



Tender Ref. No. CARS/ST/P-352/OTM/2023

Date: 25-08-1430 e¹/₂vã
10-12-2023 wL^aóvã

Invitation for Tender (National)

Sealed Tenders are hereby invited from reputed Supply, Installation, Testing and Commissioning of Equipment for different laboratory at CARS, University of Dhaka.

1.	Ministry/Division	Ministry of Education		
2.	Agency	University of Dhaka		
3.	Procuring Entity Name	Centre for Advanced Research in Sciences (CARS), University of Dhaka.		
4.	Procuring Entity Code	352		
5.	Procuring Entity District	Dhaka		
6.	Invitation for	Supply, Installation, Testing and Commissioning of Equipment for different laboratory		
7.	Invitation TenderRef No.	CARS/ST/P-352/OTM/2023		
8.	Date :	10-12-2023 wL ^a óvã		
KEY INFORMATION				
9.	Procurement Method	Open Tendering Method		
FUNDING INFORMATION				
10.	Budget and Source of Funds	Revenue Budget (RB)		
11.	Development Partner (if applicable)	N/A		
PARTICULAR INFORMATION				
12.	Project/Programme Code (if applicable)	Not used		
13.	Project/Programme Name (if applicable)	Not Applicable		
14.	Tender Package No.	Single		
15.	Tender Package Name	Supply, Installation, Testing and Commissioning of Equipment for different laboratory		
16.	Tender Publication Date	10-12-2023 wL ^a óvã		
17.	Tender Last Selling Date	14-01-2024 wL^aóvã Up to office hours		
18.	Tender Closing Date and Time	Date :		Time:
		15-01-2024 wL^aóvã		10:30 am
19.	Tender Opening Date and Time	15-01-2024 wL^aóvã		11:00 am
20.	Name & Address of the Office(s)	Address(s)		
	-Selling Tender Document (Principal)	(i) Centre for Advanced Research in Sciences (CARS), University of Dhaka.		
	-Receiving Tender Document	(i) Centre for Advanced Research in Sciences (CARS), University of Dhaka.		
	-Opening Tender Document	Centre for Advanced Research in Sciences (CARS), University of Dhaka.		
21.	Place/Date/Time of Pre-Tender Meeting	Name/Address	Date:	Time
INFORMATION FOR TENDERER				
22.	Eligibility of Tenderer	(i) Up to date Trade License (ii) Up to date VAT Registration Certificate (iii) Up to date Income Tax Clearance Certificate (iv) Experience Certificate in similar works of comparable value in a single tender in last five years as mentioned in TDS (v) Bank solvency Certificate (vi) Manufacturer Authorization letter for applicable Equipment. (vii) Applicant must be owner of the firm or Representative of the firm will be authorized by the owner of the Firm signature with name and seal of the owner.		



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		viii) Country of origin and made in country will be same. If differ then explain clearly with black and white. (ix) catalogue of the Equipment. (xii) Warranty: 2 years, Installation and training must be provided by the supplier (free of cost).		
23.	Brief Description of Goods	Supply, Installation, Testing and Commissioning of Equipment for different laboratory		
24.	Brief Description of Related Services	Supply, Installation, Testing and Commissioning of Equipment for different laboratory		
25.	Tender Document Price TK. 3,000.00	The Price of Tender Schedule as mentioned is to be deposited in University of Dhaka, A/C No. 36000392, Janata Bank, T.S.C branch, Dhaka University. Tender schedule and terms and conditions may be collected on submission of the deposit receipt from the above mentioned offices on all working days except on the date fixed for submitting the tender.		
26.	Identification/Name of Goods	Location	Tender Security Amount in Taka	Completion Time
	Equipment	CARS, DU.	Equipment 24,400/-	90 days from the date of issuance a Purchase order (Supply of Goods)
PROCURING ENTITY DETAILS				
27.	Name of Official Inviting Tender	Professor Dr. Ishtiaque M. Syed		
28.	Designation of Official Inviting Tender	Director		
29.	Address of Official Inviting Tender	Centre for Advanced Research in Sciences (CARS), University of Dhaka.		
30.	Contact details of Official Inviting Tender	9661900/Ext. 4616/ 4636		
31.	The procuring entity reserves the right to accept or reject any or all tenders without assigning any reason whatsoever. The procuring authority also reserves the right to omit, increase or decrease the quantities of Equipment from the Tender. The suppliers must abide by the decision of the University authority. Tender form, schedule of requirements of supply, tender notice and terms and conditions etc. will form the integral part of the tender. The suppliers should write the name of the item and the name of the firm on the envelope clearly. Vat, Income Tax and other Taxes, if any, imposed by the Govt. will be deducted from their bills as per Govt. rules.			

SD/-

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Director

Centre for Advanced Research in Sciences (CARS)
University of Dhaka



Section 6. Schedule of Requirements

This Section provides the List of Goods and Delivery Schedule and List of Related Services and Completion Schedule and must be carefully prepared by a Procuring Entity for each object of procurement.

Invitation for Tender No :

Date :

Tender Package No :

A. List of Goods & Related services and Delivery Schedule

Item No.	Description of Item	Unit of Measurement	Quantity	Point of Delivery	Delivery Period Required
1	2	3	4	5	6

Equipment

1	<p>Horizontal Electrophoresis system (with power Pac) FEATURES: *Polycarbonate is injection molded at one time without leakage *The Cooling hole design on the upper cover effectively avoids the condensation of water vapor. *Special telescopic elastic glue maker to ensure clean and no leakage of glue. *The limit function prevents the positive and negative electrodes from being reversed. *Highly flexible wire, power-off design when opening the cover to ensure safety. *The electrode head can be replaced for easy maintenance. *99.00%, high-purity platinum electrode, the best electrical conductivity, corrosion and aging resistance. TECHNICAL PARAMETERS:</p> <table border="1"> <tbody> <tr> <td>Gel Trays (W x L)</td> <td>Minimum 75 X 60mm</td> </tr> <tr> <td>Buffer Volume</td> <td>Minimum 300ml</td> </tr> <tr> <td>Comb Thickness</td> <td>1&1.5mm</td> </tr> <tr> <td>Comb Throughout</td> <td>6 ,11 samples</td> </tr> <tr> <td>NO. Of Samples</td> <td>6-22</td> </tr> <tr> <td>Standard Accessories</td> <td>Body tank with Electrode *1, Cap*1, Gel Tray*1, Gel Box *1, Gel handling plastic</td> </tr> </tbody> </table>	Gel Trays (W x L)	Minimum 75 X 60mm	Buffer Volume	Minimum 300ml	Comb Thickness	1&1.5mm	Comb Throughout	6 ,11 samples	NO. Of Samples	6-22	Standard Accessories	Body tank with Electrode *1, Cap*1, Gel Tray*1, Gel Box *1, Gel handling plastic	No's	01
Gel Trays (W x L)	Minimum 75 X 60mm														
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Comb Throughout	6 ,11 samples														
NO. Of Samples	6-22														
Standard Accessories	Body tank with Electrode *1, Cap*1, Gel Tray*1, Gel Box *1, Gel handling plastic														



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		Spatula, Comb for 6-22 samples		
2	<p>LCD Digital Magnetic hotplate Stirrer</p> <p>FEATURES:</p> <ul style="list-style-type: none"> *Backlit LCD display for precise monitoring of speed and temperature. *Take advantage of a built-in PID controller that ensures maximum heat-up times while preventing an over temperature situation of your sample. *Temperature up to 550C. *Separate safety circuits with fixed safety temperature of 580C. *Integrated temperature sensor PT1000 for precise temperature control. Control accuracy+_0.2C *Excellent heat control accuracy of the work plate +_1(100C) *Electronic speed control, the max speed is 1500rpm. *Brushless DC motor is maintenance free, explosion-proofed and accurate speed control. *Independent control knobs for adjusting the speed and temperature. *"HOT" Sign warning to prevent burns, even if switched off. *PC can control and documents all parameters via RS232 interface- OPTIONAL. *Pan size: minimum 7 x 7 inch. * Temperature sensor PT1000 with Support Clamp including. 		No's	01
3	<p>Ultrasonic Cleaner</p> <p>Features: Standard accessories: soundproof cover, basket, PVC pipe. The shell and inner cavity are made of 304 stainless steels, which is anti-corrosion. LED display.</p> <p>Specifications:</p> <ul style="list-style-type: none"> • Capacity(L): minimum 22.5 • Ultrasonic Frequency: Double Frequency, 28/40kHz • Time Range/Heating Temperature: 1- 99min/RT~80°C • Ultrasonic Power: minimum 480W • Heating Power: minimum 500W • Power Supply: Standard: 220V 50/60Hz • Tank Size(mm): around 500*300*150 		No's	01



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04	<p>pH meter Advanced pH electrode diagnostics</p> <ul style="list-style-type: none"> • Capacitive Touch • Large Easy to Read LCD • Digital pH Electrodes • CAL Check • Sensor Check • Wall Mount • Cradle and Electrode Holder • Two USB Ports • Data Logging • Two Operating Modes <p>Specifications: pH Specifications:</p> <ul style="list-style-type: none"> •pH Range: -2.000 to 6.000 pH (Standard Mode), -2.00 to 16.00 pH (Basic Mode) •pH Resolution:0.001 pH, 0.01 pH •pH Accuracy (@25°C/77°F): ±0.01 pH, ±0.002 pH • pH Calibration: 5 points (Standard mode) 1.68, 4.01 (3.00+), 6.86, 7.01, 9.18, 10.01, 12.45, and two custom buffers; 3 points (Basic mode) 4.01; 6.86; 7.01; 9.18; 10.01 pH Temperature Compensation ATC: -5.0 to 100.0°C; 23.0 • to 212.0°F* mV Range: ±1000.0 mV; ±2000.0 mV • mV Resolution: 0.1 mV • mV Accuracy: ±0.2 mV (±999.9 mV); ±1 mV (±2000 mV) • Temperature Specifications: Temperature Range: -20.0 to 120.0 °C, -4.0 to 248.0 °F • Temperature Resolution: 0.1 °C, 0.1 °F • Temperature Accuracy: ±0.5 °C, ±0.9 °F • °C/°F: Yes • Additional Specifications: pH Electrode Diagnostics: Glass and reference junction • Connectivity: 1 micro USB port for charging and PC • connectivity, 1 USB port for storage. Environment: 0 to 50°C (32 to 122°F), RH max 95% noncondensing • Battery Type/Life: Built-in rechargeable battery with up to 8hours of continuous use Power Supply: 5 VDC adapter (included) <p>includes benchtop docking station with electrode holder, wall mount cradle, USB cable, HI11310 glass body refillable pH electrode with temperature sensor, 2 sachets each of pH 4, 7, 10, cleaning and storage solution, 5 VDC power adapters and instruction manual.</p> <p>Warranty : One year from the date of Installation Installation & training: Must provide all necessary accessories to run the instrument /device functional at free of cost. The bidder must satisfactorily complete installation & commissioning of the equipment/device at client Lab & trained to the scientists/officer at the laboratory site</p>	No's	01
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05	<p>Moisture Analyzer Balance (Halogen) Technical Specification: Moisture Analyzer Balance (Halogen) Capacity: 0.001g – 110g Technical Specification: Max capacity [Max]: 110 g Readability [d]: 1 mg Tare range: -110 g Max sample weight: 110 g Drying temperature range: max. 250 °C Moisture readout accuracy: 0,001 % Moisture content repeatability: +/-0,05% (sample ~ 2g), +/-0,01% (sample ~ 10g) Display: LCD (backlit) Heating module: Halogen Drying mode: 4 drying modes (standard, quick, step, mild) Auto switch-off options: 4 modes (time, defined, automatic, manual) Additional functions: sample identification Power supply: 230V 50Hz AC Pan Size: around ϕ 90, h = 8 mm Interface: 1xRS 232, USB-A, USB-B, Wireless Module (option) Max sample height: h = 20 mm Documentation will be included with the system: ➤ IQ & OQ Documents ➤ Calibration certificate ➤ Calibration Tag ➤ Calibrate/Validate with Standard Weight</p>	No's	01
06	<p>Vortex Mixer Features: • Variable speed of 0 to 3,000rpm for gentle shaking to rapid mixing of samples • Touch or continuous operation mode • Must include a standard top head for mixing a single test tube or others small vessel up to 30mm in diameter • Electronic speed control should maintain constant speed even during changes in load • Steel base with specially designed vacuum suction feet, to provide stability and dampens vibration • Robust aluminum-cast construction Technical Specifications: Motion type: Touch operation/Continuous Orbital diameter: minimum 4mm Speed range: 0-3000rpm (Adjustable) Speed display: Scale Run type: Touch operation/Continuous Motor type: Shaded pole motor Motor rating input: minimum 58W Motor rating output: minimum 10W Power: around 60W Voltage: 100-120V/200-240V Frequency: 50/60Hz Permissible ambient temperature: 5-40 °C Permissible relative humidity: 80%RH Protection class: IP21 Accessories: 1. Universal Top Plate minimum ϕ 100mm, Used with tube adapters. 2. Tube adapters for 48 holes test Tube, ϕ 06mm 3. Rubber Vacuum Suction Foot. 4. Tube Holding rod used with tube adapters.</p>	No's	01

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07	<p>Distilled Water Plant Features * Horizontal thick wall heat resistant borosilicate glass boiler fitted with 3 KW chromium plated heater. * High efficiency coil condenser ensure low temperature, high output quality distillate of conductivity 3 to 4μs/cm. * Compact construction suitable for bench and wall mounting. * Screwthread connectors enable easy fitting or removal of hose safely. * Built-in constant level device with Vendura-Nova valve for drainage provides easy descaling without dismantling. * Safety thermostat built into the heater protect the Favorit water still in the event of water supply failure and automatically resets when the water supply is restored.</p> <p>Technical Specifications Distillate output: Minimum 4 litres per hour, single distilled * Water Supply Requirement: 1 litre / min (Min pressure 3 p.s.i)(0.2 x 10⁵ NM⁻²) * pH: 5.0 to 6.5 * Conductivity: 3.0 to 4.0 μs/cm * Temperature: 35 to 50 $^{\circ}$C * Pyrogen Content: Pyrogen free * Power Requirement: 220/240v , 50/60 Hz single phase, 13A fused</p>	No's	01
08	<p>Analytical Balance</p> <ul style="list-style-type: none"> The balance should perform self-calibration fully automatically according to pre-installed conditions (elapsed time or temperature change). It should make sure that the balance is always in appropriate condition for accurate weighing operation. Easy RES key must offer very simple way to adjust the response speed in three levels. Automatic Repeatability Measurement: It should easily be checked the condition of the balance by calculating the standard deviation of repeatability. Should have Short stabilization time & stable indication. Should have simple structure and Easy to clean With clear and bright back-lit LCD, the user should easily read the indication in the display. <p>Technical Specifications:</p> <ul style="list-style-type: none"> Capacity: Minimum 220 gm Readability: 0.0001 gm Non-Linearity : \pm 0.0003 gm Stability: \sim 3 Sec Pan Size : Minimum 80 mm dia Calibration: Internal & External Dimension (LxWxH) : Minimum 290x200x306 mm Power: AC 120/230, DC 9V Output : RS232C, Printer Output Density measurement kit option 1 	No's	01
09	<p>Microscope Trinocular Head Technical Specifications: Illuminator: Light source type X-LED with white LED; light intensity control using a knob on left side of the frame. LED power around 3W, comparable to an halogen bulb 30-35W. Color temperature: 6300K LED average life time approx. 50,000Hour. Voltage: external power supply 100/240Vac, 50/60Hz, output: 7,5 V Max power required: 7W Observation Modes: Brightfield Focusing: Coaxial coarse and fine focusing mechanism (graduated, 0.002mm) with</p>	No's	01



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	<p>upper stop, to prevent the contact between objective and specimen. Adjustable tension of coarse focusing knob Stage: Double layer with mechanical sliding stage, size minimum 125x115mm, X-Y movement range around 76x30, specimen holder for one slide. Vernier scale on the two axes, accuracy 0,1 mm Nosepiece: Quadruple revolving nosepiece, rotation on ball bearings. Head: Trinocular observation head, inclined 30° and rotatable 360°, Photo port light split: 50/50 fixed. Diopter adjustment on left eyepiece. Interpupillary adjustment 48-75 mm. Eyepiece: Wide field eyepieces WF10X/18 with field number 18 Objectives: Achromatic objectives with mechanical tube length 160 mm, made by following objectives: -) Achromatic DIN 4X, ANN. 0.10, W.D. 18 mm – -) Achromatic DIN 10X, A.N. 0.25, W.D.7 mm -) Achromatic DIN 40X, A.N. 0.65, W.D. 0,53 mm -) Achromatic DIN 100X, A.N. 1,25, W.D. 0,13 mm (oil immersion) All objectives are treated with an anti-fungus treatment. Condenser. Abbe condenser, N.A. 1,25 precentered Accessories: Instruction manual and dust cover included Power supply: 100-240 Vac 50-60 Hz external power adapter 6Vdc output.</p>		
10	<p>Refrigerator Type Non-Frost Capacity : Gross Volume minimum 386 Ltr. Net Volume minimum 328 Ltr. Performance : Climatic Type (SN, N, ST, T) T Rated Voltage/ Hz/ watt 220-240/ 50 Hz General Features : Temperature Control Mechanical (Electronic/ Mechanical) Defrosting (Automatic/ Automatic Manual) Refrigerant R600a Condenser 100 % Copper Capillary Copper Thermostat RoHS Certified Polyurethane foam Cyclopentene blowing agent [Eco-friendly (100% CFC & HCFC Free) Green Technology] Refrigerator Compartment : Shelf (Material/No.) Glass/3 Bottle Pocket GPPS/7 Interior Lamp, Chilled Room, Chilled Room Door, Egg Tray or Pocket, 2 Vegetable Crisper; Freezer Compartment: Twist Ice tray Yes</p>	No's	01

Warranty: 24 Months from the date of installation for the all equipment.

Country of Origin: USA/UK/EU/Japan/Australia/Canada/Singapore/Equivalent.

Section 7. Technical Specifications.

The Goods and Related Services shall comply with following Technical Specifications:

Item No	Name of Item or Related Service	Technical Specification and Standards												
»	CARS	Supplier												
1	<p><u>Horizontal Electrophoresis system (with power Pac)</u> FEATURES: *Polycarbonate is injection molded at one time without leakage *The Cooling hole design on the upper cover effectively avoids the condensation of water vapor. *Special telescopic elastic glue maker to ensure clean and no leakage of glue. *The limit function prevents the positive and negative electrodes from being reversed. *Highly flexible wire, power-off design when opening the cover to ensure safety. *The electrode head can be replaced for easy maintenance. *99.00%, high-purity platinum electrode, the best electrical conductivity, corrosion and aging resistance.</p> <p>TECHNICAL PARAMETERS:</p> <table border="1"> <tbody> <tr> <td>Gel Trays (W x L)</td> <td>Minimum 75 X 60mm</td> </tr> <tr> <td>Buffer Volume</td> <td>Minimum 300ml</td> </tr> <tr> <td>Comb Thickness</td> <td>1&1.5mm</td> </tr> <tr> <td>Comb Throughout</td> <td>6 ,11 samples</td> </tr> <tr> <td>NO. Of Samples</td> <td>6-22</td> </tr> <tr> <td>Standard Accessories</td> <td>Body tank with Electrode *1, Cap*1, Gel Tray*1, Gel Box *1, Gel handling plastic Spatula, Comb for 6-22 samples</td> </tr> </tbody> </table>	Gel Trays (W x L)	Minimum 75 X 60mm	Buffer Volume	Minimum 300ml	Comb Thickness	1&1.5mm	Comb Throughout	6 ,11 samples	NO. Of Samples	6-22	Standard Accessories	Body tank with Electrode *1, Cap*1, Gel Tray*1, Gel Box *1, Gel handling plastic Spatula, Comb for 6-22 samples	
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2	<p><u>LCD Digital Magnetic hotplate Stirrer</u> FEATURES: *Backlit LCD display for precise monitoring of speed and temperature. *Take advantage of a built-in PID controller that ensures maximum heat-up times while preventing an over temperature situation of your sample. *Temperature up to 550C. *Separate safety circuits with fixed safety temperature of 580C. *Integrated temperature sensor PT1000 for precise temperature control. Control accuracy+_0.2C *Excellent heat control accuracy of the work plate +_1(100C) *Electronic speed control, the max speed is 1500rpm. *Brushless DC motor is maintenance free, explosion-proofed and accurate speed control. *Independent control knobs for adjusting the speed and temperature. *"HOT" Sign warning to prevent burns, even if switched off.</p>													



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	<p>*PC can control and documents all parameters via RS232 interface- OPTIONAL. *Pan size: minimum 7 x 7 inch. * Temperature sensor PT1000 with Support Clamp including.</p>
3	<p>Ultrasonic Cleaner Features: Standard accessories: soundproof cover, basket, PVC pipe. The shell and inner cavity are made of 304 stainless steels, which is anti-corrosion. LED display. Specifications:</p> <ul style="list-style-type: none">• Capacity(L): minimum 22.5• Ultrasonic Frequency: Double Frequency, 28/40kHz• Time Range/Heating Temperature: 1- 99min/RT~80°C• Ultrasonic Power: minimum 480W• Heating Power: minimum 500W• Power Supply: Standard: 220V 50/60Hz• Tank Size(mm): around 500*300*150

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04	<p>pH meter Advanced pH electrode diagnostics</p> <ul style="list-style-type: none"> • Capacitive Touch • Large Easy to Read LCD • Digital pH Electrodes • CAL Check • Sensor Check • Wall Mount • Cradle and Electrode Holder • Two USB Ports • Data Logging • Two Operating Modes <p>Specifications: pH Specifications:</p> <ul style="list-style-type: none"> •pH Range: -2.000 to 6.000 pH (Standard Mode), -2.00 to 16.00 pH (Basic Mode) •pH Resolution:0.001 pH, 0.01 pH •pH Accuracy (@25°C/77°F): ±0.01 pH, ±0.002 pH • pH Calibration: 5 points (Standard mode) 1.68, 4.01 (3.00+), 6.86, 7.01, 9.18, 10.01, 12.45, and two custom buffers; 3 points (Basic mode) 4.01; 6.86; 7.01; 9.18; 10.01 pH Temperature Compensation ATC: -5.0 to 100.0°C; 23.0 to 212.0°F* mV Range: ±1000.0 mV; ±2000.0 mV • mV Resolution: 0.1 mV • mV Accuracy: ±0.2 mV (±999.9 mV); ±1 mV (±2000 mV) • Temperature Specifications: Temperature Range: -20.0 to 120.0 °C, -4.0 to 248.0 °F • Temperature Resolution: 0.1 °C, 0.1 °F • Temperature Accuracy: ±0.5 °C, ±0.9 °F • °C/°F: Yes • Additional Specifications: pH Electrode Diagnostics: Glass and reference junction • Connectivity: 1 micro USB port for charging and PC • connectivity, 1 USB port for storage. Environment: 0 to 50°C (32 to 122°F), RH max 95% noncondensing • Battery Type/Life: Built-in rechargeable battery with up to 8hours of continuous use Power Supply: 5 VDC adapter (included) <p>includes benchtop docking station with electrode holder, wall mount cradle, USB cable, HI11310 glass body refillable pH electrode with temperature sensor, 2 sachets each of pH 4, 7, 10, cleaning and storage solution, 5 VDC power adapters and instruction manual. Warranty : One year from the date of Installation Installation & training: Must provide all necessary accessories to run the instrument /device functional at free of cost. The bidder must satisfactorily complete installation & commissioning of the equipment/device at client Lab & trained to the scientists/officer at the laboratory site</p>
05	<p>Moisture Analyzer Balance (Halogen) Technical Specification: Moisture Analyzer Balance (Halogen) Capacity: 0.001g – 110g Technical Specification: Max capacity [Max]: 110 g Readability [d]: 1 mg</p>

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	<p>Tare range: -110 g Max sample weight: 110 g Drying temperature range: max. 250 °C Moisture readout accuracy: 0,001 % Moisture content repeatability: +/-0,05% (sample ~ 2g), +/-0,01% (sample ~ 10g) Display: LCD (backlit) Heating module: Halogen Drying mode: 4 drying modes (standard, quick, step, mild) Auto switch-off options: 4 modes (time, defined, automatic, manual) Additional functions: sample identification Power supply: 230V 50Hz AC Pan Size: around ϕ 90, h = 8 mm Interface: 1xRS 232, USB-A, USB-B, Wireless Module (option) Max sample height: h = 20 mm Documentation will be included with the system:</p> <ul style="list-style-type: none"> ➤ IQ & OQ Documents ➤ Calibration certificate ➤ Calibration Tag ➤ Calibrate/Validate with Standard Weight
06	<p>Vortex Mixer Features:</p> <ul style="list-style-type: none"> • Variable speed of 0 to 3,000rpm for gentle shaking to rapid mixing of samples • Touch or continuous operation mode • Must include a standard top head for mixing a single test tube or other small vessel up to 30mm in diameter • Electronic speed control should maintain constant speed even during changes in load • Steel base with specially designed vacuum suction feet, to provide stability and dampens vibration • Robust aluminum-cast construction <p>Technical Specifications: Motion type: Touch operation/Continuous Orbital diameter: minimum 4mm Speed range: 0-3000rpm (Adjustable) Speed display: Scale Run type: Touch operation/Continuous Motor type: Shaded pole motor Motor rating input: minimum 58W Motor rating output: minimum 10W Power: around 60W Voltage: 100-120V/200-240V Frequency: 50/60Hz Permissible ambient temperature: 5-40 °C Permissible relative humidity: 80%RH Protection class: IP21</p> <p>Accessories:</p> <ol style="list-style-type: none"> 1. Universal Top Plate minimum ϕ 100mm, Used with tube adapters. 2. Tube adapters for 48 holes test Tube, ϕ 06mm 3. Rubber Vacuum Suction Foot. 4. Tube Holding rod used with tube adapters.
07	<p>Distilled Water Plant Features</p> <ul style="list-style-type: none"> * Horizontal thick wall heat resistant borosilicate glass boiler fitted with 3 KW chromium plated heater. * High efficiency coil condenser ensure low temperature, high output quality distillate of conductivity 3 to 4μs/cm. * Compact construction suitable for bench and wall mounting. * Screwthread connectors enable easy fitting or removal of hose safely. * Built-in constant level device with Vendura-Nova valve for drainage provides easy descaling without

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	<p>dismantling. * Safety thermostat built into the heater protect the Favorit water still in the event of water supply failure and automatically resets when the water supply is restored. Technical Specifications Distillate output: Minimum 4 litres per hour, single distilled * Water Supply Requirement: 1 litre / min (Min pressure 3 p.s.i)(0.2 x 10⁵ NM⁻²) * pH: 5.0 to 6.5 * Conductivity: 3.0 to 4.0 µs/cm * Temperature: 35 to 50 °C * Pyrogen Content: Pyrogen free * Power Requirement: 220/240v , 50/60 Hz single phase, 13A fused</p>
08	<p>Analytical Balance</p> <ul style="list-style-type: none"> The balance should perform self-calibration fully automatically according to pre-installed conditions (elapsed time or temperature change). It should make sure that the balance is always in appropriate condition for accurate weighing operation. Easy RES key must offer very simple way to adjust the response speed in three levels. Automatic Repeatability Measurement: It should easily be checked the condition of the balance by calculating the standard deviation of repeatability. Should have Short stabilization time & stable indication. Should have simple structure and Easy to clean With clear and bright back-lit LCD, the user should easily read the indication in the display. <p>Technical Specifications:</p> <ul style="list-style-type: none"> Capacity: Minimum 220 gm Readability: 0.0001 gm Non-Linearity : ± 0.0003 gm Stability: ~ 3 Sec Pan Size : Minimum 80 mm dia Calibration: Internal & External Dimension (LxWxH) : Minimum 290x200x306 mm Power: AC 120/230, DC 9V Output : RS232C, Printer Output Density measurement kit option 1
09	<p>Microscope Trinocular Head</p> <p>Technical Specifications:</p> <p>Illuminator: Light source type X-LED with white LED; light intensity control using a knob on left side of the frame. LED power around 3W, comparable to an halogen bulb 30-35W. Color temperature: 6300K LED average life time approx. 50,000Hour. Voltage: external power supply 100/240Vac, 50/60Hz, output: 7,5 V Max power required: 7W</p> <p>Observation Modes: Brightfield</p> <p>Focusing: Coaxial coarse and fine focusing mechanism (graduated, 0.002mm) with upper stop, to prevent the contact between objective and specimen. Adjustable tension of coarse focusing knob</p> <p>Stage: Double layer with mechanical sliding stage, size minimum 125x115mm, X-Y movement range around 76x30, specimen holder for one slide. Vernier scale on the two axes, accuracy 0,1 mm</p> <p>Nosepiece: Quadruple revolving nosepiece, rotation on ball bearings.</p> <p>Head: Trinocular observation head, inclined 30° and rotatable 360°, Photo port light split: 50/50 fixed. Diopter adjustment on left eyepiece. Interpupillary adjustment 48-75 mm.</p> <p>Eyepiece: Wide field eyepieces WF10X/18 with field number 18</p> <p>Objectives: Achromatic objectives with mechanical tube length 160 mm, made by following objectives:</p>



Office of the Director

	<p>-) Achromatic DIN 4X, ANN. 0.10, W.D. 18 mm –</p> <p>-) Achromatic DIN 10X, A.N. 0.25, W.D.7 mm</p> <p>-) Achromatic DIN 40X, A.N. 0.65, W.D. 0,53 mm</p> <p>-) Achromatic DIN 100X, A.N. 1,25, W.D. 0,13 mm (oil immersion)</p> <p>All objectives are treated with an anti-fungus treatment.</p> <p>Condenser. Abbe condenser, N.A. 1,25 precentered</p> <p>Accessories: Instruction manual and dust cover included Power supply: 100-240 Vac 50-60 Hz external power adapter 6Vdc output.</p>
10	<p>Refrigerator</p> <p>Type Non-Frost</p> <p>Capacity : Gross Volume minimum 386 Ltr. Net Volume minimum 328 Ltr.</p> <p>Performance : Climatic Type (SN, N, ST, T) T Rated Voltage/ Hz/ watt 220-240/ 50 Hz</p> <p>General Features :</p> <p>Temperature Control Mechanical (Electronic/ Mechanical) Defrosting (Automatic/ Automatic Manual)</p> <p>Refrigerant R600a Condenser 100 % Copper Capillary Copper Thermostat RoHS Certified Polyurethane foam Cyclopentene blowing agent [Eco-friendly (100% CFC & HCFC Free) Green Technology]</p> <p>Refrigerator Compartment : Shelf (Material/No.) Glass/3 Bottle Pocket</p> <p>GPPS/7 Interior Lamp, Chilled Room, Chilled Room Door, Egg Tray or Pocket, 2 Vegetable Crisper;</p> <p>Freezer Compartment:</p> <p>Twist Ice tray Yes</p>

Warranty: 24 Months from the date of installation for the all equipment.

Country of Origin: USA/UK/EU/Japan/Australia/Canada/Singapore/Equivalent.