IB 2021-34 – PROCUREMENT OF VARIOUS LABORATORY EQUIPMENT

SECTION VII- TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

IB No. 2021-34 PROCUREMENT OF Various Laboratory Equipment

Item	Specifications	Statement of Compliance
		[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.]
1	**Laminar Flow Vertical Flow Cabinet**. Technical Specifications: Laminar Flow Vertical Flow Cabinet, single person double sides. Airflow Direction: vertical performance air cleanness level 100; Bacteria <0.5/petri dish (φ90mm); wind speed 0.2-0.6m/s (adjustable); Noise level <62db; vibration & semi-peak value ,3um; Illumination intensity >300LX (work center); Work surface bearing 50kg; Structure work surface stainless steel; shelf material spray cold rolled steel; Work door tempered glass; HEPA filter 820x600x50mm; Pre-filter 520x490x5mm; LED Lamp 20W; UV Lamp 20W; Fan motor 300W ; Specifications working area (WxDxH) at least 780x670x550mm. Exterior size (WxDxH) atleast 935x725x1690mm: Max power at least 0.4kw; Power source AC 220C; 1.8A (50/60Hz); compatible AVR; includes industry standard installation and warranty.	
2	**Muffle Furnace** Technical Specifications: • Benchtop Muffle Furnace, 1200°C Operating Temperature, Modern Fiber/ Fiberbrick Muffle Design, 220V/23A with exhaust port, Furnace is ideal for soil and plants sample ashing determinations. The furnace has temperature display. • Temp. range: 300-1200 °C, Temp. resolution: 1°C, Fluctuation: ± 5 °C, shell material: spraying cold roll steel. Heating mode: 3 side heating wire. • Heating device: nickel-chromium alloy wire, chamber material: aluminum silicate, Chamber size: at least 7 liter capacity, Timer: 0-9999 min, sensor: K, Temp control: microcomputer PID • Over Temperature alarm, Standard configuration: observation window/vent, chimney block • Working Chamber Dimensions: at least 20x30x12cm	

	• Power: AC 220V/23A, 50/60 Hz, with compatible AVR; includes industry standard installation and warranty	
3	**Cold Storage Top Freezer** Technical Specifications: Top freezer, single door, inverter technology, Nano Deodorizer, LED Lighting, 2-way Fresh Room, Tempered Glass Shelves, High Rotation Speed Compressor, Adjustable Freezer/ refrigerator Room shelves, silent operation (at least 36 dB), extra eco function. At least 6 cu.ft; Rate input: up to 140W; inverter operation; no frost cooling system; automatic defrosting . Includes: industry standard warranty on parts and services, compatible AVR and training on equipment use.	
4	**Vortex Mixer: Multi-Tube Mixer** Technical Specifications: • Mixing speed: 300rpm to 3,000rpm (increment: 10rpm); Touch vortexing speed: 3,500 rpm; Power supply: 220V/120V. 50/60 Hz, 45W. Adjustable mixing time: 15s to 99h59min; continuous; Mixing & amp; vortexing radius: 1.5mm (3mm mixing orbit). • Dimensions (WxDxH)mm 170x240x140; weight: 4.5 kg. with complete set of tubes and tube holder: 96x0.2ml PCR Tube Holder; 24x0.5ml Tube Holder; 24x1.5ml/ 2.0ml Tube holder; 8x15ml Tube holder; 3x50ml Tube holder. • Applications: Mixing PCR preparations; resuspending pellets (e.g., bacteria, DNA, cell culture pellets); Incubation (e.g., ELISA assays); Colorimetric assays (e.g., Bradford, Lowry, BCA); Reporter gene assays (e.g., galactosidase, luciferase); mixing restriction digestion preparations; vortexing numerous tube formats (e.g., 15ml and 50ml conical tubes). • With compatible AVR, includes industry standard installation and warranty	
5	**MICRO VOLUME PIPETTE 2.0-20 MicroL** Technical Specifications: • Adjustable volume; Manual air displacement; Number of channels: 1; Ejector type: 1; With pipette rack, pipette tips compatible for each volume, pipette tips rack • Features: Updated piston assembly with more responsive springs which reduces pipetting forces. The tip ejector is also adjustable for right- or left-handedness. The patented locking system fully disconnects the operating rod from the counter assembly during pipetting so that once locked into place, the volume cannot be accidentally changed, preventing accidental volume drift during pipetting tasks. Pipettor features a 2D identification bar code for easy traceability that covers the product part number, date of manufacturing and serial number.	
6	**Micro Volume Pipette – 20-100 microL** Technical Specifications: • Adjustable volume; Manual air displacement; Number of channels: 1; Ejector type: 1; With pipette rack, pipette tips compatible for each volume, pipette tips rack	

	• Features: Updated piston assembly with more responsive springs which reduces pipetting forces. The tip ejector is also adjustable for right- or left-handedness. The patented locking system fully disconnects the operating rod from the counter assembly during pipetting so that once locked into place, the volume cannot be accidentally changed, preventing accidental volume drift during pipetting tasks. Pipettor features a 2D identification bar code for easy traceability that covers the product part number, date of manufacturing and serial number.	
7	**Compact Biological Trinocular Digital Microscope** Technical Specifications: Image previewing rate: 30fps at full resolution; White balance setting: manual/automatic/ preinstall operation; Pixel size: 2.2umx2.2um; ADC: 12 bit; Dynamic Range: 71dB; SNRMAX: 40.5dB; Shutter type (GRR); Color Filter Array: RGB Bayer Pattern; Connection: c-mount interface; with Digital LCD Pad (at least 11" or higher), 1.2GHz (ARM Cortex-A8 Core), 1GB (DDR3); 5MP, with cordless mouse connecting to the microscope; Esupport External TF Card: max capacity of 32GB; onboard G-sensor: support X/Y/Z 3 axis gravity sensor; with onboard electronic pass; Temp: -30°C to 70°C; with minimum of 1 year manufacturer's warranty on microscope and accessories.	
8	**Binocular High Power Compound Microscope** Technical Specifications: Eyepiece details: DIN Standard microscope objectives: 4x, 10x, 40x, 100x (oil immersion lens) with spring that protects the glass specimen slide and lens; Microscope Head: 45° inclined binocular head rotatable 360°, 55 to 77mm inter pupillary distance; Stage specs: graduated mechanical movable (up/down and longitudinal y-direction) 142x132mm, low position coaxial X-Y slide. Stage movement); Coarse Adjustment Travel Range: 20mm (Stage movement distance up/down); fine adjustment division: 0.002mm; at least 1-year warranty on microscope and accessories	
9	**Alcohol Distiller** Technical Specifications: 35 Liters capacity, food grade 304 stainless steel, red copper condenser pipe, bucket size: 30cmx50cm, with accessories (100ml graduated cylinder, submersible pump, thermometer, raw material belt, alcohol meter, filter bag, check valve, silicone plug, ferrule, silicone tube, grate bracket and user manual)	
10	**Wireless Weather System** Technical Specifications: Package Dimensions: (Length x Width x Height): 445 mm x 264 mm x 406 mm Components: Sensor Suite, Console *Sensor Suite:* Operating Temperature: -40° to +150°F (-40° to +65°C) Non-operating Temperature: -40° to +158°F (-40° to +70°C) Current Draw : 0.14 mA (average), 30 mA (peak) at 4 to 6 VDC Solar Power Panel : 0.5 Watts (ISS SIM), plus 0.75 Watts (Fan-Aspirated) Battery (ISS SIM /Fan-Aspirated) : CR-123 3-Volt Lithium	

	cell / 2 - 1.2 Volt NiMH C-cells Battery Life (3-Volt Lithium cell): 8 months without sunlight, >2 years depending on solar charging Battery Life (NiMH C-cells, Fan-Aspirated) : Up to 2 years Fan Aspiration Rate Intake Flow Rate, full sun: 190 feet/min. (0.9 m/s) Intake Flow Rate, battery only: 80 feet/min. (0.4 m/s) Sensor Chamber Flow Rate, full sun : 500 feet/min. (2.5 m/s) Sensor Chamber Flow Rate, battery only : 180 feet/min. (0.9 m/s) Connectors, Sensor : Modular RJ-11 Cable Type : 4-conductor, 26 AWG Wind Speed Sensor: Solid state magnetic sensor Wind Direction Sensor : Wind vane with potentiometer Rain Collector Type: Tipping spoon, 0.2 mm, 33.2 in^2 (214 cm2) collection area Temperature Sensor Type: PN Junction Silicon Diode Relative Humidity Sensor Type : Film capacitor element With UV sensor and solar radiation sensor Housing Material: UV-resistant ABS, polypropylene able Length: 240 feet (73 m) ***Console:*** Operating Temp.: +32° to +140°F (0° to +60°C) Non-Operating (Storage) Temp. +14° to +158°F (-10° to +70°C) Current Draw : 0.9 mA average, 30 mA peak AC Power Adapter : 5 VDC, 1000 mA, regulated Batteries : 3 C-cells Battery Life : up to 9 months Connectors : Modular RJ-11 Housing Material : UV-resistant ABS plastic Console Display Type : LCD Transflective Display Backlight : LEDs Console Dimensions Console with antenna down (L x H x D): 270 mm x 156 mm x 41 mm Console with antenna extended up (L x H x D) : 270 mm x 245 mm x 41 mm Display (L x H) : 151 mm x 86 mm Weight (with batteries) : 0.85 kg Data Displayed on Console: General data, Barometric Pressure, Clock, Dewpoint, Forecast, Heat Index, Humidity, Moon Phase, Rainfall, Rain Rate, Rain Rate, Solar Radiation, Sunrise and Sunset, Temperature, Temperature Humidity Sun Wind Index, Ultra Violet (UV) Radiation Dose, Ultra Violet (UV) Radiation Index, Wind Chill, Direction and Speed. Includes: Weather Link Software; Software Main Type: Management; Operating System Supported: Windows; Software Sub Type: Data Management; Platform Supported: PC; With warranty	
11	**Compound Microscope** Technical Specifications: Binocular Tube Type Magnification: 4x/10x/40x/100x; 360^0 rotatable; 4 Fold lens revolving unit; Finite optical system Eye distance (max): 75 (min): 50; Illumination Type: LED; Dimensions: WxDxH: 320 x 180 x365mm Plug Type: Type C-European Plug, Type G-British 3 pin; Rechargeable Battery 220V; With warranty	
12	**Oven Dryer** Technical Specifications: Capacity: 25L	

	Temp. Range: 50~200℃; Temp. Precision: 0.1℃; Temp. Fluctuation: ±1℃; Ambient Temp. 5~40℃
	Over-temperature protection; Timing Range: 1~9999min; Shelves No. 2 pcs
	Stainless steel inner chamber, Adjustable shelves
	Power Consumption: 650W; Power Supply: 220V
	  Internal Size(W*D*H) mm: 300*300*280;
	  External Size(W*D*H)mm: 580*500*450;
	  Gross Weight 51kg.; External Material: cold-rolled steel with anti-bacteria powder coating
	PID Control with LED Display; Double-layer glass observation window, adjustable airtight buckle Lock; With warranty	

13	**Coffee/ Grain Grinder**
	Technical Specifications:
	  Heavy Duty; Food Grade Stainless Body and Hopper/Funnel; Rotating and Static disc: cast iron
	  Coarse and Fine regulating valve; Lock door screw;
	Speed: 1,420 rpm; Yield: 20-40 kg/h
	  Output Grind/Powder size: Min. No.50 mesh, Max: No. 200 mesh
	  Dimensions: 530 x 230 x 510 mm;
	  Weight: 38kg (approx.)
	  Voltage: 220V; Power: 1.1 KW; With warranty	

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Name of Bidder over Printed Name

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Date