

## ANNEXURE - A

### TECHNICAL SPECIFICATIONS

SN	Equipment	Specification	Units
1	<b>REAL TIME PCR SYSTEM</b>	<p>The System should be Four color system and multiplexing up to four can be done. The System should be 96 wells format. Excitation source: Quartz Tungsten Halogen lamp Detector: 1 scanning photomultiplier tube (PMT) Multiplexing capabilities: 4 targets in the same tube Thermal system: solid-state, Peltier-based Embedded computer safeguards data Tube/plate formats: 200ul, 96-well format, optimized for 25µl sample size Filters: Dual customizable filter wheels with four user-selected filters <b>Dynamic Range: 10 orders of magnitude</b> Excitation Range: 350nm-750nm Emission Range: 350nm-700nm Temperature Uniformity: +/- .25°C at 72 °C Temperature Ramp Rate: up to 2.5°C/second Temperature Range: 25-99°C Most fluorescent dye chemistries for FRET or other applications: Ability to mismatch excitation and emission filters ;Large Stokes shift dyes Warranty One Year One Suitable Laptop should be there with the system for data analysis.</p>	1 Unit set
2	<b>COMPLETE WESTERN BLOTTING SYSTEM</b> (with includes Vertical electrophoresis, wet Trans blot and HC Power_pack)	<p><b>Mini Trans Blot Cell</b> Should have Capacity for simultaneous transfer of up to two MP tetra gels for high throughput Should have Flexible electrode placement so that Transfer completes in just 1 hr to low intensity, overnight transfer for fast &amp; Flexible transfer of proteins Should have Minimal buffer requirement Maximum blotting capacity with minimal buffer expense Should have the Wire electrodes which are placed 4 cm apart</p>	1 Unit set

		<p>Should have a Bio-Ice Cooling Unit which is Completely contained within the Mini Trans blot cell, absorbs heat generated during rapid transfer to avoid overheating &amp; reproducible result</p> <p>Blotting Area (W x L) -10 x 7.5 cm.</p> <p><b>Transfer Parameters</b></p> <p>Number of cassettes -2</p> <p>Buffer requirement -450 ml</p> <p>Electrode distance -4 cm</p> <p>Transfer time (high-intensity) -60 min</p> <p>Gel Capacity (W x L) 8.3 x 7.3 cm</p> <p>-1 gel per cassette, 2 cassettes total (both sizes)</p> <p><b><u>Vertical Electrophoresis system</u></b></p> <p>Number of gels -1 to 2</p> <p><b>Pre cast gels (Ready Gel pre cast gels) &amp; Hand cast gels</b></p> <p>Gel size (W x L) -Pre cast: 8.4 x 6.6 cm Approx -Hand cast: 8.0 x 7.0 cm Approx</p> <p>Total buffer volume for 2 gels - 700ml to 1,000 ml approx.</p> <p>Total buffer volume for 4 gels -1,000 ml to 1,500 ml approx</p> <p>Typical run times for SDS-PAGE -30-50 min (at 200 to 210 V constant)</p> <p>Should have Casting Stand clamp assembly Hassle free, simple &amp; leak proof casting.</p> <p>Should have option for upgrading the existing 2 gel system to 4 gel system in the same tank.</p> <p>The system includes plates with integrated spacers for ease of use</p> <p>Should have Interchangeable module, which can run SDS PAGE or do western blotting in same buffer tank</p> <p><b><u>Horizontal electrophoresis system with accessories</u></b></p> <ol style="list-style-type: none"> <li>1. A horizontal electrophoresis system should be able to run the gel size of 15x10cm with safety lid.</li> <li>2. A system should include an additional UV transparent gel tray of size 15x7cm with integrated fluorescent ruler.</li> <li>3. A system should include tape free gel casting module for leak free operations or should include casting gates to allow hassle free casting of gels directly in the electrophoresis cells.</li> <li>4. A system should include two 1.5mm 15- &amp; 20-well fixed height combs.</li> <li>5. A system should have the option for adjustable height combs with comb holders.</li> <li>6. System should accommodate the UV gel trays of different sizes i.e 15x10 &amp; 15x7cm.</li> </ol>	
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3	Gel Doc System	<p><u>Hardware-</u></p> <ol style="list-style-type: none"> <li>1) <b>System should have Image resolution &gt;4 mega pixels for resolving closely spaced bands on a gel or blot, with 15 x 11.2 cm Imaging area</b></li> <li>2) <b>System should have 4.6 x 4.6 µm pixel size &amp; &gt;3.0 orders of linear dynamic range</b></li> <li>3) <b>System should be completely automatic &amp; user does not have to zoom, focus, adjust aperture or select light source.</b></li> <li>4) System should be modular with different sample trays &amp; flexible to image a wide variety of applications, including nucleic acid.</li> <li>5) System should have UV, White light, &amp; optional Blue light.</li> <li>6) <b>System should have stain-Free capability for stain-free gels and blots.</b></li> <li>7) Sample trays should be customizable per user and recognized automatically.</li> <li>8) System should require only one emission filter to accommodate a large portfolio of detection methods: ethidium bromide, SYBR® Green, SYBR® Safe, SYBR® Gold, GelGreen, GelRed, Fast Blast™, SYPRO Ruby, Flamingo™, Oriole™, CY3, rhodamine, green fluorescent protein, Hoechst, Krypton, silver stain, copper stain, zinc stain, Coomassie Brilliant Blue, Coomassie Fluor Orange, and other spectrally similar stains, labels, and dyes.</li> <li>9) <b>Should have lens flat-fielding calibration for each sample tray to delivers image data that are always optimized and reproducible without imaging artifacts, providing superior image uniformity and quantitation</b></li> </ol> <p><u>System Software-</u></p> <ol style="list-style-type: none"> <li>1) Software should have highest level of automation in hardware calibration, image optimization, capture, and analysis.</li> <li>2) Should have automated workflow recorded in a protocol file from image capture to results thus eliminates need for training.</li> <li>3) Should allow 100% repeatability of the workflow by any user and ensures optimized image data and analysis from a gel in a single uninterrupted, fast, and completely reproducible workflow.</li> <li>4) Should have automated image capture driven by a selected gel or blot application.</li> <li>5) <b>Should have one-button acquisition from image capture to result.</b></li> <li>6) <b>Should generate the publication ready images with one click export option which Specifies publishing resolution (dpi) and publishing dimension with a one-click image export for publication. Provides functionality to produce image at user-defined dpi and dimension</b></li> <li>7) Should be able to generate customizable reports.</li> </ol>	1 unit set
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		<b>8)</b> Should be supplied with branded PC with printer and 1 KVA UPS with minimum one hour power back up.																					
4	<b>Digital Dry Bath</b>	<p>The digital dry bath should have stainless steel chamber and aluminum blocks which offer rapid and even heating. Should have exchangeable blocks of 24 x 0.5 ml, 1.5 ml, or 2.0 ml micro centrifuge tubes and 12 x 15 ml tubes on the same chassis.</p> <p>The high wattage heater should be controlled by a microprocessor for precise and accurate control during rapid heating.</p> <p>Temperature is set by adjusting the easy-to-read display with the arrow keys</p> <p><b>Dry Bath</b></p> <p>Temperature range - Ambient 5–150°C  Temperature display resolution - 0.1°C, 4-digit LED  Temperature uniformity - ±0.2°C at 37°C  Temperature accuracy -±0.3°C  Block chamber - Stainless steel  Single block unit -1 standard block  Electrical -120 V, 50/60 Hz, 0.8 A, Fuse 1.5 A  230 V, 50/60 Hz, 0.63 A, Fuse T630 mA, power cord for appropriate voltage</p> <p><b>Dry Bath Blocks</b></p> <p>Construction -High grade, nonporous aluminum with anodized surface  Thermometer well -Required only for calibration purposes  Block capacity -24 x 0.5 ml, 24 x 1.5 ml, 24 x 2.0 ml, or 12 x 15 ml tubes</p>	1 unit set																				
5	<b>Semi-Micro Balance</b>	<p>Limit values</p> <table> <tr> <td>Maximum capacity</td> <td>120 g</td> </tr> <tr> <td>Maximum capacity, fine range</td> <td>42 g</td> </tr> <tr> <td>Readability</td> <td>0.1 mg</td> </tr> <tr> <td>Readability, fine range</td> <td>0.01 mg</td> </tr> <tr> <td>Repeatability (at nominal load)</td> <td>0.08 mg (100 g)</td> </tr> <tr> <td>Repeatability (at low load)</td> <td></td> </tr> <tr> <td>Linearity deviation</td> <td>0.15 mg</td> </tr> <tr> <td>Sensitivity offset</td> <td>0.4 mg (100 g)</td> </tr> </table> <p>Typical values</p> <table> <tr> <td>Repeatability (at nominal load)</td> <td>0.06 mg (100 g)</td> </tr> <tr> <td>Repeatability (at low load)</td> <td>0.015 mg (20g)</td> </tr> </table>	Maximum capacity	120 g	Maximum capacity, fine range	42 g	Readability	0.1 mg	Readability, fine range	0.01 mg	Repeatability (at nominal load)	0.08 mg (100 g)	Repeatability (at low load)		Linearity deviation	0.15 mg	Sensitivity offset	0.4 mg (100 g)	Repeatability (at nominal load)	0.06 mg (100 g)	Repeatability (at low load)	0.015 mg (20g)	1 unit
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		<p>Minimum weight (according to USP) 45 mg  Minimum weight (@U=1%, 2 sd) 3 mg  Settling time 4s / 8s  Sensitivity offset 0.3 mg (100 g)  (Hi-Resi Technology) includes two built-in weights &amp; FACT  (Fully Automatic Calibration Technology)  Efficient Handling-draft shield Ergo Door to open with one hand and simultaneously place the weighing sample with your other hand.  Space Saving draft shield doors that do not project beyond the balance, and sideways mounted connectors at the back of the balance.</p>	
6	<b>Ultra Rocker</b>	<p>Should be a versatile rocking platform for molecular biology applications.  It should have dual platforms which should be corrosion resistant and should be lined with a nonslip rubber mat to keep containers in place.  It should have the tilt capacity and variable speed control that provides a broad range of mixing and agitation options for the Overnight incubation of liquid bacterial cultures, Staining and destaining of agarose and polyacrylamide gels and blots&amp;Southern hybridization.  Speed range 8–40 rpm  Motion Tilting, ±7.5°  Platform clearance 9 cm  Maximum load 10 lb/4.5 kg  Temperature range 4–80°C  Regulatory certification CE compliant</p>	1 unit
7	<b><u>Benchtop Micro centrifuge</u></b>	<p>System should be a ultimate benchtop centrifuge, designed for all laboratory applications.  It should have brushless motor for quiet operation which requires no routine maintenance.  It should be provided with an 18-place rotor to accommodate 1.5 and 2.0 ml tubes.  It should have option for spinning 2 8-tube PCR strips or upto 16 individual 0.2 ml tubes.  It should have option of safe cold room operation.  Maximum speed 14,000 rpm (16,000 x g)  Capacity 18-place rotor for 1.5 and 2.0 ml tubes  Safety Safety interlock  Automation 30-minute timer or quick-spin button</p>	1 unit
8	<b>PCR work station</b>	<b>Dimensions:</b>	1 unit

	(tabletop)	<p>18" L x 24" W x 28" H (46cm x 61cm x 71cm)  <b>Light Source:</b>  UV bulbs - 254 nm  white fluorescent bulb  <b>Electrical:</b>  110 V/60 Hz, 1.2A  220 V/50 Hz, 0.6A  <b>Safety Device:</b>  Reed switch prevents operation of UV lamps when doors are open.  Construction: Transparent panels made of 8mm clear acrylic which is non-flammable, resistant to corrosion and easy to clean. Aluminum anodised uprights.</p>	
9	<b>Cyclomixers / Vortex Mixers</b>	<p>Touch/ Continuous Operation mode Selection through bi-directional Switch  Speed Regulation through knob provided on the control panel  Interchangeable mixing heads for use with variety of tubes  Power (W) -60  Shaking Movement -Orbital  Orbital Diameter (mm) 4  Speed range (rpm) 0-2500</p>	3 units
	<b>Inverted tissue culture Trinocular microscope</b>	<p>For bright field and phase contrast applications (30° inclined, interpupillary 48mm~75mm) having 6v30w halogen light illuminator, quintuple revolving nosepiece, coaxial coarse (stroke : 37.7mm per rotation) &amp; fine (stroke : 0.2mm per rotation) adjustment, plain stage (160x250mm) with glass insert, auxiliary stage 70x180mm, Condenser LWD 72mm, Long working distance Plan Infinity Brightfield Objectives 4x/0.1 (W.D 18mm) &amp; 40x/0.6 (W.D 2.6mm - Cover Glass 1.2mm) And Phase Contrast Objectives 10x/0.25 (W.D 10mm) &amp; 20x/0.4 (W.D 5.1mm) with phase annulus plate (10x-20x, 40x) &amp; High eyepoint, extra wide field eyepiece EW10x (F.N.22) standard set complete.  Features :Long Working Distance Plan Infinity Optics  Pre-Centered Phase Annulus  Trinocular Port In Standard Unit  Excellent Field Flatness</p>	1 unit
10	<b>Motorized Treadmill</b>	<ul style="list-style-type: none"> <li>• 2.0 HP Continuous. 4 HP peak DC Motor</li> </ul>	1 unit

		<ul style="list-style-type: none"> <li>• 5 LED display Speed, Time, Distance, Calories and Pulse.</li> <li>• 4 speed shortcut keys.</li> <li>• 8 predetermine programs.</li> <li>• Automatic and manual program.</li> <li>• Safety key.</li> <li>• Handle pulse.</li> <li>• Soft stop.</li> <li>• Folds for easy storage.</li> <li>• Speed range: 1.0-12.0 km/h.</li> <li>• Belt Size; 1220x400 mm.</li> </ul> <p>With resistant elasticity running board and anti-slip regulator</p>	
11	<b>Exercise bike</b>	<p>freestyle frame with big flywheel  User Weight : above 100 Kg  Adjustable tension strap with the control knob  Fitness monitor with 5 functions, scan, speed, distance, time &amp; calories  Dual action, synchronized action handlebars combine cycling with rowing action  Low injury risk to knees and ankles</p>	1 unit