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Food Safety and Standards Authority of India
(A Statutory Authority established under the Food Safety and Standards Act, 2006)
(Quality Assurance Division)
FDA Bhawan, Kotla Road, New Delhi - 110002


Dated, the 22nd September, 2020

**NOTICE INVITING PUBLIC COMMENTS ON DRAFT
SPECIFICATIONS FOR EQUIPMENTS USED IN MICROBIOLOGY
LABORATORY**

FSSAI is in the process of finalising the specifications of the equipments required to carry out Microbiology Analysis of Foods under the Food Safety and Standards Rules and Regulations, 2011.

2. In this regard, a draft document on "**Specifications For Equipments Used In Microbiology Laboratory**" is attached for seeking public comments.

3. Accordingly, the public/stakeholders may furnish their comments/suggestions within a period of 10 days of the publication of this notice on the website to FSSAI through email (labs@fssai.gov.in).


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Assistant Director, QA



SPECIFICATIONS FOR MICROBIOLOGY LABORATORY

SUMMARY

The specifications of the equipments required to carry out microbiological analysis of food under the Food Safety and Standard Rules and Regulations, 2011 is compiled. This list is an indicative list. The specifications listed for the equipments meet the sensitivity of the methods prescribed for food analysis.

Food Safety and Standards Authority of India

www.fssai.gov.in

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LAMINAR AIR FLOW (HORIZONTAL)

Specifications	Requirement
Working principle	<ul style="list-style-type: none"> The LAMINAR AIRFLOW UV Chamber when switched on, the blower unit should create a suction pressure through the primary filter (or Pre-filter), which removes dust particles of above 10 micron size in the first stage. Subsequently, the filtered air passed to the HEPA filters, where the particles or substances of 0.3 micron size and above are removed. Finally, the ultra-clean filtered air supplied to the working chamber as a uniform airflow to perform precision analysis activities
Cabinet (Material of construction)	<p>The system should have</p> <ul style="list-style-type: none"> Laminar Air Flow Cabinet should have fully enclosed bench designed. The Laminar flow bench should have Stainless Steel SS 304 table with MS coated tabular frame and body. Laminated Unit should also have stand by control system with lock and key.
Unit	<p>The unit should have</p> <ul style="list-style-type: none"> Should have LCD display to show measured parameters like stage velocity, total using time, UV/FL lamp on/off etc Unit should have Differential pressure indicator.
Cleanliness level	<p>The system should have</p> <ul style="list-style-type: none"> CLASS 100 (ISO 5 for particle sizes $0.5 \mu < 3530$ particles/M³ of air at both at Rest & Operation Condition as per ISO 14644 –1
Working area	Minimum 4 ft (w)x 2 ft (h) x 2ft
Work table	<ul style="list-style-type: none"> It should have IS 304 Grade Stainless Steel with finish 4 polish surface Front door 5 mm thick clear Acrylic Sheet - Vertical sliding
Floor standing Base stand for cabinet	<ul style="list-style-type: none"> Have leveling feet or locking casters or motorized height adjustment.
Direction of flow	<ul style="list-style-type: none"> Vertical airflow
Airflow Speed	<ul style="list-style-type: none"> Filter face Velocity should have 90 Feet/Minute \pm 20 (0.45 m/s)

Blower Assembly	<ul style="list-style-type: none"> • It should have one set blower system, which consists of dynamically & statically balanced aluminium centrifugal impeller driven by 1/4 HP, single phase, 1200- 1400RPM motor, enclosed in an PU coated GI casing suitably suspended in a pair springs & connected to the filter chamber through flexible canvas duct
HEPA Filters	<p>The filters should have</p> <ul style="list-style-type: none"> • Size: 30" x 18" x 3" • Type: Separator less type, Mini-Pleats HEPA Media • Media: Ultra clean glass fiber paper • Retention: 0.3 Micron • Efficiency: 99.997% or better • Initial Pressure: 16 mm WG • Grade : H13 rating
Pre Filters	<ul style="list-style-type: none"> • Size : 600 x 300 x 65 mm • Media : Synthetic, non-woven polyester • Casing : Epoxy painted GI frame • Retention : 10 Micron & above • Efficiency : 90% • Initial Pressure: 6 mm WG • Grade : F7 rating
Particle Retention	<ul style="list-style-type: none"> • 0.3 Micron
Noise level	< 60 dBA±5
Power Supply	<ul style="list-style-type: none"> • Power supply should have 220-230 V, 50 Hz. And all components UL listed and CE marked
Illumination	<ul style="list-style-type: none"> • Externally mounted illuminating lamp with separate switch to illuminate the work area.
Light	<ul style="list-style-type: none"> • High intensity, low wattage >800 lux • It should be 15 Watts, 1½ Feet length, – 1 No. each
UV lamp	<ul style="list-style-type: none"> • Pre-mounted UV lamp (30 W) with separate switch with UV light hours run indicator.

Other accessories	<ul style="list-style-type: none"> • Two gas outlet in the working area, one on each side wall • Leveling Screws & Castor Wheels • DOP test port • Easily changeable pre-filters • Fitted with UV Germicidal lamp for sterilization. • Pre-installed pressure gauge for Measurement of HEPA Filters Choking system. • Ensure noiseless operation and anti-vibration construction provides efficient working environment. • Audible or highly visual alarm for filter replacement warning
Electrical sockets or Pass Through Ports	<ul style="list-style-type: none"> • Side mounted switches for minimum three (15/5 amp) electrical sockets for ancillary equipment operation or • Convenient rear-wall pass through ports for safe routing of instrument cords, cables and leads for 15/5 amps multiple socket with switches on the wall,
Standards Compliance	<ul style="list-style-type: none"> • Performance specifications and construction must meet or exceed OSHA, ANSI and relevant international standards to assure operator safety
Certification required for sign off	<ul style="list-style-type: none"> • Test Certificate for Mini-Pleat HEPA Filters • Calibration Certificate for Pressure Gauge • Calibration Certificate for Air Velocity Anemometer, • Warranty Certificate for 24 months after satisfactory installation and working
Spares	<ul style="list-style-type: none"> • Spare compatible UV lamp– 2 Nos • A spare HEPA filter for chamber – 1 No • Gas burner (Bunsen burner) – 2 Nos
Operation and maintenance training component	<p>The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.</p>
Warranty	<p>Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.</p>
Service contract clauses,	List of all spares and accessories (including minor) with part numbers

including prices	and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy) of:- <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

BIO SAFETY CABINET CLASS II TYPE B2 (TOTAL EXHAUST)

Specifications	Requirement
Cabinet (Material of construction)	<ul style="list-style-type: none"> • Cabinet should have made from Galvanized Iron 18 SWG sheet metal with polyurethane paint coated finish and bottom will be supported with MS with PU coated modular stand which can be adjustable for height with leveling legs/or motorised. • External surfaces to be coated with antimicrobial coating to protect against surface contamination and inhibit bacterial growth. • Interior work area to be from a single piece of stainless-steel with large radius corners to simplify cleaning. • The cabinet work area must have s no welded joints, which collect contaminants or rust.
Unit	<p>The unit must be a bench top / console model.</p> <ul style="list-style-type: none"> • Front door Made of clear 5 mm thick Toughened glass, vertical sliding, with Feather touch Motorized operation, while opening the door UV Lamp will be cut “OFF” And while closing the door UV Lamp will be “ON” Automatically. • Side Panels: Both the sidewalls are made from double layered outer GI & inner stainless steel with return-air plenum in between. • Edges should perforated to avoid entry of room air into the work zone and exit of contaminated air in to the room and such contaminated air is sucked through this full height perforation at the edges of the sidewalls. • A recessed central area with drain pan to contain spills and prevent liquids from entering the lower filtration unit • The BSC shall be ergonomically designed for maximum user comfort and adjustability. • Fail-safe system to ensures that in case of exhaust failure, the cabinet’s main fan automatically shuts down to ensure safety to the user
Cleanliness level	<p>The system should have</p> <ul style="list-style-type: none"> • CLASS 100 (ISO 5 for particle sizes 0.5 μ < 3530 particles/M³ of air at both at Rest &

	<ul style="list-style-type: none"> • Operation Condition as per ISO 14644(ISO 5 replaces Class 100 • US-FS 209 E) Conforming to NSF/ANSI 49, USA & En12469 standards.
Working area	<ul style="list-style-type: none"> • Minimum 4 x 2 x 2 Ft (w x d x h) • Interior work area to be from a single piece of IS304 grade stainless-steel with large radius (joint free) corners to simplify cleaning. • The cabinet work area must have s no welded joints, which collect contaminants or rust.
Work table	It should have Removable type tabletop, made of perforated IS 304 Stainless Steel with satin finished.
Direction of flow	Vertical
Air Balancing	100% Exhaust & 0 % Re-Circulation
Particle retention:	0.3 micron particles with typical efficiency of >99.997% 0.3 micron particles with typical efficiency of >99.997%
Airflow Speed	Minimum airflow velocity of 90 ft/minute \pm 20 through the work access opening. Velocity should have 90 Feet/Minute \pm 20 Easy to-read LCD/other display for continuous monitoring of cabinet airflow
Supply Air Blower	It should consist of dynamically & statically balanced aluminum centrifugal impeller driven by an Single phase, 1440-RPM motor, enclosed in a PU coated Suspended in a pair of springs & connected to the filter chamber through flexible canvas duct inside the cabinet.
Exhaust Blower	<ul style="list-style-type: none"> • It should have suitable displacing capacity having a static of 60 mm WG and made of mild steel and directly driven by a single phase, 1440-RPM motor. The exhaust motor & blower unit to be connected to the cabinet through an exhaust duct made of rigid PVC pipe.
Exhaust Duct	<ul style="list-style-type: none"> • Direct-ducting (a leak-tight duct, a leak proof damper in the duct above the cabinet) to an exhaust system vented to the outside of the building without recirculation. Exhaust duct made of 125 mm diameter rigid PVC pipe. Suitable protection from rain with canopy at the end of the duct.
HEPA Filters	The filters should have

	<ul style="list-style-type: none"> • Type: Separator less type, Mini-Pleats HEPA Media • Media: Ultra clean glass fiber paper • Retention: 0.3 Micron • Efficiency: 99.997% • Initial Pressure: 12 mm WG • Grade: H14 rating • Real-time display panel for remaining Filter lif
Pre Filters	<ul style="list-style-type: none"> • Media : Synthetic, non-woven polyester • Casing : Epoxy painted GI frame • Retention : 10 -15 micron • Efficiency : 90% • Initial Pressure: 6 mm WG • Grade : F7 rating
Noise level	< 65 decibel on “A” scale \pm 5 as per NSF 49
Cabinet Control systems	<p>Should have</p> <ul style="list-style-type: none"> • Pressure gauge, • motor voltage regulator, • audible and visual window alarm, • main and outlet power circuit breakers, • Power switches for exterior mounted fluorescent lights and / or ultraviolet lights, interior outlets, and blower motor etc.
Illumination and light intensity	<p>Must deliver uniform lighting to the work surface for greater comfort, reduced glare and improved productivity</p> <p>High intensity, low wattage, >800 lux</p> <p>Choke less to withstand larger fluctuations in voltage,</p> <p>Must be placed in a position to avoid turbulence in working area.</p>
UV germicidal lamp	<ul style="list-style-type: none"> • Germicidal UV lamp - Controlled by automatic UV lamp timer (lamp hours) • Emission of 254 nm

	<ul style="list-style-type: none"> • Lamp should be positioned away from operator line of sight for safety and proper exposure to interior surfaces. • UV lamp should be in working zone (40 micro watts/ square cm at 254 nm or better) • The UV lamp should automatically switch “off” when the front door is opened to avoid accidental exposure of UV rays to the users’.
Alarms	<ul style="list-style-type: none"> • An audio alarm must be installed to indicate loss of exhaust flow. • Should have Audible alarm to warn the operator if the window is raised above the recommended height
Certification required	<ul style="list-style-type: none"> • Test Certificate for Mini-Pleat HEPA Filters • Calibration Certificate for Pressure Gauge • Calibration Certificate for Air Velocity Anemometer, • Warranty Certificate
BSC standard compliance	<ul style="list-style-type: none"> • Meet American (NSF/ANSI) or European standard EN 12469 (type tested) or both
Power Supply	<ul style="list-style-type: none"> • Power supply should have 220-240 V, 50 Hz. And all components UL listed and CE marked Electric supply requirement
Operation and maintenance training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system and support services till customer satisfaction
Certificates Performance and safety standards (specific to the device type);Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service Support	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service

Contact details (Hierarchy Wise; including a toll free/landline number)	agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
Comprehensive Maintenance	<ul style="list-style-type: none"> Comprehensive Maintenance of the equipment supplied, installed, commissioned for 60 months after 2 year Warranty/Defects Liability Period. This will include yearly calibration start-up / commissioning routine servicing, regular maintenance, preventive maintenance of equipment and components and break down repairs as and when occurring, ensuring that system does not remain out of service for a period more than 24 hours in case of major breakdowns and 6-8 hour in the case of minor breakdowns due to any unforeseen break down. The institution will provide Water / Electricity power, etc. for maintenance work. The successful tenderer shall keep the essential spares at site during the Contract Period to avoid the delay in attending faults / maintenance
Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets(hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.

Payment	Payment only after installation, validation and performance demonstration
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BIO-SAFETY CABINET (Class II Type A2)

Specifications	Requirements
Application	Biosafety cabinets are ventilated enclosures that use HEPA (High-Efficiency Particulate Air) filters to filter out all the pathogenic biological agents and microorganisms from the workspace environment and disseminate unpolluted air to the environment. It provides workspace for safely working with materials potentially contaminated with pathogens requiring a defined biosafety level. The Class II Biological Safety Cabinet is specialized to provide environmental, product, and personnel protection
Cabinet: Dimensions	<ol style="list-style-type: none"> 1. System must work on laminar air flow technology Vertical 2. Working area minimum 4 ft (w) x 2 ft (h) x 2ft 3. Interior work area to be from a single piece of IS304 grade stainless-steel with large radius (joint free) corners to simplify cleaning. The cabinet work area must have s no welded joints, which collect contaminants or rust. 4. Cabinet should be balanced with base stand with castor wheel and lock. Stand approx. 711 mm height from same company. Single Piece Wall. Single piece work tray. Raised arm rests. Drain Pan / Drain valve or cock for cleaning spills incase work tray is fixed.
Cabinet Construction/ Work Zone	<ol style="list-style-type: none"> 1. Body M.S with sufficient protective coating. 2. Front Window should be laminated toughened glass>5mm, anti UV 3. Vertical sliding (one piece with counter weight arrangement for finger-tip control). 4. Should have Fluorescent light with low energy choke less to withstand larger fluctuations in voltage, should be placed outside working zone to avoid turbulence 5. Should have support stand with levelling screws adjustable from 55-85 mm. 6. UV lamp should be in working zone (40 micro watts/ square cm at 254 nm or better) and placed so that the operator cannot see directly i.e. eyes should be always protected 7. Universal Service fittings for gas and air should be provided with gas burner along with gas cylinder which can be refilled on requirement

	<p>8. Should have Switches & Electrical sockets outlets for 15/5 amp.</p> <p>9. Should have Pressure Monitors like Magnehelic gauge are required to indicate pressure drop across HEPA filter.</p> <p>10. Should have DOP Port</p> <p>11. Should have current leakage circuit breaker</p> <p>12. Should have air tight duct exhaust extension</p> <p>13. Should have Contaminated plenum in negative pressure to prevent leakage into the environment.</p> <p>14. Exhaust blower should be placed outside at roof top level.</p> <p>15. Special provisions should be there, If, by chance the exhaust blower is not working properly, the operator will get a buzzer</p>
Control System	Microprocessor based
Display	LCD - all information, HEPA Filter life and UV Life indicator displayed
Air Flow Pattern (Through ULPA/HEPA)	<p>Air pressurization system should be statically and dynamically balanced, fitted with special vibration reducing system to suit low noise and vibrations</p> <p>70% of the air re-circulated and 30% of the air exhausted</p>
Class	100
Protection	Operator, sample and environment
Average Airflow Velocity	<p>Inflow: 0.53 m/s (105 fpm)</p> <p>Down Flow: 0.33 to 0.35 m/s (70 fpm)</p>
UV Lamp	<p>1. 30 to 40 W x 1</p> <p>2. UV timer, UV life indicator, Emission of 253.7 nanometers for most efficient decontamination</p>
Fluorescent Lamp	12 to 21 W x 2
Illumination	≥1000 lux
Consumption	760 W
Power Supply	210-240V/50/60 Hz
Sound Emission	62.5 dBA to 65 dBA
Filter Specification y ULPA Filter	HEPA filters should be MINIPLEAT with integral metal guards & filter frame gaskets and manufactured in Class 1000 super clean air-

	conditioned environment for longer life
	Supply: ULPA /HEPA Filter: $\geq 99.999\%$ for particle size between 0.1 to 0.3 microns
	Exhaust HEPA Filter Typical Efficiency $\geq 99.99\%$ at 0.3 microns
Interlock Function and Alarm	Interlock function for UV lamp and front window. Alarm for any out of range parameters
Certification	<ul style="list-style-type: none"> • NSF 49/EN1249 or Equivalent standard Test Certificate for Mini-Pleat HEPA Filters • Calibration Certificate for Pressure Gauge • Calibration Certificate for Air Velocity Anemometer
BSC standard compliance	Meet American (NSF/ANSI) or European standard EN 12469 (type tested) or both
Power Supply	Power supply should have 220-240 V, 50 Hz. And all components UL listed and CE marked Electric supply requirement
Services Required	System should come along with all necessary accessories and should be ready to work. Installation & onsite validation, Calibration certificates Manuals: Operation, maintenance & part list with detailed specifications, Operational & maintenance Training. For validation vendor should have capability with their own company to perform Cleanliness level validation. No third part validation will be entertained. One validation at the time of installation should be done by company personnel.
Electrical Outlets	Minimum 2 nos. electrical outlets should be provided inside the work space.
Operating manuals, service manuals, other manuals	<p>Should provide: -</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract

	(AMC/CMC/adhoc) to be declared by the manufacturer.
Training	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	Provide a list of all spares with part numbers
UPS	Suitable on - line UPS (5 KVA) to support the instrument.
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ Compliance statement	Instrument must be provided with all IQ/OQ/PQ documents The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

VERTICAL AUTOCLAVE

Specifications	Requirement
Application	A vertical steam sterilizer to provide safe, economical and effective sterilization for microbiology laboratories that do not want to compromise on quality, safety and reliability and need to sterilize liquids such as nutrient media and buffer solutions, Solid items such as pipettes, tubes and filters and Glassware and plastic articles
Chamber	<p>Vertical loading type chamber with service basket and complying to the strictest international directives and standards equipped with</p> <ul style="list-style-type: none"> • Steam collection bottles to removes most of the steam during operation • Ware inlet and outlet valve • Drain valve for cleaning or changing with fresh water • Constructed with appropriate stainless steel with superior corrosion resistance to water and steam • High temperature and pressure resistant silicon gasket • Built-in analog pressure gauge • Manual pressure release valve • Wheels/casters for easy transport.
Chamber size/Capacity	<ul style="list-style-type: none"> • Approx. 80-120 lit
Gauges	<ul style="list-style-type: none"> • Should have a water level gauge • Analog gauges for measuring inner and outer steam pressure. • Should have an inner temperature indicator.
Chamber size/Capacity	<ul style="list-style-type: none"> • Approx. 80-120 L
Display	<ul style="list-style-type: none"> • Fully Automatic PID Control ± 0.1 °C • LED display for temperature and remaining time
Operating Temperature and accuracy	<ul style="list-style-type: none"> • Maximum 123°C • Temperature Accuracy: ± 0.5 °C at 121 °C • Must have Temperature calibration function

Operating pressure and gauge	<ul style="list-style-type: none"> • 15 -20 psi • ANALOG PRESSURE GAUGE (0 -400 psi pressure gauge) indicating actual pressure
Timer	Automatic START/STOP timer
Safety warnings and alarms	<ul style="list-style-type: none"> • A cycle cannot start if the door is open or not properly locked • The door cannot unlock until chamber pressure reaches room pressure • Over-Temperature Cut-Off with audio visual alarm • Low Temperature Warning: If the temp. stays below 121°C for more than 5 seconds • Low Heat Warning: If the temp. does not reach the sterilization temperature during the set periods • Over-Pressure Cut-Off with audio visual alarm • Over Current Cut-off with audio visual alarm. • Low Water Level heater cut-off and ALARMS

11	Accessories	<ul style="list-style-type: none"> • Perforated corrosion free baskets made up of SS 304 (3-4 Nos.) that are stackable two high or even more levels, • Silicone gasket
12	Calibration certificates	Certificate from ISO17025 accredited lab for temperature, pressure gauges & timer.
13	Operation and maintenance training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system and support services till customer satisfaction
14	Certificates Performance and safety standards (specific to the device type);Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
15	Supplier/	<ul style="list-style-type: none"> • Must be ISO certified for quality

	Manufacturer	
16	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
17	Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be adequately displayed
18	Warranty	<ul style="list-style-type: none"> Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
19	Comprehensive maintenance	Comprehensive Maintenance of the equipment supplied, installed, commissioned for 60 months after 2 year Warranty/Defects Liability Period. This will include start-up/commissioning routine servicing, regular maintenance, preventive maintenance of equipment and components and break down repairs as and when occurring, ensuring that system does not remain out of service for a period more than 24 hours in case of major breakdowns and 6-8 hour in the case of minor breakdowns due to any unforeseen break down. The institution will provide Water / Electricity power, etc. for maintenance work. The successful tenderer shall keep the essential spares at site during the Contract Period to avoid the delay in attending faults / maintenance
20	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
21	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection
	Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.

	Payment	Payment only after installation, validation and performance demonstration
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INCUBATORS:

1) AMBIENT TO 70 °C) 5 °C TO 50°C and 37 °C

Specifications	Requirement
Application	For incubation of organisms, such as on agar plates, and also for conditioning of heat sensitive media and to provide an optimal, homogeneous, temperature uniformity and stability to ensure that protocols are fully reproducible –
Material of construction	<ul style="list-style-type: none"> • Double walled construction with complete inner chamber made of Corrosion resistant stainless steel (AISI 430) • Outer chamber should be of steel sheet finished with powder coated point Insulation to maintain desired temperature • Inner glass door • Inner chamber should be fabricated with ribs for adjusting shelves to convenient height and shelves to be supplied • Shelves should be made of polished stainless-steel sheet as per chamber
Capacity	<ul style="list-style-type: none"> • 150- 200 liters
Temperature range	<ul style="list-style-type: none"> • Temperature should be thermostatically controlled • Temperature should be thermostatically controlled with range 1) Ambient to 70° ±2° C and 2) 5 °C to 50°C ±2° C 3) 37 C±2° C • Over-Temperature cut-off with audio/ visual alarm • Low Temperature Warning alarm
Unit	<ul style="list-style-type: none"> • Air ventilators to be provided on both side • The equipment should be provided with microprocessor controlled digital display • Temperature homogeneity between top and bottom shelves should be maintained by forced circulation
Calibration	Certificate from a ISO 17025 accredited lab for 3 different temperature points
Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two

	scientific personnel operating the system till customer satisfaction
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> • Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	Payment only after installation, validation and performance demonstration

DIGITAL COLONY COUNTER

Specifications	Requirement
Application	For fast and accurate bacterial or mold colony counting and to aid in determining counts of colony clusters and exceedingly large or small colonies, and can accommodate multiple dish sizes or formats.
Material of construction	Full Stainless-steel fabricated body with duly heat cured epoxy coating.
Display and counting	<p>It should consist of</p> <ul style="list-style-type: none"> • Digital display up to 4 digits with confirmation by audible tone. • It should consist of Magnifying lens (greater than 2X magnification with digital marking pen) • Accepts petri dish up to size 120 mm diameter with a centering adaptor for standard 90mm petri dish • Glare free viewing low energy bright LED's • A switchable black background viewing translucent and difficult to see colonies. • Zero reset button
Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Certificates Performance and safety standards (specific to the device type);Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality

Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

LAB BLENDER (PADDLE TYPE)

Specifications	Requirement
Application	A powerful compact and ergonomic lab blender adapted for optimal homogenization and bacterial extraction without cross contamination
Unit	<ul style="list-style-type: none"> • Should have chamber of stainless steel with an opening door • Should have multi-function digital display Provision of adjustable blending power with on screen indicator. • Should have provision of removable paddles for cleaning and autoclaving • Should have facility for side by side paddle stop. • Provision of fully opening door facility for easy cleaning.
Disposable bag size	Appropriate to the model & capacity quoted
Capacity	50-400 ml
Temperature	Ambient operating temperature 10-35°C.
Humidity range	Operating relative humidity range should be 10-89%
Adjustable timer settings	1sec-60 mins.
Paddle speed	Variable speed (4-10 strokes /sec or better
Sensor	To ensures immediate stop of blending in the event of a leakage
Accessories	Bags (1000 numbers), Bag clips (50 numbers) Bag storage rack/stand (2 numbers) Bag sealer
Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Certificates Performance and safety standards (specific to the device type);Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical

	<p>safety IEC 60601- General requirements (or equivalent BIS Standard)</p> <ul style="list-style-type: none"> • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> • Warranted for 3 years after satisfactory installation and working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

SEROLOGICAL WATER BATH

Specification	Requirement
Application	The water bath is for routine use in microbiology protocols as well for solubilisation with precise temperature control.
Material of construction	<ul style="list-style-type: none"> • Rounded, seamless stainless-steel bath to preventing rust, chemical damage and contamination. • Powder coating like epoxy coating exterior for easy cleanup • corrosive resistant stainless-steel Gabled drip free lid
Unit	<ul style="list-style-type: none"> • Microprocessor controlled digital display. • Instrument should have lift up drip free bath cover; • Carrier racks should be given for flasks and test tubes racks. • Convenient water bath drains. • Water bath protective media should be there to prevent contamination and formation of algae. • Easy cleaning
Temperature	<ul style="list-style-type: none"> • Temperature Range: +20°C to 99°C • Temperature Accuracy: ± 0.2 °C at 37 .0°C • Temperature Uniformity: ± 0.5 °C at 37 .0°C • Digital LED display for operating status of TEMP • Over-Temperature Cut-Off • Temperature calibration function
Alarms	<ul style="list-style-type: none"> • Audible warning safety signals should be there for high/low temperature warnings • Low liquid level
Calibration	<ul style="list-style-type: none"> • Certificate from a ISO 17025 accredited lab for 3 different temperature points
Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Certificates Performance and safety standards	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product.

(specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> • Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

CIRCULATING CUM SHAKING WATER BATH

Specifications	Requirements
Application	Circulating baths are constant temperature water baths that enable rapid heating and cooling of samples by constantly circulating water. Water baths are primarily used incubate samples contained test tubes, flasks and beakers etc. An integral pump circulates the bath water within the tank to maintain uniform temperature. The sample containers can be mechanically agitated.
Temperature Range	Working temperature range from +20°C to+99.9 °C
Display	Bright LED-Display with cutting-edge microprocessor technology with PID temperature control
Temperature Range Display	Bath volume ~10-12 liters (one)
	Bath volume ~18-20 liters (one)
Power	Power switch integrated in keypad
Temperature Stability / Uniformity @ 37°C	High temperature stability of ± 0.2 °C or ± 0.02 °C
Adjustable shaking frequencies	Adjustable shaking frequencies from 20 to 200 RPM
Maintenance	Convenient bath drains to easily clean and maintain bath
Top cover	Lift-up bath cover
Alarms	Audible alarms for Dry-running protection and over temperature
Timers	Optimize scheduling with auto-on and auto-off timers
Accessories	Stainless Steel / Polypropylene Test tube rack, for 15-21 tubes of 23-25 mm, 25 -60 tubes of 12-16 diameter(each) 1nos Spring tray/ racks for Erlenmeyer flasks (250/500 mL)
Operating manuals, service manuals, other manuals	Should provide: - <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation.
Recommendations or	Any warning signs would be adequately displayed

Warnings	
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer.
Training	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	Provide a list of all spares and accessories with part numbers
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	Instrument must be provided with all IQ/OQ/PQ documents
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

ANALYTICAL BALANCE

Specifications	Requirement
Application	Required to measure mass to a high degree of precision with a weighing capacity typically 200 g and a readability of 0.1 mg – 0.001 mg and protected by a draft shield or an enclosure.
Operational Requirements	<p>It should have</p> <ul style="list-style-type: none"> • Microprocessor based single pan top loading analytical balance with high accuracy and precision. • Reading of the weight by digital display • Balance with transparent case. • Weighing with automatic and manual start and provision for data interface.
Technical Specifications	<ul style="list-style-type: none"> • Weigh accurately up to 3rd decimal place. • Fully automatic time and temperature controlled internal calibration and balance should be capable to adjust itself Auto zero setting. • Weighing capacity up to 200g Readability 0.1 mg Repeatability 1 mg or less. Setting time 1.5 secs.
Weight Box traceable to international standards	<ul style="list-style-type: none"> • 1 mg - 200 g, E2 • Accuracy class acc. to OIML R111: E2 • Nominal mass value: 1mg to 200g. Up to 500 mg as wire weights • Susceptibility: 0.002 – 0.004 • Material: special steel, non-magnetizable, density 8.0 g/cm³, highly corrosion-resistant, knob weights highly polished and laser marked, in wooden case. • Dust Cover
Balance should have	<ul style="list-style-type: none"> • Fast dismantling chamber for easy clean up
Environmental factors	<ul style="list-style-type: none"> • Safety for electromagnetic compatibility.

	<ul style="list-style-type: none"> The unit shall be capable of operating in ambient temperature of 20-30 deg C and relative humidity of 80%.
Accessories	<ul style="list-style-type: none"> All necessary accessories should be provided with unit.
Calibration certificate	Certificate from a ISO 17025 accredited lab for 3 different weights.
Operation and training component	<ul style="list-style-type: none"> The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> Warranted for 3 years after satisfactory installation and working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets(hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be

	<p>provided;</p> <ul style="list-style-type: none"> • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

UPRIGHT FROST FREE VERTICAL DEEP FREEZER (-25 °C)

Specifications	Requirement
Application	For storage of various biological products including, ATCC cultures, enzymes, chemicals or material testing components for a longer period of time
Unit	<ul style="list-style-type: none"> • Interior: Full stainless steel which can be easily cleaned and eliminates any possibility of cross contamination • Cooling Type: Direct cooling • Should be vertical (Upright)type • Microprocessor-based • Frost Free • Refrigerant: CFC – Free • Easy to read, LED control panel and alarm status with integrated diagnostics • Doors with key lock • Built in Voltage stabilizer/battery back-up for 48h or more • Castors for easy movability
Capacity	Capacity: 250 L or higher with a combination of sealed 5-7 pullout drawers / shelves of different sizes that can be adjusted for storage flexibility
Temperature	<ul style="list-style-type: none"> • Range - 10 ~ - 25 °C with temperature controller • Digital temperature display • LED Display for temperature and temperature history which can be downloaded via a USB port • Calibration facility
Alarms	Acoustic/visual Safety alarms for <ul style="list-style-type: none"> • High/low temperature, • door ajar and • malfunction system alarms
Optional Accessories:	Racks for 50 mm boxes (incl. dividers), Racks for 75 mm boxes (incl. dividers)

Voltage stabilizer	Suitable and compatible voltage stabilizer
Calibration	Certificate from an ISO 17025 accredited lab for 3 different temperature points.
Operation and training component	<ul style="list-style-type: none"> The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Certificates Performance and safety standards (specific to the device type);Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection

Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and
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	giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

UV-VIS SPECTROPHOTOMETER

Specifications	Requirement
Application	UV-Vis The system should be capable to measure the all colorimetric based parameters in food and water samples as per FSSAI requirements including Enzyme assays, Kinetic assays and scans
System	A fully automated spectrophotometer with double beam optics with pre-programmed applications using conventional quartz / glass/plastic cuvettes with all the required accessories.
Operation keys	<ol style="list-style-type: none"> 1. Instrument should operate immediately after switch on with no warming up time 2. Should be automatically programmed with on-board touch screen & soft keys 3. Capable to store method with analysis:> 100 method programs on the instrument, > 1000 results with data, evaluation results and used parameters
Optical Design	<ul style="list-style-type: none"> • Double Beam with sample and reference cuvette positions; Czerny-Turner Monochromatic/Holographic grating with sealed optics • Reference Compartment Should accommodate cells up to 10 mm path length as standard feature
Light Source	<p>(1) Halogen lamp for Visible range</p> <p>(2) Deuterium Lamp for UV range, light source should be auto automatically selected as per wavelength required.</p>
Detector	Silicon Photodiode dual detector/PMT
Scan Ordinate Modes	Absorbance, % Transmittance, % Reflectance
Resolution	0.1nm or better.
Wavelength Range	180 –1100 nm
Wavelength Accuracy	± 0.3nm or better for entire range
Wavelength Repeatability	± 0.1nm or better
Scanning Speed	Selectable Variable wavelength scan rate 10nm/min to 2500 nm/min or
Spectral Bandwidth	Variable(0.1/0.2/0.5/1/2/5) nm

Photometric Range	Absorbance = -4.5 to 4.5 Abs or better. Transmittance & reflectance 0 to 80000 % or better.
Photometric Accuracy	0.5 A: $\pm 0.004A$; 1A: $\pm 0.006A$; 2A: $\pm 0.010A$; (440 nm; traceable neutral density filters)
Stray Light	Max. 0.005% (220 nm NaI) or better, Max. 0.005% (340,370 nm NaNO ₂) or better Max. 1% (198 nm KCl) or better
Noise	0.00005 Abs RMS (500nm) or better
Drift	< 0.0005 A/hr (500 nm, 1 hour warm-up)
Baseline flatness	± 0.0005 Abs or better
Application Software	<p>Compatible Software should be user friendly & simple for data handling with feature like easy to use report publisher, online help and answer wizard, GLP & audit trail and fully compatible with Windows.</p> <p>System built in features such as real time display of concentration, time scan, photometric mode, single/multi-wavelength, capability for event recording (e.g., addition of reagents)</p> <p>Software should have built in</p> <p>a. Methods:</p> <ul style="list-style-type: none"> • Absorbance with one or more wavelengths, • Scans, Nucleic acids, Proteins, OD 600, • Evaluation: via factor, standard and calibration curve • Dual wavelength with subtraction and division evaluation <p>b. Method dependent evaluation:</p> <ul style="list-style-type: none"> • Absorbance, concentration via factor and standard • Concentration via standard series using Linear regression, Nonlinear regression with 2nd and 3rd degree polynomials • Spline analysis, • Linear interpolation (point to point evaluation) • Absorbance allocation via subtraction and division • Ratio 260/280, 260/230, Molar concentration and total yield for nucleic acids. <p>The software should be 21CFR part 11 compliant.</p>

Accessories and spares	<ul style="list-style-type: none"> • One pair each of 0.5, 1 and 3-ml quartz cuvettes 10 mm path length • One pair each of 0.5, 1, and 3 ml glass cuvettes 10 mm path length • Cuvette holder • Deuterium Lamp • Halogen lamp • Holmium oxide glass filters for wavelength calibration. • NIST traceable Potassium dichromate
Computer and printer	Latest configuration factory set branded PC system with 22-23” Full HD Monitor with printer –B/W – duplex- laser-legal, A4 - 1200dpi- up to 21 ppm –capacity with network card
UPS	Suitable UPS with 60 mins backup power
Calibration	Certificate from an ISO 17025 accredited lab spectral calibration.
Compliance	IQ/OQ/PQ of instrument and Software should be provided along with document
Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Certificates Performance and safety standards (specific to the device type);Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality

Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> Warranted for 3 years after satisfactory installation and working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

BINOCULAR MICROSCOPE

Specifications	Requirement
Application	A System complete with illumination system is required. For view of individual cells, even living ones with high magnification microscope using 2 eye lenses to reduce the eyestrain
Body	<ul style="list-style-type: none"> • Body-Single mold sturdy stable base stand, inclined Binocular body 30 °, 360° rotatable head with focus adjustment controls. • A durable textured acid resistant finish • All optical parts including objectives, eye pieces and prisms should have anti-reflective coating which also gives anti-fungal property. • All metallic parts should be corrosion-proof, acid proof and stain-proof.
Eye piece	<ul style="list-style-type: none"> • -Highest quality 10 X/20mm wide angle anti fungus field eyepiece. One with pointer. Diopter adjustment must be present on both eye pieces. (the image of the object as seen through the binocular eyepiece should be well defined centrally in at least 2/3 field of view) • Achromatic, wide field, 10 x with inbuilt pointer. • The eyepiece should be aplanatic and have a minimum field number of 18 Diopter adjustment must be present on one/ both eye pieces or on the eye piece tube.
Optical system	<ul style="list-style-type: none"> • Optical system should be infinity corrected. • Built-in LED light source with white light with intensity control and LED life of more than 10, 000 Hrs.
Objective	<ul style="list-style-type: none"> • -Parfocal, antifungal coated 4×, 10×, 40×and 100× (oil immersion) with semi planner achromatic correction. • Objective should be well centered even if their position on turret is changed. • 10× and 40× objectives should have numerical apertures of 0.25 and 0.65 respectively. • 100×should have numerical aperture of 1.25 and should be of oil immersion. • Unbreakable containers to be provided for storing the objectives. • All objectives should be wide field, achromatic and par focal.

Nose piece	<ul style="list-style-type: none"> • Backward tilted revolving nose piece suitable to accommodate four objectives with click stop • . It should be provided with rubber ribbed grip for easy rotation mounted on a precision ball bearing mechanism for smooth and accurate alignment. Extra ports if any should be fitted with dust& fungal proof metallic/ebonite caps.
Focusing:	<ul style="list-style-type: none"> • . Coaxial coarse and fine focusing knob, capable of smooth, fine focusing movement sensitivity; minimum: 300 micron; focusing stop for slide safety. ..
Stage	<ul style="list-style-type: none"> • Stage uniformly horizontal, mechanical stage having dimensions of length 140 mm (+/- 20mm) with fine Vernier graduations (minimum reading accuracy of 0.1 mm). • It should be designed with convenient sub-stage vertical coaxial adjustment for slide manipulation. • The stage should have ball-bearing arrangement to allow smooth travel in transverse directions i.e. 80 mm (+/-5mm) and front to back direction, 50mm (+/- 5mm).
Sub-stage condenser	<ul style="list-style-type: none"> • Abbe-type condenser with numerical aperture (N.A.) 1.25 focusable with rack and pinion arrangement incorporating a spherical lens and an iris-diaphragm
Sub-stage illuminator	<ul style="list-style-type: none"> • The system should have a build-in variable light source (Illuminator). • This light source should have a 20 W, 6 V Halogen lamps. • The system should be provided with a step down transformer and an on-off switch and intensity control. • The lamp should be provided with a lamp socket which has the facility for easy replacement of the bulb
Power supply & protection	<ul style="list-style-type: none"> • Voltage 220 V AC, 50Hz. should have one on-off power switch • A plano-concave mirror in fork mounting should be supplied which would be attachable to the base for field use when power is not available. • Should have over-charging cut-off with visual symbol
Battery backup	<ul style="list-style-type: none"> • Minimum 1 Hour
Operating and	<ul style="list-style-type: none"> • Capable of operating continuously in ambient temperature of 10

storage conditions	<p>to 50 ° C and relative humidity of 15 to 90% in ideal circumstances.</p> <ul style="list-style-type: none"> Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 °C and relative humidity of 15 to 90%
Manual Accessories	<ul style="list-style-type: none"> Working manual should be provided with each microscope. Immersion oil 25 ml × 2 lens tissue paper 2 rolls or boxes) Lens cleaning solution (100 ml) One anti-static cleaning brush. The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%.
Digital camera	<ul style="list-style-type: none"> 5 mega pixel scientific grade (even at dim light) colour CCD camera along with image capture and analysis software and c-mount adapter. Resolution at least 2448 x 1920 effective pixel (4 x 4 binning and 2 x 2 binning) and 10-bit digitization. Microscope should come along with PC (i5 6200U processor, 6 GB RAM, 1 TB HDD, DVR R/W, LED 20”). With UPS (minimum offline backup of 30 minutes).
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. TVU Cert Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality
Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets(hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and

	<p>routine maintenance;</p> <ul style="list-style-type: none"> • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Warranty	<ul style="list-style-type: none"> • Warranted for 3 years after satisfactory installation and working excluding consumable parts and accessories.
Operation and maintenance training	<p>The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.</p>
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

HOWARD MOLD COUNTER (PROPRIETARY)

Specification	Requirement
Application	It is use in determining mold counts (is used mold fibres and spores) in tomato products and for mold counting in food quality control applications for other fruit based preparations and mold mycelia in butter and cream..
Counting chamber	Constructed entirely of glass. Centre of glass should contain a 15x20mm rectangle that is flanked by 0.1 mm shoulders on each side to support cover glass Rectangle and Cover glass should have optically plane surfaces Facilities for calibration of microscope
Eyepiece micrometer	Ruled into squares (grid), each of which is equal to 1/6 of the diameter of the eyepiece diaphragm opening
Cover slips	Thin 28mm x 33mm x 0.5mm 2 Nos Thick 28mm x 33mm x 1.0mm 2 Nos
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards.
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required;
Demonstration and training	The supplier will have to carry out successful demonstration at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system till customer satisfaction with the system.
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards.
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous

	information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

REFRIGERATED CENTRIFUGE

Specifications	Requirement
Application	A Multi-functional, general purpose High speed refrigerated bench top centrifuge with both fixed angle and swinging bucket rotors for sedimentation of samples with easy lift and safety lid
Base unit	<ul style="list-style-type: none"> • Table top centrifuge with maintenance free brushless motor and have low access height • CFC free refrigerant • LCD Digital Display of time, speed and Temperature and run conditions • Compatible with all fixed angle and swinging bucket rotors • Automatic rotor recognition facility • Automatic imbalance detection and cut-off • Should be programmable with easy preset programs for fast temperature for pre-cooling and short spin. • Should have motorized lid lock system
Temperature range	<ul style="list-style-type: none"> • -5°C to 40 °C
Speed	<ul style="list-style-type: none"> • Maximum speed: 15000 rpm (20000 RCF) with 8 × 50 mL Fixed angle rotor or better
Rotors	<ol style="list-style-type: none"> 1. Fixed Angle Rotor for 8×50 ml Falcon tube with 8 adapters for 15 mL conical bottom culture tubes/falcon/oak ridge 2. Rotor for 1.5-2.0 mL Eppendorf tubes (24 places or better) and adaptors for 0.2- and 0.5-mL tubes 3. Deep-well micro plates rotor (Four 96 well plates) 4. Swing out rotor: <ul style="list-style-type: none"> • Should have at least 4 × 100 ml of capacity Maximum RCF produced should be 3200 x g or above • Four buckets should be provided (either round or rectangular buckets) • Adapters for 15 ml conical bottom centrifuge tubes & 50 ml conical bottom centrifuge tubes should be provided (two adapters for 6 or 8 ×15 ml and two adapters for 2 or 4×50 ml) • Rotor and buckets should be autoclavable. • All rotors should be autoclavable

Centrifuge tubes	<ul style="list-style-type: none"> • Suitable 15 mL autoclavable screw capped tubes -24 Nos • Suitable 50 mL autoclavable screw capped tubes -24 Nos
Power requirement	<ul style="list-style-type: none"> • 220 v to 240 v -50 Hz If a voltage stabilizer is required, it should be supplied along with the unit
Voltage stabiliser	<ul style="list-style-type: none"> • Suitable voltage stabilizer to be provided
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Warranty	<ul style="list-style-type: none"> • Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
Operation and maintenance training	<p>The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.</p>
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This</p>

	statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

MINI CENTRIFUGE

Specifications	Requirement
Application	A compact bench top Mini Centrifuge for 96-well plates used for centrifuging plates before setting up for PCR, RT-PCR and protein estimation by ELISA
Base unit	<ul style="list-style-type: none"> • Table top centrifuge with maintenance free brushless motor and have low access height • CFC free refrigerant • LCD Digital Display of time, speed and Temperature and run conditions • Compatible with plate rotors • Automatic imbalance detection and cut-off • Should be programmable with easy preset programs for fast temperature for pre-cooling and short spin. • Should have motorized lid lock system & Automatic lid release • Aerosol tight lid
Temperature range	<ul style="list-style-type: none"> • -5°C to 40 °C
Speed	<ul style="list-style-type: none"> • Maximum speed: 2000 rpm or better for 96 well plate r
Timer	<ul style="list-style-type: none"> • Timer set up to 99 minutes
Rotors	<ul style="list-style-type: none"> • Rotor for 2 x 96 well plate • Rotor for 1.5ml with adapters for 0.2 ml
Power requirement	<ul style="list-style-type: none"> • 220 v to 240 v -50 Hz If a voltage stabilizer is required, it should be supplied along with the unit
Voltage stabiliser	<ul style="list-style-type: none"> • Suitable voltage stabilizer to be provided
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)

	<ul style="list-style-type: none"> • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Warranty	<ul style="list-style-type: none"> • Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
Operation and maintenance training	<p>The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.</p>
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

BOD INCUBATOR

Specifications	Requirement
Application	For use in microbiological laboratories to measure biochemical oxygen demand (BOD). The incubators are used to sustain and control the humidity and temperature essential to perform many types of experiments in, microbiology and biology cells.
Double walled modular structure with 3” thick PUF insulation	<p>i) Outer wall: Powder coated steel sheet with resin baked finish</p> <p>ii) Inner wall: Stainless steel* with ribs for adjusting removable perforated shelves at the height of 45 mm.</p> <p>The nuts, screws and hinges of the inner chamber shall be of Stainless Steel*. (SS Grade X07Cr18Ni9 of IS 6911 : 1992 or equivalent)</p> <p>iii) Perforated Stainless Steel*Partition tray (6 nos.)</p>
Doors	<p>Double door type</p> <ul style="list-style-type: none"> • Inner Door: Full view inner acrylic door with aluminum channel boundary, closes on a resilient gasket and permits view of the specimens (inside the Incubator), without disturbing the thermal conditions inside the chamber. • Interior illumination • Outer Door: Powder coated steel sheet with resin baked finish
Capacity	<ul style="list-style-type: none"> • 340 Liters
Temperature Range	<ul style="list-style-type: none"> • 5°C to 60°C with digital controller, • Temperature increments 0.1° C
Control Accuracy	<ul style="list-style-type: none"> • ± 0.1 °C or better (at 60°C).
Distribution Accuracy/uniformity	<ul style="list-style-type: none"> • ± 1 °C or better (at 37°C).
Temperature display	<ul style="list-style-type: none"> • Microprocessor based Digital display of temperature along with calibration certificate by 17025 accredited agency. • Temperature recorder for inner chamber with maintenance free battery backup and auto charging of battery
Air circulation	<ul style="list-style-type: none"> • With two completely in-built motors along with fan to keep the temperature uniform throughout the chamber
Heat up time &	<ul style="list-style-type: none"> • 30 min. up to 60 ° C without load.

Cool Down time	<ul style="list-style-type: none"> • 40 min. up to + 5 ° C without load
Timer	<ul style="list-style-type: none"> • 0 to 24 hrs X 7 days cyclic ON / OFF timer for illuminating port
Safety Alarms	<p>Provision for audio-visual alarm to indicate</p> <ul style="list-style-type: none"> • Door opening after 2 min. • Self -diagnosis function including overheat • Prevention and overcurrent Protection
Computer Interface	RS 485 / RS232 interface for multiple & single communication port
Voltage stabilizer	Automatic Stabilizer, 4 KVA with TDR (3minutes) electronic type
Documents Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Complete with IQ, OQ, PQ, Documents, Operations and Maintenance manuals
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection
Warranty	<ul style="list-style-type: none"> • Warranted for 2 years after satisfactory installation and working excluding consumable parts and accessories.
Operation maintenance&	The supplier will have to carry out successful installation at our

training	laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

MICRO FILTRATION UNIT

Specification	Requirement
Application	Used for the collection and preparation of samples, mobile phases, and buffers to obtain the highest quality results from downstream analysis
All-Glass Filter Holder	With borosilicate glass funnel and base, anodized aluminum spring clamp, silicone stopper, coarse-frit glass filter support and PTFE-faced funnel and base for <ol style="list-style-type: none"> 1. 47 mm disc filters 2. 90 mm disc filters 3. 25 mm filters
Stainless Steel Vacuum Filter Holders	Analytical Filter Holders For 25- and 47-mm disc filter.
Filtering Flasks	Side arm connects to vacuum source with 3/8in. I.D. hose. 1 L and 4 L flasks accept no. 8 perforated stopper. 125 mL flask accepts no. 5 stopper.
Filter Forceps	Highly polished stainless-steel forceps blades with beveled, unserrated tips to prevent damaging the membrane filter.
Oil less vacuum pump	Flow rates of up to 37 L/min
Membrane Filters	Filters 47mm, 90 mm and 25 mm for <ol style="list-style-type: none"> a) Aqueous solvents b) Hydrophobic solvents
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

DIGITAL pH/mV METER

Specifications	Requirement
Application	For food analysis, media pH adjustment with a comprehensive range of features and functions, making it suitable for general laboratory, QC and GLP based applications.
Unit	Consisting of Tri-combination pH/ATC electrode with an electrode holder/arm with smooth movement and protection cover
Working pH Range	0 – 14 pH
pH resolution	± 0.01 pH
Mv	<ul style="list-style-type: none"> • Range 0 - ± 1999 • Accuracy ± 1mV • Resolution 1 mV
Temperature Compensation	0 to 100 ° C with ATC
Temperature	Range -10 to +105°C Resolution 0.1°C Accuracy ±0.5°C ATC range 0 to 100°
Calibration Points	<ul style="list-style-type: none"> • Should have 3 stage calibration with auto buffer recognition • NIST traceable buffer set 500 ml each (pH 4.0, 7.0 & 9.0).
Alarm	<ul style="list-style-type: none"> • Calibration reminder interval (1 to 999hrs)
Temperature Compensation	<ul style="list-style-type: none"> • Automatic
Display	<ul style="list-style-type: none"> • Backlit blue LCD with operation icon • digital display with 0.001 pH unit readability
Accessories	<ul style="list-style-type: none"> • Extra Electrode • NIST Standard buffer solution (pH 4.0, 7.0, 10.01 x 500ml for each bottle) • Standard electrode holder • AC /DC Adaptor.

Power	<ul style="list-style-type: none"> • 9V DC
Data storage& Output	<ul style="list-style-type: none"> • Data storage facility and record maximum and minimum value. • RS.232C output and supply Data connector cable.
Documents Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Complete with IQ, OQ, PQ, Documents, Operations and Maintenance manuals
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided • Certificate of calibration and inspection
Operation and maintenance training	<p>The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.</p>
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

FUMIGATOR (FOGGER)

Specifications	Requirement
Capacity	<ul style="list-style-type: none"> • 5 liters with easy cleaning facility
Material of construction	<ul style="list-style-type: none"> • Body should be compact, durable, leak proof and made of stainless steel /heavy duty plastic
Particle size	<ul style="list-style-type: none"> • It should produce aerosols with particle size of less than 5 microns • The blower head should be rust proof inert to Formaldehyde, KMnO₄, H₂O₂ and deliver aerosols uniformly.
Unit	<ul style="list-style-type: none"> • It should be compatible with all disinfectant solutions usual concentration. • It should be compatible with maximum pH range (both acid and alkali). • The equipment should be of good quality and conform to national/ international standards.
Power supply	<ul style="list-style-type: none"> • The machine should operate on 220 +- 10 volts, 50 Hz, single phase, A.C • Provided with Cable should be at least 5 meters in length, ISI marked.
Operation	<ul style="list-style-type: none"> • The discharge rate should not be less than 1Liter/25 minutes. • The tank capacity, discharge rate and timer on the machine should be so that the disinfectant should be able to disinfect 4000-5000 cubic feet in one cycle of 2 hours (max).
Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful demonstration at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Warranty	<ul style="list-style-type: none"> • Warranted for 3 years after satisfactory working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy) of:-

	<ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation;
Payment	Payment only after satisfactory performance demonstration

ANAEROBIC JAR

Specifications	Requirement
Application	The Anaerobic Jar System provides oxygen free environment applied in microbiological laboratories for the isolation/culturing of anaerobic and microaerophilic microorganisms
Capacity	<ul style="list-style-type: none"> • 12 liters total volume (1 no) • 3-4 Liters (1 No)
Material of construction	<ul style="list-style-type: none"> • Transparent, unbreakable polycarbonate jar.
Unit	<ul style="list-style-type: none"> • Jar should be provided with pressure -cum -vacuum gauge attached to the lid • Jar should be ideal for all strict anaerobic test conditions. • Lid should consist of O- ring gasket. • It should be provided with petri dish (100 mm diameter) carrier/SS rack. • Schrader valve and screws to connect to vacuum pump
Vacuum pump	<ul style="list-style-type: none"> • Suitable oil free vacuum pump for the system
Accessories	<ul style="list-style-type: none"> • Catalyst/gas pouch startup kit • Anaerobe indicator tablets • Lid, complete with clamp and screw • O rings
Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful demonstration at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Certificates Performance and safety standards (specific to the device type);Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2, 61

Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/ad-hoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> • Warranted for 3 years after satisfactory working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation;
Payment	Payment only after satisfactory performance demonstration

HOT AIR OVEN

Specifications	Requirement
Application	For drying glassware and also for conditioning of heat sensitive media and to provide an optimal, homogeneous, temperature uniformity and stability to ensure drying is complete
Material of construction	<ul style="list-style-type: none"> • Should have double walled construction, with high quality insulated steel. Inner walls of 304 qualities SS, Outer walls of Epoxy Powder coated GI sheets. • Facility for adjustable shelves, 10 removable shelves to be provided. • With internal lighting facility, Insulated door fitted with heavy hinges, mechanical door lock.
Capacity	<ul style="list-style-type: none"> • Approx. 200 liters
Temperature range	<ul style="list-style-type: none"> • Temperature should be thermostatically controlled • It should be Ambient +5°C to 250°C with temperature setting accuracy ± 0.5 °C with forced air circulation for temperature uniformity • Separate PT 100 sensor and display for temperature (LED) • Safety alarms
Unit	<ul style="list-style-type: none"> • Air ventilators to be provided on both side • The equipment should be provided with microprocessor controlled digital display • Temperature homogeneity between top and bottom shelves should be maintained by forced circulation
Calibration	<ul style="list-style-type: none"> • Certificate from an ISO 17025 accredited lab for 3 different temperature points
Power supply	<ul style="list-style-type: none"> • All electrical peripherals required for smooth functioning e.g. voltage stabilizers should be provided.
Accessories	<ul style="list-style-type: none"> • Should have all the accessories required for the functioning of the equipment.
Certificates Performance and safety standards	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product.

(specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> • Warranted for 3 years after satisfactory working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation;
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration</p>

MICROPIPETTES

Specifications	Requirement
Material	Liquid handling equipment, Autoclavable
Capacity /Volume	20-200 micro liter (Variable) 100-500 micro liter (Variable) 100-1000 micro liter (Variable) 1-10 ml (Variable) *2 each
Feature	<ul style="list-style-type: none"> • Single –channel/manual • Volume lock to prevent drifting
Accessories	Suitable Tips, Tip boxes
Calibration	Certificate from NABL accredited lab for 3 points
Warranty	2 years

CARBON DIOXIDE INCUBATOR

Specifications	Requirement
Application	In a CO ₂ incubator, an atmosphere is created that is as natural as possible for microorganism to grow, to develop cell and tissue cultures. Cultivating and growing living organisms is in vitro and is the main application for CO ₂ incubators.
Capacity	150-200 Litres
Display	LCD/LED (minimum 5")
Processor	microprocessor
Heating type	Air/water/Gel (microcomputer control)
No. of shelves	3-5 minimum
Temp. control range	0 - 80°C
Ambient temp. range	20-40°C
Temp. control accuracy	± 0.1
Temp. uniformity	± 0.3
CO ₂ sensor	IR sensor
CO ₂ control range	0-20%
CO ₂ stability	± 0.1%
CO ₂ recovery time	0-10 min
CO ₂ tank switch/alarm	Yes
Temp. recovery	5-15 min
O ₂ control system	Yes
O ₂ Range	0-20%
O ₂ accuracy	± 0.2%
O ₂ sensor	yes
Humidity	95±5%
Humidity recovery	10-20 min
Alarm	Audio & visual
Stacking	Possible

Cylinders	CO ₂ cylinders (2 nos.); Capacity- 9-10kg; Purity-98.00%
Communication port	Yes
Power	AC 230V/6A, 50Hz
Power consumption	500-600W (max.); 50-100W at 37°C
Disinfection	Multiple will be preferred
Calibration	Certificate from NABL accredited lab for 3 points
Power supply	All electrical peripherals required for smooth functioning e.g. voltage stabilizers should be provided.
Accessories	Should have all the accessories required for the functioning of the equipment.
Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) <p>Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety</p>
Supplier/ Manufacturer	Must be ISO certified for quality
Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;
Recommendations or warnings	Any warning signs would be adequately displayed
Warranty	Warranted for 3 years after satisfactory working excluding consumable parts and accessories.
Service contract clauses, including prices	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<p>Should provide 2 sets(hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • Service and operation manuals (original and copy) to be provided; <p>Advanced maintenance tasks documentation;</p>

Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

FROST FREE TWO DOOR (SIDE BY SIDE) REFRIGERATOR

Application	A refrigerator is used for storing reference cultures, media etc
Specifications	Requirement
Material	Stainless steel
Capacity	Approx. 500 liters and above
Adjustable Shelves	Tempered glass shelves 05 No.
Temperature Range	Digital display and temperature controls Refrigerator +2° to +8°C Freezer -20 °C
Audio alarm	Alarm is door is ajar for long
Inner body	Rust Free Material
Refrigerant	CFC / HCFC Free
Frost Free	In built Voltage Stabilizer Door Glass Heater for special heated front glass that enhances visibility and prevents unhygienic condensation Warranty 2years and Life time on motor
Door Lock & Interior light	High/Low cut with timer delay
Temperature Control	Same Temperature: Top to Bottom Microprocessor based Temperature Controller with Digital Display
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

AIR SAMPLER

Application	It is a device used for monitoring microbial burden of air in indoor environments. This device sucks a certain amount of air through a suction device and secretes the airborne spores through a sieve on the underlying growth medium in an agar plate. The microbial components of the air sample are qualitatively and quantitatively analyzed
Specifications	Requirements
Material	Anodized aluminum
Dimensions	Height – 25 cm, Diameter - 11 cm
Diameter of Sampling Head	10 cm
Diameter of petri dish	90 mm (3½ inches)
Nominal Airflow	60-100 L / min \pm 2.5%
Standard Sampling Volumes	50, 100, 250, 500, 1000 L
Compliance	GLP (Good Laboratory Practice) & full traceability
Validation	For validation, vendor should have the capability within their own company to perform validation. No third part validation will be entertained. One validation at the time of installation should be done by company personnel.
Operating manuals, service manuals, other manuals	Should provide: - <ul style="list-style-type: none"> • User, technical and all maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided
Warning sign	Any warning signs should be adequately displayed
Warranty	One year after satisfactory working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least).
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC) to be declared by the manufacturer.
Demonstration &	The supplier will have to carry out successful demonstration of the

Training	equipment the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
Rechargeable Battery pack and range	8-10 h operation
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	<ul style="list-style-type: none"> • Instrument must be provided with all IQ/OQ/PQ documents
Compliance statement	<ul style="list-style-type: none"> • The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	<ul style="list-style-type: none"> • Payment only after installation, validation and performance demonstration

ANAEROBIC WORK STATION

Application	Anaerobic work stations are used for analysis of anaerobic and microaerophilic bacteria e.g. <i>Clostridium spp.</i> , <i>Campylobacter jejuni</i> etc. It provides excellent conditions for the processing, incubation and examination of samples without exposure to atmospheric oxygen. In comparison with anaerobic jars, anaerobic workstations offer more precise and stringent atmospheric conditions. In this culture plates can be inspected at any time without disturbing the incubation conditions.
Specifications	Requirements
Type	Bench top compact automated Anaerobic workstation with small footprint
Capacity (L)	300-400
Capacity (petri dishes)	Incubation capacity 200- 300 plates of 90 mm or better
Gas requirement	Must operate on either one cylinder of conventional anaerobic gas mixture (10% hydrogen, 10% carbon dioxide and 80% nitrogen) or one cylinder of anaerobic gas mixture and a cylinder of nitrogen. The workstation should operate in either mode without any modification.
Alarms	System should have audible and visual system indicators and alarms for all warnings.
Automated gas controls	System should have automated gas control system, low gas pressure indication/buzzer in case if the pressure of anaerobic gas mixture fed to the workstation falls below the necessary minimum level.
Temperature range	The system should be temperature controlled and set temperature between 5°C above ambient to 45°C for incubation
Humidity control	Maintenance-free dehumidification. Fully automatic de-humidity control system for no requirement of any user maintenance
Light	System should have internal spotlight for even the smallest colonies to be examined.
Power socket	Internal power socket for the use of small laboratory instruments inside the chamber.
Vacuum pump	System must be supplied with suitable vacuum pump.
Supporting consumables	Refillable sachets of anaerobic atmospheric detoxifying agent (essential for maintaining ideal internal conditions and removing volatile fatty acids) in case Detox advanced carbon filtration system is not there and catalyst palladium to be included. Petri plate racks should be included.
Sleeve Cuffs	Comfortable, sleeve cuffs seal around the operator's arms to permit

	barehanded manipulation of plates and specimens inside the working chamber.
Touch screen Control	Microprocessor controlled to provide the desired chamber atmosphere. Gauges & visual indicators show pressure, temperature, and cycle status.
Foot switch/Peddle	Footswitch. Preferably Wireless type
Validation	Vendor should have capability to perform validation. No third part validation will be entertained. One validation at the time of installation should be done by company personnel.
Operating manuals, service manuals, other manuals	Should provide: - <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided

Warranty	1 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least).
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer.
Installations & Training	The equipment should be installed in the laboratory premises (where ever the system has to be installed) On-site comprehensive training for a minimum of two scientific personnel/technicians operating the system till customer satisfaction
Spares and Accessories	System to be quoted with gas cylinders & gas regulators Workstation stand and data logging connections.
List of spares	Must provide a list of spares with part numbers
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	<ul style="list-style-type: none"> • Instrument must be provided with all IQ/OQ/PQ documents
Compliance statement	<ul style="list-style-type: none"> • The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	<ul style="list-style-type: none"> • Payment only after installation, validation and performance demonstration

AUTOMATIC SAFETY BUNSEN BURNER

Specifications	Requirements
Application	The Bunsen burner is a common laboratory tool used for heat sterilization. It provides a flame with temperatures up to 1200°C. It is commonly used for processes like sterilization, combustion, and heating. In microbiology laboratories, it is commonly used for micro-loop sterilization.
Application	For use in Laminar flow chambers and Biosafety cabinets for sterilization of loops etc.
Basic features	<ul style="list-style-type: none"> • Safety Bunsen Burner with flame monitoring, overheating protection and display movement sensor for safe operation. • Two adjustment knobs for air and gas to allow easy fine-tuning of flame size and temperature. • For heating applications or to flame-sterilize necks of large Erlenmeyer flasks, the Safety Bunsen Burner should be equipped with a long burner head.
Operation modes	Manual by matches, Infrared sensor with the push button without the need of a lighter, Foot switch.
Material	UV- and solvent-resistant, Smooth, chrome-plated metal housing.
Operating manuals, service manuals, other manuals	Should provide: - <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation.
Warranty	1 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least).
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer.
Training	The supplier will have to carry out successful installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction

List of Spares and Accessories	<ol style="list-style-type: none"> 1. All accessories for running with natural gas should be supplied including tubing 2. Main adapter 3. Adapter for standard gas hose with inner diameter 10 mm.
Performance certificates	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	Instrument must be provided with all IQ/OQ/PQ documents
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

DIGITAL THERMOHYGROMETER

Application	The thermo hygrometer measures both humidity and temperature of the laboratory environment. It is useful instrument for maintaining optimal temperature and humidity inside the lab.
Specifications	Requirements
Temperature	-20 °C to 60 °C ± 0.5 °C Readability 0.1 °C
Temperature accuracy	±0.5°C - ±1.0°C
Resolution	0.1°C
Temperature Update Rate	500 ms
Data storage capacity	99 points
R.H. Range	5 % to 95 % R.H. ± 2.5 % - % RH readability
Display	Backlit dual display of humidity and temperature
Operating manuals, service manuals, other manuals	Should provide: - <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation.
Recommendations or Warnings	Any warning signs would be adequately displayed
Calibration certificate	Calibration certificate from ISO17025 for Temperature and Relative humidity.
Warranty	2-year after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier should provide comprehensive training to users on operation of the instrument and application support onsite as per specifications

List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
Battery backup	Suitable rechargeable battery
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

ELISA READER & PLATE WASHER

Application	ELISA readers detect and process and quantitate biological and chemical data using absorbance (ELISAs, enzyme activity, and nucleic acid and protein quantification), luminescence, and fluorescence detection modes, in the wells of a plate usually 96 or 384 plates
Specifications	Requirements
ELISA Microplate Reader	
Light Source	Quartz-halogen lamp 6V/10W
Wavelength	Absorbance 230-750 nm, Accuracy ± 1 nm Fluorescence Ex 230 – 850 nm, Em 280 – 850 nm Accuracy $< \pm 2$ nm
Filters	8- position filter wheel, the instrument is delivered with the following standard filters installed: 405nm, 450nm, 620nm and 650nm
Resolution	0.001 Abs
Display	High contrast color display (480 x 272 dots)
Internal Memory	At least up to 99 assay protocols and 100 test results, 96- well plates
Incubator (Optional)	Temperature range from ambient $+4^{\circ}$ C up to 50° C
Accuracy(405nm)	$\pm 1\%$ (0-3Abs) or ± 0.003 Abs, whichever is greater
Communication	USB for computer connection USB for memory stick position for data export USB for external printer
Mains Input	100-240V(50/60Hz) with IVD specifications
Capability	Capability to read flat-, U-, or V-bottom microplates, 6 / 12 / 24 / 48 / 96, currettes
Power Supply	210-240V/50-60 Hz
Detectors	Fluorescence, UV and Visible, Luminescence
Temperature control	Ambient $+5^{\circ}$ C to 45° C
Calibration plate	96-well calibration plate must be calibrated for the wavelength (e.g., 630 nm, 650 nm, 420 nm, 450 nm).
Calibration	Calibration certificate from ISO 17025, NABL accredited laboratory
ELISA Microplate Washer	
Function	Fully automatic plate washer With IVD specifications
Compatible	With ELISA reader supplied (as per model)

Capability	96 well microplates and strips, with flat, round, or “V” bottom well
Bottle	<ul style="list-style-type: none"> • With non-pressurized bottle to maintain biosafety • Wash, rinse and waste (volume 4-6 liter)
Residual volume	< 2 µl
Dispensing volume	50-400 µl for 96 well plate
Plate sensor	Should have the provision
Data Transfer	USB Port Number of wash protocols up to 99
Number of Wash buffer bottles	One
Validation	For validation vendor should having it own capability with their own company trained service engineer to perform validation. No third part validation will be entertained. One validation at the time of installation should be done by company personnel.
Operating manuals, service manuals, other manuals	<p>Should provide: -</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier should provide comprehensive training to users on operation of the instrument and application support onsite as per specifications
Accessories	<p>Spare Lamps 2 Nos.</p> <p>Multichannel pipette (2 nos) with pipette tips and calibration certificate should be provided.</p>
List of Spares and	All spares and accessories for both ELISA reader and Plate washer along

Accessories	with part number must be listed
UPS back-up 30 mins	Branded compatible online UPS with at least 30 minutes backup
Certificates required	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ Compliance statement	<p>IQ/OQ/PQ of instrument should be provided along with document</p> <p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	Payment only after installation, validation and performance demonstration

GLASSWARE WASHER/DRYER

Application	Glassware washer and dryer is an automated equipment designed to wash and dry laboratory glassware such as beakers, flasks, and test tubes.
Specifications	Requirements
Chamber volume of Washer/ Dryer	Option 1: 150 – 200 liters capacity Option 2: 200 – 275-liter capacity. Please quote for both the above options
Internal chamber type	Inner chamber, washing arms and tank filters made of high quality AISI 316 L stainless steel.
Front Glass Door	Glass Door version – Inside chamber must be visible, while in washing/drying run.
Control System	Soft touch LCD display. Microprocessor controlled.
Cleaning Dispenser Liquid	<ul style="list-style-type: none"> • Minimum two automatic internal liquid dispenser • Standard pre-programmed cycle • At least 10 pre-programmed standard cycles.
Internal wash temperature control	Fully adjustable wash temp. up to 90 ° C
External tap water filtering system	Must include all external tap water filtering system, preferably from local supplier
Internal Baskets for placement of glassware inside	Must include basic 3 or 4 multipurpose baskets for storing test tubes, beakers, conical flasks, round bottom flasks, pipettes and petri dishes.
Built in Dryer Unit	Built in forced air dryer unit for drying entire glassware content after the wash/rinse cycle.
Consumables required for washing/ drying cycle	<ul style="list-style-type: none"> • Must provide all necessary washing chemicals for 100 wash run cycle. • All quality washing chemicals must be easily available in Indian market at reasonable price (Indian Rupees). • Imported washing chemicals/ consumables are discouraged.
Installation and Commissioning	The vendor must carry out the installation and commissioning at site, including the installation of tap water filter system. The tap water inlet and drain will be provided at site.

End User Training at site	Necessary end user training and instructions must be provided to all users at site.
List of present users in India	Must provide the list of users/ customers of this equipment in India.
Desirable Specification:	<ul style="list-style-type: none"> • Telescopic bearing railing for loading the basket. • Operator and Service manual with all spare parts list.
Operating manuals, service manuals, other manuals	<p>Should provide: -</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least).
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction.
List of Spares and Accessories	List of all spares and accessories with part numbers
UPS	Suitable on - line UPS (5 KVA) to support the instrument.
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS

	<p>Standard)</p> <ul style="list-style-type: none"> • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
<u>IQ/PQ/OQ</u>	<u>IQ/OQ/PQ</u> of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

INCUBATOR (MULTI CHAMBERED)

Application	An incubator is used in microbiology laboratories for the growth and maintenance of microorganisms and cultures. Incubators have a heating system that allows for the temperature within the incubator to be controlled. A multi-chamber has more than one chamber where temperature and illumination of each chamber to be controlled independently
Specifications	Requirements
Configuration	Multi-chamber: 4 chambered, floor-standing, mobile - Castor wheel (for mobile incubator)
Capacity (Chamber volume) - (L / cu ft)	<ul style="list-style-type: none"> • 60 / 2.1 or more x 4 chambers • Independent Temperature Control of Each Chambers • Provision of minimum 2 nos. of SS-304 height adjustable racks in each chamber.
Temperature range (°C)	<p>Amb. +5 to 70 °C, ± 0.2 °C</p> <p>Accuracy and ±0.5 °C uniformity with programmable Temperature Control with Illumination</p> <p>Temperature and illumination of each chamber to be controlled independently).</p> <p>Independent Cooling System for each chamber to provide precise temperature</p>
Inner Chamber	Stainless Steel 304
Door specification	Solid installed with lock
Dimension (W×D×H) minimum	<ul style="list-style-type: none"> • Interior (mm) - 400×360×420x4 chambers • Exterior (mm) - 1170×640×1360 x 4 chambers
Shelves	No. of wire / Perforated shelves (standard/ max.) 2 / 7 - per chamber
Controller	<ul style="list-style-type: none"> • Programmable or Digital PID Controller • Adjustable time and interval
Safety	Over Temperature Protection, Over Current Leakage Breaker
Certification	Traceable Calibration certificate from NABL Accredited laboratory with IQ/OQ/PQ validation
Operating manuals, service manuals, other manuals	<p>Should provide:</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and

	<p>routine maintenance</p> <ul style="list-style-type: none"> • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
Accessories	Each equipment should be supplied with multi-channel data logger for temperature
UPS	Suitable on - line UPS (5 KVA) to support the instrument.
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) <p>Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety</p>
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

MULTI-PARAMETER WATER QUALITY METER

Application	Used for measuring various water quality parameters such as pH, temperature, dissolved oxygen, turbidity, conductivity, salinity, resistivity, ammonium, nitrate, chloride, barometric pressure etc simultaneously
Specifications	Requirements
General	The spectrophotometer instrument shall be a multiwavelength, UV-Visible, Split Beam / Dual Beam spectrophotometer designed for laboratory analysis of water parameters
Reagents	The Required reagents for the water parameters should be from the same manufacturer.
Display	Backlit Grayscale LCD Touch Screen. The instrument should have User Guidance on Screen. The interface of the instrument shall be graphical with touch screen. The instrument shall provide graphical display and be capable of printing test results.
Wavelength	The instrument, depending on the test selection, shall automatically select the wavelength with automatic calibration. The wavelength range of the instrument should lie between 190 to 1100 nm with accuracy of ± 1 nm & resolution of 0.1nm.
Preprogrammed Methods	<ul style="list-style-type: none"> • > 200 pre-programmed water analysis methods • The instrument shall be equipped with storage capacity from 4000-5000 data points & more than 100 user-defined calibrations (result, date, time, sample-ID, user ID).
Sample Cell Compatibility	<ul style="list-style-type: none"> • Rectangular: 10, 20, 30, 50 mm, 1 inch; • round: 13 mm, 16 mm, 1 inch & • Optional 100 mm rectangular cell with additional adapter
Operating Mode	Transmittance (%), absorbance and concentration (wavelength, time). optional wavelength scan and time course graphs.
Optics	Split Beam / Dual Beam
Source Lamp	Tungsten (visible range), deuterium (UV range)
Photometric Measuring Range	± 3 Abs
Photometric Accuracy	2 Abs with neutral glass at 546 nm

Stray Light	KI-solution at 220 nm < 3.3 Abs/< 0.05%
Operating Conditions	10 to 40°C, max. 80% relative humidity (non-condensing)
Interfaces	USB type A (2), USB type B, Ethernet,
Scope of Supply	The vendor should supply with Basic instrument, 1 Inch matched Glass sample cell, basic user manual, a multi adapter for round and rectangular vial s, CD with manual and procedure manual in .pdf format. Power cords
Operating manuals, service manuals, other manuals	Should provide:- <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	1 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least).
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	Training of personnel After supply, training on instrument operation and troubleshooting etc., to be given to all laboratory personnel.
List Of Spares And Accessories	<ul style="list-style-type: none"> • Alkaline AA rechargeable battery of 12 nos. with recharging unit • Standard solutions for pH 1.68, 4.01, 6.86, 7.00, 9.18, 10.01 and 12.46 – 500 ml each • EC, TDS, ORP, Fluoride, Chloride and Nitrate standard solution • Internal solution and Ionic strength adjuster buffer solution for Fluoride, Chloride and Nitrat Other required High Purity Analytical Grade chemicals
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product.

	<ul style="list-style-type: none"> • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
<p>IQ/PQ/OQ</p> <p>Compliance statement</p>	<p>IQ/OQ/PQ of instrument should be provided along with document</p> <p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
<p>Payment</p>	<p>Payment only after installation, validation and performance demonstration</p>

REFRIGERATOR (2– 8 °C)

Application	It is commonly used equipment at microbiology lab for the purpose of storage of items which required low temperature i.e between 4°C to 8°C e.g. food samples, media, chemicals, reagents, cultures.
Specifications	Requirements
Design	<ul style="list-style-type: none"> • Vertical with wheels • Frost free, CFC free, Automatic Defrost • 4 – 5 Height adjustable shelves • Internal LED Lighting • Single Triple-Pane Glass Door with ergonomic handle Key Lock • Automatic door closing • Fan forced air circulation to ensure stable & uniform preservation environment.
Controller	<ul style="list-style-type: none"> • Microprocessor Temp. Control Controller with 0.1°C resolution • Controller to Display data about the unit and used to control temperature • Control panel should be at eye level with Digital Temperature display & Alarms
Construction	Electro-galvanized steel with white, oven baked epoxy-polyester, anti-microbial, powder-coated finish with 304 Stainless Steel inner chamber
Capacity	300 - 350 Liters
Temperature	<ul style="list-style-type: none"> • Range: +1°C to +10°C • Uniformity: ±3°C
Alarm	Open door, High/Low temperature, Clogged condenser filter
Operating manuals, service manuals, other manuals	<p>Should provide: -</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or	Any warning signs would be adequately displayed

Warnings	
Warranty	1 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least).
Service Support	Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer. Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number.
Training	Training of personnel After supply, training on instrument operation and troubleshooting etc., to be given to all laboratory personnel.
List of Spares and Accessories	Accessories as required for functioning of the equipment
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	IQ/OQ/PQ of instrument and Software should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

SHAKING INCUBATOR (ORBITAL)

Application	Shaking incubators are combination of traditional incubators and a laboratory shaker used to simultaneously incubate and shake or agitate samples. They are ideal for laboratory working on cell culture, cell aeration and solubility experiments.
Specifications	Requirements
Shaker requirements	<ul style="list-style-type: none"> • Single knob selects all operating conditions and quickly Triple-eccentric counter balanced drive • Acceleration circuit to prevent sudden start and stop should be available • Programmable controller offering up to 4 modes of timer and parameter control for reduced user intervention. • Timer 0.1 to 99.9 hours or continuous mode • UV germicidal lights. • Noiseless operation
Shaking Speed range	25 to 400 rpm with ± 2 rpm accuracy
Temperature range	20°C below ambient to 80°C with accuracy of $\pm 0.1^\circ\text{C}$ and stability of $\pm 0.2^\circ\text{C}$ at 37°C
Shaking orbit	approx. 25 mm
Display	Large, easy to read LCD display screen
Audible and Visible Alarm	Should indicate when speed deviates more than 5 rpm or temperature deviates more than 1°C from set point, and when timer operation has expired.
Overall dimensions (W x D x H)	Minimum 62 x 75.4 x 82 cm
Operating manuals, service manuals, other manuals	<p>Should provide: -</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed

Warranty	1 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least).
Service Support	Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer. Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number.
Training	Training of personnel After supply, training on instrument operation and troubleshooting etc., to be given to all laboratory personnel.
Accessories	1. Universal Platform of at least 45 x 45 cm having capacity to holds assortment of various size of flask sizes upto 2 Ltrs and test tube racks. 2. System should be supplied with 125ml clamps (10 Nos.), 250 ml clamps (5 Nos.), 500 ml clamps (05 Nos.), 1000 ml (02 Nos.) and 2000 ml (01-02Nos) 3. Test tube rack for 20x50ml tube-1 no and test tube rack for 42x15ml tubes-1
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	IQ/OQ/PQ of instrument and Software should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

TRINOCULAR MICROSCOPE WITH DIGITAL DISPLAY SYSTEM

Application	A trinocular microscope is the advance version of binocular microscope having an eye tube in addition to two eyepiece which facilitate the connection of microscope with digital display system. It is useful in observing the structure of object on the digital display and capturing its image for further examination or storage
Specifications	Requirements
Optical system	Infinitely corrected system stroke
Focus	Vertical stage movement 25mm or more per course vertical stage movement 1micron or less for fine stroke
Illuminator	Lamp house for 100 watts halogen lamp with DIC upgradable.
Revolving nose piece	Reversed sextuple revolving nose piece should be upgradable to DIC in future
Objectives	Plan achromatic 2X N.A 0.06 Plan achromatic 4X N.A 0.10 Plane achromatic 10X N.A 0.25 Plane achromatic 40X N.A 0.65 (spring) Plane achromatic 100X N.A 1.25 (spring & oil)
Observation field	Wide field trinocular eye piece tube with 10X eye pieces of 25mm or more Field of Vision
Stage	Ceramic coated surface mechanical stage with right hand low drive controlled with left hand for two specimens.
Condenser	Swing out condenser usable for 2X-100X.
Camera & software	Digital pool CCD camera approx. 3MP/4MP, with 10-bit digitalization, 2048X1500. Software To capture and image processing.
Computer system	i5 processor, 4GB RAM,500GB HDD, DVR R/ W, TFT 20". Microscope, camera and software should be from same manufacturer.
Operating manuals, service manuals, other manuals	Should provide: - <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation.
Recommendations or Warnings	Any warning signs would be adequately displayed

Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier should provide comprehensive training to users on operation of the instrument and application support onsite as per specifications
Accessories	<ul style="list-style-type: none"> • Additional display-The equipment should be supplied with a 55-inch LED monitor, in addition to TFT screen • Dust cover
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	IQ/OQ/PQ of instrument and Software should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

WATER PURIFICATION SYSTEM

Application	Ultrapure water purification system is required for purification of water and making it free of contaminants that interfere with microbiological analysis An ultrapure water system is equipped with ultra-filters to remove endotoxins, DNase and Rnase left over from bacteria destroyed by UV, resulting in extremely low total organic carbon (TOC) and having a resistance of up to 18.2 mOhm-cm.
Specifications	Requirements
General	<ul style="list-style-type: none"> • Compact, Wall mountable system for microbiology / molecular biology grade water applications. • Should deliver ultra-pure product water by point of use dispenser with rocker arm, volumetric dispensing and auto shut off facility
Quality of water	<p>Should deliver Type I/Ultra – pure as per International specifications as follows:</p> <ul style="list-style-type: none"> • Resistivity > 16 Megaohm-cm • Conductivity < 0.06 Micro-Siemens • TOC level < 10 ppb • Flow rate > 1 lit / min • Bacteria <1 CFU/10ml
Volume	10-12 liter/h.
Feed water	Should have separate feed water (Potable tap water) specific purification cartridge and application specific polishing cartridge
Control display	Product water resistivity / conductivity both compensated and non-compensated mode, product water temperature, product water resistivity greater or below set point
	Maintenance display for sanitization, exchange purification cartridges, activation of fast flush, depressurization, air purge
Consumable	Must Quote separately for consumables (cartridges, filters etc.) for ONE YEAR for trouble free working.
Validation	For validation vender should having its own capability with their own company trained service engineer to perform validation. No third part validation will be entertained. One validation at the time of installation should be done by company personnel.
Operating manuals, service	Should provide: -

manuals, other manuals	<ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	1 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least).
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier should provide comprehensive training to users on operation of the instrument and application support onsite as per specifications
Accessories	All cartridges, filters, pump or any such item which is /are essential for Installation and functioning /operating the equipment.
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	IQ/OQ/PQ of instrument and Software should be provided along with document.
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

HOT PLATE

Application	Hot plates are generally used to heat liquids. Some hot plates also contain a magnetic stirrer, allowing the heated liquid to be stirred automatically
Specification	Requirement
Heating Plate	<ul style="list-style-type: none"> • Top Plate Material - Cast Iron • Top Plate Finish – Ceramic Coated resistant to acids, bases • Body Material – Mild Steel • Finish – Powder Coated • Should include a separate Temperature Control Unit with PTFE or any acid resistant cord connection • Ideal for heating samples and concentrated acids
Size (Dimension) & Shape	10 x 12 inches (minimum), Rectangular or Circular
Max. Heating Plate Temperature	Maximum temperature 550°C and accept up to 2L flasks /1L beakers
Controller	Energy Regulator
Power Supply	220 / 230 Volts, 50 Hz
Optional	<ul style="list-style-type: none"> • Overhead stirrer • PID Controller • Stainless steel heating plate • Support stand • Digital setting and display for temperature and time • Hotplate warning display while cooling till below 50 °C
Operating manuals, service manuals, other manuals	<p>Should provide:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>

Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	Warranted for 1-year, extendable up to 3 years, after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS	UPS/Stabilizer as required for functioning of the equipment.
Quality Requirement	<ul style="list-style-type: none"> • Product certification: CE / US FDA / BIS certified. • Quality Certification: ISO certified. • Should provide calibration certificates from NABL accredited agency every year during warranty & CMC period. Calibration cost will have to be borne by the supplier. • Equipment should be FDA / CE certified or equivalent standard of repute. It should be ISO 9001:2000 or other equivalent <ul style="list-style-type: none"> • All calibration certificates must be from ISO 17025: 2017 certified laboratory
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

HOT PLATE CUM MAGNETIC STIRRER

Application	Hot plates are generally used to heat liquids. Some hot plates also contain a magnetic stirrer, allowing the heated liquid to be stirred automatically
Specification	Requirement
Set-up plate material	Ceramic
Set-up plate dimensions	180 x 180 mm
Number of stirring positions	1
Stirring quantity max. per stirring position (H ₂ O)	20 L
Motor rating output	9 W
Direction of rotation	Right / left with automatic reverse rotation yes
Speed and Temperature display set-value /actual	LCD rpm/°C
Speed and temperature control	Turning knob
Speed range	50 - 1500 rpm
Speed deviation (no load, nominal voltage at 1500rpm and 25 °C)	± 2 %
Stirring bar length	30 - 80 mm
Self-heating of the set-up plate by max. stirring	1 °C at RT:22°C/duration:1h)
Heat output	1000 W
Temperature	0 - 100 °C

setting range	
Temperature setting resolution	2°C
Heat control accuracy of heating plate (at 100°C)	±5 °C
Connection for ext. temperature sensor PT1000,	Yes
Timer	Yes
Operating manuals, service manuals, other manuals	<p>Should provide</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately display
Warranty	Warranted for 1-year, extendable upto 3 years, after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
Quality Requirement	<ul style="list-style-type: none"> • Product certification: CE / US FDA / BIS certified. • Quality Certification: ISO certified. • Should provide calibration certificates from NABL accredited agency every year during warranty & CMC period. Calibration cost will have to be borne by the supplier.

	<ul style="list-style-type: none"> • Equipment should be FDA / CE certified or equivalent standard of repute. It should be ISO 9001:2000 or other equivalent <ul style="list-style-type: none"> • All calibration certificates must be from ISO 17025: 2017 certified laboratory
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

VORTEX MIXER (CYCLO MIXER)

Application	Vortex Mixer is a general-purpose laboratory equipment. It is used for mixing liquids in test tubes. It operates at various speed and can be operated continuously or by “touch” activation.
Specification	Requirement
Speed and control	User settable 200 - 3000 rpm or better
Operating Modes	ON (continuous), OFF, and TOUCH mix
Head	Standard rubber cup
Base	Heavy metal with Four suction cups
Movement	Orbital type movement
Accessories	Flat head Horizontal head, 12 x 1.5 mL Horizontal head, for 4 x 15 mL
Low Speed Operation Should Be Possible in Touch Activated Operation	Yes
Operation Type	Low Noise
Power Supply	200-240Vac 50Hz
Operating manuals, service manuals, other manuals	Should provide <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	1 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least)
Service Support	Contact details of manufacturer, supplier and local service

	agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

REAL TIME PCR SYSTEM

Application	A Real Time PCR system is used for gene expression analysis, pathogen quantitation, SNP Genotyping, Plus/minus Assays that use an internal positive control and analysis of genetically modified organisms.
Specification	Requirement
Hardware	<ol style="list-style-type: none"> 1. The system should be a Peltier based PCR machine supporting all of the following formats: 96-well plate with optical adhesive cover, 96-well plate with optical flats caps, 8-tubes strips with optical flat caps. 2. The normalization of reaction due to non-PCR related fluctuations should be possible by using any passive reference dye. 3. The excitation source should be bright white LED/Laser/halogen and the detection system should be through photodiode/CCD Camera. 4. The built-in emission filters to support a broader range of fluorophores with a higher sensitivity for longer wave length (red dyes). The system should be configured and calibrated to use any of the following dyes or a combination thereof: FAM™, SYBR® Green, VIC®, JOE™, HEX, TET, BY®, NED™, TAMRA™, Cy3®, JUN®, ROX™, TEXAS RED®, and capability of multiplexing for five targets or better. 5. The hardware must provide Peltier thermal cycling with pre-configured mode for Fast-PCR (40 cycles in less than 35 minutes) as well as Standard-PCR run in the same block. 6. System must have flexibility of running 2-3 different temperatures simultaneously in the same run with different set of annealing temperatures in a single run. 7. The system should have temperature range at least 4 °C-100 °C to facilitate incubation of samples at low temperature. 8. The system should have peak block ramp rate for heating and cooling exceeding 4.6 °C/ second with temperature uniformity of 0.4 °C or better and 0.25 Temperature Accuracy. Vendor should specify the sample ramp rate and should be more than 3.5°C/sec

	<p>9. System should support minimum recommended reaction volume of 10 μL and thermal cycling conditions to eliminate optimization of PCR conditions for running the templates from different sources simultaneously although lower would be preferred to minimize reagent consumption.</p> <p>10. The instrument should have real time quantitative PCR installation specification which demonstrates the ability to distinguish between 1.5-fold templates copies with a confidence level equal to 99.5% or better to be demonstrated with RNase P instrument verification plate required to be done at the time of installation.</p> <p>11. Installation specifications must demonstrate the ability to detect differences as small as 1.5 fold or better in target quantities</p> <p>12. The system should have preferably Touch Screen LCD feature with real time visuals of amplification plots etc to avoid dependency on computer for operation with USB port</p> <p>13. Latest compatible data workstation with all system software and monitor should be provided with the system</p>
Computer	<p>i. Computer: A business line computer (either notebook or tower) for system control, operation, analysis, net-working of multiple systems and a USB port for data export to Power point, Excel or JPEG file formats with colored laser printer.</p> <p>ii. Installation specifications must demonstrate the ability to detect differences as small as 1.5-fold or better in target quantities</p>
Accessories and startup	<p>Vendor should provide a complete line of reagents including</p> <p>1) Taq Man universal PCR master mix (500 reactions)</p> <p>2) SYBR Green master mixes (500 reaction) and disposables including tubes, 96 well plate with optical caps for use with the system for onsite application training after installation and</p> <p>3) TAQMAN RNASE P 96-well instrument verification plate</p>
Software specifications	<p>1. Dedicated licensed full version software for primer and probe design.</p> <p>2. The instrument should have licensed software that can analyze multiple perspectives in the Multiple Plots view, with side by side views of all data aspects including the</p>

	<p>amplification plots, standard curve, multi-component data plots, and raw data.</p> <ol style="list-style-type: none"> 3. The system should also include software to support applications including absolute quantitation, Relative quantitation, multiplex-PCR, allelic discrimination (SNP), high resolution melt curve analysis as well as pathogen detection and plus/minus assay using internal positive control. 4. The instrument software should have a multi-componenting algorithm designed to provide precise deconvolution of multiple dye signals to enable the simultaneous detection of multiple fluorophores, 5. License software should also include and supply statistical analysis tools like Box-Whisker plots to assess Ct distribution, scatter plots and heat maps to assess sample correlation and quality. 6. The instrument software should have experimental design wizard and reaction setup information including pipetting protocols. 7. Should support remote monitoring through a web browser-based software for accessing and analysing data anywhere and anytime in the world
Power Supply	200-240Vac 50Hz
Operating manuals, service manuals, other manuals	<p>Should provide</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least)
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful installation at the laboratory premises (where ever the system has to be installed)

	and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS	UPS/ as required for functioning of the equipment with 120 min back up
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

GRADIENT THERMOCYCLER (PCR Machine)

Application	A thermocycler commonly known as a PCR machine is used to amplify short DNA sequences. The thermocycler is used in identifying and genotyping of microorganisms and for detection of genetically modified organisms in food
Specification	Requirement
Thermal block	A universal dual block with 96 wells Block should accommodate PCR tubes, 0.2 ml / 0.5 mL (PCR tubes)
Screen	Menu driven through color touch screen
Temperature programme	Gradient technology should ensure identical ramp rates in both gradient and normal Capable of Running 4-5 reactions with different annealing temperatures in the same PCR run Gradient optimization should be possible in 0.2 mL PCR tube formats
Temperature range	Gradient temperature range from 35 – 100C
Block temperature control range	4°C to 99.9°C or better
Temperature uniformity	0.5°C or better
Block Temperature Accuracy:	± 0.25°C or better
Temperature control modes	Fast, Standard and Safe' temperature control modes are must
Heating rate	5 °C/second or better
Sample ramp rate	3.5 °C/second or better
Remote monitoring	Instrument must be enabled for remote monitoring
Other features	Should have Time or Temperature increment with cycles in PCR program Features for power save Standby function should be available System should have internal memory to save protocols on board and should have facility of USB memory stick

Power Supply	200-240Vac 50Hz
Operating manuals, service manuals, other manuals	<p>Should provide</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least)
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS	UPS/ as required for functioning of the equipment with 120 min back up
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies

IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

BENCH TOP PCR WORKSTATION

Application	This a PCR hood which is used for contamination control with filtered & sterilized air circulation for setting up of PCR reactions
Specification	Requirement
Design	Bench top PCR workstation with work area not less than 70 x 50 cm Body and panels made from ethanol resistant material Stainless steel Working table
Prefilter and HEPA filter	Active decontamination with either Prefilter & HEPA filter or UV Air Recirculator to create a particulate-free work area HEPA filter rated at 99.9% efficient to remove particle down to 0.3 μm Prefilter rated at > 60 % efficient to remove particle down to 6 μm
Illumination	Equipped with fluorescent white light in the interior and suitable UV tubes (254 nm) in the interior and timer
Safety warnings	Safety shut-off switch to turn off the UV light when door is opened
Power outlets in hood	Integrated power outlets (Minimum 2 Nos) for operating small lab equipment (e.g. vortex, mini centrifuge, etc.)
Power Supply	200-240Vac 50Hz
Operating manuals, service manuals, other manuals	Should provide <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least)
Service Support	Contact details of manufacturer, supplier and local service

	agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS/Stabilizer	Suitable UPS as required for functioning of the equipment with 60 min back up
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

CENTRIFUGAL VACUUM CONCENTRATOR

Application	The centrifugal vacuum concentrator is used for rapid and efficient drying of small-volume DNA/RNA samples by centrifugation with consistent drying times. This allows the dried sample to be obtained as a pellet
Specification	Requirement
Centrifuge	1. Maintenance-free induction motor and cold trap 2. Chemical resistant lids, inner chambers and rotors
Vacuum	Oil free vacuum pump
Drying Temperature	Ambient and ~60°C
Timers	Timer for heat and run times
Safety	Should be equipped with automated over-temperature safety shutoff.
Rotation speed	Fixed 1400 rpm
Rotor	Fixed Angle Rotors to accommodate 24 x 1.5 - 2.0 mL and adaptors for 0.5ml and 0.2ml tubes should be provided
Power Supply	200-240Vac 50Hz
Operating manuals, service manuals, other manuals	Should provide <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least)
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful installation at the laboratory premises (where ever the system has to be installed)

	and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS/Stabilizer	Suitable UPS as required for functioning of the equipment with 60 min back up
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

GEL ELECTROPHORESIS SYSTEM

Application	It is used for rapid, routine agarose gel electrophoresis of nucleic acids and PCR amplification products, which helps in evaluating their size and purity
Specification	Requirement
Gel electrophoresis unit	<ol style="list-style-type: none"> a. Gel Electrophoresis Base Unit for running gel sizes of $5 \pm 2 \times 7$ cm and $10 \pm 2 \times 7$ cm with safety lid. b. Two removable UV-transparent gel casting trays with provision for tape-free gel pouring c. Should be supplied with 2 numbers of 1.5 mm thickness, 8 well combs d. Should be supplied with 2 numbers of 1.5 mm thickness, 12 well combs e. Should be supplied with 2 numbers of 1.5 mm thickness, 16 well combs f. Should be supplied with 2 numbers of 1.0 mm x 8 well combs g. Should be supplied with 2 numbers of 1.0 mm x 12 well combs h. Should be supplied with 2 numbers of 1.0 mm x 16 wells combs i. Buffer Capacity not more than 200 mL j. LED Display and safety fuse
Power Supply, Dual Mode (250 Volt, 500mA)	<ol style="list-style-type: none"> a. Dual control modes (constant voltage or constant current) with automatic cross over b. Shutdown timer (0-24 hr) c. Four sets of recessed connectors d. LED Display and safety fuse e. Automatic shutdown of DC power when last electrophoresis unit is disconnected
Power Supply	200-240Vac 50Hz
Operating manuals, service manuals, other manuals	<p>Should provide</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance

	<ul style="list-style-type: none"> • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least)
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS/Stabilizer	Suitable UPS as required for functioning of the equipment with 60 min back up
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous

	information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

GEL IMAGING AND DOCUMENTATION SYSTEM

Application	This an imaging and capture system used to document the separated nucleic acids and PCR amplification products by agarose gel electrophoresis of, which helps in evaluating their size, purity etc. By densitometric analysis the concentration can be compared and estimated
Specification	Requirement
Camera	<ol style="list-style-type: none"> 1. 5 Mega pixel (or better), 16-bit Scientific-Grade CCD Camera air cooled equipped with capturing wide angle images from distances as short as several millimeters, shall be equipped with speed USB for fast data transfer 2. Fully automated operation (auto exposure, no focus or other adjustment or calibration needed) 3. Capture modes should be Automatic, semi-automatic, manual (normal/incremental) Multiple capture modes make use of 4.8 orders of dynamic range 4. Afford Flexibility of placing of sample tray at one of two different heights in the sample compartment to produce image-acquisition areas of 220 × 160 mm and 110 × 80 mm, respectively 5. Capable of detecting following <ul style="list-style-type: none"> • Nucleic Acid stained: EtBr, SYBR Green, Coumarin, Fast Blast • Protein stained with: Coomassie Blue, Silver stain, SYPRO Ruby Red • Western Blots stained with: Colorimetric, Coomassie Blue, Silver stain and Chemiluminescence
Software and PC	<ol style="list-style-type: none"> 1. Automation for image acquisition with integrated data analysis and validation and intuitive workflow, which you can operate from touch screen device, to generate and analyze data quickly and easily 2. Stand-alone Software for enhancement, editing, annotation, archiving & analysis including features like 1-D multilane densitometry, 2-D spot densitometry, MW, contrast adjustment, rotate,

	<p>cropping, zoom etc. tool for quantity calculation, density, molecular weight, background subtraction, able to optimize capture time for western blots, automatic band and lane detection and automatic and manual analysis. Export to JPEG, TIFF etc files, determination of height, area of the detected bands, and direct link to word and excel</p> <p>1. PC (Tower or Notebook) should at least have in built 1TB HD for image storage, 6 USB slots, 1 network port, Intel i5 or better at least 8GB RAM, DVD RW drive, key board, optical mouse, 18” or large LED monitor, Licensed version of latest operating system</p>
Power Supply	200-240Vac 50Hz
Operating manuals, service manuals, other manuals	<p>Should provide</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided <p>Advanced maintenance tasks documentation.</p>
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	2 year after satisfactory installation and working excluding consumable parts and accessories. Provision should be there to extend the warranty up to 3 years (at least)
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
Training	The supplier will have to carry out successful installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS/Stabilizer	Suitable UPS as required for functioning of the equipment with 60 min back up

Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	IQ/OQ/PQ of instrument should be provided along with document
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration