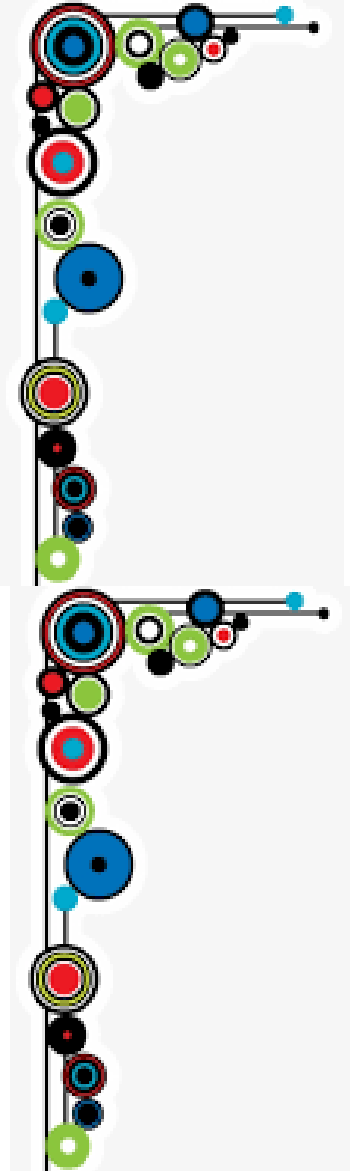


**IB 2023-19- PROCUREMENT OF VARIOUS LABORATORY  
EQUIPMENT**



***SECTION 7 –  
TECHNICAL  
SPECIFICATIONS***

## TECHNICAL SPECIFICATIONS

### IB 2023-19- PROCUREMENT OF VARIOUS LABORATORY EQUIPMENT

Item	Specifications	Statement of Compliance
		<p><i>[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]</i></p>
<p><b>1</b></p>	<p><b>1-unit Vertical Laminar Flow Hood/ Clean Bench</b>  <b>Specifications:</b> with memory function in case of power failure; audio and visual alarm (abnormal airflow velocity); interlock function: V lamp and blower; LED lamp; external size (wxdxh): at least 1500x700x(2090-2340)mm; internal size (wxdxh): at least 1400x575x625mm; work surface height: at least 750-1010mm; maximum opening: 480mm; display: LCD display; airflow velocity: at least 80-99 fpm; material: working area: 304 stainless steel; main body: 1.2mm cold-rolled steel with anti-bacteria powder coating; front window: motorized; 55mm toughened glass; anti-UV; polyester fiber pre-filter; HEPA filter: one, 99.995% efficiency at 0.3um; noise: ≤67dB(A); illumination: ≥300lx; waterproof sockets: one socket (double type), American standard, maximum power: 500W; power supply: 220 VAC; consumption: 950W; UV lamp: 40Wx1; LED lamp: 18Wx1; standard accessory: manually height adjustable base stand, LED lamp, UV lamp, wind speed sensor, waterproof socket; gross weight: at least 280kg, with AVR, with warranty and installation</p>	

2	<p><b>1-unit UV-VIS Spectrophotometer</b></p> <p>- <b>Specifications:</b> wavelength range: 190–1100 nm; wavelength accuracy: ±0.1 nm, 10, 100, 200, 400, 800, 1200, 2400, 3600, 6000 nm/min; spectral bandwidth: 0.5 nm, 1 nm, 1.5 nm, 2 nm, and 4 nm; optical system: Czerny-Turner, Dual Beam Monochromator; light source: Tungsten-Halogen and Deuterium Lamps; UV-Vis DS5; Silicon Photodiode detectors; cuvette type: quartz or glass; with built-in touch screen monitor or better connected to PC with software installation, with AVR, with warranty and equipment training</p>	
3	<p><b>1-unit Vertical Autoclave</b></p> <p><b>Specifications:</b> capacity: 100 liters; temperature range: 105–134 °C; sterilization temperature: 134°C; heat average: ≤1°C; working pressure: 0.22 MPa; maximum working pressure: 0.23 MPa; timer range: 0–60 minutes; overall dimension (l×w×h): at least 590x590x1080mm; weight: at least 85kg; power: 4500W; power supply: AC220V 50Hz; stainless steel structure; hand wheel type; door safety lock system; digital display; automatic exhaust system for cold air and pressure; over-temperature and over-pressure auto-protection; alarm function for completion of process and low water level; self-inflating-type seal; drying system, with accessories for water source inlet, with AVR, with warranty, installation, and equipment training.</p>	
4	<p><b>1-unit Continuous Stirred Tank Fermenter/ Bioreactor</b></p> <p>-Specifications: Tank: 3 liters nominal volume, charging factor ≥80%, high-temperature resistant borosilicate glass, AISI 316L stainless steel tank lid; Controller: stirring system: high precision servo motor, rotating speed 0~1200rpm, top mechanical stirring, single-layer inclined blade stirring paddle, flat blade stirring paddle; temperature control system: pt100 platinum electrode (high temperature quick release form) sensor; insulation blanket electric heating method, +5~65°C; foam system: highly sensitive defoaming probe, mechanical defoaming probe, mechanical defoaming paddle with rake compression, peristaltic pump flow addition; feeding system: peristaltic pump flow addition, manual or automatic control; pH detection and control system: Swiss Mettler Toledo, 2.00–12.00 pH, 0–130 °C sterilization temperature; DO2 detection and control system: Swiss Mettler Toledo, 0~200% control range, 0~130°C; BIOF-D2 Controller, LF-Control 2.0 control system: Adopy HSSP standard spraying process, Siemens PLC control system, 10.1-inch advanced HMI touch screen, curve display</p>	

	<p>function, historic data recording and export; air intake system: flowmeter and filter; sampling: sterile sampling system, autoclavable, dual design, users can inoculate with traditional flame inoculation; chassis at least 565x310x680mm; power supply: 220VAC, with AVR, with warranty, installation, and equipment training</p>	
<b>5</b>	<p><b>1-unit Water Purification System</b>  - <b>Specifications:</b> Applications: Microbiology, Cell Culture; Bacterial retention: 99%; Feedwater connector: 3/4 in. NPT; feedwater source/input: tap water; Product Water Type/output: both type I and type II water; Resistivity: Type 1: 18.2 Mohm.cm at 25°C.  Conductivity: Type 1: 0.055µS/cm; endotoxin concentration: 0.005 EU/mL  Bacterial content: &lt;0.01 CFU/mL; total organic carbon: 1 to 5 ppb; Feedwater pressure: 1 to 6 bar; operating pressure: 1 to 6 bar; Permeate performance: 3 L/hr. at 10°C; flow rate: 0.6 L/min.; RO flow rate: 3 L/hr.; particle &gt;0.2µM/mL: &lt;1; includes: internal 6 L tank with vent filter, RO/pretreatment cartridge, ultrapure polisher cartridge, sterile 0.2µm filter, pressure regulator, and UV lamp; hand dispenser kit at least 3m maximum length from the unit; Power consumption: 0.06 kW; Electrical requirements: 220V; Dimensions (wxh): at least 305x545mm; Depth: at least 400 mm; Net weight: at least 22 kg; preferably with AVR, With warranty, installation, and equipment use training</p>	
<b>6</b>	<p><b>1-unit Ultra-low Freezer</b>  <b>Specifications:</b> Sizes: external size of at least 700x700x1,580mm; internal size of at least 458x430x788mm; vertical; capacity of at least 158liters; temperature range -40-86°C accuracy 0.1°C, microprocessor control, LED display; high temperature, sensor failure; direct refrigeration, mixture refrigerant; 1 set compressor, copper condenser, and evaporator; unibody design and mono-assembly foaming (rigid polyurethane insulation material) body, cold-rolled steel with an antibacterial powder coating on the external body; lockable door with 4 casters; 3 chambers with inner door; 2 pieces of shelf; 480W consumption; 220V power supply; 72-hour battery backup for power failure alarm; gross weight of at least 155kg, with AVR, warranty, installation, and equipment training</p>	

7	<p><b>1- unit Oven Sterilizer</b>  <b>Specifications:</b> CRC/mild steel with powder coating; temperature range: 10°C to 250°C; temperature stability: <math>\pm 1^\circ\text{C}</math>; with mains and load indicators, fan switch and main switch, temperature controller; power supply: 220 VAC; single phase; 60 Hz; double metal sheet body with AIS pockets; three fans cooling body; digital temperature control with display; thermostat added to control the transfer of heat for fine temperature control; insulated glass door window to view the sample; perforated stainless steel removable two racks; temperature over shoot high and low temperature alarm; external size (wxdxh): at least 500x550x735; internal size (wxdxh): at least 350x350x350; volume capacity of at least 45–65 liters, with AVR, with warranty, installation, and equipment training</p>	
8	<p><b>1-unit Laboratory Refrigerator</b>  <b>Specifications:</b> Capacity: at least 510 liters; shelves: 8; doors: 2; load in KW: 2; Exterior material: pre-painted galvanized iron at least 1.2 mm thick sheets powder-coated with coated-resistant paint; interior material: stainless steel 304 mar finish 0.91 mm thick sheets; shelves material: stainless steel wire mesh shelves; insulation material: PU foam: insulation size from the back, from sides, door: 60mm, 60mm, 60mm; 1 number of compressors: 1; with heat exchanger; with oil separator; refrigerant: R134A, CFC- and HFC-free; temperature range: ambient to at least 2°C; temperature uniformity: <math>\pm 1^\circ\text{C}</math>; temperature accuracy: <math>\pm 0.5^\circ\text{C}</math>; controller type: microprocessor-based digital controller; display type: LCD; data logging: RS 232 port; with 21 CFR; with castor wheels; lock type: single hand-operated compressed door latch; gasket material: silicon; defrost type: automatic; phase: single; voltage: 220V; with warranty and installation</p>	
9	<p><b>1-unit Shaker Incubator</b>  <b>Specifications:</b> Controller: PID; display: LCD; circulation mode: forced convection; rotary shaking; unishaft drive; temperature range: 5~60°C; accuracy: <math>\pm 0.1^\circ\text{C}</math>; temperature uniformity: <math>\pm 1^\circ\text{C}</math>; 30~300rpm rotating speed: rotating accuracy: <math>\pm 1\text{rpm}</math>; vibration range: 25mm; CFC-Free refrigerant; 200W cooling consumption; heating consumption: 800W; timing range: 0~999.59h; shaking plate size: 780x480mm; standard capacity: 250mlx40pcs; maximum capacity: 2000mlx12 or 1000mlx28 or 250mlx40; mirror stainless steel internal material: cold-rolled steel with anti-bacterial powder-coated external</p>	

	material; safety functions: audio and visual alarm for over-temperature; alarm for over-speed; independent over-temperature protector; shutdown protection for door opening; leakage or over-current protection; power supply: 220V; internal size (wxdxh) mm: at least 870x550x395; external size (wxdxh) mm: at least 1150x780x640; gross weight (kg): at least 190, with AVR, with warranty, installation, and equipment training	
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*I have hereby certified to comply with the above Technical Specifications*

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*Name of Bidder over Printed Name*

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*Designation*

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*Date*