u>Dental instrument cabinet:</u> ▪ Medical-grade, corrosion-resistant materials with smooth, easy-to-clean surfaces. ▪ Mounted on high-quality, smooth-rolling, lockable casters for easy repositioning and stability during use. ▪ 4 to 6 drawers, each fitted with removable stainless steel or autoclavable plastic trays/racks for organized instrument storage. ▪ At least one dedicated compartment for storing larger devices or consumables. ▪ Drawers equipped with smooth, quiet, full-extension runners and easy-grip handles. ➤ <u>Dental X-ray Tube:</u> ▪ Wall Mounted unit, on articulated arm. ▪ Completely microcontroller based digital timer. ▪ Remote control for all functions including the timer. ▪ Touch Keypad ▪ Exposure cable not less than 5 meters.	

Item Description	Supplier Specifications
▪ Exposure timing accuracy 0.01 second within the range of 0.01 to 4 second. ▪ Preset modes includes. ▪ RVG Mode active for RVG sensor. ▪ X-Ray Output parameters around 65kV+5%, 8mAs+/-10%. ▪ Adjustable kv, mA, and time. ▪ 0.4mm focal spot ▪ Cones included 70 mm aperture with 20 cm SID ▪ X-Ray Radiation indications alarm ▪ Operation modes manual and automatic included ➤ <u>Digital X-ray Sensor:</u> ▪ Should be based on CMOS ▪ RVG sensor resolution > 20lp/mm with high signal-to-noise ratio. ▪ RVG sensor to be robust and water-resistant. ▪ RVG sensor to support USB connection for data transfer to the laptop (USB Length Cable > 2.5 m) ▪ To be provided with suitable laptop equipped with the latest operating system, an internal battery with 4 hours autonomy minimum, an internal memory over 500 GB SSD, a processor over 16 GB RAM, screen > 15 inch, USB Ports, HDMI Ports, ..) ▪ RVG/System software installed on the computer ▪ Software Open license with no limitation is mandatory, and the CD installation software with its activation passkey will remain property of the client for any future installation over another computer whenever the provided laptop could be out of service for any reason. ▪ USB cable - The RVG should include 2 sample pack of disposable hygienic sheaths, positioners, and mounting holders ➤ <u>Benchtop Steam Sterilizer:</u> ▪ Benchtop type, Class B autoclave in accordance with EN 13060, suitable for sterilization of dental instruments. ▪ Brand new, currently in production (no notification of “End of Production”). ▪ Must provide sterilization at both 121 °C and 134 °C. ▪ Suitable for sterilization of wrapped and unwrapped instruments. ▪ Must include a flash cycle for rapid sterilization. ▪ Equipped with a powerful vacuum pump for pre-vacuum and post-vacuum drying. ▪ Minimum of 4 sterilization programs, including a Bowie-Dick test program.	

Item Description	Supplier Specifications
▪ Chamber capacity: 15–20 liters maximum. ▪ Noise-free operation system. ▪ Integrated pressure gauge and timer. ▪ Screen display with visual alarms for abnormal functioning (error codes displayed). ▪ Water level indicator included. ▪ Equipped with efficient safety valve. ▪ Accessories & Features: - Integrated thermal printer. - Active USB port for cycle data export after each cycle. - Supplied with stainless steel multi-layer tray rack with minimum three trays. - Supplied with minimum two stainless steel instrument plates. - Delivered with an additional set of air filters ➤ <u>Dental Curing Light:</u> ▪ It should be cordless, battery operated supplied with external charger. ▪ It should be lightweight with ergonomic design and made of heavy-duty material. ▪ LED curing light should be operating at standard mode of around 1000-1800 mW/cm². ▪ Tip diameter should be around 10mm. ▪ Built-in with Eye Shield. ▪ Advanced heat management system allowing use for both direct and indirect restorations. ▪ It should have an intensity of around 2mm cures per 8 seconds. ▪ Wavelength range 400nm - 460nm minimum. ▪ Charge Indicator LED & Timer Display LEDs. ▪ Lithium-ion battery or better. ➤ <u>Dental Ultrasonic Cleaner:</u> ▪ Made from 304 stainless steel ▪ Heating Power:100 Watts (Adjustable heater) ▪ Time Setting: 0-30 mins (Mechanical adjustable timer) ▪ Frequency: 40kHz ▪ The Ultrasonic cleaner should come with stainless steel basket ▪ Tank Capacity: 2L ➤ <u>Amalgamator:</u> ▪ Controlled via a microprocessor. ▪ Mixing speed should be 3000 to 5000 rpm minimum.	

Item Description	Supplier Specifications
▪ Adjustable mixing time from 5 sec to 90 sec minimum. ▪ Adjustable speed. ▪ Digital display showing at least the timer and the rotation speed. ▪ Preset profiles and/or manual operation modes included. ▪ Automatic alarm included. ▪ Safety mechanical features including a motor stop action in case the mask lid is opened. ▪ Heavy duty manufacturing material including the metallic revolver. ▪ Easy cleaning of the device ▪ Noise level during operation less than 65 dB ➤ <u>Dental Chair for Dentist:</u> ▪ Chairs should be height adjustable. ▪ Equipped with back support and armrests. ▪ Designed with a wide, cushioned seat for comfort. ▪ Ring-type footrest included. ▪ Fitted with five swivel castors for stability and mobility. ➤ <u>Dental Compressor:</u> ▪ Oil free medical grade type to prevent patients from acquiring harmful contaminations. ▪ Power: one head x 750 Watts minimum. ▪ Peak and continuous power consumption must be specified in watts. ▪ The air pressure at the dental chair should be around 4 bar. ▪ The air pressure at hand piece ports should be around 2.5 bar. ▪ Minimum airflow of 180 liters per minute or higher. ▪ Noise level 50 to 60 dB maximum under standard operating conditions ▪ Epoxy Coated air receiver tank with corrosion resistance ▪ Tank Capacity: 50 liters minimum. ▪ Maximum pressure of the compressor: 8 bar or above ▪ Pressure gauge and auto cutoff switch to be included ▪ Should be certified Class-0 ▪ Should meet the requirements of ISO7396 & HTM02-01 with an integral dryer, internally coated air receiver and a breathing air and bacterial filter down stream of the compressor, free from leaks and contains sufficient isolation valves. ▪ Safety release valve to be included to prevent over-pressurization. ▪ Compressor filter should be 3um, membrane drying unit fine filter 3 um, sterile filter for membrane drying 0.01 µm.	

Item Description	Supplier Specifications
▪ To include sufficient isolation valves to ensure operational safety. ▪ To include automatic drain valve for efficient water removal ▪ Including installation and all necessary electrical cables, electrical controls, mechanical inlet and outlet air piping and valves, and drainage of water. ➤ <u>Dental Vacuum Pump:</u> ▪ It should be "CE" and "ISO" Certified. ▪ It should include anti-vibration mounts or shock absorbers for stable operation. ▪ The system should be compact and lightweight to fit within the clinic space. ▪ The suction motor should simultaneously aspirate and separate the liquid and air. ▪ Motor overheat protection. ▪ Rated power output around 600 Watt. ▪ Protection class I. ▪ Medical device class II A. ▪ Impellers should be made of coated aluminum or extremely corrosion-resistant plastic. ▪ The aerosol suction volume should be around 300 to 325 liters per minute. ▪ Noise level less than 55 dB(A). ▪ Maximum fluid flow rate around 4 liters/min. ▪ Vacuum connection special (hose around 30 mm inner). ▪ Integration capability with dental chair controls, including relays for synchronization. ▪ To include all necessary adapters and connectors for the dental chair integration. ▪ Waste water connection (hose around 20 mm inner diameter). ▪ Exhaust air connection (aluminum hose around 30 mm inner). ▪ To include overload and short-circuit protection mechanisms. ▪ Vacuum pressure around 180 mbar approx. ▪ To have an efficient drainage system with automatic discharge for collected fluids to a specific waste tank. ▪ The drainage outlet should include valves for secure and leak-free operation. ▪ The filters should have easy access for regular cleaning without complicated tools. ▪ The system should have replaceable and reusable filter options. ➤ <u>Dental Casework:</u> ▪ Medical-grade surfaces per healthcare standards. ▪ Made from non-porous, scratch-resistant materials with all edges sealed. ▪ Fitted with corrosion-resistant hinges, slides, and handles suitable for frequent use.	

Item Description	Supplier Specifications
▪ Smooth finishes and rounded corners for easy cleaning and infection control. ▪ Minimum four drawers and two cabinets with removable, autoclavable trays; at least one lockable compartment. ▪ Worktops of heat- and chemical-resistant solid surface, ≥ 12 mm thick, with backsplash. ▪ Ergonomic height and depth, with under-counter space for seated work. ▪ Stainless steel sink with gooseneck faucet ▪ Submit material samples and detailed room-fitting drawing for approval. ▪ Supplier shall provide and install all related sinks, faucets, connections, and hardware, and is fully responsible for completing all connection works.	

Item Description	Supplier Specifications
PACKAGE (F) - MEDICAL FURNITURE	
F01 Bed, hospital, electric	Qty : 31
➤ Description: ▪ Fully motorized 4-sections hospital bed, electrically operated, designed for inpatient use. ▪ Enables both patients and caregivers to conveniently adjust bed height, backrest, and leg sections with minimal effort. ▪ Ergonomically designed to reduce staff workload, facilitate patient positioning, and improve safety and comfort. ➤ Functional Features: ▪ Motorization: Minimum three-motor system (backrest, knee-rest, and height adjustment). ▪ All bed movements to be electrically controlled. ▪ Special positions and features: - Auto regression system on backrest and leg rest - Auto contour or equivalent - Semi-Fowler position - Cardiac chair position - CPR position with instant manual release to put the bed in flat position in case of life-threatening emergency ▪ Controls: - Electrical control system. - Patient controls for height, head and knee sections built into the safety side rails with clearly visible positioning and movements symbols	

Item Description	Supplier Specifications
- Recessed controls Nurse/attendant master control in the foot-end board - Nurse controls at foot side to include patient controls lockout, no walk-away descending height ▪ Adjustments: - Backrest, knee section, and height adjustment. - Trendelenburg and Reverse Trendelenburg positions. ▪ Panels: Laminated, durable, easy-to-clean head and foot panels. ▪ Headboard, footboard removable for emergency access and easy intervention on patient. ➤ <u>Safety & Patient Support:</u> ▪ With safety side rails, half-length type for both head and foot section, completely storable under bed frame for zero transfer gaps. ▪ Minimal gap between the patient mattress and the side rails, and in between head and foot side same-side rails. ▪ Side rails should cover at least 80% of the side section without any gap ▪ Braking System: Central brake with steering lock function. ▪ Castors: Four (4) heavy-duty double ball-bearing swivel antistatic castors, 5-inch diameter, minimum two with independent braking. ▪ Bumpers: Protective corner and side bumpers at all sides to prevent impact damage. ▪ Infusion & Drainage: IV rod with multiple receptacles, Drainage bag holder/hook, Infusion support system ▪ Fracture Frame: Receptacles provided for attachment of fracture frame accessories. ➤ <u>Construction & Materials:</u> ▪ Patient weight capacity of at least 200 Kg with label on bed. ▪ Construction of "heavy duty molded material, scratches and stains resistant (e.g. ABS) on heavy duty welded steel frame members with epoxy-based finish" or equivalent ▪ Detachable four section lying surface ▪ Panels: Laminated plastic, easy to disinfect, resistant to moisture. ➤ <u>Mattress:</u> ▪ Standard hospital grade anti-static, antibacterial, moisture-proof, strain-resistant, and radiolucent mattress ▪ Mattress approx. dimensions 90x200x15 cm to fit bed size ▪ Mattress to provide maximum patient comfort.	

Item Description	Supplier Specifications
▪ Constructed of flame-retardant material, hospital grade multilayer foam ▪ Treated for bacteria, fungi and microbial agents ▪ Covered with material resistant to blood, urine and chemical spills and stains Mattress cover shall be easily removed and replaced. ▪ With side vents and carrying handles, min. 2 on each side ▪ Protective cover included. ➤ <u>Mobility:</u> ▪ Centralized brake and steer system for ease of movement. ▪ Roller bumpers for safe transport in narrow corridors and lifts. ➤ <u>Accessories (to be delivered with each bed):</u> ▪ Mattress (as specified above). ▪ Bedding Set: - Three (3) 100% cotton bed sheets. - Two (2) pillows with covers. - Two (2) blankets. ➤ <u>Dimensions:</u> ▪ Approximate overall outer dimensions: 210 cm (L) × 100 cm (W) ▪ Approximate sleeping surface dimensions: 200 cm (L) × 90 cm (W) ▪ Bed height adjustable to meet ergonomic and clinical requirements at least between 40 and 75 cm with easy patient exit from the bed. ➤ <u>Compliance & Quality:</u> ▪ F01, F06, and F11 models shall be supplied from the same manufacturer to ensure uniformity of design, spare parts, and maintenance. ▪ Supplier must submit color/material samples for approval prior to production.	

Item Description	Supplier Specifications
F02 Bassinets (COT, Baby) Qty :12  ➤ General Construction: ▪ The bassinet shall be constructed of seamless clear acrylic material to allow full visibility of the infant. ▪ Frame shall be made of heavy-duty 304 stainless steel, corrosion-resistant, smooth finish, easy to disinfect. ▪ The bassinet shall be designed to fit all standard bassinet holders. ▪ Front and back handgrips shall be provided for safe handling and maneuverability. ▪ A nameplate holder shall be included for infant identification. ➤ Mattress: ▪ Mattress shall be made of durable, waterproof, and easy-to-clean material (antibacterial and moisture-resistant). ▪ Mattress shall fit snugly within the bassinet with no gaps to prevent entrapment or injury. ➤ Cart/Base: ▪ The cart shall be constructed of sturdy, easy-to-clean material. ▪ The cart shall be designed to resist tipping over during use and transport. ▪ The bassinet cart shall be mounted on four (4) swivel casters, each with a diameter of minimum 7.5 cm (3 inches). ▪ At least two (2) casters shall have locking mechanisms for safety. ▪ Casters shall be conductive, smooth-rolling, and suitable for hospital flooring.	

Item Description	Supplier Specifications
➤ Safety & Hygiene: ▪ Design must ensure stability and tip-resistance during transport and patient care. ▪ All surfaces shall be non-toxic, easy to clean, and resistant to hospital disinfectants. ▪ Construction must comply with international standards for neonatal furniture safety.	

Item Description	Supplier Specifications
F05 Crib, Pediatric Qty : 13 ➤ <u>General Construction:</u> ▪ Mobile pediatric crib trolley, single crib design. ▪ Constructed with rounded, child-safe corners. ▪ Rails with 2" bar spacing to prevent entrapment. ▪ Crib design must prevent any openings (e.g., when mattress is adjusted) through which a child could fall. ▪ A vinyl, bubble, or metal safety top shall be provided to prevent the child from climbing over the rails. ➤ <u>Mobility:</u> ▪ Mounted on four (4) swivel casters of minimum 5" diameter. ▪ Central brake and/or steering system with controls accessible from two corners. ▪ Crib must resist tipping during use and transport. ➤ <u>Positioning:</u> ▪ Equipped with Trendelenburg and Reverse Trendelenburg positions. ▪ Full-function Fowler positioning (backrest elevation). ▪ Litter top: solid pan construction for durability. ➤ <u>Rails & Access:</u> ▪ Side rails must fold or slide down for patient access. ▪ End rails must also be foldable/slidable.	

Item Description	Supplier Specifications
▪ At least one intermediate rail position required, with rails ≥ 9" above mattress support while still allowing provider access. ▪ One-handed rail operation for ease of use. ➤ <u>Accessories:</u> ▪ At least two IV pole receptacles, supplied with two IV poles. ▪ Pediatric foam mattress: - Minimum 12 cm thickness. - Durable, waterproof, antibacterial, easy-to-clean cover. - Must fit snugly in the crib without gaps. ▪ Bedding set per crib: - Three (3) bed sheets. - Two (2) pillows. - Material and color to be approved by client. ➤ <u>Dimensions:</u> ▪ Minimum overall length: 1600 mm.	

Item Description	Supplier Specifications
▪ Head and foot boards to be made of both heavy duty and light weight material ▪ Detachable four section lying surface ▪ Angle gauge for back or equivalent ▪ Easy to clean equipment with standard on-the market hospital grade cleaning chemicals (specify) ▪ Ingress protection not less than IPX2 ▪ Shock-fall protection with case made of high-quality material resistant to impact ▪ Continuous operation within specification in ambient temperature of at least 5–40 °C, relative humidity of at least 10–85% non-condensing ▪ The bed shall be electrically operated, four-section, postural type. ▪ Must include manual/hydraulic backup functions for essential positioning in case of power failure. ▪ Equipped with instant CPR release for rapid flattening in emergencies. ➤ <u>Imaging Capability</u> ▪ The head and/or torso sections shall be radiolucent (Lucent window) to allow for in-bed X-ray and fluoroscopic procedures. ▪ Mattress must also be radiolucent and compatible with portable X-ray. ➤ <u>Mobility & Safety</u> ▪ Four (4) heavy-duty swivel castors, minimum 125 mm diameter. ▪ At least two castors fitted with brakes; central locking system preferred. ▪ Protective rails and bumpers to prevent impact damage to walls, furniture, and equipment. ▪ Side rails: - Must fold down or tuck-away. - Positively latch in the upright position. - Different rail lengths should be available (full-length / ¾ length). ➤ <u>Positioning Functions</u> ▪ Trendelenburg and Reverse Trendelenburg positioning: ▪ Operable under any condition (with or without electrical power). ▪ Must include gauge/indicator to show angle of inclination. ▪ Fowler and Semi-Fowler positions with angle indicators. ▪ Height adjustment (High-Low): Variable adjustment such that the top of mattress height ranges from at least 43 cm to 84 cm. ▪ Manual/hydraulic override for critical adjustments during power failure.	

Item Description	Supplier Specifications
➤ <u>Controls & Monitoring</u> ▪ Bed shall have control panels at head and foot ends, accessible to staff and patient. ▪ Must include multi-function touchscreen display for monitoring and processing patient and bed status. ▪ Integrated nurse call control. ➤ <u>Patient Access</u> ▪ Headboard and footboard shall be removable quickly for emergency access to patient's head and body. ▪ Must include minimum four (4) IV pole receptacles, ideally positioned at head, center, and foot sections on both sides. ▪ Drainage bag hooks must be provided on each side of the bed ➤ <u>Mattress & Pillow</u> ▪ Mattress must be: - High-density polyurethane foam (minimum density: 35 kg/m³). - Anti-decubitus pressure relief mattress system, suitable for long-stay ICU patients. - Minimum thickness: 14 cm. - Suitable for a four-section ICU bed. - Radiolucent, compatible with X-ray imaging. - Covered with tear-resistant, antistatic, flame-retardant, disinfectant-resistant, liquid-proof, and washable cover. - Pillow: High-quality, washable, and suitable for ICU use. ➤ <u>Electrical & Power</u> ▪ Operates on standard hospital supply voltage (220–240V, 50–60 Hz). ▪ Power cable length: minimum 3 meters. ▪ Bed must be compliant with electrical safety standards for medical equipment	

Item Description	Supplier Specifications
F07 Bed, labor / delivery Qty : 5 ➤ <u>General Description</u> ▪ Specialized labor/delivery bed designed for safety and comfort of mothers during labor, delivery, and recovery, while reducing caregiver physical strain. ▪ Bed must allow multiple positioning capabilities with reliable safety features. ➤ <u>Bed Structure</u> ▪ Three adjustable sections: backrest, seat, and foot. ▪ Each section shall include a durable support pan and individual mattress segment. ▪ Foot section must detach easily for unobstructed perineal access. ▪ Headboard must be removable for emergency access. ➤ <u>Adjustments & Positioning</u> ▪ Backrest, foot height, and overall bed height adjustable. ▪ Trendelenburg and Reverse Trendelenburg positions available. ▪ Fowler and semi-Fowler positioning for patient comfort. ▪ Hydraulic height adjustment range: 22" to ≥ 40" (or wider). ▪ Inflatable lumbar support for patient comfort. ▪ Powered "Skooscher" or equivalent feature for repositioning patient. ▪ CPR release function for instant flattening in emergencies. ➤ <u>Safety & Mobility</u> ▪ Side rails: foldable/tuck-away positively latched in upright position, multiple length options. ▪ Protective bumpers to prevent wall/furniture damage during movement. ▪ Castors: Four (4) heavy-duty 150 mm conductive swivel castors with central braking system.	

Item Description	Supplier Specifications
➤ Accessories ▪ Foot/leg supports and two knee crutches for delivery positioning. ▪ Two pairs of hand grips and access steps. ▪ Removable drain pan / fluid basin. ▪ IV pole and clamp supplied.	

Item Description	Supplier Specifications
F08 Wheelchair Qty :4  ➤ <u>General Technical Requirements</u> ▪ Primarily used indoors or on even surfaces outdoors ▪ Typically used intermittently for short duration or for short distance transportation ▪ Must be made of the highest quality materials such as chrome polished finish or stainless steel ▪ 4 wheels configuration ▪ Rear wheels located in a safe position (in line with backrest tubes or further rearward) ▪ Waterproof upholstery and easy to clean ▪ Padded backrest, seat and push handle ▪ Fixed backrest height, at least midthoracic height of target population ▪ Total seat height: around 90cm ▪ Seat size: around 48 x 46 cm ▪ Loading weight at least 180kg ➤ <u>Frame Specifications and Requirements</u> ▪ Folding frame ▪ Push handles with ergonomic non-slipping finishing covers ▪ Armrests: Padded, Fixed height and detachable ▪ Preferably fixed-height footrests ▪ Height adjustable foot plates that are swing-away and/or foldable and/or removable ▪ Tipping lever ▪ IV pole mountable preferably on both sides of the backrest	

Item Description	Supplier Specifications
➤ <u>Rear wheels</u> ▪ up to 26” solid mag tires or bicycle type spoked wheels ▪ Braking / locking mechanism on both rear wheels ▪ Self-propelling SS hoops ➤ <u>Front castors</u> ▪ Diameter: 8” mag swivel casters ▪ Width: 1-2”	

Item Description	Supplier Specifications
F09 Cabinet Out patient clinic Qty :9 ➤ <u>General Construction</u> ▪ Structure: Stainless sheet steel, durable and easy to clean. ▪ Base: Equipped with adjustable feet for stability on uneven floors. ➤ <u>Compartments & Doors</u> ▪ Upper section: Turning glass doors made of anodized alloy, fitted with lock. ▪ Lower section: Solid sheet steel doors, lockable. ➤ <u>Shelving</u> ▪ Minimum three (3) sheet steel shelves: - Two (2) shelves in the upper compartment. - One (1) shelf in the lower compartment. ➤ <u>Dimensions</u> ▪ Overall size: 80 × 40 × 180 cm (W × D × H).	

Item Description	Supplier Specifications
F10 Doctor, Chair Qty : 11 ➤ <u>General Construction</u> ▪ Ergonomically designed chair ensuring total comfort and superlative sitting convenience for doctors. ▪ Equipped with 360° swivel for full mobility. ▪ Upholstered with anti-static polyurethane cushion for hygiene and comfort. ➤ <u>Adjustability</u> ▪ In-built gas cylinder for height adjustment: - Minimum seat height: 540 mm - Maximum seat height: 700 mm - Stroke: 160 mm ▪ Ergonomic backrest for upper body and lumbar support. ➤ <u>Support & Stability</u> ▪ Stainless steel-plated foot ring for stable leg support. ▪ Five-castor base for smooth, multidirectional movement.	

Item Description	Supplier Specifications
F11 Table, Overbed Qty :52  ➤ <u>General Technical Requirements</u> ▪ Frame and finishing material same as related medical bed ▪ Compatible base with the chosen medical bed to be able to go under it while the bed is at its lowest position in way to ease access for patients with reduced mobility ▪ The top to be solid core waterproof plastic laminate with a plastic edge and an upper rim protection on the borders or equivalent ▪ Top surface dimensions approx. 60 x 40 cm ▪ Smooth vertical movement and adjustable height to permit easy access from a standing or seated position in front of the cabinet or lying in bed ▪ Height adjustment between approx. 72 to 115 cm ▪ Preferably tiltable to limitless positions ▪ All exposed and hidden metallic parts used in the overbed table construction should be corrosion resistant either stainless steel or chrome plated that could handle abrasive disinfection and cleaning corrosive chemicals used in hospital environment ▪ Mounted on at least 4 castors of at least 4.5 cm height with at least 2 having brakes ▪ Easy to clean with standard on-the market hospital grade cleaning chemicals (specify) ➤ <u>Compliance & Accessories</u> ▪ Models F01, F06, and F11 must be from the same manufacturer to ensure consistency. ▪ Color samples to be submitted for approval before delivery.	

Item Description	Supplier Specifications
F12 Table, Mayo, 600x400 mm Qty : 7 ➤ <u>General Technical Requirement</u> ▪ Instrument mayo stand/table for operating theatre or intensive care setup use ▪ Heavy robust construction, stable with at least 304 stainless steel construction (specify) ▪ 360 degrees rotatable table top surface with a removable upper tray configuration ▪ Tray should have up-turned lipping of adequate height to withstand fluids ▪ Removable upper tray dimensions: approx. 60 x 40 cm ▪ T shaped base on 3 swivel castors of approx. 6 cm height ▪ Easily adjustable height with a hydraulic system that is foot operated by a paddle/lever preferably located fully under the tray area near the column (or equivalent mechanism) ▪ Height range from approx. 83 to 117 cm ▪ Weight capacity: approx. 30 Kg ➤ <u>Accessories</u> ▪ Delivered with three (3) reusable drapes, 100% cotton, green color.	

Item Description	Supplier Specifications
F13 Table, Mayo, 700x500 mm Qty : 7 ➤ <u>General Technical Requirement</u> ▪ Instrument mayo stand/table for operating theatre or intensive care setup use ▪ Heavy robust construction, stable with at least 304 stainless steel construction (specify) ▪ 360 degrees rotatable table top surface with a removable upper tray configuration ▪ Tray should have up-turned lipping of adequate height to withstand fluids ▪ Removable upper tray dimensions: approx. 70 x 50 cm ▪ T shaped base on 3 swivel castors of approx. 6 cm height ▪ Easily adjustable height with a hydraulic system that is foot operated by a paddle/lever preferably located fully under the tray area near the column (or equivalent mechanism) ▪ Height range from approx. 83 to 117 cm ▪ Weight capacity: approx. 30 Kg ➤ <u>Accessories</u> ▪ Delivered with three (3) reusable drapes, 100% cotton, green color.	

Item Description	Supplier Specifications
F14 Cabinet, bedside Qty : 44  ➤ General Construction ▪ Frame material same as related medical bed ▪ Back and side sections made of durable corrosion resistant material (specify) ▪ Configuration with 1 drawer and 1 storage cabinet to be made from durable corrosion resistant material (specify) ▪ The top to be solid core waterproof material with round edges (specify) ▪ Designed to permit easy access from a standing or seated position in front of the cabinet or lying in bed ▪ All hinges to be stainless steel ▪ Mounted on at least 4 castors of at least 4.5 cm height with at least 2 having brakes ▪ Size: approx. 475×470×755 mm ▪ Hidden pull-out tray for cups & articles ▪ 2 bumpers on the backside to protect the cabinet and the wall ▪ Easy to clean with standard on-the market hospital grade cleaning chemicals (specify) ▪ Cabinet must be supplied by the same manufacturer as models F01, and F11 to ensure uniformity. ▪ Color samples shall be submitted for client approval prior to production.	

Item Description	Supplier Specifications
F15 Wardrobe Qty : 3  ➤ <u>General Construction</u> ▪ Closet made of 16 mm décor laminated particle board, durable and easy to clean. ▪ Fitted with two hinged doors. ▪ Includes internal shelves and a fixed hanging rail for clothing storage. ➤ <u>Dimensions</u> ▪ Approximate size: 900 mm (W) × 450 mm (D) × 2000 mm (H). ▪ Final sizing to be adjusted according to onsite measurements. ▪ Color samples to be submitted for approval prior to fabrication.	

Item Description	Supplier Specifications
F16 Couch, Examination w/step Qty : 8 ➤ <u>General Technical Requirements</u> ▪ Frame constructed out of welded chromium plated tubular plated steel or heavy-duty equivalent ▪ Patient top made out of heavy-duty steel alloy (chromium or baked enamel finish), smooth finished GRP or high-grade PVC ▪ Fixed-height, with adjustable backrest with storage unit ▪ Approx. 8 cm thick hypoallergenic mattress with washable top ▪ Approximate minimum dimensions in cm: 1900 mm (head section 500 mm, main section 1400 mm) ▪ Width approx. 650 mm ▪ Mattress size in cm: ≥ 185 L x 60 W ▪ Maximum patient weight: ≥ 180 Kg ▪ Headrest adjustment: $+30^\circ$ (Grid) ▪ The color coating of the frame can be chosen by the client ▪ Paper roll holder ▪ Three-drawer mobile base unit placed under the examination table ▪ Supplied with a mobile swivel stool and foot step (Refer to item Nr. F20)	

Item Description	Supplier Specifications
F17 Bowl, single, mobile Qty : 6  ➤ <u>General Construction</u> ▪ Mobile bowl stand constructed from chrome–nickel steel (18/10), seamlessly welded. ▪ Equipped with a removable stainless-steel bowl. ▪ Includes pushing handle for ease of movement. ▪ Fitted with four swivel castors (50 mm diameter), with double ball bearing and electrically conductive design. ➤ <u>Dimensions</u> ▪ Height: 800 mm (approx.). ▪ Final adjustments to be made according to onsite requirements.	

Item Description	Supplier Specifications
F18 Bowl, double mobile Qty : 6 ➤ <u>General Construction</u> ▪ Mobile double-bowl stand, seamlessly welded. ▪ Fabricated from AISI 304 stainless steel (18/10 chrome–nickel), corrosion-resistant and durable. ▪ Equipped with two removable stainless-steel bowls. ▪ Includes pushing handle for easy maneuverability. ▪ Mounted on four swivel castors (50 mm diameter) with double ball bearing and electrically conductive properties. ➤ <u>Dimensions</u> ▪ Height: 800 mm (approx.). ▪ Final adjustments to be made according to onsite requirements.	

Item Description	Supplier Specifications
F19 Couch, Examination Table, OBS/GYN Qty: 1  ➤ <u>General Construction</u> ▪ Dedicated OBS/GYN examination couch with integrated stepper for patient access. ▪ Frame constructed from heavy-duty mild steel, finished with epoxy powder coating. ▪ Upholstered with high-density foam padding, covered in durable, washable, waterproof plastic/vinyl. ▪ Adjustable head section (manual). ▪ Retractable leg rest for gynecological examinations. ▪ Includes built-in storage: minimum of two drawers and cabinet space. ▪ Paper towel roll holder, supplied with 10 rolls. ➤ <u>Dimensions</u> ▪ Approximate size: 1900 mm (L) × 700 mm (W) × 650 mm (H). ▪ Patient load capacity: 110 kg minimum.	

Item Description	Supplier Specifications
F20 Steps Qty : 34  ➤ <u>General Technical Requirements</u> ▪ Foot stool single step ▪ Should not include any exposed parts that are made of wood ▪ If internal fillers are of wooden origin, the wood type should be water and mold resistant ▪ The top to be solid core metal material with smooth edges (specify) ▪ All metallic exposed and hidden parts should be stainless steel or chrome plated corrosion resistant that could handle abrasive disinfection and cleaning by corrosive chemicals used in hospital environment ▪ Easy to clean with standard on-the market hospital grade cleaning chemicals (specify)	

Item Description	Supplier Specifications
F21 Stretcher Transport Qty : 10  ➤ <u>General Construction</u> ▪ Frame constructed out of Welded chromium plated tubular plated steel or heavy-duty equivalent ▪ Patient top made out of heavy-duty steel alloy (chromium or baked enamel finish), smooth finished GRP or high-grade PVC ▪ Collapsible or tuck-away side rails ▪ 2 sections, Head-end tiltable, foot-end fixed ▪ Quick release CPR feature ▪ Mounted on four 20 cm conductive, swivel casters with central break including a steering wheel function ▪ Transport hand bars at both ends for easy handling and steering ▪ Under top tray, utility shelf or wire basket ▪ Removable and washable restraining straps ▪ Approx. 8 cm thick Hypoallergenic mattress with washable top ▪ At least 2 IV pole mounting sockets; one on each side ▪ Non-marking rubber bumpers. ▪ Approximate minimum dimensions in cm: 200 L x 70 W ▪ Mattress size in cm: ≥ 185 L x 60 W ▪ Maximum patient weight: ≥ 180 Kg ▪ Oxygen tank holder ▪ Height and tilt operations via a crank or hydraulic high-low foot control on both sides ▪ ➤ <u>Attachments (per stretcher)</u> ▪ One Double Hook ▪ Removable IV Rod ▪ Restraint straps (1 set per trolley)	

Item Description	Supplier Specifications
F22 Stretcher, Emergency/ Procedure Qty :10  ➤ <u>General Technical Requirements</u> ▪ The stretcher should allow the user to individually control back angle, hi-io and angle of inclination (Trendelburg and reverse Trendelenburg) ▪ Back raising operation can be activated with help of gas spring by operating manual lever. ▪ Height adjustment and angle of inclination can be activated with thrust of hydraulic cylinder by operating height – adjustment pedals on both sides. ▪ Height can be lowered by operating height down pedal on foot end. ▪ Base frame should be provided with center wheel system to facilitate transfer. Rotating side rails should be provided. ▪ It should have full length x ray cassette imaging and 360-degree x-ray cassette insertion. ▪ Total Height: approx 890mm to 1,210mm ▪ Total Width: approx. 760mm ▪ Total length: approx. 2,110mm ▪ Height Adjustment Range: approx. 330mm ▪ Trendelenburg/Reverse Trendelenburg: approx 0 to 180 ▪ Back Raise Angle: approx 0 to 90 ▪ Knee Raise Angle: approx 0 to 30	

Item Description	Supplier Specifications
➤ <u>The Mattress Base & the Mattress Size</u> ▪ The Mattress Base Length: approx. 1,910mm ▪ The Mattress Base Width: approx. 640mm ▪ The Mattress Base Height: approx. 570 to 900mm (The height from the floor to the mattress base surface.) ▪ The Stretcher should withstand a maximum load of 220 KG. ▪ The stretcher wheel casters should be a single-wheel casters with center wheel system (Steering Mode) and 200 mm diameter. ▪ The mattress base is provided with mattress stopper to prevent the mattress from shifting out of place or sliding downward. ▪ Side rails should be of chemical resistance and made of blow molded resin parts (polypropylene) ▪ Gap between stretcher and bed can be eliminated by bridging it by side rail declined to bed to ensure safety when on to bed. ▪ It should have two-stage lock mechanism with safety lock. ▪ Side rails are provided with angle indicator for checking angle of back. ➤ <u>Reusable accessories to be delivered</u> ▪ To be delivered with one double hook, removable IV rod ▪ To be delivered with oxygen cylinder holder, ▪ To be delivered with writing table along with the unit	

Item Description	Supplier Specifications
F25 Sack holder, Soiled Linen Qty :19  ➤ <u>General Technical Requirements</u> ▪ Single hospital linen hamper used for safe disposal of soiled linens ▪ Seamlessly welded frame made from heavy tubular 304 grade stainless steel ▪ Using either a tubular C shaped ring or a full circular ring to hold one reusable linen bag(s) ▪ Bag is supported on an easily cleanable solid base part of linen hamper structure ▪ Linen bag capacity of approx. 90 to 100 liters ▪ A foot pedal operated lid should be available ▪ Lid to be made from same grade stainless steel as the hamper frame ▪ Foot pedal core should be made from same grade stainless steel as the frame and should be covered with slip-resistant rubber or plastic finish ▪ With 75mm swivel non-marking castors ➤ <u>Reusable accessories to be delivered</u> ▪ To be delivered with two extra washable bags (total 3)	

Item Description	Supplier Specifications
F26 Trolley, Dressing Qty: 15  ➤ General Construction ▪ Corrosion resistant stainless steel mobile table with sound-deadening shelf and drawer ▪ Round pipe guardrail to prevent objects from falling off ▪ Top surface dimensions approx. 53 x 43 x 90cm ▪ Designed for all purpose use in the hospital or clinic ▪ Mounted on at least 4 castors of at least 4.5 cm height with at least 2 having brakes ▪ Easy to clean with standard on-the market hospital grade cleaning chemicals (specify) ▪ Includes bucket with holder and pan with holder.	

Item Description	Supplier Specifications
F27 Drug Cart Qty : 11 ➤ <u>General Construction</u> ▪ Medication cart with one-sided drawer arrangement. ▪ Body constructed of aluminum reinforced panels with thermo-processed enamel finish, ensuring durability, corrosion resistance, and easy cleaning. ▪ Equipped with minimum 6 lockable drawers, dividable for patient-specific medication storage. ▪ Central lock system for secure drug management. ▪ Integrated cup dispenser and waste bin mounted at the rear side. ▪ Pull-out tray for expanded workspace. ▪ Designed for ergonomic handling and ease of disinfection. ▪ Protected with vinyl bumpers on all sides to minimize impact damage. ➤ <u>Mobility</u> ▪ Mounted on four swiveling castors (Ø 180 mm / 7"), smooth-rolling and antistatic. ▪ Two castors lockable for secure positioning. ▪ Bumper protection integrated around castors. ➤ <u>Dimensions</u> ▪ Approximate size: 900 mm (W) × 500 mm (D) × 1000 mm (H)	

Item Description		Supplier Specifications
F28	Trolley, Instrument	Qty : 13
 ➤ General Construction ▪ Made from stainless steel AISI 304 for durability, corrosion resistance, and ease of cleaning. ▪ Equipped with two stainless-steel shelves, each fitted with guard rails (minimum 25 mm height) to prevent instrument slippage during transport. ▪ Supplied with one cover (100% cotton, green) per trolley. ➤ Mobility ▪ Mounted on four swivel castors, with two castors fitted with brakes for secure positioning. ➤ Dimensions ▪ Trolley top shelf size: 750 mm (L) × 500 mm (W).		

Item Description	Supplier Specifications
F29 Stand, I.V. Qty : 24  ➤ <u>General Technical Requirements</u> ▪ Four-hook top with stainless steel finish ▪ Heavy weight, stable with five-leg black epoxy coated or 304 stainless steel base ▪ With approx. 6 to 7.5 cm swivel casters, two with brake ▪ Two-piece telescoping approx. 25mm diameter tubular type 304 stainless steel poles ▪ Easily adjustable height with turning-knob or equivalent mechanism ▪ Height range from approx. 167 to 215 cm ▪ Holds minimum 7.5 kg of I.V. fluid ▪ Patient handle ▪ Urine Bag Holder	

Item Description		Supplier Specifications
F30	Orthopedic overbed suspension	Qty : 1
 Rigid fracture suspension system with light metal bars and rigid locking clamps, including: ▪ 2 plain bars, 910mm ▪ 2 plain bars, 2440mm ▪ 6 swivel clamp bars, 1220mm ▪ 1 double clamp bar, 890mm ▪ 1 wall bumper ▪ 1 I.V post with clamp, 180mm ▪ 1 trapeze assembly ▪ 1 cross clamp ▪ 1 set of weights totaling 5kg		



Item Description	Supplier Specifications
F31 Light, Examination, Wall mounted Qty :14  ➤ <u>General Construction</u> ▪ Wall-mounted examination/treatment light. ▪ Mounted on a counterbalanced, drift-free arm with: - Horizontal rotation: $\geq 180^\circ$ - Vertical movement: ≥ 750 mm - Swivel adjustment: full multi-directional range ▪ Arm and head assemblies to move smoothly, silently, and without drift. ▪ Exterior finished with durable powder coating or baked enamel, smooth and easy to clean. ➤ <u>Light Source & Illumination:</u> ▪ High-efficiency LED light source, maintenance-free. ▪ Central illumination: $\geq 30,000$ lux at 0.5 m. ▪ Color temperature: 4,000 – 4,500 K (neutral white, daylight equivalent). ▪ Color Rendering Index (CRI): ≥ 90 for accurate tissue color. ▪ Shadow-free, uniform light field with minimal heat emission. ▪ LED lifespan: $\geq 40,000$ hours. ➤ <u>Control & Adjustment:</u> ▪ Intensity adjustment (step or continuous dimming). ▪ Light field diameter: 100 – 150 mm at 0.5 m. ▪ Easy-to-use controls located on light head or arm. ➤ <u>Hygiene & Safety:</u> ▪ Sealed, dustproof, and splash-proof light head (IP ≥ 20). ▪ Smooth surfaces for easy disinfection. ▪ Housing material resistant to disinfectants and scratches. ▪ Low heat emission for patient comfort.	

Item Description	Supplier Specifications
F32 Light, Examination, Mobile Qty : 3  ➤ <u>General Technical Requirements</u> ▪ Mobile examination light, mounted on heavy base with 4 or 5 swivel castors and brakes ▪ Single cupola, with handle ▪ High-efficiency LED light source, maintenance-free. ▪ Central illumination: $\geq 30,000$ lux at 0.5 m. ▪ Color temperature: 4,000 – 4,500 K (neutral white, daylight equivalent). ▪ Color Rendering Index (CRI): ≥ 90 for accurate tissue color. ▪ Shadow-free, uniform light field with minimal heat emission. ▪ LED lifespan: $\geq 40,000$ hours. ▪ Light head mounted on adjustable flexible arm and pole stand ➤ <u>Mechanical & Ergonomics</u> ▪ Spring-loaded counterbalance system. ▪ Mobile stand with five castors (roller base, steel structure). ▪ Vertical height adjustment: 840 mm. ▪ Swivel range: approx. 700 mm. ▪ Full 360° rotation of lamp head. ▪ Switch on/off control located at the lamp head.	

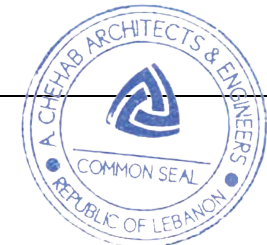
Item Description	Supplier Specifications
F33 Kick Bucket Qty : 6  ➤ <u>General Construction</u> ▪ Fully stainless-steel body and bucket for durability, corrosion resistance, and easy disinfection. ▪ Bucket capacity: 14 liters. ▪ Smooth seamless design to prevent dirt accumulation and allow thorough cleaning. ▪ Rounded edges for safety and ease of handling. ▪ Designed for operating room and treatment room use. ➤ <u>Mobility & Handling</u> ▪ Mounted on 4 swivel castors for 360° maneuverability. ▪ Castors made of non-marking, anti-static material for smooth and quiet movement on hospital floors. ▪ Stable base to prevent tipping during use. ▪ Removable bucket for easy emptying and cleaning.	

Item Description	Supplier Specifications
F34 Plaster Cutter Kit Qty : 1  ➤ <u>Cast Cutter Unit (Plaster Saw)</u> ▪ Type: Oscillating cast cutter, lightweight, ergonomically designed for continuous orthopedic use. ▪ Cutting Action: Oscillating motion (not rotary) for safe cast removal without skin injury risk. ▪ Blade System: Quick-release type for easy change. ▪ Cooling: Ventilated motor for continuous use without overheating. ▪ Noise level: ≤70 dB during operation. ▪ Accessories supplied with unit: - Power cord. - 8 ft vacuum hose, compatible with dust extractor. - Blades (minimum supplied): - 3 × 2” stainless steel blade. - 3 × 2½” stainless steel blade. - 3 × 2” titanium-nitrated coated blade. - 3 × 2½” titanium-nitrated coated blade. ➤ <u>Vacuum Extraction System (Dust Collector)</u> ▪ Type: Heavy-duty, commercial-grade, wet & dry vacuum system for cast dust control. ▪ Motor Power: ~1.3 hp. ▪ Air Flow: ~100 cfm. ▪ Noise Level: ≤67 dB(A). ▪ Tank: Blow-molded polyethylene, ~40 L capacity, heavy-duty construction.	

Item Description	Supplier Specifications
▪ Filtration: - Replaceable dust filter. - HEPA filter or equivalent fine filtration system for fiberglass and plaster dust. ▪ Mobility: Stable base with anti-static casters for safe movement in wards/OR. ▪ Hose System: Snap-in aspiration hose and tubing compatible with cast cutter. ▪ Accessories supplied: Wide, narrow, probe, and brush heads.	

Item Description	Supplier Specifications
F35 Patient Transfer Lift Qty : 2  ▪ The lift shall be suitable for transfers to or from bed, Bathtubs, wheelchair, and floor. ▪ The patient transfer lift shall be primarily constructed of steel or aluminum tubing and shall have a minimum lifting capacity of 250 Kg ▪ The patient transfer lift support sling shall offer adjustment to accommodate different size patients. ▪ The patient transfer lift shall go through narrow doorways and access patients in wheelchairs. ▪ Total pinch-point protection covers all moving parts for added safety. ▪ Covered base provides protection against wear, dirt and moisture. ▪ Height range allows lifting from floor and high surfaces. ▪ Attractive neutral design blends well into any environment. ▪ Electronic system includes battery system: one for lift, one for battery-charging station; a manual emergency lowering device; and anti-entrapment if boom meets any resistance while lowering. ▪ Overall Height: 60 – 185 cm ▪ Clearance: 12 cm ▪ Caster Size: Front: 3", Rear: 5" ▪ Power: Audible low battery alarm, Lifts per charge: 150 - 300 (varies with lift range and load) ▪ There shall be a visual and/or audible display to indicate when the battery on the unit should be exchanged.	

Item Description	Supplier Specifications
▪ The patient transfer lift shall have clearly marked controls that regulate the lifting mechanism. ▪ Patient lifts should be designed to support weights that are at least 150% of the rated capacity to allow for overhead due to dynamic loading during transfers. ▪ Patient lifts shall remain stable during use. ▪ Lifts should be free of sharp edges and pinch points. ▪ The slings should provide adequate links restraint to prevent injury. ▪ Battery-powered units should tolerate fluid spills with no adverse effects. ▪ Lifts should have at least two brakes. ▪ Lifts should move easily over tiled and carpeted floors. ▪ Lifts should not obstruct visibility in the direction of travel. ▪ Lifts should require only one operator. ▪ The support slings shall be easy to clean. ▪ shall tolerate fluid spills with no compromise in performance ▪ The system should be provided with a sling set and an appropriate chair specifically designed to fit with the lift. ▪ The Design of the slings should support Three-piece sling, has a cloth band for the back and one for each leg. ▪ Headrest extensions or other attachments shall be listed separately as options. ▪ Patient lift slings offered should be made of materials, such as nylon or terylene.	



Item Description	Supplier Specifications
F38 Trolley, Corpse Transport Qty : 1  ➤ <u>General Construction</u> ▪ Heavy-duty stainless-steel frame for durability, corrosion resistance, and ease of cleaning. ▪ Fitted with manual crank-action lifting mechanism to raise/lower the body tray. ▪ Body tray constructed of tubular aluminum top deck for strength and lightweight handling. ▪ Hinged safety side rails to secure body during transport. ▪ Supplied with two-piece top cover and an external white blackout shroud for discreet movement. ➤ <u>Mobility & Handling</u> ▪ Mounted on 4 swivel castors (8-inch rubber-tyred) for smooth and silent movement. ▪ 2 castors with locking facility for safe positioning. ▪ Castors designed to be anti-static, non-marking, and suitable for hospital flooring. ▪ Loading weight at least 200kg ➤ <u>Safety & Ergonomics</u> ▪ Smooth crank operation with minimal effort. ▪ Hinged side rails fold down for easy transfer and access. ▪ Covers designed to ensure dignity and privacy during body transport. ➤ <u>Dimensions</u> ▪ Overall size: 212 × 85 cm (L × W). ▪ Adjustable height range: 60 – 90 cm.	

Item Description	Supplier Specifications
F39 Refrigerator, 2 corps Qty : 2  ➤ <u>General Construction</u> ▪ Front-loading refrigerator designed to store two bodies on two levels. ▪ Constructed with: – Stainless steel (S/S) front panels and doors for durability and hygiene. – 20-gauge aluminum for interior lining and balance of exterior surfaces. ▪ Two separate compartments, each with its own insulated door for independent access. ▪ Each compartment fitted with a removable 18-gauge stainless-steel body tray with hand holes. ▪ Body trays mounted on 3-piece telescoping galvanized-steel carriages with nylon rollers for smooth sliding. ➤ <u>Dimensions</u> ▪ External size: to fit allocated space (site conditions to be confirmed). ➤ <u>Refrigeration System</u> ▪ Air-cooled condensing unit, designed for continuous operation in tropical conditions, capable of maintaining a temperature range of -20 °C to +5 °C at an ambient dry-bulb of 50 °C. ▪ Direct expansion blower/cooler unit matched with condensing unit for uniform cooling, adjustable between -20 °C and +5 °C. ▪ Standby backup refrigeration system with automatic switchover in case of main system failure. ▪ Refrigeration components designed for reliability, low vibration, and low noise. ➤ <u>Monitoring & Safety</u> ▪ Digital temperature indicator/alarm package including: – Electronic display with remote sensor	

Item Description	Supplier Specifications
- Integrated audio-visual alarm indicators - Adjustable, tamper-resistant high and low temperature settings. - Automatic alarm reset. - Audible and visible alarms, with audible alarm silence button. ▪ Vapor-proof incandescent lighting with switch and pilot light for interior visibility.	

Item Description	Supplier Specifications
F40 Refrigerator, Pharmacy Qty : 3  ➤ <u>General Construction</u> ▪ Medical-grade refrigerator designed for pharmacy and laboratory use. ▪ Capacity: ≥ 850 L. ▪ Stainless steel exterior for durability and hygiene. ▪ Interior constructed with smooth, easy-to-clean surfaces and high-quality insulation to ensure stable cooling. ▪ Single lockable door with handle. ▪ Integrated interior lighting for clear visibility of stored contents. ➤ <u>Temperature Control & Performance</u> ▪ Temperature range: $+2^{\circ}\text{C}$ to $+4^{\circ}\text{C}$. ▪ Continuous electronic temperature monitoring and control, displaying low, safe, and high ranges. ▪ Digital display for real-time monitoring. ▪ Automatic defrosting system. ▪ Designed for uniform air circulation to ensure stable cooling throughout the cabinet. ➤ <u>Safety & Alarm Systems</u> ▪ Audible and visual alarms for high/low temperature deviations. ▪ Door-open alarm with adjustable delay. ▪ Power failure alarm to alert staff during outages. ▪ Alarm silence/reset function for operator convenience. ▪ Meets international safety and electrical standards (IEC/EN/ISO for medical refrigeration).	

Item Description	Supplier Specifications
➤ <u>Storage & Ergonomics</u> ▪ Removable and adjustable drawers/shelves for flexible storage. ▪ Ergonomic design to allow easy loading and retrieval of medical supplies. ➤ <u>Data Logging & Connectivity</u> ▪ Integrated temperature data logger with USB/SD card port for data download. ▪ Battery backup to maintain temperature monitoring and alarm functions during power outages. ▪ Delivered with all necessary accessories for normal and safe operation.	

Item Description	Supplier Specifications
F41 Shelving, Pharmacy Qty : 12  ▪ Made of chipboard covered with laminated plastic, doors, to be of solid wood frame, covered with laminated plastic and have handles and cylinder lock. ▪ The internal shelving to be made of molded plastic, double faced, panels, with approx. 40 spaces divided in 2 heights and 20 special spaces with double depth. ▪ Each space to be equipped with railings and a plastic divider with incorporated label-holder. ▪ Double faced panels to be mounted on swivels allowing them 90o out swing, allowing access to the 5 rear shelves of the cabinet. ▪ Equipped with an inner safe for dangerous drugs, made of steel plate 12 / 10mm thick, complete with door and lock of anti-picking type. ▪ The cabinet stands on epoxy-coated steel legs, with adjustable feet. ▪ Approximate dimensions: 1000mm x 700mm x 2000mm (W x D x H)	

Item Description	Supplier Specifications
F42 Cabinet, Safety, drug Qty : 4  ➤ General Technical Requirements ▪ High-strength narcotic cabinet/cupboard used to securely store controlled medication (e.g. potentially dangerous and addictive drugs) and prevent unauthorized access from unrelated medical staff and patients ▪ Made of anti-corrosion material and resistant to hospital grade cleaning chemicals ▪ Double lock system ▪ Wall Mounted ▪ With anchoring device ▪ Alarm system for unauthorized opening and prolonged opening time ▪ Dimensions: approx. 60 x 40 x 120 cm (W x D x H) ▪ With internal shelves and dividers	

Item Description	Supplier Specifications
PACKAGE (I) - IMAGING	
I01 CT Scanner – 64-Slice System with Contrast Injector	Qty : 1
The proposed system shall include a complete 64 slice helical CT scanner, dual-head CT contrast injector, and independent 3D post-processing workstation, with all hardware/software, accessories, site interfaces, and user/service training for full clinical operation. ➤ CT Scan System: ▪ The CT system proposed shall include the following: - Detector / slice geometry: minimum 32 detector rows / 64 slices - Dynamic Spiral and Axial scanning modes - Head, Neck, Pelvis, chest, Abdomen and Whole-body scanning. - Duty cycle: ✓ Support ≥ 25 routine chest/abdomen exams per 8-h shift without overheat (Provide documentation) ✓ Support multiple consecutive patients' large body sections scans in case of trauma or emergencies ((Specify and provide documentation) - Slip ring gantry with detector assembly. - X ray tube and housing assembly. - X ray generator.	

Item Description	Supplier Specifications
- Computer hardware, including computer processor(s), disk drives, data acquisition, input/output units, etc. - Operator's console - Patient table assembly. - Dicom interface to PACS. ➤ <u>Gantry:</u> ▪ Gantry bore: 70 cm or higher. ▪ Gantry physical tilt $\pm 30^\circ$ or better. ▪ Rotation scan time ≤ 0.5 s or lower. ▪ On-gantry controls with digital display located at the CT table side on the front cover of the gantry housing. ▪ Auto positioning scan Localizer: 3-plane lasers lights. ▪ Accuracy of positioning lights: ± 1 mm. ▪ Integrated intercom system for 2-way communication between the operator at the control console and the patient inside the gantry. ➤ <u>Detector:</u> ▪ Solid state detector ▪ Automatic calibration of detectors. ▪ Standard scan field of view FOV ≥ 50 cm. ▪ Number of detector raw: minimum 32 physical detector rows. ▪ Number of acquisition channels: (specify). ▪ Number of slices acquired simultaneously per gantry rotation: ≥ 64. ▪ High-contrast spatial resolution: approx. 20 lp/cm. ▪ Minimum slice width 0.6 mm or better. ➤ <u>X-Ray High Frequency Generator:</u> ▪ Output 50kW or higher (True output not effective calculated). ▪ mAs: up to 400 mA or better. ▪ kV: 70 -140 kV with steps covering 70/80/100/120/140 kV (or wider). ➤ <u>X-Ray Tube:</u> ▪ Tube heat capacity: ≥ 5.0 MHU (Real not effective calculated). ▪ Cooling rate ≥ 800 KHU/min (or vendor standard to achieve continuous workload) (Real not effective calculated). ▪ Focal spots: dual (small/large).	

Item Description	Supplier Specifications
▪ Small focal spot size approx. 0.5 mm². ▪ Large focal spot size approx. up to 1.4 mm². ▪ Method of tube Cooling: Oil/Air. ➤ <u>Patient Table Assembly:</u> ▪ Fully motorized table movements. ▪ Carbon fiber, metal-free tabletop. ▪ On-Table Controls. ▪ Manual override of motorized table movement. ▪ Fine jog & crash protection. ▪ Scannable range: 170 cm, or better. ▪ Vertical travel: 60 cm to 90cm or better. ▪ Patient weight capacity: 200 kg or higher. ▪ Positioning accuracy: approx. ±1 mm or better. ▪ Accessories add all necessary accessories. ➤ <u>Dose Management:</u> ▪ Radiation dose display (Specify). ▪ Dose Check (notifications/alerts vs reference levels). ▪ Automatic kV selection and target noise/quality. ▪ Organ-based modulation (e.g., anterior dose reduction). ▪ Pediatric protocols and dose management. ▪ AEC with angular and longitudinal modulation. ▪ Angular (XY) and longitudinal (Z) direction ➤ <u>Main Console/Workstation:</u> ▪ PC based acquisition and processing platform, with stable operating system. ▪ Dual medical grade displays, at least 23", 1920×1080. ▪ Storage: ≥ 2 TB RAID on NVMe or SSD HD. ▪ USB/DVD export. ▪ Intercom system. ➤ <u>Basic Clinical Applications</u> ▪ Bolus tracking: ROI-based timing with automatic trigger; real-time enhancement curves; auto start. ▪ Auto-range / auto-position: Automatic scan-range selection and isocentering from topogram/camera.	

Item Description	Supplier Specifications
▪ CTA auto bone-removal: Automatic bone segmentation for angiography with manual edit tools. ▪ 3D reconstruction & display: MPR/CMPR, thick-slab MPR, MIP/MinIP, VRT; user-definable preset display protocols; multi-viewport with linked scrolling, cine, measurement/annotation, and DICOM export of derived images. ▪ Artifact suppression: Vendor's metal artifact reduction (MAR) and beam-hardening reduction available on console. ▪ Exam & dose analytics dashboard. ▪ On-console dashboard for protocol usage, productivity, and dose trends (patient/series level). ➤ <u>Advanced Clinical Applications</u> ▪ CT angiography package: Centerline extraction, stenosis/diameter measurements, aneurysm sizing; multi-phase CTA workflow; saline chaser support. ▪ Calcium scoring. ▪ Bolus chase software: Peripheral run-off CTA with table/station tracking and automatic stitching. ▪ Virtual endoscopy: Bronchoscopy and colonography modules. ▪ Dental applications. ▪ Lung applications: Nodule detection/segmentation, volumetry and densitometry, longitudinal tracking. ▪ CT perfusion: Brain (and body if supported) with CBF/CBV/MTT/TTP maps; vendor to state temporal sampling and z-coverage (slab or shuttle mode). ▪ Note: Advanced modules may run on the console or on the post-processing workstation; accept floating/concurrent licensing and require DICOM export of all derived series back to PACS. ➤ <u>Image Reconstruction:</u> ▪ Reconstruction Matrix: 512×512 (standard) with 1024/1024 modes for high-res. ▪ Reconstruction speed: ≥ 20 images/s at 512 matrix (routine kernels). ▪ Iterative / AI enhancement: hybrid/model-based or deep-learning IR for routine body/neuro ▪ Kernels: soft tissue, standard, lung, bone, edge-enhanced; metal artifact reduction (MAR) included. ➤ <u>Post-Processing Workstation (Independent)</u> ▪ Hardware: ≥ 8-core CPU, 32 GB RAM, GPU ≥ 6 GB VRAM, SSD ≥ 1 TB; dual displays (one diagnostic ≥ 27" QHD/4K with calibration).	

Item Description	Supplier Specifications
▪ Software: multi-modality 3D with MPR/CMPR/MIP/MinIP/VRT, vessel analysis.(centerline/stenosis), auto bone-removal, lung tools (volumes/density), renal stone analysis, batch export, structured reporting. ➤ <u>Image Quality:</u> ▪ Display Matrix: 1024x1024. ▪ High-contrast resolution: vendor to state lp/cm at 10% MTF (adult head protocol) for scoring. ▪ Uniformity & noise: vendor to state values on water phantom at standard adult abdomen protocol or equivalent testing procedure. ➤ <u>Connectivity:</u> ▪ Capacity for removable media storage, to transfer data through different options (DVD and USB), to send images through existing network port. ▪ Full DICOM 3.0 capabilities (Store SCU/SCP, MWL, MPPS, Q/R, RDSR; Print) ▪ Integrated Ethernet connectivity required. ▪ Cybersecurity: role-based access, anti-malware compatibility, patching policy, encrypted media export, audit trails. ➤ <u>Reusable accessories to be delivered:</u> ▪ Must be supplied with protective dust cover at least for control panel. ▪ To be supplied with at least one adult-size protective lead apron and 1 thyroid shield. ▪ Portable radiation hazard warning signs to be supplied with unit. ➤ <u>Compliant with International Standards Agencies:</u> - FDA and/or CE. - Electrical safety standard IEC 60601. - IAEA and EPA Safety Standards. ➤ <u>CT Scan Injector:</u> ▪ Dual injection head with easy to install and remove syringes' structure and a user-friendly interface. ▪ Drive mechanism technology (Specify) ▪ Suitable for both adult and pediatric applications ▪ Large color LED display of parameters for viewing from a distance ▪ Includes min 12 pre-program user protocols ▪ Integrated protection against: Over-volume, over-flow and over-pressure, air-in-line,	

Item Description	Supplier Specifications
occlusion detection ▪ Auto mechanical stop, with pause/resume, lockouts. ▪ Compatible with disposable single-use syringes use. ▪ Dual syringes (contrast + saline), capacity each ≈ 200 mL ▪ Fluid heating feature $\sim 35\text{--}40$ °C ▪ Flow 0.1–10 mL/s ▪ Selectable delivery pressure up to 300 psi with 10 psi increment (specify) ▪ Delay timer for up to 99.99 sec ▪ Hold time up to 20 min ▪ Start/stop sync to CT with X-Ray generator synchronization ▪ data logging & export ▪ Supplied with at least 5 disposable syringes ▪ The Injector should be mounted on trolley/stand/cart with support stand (cart for transport with at least 2 conductive castors fitted with breaks) ▪ Connectivity: Specify communication modality between console & injector (Fiber optic, wireless, cable) ▪ Compliant with: FDA, CE, and Electrical safety standard IEC 60601 ➤ <u>Special Site Preparation Requirements</u> ▪ Vendor to provide and install all floor fixing plates and ceiling rail systems (if any). ▪ Vendor shall refer to the relative medical equipment loaded drawings. ▪ Vendor to provide a complete shop drawing and requirements for the equipment to be installed. ▪ Vendor to fully coordinate with the main contractor on-site as required. ➤ <u>Overall system dimensions (net dimensions and crates dimensions)</u> ▪ Vendor to indicate weight. ▪ Vendor to indicate the length of all components at normal and end-of-travel stop positions. ▪ Vendor to indicate width of all components at normal and end-of-travel stop positions. ▪ Vendor to indicate height of all components at normal and end-of-travel stop positions. ➤ <u>Power and Main Disconnect Panel</u> ▪ Specify equipment maximum power consumption and UPS power reservation needs in (KVA) ▪ A main disconnect panel with a main breaker shall be supplied with the machine.	

Item Description	Supplier Specifications
▪ The supplier is responsible for its installation and for providing all necessary connections and accessories, including: ✓ Emergency switch ✓ Circuit breakers ✓ Protection devices ✓ The supplier shall also provide all required wiring and conduits from the main panel to the disconnect panel and from the disconnect panel to the sub-circuits. ✓ The disconnect panel must be fully compatible with the delivered equipment and its electrical requirements.	

Item Description	Supplier Specifications
I02 Cardiac / General Diagnostic Ultrasound Scanner Qty : 1  The device should be a cart-based digital ultrasound system to be used for cardiology and general applications. It should be capable of performing state of the art imaging primarily for adult/pediatric transthoracic echocardiography, but also for other applications such as thyroid, testicles, breast, carotid, and other peripheral vascular applications either directly or with the addition of the suitable probes. It should be a brand-new high-end ultrasound system with OEM transducers, software, accessories, DICOM connectivity, user and service training, and documentation for full clinical operation. ➤ <u>Application:</u> ▪ Abdominal ▪ Obstetric ▪ Gynecology ▪ Vascular ▪ Cardiac ▪ Small parts ▪ Fetal echo ▪ Pediatric Cardiology ▪ Pediatric radiology ▪ Neonatal package ▪ Transcranial doppler ▪ Stress echo ▪ Contrast imaging	

Item Description	Supplier Specifications
▪ Interventional imaging ▪ Musculoskeletal ▪ Urology ▪ 2D/3D cardiac quantifications ▪ Breast elastography package ➤ <u>Main System:</u> ▪ Ergonomic design, with original trolley on 4 wheels with brakes. ▪ Height adjustable trolley to allow maximum comfort for the operator. ▪ System dimensions (H × W × D): To be specified by the supplier ▪ System weight (kg): To be specified by the supplier ▪ Active transducer ports: ≥ 4, with rapid electronic probe selection and automatic identification. ▪ It should have at least four probe holders ▪ It should have one bottle gel holder and warmer. ▪ It should have probe cables hangers. ▪ User interface: Full touchscreen control with dedicated function keys and it should have configurable shortcut keys. ▪ User friendly interface ▪ Touchscreen size: $\geq 10.4''$, high-resolution color display ▪ Adjustable control panel (up/down) ▪ Monitor: $\geq 21''$ medical-grade, adjustable ▪ Full keyboard with built-in trackball ▪ Silent operation: Yes ▪ System must have fast boot-up time with maximum of 30 sec from sleep mode to ON ▪ It should have at least 100 user programmable protocols. ▪ Wideband probe technology with a range from 2 to 20 MHz ▪ High Digital processing channels $>600\ 000$: Specify ▪ Dynamic range shall be 200 dB or better. ▪ System shall have speed capability of not less than 500 frames per second. ➤ <u>Features:</u> ▪ 2D, Color, Doppler automatic optimization: Specify ▪ Speckle noise reduction: Specify ▪ Noise reduction technique should be functional in both real time and freeze ▪ Artifact reduction: Specify ▪ Gain, TGC, IP, image shift, zoom: Specify	

Item Description	Supplier Specifications
▪ Pan/Zoom options in both real time and freeze images shall be adjustable ▪ Steering Angle ± 30 degrees: Specify ▪ Split Screen capability ▪ Image rotation ▪ Image reversal ▪ Mapping ▪ Angle correction ▪ Simultaneous display of B/Q and Color Doppler in real time ▪ Automatic doppler measurements: Specify ▪ Biopsy needle visualization: Specify ▪ Speckle Tracking: Specify ▪ Standard anatomic annotations ▪ Advanced ob/gyn visualization package ▪ Cardiac imaging and quantification package ▪ Advance cardiac analysis package ▪ Advanced breast imaging package ▪ Liver tissue analysis package ▪ Contrast imaging and quantification package ▪ Automated doppler measurements ▪ Real time doppler measurements ➤ <u>Monitor:</u> ▪ Type: medical grade LED ▪ Dimensions: $\geq 21"$: Specify ▪ High contrast ratio not less than 800:1 ▪ Touch screen: Yes ▪ Resolution of 1280x1024 pixels or better: Specify ▪ Flexible arm articulation (up/down, swivel and tilt): Specify ▪ Boot-up time: Specify ➤ <u>Transducers:</u> ▪ Convex Probe: 1 – 6 MHz or wider ▪ Linear Probe: 5 – 10 MHz or wider ▪ Cardiac Probe 2D/3D: 2 – 5 MHz or wider ▪ Endocavitary Probe: 3 – 9 MHz or wider ▪ Pediatric Cardiac Probe: 4 – 10 MHz ▪ 3D Convex Probe: 2 – 8 MHz or wider	

Item Description	Supplier Specifications
➤ <u>Imaging Modes:</u> ▪ B-Mode ▪ M-Mode ▪ CW ▪ PW ▪ Color doppler ▪ Color power angio ▪ Duplex, triplex mode ▪ Dual mode ▪ Trapezoidal imaging ▪ Tissue harmonic imaging ▪ Time gain compensation ▪ Chroma imaging ▪ 3D/4D imaging ▪ Panoramic imaging ▪ Oblique doppler scan ▪ Automatic Doppler Tracing ▪ Elastography ➤ <u>Reporting:</u> ▪ User configurable Report by Application / Specialty type ▪ Measurements and calculations are automatically inserted to Report ▪ System should be able to generate automatically multi-format reports, pictogram, annotations and all measurement results. ▪ Measurement tools, including but not limited to area, distance, circumference, velocity, acceleration, time interval, heart rate, angle, volume, pressure gradient, resistance index, stenotic rate, etc. ▪ Selected images automatically inserted in the Report ▪ Patient Dossiers to include images and reports are logged in a database capable of handling 10-thousand entry minimum ▪ Cine Memory more than 2000 images ▪ Cineloop review capability of 1000 frames of 2D and color images. ▪ Report format shall be selectable. At minimum, it should include patient images, personal data and history, facility name and information. ➤ <u>Attached equipment:</u> ▪ Small Format Color Printer fully integrated ▪ Small format black & white Printer fully integrated	

Item Description	Supplier Specifications
➤ <u>Consumables / single use accessories to be delivered:</u> ▪ Provide 3 gel bottles ▪ Provide 3 packs of B&W printing paper ▪ Provide 3 packs of color printing paper ➤ <u>Reusable accessories to be delivered:</u> ▪ Biopsy kits for each transducer where applicable ➤ <u>Portability & Mounting:</u> ▪ Easy movement on large antistatic castors with at least 2 castors fitted with breaks ➤ <u>Storage, Connectivity, and System Integration:</u> ▪ Data management system not less than 500 GB (HDD), 600 000 images or better. ▪ DVD/CD drive, USB port ▪ HL7 protocol compatible. ▪ Bidder shall list the types and quantities of all available connections ports such as USB ports, RJ 45, RS232, HDMI, etc. ▪ Full DICOM 3 packages with Lifetime license (Store, Send, Print, worklist...) ▪ Bidder shall supply any additional hardware requirements without any additional costs to enable full integration and operation. (i.e. servers, licenses, dongles) in coordination with the IT hospital responsible ➤ <u>Upgradability:</u> ▪ Fully upgradable platform; both software and hardware ➤ <u>Standards and Certifications:</u> ▪ Compliant with international regulatory requirements, a valid CE certification and/or FDA registration. ▪ Electrical safety standard IEC 60601 ▪ Specify equipment maximum power consumption and UPS power reservation needs in (KVA) ▪ Provide the necessary training by application specialists for dedicated radiologists and operators.	

Item Description	Supplier Specifications
I03 Radiographic/Fluoroscopic Table System Qty : 1  High-end, fully digital, remote-controlled and tableside-operated R/F system with: floor-mounted tube-stand for general radiography, remote R/F tilting table and dynamic flat-panel detector, full image acquisition/processing, and DICOM connectivity having the following specifications: ➤ Table System Features: ▪ Fully Motorized Table system, including: - Tilt: +90°/-90° tilting with auto stop at 0°; tilt angle indicated on table. - Height adjustment: Approximately 52-110 cm when table is in 0°. - Longitudinal travel: 150 cm with travel speed of up to 5 cm/s. - Transverse travel: ± 15 cm or better. - Movements: four-way power assist, fine jog, crash protection, manual override. - Top size (L×W): minimum 200 × 70 cm. - Table top with low-attenuation carbon-fiber top (≤ 1.5 mm Al @ 100 kVp). - Patient weight capacity: at least 200 kg (dynamic). - System with complete cable concealment. - Table shall be delivered with a full set of standard accessories: compression band/ positioning straps, foot board/ removable footrest, Handgrips (pair), shoulder rests, and positioning pads.	

Item Description	Supplier Specifications
➤ <u>Tube Stand:</u> - Motorized Movements controlled by foot switch and remote control. - SID range: approx. 115–180 cm (vendor to state min/max). - Imaging tower / tube gantry movements (relative to table): Longitudinal: ≥ 100 cm - Tube rotations/angulations to allow lateral/oblique projections over table; tube arm angulations range: $\pm 40^\circ$. - Auto-tracking to table. ➤ <u>Digital Imaging Chain / Flat-Panel Detectors:</u> - Integrated detector: CsI FPD 43×43 cm, native pixel $\leq 150 \mu\text{m}$; pulsed & continuous fluoro 1/2.5/5/7.5/10/15/30 fps; real-time processing (temporal noise reduction, edge enhancement). - Effective limiting resolution: ≥ 34 lp/cm for $\geq 150 \mu\text{m}$ detectors. - Area: $\geq 1500 \text{ cm}^2$ active area (minimum). - Calibration: Automatic detector calibration and defective-pixel management. ➤ <u>Collimation, Filtration & Compression:</u> - Motorized automatic collimation with inherent Al filtration and motorized Cu pre-filters (multiple steps). - Scatter grid: 12:1 ratio (removable / parkable for low-dose/pediatric). - AEC: Three-field AEC for radiography with selectable density. - Compression cone: Remote-controlled motorized compression with adjustable force and safety features ➤ <u>Fluoroscopy (Digital):</u> - Pulsed fluoroscopy: user-selectable 1/2.5/5/7.5/10/15/30 fps; grid-controlled (or equivalent) pulsing; user-selectable Cu filtration (adult/pediatric dose presets). - Acquisition matrix: minimum 1024×1024 at maximum frame rates. - Acquisition pipeline bit depth: ≥ 14–16-bit. - Exposure control: AERC/ABC with clinical dose/quality presets. ➤ <u>Digital Radiography / Rapid Spot:</u> - Matrix: minimum 3k-class. - Bit depth: ≥ 14–16-bit. - Rapid sequence: minimum 7.5 fps.	

Item Description	Supplier Specifications
➤ <u>Control Console and Displays:</u> ▪ Integrated control console with Graphical User Interface and 21" minimum. ▪ Medical grade display monitor. ▪ Table-side controls. ▪ Foot switch for fluoroscopy. ▪ In-room single medical grade monitors on a floor stand $\geq 24"$ with screen by software splitting option. ▪ Local storage ≥ 1 TB, raw-data reprocessing; fast access to series/images from exam room panel and console. ➤ <u>Image processing functions:</u> ▪ Last Image Hold. ▪ Image rotation. ▪ Image annotation functions. ▪ Fluoroscopy loop replay. ▪ Image brightness and contrast adjustments. ▪ Edge enhancements capabilities. ▪ Positive/ negative image inversion. ▪ Left / right and top / bottom image reversal. ▪ Split screen. ▪ Digital zoom, windowing and roam functions. ▪ Gray scale optimization capability. ▪ Electronic collimation and zoom. ▪ Electronic shuttering. ▪ Automatic image storage to disk. ▪ Instantaneous image review and auto-save. ▪ Multi image format display and print capabilities. ➤ <u>Generator:</u> ▪ Nominal Power Output: ≥ 65 kW. ▪ Generator Type: High frequency inverter type: 200 to 400 KHz or better. ▪ KV range: Approximately: 40- 150 kV for radiography and 40-110 kV for fluoroscopy with 1 kV steps. ▪ mA range: Up to 800 mA. For radiography and up to 10 mA for fluoroscopy. ▪ Exposure time: from 1 msec to 6 sec; up to 8 exposures/s. ▪ Dual speed x-ray tube rotor drive (high/low). ▪ Anode heat calculator, exposure counter, fluoro timer.	

Item Description	Supplier Specifications
▪ Maximum number of radiographic exposures per second: 8 ▪ Exposure counter and fluoro-delivery timer ➤ <u>X-ray tube:</u> ▪ Column X-ray tube with variable height. ▪ Dual focal spots: 0.6 / 1.0–1.2 mm. ▪ Anode heat storage capacity: $\geq 600,000$ HU (or better). ➤ <u>Connectivity</u> ▪ It shall be fully DICOM 3.0 compliant with all standard DICOM specifications with interface to the hospital RIS/PACS network/system (Send, Receive, Print, Store, MPPS, Worklist, Import, Export, and CD Print minimum, in addition to all required licenses for proper operation inside hospital environment) ➤ <u>Compliant with International Standards Agencies:</u> ▪ FDA and/or CE ▪ Electrical safety standard IEC 60601 ▪ IAEA and EPA Safety Standards ➤ <u>Overall system dimensions (net dimensions and crates dimensions)</u> ▪ Vendor to indicate weight. ▪ Vendor to indicate the length of all components at normal and end-of-travel stop positions. ▪ Vendor to indicate width of all components at normal and end-of-travel stop positions. ▪ Vendor to indicate height of all components at normal and end-of-travel stop positions. ➤ <u>Power and Main Disconnect Panel</u> ▪ Specify equipment maximum power consumption and UPS power reservation needs in (KVA) ▪ A main disconnect panel with a main breaker shall be supplied with the machine. ▪ The supplier is responsible for its installation and for providing all necessary connections and accessories, including: ✓ Emergency switch ✓ Circuit breakers ✓ Protection devices	

Item Description	Supplier Specifications
✓ The supplier shall also provide all required wiring and conduits from the main panel to the disconnect panel and from the disconnect panel to the sub-circuits. ✓ The disconnect panel must be fully compatible with the delivered equipment and its electrical requirements.	

Item Description	Supplier Specifications
I04 C-ARM Units, Mobile Qty : 1  The mobile C-arm units provide radiographic and fluoroscopic imaging in surgical, orthopedic, critical care, and emergency care procedures. They shall be used to image patients in radiolucent beds, stretchers, and operating tables. ➤ <u>General Requirements:</u> ▪ Mobile C-arm fluoroscopy system equipped with Digital Flat Panel Detector (FPD) technology. ▪ Application: Hybrid Operating rooms and Interventional procedures (vascular, ortho, pain management, ERCP) ▪ Image Modes: Fluoroscopy, Snapshot, DSA (Digital Subtraction Angiography), Roadmap ➤ <u>Flat Panel Detector (FPD):</u> ▪ Detector Type: Digital Flat Panel Detector (non-intensifier) ▪ Detector Technology: Amorphous silicon or CMOS with Cesium Iodide (CsI) scintillator, or equivalent ▪ Detector Size: Minimum 30 × 30 cm of active area or wider ▪ Pixel Matrix: Minimum 2k x 2k ▪ Pixel Pitch: ≤200 microns ▪ Dynamic Range: ≥ 14-bit	

Item Description	Supplier Specifications
▪ A/D Conversion: ≥ 14-bit ▪ Frame Rate: Minimum 25 fps for fluoroscopy, ≥ 60 fps cine ➤ <u>X-Ray Generator & Tube:</u> ▪ Generator Type: High frequency (≥ 50 kHz) ▪ Power Output: Minimum 15 kW suitable for extensive fluoroscopic applications over 30 minutes ▪ kVp Range: 40–125 kVp ▪ mA Range: 0.1–120 mA (continuous & pulsed) ▪ Exposure Control: Automatic Brightness Control (ABC) (Automatic Dose Rate Control (ADRC)), low-dose modes, and manual mode ▪ Grid-controlled pulsed fluoroscopy for better dose management ▪ Pulse Fluoroscopy with adjustable pulse rates: 4, 8, 15, 30 fps ▪ Cooling: High-performance automatic or active tube cooling system ▪ Anode: Rotating anode ▪ Focal Spot Size: Dual (e.g., 0.3 / 0.6 mm or similar) ▪ X-Ray Tube Heat Capacity: $\geq 600,000$ HU ▪ Virtual collimation ➤ <u>C-Arm Mechanics:</u> ▪ Orbital Rotation: $\pm 120^\circ$ or more ▪ Angular Coverage: $\pm 180^\circ$ or more ▪ Vertical Travel: ≥ 40 cm ▪ C-Depth (Free Space): ≥ 70 cm ▪ SID (Source-to-Image Distance): ≥ 100 cm ▪ Motorized movements: standard orbital and vertical movements ▪ Laser Positioning: Integrated cross-laser or LED for alignment ▪ Position memory and automatic positioning recall ▪ Anti-collision system ➤ <u>Workstation and Display:</u> ▪ Monitors: Dual 21 inch or above medical-grade LCD or LED monitors. ▪ Resolution: Full HD (1920 x 1080) or higher. 4K UHD is preferred. ▪ Monitor Arms with adjustable height ▪ Workstation: Touchscreen interface with image post-processing ▪ Image Storage: ≥ 1 TB, $\geq 100\,000$ images ▪ Image Formats: DICOM 3.0-compatible, JPEG/PNG	

Item Description	Supplier Specifications
▪ Export: USB, DVD, network, cloud ▪ Software License: Full-feature license included ➤ <u>Image Processing:</u> ▪ Image Processing and Enhancement: Real-time image acquisition, filtering, real-time noise reduction, edge enhancement ▪ AI-based image enhancement is a plus for denoising and anatomy recognition. ▪ Perfusion and vascular analysis tools ▪ Subtraction Imaging (DSA): Real-time with automatic mask selection ▪ Roadmap function ▪ Cine storage > 10 000 frames ▪ Cine Loop Replay: With adjustable speed and frame-by-frame review ▪ Zoom and ROI: Digital zoom, pan, ROI, invert, and rotation tools capability ▪ Last Image Hold (LIH) and Frame Grabbing ▪ Software License: Full-feature license included ➤ <u>Safety & Dose Management:</u> ▪ Real-time skin dose mapping display ▪ Dose Display: Real-time and cumulative dose report ▪ Dose Meter: Integrated DAP (Dose Area Product) meter with readout and recording ▪ Automatic Exposure Control (AEC): Yes ▪ Protective Features: Overheat protection, dose alarm ▪ Automatic collimation and filtration based on anatomy ▪ Lead Shielding: Collimators with automatic adjustment ▪ Pediatric dose protocols ▪ Emergency OFF Switch on the control panel ➤ <u>Connectivity:</u> ▪ DICOM Support: Full DICOM 3.0 (Modality Worklist, Storage, Print, Query/Retrieve) ▪ Integration: PACS, RIS, HIS compatibility ▪ Cybersecurity compliance ▪ Network Connectivity: mandatory Ethernet port and optional Wi-Fi ▪ Image Export to Media: USB, DVD, and cloud-capable ➤ <u>Braking System:</u> ▪ Reliable electromagnetic or hydraulic braking system with safe parking lock.	

Item Description	Supplier Specifications
➤ <u>Accessories</u> ▪ All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer. ▪ AP meter ▪ To provide with connected thermal integrated printer ▪ To provide sterile drapes sets for detector and tube. ▪ To provide lead-free radiation lightweight protection aprons (4 sets: Chest, Thyroid collars. 2 Large and 2 X-Large sizes) ▪ To provide dust protection cover for the whole unit ▪ Footswitch: Dual pedal (fluoro / snapshot) ▪ Hand control with extendable cable ➤ <u>Standards and Certifications:</u> ▪ Compliant with international regulatory requirements, a valid CE certification and/or FDA registration. ▪ Electrical safety standard IEC 60601 ▪ Specify equipment maximum power consumption and UPS power reservation needs in (KVA) ▪ A main circuit breaker shall be integrated with the machine ▪ Provide the necessary training by application specialists for dedicated radiologists and operators. ➤ <u>Overall system dimensions (net dimensions and crates dimensions):</u> - To indicate weight - To indicate the length of all components at normal and end-of-travel stop positions - To indicate width of all components at normal and end-of-travel stop positions - To indicate height of all components at normal and end-of-travel stop positions	

Item Description	Supplier Specifications
I05 Digital Mammography Unit Qty : 1 ➤ General Technical Requirements ▪ Fully Digital Mammography system consisting of exposure stand with attached swivel system, separate console with radiation shield, automatic exposure control and mammography X-Ray tube. ▪ The system must consist of a tube head and detector assembly that has isocentric rotation for every positioning. ▪ The isocentric movements must be motorized. The patient compression device must have automatic multispeed variable compression system which senses the breast density and adjusts the compression force. ▪ Digital display of compression force and compression thickness must be available. ▪ The C-arm rotation and the up / down movement must be motorized. ▪ The angle of C-arm movement shall be displayed. ▪ At least a pair of two-foot switches must be provided for compression. ▪ The acquisition station should be integrated with a transparent anti-X protective for the operator) ➤ Gantry: ▪ Design: Capable of 2D Digital Mammography and 3D Digital Breast Tomosynthesis ▪ Vertical Travel: Specify (must cover full range of patient positioning) ▪ Vertical Movement: Motorized, smooth, and ergonomically designed.	

Item Description	Supplier Specifications
▪ Breast support (Bucky) must reach at least 140 cm height (Vertical movement 60 to 140cm) ▪ Rotation: Motorized; specify available angles for tomosynthesis and biopsy. ▪ Rotation angle -135 to 180 degrees minimum ▪ SID (Source-to-Image Distance): Specify (≥ 65 cm preferred). ▪ Patient Face Shield: Included. ▪ The unit should provide a hygienic way to position breasts ▪ Two emergency pushbuttons ▪ Dual footswitches for height adjustment, compression and decompression ➤ <u>Generator:</u> ▪ Type: High-frequency generator ▪ Power Output: ≥ 5 kW ▪ kV Range: 25 to 35KV or better ▪ mAs Range: 5 to 600 mA or better ▪ Must have automatic line voltage compensation of $\pm 10\%$ ▪ Automatic Exposure Control (AEC): Specify ➤ <u>X-Ray Tube:</u> ▪ Type: Rotating Anode with high speed over 6000 rpm ▪ Filters must be Rh 60 μm and Ag 75 μm ▪ Anode Material: Specify ▪ Dual Focal Spot: 0.3 mm and 0.1 mm ▪ Heat Capacity: ≥ 300 KHU ▪ Filtration: Specify ➤ <u>Collimator:</u> ▪ Mode: Motorized automatic collimation with manual override. ▪ Field Sizes: Specify (should cover all breast sizes). ➤ <u>Bucky:</u> ▪ Grid ratio 5:1, 36 lp/mm ➤ <u>Compression System:</u> ▪ Mode: Specify (motorized with fine control, manual override). ▪ Force Range: Specify (typically 20–200 N). ▪ Compression Paddles: Small (18×24 cm), Large (24×30 cm), plus optional biopsy paddles	

Item Description	Supplier Specifications
➤ <u>Magnification:</u> ▪ Magnification Platform: Specify availability and magnification factors. ▪ Sizes: Specify small, medium, and large compression paddles. ➤ <u>Detector:</u> ▪ Type: Direct digital flat panel detector. ▪ Material: Specify (e.g., Amorphous Selenium, a-Se). ▪ Imaging Area (cm): Specify (e.g., $\geq 24 \times 30$ cm). ▪ Bit Depth: ≥ 14 bits. ▪ Pixel Pitch: < 80 microns. ▪ Resolution min 6 lp/mm or better ▪ Anti-Scatter Grid: Specify (fixed/removable). ▪ No external cooling is needed for the detector ▪ Full field AEC that detects the breast tissue ▪ ➤ <u>Tomosynthesis:</u> ▪ Application: The system should utilize DBT technology to capture 3D images of the breast ▪ Acquisition Angles & Details: Specify (e.g., 15–50° sweep, multiple projections). ▪ Two voxel sizes: 95/140 μm ➤ <u>Stereotactic Biopsy:</u> ▪ Integration: Mandatory within the main unit. ▪ Accuracy: Specify (sub-mm targeting precision). ➤ <u>Acquisition Station:</u> ▪ CPU: Specify (high-performance processor). ▪ Memory (RAM): ≥ 8 GB (expandable). ▪ Hard Drive: ≥ 1 TB. ▪ Monitor for Image Display: > 24-inch Flat panel with a minimum resolution ≥ 2 MP; medical-grade grayscale. ▪ User Interface Monitor: Specify (touchscreen preferred). ▪ Motorized Height Adjustment: Specify vertical range. ▪ Image acquisition, easy image rejection and retake, whole study all 4 images to be accepted once ▪ Automatic projection info from mammography unit to the acquisition workstation ▪ Advanced Image Reconstruction Algorithms: The system should employ advanced	

Item Description	Supplier Specifications
algorithms for image reconstruction to produce clear and high-resolution 3D images. ▪ Software tools at least: zoom, pan, invert, orientation, magnify, layout control, maximize single image. ▪ Patient information input via keyboard or DICOM modality worklist; data to include at least patient name, patient ID, gender, date of birth, age, referring physician, reading physician ▪ DICOM modules needed: query/retrieve and storage commitment, print, single media archive, modality work list ▪ Integrated quality control ▪ Local database storage of minimum 30000 2D images ▪ Study list filter and sorting tools ▪ To be delivered with an original free of charge X-Ray Barrier having a lead glass window of at least 80x100cm ➤ <u>Post-Processing Workstation:</u> ▪ Processing $\geq$ 32-bit high-speed processor. ▪ Storage Disk: $\geq$ 2 TB. ▪ RAM: $\geq$ 32 GB. ▪ Medical Grade Monitors: Two (2) $\times$ 5 MP Grayscale LCD monitors, >24 inch. ▪ CD/DVD-R/W Archiving: Yes. ▪ Mammography Dedicated Keyboard: Yes. ▪ 4 USB ports ▪ Advanced Image Reconstruction Algorithms: The system should employ advanced algorithms for image reconstruction to produce clear and high-resolution 3D images. ▪ Software tools at least: zoom, pan, invert, orientation, magnify, layout control, maximize single image. ➤ <u>Software:</u> ▪ Mandatory: Full mammography acquisition, display, and post-processing software. ▪ Tomosynthesis (3D) dedicated software. ▪ Optional: Computer-Aided Detection (CAD) and AI-based tools for lesion detection (support for PACS reprocessing). ➤ <u>Reusable accessories to be delivered</u> ▪ All patient positioning accessories, 18x24cm shifting paddle, 24x30 cm compression paddles, spot compression paddle, magnification paddle, chin guard, qc phantoms ▪ X-Ray Protection Panel ▪ Large breast bucky	

Item Description	Supplier Specifications
▪ Motorized stereotactic system for 2D or tomosynthesis biopsy procedures should be included ➤ <u>Connectivity and System Integration:</u> ▪ Full DICOM 3.0 capabilities ➤ <u>Upgradability:</u> ▪ Fully upgradable platform; both software and hardware: Mandatory ➤ <u>Standards and Certifications:</u> - FDA and/or CE - Electrical safety standard IEC 60601 - IAEA and EPA Safety Standards ➤ <u>Special Site Preparation Requirements</u> ▪ Vendor shall refer to the relative medical equipment loaded drawings. ▪ Vendor to provide a complete shop drawing and requirements for the equipment to be installed. ▪ Vendor to fully coordinate with the main contractor on-site as required ▪ Vendor to indicate weight ▪ Vendor to indicate the length of all components at normal and end-of-travel stop positions ▪ Vendor to indicate width of all components at normal and end-of-travel stop positions ▪ Vendor to indicate height of all components at normal and end-of-travel stop positions ▪ Specify equipment maximum power consumption and UPS power reservation needs in (KVA) and any specific earthing needed details. ▪ A main circuit breaker shall be supplied with the machine. ▪ The supplier is responsible for its installation and for providing all necessary connections and accessories, including Emergency switch, Circuit breakers, Protection devices ▪ The supplier should also provide all required wiring and conduits from the main unit to the mammography workstations	

Item Description	Supplier Specifications
I07 Apron set Qty : 1  ▪ Flexible lead rubber in tear resistant plastic cover; sleeveless; half-length at back; fastening with crossed elastic straps with Velcro ends; not less 0,5mm lead thickness at the front and 0.25 mm at the back . - S Size Qty (x 2) - M Size Qty (x 2) - L Size Qty (x2) -Each apron should hold one pair of gloves The set should come with a stainless steel mobile apron storage system which should come with at least 6 hangers.	

Item Description	Supplier Specifications
I08 OB/GYN Ultrasound Scanner Qty : 1  ➤ General Requirements - Fully digital, advanced colored ultrasound imaging modality for general imaging that is mounted on a trolley, optimized mainly for OB/GYN, with capability for 3D and 4D imaging, featuring a high-resolution touchscreen interface, comprehensive scanning modes, and a wideband probe range (approx. 2–20 MHz) with single crystal technology. It includes a flexible ergonomic monitor, fast boot-up, advanced imaging features, DICOM 3 integration, and all essential accessories for full diagnostic functionality. ➤ Technical characteristics - Application: Abdominal, small parts, OB/GYN, MSK, 2D/3D/4D. - Integrated Mobile system on four casters - Height adjustable to allow for maximum comfort and examination efficiency. - Touch Command Screen - Programmable panel - Advance digital beamforming - Dynamic range shall be 200 dB or better - User selectable dynamic range - It should be able to support transducer frequencies up to 20 Mhz - Shall not have less than 200 frames per second. - Grayscale level: 256 or better	

Item Description	Supplier Specifications
➤ <u>Scanning Techniques:</u> ▪ Electronic convex scanning ▪ Electronic linear scanning ▪ Wide scanning "Trapezoid scan " ▪ 4D scanning ➤ <u>Monitor:</u> ▪ At least 20" color LCD /LED flat monitor, with ergonomic design ▪ High resolution of 1280x1024 pixels or better ▪ High contrast ratio not less than 800:1 ▪ Mounted on a flexible arm move up/down, swivel and tilt ➤ <u>Control Panel:</u> ▪ User friendly interface ▪ Fully customizable console with touch screen panel ▪ It should have configurable shortcut keys. ▪ Adjustable control panel (up/down) ▪ Full keyboard with built-in trackball ▪ At least 100 user programmable protocols. ▪ Rapid electronic probe selection with automatic identification ▪ Maximum depth of field 400 mm or better ▪ Minimum depth of field 30 mm or better ▪ Probe Active Ports: Minimum three ▪ Probe Holder: Minimum three ▪ Probe cable hanger ▪ Probe Technology: Wideband, high no. of elements and the system must support 2–20 MHz ▪ System must have fast boot-up time with maximum of 30 sec and intuitive workflow ▪ High Digital Processing Channels, Specify. ▪ Audio output for Doppler analysis ▪ The obstetric/gynecologic diagnostic ultrasound scanner should be capable of performing state of the art imaging primarily for OB/GYN. ▪ Capable of performing 2D sector, linear-array imaging, M-mode and various Combination as well as Doppler analysis. ▪ 3D / 4D Imaging Software ▪ Harmonic Imaging ▪ 256 Discrete Gray Levels	

Item Description	Supplier Specifications
▪ Should include color flow mapping. ▪ Frequency Display, Velocity Display ▪ Power Doppler, Duplex and Triplex mode ▪ The following probes should be submitted with the Ultrasound and shall be multi-frequency: - 3-5 MHz Convex for general obstetrics - 5-9 MHz Endo-vaginal probe for gynecology and early pregnancy - 2-5 MHz 4D Volumetric Probe for fetal imaging - 3-5 MHz Linear (OBS/GYN) (optional) ▪ The system should include both preprocessing and post processing capabilities and the appropriate controls for time gain compensation (TGC) Variable power, dynamic range, and overall system gain controls are desirable features ▪ Should have auto 3D/4D Rendering ▪ Should be able to perform live 4D imaging with volume transducers, Advanced 3D/4D imaging with auto-rendering for fetal face, spine, and organ views. ▪ Pan/Zoom, Real Time Imaging, Freeze ▪ Processing and post processing programs ▪ Selectable Dynamic range. ▪ Image reversible and switch able convex angle ▪ Adjustable Transmit Focus ▪ Multifunction Digital calipers. ▪ Dedicated OB/GYN Protocols, including application and calculation software: GA, EFW, BPD, FL, AC, HC, fetal growth charts ▪ Multi-plane reconstruction and cine review of 3D/4D volumes ▪ Automatic fetal biometry tools ▪ Number of User Protocols: At least 40 ▪ Dicom 3.0 fully integrated (worklist, store, print, query/retrieve) ▪ The equipment should be a room based wheeled unit with integrated brake, footrest, transducer, and cable and gel bottle holder. ▪ The system should have four universal probe ports in a convenient easy-to-access location with an electronic switching facility ▪ The system should include cine loop/image storage. ▪ System should have facility to adjust 2D performance instantly for different patient types (thin, average, obese)	

Item Description	Supplier Specifications
▪ System should have a full-size alphanumeric keyboard ▪ The system should have on board storage facility of minimum 500 GB ▪ The system shall provide the ability to sort images stored on board based on patient name, exam date, patient ID and exam types ▪ Must have at least 2 USB Ports and ethernet connection to DICOM PACS and optional Wi-Fi connection. ▪ Ability to store / retrieve images in different formats (TIFF, JPF, JPG, AVI, DICOM) ▪ Color Paper Printer and B&W printer to be supplied ▪ Fully upgradable platform, both software and hardware ▪ To supply all Necessary accessories to allow for the full functionality of the system ▪ Item I08 should be the same brand as I02 ➤ <u>Accessories:</u> The following are the Accessories required: - 3 packs of B&W printing paper - 3 packs of color printing paper - 100 sterilized probe covers - 5 gel bottles ➤ <u>Standards and Certifications:</u> ▪ Compliant with international regulatory requirements, a valid CE certification and/or FDA registration. ▪ Electrical safety standard IEC 60601 ▪ Specify equipment maximum power consumption and UPS power reservation needs in (KVA) Provide the necessary training by application specialists for dedicated operators.	

Item Description	Supplier Specifications
I09 X-Ray Unit, Mobile Qty : 1  ■ The mobile radiographic units are used for radiographic imaging of patients who cannot be moved to the radiology department and who are in areas such as intensive and critical care units or operating and emergency rooms, that lack standard, fixed radiographic equipment. At minimum, the mobile radiographic unit shall include the following: ➤ <u>Imaging Technology</u> ■ Detector Type: Digital Flat Panel Detector ■ Wireless range ≥ 15 meters with encryption ■ Retrofit DR (wireless) with battery: Pixel pitch: $\leq 150 \mu\text{m}$ or less. ■ Pixels resolution: 3k x 3k pixels or better ■ DQE at 0 lp/mm: $\geq 70 \%$ ■ Imaging Area: 17 x 17 inch. ■ Detector Technology: Amorphous silicon with CsI scintillator or equivalent ■ Wireless hot-swap battery detector with at least 8 hours of operation ■ Charging mode of the flat panel detector ■ Drop resistance and IP rating to be indicated (water/dust protection is a must) ➤ <u>Generator & Tube</u> ■ Generator Type: High frequency, $>25\text{KW}$ at 100 kV or better ■ kVp Range: 40–125 kVp in step of 1 kV or more ■ mA Range includes 100 to 350 mA or better	

Item Description	Supplier Specifications
▪ Cooling: Automatic or active tube cooling system ▪ Emergency OFF Switch on the control panel ▪ Rotating Anode x-ray tube for excessive use, with dual focus/single focus 0.8/1.2 mm or better ▪ Anode heat storage capacity of at least 200 KHU or better ▪ Electronic timer with minimum exposure time of 1 msec or less ▪ Patient positioning indicators before X-ray activation ➤ <u>Image Processing</u> ▪ Image Processing: Real-time image acquisition, filtering, edge enhancement ▪ Digital Storage: $\geq 30,000$ images ▪ Display System: Color touch screen of 17 inch minimum with certified medical-grade (according to IEC60601-1) image quality. ▪ The monitor shall be compliant with DICOM Part 14 grayscale calibration ▪ Image Formats: DICOM-compatible, JPEG/PNG export ▪ Built-in image stitching and dose reporting ▪ Support for auto-exposure control (AEC) ▪ Onboard touchscreen console ▪ The console should enable to view the image, and provide post processing features, using touch screen. The post processing features should include zoom, contrast and brightness, gray scale inversion, collimation adjustment, panning annotate, mark and reporting. ▪ AI-assisted optimization (noise reduction, anatomy-based enhancement) is a plus. ➤ <u>Mobile X-Ray Mechanics</u> ▪ Tube vertical movement in cm ▪ Tube horizontal movement in cm ▪ Tube rotation around Z axis = ± 90 degrees or better ▪ Tube rotation around X axis = ± 180 degrees or better ▪ Collimation rotation = ± 90 degrees or better ▪ Wheels Diameter to be indicated in cm ▪ Antistatic Wheels ▪ Minimum turning radius for compact maneuvering ▪ 5th castor is preferred for Elevator and driving through different floor levels	

Item Description	Supplier Specifications
➤ <u>Power and Battery</u> ▪ The machine is not required to be motorized; however, it is mandatory that all integrated functions operate on internal lithium-ion battery power, with capability to switch to mains power as needed ▪ Capable of more than 200 exposures per full battery charge ▪ Battery charging time < 3 hours ▪ "Charging time of batteries must not exceed 4 hours, and it should be equipped with a light indicator ▪ for the low battery alarm - guaranteed battery life > 3 years" ➤ <u>Connectivity</u> ▪ DICOM: Full DICOM 3.0 support (Send, Store, Print, Worklist) ▪ Network Connectivity: Active Ethernet port to transfer images and patient data from and to hospital network using LAN connectivity, and optional Wi-Fi ▪ Export Media: minimum 1 USB active port, DVD writer, and cloud-capable (if applicable) ➤ <u>Braking System</u> ▪ The Unit should have effective braking system for parking. ➤ <u>Accessories</u> ▪ All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer. ▪ To deliver free of charge Radiation protection aprons (3 Thyroid and 3 light weight Chest type 2x Large and 1 X-Large) ▪ Hand Switch control with extendable cable (additional wireless remote control is a plus) ▪ To provide free of charge detector battery docking charger ▪ To provide free of charge detector protection cover ➤ <u>Power Requirements and Physical Characteristics</u> ▪ Power input 220–240V, 50/60 Hz ▪ Protectors against power surge (over-voltage and over-current) line conditions. ▪ Vendor to indicate weight in kg ▪ Vendor to indicate the length of all components at normal and end-of-travel stop positions	

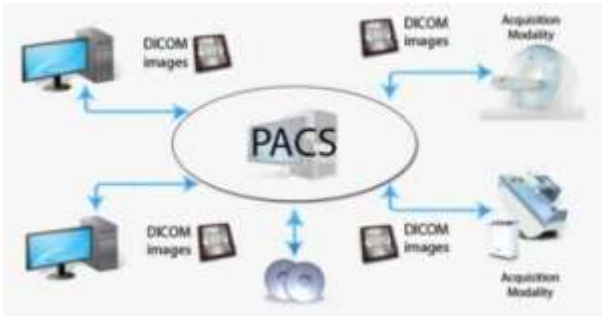
Item Description	Supplier Specifications
▪ Vendor to indicate width of all components at normal and end-of-travel stop positions ▪ Vendor to indicate height of all components at normal and end-of-travel stop positions ▪ A main circuit breaker shall be supplied with the machine. ➤ <u>Standards and Certifications:</u> - FDA and/or CE - Electrical safety standard IEC 60601 - IAEA and EPA Safety Standards	

Item Description	Supplier Specifications
I10 Digital Radiographic System Qty : 1  A digital radiography system with flat panel detector, capable of taking digital images in horizontal, vertical and oblique positions of all skeletal body including Head, spine and chest. ➤ <u>GENERATOR</u> ▪ Generator should be of latest high frequency inverter technology for constant output and lowest radiation doses. ▪ Must be microprocessor-controlled high frequency, 100 kHz. ▪ Power Output: 50 KW or above ▪ Tube Voltage: 125 KV or better, 1KV steps ▪ Current: 500 mA or more ▪ mAs product: 1 mAs to 500 mAs ▪ Exposure time should be specified ($\geq 1\text{ms}$) ▪ Should have automatic exposure control device (AEC). ▪ Should have anatomical programming radiography (APR) ▪ Should have over loading protection feature. ▪ Should have a digital display for KV and mAs on console. ▪ Light and sound indicators for exposure.	

Item Description	Supplier Specifications
➤ <u>X-RAY TUBE AND COLLIMATOR</u> ▪ The x-ray tube should be rotating anode high speed. ▪ Should have an anode heat capacity of 300KHU or more. ▪ Should have dual focal spots with the following focal spot size range: small focal spot size: 0.6 mm, large focal spot size: 1.2 mm. ▪ Multi leaf collimator having bright light source and auto shut provision for the light. ▪ Auto collimation to be integrated with automatic filters and Automatic Centering laser line. Additional copper filtration for dose reduction is preferred. ➤ <u>STAND TUBE</u> ▪ Floor Mounted X-ray Stand Tube with motorized movements managed by an incorporated control panel. It should have electromagnetic brakes for various movements ▪ Automatic positioning and pre-programmed positions for chest, spine, abdomen ▪ Smoothly and widely longitudinal, transverse, vertical movement and tube arm rotation by pressing the operation button on the handlebar. ▪ The X-ray tube assembly shall rotate through 360° with locks or detents at 90° intervals and shall tilt 135° from vertical with locks or detents at 0° and 90°. ➤ <u>RADIOGRAPHIC TABLE</u> ▪ Motorized radiographic table with 4-way movement of the tabletop. ▪ Radiographic Table with 3 chambers AEC ▪ Transverse and longitudinal movements of the tabletop should be locked by electromagnetic locks ▪ Width of the patient table: approx. 80 cm. ▪ Length of the patient table: approx. 220 cm. ▪ Motorized height adjustable: 55 cm up to 100 cm. ▪ The tabletop should be of low radiation absorption ▪ Table should support patients' weight up to 250 Kg or more. ▪ Anti-collision system ▪ Patient hand grips	

Item Description	Supplier Specifications
➤ <u>VERTICAL DETECTOR STAND (Chest bucky)</u> ▪ Should have a vertical bucky with oscillating/moving grid (grid ratio 10:1) ▪ The vertical movement range should be 125 cm or more with the lowest point (from cassette center to ground) being not more than 55 cm and the highest point being not less than 175 cm. ▪ Bucky should have electromagnetic lock that allows for easy positioning. ▪ Lateral chest positioning capability (motorized movement and tilt option is a plus) ▪ It should have automatic exposure control with at least three fields. ▪ The detector should be capable of rotating on its axis across +90 to -15 degrees ➤ <u>DIGITAL DETECTOR</u> ▪ Two wireless detectors to be provided and used in the radiological table and the vertical stand ▪ The detectors should be a flat panel detector of latest technology with Cesium Iodide scintillator. ▪ The size of the detector should be 35 cm x 41 cm or more. ▪ The resolution should be minimum of 3.5 lines pair/millimeter. ▪ Detector Quantum Efficiency (D.Q.E) should be $\geq 65\%$ at 0 lp/mm. ▪ The active-matrix size should be 3k x 3k x 14 bits or more. ▪ The pixel size should be in the range of 100–125 μm or better. ➤ <u>Digital Workstation</u> ▪ The digital workstation should be based on the latest high-speed processors and should be provided with dual high-resolution displays of minimum 2 Mega Pixel 21” Medical Grade Monitors each. ▪ The workstation should be able to send, receive and print according to DICOM standards. ▪ Image Storage Disc minimum 2 TB in addition to PACS/cloud connectivity. ▪ Zooming, ROI, Image Cropping and Masking, automatic grid removal function ▪ The workstation should also be able to obtain DICOM modality, work list from connected information system and send information about performed procedure to the connected information system. ▪ CD/DVD writing, ≥ 4 USB ports, optional cloud/PACS auto-backup. ▪ Should have a compatible Ethernet interface for rapid image processing. ▪ Wi-Fi enabled	

Item Description	Supplier Specifications
▪ Integrated UPS for 30 minutes backup ▪ Emergency stop buttons ➤ <u>Compliant with International Standards Agencies</u> ▪ FDA and/or CE ▪ Electrical safety standard IEC 60601 ▪ IAEA and EPA Safety Standards ➤ <u>Special Site Preparation Requirements</u> ▪ Vendor to provide and install all floor fixing plates and ceiling rail systems (if any). ▪ Vendor shall refer to the relative medical equipment loaded drawings. ▪ Vendor to provide a complete shop drawing and requirements for the equipment to be installed. ▪ Vendor to fully coordinate with the main contractor on-site as required ➤ <u>Overall system dimensions (net dimensions and crates dimensions)</u> ▪ Vendor to indicate weight ▪ Vendor to indicate the length of all components at normal and end-of-travel stop positions ▪ Vendor to indicate width of all components at normal and end-of-travel stop positions ▪ Vendor to indicate height of all components at normal and end-of-travel stop positions ➤ <u>Power and Main Disconnect Panel</u> ▪ Specify equipment maximum power consumption and UPS power reservation needs in (KVA) ▪ A main disconnect panel with a main breaker shall be supplied with the machine. ▪ The supplier is responsible for its installation and for providing all necessary connections and accessories, including Emergency switch, Circuit breakers, Protection devices ▪ The supplier should also provide all required wiring and conduits from the main panel to the disconnect panel and from the disconnect panel to the sub-circuits. ▪ The disconnect panel must be fully compatible with the equipment delivered and its electrical requirements.	

Item Description	Supplier Specifications
I12 Picture Archiving and Communication System (PACS) Qty: 1  The diagram illustrates the PACS architecture. A central oval labeled 'PACS' is connected by blue arrows to four 'Acquisition Modality' icons (top-left, top-right, bottom-left, bottom-right). Each modality is also connected to a 'DICOM images' icon. The arrows indicate the flow of data from the modalities through the DICOM images to the central PACS hub. ➤ Scope & Scale: - Picture Archiving and Communication System to acquire, store, route, display, and retrieve multi-modality studies: CR/DR, CT, MR, US, RF/Fluoro, Mammography, and C-arm. - Sizing baseline: approximately 70 radiology patients/day with headroom to 120/day. - At least 25 concurrent viewing sessions, and priors prefetch rules (configurable). ➤ System Architecture (On-Prem, High Availability) - On-prem only: primary, replica, and archive storage inside hospital data centers; no cloud primary/archive. - Vendor-neutral x86-64 (or customer VM). Separate App/API, DICOM/DICOM web, and DB tiers. - HA with redundant nodes and automatic failover; optional second room / building asynchronous replica. - ILM tiers: Tier-1 SSD cache → Tier-2 archive → Tier-3 deep archive; policies by modality/age/priors. - No third-party/cloud processing of PHI for clinical use. Only the optional encrypted cloud backup (DR copy) is allowed. ➤ Server & Storage (On-Prem Tiers + DR) - Compute (min.): App/API ≥16 vCPU / 64 GB RAM; 10 GbE network; DB sized per vendor. - Tier-1 (performance): ≥2 TB NVMe/SSD (RAID10). - Tier-2 (archive): SAN/NAS or scale-out object/NAS with RAID-6/erasure coding + snapshots.	

Item Description	Supplier Specifications
▪ Tier-3 (deep archive): on-prem NAS/object with EC or LTO tape with WORM/air-gap. ▪ Capacity plan (7 years) for ~70→120 pts/day; declare usable TB per tier; include growth and replica/backup copies. ▪ Immutability enabled on Tier-2/3 (object-lock/snapshot). ▪ RPO ≤ 24 h / RTO ≤ 8 h with documented runbook and quarterly test-restores ➤ <u>Interoperability & Applicable Standards</u> ▪ DICOM: Storage SCP/SCU, Query/Retrieve (C-FIND/C-MOVE), Storage Commitment, MWL, MPPS, GSPS/PR, KOS, RDSR, IOCM (corrections). ▪ DICOM web: QIDO-RS (query), WADO-RS (retrieve), STOW-RS (store) for web/enterprise access. ▪ Compression: Lossless JPEG-LS / JPEG 2000; support HTJ2K (High-Throughput JPEG 2000) for faster viewing of large studies. ▪ IHE profiles: Scheduled Workflow (SWF.b), Patient Info Reconciliation (PIR), ATNA (security/audit), MRRT (report templates), XDS-I.b (optional cross-enterprise sharing). ➤ <u>Mammography / DBT / Stereotaxy (Additional requirements; applies in addition to all multimodality PACS functions)</u> ▪ Store/deliver FFDM (MG) and DBT using the Breast Tomosynthesis Image IOD; preserve acquisition metadata; auto-fetch prior mammography exams. ▪ Accept stereotactic series; keep view pairing/angles; preserve PR/CAD/AI overlays. ▪ No lossy compression for primary diagnostic MG/DBT. ➤ <u>Security & Privacy</u> ▪ Encryption: TLS 1.2/1.3 in transit; AES-256 at rest. ▪ Access: RBAC with AD/LDAP/SSO; full ATNA audit (view/export/delete). ▪ Data residency: all PHI on-prem. Optional cloud backup = encrypted DR copy with customer-managed keys (no clinical viewing from cloud). ▪ Immutable backups (snapshots/WORM), 3-2-1 strategy; annual recovery drill + quarterly restore tests. ➤ <u>Administration & Workflow</u>	

Item Description	Supplier Specifications
▪ Admin dashboards; worklist/routing rules, prefetch, PIR (patient info reconciliation), and purge/ILM policies. ▪ Web and desktop diagnostic viewers with caching; ≤ 2 s time-to-first-image on LAN (target). ▪ Diagnostic viewing (all modalities): multimodality hanging protocols; MPR/MIP/MinIP (as licensed); measurements/annotations; synchronized prior comparison; US cine playback; save GSPS/PR. ➤ <u>Service & Uptime</u> ▪ 24/7 support with 99% uptime target; proactive monitoring; remote diagnostics. ▪ Redundant UPS for server with 6 hours batteries autonomy.	

Item Description	Supplier Specifications
I13 Radiology Diagnostic, Reading and Reporting Workstation Qty: 1 ➤ <u>Scope (multimodality):</u> ▪ This workstation supports primary diagnostic reading for CR/DR, CT, MR, US, RF/Fluoro, and C-arm in addition to mammography/DBT/Stereotaxy. ➤ <u>System Architecture (On-Prem, High Availability)</u> ▪ On-prem only: primary, replica, and archive storage inside hospital data centers; no cloud primary/archive. ▪ Vendor-neutral x86-64 (or customer VM). Separate App/API, DICOM/DICOM web, and DB tiers. ▪ HA with redundant nodes and automatic failover; optional second room / building asynchronous replica. ▪ ILM tiers: Tier-1 SSD cache → Tier-2 archive → Tier-3 deep archive; policies by modality/age/priors. ▪ No third-party/cloud processing of PHI for clinical use. Only the optional encrypted cloud backup (DR copy) is allowed. ▪ Speech engine: on-prem processing ➤ <u>Hardware</u> ▪ Two 5MP grayscale diagnostic monitors 21 inch (mammography-grade), DICOM GSDF-calibrated, built-in front sensor & ambient light compensation; calibrated luminance per current practice; 3rd 2MP color monitor 21 inch for worklist/US/CT. (AAPM, reshinmonitors.com) ▪ GPU capable of smooth DBT cine/stack and 3D MPR; quiet workstation, ≥32 GB RAM, NVMe SSD. ▪ Speech input: USB dictation microphone (noise-canceling, push-to-talk) and/or USB headset; optional USB foot switch for start/stop/next field. Drivers for Windows 10/11; low-latency capture. ➤ <u>Mammography / DBT / Stereotaxy Reading</u> ▪ IOD support: MG (FFDM) and Breast Tomosynthesis Image Storage; ingest stereotactic acquisitions and keep view pairing/angles. ▪ Hanging protocols: auto-layout for CC/MLO, with symmetric zoom/pan, same-size display, auto-fetch multiple prior years (configurable). ▪ DBT tools: fast stack scrolling, cine speed control, slab MIP/MinIP, slice thickness control, cross-linking to 2D.	

Item Description	Supplier Specifications
▪ Stereotaxy tools: synchronized stereo-pair display, angle/offset display, target coordinate readouts, lesion/calcification marking, clock-face & quadrant annotations, export of biopsy target screenshots into report. ▪ Reporting (mammography): Uses the Reporting & Voice (All Modalities) features; provide BI-RADS MRRT templates and same-size synchronized display of priors. ▪ CAD/AI results: display CAD marks and modern AI outputs (DICOM SR/TID1500 or equivalent) over MG/DBT. ➤ <u>General Diagnostic Tools (All Modalities)</u> ▪ Independent logins, admin-controlled worklists, ad-hoc search, prior-exam auto-notification. ▪ User-definable hanging protocols, session suspend/resume. ▪ 2D/3D toolset: MPR, MIP/MinIP, VRT (as licensed), measurements, key-image, teaching file export. ▪ Export GSPS/PR, KOS, and DICOM series; JPEG/MP4 for presentation. ➤ <u>Reporting & Voice (All Modalities)</u> ▪ Real-time speech-to-text from microphone with auto-punctuation, voice commands (insert template/next field/headings), per-user voice profiles with acoustic & lexicon learning, medical radiology vocabulary; structured reporting (MRRT templates); HL7/FHIR results back to RIS; text macros/AutoText, pick-lists; optional audio file attachment to the study. ➤ <u>DICOM/DICOM web on the Workstation</u> ▪ DICOM C-FIND/C-MOVE/Storage SCU/SCP, Storage Commitment, MWL, MPPS, GSPS. ▪ DICOM web QIDO-RS/WADO-RS (query/retrieve) for web access to PACS/VNA.	

Item Description	Supplier Specifications
PACKAGE (L) - LABORATORY	
L01 Analyzer, Hematology Qty: 1	
➤ General Requirements - Fully automated hematology analyzer with integrated data management system. - Must provide multi-parameter hematology profiles with a minimum of 25 parameters. - Model must be of new technology, not older than 5 years. - Must support primary/closed tube vial analysis. - Must include PC workstation with latest hardware, operating system, and licensed software. ➤ Analytical Parameters - Mandatory parameters: WBC, RBC, HGB, HCT, MCV, MCH, MCHC, RDW, PLT, MPV, PCT, PDW, MRV. - Percentages and absolute counts: Lymphocytes, Monocytes, Neutrophils, Eosinophils, Basophils, Atypical lymphocytes (ALY), Large immature cells (LIC). - Reticulocyte counts: %RET, absolute count, and ratio. 5-part WBC differential distribution. - Morphology flags/comments for RBC and PLT. - Histograms (3): WBC, RBC, PLT. - Scattergrams (4): 3 diff + 1 basophil. ➤ Performance - Throughput: ≥60 samples per hour in all discrete modes. - Sample volume: ≤20 µL. - Sample modes: whole blood, capillary blood, and pre-diluted.	

Item Description	Supplier Specifications
▪ STAT mode capability. ▪ Automatic start-up and shutdown. ▪ Electronic self-checks and error detection. ▪ Automatic probe wipe and auto-cleaning (in case of capillary blockage/bubbles). ▪ Auto stop if control data is unacceptable. ▪ Needle collision protection and blockage detection mechanisms. ▪ Built-in alarm system: reagent low, clot detection, sample abnormality flags, system malfunction ➤ <u>Quality Assurance & Data Management</u> ▪ Integrated calibrator and control management system. ▪ Bar-code sample identification. ▪ USB 2.0 / higher, Ethernet ports for connectivity. ▪ The analyzer shall be fully compatible with the LIS, supporting two-way HL7/ASTM communication (worklist download and result upload) as defined in the LIS specification. ▪ Easy calibration management, QC, and troubleshooting. ▪ Built-in graphics printer for histograms/scattergrams/reports. ▪ Must support internal and external printing. ▪ User interface: ≥ 10-inch color touchscreen, user-friendly software. ➤ <u>Reagents & Consumables</u> ▪ High stability reagents (with testing certificates). ▪ List of compatible reagents with average number of tests per kit. ▪ Reagents must be readily available for minimum 5 years. ▪ All standard consumables required for full operation to be supplied. ➤ <u>Accessories & Supplies</u> ▪ Computer with licensed software. ▪ Branded PC, $\geq$ Intel i5, 16 GB RAM, 512 GB SSD, 22" monitor, Windows 10/11 Pro, keyboard and mouse. ▪ Starter kit of reagents and controls for $\geq 5,000$ tests. ▪ Barcode scanner and all necessary cables	

Item Description	Supplier Specifications
L02 Analyser, Blood Gas/Acid Base Qty : 1 ▪ Unit should be able to measure: pH (6.5-8), pCO₂ (5-250mmHg), pO₂ (0-800 mm Hg), total hemoglobin THb(0-25g/dL); SO₂ (0-100%); MetHb(0-100%);COHb(0-100%);RHb(0-100%);Glucose(0-1000mg/dL) . ▪ Unit should be fully automatic; ▪ Computer controlled; ▪ clot catcher; built-in printer; ▪ alphanumeric keyboard; ▪ maintenance free electrodes; ▪ Including a Touch screen LED Display; ▪ And Archiving facilities for all data relating to patients' results, ▪ Calibration points for at least 1000 tests. ▪ Complete with all necessary electrodes, tubing, manuals, printer paper and electrode compartment kit, waste filter muffler kit, aspiration adapter kit, protein removal kit, conditioning kit, blood gas Na/K micro kit and calibration gas ▪ The analyzer shall be fully compatible with the LIS, supporting two-way HL7/ASTM communication (worklist download and result upload) as defined in the LIS specification. ▪ kit; accessories: - (1) calibration gas cylinder, 40 cubic feet - (1) slope gas cylinder, 40 cubic feet - (9) 350ml bottles calibration buffer 7,3 - (3) 350ml bottles calibration buffer 6,8 - (6) 750ml bottles wash solution I	

Item Description	Supplier Specifications
- (10) 350ml bottles wash solution II - (8) 500ml bottles Hb reagent - (5) protein removal kits - (5) conditioning kits - (1) pump tubing kit - (1) reference electrode kit - (1) reference internal - (10) rolls of printer paper	

Item Description	Supplier Specifications
L03 Centrifuge, micro-hematocrit Qty : 1  ➤ <u>General Requirements</u> ▪ Heavy-duty, medical-laboratory grade micro-hematocrit centrifuge. ▪ Designed for determination of packed cell volume (PCV/hematocrit) in capillary tubes. ▪ Bench-top type, vibration-free, maintenance-friendly construction. ➤ <u>Capacity & Rotor</u> ▪ Rotor capacity: minimum 24 capillary tubes (75 mm length, standard micro-haematocrit tubes). ▪ Stainless Steel Chamber with additional inner guard ring ▪ Rotor type: swing-out or fixed angle, with secure tube holders. ▪ Safety lock to prevent lid opening while rotor is in motion. ▪ Rotor cover to contain broken glass/tubes ▪ Removable capillary rotor for cleaning and maintenance. ➤ <u>Performance</u> ▪ Maximum speed: $\geq 12,000$ RPM. ▪ Relative Centrifugal Force (RCF): $\geq 14,000 \times g$. ▪ Run time adjustable: 0 – 60 minutes (99 min), with automatic shut-off. ▪ Noise level: ≤ 65 dB. ▪ Digital display of speed, time, and RCF.	

Item Description	Supplier Specifications
➤ <u>Operation & Safety Features</u> ▪ Microprocessor-controlled for precise speed and time settings. ▪ LCD for displaying parameters such as speed, time, lid open/close, errors. ▪ Program Memory: up to 10 Programs ▪ Imbalance detection with automatic stop. ▪ Lid lock safety interlock system. ▪ Automatic braking at end of run. ▪ Transparent lid for observation during run ➤ <u>Accessories & Supplies</u> ▪ Complete set of tube holders/adapters for standard capillary tubes. ▪ Calibrated capillary reading plate ▪ Starter pack of capillary tubes (heparinized and non-heparinized, 200 pcs each).	

Item Description	Supplier Specifications
▪ Insulation: Double-walled with thermal insulation to reduce energy loss. ▪ Drain: Built-in drain valve. ➤ <u>Accessories (per unit supplied)</u> ▪ Removable perforated stainless-steel tray/rack for test tubes and flasks.	

Item Description	Supplier Specifications
interlock to eliminate UV exposure of users. ▪ Built in with airflow sensor for monitoring real-time airflow ▪ Automatic Airspeed adjustable with filter block ▪ Should have a Direct-drive centrifugal fan with variable speed controller ▪ HEPA-filtered, re-circulated mass airflow within the work space ▪ Exhaust air from the cabinet is also filtered by HEPA filters ▪ Low Noise should be less than 65 dB ▪ Audible and Visual Alarms ▪ Minimum two mounted electrical sockets (Waterproofed) ▪ Armrest ▪ Outlets for water and gas ▪ Drainage ▪ Internal Dimension (WxDxH): 900 x 600 x 680 mm ▪ Base Stand with 3 inches lockable casters ▪ The Biosafety Cabinet should be NSF listed	

Item Description	Supplier Specifications
L06 Microscope, Binocular Qty : 2  ➤ <u>General Technical Requirements</u> ▪ Laboratory-grade binocular optical microscope designed for routine clinical, diagnostic, and teaching use. ▪ Ergonomic, compact, vibration-free, with anti-fungal optical treatment. ➤ <u>Optical System</u> ▪ Observation head: Binocular, 30° inclined, 360° rotatable. ▪ Interpupillaory distance: adjustable 48–75 mm. ▪ Eyepieces: - 2 × Widefield 10× eyepieces, FOV ≥18 mm. - Eyepieces with diopter adjustment (at least on one side). ▪ Objectives: - 4× (achromatic). - 10× (achromatic). - 40× (achromatic, spring-loaded). - 100× (oil immersion, achromatic, spring-loaded). ▪ Total magnification: 40× – 1000×. ▪ Nosepiece: Quadruple, inward-facing, ball-bearing mounted, click-stop positions. ➤ <u>Illumination System</u> ▪ Built-in LED illumination with brightness control (50,000 hours lifespan). ▪ Koehler or pre-centered illumination system with field diaphragm.	

Item Description	Supplier Specifications
➤ <u>Focusing System</u> ▪ Coaxial coarse and fine focus controls on both sides. ▪ Fine focus sensitivity: 2 μm or better. ▪ Stage upward movement limited by stopper (to protect slides/objectives). ➤ <u>Mechanical Stage</u> ▪ Built-in mechanical stage with low-position coaxial controls. ▪ Stage size: approx. 135 × 140 mm. ▪ X-Y movement range: $\geq 75 \times 50$ mm. ▪ Graduated to 0.1 mm for accurate measurement. ➤ <u>Condenser</u> ▪ Abbe condenser, NA 1.25 with iris diaphragm and filter holder. ▪ Adjustable height with rack & pinion movement. ➤ <u>Accessories (per unit supplied)</u> ▪ Immersion oil (1 bottle). ▪ Blue and green filters. ▪ Dust cover.	

Item Description	Supplier Specifications
L07 Hematology differential counter Qty :1 ➤ <u>General Technical Requirements</u> ▪ Microprocessor-controlled digital blood cell counter designed for accurate and simple differential counts in hematology. ▪ Compact, portable design with durable housing, suitable for routine laboratory use. ▪ 8 counting keys, arranged with alternating red and white colors for easy identification. ▪ Each key is individually labeled with cell types: BASO, EOSIN, MYELO, JUVEN, STAB, SEG, LYMPH, MONO. ▪ Provides clear audible click on each key press for confirmation. ➤ <u>Display & Counting Features</u> ▪ Each button has a 3-digit LCD display to show individual counts. ▪ One separate 3-digit LCD display shows the total count. ▪ At increments of 100 cells counted, an audible beep is triggered to alert the operator. ▪ Function Available: percentage calculation of each cell type, reset button, other (specify). ➤ <u>Accessories (per unit supplied)</u> ▪ 1 × AC power adaptor. ▪ 1 × Set of AA batteries. ▪ 1 × Dust cover.	

Item Description	Supplier Specifications
L08 Centrifuge, Universal Qty : 1 ➤ General Requirements - Universal, floor-standing centrifuge suitable for clinical and laboratory use. - Heavy-duty design with steel chassis and stainless-steel rotor chamber. ➤ Performance - Speed range: 100–6,000 rpm, programmable. - Maximum RCF: $\geq 8,000 \times g$. - Capacity: $\geq 6,000$ mL total volume. - Rotor chamber diameter: ≥ 55 cm. - Timer: 1–90 minutes, programmable. - Acceleration profiles: ≥ 10 rates. - Deceleration profiles: ≥ 10 rates. - Stepless, variable braking system. - Noise level: ≤ 65 dB. ➤ Controls & Display - Large graphical LCD display, showing pre-set and actual run parameters. - Digital display of time, speed (rpm/RCF), and program settings. - User-programmable memory: ≥ 100 programs.	

Item Description	Supplier Specifications
▪ User password protection for program recall. ▪ RPM/RCF conversion adjustment. ➤ <u>Safety Features</u> ▪ Imbalance detection with flashing warning light and automatic shutdown. ▪ Lid lock with interlock — prevents opening during operation. ▪ Emergency lid release. ▪ Start-blocking if lid open. ▪ Overspeed protection. ▪ Rotor recognition system ➤ <u>Accessories</u> ▪ Fixed-angle rotor for 20 × 15 mL tubes. ▪ Swing-out rotor (6-place) with wind shield. ▪ 6 x Sealed buckets (capacity 100 mL each) ▪ Tube racks: 12 x 15 ml ▪ Aluminum adapters: 4 × 15 mL, 2 × 50 mL, 3 × universal containers ▪ Consumables: - 15 mL centrifuge tubes (starter set, ≥50 pcs). - 12 mL tubes (pack of 80). - 50 mL tubes (pack of 25).	

Item Description	Supplier Specifications
▪ Indicator lights for heating and stirring functions. ▪ Hot-surface warning lamp, active until plate cools below 50 °C. ▪ Safety circuit to prevent motor overheating under heavy load. ➤ <u>Accessories (per unit supplied)</u> ▪ 12.7 x 8; 25.5 x 8; 38 x 8; 50.8 x 8; and 76.2 x 8mm. ▪ External PT100 temperature probe for solution temperature control. ▪ Bracket with Clamps and cross clamps	

Item Description	Supplier Specifications
L10 Incubator, 70 liter Qty : 1 ➤ <u>Construction</u> ▪ High-quality, corrosion-resistant stainless steel inner chamber and fittings. ▪ Double-door system: - Outer insulated steel door to maintain chamber stability. - Wide-area inner glass door for full sample visibility without disturbing chamber conditions. ▪ Seamless, easy-to-clean interior design. ▪ The entire chamber, including sensors and fittings, must be capable of sterilization at 160 °C. ➤ <u>Working Chamber</u> ▪ Internal chamber volume: ~70 liters. ▪ Supplied with two stainless steel autoclavable shelves, adjustable height. ➤ <u>Temperature Control & Performance</u> ▪ Temperature range: +8 °C to +80 °C. ▪ Accuracy: ±0.5 °C across the range. ▪ Digital PID controller with LED/LCD display. ▪ Uniformity: ±1 °C within the chamber. ▪ Over-temperature safety protection with audible/visual alarms. ➤ <u>Humidity Control & Performance</u> ▪ Digitally controlled active humidification and dehumidification system. ▪ Adjustable humidity: up to 90% RH.	

Item Description	Supplier Specifications
▪ Digital display of temperature and humidity simultaneously. ▪ Automatic alarms for humidity deviation outside set limits. ➤ <u>Additional Features</u> ▪ Built-in memory to store temperature/humidity programs. ▪ Internal fan/air circulation for uniform conditions. ▪ Calibration certificate supplied by manufacturer.	

Item Description	Supplier Specifications
L11 Centrifuge, Refrigerated Qty : 1 ➤ <u>General Requirements</u> ▪ Laboratory-grade benchtop refrigerated centrifuge, suitable for molecular biology, microbiology, and biochemistry applications. ➤ <u>Performance</u> ▪ Speed range: 500 – 30,000 rpm, programmable in 100 rpm steps. ▪ Maximum RCF: $\geq 65,000 \times g$. ▪ Temperature range: $-20\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$, adjustable in $1\text{ }^{\circ}\text{C}$ increments. ▪ Temperature accuracy: $\pm 1\text{ }^{\circ}\text{C}$. ▪ Acceleration profiles: ≥ 9 selectable. ▪ Deceleration profiles: ≥ 9 selectable. ▪ Pre-cooling function: chamber reaches $+4\text{ }^{\circ}\text{C}$ in ≤ 15 minutes. ▪ Noise level: $\leq 60\text{ dB}$. ➤ <u>Controls & Display</u> ▪ Large digital LCD/LED display for speed (rpm/RCF), time, and temperature. ▪ Timer: 1 min – 99 h, plus continuous run. ▪ User-programmable memory: ≥ 50 protocols. ▪ RPM/RCF conversion key. ▪ Error/alarm messages for imbalance, overspeed, and system faults. ▪ Password protection for saved programs.	

Item Description	Supplier Specifications
➤ <u>Safety Features</u> ▪ Automatic rotor recognition. ▪ Overspeed detection. ▪ Imbalance detection with automatic stop. ▪ Motorized lid lock with automatic opening at end of run. ▪ Emergency lid release in case of power failure. ▪ Start-blocking if lid open. ➤ <u>Construction</u> ▪ Rotor chamber: stainless steel, corrosion-resistant, easy to clean. ▪ Housing: steel chassis with vibration-free design. ▪ Motor: brushless, maintenance-free induction drive. ➤ <u>Accessories (to be supplied with unit)</u> ▪ Fixed-angle rotor for $\geq 24 \times 1.5/2$ mL microtubes. ▪ Fixed-angle rotor for $\geq 8 \times 50$ mL conical tubes. ▪ Adapters for 15 mL conical tubes. ▪ Sealed aerosol-tight rotor lids (for biosafety). ▪ Balancing tubes (dummy tubes). ▪ Consumables starter pack: - ≥ 100 pcs 1.5/2 mL tubes. - ≥ 50 pcs 15 mL tubes. - ≥ 25 pcs 50 mL tubes.	

Item Description	Supplier Specifications
L12 Analyzer, Chemistry Qty : 1  ▪ The Unit should be fully automated, random access chemistry system with STAT capability able to perform all routine and non-routine clinical Chemistry Tests, Special Chemistry Tests and Drug Assay test. ▪ Tests would at least Include: Albumin, ALP, ALT, Amylase, AST, Cholesterol, Co2, Glucose, Ignorant Phosphorus, Total Protein ,Triglycerides, Uric Acid, Creatinine, CK-MB, LDL, Acid phosphates, acid phosphates prostate, alcohol, CGT,HDL Iron, Lipase, IgA, IgC, AND Amikacin, Amphetamine, Bariturate, Benzodiazepine, cannabinoid, carbamazepine, cocaine metab, Ethosuximide, Gentamicin, Phenobarbitol, Phenytoin, Primidone, procainamide, Propoxyphene, Quinidine, Digozin, lidocaine, salicylate acetaminophen, methadone, metha-salicylates qu., phencyclidine, opiate, Sali-cylate, tobramycin. ▪ Throughput: Minimum 400 photometric tests/hour; maximum of 800 with ISE ▪ ISE Throughput : Minimum 200 samples/hr ▪ Sample Feeder: Racks with min. 10 samples each (barcodes on primary tubes and on racks); capacity of at least 80 samples; continuous loading ▪ Sample Tubes: Primary and secondary tubes; diameter from 11.5 to 16 mm; height from 55 to 102 mm, nestled micro sample cups ▪ STAT samples: Up to 22 positions for STAT samples via cooled turntable. Easy to operate interrupts between tests Auto repeat run capability ▪ Sample Volume: Range 1–25 µl in 0.1 µl steps (1–25 µl for repeats) ▪ Reagent Capacity: Minimum 76 positions for (R1+R2, detergent position). Holds 15, 30 and 60ml bottles ▪ Reagent Storage: Refrigerated (4 °C–12 °C) ▪ Reagent Volume: R1: 10–250 µl; R2: 10–250 µl; (in 1 µl increment)	

Item Description	Supplier Specifications
▪ Total Reaction Volume: 90–350 µl ▪ Reaction Cuvette: Permanent glass cuvettes ▪ Reaction Time: Up to 8 minutes, 37.5 seconds ▪ Reaction Incubation: 37 °C, dry bath ▪ Photometry system: Direct assay through the reaction cuvette (0 – 3.0 OD) mono and bichromatic measurements possible ▪ Wavelength: 13 different wavelengths between 340 – 800 nm ▪ Calibration: Auto calibration, cooled calibrator positions; master calibration established by two-dimensional barcode ▪ Quality Control: Auto QC, cooled QC positions ▪ Rerun: 1. Auto rerun and manual rerun available ▪ 2. Automatic sample increase, decrease or normal repeat ▪ 3. Reflex testing ▪ Sample Pre Dilution :Dilution ratio: Fixed to 3, 5, 10, 15, 20, 25, 50, 76 or 100 ▪ Test requisition : Individual and profile test requisition via on-line, mouse, function keys and touch screen ▪ Sample Integrity: Lipaemia, Haemolysis and Icterus analysis. Sample clot detection and probe crash protection ▪ Interface: RS232C. Full uni- and bidirectional communication possible ▪ Data Storage: Sample number 100,000 samples. Reaction Data 200,000 tests ▪ Accessories to be supplied : - 2 reagent trays with covers - 2 sample trays with covers - 1 20 position primary sample tray with cover - 1 operation manual - 1 application guide - 1 peristaltic pump tubing kit - 1 dispenser inlet tubing kit - 1 dispenser outlet tubing kit - 1 air filter kit - 2 wash waters filters - 5 packs of reaction cuvettes, each pack containing 6500 cuvettes and 40 disposable liners - 5000 sample cups - 10 rolls of printer paper - 2 multi-calibrators levels I and II - 6 125ml bottles of protein removing solution - 2 100ml bottles of Surfex;	

Item Description	Supplier Specifications
▪ An adequate supply (Startup KIT) of all necessary reagents and controls. ▪ The chemistry analyzers shall have the capability to upgrade with the necessary bidirectional interface for the laboratory information system. ▪ The chemistry analyzers must meet the necessary space requirements. ▪ The seller must include cost/test for each test done by the chemistry analyzer, including cost / consumables and cost/reagents (Itemized individually). ▪ The seller must provide the reagent storage requirements and reagent preparation requirements for each chemistry analyzer. ▪ The seller must provide the necessary software packages and any anticipated enhancements. ▪ The seller must provide a list of reportable and non-reportable tests ▪ The analyzer shall be fully compatible with the LIS, supporting two-way HL7/ASTM communication (worklist download and result upload) as defined in the LIS specification. ▪ The seller must provide a list of any hazardous waste generated by the chemistry analyzers.	

Item Description	Supplier Specifications
L13 Analyzer, Electrolyte Qty : 1  ▪ A completely automated, microprocessor-controlled electrolyte system that uses ISE (Ion Selective Electrode) technology to make electrolyte measurements ▪ Electrolyte analyzers measure electrolyte concentrations in body fluids, typically whole blood, and plasma, serum, or urine specimens. ▪ Large Screen Display ▪ It measures combinations of Na⁺, K⁺, Cl⁻, Li⁺, Ca⁺⁺, and pH in whole blood, serum, plasma, or urine. ▪ Electrodes: Long life up to 5 years. ▪ The analyzer stores quality- control data that is easily accessible. Patient histories are immediately retrievable for evaluation. ▪ Simple yes/no prompted operation, low maintenance, and high reliability. ▪ Sample Size: 100 µL, 60 µL capillary or 400 µL diluted (1:10) Urine ▪ Measurement Range in Blood: - Na⁺: 20– 200 mmol/L K⁺: 0.2– 40 mmol/L - Cl⁻: 25– 200 mmol/L Li⁺: 0.2– 5.0 mmol/L - Ca⁺⁺: 0.1– 6.0 mmol/L pH: 6.0– 8.0 ▪ Measurement Range in Urine: - Na⁺: 25– 1000 mmol/L K⁺: 1.0– 500 mmol/L - Cl⁻: 25– 500 mmol/ L ▪ QC results— up to 20 each Normal, Low, and High ▪ Complete Automation ▪ Shall have bar code capability. ▪ Shall have random access and stat capabilities. ▪ Should have a display of all readings. ▪ Should have an automatic calibration system and on Demand ▪ The analyzer shall be fully compatible with the LIS, supporting two-way HL7/ASTM	

Item Description	Supplier Specifications
communication (worklist download and result upload) as defined in the LIS specification. ▪ Should accept sample types serum/plasma, and urine. ▪ Includes a visible sample chamber. ▪ Should have automatic wash system. ▪ Built in paper printer w/ 50 rolls of paper. ▪ supply of disposables ▪ Memory Storage: up to 256 patient files	

Item Description	Supplier Specifications
➤ <u>Safety Features</u> ▪ Over-temperature protection with audible/visual alarm. ▪ Automatic shutoff on overheating. ▪ Double-walled insulated body for operator safety.	

Item Description	Supplier Specifications
L15 Mixer Vortex Qty : 1  ➤ <u>General Requirements</u> ▪ Laboratory-grade hot air oven for sterilization, drying and heating of glassware, instruments, and materials ▪ Laboratory-grade vortex mixer for mixing of samples in test tubes, vials, and small containers. ▪ Heavy-duty construction with stable operation at high speed ➤ <u>Construction & Design</u> ▪ Housing: tough, corrosion-resistant metal body with non-slip rubber feet. ▪ Sufficient weight and stability to prevent walking during use. ▪ Compact, benchtop design. ▪ Interchangeable mixing heads (supplied). ➤ <u>Performance</u> ▪ Speed range: 300 – 3,200 rpm, variable control. ▪ Mixing modes: - Touch mode: 1–60 seconds. - Hands-free/Timer mode: 1–60 minutes. - Continuous mode: unlimited. ▪ Speed control: smooth digital adjustment. ▪ Timer: digital timer with LED display.	

Item Description	Supplier Specifications
➤ <u>Controls</u> ▪ 3-way power switch (ON / OFF / TOUCH). ▪ Digital LED display for time and speed. ▪ Up/Down keys for set-point control. ➤ <u>Accessories (supplied with unit)</u> ▪ 2 × Stirring pads. ▪ 1 × Rubber cup head. ▪ Additional universal tube holder for multiple small tubes (preferred). ➤ <u>Safety Features</u> ▪ Overload protection for motor. ▪ Non-slip rubber base for stability. ▪ Automatic shut-off when overloaded.	

Item Description	Supplier Specifications
L16 Photometer Qty : 1  ➤ <u>General Requirements</u> ▪ Semi-automated, microprocessor-controlled clinical chemistry photometer. ▪ Designed for routine biochemical analysis of serum, plasma, urine, CSF, and other biological fluids. ▪ Compact, user-friendly design with touchscreen graphic display. ▪ Internal thermal printer included for on-site result printing. ➤ <u>Analytical Capabilities</u> ▪ Supported test types: End-point, Kinetic, Fixed-time, and multi-standard methods. ▪ Method storage capacity: ≥ 200 tests. ▪ Flow-through cell with 32 μL reaction volume (low reagent consumption). ▪ Integrated Peltier temperature control at 25 °C, 30 °C, and 37 °C for stable reaction conditions. ▪ Equipped with integrated aspiration pump and personalizable aspiration features. ▪ Built-in 8-position incubator at 37 °C for sample/reagent incubation. ▪ Must be open system. ▪ Sample repetition function must be supported. ➤ <u>Optical & Measurement System</u> ▪ Photometer wavelength range: 340–700 nm (or broader, specify). ▪ Photometer type: Dual-beam (preferred) or single-beam with reference correction ▪ Minimum 6 standard interference filters and additional to 3 positions for optional filters. ▪ High optical stability with minimal drift.	

Item Description	Supplier Specifications
➤ <u>Data Management & Output</u> ▪ Display of results on graphic color touchscreen. ▪ Results automatically printed via integrated printer. ▪ Connectivity: USB and/or Ethernet ports, LIS compatibility preferred. ▪ Storage: at least 500 patient results with QC data. ➤ <u>Accessories & Consumables</u> ▪ 50 rolls of thermal printer paper. ▪ Dust cover. ▪ 10 mm glass cuvettes (Qty: 10). ▪ 10 mm quartz cuvettes (Qty: 10). ▪ Cuvette rack. ▪ Pipettes, tubing, and flow-through cell. ▪ Initial reagent kit, calibrators, and QC materials sufficient for validation and training.	

Item Description	Supplier Specifications
L17 Microscope Fluorescent Qty: 1  ➤ <u>General Requirements</u> ▪ The microscope shall include: - Optical system: eyepieces, objectives, sub-stage condenser. - Body: observation tubes with diopter adjustment, interpupillary adjustment, and revolving nosepiece (minimum 4 positions). - Stage & controls: precision stage with coaxial X-Y controls. - Illumination system: suitable for both transmitted light and fluorescence excitation, with iris diaphragm, focusing knobs, and light port. ➤ <u>Observation Tube</u> ▪ Binocular with 45° inclination. ▪ Provision for auxiliary photo/video port (C-mount adapter included). ▪ Interpupillary adjustment: 48–75 mm range. ➤ <u>Eyepieces</u> ▪ Wide-field eyepieces 10×, FOV ≥ 22 mm. ▪ Anti-fungal coated lenses. ▪ Both tubes with adjustable diopters ➤ <u>Objectives</u> ▪ Minimum objectives supplied: 4×, 10×, 40×, and 100× oil immersion. ▪ Objectives shall be plan achromatic or better (plan fluorite preferred). ▪ Numerical aperture (NA): - 4×: ≥0.10 - 10×: ≥0.25	

Item Description	Supplier Specifications
- 40×: ≥ 0.65 (spring-loaded) - 100× oil: ≥ 1.25 (spring-loaded) ➤ <u>Magnification</u> ▪ Total magnification range: 40× to 1000× with supplied eyepieces and objectives. ➤ <u>Stage</u> ▪ Double-layer mechanical stage with roller-bearing mechanism. ▪ Stage travel: minimum 75 mm × 50 mm. ▪ Graduated vernier scales. ▪ X-Y coaxial controls positioned for ergonomic use. ➤ <u>Focusing</u> ▪ Coaxial coarse and fine focus knobs. ▪ Coarse focus with torque adjustment. ▪ Fine focus precision: 2 μm or finer. ▪ Focus lock and tension adjustment to prevent drift. ➤ <u>Illumination System</u> ▪ Transmitted light: LED illumination, ≥ 3 W, long-life ($\geq 50,000$ hrs), brightness adjustable. ▪ Fluorescence illumination: - High-intensity LED or mercury/xenon arc lamp (≥ 100 W) with power supply. - Integrated filter turret/cube system for at least 3 excitation/emission sets (e.g., DAPI, FITC, TRITC). - Dichroic beam splitter included. ➤ <u>Contrast Methods</u> ▪ Microscope shall support: bright field, phase contrast, dark field, and fluorescence. ▪ Polarizer/analyzer and interference contrast (DIC) available as optional accessories. ➤ <u>Accessories</u> ▪ Protective dust cover (sterile cover if required for operating room use). ▪ Immersion oil (1 bottle).	

Item Description	Supplier Specifications
L18 Incubator, Carbon Dioxide Qty : 1 ➤ <u>General Requirements</u> ▪ Laboratory-grade CO₂ incubator designed for tissue culture, cell culture, and biomedical research. ➤ <u>Chamber & Construction</u> ▪ Capacity: minimum 150 liters. ▪ Inner chamber: stainless steel, seamless, rust- and corrosion-resistant. ▪ Shelves: ≥ 3 stainless steel shelves, adjustable, autoclavable. ▪ Doors: - Outer insulated solid door. - Inner full-view glass door to observe samples without disturbing conditions. ▪ Insulation: High-grade thermal insulation for stable internal environment. ▪ Cabinet sterilization: chamber, shelves, and sensors must withstand ≥ 180 °C sterilization cycle. ➤ <u>Performance Parameters</u> ▪ Temperature range: Ambient +5 °C to 60 °C. ▪ Temperature accuracy: ± 0.1 °C. ▪ Temperature uniformity: ± 0.3 °C throughout chamber. ▪ CO₂ concentration range: 0 – 20%. ▪ CO₂ accuracy: ± 0.1%. ▪ CO₂ sensor type: Infrared (IR) sensor (preferred for accuracy and stability).	

Item Description	Supplier Specifications
▪ Humidity control: active system with automatic humidification; relative humidity $\geq$ 90% RH at 37 °C. ▪ Alarms: audible and visual alarms for temperature, CO₂, door open, humidity deviation. ➤ <u>Controls & Display</u> ▪ Digital microprocessor PID controller. ▪ Large LED/LCD display for temperature, CO₂ %, and humidity %. ▪ Password protection for settings. ▪ Data logging function with USB port or RS232/LAN connectivity (for traceability). ➤ <u>Safety Features</u> ▪ Automatic cut-off for over-temperature. ▪ Gas supply regulator with fail-safe shutoff. ▪ HEPA filter system for clean chamber air. ▪ Internal fan with air circulation system for uniformity. ▪ Door open alarm. ➤ <u>Accessories (to be supplied with unit)</u> ▪ CO₂ gas pressure regulator with dual gauge (inlet/outlet). ▪ CO₂ gas cylinder, medical grade, filled, $\geq$ 40 L. ▪ Humidity tray.	

Item Description	Supplier Specifications
L19 Balance, Analytical, electronic Qty : 1  ➤ <u>General Requirements</u> ▪ Laboratory-grade electronic analytical balance. ➤ <u>Performance</u> ▪ Weighing range: 0g to (220g); ▪ Readability (Resolution): 0.1 mg (0.0001 g). ▪ Repeatability: $\leq \pm 0.1$ mg. ▪ Linearity: $\leq \pm 0.2$ mg. ▪ Stabilization time: ≤ 3 seconds. ▪ Calibration: internal automatic calibration ➤ <u>Construction & Design</u> Large, intuitive 4.5 inches' color TFT as well three interface connections for easy data handling; ▪ Weighing pan: stainless steel, diameter ≥ 80 mm. ▪ Draft shield: fully enclosed, three sliding glass doors (left, right, top) to minimize air disturbance. ▪ Each glass shield is equipped with push-pull handle. ▪ Housing: corrosion-resistant, easy to clean. ▪ Controls: simple keypad or touch panel with numeric input.	

Item Description	Supplier Specifications
➤ Functions ▪ Tare, calibration, piece counting, percent weighing, density determination mode. ▪ Data memory for ≥ 100 results. ▪ Auto-zero tracking. ➤ Accessories (to be supplied with unit) ▪ Dust cover.	

Item Description	Supplier Specifications
L20 Bunsen burner Qty : 1 ➤ <u>Construction</u> ▪ Die-cast heavy base with anti-tilt design for stability. ▪ Stainless steel grid support. ▪ Burner tube made of rust-free, chrome-plated finish for durability and corrosion resistance. ▪ Height: approx. 120–150 mm. ▪ Base diameter: ≥ 75 mm. ➤ <u>Operation</u> ▪ Adjustable gas control valve. ▪ Adjustable air control sleeve for regulation of flame (safety flame to blue flame). ▪ Compatible with 6.5 mm ID flexible tubing (standard laboratory gas tubing). ▪ Flame temperature: $\geq 1,200$ °C (butane). ➤ <u>Gas Supply & Accessories</u> ▪ Each unit must be supplied complete with: - 1 × Bunsen burner with die-cast base, stainless steel grid, and chrome-plated tube. - 1 × Standard nozzle for 6.5 mm tubing. - 1 × Pressure regulator suitable for high-pressure butane. - 1 × High-pressure butane gas cylinder, 20 kg capacity, filled. - 1 × Rubber tubing, ≥ 1.5 m, heat-resistant, to connect burner with regulator. ➤ <u>Safety Features</u> ▪ Wide die-cast base to prevent tipping. ▪ Serrated nozzle for secure hose connection. ▪ Smooth flame adjustment from luminous to non-luminous flame. ▪ Pressure regulator must include safety shut-off.	

Item Description	Supplier Specifications
L21 Autoclave, laboratory Qty : 1  ➤ <u>General Requirements</u> ▪ Laboratory-grade steam autoclave for sterilization of instruments, media, glassware, and waste. ➤ <u>Chamber & Construction</u> ▪ Capacity: 40 liters ▪ Chamber material: high-grade stainless steel, seamless, corrosion-resistant. ▪ Outer body: stainless steel ▪ Safety door lock: pressure interlock system (door cannot open until pressure is released). ▪ Shelves: minimum two stainless steel baskets or perforated trays ➤ <u>Performance</u> ▪ Operating temperature range: 105 °C to 134 °C. ▪ Operating pressure: 0.8 to 2.1 bar (80–210 kPa). ▪ Sterilization cycle time: 0–99 minutes, programmable. ▪ Heating system: electric, automatic with thermostat/PID controller. ▪ Display: digital LCD/LED display for temperature, pressure, and cycle time. ▪ Control system: microprocessor controlled with programmable sterilization cycles. ▪ Built-in Printer ➤ <u>Safety Features</u> ▪ Automatic over-temperature cut-off. ▪ Pressure release valve and safety valve. ▪ Low-water level protection with automatic heater cut-off. ▪ Audible and visual alarms (over-pressure, low water, end of cycle). ▪ Door interlock safety system.	

Item Description	Supplier Specifications
L22 Chair blood sample taking Qty: 2  ▪ Specialized phlebotomy chair equipped with a hydraulic lift mechanism heavy duty that allows the height of chair seat to be easily adjusted from 20 inches to 28 inches. ▪ Durable arm rest assembly to be fully movable both horizontally and vertically to ensure optimum positioning for venipuncture and collection. Both arm rests are wide and padded for patient comfort. ▪ The reinforced chair shell and durable steel frame should be maintenance free. ▪ The arm rest tray should have a pull out drawer and a fixed tray for convenient storage. The drawer should contain a built in tube holder and multiple compartments for supplies. The tray should have raised sides. ▪ Both drawer and tray must be constructed of durable polyethylene thermoplastic that can be easily	

Item Description	Supplier Specifications
L23 Distiller, Water Qty : 1 ➤ General Requirements ▪ Laboratory-grade water distiller for producing distilled water suitable for analytical and general laboratory use. ➤ Performance ▪ Output capacity: 10 Liters of water/hour ▪ Conductivity of output water: $\leq 2 \mu\text{S/cm}$ (or $\geq 1 \text{ M}\Omega\cdot\text{cm}$ resistivity). ▪ Distillation method: all-glass or stainless-steel heater + condenser system. ▪ Water purity: free from pyrogens, particulates, and organics. ▪ Cooling water requirement: $\leq 1 \text{ L/min}$ at $15\text{--}30^\circ\text{C}$. ▪ Automatic shut-off if water feed is interrupted. ➤ Construction ▪ Boiler & condenser: high-quality borosilicate glass (preferred). ▪ Heating element: corrosion-resistant, sheathed immersion type, replaceable. ▪ Housing: durable, corrosion-resistant, easy to clean. ▪ Safety system: thermostat-controlled with overheat and dry-run protection. ▪ Open construction gives easy access to glassware and heaters ➤ Features ▪ Automatic re-start when cooling water is restored. ▪ Automatic power cut off in case of over temperature or low water level. Collection container. ▪ Continuous distillation cycle. ▪ Bench-top design. ▪ Drain valve for easy cleaning and descaling.	

Item Description	Supplier Specifications
➤ <u>Accessories (supplied with unit)</u> ▪ Storage reservoir (≥ 10 liters, borosilicate glass or polyethylene). ▪ Tubing set for inlet/outlet connections. ▪ Spare heating element (1 piece).	

Item Description	Supplier Specifications
➤ <u>Controls & Functions</u> ▪ Auto-buffer recognition (US/NIST standards). ▪ Auto-hold function for stable readings. ▪ GLP compliance: date/time stamping of calibration and measurement. ▪ Password protection for stored data (preferred). ➤ <u>Accessories (to be supplied with unit)</u> ▪ Electrodes: - 2 spare combination glass pH electrodes. - 1 temperature probe. ▪ Buffers & solutions: - 8 bottles of calibration buffer solutions (pH 4.01, 7.00, 10.01). - 1 bottle electrode storage solution. - 1 bottle electrode cleaning solution. ▪ Dust cover.	

Item Description	Supplier Specifications
L26 Micropipettes Qty : 2 ➤ <u>General Requirements</u> ▪ Laboratory-grade, fully autoclavable micropipettes. ▪ Ergonomic, lightweight design suitable for long-term laboratory use. ▪ Adjustable volume with clear digital/analog display. ▪ Compatible with standard universal pipette tips. ▪ Ejectable tip mechanism for safe disposal. ▪ Supplied in assorted set of 10 micropipettes. ➤ <u>Set Composition & Performance</u> ▪ 2 × Micropipettes - Volume range: 5–50 µL - Division (increment): 1 µL - Accuracy: $\leq \pm 1.5\%$ ▪ 5 × Micropipettes - Volume range: 50–200 µL - Division (increment): 1 µL - Accuracy: $\leq \pm 0.6\%$ ▪ 3 × Micropipettes - Volume range: 200–1000 µL - Division (increment): 10 µL - Accuracy: $\leq \pm 0.5\%$ ➤ <u>Accessories</u> ▪ Pipette stands/racks (suitable to hold full set). ▪ Starter pack of universal pipette tips (minimum 1,000 tips assorted sizes).	

Item Description	Supplier Specifications
L28 Thermometer, Electronic, laboratory Qty : 1  ➤ <u>General Requirements</u> ▪ Laboratory-grade electronic thermometer, digital type. ▪ Dual scale: °C (Celsius) display. ▪ Portable, lightweight, and robust for routine laboratory use. ➤ <u>Measurement Performance</u> ▪ Temperature range: –50 °C to +150 °C. ▪ Accuracy: ±0.1 °C across full range. ▪ Resolution: at least 0.1 °C. ▪ Response time: ≤ 5 seconds (in liquid). ➤ <u>Display & Controls</u> ▪ Clear digital display (LCD or LED). ▪ Simple one-button operation (ON/OFF, Hold). ▪ Low-battery indicator. ➤ <u>Probe</u> ▪ Supplied with detachable stainless-steel probe. ▪ Probe length: ≥ 100 mm. ▪ Probe cable: ≥ 1 m, heat-resistant and flexible. ▪ Protective probe cover or case included. ➤ <u>Power & Battery</u> ▪ Battery-operated. ▪ Auto shut-off feature to conserve battery.	

Item Description	Supplier Specifications
L30 Timer Qty : 3 ➤ <u>General Requirements</u> ▪ Electronic digital timer, specifically designed for laboratory use. ▪ Must provide two independent timing channels (dual timers) for simultaneous experiments. ▪ Functions: countdown and count-up (stopwatch). ➤ <u>Construction</u> ▪ Rugged, chemical-resistant ABS plastic housing. ▪ Fold-out stand, magnetic back, and clip for versatile mounting. ▪ Compact, lightweight design for bench-top use. ➤ <u>Performance</u> ▪ Timing range: 0 seconds to ≥ 99 hours, 59 minutes, 59 seconds. ▪ Accuracy: $\pm 0.01\%$ or better. ▪ Resolution: 1 second or better. ▪ Audible alarm/buzzer at end of countdown (distinct alarm for each channel). ▪ Memory recall of last set time for each channel. ➤ <u>Display & Controls</u> ▪ Large, clear digital LCD display showing both channels simultaneously. ▪ Individual Start/Stop and Reset buttons for each channel. ▪ Mode selection (Timer / Clock / Stopwatch). ▪ Low-battery indicator. ➤ <u>Power</u> ▪ Battery-operated. ▪ Auto shut-off to conserve power. ➤ <u>Accessories & Documentation</u> ▪ Spare battery (minimum 1)	

Item Description	Supplier Specifications
L31 pump suction Qty : 1  ➤ <u>General Requirements</u> ▪ Laboratory-grade suction pump with detachable collection bottle, suitable for microbiology, tissue culture, and general laboratory applications. ➤ <u>Performance</u> ▪ Vacuum pressure: adjustable, up to -0.8 bar (-80 kPa). ▪ Suction capacity: approx. 20 L/min. ▪ Noise level: ≤ 55 dB during operation. ▪ Continuous duty cycle: suitable for prolonged laboratory use. ➤ <u>Construction & Design</u> ▪ Pump: oil-free, chemical-resistant diaphragm pump. ▪ Resistance: pump materials must resist bleach and acetone vapors (for cell culture and disinfection use). ▪ Collection bottle: 1 × 1 L with sealed lid, overflow protection device, detachable, sterilizable (autoclavable). ▪ Tubing: minimum 1.25 m medical-grade silicone tubing. ▪ Bacterial filter: supplied, to prevent contamination of pump and environment. ▪ Controls: ON/OFF power switch with vacuum pressure gauge. ▪ Fittings: complete with all tubing, connectors, and clamps required for immediate operation. ➤ <u>Safety Features</u> ▪ Overflow protection to prevent liquid entry into the pump. ▪ Bacterial/HEPA filter to prevent biohazard spread.	

Item Description	Supplier Specifications
▪ Non-slip base and shock-absorbing housing. ▪ Overheat protection with auto shut-off. ➤ <u>Accessories (supplied with unit)</u> ▪ 1 × Spare bacterial filter. ▪ 1 × Spare silicone tubing set. ▪ 1 × Spare bottle seal/gasket.	

Item Description	Supplier Specifications
L32 Refrigerator table top Qty : 1 ➤ <u>General Requirements</u> ▪ Laboratory-grade tabletop refrigerator for storage of reagents, samples, and laboratory consumables. ➤ <u>Capacity & Construction</u> ▪ Net capacity: ≥ 90 liters. ▪ LCD Display on front. ▪ Door: glass door with internal illumination. ▪ Shelves: minimum 2 × stainless steel (SS 304) adjustable shelves. ▪ Cabinet interior: stainless steel or corrosion-resistant polymer, easy to clean. ▪ Cabinet insulation: high-density CFC-free foam for stable temperature. ▪ Door lock: 1 × safety lock with key. ➤ <u>Performance</u> ▪ Temperature range: +2 °C to +20 °C, adjustable. ▪ Uniformity: ± 2 °C across the chamber. ▪ Controller: microprocessor-based electronic control with LCD display. ▪ Defrosting automatic. ▪ Cooling system: forced-air circulation for uniform temperature. ▪ Refrigerant: CFC/HCFC-free, eco-friendly. ➤ <u>Alarms & Safety</u> ▪ Audio-visual alarms for: High/low temperature, Door open, Power failure. ▪ Auto restart with memory function after power failure. ▪ Visual alarm history on display.	

Item Description	Supplier Specifications
L33 Casework, laboratory/ meter Qty : 48  ➤ <u>Scope</u> ▪ Casework shall be supplied, installed, and measured per linear meter, covering all areas indicated in the tender drawings. ▪ The bidder shall be responsible for complete delivery, installation, civil, and electro-mechanical works associated with the casework system. ▪ Materials, finishes, and fixtures must be dedicated for laboratory use and resistant to heavy-duty conditions. ➤ <u>Casework Components</u> ▪ Work surfaces: - Material: Epoxy resin, phenolic resin, or equivalent laboratory-grade. - Properties: acid-, alkali-, solvent-, and heat-resistant ($\geq 500^{\circ}\text{C}$ short-term exposure). - Minimum thickness: 25 mm.	

Item Description	Supplier Specifications
▪ Under-bench storage (Drawers & Cabinets): - All casework modules shall include a combination of drawers and base cabinets as an integral part of the system. - Each 1.5 m length of bench shall include at least one drawer unit (≥ 3 drawers) and one cabinet unit (swing-door or sliding). - Cabinets and drawers must be factory-assembled, not loose furniture. - Drawer slides: full-extension, heavy-duty, corrosion-resistant (≥ 35 kg capacity). - Hinges/handles: stainless steel or epoxy-coated, chemical-resistant. ▪ Sinks & faucets: - Sinks shall be epoxy resin or polypropylene, acid- and alkali-resistant. - Faucets (hot/cold water) shall be laboratory-grade, epoxy-coated or stainless steel with removable spouts and vacuum breaker. - All accessories (drains, traps, overflows) must be included and shall be chemical-resistant. ▪ Electrical & Data Outlets - Each bench section should be equipped with outlets (Normal Supply sockets, UPS Sockets, Data outlets). - Each 1.5 m bench section shall include minimum 2 $\times$ sockets (normal supply), 2 $\times$ UPS socket, and 2$\times$ data point (RJ45 Cat6 or higher). - The UPS socket should be clearly marked and color-coded to distinguish from normal supply. - All wiring and conduits shall be concealed within the casework and terminated at the building's electrical/data distribution points by the supplier. ➤ <u>Drawings & Submittals</u> ▪ The bidder shall submit detailed shop drawings for approval prior to fabrication, showing: - Plan views, elevations, sections, and details of all casework. - Exact dimensions, materials, finishes, and hardware. - Sink and faucet placement with plumbing connections. ➤ <u>Installation</u> ▪ Casework shall be installed plumb, level, and securely fixed to floor and/or walls.	

Item Description	Supplier Specifications
L34 Freezer, laboratory Qty : 1  ➤ <u>General Requirements</u> ▪ Heavy-duty hospital/laboratory-grade freezer for safe storage of reagents, samples, and biological materials. ➤ <u>Capacity & Construction</u> ▪ Net capacity: ≥ 500 liters. ▪ Door: single, self-closing, reversible, with magnetic gasket seals, lock, and 90° dwell hinges. ▪ Finish: stainless steel (SS 304) interior and exterior. ▪ Shelves: ≥ 4 fully adjustable stainless steel wire shelves. ▪ Mobility: mounted on heavy-duty castors with locking brakes. ➤ <u>Performance</u> ▪ Temperature range: 0 °C to –30 °C, adjustable. ▪ Controller: microprocessor-based electronic control with digital set point adjustment. ▪ Temperature display: large front-mounted LCD display showing set temperature and actual temperature. ▪ Uniformity: ± 3 °C across chamber. ▪ Cooling system: forced-air circulation with frost-free evaporator. ▪ Defrosting: automatic hot gas defrost with condensate evaporator. ▪ Refrigerant: CFC/HCFC-free, eco-friendly. ▪ Condenser unit: hermetically sealed, top-mounted, fan-cooled condensing unit.	

Item Description	Supplier Specifications
➤ Safety & Alarms ▪ Audio-visual alarms for: High/low temperature, Power failure, Door open. ▪ Alarm memory log for tracking. ▪ Set point security with key-operated lock to prevent unauthorized changes. ▪ Chart recorder with 7-day continuous monitoring. ▪ Auto restart with memory recovery after power failure. ➤ Accessories (supplied with unit) ▪ 7-day chart recorder paper roll (starter pack).	

Item Description		Supplier Specifications
L35	Container, Tubes	Qty : 1
 ▪ Phlebotomy tray includes two removable tube racks each with a 32 tube capacity and one metal mounting bracket that holds a one quart sharps container. ▪ The tray ensures a storage area under the handle for gloves or tourniquets. ▪ Latched pull out drawer that has six compartments for concealed storage. ▪ To include a quart sharps container.		

Item Description	Supplier Specifications
L36 Refrigerator, laboratory Qty : 1  ➤ <u>General Requirements</u> ▪ A heavy-duty, laboratory-grade refrigerator designed for safe storage of reagents, samples, and sensitive laboratory materials under controlled temperature conditions ➤ <u>Capacity & Construction</u> ▪ Net capacity: not less than 700 liters. ▪ Interior chamber: stainless steel (SS 304) or corrosion-resistant, smooth finish, easy to clean. ▪ Exterior: stainless steel or powder-coated steel for durability. ▪ Shelves: minimum five stainless steel adjustable shelves. ▪ Doors: self-closing, lockable; fitted with heavy-duty hinges and magnetic gasket seals. ▪ Lighting: internal LED illumination. ▪ Mobility: heavy-duty castors with front locking brakes ➤ <u>Performance</u> ▪ Operating temperature range: +2 °C to +15 °C. ▪ Temperature accuracy: ±0.5 °C. ▪ Uniformity: ±2 °C throughout the chamber.	

Item Description	Supplier Specifications
▪ Cooling system: forced-air circulation with fan-driven uniform airflow. ▪ Defrosting automatic frost-free system. ▪ Refrigerant: CFC/HCFC-free, environmentally friendly. ➤ <u>Controls & Monitoring</u> ▪ Microprocessor-based electronic controller. ▪ Large digital display showing set temperature and actual temperature. ▪ Remote temperature sensor included. ▪ Programmable high and low temperature alarm limits. ▪ Alarm system: audible and visual alarms for: High/low temperature deviations, Power failure, Door open condition. ▪ Alarm silence function with automatic reactivation. ▪ Automatic data recording with built-in 7-day chart recorder. ➤ <u>Safety & Backup</u> ▪ Dual refrigeration system with automatic switchover to backup compressor. ▪ Automatic restart after power restoration. ▪ Password-protected control panel to prevent tampering. ▪ Door lock with keys for security. ➤ <u>Connectivity</u> ▪ USB Ports, LAN , Other (Specify) ➤ <u>Accessories (included with supply)</u> ▪ 1 starter pack of chart paper rolls (≥300 charts). ▪ 15 chart recorder pens.	

Item Description	Supplier Specifications
L37 Balance Qty : 1 ▪ Full range tare, Zero Tracking ▪ Large easy to read LCD display ▪ Electronic; weighing range 5000g; ▪ readability 0,1g; ▪ Lightweight and portable ▪ Color coded, sealed keypad ▪ Lightweight and portable ▪ Simple user-friendly operation ▪ Precision load cell technology ▪ Splash proof to protect from accidental spills ▪ External calibration ▪ Low battery indication ▪ Auto sleep / power down function to save battery life ▪ Power– Battery or AC power (Battery to be included) ▪ Operator Keys– On/Off/Zero, Tare, Units (lb, kg, lb/oz), Hold/Print,	

Item Description		Supplier Specifications
L38	Mixer Blood	Qty : 1
 - flexible lab mixer and lab rotator - Rotates 5 - 60 RPM - Capable of performing three modes of mixing, all of which are programmable and can all be used in the same mixing run. - can hold many different sizes of test tubes ranging from 1.5 ml to 50 ml - Mixer, blood; Aliquot mixer - LCD Display : Timer & Speed		

Item Description		Supplier Specifications
L39	Blood Tube Sealer	Qty : 1
 ▪ Compact design, with light-weight sealing tongs ▪ Efficient battery >4.5 Ah ▪ Lightweight, portable and heavy duty ▪ Working Temperature: 0 °C to 50 °C, Humidity: 10 to 90% ▪ More than 1,000 seams per battery charge ▪ For sealing blood collection tubes; complete with roller and cutter. ▪ Radio Frequency Output: 20W ▪ Sealing Time : 0.5 to 1.5 Sec ▪ Oscillation Frequency: 40.68 Mhz ▪ LED indication for System Ready, Sealing, Battery and power ▪ Integral charger ▪ Transport case		

Item Description		Supplier Specifications
L40	Thermo/Shaker for Microtube	Qty : 1
 ▪ Efficient and highly versatile ▪ Ideal for applications requiring microtube and microplate heating and shaking ▪ Suitable for use in cold rooms and incubators ▪ Operating temperature range 4 to 100 °C ▪ Compact benchtop incubator without shaking ▪ Microtube shaker without temperature control ▪ Thermostatic precision; fixed shaking speed of 200 oscillations per minute; ▪ Hotplate and shaker may be used separately; ▪ Top plate 300mm x 300mm ▪ Complete with control panel;		

Item Description		Supplier Specifications
L41	Blood Tube Striper	Qty : 1
 ▪ Light aluminum alloy with stainless steel adjustable wheels on bearings. ▪ Easy and ergonomic to use, it permits quick stripping of any tubing. ▪ To have plastic roller; for emptying blood donation tubes.		

Item Description	Supplier Specifications
L42 Laboratory Information System (LIS) Qty: 1 ➤ General Requirements ▪ The LIS shall automate clinical laboratory operations, including test ordering, result reporting, billing transactions, and specimen tracking. ▪ The system shall enable monitoring of laboratory performance, productivity, and QA/QC procedures. ▪ It shall support communication of diagnostic test results to physician offices, clinics, and other healthcare facilities (outreach). ▪ The LIS shall handle a workload of at least 100 patients per day. ➤ Hardware Requirements ▪ Server: Central database/server dedicated for LIS (not counted as a workstation). ▪ Workstations (Terminals): - Minimum of three (3) fully configured terminals (monitor, CPU, keyboard, mouse). - All terminals shall be LAN-connected to the LIS server for real-time synchronization. ▪ Printer: - At least one (1) shared network printer unit, accessible from all terminals. ▪ Barcode System: - One (1) barcode label printer. - Minimum of three (3) handheld barcode scanners (USB or wireless) for phlebotomy and specimen tracking. ▪ Platform: PC-based, running Windows operating system. ▪ Display: Each terminal equipped with a minimum 19" LED screen. ▪ Storage: Capacity to store ≥10,000 patient records. ▪ Networking: Client/Server architecture, HL7 compliant, Ethernet TCP/IP. ▪ Interfacing: Capability to connect with at least five (5) laboratory instruments (e.g., chemistry analyzer, hematology analyzer, microbiology system) with full bi-directional communication (worklist download from LIS to analyzer and results upload from analyzer to LIS), using HL7 or ASTM protocols. ▪ Redundancy & Power: - Server with RAID storage or mirrored disk for redundancy. - UPS backup for server and network devices to ensure at least 30 minutes operation in case of power failure.	

Item Description	Supplier Specifications
➤ <u>Software Requirements</u> ▪ Clinical Features - General laboratory (chemistry, hematology). - Anatomic Pathology. - Cytology. - Phlebotomy. - Microbiology. - Specimen tracking. - Ad hoc reporting. ▪ Management Features - Barcoding integration. - Cumulative QC & statistics. - Patient / Physician directory. - Direct printing of reports. - Results reporting with electronic signature. - User access control & audit trail (system security). - Inventory control. - Billing functions. ▪ Additional Features - Analyzer Integration: The LIS shall support two-way communication with connected analyzers, including automatic worklist transfer, results capture, QC data exchange, and error flag reporting, without manual re-entry. - Specimen Tracking: End-to-end bar-coded specimen tracking. - Automation Support: Control and integration with laboratory automation systems. - Result Verification: Automatic verification of test results against predefined rules. - Alerts: Visual and audible alerts for abnormal or failed results. - Parameter Definition: Customizable test codes, units, collection tube types, reference ranges, worksheet formats, and QC protocols. - Worklists: Automated workstation and instrument worklist generation.	

Item Description	Supplier Specifications
- Reflex Testing: Automatic ordering/cancellation of tests based on prior results. - Tele-pathology: Transmission of pathology images for remote consultation. - Data Exchange: Full HL7 support for integration with HIS/EMR systems.	

Item Description	Supplier Specifications
L43 Refrigerator, Blood Bank Qty: 1 The 4 °C Blood bank refrigerator shall be designed for the storage of the cross matched blood. ▪ Microprocessor-based temperature controller with a temperature range between +2°C to +6°C ▪ Cooling Temperature: +4°C ▪ The refrigerator shall have a net usable internal volume between 160 and 200 liters. ▪ It shall be capable of accommodating at least 100 standard 450 mL blood bags, ▪ Cabinet Type: Upright ▪ LCD display of temperature with a precision of $\pm 0.1^{\circ}\text{C}$ ▪ Display: minimum 4 Inches LCD Display ▪ Should be provided with a temperature recorder ▪ Should have two temperature sensors ▪ The external cabinet should be of rust proof material with anti-bacterial powder coating ▪ Should have minimum of 5 S/S adjustable drawers with dividers for sorting the stored blood bags ▪ Should have an internal light ▪ Door shall be lockable, insulated, and gasket-sealed for safety. ▪ Should have a forced air circulation system to maintain temperature uniformity at all shelf levels ▪ Recovery time: After 30-second door opening, temperature shall return to +2 °C to +6 °C within 10 minutes. ▪ Should have sensors for activating automatic defrost cycles ▪ Should have visual and audible indication for: -High and Low temperature -Door Ajar -Power failure -Temperature sensor failure -Compressor failure ▪ Should be equipped with castors, 2 castors with braking system ▪ Battery backup for minimum 2 hours in case of main power failure ▪ Integrated digital data logger with memory for ≥ 30 days, USB/Ethernet port for export.	

Item Description	Supplier Specifications
PACKAGE (M) - MONITORING	
M01 Monitoring unit, Mobile Qty: 8	
 ➤ <u>General Technical Requirements</u> ▪ Spot Check - 3 parameters - monitor designed to be used on adult and pediatric patients and allowing vital signs checking ▪ Continuous display on screen of patient non-invasive blood pressure (NIBP), body temperature and SpO2 ▪ Dynamic user configured digital display that can show all active parameters ▪ Unwanted parameters can be deselected from display ▪ Operator can set audio-visual alarm levels for low or high levels of each parameter independently. ▪ Operates from mains voltage or from internal rechargeable battery ▪ Design must enable use in demanding environments, e.g. shock, vibration and free fall tests as per tests ▪ Protections of all the functions against defibrillator discharges and electrosurgical units ▪ Easy to clean equipment with standard on-the market cleaning chemicals (specify) ▪ Enclosure to have ingress protection level IPX1 or better ▪ Capable of operating continuously in ambient temperature of 10–40°C and relative humidity of 15–85%	

Item Description	Supplier Specifications
➤ <u>Display</u> - Minimum screen size: 7-inch (diagonal) color TFT/LCD. - Display features: Multi-parameter display with simultaneous waveforms and numeric values, adjustable brightness, and clear visibility under ambient light in clinical settings. - Knob controlled or touch screen interface ➤ <u>SpO2</u> - Measurement range at least 70–99 % - Accuracy better than $\pm 3\%$ and minimum gradation 1% - Disconnect & failure detection - Disposable and reusable probes compatible ➤ <u>Non-Invasive Blood pressure (NIBP)</u> - Internal pump for cuff inflation for non-invasive blood pressure measurement with over pressure protection - Any approved method (specify) - Monitoring range at least 30–270 mmHg - Resolution: 1mmHg - Manual & Automatic measurement modes - User selectable measurement interval - Cuff pressure display - Quick hose connection - Patient categories: neonatal/pediatric and adult ➤ <u>Temperature</u> - Electronic Thermometer reading with Interchangeable Oral Probe and Pediatric and Adult Temperature Axillary Probes - Temperature range at least 30 to 45°C, minimum gradation 0.1°C - Oral Probe with at least 1 m Cord - Axillary Probe with at least 1 m Cord - Readings in Fahrenheit or Celsius ➤ <u>User adjustable settings</u> - Audio-visual alarms required: high and low levels for each parameter (operator variable settings), sensor/wire/probe disconnected, low battery - Alarms muting	

Item Description	Supplier Specifications
➤ <u>Alarms</u> ▪ Audible and visual ▪ Alarm override and temporary alarm silence facility to be included ▪ High and low levels for each monitored parameter with default settings and operator variable settings ▪ Sensor/wire/probe disconnected ▪ Cuff leak, cuff disconnect, hose leak, inflation/deflation errors ▪ Failure to take successful reading ▪ Low battery ▪ Power failure ➤ <u>Consumables / single use accessories to be delivered</u> ▪ Temperature Probe covers Qty: 2000 ➤ <u>Reusable accessories to be delivered</u> ▪ All the cables, sensors and connectors needed for full monitor functionality are to be included in the bid ▪ Reusable SpO2 probes adult with approx. 2-meters extension cable: 1 probe ▪ Reusable SpO2 probes pediatric use with approx. 2-meters extension cable: 1 probe ▪ NIBP cuffs: 1 pediatric reusable cuff and 3 adult reusable cuffs (1 medium, 1 large and 1 XL) ▪ Oral Temperature Probe ▪ Axillary Temperature Probes (adult and pediatric) ▪ Battery: 1 set ➤ <u>Portability and Mounting</u> ▪ Monitor delivered with its factory original trolley along with all accessories ▪ The body of the cart should be made of high-quality aluminum alloy ▪ Foot control pneumatic lifting design for different heights ▪ Height adjustment: 80 to 130 cm ▪ Easy transition (five dual wheel caster) over uneven surface, antistatic, 2 with brakes ▪ Caster diameter: 5cm ▪ Cart load up to 25 Kg ▪ High quality utility basket with cable hook	

Item Description	Supplier Specifications
➤ <u>Connectivity</u> ▪ Hardwired RJ45 network interface or equivalent ▪ HL7 connectivity ➤ <u>Power supply</u> ▪ Operates from AC power electric line: 100–240 V AC $\pm 10\%$ / 50–60 Hz $\pm 10\%$ of nominal value ▪ Built-in rechargeable battery ▪ Automatic switch from AC power electric-line mode to battery operating mode and vice versa ▪ Continuous on battery operating mode for not less than 1 hour ▪ Total re-charging time not greater than 6 hours	

Item Description	Supplier Specifications
M01a Monitoring unit, Wall Mounted Qty: 18 ➤ <u>General technical requirements</u> ▪ The monitor shall be designed for use on both adult and pediatric patients. ▪ Continuous display on screen of patient ECG, heart rate, respiration rate (RR), non-invasive blood pressure (NIBP), body temperature, SpO2 ▪ Dynamic user configured digital display that can show all active parameters ▪ Unwanted parameters can be deselected from display ▪ Operator can set audio-visual alarm levels for low or high levels of each parameter independently. ▪ Operates from mains voltage or from internal rechargeable battery ▪ Design must enable use in demanding environments, e.g. shock, vibration and free fall tests as per tests ▪ Protections of all the functions against defibrillator discharges and electrosurgical units ▪ Pace-maker detection ▪ Easy to clean equipment with standard on-the market cleaning chemicals (specify) ▪ Enclosure to have ingress protection level IPX1 or better ▪ Capable of operating continuously in ambient temperature of 10–40°C and relative humidity of 15–85% ➤ <u>Display</u> ▪ Min 12.1-inch color display ▪ Minimum resolution 800 x 600 pixels ▪ Up to 10 waveforms ▪ Split screen display ▪ Knob controlled or touch screen interface ➤ <u>ECG</u> ▪ ECG patient connectors that are sterilizable and reusable ▪ Multichannel 5 simultaneous leads ECG measurement with selectable display ▪ Pacemaker detection ▪ Auto cable detection (lead off) ▪ Defibrillator overload protection ▪ Accuracy: $\leq 5\%$ or 5 bpm. ▪ Heart rate measurement range to be at least 30–250 bpm, with accuracy better than ± 5 bpm and minimum gradation 1 bpm.	

Item Description	Supplier Specifications
➤ <u>Respiration</u> ▪ Any approved method (specify) ▪ RR measurement range at least 0–100 bpm with minimum gradation 1bpm ▪ RR waveform display ➤ <u>SpO2</u> ▪ Measurement range at least 70–99 % ▪ Accuracy better than $\pm 3\%$ and minimum gradation 1% ▪ Disconnect & failure detection ▪ Disposable and reusable probes compatible ➤ <u>Non-Invasive Blood pressure (NIBP)</u> ▪ Internal pump for cuff inflation for non-invasive blood pressure measurement with over pressure protection ▪ Any approved method (specify) ▪ Monitoring range at least 30–270 mmHg ▪ Resolution: 1mmHg ▪ Manual & Automatic measurement modes ▪ User selectable measurement interval ▪ Cuff pressure display ▪ Quick hose connection ▪ Patient categories: neonatal/pediatric and adult ➤ <u>Temperature</u> ▪ Temperature probe to be reusable, external skin contact type, but consumable to protect between patients or disinfection method explained. ▪ Temperature range at least 30 to 45°C, minimum gradation 0.1°C ➤ <u>Trending</u> ▪ Full disclosure for all parameters ▪ Graphical and tabular forms ▪ Memory storage: 72 hours ▪ Programmable sampling frequency for tabular values recording	

Item Description	Supplier Specifications
➤ <u>Calculations</u> ▪ ST analysis capable ▪ Full arrhythmia calculations (on all leads) ➤ <u>User adjustable settings</u> ▪ User operated 1 mV ECG test marker function required ▪ Adjustable screen configuration preferably for each parameter ▪ Include different users and user-preference configuration ▪ Audio-visual alarms: high and low levels for each parameter, alarm muting and alarm override ▪ Parameters manual zeroing and calibration ▪ Monitor reset to factory settings ▪ Others (specify) ➤ <u>Alarms</u> ▪ Audible and visual ▪ Alarm override and temporary alarm silence facility to be included ▪ High and low levels for each monitored parameter with default settings and operator variable settings ▪ Sensor/wire/probe disconnected ▪ Cuff leak, cuff disconnect, hose leak, inflation/deflation errors ▪ Failure to take successful reading ▪ Low battery ▪ Power failure ➤ <u>Consumables / single use accessories to be delivered</u> ▪ Disposable ECG Electrodes: 200 ➤ <u>Reusable accessories to be delivered</u> ▪ All the cables, sensors and connectors needed for full monitor functionality are to be included in the bid ▪ ECG cable of a length of at least 2 meters with a trunk: 1 per equipment ▪ Reusable SpO2 probes adult with approx. 2-meters extension cable: 1 probe ▪ Reusable SpO2 probes pediatric use with approx. 2-meters extension cable: 1 probe ▪ NIBP cuffs: 1 pediatric reusable cuff and 3 adult reusable cuffs (1 medium, 1 large and 1 XL) ▪ Temperature probes: 2 probes one rectal, one for esophagus	

Item Description	Supplier Specifications
▪ Battery: 1 set ➤ <u>Mounting Unit</u> ▪ The monitor shall be supplied with its original factory wall-mounting stand. ▪ All required accessories for wall-mounting shall be included and delivered together with the monitor. ▪ The monitor, along with its wall-mounting stand and accessories, shall be properly installed at the designated site. ➤ <u>Connectivity</u> ▪ Hardwired RJ45 network interface or equivalent ▪ Interface for central station and Interbed connectivity ▪ HL7 connectivity ➤ <u>Power supply</u> ▪ Operates from AC power electric line: 100–240 V AC $\pm 10\%$ / 50–60 Hz $\pm 10\%$ of nominal value ▪ Built-in rechargeable battery ▪ Automatic switch from AC power electric-line mode to battery operating mode and vice versa ▪ Continuous on battery operating mode for not less than 1 hour ▪ Total re-charging time not greater than 6 hours	

Item Description	Supplier Specifications
M01b Neonatal Monitor Qty: 3 ➤ <u>General Technical Requirements</u> ▪ Patient monitor for neonatal cases ▪ Patient age range: preterm, neonates and term Infants up to 10 Kg ➤ <u>Technical Characteristics</u> ▪ Shall be fully compatible for all preterm, neonates and term infant's patient categories/case mix ▪ Modular monitor type ▪ Modules shall be fully swappable with other patient monitors from same manufacturer without hardware or software modifications ▪ Automatic self-test at switch on ➤ <u>Display and screen</u> ▪ Screen size: 15" Medical grade, LCD color or better ▪ Simultaneous display of 6 channels/waveforms ▪ Preset and configurable interfaces/layouts ➤ <u>ECG and Heart Rate</u> ▪ 3 leads monitoring for neonate ▪ Available leads: I, II, III, V, AVR, AVL, AVF, V1, V2, V3, V4, V5 & V6 ▪ Accuracy of $\pm 1\%$ or ± 1 beat / min ▪ ST segment analyzer: Analyze all 12 lead ST segment ▪ Heart rate range: 15 – 300 bpm ▪ Advanced full arrhythmia detection algorithm ▪ Classification of different types of arrhythmias including at least: ventricular fibrillation, ventricular tachycardia, supraventricular tachycardia, ventricular bigeminy, Sinus bradycardia and Asystole ➤ <u>SpO2 and Pulse Rate</u> ▪ Range: 1 – 100% ▪ Accuracy of SpO2 better than $\pm 3\%$ for range 70-99 ▪ Pulse rate range at least 30 to 240 bpm ▪ Accuracy of pulse rate better than ± 3 bpm ▪ Signal strength or quality to be visually displayed ▪ Plethysmograph display is mandatory ▪ Should be sensitive and function accurately even at low perfusion states of low blood	

Item Description	Supplier Specifications
pressure or hypothermic conditions as per Range:10mmHg-135mmHg for neonates ▪ Preferable masimo technology ➤ <u>Respiration</u> ▪ Respiration monitoring via impedance calculation, through ECG lead ▪ Range: 1 – 150 rpm ▪ Accuracy: ± 2 rpm ➤ <u>Temperature</u> ▪ Simultaneous measurement and display of 2 channels ▪ Range: 0 – 45° C ➤ <u>Non-Invasive Blood Pressure</u> ▪ Oscillometric method ▪ Manual and automatic activation ▪ Over pressure protection ▪ Range: 10-135 mmHg for neonates ➤ <u>ETCO2 (Capnography)</u> ▪ Side-stream capnography ▪ Measurement range: 0.0 ~ 10% or better ▪ Resolution: maximum 1 mmHg ▪ Sampling flow to be specified ▪ Rise Time: CO2 maximum 200 ms ▪ Total system response time: CO2 max 5 sec ▪ Unit selection: %, mmHg, kPa ▪ Accuracy: < 5% CO2, $\pm 3\%$ (± 2.0 mmHg) ➤ <u>IBP</u> ▪ Dual channel IBP ▪ Measure all types of Invasive pressures ➤ <u>Events Log</u> ▪ Event log for errors traceability ▪ Ability to store and display patient's events: maximum number of events that can be stored shall be 1000 or better ▪ Ability to save and record graphical trends: minimum 72 hrs	

Item Description	Supplier Specifications
▪ Ability to store and display alarm history: minimum 72 hours or more ➤ <u>Networking and connectivity</u> ▪ Shall be networkable to share data with hospital networks ▪ Shall be networkable to share data with a central station via local area network (LAN) ▪ Shall facilitate report generation via networked printer and recorder ➤ <u>Alarm Features</u> ▪ The below listed alarms should be adjustable, and trigger both visual and audible notifications when activated ▪ All alarms are adjustable by the clinician and medical staff ▪ The alarm tones can be regulated from high to low tonality to alarm off at least: - Apnea Alarm - Bradycardia - Tachycardia - Low respiratory rate - High respiratory rate - Saturation low - Saturation high - Blood pressure low (systolic, diastolic, mean) - Blood pressure high (systolic, diastolic, mean) - Temperature low - Temperature high - Power failure alarm - System fault alarm - Battery low ➤ <u>Material and Design</u> ▪ All Surfaces and material should be easy to clean with standard on-the market hospital grade cleaning chemicals ▪ All proposed medical devices and accessories should withstand shocks and mechanical vibration ▪ The machine should be compact, portable with built in rechargeable battery & light weight. ➤ <u>Accessories</u> ▪ All Standard accessories for ECG, NIBP, SPO2, IBP, Temp, and ETCO2 ▪ Additionally, provide the below listed accessories:	

Item Description	Supplier Specifications
▪ ECG cables with 3 leads - Qty:2 ▪ Cuff set reusable, all dimensions newborn - Qty: 15 from each size (cuffs Sizes: 1,2, 3) ▪ Reusable newborn SpO2 sensor - Qty:2 ▪ Disposable newborn SpO2 sensor with cable - Qty: 100 disposable Spo2 sensor ▪ ECG electrodes for newborn/infant - Qty: 500 pcs ▪ Rectal temperature cable - Qty: 2 ▪ Skin temperature cable - Qty: 2 ▪ IBP cable Qty: 4 ▪ IBP transducers - Qty: 30 ▪ Reusable ETCO2 sensor - Qty: 2 ▪ Manufacturer's original wall mounted stand, adjustable height and orientation with basket ➤ <u>Mounting Unit</u> ▪ The monitor shall be supplied with its original factory wall-mounting stand. ▪ All required accessories for wall-mounting shall be included and delivered together with the monitor. ▪ The monitor, along with its wall-mounting stand and accessories, shall be properly installed at the designated site. ➤ <u>Power Requirements</u> ▪ Input voltage compatibility: 210V-240V ▪ Input frequency: 50 Hz. ▪ Input power cord: heavy duty with earthing and adaptable to hospital outlets (e.g. EU type or US) ▪ Backup batteries should be internal Lithium battery or equivalent, easily replaceable by the end-user without having to dismantle the equipment, rechargeable and allow operation for a minimum of at least 2 hours in the event of power failure ▪ Battery charger to be integral to mains power supply, with the ability to charge batteries during mains power operation of the unit ▪ The machine should work on mains without an installed battery	

Item Description	Supplier Specifications
M02 Crash Cart with Defibrillator w/ Monitor Qty : 6  Mobile cart with 4 lockable drawers and defibrillator transport tray. Handle Bar, self-support brackets, arm extension and at least three electrical outlets for ancillary equipment. ➤ <u>Defibrillator Unit</u> ▪ General Technical Requirements - Lightweight, easy-to-operate, portable biphasic external defibrillator with ECG monitoring, supporting both semi-automatic and manual modes, and equipped with audible and visual alarms. - Out of the total required quantity, at least two (2) units shall also be provided with an integrated transcutaneous pacemaker. - Delivered energy maximum range between 200-260 joules - Charging time less than 6 seconds - Display of selected and delivered energy - ECG acquisition via Paddles and patient cable with lead fault indicator - Large screen display (LCD or LED) with multiple parameters display: selected ECG lead, alarm messages, variable sensitivity, heart rate, delivered energy and alarm limits - ECG recorder with selectable paper speed, auto and manual print of time / date /lead / gain / heart rate / operating mode annotation - Automatic ECG printout after shock delivery showing delivered energy - Enclosure to have ingress protection level IPX1 or better - Capable of operating continuously in ambient temperature of 10–40°C and	

Item Description	Supplier Specifications
relative humidity of 15–85% ▪ Defibrillation modes - Synchronized and non-synchronized biphasic defibrillation - External defibrillation via paddles - External defibrillation via adhesive pads - Paddle contact quality indication - Paddle controls to include at least charge and discharge (and preferably energy select) - Semi-automated defibrillation with voice prompts/controls ▪ Alarms - Adjustable ECG alarm limits - ECG alarm limits (HR high/low). - Probe/paddle off or poor contact alarm. - Low battery and charging failure alarm. - System error codes. ▪ Pacemaker - Noninvasive (fixed, override or on demand) pacer modes possibilities with 50 to 150 ppm pacing rate ▪ Consumables / single use accessories to be delivered - ECG paper: 5 rolls or packs - Pacing Electrodes: 10 sets - ECG electrodes: 100 Reusable accessories to be delivered - Delivery to include the standard set of accessories for the complete proper function of the unit including adult and pediatric paddles, 3 leads ECG cable ▪ Power supply - Operates from AC power electric line: 100–240 V AC $\pm 10\%$ / 50–60 Hz $\pm 10\%$ of nominal value - Removable rechargeable battery - Automatic switch from AC power electric-line mode to battery operating mode and vice versa - Continuous on battery operating mode for at least 2 hours of continuous ECG monitoring or 20 discharges at maximum energy	

Item Description	Supplier Specifications
- Total re-charging time not greater than 6 hours ➤ <u>Cart Unit</u> The Cart should include the following items: ▪ Oxygen supply system with 2 cylinders. ▪ Suction unit ▪ Venture system. ▪ Oxygen flow meter 0-15 liter/minute. ▪ Laryngoscope set with adult/child/infant blades. ▪ Guedel airway set, size 0 to 8. ▪ Set of oxygen therapy masks (adult & pediatric). ▪ Set of endotracheal tubes, size 5-10 mm with 15mm ISO connectors. ▪ Resuscitation bags (children/infant) with masks. ▪ Suction handle and tubing. ▪ Tourniquet with Velcro fasteners. ▪ Artery forceps, magill forceps. ▪ Suture scissors, dressing scissors. ▪ Penlight; bite stick; nasal canula set. ▪ Stopwatch, rail mounted. ▪ Sphygmomanometer, rail mounted, complete with adult and pediatric cuffs. ▪ Stethoscope ▪ Angle poise lamp ▪ Telescopic infusion pole.	

Item Description	Supplier Specifications
M03 ECG Recorder, 6-Channels Qty : 4  ➤ <u>General Technical Requirements</u> ▪ ECG machine with 6 simultaneous channels, mounted on a trolley. ▪ Suitable for adult, pediatric, and neonatal patients. ▪ Manual and automatic recording modes. ▪ Printout options: 3 or 6 channels. ▪ Sensitivity: at least 3 selectable levels. ▪ Chart speeds: 5, 10, 25, and 50 mm/sec. ▪ Programmable channel selection. ▪ Preferably with a color display or touchscreen. ▪ Diagnostic frequency range: 0.05 – 150 Hz. ▪ Built-in filters for line frequency, low-pass, muscle artifact, and high-frequency noise reduction. ▪ Thermal printer with Z-fold ECG paper (minimum A5 size or equivalent). ▪ Operation on rechargeable battery and AC line power. ▪ Defibrillator overload protection. ▪ Automatic calibration signal/test on startup. ➤ <u>Recorded Information</u> ▪ Patient information: name, ID. ▪ Date and time of recording. ▪ Leads being recorded. ▪ Sensitivity setting. ▪ Chart speed. ▪ Heart rate (HR). ▪ Event marker and arrhythmia detection.	

Item Description	Supplier Specifications
▪ Internal memory for at least 200 patients. ➤ <u>Visual Indicators</u> ▪ Line power indicator. ▪ Battery status indicator. ▪ Leads-off indicator. ➤ <u>Accessories & Consumables</u> ▪ Single-use consumables ▪ Patch electrodes: 200 pcs. ▪ ECG gel: 3 × 250 ml bottles. ▪ 1 box of compatible ECG paper (A5 or equivalent). ➤ <u>Reusable accessories</u> ▪ Patient cable (ECG Cable 12-leads compatible with patch electrodes) ▪ Color-coded limb clamps: 4 pcs. ▪ Chest electrodes (ventose): 6 pcs.	

Item Description	Supplier Specifications
M03a ECG Recorder, 12-Channels Qty: 2  ➤ General Technical Requirements ▪ ECG Machine, 12 Lead mounted on a Trolley ▪ It should be suitable for all Patient Categories ▪ 12 Channels acquired simultaneously ▪ Manual and Automatic Operation ▪ 3 or 6 or 12 Channel print out ▪ At least 3 selectable sensitivity levels ▪ Chart speeds: 5, 10, 25 and 50 mm/sec ▪ Programmable channel selection ▪ Preferably colored touch screen interface minimum 7 Inches ▪ Diagnostic frequency range: 0.05 to 150 Hz ▪ Filtered frequency ranges: any line frequency, low and muscle artifact/high frequency ▪ Printer paper size A4 ▪ Shall be capable of operating on either rechargeable battery or line power ▪ Shall have defibrillator overload protection ▪ Automatic calibration signal/test should be in each starting cycle ➤ ECG machine minimum recorded information ▪ Patient information: name, ID ▪ Recording date and time ▪ Sensitivity setting ▪ Chart speed ▪ Leads being recorded ▪ Heart rate (HR) ▪ Event marker and arrhythmia printout ▪ Trends and internal memory storage capacity for at least 200 patients	

Item Description	Supplier Specifications
➤ <u>ECG machine minimum visual indicators</u> ▪ Line power indicator ▪ Battery status ▪ Leads-off indicator ➤ <u>Calculations and arrhythmia detection</u> ▪ Shall measure all basic axes and durations including: RR, PQ, QT, ATC, P, QRS, T and HR ▪ Shall identify arrhythmias ➤ <u>Consumables / single use accessories to be delivered</u> ▪ Patch electrodes: 200 ▪ ECG gel: 3 Bottles 250 ml ▪ 1 box of A4 paper ➤ <u>Reusable accessories to be delivered</u> ▪ Patient cable (ECG Cable 12-leads compatible with patch electrodes) ▪ Color coded limb clamps: 4 ▪ Set of chest electrodes (ventose): 6 ➤ <u>Portability & Mounting</u> ▪ Trolley mounted with cart including one drawer and arm support to handle the ECG cable ➤ <u>Connectivity</u> ▪ LAN, USB, other specify	

Item Description	Supplier Specifications
M04 Central Monitoring Station w/6 Monitors Qty : 1  ➤ <u>General Technical Requirements of the Central Monitoring System Station</u> ▪ Central monitoring system station (CMS) should be capable of displaying patient's vital information from any bedside monitor within the system ▪ Displays the Following parameters: EKG, respiratory rate (RR), blood pressure (systolic, diastolic, and mean) Invasive and noninvasive (IBP and NIBP), body temperature, arterial hemoglobin oxygen saturation (SpO2), cardiac output, full arrhythmia and other parameters if included in the bedside monitors configurations ▪ <u>Central Display</u> - The license for monitored patients should with minimum 2 waveforms displayed per patients - Should have minimum 21-inch LED flat screen display with colored waveforms - The system should allow bedside monitor display of data from another bedside monitor including automatic display of alarm information - The central station should display waveforms, numerical values, graphical displays, tabular displays and calculations - Licensed windows-based system - Wall mounted 42-inch repeater TV screen for viewing CMS with wave forms clearly visible from a distance of 4 m	

Item Description	Supplier Specifications
▪ <u>Trending</u> - Graphical - Full disclosure recommended with at least 48 hours length of time for all waveforms and parameters - Full records and displays of retrievable events for the whole patient stay from admission to discharge ▪ <u>Software Capabilities</u> - Real time display of patient data - All patient data should be available at central station - Full arrhythmia analysis and ST analysis - License for 8 beds, upgradable to 16 beds ▪ <u>Alarms</u> - High and low for all monitored parameters - Alarm prioritization and level differentiation - Temporary silence of active alarm possibility - Display of alarm limits for each parameter and the alarm status for each parameter (i.e., standby or suspend mode) - Storage of alarm events (Printed and stored alarm strips should provide a minimum of 10 seconds pre-event and 15 seconds post-event information) ▪ <u>Reports</u> - Reports availability recommended - Windows compatible export formats - Printer ▪ <u>Laser printer (A4 format)</u> - Annotation of date, time, bed number, alarm status, and vital signs - Automatic trace calibration and centering ▪ <u>Hardware Capability</u> - At least 3.5 GHz processor with CD/DVD RW - At least 4 GB RAM - At least 1T Hard Disk - At least 4 USB ports - Color laser printer: A4 size	

Item Description	Supplier Specifications
▪ <u>Networking</u> - Hardwired RJ45 network interface or equivalent - HL7 connectivity ▪ <u>Material and Design</u> - Frame Material - All Surfaces and material should be easy to clean with standard on-the market hospital grade cleaning chemicals - Accessories - Color and black ink cartridge - Qty: 5 ➤ <u>Bedside Monitors</u> ▪ To be supplied complete with <u>6 bedside</u> monitoring units and modules with the following technical specs: ▪ <u>General technical requirements</u> - Critical care physiological monitor designed to be used on adult and pediatric patients in the Intensive Care Units and allowing high level monitoring and calculations - Continuous display on screen of patient ECG, heart rate, respiration rate (RR), non-invasive blood pressure (NIBP), body temperature, SpO2, invasive blood pressure (IBP), cardiac output (CO) for one monitor and EtCO2 (3 out of 6) mainstream or side stream - Dynamic user configured digital display that can show all active parameters - Unwanted parameters can be deselected from display - Operator can set audio-visual alarm levels for low or high levels of each parameter independently. - Operates from mains voltage or from internal rechargeable battery - Design must enable use in demanding environments, e.g. shock, vibration and free fall tests as per tests - Protections of all the functions against defibrillator discharges and electrosurgical units - Pace-maker detection - Easy to clean equipment with standard on-the market cleaning chemicals (specify) - Enclosure to have ingress protection level IPX1 or better - Capable of operating continuously in ambient temperature of 10–40°C and relative humidity of 15–85% -	

Item Description	Supplier Specifications
▪ <u>Display</u> - Min 12.1-inch color display - Minimum resolution 800 x 600 pixels - Up to 10 waveforms - Split screen display - Knob controlled or touch screen interface ▪ <u>ECG</u> - ECG patient connectors that are sterilizable and reusable - Multichannel 5 simultaneous leads ECG measurement with selectable display - Pacemaker detection - Auto cable detection (lead off) - Defibrillator overload protection - Accuracy: $\leq 5\%$ or 5 bpm. - Heart rate measurement range to be at least 30–250 bpm, with accuracy better than ± 5 bpm and minimum gradation 1 bpm. ▪ <u>Respiration</u> - Any approved method (specify) - RR measurement range at least 0–100 bpm with minimum gradation 1bpm - RR waveform display ▪ <u>SpO2</u> - Measurement range at least 70–99 % - Accuracy better than $\pm 3\%$ and minimum gradation 1% - Disconnect & failure detection - Disposable and reusable probes compatible ▪ <u>Non-Invasive Blood pressure (NIBP)</u> - Internal pump for cuff inflation for non-invasive blood pressure measurement with over pressure protection - Any approved method (specify) - Monitoring range at least 30–270 mmHg - Resolution: 1mmHg - Manual & Automatic measurement modes - User selectable measurement interval - Cuff pressure display - Quick hose connection	

Item Description	Supplier Specifications
- Patient categories: neonatal/pediatric and adult ▪ <u>Temperature</u> - Temperature probe to be reusable, external skin contact type, but consumable to protect between patients or disinfection method explained. - Temperature range at least 30 to 45°C, minimum gradation 0.1°C ▪ <u>Capnography</u> - Any approved method (specify) - Easy to calibrate - Display of EtCO₂ and FiCO₂ - Display of CO₂ waveform - Range: 0 to 100 mmHg ▪ <u>Dual Invasive Blood Pressure (IBP)</u> - Any approved method (specify) - Min 2 Channels with dual-digital display for systolic/diastolic and/or mean pressures, pressure alarm, and trace size/position controls - Suitable for arterial, venous, pulmonary artery, wedge, intracranial, and cerebrospinal fluid pressures - Systolic/ Diastolic/Mean Arterial Pressure: approx. -30-300 mmHg - With pressure range selection, auto-zero calibration, - Curves labeling available ▪ <u>Cardiac Output (One out of 6)</u> - Any approved method (specify). - In-line or bath probe type - CO volume range: up to 20 L/min - Digital display of injectate and blood temperatures, CO consumption and trial number - Performs hemodynamic calculations - Catheter size: 5F to 8F ▪ <u>Trending</u> - Full disclosure for all parameters - Graphical and tabular forms - Memory storage: 72 hours - Programmable sampling frequency for tabular values recording	

Item Description	Supplier Specifications
▪ <u>Calculations</u> - ST analysis capable - Full arrhythmia calculations (on all leads) ▪ <u>User adjustable settings</u> - User operated 1 mV ECG test marker function required - Adjustable screen configuration preferably for each parameter - Include different users and user-preference configuration - Audio-visual alarms: high and low levels for each parameter, alarm muting and alarm override - Parameters manual zeroing and calibration - Monitor reset to factory settings - Others (specify) ▪ <u>Alarms</u> - Audible and visual - Alarm override and temporary alarm silence facility to be included - High and low levels for each monitored parameter with default settings and operator variable settings - Sensor/wire/probe disconnected - Cuff leak, cuff disconnect, hose leak, inflation/deflation errors - Failure to take successful reading - Low battery - Power failure ▪ <u>Consumables / single use accessories to be delivered</u> - Disposable ECG Electrodes: 200 - For EtCO2 side stream technology: sample lines: 100 lines; water tramps: 10 per equipment. ▪ <u>Reusable accessories to be delivered</u> - All the cables, sensors and connectors needed for full monitor functionality are to be included in the bid - ECG cable of a length of at least 2 meters with a trunk: 2 per equipment - Reusable SpO2 probes adult with approx. 2-meters extension cable: 3 probes - Reusable SpO2 probes pediatric use with approx. 2-meters extension cable: 3 probes - NIBP cuffs: 1 pediatric reusable cuff and 3 adult reusable cuffs (1 medium, 1 large and 1 XL)	

Item Description	Supplier Specifications
- Blood pressure – invasive: 1 sensor for each channel offered - Temperature probes: 2 probes one rectal, one for esophagus - For CO2 mainstream technology: tube adapter: 3 per equipment; sensor: 3 per equipment - Battery: 1 set ▪ <u>Portability and Mounting</u> - Monitor delivered with its factory original wall mounting stand along with all accessories ▪ <u>Connectivity</u> - Hardwired RJ45 network interface or equivalent - Interface for central station and Interbed connectivity - HL7 connectivity ➤ The bidder shall provide all required cables and networking devices necessary to establish communication between the CMS and the bedside monitors.	

Item Description	Supplier Specifications
M05 Fetal heart detector Qty : 3  ➤ <u>General Technical Requirements</u> ▪ Portable design, lightweight and suitable for use in clinics and hospitals. ▪ Battery operated, with built-in rechargeable battery and integrated battery charger. ▪ TFT LCD display for real-time visualization of fetal heart rate (FHR) waveform. ▪ Sound amplifier with adjustable volume control for clear auscultation. ▪ Earphones provided for private listening and verification. ▪ Noise reduction system with auto-correlation noise filter for accurate heartbeat detection in noisy environments. ▪ Complete with all standard accessories and charger unit. ➤ <u>Probes:</u> ▪ Probes must be interchangeable on the same main unit. ▪ Supplied with: - One 2 MHz probe (optimal for later gestation / obese patients). - One 3 MHz probe (optimal for early gestation / standard use). ➤ <u>Alarm & Safety Features</u> ▪ Fetal heart rate alarms, Probe-off , low battery, power/charging, other (specify)	

Item Description	Supplier Specifications
M06 Monitor, SpO2 Qty : 5 ➤ General Technical Requirements - Monitors adults, pediatric and neonates - Bedside pulse oximeter type - Continuously displays patient oxygen saturation, plethysmograph, perfusion index bar, alarms, silenced alarm, and AC/battery power in real time - Capable to provide accurate blood oxygen saturation and pulse rate reading especially under challenging conditions like motion or low perfusion ➤ Technical Characteristics - Ability to detect SPO2 in case of low perfusion and patient motion - SpO2 measurement range at least 1% to 100 %, minimum increment 1% - Accuracy of SpO2 better than $\pm 3\%$ - Pulse rate range at least 30 to 240 bpm - Accuracy of pulse rate better than ± 3 bpm - Signal strength or quality to be visually displayed - Perfusion index: 0.03% to 20% or better - Plethysmograph display mandatory - Display allow easy viewing in all ambient light levels with display size at least 3 inches - Trend display and plethysmograph wave should be stored for at least 24 hours - Provides accurate and reliable SpO2 readings even during motion ➤ Alarm Features - The below listed alarms should be adjustable, and trigger both visual and audible notifications when activated - All alarms are adjustable by the clinician and medical staff	

Item Description	Supplier Specifications
▪ The alarm tones can be regulated from high to low tonality to alarm off at least: - High and low SpO2 - High and low pulse rate - Sensor disconnected - Sensor failure - Low battery ➤ <u>Material and Design</u> ▪ Frame Material: Specify the structure supporting frame material (to be of non-corrosive material). ▪ All Surfaces and material should be easy to clean with standard on-the market hospital grade cleaning chemicals ▪ All proposed medical devices and accessories should withstand shocks and mechanical vibration ▪ The machine should be compact, portable with built in rechargeable battery & light weight ➤ <u>Accessories</u> ▪ Adult reusable Spo2 sensor - Qty: 1 ▪ Pediatric reusable SPO2 sensor - Qty: 2 ▪ Neonate reusable SPO2 sensor - Qty: 2 ▪ Neonates disposable sensor - Qty: 100 ➤ <u>Power Requirements</u> ▪ Input voltage compatibility: 210V-240V ▪ Input frequency: 50 Hz. ▪ Input power cord: heavy duty with earthing and adaptable to hospital outlets (e.g. EU type or US) ▪ Backup batteries should be internal Lithium battery or equivalent, easily replaceable by the end-user without having to dismantle the equipment, rechargeable and allow operation for a minimum of at least 3 hours in the event of power failure ▪ Battery charger to be integral to mains power supply, with the ability to charge batteries during mains power operation of the unit ▪ The machine should work on mains without an installed battery	

Item Description	Supplier Specifications
M07 Sphygmomanometer, aneroid, Mobile Qty : 6  ▪ Mounted on a mobile stand with 5 swivel casters, measurement 0-300Hg, approximately 150mm diameter black dial with white pointer; Stand should be adjustable in height , ▪ Velcro cuffs for adult and pediatric to be included and storage case; ▪ To include a stethoscope, adult and pediatric and accessory Basket.	

Item Description	Supplier Specifications
M08 Wall mounted Examination Kit Qty : 7  ➤ <u>General Technical Requirements</u> ▪ Wall mounted integrated diagnostic set. ▪ Sealed Heay duty construction to prevent dust and dirt build up. ➤ <u>Includes the following:</u> ▪ Diagnostic Ophthalmoscope (complete with handle and head) - LED Source - Focusing adjustable from handle ▪ Diagnostic Otoscope (complete with handle and head) - LED source. - Focusing adjustable from handle. ▪ Sphygmomanometer (wall-mounted, calibrated, with adult, pediatric, and large cuffs). ▪ Digital thermometer with oral probe. ▪ Additional accessories (not wall mounted): - Multi-purpose stethoscope, with case or pouch. - Percussion Hammer Buck. - Tourniquet Strap. - Percussion Hammer Babinsky. - Measuring Tap, 2M. - Steel Rule, 30cm. - Tuning Fork, Set of 4. - Pinwheel Wartenberg. - Penlight. - Case.	

Item Description	Supplier Specifications
➤ <u>Accessories to be supplied:</u> ▪ Disposable Ear Specula – Assorted Size (500 pcs per unit) ▪ Disposable thermometer probe covers (200 pcs per unit) ▪ Tongue depressors – disposable wooden (box of 100) ▪ Wall mounting hardware set	

Item Description		Supplier Specifications
M09	Standing Patient Scale	Qty : 5
 ➤ General Technical Requirements ▪ For patient weighing and height measurement ▪ Durable Material, Heavy Duty ▪ Mechanical operations ▪ Digital or Bar weight indicator ▪ Capacity up to 240 Kg ▪ Telescopic height measurement range approx. 800 to 2200mm ▪ Non slip platform cover ▪ Weight readings in Kg		

Item Description	Supplier Specifications
M10 Fetal & Maternal Monitor Qty : 2 The monitor is intended to be used in labor and delivery unit for monitoring fetal heart rates and the uterine contraction in real time as well as mother's ECG, NIBP, TEMP and SpO₂. ➤ <u>General Technical Requirements</u> ▪ Microprocessor-controlled fetal & maternal monitoring systems. ▪ Compact, portable and designed for continuous beside use. ▪ Capable of monitoring two fetuses simultaneously and maternal parameters. ▪ User interface: Large screen TFT/LCD screen, high-resolution, with adjustable brightness. ▪ Touch-screen operation with rotary knob/buttons as backup ▪ Built-in rechargeable battery providing more than 2 hours operations. ▪ The unit shall be mounted on a mobile cart designed for hospital use. ➤ <u>Fetal Monitoring Parameters</u> ▪ Fetal Heart Rate (FHR): - Dual ultrasound Doppler transducers, ≥ 1 MHz frequency. - Measurement range: 50–240 bpm per fetus. - Accuracy: ± 1 bpm. - Simultaneous, independent display of two FHR traces. - Update every ≤ 1 sec. - Intensity $< 10 \text{ mW/cm}^2$ - Dynamic Range $> 50 \text{ dB}$. ▪ Fetal Movement: Manual and automatic detection. ▪ Uterine Contractions (TOCO): - External TOCO transducer with strain gauge. - Range: 0–100 units. - Accuracy: $\pm 5\%$. ➤ <u>Maternal Monitoring Parameters</u> ▪ ECG/HR: 3/5-lead ECG, heart rate range 30–250 bpm. ▪ NIBP: Oscillometric method, systolic 40–260 mmHg, diastolic 10–220 mmHg, accuracy ± 5 mmHg. ▪ SpO₂: Digital pulse oximetry, 0–100%, accuracy $\pm 2\%$. ▪ Respiration Rate: Derived from ECG or impedance, 0–120 bpm. ▪ Temperature: ≥ 2 channels range 25–45 °C, accuracy ± 0.1 °C.	

Item Description	Supplier Specifications
➤ <u>Display & Recording</u> ▪ Simultaneous real-time display of: Two FHR waveforms, TOCO waveform, Maternal vitals. ▪ Trend storage: ≥ 72 hours of monitoring data. ▪ Built-in thermal recorder, ≥ 152 mm wide paper. ▪ Automatic printing of dual FHR, TOCO, and maternal parameters. ▪ Manual/automatic/event-triggered printout modes. ➤ <u>Alarms & Safety</u> ▪ Visual and audible alarms for: - High/low FHR (individually for both fetuses) - Tachysystole, prolonged deceleration - Maternal HR, BP, SpO₂, temperature out of range - Sensor disconnection, lead-off, battery low, power failure - Adjustable alarm limits. - Alarm silence/reset with safety timeout. ➤ <u>Data Management</u> ▪ Patient ID entry via touch/keyboard. ▪ Internal memory for ≥ 200 patient records. ▪ USB port for data export. ➤ <u>Mobile Cart</u> ▪ 4 x lockable caster wheels (≥ 75 mm diameter) ▪ Integrated cable management ▪ Dedicated holders/hooks for the probes, transducer, sensors, etc.... ▪ Height suitable for bedside use ➤ <u>Accessories (per unit supplied)</u> ▪ 2 × FHR ultrasound probes with belts and holders. ▪ 1 × TOCO transducer ▪ 1 × Maternal SpO₂ sensor (adult reusable). ▪ 1 × NIBP cuff (adult, latex-free, reusable). ▪ 1 × ECG cable with electrodes (reusable) + starter pack of disposable electrodes. ▪ 1 × Temperature probe. ▪ 1 × Recorder paper starter pack (≥ 5 rolls). ▪ 5 x Belts	

Item Description	Supplier Specifications
PACKAGE (N) - NEONATAL	
N01 Incubator, Neonatal	Qty : 2
➤ <u>General</u> ▪ Neonatal intensive care incubator ▪ Closed incubator that regulates air temperature, humidity and oxygen levels ➤ <u>Closed Incubator Air Temperature Control Mode</u> ▪ Servo-control system ▪ Air temperature control range: minimum 20-39 °C ▪ Temperature accuracy: less than: ± 0.2 °C ▪ Override function Override Function: Allows manual override for immediate control. ▪ Low Air velocity over mattress ➤ <u>Closed Incubator Skin Temperature Control Mode</u> ▪ Servo-control system ▪ Air temperature control range: minimum 35-38 °C ▪ Temperature accuracy: less than: ± 0.1 °C ▪ Override function ▪ Sensor type: calibration free thermistor based Interchangeable and detachable probe or equivalent	

Item Description	Supplier Specifications
➤ <u>Closed Incubator Air Circulation</u> ▪ Air curtain to minimize the drop in air temperature within the incubator ▪ Noise/sound level: less than 50 dB at fan full speed ▪ Air intake microfilter ➤ <u>Closed Incubator Humidity Control</u> ▪ Servo-control system ▪ Humidity control range: minimum 30 to 85 % RH (non-condensing) ▪ Humidity control increment: maximum 5 % RH Increment ▪ Humidity recovery time: less than 15 minutes ▪ Humidity accuracy: less than: $\pm 10\%$ RH ▪ Water reservoir capacity: minimum 1000 mL ➤ <u>Closed Incubator Oxygen Controller</u> ▪ Servo-control system for oxygen therapy ▪ Oxygen control range: minimum 21-60% ▪ Display range : minimum 20-70% ▪ Oxygen control accuracy: less than: $\pm 5\%$ ▪ Rise time: less than 15 minutes ▪ Recovery time: less than 5 minutes ➤ <u>Baby Scale</u> ▪ Baby Scale Function ▪ Baby scale range: minimum 0.3 Kg to 7 Kg ▪ Baby scale accuracy: maximum ± 10 g ➤ <u>X-Ray Tray</u> ▪ X-ray tray: for ease of accessibility from outside for x-rays acquisition while minimizing the need to move the baby ➤ <u>Display</u> ▪ Color LCD screen with ability to change brightness (touchscreen is a plus) ▪ Should at least display the following parameters: - Selected mode - Baby skin temperature - Air temperature	

Item Description	Supplier Specifications
- Set temperature - AC power - Oxygen % - Humidity % ▪ Should at least feature the following graphical trends: - Air temperature - Baby temperature - Humidity - Weight ▪ Minimum 24hrs trend or better ➤ <u>Incubator Design and Material</u> ▪ Double wall canopy ▪ Light weight ▪ Mattress tilt ▪ Access ports: minimum 4 portholes with 2 Iris or better ▪ Sides, portholes and iris openable with minimal effort using a one-handed operation ▪ Sides, portholes and iris openable with minimal opening and closing sound ▪ Handles for ease of movement and transportation: at least 2 ▪ Material of hood, sides, portholes and iris: clear polycarbonate or acrylic to ensure visibility and easy cleaning or equivalent ▪ Frame Material: non-corrosive material ▪ Surface Finish: antimicrobial, powder-coated or equivalent strength material ▪ Equipped with conductive castors with a minimum of two featuring sturdy brakes ➤ <u>Additional Features</u> ▪ Large storage capacity: either cabinet or drawers ▪ IV pole capable of withstanding the weight of 3 infusion pumps ▪ Utility shelf with fixation straps to mount a medical equipment ➤ <u>Alarm Features</u> ▪ The below listed alarms should be adjustable, and trigger both visual and audible notifications when activated - Adjustable audible alarm loudness	

Item Description	Supplier Specifications
- Air high/low temperature alarm - Baby high/low temperature alarm - Humidity high/low temperature alarm - Oxygen high/low temperature alarm - Overheating alarm - Power failure alarm ➤ <u>Infant Mattress</u> ▪ Infant mattress: x-ray translucent made of memory foam or gel mattress with waterproof, fire-retardant, and anti-microbial material covers ➤ <u>Accessories</u> ▪ Additional reusable skin temperature probes with correspondent covers (Qty: 2) ▪ Mattress covers, disposable, pack of 50; ▪ Air intake filters, pack of 10; ▪ IV Column	

Item Description	Supplier Specifications
N02 Ventilator, Neonatal Qty : 2	
➤ General Requirements ▪ Microprocessor controlled ventilator with integrated nebulizer function to ventilate premature and neonatal patients starting from 0.3 Kg ▪ Ventilator include all required software options and accessories ensuring optimal performance ▪ Ventilator Technology: - Combined gas ventilator with medical oxygen (O2) and medical air (MA4) supply inputs or - Turbine driven (built-in) with medical oxygen (O2) supply input ▪ Medical gas inlet ports operable at supply pressure levels starting 1.5 to 6 bar [22 to 87 psi] ▪ Medical gas inlet ports fitted with check valves to prevent gases backflow (retro-contamination) ▪ Built-in pressure regulators and reducers to avoid damaging ventilator ▪ Mechanical safety valves to avoid damaging ventilator ▪ Medical gas inlet ports fitted with a filter and water trap ▪ Automatic switch over between piped medical air and oxygen supply should one of the supplies fail (Combined gas ventilator) ▪ Comprehensive self-testing, continuous monitoring, diagnostic, and troubleshooting system at startup and during operation of all internal functions/component/sensors	

Item Description	Supplier Specifications
testing/calibration, leakages, gas supply, power, battery, etc. ▪ Ventilator software and available modes are upgradable ▪ The startup time needed for the unit to be ready for use shall be less than 60 seconds ▪ Noise level shall not exceed 46 dB ▪ Continuous operation within specification in ambient temperature of at least 5–40 °C, relative humidity of at least 10–85% non-condensing ▪ Ventilator compatible with open-system breathing circuit from third party providers ➤ <u>Ventilation modes: Volume and Pressure Assist/control modes</u> ▪ Pressure Control Ventilation (PCV) ▪ Intermittent Mandatory Ventilation Modes: Pressure Assist-Control Ventilation (PAC) ▪ Pressure Support Ventilation (PSV) ▪ Pressure Control-Synchronized intermittent mandatory ventilation (PC-SIMV) ▪ Intermittent Positive Pressure Ventilation Mode ▪ Synchronized Intermittent Positive Pressure Ventilation Mode (SIPPV) ▪ Non-Invasive Ventilation e.g. NIV, NPPV ▪ Biphasic Positive Airway Pressure Mode (BiPAP) for both invasive and non-invasive ventilation ▪ Continuous Positive Airway Pressure Mode (CPAP) for both invasive and non-invasive ventilation ▪ Selectable flow or pressure triggering ▪ Apnea detection with safety automatic ventilation for patients ▪ Other optional modes: hybrid, adaptive pressure ventilation, automated combination modes or others ➤ <u>Setting, and User Controlled Parameters</u> ▪ Tidal Volume (VT): min 2 to 300 ml or better ▪ Inspiration flow: approx. 0 to 15 l/min or better ▪ Inspiratory Pressure: approx. 1 - 60 cm H₂O or better ▪ Respiratory rate (RR): approx. 1 to 150 breath/min or better ▪ SIMV respiratory rate: approx. 1 to 100 breath/min or better ▪ Inspiratory rise time (%): approx. 20 % or better ▪ Inspiratory time: 0.2 -3 s ▪ Expiratory time: 1- 8 s ▪ Inspiratory to Expiratory Ratio (I/E): 1:4 to 4:1 ▪ Inspiratory Hold: 0 - 10 s ▪ Inspiratory pause maneuver with capability to measure plateau pressure	

Item Description	Supplier Specifications
▪ FiO2: 21 – 100 % ▪ PEEP/CPAP: Approx.0 to 30 cm H2O ▪ Pressure Support: 1 - 60 cm H2O ▪ Flow and Pressure trigger mechanism ▪ Flow trigger sensitivity: approx. 0.1 to 5 l/min or better ▪ Sigh breath function ▪ Auto 100% O2 button ▪ Manual Breath button for emergency resuscitation ▪ Leak compensation protocol/mode ▪ Compliance compensation and automatic correction ▪ Integrated nebulizer function with a minimum volume of 6 mL and a minimum flow rate of 2 ml/min ▪ Control panel lock ▪ Alarm silence ▪ Alarm reset ▪ Additional available settings ▪ Ventilator allows adjustments while the unit is ventilating a patient, and requires 2 steps operator's confirmation to the adjustments in order to eliminate any accidental tampering with the parameters ➤ <u>Screen and Interface</u> ▪ User friendly display easily readable in low ambient light and sunlight, with colored touch-screen (LCD/LED) for user interface and system control, program selection and creation; displaying waveforms, viewing monitored parameters, ventilation settings, status updates, quality control data, alarms set values, errors and alarms' notifications in addition to other data ▪ Waveforms, trends, numerical values and graphics related to pressure, volume and flow to be clearly displayed ▪ At minimum 3 waveforms/trends can be displayed simultaneously without having to switch between views and windows ▪ Touch screen with a minimum 10" dimension ▪ Gauges for airway pressure ▪ Screen Capture ➤ <u>Displayed and Monitored Parameters</u> ▪ Status indicators for ventilator mode, battery status, patient data, alarm settings, FiO2 ▪ Airway pressures including: peak, plateau, mean and PEEP ▪ Expired Tidal Volume	

Item Description	Supplier Specifications
▪ Expired Minute Volume ▪ Spontaneous Minute Volume ▪ Respiration rate RR: spontaneous and total ▪ Inspiratory and Expiratory Time ▪ I:E ratio ▪ Analyzed / measured FiO2 % ▪ Leak value ▪ Lungs' parameters including but not limited to resistance and compliance ➤ <u>Alarms, Related to Patient Ventilation - Adjustable, Visual and Audible</u> ▪ The below listed alarms should all be monitored and triggered based on the patient actual ventilation status ▪ The below listed alarms should be adjustable, and trigger both visual and audible notifications when activated ▪ Adjustable audible alarm loudness ▪ Oxygen concentration FiO2: high and low ▪ Minute volume: high and low ▪ Tidal volume: high and low (not achieved or exceeded) ▪ Inspiratory pressure: high and low ▪ Airway pressure: high and low ▪ PEEP: high ▪ Loss of PEEP ▪ Apnea time (settable between 0 and 60 s) ▪ Respiratory rate (RR): high and low ▪ Continuously high pressure/occlusion ▪ Leak value: high ▪ Breathing circuit disconnect ▪ Additional available alarms ➤ <u>Alarms, Related to Equipment Operation - Visual and Audible</u> ▪ Gas supply failure including loss of supply, leakages and blockages ▪ Power failure ▪ Low battery ▪ Ventilator inoperative or system failure ▪ Self-diagnostics failure alarm ▪ Events Log ▪ Event log for errors traceability ▪ Alarms' values and ventilation parameters maintained and saved even when the	

Item Description	Supplier Specifications
ventilation mode is swapped ▪ Ability to save and record the trends for each patient for at minimum 24 hrs ▪ Ability to store and display patient's events: maximum number of events that can be stored shall be 1000 or better ➤ <u>Humidifier</u> ▪ Ventilator supplied with compatible active automated servo-controlled heated humidifier with adjustable setting, suitable for premature and neonatal patients; with all the needed accessories ▪ Available modes: - Invasive ventilation for fully saturated gas delivery at 37oC - Non-invasive ventilation compatible with both face and nasal mask interfaces ▪ Compact and lightweight design ▪ Compatible with inspiratory heated breathing circuit with temperature and humidity feedback and monitoring from chamber and reusable patient circuit ▪ Compatible with dual limb heated breathing circuit with temperature and humidity feedback and monitoring from chamber and single-use patient circuit ▪ Temperature display in oC with one digit after the decimal ▪ Accuracy: less than $\pm 0.4^{\circ}\text{C}$ ▪ Warmup time: less than 30 min ▪ Alarms and monitored parameters to ensure optimal function including: ▪ Over-temperature protection ▪ High and low humidity alarm ▪ High and low temperature alarm ▪ Low water level alarm ▪ Disconnect alarm ➤ <u>Portability & Mounting Stand</u> ▪ Supplied with the manufacturer's original sturdy and stable trolley with support stand, handle, holder for humidifier, and articulated flex arm for patient circuit support ▪ Mounting trolley equipped with conductive castors with a minimum of two featuring sturdy brakes ➤ <u>Power Requirements</u> ▪ Input voltage compatibility: 210V-240V ▪ Input frequency ▪ Input power cord - Integrated battery with automatic switch over to provide backup for a minimum of 2	

Item Description	Supplier Specifications
hours of patient ventilation ▪ Total batteries re-charging time not greater than 6 hours ➤ <u>Connectivity</u> ▪ Hardwired RJ45 network interface or equivalent ▪ Other connections ports: USB ports, RS232, HDMI, etc. ▪ HL7 protocol compatible ▪ Interface and connect with a central station or any other critical care monitoring system for real-time remote monitoring, alarms display, event log and alarm lists reporting ➤ <u>Consumables and Single-Use Accessories</u> ▪ The following consumables and single use accessories should be delivered with each ventilator: - Single use breathing circuits: double-limb with standard outlet/inlet connectors - compatible with the selected humidifier - less than 11 mm outside diameter (30 per equipment) - Viral/bacterial filters 99.99% efficiency minimum; for inspiratory and expiratory limbs (60 per equipment) - Viral/bacterial filters 99.99% efficiency minimum with cellulose membrane (30 per equipment) - Nebulization kit (30 per equipment) ➤ <u>Reusable Accessories</u> ▪ The following reusable accessories should be delivered with each ventilator: Reusable neonatal breathing circuits: of silicon material, double-limb, with water traps and all standard outlet/inlet/Y connectors - less than 11 mm outside diameter (5 per equipment) ▪ Prongs and masks: - Premature and Neonatal Nasal Prongs of Different Sizes: Approx. 3 mm, 3.5 mm, 4 mm, 4.5 mm, and 5 mm (2 of Each Size - Total 10) - CPAP Mask of Different Sizes: Small - Medium (5 of Each - Total 10) - Premature and Neonatal Bonnets of Different Sizes: 22-25 cm, 25-29 cm, and 29-36 cm (3 of Each Size - Total 10) ▪ All Delivered masks and tubing should withstands high-level disinfection and sterilization	

Item Description	Supplier Specifications
▪ Sterilizable expiratory valve/block (5 per equipment) ▪ Sterilizable flow sensor (1 per equipment) ▪ Neonatal Test lung (1per equipment) ▪ CO2 sensors (1 per equipment) ▪ Standard color-coded hoses and connectors for oxygen and medical air wall outlets and cylinders connection of at least 3 m length. Connectors' configuration whether, NF or BS or US standards will be specified after the bid awarding stage	

Item Description	Supplier Specifications
N03 Table, Reanimation, Neonatal Qty : 5  ➤ <u>General Requirements</u> ▪ Infant warming and resuscitation table, including a radiant warmer for neonatal care, designed for thermal regulation and monitoring in nursery, neonatal care, and labor and delivery setups ▪ Optimal access from all sides to mattress and control interface ➤ <u>Radiant Warmer Heating System</u> ▪ Advanced infrared radiation technology to minimize water loss and maintain infant thermal comfort ▪ High-efficiency quartz infrared or ceramic radiant heating elements with parabolic reflector for uniform heat radiation and distribution or equivalent ▪ Zone heating system for targeted thermal regulation ▪ The heating distribution difference ratio min to max shall be minimum on the mattress ▪ Heater unit protected by a suitable grill ▪ Heater unit design to facilitate X-ray procedures or of swiveling type, rotatable around $\pm 90^\circ$ to the side ▪ Swiveling type heater auto shut-off when rotated to the side	

Item Description	Supplier Specifications
▪ Modes of operation: - Servo-control based heater control baby skin mode - Manual mode - Pre-warm mode ▪ Manual radiant power control range: from 0 to 100% ▪ Manual radiant power control increment: Maximum 5% Increment ▪ Heater Output Power: approx. 0 to 650 W ▪ Air temperature control range: minimum 30-38 °C ▪ Override function ▪ Automatic temperature cut off at 38oC ▪ Temperature rise time at startup ▪ Warmer sensor type: calibration-free temperature sensors ▪ Number of warmer embedded temperature sensors ▪ Temperature accuracy: less than: ± 0.3 °C ▪ Baby skin sensor type: calibration free thermistor based Interchangeable and detachable probe or equivalent ▪ Baby skin sensor accuracy: less than: ± 0.1 °C ➤ <u>Infant Bed and Mattress</u> ▪ Motorized infant bed with continuous tilting movement and return to horizontal feature ▪ Infant bed tilt of around $\pm 15^\circ$ trendelenburg and reverse trendelenburg position ▪ Variable height adjustment with up and down pedal(s) accessible from all sides ▪ Infant mattress configuration: heated mattress ▪ Infant mattress material: x-ray translucent made of gel mattress with waterproof, fire-retardant, and anti-microbial material covers ▪ Infant mattress thickness: approx. 4 cm or better ▪ Infant mattress density ▪ Infant mattress covers removable and washable ➤ <u>Infant T-Piece Resuscitator</u> ▪ Analogue manometer with a range of 10 to 80 cmH2O ▪ Analogue manometer accuracy: ± 2 cmH2O ▪ Input mixed gas flow range: up to 15 l/min ▪ Adjustable maximum relief pressure ▪ Adjustable Peak Inspiratory Pressure (PIP): approx. 1 to 70 cmH2O or better ▪ Adjustable Positive End Expiratory Pressure (PEEP) using T-piece: approx. 1 to 15	

Item Description	Supplier Specifications
cmH2O or better ➤ <u>Air / Oxygen Blender</u> ▪ High Flow Air / Oxygen Blender with a Flowmeter Ranging from: 0 to 15 lpm ▪ Oxygen Concentration Range Continuously Adjustable Between: 21 - 100 % ▪ Accuracy: Less than $\pm 4\%$ at Full Range ▪ Number of Additional Output Port(s): minimum 1 ▪ Compact Light Weight Design ➤ <u>Display</u> ▪ Color touch screen with a minimum dimension of 8" ▪ Should at least display the following parameters: - Selected mode - Warmer level - Baby skin temperature - Air temperature - Mattress temperature ▪ Displayed temperature resolution: $\pm 0.1^{\circ}\text{C}$ ➤ <u>Warmer Design and Material</u> ▪ Light weight ▪ Handles for ease of movement and transportation: at least 2 ▪ Expandable grommets for holding tubing and lines: ≥ 4 ▪ Material of sides: clear polycarbonate or acrylic to ensure visibility and easy cleaning or equivalent ▪ Frame Material: non-corrosive material ▪ Surface Finish: antimicrobial, powder-coated or equivalent strength material ▪ Equipped with conductive castors with a minimum of two featuring sturdy brakes ▪ All Surfaces and material should be easy to clean with standard on-the market hospital grade cleaning chemicals ▪ The proposed medical device should withstand shocks and mechanical vibration ➤ <u>Additional Features</u> ▪ Under storage drawers, plastic molded: 2 large with several compartments or 3 small ▪ Articulate underbed trays: 1 large ▪ Integrated LED examination light ▪ IV pole capable of withstanding the weight of 3 infusion pumps	

Item Description	Supplier Specifications
▪ Utility shelf with straps to mount a patient monitor ▪ Mounting stand to receive a bedside pulse oximeter ➤ <u>Alarm Features</u> ▪ The below listed alarms should be adjustable, and trigger both visual and audible notifications when activated - Adjustable audible alarm loudness - High/low temperature alarm - Overheating alarm - Power failure alarm - Probe failure alarm - System fault alarm, Heater fault alarm, fan fault alarm ➤ <u>Events Log</u> ▪ Event log for errors traceability ➤ <u>Accessories</u> ▪ Additional reusable skin temperature probe (Qty: 2) ▪ Single use resuscitation kit complete with corrugated circuit, mixed gas hose, T piece and PEEP valve kit (Qty: 30) ▪ Single use masks of different sizes: small - medium - large (10 of each) ▪ Test lung (Qty: 3) ▪ Standard color-coded hoses and connectors for oxygen and medical air wall outlets and cylinders connection of at least 3 m length. ▪ Connectors' configuration whether, NF or BS or US standards will be specified after the bid awarding stage	

Item Description	Supplier Specifications
N04 Incubator ,Neonate Transport Qty : 1  ➤ <u>General</u> ▪ Neonatal intensive care transport incubator with a versatile configuration for transport of baby's primary inside hospitals and transfer between medical departments in the same healthcare facility ▪ Transport incubator can be occasionally used to transfer infant to another healthcare facility using an ambulance ▪ Transport incubator with a robust design engineered to withstand the stresses of transportation and absorb impacts effectively ▪ Transport incubator fitted with a cushioned mattress to guarantee neonatal patient safety and comfort ▪ Transport incubator controls and maintains the adequate microclimate for the neonatal patient including temperature and oxygen concentration ➤ <u>Air Temperature Control Mode</u> ▪ Servo-control system ▪ Air temperature control range: minimum 30-38 °C (To specify the range in °C) ▪ Temperature accuracy: less than: ± 0.2 °C (Specify accuracy in °C) ▪ Override function ▪ Temperature rise time at startup: < 35 min (Specify the rise time at startup in minutes) ▪ Temperature response time (Specify the response time for restoring the set	

Item Description	Supplier Specifications
temperature in minutes) ▪ Sensor type: calibration free temperature sensors ▪ Number of temperature sensors (To specify the number of locations of temperature sensors) ➤ <u>Skin Temperature Control Mode</u> ▪ Servo-control system ▪ Air temperature control range: minimum 35-37.5 °C (Specify range in oC) ▪ Temperature accuracy: less than: ± 0.1 °C (Specify accuracy in oC) ▪ Temperature response time Indicate the response time for restoring the set temperature ▪ Sensor type: calibration free thermistor based Interchangeable and detachable probe or equivalent (Specify type of sensors) ➤ <u>Air Circulation</u> ▪ Fan type: axial or centrifugal or equivalent (Indicate fan type) ▪ Noise/sound level: less than 60 dB at fan full speed (Specify operating noise level in dB) ▪ HEPA Filter with a minimum efficiency of 99.97% for particles ≥ 0.3 microns (Confirm availability of HEPA filters and specify filtration efficiency) ➤ <u>Humidification</u> ▪ Humidity management using reusable humidity pads or sponges to prevent spills ▪ Humidity range: around 50 to 70 % RH (non-condensing) ➤ <u>Oxygen Administration</u> ▪ Controlled oxygen administration ▪ Oxygen control range: minimum 21-58% ▪ Oxygen control accuracy ▪ Rise time ▪ Recovery time	

Item Description	Supplier Specifications
➤ <u>Display</u> ▪ Should at least display the following parameters: - Selected mode - Baby skin temperature - Air temperature - Set temperature - Source of electric power - Heater power level - Remaining battery level - Battery charging status - Current alarms (if any) ➤ <u>Incubator Design and Material</u> ▪ Double wall canopy ▪ Light weight ▪ Baby bed positioned over cushions or equivalent to reduce vibration during transportation and limit the overall stress on the infant ▪ Incubator openable and freely accessible from at least one side ▪ Access ports: ≥ 3 portholes or a combination of portholes and Iris (minimum 2 portholes with 1 Iris or better) ▪ Universal ports for tubing and lines: ≥ 4 ports with additional expandable grommets for customized use ▪ Side, portholes and iris openable with minimal effort using a one-handed operation ▪ Side, portholes and iris openable with minimal opening and closing sound - Handle for ease of movement and transportation: at least 4 ▪ Material of hood, sides, portholes and iris: clear polycarbonate or acrylic to ensure visibility and easy cleaning or equivalent ▪ Frame Material: non-corrosive material - Surface Finish: antimicrobial, powder-coated or equivalent strength material ▪ All Surfaces and material should be easy to clean with standard on-the market hospital grade cleaning chemicals ▪ The proposed medical device should withstand shocks and mechanical vibration	

Item Description	Supplier Specifications
➤ <u>Incubator Under-Carriage</u> ▪ Supplied with the manufacturer's original sturdy and stable carriage ▪ Incubator firmly fixed to its under-carriage ▪ Lightweight carriage ▪ Adjustable height carriage ▪ Carriage made of aluminum or an equivalent non-corrosive, unpainted material ▪ Carriage equipped with medical gas bottle holder that can accommodate at least one - 1 m3 capacity - oxygen bottle ▪ Carriage equipped with conductive castors with a minimum of two featuring sturdy brakes ▪ Carriage with ambulance coupling mechanism ➤ <u>Additional Features</u> ▪ IV pole capable of withstanding the weight of 3 infusion pumps ▪ Utility shelf with straps to mount a patient monitor, a defibrillator monitor or a ventilator` ➤ <u>Alarm Features</u> ▪ The below listed alarms should be adjustable, and trigger both visual and audible notifications when activated - Adjustable audible alarm loudness - Air high/low temperature alarm - Baby high/low temperature alarm - Overheating alarm - Power failure alarm - System fault alarm, Heater fault alarm, Airflow/Fan fault alarm ➤ <u>Events Log</u> ▪ Event log for errors traceability ➤ <u>Infant Mattress and Belts</u> ▪ Infant mattress: made of memory foam, gel mattress or equivalent with waterproof, fire-retardant, and anti-microbial material covers ▪ Infant mattress thickness: approx. 3 cm or better ▪ Infant mattress density ▪ Infant restraint straps / safety belts: at least 2	

Item Description	Supplier Specifications
▪ Infant mattress cover and safety belts removable and washable ➤ <u>Accessories</u> ▪ Additional reusable skin temperature probe (Qty: 2) ▪ Additional restraint straps / safety belts (Qty: 4) ▪ 1m3 aluminum light weight medical oxygen bottle with double stage certified regulator (Qty: 1) ▪ Dust cover (Qty 1) ➤ <u>Power Requirements</u> ▪ Input voltage compatibility: 210V-240V ▪ Input frequency ▪ Input power cord ▪ Backup internal batteries: Lithium-ion battery or equivalent, easily replaceable by the end-user without having to dismantle the equipment, rechargeable with > 2 hours capacity at full load ▪ Backup batteries fast charging ▪ External DC charging/powering input: 12V DC (e.g. car battery source or equivalent)	

Item Description	Supplier Specifications
N05 Infant Warmer, mobile Qty : 3  ➤ <u>System Configuration</u> ▪ Radiant warmer assembly on height-optimized mobile trolley with integrated neonatal bed. ▪ Controller with digital display, soft-touch keys/knob, and visual/audible alarms. ▪ Operating modes: Manual Power mode and Servo (Skin) mode with neonatal skin probe. ▪ Integrated APGAR timer with 1/5/10-min prompts. ▪ Side rails, clear mattress, and accessory rails. ▪ IV pole and utility shelves. ▪ Cable management and probe holders ▪ Works on main power supply & battery ➤ <u>Performance Requirements</u> ▪ Heating technology: Overhead infrared emitter with reflector; uniform heat field over mattress. ▪ Heater power: ≥ 650 W (nominal) with continuous control 0–100%. ▪ Warm-up time: Achieve stable set temp within ≤ 10 minutes from cold start. ▪ Servo (skin) setpoint range: 34.0–37.5 °C (increments ≤ 0.1 °C). ▪ Manual mode output: Adjustable in $\leq 10\%$ steps; display % power. ▪ Temperature accuracy: ± 0.2 °C (display); skin probe accuracy ± 0.1–0.2 °C. ▪ Temperature uniformity at mattress: variation ≤ 1.0 °C across center 20×30 cm. ▪ Over-temperature protection: Independent thermal cut-off and automatic power reduction. ▪ Noise level: ≤ 60 dBA at operator position.	

Item Description	Supplier Specifications
➤ <u>Neonatal Bed & Ergonomics</u> ▪ Mattress size $\geq 60 \times 40$ cm, radiolucent, anti-microbial, fluid-resistant, easily cleanable. ▪ Tilting: Trendelenburg/Reverse Trendelenburg $\pm 10-12^\circ$ (tool-less). ▪ Side rails: Transparent, ≥ 10 cm height, one-hand drop mechanism; no finger entrapment. ▪ Work lighting: Dimmable exam/spot light integrated in heater head. ▪ Display visibility: ≥ 2.5 m under 500 lux ambient. ➤ <u>Controls & Indicators</u> ▪ Dual displays for set and measured temperatures; heater power bargraph/%. ▪ Dedicated keys/knob for Mode, Set Temp, Silence/Reset, Start/Stop APGAR, Light. ▪ APGAR timer: Start/stop, 1/5/10-min alerts (tone + visual). ➤ <u>Monitoring & Alarms</u> ▪ Minimum alarms with visual + audible indicators, priority differentiated: - Skin temp high/low relative to setpoint (configurable limits). - Probe off/loose, probe fault. - Over-temperature / heater fault (latched high priority). - System fault, power failure (mains loss). - Timer reminders (APGAR). ▪ Alarm volume adjustable; default restoration on restart. ➤ <u>Mobility & Construction</u> ▪ Stable, tip-resistant trolley; column allows heater head tilt/rotation for procedures. ▪ Casters: $4 \times \varnothing 125$ mm antistatic swivel casters (≥ 2 with brakes); one caster with directional lock preferred. ▪ Frame: powder-coated steel or anodized aluminum; surfaces smooth, cleanable with hospital disinfectants (no exposed wood/porous materials). ➤ <u>Accessories</u> ▪ Skin temperature probe: $2 \times$ reusable + $50 \times$ disposable covers and $10 \times$ disposable probes if single-patient use). ▪ Neonatal mattress: 2 sets. ▪ IV pole (2-hook).	

Item Description	Supplier Specifications
N06 Phototherapy Unit Qty : 3 ➤ General ▪ Mobile LED phototherapy to treatment neonatal patients for hyperbilirubinemia, freestanding type ▪ Provides filtered light using radiant electric light emitting diodes LED Phototherapy technology (fiber optic technology not accepted) ▪ Attenuation of infrared and ultraviolet radiation ▪ Compatible for use along with Infant crib, radiant warmer, and incubator ➤ Technical Characteristics ▪ Main radiation spectrum wavelength range: 450 to 480 nm ▪ Adjustment of irradiation levels range: minimum 28 to 45 $\mu\text{W}/\text{cm}^2/\text{nm}$ or better ▪ Irradiance minimum level: 30 $\mu\text{W}/\text{cm}^2/\text{nm}$ at 35 cm height (To specify the irradiation minimum level at both 35 cm and 45 cm) ▪ Effective light field $>700 \text{ cm}^2$ ▪ The irradiance ratio min to max shall be less than 30% on the mattress ▪ Digital hour meter showing total exposure time for current patient to be clearly visible by operator ▪ LED lamp life: 30,000 hours ▪ Lamp life should have timer to indicate total usage	

Item Description	Supplier Specifications
▪ Preferably fan-free operation ▪ Noise level: less than 50 dB ➤ <u>Safety</u> ▪ LED bulbs protected from accidental free fall ▪ Baby exposure to ultra-violet should be the lowest possible. Ultra-violet should not preferably exceed 5 W/m² in the spectrum of 200nm to 400nm (To specify ultra-violet limit in W/m² in the spectrum of 200 nm to 400 nm) ▪ Baby exposure to infrared should be the lowest possible (To specify infrared limit in W/m² in the near-infrared spectrum of 700 nm to 1400 nm) ➤ <u>Portability & Mounting Stand</u> ▪ Supplied with the manufacturer's original support stand, with handle ▪ Mounting stand with a stable design: no toppling up to a 10-degree inclined angle ▪ Mounting stand with adjustable height: approx. 1.1 to 1.4 m of better ▪ Easy swiveling of LED head unit with an angle adjustment up to $\pm 90^\circ$ on the sides ▪ Mounting stand equipped with at least 4 conductive castors with a minimum of two featuring sturdy brakes ▪ Lightweight design ➤ <u>Enclosure Material and Design</u> ▪ All enclosure surfaces and material should have smooth surfaces that are easy to clean with standard on-the market hospital grade cleaning chemicals ▪ All proposed medical equipment component and accessories should withstand shocks and mechanical vibration ➤ <u>Power Requirements</u> ▪ Input voltage compatibility: 210V-240V ▪ Input frequency ▪ Input power cord ▪ Mains cable to be at least 2.5m length	

Item Description	Supplier Specifications
N07 Scale, infant Qty : 2 ➤ <u>General Technical Requirements</u> ▪ For neonatal babies weighing ▪ Electronic operations ▪ Weighing Range: up to 10 kg with a 0.1 kg increment ▪ Digital readout display in kilograms ▪ Removable plastic tray: approx. 60 x 35cm ▪ Push button controls for on/off ▪ Automatic taring for tray ▪ Automatic zeroing and/or manual return to zero, ready for next patient ▪ Re-computes weight while patient is on scale ▪ Reading hold facility ▪ Recalls last weight ▪ Power Source: self-contained battery with charger ▪ Low Battery & Charge Indicator	

Item Description	Supplier Specifications
N08 Examination unit, infant Qty: 2 ➤ <u>General Requirements</u> ▪ Fixed examination table with three raised sides (left, right, back) and one open side for access ▪ Padded, fluid-resistant mattress on a seamless, easy-clean top ▪ Length measuring board (infantometer) integrated or supplied and fixed to the unit ▪ Storage: ≥2 drawers and 1 cupboard (shelves inside) ▪ Integrated Digital Scale ▪ Hidden Paper roll holder ▪ Safety strap with quick-release buckle ➤ <u>Dimensions & Capacity</u> ▪ Mattress/platform usable area: $\geq 100 \times 60$ cm ▪ Working height: 85–95 cm ▪ Side wall height: ≥ 12 cm above mattress on three sides ▪ Load capacity: ≥ 30 kg ▪ Overall footprint: $\leq 130 \times 70$ cm	

Item Description	Supplier Specifications
➤ <u>Construction & Materials</u> ▪ Frame: powder-coated steel or anodized aluminum; rounded edges, no sharp corners ▪ Work surface: seamless high-pressure laminate (HPL) or ABS/solid surface with radiused upstands; no visible screw heads on patient surface ▪ Mattress: ≥ 40 mm foam, medical-grade PU cover, non-latex, anti-microbial, wipe-clean, removable & replaceable ▪ Drawer runners: medical-grade, soft-close; recessed handles to avoid snagging ▪ All materials resistant to disinfectant solution ➤ <u>Anthropometry Features</u> ▪ Infantometer measuring range 30–100 cm, graduation 1–2 mm, accuracy ± 2 mm ▪ Fixed headboard with sliding foot piece that locks; durable, non-fading printed scale	

Item Description	Supplier Specifications
N09 Gynecology Vacuum delivery system (Ventouse) Qty : 1  ➤ General Requirements ▪ Medical-grade vacuum pump system designed specifically for obstetric vacuum-assisted delivery. ▪ Electrically powered (AC mains 220–240 V, 50/60 Hz), with manual foot-operated backup suction in case of power failure. ▪ Compact, portable, mounted on a mobile trolley with lockable castors. ▪ All parts in contact with patient fluids must be autoclavable or disposable. ➤ Performance Parameters ▪ Vacuum range: 0 – 80 kPa (0 – 600 mmHg), continuously adjustable. ▪ Vacuum build-up time: - To 500 mmHg in ≤10 seconds with 1-liter reservoir. ▪ Flow rate: ≥20 liters/min free air displacement. ▪ Vacuum control: - Fine adjustment regulator. - Automatic safety valve to prevent exceeding preset vacuum level. ▪ Noise level: ≤60 dB during operation. ▪ Collection system: - At least 1 × 1-liter graduated suction bottle (preferably polycarbonate, autoclavable). - Overflow protection and hydrophobic bacterial filter.	

Item Description	Supplier Specifications
➤ <u>Extraction Cups</u> ▪ Complete set of vacuum extraction cups, including: - Rigid (metal) cups: sizes 40, 50, 60 mm. - Soft (silicone/synthetic) cups: pediatric and standard sizes. ▪ All cups provided with traction chains/handles. ▪ Cups must be autoclavable or supplied sterile (single-use option). ➤ <u>Safety Features</u> ▪ Overflow safety trap to prevent backflow of fluids into pump. ▪ Bacterial/viral filter on vacuum line. ▪ Safety relief valve preventing excessive vacuum. ▪ Clear audible/visual indicators for: - Power on/off - Vacuum level - Alarm for over-vacuum or malfunction. ➤ <u>Accessories (per unit supplied)</u> ▪ 1 × Electric vacuum pump unit with control panel. ▪ 1 × Manual foot pump (backup). ▪ 1 × Mobile trolley/stand with lockable castors. ▪ 2 × 1-liter suction bottles with lids and tubing. ▪ 1 × Full set of vacuum cups (rigid + soft). ▪ 1 × Spare bacterial/viral filter.	

Item Description	Supplier Specifications
N10 Soft Tub with Pad for Newborn Qty : 2 ➤ <u>General Purpose</u> ▪ Soft, ergonomic bathing set for newborns/infants (0–6 months) for safe, supported bathing. ➤ <u>Composition</u> ▪ 1 × Tub (soft-edge, anti-slip base, drain). ▪ 1 × Newborn Pad/Support (breathable sling/pad that cradles infant). ➤ <u>Tub's Specifications</u> ▪ Ergonomic shape with anti-slip insert to maintain ideal bathing position. ▪ Stable base with non-slip feet; tip-resistant. ▪ Drain plug (tethered) for quick emptying; interior smooth, easy-clean surfaces. ▪ Rounded edges; no sharp corners; molded holders for soap/rinse cup (preferred). ▪ Dimensions (min.) internal bath area $\geq 70 \times 40$ cm; center depth ≥ 25 cm (bidder to state exact). ▪ Capacity: water ≥ 25 L; safe infant weight up to 9–12 kg (bidder to state). ➤ <u>Pad's Specifications</u> ▪ Ergonomic, deeply contoured with soft side wings to safely cradle infant. ▪ Easy installation on tub; secure strap/clip/suction attachment preventing drift. ▪ Material: soft, non-slippery, breathable/quick-dry mesh or 3D air-mesh; latex-free, hypoallergenic. ▪ Foldable/stretchable to fit tub; supports semi-reclined head-above-water posture. ▪ Cleaning: removable; machine- or hand-washable; dries within 6–8 h (bidder to state). ▪ Sizing: 0–6 months (or until infant sits independently); safe weight up to 9 kg (bidder to state). ➤ <u>Materials & Safety</u> ▪ Plastics PP/PE or equivalent; BPA-, phthalate-, and lead-free. ▪ Soft parts TPE/foam/mesh suitable for skin contact (ISO 10993 declaration or equivalent). ▪ Slip resistance: internal anti-slip zone + external non-slip feet. ▪ Safety labeling: permanent warnings (never leave child unattended, max water level/weight). ➤ <u>Cleaning & Maintenance</u> ▪ Compatible with routine disinfectants (alcohols, quats, dilute chlorine $\leq 1,000$ ppm). ▪ No permanently fixed fabric; pad fully removable; drain plug detachable for cleaning.	

Item Description	Supplier Specifications
PACKAGE (O) OPERATION	
001 Light, Operation, major Dual Surgical Qty : 3  ➤ <u>General Technical Requirements</u> ▪ Dual light heads, ceiling-mounted, with spring-loaded counterbalance suspension system. ▪ Lightweight, easy to maneuver; capable of 360° horizontal rotation and >80 cm vertical movement. ▪ Each light head shall have a reflector/lens housing with filtered light source, providing shadow-free, cool, daylight-quality illumination. ▪ Smooth design, compatible with laminar air flow, with no heat dissipation to patient or staff (temperature rise <1°C). ▪ Zero drift tolerance is required. ➤ <u>Light Source & Optics</u> ▪ High-performance single-color LEDs with lifetime $\geq 50,000$ hours. ▪ Illumination at 1 m: 160,000 lux. ▪ Color temperature: 4,000–4,500 K (daylight). ▪ Color Rendering Index (CRI): $R_a \geq 95$. ▪ Adjustable field diameter at 1 m: 16–32 cm, focusing via sterile central handle. ▪ Depth of illumination at 20%: ≥ 85 cm. ▪ Depth of illumination at 60%: ≥ 50 cm. ▪ D50/D10 ratio: ≥ 0.55. ▪ Radiant energy: $\leq 3.9 \text{ mW/m}^2 \cdot \text{lx}$. ▪ Equipped with heat-absorbing filters; optical system shall transmit visible light downward while dissipating heat upward.	

Item Description	Supplier Specifications
➤ <u>Controls</u> ▪ Variable intensity control on the light head and remotely on a wall-mounted panel. ▪ Automatic light field guidance system. ▪ Each light head fitted with two autoclavable sterile handles, with focusing capability via the central handle. ➤ <u>Power & Safety</u> ▪ Built-in reserve LED modules with automatic switchover in case of failure. ▪ Supplied with ceiling ring and transformer. ▪ Automatic changeover to emergency power supply in the event of mains failure. ▪ Uninterruptible power system (UPS) bridging backup for ~30 seconds using enclosed battery and DC transformer. ▪ Built-in automatic battery charger (continuous trickle charging while on mains). ▪ Bidder to provide full battery specifications including duration, charging time, and lifetime. ▪ Enclosure ingress protection: IPX1 or better. ▪ Operable in ambient temperature 10–40 °C and relative humidity 15–85%. ➤ <u>Accessories & Installation</u> ▪ To be supplied with all required accessories and installation material for complete, proper functionality.	

Item Description	Supplier Specifications
O02 Light Operation, Single Qty : 3 ➤ <u>General Technical Requirements</u> ▪ Single light head, ceiling-mounted, with spring-loaded counterbalance suspension. ▪ Lightweight and easy to maneuver, capable of 360° horizontal rotation and >80 cm vertical movement. ▪ Each light head shall have a reflector/lens housing with filtered light source, providing shadow-free, cool, daylight-quality illumination. ▪ Smooth design, compatible with laminar air flow, with zero drift tolerance. ➤ <u>Light Source & Optics</u> ▪ Single-color high-performance LEDs with lifetime $\geq 50,000$ hours. ▪ Illumination at 1 m: 160,000 lux. ▪ Color temperature: 4,000–4,500 K (daylight). ▪ Color Rendering Index (CRI): $R_a \geq 95$. ▪ Focal length >65 cm, performance maintained within ± 250 mm tolerance. ▪ Adjustable field diameter at 1 m: 16–32 cm, focusing via sterile central handle. ▪ Depth of illumination at 20%: ≥ 85 cm. ▪ Depth of illumination at 60%: ≥ 50 cm. ▪ D50/D10 ratio: ≥ 0.55. ▪ Radiant energy: $\leq 3.9 \text{ mW/m}^2 \cdot \text{lx}$. ▪ Equipped with heat-absorbing filter; optical system shall transmit visible light downward and dissipate heat upward.	

Item Description	Supplier Specifications
➤ <u>Controls</u> ▪ Variable intensity control provided on the unit and remotely via wall-mounted panel. ▪ Each light head fitted with sterile handgrips (center and rail), with focusing capability via the central handle. ▪ Electronic, sensor-controlled electromagnetic brakes for precise positioning. ➤ <u>Power & Safety</u> ▪ Automatic switchover to reserve LED modules in case of failure. ▪ Supplied with ceiling ring and transformer. ▪ Automatic changeover to emergency power supply in the event of mains failure. ▪ Uninterruptible power supply (UPS) bridging backup for ~30 seconds using enclosed battery and DC transformer. ▪ Built-in automatic battery charger (continuous trickle charging while on mains). ▪ Bidder to provide full battery specifications including backup duration, lifetime, and charging time. ▪ System shall be supplied with all required accessories and installation materials for complete and proper functionality.	

Item Description	Supplier Specifications
O03 Attachment, Orthopedics Qty: 1 ➤ <u>General Technical Requirements</u> ▪ The attachable extension system shall be: - Radio-translucent to permit intraoperative fluoroscopy. - Connecting plate and counter-traction post made of carbon fiber for strength and radiolucency. - Capable of adduction and abduction in 9° increments. - Easily attachable/detachable from standard operating tables. ▪ To be delivered complete with all required accessories and installation fittings for full functionality. ➤ <u>Accessories (to be delivered with the system)</u> ▪ For Femoral Nailing - One (1) femoral counter-traction post with padding. - One (1) universal leg support for positioning the contralateral healthy leg in an oblique downward position. ▪ For Tibial and Fibular Nailing - One (1) counter-traction post for tibia/fibula nailing, supplied with cushion. - One (1) condyle fixation device. ▪ For Total Hip Endoprosthesis - Two (2) universal lateral supports. - One (1) back/buttocks support. - One (1) pubis–sacrum–sternum support.	

Item Description	Supplier Specifications
004 Table, Operating 5 sections Qty : 2  ➤ <u>General Technical Requirements</u> ▪ Operating table shall provide an elevated, stable surface that supports the patient's body during surgical procedures, ensuring optimal positioning and exposure of the surgical field. ▪ Table shall be suitable for universal use in cardiovascular, gynecology, urology, neurosurgery, orthopedic, and traumatology surgeries. ▪ Mobile on four double castors, with central locking system operable by foot pedal on both sides. ▪ Fully electric power driven and electro-hydraulically battery driven, with: - Built-in charger module. - Storage capacity of ≥ 10 operations or ≥ 24 hours, whichever is longer. ▪ Built-in electronic battery power monitor. ▪ Shall be operable in battery mode and mains mode (when cable is plugged in). ▪ Table load capacity: ≥ 250 kg. ▪ Top shall be radio-transparent to allow intraoperative imaging, and shall accept X-ray cassettes up to 14" $\times$ 17". ▪ Shall provide clearance for use with a mobile C-arm. ▪ Mattress shall be radiolucent, made of memory foam with conductive foam rubber padding, fixed with gel strips for: Decubitus prophylaxis, Reduction of body heat loss, Enhanced patient comfort. ▪ Shall include instant cardiopulmonary resuscitation (CPR) release function. ▪ Shall include collision-prevention sensors to stop movements automatically in case of imminent obstruction. ▪ Zero function: automatic return of the patient to neutral position.	

Item Description	Supplier Specifications
➤ <u>Table Positions and Adjustments</u> ▪ Minimum positions (from horizontal plane): - 30° Trendelenburg. - 25° Reverse Trendelenburg. - 25° lateral tilt. ▪ Table sections: 5 segments (detachable). ▪ Back rest adjustment: -30° to +80°. ▪ Head rest adjustment: -20° to +50°. ▪ Leg section adjustment: -90° to +10°. ▪ Leg rest inclination angle: 180°. ➤ <u>Controls</u> ▪ Hand- or foot-operated remote control for all table functions. ➤ <u>Standard Accessories (to be delivered with each table)</u> ▪ Side rails. ▪ Armboards. ▪ Shoulder braces. ▪ Stirrups. ▪ Leg holders. ▪ Counter supports. ➤ <u>Additional Accessories</u> ▪ Goepel knee crutches (2 pcs). ▪ Arm positioning device. ▪ Body belt. ▪ Wristlet. ▪ Anesthesia screen with four clamps. ▪ Radial setting clamps (2 pcs). ▪ Cassette slide for X-ray. ▪ Universal lateral support. ▪ Back–buttocks support. ▪ Lateral support. ▪ Infusion stand. ▪ Head rest.	

Item Description	Supplier Specifications
➤ <u>Textile Accessories (Green, washable)</u> ▪ Four (4) anesthetic screens (drapes), 50/50 polycotton. ▪ Four (4) covers, 100% cotton. ▪ Two (2) drapes, 60 × 60 cm, 50/50 polycotton. ▪ Two (2) drapes, 100 × 100 cm, 50/50 polycotton. ▪ Two (2) drapes, 150 × 150 cm, 50/50 polycotton. ▪ Two (2) drapes, 90 × 60 cm, 50/50 polycotton.	

Item Description	Supplier Specifications
O05 Pendant rigid Qty : 4 ▪ The Pendant should be modular. ▪ Max. load of up to 200 kg ▪ Easily installation and maintenance ▪ Flexible positioning for gas and electrical outlets ▪ One vertical supply head fixed column ▪ Modifications or expansions possible without tools – even after installation ▪ To include modular shelves and a drawer ▪ To be equipped with : ▪ Medical gas: ○ Medical Air (3-5 bar): 1 ○ Air 7 bar: 1 ○ O2 outlet: 2 ○ Vacuum outlet: 4 ○ N2O outlet: 1 ○ AGSS outlet: 1 ▪ Electrical outlet ○ 8 electric schuko sockets ▪ IV rod with 4 hooks ▪ Supports the world's most commonly used standards (DIN, BS, AFNOR, etc.)	

Item Description	Supplier Specifications
O06 Operation Room Cabinet Qty : 5 ▪ Large stainless steel 316 grade and supply cabinet. ▪ Full height stainless steel hinged doors with glass panes. ▪ Locking handle door locks. ▪ Five removable stainless steel shelves, adjustable at 1/2" (1.3cm) increments. ▪ Heavy duty, all-welded stainless steel construction ▪ Five removable, adjustable (1/2" increments) stainless steel shelves ▪ Full height, stainless steel doors with glass panes ▪ Convenient handle door latches with lock ▪ The unit shall be constructed in 314 grade stainless steel ▪ Dimensions: 90W x 200 H x 40 D mm	

Item Description	Supplier Specifications
O07 Electro Surgery Unit Qty : 4 ➤ <u>General Technical Requirements</u> ▪ Solid-state electrosurgical generator with oscillator circuit and transistor-based amplifier. ▪ Built-in microprocessor for automatic control, self-test, and diagnostic functions. ▪ Isolated monopolar output and bipolar output, with independent control. ▪ Hand switch and foot switch for monopolar and foot switch for bipolar supplied. ▪ Conforms to IEC 60601-1 (electrical safety) and IEC 60601-2-2 (high-frequency surgical equipment safety). ➤ <u>Performance Parameters</u> ▪ Operating frequency: 0.3 – 1 MHz. ▪ Modes provided (minimum): - Monopolar: pure cut, blend, coagulation, fulguration. - Bipolar: cut and coagulation. ▪ Maximum outputs (specify rated resistance Ω): - Monopolar cutting: 300 W. - Monopolar coagulation: 120 W. - Bipolar coagulation: 50 W. ▪ Open circuit peak-to-peak voltages: - Monopolar cutting: ≤ 2000 V p-p. - Monopolar coagulation: ≤ 6000 V p-p. - Bipolar coagulation: ≤ 300 V p-p. ▪ Safety systems: - RECQM (Return Electrode Contact Quality Monitor) – mandatory. - Automatic power adjustment according to tissue load. - Independent output circuits. - Low constant voltage for patient safety. ▪ Indicators & Display: - Visual and audible activation indicators. - Alarm volume >45 dB at 1 meter, adjustable. - Power setting display (digital).	

Item Description	Supplier Specifications
▪ Cooling system: convection or fan-assisted. ▪ High-frequency leakage currents: compliant with IEC standards. ▪ Optional interface for Argon unit connection. ▪ Self-test mode required. ▪ Power requirements: 220 V AC, 50 Hz. ➤ <u>Accessories (per unit supplied)</u> ▪ 2 × Reusable active electrode pencils with hand control. ▪ 2 × Monopolar forceps cables (universal active cables). ▪ 2 × Bipolar reusable forceps. ▪ 2 × Bipolar cables. ▪ 1 × Reusable return electrode. ▪ 2 × Return electrode cables. ▪ 1 × Universal adaptor compatible with dispersive electrodes of major brands. ▪ 1 pack reusable safety holsters. ▪ 1 pack reusable needles. ▪ 1 pack reusable loop electrodes. ▪ 1 pack reusable ball electrodes. ▪ 1 pack disposable push-button hand control pencils. ▪ 1 pack disposable dual return electrodes. ▪ 1 × Mobile cart with one basket.	

Item Description	Supplier Specifications
O09 Tourniquet Qty : 3  ➤ General Technical Requirements ▪ Microprocessor-controlled automatic pneumatic tourniquet system designed for surgical procedures. ▪ Electrically powered pneumatic pump with microprocessor control for automatic inflation, continuous pressure maintenance, and rapid deflation. ▪ Compact, portable unit with stable base. ▪ Built-in rechargeable battery backup to allow continued use in case of mains power failure. ▪ System shall include the following: - Main control unit with digital display. - Pneumatic Pump. - Cuffs for adult and pediatric use. - Tubing sets. ▪ Case/housing must be medical-grade, disinfectant-resistant, impact resistant. ➤ Performance Parameter ▪ Pressure range: 50 – 500 mmHg, adjustable in 1 mmHg increments. ▪ Pressure accuracy: ± 5 mmHg or better. ▪ Inflation time: ≤ 10 seconds to preset pressure. ▪ Deflation time: ≤ 10 seconds for rapid release. ▪ Comes with Dual control valve for bilateral procedures ▪ Timer function: programmable inflation time (up to ≥ 99 minutes) with alarms for	

Item Description	Supplier Specifications
elapsed and maximum safe use. ▪ Automatic pressure maintenance with compensation for leaks or patient movement. ▪ Manual override: immediate manual inflation/deflation option. ➤ <u>Display & Controls</u> ▪ Large, bright LCD/TFT display showing: - Real-time cuff pressure. - Inflation time elapsed and remaining. - Channel identification (if dual). ▪ User interface: membrane keypad or touchscreen with simple programming. ▪ Battery backup ≥ 30 minutes to allow safe case completion in event of power failure. ➤ <u>Alarms & Safety Features</u> ▪ Audible and visual alarms for: - High/low pressure deviation. - Maximum inflation time reached. - System malfunction. - Battery low / mains failure. ▪ Pressure relief safety valve to prevent overinflation. ▪ Automatic deflation if critical system error occurs. ▪ Lockout function to prevent accidental changes during operation. ➤ <u>Cuffs & Accessories (per unit supplied)</u> ▪ 2 × adult limb cuffs (upper and lower extremity, reusable, autoclavable or high-level disinfectable). ▪ 1 × pediatric cuff. ▪ 2 × sterile disposable cuff liners. ▪ 1 × dual-channel connecting tubing set with quick connectors. ▪ 1 × footswitch (for inflation/deflation control).	

Item Description	Supplier Specifications
O10 Operating Multifunctional Microscope Qty : 1 Zoom microscope that allows the user the ability to operate in a continuous magnification range of 3x-24x. The magnification and the motorized focus system are controlled by a set of control handles or a motorized foot pedal control. This allows the operator the freedom to control the magnification level with ease. In addition to the zoom magnification, the Evolution Zoom can be equipped with an X-Y System that gives the user the ability to control the optic pod positioning easily at high magnifications. - The surgical microscope should be used for Neurosurgery, Spine, and ENT Scope Specs - Objective lens: 200m — 400m - Eyepieces: 10x, 12.5x, and 20x - Field of vision: 14-70mm - Diopter setting: -6 to +6 - Minimum Interpupillary Distance: 48 to 78mm for the Inclinal Binocular Head - Illumination field: 70mm - Dual halogen standard light source with LED display control panel - Illumination brightness in the working area at full power: 80,000 lux (min.) - 0-200° Inclinal Head - Vertical Working Height: minimum 0.70m and maximum 1.45m (without XY) (with XY Positioning system, minimum 0.67m and maximum 1.44m) - Microfocus vertical adjustment limit: 40mm. XY SYSTEM The XY system moves the Optical situation along the X and Y axis of the Horizontal Plane, with a movement of 22.5mm to either side from the central position. The movement / magnification can be controlled either by hand control grip or foot pedal The Multifunction Foot Pedal should have the following functions: - Switches the illumination on and off - Adjusts the magnification of the Zoom system - Motorized micro focusing - Movement of XY system by means of the Foot stick - Illumination brightness adjusting	

Item Description	Supplier Specifications
O11 Colposcopy Qty : 1 ▪ The Digital Video Colposcopy system is a powerful high definition camera and imaging module used for clinical examinations of the cervix, vulva and vagina. ▪ The video colposcopy should use a digital camera for a crystal clear imaging. ▪ The camera resolution to be at least 2 Mega Pixels. ▪ The mini-LCD viewing screen is a plus. ▪ The digital video colposcopy should be able to connect to a computer or a large screen TV. ▪ Adjustable LED lights system that is precisely set to 5000~5500 K color temperature to optimize the image color and quality. ▪ Progressive green filter allows the user to control how much green filter to use. ▪ Auto focus adjusts on the go as you zoom. ▪ Manual focus allows the user to focus on different layers of depths ▪ Handheld remote allows the user to control the camera functions with minimal motion transfer. ▪ 3-pedal foot pedal for hands-free image and video capture. ▪ Capture videos and/or pictures for future reference. ▪ The unit has to be delivered with all accessories necessary for normal and safe use ▪ The unit shall be IEC-601-1 approved	

Item Description	Supplier Specifications
O12 Warmer, Blood Infusion Qty : 5  ➤ <u>General Requirements</u> ▪ Medical-grade, heavy-duty blood and infusion fluid warming device. ▪ Suitable for continuous use in hospital wards, operating theatres, ICUs, and emergency settings. ▪ Portable, compact, and maintenance-friendly design. ➤ <u>Performance</u> ▪ Temperature Range: Adjustable from 35 °C to 42 °C. ▪ Temperature accuracy: ± 0.1 °C, with continuous monitoring and feedback control. ▪ Heating Method: Dry heating system (no water bath) to avoid cross-contamination. ▪ Flow Rate Compatibility: Able to warm fluids and blood at rates from 2 mL/min up to ≥ 500 mL/min without significant drop in set temperature. ▪ Response Time: Warm-up time ≤ 2 minutes to reach operating temperature. ➤ <u>Safety Features</u> ▪ Over-temperature protection with automatic shut-off above 42 °C. ▪ Audible and visual alarms for: Overheating, System fault, Power failure ▪ Automatic air detection and bypass protection when used with infusion lines. ▪ Protection against free hemoglobin release (no overheating of blood). ▪ Device shall not cause hemolysis or damage to blood components.	

Item Description	Supplier Specifications
➤ <u>Operation</u> ▪ Display: Digital LED or LCD screen showing set and actual temperature in real time. ▪ Controls: Microprocessor-controlled with simple user interface (push buttons or touch). ▪ Alarms: Both visual and audible; must remain until acknowledged. ▪ Indicators: Power on, heating status, fault warning. ➤ <u>Accessories & Consumables</u> ▪ Disposable warming sets/tubing: Minimum 50 sets included. ▪ IV pole clamp or mounting kit.	

Item Description	Supplier Specifications
O13 Syringe Pump Qty : 14  ➤ General Requirements ▪ Microprocessor-controlled infusion pump designed for continuous and accurate delivery of IV drugs and fluids. ▪ Compact, lightweight, portable, and suitable for bedside use. ▪ User interface: Large LCD display showing rate, volume, syringe type, and alarms. ▪ Membrane or soft touch, control keypad. ▪ Compatible with standard disposable syringes of major brands (10, 20, 30, 50/60 ml). ▪ Automatic recognition of syringe size and brand. ▪ Display of infusion rate, infused volume, volume remaining, total infused volume, pressure level on bar graph, syringe size, alarms and event history. ➤ Performance Parameters ▪ Prime / purge control. ▪ Bolus rate up to: 1200ml/h with a 50 ml syringe. ▪ Adjustable, occlusion pressure (approx. 250 – 600mmHg). ▪ Infusion rate: 0.1ml to 600ml/h in 0.1 ml/h increments. ▪ Volume limit: 0.1ml to 0.5ml in 0.1ml increments. ▪ KVO rate: 1 to 5ml/h. ▪ Accuracy: to be better than 2%. ▪ Syringe size auto-detection. ▪ Dose error reduction system. ▪ Pump self-test at startup. ▪ Event log with time & date stamped ≥ 200 events stored (to include, error codes, alarms, rates, amounts infused...)	

Item Description	Supplier Specifications
➤ <u>Alarms & Safety Features</u> ▪ Audible and visual alarms for: - Fluid depletion - Infusion near end - Infusion end - High pressure / occlusions - System malfunction - Syringe Unlocked - Plunger disengaged - Lower battery - Mains failure - Purge mode - KVO mode - Flow error ▪ Start infusion only after syringe and parameters confirmed (“safety lockout”). ▪ Keypad / screen lock function to prevent accidental changes. ➤ <u>Power Requirements</u> ▪ Built in charger and rechargeable battery: ≥ 6 hours operation at 5 ml/h with 50 ml syringe. ▪ Automatic switch to battery during power failure. ➤ <u>Accessories (per unit supplied)</u> ▪ Rail / pole mounting clamp.	

Item Description	Supplier Specifications
O14 Infusion Pump Qty : 15	
➤ General Requirements ▪ Microprocessor-controlled volumetric infusion pump designed for continuous and precise delivery of IV fluids and medications. ▪ Compact, lightweight, portable, suitable for bedside and transport use. ▪ Operation via touchscreen panel with soft-touch/membrane keys as backup. ▪ Spill-resistant, easy-to-clean control interface. ▪ Large, backlit LCD/TFT display $\geq 4''$ showing infusion rate, VTBI, volume infused, remaining time, and alarm status. ▪ Compatible with standard IV sets from all major manufacturers. ▪ Housing made of impact-resistant, medical-grade, disinfectant-resistant material. ➤ Performance Parameters ▪ Flow rate range: 0.1 – 1200 ml/h, adjustable in 0.1 ml/h increments. ▪ VTBI (Volume To Be Infused): 1 – 9999 ml. ▪ KVO (Keep Vein Open) rate: adjustable 0.1 – 5 ml/h after infusion complete. ▪ Accuracy: better than $\pm 5\%$ ($\pm 2\%$ desirable). ▪ Occlusion pressure: user-selectable (low/medium/high). ▪ Air-in-line detection: ultrasonic or equivalent, automatic stop and alarm. ▪ Free-flow protection: mechanical and electronic. ▪ Programming modes: rate, volume over time, VTBI, and body-weight dosing ($\mu\text{g/kg/min}$, mg/kg/h). ▪ Bolus function: programmable bolus volume and rate, clinician-controlled.	

Item Description	Supplier Specifications
▪ Secondary infusion capability: automatic switch-over from secondary to primary infusion. ▪ Prime/Purge function: with safety interlock (only allowed when line is disconnected from patient). ▪ Anti-bolus mechanism to prevent surge after occlusion release. ➤ <u>Alarms & Safety Features</u> ▪ Audible and visual alarms for: - Low Battery - Flow error - Drop sensor - System malfunction - Infusion complete - Open door - Upstream/downstream occlusion - Air in line - Set miss-loading or bad set ▪ Start infusion only after parameters confirmed (“safety lockout”). ▪ Keypad / screen lock function to prevent accidental changes. ➤ <u>Power Requirements</u> ▪ Built in charger and rechargeable battery. ▪ Battery life: ≥ 6 h at 25ml/h when fully charged. ▪ Automatic switch to battery during power failure. ➤ <u>Accessories (per unit supplied)</u> ▪ Rail / pole mounting clamp.	

Item Description	Supplier Specifications
O15 Suction apparatus, surgical Qty : 4  ➤ General Technical Requirements ▪ Electrically powered suction apparatus designed for use in surgical procedures. ▪ Mobile, compact, and mounted on a stable trolley with ≥ 4 castors (two lockable). ▪ Housing must be medical-grade, disinfectant-resistant, and impact-resistant. ▪ Exchangeable bacteria filter ▪ Provide Foot-Switch ➤ Performance Parameters ▪ Vacuum range: 0 – 90 kPa (0 – 680 mmHg), continuously adjustable with vacuum regulator. ▪ Flow rate: ≥ 30 liters/min (free air flow). ▪ Vacuum build-up time: ≤ 10 seconds to reach 90% of maximum vacuum. ▪ Noise level: ≤ 60 dB(A) during operation. ▪ Vacuum gauge: large, easy-to-read, shock-protected, calibrated in mmHg and kPa. ▪ Operation: continuous duty motor, oil-free, maintenance-free pump. ▪ Overflow protection: hydrophobic bacterial filter and mechanical overflow valve. ➤ Collection System ▪ Two $\times \geq 2$-liter autoclavable polycarbonate jars, graduated and fitted with airtight lids. ▪ Jars mounted on a quick-release system for easy removal and cleaning. ▪ Each jar fitted with overflow protection. ▪ Disposable suction liners (starter pack) supplied.	

Item Description	Supplier Specifications
➤ Accessories (per unit supplied) ▪ 1 × Suction hose, ≥4 m length, medical grade, autoclavable. ▪ Complete tubing and surgical suction set (patient tubing + machine connection tubing). ▪ 10 × Spare bacterial/viral hydrophobic filters. ▪ 1 × Yankauer suction handles (adult, autoclavable, with suction tubing adaptors).	

Item Description	Supplier Specifications
O16 Table, Operating 3 sections Qty : 2 ▪ 3 sections universal mobile operating table (including head plate and leg plate) with electrohydraulic adjustment by means of hand-held control unit of 3 table functions: Up/down, Lateral tilt, Trendelenburg/Reverse Trendelenburg. ▪ Leg plat adjustment up/down via pneumatic spring support. ▪ Head rest adjustment up/down via handle screws. ▪ Mobile on 4 double castors with central lock by mean of foot pedal on both sides. 1 of the castors with directional lock. ▪ The table can be operated in battery mode. Battery charger is integrated. All connections and buttons are splash-proof. For emergency backup, the table must have additional Hydraulic adjustment. ▪ The material of the base & body of the table should be of high quality stainless steel for hygiene & durability. ▪ Table mattress radiolucent made of memory foam pads fixed to the table by means of gel strips to assure an efficient decubitus prophylaxis, reduce body heat loss and provide comfort to the patient. ▪ Table movements via the control elements are only carried out when the castor brake is activated. ▪ The table must have divided foot section with an option of interchangeable leg & head section. Leg section split type. ▪ Power supply: 220V/ 50Hz. Line cord and plug suitable for conditions of use. ▪ Unit shall meet international safety and electrical standards such as IEC 601-1, CE marked, FDA, ISO. ▪ Measurements Approx.:	

Item Description	Supplier Specifications
▪ Overall length (with head and leg section): 2000 - 2100 mm ▪ Overall width 600 mm ▪ Height adjustment 600 – 1100 mm ▪ Head section length 300 mm ▪ Leg section length 700 mm ▪ Back section adjustment - 30°/+ 80° ▪ Leg section adjustment - 90°/+ 10° ▪ Trendelenburg /Reverse Trendelenburg 30° ▪ Leg section 700 mm ▪ Lateral tilt +/- 20° ▪ Flex / reflex 210°/ 105° ▪ Safe Working load 350 kg ▪ Standard Accessories: ▪ Leg plated, pair ▪ Headrest ▪ Anesthesia screen with clamps ▪ Padded arm rest with straps - pair with clamps ▪ Shoulder supports - pair with clamps ▪ Patient body strap ▪ Body Support - back and pubis ▪ Cassette tray ▪ Bowl	

Item Description	Supplier Specifications
O17 Surgeon Control Panel Qty : 4  ➤ <u>Construction & Design</u> ▪ Flush wall-mounted, fully stainless steel enclosure (minimum SS 304, powder-coated or antimicrobial finish). ▪ Front face shall be smooth, sealed, and easy to clean, complying with operating theatre hygienic standards. ▪ Minimum IP54 protection for dust and moisture resistance. ▪ Panel shall be modular and upgradeable for future expansion. ➤ <u>Display & User Interface</u> ▪ LCD Touch Screen Display, minimum 21.5", full-color, resolution 1920 × 1080 or higher. ▪ Capacitive multi-touch interface with medical-grade protective glass. ▪ User-friendly graphical interface with icons and menu-driven controls. ▪ Password-protected access levels (user/admin/service). ➤ <u>Power Supply & Backup</u> ▪ Powered from hospital electrical supply (220–240 V, 50/60 Hz). ▪ Built-in emergency backup battery, supporting at least 30 minutes full operation in case of power failure. ▪ Automatic switchover to UPS/hospital emergency supply. ➤ <u>Integrated Functions & Parameters</u> The panel shall consolidate the following functions: ▪ Clocks & Timers - Digital wall clock (real-time). - Elapsed time clock (surgical timer).	

Item Description	Supplier Specifications
- Anesthesia timer with adjustable alarm. ▪ Communication - Integrated hands-free telephone system. - Dialing and receiving calls with caller ID display. - Optional VoIP/PBX integration with hospital system. ▪ Environmental Monitoring - Temperature and humidity indicator, ± 1 °C / $\pm 2\%$ RH accuracy. - Differential pressure indicator for monitoring positive/negative pressure between OT and adjacent areas. - HEPA filter status indicator (visual warning when clogged). ▪ Gas Alarm System - Continuous monitoring of 5 medical gas channels: Oxygen (O₂), Nitrous Oxide (N₂O), Medical Air 4 bar, Instrument Air 7 bar, and Vacuum. - Gas levels indicated as High / Low / Normal. - Audible and visual alarms, complying with HTM 02-01 / ISO 7396-1 standards. ▪ Lighting & Room Control - Central room lighting control with dimmer. - Operating light control with dimmer. - Interface-ready for integration with Building Management System (BMS) or Operating Theatre integration systems. ➤ <u>Safety & Standards</u> - Panel must meet IEC 60601-1 (medical electrical equipment safety). - Gas alarm system to comply with HTM, NFPA 99, or equivalent. ➤ <u>Documentation & Submittals</u> ▪ Supplier shall provide shop drawings showing all wiring, conduit, and connections.	

Item Description	Supplier Specifications
O18 Nerve Stimulator Qty : 2  ➤ General Technical Requirements ▪ Portable, battery-operated nerve stimulator for use in anesthesia and regional blocks. ▪ Lightweight, ergonomic design for handheld use. ▪ Housing made of medical-grade, disinfectant-resistant material. ➤ Performance Parameters ▪ Output current range: 0.01 – 5.0 mA, continuously adjustable in 0.01 mA increments. ▪ Pulse duration: selectable, typically 0.05–1.0 ms. ▪ Frequency settings: 1–5 Hz (single twitch, train-of-four [TOF], tetanus, double-burst). ▪ Accuracy: $\pm 5\%$ of set current. ▪ Display: LCD/LED screen showing stimulation parameters (current, frequency, mode, battery status). ▪ Mode of stimulation: Single twitch, Train-of-Four (TOF), Tetanus (50Hz), Double-burst stimulation. ▪ Polarity reversal control for accurate nerve localization. ▪ Output impedance: $\geq 1 \text{ k}\Omega$ at maximum current. ➤ Safety Features ▪ Constant current output (independent of skin impedance). ▪ Automatic shut-off after prolonged inactivity. ▪ Visual and audible indicators for stimulation. ▪ Overload and short-circuit protection. ➤ Accessories (per unit supplied) ▪ 1 × Rechargeable battery pack (installed). ▪ 1 × Charger/power adaptor.	

Item Description	Supplier Specifications
▪ 2 × Electrode cables with connectors. ▪ 1 × Pack of surface electrodes (disposable). ▪ 1 × Set of needle electrodes for nerve blocks (sterile disposable starter pack). ▪ Carry/storage case.	

Item Description	Supplier Specifications
O19 Craniotomy Drill (Pneumatic) Qty : 1 ➤ <u>General Requirements</u> ▪ Heavy-duty, medical-grade pneumatic craniotomy drill system for neurosurgery. ▪ Designed for performing precise burr holes and craniotomies. ▪ Portable and compatible with central compressed medical air or supplied with dedicated compressor. ➤ <u>Handpiece</u> ▪ Pneumatic, lightweight, ergonomic design (≤ 500 g). ▪ Autoclavable and corrosion-resistant. ▪ Vibration-free operation. ▪ Quick-connect system for burrs and attachments. ▪ Rotational speed: $\geq 60,000$ rpm (high-speed mode) and ≥ 200 rpm (low-speed drilling/saw mode). ▪ Forward and reverse rotation control. ▪ Integrated cooling to prevent overheating ➤ <u>Construction</u> ▪ Durable stainless steel / medical-grade alloy housing. ▪ Compact and lightweight system. ▪ Easy to assemble, disassemble, and sterilize. ➤ <u>Control & Operation</u> ▪ Foot pedal control with variable speed regulation. ▪ Quick response start/stop mechanism. ▪ Safety clutch mechanism to prevent over-penetration. ▪ Option for dual trigger (forward/reverse). ➤ <u>Safety Features</u> ▪ Autoclavable handpiece and attachments. ▪ Dura-protecting footplate design for craniotome attachment. ▪ Overpressure protection in air supply. ▪ Automatic shut-off in case of air blockage.	

Item Description	Supplier Specifications
➤ <u>Attachments & Accessories</u> ▪ Perforator/Burr attachment for creating burr holes. ▪ Craniotome attachment for cutting bone flaps with footplate guard for dura protection. ▪ Hudson/Standard coupling for neurosurgical burrs. ▪ Set of burrs (minimum 10 pieces): - Perforator burrs (various sizes, e.g., 7–14 mm). - Round burrs (3–9 mm). - Tapered burrs. ▪ The supplier should supply all the necessary adapters to connect the hose to the gas outlet ▪ A regulator to control the pressure of compressed air to the pneumatic control	

Item Description	Supplier Specifications
O20 Endoscopy Video System, Flexible Qty: 1  ➤ <u>General Technical Requirements</u> ▪ All below listed equipment should be factory/supplier listed as compatible with each other to provide 4K Ultra HD Medical Grade Flexible Endoscopy Video Images with AI-enhanced visualization. ▪ All system components should be constructed from durable, medical-grade, biocompatible materials resistant to repeated high-level disinfection, sterilization, and daily clinical use. ▪ All controls should be designed for heavy-duty use with sealed, liquid-proof (IPX6/IPX7 compliant) construction. ▪ Device design should prevent misinterpretation of displays and accidental control changes; haptic/visual feedback required for all critical functions. ▪ All components must be validated for easy reprocessing, automated disinfection, and sterilization compatibility (ETO, Plasma, H₂O₂ vapor, Peracetic acid systems). ▪ All system components must support remote diagnostics, predictive maintenance, and software updates. ▪ The system will consist of the following list: - Video Processor / Camera Control Unit - Light Source - Video Monitor - Recording and Printing - Co2 Insufflator - Suction & Irrigation Pump - Flexible Endoscopes - Equipment Cart	

Item Description	Supplier Specifications
- Endoscopy Leakage Testers - Endoscopy Cabinet - Accessories ➤ <u>Video Processor / Camera Control Unit</u> ▪ 4K UHD Medical Grade Image Processing System with AI-enhanced tissue recognition and digital chromoendoscopy (e.g., NBI/i-Scan equivalent). ▪ Wide color gamut: $\geq 98\%$ DCI-P3, $\geq 90\%$ BT.2020. ▪ 12" intuitive capacitive multi-touch display with programmable quick-access keys and optional voice control. ▪ Automatic and AI-assisted exposure and illumination control. ▪ Control/Features: white balance, dynamic HDR tone mapping, AI-based illumination, video gain, sharpness, contrast, digital zoom up to $2\times$ lossless, enhancement modes. ▪ Continuous real-time display: ≥ 60 fps in 4K UHD, ≥ 120 fps in FHD, image latency < 50 ms. ▪ Multi-user profile management: ≥ 50 surgeons with stored presets (enhancement, white balance, iris, zoom). ▪ Patient data entry: manual (onscreen keyboard) or automatic via DICOM Worklist / HL7 EMR integration. ▪ Seamless integration with third-party Endoscopy Management Systems, PACS, and hospital HIS. ▪ Integrated export via USB-C, SDXC, Ethernet, Wi-Fi 6E, with secure cloud archiving, encrypted transfer, and PACS/EMR compatibility. ▪ Remote software upgrade capability. ➤ <u>Light Source</u> ▪ LED/Laser hybrid light source, ≥ 2000 lumens, optimized for 4K imaging. ▪ Automatic and manual brightness adjustment. ▪ Stand-by mode with instant restart. ▪ Memory settings retained after power-off. ▪ Lamp life: $\geq 20,000$ hours continuous use. ▪ Real-time monitoring with pre-alarm for system issues. ▪ Integrated backup LED module with seamless switchover. ▪ Built-in narrow band and multispectral imaging modes (RGB/NBI/i-Scan equivalent). ▪ Whisper-quiet cooling system (< 30 dB).	

Item Description	Supplier Specifications
➤ <u>Video Monitor</u> - Medical grade, designed for continuous OR/endoscopy suite use with sealed, easy-clean front. - Size: ≥ 32-inch UHD monitor with height/tilt/swivel adjustment. - Resolution: 4K UHD (3840×2160). - HDR10+ support with ultra-high contrast ratio $\geq 2000:1$. - Anti-reflective, protective glass with scratch-resistant coating. - Connectivity: HDMI 2.1, DisplayPort 1.4, 12G-SDI, Fiber Optic, USB-C. - Integrated cable management for cart/ceiling mount. ➤ <u>Recording and Printing</u> - Integrated digital recording system with 4K UHD video capture. - Solid-state drive (SSD) based, expandable storage ≥ 2 TB. - Direct export to DICOM, PACS, EMR, Cloud Storage. - Supports encrypted recording and playback. - Wireless transfer to hospital servers (Wi-Fi 6E). - Supplied with medical-grade color photo printer (A6/A5 capability, ≥ 300 dpi). ➤ <u>Co2 Insufflator</u> - AI-assisted microprocessor control for ultra-precise flow. - Flow Rate: 0.1 – 10 L/min adjustable (suitable for low- and high-flow GI/colorectal procedures). - Pressure Range: 0 – 25 mmHg with digital real-time display. - Accuracy: ± 1 mmHg regulation. - Automatic leak detection, occlusion detection, and gas depletion cut-off. - Audible/visual alarms for overpressure, leakage, or disconnection. - Compatible with both central CO₂ pipeline and portable cylinders. - Integrated digital cylinder gauge with Bluetooth monitoring. - Supplied with ≥ 30 sterile disposable CO₂ filters ($\geq 99.999\%$ bacterial/viral retention). ➤ <u>Suction & Irrigation Pump</u> - Dual-function unit for suction and irrigation, compact cart-mount design. - Digital display with programmable suction and irrigation parameters. - Suction: - Adjustable negative pressure 0–700 mmHg. - Flow ≥ 35 L/min. - Dual 2 L autoclavable jars with overflow protection and hydrophobic antibacterial filter.	

Item Description	Supplier Specifications
▪ Irrigation: - Adjustable pressure 50–350 mmHg. - Flow rate ≥ 1.5 L/min. - Compatible with sterile water/saline bags or bottles. - Automatic air purge system. ▪ Footswitch: dual-pedal for suction/irrigation. ▪ Equipped with alarms: occlusion, overpressure, full jar. ▪ Accessories to be Supplied: - 2 × autoclavable suction jars (≥ 2 L each). - 1 × bottle holder for irrigation fluid. - 1 × set of suction tubing (reusable autoclavable). - 1 × set of irrigation tubing (disposable). - 1 × bacterial/viral filter set (disposable, ≥ 20 pieces). - 1 × dual footswitch. ➤ <u>Flexible Endoscopes</u> ▪ All scopes supplied must be compatible with the 2025 4K video system. ▪ All below listed and supplied flexible endoscopes should be therapeutic endoscopes; below listed scopes specifications are for indicative purposes where the therapeutic function precedes the below listed specifications; hence minimal justifiable deviations are allowed to guarantee the required therapeutic function; those deviations should be explicitly explained in below related flexible endoscopes sections ▪ All scopes therapeutic-grade, supplied with original protective carrying cases. ▪ Must be validated for automated reprocessing and low-temperature sterilization. ▪ Gastroscope - Insertion tube: ~9.5–10 mm - Working length: ~1.0–1.1 m - Working channel: ≥ 3.2 mm - Tip deflection: $\geq 210^\circ$ up/down, $\geq 120^\circ$ right/left - High-resolution imaging with lens wash, water jet, narrow-band equivalent modes ▪ Colonoscope - Insertion tube: ~12.5–13 mm - Working length: ~1.6–1.7 m - Working channel: ≥ 3.8 mm - Tip deflection: $\geq 180^\circ$ up/down, $\geq 160^\circ$ left/right - Enhanced torque balance for easier navigation	

Item Description	Supplier Specifications
▪ Duodenoscope - Insertion tube: ~11.5–12.5 mm - Working length: ~1.2 m - Working channel: ≥ 4.2 mm - Distal tip with side-viewing optics, elevator function - Enhanced reprocessing safety design (sealed distal cap, disposable elevator cap option) ▪ Bronchoscope - Insertion tube: 4.8–6 mm range - Working length: ~0.6 m - Working channel: 2.8–3.0 mm - Tip deflection: $\geq 210^\circ$ up/down, $\geq 120^\circ$ right/left - Compatible with therapeutic instruments ➤ <u>Equipment Cart</u> ▪ Heavy-duty, medical-grade cart with anti-rust aluminum/stainless construction. ▪ ≥ 4 ventilated equipment shelves with integrated cooling. ▪ Adjustable monitor arm for ≥ 32" monitor. ▪ Integrated power strip (≥ 8 medical-grade sockets, grounded, surge-protected). ▪ Gas cylinder holder (CO₂), suction jar holder. ▪ Endoscope hooks and holders. ▪ Ergonomic push handles and cable management system. ▪ Lockable casters, ≥ 12 cm diameter. ➤ <u>Endoscopy Leakage Testers</u> ▪ Automatic electric air-pump type leakage tester. ▪ Digital display with overpressure relief. ▪ Compatible with all supplied endoscopes. ▪ USB/Bluetooth connectivity for reprocessing log recording. ➤ <u>Endoscopy Cabinet</u> ▪ Medical-grade drying and storage cabinet for ≥ 10 endoscopes. ▪ Vertical hanging design to prevent kinking. ▪ Integrated HEPA-filtered airflow and UV-C disinfection. ▪ Automated drying cycle with monitoring of humidity and cycle completion. ▪ Freestanding, lockable, with ≥ 12 cm casters. ▪ Stainless steel, double wall, insulated.	

Item Description	Supplier Specifications
➤ <u>Accessories</u> ▪ Full set of original manufacturer's air/water, suction, and biopsy valves (1 per endoscope). ▪ Water bottles with tubing/connectors (≥ 2). ▪ Keyboard and mouse for data entry, sliding tray included. ▪ Protective monitor cover. ▪ Anti-fogging solution (≥ 2 bottles). ▪ Sterilization trays/baskets for all scopes. ▪ Supplied with ≥ 5 packs of printer paper (≥ 50 sheets per pack).	

Item Description	Supplier Specifications
O20a Endoscopy Video System, Rigid Qty: 1  ➤ General technical requirements: Imaging System ▪ All below listed equipment should be factory/supplier listed as compatible with each other to provide 4K Ultra HD Medical Grade Laparoscopic Video Images with AI-enhanced visualization. ▪ All system components shall be made of durable, medical-grade biocompatible materials resistant to high-level disinfection, sterilization, and mechanical stress. ▪ All switches, knobs, and controls shall be sealed to IPX6/IPX7 standards, ergonomic, and designed to withstand heavy clinical use. ▪ Device design shall prevent accidental control changes and misinterpretation of displays through lockable presets and clear UI. ▪ All system components shall be validated for easy cleaning, automated disinfection, and sterilization. ▪ The system shall support predictive maintenance, remote diagnostics, and firmware/software upgrades. ▪ The system will consist of: - Video Processor - Camera Head - Light Source - Video Monitor - Recording and Archiving - CO₂ Insufflator - Suction & Irrigation Pump - Telescopes & Instrument Sets	

Item Description	Supplier Specifications
- Equipment Cart - Endoscopy Stretcher - Endoscopy Cabinet - Accessories ➤ <u>Video Processor</u> ▪ 4K UHD image processing unit with AI-assisted image enhancement (real-time noise reduction, vascular mapping, digital chromoendoscopy). ▪ Wide color gamut: $\geq 98\%$ DCI-P3, $\geq 90\%$ BT.2020. ▪ User interface: 12" capacitive multi-touch panel, voice command support, wireless control option. ▪ AI-based auto exposure and illumination adjustment. ▪ Control/Features: white balance, HDR tone mapping, illumination gain, digital zoom ($\geq 2\times$ lossless), sharpness, edge enhancement, chromoendoscopy filters. ▪ Surgeon/User profiles: ≥ 50 programmable presets with recall of preferences (white balance, enhancement, zoom, iris, etc.). ▪ Patient data entry: on-screen keyboard or direct DICOM Worklist/HL7 HIS/EMR integration. ▪ Real-time video output at ≥ 60 fps in 4K, ≥ 120 fps in FHD, latency < 50 ms. ▪ Integrated connectivity: USB-C, SDXC, Ethernet, Wi-Fi 6E, DICOM, PACS, Cloud archiving with encrypted transfer. ▪ Remote software upgrade enabled. ➤ <u>Camera Head</u> ▪ Ultra-compact, lightweight, ergonomic design, ≤ 200 g. ▪ Secure, quick-lock coupler compatible with all supplied rigid scopes. ▪ Continuous real-time image transmission at ≥ 60 fps in 4K UHD. ▪ Integrated AI-assisted autofocus and digital zoom $\geq 2\times$. ▪ Programmable multi-function buttons (≥ 3). ▪ Reinforced autoclavable cable with modular, replaceable design. ▪ Waterproof and validated for repeated autoclave cycles. ➤ <u>Light Source</u> ▪ LED/Laser hybrid light source with luminous flux ≥ 2000 lumens, optimized for 4K imaging. ▪ Automatic/manual brightness control with AI-assisted adjustment. ▪ Stand-by mode with instant restart. ▪ Memory of settings after shutdown.	

Item Description	Supplier Specifications
▪ Lamp life: $\geq 20,000$ hours continuous use. ▪ Built-in multispectral and narrow-band imaging modes. ▪ Real-time system monitoring with predictive maintenance alerts. ▪ Integrated backup LED module with seamless switchover. ▪ Noise level < 30 dB. ➤ Video Monitor ▪ ≥ 32-inch medical-grade 4K UHD HDR monitor with sealed, easy-clean front. ▪ Resolution: 3840×2160 minimum. ▪ HDR10+ with ultra-high contrast ratio $\geq 2000:1$. ▪ Wide color gamut ($\geq 98\%$ DCI-P3). ▪ Multiple inputs: HDMI 2.1, DisplayPort 1.4, 12G-SDI, USB-C, Fiber. ▪ Anti-reflective, protective glass surface with scratch resistance. ▪ Supplied with all accessories for cart or ceiling mount. ➤ Recording and Archiving ▪ Integrated 4K video capture and still image recorder. ▪ ≥ 2 TB internal SSD storage. ▪ Export: DICOM, PACS, EMR, USB-C, cloud archiving (encrypted). ▪ Wireless transfer via Wi-Fi 6E. ▪ Supplied with medical-grade color photo printer ($\geq A6$ format, ≥ 300 dpi). ➤ CO₂ Insufflator ▪ AI-enhanced, microprocessor-controlled electronic insufflator. ▪ Flow rate: $0.1 - 50$ L/min. ▪ Pressure range: $0 - 25$ mmHg, accuracy ± 1 mmHg. ▪ Automatic compensation for leakage/instrument exchange. ▪ Variable flow modes (entry, maintenance, smoke evacuation). ▪ Integrated gas pre-heater to prevent hypothermia. ▪ Integrated smoke evacuation with ULPA/active carbon filters $\geq 99.999\%$ efficiency. ▪ Safety features: auto shut-off for disconnection/occlusion/gas depletion. ▪ Audible/visual alarms for overpressure, leakage, occlusion, low cylinder. ▪ Supports both central pipeline and E-cylinder connection. ▪ Quiet operation (≤ 55 dB). ▪ Accessories supplied: - ≥ 20 sterile insufflation tubing sets with filters. - 1 CO₂ regulator (E-cylinder). - 1 external full CO₂ cylinder.	

Item Description	Supplier Specifications
- ≥ 10 smoke evacuation filters. - Dual footswitch for smoke control. ➤ Suction & Irrigation Pump ▪ Dual-function smart pump for laparoscopy, urology, hysteroscopy, arthroscopy. ▪ Compact tower-mounted unit with digital touch display. ▪ Irrigation: 50 – 750 mmHg, ≥ 2.0 L/min, automatic air purge, bottle/bag holder, compatible with rigid sheaths. ▪ Suction: 0 – 700 mmHg, ≥ 35 L/min, dual 2 L autoclavable jars with overflow protection and HEPA/viral filter. ▪ Digital display for real-time flow/pressure. ▪ Footswitch: dual pedal, programmable. ▪ Safety: alarms for overpressure, occlusion, full jars. ▪ Accessories supplied: ≥ 2 suction jars, irrigation/suction tubing, ≥ 20 filters, starter probe set. ➤ Telescopes & Instrument Sets ▪ All scopes 4K optimized, autoclavable, made of stainless steel/titanium alloys. ▪ Delivered with original sterilization trays and protective cases. ▪ Laparoscopy Set - 0° and 30° 10 mm telescopes, high-definition rod lens or equivalent chip-on-tip. - Full set of trocars (5.5 mm, 10 mm, safety trocar, reducer adaptor). - Graspers, dissectors, forceps, scissors, needle holders, monopolar hook, cannulas, Veress needles. - Modular handles with rotatable design, monopolar/bipolar connectors. - Fiber optic light cable ≥ 3.5 m. - Sterilization container. ▪ Urology Set - 0°, 30°, 70° 4 mm telescopes. - Sheaths 19.5 Fr, 23 Fr, adaptors. - Biopsy and foreign body forceps (flexible). - Fiber optic light cable ≥ 3.5 m. - Sterilization container.	

Item Description	Supplier Specifications
▪ Hysteroscopy Sets - Diagnostic set with continuous-flow 5.5 mm sheath, 30° 3 mm scope, modular 5 Fr instruments. - Resection set with bipolar/monopolar-compatible 21 Fr resectoscope, 12° 3 mm scope, electrodes, connecting cable, sterilization container. ▪ Monopolar Resectoscope Set - 24/26 Fr sheaths with ceramic insulation, loop, roller, hook electrodes, bladder evacuator, container. ▪ Arthroscope Set - 0° and 30° 4 mm telescopes. - Trocar sleeves with valves, drainage cannulas, probes, punches, scissors, graspers. - Fiber optic light cable ≥ 3.5 m. - Sterilization container. ➤ <u>Equipment Cart</u> ▪ Heavy-duty, medical-grade stainless/aluminum cart. ▪ ≥ 4 ventilated shelves with cooling fans. ▪ Adjustable monitor arm for ≥ 32" monitor. ▪ Integrated power strip (≥ 8 medical sockets, surge protection). ▪ Holders for CO₂ cylinder, suction jars, endoscopes. ▪ Ergonomic push handles, lockable antistatic casters ≥ 125 mm. ▪ Cable management channels. ➤ <u>Endoscopy Stretcher</u> ▪ Lightweight stretcher, with four large castors for easy steering, one with directional locking. ▪ Two section top. ▪ Side guards folding down to below height of padded surface. ▪ Chassis and upper part features - smooth and sealed coated plastic sheets with use of antimicrobial coating for the areas of the transport. ▪ High/low and Trendelenburg/Reverse Trendelenburg hydraulic adjustments by mean of foot pump. It may be operated either from left or right side of trolley. ▪ Back section infinitely adjustable up to 90° maximum by servo-assisted gas cylinders. ▪ Trolley shall be mounted on 200 mm diameter castor wheels 2 antistatic and one castor with directional locking.	

Item Description	Supplier Specifications
▪ Mattress with adhesive gel strip at the underside, 40 mm thick and suitable for X-ray imaging. ▪ Height adjustment without mattress 500 – 900 mm ▪ Trendelenburg/Reverse Trendelenburg 12° ▪ Back section adjustment 90° ▪ Total Length 2200 mm ▪ Total Width 800 mm ▪ Safe working load 300 Kg ▪ Supplied with: - Infusion pole stainless steel, top with 4 hooks. (3-stage-telescope), one-hand adjustment. - Oxygen cylinder holder. ➤ <u>Endoscopy Cabinet</u> ▪ Capacity ≥10 rigid scopes. ▪ Vertical hanging storage, prevents damage and kinking. ▪ Integrated HEPA-filtered airflow and UV-C disinfection. ▪ Automated drying and monitoring system with humidity sensors. ▪ Double-wall stainless steel, lockable, mobile on casters. ➤ <u>Accessories</u> ▪ Original protective trays and sterilization baskets for all scopes. ▪ ≥5 packs of printer paper (≥50 sheets each). ▪ Anti-fog solution (≥2 bottles). ▪ Keyboard and mouse for processor. ▪ Monitor protective cover.	

Item Description	Supplier Specifications
O21 Pneumatic Lithotripter Qty : 1 ➤ <u>General Requirements</u> ▪ Heavy-duty, medical-grade intracorporeal lithotripsy system. ▪ Designed for fragmentation of urinary tract stones (ureteric, bladder, and renal stones). ▪ Portable, compact, and suitable for endoscopic use. ➤ <u>Lithotripsy Unit</u> ▪ Pneumatic lithotripter using high-pressure air or gas pulses for stone fragmentation. ▪ Impact frequency: Adjustable, typically 1–20 Hz (minimum range to be specified). ▪ Energy output: Adjustable to accommodate hard and soft stones. ▪ Capable of fragmenting stones of varying composition and hardness. ▪ Does not generate significant thermal energy (prevents tissue damage). ▪ Integrated shock control to avoid retropulsion of stones. ➤ <u>Construction & Design</u> ▪ Durable housing made of medical-grade ABS or metal. ▪ Smooth surfaces for easy cleaning and disinfection. ➤ <u>Operation & Control</u> ▪ Microprocessor or electronically controlled. ▪ Large LCD display showing frequency, pressure, and mode. ▪ Foot pedal control with dual action (on/off, intensity control). ▪ Capability to store and recall preset settings. ➤ <u>Handpiece & Probes</u> ▪ Lightweight, ergonomic handpiece, autoclavable or with sterile sheath system. ▪ Quick coupling system for probes. ▪ Probes: Stainless steel or equivalent high-grade alloy, length 320–430 mm, diameter 0.8–2.0 mm. ▪ At least three (3) probe sizes supplied (small, medium, large). ▪ Minimum 10 probes included with initial supply. ▪ Probes reusable and withstand ≥ 20 autoclave cycles.	

Item Description	Supplier Specifications
➤ <u>Air Compressor / Driving Source</u> ▪ Integrated silent air compressor or compatible with central air supply. ▪ Output pressure: Adjustable, up to $\geq 5-7$ bar. ▪ Equipped with air filter, pressure regulator, and safety valve. ▪ If external compressor required, must be included in the offer. ➤ <u>Safety Features</u> ▪ Automatic pressure release system. ▪ Overpressure protection with audible and visual alarms. ▪ Sterile, closed air pathway to prevent contamination. ▪ Emergency stop switch. ➤ <u>Compatibility</u> ▪ Usable with rigid and semi-rigid ureteroscopes, cystoscopes, and nephroscopes. ▪ Should allow simultaneous use with suction and irrigation systems. ▪ Compatible with 0.8–2.0 mm working channels.	

Item Description	Supplier Specifications
PACKAGE (R) - RESPIRATORY CARE	
R01 Ventilators, Intensive Care Qty: 6	
➤ General Requirements ▪ Microprocessor controlled ventilator with integrated nebulizer function to ventilate pediatric and adult patients starting from 5kg ▪ Ventilator include all required software options and accessories ensuring optimal performance ▪ Ventilator Technology: - Combined gas ventilator with medical oxygen (O2) and medical air (MA4) supply inputs or - Turbine driven (built-in) with medical oxygen (O2) supply input ▪ Medical gas inlet ports operable at supply pressure levels starting 1.5 to 6 bar [22 to 87 psi] ▪ Medical gas inlet ports fitted with check valves to prevent gases backflow (retro-contamination) ▪ Built-in pressure regulators and reducers to avoid damaging ventilator ▪ Mechanical safety valves to avoid damaging ventilator ▪ Medical gas inlet ports fitted with a filter and water trap ▪ Automatic switch over between piped medical air and oxygen supply should one of the supplies fail (Combined gas ventilator) ▪ Comprehensive self-testing, continuous monitoring, diagnostic, and troubleshooting system at startup and during operation of all internal functions/component/sensors testing/calibration, leakages, gas supply, power, battery, etc. ▪ Ventilator software and available modes are upgradable ▪ The startup time needed for the unit to be ready for use shall be less than 60 seconds ▪ Noise level shall not exceed 50 dB ▪ Continuous operation within specification in ambient temperature of at least 5–40 °C, relative humidity of at least 10–85% non-condensing ▪ Ventilator compatible with open-system breathing circuit from third party providers ➤ Ventilation modes: Volume and Pressure Assist/control modes ▪ Volume Control Ventilation (VCV) (CMV) ▪ Pressure Control Ventilation (PCV) ▪ Intermittent Mandatory Ventilation Modes: Assist-Control Ventilation (AC), Pressure	

Item Description	Supplier Specifications
Assist-Control Ventilation (PAC) ▪ Pressure Support Ventilation (PSV) ▪ Pressure Regulated Volume Control (PRVC) or similar ▪ Pressure Control with Target Volume ▪ Synchronized Intermittent Mandatory Ventilation (SIMV) ▪ Intermittent Positive Pressure Ventilation Mode ▪ Synchronized Intermittent Positive Pressure Ventilation Mode (SIPPV) ▪ Airway Pressure Release Ventilation (APRV) or similar ▪ Non-Invasive Ventilation e.g. NIV, NPPV ▪ Biphasec Positive Airway Pressure Mode (BiPAP) for both invasive and non-invasive ventilation ▪ Continuous Positive Airway Pressure Mode (CPAP) for both invasive and non-invasive ventilation ▪ Selectable flow or pressure triggering ▪ Apnea detection with safety automatic ventilation for patients ▪ Other optional modes: hybrid, adaptive pressure ventilation, automated combination modes or others ➤ <u>Setting, and User Controlled Parameters</u> ▪ Tidal Volume (VT): approx. 20 to 2000 ml ▪ Inspiration flow: approx. 0.1 to 150 l/min (Adult) - 0.4 to 100 l/min (Pediatric/Infant) ▪ Inspiratory Pressure: approx. 1 - 75 cm H₂O ▪ Respiratory rate (RR): approx. 1 to 100 breath/min ▪ SIMV respiratory rate: approx. 0 to 50 breath/min or better ▪ Inspiratory rise time (%): approx. 20 % or better ▪ Inspiratory time: 0.1 - 5 s (Adult) - 0.1 to 3 s (Pediatric/Infant) ▪ Expiratory time: 1- 8 s ▪ Inspiratory to Expiratory Ratio (I/E): 1:4 to 4:1 ▪ Inspiratory Hold: 0 - 15 s ▪ Expiratory Hold: 0 - 15 s ▪ Inspiratory pause maneuver with capability to measure plateau pressure ▪ FiO₂: 21 – 100 % ▪ PEEP/CPAP: Approx.0 to 45 cm H₂O Adult) - 0 to 30 cm H₂O (Pediatric/Infant) ▪ Pressure Support: 1 to 80 cm H₂O (Adult) - 1 to 50 cm H₂O (Pediatric/Infant) ▪ Flow and Pressure trigger mechanism ▪ Flow trigger sensitivity: approx. 1 to 15 l/min ▪ Sigh breath function ▪ Auto 100% O₂ button	

Item Description	Supplier Specifications
▪ Manual Breath button ▪ Leak compensation protocol/mode ▪ Compliance compensation and automatic correction of approximately 0 to 7.5 ml/cmH₂O ▪ Integrated nebulizer function with a minimum volume of 6 mL and a minimum flow rate of 2 ml/min ▪ Control panel lock ▪ Alarm silence ▪ Alarm reset ▪ The bidder should list all additional available parameters along with their details and settings ▪ Ventilator allows adjustments while the unit is ventilating a patient, and requires 2 steps operator's confirmation to the adjustments in order to eliminate any accidental tampering with the parameters ➤ <u>Screen and Interface</u> ▪ User friendly display easily readable in low ambient light and sunlight, with colored touch-screen (LCD/LED) for user interface and system control, program selection and creation; displaying waveforms, viewing monitored parameters, ventilation settings, status updates, quality control data, alarms set values, errors and alarms' notifications in addition to other data ▪ Waveforms, trends, numerical values and graphics related to pressure, volume and flow to be clearly displayed ▪ At minimum 3 waveforms/trends can be displayed simultaneously without having to switch between views and windows ▪ Touch screen with a minimum 10" dimension ▪ Gauges for airway pressure ▪ Screen Capture ➤ <u>Displayed and Monitored Parameters</u> ▪ Status indicators for ventilator mode, battery status, patient data, alarm settings, FiO₂ ▪ Airway pressures including: peak, plateau, mean and PEEP ▪ Expired Tidal Volume ▪ Expired Minute Volume ▪ Spontaneous Minute Volume ▪ Respiration rate RR: spontaneous and total ▪ Inspiratory and Expiratory Time	

Item Description	Supplier Specifications
▪ I:E ratio ▪ Analyzed / measured FiO2 % ▪ Leak value ▪ Lungs' parameters including but not limited to resistance and compliance ➤ <u>Alarms, Related to Patient Ventilation - Adjustable, Visual and Audible</u> ▪ The below listed alarms should all be monitored and triggered based on the patient actual ventilation status ▪ The below listed alarms should be adjustable, and trigger both visual and audible notifications when activated - Adjustable audible alarm loudness - Oxygen concentration FiO2: high and low - Minute volume: high and low - Tidal volume: high and low (not achieved or exceeded) - Inspiratory pressure: high and low - Airway pressure: high and low - PEEP: high - Loss of PEEP - Apnea time (settable between 0 and 60 s) - Respiratory rate (RR): high and low - Continuously high pressure/occlusion - Leak value: high - Breathing circuit disconnect - List all additional alarms that are triggered based on user defined values ➤ <u>Alarms, Related to Equipment Operation - Visual and Audible</u> ▪ Gas supply failure including loss of supply, leakages and blockages ▪ Power failure ▪ Low battery ▪ Ventilator inoperative or system failure ▪ Self-diagnostics failure alarm ➤ <u>Events Log</u> ▪ Event log for errors traceability ▪ Alarms' values and ventilation parameters maintained and saved even when the ventilation mode is swapped ▪ Ability to save and record the trends for each patient for at minimum 24 hrs.	

Item Description	Supplier Specifications
▪ Ability to store and display patient's events: maximum number of events that can be stored shall be 1000 or better ➤ <u>Humidifier</u> ▪ Ventilator supplied with compatible active automated servo-controlled heated humidifier with adjustable setting, suitable for pediatric and adult patients; with all the needed accessories ▪ Available modes: - Invasive ventilation for fully saturated gas delivery at 37oC - Non-invasive ventilation compatible with both face and nasal mask interfaces ▪ Compact and lightweight design ▪ Compatible with inspiratory heated breathing circuit with temperature and humidity feedback and monitoring from chamber and reusable patient circuit ▪ Compatible with dual limb heated breathing circuit with temperature and humidity feedback and monitoring from chamber and single-use patient circuit ▪ Temperature display in oC with one digit after the decimal ▪ Accuracy: less than $\pm 0.4^{\circ}\text{C}$ ▪ Warmup time: less than 30 min ▪ Alarms and monitored parameters to ensure optimal function including: ▪ Over-temperature protection ▪ High and low humidity alarm ▪ High and low temperature alarm ▪ Low water level alarm ▪ Disconnect alarm ➤ <u>Enclosure Material and Design</u> ▪ All enclosure surfaces and material should have smooth surfaces that are easy to clean with standard on-the market hospital grade cleaning chemicals ▪ All proposed medical equipment component and accessories should withstand shocks and mechanical vibration ▪ At least IP21 degree of protection to the harmful ingress of water (fluid spill resistance) ➤ <u>Portability & Mounting Stand</u> ▪ Supplied with the manufacturer's original sturdy and stable trolley with support stand, handle, holder for humidifier, and articulated flex arm for patient circuit support ▪ Mounting trolley equipped with conductive castors with a minimum of two featuring sturdy brakes	

Item Description	Supplier Specifications
➤ <u>Connectivity</u> ▪ Hardwired RJ45 network interface or equivalent ▪ Other connections ports: USB ports, RS232, HDMI, etc. ▪ HL7 protocol compatible ▪ Interface and connect with a central station or any other critical care monitoring system for real-time remote monitoring, alarms display, event log and alarm lists reporting ➤ <u>Consumables and Single-Use Accessories</u> ▪ The following consumables and single use accessories should be delivered with each ventilator: - Single use breathing circuits: double-limb with standard outlet/inlet connectors - compatible with the selected humidifier - 22 mm outside diameter (30 per equipment) - Single use breathing circuits: double-limb with standard outlet/inlet connectors - compatible with the selected humidifier - 15 mm outside diameter (30 per equipment) - Viral/bacterial filters 99.99% efficiency minimum; for inspiratory and expiratory limbs (120 per equipment) - Viral/bacterial filters 99.99% efficiency minimum with cellulose membrane (60 per equipment) - Nebulization kit (60 per equipment) ➤ <u>Reusable Accessories</u> ▪ The following reusable accessories should be delivered with each ventilator: ▪ Reusable adult breathing circuits: of silicon material, double-limb, with water traps and all standard outlet/inlet/Y connectors - 22 mm outside diameter (5 per equipment) ▪ Reusable pediatric breathing circuits: of silicon material, double-limb, with water traps and all standard outlet/inlet/Y connectors - 15 mm outside diameter (5 per equipment) ▪ Full face masks: - Universal fit for adult (Qty: 3 of different sizes) - Pediatric (Qty: 5) ▪ All Delivered masks and tubing should withstands high-level disinfection and sterilization ▪ Sterilizable expiratory valve/block (5 per equipment) ▪ Sterilizable flow sensor (1 per equipment) ▪ Test lung (1per equipment) ▪ CO2 sensors (1 per equipment)	

Item Description	Supplier Specifications
- Standard color-coded hoses and connectors for oxygen and medical air wall outlets and cylinders connection of at least 3 m length. - Connectors' configuration whether, NF or BS or US standards will be specified after the bid awarding stage	

Item Description	Supplier Specifications
R02 Nebulizer, Ultrasonic Qty : 2  ➤ <u>General Requirements</u> ▪ Ultrasonic nebulizer for adult use with a wide range of applications including acute and chronic bronchitis, asthma bronchial, tracheitis, lung emphysema, silicosis, and other diseases of the respiratory tract ▪ Drugs used with the nebulizer unit include Secretolytics, Mucolytics, Antibiotics, Antiphlogistics, Haemostyptics, Antiallergics or others ▪ Drops Size: approx. 0.5 to 5 µm ▪ Device type: ultrasonic nebulizer that uses high-frequency sound waves (ultrasound) to vibrate a piezoelectric crystal, generating a fine mist. ▪ Transducer Frequency ▪ Cycle duration of around 15 minutes per cycle, without storage bottle, especially for short-time nebulization of medicaments in medication cups ▪ Medication capacity: between 2 to 12 ml or higher ▪ Nebulization rate: approx.0.5 to 0.7 ml/min ▪ Air flow rate: approx.15 to 20 ml/min or better ▪ Noise level: less than 65 dB ▪ Electronically witching-off in case of lack of water ➤ <u>Enclosure Material and Design</u> ▪ All enclosure surfaces and material should have smooth surfaces that are easy to clean with standard on-the market hospital grade cleaning chemicals ▪ All proposed medical equipment component and accessories should withstand shocks and mechanical vibration ▪ At least IP21 degree of protection to the harmful ingress of water (fluid spill resistance)	

Item Description	Supplier Specifications
➤ <u>Consumables and Single-Use Accessories</u> ▪ Single use adult nebulization sets complete including mask and tubing (30 per equipment)	

Item Description		Supplier Specifications
R03	Oxygen Flow meter	Qty : 77
 Flow meter, oxygen Pressure compensated; impact resistant shroud and flow tube; twin legends on flow tube; expanded lower scale; color coded; up to 16 l/min gas flow w/ bubble humidifier. Complete with tubing and nasal prong.		

Item Description		Supplier Specifications
R04	Suction Regulator Set	Qty : 77
 Set should consist of: ▪ Regulators for continuous high vacuum, intermittent vacuum and continuous low vacuum. ▪ It should be PMG and equipment rail compatible; to include collection bottles (size at least 1L) with filters, 3m suction tubing, yank Auer suction Cannula. ▪ All other parts and accessories for complete installation of bedside suction requirement.		

Item Description	Supplier Specifications
R05 Suction, Thoracic Qty : 1  ➤ General Description ▪ Designed to maintain accurate and stable low-level negative pressures for thoracic drainage while maximizing flow rates. ▪ Suitable for use with single or multiple chest tubes and other thoracic applications. ➤ Construction & Design ▪ Water column regulator made of aluminum or polycarbonate, durable and easy to disinfect. ▪ Autoclavable for repeated sterilization. ▪ Equipped with appropriate probe for direct wall outlet connection. ➤ Performance Features ▪ Automatic compensation for vacuum fluctuations at catheter or wall outlet (e.g., air leaks). ▪ Pressure limiting valve ensures negative pressure does not exceed 55 cm H₂O. ▪ Provides high flow rates ≥ 40 L/min at full increase (dependent on supply vacuum and setup). ▪ Extended range capability to achieve higher negative pressures when required. ▪ Positive pressure relief valve vents accidental positive pleural pressure away from patient/system ➤ Controls & Indicators ▪ Large precision gauge with glow-in-the-dark needle and clear increments. ▪ Fine-tuning suction control knob, requiring 5 full turns to span entire gauge range, for precise adjustment. ▪ Separate ON/OFF toggle switch, retains previous settings for quick restart	

Item Description	Supplier Specifications
➤ Connectivity & Safety ▪ Supplied with adapters compatible with all standard medical gas pipeline systems. ▪ Includes standard tubing nipple or locking gland for use with an Overflow Safety Trap.	

Item Description	Supplier Specifications
➤ <u>Oxygen Masks & Cannulas</u> ▪ Non-rebreather oxygen masks, Adult × 5. ▪ Non-rebreather oxygen masks, Child × 5. ▪ Nasal cannulas × 5. ➤ <u>Suction</u> ▪ Portable suction unit.	

Item Description	Supplier Specifications
R09 Spirometer, Volumetric Portable Qty : 1  ➤ <u>General Technical Requirements</u> ▪ Portable, battery-operated or mains-powered volumetric spirometer for lung function assessment. ▪ Lightweight, compact, with built-in carrying handle or case. ▪ Easy-to-clean, disinfectant-resistant housing. ▪ Must store and display patient data, with internal memory. ▪ Conforms to ATS/ERS (American Thoracic Society / European Respiratory Society) standards for spirometry ▪ Power supply: Rechargeable battery with ≥ 8 hours operation, plus AC mains charger (100–240 V, 50/60 Hz). ➤ <u>Performance Parameters</u> ▪ Measurement principle: Volumetric or turbine/flow sensor, with accuracy according to ATS/ERS 2019 standards. ▪ Lung volumes & parameters measured (minimum): - FVC (Forced Vital Capacity). - FEV₁ (Forced Expiratory Volume in 1 second). - FEV₁/FVC ratio. - PEF (Peak Expiratory Flow). - FEF_{25–75%} (Forced Expiratory Flow). - VC (Vital Capacity). - Volume range: $\geq 0–10$ L. ▪ Flow range: 0–16 L/s. ▪ Accuracy: Volume $\pm 3\%$ or ± 50 mL; Flow $\pm 5\%$ or ± 200 mL/s.	

Item Description	Supplier Specifications
▪ Resistance: <0.15 kPa/L/s at 14 L/s. ▪ Display: LCD/TFT color display showing flow-volume and volume-time curves, numeric values, and predicted vs. measured % values. ▪ Memory: ≥500 patient test results stored. ▪ Data export: USB , others (specify) ▪ Printout: Internal thermal printer or option for external printer connection. ➤ <u>Software Requirements</u> ▪ PC software included for data management and long-term trending. ▪ Capability to input patient demographics (name, ID, age, height, weight, sex, ethnicity). ▪ Automatic calculation of predicted values based on reference equations (GLI or NHANES III). ▪ Automatic interpretation algorithms according to ATS/ERS guidelines (restrictive, obstructive, mixed). ➤ <u>Accessories (per unit supplied)</u> ▪ 1 × Spirometer unit with rechargeable battery. ▪ 1 × AC mains charger. ▪ 1 × Carry case. ▪ 2 × Reusable flow/volume sensors or transducers. ▪ 50 × Disposable bacterial/viral filters. ▪ 50 × Disposable mouthpieces. ▪ 1 × Nose clip (reusable, autoclavable). ▪ 1 × USB cable (for PC connection). ▪ 1 × PC software (license included).	

Item Description	Supplier Specifications
R10 Major Anesthesia Unit w/ Monitor Qty : 3  The offered system shall include both the anesthesia machine and patient monitor. ➤ Description for the anesthesia machine: ▪ An advanced anesthesia delivery system designed for safe administration of oxygen, air, nitrous oxide, and volatile anesthetic agents during surgical procedures, with integrated ventilatory support, comprehensive patient monitoring, safety features, and connectivity for data management and hospital information systems. ➤ Core functions: ▪ Deliver precise gas and anesthetic mixtures. ▪ Enable spontaneous, controlled, or assisted ventilation. ▪ Continuously monitor patient vital signs and anesthetic depth. ▪ Minimize patient and staff risks through failsafes, alarms, and scavenging. ➤ System Components ▪ Gas Supply & Control Circuit: Pipeline and cylinder inlets, pressure regulators, flowmeters, hypoxic guard. ▪ Breathing & Ventilation Circuit: Integrated ventilator with adult/pediatric modes. ▪ Scavenging System: Active or passive, compliant with international safety standards. ▪ Integrated Patient Monitoring: Full perioperative monitoring suite (see section below). ▪ Battery Backup: ≥90 minutes operation at full load.	

Item Description	Supplier Specifications
➤ <u>Gas Supply</u> ▪ Pipeline inlets: O₂, N₂O, Air (DISS/Pin Index). ▪ Cylinder yokes: O₂, N₂O, Air (with pressure gauges, regulators). ▪ Vaporizers: ≥2 slots, Selectatec-style or equivalent, interlocked. ▪ Agents: Sevoflurane, Isoflurane, Desflurane (Halothane/Enflurane optional/legacy). ▪ Automatic agent recognition (Auto-ID). ▪ Hypoxic guard: O₂ concentration never <25–30%. ▪ Fail-safe N₂O shutoff if O₂ fails. ➤ <u>Ventilator</u> ▪ Type: Digital, turbine- or piston-driven preferred, with backup bellows. ▪ Modes: Manual/Spontaneous, Volume Control (VCV), Pressure Control (PCV), SIMV+PS, Pressure Support, Pressure Regulated Volume Control (PRVC), Dual Control, CPAP/PEEP, and optional APRV. ▪ Adult & pediatric capability. ▪ Parameters: - Tidal volume: 20–1500 mL. - Minute volume: up to ≥20 L/min. - Rate: 4–80 bpm. - Inspiratory flow: ≥60 L/min. - I:E ratio: adjustable 1:9 to 4:1. - Pressure limits: adjustable up to 70 cmH₂O. - PEEP: 0–20 cmH₂O. - Inspiratory pause: configurable. ▪ Safety: Automatic compliance/leak test, electronic fresh gas decoupling, alarms for high/low pressure, volume, apnea. ➤ <u>Monitoring (Integrated)</u> ▪ Airway & Gas Monitoring: - O₂ concentration (paramagnetic or equivalent). - N₂O concentration. - Spirometry: Flow, Volume, Pressure loops. ▪ Alarms: Prioritized (caution, advisory, critical). Configurable with audible/visual indicators. ➤ <u>User Interface & Display</u> ▪ Integrated dual color displays ≥15" touchscreen + auxiliary.	

Item Description	Supplier Specifications
▪ Configurable screen layout: waveforms, loops, numeric trends. ▪ Context-sensitive help and guided system check. ▪ Connectivity: HL7, DICOM, IEEE 11073; network interface to Anesthesia Information Management Systems (AIMS) and HIS/PACS. ➤ <u>Safety & Scavenging</u> ▪ Active/passive scavenging interface compliant with ISO/IEC standards. ▪ Anti-hypoxic mixture system, O₂ flush, fresh gas decoupling, safety lockouts. ▪ System self-checks: daily pre-use leak, compliance, ventilation test. ➤ <u>Data & Record Keeping</u> ▪ Integrated anesthesia data management (ADMS) or connectable to hospital AIMS. ▪ Automatic event recording (alarms, vital signs, drug delivery times). ▪ Export options: PDF/HL7/DICOM SR. ▪ USB/network transfer. ➤ <u>Power</u> ▪ Mains: 220–240 V, 50–60 Hz. ▪ Backup: ≥90 min battery for full operation (ventilation + monitoring). ➤ <u>Description for the patient machine</u> ▪ Modular multiparameter monitor with central station connectivity. ▪ 15–19” color touchscreen display with configurable waveform and numeric layouts. ▪ Networked to anesthesia record system (AIMS/ADMS), PACS, HIS/RIS, and EMR via HL7/FHIR. ▪ Capability for software expansion and advanced modules. ▪ Standard Monitoring Parameter: - ECG (3/5/12 lead) with arrhythmia & ST-segment analysis. - Heart Rate. - SpO₂ with plethysmographic waveform & perfusion index. - NIBP (adult, pediatric, neonatal modes). - 2+ Invasive BP (IBP) channels with labels (ART, CVP, PA, etc.). - Temperature (≥2 channels). - EtCO₂ (mainstream or sidestream). - Anesthetic agent analysis (auto agent identification): Sevo, Iso, Des, Halothane, Enflurane, N₂O. - Agent concentration alarms (MAC calc, MAC sum).	

Item Description	Supplier Specifications
- O₂ concentration. - Respiratory rate (from CO₂ or impedance). ▪ Advanced Parameter - Depth of anesthesia monitoring (e.g. BIS or equivalent) ▪ Connectivity & Integration - Wireless and wired connectivity with central monitoring. - Data export to EMR/AIMS (HL7, IEEE 11073). - DICOM waveform storage (optional). - Remote viewing capability on central station/ICU monitor. ▪ <u>Alarms & Safety</u> - Prioritized alarms (advisory, warning, critical). - Configurable alarm limits and profiles. - Battery backup ≥2 hours. ➤ <u>Accessories</u> ▪ Reusable and disposable breathing circuits (adult/pediatric). ▪ Face masks (sizes 0–5). ▪ SpO₂ sensors (adult/pediatric). ▪ NIBP cuffs (neonate, pediatric, adult). ▪ ECG electrodes (≥100) + 3 sets of ECG leads. ▪ Temperature probes (multisite). ▪ Suction system with jars. ▪ Cylinder fittings for O₂, N₂O, Air.	

Item Description	Supplier Specifications
R11 Basic Anesthesia Unit w/ Monitor Qty : 1  The offered system shall include both the anesthesia machine and patient monitor. ➤ Description for the anesthesia machine: ▪ Mobile anesthesia system mounted on antistatic castors with brakes. ▪ Configured for adult and pediatric applications. ▪ Compact and ergonomic design with at least 1 shelf, 1 drawer, and 1 low-level tray for drugs, syringes, and accessories. ➤ Safety Features ▪ Oxygen failure protection system: visual and audible alarms, automatic N₂O shutoff, and air entrainment valve. ▪ Hypoxic guard / proportioning system to maintain minimum 30% O₂ in the fresh gas mixture. ▪ O₂ flush valve: non-lockable, flow 35–75 L/min at 400–500 kPa. ▪ Gas-specific connections (O₂, N₂O, Air, Vacuum), color-coded, with ≥4 m hoses. ▪ Compliance with ISO 80601-2-13 and relevant IEC/CE safety standards. ➤ Gas Delivery System ▪ Pipeline inlets: O₂, N₂O, Air (DISS or equivalent). ▪ Cylinder yokes: at least O₂ and N₂O with pin-index safety and regulators. ▪ Flowmeters: - O₂ and Air, calibrated up to 16 L/min. - Backlit flow tubes with precision needle valves. ▪ Vaporizers:	

Item Description	Supplier Specifications
- One agent-specific vaporizer supplied (e.g., Halothane or Sevoflurane). - Features: out-of-circuit, agent-specific calibration, flow and temp compensated, keyed filler, interlock. ➤ <u>Ventilation System (Integrated Basic Ventilator)</u> ▪ Breathing system: Circle system with APL valve (0–70 cmH₂O). ▪ Ventilator modes (minimum): - Manual / Spontaneous - Volume Controlled Ventilation (VCV) - Pressure Controlled Ventilation (PCV) - SIMV (Volume & Pressure) - Pressure Support Ventilation (PSV) ▪ Adjustable parameters: - Tidal Volume: 20–1,500 mL (adult/pediatric) - Frequency: 4–60 bpm - I:E Ratio: 1:0.3 to 1:3 - Pressure limit: adjustable, up to 60 cmH₂O - PEEP: 0–20 cmH₂O ▪ Bellows type: Ascending (safety-preferred). ➤ <u>Accessories & Circuits</u> ▪ Reusable breathing circuits: 3 adult sets, 3 pediatric sets. ▪ Face masks: 5 sizes (neonatal–adult). ▪ Suction tubing and accessories included. ▪ Backup power: ≥30 minutes battery for ventilator and alarms. ➤ <u>Construction & Ergonomics</u> ▪ Modular, compact design. ▪ Easy-clean smooth surfaces. ▪ Expandable with second vaporizer slot and extra monitoring if required. ➤ <u>Description for patient machine:</u> ▪ General - Compact multiparameter monitor, portable or cart-mounted. - ≥12” color touchscreen display with waveform and numeric display. - Basic network connectivity to anesthesia record system (if available). ▪ Standard Monitoring Parameters	

Item Description	Supplier Specifications
- ECG (3/5 lead) with HR. - SpO₂ with waveform. - NIBP (adult/pediatric/neonatal). - Temperature (≥ 1 channel). - EtCO₂ (sidestream). - O₂ concentration monitoring. - Agent monitoring for at least Sevoflurane, Isoflurane, Desflurane, N₂O with auto agent ID. - Minute volume and tidal volume (basic spirometry). ▪ Optional / Upgrade Parameters - 1–2 IBP channels. - BIS module (if required). - TOF monitoring module. ▪ Alarms & Safety - Audible & visual alarms: HR, SpO₂, NIBP, EtCO₂, FiO₂, agent concentration. - Hypoxic mixture safety alarm (linked to anesthesia machine). - Battery backup ≥ 1 hour. ➤ <u>Accessories</u> ▪ Reusable and disposable breathing circuits (adult/pediatric). ▪ Face masks (sizes 0–5). ▪ SpO₂ sensors (adult/pediatric). ▪ NIBP cuffs (neonate, pediatric, adult). ▪ ECG electrodes (≥ 100) + 3 sets of ECG leads. ▪ Temperature probes (multisite). ▪ Suction system with jars. ▪ Cylinder fittings for O₂, N₂O, Air.	

Item Description	Supplier Specifications
R12 Fast Track Kit (difficult intubation) Qty : 2  This kit is designed to enable the Paramedic or Nurse to quickly intubate a patient whether in ER or Operating theatres. Kit Should Contain: ▪ 2 Miller Blades, #2 & #3 ▪ 2 Macintosh Blades, #3 & #4 ▪ 1 Medium Laryngoscope Handle ▪ 1 Adult Magill Forceps ▪ 1 Adult Stylet ▪ 4 Cuffed Endotracheal Tubes 6, 7.0, 7.5, 8.0 ▪ 1 Thomas ET Holder ▪ 1 Robertazzi LatexFree Nasal Airway Kit (9 sizes) ▪ 1 Berman Oral Airways (6 sizes) ▪ 9 Water Based Lubricant Packets ▪ 1 Roll 1" Dermicel Tape ▪ 1 Dynamed Professional Intubation Bag	

Item Description	Supplier Specifications
PACKAGE (S) C.S.S.D	
S02 Basket, Wire S/S Qty : 2	
This fine mesh basket with lid is ideal for holding small, sharp instruments during the washing/disinfection process. The basket is made of stainless steel with mesh size 1.5 mm. ▪ Size (L x W x H), mm ▪ 100 x 100 x 60 Qty 1 ▪ 60 x 60 x 45 Qty 1 ▪ 120 x 60 x 45 Qty 1 ▪ 150 x 60 x 45 Qty 1	

Item Description	Supplier Specifications
S03 Sterilizer, Steam, pass through (400L) - Double Door Qty : 1  ➤ <u>General Technical Requirements</u> ▪ Type: Double-door, pass-through, floor-mounted steam sterilizer. ▪ Chamber capacity: 400 liters with a minimum internal chamber dimensions to fit 6 STU in term of basket capacity. ▪ Construction: - Chamber: 316L stainless steel, polished, heavy-duty. - Jacket: 304L stainless steel (or better). - Doors: 304L stainless steel (or better). - All piping touch water of steam must be made of stainless steel and must be coded and insulated. ▪ Steam generation: - Integrated fully automatic steam generator with 316L SS construction. - Equipped with water reservoir, electrodes, pressure switches, blowdown system, and safety valves. - Heating elements: Stainless steel. ➤ <u>Sterilization Cycles</u> ▪ Wrapped/unwrapped 134°C ▪ Wrapped/unwrapped 121°C ▪ Disinfection ▪ Flash ▪ Preheating ▪ Bowie-Dick test ▪ Vacuum test ▪ Diagnostic self-test to enable qualified engineers to check components and identify faults ▪ Specify other programmable cycles	

Item Description	Supplier Specifications
➤ <u>Performance</u> ▪ Operating pressure: up to 2.5 bar. ▪ Operating temperature: up to 137 °C. ▪ Equipped with vacuum pump capable of achieving deep vacuum for pre-vacuum and leak test cycles. ▪ Air evacuation: Multi-stage vacuum pump for high-volume sterilization. ➤ <u>Display & control</u> ▪ ≥ 7" multi-color touchscreen LCD/LED, high-resolution, visible at wide angles. ▪ Real-time display of cycle stage, chamber temperature, chamber pressure, jacket pressure, failure messages, and interruptions. ▪ Main control pad and screen must be on both sides. ▪ Multilingual user interface. ➤ <u>Data & records:</u> ▪ Built-in thermal printer for continuous real-time cycle documentation (time hh:mm:ss, date, load number, operator ID, cycle parameters, failures). ▪ Internal memory for ≥ 5,000 cycles. ▪ USB port for data transfer. ➤ <u>Connectivity</u> ▪ RJ45 hardwired network port. ▪ Compatible with CSSD traceability and management software. ➤ <u>Safety Features</u> ▪ Automatic door locking – inoperable if chamber pressurized. ▪ Vertical sliding automatic doors with obstruction detection and auto-stop. ▪ Safety valves for chamber and jacket. ▪ Overload protection for vacuum pump and electrical system. ▪ Thermal insulation: Thick glass wool with reflective foil wrap to minimize external heat. ▪ Alarms: Over/under temperature, chamber pressure failure, cycle failure, leak detection, unsealed door, power failure, system malfunction. ▪ Exhaust air filtration system: 0.2 µm hydrophobic sterilizing filter with condensate sterilization, easily replaceable cartridge.	

Item Description	Supplier Specifications
➤ <u>Accessories & Consumables</u> ▪ Consumables (to be delivered): - Printer paper rolls: 10 pcs - Exhaust filter cartridges: 10 pcs. ▪ Reusable accessories (to be delivered): - Stainless steel enclosure and access panels. - Baskets/trays/racks – minimum 6 trays (stainless steel, perforated, stackable). - Loading carriage and transfer trolley (stainless steel, rail-compatible). ➤ <u>Installation & Site Preparation</u> ▪ Supplier must provide detailed shop drawings showing clearance requirements for installation, operation, and service. ▪ Supplier responsible for ensuring site meets requirements (steam, electrical, drainage, water quality). ▪ Water quality testing (raw, treated, pure) to be performed and certified before commissioning. The supplier should provide the best model in their portfolio to suit the site conditions/constraints of accessibility for utilization, servicing, and routine maintenance from all sides, as per the manufacturer's requirements.	

Item Description	Supplier Specifications
S04 Sterilizer, Low Temperature, H2O2 Hydrogen Peroxide Plasma Qty : 1  ➤ General Technical Requirements ▪ Type: Double door, pass-through sterilizer. ▪ Chamber capacity: Net usable volume ≥ 55 liters. ▪ Design: Fully automated, software-controlled hydrogen peroxide low-temperature plasma sterilizer, suitable for rapid sterilization of heat- and moisture-sensitive instruments and devices. ▪ The by-products of the cycle are water and oxygen, eliminating the need for aeration or ventilation ▪ Cycles: - Factory preset and user-modifiable sterilization programs. - Cycle duration ≤ 60 minutes (validated with full load). - Preheating time ≤ 15 minutes. ▪ Display & control: - Alphanumeric and graphical display of sterilizer status, parameters (temperature, pressure, H₂O₂ level), and cycle progress before, during, and after operation. - Integrated printer for detailed cycle documentation (date, time, cycle type, load number, operator ID, status, alarms, and failures). ▪ Construction: Stainless steel (SS) interior and exterior panels, polished and corrosion-resistant. ▪ Sterilant agent source: - Disposable, single-use cassettes or cartridges. - If reusable cassettes are offered, supplier must clearly specify shelf life and sterilant capacity in the bid.	

Item Description	Supplier Specifications
▪ Loading system: - Chamber must accommodate ≥ 2 wire baskets simultaneously. - Baskets designed for smooth sliding in/out for safe loading/unloading. - Basket dimensions shall allow full utilization of the sterilizer chamber capacity. ▪ Self-contained system: No requirement for external water, drain, or exhaust. Only single-phase AC power connection is needed. ➤ <u>Safety Features</u> ▪ Automatic door interlock: Door(s) cannot open while cycle is active or chamber is pressurized. ▪ Sterilant safety: H₂O₂ injection only allowed when chamber door is sealed. ▪ Easily accessible emergency stop switches for immediate cycle termination. ▪ Audiovisual alarms (minimum): - Temperature or pressure sensor failure. - Phase time-outs. - Door(s) not properly closed. - Power failure. ➤ <u>Consumables to be Delivered</u> ▪ Disposable, single-use sterilant cassettes/cartridges: 10 pcs minimum. ▪ Printer paper: 5 Rolls ➤ <u>Reusable Accessories to be Delivered</u> ▪ Wire baskets: 2 pcs (stainless steel). ▪ Reusable cassettes: 5 pcs (if compatible with system). ▪ All required adapters/accessories for narrow-channel instruments (e.g. endoscopes, cannulated devices) must be listed and supplied. ➤ <u>Portability & Mounting</u> ▪ Unit shall be floor-mounted, heavy-duty, and vibration-free. ➤ <u>Connectivity & Data</u> ▪ Hardwired RJ45 network interface (or equivalent). ▪ Compatibility with CSSD traceability and instrument tracking software. ▪ Internal Memory for sterilization cycles (To be specify) The supplier should provide the best model in their portfolio to suit the site conditions/constraints of accessibility for utilization, servicing, and routine maintenance from all sides, as per the manufacturer's requirements.	

Item Description	Supplier Specifications
➤ <u>Safety & Alarm Features</u> ▪ Automatic alarms for: - Low/high water level. - Cover not closed. - Over/under temperature. - Sensor failure. ➤ <u>Drainage</u> ▪ Built-in drain facility with corrosion-resistant fittings for easy emptying and cleaning. ➤ <u>Reusable Accessories to be Delivered</u> ▪ Stainless steel cleaning baskets, suitable size for chamber: 2 pcs.	

Item Description	Supplier Specifications
S06 Flusher washer disinfecter Qty : 5  ➤ <u>General Technical Requirements</u> Hospital-grade, fully automatic flusher washer disinfecter for hygienic cleaning, thermal disinfection, and drying of bedpans, urine bottles, suction bottles, buckets, general utensils/glassware and similar reusable containers. ➤ <u>Capacity & Loading</u> ▪ Chamber capacity: ≥ 70 liters. ▪ Minimum load capacity: 1 bedpan and 2 urinal bottles simultaneously. ▪ Top-loading or hinged door type with foot pedal or hands-free opening mechanism for hygienic operation. ▪ Complete with multi-purpose rack/holder system for secure positioning of various utensils. ➤ <u>Construction</u> ▪ Exterior: Stainless steel (AISI 304 or better), smooth finish, resistant to hospital cleaning agents. ▪ Chamber interior: High-grade stainless steel (AISI 316 or equivalent), corrosion-proof and seamless welded for hygiene. ▪ Insulated chamber to reduce noise and heat loss. ➤ <u>Control & Operation</u> ▪ Microprocessor-controlled, fully automatic operation. ▪ Pre-programmed and user-selectable cycles for:	

Item Description	Supplier Specifications
- Bedpans & urinals - Buckets & suction bottles - General utensils/glassware ▪ Clear digital display for cycle status, temperature, and error codes. ▪ Indicators for: cycle in progress, cycle complete, error/alarm. ▪ Cycle start via foot pedal or touch-free control. ➤ <u>Performance</u> ▪ Disinfection temperature: $\geq 80-90$ °C (adjustable). ▪ Fast cycle time: ≤ 10 minutes (typical, depending on load). ▪ Other cycle types (specify). ▪ Built-in detergent dosing pump with adjustable dosing levels. ▪ Efficient water circulation system for uniform cleaning. ▪ Final rinse with thermal disinfection. ▪ Integrated drying phase using filtered hot air. ➤ <u>Safety Features</u> ▪ Lid/door interlock: cannot open during operation. ▪ Automatic fault detection with audio-visual alarms. ▪ Anti-scalding protection. ▪ Emergency stop button. ▪ Overflow and backflow protection. ➤ <u>Connections & Installation</u> ▪ Suitable for connection to hot and cold water supply. ▪ Equipped with drain pump for direct wall/floor drain connection. ➤ <u>Accessories & Initial Supply</u> ▪ Rack/holder for bedpans, urinals, and buckets. ▪ Minimum 2 multi-purpose baskets for glassware/other utensils. ▪ Detergent pump with initial supply of 20 liters of approved detergent. ▪ Installation kit including hoses, drain connections, and filters.	

Item Description	Supplier Specifications
➤ <u>Accessories & Consumables</u> ▪ Built-in or separate reel holder with cutting device for pouch preparation. ▪ Initial supply of sterilization reels (minimum 5 rolls assorted sizes). ▪ Worktable or support tray for handling reels and pouches.	

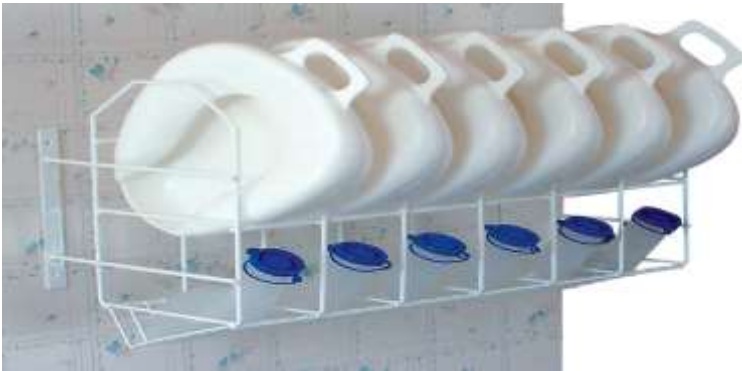
Item Description	Supplier Specifications
S08 Sterilizer, table top Qty : 1  ➤ <u>General Requirements</u> ▪ Medical-grade, automatic table-top steam sterilizer (autoclave). ▪ Class B autoclave suitable for surgical instruments used in operating rooms and dental treatment and applications ▪ Chamber capacity: ≥ 22 liters usable volume. ▪ Designed for sterilization of surgical instruments, hollow instruments, wrapped/unwrapped loads, and porous items. ➤ <u>Chamber & Construction</u> ▪ Chamber material: Stainless steel 316L, corrosion- and pressure-resistant. ▪ Chamber volume: 22 L minimum. ▪ Automatic door locking system with mechanical and electronic interlock (cannot open under pressure). ▪ Smooth interior, easy to clean. ▪ Outer housing: stainless steel or epoxy-coated steel. ➤ <u>Sterilization Performance</u> ▪ Sterilization type: Saturated steam sterilization with fractionated pre-vacuum. ▪ Pre-vacuum system: Multiple vacuum pulses before sterilization to remove air from chamber and load. ▪ Post-vacuum drying: Vacuum-assisted drying to ensure packs come out dry and ready for use. ▪ Cycles: Pre-programmed and user-selectable cycles including: - Wrapped instruments	

Item Description	Supplier Specifications
- Unwrapped instruments - Hollow instruments (e.g., cannulas, dental handpieces) - Porous loads (e.g., textiles, gowns, drapes) - Bowie-Dick and Helix test programs ▪ Sterilization temperature: 121 °C and 134 °C. ▪ Working pressure: up to 2.2 bar. ▪ Cycle time: typically ≤ 30 min at 134 °C (depending on load). ➤ <u>Operation & Control</u> ▪ Microprocessor-controlled, fully automatic. ▪ Digital LCD/LED display with real-time indication of temperature, pressure, cycle phase, and error codes. ▪ Cycle documentation via built-in printer and USB output. ▪ Automatic fault detection with audible and visual alarms. ▪ User password protection for cycle management. ➤ <u>Water & Steam System</u> ▪ Independent clean water reservoir. ▪ Separate used-water reservoir with automatic collection. ▪ Easy access fill and drain ports. ▪ Option for external demineralized water supply connection. ▪ Automatic monitoring of water level and quality (with alarms). ➤ <u>Safety Features</u> ▪ Safety door lock: prevents opening during cycle or under pressure. ▪ Over-temperature and over-pressure protection. ▪ Pressure relief valve. ▪ Automatic shut-off in case of malfunction. ▪ Electrical safety: surge, overload, and short-circuit protection. ➤ <u>Accessories & Initial Supply</u> ▪ Minimum 3 stainless steel trays with tray holder/rack. ▪ Drain hose assembly. ▪ Cleaning kit. ▪ Printer paper (5 Rolls) ▪ Two Bowie-Dick test packs and two Helix test starter kit	

Item Description	Supplier Specifications
S09 Washer disinfectant, double door Qty : 2  ➤ General Requirements ▪ High-capacity, pass-through washer-disinfectant for surgical instruments, anesthesia components, laboratory glassware, and general hospital goods. ▪ Double-door, barrier type (dirty-to-clean separation) with interlocks to prevent cross-contamination. ▪ External housing in AISI 304 stainless steel; wash chamber in AISI 316L stainless steel, fully welded and polished for maximum corrosion resistance. ▪ Glass doors (tempered, double-glazed) for visual inspection. ▪ Chamber volume: ~200–250 L. ▪ Load capacity: 8–10 DIN trays per cycle (or equivalent). ▪ Electrically heated version. ➤ Washing & Disinfection Performance ▪ Thermal disinfection up to 93 °C with validated A0 value ≥ 3000 (programmable to meet EN ISO 15883). ▪ Multi-level spray arms (≥ 4 levels) with self-cleaning design and anti-clog nozzles for uniform coverage. ▪ Adjustable wash programs with variable time, temperature, detergent concentration, and flow control. ▪ Filtered re-circulated water system with optional conductivity monitoring. ▪ Final rinse with demineralized water. ▪ HEPA H14 filtered forced-air drying system with double-action (turbine + resistance heating); adjustable cycle parameters.	

Item Description	Supplier Specifications
➤ <u>Automation, Controls & Traceability</u> ▪ PLC-based touchscreen control panel ($\geq 7''$ color display) showing: program selection, cycle status, chamber temperature, A0 values, process time, alarms, and service alerts. ▪ Self-diagnostic functions with error codes and maintenance reminders. ▪ Cycle traceability: automatic cycle recording with USB export, LAN connection, and optional integration to hospital IT (e.g., CSSD tracking systems). ▪ User levels & access control (operator, supervisor, technician) with password or RFID login. ▪ Smart dosing system: automatic dosing of detergents, lubricants, neutralizers; low-level alarms with on-screen display. ▪ Built-in thermal printer for cycle reports. ➤ <u>Safety & Ergonomics</u> ▪ Automatic door locking during cycle; doors only unlock when safe conditions are met. ▪ Cool-touch exterior even during hot cycles. ▪ Noise level ≤ 65 dB(A). ▪ Energy-saving features: heat recovery system, water-saving circulation, and standby modes. ▪ Compliance with EN ISO 15883-1/2/5, CE marked, medical-grade equipment. ➤ <u>Accessories (included)</u> ▪ 2 stainless steel loading/unloading trolleys, variable height, ergonomic design. ▪ Instrument baskets and trays: - 3 sizes of SS baskets for instruments (3 pcs/size). - 2 sizes of SS baskets for laboratory glassware (2 pcs/size). - 3 sizes of DIN trays and baskets for surgical instruments (3 pcs/size). - anesthesia circuit holders, MIS instrument racks, lumen irrigation adapters. ▪ Printer Paper (5 Rolls) ➤ <u>Utilities</u> ▪ Electrical: 400 V, 50/60 Hz, 3-phase (Specify power requirements) ▪ Water inlets: hot/cold, demineralized (Specify type of water connections needed and flow and pressure requirements for each) ▪ Drain connection with air-gap backflow prevention.	

Item Description		Supplier Specifications
S10	Holder, Urinal	Qty : 7
 ▪ 18/10 Grade Stainless Steel wall mounted unit, to hold Minimum 5 Urinal Bottles ▪ Complete with integral wall mounting brackets ▪ Should come with 5 urinal bottles		

Item Description	Supplier Specifications
S11 Rack, Bed Pan Qty : 7  ➤ <u>Rack</u> ▪ 18/10 Grade Stainless Steel ▪ Wall mounted with a designed backsplash ▪ Removable drip tray for cleaning ▪ Capacity 5 bedpans ➤ <u>Bed Pan</u> ▪ Bedpan capacity: 1 Liter ▪ Made from strong high quality plastic ▪ Integrated handle for ease of use ▪ Easy to clean and empty ▪ Cleans with steam, boiling water or chemicals ▪ For every rack 5 bedpans should be included	

Item Description		Supplier Specifications
S13	Closed Trolley Collection for soiled linen transport	Qty: 1
 ▪ Closed Soiled Linen Transport Trolley, Constructed from corrosion proof polymer. ▪ Drain holes are standard ,with 4 Swivel Castors, two with Brakes ▪ Minimum dimensions: 724mm(D)x1219mm(W)x1736mm(H)		

Item Description	Supplier Specifications
S14 Clean Linen Transport Trolley Qty: 1  ▪ Exclusive integral, convertible shelving system in a polymer linen truck. ▪ Two folding shelves can be positioned horizontally or vertically to produce three different configurations: horizontal shelves for bulk items or linens; vertical for collecting and transporting bulk materials; and with a lower shelf flipped up and out for easy loading and unloading. ▪ Advanced polymer design will not dent, rust or corrode. ▪ With Four Swivel castors, two with Brakes ▪ Dimensions: D:724mmxL:1219mmxH:1736mm capacity of 1.36 cubic metres	

Item Description	Supplier Specifications
S16 Sterile Wrap Rack Qty : 1  ▪ Mobile garment rail, built-in heavy steel pipe and angle, easy to maneuver and guide casters and wheels are heavy duty. ▪ Should have minimum 6 Rails. ▪ Two of wheels should come with a brake. ▪ Bumpers ▪ Dim. approx. (W X D X H): 1200 x 500 x 1500 mm.	

Item Description	Supplier Specifications
S17 Working Table Qty : 4  ▪ 18/10 S/S, construction work top with water proofed material, diecast aluminum fitting connection for legs, S/S square section frame and legs, corrosion – proof plastic adjustable feet with S/S lower shelf. ▪ Loading capacity: 2000 Kg ▪ Dim. approx. (W x D x H): 1800 x 700 x 900 mm.	

Item Description	Supplier Specifications
S18 Working Table with rear up stand Qty : 2  ▪ 18/10 S/S, construction work top with water proofed material, diecast aluminum fitting connection for legs, ▪ S/S square section frame and legs, corrosion – proof plastic adjustable feet with S/S lower shelf. ▪ The working table should be welded to a rear upstand of 300 mm height ▪ Loading capacity: 2000 Kg. ▪ Dim. approx. (W x D x H): 1800 x 700 x 900 mm.	

Item Description	Supplier Specifications
S20 Wash Station with two sinks Qty : 1  Stainless Steel Work table with double sinks is used for rinsing and cleaning of soiled instruments. ▪ The worktop should be made of solid, bright-polished minimum sheet thickness of 1.5 mm stainless steel (304) to withstand heavy-duty work with wet instrument. ▪ The wash station shall have a backsplash of minimum length 200 mm. ▪ The worktop is equipped with a water rim around the sides to stop any spilled fluids from dripping of the unit. ▪ The two sinks should be made from stainless steel 304 quality, 16SWG thickness, are designed in a way to minimize splash, Minimum size of each sink shall be 700mm Length x 500 mm Width x 400 mm Depth ▪ The sink/worktop unit includes a drain valve, removable strainer, overflow drainpipe and water trap. ▪ All the joints shall be welded and fine finished. ▪ The under structure of the station should consist of closed cabinets hinged doors. ▪ Separate hot and cold water faucet above each sink. ▪ The hot/cold water faucet should be chrome plated and have a long wrist blade handles. ▪ The pre-rinse sprayer unit should be have a minimum of 8 inches retractable hose. ▪ Size Approx. (LxWxH) : 2000x700x900 mm ▪ With all necessary connections , fixations and accessories as specified to the approved by the Engineer	

Item Description	Supplier Specifications
S21 Endoscopy Washing Sink Qty : 1 The endoscopy sink is designed to avoid coiling the endoscope in sink during the washing process. The sink should have the following specifications: ▪ Fully welded 304 stainless steel construction ▪ A welded rear up stand of minimum height 300 mm ▪ A worktop should slope to the sink ▪ All worktop edges are of the wet edge type and raised to prevent water drips ▪ Fully welded Under shelf ▪ The sink should be equipped with 2 bowels where both faucets with pre-rinse sprayer ▪ The hot/cold water faucets should be chrome plated and come with long wrist handles ▪ The pre-rinse spray unit should have a minimum of 8 inches' retractable hose ▪ Dimension of each scope sink bowel (LxWxD): 650 x 600 x 400 mm ▪ Bench top dimension (LxWxD): 2500 x 700 x 900 mm ▪ With all necessary connections, fixations and accessories as specified to the approved by the Engineer	

Item Description	Supplier Specifications
PACKAGE (K) KITCHEN	
K01 Insect killer Qty: 4	
Insect killer Executor horizontal white, 3 methods of fixing, Light output 2x8W, Coverage 50m2. Dim: 36x14x26 cm	
K02 Floor Water Cooler Qty: 1	
Floor water cooler Cap: 23L/Hr w/ bubbler head & glass filler	
K03 Wire Shelving Unit Dim:46x182cm Qty: 8	
Wire Shelving Unit Dim: 46x182cm (includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), nickel-plated chrome finish for dry & low humidity environments also includes a protective lacquer coat.	
K04 Platform Trolley Dim:100x60cm Qty: 2	
- S/S heavy duty platform trolley Dim:100x60cm w/ removable S/S pan, 4 castors - Construction of tubular frames, stainless steel 38x38mm, fully welded and shall be mounted on 4 swivel type casters, non-marking polyurethane, easy rolling, two with brakes	
K05 Utility Cart Dim:100x50cm Qty: 1	
- S/S utility cart, Dim:100x50cm w/ 2 shelves - Construction of tubular frames Stainless Steel 25 mm, fully welded, mounted on 125 mm swivel type casters, non-marking polyurethane, two with brake - Shelves are made of 1 mm stainless Steel type 304 - Corners are notched and welded to fit contour of frame	
K06 Reel rinse with spray valve Qty: 2	
Reel rinse with spray valve, Exposed. 35 feet, 3 ply, 2 braid hose provided with stop, can be mounted on wall or floor	



Item Description	Supplier Specifications
K07 Handwash Basin Qty: 1 - Hand wash Basin over sink compact element on 4 adjustable feet 40x40mm w/ 1.25mm thick, removable support for bucket, 1/2 hot/cold water connector Dim: 50x60x85 cm - In AISI 304L Stainless Steel with minimum 270 mm high splash back at a 30 Degree angle	
K08 Floor Type Scale Qty: 1 - Floor Type Digital Scale Capacity 150 Kg Div.: 20 g -230 v - Water Proof Rechargeable Battery - Platform Dim: 40x50 cm - Stainless Steel frame - LED Display in robust housing - Adjustable Feet - Shall measure in different units	
K09 Working Table w/ Backsplash Dim: 190x70x85cm Qty: 1 - S/S table w/ backsplash Dim: 190x70x85cm. 3 sides cross bracing 4 Legs - The one sheet, seamless top consisting of 1.5 mm stainless steel 18/8 type 304 - Top is sound dead-ended and is reinforced by rigid 1.5 mm stainless channel frames. - Backsplash shall be integral with the top minimum 100 mm high. - Corner of backsplash shall be welded, ground and finely finished to original - Understructure cross bracing 3 sides, open front, welded to tubular legs - Table is mounted on square section frame of dimensions minimum 38x38 mm stainless legs and is supplied with adjustable stainless steel bullet feet	

Item Description	Supplier Specifications
K10 Combined chiller & freezer walkin rooms External Dim: 283x376x223Hcm Qty: 1 ▪ ▪ Combination Vegetable cooler / freezer, insulated envelope completely as specified, Dim: 283x376x223cm with partition panel & 2 doors including refrigeration system and all electro-mechanical works as specified. ▪ Cooler Temperature: +2/+5 °C, Freezer Temperature: -18/-20 °C ➤ Panel Insulation The thermal transmittance (U Value) of the roof, wall and floor panels must be 0.20 W/m2K or better ➤ Panel Construction ▪ Panels must be made from zinc coated steel sheet, fully insulated, without internal structural members or stiffeners between the skins ▪ Tongued and grooved joints between panels must be designed to minimize cold-bridging ▪ Gaskets are to be resistant to damage from oil, fats, water and detergents ▪ Floor panels must to have a hard-wearing non slip finish ▪ Door Construction ▪ UL approved door and jamb, fully insulated, flush in-fitting type ▪ Gaskets shall be neoprene, replaceable and N.S.F approved Type ▪ Hardware shall be heavy-duty plated with lever type inside safety release ▪ Each door shall have two hinges, cam-action, and self-closing type ▪ Doors shall have electrically heated frost-stop contact built into both doors and jambs ▪ Doors must be constructed and insulated to the same standards as for Panel ▪ Doors must be lockable with 100% with fail-safe provision for opening from inside ▪ To provide with an internal clear plastic strip curtain ➤ Lighting ▪ Provide internal ceiling-mounted low energy fluorescent or LED luminaires with an external switch and pilot light. The external light and light switch must be fixed to the wall of the cold room enclosure near to the entrance door. The minimum illumination level on the vertical face of the lowest shelves must be 150 lux. ▪ The IP rating of the light fitting is IP68. ➤ Drainage system ▪ Room shall be provided with a drainage system	

Item Description	Supplier Specifications
➤ Partition Wall ▪ The finishes of partition wall shall be the same as the walk-in walls and shall lock into wall, ceiling, and floor panels ▪ In multi room installations with shared walls, the construction of a shared wall between adjoining cold rooms and freezer rooms must be designed to ensure that stored items on cold room side of the wall will be exposed to temperature +2 DegC, or that items stored on the freezer room side of the wall will be exposed to temperatures above -15 DegC ➤ Floor Panel ▪ Floor panels shall be made to support a uniformly distributed load up to and including 600 pounds per square foot ▪ Floor panels must to have a hard-wearing non-slip finish ➤ Alarm System ▪ Provide a mains-operated audible alarm with battery backup and automatic recharge which is triggered in the event of mains failure or when freezer room temperatures are outside set limits ▪ Alarm sounders repeaters are to be located adjacent to the cold room /freezer room ➤ Thermometer ▪ A programmable electronic temperature and event logger system with auto-dialer. Provide a backup gas or vapor pressure dial thermometer, mounted on the wall of the cold room in an accessible position ▪ The following performance specifications should be met: - Accuracy +/- 1°C - Resolution +/- 0.5°C - Refillable or inkless pen ▪ Minimum acceptable recording period between chart changes is 7 days ▪ Power source 110/240 volts 60/50 Hz mains operated with rechargeable and replaceable battery backup with 48hrs charge capacity ▪ A digital Temperature monitor is most preferred. ➤ Refrigeration Unit ▪ Provide fully installed dual refrigeration system to maintain the required temperature for chiller and freezer. Calculation note for unit capacity shall be performed and be submitted for approval by the engineer. Depending upon the internal room layout and the room location, refrigeration units may be one of the following types:	

Item Description	Supplier Specifications
▪ Wall mounted with the condenser unit discharging inside the building that houses the cold room (monoblock system or split) ▪ Refrigeration unit installations must: ▪ Be sized to give 100% stand-by capacity under worst-case conditions ▪ Use refrigerant complying with CFC Free ▪ Have an automatic duty sharing system designed to ensure even wear on the refrigeration units. All units should be fitted with run-hour meters ▪ Have timer operated electric defrosting system with a condensate drip tray and drain connection. Hot gas type defrost in conjunction with the timer is also acceptable ▪ Have airtight seals between monoblock units and wall panel cut -outs ▪ Have airtight seals around all pipe and cable penetration through wall and/ or roof panels Pressure relief valve (freezer rooms only) ▪ Provide a pressure relief valve in the roof or wall of all freezer rooms Door Frame Heating Element (For the Freezer) ▪ To provide a door frame heating element for all freezer rooms and for cold rooms	
K12 Epoxy Shelving unit Dim:46x182cm Qty: 2 ▪ Epoxy Shelving unit Dim: 46x182cm includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), corrosion resistant finish for wet & high humidity environments. Microban antimicrobial is built into the finish to keep the product cleaner.	
K13 Epoxy Shelving unit Dim:46x152cm Qty: 4 ▪ Epoxy Shelving unit Dim: 46x152cm includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), corrosion resistant finish for wet & high humidity environments. Microban antimicrobial is built into the finish to keep the product cleaner.	
K14 Epoxy Shelving unit Dim:46x122cm Qty: 1 ▪ Epoxy Shelving unit Dim: 46x122cm includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), corrosion resistant finish for wet & high humidity environments. Microban antimicrobial is built into the finish to keep the product cleaner.	

Item Description	Supplier Specifications
K15 Epoxy Shelving unit Dim:46x91cm Qty: 1 Epoxy Shelving unit Dim: 46x91cm includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), corrosion resistant finish for wet & high humidity environments. Microban antimicrobial is built into the finish to keep the product cleaner.	
K17 Dunnage rack 152cm Qty : 2 ➤ General Construction - Fabricated from stainless steel AISI 304 (18/8) or heavy-duty aluminum. - Dimensions: 1520 mm (L) × 460 mm (W) × 200 mm (H) (approx.). - Tubular frame with slatted top for ventilation. - Designed for off-floor storage of food and supplies, keeping items at least 150 mm above floor level. - Load capacity: ≥ 250 kg. ➤ Finish - Smooth polished finish, easy to clean, corrosion resistant.	
K18 Combined Chiller & Freezer Walking Rooms Dim: 183x336x223 cm Qty: 1 Combination meat & chicken / dairy cooler, insulated envelope completely as specified, Dim: 183x336x223 cm with partition panel & 2 doors including refrigeration system and all electro-mechanical works as specified. Cooler Temperature: +2/+5 °C, Freezer Temperature: -18/-20 °C ➤ Panel Insulation: - The thermal transmittance (U Value) of the roof, wall and floor panels must be 0.20 W/m²K or better ➤ Panel Construction - Panels must be made from zinc coated steel sheet, fully insulated, without internal structural members or stiffeners between the skins - Tongued and grooved joints between panels must be designed to minimize cold-bridging - Gaskets are to be resistant to damage from oil, fats, water and detergents - Floor panels must to have a hard-wearing non slip finish - Door Construction - UL approved door and jamb, fully insulated, flush in-fitting type - Gaskets shall be neoprene, replaceable and N.S.F approved Type	

Item Description	Supplier Specifications
▪ Hardware shall be heavy-duty plated with lever type inside safety release ▪ Each door shall have two hinges, cam-action, and self-closing type ▪ Doors shall have electrically heated frost-stop contact built into both doors and jambs ▪ Doors must be constructed and insulated to the same standards as for Panel ▪ Doors must be lockable with 100% with fail-safe provision for opening from inside ▪ To provide with an internal clear plastic strip curtain ➤ Lighting ▪ Provide internal ceiling-mounted low energy fluorescent or LED luminaires with an external switch and pilot light. The external light and light switch must be fixed to the wall of the cold room enclosure near to the entrance door. The minimum illumination level on the vertical face of the lowest shelves must be 150 lux. ▪ The IP rating of the light fitting is IP68. ➤ Drainage system ▪ Room shall be provided with a drainage system ➤ Partition Wall ▪ The finishes of partition wall shall be the same as the walk-in walls and shall lock into wall, ceiling, and floor panels ▪ In multi room installations with shared walls, the construction of a shared wall between adjoining cold rooms and freezer rooms must be designed to ensure that stored items on cold room side of the wall will be exposed to temperature +2 DegC, or that items stored on the freezer room side of the wall will be exposed to temperatures above -15 DegC ➤ Floor Panel ▪ Floor panels shall be made to support a uniformly distributed load up to and including 600 pounds per square foot ▪ Floor panels must to have a hard-wearing non-slip finish ➤ Alarm System ▪ Provide a mains-operated audible alarm with battery backup and automatic recharge which is triggered in the event of mains failure or when freezer room temperatures are outside set limits ▪ Alarm sounders repeaters are to be located adjacent to the cold room /freezer room	

Item Description	Supplier Specifications
➤ Thermometer ▪ A programmable electronic temperature and event logger system with auto-dialer. Provide a backup gas or vapor pressure dial thermometer, mounted on the wall of the cold room in an accessible position ▪ The following performance specifications should be met: - Accuracy +/- 1°C - Resolution +/- 0.5°C - Refillable or inkless pen ▪ Minimum acceptable recording period between chart changes is 7 days ▪ Power source 110/240 volts 60/50 Hz mains operated with rechargeable and replaceable battery backup with 48hrs charge capacity ▪ A digital Temperature monitor is most preferred. ➤ Refrigeration Unit ▪ Provide fully installed dual refrigeration system to maintain the required temperature for chiller and freezer. Calculation note for unit capacity shall be performed and be submitted for approval by the engineer. Depending upon the internal room layout and the room location, refrigeration units may be one of the following types: ▪ Wall mounted with the condenser unit discharging inside the building that houses the cold room (monoblock system or split) ▪ Refrigeration unit installations must: ▪ Be sized to give 100% stand-by capacity under worst-case conditions ▪ Use refrigerant complying with CFC Free ▪ Have an automatic duty sharing system designed to ensure even wear on the refrigeration units. All units should be fitted with run-hour meters ▪ Have timer operated electric defrosting system with a condensate drip tray and drain connection. Hot gas type defrost in conjunction with the timer is also acceptable ▪ Have airtight seals between monoblock units and wall panel cut -outs ▪ Have airtight seals around all pipe and cable penetration through wall and/ or roof panels ➤ Pressure relief valve (freezer rooms only) ▪ Provide a pressure relief valve in the roof or wall of all freezer rooms ➤ Door Frame Heating Element (For the Freezer) ▪ To provide a door frame heating element for all freezer rooms and for cold rooms	

Item Description	Supplier Specifications
K20 Garbage Bin, Cap: 70 L Qty : 10 - S/S waste bin mobile - removable base - Cap:70 L, Dim:45x60 cm w/ cover manual version & watertight bottom and bumper	
K21 Working Table w/ backsplash Dim: 140x70x85 cm Qty: 1 - S/S fish preparation table w/ backsplash Dim: 140x70x85 cm, with sink bowl Dim:114x32x16 cm - The one sheet, seamless top consisting of 1.5 mm stainless steel 18/8 type 304 - Top is sound dead-ended and is reinforced by rigid 1.5 mm stainless channel frames. - Backsplash shall be integral with the top minimum 100 mm high. - Corner of backsplash shall be welded, ground and finely finished to the original - Understructure cross bracing 3 sides, open front, welded to tubular legs - Table is mounted on square section frame of dimensions minimum 38x38 mm stainless legs and is supplied with adjustable stainless steel bullet feet	
K22 Pre Rinse Shower Qty: 7 Pre rinse assembly w/ spray head with 90° turn lever for table installation	
K24 Reach in refrigerator Dim:80x60x203 cm Qty: 1 - S/S reach in refrigerator-fish Dim: 80x60x203cm. 1 door, 6 containers - Temperature Range: -2 Deg C / +8 Deg C ➤ Exterior - The Exterior should be of AISI 304 Stainless Steel - Adjustable Stainless-Steel Legs Interior ➤ The Interior should be of AISI 304 Stainless Steel - The interior cabinet is built with rounded corners - Drain inside the cabinet - Built in with LED Lighting ➤ Doors - Self-closing door system - Doors with integrated handle and blocked opening hinge - Interior of door inserted with a triple chamber door gasket easy to remove	

Item Description	Supplier Specifications
➤ Insulation ▪ Insulation by free CFC's polyurethane foam high pressure injected with density minimum 40 Kg/m³ ▪ Zero ODP and LOW GWP ➤ Refrigeration ▪ Temperature and automatic defrost regulated by a digital controller ▪ System of ventilated Condensation ▪ System of Forced Evaporation ▪ Evaporator coil coated with anti-corrosion material	
K26 Working Table w/ Sink & Backsplash Dim:134x70x85cm Qty: 1	
▪ S/S table w/ drop in 40x40cm left sink and backsplash w/ 1 lower shelf, Dim: 134x70x85cm. ▪ The one sheet, seamless top consisting of 1.5 mm stainless steel 18/8 type 304 ▪ Top is sound dead-end and shall be reinforced with 1.25 mm stainless steel channel frames ▪ Backsplash shall be integral with the top of minimum 100 mm high and welded ▪ Corner of backsplash shall be welded, ground and finely finished to original. ▪ Understructure shelves 1.25 mm stainless steel is equivalent to top construction. Shelf corner with heavy duty angle frames are notched and welded to fit contour of tubular legs ▪ Table is mounted on square section frame of dimensions minimum 38x38 mm stainless legs and is supplied with adjustable stainless steel bullet feet.	
K32 Working Table w/ Sink & Backsplash Dim:125x70x85cm Qty: 1	
▪ S/S table w/ right hand sink & Backsplash, Dim: 125x70x85cm. Sink 40x40x25cm. 4 Legs ▪ Refer to Item K09 for general Specifications	

Item Description	Supplier Specifications
K35 Potato Peeler Qty: 1 ▪ S/Steel Potato Peeler Cap: 10 Kg. 230/50/1, 1.1 HP, 280 Kg/H ▪ S/S interior construction, transparent Lid made of a special shock proof plastic inside of the cylinder and rotating disc are coated in a special vitreous and abrasive composition. ▪ Equipment with a safety device on the discharge port preventing access to all moving parts ▪ Mechanical Timer ▪ Sensors detecting the opening of the cover ▪ Electrical Parts in box should be IP56 protection rating	
K38 Hand wash Sink Knee Operated, Dim: 39x35x50 cm Qty: 6 ▪ Hand wash sink knee operated 39x35x50 cm, round bowl, premixed hot/cold water, swan tap. ▪ In AISI 304L Stainless Steel with minimum 270 mm high splash back at a 30 Degree angle	
K39 Working Table w/ Sink & Backsplash, Dim:125x70x85cm Qty: 1 ▪ S/S table w/ right hand sink, backsplash on back and left side. Dim: 125x70x85cm. Sink 40x40x25cm. 4 Legs. ▪ Backsplash on left Dim: 70 cm ▪ Refer to Item K09 for general Specifications	
K40 Faucet Qty: 9 ▪ Single-hole heavy-duty tap with lower spout, projection 220 mm. ▪ Elbow-operated lever handle for hygienic, hands-free operation. ▪ Constructed from chrome-plated brass or stainless steel, corrosion resistant. ▪ Suitable for hospital/foodservice use, durable for frequent operation.	

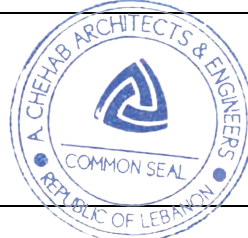
Item Description	Supplier Specifications
K41 Single Wall shelf, Dim:125x30cm Qty: 1 ▪ Body constructed of 1mm stainless steel 18/8 type 304, and shall have sanitary rim turned down at the front minimum 35 mm at 90° and 20 mm at 90 Degree. ▪ Brackets shall be welded to the shelf and secured to wall by means of bolts. ▪ Bracket corners are notched and fitted precisely to the shelf rim. ▪ Units above 2000 mm are furnished with 3 brackets	
K42 Working Table w/ Backsplash, Dim:150x70x85cm Qty: 2 ▪ S/Steel table w/ Backsplash, Dim: 150x70x85cm. 4 Legs ▪ Refer to Item K09 for general Specifications	
K43 Single Wall Shelf Dim:190x30cm Qty: 2 ▪ S/Steel single wall shelf, Dim:190x30cm ▪ Refer to Item K41 for General Specifications	
K45 Poly Cutting Board Qty: 2 ▪ Poly cutting board, reversible, white, shrink wrapped ▪ Dim:60x40x2 cm ▪ Light Weight, Durable, High Temperature Dishwasher Safe	
K46 Disinfecting / sterilizing cabinet for knives Qty: 1 ▪ Construction in Stainless AISI 304 ▪ A transparent plexi-glass door with a magnetic lock ▪ Timer: 0-2 hours ▪ Mounting knives with magnet ▪ Cap: 10 Knives ▪ A germicide Lamp U.V	
K47 Drawer Set Qty: 6 ▪ S/S single drawer assembly mounted on S/S drawer slides with ball bearing action Cap:70 kg ▪ Swivel type casters, non-marking polyurethane, two with brakes	



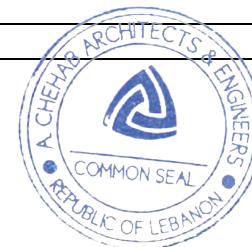
Item Description	Supplier Specifications
K48 Meat Mincer Qty: 1 ▪ S/S Meat mincer Cap.250kg, w/ reversible switch 220/50/1, 1.5 HP ▪ Table Top Meat Mincer ▪ Construction: Made of Stainless Steel ▪ 1.5 HP Motor ▪ Head readily disassembled for easy cleaning	
K49 Reach in Refrigerator Dim:70x82x210cm Qty: 2 ▪ Temperature Range: -2 Deg C / +8 Deg C ➤ Exterior ▪ The Exterior should be of AISI 304 Stainless Steel ▪ Adjustable Stainless-Steel legs ➤ Interior ▪ The Interior should be of AISI 304 Stainless Steel ▪ The interior cabinet is built with rounded corners ▪ Drain inside the cabinet ▪ Built in with LED Lighting ➤ Doors ▪ One Full Door ▪ Doors with integrated double handle and blocked opening hinge ➤ Insulation ▪ Insulation by free CFC's polyurethane foam high pressure injected with density minimum 40 Kg/m3 ▪ Zero ODP and LOW GWP ➤ Refrigeration ▪ Temperature and automatic defrost regulated by a digital controller ▪ System of ventilated Condensation ▪ System of Forced Evaporation ▪ Evaporator coil coated with anti-corrosion material	

Item Description	Supplier Specifications
K56 Working Table w/ Double Sinks & Backsplash, Dim:184x70x85cm Qty: 1 - S/S table w/ backsplash Dim: 184x70x85cm. 3 sides cross bracing, 4 Legs, Add-on 2 sinks Dim: 50 x 50 cm - Refer to Item K09 for General Specifications	
K58 Single wall shelf, Dim:100x30cm Qty: 1 - S/S single wall shelf, Dim:100x30cm - Refer to Item K41 for General Specifications	
K60 Working Table Dim:170x70x85cm Qty: 3 - S/S work table Dim: 170x70x85cm w/ 1 under shelf and 4 legs. - Refer to Item K26 for General Specifications	
K64 Working Table w/ Double Sinks & Backsplash, Dim:265x70x85cm Qty: 1 - S/S table w/ backsplash & 2 sink bowls 50x50cm. Dim:265x70x85cm - Refer to Item K09 for General Specifications	
K65a Hygiene Top Dim:265x70cm Qty: 1 S/S hygiene top with backsplash. Dim:265x70cm	
K66 Single Wall Shelf Dim:134x30cm Qty: 2 - S/S single wall shelf, Dim:134x30cm - Refer to Item K41 for General Specifications	



Item Description	Supplier Specifications
K67 Vegetable cutter Qty: 1 - Vegetable cutter 230/50/1, 1 head large, S/S body - Output Power: 2 HP - Magnetic safety system with motor brake - Large Hopper for allowing bulky vegetables to be processed - Loading Capacity at least 4 Liters - Detachable bowl and lid - Stainless Steel Bowl and the all- metal motor unit - Vertical Pusher pressure exerted on vegetables to ensure uniform cuts Equipped with: - Slicing disc with straight blades 2 mm - Slicing disc with straight blades 6 mm - Slicing disc with straight blades 8 mm - Grid for chips 8 x 8 mm - Grid for cubes 8 x 8x 8 mm - Disc for julienne 4 mm	
K68 Single Wall Shelf, Dim:70x30cm Qty: 2 - S/S single wall shelf, Dim:70x30cm - Refer to Item K41 for General Specifications	
K72 Working Table w/ Backsplash Dim:115x70x85cm Qty: 1 - S/S table w/ backsplash Dim: 115x70x85cm. 3 sides cross bracing 4 Legs with additional backsplash on left side 70 cm - Refer to Item K09 for General Specifications	
K75 Wall Shelf, Dim:164x30cm Qty: 1 - S/S single wall shelf, Dim:164x30cm - Refer to Item K41 for General Specifications	

Item Description	Supplier Specifications
K77 Table Top Refrigerator Dim:147x70x85cm Qty: 2 ▪ S/S table top refrigerator / gastronome Dim: 147x70x85cm. ▪ 2 doors ▪ Material Exterior, Interior & Back should be AISI 304 Stainless Steel ▪ Range Temperature: -2°C / +8°C ▪ Rounded Interior Corner construction ▪ Insulation should be polyurethane of high density of minimum 40 kg/m³, CFC Free, Zero ODP and Low GWP ▪ The undercounter refrigerator should be of two doors ▪ The door should be solid with integrated double-trip handle and pivoting hinge and stay open door mechanism ▪ Should come with door lock ▪ Should have adjustable stainless-steel legs from 130 – 180 mm ▪ Temperature and automatic defrost regulated by a digital controller ▪ System of ventilated Condensation ▪ System of Forced Evaporation ▪ Evaporator coil coated with anti-corrosion material	
K78 Single Wall Shelf Dim:195x30cm Qty: 1 ▪ S/S single wall shelf, Dim:195x30cm ▪ Refer to Item K41 for General Specifications	
K79 Digital Scale Qty: 2 ▪ Bench digital weighing scale 7.5Kg- 1.5Gr-220V ▪ Complete Stainless-Steel Construction ▪ Digital scale shall be having high accuracy ▪ Large weighing pan ▪ Several selectable weighing units ▪ Large Display ▪ Tare, zero, subtraction, counting function, calibration, alarm function, energy saving function ▪ Adjustable Leveling Feet ▪ IP66 Waterproof	

Item Description	Supplier Specifications
K80 Commercial Mixer, Cap: 5 ltrs. Qty: 1 - Commercial mixer heavy duty, around 5 ltrs. White color W/ handle, flat beater, hook, wire whip - Comes with several speeds - Stainless steel Container	
K81 Lemon Juicer Qty: 2 - Heavy-duty professional citrus juicer with lever press system for continuous use. - Motor power: 230 W, ensuring reliable extraction for lemons, limes, and small citrus fruits. - Speed: 1500 rpm for efficient juice extraction. - Juice output: approx. 40 L/hr, suitable for medium to high-volume use. - Construction: Stainless steel strainer and food-grade components for durability and hygiene. - Body: Classic painted finish with corrosion-resistant coating. - Dimensions: 20 × 30 × 38 cm (W × D × H). - Non-slip rubber feet for stability during operation. - Noise level: ≤ 65 dB for quiet operation. - Easy-to-clean removable parts, dishwasher safe. - Safety features: thermal overload protection and safety lock system. - Designed for countertop use in hospital kitchens, cafeterias, and catering facilities.	
K83 Single Wall Shelf, Dim:204x30cm Qty: 1 - S/S single wall shelf, Dim:204x30cm - Refer to Item K41 for General Specifications	
K84 Working Table w/ Sink & Backsplash, Dim: 395x70x85cm Qty: 1 - S/S table w/ backsplash Dim: 395x70x85cm. 3 sides cross bracing 6 Legs, Add-on sink 1 bowl Dim: 50x50cm, - Add on backsplash on left - Refer to Item K09 for General Specifications	

Item Description	Supplier Specifications
K88 Dough Mixer Cap: 30 Qt Qty: 1 ▪ Mixer Cap: 30 Qt with hub, timer, gear driven, removable safety guard, On/ Off Switch, 380/50/3 ▪ Heavy-duty dough mixer designed for bakeries, hospital kitchens, and institutional food preparation. ▪ Capacity: 30 Qt (30 liters). ▪ Drive system: Gear-driven for reliable torque and consistent mixing performance. ▪ Speeds: Multi-speed control (specify exact speed levels). ▪ Bowl: Heavy-duty stainless steel mixing bowl with lifting mechanism. ▪ Guard: Removable stainless steel safety guard with interlock system. ▪ Control panel: - ON/OFF switch - Digital or mechanical timer for precise operation - Emergency stop button ▪ Motor: 380 V / 50 Hz / 3-phase power supply. ▪ Protection: Thermal overload protection for motor safety. ▪ Attachments: Standard hub to accommodate tools (dough hook, beater, whisk/whip). ▪ Safety features: Automatic shutoff when guard is opened or bowl is lowered. ▪ Construction: Durable painted steel or stainless housing for hygiene and easy cleaning. ▪ Accessories (optional): Additional bowls, agitators, and splash covers.	

Item Description	Supplier Specifications
K89 Working Table w/ Sink & Backsplash, Dim: 220x70x85cm Qty: 1 - S/S table w/ right hand sink, with backsplash, - Dim: 220x70x85cm. Sink 40x40x25cm. 4 Legs - Refer to Item K09 for General Specifications	
K91 Single Wall Shelf, Dim:220x30cm Qty: 2 - S/S single wall shelf, Dim:220x30cm - Refer to Item K41 for General Specifications	
K95 Working Table Dim:220x70x85cm Qty: 1 - S/S table with three sides base braces. Dim: 220x70x85cm. - Refer to Item K09 for General Specifications	
K95a Hygiene Top Dim:220x70cm Qty: 1 Granite for Table Dim:219x70cm, thickness: 3 cm	
K98 Portable Bin Qty: 3 - Construction: Heavy-duty stainless steel (S/S) body for durability and hygiene. - Capacity: Approx. 120 liters. - Dimensions: 45 × 55 × 70 cm (W × D × H). - Cover: Fitted with sliding lid for easy opening and secure closure. - Mobility: Mounted on 4 swivel casters, non-marking type, for smooth movement. - Usability: Suitable for bulk storage and transport of food items, laundry, or waste in hospital and institutional settings. - Cleaning: Smooth surfaces for easy washing and disinfection.	



Item Description	Supplier Specifications
K99 Pastry Table Refrigerated/ 3 doors, Dim: 218x80x85cm Qty: 1 ▪ S/S pastry table refrigerated Dim: 218x80x85cm. Tray size 60x40cm. 3 doors ▪ Temperature Range: -2°C/+8°C ➤ Exterior: ▪ AISI 304 18/10 Stainless Steel ➤ Interior: ▪ AISI 304 18/8 Stainless Steel ▪ Internal Drain ▪ Plastic coated wire shelves, adjustable height ▪ Heated door frame to avoid growth of ice ▪ The interior cabinet is built with rounded corners ➤ Doors: ▪ Easy removal triple chamber gasket ▪ Integrated handle doors ▪ Self-closing doors ▪ Magnet Gasket & Key Lock ➤ Legs: ▪ Adjustable Stainless Steel up to 200 mm ➤ Insulation: ▪ Free CFC High density polyurethane insulation with low GWP and zero ODP effect ➤ Refrigeration ➤ Digital Controller with temperature Display ▪ Automatic defrost of the evaporator ▪ Forced Air refrigeration system ▪ Evaporator coil coated with anti-corrosion material ▪ Control of the final defrost temperature ▪ Hot gas defrosts.	

Item Description	Supplier Specifications
K99a Hygiene Top Dim:219x70cm Qty: 2	
S/S hygiene top with backsplash. Dim:219x70cm, thickness: 3 cm	
K100 Combination oven Qty: 1	
- Type: Electric combination oven with digital control panel. - Capacity: 4 trays, size 40 × 60 cm. - Dimensions: Approx. 80 × 77 × 51 cm (W × D × H). - Construction: Heavy-duty design with AISI 304 stainless steel cooking chamber; rounded edges and large-radius corners for easy cleaning and hygiene. - Temperature Range: Up to 260 °C maximum. - Rack Spacing: Minimum 75 mm between trays. - Air Circulation: - Minimum 5 programmable air speeds - Automatic reversal of fan rotation for uniform cooking - Humidity Control: Automatic humidity regulation for precise cooking conditions. - Pre-heating: Automatic pre-heating function included. - Door: Double-glazed insulated glass door to reduce heat loss and improve safety. - Lighting: Equipped with internal halogen lights for clear visibility of food during cooking. - Safety Features: Over-temperature protection and cool-touch door design. - Cleaning: Smooth internal surfaces for easy washing and maintenance.	
K101 Hood with steam condenser Qty: 1	
- Compatibility: Specifically designed to be mounted on Combination Oven (Item No. 100). - Construction: Heavy-duty stainless-steel body, corrosion-resistant, easy to clean. - Steam Condensation: Integrated steam condenser system to capture and condense vapors released during cooking. - Control System: Equipped with temperature sensor for automatic regulation of extraction and condensation. - Mounting: Directly mounted on the combination oven for compact installation. - Safety & Hygiene: Prevents excessive steam release into the kitchen environment, improving working conditions and hygiene. - Drainage: Condensed steam safely directed to drainage or collection system.	

Item Description	Supplier Specifications
K102 Working Table w/ Backsplash & Under shelf Dim:110x70x85cm Qty: 1 ▪ S/S table w/ backplash Dim: 110x70x85cm. 1 under shelf 4 Legs. ▪ Refer to Item K26 for General Specifications	
K104 Reach in Freezer Dim:69x80x210cm Qty: 1 ▪ S/S reach-in freezer, 1 full door for pastry Dim: 69x80x210cm. Internal shelves 40x60 cm. ▪ Temperature Range: -18 Deg C / -22 Deg C ▪ Type: Upright Single Door ➤ Exterior ▪ The Exterior should be of AISI 304 Stainless Steel ▪ Adjustable Stainless-Steel Legs ➤ Interior ▪ The Interior should be of AISI 304 Stainless Steel ▪ The interior cabinet is built with rounded corners ▪ Drain inside the cabinet ▪ Built in with LED Lighting ➤ Doors ▪ Self-closing door system ▪ Doors with integrated handle and blocked opening hinge ▪ Interior of door inserted with a triple chamber door gasket easy to remove ➤ Insulation ▪ Insulation by free CFC's polyurethane foam high pressure injected with density minimum 40 Kg/m3 ▪ Zero ODP and LOW GWP ➤ Refrigeration ▪ Temperature and automatic defrost regulated by a digital controller ▪ System of ventilated Condensation ▪ System of Forced Evaporation ▪ Evaporator coil coated with anti-corrosion material	

Item Description	Supplier Specifications
K106 Wire Shelving Unit Dim: 46x152cm Qty: 2 Wire Shelving Unit Dim: 46x152cm (includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), nickel-plated chrome finish for dry & low humidity environments also includes a protective lacquer coat.	
K107 Wire Shelving Unit Dim: 46x137cm Qty: 2 Wire Shelving Unit Dim: 46x137cm (includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), nickel-plated chrome for dry & low humidity environments also includes a protective lacquer coat.	
K110 Wire Shelving Unit Dim: 61x183cm Qty: 1 Wire Shelving Unit Dim: 61x183cm (includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet, nickel-plated chrome finish for dry & low humidity environments also includes a protective lacquer coat.	
K111 Double Pot Wash Unit Dim:210x70x85cm Qty: 1 - Dimensions: Overall size 210 × 70 × 85 cm (W × D × H). - Bowls: Two bowls, each 95 × 50 × 38 cm (L × W × D). - Material: Fabricated from heavy-duty 18/8 (AISI 304) stainless steel. - Top Surface: Single sheet construction, seamless, with rounded inner corners for easy cleaning and hygiene. - Backsplash: Integral with top, minimum 100 mm high, corners welded, ground, and finished smooth to original profile. - Bowls: Large radius corners (vertical and horizontal), sound-deadened at bottom to minimize noise and vibration. - Legs: Constructed of 38 × 38 mm stainless steel tubular sections, providing maximum stability. - Feet: Supplied with NSF-approved stainless steel bullet feet, adjustable up to 27 mm for leveling. - External Panels: 1 mm stainless steel, fully welded to leg contours for rigidity. - Undershelf: 1.25 mm stainless steel, with all four corners notched and welded to fit tubular legs. - Finish: Polished, smooth, easy to clean, resistant to corrosion and chemicals.	

Item Description	Supplier Specifications
K113 Pot Rack Wall Mounted Shelf, Dim:85x40cm Qty: 1 S/S pot rack wall mounted shelf w/bar for hooks Dim:85x40cm	
K115 Neutral element, Dim:40x73x90 cm Qty: 3 - Dimensions: 40 × 73 × 90 cm (W × D × H). - Construction: Heavy-duty AISI 304 stainless steel, corrosion-resistant and hygienic. - Top Surface: Thickness 1.5 mm, seamless with rounded edges for safety and easy cleaning. - Design: Three sides enclosed, with one undershelf for storage. - Base: Mounted on adjustable stainless-steel feet for leveling on uneven floors. - Finish: Polished stainless-steel surface, smooth and easy to maintain. - Application: Designed as a neutral worktop/counter element for kitchen preparation or equipment support.	
K116 Gas Grills Dim:40x73x90 cm Qty: 1 - Construction: Heavy-duty AISI 304 stainless steel body, durable and corrosion-resistant. - Cooking Surface: - Forward sloping grill with 4 mm thick elements in direct contact (for cooking meat). - Flat grill plate with 10 mm circular diameter elements (for cooking fish and vegetables). - Splashguard: Integrated 135 mm tall splashguard on three sides, made of AISI 304 stainless steel. - Grease Management: Removable drawer for fat and residue collection, easy to clean. - Heating System: - Heat regulated by safety tap with thermocouple. - Integrated pilot burner for consistent ignition. - Piezoelectric ignition system for safe and reliable start-up. - Feet/Base: Equipped with adjustable stainless-steel feet for stability on uneven surfaces. - Finish: Polished stainless steel, hygienic, and easy to maintain.	

Item Description	Supplier Specifications
K117 Griddle Gas Dim:80x73x90 cm Qty: 1 ▪ Design: Smooth top on open base. ▪ Construction: Made of AISI 304 stainless steel, durable, hygienic, and corrosion-resistant. ▪ Cooking Zones: Two independent cooking zones: - 2/3 smooth surface (for eggs, pancakes, vegetables, fish). - 1/3 ribbed surface (for meat, poultry, sandwiches). ▪ Hotplate: - Sloping hotplate design for easy grease drainage. - Recessed minimum 40 mm below worktop. - Fully welded seamless construction for hygiene and durability. ▪ Gas Control System: - Gas supply regulated by safety tap with thermocouple. - Manual temperature control for each zone. - Pilot burner and piezoelectric ignition for safe, reliable startup. ▪ Base & Stability: Open base with adjustable stainless-steel feet. ▪ Finish: Easy-to-clean polished stainless-steel surfaces. ▪ Dimensions: 80 × 73 × 90 cm (W × D × H)	
K118 Six Gas Burners Dim:120x73x90 cm Qty: 1 ▪ Construction: Entirely made of AISI 304 stainless steel, heavy-duty, corrosion resistant, and hygienic. ▪ Gas Hob: - 6 high-efficiency burners with continuous output control (1.6 – 6 kW) via safety taps with thermocouples. - Pilot burner and thermocouple located beneath the main burner body for safety and reliability. - Hob designed with radiused corners for easy cleaning. - Strong pan supports included. - Gas Oven: GN 2/1 gas oven with thermostatic control valve and Temperature adjustable from 100 °C to 330 °C. ▪ Ignition: Manual with pilot burner. ▪ Base & Stability: Equipped with adjustable stainless-steel feet for leveling. ▪ Dimensions: 120 × 73 × 90 cm (W × D × H)	

Item Description	Supplier Specifications
K119 Gas Boiling Pan Dim:80x73x90 cm Qty: 1 ▪ Construction - External body made of AISI 304 stainless steel (durable, corrosion-resistant). - Bath/well made of AISI 316 stainless steel for superior resistance against high temperatures and food acids. ▪ Heating System - Indirect heating system (bain-marie type) for uniform cooking and to prevent food from burning. - Gas burners with safety valve and thermocouple protection. ▪ Temperature Control - Thermostat-controlled, with adjustable cooking temperature range. - Integrated safety thermostat to prevent overheating. ▪ Design & Usability - Rounded internal corners for easy cleaning and hygiene. - Large capacity lid, counterbalanced, heat-insulated, and easy to operate. - Equipped with drain valve for easy emptying of liquids. ▪ Base & Stability - Adjustable stainless-steel feet for perfect leveling. ▪ Safety Features - Piezoelectric ignition for gas burners. - Overpressure safety valve in indirect heating chamber. ▪ Dimensions: 80 × 73 × 90 cm (W × D × H) ▪ Capacity: 80 L ▪ Well Dimensions: 60 × 54 cm (depth)	

Item Description	Supplier Specifications
K122 Wall Type Hood Dim: 550x110x54 cm Qty: 1 ▪ Construction - Entire hood (body, top, back, and exposed surfaces) constructed of AISI 304 (18/8) stainless steel, thickness 1.25 mm. - Smooth welded seams, polished finish, and hygienic design for easy cleaning. ▪ Filters - Aluminum baffle-type, non-clogging filters, high-efficiency grease separation. - Easily removable and washable for routine maintenance. ▪ Lighting - Integrated incandescent/proof light fixtures, fully prewired to junction box mounted on hood. - Lighting designed for safe use in kitchen environment. ▪ Ventilation System - Exhaust fan included, fire-rated F400 (2 hours), compliant with safety standards. - Fresh air compensation fan included, ensuring balance of extraction and air supply for operator comfort and energy efficiency. - Fans factory-mounted and sized appropriately for the hood capacity. ▪ Design Features - Wall-mounted type. - Designed for heavy-duty commercial kitchen operation. - Easy access for cleaning and servicing of fans and filters. ▪ Dimensions: 550 × 110 × 54 cm (W × D × H)	
K124 Working Table w/ Backsplash Dim: 150x70x85cm Qty: 1 ▪ S/S worktable Dim: 150x70x85cm. With one backsplash ▪ Refer to Item K09 for General Specifications	

Item Description	Supplier Specifications
K127 Single Wall Shelf, Dim:150x30cm Qty: 1 - S/S single wall shelf, Dim:150x30cm - Refer to Item K41 for General Specifications	
K128 Working Table w/ Sink & Backsplash Dim:170x70x85cm Qty: 1 - S/S table w/ left hand sink, one backsplash, Dim: 170x70x85cm. Sink 40x40x25cm. 4 Legs - Refer to Item K09 for General Specifications	
K132 Single Wall Shelf, Dim:170x30cm Qty: 1 - S/S single wall shelf, Dim:170x30cm - Refer to Item K41 for General Specifications	
K133 Working Table w/ Backsplash & Under shelf Dim:120x70x85cm Qty: 1 - S/S table w/ backsplash Dim: 120x70x85cm. One under shelf - Refer to Item K26 for General Specifications	
K134 Single Wall Shelf, Dim:120x30cm Qty: 1 - S/S single wall shelf, Dim:120x30cm - Refer to Item K41 for General Specifications	
K135 Gravity slicer 30cm Qty: 1 - Blade Diameter: 30 cm - Motor Power: 0.4 HP - Power Supply: 230 V / 50 Hz / 1 Ph - Drive System: Belt drive - Construction & Design - Base tray formed from a single-piece anodized aluminum with bright, hygienic finish. - Cutting blade made of hardened steel for durability and precision. - Integrated sharpening unit for blade maintenance.	

Item Description	Supplier Specifications
▪ Performance - Adjustable slicing thickness from 0 to 15 mm. - Suitable for slicing cold cuts, cheese, and other food products with consistent thickness. ▪ Safety Features - Safety device prevents blade operation when blade guard is removed. - Blade cover and food pusher designed to minimize operator risk. ▪ Ergonomics & Hygiene - Smooth, rounded edges for easy cleaning. - Quick disassembly for maintenance and sanitation.	
K136 Mixer Cutter	Qty: 1
▪ Capacity: 5.5 Liters ▪ Speeds: 2 variable speeds – 1500 & 3000 RPM ▪ Construction & Design - Stainless steel bowl with ergonomic handle for safe handling. - Transparent polycarbonate lid with feed opening for adding ingredients during operation. - Robust heavy-duty construction for professional kitchen use. ▪ Performance - Two-speed operation (1500 / 3000 RPM) for fine or coarse cutting, mixing, and emulsifying. - Suitable for vegetables, meats, herbs, sauces, purees, and similar preparations. ▪ Safety Features - Central bowl locking system ensures stability during operation. - Magnetic safety system prevents operation when lid is not properly closed. - Motor brake for immediate stop when lid is opened. ▪ Hygiene & Maintenance - Bowl and lid are easily removable and dishwasher safe. - Smooth stainless-steel surfaces for quick cleaning	

Item Description	Supplier Specifications
K138 Working Table Dim:184x70x85cm Qty: 1 - S/S work table Dim:184x70x85cm w/ 1 under shelf and 4 legs - Refer to Item K26 for General Specifications	
K139 Over Head Shelf Dim: 196x30cm Qty : 1 - Dimensions: 196 × 30 cm - Type: Double-layer stainless steel over-shelf Construction - Fabricated from 18/8 AISI 304 stainless steel, corrosion-resistant and durable. - Mounted on square stainless steel tubing (minimum 25 × 25 mm). - Smooth welded edges and rounded corners for safety and easy cleaning. Installation - Shelf secured to worktable top using concealed expanding fasteners. - Rigid mounting design ensures stability and load resistance. Design Features - Double-layer design for increased storage capacity. - Suitable for holding kitchen tools, containers, or small appliances. - Polished stainless finish for professional kitchen environments.	
K140 Refrigerated Counter Table, Dim:196x70x85cm Qty: 1 - S/S table top refrigerator / gastronome Dim: 196x70x85cm. 3 doors - Temperature Range: -2°C/+8°C Exterior: - The Exterior should be of AISI 304 Stainless Steel - Backsplash of minimum 100 mm and 50 mm of thickness Interior: - The Interior should be of AISI 304 Stainless Steel - Wide rounded corners - Drain inside the cabinet - LED Lighting Doors: - Doors are designed with double grip - The doors should be equipped with hinges for automatic return Legs: - Adjustable Stainless Steel up to 200 mm	

Item Description	Supplier Specifications
▪ Insulation: - Free CFC High density polyurethane insulation with low GWP and zero ODP effect ▪ Refrigeration - Temperature and defrost regulated by a digital controller - Automatic defrost of the evaporator - Forced Air refrigeration system - Evaporator coil coated with anti-corrosion material - Hot gas defrosts.	
K141 Working Table w/ Sink & Backsplash, Dim: 237x70x85cm Qty: 1	
▪ S/S table w/ right hand sink & Backsplash, Dim: 237x70x85cm. Sink 40x40x25cm. 4 Legs ▪ Refer to Item K09 for General Specifications	
K144 Single Wall Shelf, Dim:237x30cm Qty: 1	
▪ S/S single wall shelf, Dim:237x30cm ▪ Refer to Item K41 for General Specifications	
K147 Walk in Cooler Dim: 203x243x223 cm Qty: 1	
▪ Walk in cooler, panel thickness 10 cm, 2 doors. ▪ Dim: 203x243x223 cm including refrigeration system and all electro-mechanical works as specified. ▪ Cooler Temperature: +2/+5 °C ➤ Panel Insulation: The thermal transmittance (U Value) of the roof, wall and floor panels must be 0.20 W/m²K or better ➤ Panel Construction ▪ Panels must be made from zinc coated steel sheet, fully insulated, without internal structural members or stiffeners between the skins ▪ Tongued and grooved joints between panels must be designed to minimize cold-bridging ▪ Gaskets are to be resistant to damage from oil, fats, water and detergents ▪ Floor panels must to have a hard-wearing non slip finish ➤ Door Construction	

Item Description	Supplier Specifications
▪ UL approved door and jamb, fully insulated, flush in-fitting type ▪ Gaskets shall be neoprene, replaceable and N.S.F approved Type ▪ Hardware shall be heavy-duty plated with lever type inside safety release ▪ Each door shall have two hinges, cam-action, and self-closing type ▪ Doors shall have electrically heated frost-stop contact built into both doors and jambs ▪ Doors must be constructed and insulated to the same standards as for Panel ▪ Doors must be lockable with 100% with fail-safe provision for opening from inside ▪ To provide with an internal clear plastic strip curtain ➤ Lighting ▪ Provide internal ceiling-mounted low energy fluorescent or LED luminaires with an external switch and pilot light. The external light and light switch must be fixed to the wall of the cold room enclosure near to the entrance door. The minimum illumination level on the vertical face of the lowest shelves must be 150 lux. ▪ The IP rating of the light fitting is IP68. ➤ Drainage system ▪ Room shall be provided with a drainage system ➤ Partition Wall ▪ The finishes of partition wall shall be the same as the walk-in walls and shall lock into wall, ceiling, and floor panels ▪ In multi room installations with shared walls, the construction of a shared wall between adjoining cold rooms and freezer rooms must be designed to ensure that stored items on cold room side of the wall will be exposed to temperature +2 DegC, or that items stored on the freezer room side of the wall will be exposed to temperatures above -15 DegC ➤ Floor Panel ▪ Floor panels shall be made to support a uniformly distributed load up to and including 600 pounds per square foot ▪ Floor panels must to have a hard-wearing non-slip finish	

Item Description	Supplier Specifications
➤ Alarm System ▪ Provide a mains-operated audible alarm with battery backup and automatic recharge which is triggered in the event of mains failure or when freezer room temperatures are outside set limits ▪ Alarm sounders repeaters are to be located adjacent to the cold room /freezer room ➤ Thermometer ▪ A programmable electronic temperature and event logger system with auto-dialer. Provide a backup gas or vapor pressure dial thermometer, mounted on the wall of the cold room in an accessible position ▪ The following performance specifications should be met: - Accuracy +/- 1°C - Resolution +/- 0.5°C - Refillable or inkless pen - Minimum acceptable recording period between chart changes is 7 days - Power source 110/240 volts 60/50 Hz mains operated with rechargeable and replaceable battery backup with 48hrs charge capacity - A digital Temperature monitor is most preferred. ➤ Refrigeration Unit ▪ Provide fully installed dual refrigeration system to maintain the required temperature for chiller and freezer. Calculation note for unit capacity shall be performed and be submitted for approval by the engineer. Depending upon the internal room layout and the room location, refrigeration units may be one of the following types: ▪ Wall mounted with the condenser unit discharging inside the building that houses the cold room (Monoblock system or split) ▪ Refrigeration unit installations must: - Be sized to give 100% stand-by capacity under worst-case conditions - Use refrigerant complying with CFC Free - Have an automatic duty sharing system designed to ensure even wear on the refrigeration units. All units should be fitted with run-hour meters - Have timer operated electric defrosting system with a condensate drip tray and drain connection. Hot gas type defrost in conjunction with the timer is also acceptable - Have airtight seals between monoblock units and wall panel cut -outs - Have airtight seals around all pipe and cable penetration through wall and/ or roof panels	

Item Description	Supplier Specifications
K148 Epoxy Shelving unit Dim:46x137cm Qty: 1 Epoxy Shelving unit Dim: 46x137cm includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), corrosion resistant finish for wet & high humidity environment. Microban antimicrobial is built into the finish to keep the product cleaner. It should have Post 74"-190 cm with adjustable leveling foot	
K150 Ice Cube Machine Qty: 1 Ice Cube Machine, Regular Cube, Dim:76x62x55 cm, Cap: 254 Kg/24Hr. Storage Bin Dim: 76x86x127 cm, on 4 legs Cap: 193Kg - Type: Regular Cube Ice Maker - Production Capacity: 254 kg / 24 hours - Machine Dimensions: 76 × 62 × 55 cm (W × D × H) Storage Bin - Dimensions: 76 × 86 × 127 cm (W × D × H) - Capacity: 193 kg - Mounted on 4 stainless steel legs for stability and hygiene Construction & Features - Heavy-duty stainless-steel exterior for durability and easy cleaning - Air-cooled condenser with front ventilation - Large-capacity insulated storage bin to maintain ice quality and reduce melting - Fully automatic operation with electronic controls for ice production and bin levels - Easy access door with ergonomic handle - Removable air filter for easy maintenance - Low noise and energy-efficient design	

Item Description	Supplier Specifications
K152 Tray Dispenser, Open, Dim:50x70x91 cm Qty: 1 ▪ Construction - Fabricated entirely from AISI 304 stainless steel for durability and corrosion resistance. - Open-frame design with integrated side tray guidance system for smooth destacking. - Heavy-duty platform dispenser safeguarded against tilting and tipping under load. ▪ Operation - Adjustable dispensing height with spring-loaded platform for automatic tray presentation. - Designed for easy loading and unloading of trays. ▪ Mobility & Safety - Equipped with 4 rustproof heavy-duty castors: 2 steering castors, 2 swivel castors with brake - 4 corner bumpers to protect equipment, walls, and doors. - Integrated ergonomic push handle for safe maneuvering. ▪ Capacity - Maximum load capacity: 200 kg ▪ Dimensions: 50 × 70 × 91 cm	

Item Description	Supplier Specifications
K153 Adjustable Exchange Dispenser, Dim:96x48x90 cm Qty: 1 ▪ Construction - Made of high-quality AISI 304 stainless steel for durability and hygiene. - Double-walled insulated body to ensure temperature stability and energy efficiency. - Supplied with a polycarbonate lid for safe covering. ▪ Platform & Dispensing - Grid platform design for stable support of items. - Continuously adjustable dispensing height via heat-resistant tension spring. ▪ Heating & Controls: - Integrated digital thermostat controller with clear display. - Temperature range: +30 °C to +110 °C. - Equipped with overheating safeguard for safety. ▪ Mobility & Safety - 4 swivel castors (minimum Ø125 mm), rustproof and heavy duty: - 2 with brakes, 2 steering. - 4 protective corner bumpers to prevent damage during movement. - Ergonomically shaped push bar for safe handling. ▪ Electrical - Minimum cable length: 2 meters. - Power connection suitable for hospital/kitchen environments. ▪ Dimensions: 96 × 48 × 90 cm	

Item Description	Supplier Specifications
K154 Mobile Cold Bain Marie, Dim:120x66x90 cm Qty: 1 ▪ Construction & Design - Body made of high-quality stainless steel (AISI 304), hygienic and easy to clean. - Deep-drawn refrigerated well, fully welded and paneled. - All sides insulated to ensure efficient cold retention. - Integrated undershelf, welded for strength and storage. ▪ Refrigeration - Refrigeration unit installed beneath the well. - Temperature range: +2 °C to +10 °C. - Uniform cooling across the GN containers. - Automatic defrosting system (recommend adding for easier maintenance). ▪ Capacity - Supplied with 3 × GN 1/1 pans, 20 cm deep. ▪ Mobility & Safety - 4 heavy-duty castors (minimum Ø125 mm), rustproof: - 2 steering, 2 swivel with brake. - Protective corner bumpers on all four sides. - Ergonomically designed push handle for safe transport. ▪ Electrical - Supplied with minimum 2 m power cable. - Suitable for continuous hospital/catering service use. ▪ Dimensions: 120 × 66 × 90 cm	



Item Description	Supplier Specifications
K155 Heated Bain Marie Trolley Qty: 1 ▪ Construction & Design - Body constructed of AISI 304 stainless steel, hygienic and corrosion-resistant. - Deep-drawn hot wells, fully welded for durability and easy cleaning. ▪ Cladded and insulated on all sides to reduce heat loss and improve efficiency. - Integrated stainless steel undershelf, welded for strength. ▪ Heating System - Designed for dry or wet heating operation. - Stepless thermostat control, adjustable from +30 °C to +110 °C. - Equipped with warning light and heating indicator for operational safety. ▪ Capacity - Supplied with 3 × GN 1/1 containers, 20 cm deep. ▪ Mobility & Safety - 4 heavy-duty rustproof castors (minimum Ø125 mm): 2 steering, 2 swivel with brake. - Protective corner bumpers on all sides. - Ergonomic push handle for safe maneuverability. ▪ Electrical - Power supply suitable for catering/hospital service. - Supplied with minimum 2 m power cable. ▪ Dimensions: 123 × 68 × 90 cm	

Item Description	Supplier Specifications
K156 Plate Dispenser, 2 round, static heated, Dim:48x96x90cm Qty: 1 ▪ Construction & Design - Top, exterior, and interior made of AISI 304 stainless steel. - Two round dispensing tubes, suitable for plates up to 32 cm Ø. - Dispensing height continuously adjustable with heat-resistant tension springs for smooth operation. - Supplied with polycarbonate lid for hygiene protection. ▪ Heating System - Static heated design with gentle heat distribution. - Temperature range: +30 °C to +90 °C. - Equipped with warning light and heating indicator. ▪ Mobility & Safety - 4 heavy-duty castors (minimum Ø125 mm), rustproof: 2 steering, 2 swivel with brake. - Protective corner bumpers for impact resistance. - Ergonomic push handle for safe movement. ▪ Dimensions: 48 × 96 × 90 cm ▪ Plate Diameter: 19–32 cm (maximum)	

Item Description	Supplier Specifications
157-1 Platform Dispenser Neutral, Dim:88x69x91 cm Qty: 1 ▪ Construction & Design - Closed cabinet design with stainless steel guard and support frame for stability. - Neutral (non-heated, non-cooled) platform type dispenser. - Adjustable spring force to maintain consistent dispensing height. ▪ Capacity - Maximum load capacity: 200 kg. ▪ Mobility & Safety - 4 heavy-duty rustproof castors (minimum Ø125 mm): - 2 steering, 2 swivel with brake. - Protective corner bumpers on all sides. - Ergonomic push handle for safe maneuverability. ▪ Dimensions: 88 × 69 × 91 cm	
K157-2 Hot & Cold Food Transportation Tray Trolley Qty: 3 ▪ Control & Operation - Standard electronic control panel with: - 3 heating cycle touch buttons. - Temperature maintenance cycle. - Automatic maintenance cycle. - Programmable control panel capabilities. ▪ Display functions - Error code display. - Audible alarm to indicate cycle completion. - Countdown timer display. - Cycle-in-progress indicator. - Hot/Cold temperature display.	

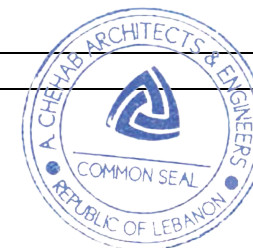
Item Description	Supplier Specifications
K160 Table Dim:220x70x85cm Qty: 1 - S/S table w/ backplash Dim: 220x70x85cm. 3 sides cross bracing 6 Legs - Refer to Item K09 for General Specifications	
K163 Tilt Trash Station Qty: 1 - Constructed of stainless steel (S/S) for durability and hygiene. - Equipped with a flip door for easy trash disposal. - Designed for quick access and efficient waste management in foodservice environments. - Dimensions: 40 × 55 × 85 cm	
K165 Blender Qty: 1 Construction & Design 0.95 L stainless steel container with ergonomic handle. - Heavy-duty rubber clutch and jar pad system to reduce vibration and enhance stability. - Built with a durable stainless-steel blade assembly for consistent blending. Performance: - Motor power: ½ HP. 2-speed operation with additional pulse function for precise control. - Dimensions / Capacity: Container capacity: 0.95 L	
K168 Wall Mounted Slanted Shelf Dim:60x40cm Qty: 1 S/S wall mounted slanted shelf Dim:60x40cm	



Item Description	Supplier Specifications
K169 Soiled Dish Table with Sink, Dim:200x90cm Qty: 1 ▪ Construction & Design - Made of stainless-steel tubular frame, fully welded for durability. - Includes one sink integrated into the bench, with right-hand side chute. - Open base with cross bracing for stability. - Designed for direct connection to washing machine. ▪ Mobility: - Mounted on 125 mm swivel casters, non-marking polyurethane type. - Two casters equipped with brakes for stability during use. ▪ Dimensions: 200 × 90 cm	
K172 Hood Type Dishwasher, Dim: 63x76x146cm Qty: 1 ▪ Construction & Design - Hood-type dishwasher built with AISI 304 stainless steel construction. - Frame, tank, external paneling, wash and rinse arms, nozzles, and all screws in high-grade stainless steel for durability and hygiene. - Ergonomic hood lift system for ease of operation. ▪ Performance - Production capacity: 48 / 30 / 20 racks per hour (selectable cycles). - Rack size: 500 × 500 mm. - Tank capacity: approx. 40 L. - Equipped with built-in booster for consistent rinse temperatures. ▪ Dimensions: 63 × 76 × 146 cm	

Item Description	Supplier Specifications
K173 Condensation Type Dishwashing Hood. Dim 90x100x54cm Qty: 1 ▪ Construction & Design - Built from heavy-duty AISI 304 stainless steel for durability and long service life. - All joints are fully welded and polished for hygiene and strength. - Includes an integral four-sided perimeter gutter with drain for effective condensate management. - Equipped with removable condensate baffles for easy cleaning and maintenance. ▪ Performance - Designed for efficient condensation extraction above dishwashers, reducing steam and humidity. - Exhaust fan included for reliable ventilation and airflow. ▪ Dimensions: 90 × 100 × 54 cm	
K174 Cleaning Dish Table Dim:110x60x85cm Qty: 1 ▪ Construction & Design - Made of 18-gauge AISI 304 stainless steel for durability and hygiene. - Four sturdy stainless-steel legs with adjustable bullet feet for leveling. - Square tubular frame (25 × 25 mm), fully welded to the top for rigidity. - Backsplash: Minimum 10 inches high, integral with the top. - Rounded corners for easy cleaning and safety. ▪ Dimensions: 110 × 60 × 85 cm	
K176 Working Table w/ Sink & Backsplash Dim:245x70x85cm Qty: 1 ▪ S/Steel table w/ backsplash Dim: 245x70x85cm, with one sink 50x50cm. ▪ Refer to Item K09 for General Specifications	
K178 Single Wall Shelf, Dim:75x30cm Qty: 1 ▪ S/Steel single wall shelf, Dim:75x30cm ▪ Refer to Item K41 for General Specifications	

Item Description	Supplier Specifications
K179 Glasswasher Undercounter, Dim:46x52x64cm Qty: 1 - Glass washer under counter w/ booster. - Maximum output of 30 racks per hour - Rack Size: 400x400 mm - Full Stainless-Steel Frame, tank and panel - Equipped with temperature interlock - General Dimension :46x52x64cm - Can be upgraded to include a drain pump	
K185 Wire Shelving Unit Dim: 46x122cm Qty: 2 Wire Shelving Unit Dim: 46x122cm (includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), nickel-plated chrome finish for dry & low humidity environments also includes a protective lacure coat.	
K186 Wire Shelving Unit Dim: 46x107cm Qty: 1 Wire Shelving Unit Dim: 46x107cm (includes 4 Shelves & 4 Posts (190 cm) with Adjustable Feet), nickel-plated chrome finish for dry & low humidity environments also includes a protective lacure coat.	
K189 Tray for Bread & silverware, Floor type Qty: 1 - S/S tray / Bread & silverware - Dispenser, floor type - One curved glass shelf, 4 compartments - Adjustable Feet - Dim: 80x80x180 H cm	
K190 Cold Counter Dim:120x70x85cm Qty: 1 - Made of AISI 304 stainless steel for durability and hygiene. - Open base design for easy cleaning and storage access. - Integrated cold pan with a depth of 11 cm, suitable for GN pans. - Dimensions: 120 × 70 × 85 cm	
K191 S/S single glass shelf 12 with supports Qty: 1 - Single glass shelf, length 12" (300 mm approx.), supplied with stainless steel supports. - Shelf made of tempered safety glass, thickness ≥ 6 mm. - Supports fabricated from stainless steel AISI 304 (18/8), polished finish. - Smooth edges, easy to clean, corrosion resistant.	



Item Description	Supplier Specifications
K192 S/Steel three tube tray slide 120 cm Qty: 2 - Fabricated from stainless steel AISI 304 (18/8). - Three-tube tray slide design, polished finish, corrosion resistant. - Length: 1200 mm. - Heavy-duty, fully welded construction for hospital/foodservice use. - Smooth surfaces and rounded edges for safety and hygiene	
K193 Bain Marie Counter on cabinet Qty: 1 Construction & Design - Made of AISI 304 stainless steel, mounted on cabinet with sliding doors. - Deep drawn hot wells, fully welded, cladded, and insulated on all sides. - Rounded edges for hygiene and safety. - Height adjustable rounded legs for stability and leveling. - Robust and ergonomic design suitable for continuous service use. Performance - Equipped with 3 × GN 1/1 – 20 cm containers. - Thermostat stepless regulation between +30°C and +110°C. - Comes with warning light and heating indicator. - Dimensions: 120 × 70 × 85 cm	
K195 S/S three tube tray slide 90 cm Qty: 1 - Fabricated from stainless steel AISI 304 (18/8). - Three-tube tray slide design, polished finish, corrosion resistant. - Length: 900 mm. - Heavy-duty construction for continuous use in hospital/foodservice environments. - Fully welded, smooth edges, easy to clean.	

Item Description	Supplier Specifications
K196 Neutral Counter, Open Base Qty: 1 ▪ Construction & Design - Made of AISI 304 stainless steel, minimum 1.2 mm thickness. - Robust and ergonomic construction, suitable for heavy-duty use. - Closed on three sides, open at the rear. - Rounded edges for safety and easy cleaning. - Mounted on height-adjustable rounded legs for stability and leveling. ▪ Dimensions: 90 × 70 × 85 cm	
K197 Cold drink dispenser 2x12Ltrs Qty: 1 ▪ Capacity & System - 2 × 12 L bowls with pump circulation system, powered by 230/50/1 supply. - Electromagnetic pump constructed with food-grade materials to ensure hygiene and safety. ▪ Bowl & Cover - Transparent polycarbonate bowls, unbreakable and food-grade certified. - Easy to remove and clean. ▪ Cooling System - Forced-air cooled hermetic compressor for reliable performance. - Refrigerant unit designed for continuous duty. - Adjustable thermostatic control system for precise cooling. ▪ Dispensing - Stainless steel dispensing taps, durable and hygienic. -	
K199 Water boiler Qty: 1 ▪ Capacity: 100-cup percolator, approx. 16.3 liters. ▪ Construction & Safety - Heat-resistant base for safe placement. - Safe handling design with insulated handles. ▪ Performance - Two-way dripless faucet for efficient dispensing. - Keeps water warm for extended periods. - LED indicator light for ready-to-use status. - Water level marker for accurate filling. ▪ Accessories - Supplied with a reusable coffee filter.	

Item Description	Supplier Specifications
K200 Tray Collecting Trolley Dim:50x65x160cm Qty : 1 ▪ Construction - Made of stainless steel tubular frame, fully welded for durability. - Fitted with non-marking polyurethane castors, 125 mm diameter. ▪ Mobility & Safety - 4 swivel castors, 2 with brakes for secure positioning. ▪ Design - Open structure with multiple tray levels for efficient collection. - Dimensions: 50 × 65 × 160 cm	



Item Description	Supplier Specifications
PACKAGE (MR) - MORGUE	
MR203 Working Table with Sink Dim:140x70x85cm	Qty : 1
▪ General Construction - Fabricated from stainless steel AISI 304 (18/8), thickness 1.5 mm. - One-piece seamless worktop with integrated right-hand sink and backsplash. - Sink dimensions: 400 mm (L) × 400 mm (W) × 250 mm (D). - Worktop dimensions: 2100 mm (L) × 700 mm (W) × 850 mm (H). - Worktop corners flanged integrally 50 mm down at 90°, under 20 mm, and up again 10 mm. - All edges welded, ground, and finely finished to original. - Top is sound-deadened and reinforced with rigid stainless steel channel frames (1.5 mm). - Backsplash integral with top, minimum 100 mm high; corners welded, ground, and polished to original finish. ▪ Understructure - Open-front frame with cross bracing on three sides, welded to legs for rigidity. - Four tubular legs (38 × 38 mm stainless steel). - Fitted with NSF-approved stainless steel bullet feet, height adjustable up to 27 mm.	
MR205 Wall Cabinet Dim: 210x40x63.5 cm	Qty : 1
▪ General Construction - Fabricated from 1.0 mm stainless steel AISI 304 (18/8), corrosion resistant, with welded seams and finely finished surfaces. - Cabinet dimensions: 2100 mm (L) × 400 mm (D) × 635 mm (H). - Fitted with two sliding doors, each double-panned with recessed pull handles (NSF approved). - Doors mounted on overhead track system, riding on ball bearing runners for smooth, silent operation. - Internal intermediate shelf, centered, fabricated from the same stainless steel material. - All exposed surfaces to be polished to a satin finish, edges ground smooth, free from burrs and sharpness.	

Item Description	Supplier Specifications
MR208 Sink unit Dim:70x70x85cm w/ 1 bowl Dim:50x50x30cm Qty : 1 ▪ General Construction - Fabricated from stainless steel AISI 304 (18/8). - Worktop formed from a single seamless sheet, 1.25 mm thick, with all four edges integrally flanged 50 mm down at 90°, under 20 mm, and up again 10 mm. - Corners welded, ground, and finely finished to original. - Worktop is sound-deadened and reinforced with 1.25 mm stainless steel channel frames. - Integrated sink bowl: 500 mm (L) × 500 mm (W) × 300 mm (D). ▪ Understructure - Lower shelf fabricated from 1.0 mm stainless steel, same construction quality as the top. - Shelf corners contoured to fit the leg tubular frame. - Supported on 38 × 38 mm stainless steel tubular legs. - Equipped with NSF-approved adjustable bullet feet for leveling. ▪ Finish - All exposed surfaces polished to a satin finish, free from burrs and sharp edges. ▪ Dimensions: 700 mm (L) × 700 mm (W) × 850 mm (H).	



Item Description	Supplier Specifications
PACKAGE (W) LAUNDRY	
General Note for Laundry Equipment - All laundry equipment shall be supplied complete with all fixtures, accessories, safety devices, and connections necessary to ensure full and proper functionality. - This shall include, but not be limited to: - Hoses, fittings, valves, connectors, safety accessories, and control elements required for correct operation. - Installation readiness for steam, water, compressed air, drainage, and electrical services. - All parts normally required by the manufacturer to guarantee safe and reliable operation.	
W214 Working Table with Sink Dim:140x70x85cm	Qty : 1
General Construction - Fabricated from stainless steel AISI 304 (18/8), thickness 1.5 mm. - Dimensions: 1400 mm (L) × 700 mm (W) × 850 mm (H). - One-piece seamless top, sound-deadened and reinforced with rigid stainless steel channel frames (1.5 mm). - Integrated backsplash, 100 mm high, with 20 mm return to wall at 90° and 10 mm sanitary flange. - Backsplash corners welded, ground, and polished to original finish. - Integrated sink bowl: 500 mm (L) × 500 mm (W). Understructure - Cross bracing on three sides, open front, welded to legs. - Four legs fabricated from 38 × 38 mm stainless steel tubing. - Equipped with NSF-approved stainless steel bullet feet, height adjustable up to 27 mm. Finish - All exposed surfaces finished in satin polish, edges ground smooth, free of burrs and sharpness.	

Item Description	Supplier Specifications
W216 Wall Cabinet with two sliding doors, Dim: 140x40x63.5cm Qty: 1 ▪ General Construction - Fabricated from 1.0 mm stainless steel AISI 304 (18/8), with welded seams and finely finished surfaces. - Dimensions: 1400 mm (L) × 400 mm (D) × 635 mm (H). - Fitted with two sliding doors, each double-panned with NSF-approved pull handles. - Doors mounted on an overhead track system, riding on ball bearing runners for smooth, silent operation. - Internal intermediate shelf, centered, fabricated from the same stainless steel material. ▪ Finish - All exposed surfaces finished in satin polish, edges ground smooth, free of burrs and sharpness.	
W217 Linen Truck Qty: 4 ▪ General Construction - Laundry truck with smooth internal surface for easy cleaning and hygiene. - Constructed with ribbed walls for extra strength and durability. - Fitted with a strong bottom frame to support heavy linen loads. - Equipped with a light alloy bumper for protection against impacts. ▪ Dimensions - Approximate size: 1000 mm (L) × 500 mm (W) × 600 mm (H). ▪ Mobility - Mounted on heavy-duty wheels, minimum diameter 100 mm, for smooth maneuverability.	

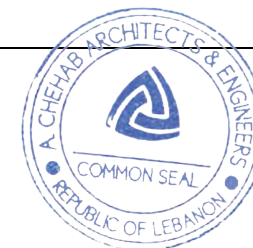
Item Description	Supplier Specifications
W218 Hygienic Barrier Washer Extractor, Cap: 18 Kg Qty: 1 ▪ General Construction - Hygienic barrier washer extractor with double-door pass-through design (loading and unloading doors). - Steam heated, soft mount, high spin, capacity: 18 kg. - Power: 1.5 kW. - Microprocessor controlled with programmable wash, extract, and cool-down cycles. - Constructed with stainless steel cabinet enclosure, loading door, top cover, drum, and tub. - Side panels reinforced for extra structural strength. - Heavy-duty V-belt drive system between main pulley and motor pulley. - Stop button included for emergency safety. ▪ Doors - Two large stainless steel doors for hygienic loading/unloading separation. - Fitted with durable, strong hinges. - Wide door opening angle for easy access. - Strong, heat-resistant glass on doors. ▪ Performance Features - Multiple wash speed options. - Multiple extractor speed options. - Programmable drying and cool-down times.	

Item Description	Supplier Specifications
W219 Working Table with Sink Dim:150x70x85cm Qty: 1 ▪ General Construction - Fabricated from stainless steel AISI 304 (18/8), thickness 1.5 mm. - Dimensions: 1500 mm (L) × 700 mm (W) × 850 mm (H). - One-piece seamless worktop, sound-deadened and reinforced with 1.25 mm stainless steel channel frames. - Integrated backsplash, minimum 100 mm high, fully welded. - Backsplash corners welded, ground, and finely finished to original surface. - Integrated add-on sink bowl: 400 mm (L) × 400 mm (W). - Add-on side backsplash on right/left, dimension 700 mm. - Fitted with one lower undershelf, fabricated from 1.25 mm stainless steel, equivalent to top construction. - Shelf corners fitted with heavy-duty angle frames, notched and welded to contour of tubular legs. ▪ Understructure - Table mounted on 38 × 38 mm stainless steel tubular legs. - Equipped with NSF-approved adjustable stainless steel bullet feet, adjustable up to 27 mm. ▪ Finish - All exposed surfaces polished to a satin finish, edges smooth, free from burrs and sharpness.	
W221 Working Table Dim:140x70x85 cm Qty: 1 ▪ S/Steel table w/ backsplash Dim: 140x70x85 cm. 1 under shelf 4 Legs ▪ Refer to Item W219 for general Specifications	

Item Description	Supplier Specifications
W223 Washer extractor steam, Cap:18 kg Qty: 2 ▪ General Construction - Hard-mounted, high-spin washer extractor, capacity: 18 kg. - Power: 1.5 kW. - Steam heated. - Microprocessor controlled, programmable for wash and extract cycles. - Cabinet enclosure, loading door, top cover, drum, and tub all constructed from stainless steel for durability and hygiene. - Direct drive V-belt system between motor and drum. - Fitted with central emergency stop button. ▪ Doors - Large stainless steel loading door with durable hinges. - Wide door opening angle for easy loading and unloading. - Fitted with heat-resistant glass. ▪ Performance Features - Multiple wash speed options. - Multiple extractor speed options. - High spin extraction for improved drying efficiency.	
W224 Base frame for washer extractor, Height: 200 mm Qty: 2 ▪ General Construction - Base frame designed to support washer extractor unit. Fabricated from heavy-duty stainless steel or epoxy-coated mild steel for strength and durability. - Height: 200 mm. - Frame constructed with rigid welded structure to ensure stability during machine operation. - Fitted with vibration-dampening pads to reduce noise and mechanical stress. ▪ Finish - Surfaces ground smooth, free from burrs and sharp edges. - Corrosion-resistant finish (stainless steel or epoxy powder coating).	

Item Description	Supplier Specifications
W227 Tumble Dryer, Cap: 17.5 kg Qty: 2 ▪ General Construction - Tumble dryer, capacity: 17.5 kg. - Power supply: 380 V / 50 Hz / 3-phase, steam heated. - Non-reverse drum rotation design. - Microprocessor controlled with programmable drying and cool-down cycles. - Stainless steel drum for durability and hygiene. - Large stainless steel door with durable hinges for long service life. - Heavy-duty V-belt drive system. ▪ Performance Features - Spin speed selection for optimal drying performance. - Temperature selection for different fabric types. - Programmable drying and cool-down times. - Fine mesh lint screen, self-cleaning, with lint collected in a large storage area for easy disposal.	
W230 Mobile Table, Dim:164x70x85cm Qty: 1 ▪ General Construction - Fabricated from stainless steel AISI 304 (18/8), thickness 1.5 mm. - Dimensions: 1640 mm (L) × 700 mm (W) × 850 mm (H). - One-piece seamless top, sound-deadened and reinforced with rigid 1.5 mm stainless steel channel frames. - Integral backplash, minimum 100 mm high. - Backsplash corners welded, ground, and finely finished to original. - Understructure cross bracing on three sides, open front, welded to tubular frame. - Frame constructed from 38 × 38 mm stainless steel tubular legs. ▪ Mobility - Mounted on 4 swivel castors for easy maneuverability. - 2 castors with brakes for secure positioning. - Castors heavy-duty, non-marking, hospital grade. ▪ Finish - All exposed surfaces polished to a satin finish, edges ground smooth, free from burrs and sharpness.	

Item Description	Supplier Specifications
W231 Utility Press, dim:120x36x22 cm Qty: 1 ▪ General Construction - Utility press dimensions: 1200 mm (L) × 360 mm (W) × 220 mm (H). - Pneumatic functioning, closing of top buck by two push buttons (safety interlock system). - Top and bottom bucks fabricated with stainless steel steam chamber and heat-resistant padding for consistent finishing. - Equipped with pump and vacuum group, driven by 0.5 Hp motor, for fast drying and suction. - Includes steam iron group with swinging arm. - Connected to compressed air supply. ▪ Utilities & Power - To be connected to central steam supply. - To be connected to compressed air supply. - Minimum required steam pressure: 4–6 bar. - Minimum required compressed air pressure: 6–8 bar. ▪ Performance Features - Fast heating of bucks for consistent operation. - Adjustable pressing pressure via pneumatic control. - Wide opening angle for easy garment placement. - Integrated vacuum system ensures rapid drying and crease-free finish. - Safety thermostat and emergency stop integrated. - Ergonomic design for continuous use. ▪ Safety & Standards - Double push-button closing system prevents accidental operation. - Equipped with thermal protection for motor and electrical parts. - Conforms to international laundry equipment safety standards (e.g., CE/ISO).	



Item Description	Supplier Specifications
W232 Vacuum Table with blow Qty: 1 ▪ General Construction - Vacuum finishing table with blow function, dimensions: 1160 mm (L) × 430 mm (W) × 260 mm (H). - Built-in vacuum unit for garment suction and drying. - Equipped with swing vacuum arm and vacuum/blow sleeve form attachment. - Includes supporting arm with integrated water spray gun. - Worktop padded with heat-resistant, moisture-proof material for long service life. ▪ Steam & Ironing Group - Steam iron group consisting of: Professional steam iron , Electric control panel for operation and monitoring and Condensate separation tank ▪ Utilities & Power - To be connected to central steam supply. - Steam pressure requirement: 4–6 bar. - Compressed air requirement (for blow function): 6–8 bar. ▪ Performance Features - Strong suction (vacuum) and blowing pressure for fast finishing. - Swing arm with interchangeable shapes for sleeves and small garments. - Blow function helps refresh and de-wrinkle delicate fabrics. - Integrated safety thermostat for motor and heating system. - Ergonomic height and operator design for continuous use. ▪ Safety & Standards - Electrical and steam systems protected by emergency stop switch. - Designed in compliance with CE / ISO laundry equipment standards. - All stainless steel and painted surfaces are corrosion-resistant and easy to clean. - Should come with all necessary fixtures to make it functional	

Item Description	Supplier Specifications
W233 Flatwork ironer Qty: 1 ▪ General Construction - Flatwork ironer, electrically heated. - Working width: 1600 mm, roller diameter: 320 mm. - Power supply: 380 V / 50 Hz / 3-phase. - Designed with ergonomic layout for operator comfort and efficiency. - Equipped with safety protector for hands to prevent accidents. ▪ Control & Operation - Electronic microprocessor control system with: Variable speed control, Temperature control, Auto power-off function - Variable-frequency drive (VFD) for smooth and precise control of ironing speed. - Automatic cool-down function to protect rollers and fabric after operation. ▪ Performance - High-quality ironing output with uniform heat distribution. - Energy-efficient design with insulation for reduced heat loss. - Low noise and vibration during operation. ▪ Safety & Standards - Integrated hand safety bar / protector. - Emergency stop function.	

Item Description	Supplier Specifications
W235 Portable Rack, Tubular Qty: 3 ▪ General Construction - Portable rack, fabricated from stainless steel AISI 304 (18/8). - Dimensions: 1220 mm (L) × 460 mm (W) × 1650 mm (H). - Frame constructed of tubular stainless steel, minimum 25 × 25 mm section, fully welded for strength and durability. - Smooth polished finish, free from burrs and sharp edges. ▪ Mobility - Mounted on 4 heavy-duty swivel castors, non-marking and easy rolling. - Castors designed for silent operation and suitable for hospital environments. ▪ Performance - Load capacity: ≥ 120 kg (static load). - Corrosion-resistant, easy to clean, suitable for continuous hospital use.	

**REPUBLIC OF LEBANON
THE COUNCIL FOR DEVELOPMENT AND
RECONSTRUCTION**

**Supply and Installation of Medical Equipment, Medical & Surgical
Instruments to Sarafand Governmental Hospital**

FINANCED BY THE ISLAMIC DEVELOPMENT BANK (IDB)

VOLUME II OF IV

LIST OF SURGICAL INSTRUMENTS

LOT I

Issued on: June 2026



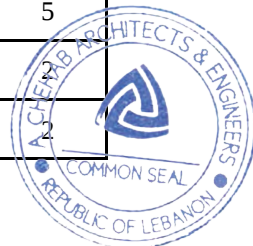
Item Nr.	DESCRIPTION	QTY
A	GENERAL SURGERY SETS	
A1	MAJOR BASIC SET, GENERAL SURGERY	2
A2	LAPAROTOMY SET	1
A3	HERNIA AND APPENDIX	1
A4	THYROIDECTOMY SET	1
A5	CHEST INSTRUMENTS SET	1
A6	TRACHEOSTOMY SET	1
A7	CUT DOWN SET	2
A8	A-V SHUNT SET	1
A9	MAJOR BASIC SET FOR CHILDREN	1
A10	KIRSCHNER FRAME	2
A11	EMERGENCY SUPPLEMENT SET FOR VESSELS	1
B	ENT SETS	
B1	TYMPANOPLASTY/STAPEDECTOMY	1
B2	AURAL POLYP SET	1
B3	MYRINGOTOMY / PARACENTESIS / TYMPAN. DRAINAGE	1
B4	PARACENTESIS, SMALL	1
B5	OTOPLASTY SET	1
B6	RHINOPLASTY (COTTLE)	1
B7	NASAL SEPTUM SURGERY (KILLIAN)	1
B8	NASAL FRACTURE SET	1
B9	MAXILLARY SINUS SET	1
B10	FRONTAL SINUS SET	1
B11	SPHENOID-NASAL-SET	1
B12	TONSILLECTOMY/ADENOTOMY	1



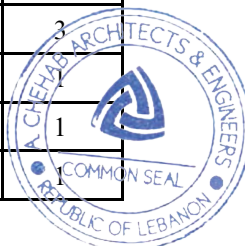
Item Nr.	DESCRIPTION	QTY
C	GYN SETS	
C1	ABDOMINAL SET	1
C2	MUENSTER RETRACTOR FOR ABDOMINAL SURGERY	1
C3	SET FOR TUBAL LIGATURE	1
C4	CAESARIAN SECTION SET	1
C5	VAGINAL BASIC SET	1
C6	MUENSTER RETRACTION FOR VAGINAL SURGERY	1
C7	HYSTEROSCOPY (ACCESS)	1
C8	PLACENTA SET	1
C9	ABORT-CURETTAGE-SET	1
C11	VACUUM CURETTES	1
C12	CERCLAGE (SHIRODKAR)	1
D	OBS SETS	
D1	SINGLE INSTRUMENTS FOR DELIVERY ROOM	2
D2	CERCLAGE FOR INITIAL INCISION	2
D3	SUTURING SET	2
D4	CERVIX SUTURE SET	2
D5	SUCTION HEADS FOR VACUUM EXTRACTION	2
D6	PLACENTA CURETTAGE SET	2
D7	UMBILICAL VEIN SET	2
F	ORTHOPEDIC SETS	
F1	BASIC SET TRAUMATOLOGY	1
F2	BASIC SET TRAUMATOLOGY FOR SMALL BONES	1
F3	LUMBAR DISC SET	1
F4	BASIC SET HAND	1
F5	SMALL FRAGMENT INSTRUMENT SET	1



Item Nr.	DESCRIPTION	QTY
G	PRACTICE SETS	
G1	DRESSING SET, SMALL	2
G2	CHANGE OF BANDAGE	3
G3	SUTURE REMOVAL SET	3
H	PLASTER ROOM SET	
H1	INSTRUMENTS FOR PLASTER ROOM	1
I	SUCTION UNIT	
I1	SUCTION TUBES, SURGERY	3
I2	SUCTION TUBES, ENT	2
J	WARD SETS	
J1	BUELAU PUNCTURE SET	2
J2	CHANGE OF BANDAGE	2
J3	SUTURE REMOVING SET	2
J4	SOUNDING SET	2
J5	CUT DOWN SET	1
J6	TRACHEOSTOMY SET	2
J7	SCISSORS FOR BANDAGE	6
J8	INDIVIDUAL INSTR.FOR BANDAGE TROLLEY	2
J9	INCISION	2
K	PREPARATION SET	
K1	PREPARATION SET FOR ANESTHESIA	3
L	ICU SETS	
L1	CHANGE OF BANDAGE	2
L2	SUTURE REMOVING SET	2
L3	CUT DOWN SET	2
L4	TRACHEOSTOMY SET	2
L5	SCISSORS FOR BANDAGE	5
L6	INDIVIDUAL INSTR. FOR BANDAGE TROLLEY	
L7	INCISION	



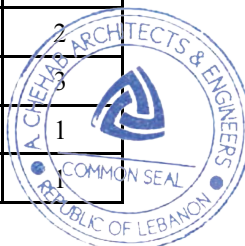
Item Nr.	DESCRIPTION	QTY
General Note: - The instruments should be durable and of high quality. - The dimensions and sizes of the surgical instruments are approximate. - The size of sterilization containers should come in various dimensions depending on the required instruments for each set.		
A	GENERAL SURGERY SETS	
A1	MAJOR BASIC SET, GENERAL SURGERY	2
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM	3
3	TOWEL CLAMP, 115 MM LENGTH	2
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE, NO. 3	1
6	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
7	DISSECT.SCISS.,METZENBAUM,TC INSERTS, CVD, 180 MM	1
8	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
9	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 230MM	1
10	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
11	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
12	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
13	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
14	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
15	TISSUE FORCEPS, 1X2 T.,200MM MEDIUM SIZE	1
16	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
17	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
18	GERALD BRAIN FORCEPS, 1X2 TEETH, 175 MM	1
19	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	3
20	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	3
21	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	3
22	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	3
23	HALSTED ARTERY FORCEPS, STRAIGHT, 185 MM	1
24	HALSTED FORCEPS, 1X2 TEETH, STR., 185CM	1
25	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
26	KOCHER HYSTERECTOMY FORCEPS STR., 240 MM	1
27	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
28	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM	3
29	OVERHOLT DISSECTING FORCEPS,FIG.0, 215MM	1
30	OVERHOLT DISSECTING FORCEPS,FIG.1, 209MM	1
31	OVERHOLT DISSECTING FORCEPS,FIG.2, 220MM	1



Item Nr.	DESCRIPTION	QTY
32	BABY-MIXTER FORCEPS, 140 MM	1
33	DESCHAMPS LIGATURE NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, BLUNT, 215 MM	1
34	GUIDE PROBE, 4,5MM BROAD, 195 MM	1
35	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
36	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
37	DE BAKEY NEEDLE HOLDER, TC INSERTS, 180 MM	1
38	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
39	LANGENBECK RETRACTOR, 28X14MM, 210MM	1
40	LANGENBECK RETRACTOR, 40X10MM, 210MM	1
41	KOCHER-LANGENBECK RETRACTOR, 55X11 MM	1
42	VOLKMANN RETRACTOR, SEMI-SHARP, 4-PRONGED	1
43	WOUND AND TRACHEAL HOOK, SHARP, 2 TEETH	1
44	CUSHING VEIN- A. WOUND RETRACTOR, 10X13MM	1
45	CZERNY TUMOR FORCEPS, 4X4 TEETH, 200 MM	1
46	NON-TRAUM. HOLDING FORC., ALLIS, 155 MM	1
47	VOLKMANN SPOON, SHARP, SIZE 0	1
48	NELATON DIRECTOR, CVD., 160 MM	1
49	PROBE, DOUBLE ENDED, 145 MM, DIAM. 1,5MM	1
50	PROBE, DOUBLE ENDED, 200MM, DIAM. 2,0 MM	1
51	PROBE, DOUBLE ENDED, 200MM, DIAM. 2,0 MM	1
52	NEEDLE CASE, PERFOR., 7 COMP, 150X90X10MM	1
53	LABORATORY DISH, 0.16 L	1
54	LABORATORY DISH, 0.4 L	1
55	KIDNEY TRAY, 250 MM	1
56	REDON SPIKE, CHAR. 12, SLIG. CVD., TRIANG. TIP	1
57	REDON SPIKE, CHAR. 14, SLIG. CVD., TRIANG. TIP	1
58	STAINLESS STEEL STERILIZATION TRAY	1



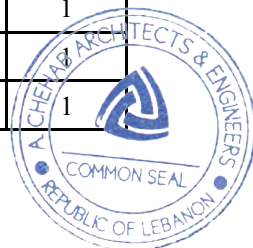
Item Nr.	DESCRIPTION	QTY
A2	LAPAROTOMY SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	3
3	TOWEL CLAMP, 115 MM LENGTH	2
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE NO. 4L	1
6	SCALPEL HANDLE, NO. 3	1
7	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
8	DISSECT.SCISS.,METZENBAUM,TC INSERTS, CVD, 180 MM	1
9	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
10	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 230MM	1
11	DISS.SCISS,NELSON-METZENBAUM, TC INSERTS, 260MM	1
12	DISS.SCISS,NELSON-METZENBAUM, TC INSERTS, 280 MM	1
13	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
14	LIGATURE SCISSORS, TC INSERTS, CVD, 230MM LONG	1
15	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
16	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
17	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
18	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
19	TISSUE FORCEPS, 1X2 T.,200MM MEDIUM SIZE	1
20	TISSUE FORCEPS, 1X2 T.,250MM MEDIUM SIZE	1
21	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
22	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
23	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.240MM	1
24	GERALD BRAIN FORCEPS, 1X2 TEETH, 175 MM	1
25	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	3
26	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	3
27	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	3
28	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	3
29	HALSTED ARTERY FORCEPS, STRAIGHT, 185 MM	1
30	HALSTED FORCEPS, 1X2 TEETH, STR., 185CM	1
31	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
32	KOCHER HYSTERECTOMY FORCEPS STR., 240 MM	1
33	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	2
34	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM	3
35	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS	1
36	OVERHOLT DISSECTING FORCEPS,FIG.1, 297MM	1



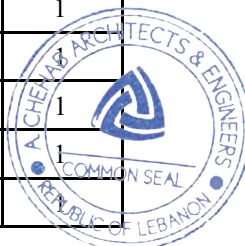
Item Nr.	DESCRIPTION	QTY
37	DISS.FORC.,OVERHOLT-GEISSENDOERFER,270MM	1
38	MIXTER LIGATURE FORCEPS230MM	1
39	DESCHAMPS LIGATURE NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, BLUNT, 215 MM	1
40	GUIDE PROBE,4,5MM BROAD, 195 MM	1
41	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
42	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
43	WANGENSTEEN NEEDLE HOLDER, TC INSERTS, 275MM	1
44	DE BAKEY NEEDLE HOLDER, TC INSERTS, 180 MM	1
45	DE BAKEY NEEDLE HOLDER, TC INSERTS, 250 MM	1
46	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
47	LANGENBECK RETRACTOR, 28X14MM, 210MM	1
48	LANGENBECK RETRACTOR, 40X10MM, 210MM	1
49	KOCHER-LANGENBECK RETRACTOR, 55X11 MM	1
50	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
51	FRITSCH ABDOMINAL RETRACTOR, 75 MM WIDE	1
52	MIKULICZ ABDOMINAL RETRACTOR	1
53	MIKULICZ ABDOMINAL RETRACTOR, 180 X 50 MM, 260 MM	1
54	HABERER ADOMINAL SPATULA, MALLEAB., TAP.	1
55	KIRSCHNER RETRACTOR, COMPLETE	1
56	NON-TRAUMATIC OVUM FORCEPS,STR.,250 MM	1
57	VOLKMANN SPOON, SHARP, SIZE 0	1
58	NELATON DIRECTOR, CVD., 160 MM	1
59	PROBE, DOUBLE ENDED, 200MM, DIAM. 1,5 MM	1
60	PROBE, DOUBLE ENDED, 300MM, DIAM. 2,0 MM	1
61	NEEDLE ROUND CASE W/ COVER	1
62	NEEDLE CASE, PERFOR., 7 COMP,150X90X10MM	1
63	LABORATORY DISH, 0.16 L	1
64	LABORATORY DISH, 0.4 L	1
65	KIDNEY TRAY, 250 MM	1
66	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
67	REDON SPIKE,CHAR.14,SLIG.CVD.,TRIANG.TIP	1
68	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
A3	HERNIA AND APPENDIX	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	2
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE, NO. 3	1
6	DISSECT.SCISS.,METZENBAUM,TC INSERTS, CVD, 180 MM	1
7	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
8	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
9	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
10	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
11	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
12	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
13	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	3
14	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	3
15	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	3
16	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
17	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
18	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM	2
19	OVERHOLT DISSECTING FORCEPS,FIG.1, 209MM	1
20	OVERHOLT DISSECTING FORCEPS,FIG.2, 220MM	1
21	DESCHAMPS LIGATURE NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, BLUNT, 215 MM	1
22	GUIDE PROBE,4,5MM BROAD, 195 MM	1
23	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
24	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
25	DE BAKEY NEEDLE HOLDER, TC INSERTS, 180 MM	1
26	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
27	LANGENBECK RETRACTOR, 33X14MM, 210MM	1
28	NEEDLE ROUND CASE W/ COVER	1
29	LABORATORY DISH, 0.16 L	1
30	LABORATORY DISH, 0.4 L	1
31	KIDNEY TRAY, 250 MM	1
32	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
33	REDON SPIKE,CHAR.14,SLIG.CVD.,TRIANG.TIP	1
34	STAINLESS STEEL STERILIZATION TRAY	1



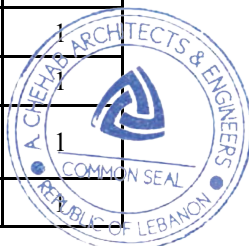
Item Nr.	DESCRIPTION	QTY
A4	THYROIDECTOMY SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	3
3	TOWEL CLAMP, 115 MM LENGTH	2
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE, NO. 3	1
6	DISSECT.SCISS.,METZENBAUM,TC INSERTS, CVD, 180 MM	1
7	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
8	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
9	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
10	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
11	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
12	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
13	TISSUE FORCEPS, 1X2 T.,180MM MEDIUM SIZE	1
14	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
15	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	2
16	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	2
17	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	6
18	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
19	BABY-MIXTER ARTERY FORCEPS,180MM	1
20	OVERHOLT DISSECTING FORCEPS,FIG.1, 209MM	1
21	OVERHOLT DISSECTING FORCEPS,FIG.2, 220MM	1
22	LAHEY TRACTION FORCEPS, 4X4 TEETH, 155 MM	1
23	BABCOCK, ATRAUMATIC ORGAN- AND TISSUE GRASPING FORCEPS, 160 MM	1
24	NON-TRAUM.GRASPING FORCEPS,ALLIS,200 MM	1
25	DESCHAMPS LIGATURE NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, BLUNT, 210 MM	1
26	DESCHAMPS LIGATURE NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, 215 MM	1
27	PAYR RECTAL DIRECTOR, GROOVED, CURVED	1
28	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
29	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
30	DE BAKEY NEEDLE HOLDER, TC INSERTS, 180 MM	1
31	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
32	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
33	KOCHER RETRACTOR, LARGE PATTERN, 36X20MM	1
34	STRUMA RETRACTOR	1
35	NEEDLE ROUND CASE W/ COVER	1
36	NEEDLE CASE, PERFOR., 7 COMP,150X90X10MM	1



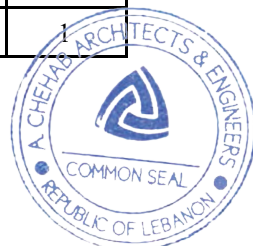
Item Nr.	DESCRIPTION	QTY
37	LABORATORY DISH, 0.16 L	1
38	LABORATORY DISH, 0.4 L	1
39	KIDNEY TRAY, 250 MM	1
40	REDON SPIKE,CHAR.10,SLIG.CVD.,TRIANG.TIP	1
41	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
42	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
A5	CHEST INSTRUMENTS SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	5
3	TOWEL CLAMP, 115 MM LENGTH	3
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE NO. 3L	1
6	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
7	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 230MM	1
8	DISS.SCISS.,NELSON-METZENBAUM, TC INSERTS, 260MM	1
9	DISS.SCISSORS, NELSON-METZENBAUM, CVD, TC INSERTS, 300 MM	1
10	LIGATURE SCISSORS, TC INSERTS, CVD, 230MM LONG	1
11	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
12	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
13	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
14	TISSUE FORCEPS, STD. PATT.,1X2 T.,145 MM	1
15	TISSUE FORCEPS, 1X2 T.,200MM MEDIUM SIZE	1
16	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
17	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
18	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.240MM	1
19	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.300MM	1
20	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	3
21	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	3
22	KOCHER HYSTERECTOMY FORCEPS STR., 240 MM	1
23	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
24	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM	2
25	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS, 210 MM	1
26	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS, 220 MM	1
27	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS, 230 MM	1
28	RUMEL DISSECTING FORCEPS, 240MM, SIZE 3	1
29	RUMEL DISSECTING FORCEPS, 240MM, SIZE 4	1
30	ZENKER DISS. A.LIGATURE FORC.,290MM, HEAVY CVD.	1
31	OVERHOLT DISSECTING FORCEPS,FIG.0, 294MM	1
32	DE'BAKEY VESSEL CLAMP, JAW 54MM,270 MM	1
33	DE'BAKEY VESSEL CLAMP, JAW 38MM,220 MM	1
34	DE BAKEY ANEURISM CLAMP, 315MM	1
35	ATRAUMATA CLAMP, DE BAKEY, JAW ANGLE 90 DEGREE, JAW LENGTH 75 MM, 255 MM	1
36	DE BAKEY VESSEL FORCEPS, JAW 65MM, 280MM	1



Item Nr.	DESCRIPTION	QTY
37	DE BAKEY LIG.CARRIER,ACUT.CURV.265MM	1
38	INTEST.FCPS.NON-TRAUM.,COLLIN,195MM	1
39	ALLIS ATRAUMATIC FORCEPS, 255 MM	1
40	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
41	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
42	DE BAKEY NEEDLE HOLDER, TC INSERTS, 180 MM	1
43	DE BAKEY NEEDLE HOLDER, TC INSERTS, 250 MM	1
44	DE BAKEY NEEDLE HOLDER, TC INSERTS, 305 MM	1
45	MASSON NEEDLE HOLDER, TC INSERTS, 265 MM	1
46	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
47	DE BAKEY, RIB SPREADER, STERNUM RETRACTOR, COMPLETE	1
48	PAIR OF BLADES, 80MM, WIDTH 60MM	1
49	BAILEY-GIBBON RIB CONTRACTOR, 200 MM	1
50	ALLISON LUNG SPATULA 32CM BLADE 50MM WIDE	1
51	LEBSCHER STERNUM CHISEL 200 MM	1
52	HAEKEL Mallet of Metal, 140 gr, Diameter 27 mm	1
53	BRUNNER RIB SHEARS, 340 MM	1
54	DOYEN RASPATORY, ADULT SIZE, LEFT SIDE	1
55	DOYEN RASPATORY, ADULT SIZE, RIGHT SIDE	1
56	LAMBOTTE RASPATORY, CVD, 15 MM BROAD	1
57	SEMB RASPATORY, TIP SIZE 12 MM, 230 MM	1
58	SEMB RASPATORY, TIP SIZE 13 MM, 230 MM	1
59	SEMB RIB AND BONE HOLDING FORCEPS, WITHOUT RATCHET, 190 MM	1
60	LISTON BONE CUTTING FORCEPS,CVD.,240MM	1
61	LUER-STILLE BONE RONGEUR, CURVED, 225 MM	1
62	REILL WIRE CUTTER 175 MM, CURVED	1
63	NEEDLE ROUND CASE W/ COVER	1
64	LABORATORY DISH, 0.16 L	1
65	LABORATORY DISH, 0.4 L	1
66	KIDNEY TRAY, 250 MM	1
67	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
68	REDON SPIKE,CHAR.14,SLIG.CVD.,TRIANG.TIP	1
69	REDON SPIKE,CHAR.16,SLIG.CVD.,TRIANG.TIP	1
70	STAINLESS STEEL STERILIZATION TRAY	1



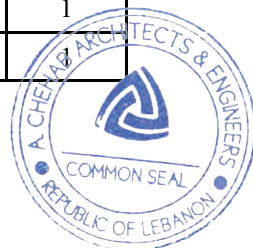
Item Nr.	DESCRIPTION	QTY
A6	TRACHEOSTOMY SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 3	1
5	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
6	DISSECT.SCISS.,METZENBAUM,TC INSERTS, CVD, 180 MM	1
7	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
8	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
9	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
10	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
11	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	1
12	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
13	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	1
14	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
15	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS	1
16	BABY-MIXTER FORCEPS, 140 MM	1
17	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
18	LANGENBECK RETRACTOR, 33X14MM, 210MM	1
19	ROUX RETRATOR, SMALL	1
20	WOUND AND TRACHEAL HOOK, SHARP, 1 TOOTH	1
21	WOUND AND TRACHEAL HOOK, SHARP, 4 TEETH	1
22	LABORDE TRACHEA DILATOR, 125 MM	1
23	WEITLANER RETRACTOR, LT-RATCH.,3X4 SHARP PRONGS, 140 MM	1
24	NEEDLE ROUND CASE W/ COVER	1
25	LABORATORY DISH, 0.4 L	1
26	REDON SPIKE,CHAR.10,SLIG.CVD.,TRIANG.TIP	1
27	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
28	STAINLESS STEEL STERILIZATION TRAY	1



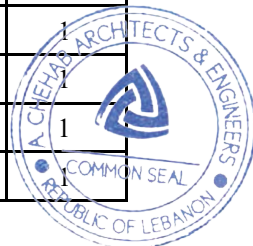
Item Nr.	DESCRIPTION	QTY
A7	CUT DOWN SET	2
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	SCALPEL HANDLE, NO. 3	1
4	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
5	IRIS AND LIGATURE SCISSORS, STR., 110 MM	1
6	DISSECT. AND STRABISMUS SCISS.,CVD,115MM	1
7	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
8	SEMKEN FORCEPS, 125 MM	1
9	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
10	SEMKEN TISSUE FORCEPS, 1X2 TEETH, 125 MM	1
11	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
12	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	1
13	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
14	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
15	BABY-MIXTER FORCEPS, 140 MM	1
16	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
17	WOUND AND TRACHEAL HOOK, BLUNT, 2 TEETH, 165 MM	1
18	KOENIG VEIN- AND WOUND RETRACTOR, SMALL	1
19	ALM RETRACTOR, 100 MM	1
20	NEEDLE ROUND CASE W/ COVER	1
21	LABORATORY DISH, 0.4 L	1



Item Nr.	DESCRIPTION	QTY
A8	A-V SHUNT SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 3	1
5	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
6	SCISSORS, DELICATE, STRAIGHT, 95 MM	1
7	IRIS AND LIG. SCISS., ANGL.TO SIDE,110MM	1
8	DISSECT. SCISSORS, JAMESON-WERBER, TIP BLUNT/BLUNT, DELICATE, CVD, 130MM	1
9	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
10	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
11	NON-TRAUMATIC VESSEL FORCEPS 150 MM	1
12	ATR.-FORCEPS "ULTRA-LIGHT", STR.,150MM	1
13	IRIS DISS. FORCEPS, STR., 100MM	1
14	MICRO-HALSTED HEMOST.FORC., CVD., 125 MM	1
15	HALSTED MOSQUITO FORCEPS, STRAIGHT,125MM	1
16	PEAN ARTERY FORCEPS, STRAIGHT, 130 MM	1
17	MICRO-ADSON HEMOSTATIC FORCEPS, 140 MM	1
18	BABY-MIXTER FORCEPS, 140 MM	1
19	MINI BULLDOG CLAMP,STRAIGHT, 35 MM LONG	1
20	MINI BULLDOG CLAMP,CURVED, 45 MM LONG	1
21	MUELLER VESSEL CLIP, FOR VEIN, STRAIGHT	1
22	MUELLER VESSEL CLIP FOR VEIN, CURVED	1
23	MICRO NEEDLE HOLDER, CURVED, WITHOUT CATCH, 160 MM	1
24	NEEDLEHOLDER,RYDER, TC INSERTS, 135MM,DELIC.	1
25	CRILE NEEDLE HOLDER, STR, TC INSERTS, 150 MM	1
26	RETRACTOR, FINE PATTERN, 2 BLUNT PRONG	1
27	DESMARRES, LID RETRACTOR	1
28	WEITLANER RETRACTOR,2X3 TEETH,SEMI SHARP	1
29	NEEDLE ROUND CASE W/ COVER	1
30	LABORATORY DISH, 0.16 L	1
31	LABORATORY DISH, 0.4 L	1
32	KIDNEY TRAY, 250 MM	1
33	STAINLESS STEEL STERILIZATION TRAY	



Item Nr.	DESCRIPTION	QTY
A9	MAJOR BASIC SET FOR CHILDREN	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 3	1
5	DISSECTING SCISSORS, TC INSERTS, CVD 115MM	1
6	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
7	JAMISON SCISSORS, SLIGHTLY CVD	1
8	LIGATURE SCISS ORS, TC INSERTS, CVD., 145 MM	1
9	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
10	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
11	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
12	NON-TRAUMATIC VESSEL FORCEPS 150 MM	1
13	ADSON FORCEPS, 1X2 TEETH, 120 MM	1
14	ADSON FORCEPS, FINE SERRATED JAWS, 120MM	1
15	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
16	BABYCRILE ARTERY FORCEPS, CURVED, 140 MM	1
17	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	1
18	POLYPUS A. SPONGE A.DRESSING FORC.,175MM	1
19	MIKULICZ PERITONEUM FORCEPS, 140 MM	1
20	MICRO-ADSON HEMOSTATIC FORCEPS, 140 MM	1
21	BABY-MIXTER FORCEPS, 140 MM	1
22	BABY-MIXTER ARTERY FORCEPS,180MM	1
23	NEEDLEHOLDER, CONVERSE, TC INSERTS, 130 MM	1
24	CRILE NEEDLE HOLDER, STR, TC INSERTS, 150 MM	1
25	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 150MM	1
26	LANGENBECK-GREEN RETRACTOR,6X16MM,DELIC.	1
27	LANGENBECK RETRACTOR, 28X10MM, 210MM	1
28	LANGENBECK RETRACTOR, 40X10MM, 210MM	1
29	DESMARRES, LID RETRACTOR	1
30	BABY-ROUX RETRACTOR, 135MM	1
31	ROUX RETRATOR, SMALL	1
32	FRITSCH ABDOMINAL RETRACTOR, 40 MM WIDE	1
33	RETRACTOR, FINE PATTERN, 2 SHARP PRONGS	1
34	WOUND AND TRACHEAL HOOK, SHARP, 4 TEETH	1
35	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
36	SPATULA, MALLEABLE, 200 X 17 MM	1



Item Nr.	DESCRIPTION	QTY
37	ADSON-BABY RETRACTOR, W JOINT, 140 MM	1
38	BABY-BALFOUR ABDOMINAL RETRACTOR	1
39	BABY-FINOCCHIETTO RIB SPREADER	1
40	BABY-ALLIS INTESTINAL FORCEPS, 130 MM	1
41	NON-TRAUM.HOLDING FORC.,ALLIS,155 MM	1
42	BABY-KOCHER INT.CLAMP, CUR., 130 MM	1
43	NON-TRAUM.INTEST.CLAMP,DOYEN,CVD.170 MM	1
44	BABY-DERRA FORCEPS, MEDIUM PATTERN,170MM	1
45	VOLKMANN SPOON, SHARP, SIZE 000, 170 MM	1
46	PROBE, DOUBLE ENDED, 145 MM, DIAM. 1,0MM	1
47	BOWMAN LACRIMAL PROBE, 0,7/0,8 MM	1
48	NEEDLE ROUND CASE W/ COVER	1
49	LABORATORY DISH, 0.16 L	1
50	LABORATORY DISH, 0.4 L	1
51	KIDNEY TRAY, 250 MM	1
52	REDON SPIKE,CHAR.10,SLIG.CVD.,TRIANG.TIP	1
53	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
54	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
A10	KIRSCHNER FRAME	2
1	KIRSCHNER RETRACTOR, COMPLETE	1
2	KIRSCHNER BLADE, 64 X 80 MM	2
A11	EMERGENCY SUPPLEMENT SET FOR VESSELS	1
1	ATRAUM.BULLDOGG CLAMP,CVD.JAW 27MM,86MM	1
2	LELAND-JONES PER.VASCUL.CLAMP,ANGL.190MM	1
3	DE'BAKEY VESSEL CLAMP, JAW 38MM,220 MM	1
4	DE BAKEY VESSEL FORCEPS, JAW 55MM, 230MM	1
5	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.240MM	1
6	DE BAKEY NEEDLE HOLDER, 230 MM, TC INSERTS	1



Item Nr.	DESCRIPTION	QTY
B	ENT SETS	
B1	TYMPANOPLASTY/STAPEDECTOMY	1
1	GROSS POLYPUS, SPONGE AND DRESS.FORCEPS, 200 MM	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 3	1
5	IRIS AND LIGATURE SCISSORS, CVD., 110 MM	1
6	JOSEPH SCISSORS FOR RHINOPLASTIC, 150 MM	1
7	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
8	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
9	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
10	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
11	NEEDLEHOLDER, CONVERSE, TC INSERTS, 130 MM	1
12	NASAL SPECULA,HARTMANN-HALLE,ASEPT.LOCK, 155 MM	1
13	SELF-RETAINING RETRACTOR,130MM,2X2T.,SHP	1
14	PLESTER SELF-RETAINING RETRACTOR, SOLID LEFT BLADE, 110 MM	1
15	RETRACTOR,BLADE,110MM,2T.,SOLID RIGHT BLADE	1
16	RASPATORY, 8 MM BROAD, SIZE 2, 165 MM	1
17	RASPATORY, LEMPERT, 3MM BROAD	1
18	LABORATORY DISH, 0.16 L	1
19	LABORATORY DISH, 0.4 L	1
20	EAR SPECULA, HARTMANN, BLACK, 4 MM	1
21	EAR SPECULA, HARTMANN, BLACK, 5 MM	1
22	EAR SPECULA, HARTMANN, BLACK, 7 MM	1
23	MICRO-NEEDLE, STRAIGHT (PERFORATOR)	1
24	MICRO-NEEDLE, SLIGHTLY CURVED	1
25	MICRO-HOOK, 45 DEGR.ANGLED, 0,4MM	1
26	MICRO-HOOK, 45 DEGR.ANGLED, 1,0MM	1
27	MICRO-HOOK, 90 DEGR.ANGLED, 0,4MM	1
28	MICRO-HOOK, 90 DEGR.ANGLED, 1,0MM	1
29	PLESTER SCRAPER, 60 DEGR.ANGLED	1
30	HOOK, 0,6MM,BACKWARD CUTTING	1
31	HOOK, FOOTPLATE, OVAL	1
32	PLESTER HOOK FOR ANTRUM, 45DEGR.	1
33	APPLICATION INSTRUMENT (GUIDE FORK)	1
34	TRANSPLANTATION CARRIER A. RASPATORY	1
35	DISCISION KNIFE, STRAIGHT	1

Item Nr.	DESCRIPTION	QTY
36	SICKLE KNIFE,PLESTER,SLIGHTLY CURVED	1
37	FLAP KNIFE, 2,4X3MM	1
38	CIRCULAR KNIFE,Ø 2,0MM,45 DEGR.ANGLED	1
39	MEASURING PROBE F.STAPES PROSTHESIS	1
40	PREPARATION TABLET, METAL W. MM-SCALE	1
41	DOUBLE SPOON, HOUSE,SHARP, 1,0, 1,2MMØ	1
42	DOUBLE-ENDED SPOON,CVD.DOWNW,170MM,LARGE	1
43	EAR CURETTE,BUCK,CVD.,SHARP,FIG.00	1
44	SALIVAL PROBE, SEIFFERT, SILVER	1
45	HARTMANN-WULLSTEIN EAR POLYPUS FORCEPS, STRAIGHT & SERRATED JAW, WORKING LENGTH 80 MM	1
46	MICRO-FORCEPS, JAW STRAIGHT, 5X1MM, STRAIGHT JAW	1
47	AURAL POLP.FORC.,HARTMANN,2MM Ø,STRAIGHT JAW	1
48	MICRO FORCEPS, JAW 1,3X0,8 MM, STRAIGHT JAW	1
49	HAMMER HEAF FORC.DIETER,UPWARD CUTTING, WORKING LENGTH 70 MM	1
50	BELLUCCI MICRO-SCISSOR,STRAIGHT,SH/SH	1
51	WIRE BENDING PLIERS, MC GEE, JAW 5,0MM	1
52	SUCTION-HANDLE,W.INTERRUPTOR, LUER	1
53	MICRO-SUCT.-CANNULA,PLESTER,0,5MM Ø,LUER	1
54	MICRO-SUCT.-CAN.,PLESTER,0,7MM Ø,LUER	1
55	MICRO-SUCT.-CAN.,PLESTER, 1,0MM Ø,LUER	1
56	PLESTER MICRO CANNULA, 1, 3MM 2, LUER	1
57	SUCTION CANNULA,PLESTER, 2 MM Ø	1
58	SUCTION CANNULA, PLESTER 2,5 MM Ø	1
59	SUCTION CANNULA, PLESTER, 3 MM Ø	1
60	STAINLESS STEEL STERILIZATION TRAY	1



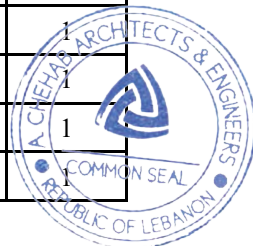
Item Nr.	DESCRIPTION	QTY
B2	AURAL POLYP SET	1
1	EAR SPECULA, HARTMANN, BLACK, 4 MM	1
2	EAR SPECULA, HARTMANN, BLACK, 5 MM	1
3	EAR SPECULA, HARTMANN, BLACK, 7 MM	1
4	KRAUSE EAR POLYPUS SNARE, 160MM	1
5	SNARE WIRE, D: 0,2MM, PAK/100PC	1
6	SPOON FORCEPS, HENKELL, TIP SIZE 3 X 5 MM, WORKING LENGTH 80 MM	1
7	LUCAE DISSECTING- A. TISSUE FORC., SERRATED, 140MM	1
8	WAGENER EAR HOOK, MEDIUM SIZE, 155 MM	1
9	COTTON CARRIER, FARRELL, 110MM	1
B3	MYRINGOTOMY / PARACENTESIS / TYMPAN. DRAINAGE	1
1	EAR SPECULA, HARTMANN, BLACK, 4 MM	1
2	EAR SPECULA, HARTMANN, BLACK, 5 MM	1
3	EAR SPECULA, HARTMANN, BLACK, 7 MM	1
4	HARTMANN-WULLSTEIN EAR POLYPUS FORCEPS	1
5	LUCAE DISSECTING- A. TISSUE FORC., SERRATED, 140MM	1
6	EAR CURETTE, BUCK, CVD, BLUNT, FIG.1	1
7	SICKLE KNIFE, PLESTER, SLIGHTLY CURVED	1
8	MICRO-HOOK, 90 DEGR. ANGLED, 0,8MM	1
9	COTTON CARRIER, FARRELL, 110MM	1
10	MICRO-SUCTION-SET, PLESTER, LUER	1
11	FERGUSSON SUCT. CANN, D: 2,0MM, WORK. L. 110MM	1
B4	PARACENTESIS, SMALL	1
1	EAR SPECULA, HARTMANN, BLACK, 4 MM	1
2	EAR SPECULA, HARTMANN, BLACK, 5 MM	1
3	EAR SPECULA, HARTMANN, BLACK, 7 MM	1
4	LUCAE DISSECTING- A. TISSUE FORC., SERRATED, 140MM	1
5	LUCAE TYMPANUM PERFORATOR, 190MM	1
6	LUCAE EAR LOOP, FIG.1	1
7	COTTON CARRIER, FARRELL, 110MM	1



Item Nr.	DESCRIPTION	QTY
B5	OTOPLASTY SET	1
1	GROSS POLYPUS, SPONGE AND DRESS.FORCEPS, 200 MM	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 3	1
5	SCISSORS, DELICATE, CURVED, 120 MM	1
6	DISSECT. AND STRABISMUS SCISS.,CVD,115MM	1
7	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
8	ADSON FORCEPS, FINE SERRATED JAWS, 120MM	1
9	ADSON FORCEPS, 1X2 TEETH, 120 MM	1
10	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
11	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
12	MICRO-HALSTED HEMOST.FORC., CVD., 125 MM	1
13	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
14	COTTLE SEPTUM KNIFE, 140 MM	1
15	FREER ELEVATOR, SHARP/BLUNT,185MM	1
16	COTTLE SKIN HOOK, CURVED 180 DEGR.	1
17	JOSEPH HOOK, 2 SHARP PRONGS, 165MM	1
18	FERGUSSON SUCT.CANN,D:2,5MM,WORK.L.110MM	1
19	FERGUSSON SUCT.CANN,D:3,0MM,WORK.L.110MM	1
20	HALSEY NEEDLE HOLDER, TC INSERTS, 130 MM	1
21	LABORATORY DISH, 0.16 L	1
22	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
B6	RHINOPLASTY (COTTLE)	1
1	SCALPEL HANDLE, NO. 3	1
2	COTTLE SEPTUM KNIFE, 140 MM	1
3	MASING CARVING KNIFE 130MM	1
4	SCISSORS,COTTLE,SHARP,CVD.,105MM	1
5	COTTLE NASAL SCISSOR, 105MM, CURVED	1
6	FOMON NASAL SCISSORS, 135MM	1
7	DORSAL SCISSOR,COTTLE, ANGULAR, 165MM	1
8	GRAEFE IRIS SCISSORS, ANGL.ON FLAT,100MM	1
9	JOSEPH SCISSORS FOR RHINOPLASTIC, 150 MM	1
10	COTTLE COLUMELLA FORCEPS, 100 MM	1
11	COTTLE NASAL FORCEPS, 145 MM	1
12	ADSON-BROWN ATRAUMATIC FORCEPS, 120 MM	1
13	GRUENWALD FORCEPS,BAYON.SHAPE, 8"	1
14	NEEDLEHOLDER, CONVERSE, TC INSERTS, 130 MM	1
15	LATHBURY-FARRELL COTTON CAR.,160MM,1,2MM	1
16	ALAE PROTECTOR, COTTLE, 10 X 12 MM, 140 MM	1
17	COTTLE NASAL RETRACTOR BLUNT, 200 MM	1
18	RETRACTOR COTTLE'S, SHARP, 5 1/4 ZOLL	1
19	COTTLE SKIN HOOK, CURVED 180 DEGR.	1
20	FOMON NOSTRIL ELEVATOR, 145 MM	1
21	COTTLE NASAL RETRACTOR BLUNT / SHARP, RIGHT TIP, 145 MM	1
22	COTTLE NASAL RETRACTOR BLUNT / SHARP, LEFT TIP, 145 MM	1
23	AUFRICT NASAL SPECULUM, 160 MM	1
24	NASAL SPECULUM, COTTLE, BLADE LENGTH 52 MM	1
25	NASAL SPECULUM, COTTLE, BLADE LENGTH 75 MM	1
26	COTTLE NASAL SPECULUM, DETACHABLE, 76 X 7 MM	1
27	COTTLE NASAL SPECULUM, DETACHABLE, 90 X 7 MM	1
28	SEPTUM CHISEL, COTTLE, 4MM BROAD	1
29	SEPTUM CHISEL, COTTLE, 7 MM BROAD	1
30	SEPTUM CHISEL, COTTLE, 9 MM BROAD	1
31	SEPTUM CHISEL, COTTLE, 12 MM BROAD	1
32	SEPTUM CHISEL, COTTLE, CURVED, 6MM	1
33	MASING OSTEOTOMES, LEFT, 175 MM	1
34	MASING OSTEOTOMES, RIGHT, 175 MM	1
35	OSTEOTOMY CHISEL, STRAIGHT	1
36	HAMMER, COTTLE, 30 MM	1



Item Nr.	DESCRIPTION	QTY
37	COTTLE SEPTUM ELEVATOR	1
38	COTTLE DOUBLE-ELEVATOR, 200 MM	1
39	MCKENTY RASPATORY, SHARP, 150 MM	1
40	JOSEPH RASPATORY, SHARP, 160 MM	1
41	SUCTION RASPATORY W.MANDRIN, 4 MM	1
42	FERGUSON SUCT.CANN,D:2,5MM,WORK.L.110MM	1
43	FERGUSON SUCT.CANN,D:3,0MM,WORK.L.110MM	1
44	DOUBLE-ENDED FILE,FOMON,210MMLONG	1
45	DOUBLE-ENDED RASP,FOMON,210MMLONG	1
46	JOSEPH NASAL SAW, CURVED TO RIGHT, 170MM	1
47	JOSEPH NASAL SAW, CURVED TO LEFT, 170 MM	1
48	BONE AND CARTILAGE CRUSHER,W.METAL CLAMP	1
49	WEIL-BLAKESLEY ETHMOID FORCEPS, 4,2MM	1
50	WATSON-WILLIAMS ETHMOID FORCEPS,TOOTHED	1
51	COTTLE-WALSHAM SEPTUM STRAIGHTENING FORCEPS, 230 LONG	1
52	BONE CUTTING FORCEPS,FINE,170 MM	1
53	JANSEN-MIDDLETON NASAL COTT. FORC.,210MM	1
54	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
B7	NASAL SEPTUM SURGERY (KILLIAN)	1
1	KILLIAN NASAL SPECULUM, BLADE LENGTH 36 MM, 140 MM	1
2	KILLIAN NASAL SPECULUM, BLADE LENGTH 56 MM, 140 MM	1
3	KILLIAN NASAL SPECULUM, BLADE LENGTH 75 MM, 140 MM	1
4	KILLIAN NASAL SPECULUM, BLADE LENGTH 90MM, 140 MM	1
5	JOSEPH DELICATE SCISSORS STRAIGHT SHARP / SHARP, 150 MM	1
6	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
7	HEYMANN NASAL SCISSOR, 175 MM	1
8	GRUENWALD FORCEPS,BAYON.SHAPE, 8"	1
9	HARTMANN NASAL TAMPON FORCEPS, 215 MM	1
10	NEEDLEHOLDER, CONVERSE, TC INSERTS, 130 MM	1
11	FREER ELEVATOR, SHARP/BLUNT,185MM	1
12	KILLIAN ELEVATOR, SHARP/BLUNT, 185 MM	1
13	LATHBURY-FARRELL COTTON CAR.,160MM,1,2MM	1
14	FERGUSSON SUCT.CANN,D:3,0MM,WORK.L.110MM	1
15	SUCTION RASPTORY W.MANDRIN, 4 MM	1
16	BALLENGER SEPTUM SWIVEL KNIFE, 4MM	1
17	KILLIAN-CLAUS SEPTUM CHISEL WITH GROOVE	1
18	FREER SEPTUM CHISEL, 4MM, 160 MM	1
19	HAMMER, COTTLE, 30 MM	1
20	WEIL-BLAKESLEY ETHMOID FORCEPS, 4,8MM	1
21	WEIL-BLAKESLEY ETHMOID FORCEPS,ANG.4,2MM	1
22	HENKE NASAL CUTTING FORCEPS, FIG.2	1
23	WATSON-WILLIAMS ETHMOID FORCEPS,TOOTHED	1
24	NASAL FORCEPS, CRAIG-DOMNICK	1
25	BRUENINGS NASAL FORCEPS, 190 MM	1
26	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
B8	NASAL FRACTURE SET	1
1	NASAL SPECULA,HARTMANN-HALLE,ASEPT.LOCK, 155 MM	1
2	KILLIAN NASAL SPECULUM, 14 CM	1
3	FERGUSSON SUCT.CANN,D:3,0MM,WORK.L.110MM	1
4	INSTR.F.NASAL FRACTURE, BOIES	1
5	COTTLE-WALSHAM SEPTUM STRAIGHTENING FORCEPS, 230 LONG	1
6	GRUENWALD FORCEPS,BAYON.SHAPE, 8"	1
7	FREER ELEVATOR, SHARP/BLUNT,185MM	1
8	WEIL-BLAKESLEY ETHMOID FORCEPS, 4,8MM	1
9	ADSON-BROWN ATRAUMATIC FORCEPS, 120 MM	1
10	IRIS AND LIGATURE SCISSORS, CVD., 110 MM	1
11	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
B9	MAXILLARY SINUS SET	1
1	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
2	TOWEL CLAMP, 115 MM LENGTH	1
3	SCALPEL HANDLE, NO. 3	1
4	JOSEPH SCISSORS FOR RHINOPLASTIC, 150 MM	1
5	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
6	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
7	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
8	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
9	ADSON-BROWN ATRAUMATIC FORCEPS, 120 MM	1
10	GRUENWALD FORCEPS,BAYON.SHAPE, 8"	1
11	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
12	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
13	NASAL SPECULA,HARTMANN-HALLE,ASEPT.LOCK, 155 MM	1
14	KILLIAN NASAL SPECULUM, 14 CM	1
15	BRUENINGS TONGUE DEPRESSOR, 190 MM	1
16	LANGENBECK RETRACTOR, 28X10MM, 210MM	1
17	BRUENINGS-BRUNK RETRACTOR, 190MM	1
18	FREER ELEVATOR, SHARP/BLUNT,185MM	1
19	COTTLE RASPATORY, 8 MM, 195 MM	1
20	SEWALL RASPATORY, 200 MM	1
21	RITTER FRONTAL SINUS DILATOR, 3,0 MM	1
22	RITTER FRONTAL SINUS DILATOR, 5,0 MM	1
23	GOUGE, 140MM, 4 MM WIDE	1
24	GOUGE, 140MM, 6 MM WIDE	1
25	GOUGE, 140MM, 8 MM WIDE	1
26	PASSOW CHISEL,TO STANCH BONE BLEED,SMALL	1
27	HAJEK Mallet OF METAL, 140 gr, DIAMETER 27 mm	1
28	SHARP SPOON, UFFENORDE, LEFT CURVED	1
29	SHARP SPOON, UFFENORDE, RIGHT CURVED	1
30	VOLKMANN SPOON, SHARP, SIZE 0	1
31	KERRISON BONE PUNCH, FIG.1, 4.0 MM BITE	1
32	KERRISON BONE PUNCH, FIG.2, 5.0 MM BITE	1
33	MARQUARDT BONE RONGEUR, 200 MM	1
34	HARTMANN NASAL TAMPON FORCEPS, 215 MM	1
35	HEYMANN NASAL SCISSOR, 175 MM	1
36	WEIL-BLAKESLEY ETHMOID FORCEPS, 3 MM	1

Item Nr.	DESCRIPTION	QTY
37	WEIL-BLAKESLEY ETHMOID FORCEPS, 4,2MM	1
38	WEIL-BLAKESLEY ETHMOID FORCEPS,ANG.4,2MM	1
39	WATSON-WILLIAMS ETHMOID FORCEPS,TOOTHED	1
40	SUCTION CANNULA F.NOSE,CVD.175MM,D:5MM	1
41	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
B10	FRONTAL SINUS SET	1
1	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
2	TOWEL CLAMP, 115 MM LENGTH	1
3	SCALPEL HANDLE, NO. 3	1
4	JOSEPH SCISSORS FOR RHINOPLASTIC, 150 MM	1
5	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
6	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
7	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
8	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
9	ADSON-BROWN ATRAUMATIC FORCEPS, 120 MM	1
10	GRUENWALD FORCEPS,BAYON.SHAPE, 8"	1
11	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
12	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
13	NASAL SPECULA,HARTMANN-HALLE,ASEPT.LOCK, 155 MM	1
14	KILLIAN NASAL SPECULUM, 14 CM	1
15	LANGENBECK RETRACTOR, 28X10MM, 210MM	1
16	FREER ELEVATOR, SHARP/BLUNT,185MM	1
17	COTTLE RASPATORY, 8 MM, 195 MM	1
18	SEWALL RASPATORY, 200 MM	1
19	RITTER FRONTAL SINUS DILATOR, 2,5 MM	1
20	RITTER FRONTAL SINUS DILATOR, 3,0 MM	1
21	RITTER FRONTAL SINUS DILATOR, 4,0 MM	1
22	RITTER FRONTAL SINUS DILATOR, 5,0 MM	1
23	GOUGE, 140MM, 4 MM WIDE	1
24	GOUGE, 140MM, 6 MM WIDE	1
25	GOUGE, 140MM, 8 MM WIDE	1
26	HAJEK MALLET OF METAL, 140 gr, DIAMETER 27 mm	1
27	HALLE SHARP SCOOP, FLEXIBLE SHAFT, 214MM	1
28	HALLE SHARP SCOOP, FLEXIBLE SHAFT, 216MM	1
29	VOLKMANN SPOON, SHARP, SIZE 0	1
30	HAJEK-KOFLER BONE PUNCH, 4 MM , FIG.3	1
31	MARQUARDT BONE RONGEUR, 200 MM	1
32	HARTMANN NASAL TAMPON FORCEPS, 215 MM	1
33	WEIL-BLAKESLEY ETHMOID FORCEPS, 4,2MM	1
34	WEIL-BLAKESLEY ETHMOID FORCEPS,ANG.4,2MM	1
35	WATSON-WILLIAMS ETHMOID FORCEPS,TOOTHED	1
36	SUCTION CANNULA F.NOSE,CVD.175MM,D:5MM	1

Item Nr.	DESCRIPTION	QTY
37	HAJEK FRONTAL SINUS CANNULA, 165 MM, 2MM	1
38	STAINLESS STEEL STERILIZATION TRAY	1



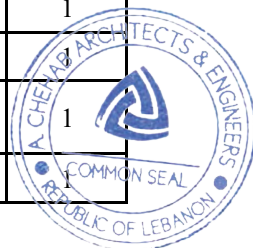
Item Nr.	DESCRIPTION	QTY
B11	SPHENOID-NASAL-SET	1
1	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
2	TOWEL CLAMP, 115 MM LENGTH	1
3	NASAL SPECULA,HARTMANN-HALLE,ASEPT.LOCK, 155 MM	1
4	KILLIAN NASAL SPECULUM, 14 CM	1
5	KILLIAN NASAL SPECULUM, BLADE SIZE 75 X 7 MM, 140 MM	1
6	KILLIAN NASAL SPECULUM, BLADE SIZE 90 X 7 MM, 140 MM	1
7	GRUENWALD FORCEPS,BAYON.SHAPE, 8"	1
8	HARTMANN NASAL TAMPON FORCEPS, 215 MM	1
9	FREER ELEVATOR, SHARP/BLUNT,185MM	1
10	FREER SEPTUM GOUGE, TIP SIZE 4 MM, 150 MM	1
11	HAJEK MALLET OF METAL, 140 gr, DIAMETER 27 mm	1
12	HAJEK-KOFLER BONE PUNCH, JAW 90 DEGREE UP, 140 mm	1
13	HALLE SHARP SCOOP, FLEXIBLE SHAFT, 214MM	1
14	FERGUSSON SUCT.CANN,D:3,0MM,WORK.L.110MM	1
15	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
B12	TONSILLECTOMY/ADENOTOMY	1
1	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
2	BRUENINGS TONGUE DEPRESSOR, 190 MM	1
3	MCIVOR FRAME ONLY	1
4	TONGUE SPATULA, RUSSEL-DAVIS, 67X29MM	1
5	TONGUE SPATULA, RUSSEL-DAVIS, 75X33MM	1
6	TONGUE SPATULA, RUSSEL-DAVIS, 85X38MM	1
7	BLOHMKE TONSIL SEIZING FORCEPS, 205 MM	1
8	TONSIL ELEVATOR A.DISSECTOR,HENKE	1
9	SUCTION CANNULA,YANKAUER,WIDE CENT. HOLE	1
10	GOOD TONSIL SCISSORS, 195 MM	1
11	BRUENINGS TONSIL SNARE, 270 MM	1
12	WIRE LOOP, DIAMETER 0.4 MM, PAK/100PC	1
13	SCHNIDT TONSIL HEMOSTAT, 185 MM	1
14	NAGER PILLAR RETRACTOR, 230 MM	1
15	HARTMANN TONSIL PUNCH, DIAMETER 13MM, WORKING LENGTH 120 MM	1
16	TISSUE FORCEPS, 1X2 TEETH, 200 MM	1
17	DE BAKEY NEEDLE HOLDER, TC INSERTS, 180 MM	1
18	CURETTE, BECKMANN, FIG. 0	1
19	CURETTE, BECKMANN, FIG. 1	1
20	CURETTE, BECKMANN, FIG. 2	1
21	CURETTE, BECKMANN, FIG. 3	1
22	CURETTE, BECKMANN, FIG. 4	1
23	CURETTE, BECKMANN, FIG. 5	1
24	LABORATORY DISH, 0.16 L	1
25	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
C	GYN SETS	
C1	ABDOMINAL SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE NO. 3L	1
6	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
7	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 230MM	1
8	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
9	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
10	SIMS TC INSERTS UTERINE SCISSORS CURVED, BLUNT / BLUNT 200 MM	1
11	DISSECT.SCISSORS,WERTHEIM, TC INSERTS, 230 MM	1
12	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
13	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
14	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
15	TISSUE FORCEPS, 1X2 TEETH, 200 MM	1
16	TISSUE FORCEPS, 1X2 TEETH, 250 MM	1
17	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
18	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
19	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.240MM	1
20	GERALD BRAIN FORCEPS, 1X2 TEETH, 175 MM	1
21	ROCHESTER-OCHSNER FORC.,STR.,1X2T.,140MM	1
22	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
23	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
24	KOCHER HYSTERECTOMY FORCEPS STR., 240 MM	1
25	WERTHEIM ARTERY FORCEPS, STRONGLY CURVED	1
26	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM	1
27	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
28	SCHROEDER TENACULUM FORCEPS, 250 MM	1
29	UTERINE VULSELLUM FORCEPS, 270 MM	1
30	FOERSTER SPONGE HOLD. FORC., SERRAT.JAWS	1
31	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS	1
32	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS	1
33	DESCHAMPS LIGATURE NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, BLUNT, 215 MM	1
34	GUIDE PROBE,4,5MM BROAD, 195 MM	1



Item Nr.	DESCRIPTION	QTY
35	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
36	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
37	HEGAR NEEDLE HOLDER, TC INSERTS, 205MM	1
38	HEGAR NEEDLE HOLDER, TC INSERTS, 245MM	1
39	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
40	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
41	KOCHER ABDOMINAL RETRACTOR	1
42	VAGINAL RETRAC., TUEBINGER PATT.,95X20MM	1
43	FRITSCH ABDOMINAL RETRACTOR, 75 MM WIDE	1
44	MIKULICZ ABDOMINAL RETRACTOR	1
45	HABERER ADOMINAL SPATULA, MALLEAB., TAP	1
46	PROBE, DOUBLE ENDED, 300MM, DIAM. 2,0 MM	1
47	NEEDLE ROUND CASE W/ COVER	1
48	NEEDLE CASE, PERFOR., 7 COMP,150X90X10MM	1
49	LABORATORY DISH, 0.16 L	1
50	LABORATORY DISH, 0.4 L	1
51	KIDNEY TRAY, 250 MM	1
52	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
53	REDON SPIKE,CHAR.14,SLIG.CVD.,TRIANG.TIP	1
54	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
C2	MUENSTER RETRACTOR FOR ABDOMINAL SURGERY	1
1	ABDOM. RING II,MUENSTER,DETACH.313X270MM	1
2	ABDOM. RING III,MUENSTER 393X350MM,DETAC	1
3	RING EXTENSION STICK, 100MM LONG	1
4	NOTCH STICK, 150MM	1
5	NOTCH STICK EXTENSION, 100MM	1
6	NOTCH STICK END PART, 6,0MM	1
7	CLAMPS F.CONNECT. RING A.WOUND RETRACT.	1
8	ABDOMINAL RETRACTOR 48X90, RETR.MUENSTER	1
9	KELLY RETRACTORS, 70X63MM,RETR. MUENSTER	1
10	ABDOMINAL RETRACTOR, MIKULICZ, 120X50 MM	1
11	ABDOMINAL RETRACTOR, MIKUKICZ, 155X50 MM	1
12	KELLY RETRACTOR, 150X39 MM	1
13	ABDOMINAL SPATULA, 40 MM BR., FLEXIBLE	1
14	ABDOMINAL SPATULA, 50 MM BR., FLEXIBLE	1
15	ABDOMINAL SPATULA, 85 MM BR., FLEXIBLE	1
16	HOLD. ARM F.CONNECT. RETRACT.FRAME W. OP	1
17	HOLDER F.HOLDING RETAINING RODS,D:20MM	1
18	RETAINING ROD F.HOLDING CLAMP RT092R	1
19	CLAMP F.HOLDING MUENSTER HOLDER BV829R	1
20	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
C3	SET FOR TUBAL LIGATURE	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE, NO. 3	1
6	DISSECT.SCISS.,METZENBAUM,TC INSERTS, CVD, 180 MM	1
7	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
8	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
9	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
10	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
11	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
12	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
13	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
14	CRILE ARTERY FORCEPS, CURVED, 140 MM	1
15	ROCHESTER-PEAN ARTERY FORCEPS, 200 MM	1
16	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM	1
17	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
18	BOZEMANN-DOUGLAS UTERINE DRESS. FORCEPS	1
19	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
20	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
21	HEGAR NEEDLE HOLDER, TC INSERTS, 205MM	1
22	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
23	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
24	KOCHER ABDOMINAL RETRACTOR	1
25	CUSHING VEIN- A. WOUND RETRACTOR,10X13MM	1
26	NEEDLE ROUND CASE W/ COVER	1
27	LABORATORY DISH, 0.16 L	1
28	LABORATORY DISH, 0.4 L	1
29	KIDNEY TRAY, 250 MM	1
30	STAINLESS STEEL STERILIZATION TRAY	1

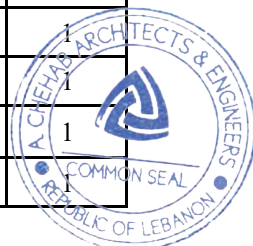


Item Nr.	DESCRIPTION	QTY
C4	CAESARIAN SECTION SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 4	1
5	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
6	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 230MM	1
7	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
8	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
9	SIMS TC INSERTS UTERINE SCISSORS CURVED, BLUNT / BLUNT 200 MM	1
10	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
11	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
12	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
13	TISSUE FORCEPS, 1X2 TEETH, 200 MM	1
14	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
15	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
16	ROCHESTER-OCHSNER FORC.,STR.,1X2T.,140MM	1
17	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
18	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
19	ROCHESTER-PEAN ARTERY FORCEPS, 200 MM	1
20	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
21	MIKULICZ PERITONEUM FORCEPS LARGE, 205MM	1
22	FAURE PERITONEUM FORCEPS,STRONGLY CURVED	1
23	HEYWOOD-SMITH HAEMORHOIDAL FORCEPS,215MM	1
24	RECAMIER PLACENTA AND OVUM CURETTE	1
25	FEMALE CATHETER, METAL, FR 12	1
26	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
27	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
28	HEGAR NEEDLE HOLDER, TC INSERTS, 205MM	1
29	HEGAR NEEDLE HOLDER, TC INSERTS, 245MM	1
30	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
31	VOLKMANN RETRACTOR, SEMI-SHARP,6-PRONGED	1
32	HABERER ADOMINAL SPATULA, MALLEAB., TAP.	1
33	FRITSCH ABDOMINAL RETRACTOR, BL. 64X85MM	1
34	PROBE, DOUBLE ENDED, 300MM, DIAM. 2,0 MM	1
35	NEEDLE ROUND CASE W/ COVER	1
36	NEEDLE CASE, PERFOR., 7 COMP,150X90X10MM	1

Item Nr.	DESCRIPTION	QTY
37	LABORATORY DISH, 0.16 L	1
38	LABORATORY DISH, 0.4 L	1
39	KIDNEY TRAY, 250 MM	1
40	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
41	REDON SPIKE,CHAR.14,SLIG.CVD.,TRIANG.TIP	1
42	STAINLESS STEEL STERILIZATION TRAY	1



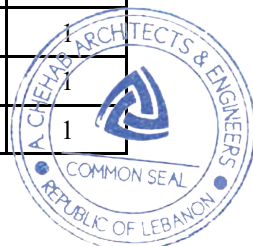
Item Nr.	DESCRIPTION	QTY
C5	VAGINAL BASIC SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE NO. 3L	1
6	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
7	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 230MM	1
8	LIGATURE SCISSORS, TC INSERTS, CVD, 230MM LONG	1
9	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
10	DISSECT.SCISSORS,WERTHEIM, TC INSERTS, 230 MM	1
11	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
12	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
13	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
14	TISSUE FORCEPS, 1X2 TEETH, 200 MM	1
15	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
16	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
17	ROCHESTER-OCHSNER FORC.,STR.,1X2T.,140MM	1
18	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
19	KELLY ARTERY FORCEPS, STRAIGHT, 140 MM	1
20	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
21	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
22	FAURE PERITONEUM FORCEPS,STRONGLY CURVED	1
23	WERTHEIM ARTERY FORCEPS, STRONGLY CURVED	1
24	FOERSTER SPONGE HOLD. FORC., SERRAT.JAWS	1
25	SCHROEDER TENACULUM FORCEPS, 250 MM	1
26	UTERINE VULSELLUM FORCEPS, 270 MM	1
27	FEMALE CATHETER, METAL, FR 12	1
28	SIMS UTERINE PROBE, GRADUATED, MALLEABLE	1
29	DOYEN MYOMA SCREW,190 MM	1
30	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
31	HEGAR NEEDLE HOLDER, TC INSERTS, 205MM	1
32	HEGAR NEEDLE HOLDER, TC INSERTS, 245MM	1
33	WERTHEIM NEEDLE HOLDER, TC Inserts, 240 MM	1
34	DOYEN, VAG. SPEC.,SLIGHTLY CONCAVE,SMALL	1
35	DOYEN, VAG. SPECULUM, SLIGHTLY CONCAVE, BLADE SIZE 90 X 45 MM , 240MM	1
36	DOYEN VAGINAL RETRACTOR, 80 X 30 MM	1



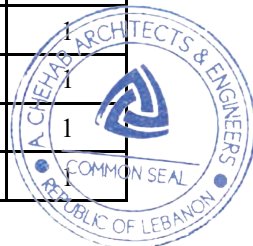
Item Nr.	DESCRIPTION	QTY
37	KRISTELLER, VAGINAL SPEC. SET, 90X36 MM	1
38	KRISTELLER, VAGINAL SPEC. SET, 110X20 MM	1
39	WOUND AND TRACHEAL HOOK, SHARP, 1 TOOTH	1
40	NEEDLE ROUND CASE W/ COVER	1
41	LABORATORY DISH, 0.16 L	1
42	LABORATORY DISH, 0.4 L	1
43	KIDNEY TRAY, 250 MM	1
44	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
C6	MUENSTER RETRACTION FOR VAGINAL SURGERY	1
1	MUENSTER VAGINAL FRAME, NONDETACH.	1
2	NOTCH STICK EXTENSION, 100MM	1
3	NOTCH STICK END PART, 6,0MM	1
4	CLAMPS F.CONNECT. RING A.WOUND RETRACT.	1
5	VAGINAL RETRACTOR,25X115MM, POSTER.BLADE	1
6	VAGINAL RETRACTOR, 25X75MM,LATERAL BLADE	1
C7	HYSTEROSCOPY (ACCESS)	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	HANDLE TO THE SCHERBAK VAGINAL SPECULUM	1
5	WEIGHT TO THE SCHERBAK,VAGINAL SPECULUM	1
6	BLADE TO THE BOZEMANN VAG. SPEC., FIG.6	1
7	BLADE TO THE BOZEMANN VAG. SPEC., FIG.7	1
8	BLADE TO THE BOZEMANN VAG. SPEC., FIG.8	1
9	BLADE FOR SCHERBACK SPECULUM, 70X45-70MM	1
10	BLADE FOR SCHERBACK SPECULUM, 80X45-70MM	1
11	SIMON VAGINAL RETRACTOR, 115 X 22 MM	1
12	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
13	SCHROEDER TENACULUM FORCEPS, 250 MM	1
14	DISSECT. FORCEPS, W. SERRAT. ENDS, 250MM	1
15	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
16	ROCHESTER-PEAN ARTERY FORCEPS,STR.,160MM	1
17	SIMS UTERINE PROBE, GRADUATED, MALLEABLE	1
18	HEGAR UTERINE DILATOR, SINGLE, 1 MM	1
19	HEGAR UTERINE DILATOR, SINGLE, 2 MM	1
20	HEGAR UTERINE DILATOR, SINGLE, 3 MM	1
21	HEGAR UTERINE DILATOR, SINGLE, 4 MM	1
22	HEGAR UTERINE DILATOR, SINGLE, 5 MM	1
23	HEGAR UTERINE DILATOR, SINGLE, 6 MM	1
24	HEGAR UTERINE DILATOR, SINGLE, 7 MM	1
25	RECAMIER UTERINE CURETTE,SH.,RIGID SHAFT, 8.5 MM	1
26	RECAMIER UTERINE CURETTE,SH.,RIGID SHAFT, 1.5 MM	1
27	LABORATORY DISH, 0.4 L	1
28	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
C8	PLACENTA SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	HANDLE TO THE SCHERBAK VAGINAL SPECULUM	1
5	WEIGHT TO THE SCHERBAK, VAGINAL SPECULUM	1
6	BLADE TO THE BOZEMANN VAG. SPEC., FIG.6	1
7	BLADE TO THE BOZEMANN VAG. SPEC., FIG.7	1
8	BLADE TO THE BOZEMANN VAG. SPEC., FIG.8	1
9	BLADE FITTING SCHERBACK HANDLE EL 746	1
10	BLADE FOR SCHERBACK SPECULUM, 80X45-70MM	1
11	KRISTELLER, VAGINAL SPEC. SET, 110X30 MM	1
12	KRISTELLER, VAGINAL SPEC. SET, 110X36 MM	1
13	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
14	SCHROEDER TENACULUM FORCEPS, 250 MM	1
15	SIMS UTERINE PROBE, GRADUATED, MALLEABLE	1
16	HEGAR UTERINE DILATOR, SINGLE, 4 MM	1
17	HEGAR UTERINE DILATOR, SINGLE, 4,5 MM	1
18	HEGAR UTERINE DILATOR, SINGLE, 5 MM	1
19	HEGAR UTERINE DILATOR, SINGLE, 5,5 MM	1
20	HEGAR UTERINE DILATOR, SINGLE, 6 MM	1
21	HEGAR UTERINE DILATOR, SINGLE, 6,5 MM	1
22	HEGAR UTERINE DILATOR, SINGLE, 7 MM	1
23	HEGAR UTERINE DILATOR, SINGLE, 7,5 MM	1
24	HEGAR UTERINE DILATOR, SINGLE, 8 MM	1
25	HEGAR UTERINE DILATOR, SINGLE, 8,5 MM	1
26	HEGAR UTERINE DILATOR, SINGLE, 9 MM	1
27	HEGAR UTERINE DILATOR, SINGLE, 9,5 MM	1
28	HEGAR UTERINE DILATOR, SINGLE, 10 MM	1
29	HEGAR UTERINE DILATOR, SINGLE, 10,5 MM	1
30	HEGAR UTERINE DILATOR, SINGLE, 11 MM	1
31	HEGAR UTERINE DILATOR, SINGLE, 11,5 MM	1
32	HEGAR UTERINE DILATOR, SINGLE, 12 MM	1
33	HEGAR UTERINE DILATOR, SINGLE, 12,5 MM	1
34	HEGAR UTERINE DILATOR, SINGLE, 13 MM	1
35	HEGAR UTERINE DILATOR, SINGLE, 13,5 MM	1
36	HEGAR UTERINE DILATOR, SINGLE, 14 MM	1



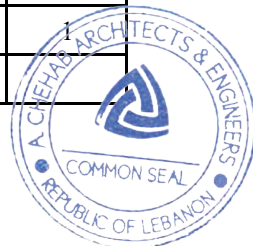
Item Nr.	DESCRIPTION	QTY
37	HEGAR UTERINE DILATOR, SINGLE, 14,5 MM	1
38	HEGAR UTERINE DILATOR, SINGLE, 15 MM	1
39	HEGAR UTERINE DILATOR, SINGLE, 15,5 MM	1
40	HEGAR UTERINE DILATOR, SINGLE, 16 MM	1
41	HEGAR UTERINE DILATOR, SINGLE, 16,5 MM	1
42	HEGAR UTERINE DILATOR, SINGLE, 17 MM	1
43	HEGAR UTERINE DILATOR, SINGLE, 17,5 MM	1
44	HEGAR UTERINE DILATOR, SINGLE, 18 MM	1
45	HEGAR UTERINE DILATOR, SINGLE, 19 MM	1
46	HEGAR UTERINE DILATOR, SINGLE, 20 MM	1
47	RECAMIER UTERINE CURETTE,SH.,RIGID SHAFT	1
48	RECAMIER UTERINE CURETTE,SH.,RIGID SHAFT	1
49	RECAMIER UTERINE CURETTE,BL.,RIGID SHAFT	1
50	BUMM PLACENTA AND OVUM CURETTE, BLUNT	1
51	RECAMIER PLACENTA AND OVUM CURETTE	1
52	LABORATORY DISH, 0.4 L	1
53	WINTER PLACENTA AND OVUM FORCEPS, CURVED	1
54	KIDNEY TRAY, 250 MM	1
55	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
C9	ABORT-CURETTAGE-SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	KRISTELLER, VAGINAL SPEC. SET, 90X36 MM	1
5	KRISTELLER, VAGINAL SPEC. SET, 110X20 MM	1
6	DOYEN, VAG. SPECULUM, SLIGHTLY CONCAVE, BLADE SIZE 90 X 45 MM , 240 MM	1
7	SCALPEL HANDLE, NO. 7	1
8	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
9	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
10	SCHROEDER TENACULUM FORCEPS, 250 MM	1
11	TISSUE FORCEPS, 1X2 TEETH, 200 MM	1
12	SIMS UTERINE PROBE, GRADUATED, MALLEABLE	1
13	FEMALE CATHETER, METAL, FR 12	1
14	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
15	HEGAR UTERINE DILATOR, SINGLE, 3 MM	1
16	HEGAR UTERINE DILATOR, SINGLE, 3,5 MM	1
17	HEGAR UTERINE DILATOR, SINGLE, 4 MM	1
18	HEGAR UTERINE DILATOR, SINGLE, 4,5 MM	1
19	HEGAR UTERINE DILATOR, SINGLE, 5 MM	1
20	HEGAR UTERINE DILATOR, SINGLE, 5,5 MM	1
21	HEGAR UTERINE DILATOR, SINGLE, 6 MM	1
22	HEGAR UTERINE DILATOR, SINGLE, 6,5 MM	1
23	HEGAR UTERINE DILATOR, SINGLE, 7 MM	1
24	HEGAR UTERINE DILATOR, SINGLE, 7,5 MM	1
25	HEGAR UTERINE DILATOR, SINGLE, 8 MM	1
26	HEGAR UTERINE DILATOR, SINGLE, 8,5 MM	1
27	HEGAR UTERINE DILATOR, SINGLE, 9 MM	1
28	HEGAR UTERINE DILATOR, SINGLE, 9,5 MM	1
29	HEGAR UTERINE DILATOR, SINGLE, 10 MM	1
30	HEGAR UTERINE DILATOR, SINGLE, 10,5 MM	1
31	HEGAR UTERINE DILATOR, SINGLE, 11 MM	1
32	HEGAR UTERINE DILATOR, SINGLE, 11,5 MM	1
33	HEGAR UTERINE DILATOR, SINGLE, 12 MM	1
34	HEGAR UTERINE DILATOR, SINGLE, 12,5 MM	1
35	HEGAR UTERINE DILATOR, SINGLE, 13 MM	1
36	HEGAR UTERINE DILATOR, SINGLE, 13,5 MM	1



Item Nr.	DESCRIPTION	QTY
37	HEGAR UTERINE DILATOR, SINGLE, 14 MM	1
38	HEGAR UTERINE DILATOR, SINGLE, 14,5 MM	1
39	HEGAR UTERINE DILATOR, SINGLE, 15 MM	1
40	HEGAR UTERINE DILATOR, SINGLE, 15,5 MM	1
41	HEGAR UTERINE DILATOR, SINGLE, 16 MM	1
42	HEGAR UTERINE DILATOR, SINGLE, 16,5 MM	1
43	HEGAR UTERINE DILATOR, SINGLE, 17 MM	1
44	HEGAR UTERINE DILATOR, SINGLE, 17,5 MM	1
45	HEGAR UTERINE DILATOR, SINGLE, 18 MM	1
46	RECAMIER UTERINE CURETTE,SHARP.,RIGID SHAFT, SIZE 7.5 MM, 300 MM	1
47	RECAMIER UTERINE CURETTE,SHARP.,RIGID SHAFT, SIZE 10.5 MM, 300 MM	1
48	RECAMIER UTERINE CURETTE,SHARP.,RIGID SHAFT, SIZE 14 MM, 300 MM	1
49	RECAMIER UTERINE CURETTE,SHARP.,RIGID SHAFT, SIZE 16.5 MM, 300 MM	1
50	RECAMIER UTERINE CURETTE,BLUNT.,RIGID SHAFT, SIZE 7.5 MM, 300 MM	1
51	RECAMIER UTERINE CURETTE,BLUNT.,RIGID SHAFT, SIZE 10.5 MM, 300 MM	1
52	RECAMIER UTERINE CURETTE,BLUNT.,RIGID SHAFT, SIZE 14 MM, 300 MM	1
53	RECAMIER UTERINE CURETTE,BLUNT.,RIGID SHAFT, SIZE 16.5MM, 300 MM	1
54	WINTER PLACENTA AND OVUM FORCEPS, CURVED, SIZE 1	1
55	WINTER PLACENTA AND OVUM FORCEPS, CURVED, SIZE 2	1
56	LABORATORY DISH, 0.4 L	1
57	STAINLESS STEEL STERILIZATION TRAY	1
C11	VACUUM CURETTES	1
1	SUCTION CURETTES F.VACUUM CURETTAGE, 4MM	1
2	SUCTION CURETTE F.VACUUM CURETTAGE, 6 MM	1
3	SUCTION CURETTE F.VACUUM CURETTAGE, 8 MM	1
4	SUCTION CURETTE F.VACUUM CURETTAGE,10 MM	1
5	SUCTION CURETTE F.VACUUM CURETTAGE,12 MM	1
6	SUCTION CURETTE F.VACUUM CURETTAGE,14 MM	1
7	SWIVEL HANDLE F.VACUUM SUCTION CURETTES	1
8	SUCTION HOSE TRANSP., 1,8M,WIDE LUMENOUS	1
	Total Amount for "VACUUM CURETTES"	



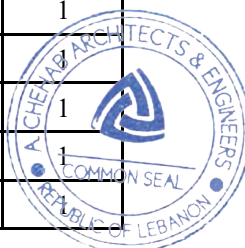
Item Nr.	DESCRIPTION	QTY
C12	CERCLAGE (SHIRODKAR)	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	DOYEN, VAG. SPEC.,SLIGHTLY CONCAVE,SMALL	1
5	DOYEN, VAG. SPECULUM, SLIGHTLY CONCAVE, BLADE SIZE 90 X 45 MM , 240 MM	1
6	KRISTELLER, VAGINAL SPECULUM,70X27 MM	1
7	KRISTELLER, VAGINAL SPEC. SET, 90X36 MM	1
8	KRISTELLER, VAGINAL SPEC. SET, 110X20 MM	1
9	DISSECT. FORCEPS, W. SERRAT. ENDS, 200MM	1
10	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
11	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
12	LABORATORY DISH, 0.4 L	1
13	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
D	OBS SETS	
D1	SINGLE INSTRUMENTS FOR DELIVERY ROOM	2
1	MARTIN PELVIMETER	1
2	LISTER BANDAGE SCISSORS, 200 MM	1
3	KIDNEY TRAY, 250 MM	1
4	UMBILICAL CORD SCISS., CVD. SIDEW.,160MM	1
5	BRAUN-STADLER EPISIOTOMY SCISSORS, 200MM	1
6	TISSUE FORCEPS, STD. PATT.,1X2 T.,160 MM	1
7	HEGAR NEEDLE HOLDER, TC INSERTS, 205MM	1
8	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
9	HERFF MEMBRANE PUNCTUR. FORC., CVD 255MM	1
10	NAEGELE OBSTETRICAL FORCEPS, 355 MM	1
11	KIELLAND OBSTETRICAL FORCEPS, 420 MM	1
12	COLLIN UMBILICAL CORD CLAMP, 85 MM	1



Item Nr.	DESCRIPTION	QTY
D2	CERCLAGE FOR INITIAL INCISION	2
1	KRISTELLER, VAGINAL SPEC. SET, 110X20 MM	1
2	KRISTELLER, VAGINAL SPEC. SET, 110X30 MM	1
3	KRISTELLER, VAGINAL SPEC. SET, 110X36 MM	1
4	SIMS TC INSERTS UTERINE SCISSORS CURVED, BLUNT / BLUNT 200 MM	1
5	TISSUE FORCEPS, 1X2 TEETH, 200 MM	1
6	DISSECT. FORCEPS, W. SERRAT. ENDS, 200MM	1
7	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
8	STAINLESS STEEL STERILIZATION TRAY	1
D3	SUTURING SET	2
1	BRAUN-STADLER EPISIOTOMY SCISSORS, 200MM	1
2	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
3	ROCHESTER-OCHSNER FORC.,STR.,1X2T.,140MM	1
4	DISS.SCISSORS,TOENNISADSON, TC INSERTS, 175MM	1
5	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
6	TISSUE FORCEPS, STD. PATT.,1X2 T.,160 MM	1
7	DISSECTING FORCEPS, SLEND. PATT., 160 MM	1
8	HEGAR NEEDLE HOLDER, TC INSERTS, 205MM	1
9	NEEDLE ROUND CASE W/ COVER	1
10	DOYEN, VAG. SPEC.,SLIGHTLY CONCAVE,LARGE	1
11	KRISTELLER, VAGINAL SPEC. SET, 110X36 MM	1
12	FEMALE CATHETER, METAL, FR 12	1
13	STAINLESS STEEL STERILIZATION TRAY	1
D4	CERVIX SUTURE SET	2
1	KRISTELLER VAGINAL RETRACTOR, 120 X 30MM	1
2	BREISKY, VAGINAL SPECULUM, 30 MM,	1
3	BREISKY, VAGINAL SPECULUM, 35 MM,	1
4	BREISKY, VAGINAL SPECULUM, 40 MM	1
5	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 230MM	1
6	TISSUE FORCEPS, 1X2 TEETH, 250 MM	1
7	DISSECT. FORCEPS, W. SERRAT. ENDS, 250MM	1
8	SCHROEDER TENACULUM FORCEPS, 250 MM	1
9	PEAN HYSTERECTOMY FORCEPS STRAIGHT,240MM	1
10	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
11	HEGAR NEEDLE HOLDER, TC INSERTS, 245MM	1
12	DE BAKEY NEEDLE HOLDER, TC INSERTS, 250 MM	1
13	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
D5	SUCTION HEADS FOR VACUUM EXTRACTION	2
1	SUCTION HEAD F VACUUM EXTRACTION 40 MM	1
2	SUCTION HEAD F VACUUM EXTRACTION 50 MM	1
3	SUCTION HEAD F VACUUM EXTRACTION 60 MM	1
4	HAND VALVE FOR VACUUM EXTRACTION	1
5	SUCTION HEAD,SILICONE,Ø60MM,W. TUBE 1,5M	1
D6	PLACENTA CURETTAGE SET	2
1	DOYEN, VAG. SPECULUM, SLIGHTLY CONCAVE, BLADE SIZE 90 X 45 MM , 240 MM	1
2	DOYEN, VAG. SPECULUM, BLADE SIZE 90 X 60 MM	1
3	HEYWOOD-SMITH POLYPUS FORCEPS, LARGE	1
4	WINTER PLACENTA AND OVUM FORCEPS, CURVED	1
5	BUMM PLACENTA AND OVUM CURETTE, BLUNT, 26 MM	1
6	BUMM PLACENTA AND OVUM CURETTE, BLUNT, 28.5 MM	1
7	RECAMIER PLACENTA AND OVUM CURETTE	1
D7	UMBILICAL VEIN SET	2
1	IRIS AND LIGATURE SCISSORS, STR., 110 MM	1
2	DISSECT. AND STRABISMUS SCISS.,CVD,115MM	1
3	IRIS DISS. FORCEPS, STR., 100MM	1
4	IRIS /VERY FINE FORC., 1X2T., STR.,100MM	1
5	HALSTED MOSQUITO FORCEPS, STRAIGHT,125MM	1
6	HALSTED FORCEPS, STR, 1X2 TEETH, 125 MM	1
7	BOWMAN LACRIMAL PROBE, 0,7/0,8 MM	1
8	BOWMAN LACRIMAL PROBE, 0,9/1,1 MM	1



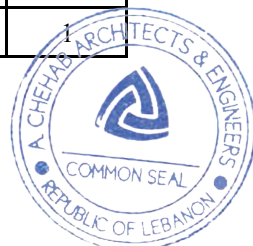
Item Nr.	DESCRIPTION	QTY
F	ORTHOPEDIC SETS	
F1	BASIC SET TRAUMATOLOGY	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE NO. 4L	1
5	SCALPEL HANDLE, NO. 4	1
6	SCALPEL HANDLE, NO. 3	1
7	DISSECT.SCISS.,METZENBAUM,TC INSERTS, CVD, 180 MM	1
8	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
9	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
10	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
11	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
12	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
13	TISSUE FORCEPS, STD. PATT.,1X2 T.,145 MM	1
14	TISSUE FORCEPS, 1X2 TEETH, 200 MM	1
15	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
16	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
17	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
18	ROCHESTER-PEAN ARTERY FORCEPS,STR.,160MM	1
19	KOCHER HAEMOSTATIC FORCEPS, STR., 160 MM	1
20	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
21	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS	1
22	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS	1
23	HEGAR-MAYO-SEELEY NEEDLE HOLD., TC HOLDER, 200 MM	1
24	HEGAR NEEDLE HOLDER, TC INSERTS, 205MM	1
25	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
26	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
27	KOCHER RETRACTOR, 60X25 MM	1
28	LANGENBECK RETRACTOR, 40X13MM, 210MM	1
29	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
30	KOCHER RETRACTOR, SEMI-SHARP, 6-PRONGED	1
31	KOERTE RETRACTOR, 8 SHARP PRONGS	1
32	VOLKMANN BONE RETR., 1 SHARP PRONG, WIDE	1
33	ISRAEL RETRACTOR, 6 BLUNT PRONGS	1
34	BONE LEVER, 8 MM WIDE, 220 MM	1
35	BONE LEVER,17MM,SHORT SLENDER TIP	1

Item Nr.	DESCRIPTION	QTY
36	BONE LEVER, 43 MM WIDE, 230 MM	1
37	HOHMANN BONE LEVER, 34MM WIDE,285MM LONG	1
38	SIMON UTERINE SCOOP, SHARP, RIGID	1
39	VOLKMANN SPOON, SHARP, SIZE 1, 170 MM	1
40	VOLKMANN SPOON, SHARP, SIZE 4	1
41	NEEDLE ROUND CASE W/ COVER	1
42	NEEDLE CASE, PERFOR., 7 COMP,150X90X10MM	1
43	LABORATORY DISH, 0.16 L	1
44	LABORATORY DISH, 0.4 L	1
45	KIDNEY TRAY, 250 MM	1
46	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
47	REDON SPIKE,CHAR.14,HIGHLY CVD,KNIFE TIP	1
48	REDON SPIKE,CHAR.16,HIGHLY CVD,KNIFE TIP	1
49	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
F2	BASIC SET TRAUMATOLOGY FOR SMALL BONES	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE, NO. 3	1
6	DISSECT.SCISS.,METZENBAUM,TC INSERTS, CVD, 180 MM	1
7	DISS.SCISS.,METZENBAUM, TC INSERTS, CVD, 200MM	1
8	LIGATURE SCISSORS, TC INSERTS, 180MM LONG	1
9	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
10	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
11	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
12	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
13	TISSUE FORCEPS, 1X2 T.,180MM MEDIUM SIZE	1
14	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
15	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
16	ROCHESTER-PEAN ARTERY FORCEPS,STR.,160MM	1
17	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
18	BABY-MIXTER ARTERY FORCEPS,180MM	1
19	OVERHOLT-GEISSENDOERFER, DISS. FORCEPS	1
20	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
21	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 185MM	1
22	ROUX RETRATOR, SMALL	1
23	BABY-ROUX RETRATOR, 135MM	1
24	LANGENBECK-GREEN RETRATOR,6X24MM,DELIC.	1
25	LANGENBECK RETRATOR, 33X14MM, 210MM	1
26	LANGENBECK RETRATOR, 40X10MM, 210MM	1
27	VOLKMANN RETRATOR, SEMI-SHARP,2-PRONGED	1
28	VOLKMANN RETRATOR, SEMI-SHARP,4-PRONGED	1
29	WOUND AND TRACHEAL HOOK, SHARP, 1 TOOTH	1
30	BABY-KOCHER BONE RETRATOR, 205MM, SHARP	1
31	BONE LEVER, 8 MM WIDE, 220 MM	1
32	BONE LEVER, SMALL, 150MM, 4,5 MM WIDE	1
33	BONE LEVER, BROAD 6,0 MM, 150 MM	1
34	BONE LEVER,SMALL W.SHORT,NARROW TIP, 6MM	1
35	BONE LEVER,SMALL,W.SHORT,NARROW TIP, 8MM	1
36	VOLKMANN SPOON, SHARP, SIZE 1, 170 MM	1

Item Nr.	DESCRIPTION	QTY
37	VOLKMANN SPOON, SHARP, SIZE 3, 170 MM	1
38	PROBE, DOUBLE ENDED, 180MM, DIAM. 2,0 MM	1
39	NEEDLE ROUND CASE W/ COVER	1
40	LABORATORY DISH, 0.16 L	1
41	LABORATORY DISH, 0.4 L	1
42	KIDNEY TRAY, 250 MM	1
43	PLASTIC-RULER FOR X-RAY, FLEXIBLE, 500MM	1
44	BONE HOLDING FORCEPS, SLENDER PATT., 200MM	1
45	VERBRUGGE BONE HOLD. FORC., SMALL, 255MM	1
46	VERBRUGGE BONE HOLD. FORC., MED., 265MM	1
47	REPOSIT.FORCEPS W.THREAD-LOCK, 17CM, SMALL	1
48	REPOSIT.FORC. W.TIPS, F.BIG BONES, 205MM	1
49	BEYER BONE RONGEUR, 180 MM	1
50	RUSKIN-ROETTGEN HOLL. CHISEL FORC., 240MM	1
51	RUSKIN-LISTON BONE CUTTING FORCEPS, CVD.	1
52	WILLIGER ELEVATOR, 172 MM, 6,0 MM WIDE	1
53	LANGENBECK ELEVATOR, SMALL TYPE, 196 MM	1
54	WILLIGER RASPATORY, 160MM LONG, 6,0MM WIDE	1
55	RASPATORY W.HARTPR.HDL, 13MM, CVD., STD.	1
56	LEXER CHISEL LENGTH 18CM WIDTH 4 MM	1
57	LEXER CHISEL LENGTH 18CM WIDTH 6MM	1
58	LEXER CHISEL LENGTH 18CM WIDTH 8MM	1
59	LEXER CHISEL LENGTH 18CM WIDTH 12MM	1
60	LEXER OSTETOOME, 220MM, 20 MM WIDE	1
61	LEXER GOUGE LENGTH 18CM WIDTH 4MM	1
62	LEXER LOUGE LENGTH 18CM WIDTH 8MM	1
63	MALLET W.HARTPR.-HDL, HEAD-Ø 30MM, 200 GR.	1
64	TAMPER D5MM F.CORRECT.POS.OF BONE DOWEL	1
65	REILL WIRE CUTTER 175 MM, CURVED	1
66	WIRE EXTRACT.FORCEPS, PFAU MODEL	1
67	EXTRACT. FORCEPS F.KIRSCHNER WIRES, 180MM	1
68	REDON SPIKE, CHAR.12, SLIG.CVD., TRIANG.TIP	1
69	REDON SPIKE, CHAR.14, HIGHLY CVD, KNIFE TIP	1
70	STAINLESS STEEL STERILIZATION TRAY	1

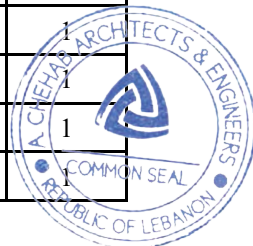


Item Nr.	DESCRIPTION	QTY
F3	LUMBAR DISC SET	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 4	1
5	SCALPEL HANDLE, NO. 7	1
6	DISSECT.SCISS.,METZENBAUM,180 MM,CVD., TC INSERTS	1
7	DISS.SCISS.,METZENBAUM,CVD.200MM, TC INSERTS	1
8	LIGATURE SCISSORS, 180MM LONG, TC INSERTS	1
9	DISS.SCISS.,MAYO-LEXER,CVD,165MM, TC INSERT	1
10	OP. SCISSORS, STR., BL/SH, 145 MM, S	1
11	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
12	TISSUE FORCEPS, STD. PATT.,1X2 T.,145 MM	1
13	TISSUE FORCEPS, 1X2 T.,200MM MEDIUM SIZE	1
14	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
15	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
16	GRUENWALD FORCEPS,BAYON.SHAPE, 8"	1
17	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
18	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
19	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
20	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
21	OVERHOLT DISSECTING FORCEPS,FIG.1, 209MM	1
22	TC INSERTS CRILE-WOOD NEEDLE HOLDER,145MM	1
23	TC INSERTS HEGAR-MAYO NEEDLE HOLDER, 205MM	1
24	NEEDLEHOLDER,DELICATE,200 MM, TC INSERTS	1
25	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
26	VOLKMANN RETRACTOR, SEMI-SHARP,6-PRONGED	1
27	RETRACTOR,CASPAR, 67X17 MM	1
28	FINE SKIN RETRACTOR GILLIES,180MM, SMALL	1
29	CUSHING NERVE HOOK, PROBE POINTED, SMALL	1
30	CUSHING VEIN- A. WOUND RETRACTOR,10X13MM	1
31	DAVIS DISSECTOR, DOUBLE ENDED, 245 MM	1
32	FREER ELEVATOR, SHARP/BLUNT,185MM	1
33	LANGENBECK RASPATORY, STRAIGHT	1
34	SIMON SHARP SPOON, RIGID, 236 MM	1
35	LUER-STILLE BONE RONGEUR, STR., 225 MM	1
36	RUSKIN-ROETTGEN HOLL. CHISEL FORC.,240MM	1

Item Nr.	DESCRIPTION	QTY
37	LANGENBECK ELEVATOR, SMALL TYPE, 196 MM	1
38	LANGENBECK ELEVATOR, BROAD 10 MM, 196MM	1
39	LAMBOTTE OSTEOTOME,STR.,247MM, 25MM WIDE	1
40	MALLET OF METAL	1
41	KERRISON SEP.,130° UP,180MM, 3MM	1
42	KERRISON SEP.,130° UP,180MM, 4MM	1
43	KERRISON SEP.,130° UP,180MM, 5MM	1
44	RONGEUR,CUSHING,STR.180MM,JAW 10X2 MM	1
45	GRUENWALD RONGEUR,180 MM	1
46	RONGEUR,SPURLING,STR.180MM,JAW 10X4 MM	1
47	GRUENWALD RONGEUR,180 MM, JAWS ANGL.UPW.	1
48	FERGUSSON SUCT.CANN,D:4,0MM,WORK.L.110MM	1
49	INTERIOR BOX FOR BL 930	1
50	LABORATORY DISH, 0.16 L	1
51	LABORATORY DISH, 0.4 L	1
52	KIDNEY TRAY, 250 MM	1
53	REDON SPIKE,CHAR.12,SLIG.CVD.,TRIANG.TIP	1
54	REDON SPIKE,CHAR.14,SLIG.CVD.,TRIANG.TIP	1
55	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
F4	BASIC SET HAND	1
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	TOWEL CLAMP, 115 MM LENGTH	1
4	SCALPEL HANDLE, NO. 3	1
5	DISSECT.SCISS.,METZENBAUM,145MM,CVD., TC INSERTS	1
6	JAMISON SCISSORS, SLIGHTLY CVD	1
7	KILNER DISSECTING SCISSORS, 150 MM	1
8	TC INSERTS SCISS. DELIC.SH P,110MM,CVD,DULL	1
9	TC INSERTS LIGATURE SCISS ORS, CVD., 145 MM	1
10	OP. SCISSORS, STR., BL/SH, 145 MM, S	1
11	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
12	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
13	NON-TRAUMATIC VESSEL FORCEPS 150 MM	1
14	ADSON FORCEPS, 1X2 TEETH, 120 MM	1
15	ADSON FORCEPS, FINE SERRATED JAWS, 120MM	1
16	SPLINTER AND DISS. FORCEPS, STR., 145 MM	1
17	MICRO-HALSTED HEMOST.FORC., CVD., 125 MM	1
18	MICRO-MOSQUITO FORCEPS, STRAIGHT, 1X2 T.	1
19	LERICHE FORCEPS, STRAIGHT, 1X2 T, 150 MM	1
20	LERICHE ARTERY FORCEPS, CURVED, 150 MM	1
21	MICRO-ADSON HEMOSTATIC FORCEPS, 140 MM	1
22	BABY-MIXTER FORCEPS, 140 MM	1
23	BABY-ADSON, ARTERY FORCEPS, 140 MM	1
24	HALSEY NEEDLE HOLDER, 130 MM, TC INSERTS	1
25	TC INSERTS HEGAR-MAYO NEEDLE HOLDER, 150MM	1
26	RETRACTOR, FINE PATTERN, 1 SHARP PRONG	1
27	WOUND AND TRACHEAL HOOK, SHARP, 1 TOOTH	1
28	RETRACTOR, FINE PATTERN, 2 SHARP PRONGS	1
29	RETRACTOR, FINE PATTERN, 3 SHARP PRONGS	1
30	RETRACTOR, FINE PATTERN, 4 SHARP PRONGS	1
31	RETRACTOR, FINE PATTERN, 2 BLUNT PRONG	1
32	RETRACTOR, FINE PATTERN, 3 BLUNT PRONG	1
33	RETRACTOR, FINE PATTERN DOPPELKNOPFSONDE	1
34	ROLLET IRIS HOOK, SHARP	1
35	ROLLET IRIS HOOK, SHARP	1
36	LANGENBECK-GREEN RETRACTOR, 6X16MM, DELIC.	1



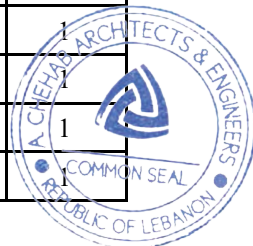
Item Nr.	DESCRIPTION	QTY
37	LANGENBECK-GREEN RETRACTOR,6X24MM,DELIC.	1
38	DESMARRES, LID RETRACTOR, FOR CHILDREN	1
39	DESMARRES, LID RETRACTOR	1
40	ALM RETRACTOR, 100 MM	1
41	WEITLANER RETRACTOR,2X3 TEETH,SEMI SHARP	1
42	DIRECTOR, 130 MM	1
43	BOWMAN LACHRYMAL PROBE, 0,7/0,8 MM	1
44	BOWMAN LACHRYMAL PROBE, 0,9/1,1 MM	1
45	INTERIOR BOX FOR BL 930	1
46	LABORATORY DISH, 0.16 L	1
47	LABORATORY DISH, 0.4 L	1
48	KIDNEY TRAY, 250 MM	1
49	LEAD HAND FOR HAND SURGERY	1
50	LEAD HAND FOR CHILDREN F. HAND SURGERY	1
51	FORCEPS FOR EXTRACTING IN-GROW NAILS	1
52	SYSTRUNK SCISSORS, 130 MM	1
53	FINGERRINGSAW, 150 MM	1
54	COMPRIMETER, COMPLETE	1
55	HAND FIXING PLATE, COMPLETE	1
56	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
F5	SMALL FRAGMENT INSTRUMENT SET	1
1	HANDLE WITH QUICK ACTION CHUCK FOR TOOLS WITH SQUARE SHAFT	1
2	DRILL GUIDE AND DRILL SLEEVE FOR DRILLS WITH 2.0 MM DIAMETER	1
3	DRILL GUIDE AND DRILL SLEEVE FOR DRILLS WITH 2.5 MM DIAMETER	1
4	TISSUE PROTECTOR SHEATH, 3.5 DIAMETER	1
5	INSERT SLEEVE, 3.5/2.7 MM DIAMETER	1
6	SCREW DRIVER, WIDTH ACROSS FLATS 2.5 MM	1
7	SCREW HOLDING SHEATH	1
8	SCREW DEPTH GAUGE, SMALL	1
9	NEUTRAL AND DRILL LOAD GUIDE, FOR DRILLS WITH 2.5 MM DIAMETER	1
10	1 RASPATORY, SMALL, 3 MM WIDE TIP	1
11	SHARP HOOK	1
12	BENDING IRON, FOR SMALL BONE PLATES	1
13	BENDING FORCEPS, FOR SMALL BONE PLATES	1
14	BONE HOLDING FORCEPS, FOR SMALL BONE FRAGMENTS	1
15	FORCEPS FOR HOLDING SMALL BONE PLATES	1
16	REPOSITION FORCEPS WITH PINTS	1
17	REPOSITION FORCEPS WITH RATCHET FOR SMA; BONE FRAGMENTS	1
18	BONE LEVER SMALL 6 MM WIDE TIP	1
19	BONE LEVER SMALL 8 MM WIDE TIP	1
20	BONE LEVERS WITH BROAD TIP	1
21	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
G	PRACTICE SETS	
G1	DRESSING SET, SMALL	2
1	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
2	RETRACTOR, FINE PATTERN, 4 SHARP PRONGS	1
3	DESMARRES, LID RETRACTOR	1
4	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
5	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
6	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
7	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
8	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
9	WEITLANER RETRACTOR, LT-RATCHET, 105 MM	1
G2	CHANGE OF BANDAGE	3
1	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
2	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
3	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
4	MYRTLE LEAF PROBE, 145 MM	1
5	CRILE ARTERY FORCEPS, CURVED, 140 MM	1
G3	SUTURE REMOVAL SET	3
1	OPERATING SCISSORS, CVD., BLUNT/SHARP, 145 MM	1
2	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
3	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
G4	SOFT TISSUE SURGERY SET	1
1	SPONGE HOLDING FORCEPS, CURVED	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	SCALPEL HANDLE, NO. 4	1
4	SCALPEL HANDLE, NO. 3	1
5	NON-TRAUMATIC FORC.STR, 15CM, 2,8MM	1
6	TISSUE FORCEPS, AM. PATT., 1X2 T., 160MM	1
7	WAUGH TISSUE FORCEPS, 1X2 TEETH, 200 MM	1
8	DISSECTING FORCEPS, SLEND. PATT., 160 MM	1
9	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.150MM	1
10	FORCEPS, STRAIGHT, 2MM JAW, ATRAUM.200MM	1
11	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
12	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	1
13	DIXON-LOVELACE, STR., 1X2 TEETH, 160 MM	1
14	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	1
15	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1



Item Nr.	DESCRIPTION	QTY
16	DISS. SCISS., METZENBAUM, TC INSERTS, CVD, 145 MM	1
17	DISS.SCISSORS,CVD.DELICATE, TC INSERTS, 200MM	1
18	ROUX RETRACTOR, DOUBLE-ENDED, SET OF 3	1
19	KOCHER-LANGENBECK RETRACTOR, 55X11 MM	1
20	KOCHER RETRACTOR, SMALL, 20 X 12 MM	1
21	VOLKMANN RETRACTOR, SEMI-SHARP,4-PRONGED	1
22	FINE SKIN RETRACTOR GILLIES,180MM, LARGE	1
23	HALSEY NEEDLE HOLDER, TC INSERTS, 120MM	1
24	CRILE NEEDLE HOLDER, STR, TC INSERTS, 150 MM	1
25	HEGAR-MAYO NEEDLE HOLDER, TC INSERTS, 205MM	1
26	VOLKMANN SPOON, SHARP, SIZE 00	1
27	VOLKMANN SPOON, SHARP, SIZE 1, 170 MM	1
28	WEITLANER RETRACTOR, LT-RATCH.,3X4 SHARP PRONGS, 140 MM	1
29	WEITLANER RETRACTOR, SHARP, 196 MM	1
30	KIDNEY TRAY, 250 MM	1
31	NEEDLE ROUND CASE W/ COVER	1
32	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
H	PLASTER ROOM SET	
H1	INSTRUMENTS FOR PLASTER ROOM	1
1	UNIVERSAL SCISSORS, 180 MM, BLACK	1
2	SMITH GAUZE SCISSORS,W.LONG BLADES,180MM	1
3	CLOTH SCISSORS, SERRATED BLADE, 235 MM	1
4	AESCLAP PATTERN PLASTER SHEAR, 260 MM	1
5	PLASTER SHEAR FOR HAND PLASTERS, 160MM	1
6	HENNIG PLASTER SPREADER, 270MM	1
7	WOLF PLASTER BREAKING FORCEPS, 240MM	1
8	WOLF PLASTER BREAKING FORCEPS, 180MM	1
9	CUTTER, TIBIA HEAD SCREWS, BOLTS, PINS 320 MM	1
I	SUCTION UNIT	
I1	SUCTION TUBES, SURGERY	3
1	YANKAUER SUCTION CANULAE, 285 MM	1
2	ASPIRATING TUBE DE BAKEY 270MM, 5MM DIAM	1
3	DOUB.BARRELLED SUCTION CANNULA FINSTERER	1
4	ASPIRATING TUBE DE BAKEY 275MM	1
5	ASPIRATING TUBE DE BAKEY 160MM, 5MM DIAM	1
I2	SUCTION TUBES, ENT	2
1	FERGUSSON SUCT.CANN,D:2,0MM,WORK.L.110MM	1
2	FERGUSSON SUCT.CANN,D:2,5MM,WORK.L.110MM	1
3	SUCTION CANNULA	1
4	IRRIGATION CANNULA, HOUSE, 1,2/0,9 MMØ	1
5	SUCTION CANNULA,YANKAUER,WIDE CENT. HOLE	1
6	LOPEZ-REINKE TONSIL DISSECT.,W.SUCT.DEV.	1
7	SUCTION CANNULA F.NOSE,CVD.175MM,D:5MM	1
8	SUCTION RASPIATORY W.MANDRIN, 4 MM	1
9	SUCTION CANNULA,PLESTER, 2 MM Ø	1
10	MICRO-SUCTION SET, WULLSTEIN	1



Item Nr.	DESCRIPTION	QTY
J	WARD SETS	
J1	BUELAU PUNCTURE SET	2
1	SPONGE HOLDING FORCEPS, STRAIGHT	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	SCALPEL HANDLE, NO. 4	1
4	KOCHER FORCEPS, STR., 1X2 TEETH, 140MM	1
5	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
6	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
7	SCISSORS, STRAIGHT, TC INSERTS, 145 MM	1
8	CRILE-WOOD NEEDLE HOLDER, TC INSERTS, 145MM	1
9	NEEDLE ROUND CASE W/ COVER	1
J2	CHANGE OF BANDAGE	2
1	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
2	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
3	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
4	MYRTLE LEAF PROBE, 145 MM	1
5	CRILE ARTERY FORCEPS, CURVED, 140 MM	1
J3	SUTURE REMOVING SET	2
1	OPERATING SCISSORS, CVD., BLUNT/SHARP, 145 MM	1
2	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
3	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
J4	SOUNDING SET	2
1	MYRTLE LEAF PROBE, 145 MM	1
2	JACOBSON CURETTE, DOUB.END., SHARP,145MM	1
3	BONE CURETTE JANSEN, DOUBLE ENDED, 160 MM	1
4	PROBE, DOUBLE ENDED, 145 MM, DIAM. 1,5MM	1
5	NELATON DIRECTOR, CVD., 160 MM	1
6	PROBE, DOUBLE ENDED, 250MM, OF TIN	1
7	SCALPEL HANDLE, NO. 3	1



Item Nr.	DESCRIPTION	QTY
J5	CUT DOWN SET	1
1	GROSS POLYPUS, SPONGE AND DRESS.FORCEPS	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	SCALPEL HANDLE, NO. 3	1
4	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	1
5	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
6	BABY-MIXTER FORCEPS, 140 MM	1
7	KOENIG VEIN- AND WOUND RETRACTOR, SMALL	1
8	WOUND AND TRACHEAL HOOK, BLUNT, 2 TEETH, 165 MM	1
9	ALM RETRACTOR, 100 MM	1
10	SEMKEN FORCEPS, 125 MM	1
11	SEMKEN TISSUE FORCEPS, 1X2 TEETH, 125 MM	1
12	TISSUE FORCEPS, STD. PATT.,1X2 T.,145 MM	1
13	IRIS AND LIGATURE SCISSORS, STR., 110 MM	1
14	DISSECT. AND STRABISMUS SCISS.,CVD,115MM	1
15	DESCHAMPS NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, BLUNT, 215 MM	1
16	NEEDLEHOLDER, MATHIEU, TC INSERTS, 17CM,FINE	1
17	COOPER SCISSORS, CVD., BL/BL, 145 MM	1
18	OCHSNER SUTURE FORCEPS,FLUTED 5 3/4"	1
19	NEEDLE ROUND CASE W/ COVER	1
20	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
J6	TRACHEOSTOMY SET	2
1	GROSS POLYPUS, SPONGE AND DRESS.FORCEPS	1
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	SCALPEL HANDLE, NO. 3	1
4	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	1
5	BABYCRILE ARTERY FORCEPS, CURVED, 140 MM	1
6	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
7	KOCHER FORCEPS, CURVED, 1X2 T., 140MM	1
8	LANGENBECK RETRACTOR, 33X14MM, 210MM	1
9	KOCHER RETRACTOR, LARGE, 20 X 15 MM	1
10	WOUND AND TRACHEAL HOOK, BLUNT, 3 TEETH	1
11	WOUND AND TRACHEAL HOOK, SHARP, 1 TOOTH	1
12	LABORDE TRACHEA DILATOR, 125 MM	1
13	WEITLANER RETRACTOR, LT-RATCH.,3X4 SHARP PRONGS, 140 MM	1
14	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
15	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
16	COOPER SCISSORS, CVD., BL/BL, 145 MM	1
17	METZENBAUM SCISSORS, CURVED, 145 MM	1
18	DESCHAMPS LIGATURE NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, 215 MM	1
19	GUIDE PROBE,4,5MM BROAD, 195 MM	1
20	NELATON DIRECTOR, CVD., 160 MM	1
21	DE BAKEY NEEDLE HOLDER, TC INSERTS, 180 MM	1
22	COOPER SCISSORS, CVD., BL/BL, 145 MM	1
23	OCHSNER SUTURE FORCEPS,FLUTED 5 3/4"	1
24	NEEDLE ROUND CASE W/ COVER	1
25	STAINLESS STEEL STERILIZATION TRAY	1
J7	SCISSORS FOR BANDAGE	6
1	LISTER BANDAGE SCISSORS, 155 MM	1



Item Nr.	DESCRIPTION	QTY
J8	INDIVIDUAL INSTR.FOR BANDAGE TROLLEY	2
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	3
3	TONGUE DEPRESSOR, 145 MM	4
4	DISSECTING FORCEPS, STD. PATTERN, 145 MM	2
5	DISSECT. FORCEPS, W. SERRAT. ENDS, 200MM	4
6	TISSUE FORCEPS, STD. PATT.,1X2 T.,145 MM	2
7	PROBE, DOUBLE ENDED, 160MM, DIAM. 1,5 MM	2
8	PROBE, DOUBLE ENDED, 200MM, DIAM. 2,0 MM	2
9	VOLKMANN SPOON, SHARP, SIZE 000, 170 MM	2
10	VOLKMANN SPOON, SHARP, SIZE 1, 170 MM	2
11	VOLKMANN SPOON, SHARP, SIZE 3, 170 MM	2
12	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	2
13	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
14	LISTER BANDAGE SCISSORS, 200 MM	2
15	OPERATING SCISSORS, CVD., BLUNT/SHARP, 145 MM	1
16	STERILE SCALPEL W. PLASTIC HANDLE FIG.10	1
17	STERILE SCALPEL W. PLASTIC HANDLE FIG.11	1
18	STAINLESS STEEL STERILIZATION TRAY	1
J9	INCISION	2
1	GROSS POLYPUS, SPONGE AND DRESS.FORCEPS, 200 MM	1
2	SCALPEL HANDLE, NO. 3	1
3	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
4	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
5	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
6	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
7	PROBE, DOUBLE ENDED, 145 MM, DIAM. 1,5MM	1
8	VOLKMANN SPOON, SHARP, SIZE 000, 170 MM	1
9	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
10	SCALPEL HANDLE, NO. 4	1
11	BAUMGARTNER NEEDLE HOLDER, TC INSERTS, 145MM	1
12	LABORATORY DISH, 0.16 L	1
13	KIDNEY TRAY, 250 MM	1



Item Nr.	DESCRIPTION	QTY
K	PREPARATION SET	
K1	PREPARATION SET FOR ANESTHESIA	3
1	UNIVERSAL SCISSORS, 180 MM, BLACK	1
2	FERGUSON-ACKLAND MOUTH GAG, 145 MM	1
3	MAGILL CATHETER INTROD. FORCEPS, ADULT	1
4	RAMPLEY DRESSING FORCEPS, 180MM	1
5	DISSECTING FORCEPS, STD. PATTERN, 145 MM	1
6	OPERATING. SCISSORS, STR., BL/SH, 145 MM	1
7	CATHETER INTRODUC.FORC.,MAGILL,INFANT	1
8	KIDNEY TRAY, 250 MM	1



Item Nr.	DESCRIPTION	QTY
L	ICU SETS	
L1	CHANGE OF BANDAGE	2
1	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
2	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
3	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
4	MYRTLE LEAF PROBE, 145 MM	1
5	CRILE ARTERY FORCEPS, CURVED, 140 MM	1
L2	SUTURE REMOVING SET	2
1	OPERATING SCISSORS, CVD., BLUNT/SHARP, 145 MM	1
2	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
3	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
L3	CUT DOWN SET	2
1	GROSS POLYPUS, SPONGE AND DRESS.FORCEPS	2
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	SCALPEL HANDLE, NO. 3	2
4	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	1
5	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
6	BABY-MIXTER FORCEPS, 140 MM	1
7	KOENIG VEIN- AND WOUND RETRACTOR, SMALL	1
8	WOUND AND TRACHEAL HOOK, BLUNT, 2 TEETH, 165 MM	1
9	ALM RETRACTOR, 100 MM	1
10	SEMKEN FORCEPS, 125 MM	1
11	SEMKEN TISSUE FORCEPS, 1X2 TEETH, 125 MM	1
12	TISSUE FORCEPS, STD. PATT.,1X2 T.,145 MM	1
13	IRIS AND LIGATURE SCISSORS, STR., 110 MM	1
14	DISSECT. AND STRABISMUS SCISS.,CVD,115MM	1
15	DESCHAMPS NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, BLUNT, 215 MM	1
16	NEEDLEHOLDER, MATHIEU, TC INSERTS, 17CM,FINE	1
17	COOPER SCISSORS, CVD., BL/BL, 145 MM	1
18	OCHSNER SUTURE FORCEPS,FLUTED 5 3/4"	1
19	NEEDLE ROUND CASE W/ COVER	1
20	STAINLESS STEEL STERILIZATION TRAY	1



Item Nr.	DESCRIPTION	QTY
L4	TRACHEOSTOMY SET	2
1	GROSS POLYPUS, SPONGE AND DRESS.FORCEPS	2
2	BACKHAUS TOWEL HOLDING FORCEPS, 110MM,	1
3	SCALPEL HANDLE, NO. 3	1
4	HALSTED FORCEPS, CURVED, 1X2 TEETH,125MM	1
5	BABYCRILE ARTERY FORCEPS, CURVED, 140 MM	1
6	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	3
7	KOCHER FORCEPS, CURVED, 1X2 T., 140MM	1
8	LANGENBECK RETRACTOR, 33X14MM, 210MM	1
9	KOCHER RETRACTOR, LARGE, 20 X 15 MM	1
10	WOUND AND TRACHEAL HOOK, BLUNT, 3 TEETH	1
11	WOUND AND TRACHEAL HOOK, SHARP, 1 TOOTH	1
12	LABORDE TRACHEA DILATOR, 125 MM	1
13	WEITLANER RETRACTOR, LT-RATCH.,3X4 SHARP PRONGS, 140 MM	1
14	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
15	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
16	COOPER SCISSORS, CVD., BL/BL, 145 MM	1
17	METZENBAUM SCISSORS, CURVED, 145 MM	1
18	DESCHAMPS LIGATURE NEEDLE, FOR RIGHT HAND, CURVED TO LEFT, BLUNT, 210 MM	1
19	GUIDE PROBE,4.5MM BROAD, 195 MM	1
20	NELATON DIRECTOR, CVD., 160 MM	1
21	DE BAKEY NEEDLE HOLDER, TC INSERTS, 180 MM	1
22	COOPER SCISSORS, CVD., BL/BL, 145 MM	1
23	OCHSNER SUTURE FORCEPS,FLUTED 5 3/4"	1
24	NEEDLE ROUND CASE W/ COVER	1
25	STAINLESS STEEL STERILIZATION TRAY	1
L5	SCISSORS FOR BANDAGE	5
1	LISTER BANDAGE SCISSORS, 155 MM	1



Item Nr.	DESCRIPTION	QTY
L6	INDIVIDUAL INSTR. FOR BANDAGE TROLLEY	2
1	MAIER POLYPUS FORCEPS, WITH RATCHET, CVD	1
2	MAIER POLYPUS, SPONGE AND DRESS.FORCEPS	1
3	TONGUE DEPRESSOR, 145 MM	1
4	DISSECTING FORCEPS, STD. PATTERN, 145 MM	1
5	DISSECT. FORCEPS, W. SERRAT. ENDS, 200MM	1
6	TISSUE FORCEPS, STD. PATT.,1X2 T.,145 MM	1
7	PROBE, DOUBLE ENDED, 160MM, DIAM. 1,5 MM	1
8	PROBE, DOUBLE ENDED, 200MM, DIAM. 2,0 MM	1
9	VOLKMANN SPOON, SHARP, SIZE 000, 170 MM	1
10	VOLKMANN SPOON, SHARP, SIZE 1, 170 MM	1
11	VOLKMANN SPOON, SHARP, SIZE 3, 170 MM	1
12	KOCHER HYSTERECTOMY FORCEPS STR., 200 MM	1
13	PEAN ARTERY FORCEPS, STRAIGHT, 140 MM	1
14	LISTER BANDAGE SCISSORS, 200 MM	2
15	OPERATING SCISSORS, CVD., BLUNT/SHARP, 145 MM	1
16	STERILE SCALPEL W. PLASTIC HANDLE FIG.11	1
17	STERILE SCALPEL W. PLASTIC HANDLE FIG.10	1
L7	INCISION	2
1	GROSS POLYPUS, SPONGE AND DRESS.FORCEPS, 200 MM	1
2	SCALPEL HANDLE, NO. 3	1
3	HALSTED MOSQUITO FORCEPS, CURVED, 125MM	1
4	DISSECTING FORCEPS, SLEND. PATT., 145 MM	1
5	TISSUE FORCEPS, AM. PATT., 1X2 T., 145MM	1
6	DISSECT.SCISS.,METZENBAUM, TC INSERTS, CVD, 145 MM	1
7	PROBE, DOUBLE ENDED, 145 MM, DIAM. 1,5MM	1
8	VOLKMANN SPOON, SHARP, SIZE 000, 170 MM	1
9	DISS.SCISS.,MAYO-LEXER, TC INSERTS, CVD,165MM	1
10	SCALPEL HANDLE, NO. 4	1
11	BAUMGARTNER NEEDLE HOLDER, TC INSERTS, 145MM	1
12	LABORATORY DISH, 0.16 L	1
13	KIDNEY TRAY, 250 MM	1

