Technical Specifications for Water Bath:

- 1. The temperature should be controlled by the microprocessor based digital temperature controller with LED display along with provision for manual thermometer recording.
- button to set nominal Value in 0.1°c Temperature range 5°C above ambient room temperature to 100°C; External WXDXH approx. 500x250x300mm
- 3. Bath (inner chamber) capacity app.20litres , Temp accuracy -/+0.1°c
- 4. The body of the equipment should be made up of material which is rust free from both inside & outside. The inner body of the equipment should be made up of stainless steel and the outer body of the equipment should have a powder coated paint finish.
- 5. The equipment should be ISO 13489 and CE (confirmite European) and/or US(FDA) certified.
- Leak proof drainage system to clean the inner chamber.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in Englishto be supplied.
- List of important spare parts and accessories with their part numbers.
- Certificate of calibration and inspection from themanufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications for Incubator:

- The temperature should be controlled by the microprocessor based digital temperature controller with LED display along with provision for manual thermometer recording.
- 2. Inner chamber capacity: 120 L
- Temperature range :ambient to 80°c
- 4. Interior chamber: stainless steel for easy cleaning and decontamination, rust free.
- Digital display of temperature and time.
- 6. Timer: 1 minute to 100 hours and hold position.
- 7. Heating and natural convection for homogenous temperature distribution.
- 8. Temp. Accuracy +/-1°c.
- Inner chamber should have transparent, glass/fiber door for the observation.
- 10. Minimum two adjustable shelves.
- 11. Power230+/- 10V;50 Hz
- 12. The equipment should be ISO 13489 and CE (confirmite European) and/or US(FDA) certified.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications for BOD Incubator:

- 1. The temperature should be controlled by the microprocessor based digital temperature controller with LED display along with provision for manual thermometer recording.
- 2. Inner chamber capacity: 6 cubic feet
- 3. Temperature range : +5°c to 80°c
- 4. Interior chamber: stainless steel for easy cleaning and decontamination, rust free.
- 5. The gap between inner and outer chamber should be filled with high grade glass wool/PUF insulation to avoid thermal loss
- 6. Digital display of temperature and time.
- 7. Timer: 1 minute to 100 hours and hold position.
- 8. Heating and natural convection for homogenous temperature distribution.
- Temp. Accuracy +/-1°c.
- 10. Inner chamber should have transparent, glass/fiber door for the observation.
- 11. Minimum two adjustable shelves.
- 12. Power230+/- 10V;50 Hz
- The equipment should be ISO 13489 and CE (confirmite European) and/or US(FDA) certified.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications for Binocular Microscope with oil immersion objective

- Viewing Head: Sliding Binocular Head Inclined at 30° To 45°, 360° Rotatable
- 2. Eyepiece: Wide Field Eyepiece WF10× / 15x / 18x
- 3. Objective: Achromatic parafocal Objective 4×, 10×, 40×, 100×
- 4. Nosepiece: Quadruple Nosepiece
- 5. Stage: Double Layer Mechanical Stage 135 to 140×130 140mm
- 6. Condenser: Abbe NA1.25 with Iris Diaphragm & Filter
- 7. Illumination: Koehler illumination, Built-in Illumination, LED Lamp.
- Filter: Blue Filter
- 9. Must provide following Accessories:
 - •LED Lamp
 - Vinyl Cover
 - Cleaning brush
- 10. Operating manual
- 11. ISO 13489 and / Confrmite European / US FDA certified
- 12. Should provide 3 years warranty & quote for 7 years CAMC.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/Technical/Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- Certificate of calibration and inspection from the manufacturer.
- · Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications for ELISA Reader/ System:

A)Elisa Reader with built in printer and digital interface along with desktop computer and external printer

1. Optical System:

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- Digital light control
- 8/12 measurement channels plus 1 reference.
- Single and dual wavelength measurement with facilely for kinetic measurement.
- 8s maximum measurement time.
- Measurement range 0.000-3.500abs (400-700nm).
- Indication range 0-2.999 abs.
- Accuracy (0.000-1.000 abs) +/- 2% and +/- 0.005 abs.
- Resolution 0.001 abs
- Grating/inbuilt (tunable) filters: narrow band interferences
- Essential 405 450 492 and 620 nm.
- The Elisa reader should have the option for 550 & 690nm.

2. Software:

- · Storage of immediately preceding measurement.
- At least 100 user programmable tests permanently stored.
- Time programmable before each measurements
- Agitation programmable before each reading.
- Bidirectional printer interface.

3. Measurements modes:

- Plate shaking mode for sample mixing (selectable speed and time)
- Flexible blank mode setting.
- Matrix modes: absorbance of each well in even numbered subtracted from those of odd numbered columns.
- Curve fit modes: LIN/LIN/LOG.LOG/LOG or auto curve transformation with ability to add the standard curve; 8 to 12 way string orientation of kinetic modes.
- Table of optical densities, delta DD, graphic, Reaction rate/ v- Max.

4. Other:

- Adjustable for different micro plate geometrics, the reader should be capable to read U, V and flat types of microtitre wells.
- Halogen lamp 20-40 W with pre-failure warning 16 digit alphanumeric florescent display.
- Membrane keyboard.
- 3-8 standards in single or duplicate wells.
- Must be supplied with an Acrylic dust proof cover cabinet with locking device.

5. Supply:

 230 V+/- 10 V, 50 Hz AC single phase UPS with minimum two (2) hours backup with maintenance free battery.

6. Accessories:

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- Halogen lamps –3 nos.
- Thermal print paper 10 nos.
- Dust cover and
- Set of pipettes consisting ofautoclavable single channel variable volume color pipettes 0.5-10ul, 5-50ul, 20-200ul, and 100-1000ul.
- 8 channel fully autoclavable, variable volume multi-channel pipettes 5-50ul, and 50-300ul
- Pipettes should offer easy in lab calibration, quick ejection, click volume setting and high accuracy and precision.
- Standards for micro pipettes ISO8655 and ISO17025
- Calibration verification plate should be supplied with the ELISA reader. A calibration certificate should be provided.
- 8. Equipment should be supplied with computer interfacing and a compatible external printer.
- B) ELISA Plate washer(Automatic)
 - 1. General:Auto strip washer for all 96 well plates 1 X 8 Strips / 1 x 12 Strips
 - a. Dispensable volume 25-300ul. Soaking time 1-600 sec.
 - b. Aerosol shield for user safety.
 - 2. Supply:230 V+/- 10 v, 50 Hz
 - 3. Accessories: 8/12 channel manifold, all tubing sets, wash / rinse waste bottles, maintenance kit, vacuum filter.
 - Adjustable for different micro plate geometrics, the washer should be capable to wash U, V and flat types of microtitre wells.

Operational manual should be provided

Standards: The equipment should be ISO 13489 and CE (confirmite European) and/or US(FDA) certified.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications for Micro pipettes

Micro pipettes: single channel variable volume

- Α. 10-100μΙ
- B. 100-1000µl.
- 1. Suitable for all brands of tips
- 2. Light weight and ergonomic design for user comfort
- 3. Made of high grade plastics with a durable tiptone made up of PVDF plastic
- 4. It should offer high accuracy and precision as per ISO 8655 and ISO 17025.
- 5. Easy in laboratory recalibration and maintenance covering or meeting the following criteria
 - a. 10-100 μl: increment of 0.2 μl and precision (CV%) 1.0 0.2
 - b. 100-1000 μl: increment of 1 μl and precision (CV%) 0.6-0.2
- 6. With tips ejector mechanism
- 7. Made of corrosion proof material.
- 8. Fully autoclavable at 121°c.
- 9. Supplied with full documentation, warranties and certificates.
- 10. Confirming to the Standards for micro pipettes ISO8655 and ISO17025

General Requirements:

- Warranty : Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- · User/ Technical/ Maintenance manuals in English to be supplied.
- · List of important spare parts and accessories with their part numbers.
- Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- · Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications DEEP FREEZER (-20°C)

1. General:

Vertical type with twin door and adjustable shelves.

Capacity: 380 to 450 liters. Temperature : -20° C

Accuracy +/- 1° C.

Must be able to perform at an ambient temperature upto40° C, user friendly, non CFC refrigerant. Body is mounted on a sturdy angle iron frame and is mounted on castor wheels.

2. Temperature range:

For recording temperature- tolerance limit -8°C to -20°C.

3. Power supply:

230+/- 10 volts; 50 Hz.

Voltage stabilizer:

Voltage regulator of appropriate rating to be included to cope with 160-260V. Microprocessor control, digital display with battery back up and alarm should be there

5. The equipment should be CE (ConfirmateEupropean)/US FDA and ISO13489 certificate.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- · User/ Technical/ Maintenance manuals in English to be supplied.
- · List of important spare parts and accessories with their part numbers.
- · Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- · Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications Centrifuge Machine

- 1. Microprocessor based table-top centrifuge with LED display of speed and time 0-60mins, digital count down timer
- 2. Brushless induction motor with frequency drive
- 3. Safety lid interlock to prevent opening of centrifugation
- 4. Step-less speed regulator with speed indicator
- 5. RPM range of 4000-6000 (3000-5000g)
- 6. It should be provided with interchangeable rotor head with the tube capacity of 24 tubes (5-15ml)
- 7. Aerodynamic compact construction for vibration free performance.
- 8. Body should be made of strong fabricated steel and corrosion resistant.
- Separate control panel- for start/stop switch, dynamic brakes.
- 10. Spare six (6) protective fuses to be supplied.
- 11. Appropriate voltage stabilizer with each unit(if recommended to be run with voltage stabilizers).
- Electrical requirements: 220 volts 240 volts single phase, 50 Hz with power cord and plug.
- 13. The equipment should be ISO and CE (confirmite European) certified.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- · Certificate of calibration and inspection from the manufacturer.
- · Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- The certificate of ISO and CE (confirmite European) should be provided.

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Technical Specifications Lab Refrigerator

- 1. Capacity (as per requirement) 350-450Ltrs.
- 2. Preferably double door
- 3. CFC free refrigerant gas (Not frost free)
- 4. Temperature 2-8°c
- 5. Preferably roller mounted.
- 6. Adjustable shelves (4 in No.)
- 7. Battery backupupto 1 hr.
- Durable rust free resistant exterior.
- 9. Durable unbreakable interior.
- 10. Control panel with temperature alarm, on/off switch and digital thermometer, power on indicator.
- 11. Interior lighting.
- 12. Adequate circulation of air to ensure even cooling by DUCT System
- 13. Door with lock.
- 14. Operable at 230+/- 10V, 50Hz.
- 15. Training of laboratory staff for the purchased equipment.
- 16. Availability of spares / disposables for at least 10 years.
- 17. All consumable required for installation and standardization of system to be given free of cost.
- 18. List of users and satisfactory report of quoted model from reputed institute preferably Government institute/ hospital.
- 19. Should have all the accessories required for the functioning of the equipment.
- 20. ISI mark or other equivalent quality certification.
- 21. All electrical peripherals required for smooth functioning e.g. voltage stabilizer and UPS should be provided with the equipment.
- 22. There should be provision for demonstration before final approval of equipment.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in English to be supplied.
- · List of important spare parts and accessories with their part numbers.
- · Certificate of calibration and inspection from the manufacturer.
- · Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications BIO SAFETY CABINET CLASS II A

Specifications

- Should be CLASS II A 1.
- Biosafety cabinet should provide protection for operator, environment and product from aerosols and microorganisms. 2.
- Size HxWxD 1560-1600mmx1300-1350mmx800-850mm
- Design and Construction
 - a. 18 gauge SS 304 grade interior and epoxy coated steel exterior,
 - b. fully closing front door, front door open-able to a height of 10 inches and made up of %" clear tempered glass,
 - should provide drain pan C.
- Work area 16 gauge SS, seamless, dished work surface, removable with external knobs
- Airflow velocity Inflow 100fpm, down flow 60+/-10fpm, 70% recirculation and 30% exhaust
- Plenum negative pressure plena surrounding the work area and should be made up of metal
- HEPA filters Twp HEPA filters (Exhaust and Supply), Should be of 99.9% efficiency at 0.1 and 0.3µ
- Sound emission <65db
- 10. UV light should be provided with UV light and UV Interlock system to cut the UV light automatically if the door opens accidentally
- 11. Fluoroscence light Should be provided with fluorescence light
- 12. Ports should be provided with gas connection ports
- 13. Electrical socket outlets socket for 5 and 15 amp
- 14. Microprocessor controlled display for airflow velocity
- 15. Audiovisual alarms for
 - a) Excessive opening of sash
 - b) Airflow failure or slow airflow (optional)
- 16. Operating environment should be capable of operating in 20-35°C and relative humidity of 80%
- 17. Power supply 210-240V, 50Hz
- 18. Compliance with NSF49 /ANSI49 / EN 12469 certifications
- 19. Certification US(FDA) / CE certified/ISO13489
- 20. Safety requirements -shall meet latest IEC or equivalent BIS requirements of safety for electromagnetic compatibility
- 21. Accessories-should provide the following:
 - Suitable voltage stabilizer and UPS
 - Replacement filter
 - Stand with leveling screws and castors
- 22. Services required:
 - Onsite installation and validation
 - Calibration certificates
 - Operation manual

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications for weighing scale

- Electronic analytical balance which is fast, accurate, reliable and easy to operate
- · Draft shield chamber with sliding door on both sides.
- Digital LCD/LED display
- Readout should have at least 4 decimal places.
- Readability: 0.01 mg
- Minimum weighing capacity: 0.01g
- · Maximum weighing capacity: 100 gms
- Operating temperature 10° c to 50 °c.
- Electrical Requirement: 230 V/50-60 Hz (supplied with AC Adapter)
- Tare/Zero function, Calibration Facility should be there
- Instruction manual and spare fuses(2Nos) to be provided
- Should be CE (Conformite European)/US(FDA) and ISO13489 certified.

Operation manual with user demonstration video CD.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- · Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications for Needle Destroyer

- Should be lightweight, portable and compact
- Housing should be molded type, shock proof and made of ABS powder coated Stainless Steel 304 Grade
- Should provide a removable discharge tray made for easy disposal of syringe hubs
- Should have the provision to burn the needle & to cut the syringe tips
- Should have a hardened steel plate to cut the Syringe
- Should be able to destroy needle of type up to 18G
- Should be able to destroy minimum of 5 injection on continuous operation
- Should a heavy duty transformer and work on 220-240 Vac/50 Hz electric supply.
- Should have a power on/off switch and an indication for power.
- Should be properly insulated for the protection from electrical hazard.
- Should provide with fuse (5nos) of adequate rating with each unit

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Technical Specifications for Autoclave (Vertical)

- Should be fully automatic vertical autoclave for total destruction of all living microorganisms
- Pressure adjustable from 10 psi to 20 psi with an accuracy of +/- 1 to 3 psi, with automatic pressure control switch
- Outer and Inner chambers made up of stainless steel SS 304
- Size of the inner chamber 40 -50 (Width) x 60 -80 cm.(Height)
- Should be provided with silicon / Rubber / Neoprene gasket
- Lid should be stainless steel and should be fitted with
- Pressure Gauge
- Safety Valve
- Manual exhaust valve
- Vacuum breaker
- Ports for calibration check
- All the hinges should be of stainless steel
- Drain valve at bottom for draining the water
- Micro processor controller based system to provide digital display of cycle processes like temperature, pressure, and time.
- Should be provided with low water level alarm and cut off.
- Automatic Pressure Control Switch To cutoff the current from the heating elements, when the desired/ set pressure
 value level is attained inside the chamber and restarts the mechanism once the pressure inside the chamber falls from
 the desired level.
- ISO / CE (Confirmate European) Certified

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/Technical/ Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- Satisfactory working of quoted model from institutes of repute.
- Valid ISO 13489 and CE (confirmite European) and/or US(FDA) certificates to be provided.

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Technical Specifications for Hot Air Oven

- 1. Double Walled Construction
- Outer Chamber is made of Mild Steel duly pre-treated with rust proofing and finished with durable powder coated paint.
- 3. Inner chamber made of Stainless Steel. Size (WxDxH) 550 600 mm with 3 shelves.
- 4. Inner Chamber fabricated with ribs to adjust shelves to convenient height.
- 5. Inner Chamber has 3 removable shelves
- Gaps between the walls are filled with special grade glass wool/any other material.
- 7. Insulated doors fitted with heavy hinges with a ball catcher spring-loaded door closing device.
- 8. Motorized air-circulating fan installed for uniform air circulation
- 9. Heating element made of high grade nichrome wires
- 10. Temperature Range: above ambient temp to 250° C
- 11. Temperature Control Microprocessor based digital temperature controller with built-in timer to set the sterilization cycle and LED display.
- 12. Temperature Accuracy: +/- 10 C
- 13. Front Panel On/Off Switches with heating and main indicator lamps temperature controllers with LED Display.
- 14. Air ventilation ports provided on both sides
- 15. Power Supply: 230 V AC single Phase, 50Hz supply with power cord and plug.
- 16. Equipment should meet ISO/CE Standards.

General Requirements:

- Warranty: Three (3) years warranty and thereafter seven (7) years Comprehensive Annual Maintenance Contract (CAMC)
- User/ Technical/ Maintenance manuals in English to be supplied.
- List of important spare parts and accessories with their part numbers.
- · Certificate of calibration and inspection from the manufacturer.
- Attach original manufacturer's catalogue and specification sheet. Photocopy/computer print will not be accepted. All technical data to be supported with original product data sheet.
- · Satisfactory working of quoted model from institutes of repute.
- Valid ISO and CE (confirmite European) and/or US(FDA) certificates to be provided.

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