Notice Inviting Quotation (E-Procurement mode)

Indian Institute of Technology Delhi is in the process of purchasing following item(s) as per details as given as under.

Details of the item

Installation and third-party validation of - Two units of prefabricated container based biosafety level 3 labs with fitting and accessories

Earnest Money Deposit to be submitted

Rs. 750000

Warranty

3 Years/3 साल

Performance security

3% of item value

Delivery Schedule

6-8 Weeks Pl. refer Terms & Conditions No.12

Mandatory Minimum Local Content

1) 50% for Class I Supplier
2) 20% for Class II Supplier

Margin of Purchase Preference for Local Content

20% (Pl. refer to the DPIIT Order mentioned at T&C No.45)

Tender Documents may be downloaded from Central Public Procurement Portal http://eprocure.gov.in/eprocure/app. Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website http://eprocure.gov.in/eprocure/app. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at ‘Instructions for online Bid Submission’.

Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type ‘IIT’. Thereafter, Click on “GO” button to view all IIT Delhi tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website http://eprocure.gov.in/eprocure/app as per the schedule given in the next page.

No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E-procurement portal).
### SCHEDULE

<table>
<thead>
<tr>
<th>Name of Organization</th>
<th>Indian Institute of Technology Delhi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender Type (Open/Limited/EOI/Auction/Single/Global)</td>
<td>Open</td>
</tr>
<tr>
<td>Tender Category (Services/Goods/works)</td>
<td>Goods/Services</td>
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<tr>
<td>Type/Form of Contract (Work/Supply/Auction/Service/Buy/Empanelment/Sell)</td>
<td>Supply/Service/Buy</td>
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<tr>
<td>Product Category (Civil Works/Electrical Works/Fleet Management/Computer Systems)</td>
<td>Civil Works/Electrical Works</td>
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<tr>
<td>Source of Fund (Institute/Project)</td>
<td>Budget Code 35.02.13(SF)/Project Code GCFL__</td>
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<tr>
<td>Currency</td>
<td>Indian Rupee (INR)</td>
</tr>
<tr>
<td>Date of Issue/Publishing</td>
<td>30/11/22 (11:00 Hrs)</td>
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<tr>
<td>Document Download/Sale Start Date</td>
<td>30/11/22 (11:00 Hrs)</td>
</tr>
<tr>
<td>Document Download/Sale End Date</td>
<td>13/12/22 (11:00 Hrs)</td>
</tr>
<tr>
<td>Date for Pre-Bid Conference</td>
<td>05/12/22 (10:00 Hrs)</td>
</tr>
<tr>
<td>Venue of Pre-Bid Conference</td>
<td>pre-bid conference on 5th Dec. 10 am at SPS committee room.</td>
</tr>
<tr>
<td>Last Date and Time for Uploading of Bids</td>
<td>13/12/22 (11:00 Hrs)</td>
</tr>
<tr>
<td>Date and Time of Opening of Technical Bids</td>
<td>14/12/22 (11:00 Hrs)</td>
</tr>
<tr>
<td>Tender Fee</td>
<td>Rs. 10000/- (For Tender Fee)</td>
</tr>
<tr>
<td>(To be paid through RTGS/NEFT. IIT Delhi Bank details are as under: Name of the Bank A/C : IITD Revenue Account SBI A/C No. : 10773572622 Name of the Bank : State Bank of India, IIT Delhi, Hauz Khas, New Delhi-110016 IFSC Code : SBIN0001077 MICR Code : 110002156 Swift No. : SBININBB547 (This is mandatory that UTR Number is provided in the online quotation/bid. (Kindly refer to the UTR Column of the Declaration Sheet at Annexure-II)</td>
<td></td>
</tr>
<tr>
<td>No. of Covers (1/2/3/4)</td>
<td>02 (Technical, Financial)</td>
</tr>
<tr>
<td>Bid Validity days (180/120/90/60/30)</td>
<td>180 days (From last date of opening of tender)</td>
</tr>
<tr>
<td>Address for Communication</td>
<td>Prof. Sandeep Jha, 393 Block 3 IIT Delhi, New Delhi 110016</td>
</tr>
<tr>
<td>Contact No.</td>
<td>8800883905</td>
</tr>
<tr>
<td>Email Address</td>
<td><a href="mailto:sandeepkjha@gmail.com">sandeepkjha@gmail.com</a></td>
</tr>
</tbody>
</table>

**Chairman Purchase Committee**

(Buyer Member)
Instructions for Online Bid Submission/ ऑनलाइन बोली (बिड) के लिए निर्देश:
As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (URL: http://eprocure.gov.in/eprocure/app). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at:
http://eprocure.gov.in/eprocure/app

REGISTRATION

1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: http://eprocure.gov.in/eprocure/app) by clicking on the link “Click here to Enroll”. Enrolment on the CPP Portal is free of charge.

2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.

5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.

ा एक मान्य हस्त क्षर प्रम ण वट महत्त्वपूणव उपयोग के लिए चयन करें। उनके प्रोफाइल के साथ

केवल एक मान्य हस्त क्षर प्रम ण वट दो बोलीदाता द्वारा पंजीकृत होना चाहिए। कृपया ध्यान दें कि निविदकर्ताओं का सीम्य लेने के लिए प्रज्ञे देता है कि वे अपने हस्त क्षर प्रम ण वट के उदार नहीं देते हैं जिससे दुर्घटना हो सकता है।
6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

**SEARCHING FOR TENDER DOCUMENTS/ निविदा दस्तावेजों के लिए खोजना**

1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

**PREPARATION OF BIDS/ बोली (विड) की तैयारी**

1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.

2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.
To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

**SUBMISSION OF BIDS/ बोली (विड) का जमा करना**

1) Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

3) Bidder has to select the payment option as “on-line” to pay the tender fee as applicable and enter details of the instrument. Whenever, Tender fees is sought, bidders need to pay the tender fee separately online through RTGS (Refer to Schedule, Page No.2).

4) A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the white colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

5) The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.

The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

**ASSISTANCE TO BIDDERS / बोलीदाताओं को सहायता**

1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

**General Instructions to the Bidders / बोलीदाताओं के लिए सामान्य निर्देश**

1) The tenders will be received online through portal [http://eprocure.gov.in/eprocure/app](http://eprocure.gov.in/eprocure/app). In the Technical Bids, the bidders are required to upload all the documents in .pdf format.

2) Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through [https://eprocure.gov.in/eprocure/app](https://eprocure.gov.in/eprocure/app). Digital Signature Certificates can be obtained from the...
authorized certifying agencies, details of which are available in the web site https://eprocure.gov.in/eprocure/app under the link “Information about DSC”.

कंपनी के नाम में स्मार्ट कार्ड / ई-टोकन के रूप में मान्य क्लास II / III डिजिटल हस्ताक्षर प्रमाण पत्र (डीएससी) के पंजीकरण के लिए एक शर्त है और https://eprocure.gov.in/eprocure/ के माध्यम से बोली प्रस्तुत करने की गतिविधियों में भाग ले सकते हैं। डिजिटल हस्ताक्षर प्रमाण पत्र अधिकृत प्रमाणित एजेंसियों से प्राप्त की जा सकती है, जिनमें से जनकारी "डीएससी के बारे में सूचना" लिंक के तहत वेब साइट https://eprocure.gov.in/eprocure/app पर उपलब्ध है।

3) Tenderer are advised to follow the instructions provided in the ‘Instructions to the Tenderer’ for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at https://eprocure.gov.in/eprocure/app.

निविदकर्ताओं को सलाह दी जाती है कि वे निविदकों को निर्देश दिए गए हों ताकि ई-प्रोक्योरेंटें के लिए सेंट्रल पब्लिक प्रोकर्ममेंट पोर्टल के जरिए https://eprocure.gov.in/eprocure/app पर ऑनलाइन निविदाएं जमा कर सकें।
Subject : Installation and third party validation of - Two units of prefabricated container based biosafety level 3 labs with fitting and accessories

Invitation for Tender Offers

Indian Institute of Technology Delhi invites online Bids (Technical bid and Commercial bid) from eligible and experienced OEM (Original Equipment Manufacturer) OR OEM Authorized Dealer for supply, integration, installation and third party validation of - Two units of prefabricated container based biosafety level 3 labs with fitting and accessories with (warranty period as stated at page #1 of this tender) on site comprehensive warranty from the date of receipt of the material as per terms & conditions specified in the tender document, which is available on CPP Portal http://eprocure.gov.in/eprocure/app

TECHNICAL SPECIFICATION:

Sealed Tenders are invited for Design, Supply, Installation, Testing, and Commissioning (SITC) and Validation of Prefabricated Bio-Safety Level-III labs on turnkey basis as per DBT guidelines on BSL3 structures 2020 with following specifications:

One BSL3 unit having two 40 feet length x 8’ width x 10’ high adjoined containers for bacteriology

One BSL3 unit having two 40 feet length x 8’ width x 10’ high adjoined containers for virology.

One 16 feet length x 8’ width x 10’ high container sandwiched in between the above two BSL3 units to house common Effluent treatment plant (ETP).

Which means it is 5 container system adjoined to make two independent BSL3 labs and one common ETP working under negative pressure.

Tentative drawing and material/human flow given on next page. Minor readjustments can be suggested during pre-bid meeting, but purpose is to maximize usable lab space within BSL3 containers while maintaining BSL3 and fire safety norms.

There are 4 doors in each BSL3 lab: 1 for personnel entry, one for autoclave room, one for plant room and one emergency exit cum material entry door. The emergency door should have minimum 4.25ft net width with clear entry width of 4 ft.
The scope of work includes design, supply, installation, testing, commissioning (DSITC) and validation documentation of the Prefabricated Biosafety Level-III Facility on a turnkey basis and its day-to-day on-site operation and comprehensive maintenance in accordance with the DBT guidelines on BSL3 structures 2020 and fifth edition of BMBL Guidelines issued by the U.S. Department of Health and Human Services, CDC, USA’, NIH and WHO.

Scope will include design, engineering and installation of Prefabricated Biosafety level-III Laboratory with double skin PUF panels, HVAC system including complete air management system for maintaining the lab environment as per the biosafety guidelines, all related internal lighting and wiring work with UPS for smooth and safe operation of Laboratory.

For safe operations as per the guidelines and monitoring of the facility, the system must have necessary monitoring, operations & controlled through a DDC based system with requisite sensors for controlling indoor conditions/environment including pressure gradient, temperature, humidity, exhaust, etc.

A fire detection system, Access Control System and CCTV System shall also be provided.

**Reference Standards:**

- Biosafety Level 1 – 4 DBT – RCGM 2020: [DBT guidelines on BSL3 structures 2020](#)
- Biosafety in Microbiological and Biomedical Laboratories – 5th Edition
- Canadian Standard, Laboratory Biosafety Guidelines – 3rd Edition 2004
- EN12128 -1998, Biotechnology- Laboratories for research development and analysis-containment levels of microbiological Laboratories, areas of risks localities and physical safety requirement.
- PCL- 1– 4 Physical Containment Level Laboratory
- NIH Guidelines for research involving recombinant DNA molecules (Jan 2001) Biosafety Level 1—4,

**HVAC SYSTEM AND BUILDING MANAGEMENT SYSTEM**

The Biosafety level-III Laboratory and support areas shall be air-conditioned through separate dedicated Central AC System with 100 % fresh air once through system comprising of Chiller Pack, Air Handling Units, Exhaust System, Air Filtration System and Air Distribution System complete in all respect. The system shall be with standby AHU operating in 12h shift with auto-change over and backup provisions capable to provide un-interrupted continuous 24x7x365 days operation of the Laboratory to maintain the required temperature, humidity, air-change rate, differential pressure gradient and air filtration conditions of the Laboratory Facility. Submit the HVAC system and BMS design and working drawings for prior approval. The HVAC system shall comply with the given specifications and performance requirements and shall be complete in all respect, as required and approved.

**BSL-3 areas Parameters:**

Uses of 100 % fresh air with no recirculation for BSL 3 facility

Managed directional flow to ensure air always flows toward the highest area of containment
Negative Pressure monitoring and control

Temperature: 23°C ± 2
Relative Humidity: NMT 55 ± 5%
No. of air changes: Minimum 16 ACPH (Air Changes per Hour)
Supply air should have Three Stage Filtration
Exhaust air through HEPA filters with safe Bag In Bag Out arrangement (BIBO)
Audible and visual alarms to alert personnel if a system fails with SMS control
Building management system (BMS) for facility control & monitoring
Liquid disinfection system

The necessary civil and electrical work outside the lab shall be done by us as per the requirement furnished by successful bidder. The class validation of biosafety Laboratory shall be done by vendor and report submitted through a third party agency. Equipment’s used for validation should have valid traceable calibration certificates.

**Area Pressure Gradient**

<table>
<thead>
<tr>
<th>Area</th>
<th>Pressure Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoclave Room</td>
<td>-15 Pa</td>
</tr>
<tr>
<td>BSL-3</td>
<td>-45 Pa</td>
</tr>
<tr>
<td>Exit Airlock 1</td>
<td>-30 Pa</td>
</tr>
<tr>
<td>Exit Airlock-2/ change room/ Entry Airlock-1 / Preparation room</td>
<td>-15 Pa</td>
</tr>
</tbody>
</table>

BSL3 Lab height: min 8 feet working

**Air Conditioning Plant:**

a) **Chiller:**

Air cooled condensing unit shall consist of hermetic scroll/ screw air-conditioning compressor assembly, air cooled coil, propeller-type condenser fans, and a control box, copper piping, refrigerant gas, automatic low pressure and high pressure cutouts with microprocessor controlled system, electronic regulation, Acoustic isolation, gas charge and should be integrated with DDC system of the main lab. It should also have electronic thermostats for tripping the compressors after reaching set temperature with suitable insulation of the suction line.

Supply, installation, testing and commissioning of CHILLING UNITS each complete with compressor, motor, insulated chiller, flow switch, condenser fans, vibration isolators, integral refrigerant piping and wiring, accessories as required and called for. The Chiller Pack shall be skid mounted with Air Cooled Condenser, Evaporator/Chiller, Micro-processor control panel including interconnecting control and power wiring, refrigerant charge etc. complete in all respect. To economize the operating cost and provide backup capacity, the chiller pack shall have multiple compressors.
b) Chilled Water Piping System:

Chilled water piping system shall be provided in accordance with ISHARE/ASHRAE standards ensuring no leakage in all the ducts and pipes. The piping shall be carried out in heavy class MS ERW pipes conforming to IS 1239 for pipe size upto 150 mm dia and IS 3589 above 150 mm dia pipes. The joints in the water piping system shall be welded as per IS 823. The piping system shall be complete with required butterfly valves, ball valves, balancing valves as per IS 780, IS 5152 & IS5155. Non-return valves as per IS 778 & IS 5312.

Air Handling Unit (AHU):

One main unit and one backup AHU unit to be installed in each of the BSL3 lab. Both should changeover automatically after 12h shift without fall in air pressure in lab.

Design Ambient weather data considered as per ISHRAE. HVAC system design with 100% Fresh air and no recirculation for proposed BSL-3 Lab. Room return air shall be exhausted after filtration through Safe change HEPA filter & UV. Room condition will be maintained with temperature of 24±4 °C The lab design is to clean the air >16 times per hour.

The AHU constructed over a metallic structure made with a normalised steel profiles, covered with sandwich type panel. The panel is made with lacquered galvanised stainless 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 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, electrical resistance 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.

All the supply AHUs comprise of following sections: Intake louver, Pre- filter section with 20 microns and 10 microns filters, Cooling coil section, blower section, driver set and pulley, fine filter section with 5 micron filter. Other accessories like dampers, SS 304 drain pan, Common base frame with vibration isolators pads, Suitable inspection doors for filter, coil & blower sections, are provided. They are connected to HEPA filters for all Labs, corridors and air-lock rooms. All HEPA filters, the lay-in type, are at 99.99% efficient to @ 0.3 micron particle size, hermetically sealed and ducted aluminum terminal units. Each unit has an upstream sample port, and protective painted aluminum face screen. The Supply Air Handling Unit will be connected to AHU of suitable capacity for temp and RH control. The HEPA filter should be capable to withstand corrosive agents and gases used for lab fumigation. The Exhaust/Blower fan shall be turned at once to achieve the set value of negative pressure.

Air Filtration System:
- All incoming air filtered by three stages Filtration in AHU
- All main lab exhaust air pass through BIBO HEPA.
Three Stages for supply Pre- Filtration:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASHRAE 1st stage</td>
<td>30% efficiency</td>
</tr>
<tr>
<td>ASHRAE 2nd stage</td>
<td>90% efficiency</td>
</tr>
<tr>
<td>Final Stage HEPA Filtration</td>
<td>99.99% efficiency</td>
</tr>
</tbody>
</table>

HEPA filters for Exhaust:

<table>
<thead>
<tr>
<th>Filter Type</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIBO HEPA Filter</td>
<td>0.3 micron @ 99.99% efficient</td>
</tr>
</tbody>
</table>

Fumigation

Entire laboratory areas and ETP plant room should be fumigation and disinfection complaint. Provision is to be kept for portable fumigation, surface sterilization kit and Decontamination procedure is to be as per BSL3 DBT 2020 guideline.

Ducting and Insulation for Supply and Exhaust Ducts:

The supply air and exhaust ducting shall be carried out in GI sheet (class VIII with zinc coating of 120 gm/sqm.). All duct fabrication work, thickness of sheet metal, supports, hangers shall conform to SMACNA standards. All the joints shall be sealed with silicone sealant.

Duct Insulation:

Closed cell, fire retardant, self-extinguishing type crossed linked polyethylene insulation density not less than 24 Kg/sqM, "K" value not more than 0.028 Kcal/deg C with adhesive tape etc, on duct complete as per specification and drawings.

Motorized Airtight Damper:

Consists of aluminium casing with factory fitted motorized damper. Casting and attachment should in stainless steel. The damper blade with plastic seal when closed should comply with DIN EN 1751, CLASS 4 (Exception normal size 100 and 125, class 3) also complies with the requirement of DIN 1946, Part 4 (leakage < 10 M3/h. M2 of damper cross section with a 100 Pa Pressure differential).

Fire Dampers:

Fire Dampers provided in the supply and exhaust air systems shall be interlocked with the AHU blower motors such that in case of fire, the AHU fan motor should trip automatically.

Sound Damper:

There are used for reducing the noise level of the air which is travelling through the duct. These are to be placed after the air throwing machines so that these can absorbs the extra noise. And surrounding will not be affected by the noise & it will be noise proof.
BUILDING MANAGEMENT SYSTEM (BMS):

A customized Building Management System shall be designed, programmed and provided to:

i. Control and monitor the operation of HVAC system and other laboratory operating parameters in the Lab rooms/zones like: Room/Area/zone pressure, temperature & RH, Ambient temperature & RH, AHU and AHU changeover and Exhaust Blower operating status, VFD status & VCD status, OPEN/Close dampers status, Supply & exhaust air quantity in each Laboratory rooms/zone.

ii. The BMS shall be complete with PLC, Sensors, Controllers, power and control wiring, customized Software and other associated field devices, hardware and accessories complete in all respect, as per requirement and approved design.

iii. The HVAC system START and STOP sequence shall be interlocked to prevent positive pressurization of the laboratory, at any point of time.

iv. A dedicated AIO PC shall be provided for the BMS operation and control along with a parallel secondary display screen of 32” size at the laboratory entrance to show the operating parameters.

v. The BMS control panel shall be powered through UPS. Upon restoration of power after a power failure, the BMS shall start the HVAC system automatically without any human interface and restore the normal operational set points of the system.

Laboratory should have automated BMS Control System showing all the parameter like- Return Air Temperature, Temperature, RH & Pressure Setpoints, CHW Value detail, Return Air Humidity, Room Pressure, SAF-EAF VFD Speed, SAF-Auto/Manual Status, SAF AHU on/Off Status & Command, Autoclave and ETP status.

BMS System shall have all the Graphic display, of AHU along with filtration stage/ filtration life along with the standby blower. Online Data of all the VFD integrated with AHU should also be displayed.

Alarm and Monitoring Systems:

a) for lab pressure, humidity, fire

b) Pressure alarm visual/audio

c) Temperature/RH alarm visual/audio

d) Emergency panic button (break glass type) - audio all rooms/control room

e) Emergency door-open” button (For interlock door)

f) Automatic SMS/call based warning system should be integrated for critical failure warning to Facility in-charge

a) Computerized Controls (DDC):

The control System, consist of DDC (Direct Digital Controller) should automatically adjust system airflow and maintain system as the designated negative pressure.

The DDC should have the following features:

- The system controller (Direct Digital Controller) controlled via a dedicated software program.
- Centralized Control
- Automatic air flow control.
- Pressure, Temperature & Humidity monitor and control.
- Doors interlock - controlled by DDC and display on the DDC control panel.
- HEPA filter resistance and efficiency monitoring. When the pressure of the filters reaches the setting value, the DDC has the alarm.

BMS AIO PC (Computer): Supply and Installation Main Operator Station Comprising Main P.C. with Intel Core I7 series or latest 2.5 Ghz CPU complete with accessories such as 21” LCD Colour Monitor, 1 TB hard disk drive. 16 GB RAM, wireless 101 Keys Key Board, wireless Optical Mouse, A4 colour Printer including UPS with half an hour battery backup.

BMS SOFTWARE: Supply, Installation, Testing and Commissioning of the BMS System Software: Graphical Software meeting the requirements in the Given I/O Summary and technical specifications including configuration and facility to create / provide the graphic mapping for all I/O summary points, configurable password protection for Building Mgmt System as per Specifications. Software shall be able to communicate with Bacnet, Modbus devices simultaneously, with unlimited web user license capacity. Same software can be used as programming / commissioning software.

BMS PANEL: Automation stations/ Direct Digital Controller with I/O module etc. The networkable controllers shall be 32/64 bit, UL listed microprocessor with built in networkable (IP) type with real time clock with SD-CARD programmable memory. Minimum one networkable DDC (32/64 bit, UL Listed) should have inbult graphics display with knob operation. The networkable DDC's shall be capable of either direct sitting on IP LAN or peer to peer communication with lockable MS mounting cabinets duly powder coded connector strip, internal wiring and space to house controller & relays, connector etc. as per IO summary.

b) Door Interlock and Access Control System

The door interlock and access control system shall be provided with combination of proximity card based, numerical key pad lock based and push button based system. The system shall be complete with access logic controllers, door electromagnets, proximity cards and card reader/s, numerical keypad locks, door release push buttons, emergency door release buttons, PC communicator, control and power wiring and cabling and other required accessories, hardware, and software. The access control system shall be powered through UPS supply for uninterrupted operation even during mains power failure. The door Electromagnetic Lock shall be suitable for installation on doors/frames. The electromagnetic lock and armature shall be constructed and designed to provide trouble free service. There has to be provision of disabling interlocking of emergency exit (double door) twin doors for passage of large apparatus e.g. -80 refrigerator in and out of lab during installation/repairs situation without losing negative air pressure in the lab.

c) CCTV System

CCTV System shall be provided for surveillance of the Laboratory. The CCTV system shall be complete with wall/ceiling mounted high resolution color cameras, multiplexer cum DVR, associated power and
control cabling etc. and required hardware and software. The cameras shall be high resolution color cameras and shall be suitable for indoor installation. Atleast one PZT camera to be installed in each working space in the middle of the lab. No CCTV camera in the shower area. CCTV system to be plugged to LAN for remote monitoring. CCTV system should be thus compatible with Android 13 & Windows 11 OS.

The multiplexer cum DVR shall be suitable for analog data, audio, text data and event data with play back feature. The DVR memory/Hard disk capacity shall be 8TB HDD or higher for 3 months data storage. For convenient backups the DVR shall be compatible with Windows based OS so that it can be backed up through a PC.

d) Fire Detection and Alarm System

The complete Laboratory and support areas shall be provided with Fire Detection and Alarm System. The Fire Detection & Alarm System shall be complete with Smoke detectors, Heat detectors, Fire Alarm Panel, manual call points, response indicators, power and control wiring and cabling etc. complete in all respect.

a) Temp/RH/Pressure Sensor
b) Pressure alarm visual/audio
d) Emergency panic button (break glass type) - audio all rooms/control room
e) Emergency door-open” button (For interlock door)

ELECTRICAL SYSTEM AND ASSOCIATED WORKS:

Electrical power distribution system scheme for the complete Laboratory should be provided. The electrical distribution system shall be designed and installed as per the Indian Electricity Rules and shall conform to NBC. Vendor shall calculate and submit the electrical load calculation sheet, power and light wiring diagrams, GA and Single Line diagrams for Electrical Distribution Panels, cable routing etc., before proceeding with the work.

a) Power Distribution System:

The executing agency shall design and provide the main power distribution (LT) panel, sub-distribution boards and panels complete with required switchgears, breakers, circuit breakers, power and control wiring, etc. for power distribution system for complete Laboratory Facility. The power distribution system shall include supply and laying of cabling/wiring for HVAC System and Fixed equipment and systems like Autoclaves, Bio-safety cabinets, access control system, CCTV system etc., required and provided for the Laboratory.

For circuit and power distribution, the DB's shall be 8/12 way TPN vertical/Horizontal with double door 3 phase/ 1 phase, fitted with ELCB, RCCB, MCB etc. complete as required. The circuits, lighting and power distribution shall be fully wired and complete in all respect. Only multi-stranded copper conductor wires shall be used for sub-main wiring, circuit wiring, light and power wiring. All joints shall be made at main switches, distribution board socket and switch boxes only. No joint shall be made in conduits and junction boxes. Conductors shall be continuous from outlet to outlet.
b) Internal Light Points, Power Points, Fittings and Fixtures

The Electrical fittings and fixtures in the Laboratory and support areas shall be sealed type, explosion proof, capable to withstand chemical exposures during laboratory fumigation. The Laboratory rooms shall provide 400-450 lighting Lux level and the light fixtures shall be surface mounted type.

All the electrical points, power points, light and power sockets shall be fully wired with switches, sockets, connections complete in all respect as required. Only multi-stranded copper conductor wires shall be used for light and power wiring. The internal wiring shall conform to the Indian Electricity Rules and BIS standards. The conduit work for light points, power points, voice and data points, FDA system etc., shall be concealed type and shall be done in rigid PVC as per IS specifications. All the conduit pipes shall be sealed to prevent ingress of air.

c) Communication Facility (Intercom & LAN)

The Laboratory areas and support and service areas shall be provided with Data (LAN) and Voice points (Intercom) for communication. The system shall be complete with required conduit and wiring. The Data and Voice points shall be fully wired with CAT6 cable complete with output terminals.

d) UPS

An UPS of 30 KVA (each for both wings) shall be provided for un-interrupted power backup to critical components like Door Interlock and access control system, BMS Operation and shower control panel operation. The power backup through the UPS shall be for minimum 60 minutes. The UPS shall be complete with battery bank, battery rack, interconnecting cabling and wiring, complete in all respect.

INTERNAL CONSTRUCTION WORKS & FINISHES:

The internal partition walls and ceiling construction in Biosafety Laboratory shall be carried out with, non-particle shredding panels in Powder Coating finish. The ceiling shall be walk-able type for access of services above for maintenance purpose.

a) Modular Wall & Cladding Panels:

Double skin modular wall panels made of 0.8mm thick GPSP (galvanized plain skin pass) sheet powder coating with min. 60 Micron on both sides with PUF of density 40±2kg/m³ as infill, GI profiles for reinforcement along the periphery, floor track in Painted GI with EPDM rubber below Floor Track using Fastener bolts, Self tapping screws at suitable interval, suitable to accommodate the epoxy floor flush with wall panel. Joints shall be sealed with clean room compatible silicon sealant. Including all material, lead lift T&P, Labour etc. **Wall panel is sealed airtight**, that ensures no air leakage. There shall be cut-outs on the walls to accommodate electrical outlets, telephone & intercom pipelines, control panels, monitoring devices,
emergency warning systems, pass-thru’ cabinets and piping where are applicable, whish should be air sealed.

Wall Panel Thickness - 50/80/100 mm  
Cladding Panel Thickness - 50/80 mm  
Outer Skin (both sides) - Powder Coated GSS sheet in 0.8 mm thickness  
Insulation/Filler material - PUF having density of 35-40kg/m³  
Shade / Color - White  
Services - Pre-inserted conduits for electrical wires/cables etc.  
Sealing of Joints - Silicone Sealant  
Sealing of Penetration - Silicone Sealant

b) Ceiling Panels:

Double skin totally flush walkable false ceiling made of 0.8mm thick GPSP (galvanized plain skin pass) sheet powder coating with min 60 micron on both sides with PUF of density 40 ± 2 kg/m³ as infill, GI profiles for reinforcement along the periphery, including ceiling grid for easy installation and necessary hardware like threaded rods, Fastner Bolts, self tapping screws, nuts and bolts etc. Joints shall be sealed with cleanroom compatible silicon sealant. (Load bearing capacity- 150 kg/m²). Double skin modular wall panels made of 0.8mm thick GPSP (galvanized plain skin pass) sheet powder coating. The solid ceiling panels will be placed side by side and fastened together. Ceiling trim (PVC) pieces will be installed on the ceiling to seal the ceiling panel airtight. The GI panel edges are sealed with Room Temperature Vulcanizing (RTV) Silicone to the structural frame and fasten on both sides to form an airtight sealed panel. 
The wall and ceiling system should be impervious, non-corrosive, antibacterial and antifungal surface finish suitable for use of wide range of chemicals like Hydrogen peroxide, formalin etc. for laboratory decontamination.

The solid ceiling panels of size 80mm and 50mm shall be capable to withstand the high negative operating pressure of Laboratory and shall be suitable for normal walking pressure and strong enough to allow personnel to climb above for installation and servicing via the service access on the side of the laboratory.

c) The Radius Coving (wall-to-wall, and wall-to-ceiling, from inside to outside corner):

Smooth radius coving should be installed at all wall-to-wall and wall-to-ceiling joints. All seams should be carefully sealed with RTV sealant. Corners at floor - coved from epoxy floor sheet to the wall.

d) Flooring

Flooring for BSL-3 Lab and Other Area shall be 4 mm or thicker Epoxy flooring with rounded corners, non-skidding, abrasion resistant and chemical resistant.

e) Doors

All Air-Tight Doors (air-lock to the outside of the Laboratory) to be constructed with steel and powder-coated (for easy cleaning). 46 mm thick doors made with PU painted 0.8mm thick GPSP sheets on both
sides with honeycomb kraft paper as infill, 1.2 mm thick GPSP powder coated door frames, hardware like SS push plate, SS 'D' handle, SS ball bearing butt hinges, Double glazed view panel with Automatic Concealed door bottom drop seal and 1.2mm thick SS304 kick plate with necessary gaskets and drop seals.

The door is to be installed completely with pull-door-handle door, closer and electrical interlock mechanism. The Airlock doors and emergency Exit Door shall be Air-Tight Doors. These Air Tight Doors should have adequate gasket arrangement to provide air tight seal and may have a step-over seal.

The interlock logic shall be such that while entering or exiting the facility, traffic from the other side should not get access, to ensure privacy.

**EQUIPMENTS & SYSTEMS**

**a) BIOSAFETY CABINET BSCs** (1 units 2.25 feet high x 6 feet wide x 2.25 ft deep working area & and 1 units 2.25 feet high x 4 feet wide x 2.25 ft deep working area) for each Lab shall be Class II B2 type . The Bio-Safety Cabinet body, frame and supports shall be constructed in SS 316 L (18 gauge). The work surface shall be fine perforated SS 316 L (18 gauge). The front shall have SS 316 L (18 gauge) top section and sliding sash in toughened glass with required counter weight. Front should have liquid splash barrier control.

The Bio-Safety Cabinet shall be complete with following accessories, features and specifications:

- Approx. Work Space of 1830/1220 mm (W) x 685 mm(D) x 685 mm (H)
- Supply Air Face velocity not to exceed 0.65 m/sec
- Working chamber to operate under > 10 mm negative pressure
- Drain receptable with drain faucet
- Flourescent light & UV light
- Extract plenum and Air control dampers
- 2 Nos. Power outlet switch/sockets
- 80 to 100 fpm air inlet velocity at 8-10 inches of sash opening
- Supply and Exhaust HEPA filters shall be mini pleat separator less type with 99.99 % efficiency down to 0.3 micron particle size
- Supply and Exhaust Blowers with motor, statically and dynamically balanced.
- Magnehelic differential pressure gauge for chamber and HEPA filters

**b) AUTOCLAVE** shall be double door, rectangular, steam operated, high pressure high vacuum, suitable for horizontal loading of waste. The autoclave shall be with bio-seal design. The chamber size shall be approximately 600 mm x 600 mm x 900 mm, of 320 Ltr capacity. The autoclave shall be free standing type. The Autoclave shall be PLC controlled, programmable and shall be loaded with different pre-programmed decontamination and sterilization cycles.
The chamber and door plate would be made of stainless steel AISI 316 quality and electric steam generator would be made of stainless steel AISI 304 quality. The jacket would be made of Boiler Quality steel.

The chamber & jacket would be hydraulically tested to 2 times the working pressure. The normal working pressure would be 2.1 Kg/cm² corresponding to temperature 135°C.

The unit also would be incorporated with water ring vacuum pump to create vacuum of 24” when the temperature of cooling water to the pump is less than 30°C for total evacuation of the air from the chamber, thus allowing complete sterilization of the load in shortest possible time.

The system shall be PLC based microprocessor with the facility of HMI (Human-Machine-Interface) which is incorporated with the sterilizer.

The Micro-Processor based control Panel (Microster) will control entire cycle of sterilization and steam pulsing automatically through water ring vacuum pump. The control panel shall house the complete automatic process control arrangement including timers, relays, contactors etc.

c) PASS BOX shall be provided at required locations for transfer of samples, chemicals and materials into the laboratory Pass box with UV to be provided. The Pass Box shall be constructed in 18 swg SS 304. The corners inside the Pass Box chamber shall be coved for easy cleaning. The pass box chamber dimension shall be approximately 610 mm x 610 mm x 610 mm. The unit shall be complete with HEPA filters, blower, motor, door electromagnets, door interlock, UV Lamp with timer, necessary wiring, controls and all other accessories. etc. complete.

The Pass Box doors shall be interlocked by providing suitable electromagnet, so that both the door cannot be opened simultaneously. The interlock shall provide visual indicator for door open/close conditions. The blower motor of Pass Box shall of suitable rating and shall be dynamically and statistically balanced. Magnehelic differential pressure gauge shall be provided to indicate the pass box chamber pressure. The pass box shall be provided with UV light with ON/OFF switch and shall be interlocked with the pass box doors

d) EFFLUENT DECONTAMINATION SYSTEM The Chemical Decontamination System for Biosafety Level-III Laboratory effluent shall comprise of one common Effluent Collection tanks (1 Working +1 Standby) capacity. The drain line from Laboratory containment area shall be terminated to the effluent decontamination tanks. The effluent decontamination tanks shall be provided with motorized OPEN/CLOSE valves connected with liquid level sensor such that when one tank get filled up to full volume, the supply valve shall automatically close and the supply valve of the standby tank shall automatically open to allow collection of effluent. One number
chemical storage tank fitted with transfer pump and measuring device, piped and connected to both the decontamination tanks shall also be provided for introducing disinfectant chemical into the decontamination tanks. The system shall be complete with items: - Motorized valve connected with liquid level sensor through control panel - Disinfectant Chemical storage tank - Disinfectant Chemical dosing pump - Non return valves - Interconnecting piping including piping for chemical dosing - Pumps for discharging decontaminated effluent into sewer/drain (1W+1S) - Power and control cabling/wiring for pumps and motorized valves with control panel. A dunk tank made of SS 304 steel for mixing NaOH / sodium hypochloride to be added for disinfection process before the drain outlet of BSL3. Approx size of dunk tank shall be 1000x1000x500 mm and to be kept at base of the ETP container. This shall be fitted with motorized open/close valve with liquid level sensor with 500 L volume in one batch of disinfection.

e) Emergency Shower with Eye wash station inside Shower Room, required during exit from the Lab

f) PLUMBING WORK: All internal Plumbing- piping Work for Sink/ shower/ ETP, etc

g) CIVIL FOUNDATION AND CANOPY: Preparation of Civil Foundation as per requirement for Placement of BSL-3 Lab Containers. Preparation of Canopy/ Shed work of the BSL-3 Lab containers shall be done by the Institute.

SERVICE & UTILITIES

a) Power:
The required Power for the Laboratory with DG backup shall be arranged and provided by institute, upto the main LT Panel of the Laboratory.

b) Water:
Water supply for the Laboratory shall and provided by institute, up to the Lab area. One unit of RO plant of capacity 50L/h to be supplied and installed for use by the HVAC system, the steam boiler, the laboratory room sinks and showers.

c) Drain & Sewer Line
The drain from the Laboratory, after decontamination, shall be connected to the nearest available drain line (to be made available by the institute).

TESTING, COMMISSIONING AND VALIDATION

After completion of the construction and installation works, all the equipment, systems and services shall be commissioned and tested to check the operation and performance of each of the equipment and system.
The list of tests to be performed is not limited to the following and should be commensurate to the DBT guidelines on BSL3 structures 2020.

- Containment Barrier Integrity Test
  - HEPA Filter Leak Test – According to the US Federal Standard 209E
  - Ducting Pre-welding leak test
  - Ducting post-welding leak test
  - Room Differential Pressure test
  - Particle Count Test for Cleanliness
  - Air Velocity/ Pattern smoke Test
  - Room Air change Rate Test
  - Light intensity Test
  - Noise level Test
  - Biological Safety Cabinet Test
  - Temperature and RH
  - Effluent treatment plant test with microbiological characterization
  - Viral burnout units test
  - UPS load and drain check
  - Door interlocking and leakage tests
  - Shower test
  - Fumigation check
  - BMS test including warning system
  - Chiller units test
  - AHU changeover pressure drop tests
  - DB MCB trip tests

A one-month report should be provided for submission to DBT for final approval of facility within the scope of tests within 1 months of commissioning and operation. **Failing which Performance security guarantee shall be forfeited.**

One year on-site and 3 year total parts warrantee on all units, fittings and equipments, accessories to be provided.

The vendor shall provide one BSL3 trained manpower each in 3 shifts for operation and monitoring for 1 month within the scope of contract. Payment to the manpower for 1 month shall fall within the scope of work contract. Beyond this period, facility owner shall be responsible for manpower hiring and operation.

If by some reasons the facility fails to clear DBT biosafety committee inspection cum approval due to poor workmanship or failing to adhere to the DBT guidelines on BSL3 structures 2020 on structure, **Performance security guarantee (3% of contracted amount shall be forfeited).** Performance security guarantee is to be deposited by winning bidder as bank guarantee to be retained by institute until the warrantee period.
<table>
<thead>
<tr>
<th>Category</th>
<th>Approved Makes and Manufacturers</th>
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<tbody>
<tr>
<td>Air Cooled Chilling Units</td>
<td>VOLTAS/BLUESTAR/CARRIER</td>
</tr>
<tr>
<td>Chilled Water Pump</td>
<td>KIRLOSKAR/ CROMPTON GREAVES/ ARMSTRONG/ GRANDFOSS/ KSB/ WILOS / KBL</td>
</tr>
<tr>
<td>Supply &amp; Exhaust AHU</td>
<td>VTS/FLAKTWOODS/BIOSAFE/SYSTEM CLIMCONE / AIR/ZEFCO/ KSB/ CROMPTON/KIRLOSKAR</td>
</tr>
<tr>
<td>Hot Water Generator</td>
<td>RAPIDKOOL/KHOKAR/EMERALD</td>
</tr>
<tr>
<td>Supply &amp; Exhaust AHU blower</td>
<td>NICOTRA/KRUGER/COMFRI/ROSENBERG</td>
</tr>
<tr>
<td>Motors (for AHU)</td>
<td>ABB/SIEMENS/BHARAT BIJILI/CG/ KIRLOSKAR</td>
</tr>
<tr>
<td>VFD</td>
<td>SIEMENS/ABB/SCHNEIDER/EQUIVALENT / FUJI/DANFOS</td>
</tr>
<tr>
<td>Chilled Water Piping</td>
<td>TATA/ JINDAL/SAIL/ HSL / SURYA</td>
</tr>
<tr>
<td>Butterfly valve</td>
<td>ADVANCE/ INTERVALVE/ AUDCO/C&amp;R/CASTLE/ARROW</td>
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<tr>
<td>Balancing Valve</td>
<td>ADVANCE/ INTERVALVE/ AUDCO/C&amp;R/CASTLE/ARROW</td>
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<tr>
<td>Gate Valve</td>
<td>LEADER/SANT/DIVINE/ADVANCE/CASTLE</td>
</tr>
<tr>
<td>NR Valve</td>
<td>ADVANCE/ INTERVALVE/ AUDCO/C&amp;R/CASTLE/ARROW</td>
</tr>
<tr>
<td>Flow Switch</td>
<td>JOHNSON/HONEYWELL/STAEFA</td>
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<tr>
<td>Y strainer</td>
<td>SANT / EMERALD/RAPIDKOOL</td>
</tr>
<tr>
<td>Temperature Gauges/ Pressure Gauge</td>
<td>WAREE/H GURU/FIEBIG/JAPSIN/FORBESMARSHALL</td>
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<tr>
<td>Air Vents</td>
<td>I TAP / ANERGY/SANT/H GURU/CASTLE</td>
</tr>
<tr>
<td>Pipe Insulation</td>
<td>AEROFLEX/ ARMACELL/SUPREME/PARAMOUNT/K FLEX</td>
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<tr>
<td>Duct Insulation</td>
<td>AEROFLEX/ ARMACELL/SUPREME/PARAMOUNT/K FLEX</td>
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<tr>
<td>Ducting GI Sheets 280 GSM with certificates</td>
<td>TATA/ JSW/ SAIL/JINDAL</td>
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<tr>
<td>Volume Control Dampers/ Fire Dampers – Fusible Link</td>
<td>CARYAIRE / AIRMASTER / AJANThA/ SYSTEMAIR/ CONTINENTAL</td>
</tr>
<tr>
<td>Bag In Bag Out HEPA Filters with Module</td>
<td>AAF / CAMFIL/ BIOSAFE/ THERMADYNE</td>
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<tr>
<td>HEPA Filter with Filter Module</td>
<td>AAF / CAMFIL/ BIOSAFE/ THERMADYNE</td>
</tr>
<tr>
<td>Wall Panel/ Ceiling Panel/ Doors</td>
<td>FABTECH/I-CLEAN/GMP/SYNERGY/ BIOSAFE/NICOMAC/ AIRTECH</td>
</tr>
<tr>
<td>Grills/Diffusers/Dampers</td>
<td>AIR MASTER/ AJANThA/ SACHIN IMPEX / BIOSAFE/CARYAIRE / MKPRECISION/ CONTINENTAL/SYSTEMAIR/ TROX/ KLEZADES/ SHRI HARI / SYSTEMAIR</td>
</tr>
<tr>
<td>Heaters</td>
<td>HEATCON/DASPASS/ESCORTS/UKTAL</td>
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<tr>
<td>I BMS System/ Modulating 3 Way</td>
<td>HONEYWELL / SIEMENS/JOHNSON CONTROL/ROCKWELL/SCHINEDER</td>
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<tr>
<td>Item</td>
<td>Manufacturers</td>
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<tr>
<td>Valves, Thermostats, Humidation/Electric porous membranes, Sensors</td>
<td>DWYER/ substantially identical make</td>
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<tr>
<td>Air Circuit Breaker &amp; Bus Couplers</td>
<td>L &amp; T/SIEMENS/ABB</td>
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<tr>
<td>MCCB</td>
<td>L &amp; T/SIEMENS/SCHNEIDER/ABB/CG</td>
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<tr>
<td>MCB’s</td>
<td>L &amp; T/SIEMENS/SCHNEIDER/ABB/CG/HAGER/LEGRAND</td>
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<tr>
<td>ELCB’s</td>
<td>L &amp; T/SIEMENS/SCHNEIDER/ABB/CG/LEGRAND</td>
</tr>
<tr>
<td>Power/Control Contacts, Over load Relays, Timers, etc.</td>
<td>L &amp; T/SIEMENS/SCHNEIDER/ABB</td>
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<tr>
<td>Fuses</td>
<td>CG/L &amp; T/SIEMENS</td>
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<tr>
<td>Energy Meters</td>
<td>L &amp; T/CONZERVE</td>
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<tr>
<td>Power Cables/Control Cables/Wires etc.</td>
<td>FINOLEX/UNIVERSAL/POLYCAK/KALINGA/HAVELLS/RR CABLES</td>
</tr>
<tr>
<td>CAT 5/6 Cables</td>
<td>AT&amp;T/KABEL/DIGILINK/LAPP/LUCENT</td>
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<tr>
<td>Electrical Conduits</td>
<td>BHARAT/GUPTA/POLYCAK/PRECISION OR / OEM MAKES WITH ISI STD.</td>
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<tr>
<td>UPS</td>
<td>APC / UNLINE/ 3EM/ EMERSION</td>
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<tr>
<td>PASS BOX</td>
<td>THERMADYNE/BIOSAFE/PRAGATI</td>
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<tr>
<td>PVC Conduit</td>
<td>POLYCAK/PRECISION/SUPREME</td>
</tr>
<tr>
<td>Switches &amp; Sockets</td>
<td>POLYCAK/CROMPTON/NORTHWEST/LEGRAND/WIPRO/P HILLIPS/MK/HAGER/LEGRAND</td>
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<tr>
<td>LT Panel</td>
<td>CPRI APPROVED OEM MANUFACTURER</td>
</tr>
<tr>
<td>Distribution Board</td>
<td>LEGRAND/ L&amp;T/ABB/HAVELLS/SCHNEIDER</td>
</tr>
<tr>
<td>Light Fixtures</td>
<td>POLYCAK/CROMPTON/NORTHWEST/LEGRAND/WIPRO/P HILLIPS/MK/HAGER/LEGRAND</td>
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<tr>
<td>Two 6x4’ and two 4x4’Class II-B2 type 100% exhaust Biosafety Cabinet with viral burnout and HEPA systems</td>
<td>Thermo/ Klenzaids</td>
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<tr>
<td>Pre-insulated Valves, strainers</td>
<td>CR VALVES/ AUDCO/ ADVANCE/ LEADER/SANT/CASTLE/ INTER VALVE/KIRLOS Karnataka</td>
</tr>
<tr>
<td>Autoclave</td>
<td>NAT-STEEL/ MACHINFABRIC/ PRECISION</td>
</tr>
<tr>
<td>CCTV Camera</td>
<td>CPPLUS/BOSCH/PALCO/HONEYWELL/LG/SAMSUNG/MOB OTIX/VIVOTEK</td>
</tr>
<tr>
<td>Fire Alarm System</td>
<td>HONEYWELL/BOSCH/ SIEMENS/SYSTEM SENSOR/GST</td>
</tr>
<tr>
<td>Door Interlocking &amp; Access control system</td>
<td>REALTIME/HID/LG/ESSL</td>
</tr>
<tr>
<td>RO system</td>
<td>OZONE / TDS CHEMICAL / 3D AQUA/ Indian OEM make</td>
</tr>
</tbody>
</table>
Personnel movement:
Lab personnel will enter the lab, after removing street cloths and wearing necessary garments and PPEs (Personal Protection Equipment). Personnel entry to the BSL3 lab is through Change room/Ante room and after completion of work, will enter shower room and change room and exit the lab.

Material movement:
Sample/consumables will be transported in viral culture medium in biosafety container to the lab, it will be placed in Dynamic pass box located on entry area. Lab personnel in BSL-3 lab will collect the sample and will process in bio safety cabinet for further process. Material which are required to be sent out will be through Autoclave from lab to outside.

Any item not included above shall conform to the relevant BIS specifications, wherever applicable.

A complete set of tender documents* may be Download by prospective bidder free of cost from the website http://eprocure.gov.in/eprocure/app. Bidder has to make payment of requisite fees (i.e. Tender fees (if any) and EMD) online through RTGS/NEFT only.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Due date</strong>: The tender has to be submitted on-line before the due date. The offers received after the due date and time will not be considered. No manual bids will be considered.</td>
</tr>
<tr>
<td>2.</td>
<td><strong>Preparation of Bids</strong>: The offer/bid should be submitted in <strong>Two bid systems</strong> (i.e.) <em>Technical bid and financial bid</em>. The technical bid should consist of all technical details along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the technical bid in the given format i.e BoQ_XXXX. The Technical bid and the financial bid should be submitted Online. <strong>Note</strong>: -Comparison of prices will be done ONLY on the bids submitted for the Main Equipment and anything asked as ‘Optional’ in the specs is not to be included for overall comparison.</td>
</tr>
<tr>
<td>3.</td>
<td><strong>EMD (if applicable)</strong>: The tenderer should submit an EMD amount through RTGS/NEFT. The Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted. The EMD will be refunded without any interest to the unsuccessful bidders after the award of contract. Refer to Schedule (at page 1 of this document) for its actual place of submission.</td>
</tr>
<tr>
<td>4.</td>
<td><strong>Refund of EMD</strong>: The EMD will be returned to unsuccessful Tenderer only after the Tenders are finalized. In case of successful Tenderer, it will be retained till the successful and complete installation of the equipment.</td>
</tr>
<tr>
<td>5.</td>
<td><strong>Opening of the tender</strong>: The online bid will be opened by a committee duly constituted for this purpose. Online bids (complete in all respect) received along with EMD (if any) will be opened as mentioned at “Annexure: Schedule” in presence of bidders representative if available. Only one representative will be allowed to participate in the tender opening. Bid received without EMD (if present) will be rejected straight way. The technical bid will be opened online first and it will be examined by a technical committee (as per specification and requirement). The financial offer/bid will be opened only for the offer/bid which technically meets all requirements as per the specification, and will be opened in the presence of the vendor’s representatives subsequently for further evaluation. The bidders if interested may participate on the tender opening Date and Time. The bidder should produce authorization letter from their company to participate in the tender opening.</td>
</tr>
<tr>
<td>6.</td>
<td><strong>Acceptance/ Rejection of bids</strong>: The Committee reserves the right to reject any or all offers without assigning any reason.</td>
</tr>
<tr>
<td>7.</td>
<td><strong>Pre-qualification criteria</strong>:</td>
</tr>
<tr>
<td></td>
<td>- The Bidder should be a well-established, ISO 9000/9001, ISO17025 certified, WHO-GMP or equivalent Certified for the Biosafety labs and registered with Registrar of Companies, under the Indian Companies Act and should be in similar business since last 7 years. Copy of Registration/Certificate of Incorporation shall be submitted. Copy of PAN Number, GST Registration, ESIC &amp; PF Registration with the appropriate concerned regulatory authorities must be submitted.</td>
</tr>
<tr>
<td></td>
<td>- It is mandatory for bidder to have completed two prefabricated BSL-3 installations (at Central/State Government organisation/Central Autonomous body/Central Public Sector Undertaking / Universities and Institutes in last 5 years) in India and should have been in running contract for operation and maintenance for Two BSL 3 facilities in India. A list of end-user should be provided with details of work orders from the client. The Bidder must have trained engineers having valid HVAC and Biosafety training certification. Online training certificate shall not be acceptable.</td>
</tr>
</tbody>
</table>
• The Purchase committee shall contact the end-users and obtain feedback on Workmanship of bidder, and maintenance after-sale experience. This process shall carry marks for technical evaluation process and mandatory pre-qualification clause is to have satisfactory response from two end users.

• This is a turn-key project that includes Design, Supply, Installation, Testing, Commissioning (DSITC) and Validation of Bio-Safety Level-3 Laboratory. All offers should be submitted in two sealed parts: Technical and Price Bids, separately. Interested contractors should visit the site for physical check and status of the site condition and clarify any queries from Purchase committee during pre-bid meeting. All eligible vendors will be called for a thirty-minute presentation. The presentation should include a brief introduction on company, plan for project execution, timeline and new suggestions that might include a better alternate layout plan/BOQ for a better utilization of the limited space and optimum running costs.

• The Company should have positive Net Worth and should not have incurred loss in last three years ending 31st March 2022 duly certified by the Chartered Account. The Company should have average Annual Financial Turnover of at least Rs. 20 Crore during the last three financial years. The Bidder shall have minimum solvency of Rs. 5 Crore. Solvency Certificate from the Bidder’s Banker shall be submitted.

Criteria for evaluation of the Technical-qualification - The financial bid at NIQ portal will be opened only if bidder obtains atleast 80% evaluation marks from technical qualification. This mark shall be carried forward towards total evaluation percentage.

Documents need to be provided in Technical Bid

If these documents are not submitted /conditions not met, the quotation shall be summarily rejected and no further correspondence, in this regard, shall be entertained. Scope of Work:

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<th>Description</th>
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<td>3</td>
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<td>4</td>
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<tr>
<td>5</td>
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<tr>
<td>6</td>
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</table>
Statement of financial standing from C.A. or Bank with address & proof of average annual turnover of the firm minimum 15.00 Cr for the last 3 years

The Bidder shall have minimum solvency of Rs. 5.00 Crore. Solvency Certificate from the Bidder’s Banker shall be submitted

Experience in similar class of work enclosed with Customer Purchase Order/Contract copy.

Completion certificate of timely/satisfactory commissioning from minimum two clients.

The Firm/office/service Centre in Delhi-NCR (Address proof)

Undertaking for adherence of Two-Bid System. (Non-violation of Two-Bid System)

Compliance statement of tendered specifications along with Catalogues

Information and details regarding litigation/arbitration cases, if any, for the last five years.

Undertaking for adherence & acceptance to all Tender Terms

The Firm/office/service Centre in Delhi-NCR (Address proof)

Fall clause declaration/ Non-black listing declaration

TABLE-1
TECHNICAL BID STAGE 1 CRITERIA FOR EVALUATION OF THE PERFORMANCE OF FIRMS/CONTRACTORS/BIDDERS FOR ELIGIBILITY UNDER QCBS

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Strength</td>
<td>15 marks</td>
</tr>
<tr>
<td>(a)</td>
<td></td>
</tr>
<tr>
<td>1. Average annual Turn Over:</td>
<td>10 marks</td>
</tr>
<tr>
<td>2. Solvency certificate</td>
<td>5 marks</td>
</tr>
<tr>
<td>(i) 60% marks for minimum eligibility criteria</td>
<td></td>
</tr>
<tr>
<td>(ii) 100% marks for twice the minimum eligibility criteria or more</td>
<td></td>
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<tr>
<td>In between (i) &amp; (ii) – on pro-rata basis</td>
<td></td>
</tr>
<tr>
<td>Experience in similar class of works:</td>
<td>15 marks</td>
</tr>
<tr>
<td>(b)</td>
<td></td>
</tr>
<tr>
<td>Performance on works (Time over run):</td>
<td>15 marks</td>
</tr>
<tr>
<td>(c)</td>
<td></td>
</tr>
<tr>
<td>N.B. TOR = AT/ST</td>
<td></td>
</tr>
<tr>
<td>Where AT = Actual Time</td>
<td></td>
</tr>
<tr>
<td>ST = Stipulated Time in the agreement plus justified period of extension of time. Marks for value in between the stages indicated above is to be determined by straight line variation basis.</td>
<td></td>
</tr>
<tr>
<td>If TOR =</td>
<td></td>
</tr>
<tr>
<td>Without levy of compensation</td>
<td></td>
</tr>
<tr>
<td>1 - &lt;2</td>
<td>20</td>
</tr>
<tr>
<td>2 - &lt;3</td>
<td>15</td>
</tr>
<tr>
<td>3 - &lt;3.5</td>
<td>10</td>
</tr>
<tr>
<td>&gt;3.5</td>
<td>10</td>
</tr>
<tr>
<td>With levy of compensation</td>
<td></td>
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<tr>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Levy of compensation not decided</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
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<tr>
<td>10</td>
<td></td>
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<tr>
<td>0</td>
<td></td>
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<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Based on user feedback report/PFC site visit</td>
<td></td>
</tr>
<tr>
<td>At Least 2 pre-fabricated container-type Biosafety level-III Laboratory</td>
<td></td>
</tr>
<tr>
<td>30 marks</td>
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</tr>
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</table>
with Central/State Government organisation/Central Autonomous body/Central Public Sector Undertaking/University/Institutes in last 5 years.

(i) Excellent (>2 prefab BSL3 installations in India with 2 satisfactory user feedback with existing contract on operation and maintenance of 2 such BSL3 facility)
(ii) Very Good (>2 installations in India with 2 satisfactory user feedback, existing contract on operation and maintenance of 1 such BSL3 facility)
(iii) Good (>2 installations in India with 1-2 satisfactory user feedback and <2 existing contract on operation and maintenance of 1 such BSL3 facility)
(iv) Fair (2 installations in India with 1-2 satisfactory user feedback, no existing service/maintenance contract for operating BSL3 facility)
(v) Poor (<2 installations in India or No prior experience in similar class of work, no existing service/maintenance contract for operating BSL3 facility)

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Description</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>(e) Presentation</td>
<td>Project completion, material delivery, installation, third party validation timeline, workplan, schedule, layout as per DBT guideline</td>
<td>15 Marks</td>
</tr>
<tr>
<td>(f) Local office/service centre in India</td>
<td>with minimum twenty Service Engineers. If not</td>
<td>10 Marks</td>
</tr>
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8. **Evaluation of Price/Financial Bid:**

For the bids surviving the technical evaluation which have been found to be responsive the evaluation & comparison shall be made as under:

(i) The final landing cost of purchase after all discounts, freight, forwarding, insurance, taxes etc. shall be the basis of evaluation.
(ii) In the case of goods manufactured in India or goods of foreign origin already located in India, GST and excise duty (if applicable) and other similar taxes and duties, which will be contractually
payable (to the tenderer) on the goods are to be added and will be considered in determination of evaluation criteria for L-1 in those cases where only Indian bidders are competing.

**Quality and Cost-Based Selection (QCBS):** In the case of QCBS, the total score is calculated by weighting the technical and financial scores and adding them to obtain a combined QCBS (Technical cum Financial) score. The bidder with the Proposal that achieves the highest combined QCBS scores shall be invited for negotiations.

a) The lowest evaluated Financial Proposal (Fm) shall be assigned the maximum financial score (FS) of 100. The formula for determining the financial scores (FS) of all other Proposals is as follows:

\[ FS = 100 \times \frac{Fm}{F}, \]

in which "Fm" is the price of the lowest offer, "FS" is the financial score calculated, and "F" is the price of the proposal under consideration.

b) The weights given to the Technical (T) and Financial (P) Proposals are:

T (the weight given to the Technical Proposal) = 70%, and

P (the weight given to the Financial Proposal) = 30%(T + P = 100%)

c) Proposals would be ranked according to their combined QCBS (weighted technical, TS and financial, FS) scores as follows:

\[ S = \frac{(TS \times T + FS \times P)}{100}, \]

in which "S" is the combined QCBS score, "TS" is the technical score calculated as per para pre-qualification criteria score above and "FS" is the financial score calculated as per a) above.

d) All scores shall be calculated up to two decimal places only.

In case two or more agencies are found to have quoted the same lowest rate in their financial proposal, the work shall be awarded to that lowest bidder who has scored highest marks in technical evaluation at Stage 1. If it is found that two or more such bidders have same marks even in the said technical stage 1, the work shall be awarded to the agency with the highest value of financial turnover, averaged over the financial years 2019-20,2020-21 and 2021- 22, in terms of the audited accounts for those years.

9. **Performance Security:** The supplier shall require to submit the performance security in the form of irrevocable bank guarantee issued by any Indian Nationalized Bank for an amount which is stated at page #1 of the tender document within 21 days from the date of receipt of the purchase order and should be kept valid for a period of 60 days beyond the date of completion of warranty period. If the facility after installation fails to clear DBT committee inspection and certification due to poor workmanship/lack of compliance the performance security shall be forfeited. Account payee Demand Draft and Fixed Deposit Receipt from a commercial bank are also accepted.

10. **Force Majeure:** The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it’s delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

- For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

- If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
11. **Risk Purchase Clause**: In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause.

12. **Packing Instructions**: Each package will be marked on three sides with proper paint/indelible ink, the following:
   - i. Item Nomenclature
   - ii. Order/Contract No.
   - iii. Supplier’s Name and Address
   - iv. Consignee details
   - v. Packing list reference number

13. **Delivery and Documents**:
    Delivery of the semi-fabricated BSL3 containers, Autoclave, B2 type clean benches and other accessories, fixture etc. in good packaged condition and ready to be accepted condition to be made within **6-9 weeks from the date of the issuance of purchase order**. Installation and fittings of BSL3 to final conformation is to be completed within next **1-4 weeks**. User trial and third party validation has to be completed by 31st March 2023.

    Within 24 hours of shipment, the supplier shall notify the purchaser and the insurance company by email the full details of the shipment including contract number, railway receipt number/ AAP etc. and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:
    1. 4 Copies of the Supplier invoice showing contract number, goods' description, quantity
    2. Unit price, total amount;
    3. Insurance Certificate if applicable;
    4. Manufacturer's/Supplier's warranty certificate;
    5. Inspection Certificate issued by the nominated inspection agency, if any
    6. Supplier’s factory inspection report; and
    7. Certificate of Origin (if possible, by the beneficiary);
    8. Two copies of the packing list identifying the contents of each package.
    9. The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

14. **Delayed delivery**: If the delivery/integration/third party validation is not made within the due date stated in clause 12 above for any reason, the Committee will have the right to impose penalty of **25%** balance payment of contract value / price.

15. **Prices**: The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However, the percentage of taxes & duties shall be clearly indicated. The price should be quoted without custom duty and excise duty, since IIT Delhi is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand.

   **Note**: -Comparison of prices will be done **ONLY on the bids submitted for the Main Equipment and anything asked as ‘Optional’ in the specs is not to be included for overall comparison.**

16. **Notices**: For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.
    **Purchaser**: Dr. Sandeep K. Jha,
    Central Research Facility
    Indian Institute of Technology
    Hauz Khas, New Delhi - 110016.
Supplier:  (To be filled in by the supplier)
(All suppliers should submit its supplies information as per Annexure-II).

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17. **Progress of Supply:** Wherever applicable, supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under:
1. Quantity offered for inspection and date;
2. Quantity accepted/rejected by inspecting agency and date;
3. Quantity dispatched/delivered to consignees and date;
4. Quantity where incidental services have been satisfactorily completed with date;
5. Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Purchaser with date;
6. Date of completion of entire Contract including incidental services, if any; and
7. Date of receipt of entire payments under the Contract (In case of stage-wise inspection, details required may also be specified).

18. **Inspection and Tests:** Inspection and tests prior to shipment of Goods and at final acceptance are as follows:

- After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier’s plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications attached to the purchase order. Manufacturer’s test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser shall be present at the supplier’s premises during such inspection and testing if need is felt. The location where the inspection is required to be conducted should be clearly indicated. The supplier shall inform the purchaser about the site preparation, if any, needed for installation of the goods at the purchaser’s site at the time of submission of order acceptance.
- The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at purchaser’s site in the presence of supplier’s representatives. The acceptance will involve trouble free operation and ascertaining conformity with the ordered specifications and quality. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.
- In the event of the ordered item failing to pass the acceptance test, a period not exceeding one weeks will be given to rectify the defects and clear the acceptance test, failing which the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.
- Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.

19. **Resolution of Disputes: Amicable Settlement:**

- In case dispute arises between the (IITD and the Agency (parties) regarding any matter under the contract, either Party of the contract may send a written Notice of Dispute to the other party. The Party receiving the Notice of Dispute will consider the Notice and respond to it in writing within 30 days after receipt. If that party fails to respond within 30 days, or the dispute cannot be amicably settled within 60 days following the response of that party, Arbitration Clause shall become applicable.

**Arbitration:** In the case of dispute arising upon or in relation to or in connection with the contract
between IITD and the Agency, which has not been settled amicably, any party can refer the dispute for Arbitration under the Arbitration and Conciliation Act 1996. There shall be a sole arbitrator, to be appointed with the mutual consent of the parties. The decision of the Arbitrator shall be final and binding on the Parties. Dispute, if any, shall pertain to the agency & IIT Delhi and not individual outsourced staff. The arbitration proceedings shall be held at New Delhi and the parties shall bear their own respective costs of arbitration/litigation, in the event of a monetary award being passed and where interest is to be awarded, the same shall not exceed the rate of 5% per annum.

**Jurisdiction of Courts etc.:** The courts/any other Tribunal or Forum in New Delhi alone shall have exclusive jurisdiction with regard to any matter/dispute relating to or arising out this contract.

20. **Applicable Law:** The place of jurisdiction would be New Delhi (Delhi) INDIA.

21. **Right to Use Defective Goods:**
   If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser’s operation.

22. **Supplier Integrity:**
   The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.

23. **Training:**
   The Supplier is required to provide training to the designated Purchaser’s technical and end user personnel to enable them to effectively operate the total equipment.

24. **Installation & Demonstration:**
   The supplier is required to do the installation and demonstration of the equipment within one month of the arrival of materials at the IITD site of installation, otherwise the penalty clause will be the same as per the supply of materials.

   In case of any mishappening/damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. IITD will not be liable to any type of losses in any form.

25. **Insurance:** For delivery of goods at the purchaser’s premises, the insurance shall be obtained by the supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on “All Risks” basis including War Risks and Strikes. The insurance shall be valid for a period of not less than 3 months after installation and commissioning.

26. **Incidental services:** The incidental services also include:
   - Furnishing of 01 set of detailed operations & maintenance manual.
   - Arranging the shifting/moving of the item to their location of final installation within IITD premises at the cost of Supplier through their Indian representatives.

27. **Warranty:**
   (i) Warranty period shall be (as stated at page #2 of this tender) from date of installation of Goods at the IITD site of installation. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in
order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. The warranty should be comprehensive on site.

(ii) The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall immediately within 02 days arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter. The period for correction of defects in the warranty period is 02 days. If the supplier having been notified fails to remedy the defects within 02 days, the purchaser may proceed to take such remedial action as may be necessary, at the supplier’s risk and expenses and without prejudice to any other rights, which the purchaser may have against the supplier under the contract.

(iii) The warranty period should be clearly mentioned. The maintenance charges (AMC) under different schemes after the expiry of the warranty should also be mentioned. The comprehensive warranty will commence from the date of the satisfactory installation/commissioning of the equipment against the defect of any manufacturing, workmanship and poor quality of the components.

(iv) After the warranty period is over, Annual Maintenance Contract (AMC)/Comprehensive Maintenance Contract (CMC) up to next two years should be started. The AMC/CMC charges will not be included in computing the total cost of the equipment.

28. **Governing Language:**
The contract shall be written in English language. English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.

29. **Applicable Law:**
The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction.

30. **Notices:**
- Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by email and confirmed in writing to the other party’s address.
- A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

31. **Taxes:**
Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, GST etc, in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the order.

32. **Duties:**
IIT Delhi is exempted from paying custom duty under notification No.51/96 (partially or full) and necessary “Custom Duty Exemption Certificate” can be issued after providing following information and Custom Duty Exemption Certificate will be issued to the shipment in the name of the Institute, (no certificate will be issued to third party): The procured product should be used for teaching, scientific and research work only.
   a) Shipping details i.e. Master Airway Bill No. and House Airway No. (if exists)
   b) Forwarder details i.e. Name, Contact No., etc.

33. **Payment terms**

Only those vendors should bid who can complete the installation and commissioning of entire lab with at least 1 user-trial and third-party validation within 31st March 2023. Vendor shall be
responsible for logging usage data for each unit and component over 1 month period for submission to DBT for approval of BSL3 installation.

50% of contracted amount shall be released after the winning bidder unloads all necessary units at installation site in semi fabricated or packaged condition while items shall be all brand new and in good working condition within 6-9 weeks of issuance of PO.

Next 25% of amount shall be released after integration of all units and 1st user trial within next 1-4 weeks as per delivery/installation schedule given in clause 13 above.

Final 25% of amount shall be released after third party validation to be completed by 31st March 2023, subject to clause 14 above.

One-month test data and providing 1 month of manpower to man the facility in three shift is included in contract and vendor shall forfeit the performance security deposit if DBT committee finds any flaw with regards to its guideline on BSL3 installations as per DBT guidelines on BSL3 structures 2020.

All the bank charges within India will be borne by the Institute and outside India will be borne by the Supplier.

34. **User list:** Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided. (Ref. Annexure-III)

35. **Manuals and Drawings:**
   (i) Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals. These shall be in such details as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
   (ii) The Manuals shall be in the ruling language (English) in such form and numbers as stated in the contract.
   (iii) Unless and otherwise agreed, the goods equipment shall not be considered to be completed for the purposes of taking over until such manuals and drawing have been supplied to the Purchaser.

35. **Application Specialist:** The Tenderer should mention in the Techno-Commercial bid the availability and names of Application Specialist and Service Engineers in the nearest regional office. (Ref. to Annexure-III)

36. **Site Preparation:** The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter. The supplier shall visit the Institute and see the site where the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other pre-installation requirements.

37. **Spare Parts**
   The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:
   (i) Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
   (ii) In the event of termination of production of the spare parts:
iv. Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
v. Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.
Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belts etc. Other spare parts and components shall be supplied as promptly as possible but in any case within six months of placement of order.

| 38. | Defective Equipment: If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions, IIT Delhi may consider “Banning” the supplier. |

| 39. | Termination for Default: The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:
   i. If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order or within any extension thereof granted by the Purchaser; or
   ii. If the Supplier fails to perform any other obligation(s) under the Contract.
   iii. If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
   - For the purpose of this Clause:
     i. “Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
     ii. “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;”
   - In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated. |

| 40. | Downtime: No downtime will be permissible for BSL3 exhaust system or negative pressure. Performance security shall be forfeited upon downtime during warranty period of 3 years. For other systems, during the warranty period not more than 5% downtime will be permissible. For every day exceeding permissible downtime, penalty of 1/365 of the 5% item value will be imposed. Downtime will be counted from the date and time of the filing of complaint with in the business hours. |

| 41. | Training of Personnel: The supplier shall be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment for a minimum period of one week at the supplier’s cost. |

| 42. | Disputes and Jurisdiction: Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within New Delhi. |
43. **Compliance certificate**: This certificate must be provided indicating conformity to the technical specifications. (Annexure-I)

44. **As per Ministry of Finance, Deptt. of Expenditure, Public Procurement Division Order (Public Procurement No.1) issued from file No.6/18/2019-PPD dated 23rd July, 2020 regarding Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs) 2017**, it is directed that any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority i.e. the Deptt. for Promotion of Industry and Internal Trade (DPIIT). *The said order will not apply to bidders from those countries (even sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects (updated lists of the countries are given in the Ministry of External Affairs)*

“Bidder” (including the term ‘tenderer’, ‘consultant’ or ‘service provider’ in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participated in a procurement process.

“Bidders from a country which shares a land border with India” for the purpose of this Order means:

i. An entity incorporated, established or registered in such a country; or
ii. A subsidiary of an entity incorporated, established or registered in such a country; or
iii. An entity substantially controlled through entities incorporated, established or registered in such a country; or
iv. An entity whose *beneficial owner* is situated in such a country; or
v. An Indian (or other) agent of such an entity; or
vi. A natural person who is the citizen of such a country; or
vii. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

The *beneficial owner* for the purpose of above will be as under:

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercise control through other means.

Explanation-

a. “Controlling ownership interest” means ownership of or entitlement to more than twenty-five per cent of share or capital or profit of the company;
b. “Control” shall include the right to appoint majority of the directors or to control the management of policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

An agent is a person employed to do any act for another, or to represent another in dealings with the third person.

For Works contracts, including Turnkey contracts, the successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

A certificate shall be submitted by bidders in the tender documents regarding their compliance with the said order. If the certificate submitted by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law.

Annexure VI (For Goods/ Services contracts)/ Annexure VII (For Works contracts, including Turnkey contracts)

45 It is mandatory for bidders to quote items having local content minimum 20%. Refer revised Public Procurement (Preference to Make in India), Order 2017, No. P-45021/2/2017-PP (B.E-II) dated 16.09.2020 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India. (Submit duly filled Annexure VIII for the same). The Annexure VIII once submitted in the Technical Bid will be final. Submission of Revised Annexure VIII will NOT be accepted.

As per O.M. of DPIIT, Ministry of Commerce and Industry, Govt. of India No.P-45021/102/2019-BE-II- Part (1) (E-50310) Dated 04.03.2021, Bidders offering Imported products will fall under the category of Non_Local Suppliers. They cannot claim themselves as Class-I or Class –II Local Suppliers by claiming the services such as Transportation, Insurance, Installation, Commissioning, Training and After Sale Service Support like AMC/ CMC etc. as Local Value Addition.
## TECHNICAL SPECIFICATION

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<td>Information and details regarding litigation/arbitration cases, if any, for the last five years.</td>
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<td><strong>22</strong></td>
<td>Fall clause declaration/ Non-black listing declaration</td>
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</table>

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

**Signature of Bidder**

Name: __________________________

Designation: _____________________

Organization Name: ____________________________

Contact No.: ________________________________
ANNEXURE-II

DECLARATION SHEET

We, _______________________________________ hereby certify that all the information and data furnished by
our organization with regard to this tender specification are true and complete to the best of our knowledge. I have
gone through the specification, conditions and stipulations in details and agree to comply with the requirements and
intent of specification.

This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We
further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document.
Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the
warranty.

The prices quoted in the financial bids are subsidized due to academic discount given to IIT Delhi.

| NAME & ADDRESS OF THE Vendor/ Manufacturer / Agent |
| We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years. |
| 1. Phone |
| 2. Fax |
| 3. E-mail |
| 4. Contact Person Name |
| 5. Mobile Number |
| 6. GST Number |
| 7. PAN Number |
| (In case of on-line payment of Tender Fees) |
| 8. UTR No. (For Tender Fee) |
| 9. Kindly provide bank details of the bidder in the following format: |
| a) Name of the Bank |
| b) Account Number |

(Signature of the Tenderer)
Name: _______________________
Seal of the Company
Annexure-III

List of Government Organizations for whom the Bidder has undertaken such work during last three years (must be supported with work orders)

<table>
<thead>
<tr>
<th>Name of the organization</th>
<th>Name of Contact Person</th>
<th>Contact No.</th>
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Name of application specialist / Service Engineer who have the technical competency to handle and support the quoted product during the warranty period.

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Signature of Bidder

Name: _______________________

Designation: ____________________

Organization Name: _______________________

Contact No. : _______________________
### PREVIOUS SUPPLY ORDER DETAILS

**Annexure - IV**

**Name of the Firm**

<table>
<thead>
<tr>
<th>Order placed by (Full address of Purchaser)</th>
<th>Order No. and Date</th>
<th>Description and quantity of order equipment</th>
<th>Value of order</th>
<th>Date of Completion of delivery as per contract</th>
<th>Has the equipment been installed satisfactorily (Attach a Certificate from the Purchaser/Consignee)</th>
<th>Contact person along with Telephone No., Fax No. and email address</th>
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</table>

Signature and Seal of the Manufacturer/ Bidder

________________________________________

Place: ________________________________

Date: ________________________________
To
The Director,
Indian Institute of Technology Delhi,
New Delhi- 110016

Dear Sir,

We manufacture of original equipment at (…………………………..address of factory……………………………) do hereby authorize M/s (Name and address of Agent) to submit a bid, negotiate and receive the order format against your tender enquiry.

M/s. ……………………………….. is authorized to bid and conclude the contract in regard to this business.

We hereby extend our full guarantee and warranty as per clause …………………………… of the terms and conditions NIQ for the goods and services offered by the above firm.

Yours Faithfully,

(Name)

(Name & Seal of Manufactures)

Note: -

1. **Items of indigenous nature or quoted in INR**, more than 1 authorized representative may participate in the same tender and submit their bids on behalf of their OEM/Principal/Manufacturer if the OEM permits more than one authorized bidder in such case as per their policy.

2. **In cases of agents quoting in offshore procurements**, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. **One manufacturer can also authorize only one agent/dealer**

3. The letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. The same should be included by the bidder in its techno-commercial unpriced bid.
CERTIFICATE

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and hereby certify that this bidder is not from such a country.

OR (whichever is applicable)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and hereby certify that this bidder is from ___________(Name of Country) and has been registered with the Competent Authority. I also certify that this bidder fulfills all the requirements in this regard and is eligible to be considered.

(Copy/ evidence of valid registration by the Competent Authority is to be attached)

Signature of Bidder/ Agent

Name: ___________________________

Designation: _______________________

Organization Name: __________________________

Contact No. : ____________________________
CERTIFICATE

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries and hereby certify that this bidder is not from such a country and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

OR (whichever is applicable)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries and hereby certify that this bidder is from ___________ (Name of Country) and has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I also certify that this bidder fulfills all the requirements in this regard and is eligible to be considered.

(Copy/ evidence of valid registration by the Competent Authority is to be attached)

Signature of Bidder/ Agent

Name: __________________________

Designation: ______________________

Organization Name: __________________________

Contact No. : ____________________________
To,
The Director,
Indian Institute of Technology Delhi
New Delhi-110016

Subject: - Declaration of Local Content

Tender Reference No: _______________________

Name of Tender/ Work: __________________________________________________________

2. We hereby declare that items offered has ______% local content
3. Details of the Location at which the Local Value Addition is made_________________________
4. Details of Local Content_____________________________________________________________

“Local Content” means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

Bidders offering Imported products will fall under the category of Non Local Suppliers. They cannot claim themselves as Class-I or Class –II Local Suppliers by claiming the services such as Transportation, Insurance, Installation, Commissioning, Training and After Sale Service Support like AMC/ CMC etc. as Local Value Addition.

“*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law.”

Yours faithfully,

(Signature of the bidder, with Official Seal)

Note: It is mandatory for bidders to quote items having local content minimum 20%. Refer revised Public Procurement (Preference to Make in India), Order 2017, No. P-45021/2/2017-PP (B.E-II) dated 16.09.2020 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India. (Submit duly filled Annexure VIII for the same). The Annexure VIII once submitted in the Technical Bid will be final. Submission of Revised Annexure VIII will NOT be accepted.
BID SECURITY UNDERTAKING
(To be issued by the bidder on company’s letterhead in lieu of EMD)

To,

The Registrar,
I.I.T. Delhi, Hauz Khas,
Delhi – 110016.

We, M/s ________________________________ (Name of the Firm), with ref. to Tender No._______________ dated__________ hereby undertake that:

1. We accept all terms and conditions of the tender document.
2. We accept that, we will not modify our bid during the bid validity period and will honour the contract after the award of contract.
3. In the event of any modification to our bid by us or failure on our part to honour the contract after final award, our firm may be debarred from participation in any tender/contract notified by IIT Delhi for a period of one year.

Yours faithfully,

(signature)
Name:
Date:
Office Seal:
**BID SUBMISSION**

**Online Bid Submission:**

The Online bids (complete in all respect) must be uploaded online in **two** Envelops as explained below:

<table>
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<th>Sl. No.</th>
<th>Document</th>
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<td></td>
</tr>
<tr>
<td>22.</td>
<td>Fall clause declaration/ Non-black listing declaration</td>
<td>.PDF</td>
<td></td>
</tr>
</tbody>
</table>

**Envelope – 2**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Document</th>
<th>Content</th>
<th>File Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Financial Bid</td>
<td>Price bid should be submitted in given BOQ_XXXX.xls format. <em>(Note: Comparison of prices will be done ONLY on the bids submitted for the Main Equipment and anything asked as ‘Optional’ in the specs is not to be included for overall comparison.</em>) Bids for optional items are to be submitted in ‘sheet2_Quote for optional items’</td>
<td>.XLS</td>
</tr>
</tbody>
</table>