

तारीख/Date: 24.09.2026

निविदा के लिए आमंत्रण (इ-प्रोक्योमेंट मोड)/ INVITATION TO TENDER (E-Procurement mode only)

No: IISER/PUR/0963/0964/FAA/RBS/SEESS/26-27 नियत तारीख/Due Date: 14-10-2026 [3 PM]

खोलने की तारीख/Date of Opening: 15-10-2026 [3.30PM]

प्रिय महोदय/Dear Sirs,

विषय / SUB: :Supply, Installation and commissioning of Laboratory Furniture, Fume Hood & Accessories (SoEESS Laboratory ground Floor) & Laboratory Furniture (Marine-Optics and Imaging Nearshore Ecosystem (MAINE) Laboratory, First Floor, SoEESS)

The Institute invites Single Cover Tenders as per DPIIT O.M. No.P45021/2/2017-PP(BE-II)-Part(4)Vol.II dated 8/7/2025, for the following items through the eProcurement System of National Informatics Centre that enables the Tenderers to download the Tender Schedule free of cost and then submit the bids online through Central Public Procurement Portal of Government of India (<https://eprocure.gov.in/eprocure/app>).

SL No	Description of Goods	Quantity
1	Laboratory Furniture, Fume Hood & Accessories (SoEESS Laboratory ground Floor) as per technical specifications at Annexure 6	As per Annexure 6
2	Laboratory Furniture (Marine-Optics and Imaging Nearshore Ecosystem (MAINE) Laboratory, First Floor, SoEESS)	As per Annexure 6

ईएमडी/EMD:

Rs. 48,000/- (Rupees Forty-Eight Thousand only) स्टेट बैंक संग्रह द्वारा भुगतान करना चाहिए - निविदा संख्या और कंपनी का नाम उल्लेख किया जाना चाहिए। उद्धरण के साथ लेनदेन पर्ची / प्रिंट आउट या ईएमडी मूल्य के बराबर 90 दिनों की वैधता में बैंक गारंटी या बोलीदाता के उपक्रम जमा करना चाहिए।/ should be paid through State Bank Collect- Tender No & Company Name must be mentioned in the Remarks column. (<https://www.onlinesbi.com/sbicollect/icollecthome.htm>) (State Bank Collect- Accept-Term and Conditions- Proceed-Select State Kerala-Select Type of Institution-Educational Institution- Select - IISER Thiruvananthapuram- Select Payment Category- Stores and Purchase) Quotes should accompany a copy of Transaction slip /Print out OR Bank guarantee equivalent OR Insurance Surety Bond to the EMD value with validity 90 days (should reach before tender due dates). EMD EXEMPTION: The bidder seeking EMD exemption, must submit the valid supporting document with the bid. Under MSE category, only manufacturers for goods and Service. Providers for Services are eligible for

exemption from EMD. Traders are excluded from the purview of this Policy.

**भुगतान/
PAYMENT:**

आपूर्ति और स्थापना के बाद 30 दिनों के अंदर आईआईएसईआरटीवीएम द्वारा कोई अग्रिम भुगतान नहीं किया जाएगा।/ Within 30 days after supply and installation. Advance payment will not be made by IISERTVM

**वितरण/
Delivery:**

विथुरा कैम्पस में वितरित करना है (मुफ्त वितरण)। अगर आयात करें तो स्पष्ट रूप से ब्रेकअप शुल्क के साथ पूर्व-कार्य / एफसीए / सीआईपी शर्तों का उल्लेख करें।/ To be delivered at **Vithura Campus** (Free delivery including unloading charges).

**कर एवं कर्तव्य/
TAXES &
DUTIES:**

At actuals. Indicate taxes and duties. We are partially exempted for customs duty under 51/96 notification

छूट/ Discount:

अगर कोई है तो सूचित करें।/ Indicate, if any.

**वितरण
अनुसूची/Delivery
Schedule:**

अति आवश्यक है। अपना अनुसूची उल्लिखित करें।/ Required Immediately. Indicate your schedule

**उद्धरण की
विधिमान्यता
Validity of
quote:**

90 दिन/90 days

Annexure 3,4,5, and 7: should be enclosed with the offer. **If not, the bid will be summarily rejected.**

Details: Annexure 1: Terms & Conditions, **Annexure 2:** Instructions to Bidder for Online Bid Submission, **Annexure 3:** Certificate by Bidder **Annexure 4 :** Tender Acceptance Letter, **Annexure 5:** Certificate of not being blacklisted **Annexure 6 :** Detailed Specifications **Annexure 7:** Check list of documents required.

भवदीय/ Yours Faithfully


Assistant Registrar
PURCHASE & STORES

ANNEXURE: 1

निविदाकारों के लिए निर्देश (स्वदेशी)/ INSTRUCTION TO TENDERER

1. कर अन्य कर्तव्य अधिभार निविदा में अलग से दिखाया जाना चाहिए। Tax and /or other duties/levies where legally levies and intended to be claimed should be distinctly shown separately in the tender.
2. (a) आपका उद्धरण निविदा खोलने की तारीख से 90 दिनों के लिए मान्य होता है। निश्चित कीमत के साथ के संविदा दर को प्राथमिकता दी जाएगी। Your quotation should be valid for a minimum period of 90 days from the date of opening of the Tender. Quotation with firm prices will be preferred.
(b) निविदा के आमंत्रण में संकेतित इकाइयों के अनुसार कीमत उद्धृत करना है। जब निविदा फॉर्म में उल्लिखित इकाइयों के अलावा संविदा दर दिए जाने पर दो इकाइयों के बीच के संबंध प्रस्तुत किया जाना चाहिए। Prices are required to be quoted according to the units indicated in the Invitation to Tender. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
3. (a) **तैयार माल से आपूर्ति करने वाले निविदाओं को** वरीयता दी जाएगी। वितरण का आधार आईआईएसईआर के साइट पर मुफ्त में है। Preference will be given to those tenders offering supplies from ready stocks. The basis of delivery is at IISER site free of cost.
(b) हमारी भुगतान की शर्तें माल की प्राप्ति और स्वीकृति के 30 दिनों के भीतर होंगी। our payment terms are within 30 days of receipt and acceptance of the item at our site.
4. (a) वस्तुओं के सभी उपलब्ध तकनीकी साहित्य, सूचीपत्र और अन्य आंकड़े प्रस्ताव के साथ प्रस्तुत किया जाना चाहिए। All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.
विशेष विवरण/ Specifications: प्रस्तावित भंडार हमारे विवरण के अनुरूप होना चाहिए। अगर विचलन है तो निविदाकार अपने उद्धरण में संकेत दिया जाना चाहिए। निविदाकार भंडार के प्रारूप सूचित करना चाहिए और आवश्यक होने पर संविदा दर के साथ सूचीपत्र, तकनीकी साहित्य और नमूने प्रदान करना चाहिए। आवश्यक होने पर परीक्षण प्रमाण पत्र आपूर्ति के साथ अग्रेषित किया जाना चाहिए। निविदाकार को उपयुक्त कारणों के साथ विनिर्देशों में परिवर्तन का सुझाव दे सकता है। Stores offered should strictly conform to our specifications. Deviations, if any should be clearly indicated by the tenderer in their quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary along with the quotations. Test Certificates wherever necessary should be forwarded along with supplies. Whenever specifically mentioned by us the tenderer could suggest changes to specifications with appropriate reasons for the same.
5. आईआईएसईआर को निम्नतम या किसी भी निविदा को स्वीकार करने के लिए कोई दायित्व नहीं होगा और पूरे या निविदा के किसी हिस्से के स्वीकृति का अधिकार सुरक्षित रखेगा और निविदाकार उद्धृत दरों पर समान की आपूर्ति करना चाहिए। IISER shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the tenderers shall supply the same at the rates quoted.
6. अगर संवुदा दर में कोई सुधार होने पर इसे प्रमाणित किया जाना चाहिए। सभी राशी शब्दों और आंकड़ों में भी सूचित किया जाना चाहिए। यदि शब्दों और आंकड़ों में उद्धृत राशि के बीच अंतर होने पर शब्दों में उद्धृत राशि प्रबल होगी। संविदा दर में प्रत्येक वस्तु के मूल्य होना चाहिए और कर और कर्तव्यों सहित मूल्य की कुल राशि का स्पष्ट रूप से उल्लेख किया जाना चाहिए। Corrections, if any, in the Quotation must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail. Quotation must have price for each line item and totaling of the price including taxes and duties should be clearly mentioned.
7. निविदाकार निविदा में अपने बैंकर, कर पंजीकरण, पैन नंबर आदि उल्लिखित करना चाहिए। The tenderer should mention the name of his bankers, Tax Registration, PAN number etc in the tender.
8. निविदा पर हस्ताक्षर करने वाले व्यक्ति बुलाने पर उपस्थित होना चाहिए। The authority of the person signing the tender, if called for, should be produced.
9. IISER being a Govt of India Educational and Research Institute, is exempted from payment of Customs Duty under Notification No. 51/96- Customs dated 23rd July 2009.
10. आपूर्ति की गई भंडार आपूर्ति, स्थापना और कमीशन की तारीख से 1 वर्ष वारंटी में होगा। The stores supplied should be covered with minimum of 1 year warranty from the date of supply, installation and commissioning, if not stated otherwise in tender specification.
11. निविदा के आमंत्रण में उल्लिखित के अनुसार धन जमा / बोली सुरक्षा जमा उद्धरण के साथ जमा किया जाना चाहिए। ईएमडी भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान तिरुवनंतपुरम के पक्ष में 90 दिनों के लिए मान्य होगा। Earnest Money Deposit/ Bid Security should be submitted along with your quote as mentioned in Invitation for Tender. EMD should be in favour of Indian Institute of Science Education and Research Thiruvananthapuram valid for 90 days.
12. IISER-TVM comply with order No. P-45021/2/2017-PP(BE-11) dated 04 Jun 2020 (Public Procurement/ Preference to Make in India) and its order 2017 revision.
13. LD Clause: LD may be imposed @ 0.5% per week after stipulated delivery period.
14. Award of Contract (AOC) would be issued to the technically qualified lowest bidder.
15. Tender due date would be auto-extended upon non-receipt of sufficient number of bids.
16. If the bidder withdraws or modifies or amends its tender or impairs or derogates from its bid during the bid validity period or if awarded the contract and fails to sign the contract or fails to furnish order acceptance or performance security before the deadline defined by the Institute, they will be suspended for the period of time as decided by the administrative competent authority of IISER Thiruvananthapuram from being eligible to submit bids for contracts floated by the Institute in accordance with GoI MOF Office memorandum NO. F/9/4/2020-PPD dated 12 Nov 2020 and GFR

ANNEXUE: 2

Instructions To Bidder for Online Bid Submission

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: <https://eprocure.gov.in/eprocure/app>.

REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link "Online bidder Enrollment" on the CPP Portal which 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 III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / 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 DSC's to others which may lead to misuse.
- 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 / e-Token.

SEARCHING FOR TENDER DOCUMENTS

- 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 / email 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

- 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/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) 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" or "Other Important Documents" 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.

Note: My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.

SUBMISSION OF BIDS

- 1) Bidder should log into the site well in advance for bid submission so that they can 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.

CERTIFICATE BY THE BIDDER (FOR TENDERS)
(ON COMPANY LETTER HEAD)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India. I certify that this bidder is not from such a company or, / if from such a country, has been registered with the Competent Authority (copy of the Registration Certificate enclosed). I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]”

Date:

Place:

Signature with Date and Stamp of the Bidder

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

To,
The Director, Indian Institute of Science Education and Research –
Thiruvananthapuram,
Maruthamala P.O, Vithura, Thiruvananthapuram, Kerala -695551, India.

Date:

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender / Work: - _____

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned Tender/Work' from the web site(s) namely: _____ as per your advertisement, given in the above mentioned website(s).
2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organization too have also been taken into consideration, while submitting this acceptance letter.
4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.
5. I / We do hereby declare that our Firm has not been blacklisted/ debarred by any Govt. Department/Public sector undertaking.
6. I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.
7. I / We declare the following information provided are correct to the best of my knowledge:

1	Name and Address of the bidder	
2	Manufacturer / Dealer / Agent	
3	Contact Person	
4	Phone	
5	Email	
6	Mobile Number	
7	GST No	
8	PAN No	
9	UTR No / DU No (in case of online transfer of Tender Fee) (if any)	
10	UTR No / DU No (in case of online transfer of EMD)	
11	Warranty, if any	
12	Delivery period	
13	Payment terms	
14	PO to be placed in favour of	

Yours Faithfully,

Date:

Place:

Signature with Date and Stamp of the Bidder

CERTIFICATE
(ON COMPANY LETTER HEAD)

I hereby certify that we M/s

_____ (name and address of the firm) is neither blacklisted by any Central/ State Government / Public Undertaking/ Institute nor is any criminal case registered / pending against the firm or its owner / partners anywhere in India.

I also certify that the above information is true and correct in every aspect and in any case at a later date it is found that any details provided above are incorrect, any contract given to the above firm may be summarily terminated and the firm blacklisted.

Date:

Place:

Signature with Date and Stamp of the Bidder

TECHNICAL SPECIFICATIONS

Laboratory Furniture, Fume Hood & Accessories

EESS IISER Thiruvananthapuram

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SECTION 1: REQUIREMENTS & ITEM SCHEDULE

• **Constant Bypass Type Bench Fume Hood (FH-1) Size: L 1500 mm × D 915 mm × H 2300 mm (Non-AC Lab)**

- Fume Hood Superstructure (as specified in Section 3 & Section 5)
- Fume Hood Worktop: Black natural granite construction
- Service Valves (Compressed Air, Potable Water, Nitrogen as per Section 5)
- Electrical Fittings (minimum 4 Nos. 3-pin sockets, 6-16A with switch)
- Controls: Air Velocity Monitor with low airflow alarm, audible & visual
- Fume Hood Understructure (MS hollow pipe, powder coated)
- Fume Hood Under-Cabinet (Chemical Storage Purpose) twin doors, FRP-lined interior
- Accessories: Volume Control Damper (PP), Scaffold/Lattice (12 mm dia. epoxy rods)

Quantity: 1 No.

• **Exhaust Fan (PP) for Fume Hood**

- Single piece moulded UV-treated chemical-resistant SISW direct-driven centrifugal fan in PP construction with MS powder-coated stand, CFM 1900-2300
- Corrosion-resistant PP Impeller high efficiency, low noise & power consumption
- Drive: 5 HP, 2800 RPM, 415V, 50 Hz, TEFC Class B insulation, IP55 enclosure, Non-FLP construction
- Protection: 16A, 3-Phase MCB Legrand or equivalent make
- Electrical panel with necessary internals and VFD for fan

Quantity: 1 No.

• **Wall Bench (WB-1) Size: L 3000 mm × W 750 mm × H 900 mm [Left Wall]**

- C-Frame structure in 60 × 30 × 2 mm thick hollow pipe construction
- Worktop: 18 ± 1 mm thick White Nano-Glass (Grade G7) construction
- L 750 mm × W 500 mm × H 700 ± 50 mm storage module with one drawer + two shutters, 3 Nos.
- Knee space 1 No.
- Worktop-mounted electrical raceway in GI/CRCA powder-coated construction
- 6/16 Amp electrical sockets and 16 Amp one-way switch 10 Nos.
- Filler panel in GI construction 2 Nos.

Quantity: 1 No.

• **Wall Bench (WB-2) Size: L 4000 mm × W 750 mm × H 900 mm [Back Wall with corner sink unit]**


 24/9/26

- C-Frame structure in 60 × 30 × 2 mm thick hollow pipe construction
- Worktop: 18 ± 1 mm thick White Nano-Glass (Grade G7) construction
- L 750 mm × W 500 mm × H 700 ± 50 mm storage module with one drawer + two shutters 3 Nos.
- L 750 mm × W 500 mm × H 700 ± 50 mm storage module with two shutters 1 No.
- Single piece moulded PP sink (L 600 × W 450 × D 315 mm) 1 No. [corner position]
- Worktop-mounted three-way water tap with swan neck spout 1 No.
- PP Adjustable Pegboard with 46 Nos. PP pegs (Size: 600 × 600 mm) 1 No.
- Worktop-mounted, double outlet eye wash with SS braided flexible hose 1 No.
- Knee space 1 No.
- Worktop-mounted electrical raceway in GI/CRCA powder-coated construction
- 6/16 Amp electrical sockets and 16 Amp one-way switch 12 Nos.
- Close panel in GI construction 1 No.
- Filler panel in GI construction 2 Nos.

Quantity: 1 No.

• **Wall Bench (WB-3) Size: L 3500 mm × W 750 mm × H 900 mm [Right Wall]**

- C-Frame structure in 60 × 30 × 2 mm thick hollow pipe construction
- Worktop: 18 ± 1 mm thick White Nano-Glass (Grade G7) construction
- L 750 mm × W 500 mm × H 700 ± 50 mm storage module with one drawer + two shutters 3 Nos.
- Knee space 1 No.
- Worktop-mounted electrical raceway in GI/CRCA powder-coated construction
- 6/16 Amp electrical sockets and 16 Amp one-way switch 10 Nos.
- Filler panel in GI construction 2 Nos.

Quantity: 1 No.

• **Island Bench (IB-1) Size: L 3000 mm × W 1500 mm × H 900 mm [Centre]**

- C-Frame structure in 60 × 30 × 2 mm thick hollow pipe construction
- Worktop: 18 ± 1 mm thick White Nano-Glass (Grade G7) construction
- L 500 mm × W 500 mm × H 700 ± 50 mm storage module with one drawer + one shutter 6 Nos.
- Knee space 4 Nos.
- Double-sided double-tier reagent rack with electrical raceway
- 6/16 Amp electrical sockets and 16 Amp one-way switch 20 Nos.
- Filler panel in GI construction 2 Nos.

Quantity: 1 No.

• **Overhead Cabinets (OHC) Size: L 750 mm × D 350 mm × H 600 mm each [Wall-mounted, back wall]**

- Fabricated in GI sheet, epoxy powder-coated construction
- 1 fixed shelf per unit forming 2 compartments
- Front door: twin-door design with glass panel in metallic GI frame
- Door hinges: Knuckle-Barrel type SS hinges
- Door handle: SS 304 grade
- Door lock with two keys

Quantity: 6 Nos.

• **PP + FRP Exhaust Ducting (Round Shape, 3 mm + 2 mm)**

- Complete with necessary bends, reducers, T-connections, supports, flanges, gaskets, nut-bolts etc.
- Amount for ducting work shall be payable as per actual measurement

Quantity: ~20 Sq. m (actual measurement basis)

• **Laboratory Stools (Regular Size)**

Quantity: 6 Nos.



General Conditions for Bidders

- The bidder must visit the site and prepare and submit the sketch/drawing for the proposed work within the stipulated time.
- The bidder shall furnish Brochures / Catalogues / Datasheets of all components stated herein.
- The entire work shall be done with all necessary scaffolding, working platforms, ladders and safety measures. The rates quoted shall include all such arrangements and no extra claims shall be entertained. The exact site conditions, height, and working areas shall be clearly assessed by the agency before quoting the tender.
- Samples for all approved makes shall be produced by the bidder upon request from the client.
- The bidder should have experience working with Nano-Glass (Grade G7) mounted on C-Frame. The bidder shall furnish photographs of previous work carried out at a public sector establishment along with purchase order.
- Factory site visit (online/offline), as per the convenience of the client, shall be arranged by the bidder to demonstrate the capacity of the firm.
- The bidder shall furnish purchase orders of three works carried out in the previous seven years at public sector institutes.

SECTION 2: LABORATORY PLANS

The plans below indicate the layout of the Laboratory, EESS ground floor Bidders must visit the site and verify all dimensions before submission.

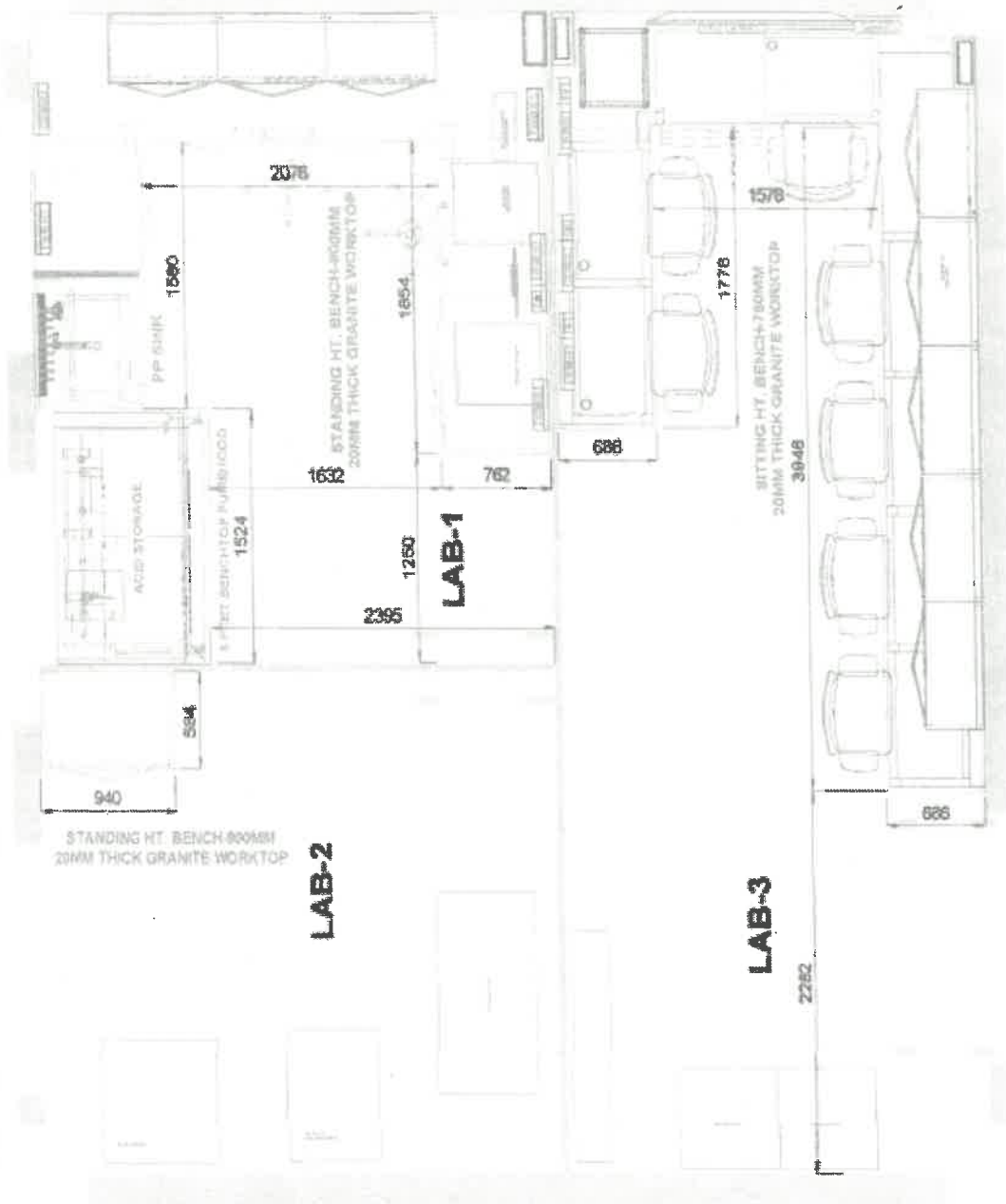
PLAN 1 Overall Lab Layout (enclosed)

(Refer isometric view / 3D design drawing shared with tender)

Item	Description / Location	Approx. Dimensions
FH-1	Constant Bypass Bench Fume Hood Left wall	L 1500 × D 915 × H 2300 mm
WB-1	Wall Bench Left wall (adjacent to fume hood)	L 3000 × W 750 × H 900 mm
WB-2	Wall Bench with PP Sink Back wall / corner	L 4000 × W 750 × H 900 mm
WB-3	Wall Bench Right wall	L 3500 × W 750 × H 900 mm
IB-1	Island Bench Centre of lab	L 3000 × W 1500 × H 900 mm
OHC 1-6	Overhead Cabinets (6 Nos.) Wall-mounted above back wall benches	L 750 × D 350 × H 600 mm each

Note: The bidder shall prepare and submit detailed shop drawings with exact dimensions for approval by the Engineer-in-Charge (EIC) before fabrication commences.


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SECTION 3: SPECIFICATION FOR LABORATORY FUME HOOD & ACCESSORIES

Contents

- General
- Scope of Work
- Technical Specifications
- Centrifugal Blower
- Exhaust Ducting
- Certification Requirements
- List of Approved Makes
- Functional Performance Test Requirements

1. General

This section specifies requirements for the selection, supply, installation, and testing of laboratory fume hoods. The scope of work includes, but is not limited to:

- Installation of all specified accessories including monitor, cup sink, service valves, lighting, electrical fittings, base cabinets, work surfaces, and filler panels.
- Internal hood plumbing and wiring.
- The contractor shall provide all miscellaneous parts and labour required to provide a complete and functioning fume hood system.

Relevant Codes and Standards

- OSHA Part 1910.1450 Occupational Safety and Health Administration regulations for laboratory fume hood operation.
- ANSI/ASHRAE 110-2016 Method of Testing Performance of Laboratory Fume Hoods.
- ANSI/ASHRAE 110-2016 American National Standard for Laboratory Ventilation.
- IS 4209 Indian Standard Code for Chemical Laboratories, Code of Safety.
- NFPA 45 National Fire Protection Association standard for laboratory hoods.
- SEFA 1.2 Scientific Equipment & Furniture Association: Laboratory Fume Hoods Recommended Practices.
- BS EN 14175 Part 3 European Standard for Fume Cupboard Type Testing.

2. Scope of Work

- Supply and installation of fume hood (superstructure and understructure cabinets), including worktops, based on ASHRAE 110 and EN 14175 standards.
- Supply and installation of fume hood accessories: service outlets/fittings and electrical switches as per the approved make list.
- All plumbing fixtures mounted on fume hood superstructures shall be pre-plumbed and electrical fixtures pre-wired.
- All fume hoods to be fitted with an electrical control box with motor starter and all required electronic circuits.
- Removal of all debris, dirt, and rubbish accumulated as a result of installation, leaving the premises clean and orderly.
- Manufacturer should provide data indicating compliance with ASHRAE 110 or BS EN-14175 Part 3 at least one of the two.

3. Technical Specifications Fume Hood


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Standard Performance Requirements:

Fume hoods shall be of complete airfoil design to ensure maximum operating efficiency. All fume hoods shall be designed for an approximate face velocity of 80 to 100 fpm. Rear baffle system shall minimise turbulence in the upper portion of the hood interior.

Type of Fume Hood: Constant Bypass Type Bench Fume Hood

Overall Dimensions: Width ≥ 1500 mm $\times$ Depth ≥ 915 mm $\times$ Height ≥ 2300 mm

Inner Dimensions: Width ≥ 1300 mm $\times$ Depth ≥ 645 mm $\times$ Height ≥ 1200 mm

Fume Hood Superstructure:

- Structure frame: 2.0 mm thick Galvanized Iron (GI), powder-coated.
- Outer panels: 1.2 mm thick GI, pre-treated with 8-tank chemical process; epoxy powder-coated with dry film thickness 70–80 microns.
- Inner lining, rear baffles and top baffles: minimum 6 mm thick phenolic resin / compact laminate excellent chemical and heat resistance, fire retardant.
- Aerodynamic shape front posts in GI construction.
- Rear part of fume hood shall have service access for maintenance.

Sash:

- 5 mm thick transparent toughened glass (breaking stress 24,000 psi); heat resistant; clear openable height 750 mm.
- Combination sash (vertical rise + horizontal sliding) in frameless design.
- Sash handle: anodized aluminium construction, aerodynamic profile.
- Counterbalance: single counterweight, SS wires on ball bearing pulleys; spring mechanisms are not acceptable.
- Design shall ensure that in event of counterbalance failure, sash cannot fall within 50 mm of the bottom airfoil.

Airfoil:

- Flip-on type airfoil in 1.6 mm thick SS 316L construction, installed approximately 25 mm above the work surface.
- Designed for eddy-free air entry; airfoil width to project into fume hood beyond the plane of the sash.

Baffle:

- Minimum 6 mm thick phenolic resin; at least three slots for effective distribution of airflow.
- Slots placed approximately 5 cm from back liner, removable for cleaning.

Scaffold/Lattice:

- 4 $\times$ 4 adjustable scaffold fabricated from 12 mm dia. epoxy rods, 150 mm pitch, clamped with PP clamps.

Cup Sink:

- Single water supply valve tap per fume hood with single-piece moulded PP cup sink (approx. 130 $\times$ 80 mm oval); connected to existing water inlet and drain outlet.

Electrical Services:

- Vapor-proof lighting: twin LED type light, sealed, scratch-resistant, shatter-resistant and flame-resistant.
- Minimum 4 Nos. 3-pin electrical sockets (220–240V, 6–16A) positioned outside the fume hood just below the worktop, with shunt tripper.
- Controller for blower and light (touch pad type).
- 16A, 2-pole MCB Legrand or equivalent make.

Service Valves and Plumbing:

- Body: forged brass construction; extended spindle in aluminium; colour-coded PP knobs as per DIN/BS standard.


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- Angular-shaped serrated nozzles in epoxy-coated forged brass; 1.5 m long flexible tubing with end fittings.
- Services: Compressed Air (PU-4 tubing), Potable Water (nylon-braided PVC hose), Nitrogen/Argon (PU-4 tubing).
- Pressure test requirements: Gas fittings 7 bar; Water fittings 10 bar.

Digital Face Velocity Monitor:

- Digital display of air velocity in fpm; sensor mounted on interior side liner.
- Audible and visual alarm signals for low face velocity (below 80 fpm) and high face velocity.
- Alarm mute provision; alarm set point internally adjustable.
- All parts in contact with fume hood vapours to be chemically resistant.
- Monitor: AFA/1000 TEL (UK Make) or equivalent approved make.

Duct Collar:

- 8"-10" diameter moulded polypropylene (PP) duct collar in top of hood plenum.

Volume Control Damper:

- PP construction, pre-drilled flanges on both sides, manual operation handle and extended spindle, suitable for motorised drive.

Under-Hood Cabinet (Chemical Storage):

- Double-wall GI/CRCA epoxy-coated construction; leak-proof sills.
- Twin doors in double-skin construction with self-latching flush handles.
- FRP lining inside cabinet walls for chemical resistance.
- Full-length piano hinges; PP tray for chemical storage; twin castors for easy removal.
- 1 No. adjustable shelf; detachable rear panels in segmented construction.
- Air ventilation ports connected to main exhaust system of fume hood.

4. Centrifugal Blower

- Single-piece moulded PP blower, UV treated, chemical-resistant, continuous rating motor.
- CFM: 1900-2300; 40 mm WC static pressure.
- Drive: 5.0 HP, 2800 RPM, 415V, 50 Hz, TEFC Class B insulation, IP55 enclosure, Non-FLP.
- Fan wheel: PP forward-curved centrifugal impeller, injection-moulded PPH; electronically and dynamically balanced to ISO 1940.
- Housing: single-block PP, high-density UV-treated, no welded joint; reversible/rotatable to 8 standard discharge positions.
- Motor support: epoxy-coated sheet metal stand or PP motor pedestal.
- Performance based on AMCA 210-85 and ISO 5801.
- Warranty: minimum one year from date of commissioning.

5. PP + FRP Exhaust Ducting

- Rigid ducting (round shape): PP (PPGL one side smooth/glossy inner, one side matt outer) + FRP (3 mm PP + 2 mm FRP).
- Stitch welding: 25 mm x 25 mm on inner surface; continuous welding on outer surface, 5 mm thickness.
- Includes: necessary bends, reducers, T-connections, supports, flanges, gaskets, nut-bolts, damper transitions, clamps.
- Flexible joint at blower connection to isolate vibration.
- Weatherproof rain cowl at blower outlet.
- Ducts > 450 mm size shall be cross-braced.
- All ducts supported from ceiling/slab by MS rods (8 mm dia.) with MS angle 40 x 40 x 5 mm with neoprene pad between duct and angle.


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- Rubber gasket between all duct flange connections.
- Ducting work payable on actual measurement basis.

6. Certification Requirements

- Valid ASHRAE Membership Certificate.
- Valid ISO 9001:2015; ISO 14001:2015; ISO 45001:2018 certificates.
- Third-party test certificate of SEFA 8M (2016) from SEFA-approved laboratory.
- Third-party test certificate of SEFA 10 - 2016 from SEFA-approved laboratory.
- Third-party test certificate of ASHRAE 110-2016 and SEFA 1 for laboratory fume hoods.
- Third-party test certificate in accordance with BS EN 14175 Part 3.
- In-house ASHRAE 110 test facility at manufacturer's factory documentary evidence required in technical bid.
- Third-party fire rating certificate for fume hood liner (minimum 60-minute fire rating).
- Valid SEFA Membership Certificate (minimum 12 years).
- IGBC Membership Certificate.
- BIFMA Membership Certificate.

7. List of Approved Makes Fume Hood

S/N	Item	Approved Makes
1	Fume Hood Service Fixtures	Water Saver / Broen / Premier Polymer
2	Fume Hood Electrical Sockets / MCB / RCBO	Legrand / Northwest / MK / Siemens / Norisys
3	Face Velocity Monitor & Controls	TEL / TROX / Phoenix / Schneider
4	Centrifugal Blowers (PP)	SEAT / Premier Polymer / MK Plastics / Colasit / Plastifer
5	Blower Motors	ABB / Siemens / CG (Crompton Greaves) / Bharat Bijlee
6	Variable Frequency Drives (VFD)	Siemens / Danfoss / ABB / Invertek
7	Worktop	Black Natural Granite
8	Volume Control Dampers (PP)	MK Plastics / Premier Polymer
9	Inner Lining	6 mm Phenolic Resin construction
10	Toughened Glass (Sash)	Saint Gobain / Modi / Asahi India / GSC / Atul
11	Light Fittings / LED	Philips / Wipro / Crompton or equivalent
12	Cables & Wires	Polycab / RR Kabel / Finolex / Gloster / Anchor
13	Cable Management System	Legrand / MK / LK / Centaur
14	PP Sheets for Exhaust Ducting	Mandhani / Dugar / Khanna / Simona / Beck
15	All other items not listed above	As per sample approved by EIC

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SECTION 4: SPECIFICATION FOR LABORATORY FURNITURE & ACCESSORIES

Contents

- General Conditions
- Reference Standards
- Design Requirements
- Construction Requirements
- Specifications
- Quality Assurance & Testing
- Chemical Spot Test Protocol
- List of Approved Makes

1. General Conditions

This section covers the furnishing and installation of laboratory cabinets and furniture including:

- Wall benches, island bench, under-bench cabinets, counter tops, overhead cabinets, and reagent racks.
- Service fixtures, wall plates, sinks, pegboards, eyewash units.
- Filler panels, knee space panels, and other items of trim and enclosure.
- Delivery to the building, unpacking, setting in place, levelling, and scribing to walls and floors as required.

2. Reference Standards

- IS 4209 : Chemical Laboratories: Code of Safety.
- IS 1161 :Steel Tubes for Structural Purpose.
- IS 7138 :Specification for Steel Tubes for Furniture Purpose.
- IS 13871 :Powder Coating Specification.
- IS 822 :Code of Procedure for Inspection of Welds.
- SEFA 2.3: Scientific Laboratory Furniture and Equipment.
- SEFA 3 :Work Surfaces.
- SEFA 7 :Laboratory and Hospital Fixtures.
- SEFA 8M:2016 Laboratory Furniture and Equipment.
- SEFA 10:2016 Adaptable Laboratory Furniture Systems.

3. Design Requirements

- All laboratory furniture should be modular in construction and design, made of Skin-Passed (Zero Spangle) Galvanized Iron (GI) to IS 277 standard, powder-coated with 50-60 micron pure epoxy coating, in CKD (Completely Knocked Down) construction erectable at site as per the approved layout.
- The design must allow reconfiguration for layout changes using simple tooling and provide independent access to utilities, electrical panels, and instrumentation panels.
- All GI sheet components shall be fabricated by precision shearing, levelling, notching, and piercing to achieve consolidated dimensions within close tolerances.
- Exposed welding marks shall be polished smooth. Corner intersections of vertical and horizontal members shall be in the same plane with bolted joints.
- Submittals: contractor shall submit shop drawings showing each assembly, material thicknesses, details of construction, and deviations from contract documents clearly marked.
- Contractor shall verify field dimensions and that products will fit through entryways, corridors, and door openings.


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4. Specifications Work Tables (C-Frame)

Work tables in C-frame design available in heights of 900 mm and 750 mm. Metallic construction, completely flexible modular system.

Parameter	C-Frame Module Specifications
MOC	IS 277 standard, Zero Spangle Galvanized Iron (GI)
Sheet thickness	1.0 to 1.6 mm
Cabinet mounting	Suspended type — fixed on C-frame structure
Module widths available	500 mm, 750 mm, 900 mm
Module height	Varying 550 mm to 700 mm depending on table height
Module depth	500 mm
Hinges	Knuckle-barrel type SS — 270° opening with positive catch
Drawer rails	Telescopic double-extension ball slide; load capacity 45 kg per pair
Handles	Aluminium flush type, epoxy powder-coated
Locks	Lock with two keys for drawers; lock with two keys for shutters

GI Sheet Thickness by Component

Component	Minimum Thickness
Cabinet end panels	1.0 mm GI
Cabinet rear panel and top panel	1.0 mm GI
Cabinet drawers	1.0 mm GI
Cabinet shutters & drawer front panels	0.8 mm GI double skin construction
Cabinet main frame structure & drawer slide rails	1.6 mm GI

5. Worktop Specification

Worktop Type	Colour	Thickness	Properties & Application
White Nano-Glass (Grade G7)	White	18 ± 1 mm	Good resistance to common chemicals and stains; scratch and abrasion resistant; smooth, non-porous and easy-to-clean; flat and uniform finish; suitable for general laboratory and research applications.


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6. Sink, Tap & Eyewash Specifications

PP Sink:

- Single-piece moulded polypropylene (PP) sink, dimensions: L 600 × W 450 × D 315 mm.
- Connected to existing drain outlet via SW PVC-U pipes schedule 40, totally leak-free.

Three-Way Swan Neck Water Tap:

- Pillar-type, 3-way, swivelling gooseneck spout in PP handle and epoxy-coated forged brass body.
- Water flow capacity: ~30 L/min at 3 kg/sq.cm; temperature range 0-70°C; test pressure 9 kg/sq.cm, max working pressure 10 kg/sq.cm.
- Connected to water mains by CPVC pipes.

PP Pegboard:

- High-density PP adjustable pegboard, size 600 × 600 mm, with 46 Nos. PP pegs (minimum 125 mm length, 10 mm diameter, 4 kg load capacity each).
- Drip rack at bottom with drainage arrangement.

Eyewash Unit:

- Double-headed, double-outlet eyewash unit mounted near sink.
- SS 304 braided flexible hose connection to water mains.

7. Overhead Cabinet Specification

Wall-mounted cabinets in GI epoxy powder-coated construction.

Parameter	Details
Overall dimensions	W 750 mm × D 350 mm × H 600 mm
No. of shelves	1 fixed shelf - forming 2 compartments
End, top & bottom panels	1.0 mm GI
Rear panel	1.0 mm GI
Front door	5 mm glass with metallic GI frame - twin door design

Shelf	1.0 mm GI
Door supporting frames	1.6 mm GI
Hinges	Knuckle-barrel type SS
Handle	SS 304
Lock	With two keys

8. Electrical Raceways

- Triangular or rectangular box-type design in 1 mm thick GI, epoxy powder-coated.
- Internal wiring using copper conductors with FRLS insulation (approved makes).
- Each running metre of the island bench shall have minimum 2 Nos. electrical sockets (220-240V, 6/16A, 6-pin) on each side.
- All sockets to be wired with minimum 4 sq.mm PVC sheathed, unarmoured, stranded copper conductor FRLS insulated cable.
- Each power circuit wired from separate MCB enclosure mounted on appropriate position; maximum 2 switchboards per circuit.

9. Quality Assurance & Testing


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- The contractor shall have a history of successful projects of similar size and complexity.
- Single Source Responsibility: contractor to provide complete C-frame assembly, worktop, shelves, storage, service fixtures, and accessories under single responsibility.
- Contractor shall submit SEFA-3 and SEFA-8M test results from NABL-accredited third-party testing laboratories for minimum 2 cabinets and 2 C-frames of different sizes as listed in the BoQ.
- 1000-hour salt spray test result and physical test results for epoxy coating shall be submitted for each batch.

10. Chemical Spot Test Protocol (Performance Test)

Testing Procedure: Chemical spot tests for non-volatile chemicals shall be made by applying 5 drops of each reagent to the surface covered with a 3.2 mm watch glass, convex side down, for one hour at $25 \pm 1.5^\circ\text{C}$. Volatile chemicals shall be tested with a cotton ball saturated with reagent, covered with an inverted 60 mL wide-mouth bottle.

Test Evaluation Rating:

- Level 0 : No detectable change.
- Level 1 : Slight change in colour or gloss.
- Level 2 : Slight surface etching or severe staining.
- Level 3 : Pitting, cratering, swelling, or erosion of coating.

After testing, panel shall show no more than four (4) Level 3 conditions.

Heat Resistance Test: Hot water ($88-96^\circ\text{C}$) at rate ≥ 180 mL/min on surface at 45° for 5 minutes. No visible effect permitted.

11. List of Approved Makes Furniture

S/N	Item	Approved Makes
1	Steel Sections	SAIL / TATA / Vizag / Jindal / JSW
2	Laboratory Fittings	Water Saver / Broen / FAR / Premier Polymer / Brownall LabTap
3	Laboratory Sinks & Drip Cups	KLLAB / Water Saver / Broen / Premier Polymer / Friatec
4	Electrical Sockets (6/16A)	Legrand (Mosaic) / Northwest / MK / Siemens / Norisys
5	FRLS PVC Insulated Copper Wires/Cables	Polycab / Finolex / RR Kabel / Gloster / Anchor
6	Modular Switches	Legrand / Siemens / MK or equivalent
7	Eyewash / Shower	Water Saver / Broen / Premier Polymer
8	Hinges	Hettich / Hafele or equivalent
9	Legs / Adjustable Feet	Hettich / Hafele
10	Locks	Hettich / Hafele
11	Double Extension Ball Slide	Hettich / Hafele
12	Worktop	White Nano-Glass (Grade G7) — approved make



13	Toughened Glass	Saint Gobain / Modi / Asahi India / GSC / Atul
14	Polypropylene Sink	As per sample approved by EIC
15	GI Sheets	SAIL / TATA / Vizag / JSW
16	All other items not listed	As per sample approved by EIC

SECTION 5: FUME HOOD SPECIFICATION SUMMARY TABLE

Sr. No.	Description	Qty
1	Type of Hood: Constant Bypass Type Bench Fume Hood	
2	Overall Dimension: Width 1500 × Depth 915 × Height 2300 mm	
3	Inner Dimension: Width 1300 × Depth 645 × Height 1200 mm	
4	Fume Hood Superstructure: - Structure frame: 2.0 mm GI - Inner lining, rear & top baffles: 6 mm phenolic resin - Outer panels: 1.2 mm GI - Aerodynamic front posts in GI - Flip-on airfoil: 1.6 mm SS 316L - PP exhaust duct collar - Combination sash: toughened glass + anodised Al handle - Counterweight sash mechanism - Twin LED lighting	1 No.
5	Fume Hood Worktop: Telephone black natural granite, raised rails on 4 sides, with 1 No. oval PP cup sink on left/rear side	1 No.
6	Service Valves: Forged brass body, Al spindle, colour-coded PP knobs, serrated nozzles in epoxy-coated brass, 1.5 m flexible tubing	
7	Service: Compressed Air	1 No.
8	Service: Potable Water	1 No.


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9	Service: Nitrogen	1 No.
10	Electrical: Controller for blower & light (touch pad)	1 No.
11	Electrical: 16A, 2-pole MCB — Legrand or equivalent	1 No.
12	Electrical: 6/16A 3-pin socket with switch — Legrand or equivalent	4 Nos.
13	Controls: Air Velocity Monitor with low airflow alarm — AFA/1000 TEL UK or equivalent	1 No.
14	Fume Hood Understructure: MS hollow pipe rectangular frame, powder-coated	1 No.
15	Fume Hood Under-Cabinet (Chemical Storage): Double-skin GI, FRP-lined, twin doors, 1 adjustable shelf, PP tray, twin castors, ventilation ports	1 No.
16	Volume Control Damper: PP construction, pre-drilled flanges, manual handle, extended spindle, motorisable	1 No.
17	Scaffold/Lattice: 12 mm dia. epoxy rods, 150 mm pitch, PP clamps	1 Set
18	Exhaust Fan: Single-piece PP, UV-treated, SISW, CFM 1900–2300, 5 HP, 2800 RPM, 415V, 50 Hz, IP55, TEFC Non-FLP, VFD, MCB	1 No.
19	PP + FRP Exhaust Ducting (3 mm + 2 mm): Round, with bends, reducers, T-connections, supports, flanges, gaskets payable on actual measurement	~20 Sq.m


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SECTION 6: TECHNICAL COMPLIANCE SHEET

Bidder shall fill in Yes/No for each item below. Non-compliance must be explained under remarks.

Sl#	Item / Specification	Response (Yes/No)	Remarks
1	Constant Bypass Type Bench Fume Hood (FH-1) 1500 × 915 × 2300 mm (1 No.)		
2	Superstructure: 2.0 mm GI frame		
3	Inner lining & baffles: 6 mm phenolic resin		
4	Outer panels: 1.2 mm GI, 70-80 micron epoxy coating		
5	Sash: 5 mm toughened glass, combination type, anodised Al handle, counterweight mechanism		
6	Airfoil: SS 316L, flip-on type, 1.6 mm thick		
7	Baffles: 3-slot design, phenolic resin, removable		
8	Scaffold: 12 mm dia. epoxy rods, 150 mm pitch		
9	PP Cup Sink with water supply tap		
10	Twin LED vapor-proof lighting, sealed		
11	Minimum 4 Nos. 3-pin sockets (6-16A) outside hood + shunt tripper		
12	Service Valves: Compressed Air, Potable Water, Nitrogen (colour-coded PP handles)		
13	Digital Face Velocity Monitor with audible & visual alarm, mute provision		
14	PP Duct Collar (8"-10" diameter)		
15	Volume Control Damper in PP construction		
16	Under-Hood Cabinet: GI double-skin, FRP-lined,		

	twin doors, PP tray, castors		
17	Exhaust Fan PP, UV-treated, SISW, CFM 1900-2300, 5 HP, 415V, IP55, Non-FLP, VFD		
18	16A, 3-Phase MCB (Legrand or equivalent)		
19	Electrical panel with VFD		
20	Wall Bench (WB-1) 3000 × 750 × 900 mm, Left wall (1 No.)		
21	C-Frame: 60 × 30 × 2 mm hollow pipe		
22	Worktop: 18 ± 1 mm White Nano-Glass Grade G7		
23	Storage modules: 1 drawer + 2 shutters (3 Nos.)		
24	Knee space (1 No.)		
25	GI electrical raceway + 10 Nos. 6/16A sockets		
26	Filler panels in GI (2 Nos.)		
27	Wall Bench (WB-2) 4000 × 750 × 900 mm, Back wall with corner PP sink (1 No.)		
28	C-Frame: 60 × 30 × 2 mm hollow pipe		
29	Worktop: 18 ± 1 mm White Nano-Glass Grade G7		
30	Storage modules: 1 drawer + 2 shutters (3 Nos.) + 2 shutters (1 No.)		
31	PP Sink (L600 × W450 × D315 mm) corner position (1 No.)		
32	3-way swan neck water tap (1 No.)		
33	PP Adjustable Pegboard, 46 pegs, 600 × 600 mm (1 No.)		

34	Double-outlet eyewash, SS braided hose (1 No.)		
35	Knee space (1 No.)		
36	GI electrical raceway + 12 Nos. 6/16A sockets		
37	Close panel GI (1 No.), Filler panels GI (2 Nos.)		
38	Wall Bench (WB-3) 3500 × 750 × 900 mm, Right wall (1 No.)		
39	C-Frame, Worktop G7, 3 drawer modules, knee space, raceway, 10 sockets, fillers		
40	Island Bench (IB-1) 3000 × 1500 × 900 mm, Centre (1 No.)		
41	C-Frame: 60 × 30 × 2 mm hollow pipe		
42	Worktop: 18 ± 1 mm White Nano-Glass Grade G7		
43	Storage modules: 1 drawer + 1 shutter (6 Nos.)		
44	Knee spaces (4 Nos.)		
45	Double-sided double-tier reagent rack with electrical raceway		
46	20 Nos. 6/16A sockets; filler panels GI (2 Nos.)		
47	Overhead Cabinets 750 × 350 × 600 mm each (6 Nos.)		
48	GI epoxy powder-coated, 1 shelf, twin glass-panel doors, SS hinges, SS handle, lock		
49	PP + FRP Exhaust Ducting (3+2 mm), ~20 Sq.m payable on actual measurement		
50	Includes bends, reducers, T-connections, supports, flanges, gaskets, nut-bolts		
51	Laboratory Stools regular size (5 Nos.)		

52	SEFA Membership Certificate (min. 12 years)		
53	Third-party SEFA 8M:2016 test certificate		
54	Third-party SEFA 10:2016 test certificate		
55	Valid ASHRAE Membership Certificate		
56	Third-party ASHRAE 110-2016 & SEFA 1 type testing certificate		
57	Third-party EN 14175 Part 3 type testing certificate		
58	ISO 9001:2015 Certificate		
59	ISO 14001:2015 Certificate		
60	ISO 45001:2018 Certificate		
61	IGBC Membership Certificate		
62	BIFMA Membership Certificate		
63	Third-party Fire Rating Certificate fume hood liner (60 min)		
64	In-house ASHRAE 110 test facility at factory documentary evidence		

SECTION 7: PRE-QUALIFICATION (PQ) COMPLIANCE SHEET

Sr. No.	Qualification Criteria	Bidder's Compliance (Yes/No)	File Uploaded (Yes/No)
1	Similar work: composite supply and installation of lab furniture and fume hood. Three similar works each $\geq 40\%$ of estimated cost, or two works each $\geq 60\%$, or one work $\geq 80\%$ of estimated cost within last 7 years executed at Government / CPSU / SPSU / Central or State Autonomous bodies. Supporting purchase orders required.		
2	Bidder should have well-established in-house manufacturing unit for laboratory fume hoods as per international standards, in operation for more than 20 years. Factory licence / Udyam Aadhar Certificate to be provided.		
3	PAN Card copy to be attached with bid.		
4	GST Registration Certificate copy to be attached.		
5	EPF Registration copy to be attached.		
6	ESIC Registration copy to be attached.		
7	Income Tax Returns (ITR) for past three financial years.		
8	Minimum average annual turnover $\geq 30\%$ of estimated cost from lab fume hood work over past three years. Turnover Certificate for past three years to be submitted.		
9	Balance Sheets for past three financial years.		
10	Valid Solvency Certificate for current year of worth $\geq 40\%$ of estimated cost.		

11	Valid SEFA Membership Certificate — minimum 12 continuous years.		
12	Third-party testing report for SEFA 8M:2016.		
13	Third-party testing report for SEFA 10:2016.		
14	Valid ASHRAE Membership Certificate.		
15	Third-party test certificate for ASHRAE 110-2016 and SEFA 1 type testing.		
16	Third-party test certificate for EN 14175 Part 3 type testing.		
17	In-house ASHRAE 110 test facility at factory documentary evidence.		
18	ISO 9001:2015 Certificate.		
19	ISO 14001:2015 Certificate.		
20	ISO 45001:2018 Certificate.		
21	IGBC Membership Certificate.		
22	BIFMA Membership Certificate.		
23	Third-party Fire Rating Certificate for fume hood liner (60-minute minimum).		
24	Authorized local service centre near Thiruvananthapuram.		

SECTION 8: DOCUMENT CHECKLIST

All documents listed below must be enclosed with the technical bid at the time of submission.

Sl No.	List of Documents	Enclosed (Yes/No)
1	Brochures / Catalogues / Datasheets for all components	
2	Bill of Quantities (BoQ) duly filled	
3	Statutory Registration Certificates (PAN, GST, EPF, ESIC, Udyam Aadhar)	
4	Income Tax Returns past three years	
5	Balance Sheets past three years	
6	Turnover Certificate past three years	
7	Solvency Certificate current year	
8	Purchase orders of similar works (as per PQ criteria Section 7)	
9	Photographs of previous work involving Grade G7 Nano-Glass on C-Frame at a public sector establishment, along with purchase order	
10	SEFA Membership Certificate	
11	Third-party SEFA 8M:2016 test certificate	
12	Third-party SEFA 10:2016 test certificate	
13	ASHRAE Membership Certificate	
14	Third-party ASHRAE 110-2016 & SEFA 1 type testing certificate	
15	Third-party EN 14175 Part 3 type testing certificate	
16	Documentary evidence of in-house ASHRAE 110 test facility at factory	
17	Third-party fire rating certificate fume hood liner (60 min)	
18	ISO 9001:2015 Certificate	
19	ISO 14001:2015 Certificate	
20	ISO 45001:2018 Certificate	
21	IGBC Membership Certificate	
22	BIFMA Membership Certificate	

23	Compliance Sheet (Section 6) duly filled	
24	PQ Compliance Sheet (Section 7) duly filled	
25	Tender document duly signed on all pages with bidder's seal	
26	Any other document referenced in Section 1: Requirements	

Specifications for Laboratory Furnishing

MARine-optics and Imaging Nearshore Ecosystem (MAINE) Laboratory, First Floor, SoE ESS.

Section 1: Requirements

A. Computation Lab

1. Wall-Mounted Storage Cabinets (WSC-1 to WSC-8) - Size: L 750 x D 350 x H 600 mm

Wall-mounted laboratory/office storage cabinet in galvanized iron (GI) or equivalent corrosion-resistant sheet-metal construction.

- Minimum nominal sheet thickness 0.9-1.0 mm for body/shutters, with stiffeners where required to prevent oil-canning or sagging.
- Pure epoxy/polyester-epoxy powder coating or equivalent durable coating, minimum dry film thickness approximately 60 microns, finish shall be smooth, uniform and resistant to routine cleaning.
- One height-adjustable shelf per cabinet; shelf load capacity not less than 25 kg uniformly distributed.
- Double-skin framed glass shutters/doors with toughened safety glass, corrosion-resistant hinges, positive catch and lock.
- Concealed/secure wall anchoring suitable for the substrate; the bidder shall verify wall type and provide all brackets, fasteners and backing plates needed for safe installation.

Quantity: 8 Nos.


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2. Computation Wall Bench WB-01 - Size: L 6025 x W 600 x H 750 mm

- Plinth-mounted modular workbench designed for five seated computing positions.
- Worktop: 18 ± 1 mm minimum moisture-resistant BWP-grade plywood/engineered wood core with melamine/HPL laminated finish, or equivalent; all exposed edges shall be sealed and finished with durable edge banding.
- One approximately 500 mm wide storage module comprising one drawer and one shuttered cabinet with one adjustable shelf.
- Five leg spaces, each with keyboard provision where shown, mobile/slide-out CPU trolley and cable manager; clear knee space shall support ergonomic seating.
- Continuous white-board/pin-board arrangement above worktop, approximately 450 mm high over the usable bench length; surface shall be replaceable/maintainable.
- Worktop-mounted electrical/data raceway in GI/CRCA powder-coated construction or equivalent non-combustible enclosure with removable access cover.
- Ten 6/16 A, 230 V sockets with individual or grouped 16 A switches as appropriate; sockets shall conform to applicable Indian standards and be suitable for computer loads.
- Five RJ45 data outlets or equivalent data modules without active network equipment; structured cabling termination shall be coordinated with the Institute.
- Internal wiring within the furniture shall use FR/FRLS copper conductors of adequate size; minimum 2.5 sq.mm for 16 A socket circuits unless load calculation requires higher size, with continuous protective earthing.
- Filler/closure panels at exposed ends and gaps to give a finished, flush appearance.

Quantity: 1 No.

3. Computation Wall Bench WB-02 - Size: L 3355 x W 600 x H 750 mm

- Plinth-mounted modular workbench designed for approximately three seated computing positions.
- Worktop: same material and finish as WB-01, 18 ± 1 mm minimum thickness.
- Storage modules: approximately 500 mm wide modules with one drawer and one shutter as shown in the approved shop drawing; final module count/configuration shall preserve the three designated leg spaces and overall length.
- Three leg spaces with CPU trolley and cable manager.
- White-board/pin-board arrangement approximately 450 mm high along the usable bench length.
- GI/CRCA powder-coated electrical/data raceway integrated with the bench.
- Six 6/16 A, 230 V sockets with 16 A switching and three RJ45 data outlets or equivalent.
- Vertical support/stiffener where required to control worktop deflection, plus filler/closure panels at exposed ends.

Quantity: 1 No.

4. Ergonomic Seating for Computation lab - Size: High-back, wheeled, height-adjustable chair

- Ergonomic high-back chair suitable for prolonged computer work; gas-lift height adjustment, 360-degree swivel and five-star base with twin-wheel casters.
- Adjustable or fixed arm support, adequate lumbar support and breathable/upholstered back and seat.
- Minimum user load rating 100 kg or higher; all chairs shall be supplied fully assembled/commissioned and covered by warranty.
- Neutral colour/finish to be finalized by IISER TVM during shop-drawing/sample approval.

Quantity: 8 Nos. (overall provision)


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B. Experiment Lab

5. Local Spot Extractor - Size: Nominal dome diameter about 385 mm: ceiling/wall support as required

- Chemical-resistant polypropylene (PP) or equivalent corrosion-resistant extraction hood/dome intended for local capture of vapours generated during small-scale wet-chemistry/sample-preparation operations.
- Adjustable arm/support arrangement with smooth positioning and sufficient reach for the designated work area; standard support height approximately 1200 mm, with extension where site conditions require.
- All joints shall maintain position without drift and shall be compatible with the connected exhaust duct.
- Capture airflow target: nominal 150-250 CFM at the extractor, or higher if required by final duct resistance, such that visible vapour/smoke is captured at the intended working position without excessive noise or draft.
- All exposed parts in the air stream shall be corrosion resistant and suitable for laboratory solvent vapours. The extractor shall not be represented as a full fume hood and shall be used only for operations appropriate to local exhaust capture.

Quantity: 1 No.

6. Chemical-Resistant Exhaust Fan/Blower for Spot Extractor - Size: Capacity matched to installed duct system

- Single-inlet centrifugal fan/blower with corrosion-resistant PP/FRP housing and impeller, suitable for laboratory exhaust service.
- Design duty approximately 150-250 CFM at the actual total static pressure of the installed duct system; bidder shall submit fan curve and duty-point selection.
- Direct-drive or equivalent low-maintenance arrangement; motor approximately 1 HP or sized by the system calculation, 415 V, 50 Hz, 3-phase where available, TEFC enclosure, IP55 or better.
- Motor insulation Class B/F or better. Rotating assembly shall be dynamically balanced and mounted to minimize vibration and noise.
- Provide local isolator, appropriately rated MCB/MPCB/overload protection and DOL or equivalent starter; all electrical components shall comply with applicable IS/IEC requirements.
- Fan support/stand shall be corrosion-protected and structurally adequate. Flexible connector/vibration isolator shall be used where needed to avoid transmitting vibration to the building/duct.

Quantity: 1 No.

7. Wall-Mounted Storage Cabinets (Experiment Lab) - Size: L 750 x D 350 x H 600 mm (nominal)

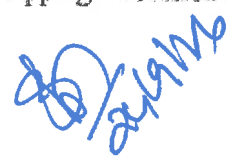
- Construction, coating, shutters, glass, shelves, locks and wall anchoring shall be as specified for the Computation Lab wall-mounted storage cabinets.
- Cabinets shall be positioned so that access to laboratory instruments and service points is not obstructed.

Quantity: 3 Nos.

8. Glassware Storage Cabinet GSC-1 - Size: L 1000 x D 450 x H 1830 mm

- Floor-standing GI/CRCA or equivalent metal cabinet with corrosion-resistant epoxy powder-coated finish.
- Five height-adjustable shelves forming approximately six storage compartments; each shelf to carry at least 30 kg uniformly distributed without permanent deformation.
- Double-skin framed glass doors with toughened safety glass, stainless/corrosion-resistant handles, hinges, positive catch and lock.
- Adjustable levelling feet/plinth; cabinet shall be stable against tipping. Provision for wall anchoring shall be included where required by safety practice.

Quantity: 1 No.



9. Experiment Wall Bench WB-03 - Size: L 2000 x W 750 x H 900 mm

- 18 ± 1 mm minimum chemically resistant, non-porous laboratory-grade solid worktop (engineered stone/artificial granite/nano-glass or technically equivalent), with sealed edges and joints; light/neutral colour subject to approval.
- Under-bench storage: one approximately 750 mm wide module with one drawer and two shutters, and one approximately 500 mm wide module with one drawer and one shutter.
- One clear leg space with CPU/instrument trolley and cable management as shown; configuration shall be coordinated with the spot extractor.
- End closure panels and filler panels in matching GI/CRCA construction.
- Bench frame/plinth shall safely support laboratory instruments; minimum design load 200 kg uniformly distributed per running metre, with local reinforcement at designated heavy-equipment positions.

Quantity: 1 No.

10. Experiment Wall Bench WB-04 with Sink - Size: L 970 x W 750 x H 900 mm

- 18 ± 1 mm minimum chemically resistant, non-porous laboratory-grade solid worktop (engineered stone/artificial granite/nano-glass or technically equivalent), with sealed edges and joints; light/neutral colour subject to approval.
- One approximately 750 mm wide under-bench storage module with two shutters.
- Single-piece moulded polypropylene sink, approximately L 600 x W 450 x D 315 mm, chemically resistant and fitted leak-free into the worktop.
- Worktop-mounted three-way laboratory water tap with swivelling/swan-neck spout; wetted/exposed parts shall be corrosion resistant and suitable for laboratory use.
- PP adjustable drying/peg board approximately 600 x 600 mm with at least 46 pegs and drip collection/drainage arrangement.
- All water and drain connections between the sink/tap and the designated building-side termination point shall be included within the furniture scope unless otherwise stated.
- Close/filler panels in matching construction; cut edges around sink shall be fully sealed against moisture ingress.

Quantity: 1 No.

11. Corner Bench CB-02 - Size: L 1030 x W 1030 x H 900 mm

- 18 ± 1 mm minimum chemically resistant, non-porous laboratory-grade solid worktop (engineered stone/artificial granite/nano-glass or technically equivalent), with sealed edges and joints; light/neutral colour subject to approval.
- Corner storage module with one shutter and adjustable shelf.
- Worktop/frame shall be reinforced for the designated refrigerated centrifuge location; bidder shall obtain equipment footprint and operating weight before final fabrication.
- Bench shall remain level and vibration-stable under equipment operation. Anti-vibration provision shall be included if recommended by the centrifuge manufacturer.
- Filler/closure panels shall provide a flush transition to adjoining benches.

Quantity: 1 No.

12. Experiment Wall Bench WB-05 - Size: L 2370 x W 750 x H 900 mm

- 18 ± 1 mm minimum chemically resistant, non-porous laboratory-grade solid worktop (engineered stone/artificial granite/nano-glass or technically equivalent), with sealed edges and joints; light/neutral colour subject to approval.
- Two approximately 750 mm wide storage modules, each with one drawer and two shutters.
- One clear leg/equipment space with trolley/cable manager as shown in the approved shop drawing.


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- Bench is intended to coordinate with HPLC, Milli-Q water system and other instruments shown on the layout; final clearances, service cut-outs and module positions shall be verified against instrument dimensions before manufacture.
- Filler panels at exposed ends. Worktop/frame shall satisfy the same minimum laboratory bench load requirement as WB-03.

Quantity: 1 No.

13. Laboratory Stools/Chairs for Experiment Lab - Size: Adjustable laboratory stool/chair with back support

- Height-adjustable laboratory stool/chair with back support, chrome-coated or corrosion-resistant five-star base, twin-wheel casters and adjustable foot ring.
- Seat diameter approximately 380 mm (15 inch) or greater; seat height adjustment approximately 450-560 mm or suitable for 900 mm bench height.
- Gas lift Class 3 or better; upholstery/seat surface shall be durable, easy to clean and suitable for laboratory use.

Quantity: 3 Nos.

14. Exhaust Ducting for Spot Extractor - Size: Round PP + FRP composite ducting, nominal 3 mm PP + 2 mm FRP

- Chemical-resistant circular duct in PP with external FRP reinforcement, or technically equivalent corrosion-resistant duct system suitable for the conveyed vapours.
- Complete with bends, reducers, tees, collars, dampers where required, flanges, gaskets, flexible connectors, supports/hangers, weatherproofing for outdoor portions and all fastening hardware.
- Duct sizing shall maintain stable capture airflow while limiting noise and pressure loss. The bidder shall submit a simple duct sizing/static-pressure calculation and selected fan duty point before fabrication.
- All joints shall be leak resistant. Duct routing shall avoid water traps and shall permit inspection/maintenance. External discharge termination shall be located/oriented so that exhaust is not readily re-entrained into the building.

Quantity: Approx. 5 m² duct surface area / final quantity as installed

C. GENERAL REQUIREMENTS APPLICABLE TO SECTION 1

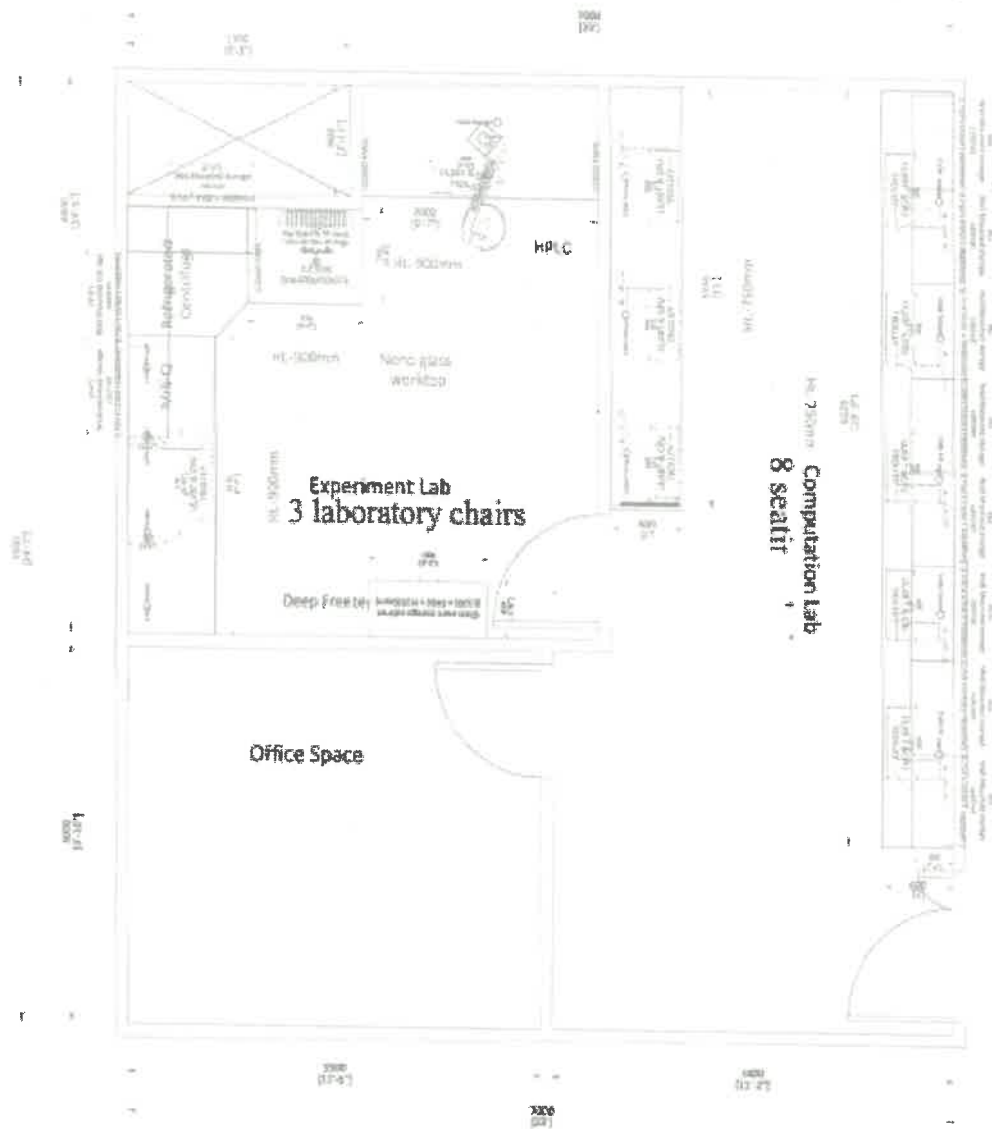
1. The bidder shall visit the site, verify dimensions/services and submit coordinated shop drawings before manufacture. Fabrication based only on tender drawings without site verification shall be at the bidder's risk.
2. Shop drawings shall show plan, elevation, section, module widths, worktop joints, sink cut-out, service raceways, electrical/data outlet positions, cable paths, fan/duct route, wall/ceiling supports and interfaces with existing services.
3. Product datasheets shall be submitted for worktops, sheet metal/coating system, hinges/slides/locks, electrical devices, data outlets, sink/tap/pegboard, spot extractor, fan/blower and duct material.
4. Samples/finish swatches may be requested for approval. Approval of a sample does not relieve the bidder from meeting the specified performance requirements.
5. All work shall include safe access equipment, ladders/scaffolding, drilling, anchors, minor sealants, fasteners and other consumables necessary for a complete installation.
6. Furniture shall be installed plumb, level and aligned; drawers/doors shall operate smoothly without binding. Worktop joints shall be smooth, sealed and easy to clean.
7. All debris and packing material generated by installation shall be removed and the laboratory handed over clean and ready for use.
8. Minimum warranty: 12 months from successful installation/acceptance, covering manufacturing and installation defects. Longer standard warranty offered by the bidder shall prevail.



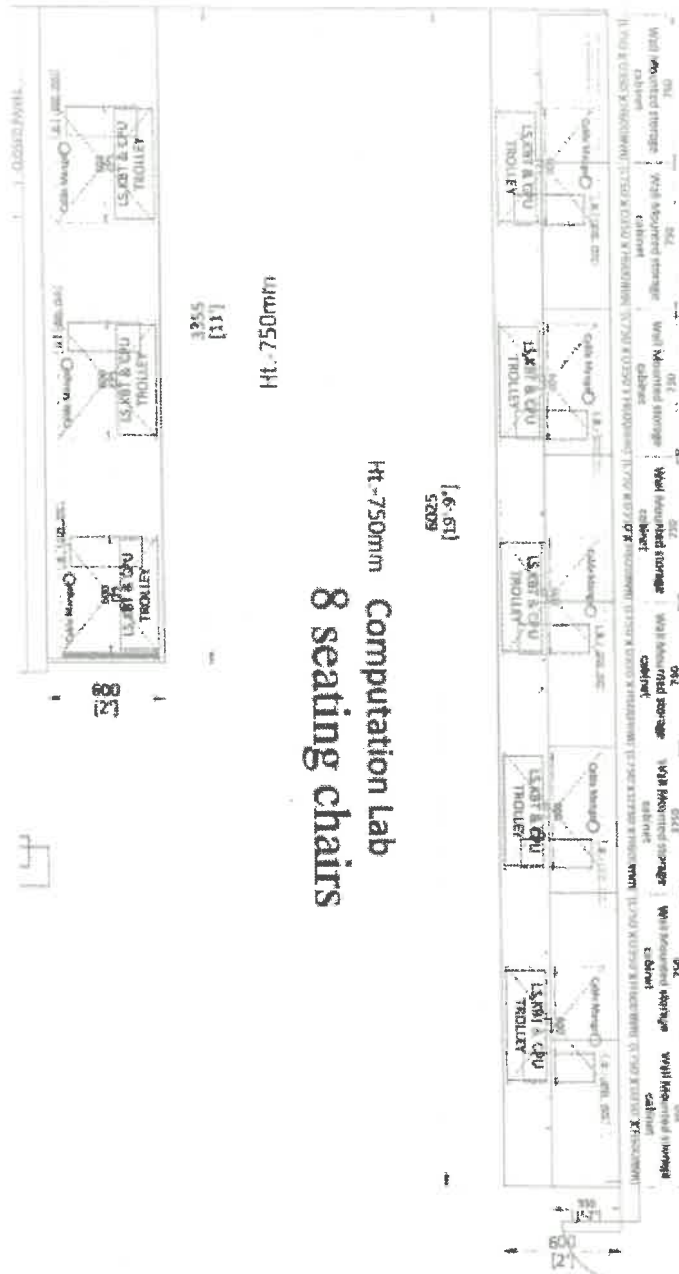
Section 2: Plans

The following drawings are included for dimensional coordination and reference. The bidder shall verify dimensions at site and submit final shop drawings for approval before fabrication. Equipment names shown on the drawing indicate intended locations/clearance requirements and do not imply supply of those instruments under this furniture tender

Plan 1 - Overall Laboratory Layout

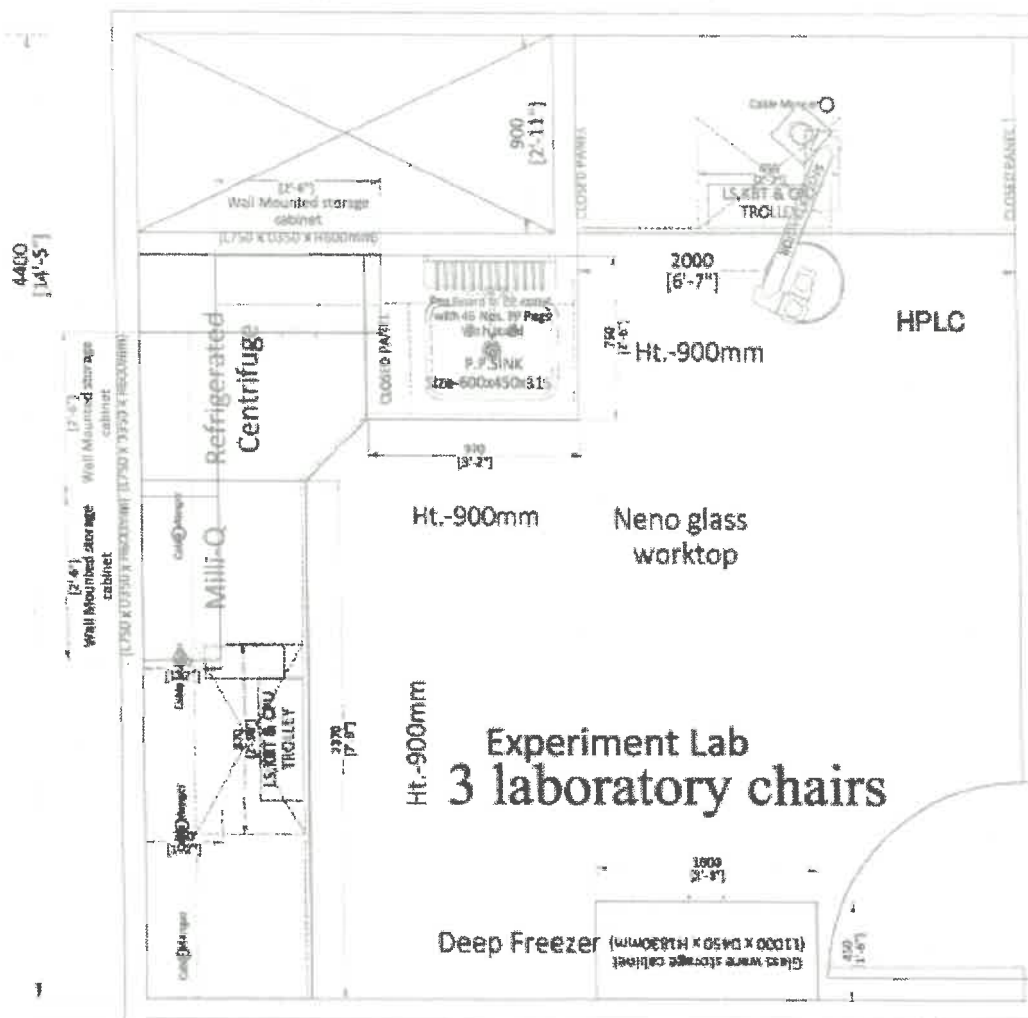


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Section 3: Specification For Local Exhaust, Ducting And Associated Storage

I. General

1. Summary

This section specifies the selection, supply, installation and testing of the local spot-extraction system serving the Experiment Lab. The system comprises the capture hood/spot extractor, connecting duct, centrifugal exhaust fan/blower, supports, motor controls and all accessories required for a complete functioning installation.

2. Applicable requirements

- Applicable Indian electrical, fire, building and occupational-safety requirements in force at the project location.
- Good engineering practice for laboratory/industrial local exhaust ventilation, including capture at source, corrosion-resistant materials, adequate make-up air and safe exhaust discharge.
- Manufacturer installation and maintenance instructions for the extractor, fan motor and controls.
- Where international laboratory ventilation guidance is cited by the bidder, current recognized guidance such as ANSI/AIHA Z9.5, ACGIH Industrial Ventilation or technically equivalent guidance may be used. The spot extractor is not a substitute for a certified chemical fume hood where a full enclosure is required.

3. Submittals

- Plan/elevation of extractor location and duct route, ceiling/wall supports and discharge point.
- Duct diameter(s), equivalent length, estimated pressure loss and selected fan duty point.
- Fan curve showing airflow and static pressure at the proposed operating point, motor data and noise information if available.
- Material datasheets for PP/FRP ducting, extractor hood, flexible connections and gaskets.
- Electrical single-line/control schematic for motor starter/isolator/protection.
- Installation, operating and maintenance manuals and spare-parts list.

II. Scope of Work

- Supply and install one local extraction hood/spot extractor at the designated experiment bench.
- Supply and install one chemical-resistant centrifugal fan/blower, support frame and vibration-control accessories.
- Supply and install complete round corrosion-resistant duct system from extractor to final exhaust termination, including all fittings and supports.
- Provide fan motor starter/protection and local isolation; internal/control wiring associated with the exhaust package shall be included.
- Seal all penetrations made under the scope and coordinate with building services. Any major civil work shall be identified in advance for approval.
- Test airflow/capture, verify rotation/current/vibration, rectify leakage or abnormal noise, and demonstrate system operation to IISER TVM.

III. Technical Specification

1. Spot Extractor

- Capture hood/dome: approximately 385 mm diameter or equivalent capture area, PP or other chemically resistant material.
- Articulated/adjustable support shall allow the hood to be positioned close to the emission source and remain stable in the selected position.
- Connection spigot and duct shall be smooth internally and arranged to minimize pressure loss.


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- Surfaces shall be easy to clean and resistant to typical laboratory solvents used for sample preparation/HPLC workflows.

2. Exhaust Fan/Blower

- Centrifugal fan of PP/FRP or equivalent corrosion-resistant construction; direct-driven preferred for low maintenance.
- Nominal system airflow 150-250 CFM, subject to final capture and duct-pressure calculation. Installed airflow shall be sufficient for effective source capture.
- Motor shall be IEFC, IP55 or better and suitable for the available supply; three-phase 415 V, 50 Hz configuration may be used where site supply permits.
- Impeller shall be balanced; fan shall operate without objectionable vibration, rubbing or resonant noise.
- Motor protection shall include short-circuit and overload protection and local isolation; starter type may be DOL or equivalent appropriate to motor rating.

3. Ducting

- Round PP duct with external FRP reinforcement, nominal 3 mm PP + 2 mm FRP, or equivalent proven chemical-resistant construction.
- Fittings shall have smooth transitions and long-radius bends wherever practical. Abrupt reductions and unnecessary tees shall be avoided.
- Hangers/support spacing shall prevent sagging and shall be compatible with the duct material. Outdoor supports and fasteners shall resist corrosion.
- Joints shall be airtight for the operating pressure and resistant to cleaning/condensation. Gaskets/adhesives shall be compatible with conveyed vapours.
- Provide a balancing/isolation damper if needed for commissioning/maintenance; damper material shall be compatible with the duct.

IV. Installation Requirements

- Final duct route shall be approved before installation. Access to lights, sprinklers, HVAC diffusers and maintenance zones shall not be obstructed.
- Fan shall be installed on a rigid support with vibration isolation as appropriate. Rotation direction shall be clearly marked.
- Flexible connector shall be used at fan connection when required to isolate vibration.
- Duct discharge shall terminate safely away from occupied openings and air intakes, subject to site constraints and Institute approval.
- Electrical control shall be labelled. Emergency/local stop/isolation shall be accessible to the user/maintenance staff.

V. Functional Performance Test

Test	Acceptance Requirement
Visual inspection	No cracks, poor joints, exposed sharp edges, loose supports or unscaled penetrations.
Fan operation	Correct rotation; no abnormal vibration/rubbing; motor current within nameplate limits.
Airflow	Measured airflow/capture consistent with approved design; nominal 150-250 CFM unless an approved calculation indicates otherwise.
Capture demonstration	Smoke/tracer released at the intended work position shall move consistently into the capture hood without obvious escape under normal room conditions.
Duct leakage	No visible leakage at joints/fittings; all supports secure.
Electrical safety	Protective earthing continuity and operation of isolator/protection verified.


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VI. Handover Documentation

- Approved as-built duct route drawing
- Fan/extractor datasheets and fan curve
- Motor/control datasheets and wiring diagram
- Airflow/capture test record
- Warranty certificates
- Operation and maintenance instructions

Section 4: Specification For Laboratory Furniture

I. General Conditions

- All laboratory furniture shall be modular, robust, maintainable and fabricated for the dimensions shown in Section 1 and the approved shop drawings.
- The bidder shall verify that completed modules can be transported through available doors/corridors and safely installed at the final location.
- Exposed surfaces shall be smooth and free from burrs, sharp edges, dents, welding spatter and coating defects.
- Fasteners exposed to the laboratory environment shall be corrosion-resistant. Dissimilar-metal contact likely to cause galvanic corrosion shall be avoided or isolated.
- Colours/finishes shall be finalized from standard manufacturer ranges during shop drawing/sample approval. Colour choice shall not affect quoted performance.

II. Materials And Workmanship

Component	Minimum Requirement
Metal cabinet bodies	GI/CRCA sheet, nominal 1.0 mm, thinner material only if equivalent stiffness/load performance is demonstrated. Double-skin shutters where specified.
Coating	Chemical-resistant epoxy or polyester-epoxy powder coat, approx. 60 microns minimum DFT, uniformly cured after appropriate surface pretreatment
Experiment worktop	18 ± 1 mm minimum chemically resistant, non-porous laboratory-grade solid surface such as engineered stone/artificial granite/nano-glass or equivalent
Computation worktop	18 ± 1 mm minimum BWP-grade plywood/engineered wood with durable melamine/HPL laminate and sealed edges.
Glass	Toughened safety glass, nominal 5-6 mm minimum for cabinet shutters unless design requires higher thickness
Hinges	SS304/corrosion-resistant heavy-duty hinges, doors to open smoothly and remain aligned.
Drawer slides	Full/near-full extension ball-bearing slides, corrosion resistant, minimum 35 kg load rating per pair or higher for drawer size
Locks/catches	Recessed/flush handles preferred; positive catches and keyed locks where specified.
Plinth/feet	Stable plinth construction or adjustable levelling feet as shown; no rocking after installation.

III. Construction Requirements

- Cabinet edges shall be folded/hemmed or otherwise finished to remove sharp exposed sheet-metal edges.
- Shelves shall be removable/height adjustable where specified and shall not show permanent sag at rated load.



- Drawer and shutter gaps shall be uniform. Hardware shall be replaceable using standard service tools.
- Worktops shall be level, joints shall be minimized and located away from sinks and high-use wet zones where possible.
- Cut-outs for sink, services and cable passages shall be made after verifying actual component dimensions. All cut edges shall be sealed/finished.
- Filler and closure panels shall close gaps to walls/columns and prevent accumulation of debris while allowing required access to services.
- Wall cabinets shall be fixed using anchors suitable for the actual substrate and shall have a factor of safety appropriate to their loaded condition.
- Bench frames/supports shall limit noticeable deflection under rated load and shall be reinforced at instrument locations where required.

IV. Detailed Furniture Requirements

A. Computation Lab

- WB-01 and WB-02 shall provide the seating count, storage modules, CPU trolleys, cable managers, white-board/pin-board areas and electrical/data points listed in Section 1.
- Cable management shall separate power and data as far as practical and shall include removable covers for maintenance.
- CPU trolleys shall be sized for common desktop tower cases, ventilated and movable/removable for servicing.
- Knee spaces shall have no sharp edges or protruding hardware and shall allow comfortable seated use.
- Wall cabinets shall align with the workstation layout while preserving access to electrical/data services and avoiding head-impact zones.

B. Experiment Lab

- WB-03, WB-04, CB-02 and WB-05 shall form a continuous, level working arrangement as shown in the plan. Filler panels shall be used at wall interfaces and corners.
- Wet bench WB-04 shall be sealed around sink and tap penetrations; splash-prone surfaces shall be water resistant and easy to clean.
- Instrument zones for HPLC, Milli-Q, refrigerated centrifuge and other equipment shall remain clear of unnecessary overhead obstructions and shall include service access as agreed during shop drawings.
- Centrifuge location shall be reinforced and level. Worktop joints shall not pass directly under the centrifuge footprint where avoidable.
- Glassware cabinet shall have adjustable shelves and stable door hardware suitable for repeated laboratory use.

V. Plumbing And Electrical Services

1. Sink and water services

- PP sink approximately 600 x 450 x 315 mm shall be single-piece moulded construction, smooth and resistant to routine laboratory chemicals.
- Three-way laboratory tap shall have a swivelling gooseneck/swan-neck outlet and corrosion-resistant body/coating. Hose/service connections shall be secure and accessible.
- Drain connection shall use chemically resistant piping/fittings suitable for the intended waste stream and shall be leak-free under normal use.
- Pegboard shall be PP, approximately 600 x 600 mm, with at least 46 removable pegs and a drip collection/drainage arrangement.



2. Electrical/data services integrated into furniture

- Power outlets shall be 230 V, 6/16 A type with appropriate 16 A switching and shall comply with relevant Indian standards.
- Internal furniture wiring shall be FR/FRLS copper; conductor size shall be selected for connected load and protective device rating. Earthing shall be continuous to all metallic raceways and exposed conductive parts where required.
- Power and data compartments shall be segregated or divided to minimize interference and simplify maintenance.
- All raceways shall have removable covers and no sharp cable-entry edges. Grommets/bushes shall be provided at cable penetrations.
- Each completed workstation circuit shall be tested for polarity, insulation and earth continuity before handover. Final building-side circuit protection shall be coordinated with IISER TVM.

VI. Quality Assurance And Testing

- Bidder/manufacturer shall demonstrate experience with modular laboratory or technical furniture of comparable complexity. Similar-work references may be requested for technical evaluation.
- Material certificates/datasheets shall be supplied for sheet metal, coating, worktop and key bought-out hardware when requested.
- Laboratory cabinets should conform to SEFA 8M/SEFA 8 performance principles or technically equivalent recognized furniture performance requirements. Equivalent third-party test evidence may be submitted.
- Coated metal samples shall show adequate adhesion and chemical/cleaning resistance without blistering, peeling or widespread corrosion.
- Experiment worktop shall resist typical laboratory solvents and dilute acids/bases encountered in sample-preparation workflows without swelling, delamination or loss of structural integrity

Representative Reagent	Exposure	Minimum Acceptance
Deionized water	1 hour	No swelling/delamination; wipe clean
70% ethanol	1 hour	No structural damage or coating lifting
Methanol	1 hour	No structural damage; only minor reversible cosmetic change acceptable
Acetonitrile	1 hour	No structural damage; no softening/delamination
Acetone	30 minutes	No structural damage/delamination
10% trichloroacetic acid	1 hour	No pitting, swelling or delamination
10% sodium hydroxide	1 hour	No pitting, swelling or delamination

Note: This table defines a practical minimum performance screen for the experiment-lab worktop/coated furniture and is not intended to prescribe a proprietary material. Equivalent recognized chemical-resistance test reports are acceptable.

VII. Installation, Cleaning And Protection

- Install all furniture plumb, level and true to line. Adjacent worktops shall align without steps that interfere with instrument placement or cleaning.
- Adjust doors, drawers and slides for smooth operation. Replace damaged hardware or panels before handover.
- Seal worktop joints and sink edges with compatible chemical/moisture-resistant sealant.
- Clean drawers, cabinet interiors, glass and worktops. Remove protective film, adhesives and fabrication debris.
- Protect completed furniture from damage until final acceptance. Any damage before handover shall be repaired/replaced at no additional cost.


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Section 5: Spot Extractor And Exhaust System - Data Sheet Requirements

The following schedule defines the minimum information that shall be submitted with the offer and reconfirmed during shop-drawing approval. Values shown as targets may be met by equivalent designs providing equal or better functional performance.

SL No.	Parameter	Minimum / Target Requirement	Bidder Offered
1	Extractor type	Local capture spot extractor / articulated capture hood	
2	Capture hood material	PP or equivalent corrosion-resistant material	
3	Hood/dome size	Approx. 385 mm diameter or equivalent capture area	
4	Positioning	Adjustable arm/support; stable at selected position	
5	Design airflow	Approx. 150-250 CFM at installed condition, subject to duct calculation	
6	Fan type	Chemical-resistant centrifugal fan/blower	
7	Fan casing/impeller	PP/FRP or equivalent corrosion-resistant material	
8	Motor	Approx. 1 HP or as selected; TIEC; IP55 or better	
9	Electrical supply	415 V, 50 Hz, 3-phase where site supply permits; alternative to be stated	
10	Motor protection	MCB/MPCB + overload + DOL/equivalent starter + local isolator	
11	Duct construction	Round PP + FRP, nominal 3 + 2 mm, or equivalent	
12	Duct fittings	All bends/reducers/tees/flanges/gaskets/supports/flexible connector as required	
13	Fan curve	Mandatory; operating point to be marked	
14	Airflow test	Measured after installation and documented	
15	Warranty	Minimum 12 months from acceptance	

Section 6: Compliance Sheet

(A) Technical Requirements

SL	Item	Minimum Requirement	Qty.	Comply (Yes/No)	Bidder Reference / Deviation
1	Computation wall-mounted storage cabinet	750 x 350 x 600 mm; GI/metal, epoxy-coated, glass doors, lock, adjustable shelf	8		
2	WB-01 Computation wall bench	6025 x 600 x 750 mm, laminated BWP/engineered-wood worktop; 5 leg spaces, 10 power + 5 data outlets; storage/cable management	1		
3	WB-02 Computation wall bench	3355 x 600 x 750 mm; laminated BWP/engineered-wood worktop; 3 leg spaces; 6 power + 3 data outlets; storage/cable management	1		
4	Ergonomic high-back chairs	Height-adjustable, swivel, wheeled, lumbar support	8		
5	Spot extractor	PP/corrosion-resistant adjustable local capture hood; approx. 385 mm capture dome	1		
6	Exhaust fan/blower	Chemical-resistant centrifugal fan; duty selected for approx. 150-250 CFM; protected motor	1		
7	Experiment wall-mounted storage cabinet	750 x 350 x 600 mm; GI/metal, epoxy-coated, glass doors, lock, adjustable shelf	3		
8	Glassware storage cabinet	1000 x 450 x 1830 mm; 5 adjustable shelves; glass doors, lock	1		
9	WB-03 Experiment bench	2000 x 750 x 900 mm; chemical-resistant worktop; under-bench modules; leg/equipment space	1		
10	WB-04 Sink bench	970 x 750 x 900 mm; chemical-resistant worktop, PP sink, 3-way tap, PP peg board	1		
11	CB-02 Corner bench	1070 x 1030 x 900 mm; reinforced chemical-resistant worktop; corner storage	1		
12	WB-05 Experiment bench	2370 x 750 x 900 mm; chemical-resistant worktop; two drawer/shutter modules; instrument coordination	1		
13	Laboratory stools/chairs	Height-adjustable with back support and foot ring	3		

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14	PP-GRP exhaust ducting	Round chemical-resistant ducting with complete fittings/supports	Approx. 5 m ² / actual		
15	Shop drawings/site verification	Mandatory before fabrication	1 set		
16	Installation, testing and handover	Complete including airflow/electrical/furniture functional checks	1 lot		

(B) Other Requirements

Sl. No.	Requirement	Comply (Yes/No)
1	Site visit and dimensional verification before fabrication	
2	Coordinated shop drawings including furniture, power/data, plumbing and exhaust route	
3	Datasheets for worktops, cabinets/hardware, sink/tap/pegboard, extractor, fan, ducting and electrical devices	
4	Material/finish samples when requested	
5	All installation accessories, fixings, supports, sealants and consumables included	
6	Testing/commissioning records and as-built documentation	
7	Minimum 12-month warranty and service contact details	
8	Deviation statement clearly listing every departure from this specification	

Check List of Documents Required

Sl. No.	Document	Enclosed (Yes/No)
1	Technical offer with item-wise description and offered construction details	
2	Filled and signed Section 6 compliance sheet	
3	Deviation statement (or explicit statement of no deviations)	
4	Preliminary layout/shop drawing confirming dimensions and module arrangement	
5	Datasheets/brochures for all major bought-out components	
6	Fan curve and preliminary duct/static-pressure calculation	
7	Worktop material technical data including chemical/moisture resistance	
8	Metal sheet/coating construction details and hardware load ratings	
9	Electrical device/wiring details for furniture-integrated power/data raceways	
10	Similar-work credentials/references demonstrating relevant laboratory/technical furniture experience	
11	Warranty terms and post-installation service contact	
12	Signed tender technical specification as required by Institute procurement procedure	

Final Notes For Bidders

1. The tenderer shall quote a complete working system. Omission of minor fittings/accessories from the text shall not be interpreted as exclusion where such items are reasonably necessary for safe and complete operation.
2. Any proposed equivalent material/construction shall be accompanied by sufficient technical evidence to demonstrate equal or better performance. Mere brand substitution without performance data may be rejected.
3. Where tender drawing and this specification differ, the bidder shall identify the discrepancy in the deviation statement and seek clarification before manufacture. No silent substitution is permitted.
4. Final dimensions, service positions and colours shall be frozen only after approved shop drawings and site verification.


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Annexure 7**CHECK LIST OF DOCUMENT REQUIRED**

<u>Ser</u>	<u>List of documents required</u>	<u>Enclosed Yes / No</u>
1.	Certificate by the bidder as per Annexure 3 of the tender document	
2.	Tender Acceptance Letter as per Annexure 4 of the tender document	
3.	Certificate by the bidder as per Annexure 5 of the tender document	
4.	Technical Compliance statement with tender specifications	
5.	EMD Details	
6.	Brochure/ Catalogue/ Datasheet	
7.	BoQ	
8.	Statutory Registration Certificates	
9.	Previous purchase orders (if any)	
10.	Tender document duly signed on all pages along with bidders seal.	
11.	Other documents pertaining to technical aspects	
12.	Any other document as provided in technical specifications	

