



SANJAY GANDHI POST GRADUATE INSTITUTE
OF MEDICAL SCIENCES LUCKNOW-226014.

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TENDER NOTICE

Sealed offers are invited from manufacturer/Direct importers/Distributors for the supply and Turnkey project for one Bio-safety level 3 laboratory facilities to be created at Department of Microbiology. The last date of receipt of tender bid is 25.11.2009 and the same will be open on 26.11.2009

Detailed information like scope of work, list of items, earnest money deposit & their specifications, you may please visit our website www.sgpgi.ac.in.

DIRECTOR

Tender Advt: 62/ 09-10

<u>sr</u>	<u>The offer must be fulfilling the following conditions:</u>
1	Unconditional warranty & Guarantee for 5 years from the date of installation.
2	An undertaking from the firm that the equipment is of the latest model and version. Till date no revised or amended version has been launched and the spare parts will remain available for at least 10 years
3	The percentage (%) or amount of Indian Agency Commission must be mentioned in all offers of overseas suppliers who are offering through their Indian Agency. Please attach Agency certificate issued by photocopy being Indian Agent.
4	After sale service support
5	List of installations in India should be provided with the tender.
6	An undertaking that the equipment is latest art of technology and no other model is superseded this equipment
7	Software upgradation if needed free of cost
8	Availability of spare parts for next 10 years
9	<u>AMC:</u> Annual Maintenance Contract should be 1 % without spares without escalation of subsequent year & 3% with spares without escalation of subsequent year must be undertaken.
10	<u>Earnest money deposit : Rs 1,50,000.00 (Rs One Lakh fifty thousand only is to be deposited along with the technical bid in form of Demand draft/ FDR in favour of Director , SGPGI, Lucknow</u>

TENDER DOCUMENTS & TERMS AND CONDITIONS

The following terms & conditions should be compiled with while submitting tender:

- 1 Tenders should be submitted to the RSD Cell Located at 3rd Floor of the Administrative Building, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Raebareli Road, Lucknow 226014, India. under the sealed cover failing which the tender shall be disqualified.
- 2 The tender terms and conditions be clearly typed or legibly written giving the full name and address of the tenderers. The tenderers should quote in figures as well as in words the rates and amount tendered by him/them. Alteration, if any unless legibly attested by the tenderers, with their full signature, shall invalidate the tender. The tender should be signed by the tenderers himself/themselves or his/their authorized agent on his/their behalf. In case the tender is signed by the agent the authority letter in his favour shall be enclosed with tender documents.
- 3 Sealed Tenders should be submitted in two-bid system (in two identical copies) consisting earnest money, technical offer & price bid. In case of equipments tender the Earnest Money and Technical Bid shall be submitted in first part while price bid be submitted in second part, both separately sealed.
- 4 The tenderers should take care that the rates and amounts are written in such a way that interpolation is not possible. No blank space should be left, which would otherwise make the tender liable for rejection.
- 5 Delivery schedule with definite date of delivery at destination taking into cognizance of transit facilities must be indicated. This contractual delivery date/period should be inclusive of all the lead-time.
6. The tenderers should clearly state whether he/they are manufacturer, accredited agents, or sole representative (indicating the name of Principal) on the top of the Bid.
- 7 The tenderer submitting his tender would be deemed to have considered and accepted all the terms and conditions. No Enquiries, verbal or written shall be entertained in respect of acceptance or rejection of the tender.
- 8 The quantity shown in the Schedule may be increase or decrease or any extent depending upon the actual requirement.
- 9 The tenderer shall specify after sales services facilities within the Guarantee/Warranty period. The warranty period will be extended for the period of the Instruments remain out of order during warranty period.
- 10 The tender shall also confirm the Installation, Commissioning, Demonstration and Training to the concerned of this Institute.
- 11 The tenderer shall submit the pre-requisite information like Civil works/ Electrical details etc. Within 2 weeks from the date of receipt of order or establishment of letter of credit as the case may be.
12. The Institute reserves the right to cancel/reject in full or any part of the tender which generally do not fulfill the conditions stipulated in the tender without assigning any reason.
13. Any action on the part the tender to influence any body of the Institute will make his tender liable to rejection.
- 14 The tenderers shall submit the offer with in original copy of the tender documents duly signed on each page. Item-wise rates indicating units can be offered on letter head of the firm.
- 15 In the case of placement of Purchase Order, the vendor (the tenderers whose tender is accepted) shall have to confirm the purchase order within 7 days from the date of the dispatch of purchase order otherwise it will be deemed that offer is acceptable to the firm. Notwithstanding any other provision, the terms & conditions and any other items given in the Purchase order will be treated as binding with "Errors & omission Expected" basis. However, if the supplier notices any mistake in the contentions of the order, he must bring the same to the notice of the Institute and seek clarifications. Supplier will have to bear the responsibility for failure to take this action.

- 16 The Institute may in writing make any revision or change in the purchase order, including additions or deletions from the quantities originally ordered in the specifications or drawings. If any such revisions/changes affect the price or delivery, the same shall be subject to the adjustment of price/delivery, where requires on a reasonable basis by mutual agreement in writing which should be communicated.
- 17 The tenderer shall also furnish performance bank guarantee of 15% of the order value or (FOB) value at the time of shipment or supply of goods and this will be relapsed after the successful completion of warrantee period.
- 18 The Institute reserves the right to cancel the purchase order or any part thereof and shall be entitled to revise the contract wholly or in part by a written notice to the vendor, if :-
The vendor fails to comply with the terms of the purchase order including specifications and other technical requirement.
The vendor becomes bankrupt or goes into liquidation.
The vendor fails to deliver the goods in time and or does not replace the rejected goods promptly
A receiver is appointed for any of the property owned by the vendor.
19. Upon receipt of the said cancellation notice, the vender shall discontinue all works of the purchase order and matters connected with it
- 20 Earnest Money be paid in shape of D/D, TDR, FDR, drawn in favour of the Director, Sanjay Gandhi Postgraduate institute of Medical Sciences, and payable a Lucknow (U.P.), India as per mentioned in the tender notification.
- 21 Unless otherwise specified in the order, the order price shall remain firm and will not be subject to escalation of any description during the pendency of the order, notwithstanding the change in the cost of materials, labor and/or variations in taxes, duties and other levies on raw materials and components the may take place while the order is under execution even if the execution of the order is delayed beyond the completion date specified in the order for any reason whatsoever.
- 22 For indigenus goods the price should be on F.O.R. SGPGIMS basis inclusive of all levies and duties wherever applicable which should be indicated clearly. The rates of sales tax should be clearly indicated wherever chargeable. The SGPGIMS is not eligible to issue 'C' or 'D' Form, however the concessional rate of Central Sales Tax admissible to Research Institutions on purchase of Scientific Instruments/Equipments etc. from certain States like Maharashtra., Delhi, West Bengal etc. is applicable to this Institute.
- 23 Prices will be quoted on F.O.B. as well as estimated CIF New Delhi basis for imported goods. Indian Agency commission/rebate payable to Indian Agent, if any, shall be shown separately and that will be payable in equivalent rupee directly to Indian Agent as per declaration furnished by foreign suppliers. The Institute reserves the right to get their goods air-freighted/Sea freighted & air insured/marine insured upto site.
- 24 The offer of the tenders shall remain valid for a period of 180 days from the date of opening of the tender.
- 25 All goods or materials shall be supplied by the tenderers whose tender is accepted, strictly in accordance with the specifications, drawings, data sheets, other attachments and conditions stated any alterations of those conditions shall not be made without the consent of the Institute in writing which must be obtained before any work against the order is commenced. All material furnished by the seller pursuant to this order (irrespective of whether engineering, design data or other information has been furnished, reviewed or approved by the Institute) will be guaranteed to the best quality of their respective kind (unless otherwise specifically authorized in writing by the Institute) and shall be free from faculty design (to the extent such design is not furnished to the Institute) workmanship and materials, and to be of sufficient size and capacity and of proper materials so as to fulfill in all respects with all operating conditions, if any , specified in this order.

26 The Equipment supplied shall carry a warranty of 60 months from the date of satisfactory Installation and commissioning of the equipment. If any trouble or defect originating with the design, materials, workmanship or operating characteristics of any materials arise at any time from the date of Installation, the same shall promptly as possible make such alteration, repairs and replacement as soon as notified thereof, the seller shall at his own expenses and as promptly as may be necessary to permit the materials function in accordance with the specification and to fulfill the foregoing guarantee/ warranty.

27 The Institute may at his option, remove such defective materials at the seller's expense in which event the seller shall, without any cost to the SGPGIMS and as promptly as possible, furnish and install proper materials, repaired or replaced materials shall be similarly guaranteed for a period of not less 30 (thirty) months from the date of shipment.

28 In the event that the materials supplied do not meet the specifications and are not in accordance with the drawings, data sheets or the terms of this order, rectification is required at site, the SGPGIMS shall notify to the seller giving full details of differences. The seller shall attend the site, within seven days of receipt of such notice to meet and agree with representative of the SGPGIMS the action required to correct the deficiency.

29 If the seller fails to attend meeting at site within the time prescribed above, the SGPGIMS shall immediately get the same rectified the work/materials and seller shall reimburse the Institute all costs and expenses incurred by the SGPGIMS in removing such trouble or defect

30 100% payments shall be released within 30 days from the date of satisfactory receipt of materials. Where necessary performance bank guarantee @ 15% of the ordered value or FOB value shall be submitted to the Institute before arranging the delivery till expiry of warranty period.

31 The mode of payment will be through irrevocable letter of credit. However, Indian Agency Commission or Technical Services charges would be paid in Indian rupee after satisfactory receipt & installation of goods at site. Indian Agency Commission will be declared in the price-bid.

32 Time delivery as mentioned in Purchase order shall be the essence of the order and no variation shall be permitted except with prior authorization in writing from Purchaser.

33. In the event of delay in making delivery on the part of the vendor, it will be at purchaser's discretion to receive delivery with a reduction in price of the article/or equipment.

34 Forced majeure shall mean and be limited to the following :

Any war/hostilities

Any riot or civil Communication

Any earthquake, flood, tempest, lightning or other natural physical disaster

Any strike, or lock-out (only those exceeding ten continues days in duration) affecting the performance of the seller's obligations.

The seller shall advise the SGPGIMS by registered letter duly certified by Local Chamber of Commerce of Statuary authorities the beginning and end of the above causes of delay within 7 (seven) days of occurrence and cessation of such Forced Majeure conditions, in the event of delay lasting over one month, if arising our causes of Force Majeure, the SGPIGMS reserves the right to cancel the order and the provisions governing termination state under articles shall apply.

For delays arising out of Forced Majeure, the seller shall not claim extension in completion date for a period exceeding the period of delay attributable to the causes of Force Majeure and neither the.

SGPGIMS nor the seller shall be liable to pay extra costs provided it is Mutually established that Force Majeure conditions did actually exist

The seller shall categorically specify the extent of Force Majeure conditions prevalent in his works (such as power restriction etc.) at the time of submitting the bid and whether the same have taken into consideration or not in the quotations.

In the event of delay delivery and/or unsatisfactory manufacturing progress and supply, the SGPGIMS has the right to cancel the purchase order as whole or in part without liability for cancellation charges.

In the event of rejection of non-confirming goods the vendor shall be allowed, without any extension of delivery time to correct the non-conformities, should however the vendor fail to do so within stipulated time, the SGPGIMS may cancel the order.

35 No Payment shall be made for rejected material nor would the tenderer be entitled to claim for such items.

36 Rejected items would be removed by the tenderer from the site within two weeks of the date of rejection at their own cost. In case they are not removed they will be auctioned at the risk and responsibilities of the suppliers without any further notice.

37 In the case of not honoring the supply order, Sanjay Gandhi Postgraduate Institute of Medical Sciences, will have the right to impose penalty as deemed fit to resort to make purchase at the suppliers cost and risk may forfeit his security to make purchase at the suppliers cost and risk

38 In the case of non-supply of stores within stipulated period, it will be at the desecration of the Sanjay Gandhi Postgraduate Institute of Medical Sciences to accept delivery with late delivery clause @ 1% per week maximum to the extent of 10% of the ordered value for delayed supply.

39 All disputes and question, if any arise between the Institute and the bidder out of or in connection with the terms and conditions contained herein or as to the construction of application thereof, or the respective rights and obligations of the parties there under or as to any clause or thing herein contained or by reason of the supply or failure or refusal to supply any material or as to any other matter in any way relating to these presents shall be referred to the sole Arbitration, President of the Institute/Chief Secretary of the U.P. Govt. or his nominee. The decision of the sole arbitrator shall be final and binding upon both parties and subject to adjudication of Lucknow Court. Place for arbitration shall be at Lucknow (U.P.), India. Venue of such arbitration proceedings shall be the Institute. Arbitration and conciliation Act 1996 and rules made there under shall be applied to the proceedings under this clause.

40 Sales-Tax Registration certificate duly attested copy by a Gazzetted Officer should be also enclosed.

Sales Tax, Income Tax clearance certificate along with the affidavit from a notary that the firm has never been black listed must be attached along with the tender failing which the tender will be rejected.

Tenderers hereby agree to all terms and conditions stipulated in N.I.T. and undertake to sign the rate Contract or Supply order within the given days from the date of order failing which Security shall be liable to forfeit.

The manufacturer or their Indian representative will ensure a proper after sales service as per our requirement from time to time, against the guarantee/warranty clause as per the terms and conditions agreed under negotiations would be provided at our Institute without fail. Any negligence on this account shall be the sole responsibility of foreign vendor and the liability for compensation will be fixed up by the Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow.

A Comprehensive offer of same for 5 years would be finalized before placement of order either on comprehensive or semi/non-comprehensive basis (with or without spare/consumables/Accessories including labor charges) by the Institute to the tune of 95% uptime of equipment that AMC will be effective after expiry of warranty period

Joint Director(M.M)

for Director

Sanjay Gandhi Postgraduate Institute of Medical Sciences,
Raebareli Road, Lucknow

SPECIFICATIONS FOR MODULAR BIO-SAFETY LEVEL 3 LABORATORY FACILITY

LAYOUT AND GENERAL SPECIFICATIONS

Company has to provide necessary civil works and utilities that are required before the installation of the modules, eg Civil work structure for an almost uniformly distributed weight of 60.000 kg approx, Electrical Power supply of approximately 100 kVA, Feeding of potable water with a piping of 1 ½ inches of diameter, Drainage conduction with a piping of 2 ½ inches of diameter, a civil work shelter to prevent future water filtrations and moisture problems.

- i. Size of BSL III hood: 16 X40 ft along with roof tope cover with construction of concrete platform for installation
- ii. Back up power supply of 100 KVA for the unit (generator), with 220 V 50Hz..

Validation of the equipment and systems complying with the most demanding international standards at the time of installation and also once in year for the period of maintenance.

Personnel sluices: (Dry air shower)

The personnel sluice cabinet consist of two gas-tight manually operated hinged door with a shower in between. The locking system of both gas tight door is connected to the shower operation by a control programme. Electronic camera to be used for all the operation and procedure. Door locking should automatically open and can be opened by emergency button. The dry air shower cabinet is designed using just air circulation with no fresh air supply. The clean air is blown into the unit through nozzles situated on all four corners. This produces strong gravity forces that ensure a thorough cleaning of personnel. Two return channels placed at floor level suck out the used air which is then passed through H12, H14, or H16 filter cells and returned to the circulation ventilation.

CHARACTERISTICS.

In order to comply with international standards for Bio-safety Level 3, the design of the modular laboratory will be in concordance with the following mainlines:

- Walls and ceiling should be stainless steel, floors will be apoxy coated smooth, easy to clean, impermeable to liquids and resistant to the chemicals and disinfectants normally used in the laboratory.
- Doors stainless steel must be open inwards and be self-closing.
- Windows must be secure and glass resistant to breakage.
- Lighting will be adequate for all activities.
- Optimal personnel flow, including:
 - Bio-safety cabinets specially design for operations avoiding the potential contamination of the workers. Materials flow, including:
- Autoclave for thermal decontamination.
- Biological SAS (Sanitary Access System).This is multipurpose equipment that allows the following tasks:

- Exit of materials that cannot be thermally sanitized. The biological SAS applies a complete chemical treatment that sanitizes the outer surface, so that it is safe to transport the material to the incinerator.
The air treatment is also especially design for BSL-3 application, including features such as:

PHARMACEUTICAL ARCHITECTURE

1. WALLS

The inside divisions be designed with sandwich type panels with insulating soul of polystyrene of 35 Kg/m³. The faces made of galvanized steel sheets 0,6mm thick, treated against microbiologic development and are resistant to chemical attacks. The assembly strengthened with 30x30mm steel tube, and the joints sealed with silicon to complete the air-tightness. Thickness 50mm, Internal Core Polystyrene 35 Kg/m³

The encounters with floor, ceiling and panels done with aluminium covings of 40x40mm. The finishing of corners done with special aluminium pieces.

2. FALSE CEILING

The false ceiling designed with sandwich type panel with insulating soul of polystyrene of 35Kg/m³ and thickness of 50mm, the faces made of galvanized steel sheets of 0,6mm, covered with a primary coating of 5G epoxy and other vanish coating of 20G treated in oven. The assembly strengthened with aluminium tube 30 x 30mm. and joints are sealed with silicon to ensure air-tightness.

To avoid damages during the transport and assembly, both sides are protected with an adhesive plastic sheet.

Thickness 50mm

Internal Core Polystyrene 35 Kg/m³

Colour RAL 9010 white

3. CLEAN ROOM DOORS

The doors composed of sandwich type panels. The faces treated against microbiologic development and resistant to chemical attacks. The door frame made of aluminium profile, mechanically cut to ensure a flush-mounted assembly, without crevices or gaps. Its development with concave and convex forms, allows a perfect union between door and frame ensuring a clean finish.

Both the hinges and the door handles designed to avoid the particles retention and facilitate its cleaning. Electro-magnetic interlocking, to avoid cross-contaminations.

4. CLEAN ROOM WINDOWS

Built on a steel rack varnished in the oven, with a double glazing of 4mm thickness, forming a compact block of the same thickness than the panel, 50 mm, to avoid the particles accumulation.

The mounting system similar to the panel mounting, with an aluminium profile that fixes in the panel rail.

The nominal dimensions 1.000 x 1.200 mm.

5. PVC FILM FLOOR

Floor installed of epoxy coated welded one to the other. low porosity permits an easy and quick cleaning, avoiding the accumulation of particles. specially indicated for its use on clean rooms.

ELECTRICAL SYSTEM (220V ,50 Hz)

1. BOARDS

The electrical boards for protection and actuation made of lacquered-galvanized steel, and prepared to contain the following elements:

- General automatic switch with socket for Indian plug.
- Differential protection switch
- Automatic switches for each circuit
- The electrical boards designed with a 20% spare space, for future installation needs.

2. INSTALLATION SYTEM

- The trays and pipes dimensioned according the number and diameters of wires to be installed.
- For each shunt, way change, connection and fitting a connecting box shall be installed.
- The size of the connecting box made according to the number and size of the wires to be installed. The service voltage 220V 50Hz.
- Separated trays for: Lighting and sockets
- Automated control installation Wires
- All wires to be installed will be cooper made. All wires must be easily identified by colour or inscriptions (or both), especially neutral and protection.
- When colours are used, blue will be used for neutral, green-yellow for protection, and the others could be brown, black or grey, depending the number of wires included in each tray.
- The diameters of all wires will be constant for the entire path, with no connections, way changes shuts done out of the boxes described before.
- All wires will be covered with double layer PVC sleeves.

HVAC System

CHILLER (Water cooling Plant.)

- Two independent external units installed for reliability purpose to provide the cooling water for the air handling unit.
- The compact unit have the following characteristics:
- Air-Water plant with helicoidally fans
- Cooling capacity approximately 30 KW
- Electronic regulation with electronic thermostat
- Acoustic isolation
- Gas charge
- Complete Water circuit

AIR HANDLING UNIT (AHU)

The AHU constructed over a metallic structure made with normalized steel profiles, covered with sandwich type panel. The panel is made with lacquered galvanised steel plates, with

120 kg/m³ rock-wool foam core. The gaps between panel and structure will be sealed with neoprene joints, in order to guarantee the air-tightness of the AHU. Several maintenance doors are built in the AHU, the one for fan maintenance being double and safety check.

AHU includes the following sections:

- Mixing sections, with regulation dampers for fresh intake air and return air.
- Pre-filtration section, with G-4 and F-9 pre-filters.
- Electrical resistances for heat battery.
- Cool battery, made of copper pipes and aluminium blades.
- Fan section, including high-pressure fan
- Absolute filtration section H-14.
- AHU must be installed over an anti-vibration platform, and the connections between AHU and ducts will be done with flexible ducts.

AIR CONDITIONING DUCTS AND AIR DIFFUSION

- A ducting network installed for the air conditioning system, built in galvanized steel, insulated with glass fibre and metallic mesh for the inside zones, impelled through aluminium diffusers, evenly distributed over the ceiling.
- The air return ducting installed through vents situated on the rooms ceiling and through ducts with the same characteristics of those used in the impulsion.
- The regulation of air flow achieved through dampers installed in the impulsion ducts, exterior air, extraction and return. The temperature and humidity should be able to control.
- In order to increase the lifetime of the HEPA filters, the air previously filtered through pre-filters of medium efficiency, before passing to the terminal filtration unit.
- The unit of the absolute air sterilization composed of HEPA cellules of Ultra High Efficacy, of an 100% AFI efficacy, and a 99.99% of D.O.P. installed on Bag-In Bag-out units especially designed to protect operators during filter manipulation (change) in bio-hazardous environments.
- Each absolute filter formed by a plate of glass fibre doubled in zigzag to increase its surface, being perfectly sealed in a frame.
- A complete adjusted system ensuring the filter air-tightness against the mounting frame, avoiding leakages of air. Because of this, the air introduced and extracted in the classified zones is free of dust particles and bacteriologically sterile.

CONTROL SYSTEM

- In order to control the HVAC system, a PLC to be installed.
- The PLC an autonomous electrical controller, specially designed to control HVAC systems. The PLC is made according DIN 43880, ready to be installed inside a control board, covered with PVC cover, screw fixing.
- The PLC includes several digital and analogical inputs and outputs, a LCD screen to check current values, functional codes, information and consignees introduction. Inputs that can be connected are very variation, as temperature probes, pressure probes, etc.
- Outputs can be connected to valves, current valves, batteries, dampers, transducers, etc.
- The controller can process variables as temperature, moisture, enthalpy, pressure, flow, etc.
- Controlling outputs as follows:

- Working condition
- Pressure fall control
- Compensating consignee function
- Maximum-minimum consignee function
- Inputs priority function

Among its principal characteristics, a special software capable of controlling three independent systems. It can also be configured to control the system according proportional control, integral proportional control and derivative-integral-control. Its configuration can be done directly, with no necessity of external hardware.

SCIENTIFIC EQUIPMENTS

Scientific equipment to the BSL-3 laboratory includes : 2 SAS (pass boxes)

1. 2 Bio-safety cabinets –BSL-II A 2
- 2 2 Autoclave (one Large regular and another bench top)
- 3 Water purification system
4. 2 Ordinary table top centrifuge
5. 1 High speed cold centrifuge
6. Ordinary water jacketed Incubator 37 C
7. 1.Water bath (digital circulatory water bath)
8. -85 deg Deep freezer
- 9 -20 deg freezer
10. Medical cool refrigerator
- 11 Hot air oven
- 12 2 Liquid Nitrogen container of 100 liter capacity
- 13 1. Gene Sequencer 3500, 8 capillary – Applied Bio system
14. 1. Automated purification of DNA/RNA using QIAGEN spin column

Entire set of furniture should be autoclavable.

Note : 1 to 12 are different equipments are the parts of BSLIII hood and their cost included In the actual cost of hood.

Special Terms and conditions: The company must incorporate comprehensive warranty for five years and comprehensive maintenance for another 5years. The company should spell out the rate of CMC charges for next five years (i.e.6 to 10 years) with annual Validation The company should ensure the availability of spare parts and maintenance. Service and spares availability to be ensured for a period of 10 years by the parent company. Fifteen percent of bank guarantee will be with us for 5 years.

Kindly submit the financial bid under following heads

- | | | |
|--|-----|-----------------|
| 1. Total price of the BSL-3 hood US \$ | INR | (on LC basis) |
| 2. Other required equipments | INR | |
| 3. Custom, transport &Insurance | INR | |
| 4. Canopy, foundation & civil work | INR | |
| 5. Five years warranty | INR | |

6. Third party annual validation	INR
6 Five years CMC along with spare (6 to 10 yrs)	INR
	Total INR
8. Bank guarantee 15% of Total amount	INR
GRAND TOTAL	INR

1. Bio-safety Cabinet (BSLII A2)

- i. Nominal width 4feet and sash opening 8” with exhaust volume 269 – 296 CFM
- ii 220-240 volts with 50 Hz , 2 Fluoresecent and one Ultraviolet lamp
- iii Nominal inflow velocity of 105 feet per minute (fpm) (0.5m/sec)
- iv Nominal downflow velocity of 55fpm(0.3 m/sec)
- v Approximately 70% air recirculation.
- vi Tocuhpad control panel with electronic security.
- Vii Indicator for HEPA filter choaking .

2. Large Autoclave

A Double door, 250 litre autoclave.

The autoclave is designed for the sterilisation of a wide variety of loads: dry goods (instruments, rubber goods, etc...), porous loads (textiles, filters, etc...) and liquids in vented or closed containers.

The technical desprition is included in an annexed document

biowaste treatment syste

1.Chemical Inactivation

The waste water will be treated using an appropriate virucide that allows the correct killing of the biological element to be handled in the p3 lab (the virucide must be identified and provided by the user). T

2.Circulation pump

Sewer: to collect wastes from the drainage net

Type: Stainless steel centrifugal pump

3.Chemical inactivation vessel

Capacity: 50/100 litres

Material: Polypropylene (SS 304; to be defined in a future)

4.Chemical storage tanks

- Chemical storage tanks in PE, 50 litres capacity for anti-foaming and virucide solutions

The interconnecting lines of all the system will be constructed in SS 304/ Polyethylene, with appropriate surface finishes and thickness.

5.Control board

State plant indicators: volume, time...

Protection for three phases motor with a direct starter

General protections (differential, general switch of, interrupter)

All normative certified, marked CE

APPROXIMATE DIMENSIONS

Length (max.)	2mts.
Width (max.)	1mts.
Height (max.)	2,4 mts.

Specification of Sterilizer (Bentch top)

- Easy to set up operate one touch controls.
- Easily accessible reservoir and removable racks and trays make cleaning easy.
- Built and tested to rigorous industry standards.
- **System chamber holds three 1 liter flasks.**
- 4 preset cycle; wrapped unwrapped packs and liquids and an automatic drying cycle.
- Closed door drying protects against airborne contaminants.
- Special venting for liquids to reduce boil over, allows cycle to run under 45 minutes for EPA standards.
- ASME coded chamber.
- Has received 510 (K) clearances.
- Optional printer for hard copy records.
- **Fixed Cycle parameters:** Liquids: 30 min @ 121⁰C
 - Unwrapped: 3min. @135⁰C
 - Wrapped: 5 min. @ 135⁰C
 - Packs: 30 min @ 121⁰C
- **Chamber Capacity:** 0.7 cubic ft., 19.8 l

3.SPECIFICATION of Ultra Pure Water Purification System

Stage I: Prefilter

There should be a prefiltration Unit, before the Analytical Grade Water System to make sure a longer life of the consumables in it.

Stage II: Analytical Grade Water System

System should be a combination of Pretreatment cartridge, Reverse Osmosis, deionization and UV oxidation in a single unit, so that Product Water should have:

Resistivity > 15 MegaOhm.cm,

TOC < 15 ppb,

Bacteria < 10 cfu/ml

Flow Rate: up to 1 liter/min directly from the system

- Volumetric and timed dispense of Type II Water directly from system.
- System should have individual pretreatment cartridges for removal of particle, hardness and chlorine and can be exchanged independently as & when required.
- Draw off product water from both analytical grade water from system & reservoir.
- Remote mounting of purity monitor and controls for increased flexibility in choosing a mounting location.
- System should have a dual wave UV lamp (185 and 254 nm) for Photo-oxidation of organics and bacterial reduction.
- Digital readings of the system product purity in resistivity or conductivity as well as TDS (Total Dissolved Solids) of RO feed water and product water.
- LCD display monitors the level of water in the storage reservoir.
- System should have diagnostic facility to display error and alert to change the consumables.
- System should have Coaxial resistivity with constant of 0.1cm^{-1}
- Standard wall mounting bracket should be included in the system.
- System should have diagnostic facility to display error and alert to change the consumables.

Stage III: Reservoir

- Cylindrical Storage Reservoir with a capacity of at least 30 liter.
- Filtered to prevent the introduction of airborne contaminants into the storage reservoir.
- Design of the reservoir should allow for bench or wall mounting without additional accessories.
- Fluorinated to prevent recontamination of water by contact with impure surfaces.
- Optional UV lamp to control bacterial growth within the tank.
- Optional distribution pump allows transporting Type II water to remote locations.

Stage IV: Ultra Pure Grade Water Purification System

- Final Ultra Pure Grade Product water, ideal for molecular biology applications including; PCR, Electrophoresis, as well as cell and tissue culture, should have:

Resistivity: 18.2 MegaOhm.cm

TOC: < 10 ppb

Bacteria < 1 cfu/ml

Pyrogen Level <0.001EU/ml

Flow Rate: At least 1.6 Liter/min directly from the system

- Volumetric and timed dispense feature allowing to fill carboys without monitoring.
- System should recirculate water for 10 minutes every hour, when the system is in standby mode of operation, to maintain water quality.
- System should be able to remove nucleases such as RNase and DNase as well as DNA from challenged feed water.
- Purification pack should contain activated carbon & highest purity semi conductor grade ion exchange resins.
- Should have a facility to calibrate electronics through N.I.S.T calibrated module on site.
- System should have feed water and application specific cartridge packs, and inbuilt dual Wavelength quartz UV lamp (185 & 254 nm).
- Should have single cartridge replacement with One Connection cartridge pack.
- System should have incorporated hollow fiber Ultra filtration cartridge in polypropylene

- housing so as to produce water with pyrogen level less than 0.001 EU/ml. and 6+ log
- reduction of Pyrogens.
- Drain piping should be provided from UF cartridge for system to periodically send waste water from outside of membrane thereby remaining filter contaminations.
- Maintain bacterial and particle free water with a 0.2 micron final Filter.
- System should have Coaxial resistivity with constant of 0.1cm^{-1}
- Should have detachable remote mounting of purity monitor display and controls for increased flexibility in choosing a mounting location upto 10 feet away from the system.
- Final Filtration should be performed with an absolute 0.2micron gamma irradiated filter.
- System should have inlet pressure regulating valve to avoid any problem in case of feed water fluctuations.
- Should have RS232 interface enabling data to print or save to a computer or an optional printer.
- System should have diagnostic facility to display error and alert to change the consumables.

4. Table Top Centrifuge

- Universal and compact high-speed table top refrigerated centrifuge with maintenance free without carbon brushes,
- Induction drive,
- Automatic rotor detection
- Digital selection and display of speed,
- RCF, time and braking profiles
- Min. /max. Speed : 300/15,000 rpm
- (Adjustable in increments of 10)
- Max. RCF : 21,885 x g
- Max. Capacity : 4 x 100 ml
- Accel./braking curves : 9/2
- Noise level at max. Speed: < 62 dB
- Run time : 0 to 9 hrs 59 mins,
- Continuous operation
- Function: RCF pre-selection, quick run
- Imbalance recognition: Electronic, ideally tuned for every rotor
- Rotor recognition: Automatic
- Dimensions (HxWxD) mm (inch): 315x380x475 (12.4x15x16.7)
- Weight kg (lb): 40 (88)
- Power consumption W: 350
- Swing bucket rotor, Max. Capacity: 4 x100 ml
Max. Speed: 4,000 rpm, Max. RCF: 2,585 x g
- Round bucket, Max. Capacity: 4 x100 ml, Max. Speed: 4,000 rpm, Max. RCF: 2,585 x g
- Adaptor for Swing Bucket rotor, 7 ml blood sample, Max tube size: 13 mm, Length: 105, Tube per adaptor: 3, Rotor 12
- Highconic rotor 45⁰C Max. capacity mL: 6x50, Max speed rpm: 8,500, Max.RCF: x g 10,015

5. High Speed Cooled Centrifuge:

- **System should have microprocessor controlled**
- **Drive System :** Direct, brushless induction low profile motor
- **Rotor Locking :** Auto-Lock III & **Imbalance Detection**
- **SMARTSpin Programs:** 99 (5 w/ direct access) & **Temp. Range**-10 °C to +40 °C
- **Pre-Cooling Function :** Yes, with direct button & **Refrigeration :** CFC free
- **System should have acceleration Rates :** 9
- **Deceleration Rates :** 10 & **Max Timer Range :** 9h, 99min + continuous
- **Certifications:** UL listed/ CSA certified/ CE marked/ IVD compliant/Certified Biosafety **Auto-Lock® III Rotor System**

A secure locking system allows easy push- button installation and exchange of rotors for quick switch between applications and time savings. Also, easy access to the chamber enables quick cleaning, a healthier working environment and longer unit life.

- **ClickSeal® Bucket Sealing System** Our biocontainment solution, certified by CAMR* in Proton Down, UK, allows simple operation eliminating screw caps and Complicated clips as well as glove-friendly, one-handed open/close capability.
open/close capability
- **Motorized Lid Latch**
Improve closure time and reduce wear with our highly reliable, hybrid lid latch system -combining the advantages of mechanical and electro mechanical systems.
- **SMARTSpin® Technology**
System should have advanced rotor management system maximizes acceleration, braking and residual load imbalance for each rotor and bucket option, optimizing safety and improving separations
- **Fiberlite F 15 – 8x 50c Fixed Angle Rotor**
Max Cap: 8x50 ml
Max Speed: 14,500 rpm
Max RCF: 24,446 x g
- Adapter for 15 ml conical tubes (Set of 2)
- 4x 250 ml BIOShield 1000A High Speed swing bucket rotor
Max. Capacity: 4x250 ml Max. Speed: 6000 rpm Max RCF : 7164xg
- Adapter for 16x 50 ml Falcon tubes(set of 4)
- Adapter for 36x 15 ml Falcon tubes(set of 4)
- Highplate 6000 MTP Rotor
2x5 MTP's Max. Speed: 6300 rpm Max RCF : 6168xg
- **Swinging Bucket**
Max Capacity : 4 x 750 ml (w/ TX-750 and BIOLiner rotors)
Max Speed (rpm) : 6000 (w/ BIOShield 1000A rotor)
Max RCF (xg) : 7164 (w/ BIOShield 1000A rotor)

- **Fixed Angle Rotors**
Max Capacity : 6 x 250 ml
Max Speed (rpm) : 15200 rpm
Max RCF (xg) : 25314xg (w/ 48x2 ml rotor)

6. Specification of Incubator

- System should have total volume 150 L Capacity
- Temperatures from 0 to 50⁰C
- Stainless steel interior with rounded edges and corner.
- The small footprint compact incubator fits neatly on any bench or even a shelf
- Temperature is freely adjustable and can be displayed in increment of 0.2⁰C
- External Dimensions (wxhxd): mm\inch 340x270x431\13.4x10.6.x17.0
- Internal Dimensions (wxhxd): mm\inch 270x205x288\10.6x8.1x11.3
- Reservoir for collecting spilled fluids provides additional safety

7. SPECIFICATIONS FOR DIGITAL WATER BATH

- Excellent $\pm 0.2^{\circ}\text{C}$ uniformity and stability
- Seamless corrosion resistant stainless steel chamber
- Analog or digital temp. set and display
- Uniquely designed heating plate on the underside of working chamber for maximum heat transfer to bath
- Any aqua bath can become a boiling bath by using the Lexan gable cover included free if charge
- Temp. range from slightly above ambient to 65⁰C, 100⁰C with gable cover included
- Independent high-limit thermostat provides over temperature protection
- Exclusive lifetime warranty on the heating element
- Digital Operating system easy to use PID microprocessor control for set points entry at any temp.
- Electrical 50/60Hz: Volts 240, Watts 500
- Chamber capacity Liters: 6.7
- Chamber Dimension Inches WxHxD: 5.9(15)x 5(13)x11.6(30)
- Chamber Dimension Inches WxHxD: 8.4(21)x 9(23)x14(36)

8. **ULTRA LOW TEMPERATURE DEEP FREEZER -86°C**

- TYPE : Vertical, -86°C deep freezer with storage capacity 475 liters and above. 220 V, 50 Hz.
- REFRIGERATION: Cascade with two highly efficient 1H.P. Compressors.

- Microprocessor controlled operational data recorder for recording of 30 days parameters with diagnostic alarms for fault detections.
- At least 150 mm thick polyurethane insulation.
- System should have 5 compartments with independent lids
- Stainless steel interior with removable stainless steel shelves
- Programmable Microprocessor based temperature controller with interface
- Upper and lower alarm limits can be programmable.
- Digital temperature display with resolution of 0.5°C
- Audio visual alarms warning for power failure, open door, deviation of interior temperature and defective temperature sensors
- Battery backup for alarm and display
- User code protection against unauthorized parameter changes
- Non CFC, Non HCFC refrigerants.
- Double heating of door for easy opening of door & prevent low pressure or vacuum.
- Remote alarm capability
- Digital temperature display easy Touch Key pad for setting temperature Key-operated switch main power switch.
- Optional CO2 backup in case of power failure
- Working ambient temp. 32°C

9. Specification of Laboratory Freezer -20°C

- System should have digital display
- System should have high temp. alarm
- Exterior contact for remote alarm
- System should have acoustic alarm
- Right hand hinged reversible door
- Adjustable feet at front and castor at back
- All around sealed drawers to prevent frost escape when opening door
- 7 drawers sealed with transparent door
- Easy access and reliable storage at low temperatures.
- Direct cooling above each drawer the temp. is stable while the door is open

- Dimensions exterior WxDxH(mm): 570x595x1760
- Net capacity: 250 to 300 ltrs.
- Temp. range: -10/-40⁰C
- Power supply V : 230
- Frequency Hz: 50/60

10. Medical cool Refrigerator

- System should have digital display
- System should have high/low temp. alarm visual alarm
- Acoustic open door alarm
- System should have spark free interior
- White exterior
- System should have key lock
- System should have ABS interior
- Auto defrost in refrigerator
- Adjustable shelves
- Right hand hinged reversible door
- Net capacity : 380 to 390 ltrs
- Temperature range : +2/+15⁰C
- Dimensions Exterior WxDxH mm : 595x595x1850
- Power supply V : 230
- Frequency Hz: 50/60

11. Hot air OVEN

- Precision high performance Oven: Ultra precise temp. stability and recovery
- 1.4 cu. Ft. (39L) holds seven adjustable shelves (two included)
- Chamber volume: 1.4 cu. Ft. /39 L
- Microprocessor temp. controller
- Temp. display: Two lines, 4digit LED
- Temp. Range: Amb. +15 ⁰C to 325⁰C
- Heat up Time to 325⁰C: ±2.5⁰C
- Recovery time: 2.5 minutes
- Air change (Max): 128/hour
- Dimensions(WxHxD) chamber: 14x13x13 in. (35.6x33x33cm)
- Electrical specs: 2500watts/10.9 Amps
- Net weight: 230lbs. (104.3 kg)

12. Specification of Liquid Nitrogen container:

Cryo Can (Liquid Nitrogen container with accessories), Capacity : 100 Liter, with trolley and containers & spare lids & accessories.

Justification : To carry out the Liquid nitrogen and stand by.

Portable 5 liter for refilling.

13. Automated purification of DNA/RNA by spin column

Automated Sample Purification System (DNA,RNA,Protein)

System should be designed to perform fully automated purification of nucleic acids and proteins for research use in molecular biology applications.

1. System should have inbuilt centrifuge with 12,000 x g maximum, Swing-out rotor (maximum 45°) & 12 rotor positions.
2. System should have inbuilt shaker with speed 100- 2000rpm, Amplitude 2 mm, Heating range of room temperature to 70°C (158°F) & Ramp up time of <5 minutes from room temperature to 55°C (±3°C).
3. System should have pipetting system of syringe size 1 ml & pipetting range 5–900 µl.
4. System should be based on world wide proven Silica gel based spin column technology.
5. System should have capacity from 2-12 samples per run.
6. System should have touchscreen (Transmissive TFT, 64 x 86 x 6.5, white LED backlight,high brightness) control.
7. System software should come with preinstalled protocol and new protocol can be freely downloaded from its website. System should have option for custom development of protocols.
8. System should have power requirement of 220–240 V AC, 50–60 Hz, 650 VA.
9. System should come with 1 year warranty.
10. Company should have complete range of compatible consumables & kits for reagent support of their own.
11. System should be able to do following purification / Isolation application:-

Isolation of Plasmid DNA ,Plant DNA ,Genomic DNA, PCR Purification,DNA purification from agarose gels,RNA cleanup from enzymatic reactions for array analysis, realtime RTPCR, Northern blotting, Genomic DNA from blood or body fluids & tissues,Purification of Methylated DNA,Viral nucleic acids (DNA/RNA) from plasma, serum or cell-free body fluids, Total RNA from animal /human tissues and cells, Purification of 6X His-tagged proteins from bacterial or eukaryotic cells,Depletion of IgG / Albumin from serum or plasma samples etc.

14. Gene Sequencer

- **8 capillary system that can easily be upgraded to a 24-capillary system when you're ready**
- **New single-line 505 nm, solid-state long-life laser—utilizes a standard power supply; requires no heat-removal ducting**
- **Powerful, integrated data collection and primary analysis software provides real-time assessment of data quality**
- **Radio Frequency Identification (RFID) technology tracks key consumables data and records administrative information**
- **Advanced multiplexing capabilities for DNA fragment analysis with up to six unique dyes**
- **Unrivalled application flexibility—one array and one polymer are used for most applications**
- **Simple setup, operation and maintenance—the easiest-to-run, easiest-to-own DNA sequencer to date**

3500 System Operating Specifications

- **Laser**
Long-life, single-line 505 nm, solid-state laser excitation source
- **Electrophoresis Voltage**
Up to 20 kV
- **Oven Temperature**
Active temperature control from 18°C to 70°C
- **Minimum Computer Requirements**
Hardware: Pentium® IV 1.86 GHz Processor
Operating system: Windows® Vista SP1
Installed RAM: 2 GB
Hard Drive: 1X 80 GB 7200 RPM SATA 3.0GB/s and 8 MB Data Burst Cache

- **Operating Environment**

Temperature: 15°C–30°C (Room temperature should not fluctuate more than $\pm 2^\circ\text{C}$ during an instrument run)

Humidity: 20–80% (non-condensing)

- **Main Power Voltage**

100–240 V $\pm 10\%$

50–60 Hz $\pm 10\%$

- **Current**

Maximum: 15 A

- **Maximum Power Dissipation**

417 VA, 371 W (approximately, not including computer and monitor)

- **Dimensions**

Width (closed-door): 61 cm

Width (open-door): 122 cm

Depth: 61 cm

Height: 72 cm

Weight: 82 kg (approximately)

- **Service and Warranty**

1-year limited warranty on parts and labour

Service installation

Application training