



**SUPPLY, DELIVERY AND INSTALLATION OF LABORATORY EQUIPMENT AND MATERIALS FOR INSTITUTE OF FOOD SCIENCE AND TECHNOLOGY**

**ABC: ₱6,000,000.00 / F164**

Item No.	Qty.	Specifications	Unit Price (Php)	Total Price (Php)
1	1 set	<p><b>Kjeldahl System and Solvent Extractor Distillation Unit</b></p> <ul style="list-style-type: none"> <li>▪ Automatic distillation procedures: dilution of sample (water addition), alkali (sodium hydroxide) addition, distillation time, steam output regulation and tube drainage</li> <li>▪ Automatic waste removal via tube drainage after distillation</li> <li>▪ Conformity with AOAC, EPA, DIN and ISO standards</li> <li>▪ Chemical resistant plastic housing</li> <li>▪ Recovery must be at least <math>\geq 99.5\%</math> at nitrogen levels between 0.04-220 mg N</li> <li>▪ RSD must be <math>\leq 1\%</math>;</li> <li>▪ Detection limit: <math>\geq 0.015</math> mg N</li> <li>▪ Steam distillation in a few minutes</li> <li>▪ Built-in steam generator Safety Thermostat</li> <li>• Steam output regulation between 10%-100%</li> <li>▪ Titanium condenser</li> <li>▪ No need of an external chiller</li> <li>▪ Alkali resistant technopolymer splash head for high durability of up to 10,000 analyses</li> <li>▪ Limited water consumption (0.5 L/min. with tap water at 15 °C, 1 L/min. at 30 °C)</li> <li>▪ Drip tray to collect any spillage during the steam distillation (no contact with dirty surfaces)</li> <li>• Service door to access the inside of the instrument</li> <li>▪ Safety sensors including electrical shutdown when accessing inside, test tube sensor, cooling water flow-rate detector and visual reagent level warning</li> <li>▪ Possibility to monitor and control the instrument from cloud platform</li> <li>▪ 7" color touch screen</li> <li>▪ Data transfer to pc or to a pen drive, data printing</li> <li>▪ Ethernet, 2 x USB</li> <li>▪ Devarda delay approximately from 00:01 to 99:59 (min:sec)</li> <li>▪ 10-program customizable library</li> <li>▪ Bench-top footprint approximately ranging from 350 - 400 mm wide and 400-450 mm deep</li> </ul>	3,222.674.00	3,222.674.00

- Maximum total weight approximately not more than 30 kg
- Maximum power consumption of 2200 W

#### Digestion Unit

- Construction material: Epoxy painted with chemical resistant coating.
- Temperature range: Ambient to 450 °C/ 842 °F
- Stability of the heating block:  $\pm 0,5$  °C
- Precision of the heating block temperature:  $\pm 0,5$  °C
- Set temperature: Digital readout in °C or °F
- Automatic Temperature calibration
- Selectable ramps: up to 4 per program
- Digestion time range: 1 to 999 minutes
- Time selection: 1 minute steps
- Countdown: Digital readout
- Selectable language: EN, IT
- Heating places: 20-position
- Sizes of tubes : 250 ml test tubes ( $\varnothing$  42 mm)
- Power: 2300 W
- Approximate Ranging Dimensions (WXHXD): (ALUMINUM BLOCK ONLY) 300x100x500 mm to 350x150x550mm
- Approximate Ranging Dimensions (WXHXD):300x650x500 mm to 350x700x550mm
- Approximate Ranging Weight: 15 - 20 kg

#### Scrubber Unit

- Designed to neutralize corrosive and toxic fumes developed during oxidative mineralization or other processes, such as digestion.
- Its working process is generally composed of 3 stages: condensation, neutralization with acids and bases, absorption with activated carbon (optional - ideal for high fume levels)
- Construction material: Stainless steel structure
- Weight: approximately ranging 3.5 Kg – 15 kg
- Approximate Ranging Dimensions: (WXHXD): 300x300x350 mm to 350x350x400

#### Recirculating Water Pump

- Recirculating Water Pump - must ensures optimum fumes aspiration during digestion.
- Construction Material: Acrylonitrile Butadiene Styrene (ABS) structure, extremely resistant to chemical corrosion and the type of materials used make the instrument extremely quiet and long-lasting.
- Facilitated by special technical devices such as the level indicator for water control, the tap for emptying the tank and two convenient handles for handling.
- Must be combined with the special Scrubber, to provide the ideal complement for a very effective abatement of fumes developed during acid digestions.
- Maximum Air Flow: approximately 35 l/min
- Flow Regulation: from 0 to 35 l/min
- Residual pressure with water temperature of 15°C: 35 mm Hg

		<ul style="list-style-type: none"> <li>▪ Weight: approximately Ranging from 3.5 Kg – 15 kg</li> <li>▪ Dimensions (WXHxD): Approximately Ranging from 300x300x350 mm to 350x350x400</li> </ul> <p>Solvent Extractors</p> <ul style="list-style-type: none"> <li>▪ Construction Material: Epoxy Painted</li> <li>▪ Number of samples: 6 samples position</li> <li>▪ Displays: Working Temperature / Settable parameters</li> <li>▪ Dimensions (WxHxD): Approximately Ranging from 700x600x350 mm to 750x650x400 mm</li> <li>▪ Weight: Approximately 85 to 90 lbs</li> <li>▪ Power: 950 W</li> <li>▪ Safety: IP 55</li> <li>▪ Reproducibility (RSD): ≤ 1%</li> <li>▪ Solvent Recovery: from 50 to 75%</li> <li>▪ Max volume extraction cup: 150 mL</li> <li>▪ Number of Programs: 29</li> <li>▪ Working temperature: form 100-260 °C</li> <li>▪ Cooling water: 2l/min</li> <li>▪ Sample quantity: from 0.5 to 15g</li> <li>▪ Solvent Accepted: Works with the majority of solvents</li> <li>▪ Solvent Volume: 30 to 100 mL</li> <li>▪ Immersion time: from 0 to 999 minutes</li> <li>▪ Washing time: from 0 to 999 minutes</li> <li>▪ Recovery time: from 0 to 999 minutes</li> <li>▪ Operating temperature range: °C +5°to +40°C</li> <li>▪ Maximum admitted humidity T %: 85%</li> <li>▪ Power supply: 230/50-60 V/Hz</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least 2-year warranty on parts and services. With onsite demonstration and training for end-users</p>		
2	7 units	<p><b>Digital Hand-held -pH meter</b></p> <ul style="list-style-type: none"> <li>• Range: pH0.00~14.00</li> <li>• Resolution: pH0.01</li> <li>• Accuracy: pH±0.10</li> <li>• Calibration: Calibration at 3 points at 4.01, 6.86, 9.18.</li> <li>• Calibration at 3 points at 4.01, 7.00, 10.01.</li> <li>• Temperature compensation: 10 to 40° C</li> <li>• Sample Volume: 0.6mL</li> <li>• Power Supply: Size AAA alkaline battery × 2</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least two-year warranty on parts and services. With onsite demonstration and training for end-users</p>	22,000.00	154,000.00
3	8 units	<p><b>Digital Refractometer</b></p> <ul style="list-style-type: none"> <li>• Range: Brix : 45.0 to 90.0%</li> <li>• Resolution: 0.1%</li> <li>• Accuracy: ±0.1%</li> <li>• Temperature compensation: 10 to 40°C</li> <li>• Power Supply: 006P dry battery (9V)</li> </ul>	25,000.00	200,000.00

		<ul style="list-style-type: none"> <li>• Dimensions &amp; Weight: 17x9x4cm, 270g</li> <li>• Included Accessories: Standard liquid LG</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least two-year warranty on parts and services. With onsite demonstration and training for end-users</p>		
4	4 units	<p><b>Salt Meter</b></p> <ul style="list-style-type: none"> <li>• Scale: Salt concentration (g/100g) Temperature</li> <li>• Method: Conductivity method</li> <li>• Range: 0.00 to 10.0%</li> <li>• Resolution: 0.01% for salt concentration of 0.00 to 2.99% and 0.1% for salt concentration of 3.0 to 10.0%</li> <li>• Accuracy: Displayed value <math>\pm 0.05\%</math> (for salt concentration of 0.00 to 0.99%)</li> <li>• Relative precision <math>\pm</math> less than 5% (for salt concentration of 1.00 to 10.0%)</li> <li>• Ambient Temperature: 10 to 40°C</li> <li>• Power Supply: 006P Dry battery (9V)</li> <li>• Dimensions &amp; Weight: 17x9x4cm, 220g (Main Unit only)</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least two-year warranty on parts and services. With onsite demonstration and training for end-users</p>	60,000.00	240,000.00
5	1 unit	<p><b>Viscometer</b></p> <ul style="list-style-type: none"> <li>• Measurement item: Viscosity(mPa · s/cP) · Kinematic Viscosity(mm<sup>2</sup>/s cSt) <ul style="list-style-type: none"> <li>○ Temperature(°C/°F)</li> <li>○ Torque(%)</li> </ul> </li> <li>• Range: Viscosity / Kinematic Viscosity :</li> <li>• 12~60,000,000mPa·S、 12~60,000,000cP</li> <li>• L1 12~600,000mPa·S、 12~600,000cP</li> <li>• L2 30~3,000,000mPa·S、 30~3,000,000cP</li> <li>• L3 48~12,000,000mPa·S、 48~12,000,000cP</li> <li>• L4 240~60,000,000mPa·S、 240~60,000,000cP</li> <li>• Torque : 0.0~100.0% (Recommended torque 10.0 to 100.0%)</li> <li>• Temperature: 0.0~100.0°C、 32.0~212.0°F</li> <li>• Accuracy: Viscosity / Kinematic Viscosity: <math>\pm 1\%</math> of Maximum Viscosity</li> <li>• Temperature: <math>\pm 0.2^\circ\text{C}</math>、 <math>\pm 0.4^\circ\text{F}</math></li> <li>• Power Supply: LR6 / AA alkaline batteries (x4), AC adapter</li> <li>• Computer Communication: Output: USB – PC</li> <li>• Dimensions &amp; Weight: (W)178x(D)86x(H)194mm 1.2kg (Main unit) <math>\phi 240</math>x(H)398mm 2.8kg (Stand and Rod)</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance</p>	284,000.00	284,000.00

		services for at least 2 years, and at least two-year warranty on parts and services. With onsite demonstration and training for end-users		
6	1 unit	<p><b>BIOSAFETY CABINET CLASS II TYPE A2</b></p> <ul style="list-style-type: none"> <li>• Type: Bio Hazard Type (Class II A2)</li> <li>• Approximate Dimension Internal: 1340x600x750mm (WxDxH)</li> <li>• Approximate Dimension External: 1500x825x1900mm (WxDxH)</li> <li>• Approximate Weight: Ranging from 260 – 265 kg</li> <li>• Control System: Microprocessor LCD Digital Controller</li> <li>• Main Filter: HEPA Filter 0.3<math>\mu</math>m 99.97% efficient filter</li> <li>• Material External: Steel Plate with Powder Heating Coated</li> <li>• Material Internal: Stainless Steel</li> <li>• Utility: Air &amp; Gas port</li> <li>• Illumination LED Lamp: 20W, Length 1200mm</li> <li>• Illumination UV Lamp [Automatic On/Off in door Opening/Closing] : : 32W x 1EA</li> <li>• UV Time Range: 00.00 to 99HR 59MIN (MIN SEC) Selectable LCD Counter</li> <li>• Winding Velocity: 0.2~1.9M/Sec, 10 step adjustable</li> <li>• Purity: Below to Class 100</li> <li>• Door Type: Tempered 5T Glass by Weight Balance</li> <li>• Electrical Requirements: 120V, 230V, 50/60Hz, 1<math>\Phi</math></li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least two-year warranty on parts and services. With onsite demonstration and training for end-users</p>	539,000.00	539,000.00
7	1 unit	<p><b>FUME HOOD</b></p> <ul style="list-style-type: none"> <li>• Type: Fume Hood Type</li> <li>• Approximate Dimension External: 1200x800x2350mm (WxDxH)</li> <li>• Approximate Dimension Internal: 1024x676x1160mm (WxDxH)</li> <li>• Structure: Aluminum Profile / AL Profile</li> <li>• Exterior: Phenolic Laminate</li> <li>• Interior / Baffle: Phenolic Laminate</li> <li>• Work Top: Phenolic Laminate, Epoxy, P.P / P.V.C, Stainless steel, Stoneware</li> <li>• Sash: Tempered Safety Glass 5.0T / Transparent clear</li> <li>• Utility: Air / N2 / Water</li> <li>• Cock &amp; Valve: P.P / Brass</li> <li>• Lamp: LED</li> <li>• Lamp case: Explosion proof / Vapor proof - Optional</li> <li>• Electrical supply: External socket, 110V/220V. 60Hz</li> </ul>	679,000.00	679,000.00

		<ul style="list-style-type: none"> <li>Controller: LCD Touch controller - Optional</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least two-year warranty on parts and services. With onsite demonstration and training for end-users</p>		
8	1 unit	<p><b>MAGNETIC STIRRER</b></p> <ul style="list-style-type: none"> <li>Construction Material: Techno polymer</li> <li>Power: 0.6 W</li> <li>Approximate Weight: 0.4 Kg (0.9 lb)</li> <li>Dimensions (WXHxD): Ranging from 100x40x50x140 mm to 120x50x145mm</li> <li>Electronic speed regulation: Up to 1100 rpm</li> <li>Stirring volume (H<sub>2</sub>O): Up to 5 liters</li> <li>Speed Control: High power magnet type PCM</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least three-year warranty on parts. With onsite demonstration and training for end-users</p>	71,036.00	71,036.00
9	1 unit	<p><b>DIGITAL OVERHEAD STIRRER</b></p> <ul style="list-style-type: none"> <li>Digital Display</li> <li>Digital User interface</li> <li>Motor Brushless DC</li> <li>Stirring Volume (H<sub>2</sub>O): Up to 40 L</li> <li>Speed gears: 1</li> <li>Max Torque: 60 Ncm</li> <li>Stirring Speed Range: 30-2000 rpm</li> <li>Speed Setting Resolution: 1 rpm</li> <li>Digital Speed Control</li> <li>Torque compensation</li> <li>Max Viscosity: 50.000 mPa*s</li> <li>Chuck Range: Ø from 1 to 13 mm</li> <li>Shaft Diameter Pass-Through: up to 8.5mm</li> <li>Timer</li> <li>USB Interfaces</li> <li>Lock of the instrument</li> <li>Range Dimensions (WXHxD): 90x280x230 to 100x285x235 mm</li> <li>Weight: Ranging from 4.0 to 4.5 kg</li> <li>Protection Class DIN EN 60529: IP 54</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least 3-year warranty on parts. With onsite demonstration and training for end-users</p>	265,076.00	265,076.00
10	1 unit	<p><b>CLASSIC VORTEX MIXER</b></p> <ul style="list-style-type: none"> <li>Construction Material: zinc alloy and techno polymer</li> <li>Support System: 3 anti-sliding feet</li> <li>Speed Setting: analog</li> </ul>	59,170.00	59,170.00

		<ul style="list-style-type: none"> <li>• Speed Control: electronic</li> <li>• Operational Mode: Touch / Continuous</li> <li>• Type of Movement: orbital</li> <li>• Orbital Diameter: 4.5 mm</li> <li>• Electronic Protection degree CEI EN 60529: IP 42</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least 3-year warranty on parts. With onsite demonstration and training for end-users</p>		
11	1 unit	<p><b>CIRCULATING WATER BATH</b></p> <ul style="list-style-type: none"> <li>• Temp Range Ambient +5°C to 99°C</li> <li>• Temp Controller Digital PID Controller</li> <li>• Time Range 00.00 to 99HR 59MIN (MIN SEC) Selectable Digital Display</li> <li>• Capacity ranging from 10.5 L to 10.8 L</li> <li>• Heater Capacity 800 W</li> <li>• Approximate Dimension Internal 240x300x150mm (WxDxH)</li> <li>• Approximate Dimension External 340x390x470mm (WxDxH)</li> <li>• Top Open 240x124mm (WxD) '</li> <li>• Approximate Net Weight 10 Kg to 11 kg</li> <li>• Material Internal Stainless Steel</li> <li>• Material External Steel Plate with Powder Heating Coated</li> <li>• Electrical Requirements 6.7 A</li> <li>• Electrical Requirements 3.5 A 230v , 50/60Hz, 1Φ</li> </ul> <p>Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least two-year warranty on parts and services. With onsite demonstration and training for end-users</p>	160,372.00	160,372.00
12	1 unit	<p><b>STOMACHER BLENDER</b></p> <ul style="list-style-type: none"> <li>• Flapping Time: 1s-99min 59s or continuous operation</li> <li>• Approximate Flapping Speed 3-12 times/s</li> <li>• Approximate Flapping Spacing 0-50 mm adjustable</li> <li>• Effective Capacity 3-400L</li> <li>• Program Setting and Storage 8 segments combination programming</li> <li>• With Temperature control Range</li> <li>• With Disinfection Function</li> <li>• Sterile Bag: 17*30cm, standard 100pcs</li> <li>• With Voice Prompt Function</li> <li>• With automatic stop anti pinch function</li> <li>• Consumption: 200W</li> <li>• Power Supply: AC110/220V+-10%, 50/60Hz</li> <li>• Approximate External Size (WxDxH): Ranging from 450x250x330mm to 460x260x340mm</li> <li>• Approximate Net Weight: 19 kg to 20Kg</li> </ul>	125,672.00	125,672.00

	Warranty and After Sales: All equipment items are inclusive of calibration and preventive maintenance services for at least 2 years, and at least two-year warranty on parts and services. With onsite demonstration and training for end-users		
			Grand Total: <b>₱6,000,000.00</b>

Noted by:



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