

المواصفات الفنية

ملحق رقم -٤-

جدول الاسعار

ملحق رقم -٥-

LOT 1

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17. Shaker incubator
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20. Vacum Pump
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22. Dispersers Basic
23. Dispersing tools 1-100ml
24. Dispersing tools 100-2000ml
25. Dispenser (1-1500ml)+ dispensing Tool
26. OHS Digital Stirrer
27. Muffle furnace
28. BOD (Biochemical Oxygen Demand) / respirometric analyzer system
29. Rotary Evaporator
30. Dispenser
31. Water Distiller
32. UltraPure Water
33. Thermohygro metre
34. Data Logger for temperature T and humidity TH
35. Heating Mantles for round flask
36. Heating Mantles for round flasks with Magnetic stirrer

37.	Heating Mantles for round flasks with Magnetic stirrer
38.	Heating Mantles for round flask,
39.	Heating Mantles Multi_place
40.	Heater and magnetic stirrer
<u>Only Brands from Europe, North America, or Japan are acceptable.</u>	
1. Analytical Balance	
Capacity 310g	
Readability 0.0001g	
Repeatability 0.0002g / Linearity 0.0004g/ Stabilisation time 4 sec	
High resolution graphic display 0.6" / 15 mm high digits	
Internal automatic calibration & External calibration for verification and adjustment with weights	
Large, grade 304 stainless steel pan for swift cleaning 3.1"/80 mm	
Level indicator and adjustable feet for proper balance setup and optimum weighing results	
RS-232 interface for fast connection to computers and printers	
Weighing units: Ct, custom unit, Dwt, g, GN, lb, mg, mm, oz, ozt, T, tl.H, tl.S, tl.T.	
Power supply 24V 50/60Hz 500mA adapter	
2. Precision Balance	
Capacity 4600g	
Readability 0.01g	
Repeatability 0.01g / Linearity 0.03g/ Stabilisation time 1 sec	
Backlit LCD with 24mm high digits	
Internal automatic calibration & External calibration for verification and adjustment with weights	
Large, grade 304 stainless steel pan for swift cleaning 185 x 185mm	
Level indicator and adjustable feet for proper balance setup and optimum weighing results	
USB and RS-232 interface for fast connection to computers and printers	
Weighing units: g, kg, ct, GN, N, dr, lb, oz, lb:oz, ozt, dwt, tl.T, tl.H, tl.S, T, custom unit	
Power supply 18VDC 830mA adapter	
3. Autoclave	
Capacity 47 L	
Stainless steel wire basket (2 pcs. included) and pressure vessel	
Pressure 1.2 kgf/ cm2 at 121°C / 2.0 kgf/ cm2 at 132°C, 0 - 3 kgf/ cm2	
Temperature range: Room temperature + 5°C - 132°C	
Powder-coated steel body	

Casters for excellent mobility
Solid and liquid mode
Digital backlight LCD display
Digital timer function – delay time and operation time can be controlled
Overheat and over-current protection
Automatic over pressure release valve & heat-protective lid
Error alarm, power failure and temperature error
Water low level detection
Electronic door lock sensing system (locks the door over 80°C)
CE certified
Steam condensing mechanism, to protect the user from dangerous high temperature steam
4. Autoclave Benchtop
Three times fractionated pre-vacuum
Stainless steel chamber
LCD display
Equipped with high quality and high performance pump
1 tray holder, 1 tray handle and 3 trays included
High quality water pump and valves
Independent steam generator
Two samples self-calibration
Overhead type water storage tank, easy to clean.
Drying procedure: Dry by vacuum.
Sterilization temperature: 121°C and 134°C
Test programs: Helix test, B&D test and Vacuum test.
Sterilization cycles: 9 cycles are available and 3 test programs.
It only have several buttons, very easy to use.
All cycles are fully automatic
Pressure protection locking system that ensures the door will not be opened once there is any pressure in chamber.
Sterilization documentation: Integrated Micro Printer and USB port to store the information of the programme cycle in flash memory.
The sterilization time and dry time can be adjusted by manual, ensure user obtain best sterilization effects according to private requirements.
Malfunction detection system, corresponding error code will be showed on the display once there's something goes wrong.

Safety:
Warning system prevents starting a cycle if door is not properly locked.
Triple Threat Protection for overheating and overpressure.
The pressure protection system will automatically cut off the electricity supply once the temperature of chamber inside is abnormally.
Temperature control system is using high quality PT1000 temperature sensor, ensure accurate and timely transmission of temperature fluctuation.
The safety valve will release steam in case the pressure inside chamber exceed normal levels.
Conform to CE and EN13060
Manufactured under ISO 9001 and ISO 13485 norms
Chamber Size: $\varnothing$ 247 x 460 mm (23 L)
External dimension: 690 x 480 x 455 mm, Netweight 51 kg
5. Benchtop Steam sterilizer/ Autoclave
Capacity 40L
110 °C to 135 °C (max)
Pressure: 0.4 to 2.2 bar
Heater/power: 2.5 kW
Outer: Epoxy powder coated steel. Inner: Stainless Steel 304
Microprocessor PID controller with self-auto tuning and LED (or LCD) display
Fully automatic cycle operation
Self-diagnostic and safety system: error codes, automatic ventilation, door locking
Square (bench-top / vertical) chamber
Exterior / Footprint Dimensions (W × D × H): 527 × 787 × 530 mm
Electrical supply: 220 V, 50/60 Hz
Standard accessories: 2 perforated trays + removable rack
6. Centrifuge
Maximum Capacity 10 tubes of 15 ml
RPM Max 8000rpm
230-220 V, 50-60 Hz
LED screen: Shows RPM/ RCF and time with speed programming in 50 RPM/ 10 xg steps.
Acoustic and visual messages on screen showing the equipment status to the user.
Microprocessor controlled, Induction motor maintenance free (brushless)with noise level: below 60 dB.
Start, stop, open lid and short spin with adjustable speed buttons.
Over-speed protection
Possibility to block or modify the speed during the cycle

Lid with security systems: Automatic lid lock system, motorized. Emergency lid-lock release. Locking and protection against opening along the run. Lid dropping protection.
Unbalance detection and switch off.
Chamber of centrifugation in stainless steel for easy cleaning.
Forced ventilation to reduce temperature increasing
Rotors and adapters autoclavable and easy to install by the user.

7. Centrifuge

Wide range of rotors for microplates, cryotubes, microtubes, tubes from 100 ml with options as versatile as con 28 x 15 ml. Tubes in a swing out rotor and 32 x 15 ml. Conical tubes in an angle fixed rotor, and rotors for high speed 85 ml, 80 ml, 50 ml.
Angle fixed rotor 28° for 6 tubes of 50 ml hermetic with REI System.
28 adapters for 28 tubes of 5ml vacuum and 5ml in rotor of 28x15ml
Screen Type: TFT touch screen
Max. Volume: 500 ml
Max. Speed: 26.480 xg / 16.500 RPM
Power supply: 220-230 V, 50-60 Hz
Acoustic and visual messages on screen showing the equipment status to the user.
Microprocessor controlled, Induction motor maintenance free (brushless) with noise level: below 60 dB.
PCBS: Progressive controlled acceleration and braking system up to 175 selectable ramps that prevents sample homogenization after separation
Start, stop, open lid and short spin with adjustable speed buttons.
Over-speed protection
Possibility to block or modify the speed during the cycle
Lid with security systems: Automatic lid lock system, motorized. Emergency lid-lock release. Locking and protection against opening along the run. Lid dropping protection.
Unbalance detection and switch off.
Chamber of centrifugation in stainless steel for easy cleaning.
Forced ventilation to reduce temperature increasing
Rotors and adapters autoclavable and easy to install by the user.

8. Mini centrifuge

Maximum Speed: 15,000 RPM
Maximum RCF (Relative Centrifugal Force): 15,596 ×g
Rotor Type: Fixed-angle
Timer: 30 seconds to 999 minutes, programmable in 1-second steps or hold position
Speed Programming: Adjustable in 100 RPM or 100 ×g increments
Control Interface: Microprocessor-controlled with LCD display
Display Information: Shows RPM/RCF, time, rotor status, and lid status

Noise Level: Below 60 dB
Lid with security systems: Automatic lid lock system, motorized. Emergency lid-lock release. Locking and protection against opening along the run. Lid dropping protection.
Unbalance detection and switch off.
Forced ventilation to reduce temperature increasing
9. Mini Centrifuge + vortex
Max Speed 2,800 rpm (50 Hz) / 3,500 rpm (60 Hz)
Capacity 12 × 1.5 ml or 12 × 0.5 ml and 12 × 0.2 ml microtubes
Max RCF: 500 × g (50 Hz) 700 × g (60 Hz)
Operation Modes Continuous and impulse
Automatic rotor stop when lid is opened
Dual-functionality (centrifuge + vortex mixer)
10. Centrifuge
Maximum Speed: 18,100 rpm
Maximum RCF: 31,865 × g
Temperature Range: -20°C to +40°C
Cooling Performance: Maintains 4°C at maximum speed
Cooling System: Dynamic refrigeration with R-449A HFO refrigerant (CFC-free)
Display: LCD screen displaying RPM/RCF, time, temperature, and braking
Timer: Programmable from 5 seconds to 99 minutes or 1 minute to 99 hours
Memory: 16 programmable memory slots
Automatic lid lock, unbalance detection Overspeed protection, emergency lid release.
Stainless steel chamber for easy cleaning
Noise Level: <65 dB
Unbalance detection and switch off.
Forced ventilation to reduce temperature increasing
Rotors and adapters autoclavable and easy to install by the user.
11. Hematology centrifuge
Max Speed 18,100 rpm
Max Capacity 6 × 50 mL
Speed programming in 10 RPM/ 10 xg steps
Timer: from 5 sec. to 99 minutes or from 1 min. to 99 hours and indefinite time
Temperature Range -20 °C to +40 °C in 1 °C increments
Refrigerant Gas R-449A (HFO, CFC-free)
LCD showing RPM/RCF, time, temperature, acceleration & deceleration (PCBS
Progressive Controlled Braking System with up to 175 selectable braking ramps
16 programmable memory settings
Acoustic & visual messages / indicators for status, errors

Supports rotor options; has adapters/rotors for microtubes, conical tubes.
Microprocessor controlled.
Induction motor maintenance free (brushless).
Rotors list in memory.
Noise level: below 60 dB.
Lid with security systems: Automatic lid lock system, motorized. Emergency lid-lock release. Locking and protection against opening along the run. Lid dropping protection.
Unbalance detection and switch off
Start, stop, open lid and short spin with adjustable speed buttons
12. Microplate centrifuge
Max Speed 4,500 RPM
Max Capacity up to Up to 10 / 6 / 2 / 2 microtiter plates, depending on plate height and configuration. Specifically: 10 standard plates, 6 deeper plates, 2 deep-well plates (h: 80 mm) in the same rotor
Swing-out rotor
Maximum relative centrifugal force (RCF): $3,758 \times g$
Temperature range from -20°C (-4°F) to 40°C (104°F) in 1°C/1°F steps. Programmable in °C o °F
Minimum temperature guarantee at maximum speed: +4 °C
Interface & features: Colour TFT touchscreen; shows rpm/RCF, time, temperature, acceleration / deceleration; speed programming
Automatic lid lock, unbalance detection, stainless steel chamber.
Noise level < 60 dB
Induction motor maintenance free (brushless).
Acoustic & visual messages / indicators for status, errors
Temperature sensor inside the chamber.
Gas R 449A HFO (CFC free)
13. Vortex mixer
Variable speed operation, electronically controlled up to 3000 rpm
Automatic start in touch mode or continuous operation
Large choice of accessories to suit tubes, plates and flasks
Universal voltage / frequency model
Accessories fit by simple pressure
Optimum resistance to chemicals from technopolymer casing
Excellent stability with zinc alloy base
Large, anti-slip rubber feet for staying in required position

14. Water Bath 6L
Capacity: 6 L
Temperature range: Ambient 5°C 100°C
Accuracy: $\pm 0.1^{\circ}\text{C}$
Bath Dimensions: 300×155×150 mm
Heater: 1.2 kW
Digital Fuzzy Controller with Jog - Shuttle Switch (Turn + Push)
Digital LCD Display
Digital timer: 99hr 59min
Safety Device: Over Temperature and Over Current Protector, Sensor Error Detector
Internal material: Stainless Steel
CE certified
15. Water Bath 11L
Capacity: 11 L
Temperature range: Ambient 5°C 100°C
Accuracy: $\pm 0.1^{\circ}\text{C}$
Bath Dimensions: 302×240×150 mm
Heater: 1 kW
Digital Fuzzy Controller with Jog - Shuttle Switch (Turn + Push)
Digital LCD Display
Digital timer: 99hr 59min
Safety Device: Over Temperature and Over Current Protector, Sensor Error Detector
Internal material: Stainless Steel
With Lid
CE certified
16. Ultrasonic Bath
Capacity 6L
Ultrasonic frequency 40 kHz
Heating power 172 W
Temperature range ambient to 85 °
Timer 0 – 30 minutes
Stainless steel housing / tank, finished surface
Analog controller (knobs / switches) for timer, temperature, output control
Flat lid included; optional wire baskets; CE certified; unique serial number for traceability
Power supply 230 V, 50/60 Hz
17. Shaker incubator

Capacity 5 pcs flask holder for 100 ml flasks, 16 pcs. flask holder for 250 ml flasks, 12 pcs. flask holder for 500 ml flasks, 9 pcs. flask holder for 1000 ml flasks
Temperature range Room temperature +5°C - 60°C
Temperature accuracy / uniformity ± 0.2 °C accuracy at 37 °C; uniformity ± 0.5 °C at 37 °C
Shaking motion: Orbital motion
Shaking stroke / orbit 25 mm
Shaking speed range 30 – 250 rpm
Timer up to 99 h 59 min; continuous mode; alarm & error status; automatic stop when door opens / safety interlocks
Digital fuzzy controller, Jog-Shuttle switch (turn + push) for parameter changes
LCD display with backlight
Overheat protection, overcurrent protection, leakage breaker, auto stop on door open
Interior: stainless steel Exterior: powder coated steel
18. Incubator
Capacity 105L
Temperature range Ambient +5°C to 70°C
Temperature Uniformity/stability: ± 0.2 °C at 37°C/ ± 0.3 °C at 50°C
Heating Time 25 min to 37°C, 40 min to 50°C
Digital fuzzy control with Jog-Dial
RS232C for remote monitoring
Chamber material stainless steel
2 PE-coated steel wire shelves
Door with inner tempered glass with silicone sealing
CE, UL/CUL
Power supply 230 V, 50/60 Hz
19. Vacuum Pump
Piston-powered, oil-free vacuum pumps.
Quiet and low vibration
Compact and light weight
Oil free and Maintenance-free
Max. vacuum: 670 mm Hg 50 Hz 60 Hz
Max flow rate: 17 l/min 20 l/min
Horse power: 1/8 HP
Pole: 4 P
Net weight: 3,5 kg
Port thread: 5/16 inch (8 mm)
Noise level: 50 db