

TECHNICAL SPECIFICATIONS OF THE GOODS

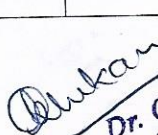
Tender No.: GMC/MICRO/2019/358

Dated: 21/5/2019


Sl. No.	Item Quoted should have the following specifications :
01	<p><u>Thermo-cycler:</u></p> <ol style="list-style-type: none"> 1. The quoted Thermo cycler should be Peltier based heating and cooling PCR system with Touch screen control and remote control via App (iOS and Android) 2. The offered system should be authorized / licensed for PCR applications and the vendor should produce the certificate for the same. 3. Block to be supplied: Aluminium block, covered with special anodized alloy block Optimized for standard sample consumption in single tubes, 8 well strips and microtiter plates with 96 wells (0.2/0.1 ml), sample volume from 10 µl to 50 µl 4. Should have gradient span of 20°C and linear gradient tool for programming of equal temperature increments between the 12 columns of the block. 5. Should have a temperature range of 3-99 °C with control accuracy of ± 0.1 °C. 6. Should have a ramp rate of 4.0°C/sec (Heating) & 3.3°C/sec (Cooling). 7. Should have temperature uniformity down to ± 0.20 °C 8. Time increments: 1 to 240 sec per cycle, Temperature increments: ± 0.1 to 20 °C per cycle 9. Should have high performance smart heated lid for improving temperature uniformity in the range of 30 °C to 110 °C 10. Should have auto-restart feature in the event of power failure. 11. Should have on board controller color Touch screen view for easy programming 12. Software should have options like Quick start of the last five programs, gradient temperature graph, toggle between User specific quick start of the last five programs, program preview prior to start, toggle between spreadsheet and graphical programming mode, Linear Gradient Tool, generate service info files (SINF), extended self-test, adjustable ramp rates, view gradient temperature graph, PC control via Ethernet, comprehensive user administration tool with individual rights settings 13. Should be imported & fully licensed PCR 14. Warranty on system should be minimum 2 years from the date of Installation and commissioning. 15. Calibration certificate has to be provided wherever applicable.
02	<p><u>Biosafety cabinet:</u></p> <ol style="list-style-type: none"> 1. Class II A2 Biohazard Safety Cabinets in the proportion as 70% air is re-circulated within the cabinet through high efficiency particulate air (HEPA) filtration. Velocity of airflow to the work zone creates an ultra-clean environment for product protection, where the remaining exhaust air is discharged out. 2. Cleanliness Level ISO CLASS 100 as per ISO 14644-1 Direction of Flow Vertical Model 3. Working Size should be W 1200 x D 600 x H 600 mm (4' x 2' x 2') 4. Air Balancing 70% re-circulation and 30% exhaust 5. Particle Retention 0.3 Micron & above 6. Inflow Velocity 100 FPM ± 20 7. Down Flow Velocity 80 FPM ± 20 8. Noise level 65 decibel on "A" scale ± 5 9. Pressure Differential Digital Display Monitoring 10. Should have Ultra violet lamp of good quality 11. The Material of Construction of the cabinet should be made from Galvanized Iron 18 SWG sheet metal with polyurethane paint coated finish. Further the working Table should be Removable type table top, made of perforated IS 304 Grade SS with satin finished, underneath provided with drain-pan to collect & dispose of liquid wastes. The front edge of the working table should be curve finished and perforated for comfortable arm resting. 12. Front Sash should be made of clear 5 mm Polycarbonate sheet / Toughend Glass, while opening the door UV Lamp will be cut "OFF" and while closing the door UV Lamp will be "ON" automatically.

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	<p>13. Side Panels should be made from double layered outer GI & inner stainless steel or Both in Stainless Steel respectively with return-air plenum in between.</p> <p>14. The HEPA Filter: Media Ultra clean glass fiber paper – imported Supply Air & Exhaust Type Mini- Pleated constructions Retention 0.3 Micron Efficiency 99.997% Pressure drop 12 mm WG Grade: H13 rating</p> <p>15. PRE-Filter: Media Non-woven - synthetic polyester Retention 10 - 15-micron Efficiency 90% Pressure drop 6 mm WG</p> <p>16. Supply Air Blower: Outer rotor type motor blower, which consists of dynamically & statically balanced aluminum centrifugal impeller driven by Single phase motor, enclosed in a PU coated GI casing & directly connected to the filter chamber inside the cabinet. Manual Speed controller will be provided.</p> <p>17. Exhaust Duct: The exhaust air will be sending out through an exhaust duct made of 150 mm dia rigid PVC pipe up to 10 feet length. Suitable canopy will be provided at the end of the duct.</p> <p>18. UV on/off should be integrated with door close/open operation to avoid accidental exposure to UV.</p> <p>19. Should include standard accessories such as additional power point 5 /15 Amps – 1 No., Fixed Arm rest Air/Gas inlet nozzle, Floor leveling screws & wire chord etc.</p> <p>20. Documentation: DQ, IQ, OQ, PA Document & Warranty certificate should be provided</p> <p>21. Test certificate for HEPA Filter should be provided.</p> <p>22. Warranty on system should be minimum 2 years from the date of Installation and commissioning.</p> <p>23. Calibration certificate has to be provided wherever applicable.</p>
3	<p>Ultrapure Water Purification System:</p> <ol style="list-style-type: none"> 1. Should be UV/UF direct system with permeate performance of 6 l/h, pre-treatment with integrated reverse osmosis, ultra-pure water set, sterilizing filter, ultra filter, tank 6 litres with pressure/recirculation pump. 2. Operating pressure in bar, min/max 1 to 6 bar 3. Type 1 - Conductivity 0.055μS/cm 4. Type 1 - Resistance at 25°C 18.2MWxcm 5. Bacterial content (CFU/mL) <1 6. Particles >0.2μM/mL <1 7. pH value range 6.8-7.2 8. Type 2 - Conductivity 0.067 to 0.1μS/cm 9. Type 2 - Resistance at 25°C 15 to 10MWxcm 10. Type 2 - Bacterial Retention 99% 11. Electrical Requirements 100-240V, 50/60 Hz 12. Power Consumption 0.06kW 13. Flow rate, max. 0.6L/min 14. Type 1 - TOC 1 to 5ppb 15. Type 1 - Endotoxins (EU/mL) 0.005 16. Dispensing is easy and features variable speed to control flow. 17. The display can be tilted for optimal reading 18. Optional UV bulb and UF ultra filter to customize ultrapure Water Placement options 19. Position on laboratory bench 20. Mount it on the wall Smart integrated 6L reservoir for the Smart2Pure 21. Constructed with pigment-free materials 22. Conical bottom outlet allows for complete draining and efficient cleaning and disinfection 23. Warranty on system should be minimum 2 years from the date of Installation and commissioning. 24. Calibration certificate has to be provided wherever applicable.
4	<p>Digital balance</p> <ol style="list-style-type: none"> 1. Capacity: 220gm 2. Repeatability: 0.1mg 3. Linearity: +/-0.2 mg 4. Automation Grade: Automatic 5. Touch-Key calibration: Automated calibration should be started by pressing keys. 6. Should have Windows Direct communication function so that data can be sent to Excel or other Windows applications without any data communication software installation required.


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	<ol style="list-style-type: none">The pan size should be 91 mm in diameter.Should have Password lock for menu operation.Warranty on system should be minimum 2 years from the date of Installation and commissioning.Calibration certificate has to be provided wherever applicable.																					
5	Autoclave <ol style="list-style-type: none">Should be Double wall Construction fully made of Stainless Steel with Two Safety Valves, Pressure gauge, Steam release Valve, Drain Valve at bottom, and Joint less Silicon gasket.Should be ISI approved heating elements and foot lifting arrangement for cover.Minimum chamber Size: 14" x 22" with capacity of at least 50 L.Digital Temperature indicator cum controller with timer.Warranty on system should be minimum 2 years from the date of Installation and commissioning. Calibration certificate has to be provided wherever applicable.																					
6	Water bath <ol style="list-style-type: none">Temp range should be 5°C- 90°C with Accuracy of ±1°CShould be I.S.I. Mark/CE Certified.Heating Coil without Pyramid Lid.Digital Temperature Controller P.I.D. TypeDouble wall ThermostaticStirred Water Bath / 14 LInner Dimension: 320 x 300 x 150Bath opening: 200 x 300Gross Dimension: 610 x 500 x 410 mm /Independent over-temperature self-resetting safety cut-off with alarm.Full Stainless-Steel construction.Uniformity: ± 0.1°C at 37°C.Warranty on system should be minimum 2 years from the date of Installation and commissioning.Calibration certificate has to be provided wherever applicable.																					
7	Pipette Set : (autoclaveable) Required number of Pipettes <table><tr><th>Sl No</th><th>Pipette Specification</th><th>Quantity</th></tr><tr><td>1</td><td>0.1-2.5 µl</td><td>01</td></tr><tr><td>2</td><td>0.5-10 µl</td><td>01</td></tr><tr><td>3</td><td>2-20 µl</td><td>01</td></tr><tr><td>4</td><td>10-100 µl</td><td>01</td></tr><tr><td>5</td><td>20-200 µl</td><td>01</td></tr><tr><td>6</td><td>100-1000</td><td>01</td></tr></table> <ol style="list-style-type: none">Should be fully autoclavable, Light weight and with a clear Digital DisplaySecondary adjustment for the most accurate pipetting of different liquid or other external condition without the need for a full calibration.Individual Calibration report necessary.Warranty on system should be minimum 2 years from the date of Installation and commissioning.	Sl No	Pipette Specification	Quantity	1	0.1-2.5 µl	01	2	0.5-10 µl	01	3	2-20 µl	01	4	10-100 µl	01	5	20-200 µl	01	6	100-1000	01
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8	Refrigerated micro-centrifuge <ol style="list-style-type: none">Should have a maximum capacity of 24 x 2 ml, with a maximum speed of 15000 rpm.Max. RCF: 16602 x gTemperature adjustment range -10 to +40°C with temperature increment 1°C n Assured +4°C at maximum speed.Should have a clearly organized display with large buttons.Zero-maintenance motorShould have motorized cover lock with automatic lid unlocking																					


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7. Timer : 10 s - 99 min, 1 s increment, intermittent or continuous

8. Should have two acceleration and braking curves, soft or fast.

9. Over speed monitoring

10. Power consumption: 230 W

11. Warranty on system should be minimum 2 years from the date of Installation and commissioning.

Chukar