

**REQUEST FOR PROPOSAL FOR SETTING UP MICROBIOLOGY SECTION AND
INSTALLATION OF EQUIPMENT**
(E Tender)

Request for Proposal (RFP) No. 04/2021-22

File No.11023/18/2019-QA

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

Dated, the 7th January 2022

The Food Safety and Standards Authority of India (hereinafter called "The Authority" invites tender on Two-Bid system for **SETTING UP MICROBIOLOGY SECTION AND INSTALLATION OF EQUIPMENT** on turnkey basis in 05 (Five) Regions i.e. Eastern, North Eastern, Western, Northern and Southern.

2. Bids under Two bid system (Technical Bid and Commercial Bid) are invited for "**SETTING UP MICROBIOLOGY SECTION AND INSTALLATION OF EQUIPMENT**" through CPP's e- Procurement portal at <http://etenders.gov.in/eprocure>.

3. General information about the tender is as follows: -

- | | | |
|-----|---|---|
| (a) | Queries to be addressed to | : rknarula.fssai@gmail.com
pritha@fssai.gov.in |
| (b) | Name/designation of contact person | : Ravinder Kumar Narula
Asstt. Director(QA) |
| (c) | Telephone No. | : 9868945085 |
| (d) | Last Date and Time for Receipt of Tenders | : 31 st January 2022 at 1500 Hrs |
| (e) | Date and Time of Opening of Tenders | : 1 st February 2022 at 1500 Hrs |

4. This RFP is divided into five Parts as follows: --

- a. **Part I** Contains General Information and Instructions for the Bidders about the RFP such as the time, place of submission and opening of tenders, Validity period of tenders, etc.
- b. **Part II** Contains Essential Details of the Items/Services required, such as the Schedule of Requirements (SOR), Technical Details, Delivery Period, Mode of Delivery and Consignee details and Technical Bid Format.
- c. **Part III** Contains Standard Conditions of RFP, which will form part of the Contract with the successful Bidder, besides other conditions contained in this RFP.
- d. **Part IV** Contains Special Conditions of RFP, which will also form part of the Contract with the successful Bidder.
- e. **Part V** Contains Evaluation Criteria and Format for Price Bids/Commercial Bids.

5. The following certificate must be given in the offer letter under the seal of the bidder: -

'I/WE HEREBY DECLARE THAT ALL THE TERMS AND CONDITIONS GIVEN IN THE TENDER ENQUIRY ARE ACCEPTED BY ME/US ON BEHALF OF MY/OUR FIRM AS PER ANNEXURE I'

6. This RFP is being issued with no financial commitment and this office reserves the right to change or vary any part thereof at any stage. This office also reserves the right to withdraw the RFP, should it become necessary at any stage.

-Sd/-

(Ravinder Kumar Narula)
Assistant Director (QA)
Food Safety and Standards
Authority of India, FDA Bhawan,
Kotla Road, New Delhi-110002

PART I – GENERAL INFORMATION AND INSTRUCTIONS

1. The bidder shall go through the tender document and shall comply with each clause of all the sections of the tender document.

2. Prospective Bidders are advised to go through the “Help for Contractors” & “Bidders Manual Kit” at <http://etenders.gov.in/eprocure/app> and get themselves acquainted for e-tendering participation requirements. They should get their computer system configured according to the recommended settings as specified in the portal at “System Settings for CPPP”.

3. **Registration:**

Bidders willing to participate are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://etenders.gov.in/eprocure/app>) by clicking on the link “**Online bidder Enrolment**” on the CPP Portal which is free of charge. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

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. They should also obtain Class III Digital Signature Certificate (DSC) in parallel (as per Indian IT Act, 2000, from the licensed Certifying Authorities (CA), operating under the Root Certifying Authority of India (RCAI) / Controller of Certifying Authorities (CCA) of India - Please see www.cca.gov.in), which is essentially required for submission of their application. This process normally takes 03 days’ time.

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.

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.

4. **Searching for Tender Documents:**

- i. 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.
- ii. 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.
- iii. 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.

5. **Preparation of Bids:**

- i. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- ii. 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 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.
- iii. 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.
- iv. 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.

6. **Submission of Bids:**

- i. 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.
- ii. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- iii. The bidder shall upload the digitally signed **Schedule of price bid in the form of BOQ.xls**. Bidders may please note the schedule of quantities is attached in the portal. The same (BOQ) shall be downloaded and be filled in the editable (unprotected) cells only and they should necessarily submit their financial bids in the format provided after entering the financial quotes, name of the bidder etc.
- iv. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the green 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.
- v. 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.
- vi. 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. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption

using buyers / bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

- vii. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
 - a) Upon the successful and timely submission of bids (i.e. after Clicking “Freeze Bid Submission” in the portal), 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.
 - b) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

7. **Assistance to Bidders:**

- i. 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.
- ii. 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.

8. The instructions in the tender document are binding on the bidder and submission of the tender shall imply unconditional acceptance of all the terms and conditions by the bidder.

9. **Amendment to Tender document:**

At any time, prior to scheduled date of submission of bids, FSSAI if it deems appropriate to revise any part of this tender or to issue additional data to clarify and interpretation of provisions of this tender, it may issue addendum / corrigendum to this tender. Any such addendum / corrigendum shall be deemed to be incorporated by this reference into this tender and binding on the bidders. Addendum / corrigendum will be notified through CPP's e- Procurement portal at <http://etenders.gov.in/eprocure/app>.

10. **Clarifications of Bid Documents:**

Bidder, requiring any clarification of the tender Document, may submit their clarifications, if any, through provision of CPP's e-Procurement Portal at <http://etenders.gov.in/eprocure/app>.

Request for clarifications received from bidders shall be responded by FSSAI till the scheduled dates. Replies to Clarifications by FSSAI will be uploaded through CPP's e-Procurement Portal. The bidders are advised to visit CPP's e-Procurement portal at <http://etenders.gov.in/eprocure/app> regularly.

Clarifications and other documents, if and when issued by FSSAI, shall be in relation to the tender and hence shall be treated as their extension.

FSSAI makes no representation or warranty as to the completeness or accuracy of any response, nor does FSSAI undertake to answer all the queries that have been posted by the Bidders.

In order to provide reasonable time to bidders to take the amendments into account for preparing their bids, FSSAI may, at its discretion, extend the deadline for the submission of bids suitably.

11. **Composition of Bids and General Guidelines for bid process:**

Bidders shall submit their bids as per scheduled date and time through CPP's e-Procurement portal at <http://etenders.gov.in/eprocure/app> only.

CPP's e-Procurement system shall not allow bidders to submit their tender, after the scheduled date and time. Bidders shall submit tender before the deadline specified.

The Technical bids and the Price bids will be opened online by FSSAI at the time and date as scheduled for the same. All the Statements, documents, certificates etc., uploaded by the bidders shall be downloaded and verified for technical evaluation. The clarifications, particulars, if any, required from the bidders, will be obtained through query provision available in CPP's e-Procurement portal.

The result of Technical bid and Price bid evaluations shall be displayed on CPP's e-Procurement portal and shall be visible to all the bidders who participated in this Tender.

The helpdesk support contact details can be downloaded from following URL: <http://etenders.gov.in/eprocure/app> and then clicking on below mentioned link: Contact Us / Help Desk Support Contact Details, which are also listed below for ready reference. More information useful for submitting online bids on the CPP Portal may be obtained at <https://etenders.gov.in/eprocure/app>.

12. **E-Tendering Participation Requirements:** 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.

13. **Licensed CA's in India are:**

- a. Safe Script, b) NIC, c) IDRBT, d) TCS, e) MTNL Trustline, f) GNFC, g) e- Mudhra CA, h) Sify, i) nCode

14. **Two-Bid System:** In case of the Two-Bid System, only the Technical Bid would be opened on the time and date mentioned. Date of opening of the Commercial Bid will be intimated after acceptance of the Technical Bids. Commercial Bids of only those firms will be opened, whose Technical Bids are found compliant/suitable after Technical evaluation is done.

15. **Last date and time for depositing the Bids:** **31st January 2022 by 1500 Hrs.** The bids under two bid system (i.e. Technical Bid & Commercial Bid) should be submitted

on CPP's e-Procurement portal by the due date and time. The responsibility to ensure this lies with the Bidder.

16. **Time and date for opening of Technical Bids:** The Technical Bids will be opened on **1st February 2022 at 1500 hrs.** (If due to any exigency, the due date for opening of the Technical-Bid is declared a closed holiday, then it will be opened on the next working day at the same time or on any other day/time, as intimated by this office).

17. **Rejection of Bids:** Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection. Conditional tenders will also be rejected.

18. **Validity of Bids:** The Bids should remain valid till **06 Months** from the last date of submission of the Bids.

19. **Earnest Money Deposit.**

Bidders are required to submit Earnest Money Deposit (EMD) for amount of 50 Lakhs (Rupees Fifty Lakh only) along with their bids. The EMD may be submitted in the form of an Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque from any of the public sector banks or a private sector bank authorized to conduct government business. The EMD should be valid for a minimum period of forty five days or more from the date of last date of bid submission. EMD of the unsuccessful bidders will be returned to them at the earliest after expiry of the final bid validity and latest on or before the 30th day after the award of the contract. The EMD of the successful bidder would be returned, without any interest whatsoever, after the receipt of Performance Guarantee from them as provided in part-IV of this RFP. The EMD will be forfeited if the bidder withdraws or amends/impairs or derogates from the tender in any respect within the validity period of their tender.

19.1 In terms of Public Procurement Policy of MSEs/Guidelines of Govt. of India, the bidders may claim exemption from deposit of EMD provided the bidders upload along with the technical bid the scanned copy of documentary proof / certificate in support of the claim for EMD exemption issued by the appropriate authority of Government of India.

19.2 The bid shall also be regulated by the "Public Procurement Policy for Micro & Small Enterprises (MSEs) Order 2012" as amended from time to time to the extent of its applicability to this bid process.

19.3 In case of bidder who claim exemption of EMD in terms of Clause 10.1 revise or modifies his offer or terms & conditions thereof, after submitting his bid for any reasons whatsoever during the Bid process, without prejudice to the course of action as stipulated in the preceding Clause 10, the case would be referred to the appropriate authority of Government of India for cancellation of the benefits issued to such bidder and initiating necessary action against the bidder.

PART II – ESSENTIAL DETAILS OF ITEMS/SERVICES REQUIRED

The tenders are invited for **setting up of Microbiology section and installation of equipment** in 05 (Five) Regions as mentioned below. The list of Laboratories is attached at **Annexure XII**. This contract is initially for a period of 03 years which may be extended further with the approval of Competent Authority. This Tender is a Turnkey Project.

Sl. No.	Region	States
1.	Eastern	Bihar, Jharkhand, West Bengal, Orissa and Chhattisgarh
2.	North Eastern	Assam, Arunachal Pradesh, Nagaland, Sikkim, Meghalaya, Manipur, Tripura and Mizoram
3.	Northern	J&K, Delhi, Himachal Pradesh, Uttarakhand, Haryana, Punjab and Uttar Pradesh
4.	Western	Maharashtra, Rajasthan, Gujarat, Madhya Pradesh and Goa
5.	Southern	Kerala, Karnataka, Andhra Pradesh, Telangana, Tamil Nadu and Puducherry.

The RFP is the same for all the regions. The Technical bid will remain same for all the regions, however, if the bidders are interested in applying for more than one regions, then, they are required to indicate in the Financial bid for each of the regions separately.

1. **Schedule of Requirements** –List of items/services required for setting up a state of art microbiology facility for testing food matrices and water is as follow:

- A. Setting up Clean Room and associated Civil/Electrical Work
- B. Microbiology Laboratory Equipment's/Consumables
- C. Provision of Manpower

2. **Technical Details:**

Part A

The Clean room has to be set up as per specification attached at **Annexure II and III**. The Associated Civil and Electrical work has to be carried out as per the Model Layout attached at **Annexure IV, IV, VI and VII** as far as possible and as per the requirement of States/UTs. The work has to be carried out as per CPWD rates; and, where the item is not available in the CPWD schedule, as per the Market rate.

PART-B

Sl. No.	Instruments/Consumables	Qty
1.	Laminar Air Flow (Vertical)	02
2.	Bio Safety Cabinet Class II Type B2 (Total Exhaust)	01
3.	Autoclave (Vertical)	03

4.	Incubators: Ambient to 70 °C	01
5.	Incubators: 5 °C to 50°C	02
6.	Digital Colony Counter	01
7.	Lab Blender	02
8.	Water Bath – Serological	01
9.	Analytical Balance	03
10.	Upright Frost Free Vertical Deep Freezer (-20°C)	02
11.	UV-Vis Spectrophotometer	01
12.	Binocular Microscope	01
13.	Howard Mold Counter	01
14.	Refrigerated Centrifuge	02
15.	BOD Incubator	02
16.	Micro Filtration Assembly	02
17.	Digital pH Meter	02
18.	Fumigator	01
19.	UV Viewing Chamber	01
20.	Anaerobic Jar	01
21.	Hot Air Oven	02
22.	Micropipette	02 Set each 02 Set of following dispensing volume (20µl to 200 µl), (200µl to 1000 µl) (1000 µL to 10 ml) Total six nos.
23.	Carbon dioxide incubator	01
24.	Frost Free Double door (side by side)Refrigerator	02

PART-C

Manpower to be provided:

Successful bidders are required to provide full time three trained personnel specialized in microbiology testing of FOOD (Microbiologist -01 and Assistant Analyst -02) for 03 years who will be responsible for the working in the Microbiology laboratory i.e. Media preparation, sample preparation, method validation, analysis of samples as per FSSR including operation of instrument and data interpretation. The personnel will not claim to be an employee of FSSAI/State/UT/MC Laboratory. The person will work under the supervision and direction of Food Analyst /Director of Laboratory /State laboratory head and carry out the required analysis of various samples/participation in PT/ILC as received in the lab. He /She will also be responsible for providing training on the methods /instrument to the other laboratory staff. The personnel should have following qualification and experience:

i. Microbiologist

Qualification: M.Sc. with First Class in Microbiology or allied subjects from a recognized university with three years experience in microbiological testing of Food/ Water and Pathogen handling in a laboratory.

Desirable Qualification: Qualified and Certified Food Analyst by FSSAI.

ii. Assistant Analyst:

Qualification: M.Sc. in microbiology or allied subjects from a recognized university with one year laboratory experience in Microbiological analysis of Food/Water

Desirable Qualification: Qualified and Certified Junior Food Analyst by FSSAI.

Bidders will have to maintain backup of the manpower supplied in case of prolonged leave or any unforeseen circumstances. In case the person provided by the bidder is found to be involved in any unlawful activity, the bidder will be liable to remove him immediately and provide a replacement. The decision of the State Food Laboratory would be final and binding to the bidder in this regard.

Note: Engagement of manpower and period of engagement will be at the sole discretion of **FSSAI/State Food Commissioners or any office designated by FSSAI.**

3. **Delivery Period**– Delivery period for setting up Microbiology section and installation of equipment's would be **270 days** from the date of issue of Supply Order. Please note that Supply Order can be cancelled unilaterally by the Buyer in case items are not received within the Supply Order delivery period. Extension of Supply Order delivery period will be at the sole discretion of the Buyer, with applicability of Liquidated Damages(LD) clause.

4. **Penalty for delay in supplies / Installation/Services :**

In the event of delay in setting up of Microbiology section, supply, installation, testing and commissioning of the equipment to the satisfaction of the **FSSAI/State Food Commissioners or any office designated by FSSAI** beyond the stipulated date:

- a. The Bidder will inform **FSSAI/State Food Commissioners or any office designated by FSSAI** well in advance in writing the reasons for delay in supply and/or installation of the equipment.
- b. **FSSAI/State Food Commissioners or any office designated by FSSAI** shall have the right to recover liquidated damages at the rate of 0.25% of the Value of the equipment per day, by which the supplies or their satisfactory installation and commissioning is delayed subject to a maximum of 10%. Once the maximum is reached **FSSAI/State Food Commissioners or any office designated by FSSAI** may consider termination of the supply order.
- c. The successful bidder shall pay a penalty equivalent to **0.5 %** of the order value of the equipment for every week or part thereof delay **in rectifying the defect.**

Note: The right to accept the reason(s) for delay and consider reduction or waive off the penalty for the same shall be at the sole discretion of FSSAI/State Food Commissioners or any office designated by FSSAI.

5. **Consignee Details.** State Food Commissioners or any office designated by FSSAI.

6. **Consortium / Joint Ventures**

6.1 Consortium is allowed as per rules and regulation of Govt. of India subject to a maximum of 3 members. A consortium bid will be considered in the name of Lead Partner. Notarized agreement signed by all partners should be furnished along with the bid. The agreement between all consortium partners should have been concluded prior to bid submission date.

6.2 If the Supplier is a consortium, all of the parties shall be jointly and severally liable to FSSAI for the fulfilment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the consortium. The composition or the constitution shall not be altered without the prior consent of the FSSAI. If the firm/bidders is a partnership or a consortium, the contract agreement must be signed by all partners or consortium members. No member of the Joint Venture/Consortium shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other members and that of the FSSAI.

6.3 On the issue of LOA (Letter of Acceptance), an agreement among the member of the JV firms (to whom the work has been awarded) shall be executed and shall be registered before the Registrar of the Companies under Companies Act or before the Registrar/Sub-Registrar under the Registration Act. 1908. In case the tenderer fails to observe/comply with this stipulation, the full Earnest Money Deposit (EMD) shall be fortified and other penal actions due shall be taken against partners of the JV and the JV.

6.4 Following parameters upto the specified limits have to be essentially met by the Consortium/JV collectively, some by the lead partner, and some by the other partners, as briefly described below: -

- a. Qualifying factors mentioned in para 7 below have to be fulfilled collectively by the Consortium/JV. Qualifying factors for **Lead partners** will be as under:-
 - i. Annual Turnover from similar work;
 - ii. Work experience of similar nature;
 - iii. Financial capability to meet cash flow requirement of subject contract-not less than 50 (fifty) per cent of the respective limits prescribed in case of individual contractors may be accepted;
 - iv. Adequate sources to meet financial commitments on other contracts;
 - v. Financial soundness.
- b. Qualifying factors for **other partners** will be as under: -
 1. Same as per lead partner except that for the factors specified in para 6.2 (a)(iii), a lower limit of 25 (twenty-five) per cent may be accepted instead of 50 (fifty) per cent.

7. **Eligibility Criteria for Pre-Qualification of Bidders.** The firm/Bidder fulfilling the following eligibility criteria will be considered for opening of their Commercial Bids:

- a) Average annual financial turnover, during the last three years i.e. 2018-19, 2019-20 and 2020-21 should not be less than **Rs. 10 (Ten) Crores**. Documentary evidence duly attested by a Chartered Accountant/Company Secretary should be submitted along with the Technical Bid. Bidders should also enclose notary attested copy of IT returns filed for the last three financial years, notary attested audited copy of audited accounts, balance sheet, annual report etc.
- b) Bidder must have valid GST Registration Certification. A copy of the certificate should be enclosed with the Technical Bid.
- c) Bidder must possess valid PAN Card. A copy of the same should be enclosed with the Technical Bid.
- d) Bidders are required to submit Bank Solvency Certificate issued not earlier 3 months from the date of issue of this RFP.
- e) Bidder should have sufficient experience of setting up of laboratory and installation of analytical equipment (satisfactorily work completion Certificate to be attached). **At least two work order of setting up of microbiology laboratory should have been completed in the Government Sector/Private Sector, of which one should be in the Government Sector.**
- f) Consortium is allowed as per rules and regulation of Govt. of India subject to a maximum of 3 members The members of the Consortium should have jointly an average annual turnover as mentioned in para (a) above and any member of the Consortium should have experience as mentioned in para (e) above. Consortium/JV is required to submit a copy of its Board Resolution along with the Technical bid document.
- g) Bidders should have the capability to attend repairs of the equipment and have the capability to ensure the uptime in a year of 90% as per **Annexure VIII**. (Documentary proof shall be submitted on the after sales facilities and expertise of the bidder.)

- h) Bidders who have been blacklisted / debarred by the Tender Inviting Authority or blacklisted / debarred by any State Government or Central Government department/Organization should not participate in the tender during the period of blacklisting. The bidder should enclose an undertaking to this effect along with the Technical Bid as per **Annexure IX**.
- i) Bidder should also provide general information as per **Annexure X**.
- j) Any other details, as considered necessary, may also be provided.
- k) Non- receipt of above mentioned documents may lead to rejection of the bid submitted by the bidder.

8. **Two-Bid System**. The quotation must be submitted by the bidder under two –bid system i.e. Technical-Bid and Commercial Bid to be submitted on CPPs e-Procurement portal. Format of Technical Bid is at para 10 of the RFP. The documents mentioned in para(s) 6, 7 and 11 should be enclosed with the Technical –Bid. Bidders are also required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any. The Bidders are advised to submit the compliance statement as per **Annexure XI**.

9. **Other terms and Conditions:**

- a. All the terms and conditions in respect of warranty/guarantee, Training of Staff etc. shall be complied with.
- b. Technical Specifications and Standards: - The Goods & Services to be provided by the successful bidder under this contract shall conform to the technical specifications and quality control parameters mentioned in **para 2 of Part-II** of this document.
- c. The bidder shall be responsible for payment of any charges due to any statutory authorities such as Income Tax, GST, Customs Duties, etc.
- d. In the event, if it found that there is some statutory deduction to be made at the source, the Tender Inviting Authority will have the authority to do so.

10. **Amendment of tender documents:**

- (a) At any time prior to the dead line for submission of Tender, the Tender Inviting Authority may, for any reason, modify the tender document by amendment.
- (b) The amendments shall be published on the website and CPP portal, and the tender shall submit copy of amendments published if any signed by the bidder or the authorized representative shall be enclosed as part of the technical bid as a proof of having read and accepted the terms and conditions of the tender document.
- (c) The Tender Inviting Authority shall not be responsible for failure to inform the prospective bidders for any notices published related to each tender. Bidders are requested to browse the website of the Tender Inviting Authority and CPP portal for information/general notices/amendments to tender document etc on a day to day basis till the tender is concluded.

11. Bid Form
TECHNICAL BID FORM (A)

1.	Tender to be submitted on	CPP's e-Procurement portal
2.	Closing date and time for receipt of Tenders.	1500 hrs on 31st January 2022
3.	Time, date & place of opening of Technical Bids	1500 hrs on 1st February 2022 in Conference Hall, Food Safety and Standards Authority of India, FDA Bhawan, Kotla Road, New Delhi-110002
4.	Schedule of Requirements and other Technical features as contained in Part II of the RFP	Complied / Not complied
5.	Bank Solvency Certificate (issued not earlier than three months from the date of issue of this RFP)	Enclosed / Not enclosed
6.	Authenticated copy of PAN	Enclosed / Not enclosed
7.	Authenticated copy of GST Regn.	Enclosed / Not enclosed
8.	Tender Bid valid for acceptance up to 12 months from the date of opening of the commercial bid.	Accepted / Not Accepted
9.	Experience Certificate of having successfully set-up a Microbiology Laboratory and installation of equipment of similar nature in that Laboratory.	Enclosed / Not enclosed
10.	Average Annual Financial Turnover during the last three Financial years 2018-19, 2019-20 and 2020-21, should not be less than Rs. 10 (Ten) Crore.	Enclosed / Not enclosed
11.	Copy of Board Resolution of Consortium/JV (if applicable)	Enclosed/ Not enclosed
12.	Declaration form as per Annexure I	Enclosed / Not enclosed
13.	Certificate of Guarantee/Warranty as per Annexure VIII	Enclosed / Not enclosed
14.	An undertaking that the bidder has not been blacklisted/debarred by any State Govt./ Central Govt. Department/organization as per Annexure IX	Enclosed / Not enclosed
15.	General Information about the Bidder as per Annexure X	Enclosed / Not enclosed
16.	Compliance sheet as per Annexure XI	Enclosed / Not enclosed
17.	Compliance sheet as per Annexure XII	Enclosed / Not enclosed
18.	Documentary proof shall be submitted on the after sales facilities and expertise of the bidder	Enclosed / Not enclosed
19.	Satisfactory Completion certificate of having successfully setting up of laboratory and	Enclosed / Not enclosed

	installation of analytical equipment or work order towards setting up of microbiology lab	
20.	Details of staff under permanent rolls of the bidder/consortium partners (separately) <ul style="list-style-type: none"> a. Technical b. Skilled c. Unskilled 	
21.	Financial Data of the Organisation/Consortium <ul style="list-style-type: none"> • Lead Bidder <ul style="list-style-type: none"> a. FY 2018-19 = Rs. b. FY 2019-20 = Rs. c. FY 2020-21 = Rs. • Consortium Partner(s) (if any) <ul style="list-style-type: none"> a. FY 2018-19 = Rs. b. FY 2019-20 = Rs. c. FY 2020-21 = Rs. (Please attach Audited Financial Statement including P&L Statement, Income & Expenditure Statement etc)	

Signature of Bidder _____
 Name in Block letters _____
 Capacity in which signed _____
 Date _____

Stamp of the Firm

12. Supply Order

It is brought out to the notice of all prospective bidders that this is a common RFP being floated by FSSAI on behalf of the States/UTs. Further, Supply Orders/ Work Orders will be issued by the respective States/UTs where the Labs will be set-up as per their actual requirements.

TECHNICAL BID FORM (B)

(a) The bids of only the technically qualified bidders will be eligible for consideration for opening of financial bid. The technical bid of the bidders will be evaluated on the basis of specification of the offered model vis-à-vis the prescribed specification given below:

1. Laminar Air Flow(Vertical)

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Main body	Complete body with Stainless Steel 304		
2.	Inner Surface	Inner Back wall & Side wall made in stainless steel, grade SS 304		
3.	Work Surface	Seamless, Scratch-free, high quality 18 gauge stainless steel, grade 304		
4.	Working tray	Removable stainless steel work surface for easy cleaning.		
5.	Filter type	HEPA filter with integral metal guards & frame gaskets. Supply of HEPA filter 99.997% at 0.3 micron.		
6.	Class	Class 100 or exceeding class 100 requirements of FEDERAL standards 209E or equivalent ISO standard		
7.	Primary Filter	Specially designed pre filter to increase the life of HEPA filter		
8.	Ergonomic tilt	Exceptionally comfortable 10 deg ergonomic design improves comfort, prevents user fatigue & promotes safe working techniques.		
9.	Front control panel	Provided to avoid exposure of UV Light & Lamp outside, making eyes more comfortable.		
10.	Front sash door	Manual sliding sash door made up of Imported poly carbonate sheet or toughened glass with sloping front for better access of samples. Front sash door height can be easily adjusted as per required by end-user. The transparent sash door maximizes light & visibility inside the cabinet, providing		

		a bright & open working environment. The closing/ opening of front door is integrated with the UV ON/OFF. The UV will automatically switch "OFF" when the sash door is opened & switch "ON" when door is closed to avoid accidental exposure of UV light to the operator.		
11.	Air velocity	90 ft/min \pm 10.		
12.	Air volume	500 cfm & above		
13.	UV Light programming	Available with timer		
14.	Ultra violet tube light	Germicidal i.e. 254 nm		
15.	Electrical socket	Internal socket inside the chamber, 5/15 Amp		
16.	Illumination of work surface	Fluorescent tube light (intensity > 600 lux) provides excellent illumination for work surface & reduces operator fatigue. Fluorescent tube light in set behind front control panel.		
17.	LCD Screen Display	Digital Microprocessor controlled for Operating Fluorescent, UV Light & Blower with Audio and Visual alarm for HEPA filters life. And also for Static Pressure Measurement of HEPA Filter. Conveniently located display on outside of the Laminar Air Flow for easy use & also easy to reach from a seated working position.		
18.	Sleep Mode Operation	Automatically blower speed reduced up to 30%, this will help to save energy as well as help to maintain sterile work area during Biosafety Cabinet is not in operation		
19.	Intelligence Alarm System	Safety purpose Audio & Visual alarm for air fluctuation and for life of the HEPA filter and UV light		
20.	Working Noise level	Low/ should be < 65 dB		
21.	Electronic/ Electrical panel	From clean chamber to give better contamination free results.		
22.	Electrical safety	Electrical components used are standard for better electrical safety for the operator.		

23.	Power supply	230 V \pm 15%, 50 Hz \pm 3%		
24.	Arm Rest bar	To avoid contamination from outside to inside contamination & for easy working with comfort. Secure & comfortable armrests enhance your comfort during extended work sessions		
25.	Drainage port	Provide beneath work surface to facilitate easy & better cleaning of the interior & handling of spillage inside the chamber.		
26.	Blower-Motor Assembly	Dynamically & statistically balanced aluminium centrifugal impeller driven by single phase, 1400 RPM motor. Double inlet blower fitted in such a way to reduces vibration & noise. Blower is positioned in such a way that, to create an even filter loading, it helps to prolong the life of HEPA filters. Provide uniform airflow by adjusting working voltage of fan.		
27.	Certificates	IQ, OQ & PQ Certificates with given Calibration & Traceability certificate provided with NABL accredited. Factory tested DOP test certificate provided.		
28.	Trolley (Base Stand)	Provided with lockable castor wheels		
29.	Certification	Product must be ISO 9001 : 2015 Certified CE Marked : CE marked product GMP Certified		
30.	Applicable Standards	EN ISO 14971:2012/EN ISO 13485: 2012/EN 980:2008/EN 1041: 2008/EN 61010-1:2010/EN61326-1:2013/EN 12469:2000.		
31.	Size	4'x2'x2'		
32.	Warranty	Warranty for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
33.	Service contract clauses,	List of all spares and accessories (including minor) with part numbers and price, required for maintenance		

	including prices	and repairs in future after guarantee/warranty period should be attached;		
34.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection 		

2. Bio Safety Cabinet Class II Type B2

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Size	4'x2'x2' (MS Inner SS)		
2.	Main body	Constructed in Mild Steel with Epoxy Powder Coated		
3.	Inner Surface	Inner Back wall & Side wall made of stainless steel SS 304		
4.	Work Surface	Working area minimum 4 ft (w) x 2 ft (h) x 2ft Interior work area to be from a single piece of SS-304 grade stainless-steel with large radius (joint free) corners to simplify cleaning. The cabinet work area must have no welded joints, which collect contaminants or rust.		
5.	Working tray	Cabinet should be balanced with base stand with castor wheel and lock. Stand approx of 711 mm height from ground. Single Piece Wall and work tray. Raised arm rests. Drain Pan / Drain valve or		

		cock for cleaning spills in case work tray is fixed		
6.	LCD Display	Digital Microprocessor Control System for Operating Fluorescent, UV Light & Blower. Continuously display true value of inflow as well as down flow velocity. Conveniently located display on outside of the Biosafety Cabinet for easy use & also easy to reach from a seated working position		
7.	Air Flow pattern (through ULPA/HEPA)	Air Flow pattern (through ULPA/HEPA) 100% of the exhausted air		
8.	Class	Class 100 or exceeding class 100 requirements of FEDERAL standards 209E or equivalent ISO standard		
9.	Sleep Mode Operation	Automatically blower speed reduced up to 30%, this will help to save energy as well as help to maintain sterile work area during Biosafety Cabinet is not in operation. Special precautions are taken so that if by chance the exhaust blower is not working, buzzer will become active		
10.	Supply ULPA /HEPA Filter	Typical Efficiency of $\geq 99.999\%$ for particle size between 0.1 to 0.3 microns		
11.	Exhaust HEPA Filter	Typical efficiency of $\geq 99.99\%$ at 0.3 microns		
12.	Intelligence Alarm System	Safety purpose Audio & Visual alarm for air velocity fluctuation and for life of the HEPA filter and UV light		
13.	Ultra violet tube light	Germicidal i.e. 254 nm		
14.	Ultra violet life meter	Continuously display UV Hour on display		
15.	UV Light programming	Available with timer & UV Hour meter to avoid operator risk		
16.	Interlocking UV	The closing/opening of front door is integrated with the UV ON/OFF. The UV will automatically switch "OFF" when the sash door is opened & switch "ON" when door is closed to avoid		

		accidental exposure of UV light to the operator.		
17.	Certification	An ISO 9001: 2015 Certified Company CE Marked : CE marked product GMP Certified Product, NSF 49 Certified and EN ISO 14971:2012/EN ISO 13485 : 2012/EN 980:2008/EN 1041 : 2008/EN 61010-1:2010/EN 61326-1:2013/EN 12469:2000 NSF 49/EN1249 or Equivalent standard Test Certificate for Mini-Pleat HEPA Filters Calibration Certificate for Pressure Gauge Calibration Certificate for Air Velocity Anemometer		
18.	Warranty	Warranty for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
19.	Service contract clauses, including prices	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
20.	Services Required	System should come along with the entire necessary accessories. Installation & onsite validation, Calibration certificates Manuals : Operation, maintenance & part list with detailed specifications, Operational & maintenance Training. Cleanliness level validation. No third party validation will be entertained. One validation at the time of installation should be done by the company personnel.		
21.	Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy) of: - <ul style="list-style-type: none">• User, technical and maintenance manuals to be supplied in English language along with machine diagrams;• List of equipment and procedures required for local calibration and routine maintenance;• Service and operation manuals		

		(original and copy) to be provided; <ul style="list-style-type: none"> • Advanced maintenance tasks documentation; • Certificate of calibration and inspection 		
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3. Autoclave Vertical

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Application	A vertical steam sterilizer to provide safe, economical and effective sterilization for laboratories that do not want to compromise on quality, safety and reliability and sterilize liquids, such as nutrient media and buffer solutions. Solid items such as pipettes, tubes and filters and Glassware and plastic articles can also be sterilized.		
2.	Chamber	Vertical loading type chamber with service basket and complying to the strictest international directives and standards equipped with <ul style="list-style-type: none"> • Steam collection bottles to remove most of the steam during operation • Ware inlet and outlet valve • Drain valve for cleaning or changing with fresh water • Constructed with SS-304 with superior corrosion resistance to water and steam • High temperature and pressure resistant silicon gasket • Built-in analog pressure gauge • Manual pressure release valve • Wheels/casters for easy transport. Chamber inner material should be SS304 double/triple walled with steam jacket		
3.	Safety Device	Water level sensor, current leakage breaker, lid interlock, over heat & pressure Prevention, open temperature sensor detection & safety valve. To be provided with pressure control switch.		

4.	Heat source	2.5-3 kW electric heater		
5.	Gauges	Should have a water level gauge Analog gauges for measuring inner and outer steam pressure. Should have an inner temperature indicator.		
6.	Chamber size/Capacity	Approx. 80-120 L		
7.	Display	Fully Automatic PID Control $\pm 0.1^{\circ}\text{C}$ LED display for temperature and remaining time		
8.	Operating Temperature and accuracy	Maximum 125- 130 $^{\circ}\text{C}$ Temperature Accuracy: $\pm 0.3^{\circ}\text{C}$ at 121 $^{\circ}\text{C}$ Must have Temperature calibration		
9.	Operating pressure and gauge	15 -20psi ANALOG PRESSURE GAUGE (0 - 40 psi pressure gauge) indicating actual pressure		
10.	Timer	Automatic START/STOP timer		
11.	Safety warnings and alarms	A cycle cannot start if the door is open or not properly locked. The door cannot unlock until chamber pressure reaches room pressure. Over-Temperature Cut-Off with audio visual alarm. Low Temperature Warning: If the temp. stays below 121 $^{\circ}\text{C}$ for more than 5 seconds. Low Heat Warning: If the temp. does not reach the sterilization temperature during the set periods. Over-Pressure Cut-Off with audio visual alarm. Over Current Cut-off with audio visual alarm. Low Water Level heater cut-off and ALARMS		
12.	Accessories	Perforated corrosion free baskets made up of SS 304 (3-4 Nos.) that are stackable		
13.	Calibration certificates	Certificate from ISO 17025 accredited lab for temperature, pressure gauges & timer.		
14.	Operation and maintenance training component	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system and support services till customer satisfaction		
15.	Certificates Performance	Should be FDA/CE/BIS approved product. Manufacturer/ Supplier should have ISO		

	and safety standards (specific to the device type); Local and/or international	13485 certification under ISO 9001 for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)/Certified to be compliant with IEC 61010-1/ IEC 61010-2-40 for safety		
16.	Supplier/ Manufacturer	Must be ISO/BIS certified for quality		
17.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
18.	Recommendations or warnings	Any warning signs would be adequately displayed		
19.	Warranty	Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
20.	Service contract clauses, including prices	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
21.	Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy) of: - User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection		

04 and 05. Incubators: 1) Ambient to 70 °C and 2) 5 °C to 50°C

S. No.	Specifications	Requirement	Please Specify whether the quoted	Specify Make and Model
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			model/items meets the specification (Yes/No)	
1.	Application	For incubation of organisms, and also for conditioning of heat sensitive media and to provide an optimal, homogeneous, temperature uniformity and stability to ensure that protocols are fully reproducible –		
2.	Material of construction	<ul style="list-style-type: none"> • Seamless Round Corner • Double walled construction with complete inner chamber made of Corrosion resistant stainless steel (SS304) • Outer chamber should be of steel sheet finished with powder coated point Insulation to maintain desired temperature • Inner glass door • Inner chamber should be fabricated with ribs for adjusting shelves to convenient height and shelves to be supplied • Shelves should be made of polished stainless steel sheet as per chamber 		
3.	Capacity	<ul style="list-style-type: none"> • 150- 200 liters 		
4.	Temperature range	<ul style="list-style-type: none"> • Temperature should be Microprocessor controlled with range 1) $\pm 2^{\circ}$ C Ambient to 70° C and 2) 5° C to 50° C • Accuracy: $\pm 0.3^{\circ}$ C • Over-Temperature Cut-Off with audio/ visual alarm • Low Temperature Warning alarm 		
5.	Unit	<ul style="list-style-type: none"> • Air ventilators to be provided on both sides • The equipment should be provided with microprocessor controlled digital display • Temperature homogeneity between top and bottom shelves should be maintained by forced circulation 		
6.	Safety	<ul style="list-style-type: none"> • Over Temperature Protection, 		

		Over Current Leakage Breaker		
7.	Calibration	Certificate from a ISO 17025 accredited lab for 3 different temperature points should be attached		
8.	Operation and training component	<ul style="list-style-type: none"> The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction 		
9.	Certificates Performance and safety standards (specific to the device type);Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. Manufacturer / Supplier should have ISO 13485 certification under ISO 9001f or quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) 		
10.	Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality 		
11.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer 		
12.	Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be adequately displayed 		
13.	Warranty	<ul style="list-style-type: none"> Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		
14.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period 		

		should be attached;		
15.	Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy) of: - <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection 		

06. Digital colony counter

S. No	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Application	For fast and accurate bacterial or mold colony counting and to aid in determining counts of colony clusters and exceedingly large or small colonies, and can accommodate multiple dish sizes or formats.		
2.	Material construction of	Full Stainless steel fabricated body with duly heat cured epoxy coating.		

3.	Display counting and	<p>It should consist of</p> <ul style="list-style-type: none"> • Digital display up to 4 digits with confirmation by audible tone. • It should consist of Magnifying lens (greater than 1.5X magnification with digital marking pen) • Accepts petri dish up to size 120 mm diameter with a centering adaptor for standard 90mm petri dish • Glare free viewing low energy bright LED's • Appropriate background viewing translucent and difficult to see colonies. • Zero reset button 		
4.	Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction 		
5.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard 		
6.	Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified or quality 		
7.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer; 		
8.	Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed 		
9.	Warranty	<ul style="list-style-type: none"> • Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		

10.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
11.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of: -</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection 		

07. Lab Blender/Homogenizer

S.No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Application	This is required for the quick and safe preparation of samples before the microbiological and chemical analysis. Accepts all bag sizes 50 to 400 ml. 100% stainless steel chamber. 75w (power consumption reduced to 30% to 50%)		
2.	Motion	Variable Paddle type		
3.	LCD Digital Display	User friendly control, Auto-Manual Mode, Programmable time.		
4.	Door	Removable & Autoclavable door. Front : Glass Door.		

5.	Bending Capacity	From 50 – 400 ml (Sterile with or without filter)Adjustable electronic timer from 10 sec to 3 min Continuous mode available		
6.	Brushless Motor	No wearing parts, Less power consumption.		
7.	Safety	Electronic circuit breaker which stop the cycle in case of resistant samples motor protection. No access to the homogenization chamber during the operation		
8.	Easy cleaning	removable paddles and easy access to the stainless steel homogenizing chamber		
9.	Unit	No vibration. Ensured efficiency irrespective of the sample size (25-150g), Built-in waste drawer for spillage collection. 100% stainless steel chamber. Smooth surfaces and rounded corners Progressively & gently stroked samples for an optimal blending. Not “up to” but “from” 28 kgs of pressure by paddle!		
10.	Warranty	Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
11.	Service contract clauses, including prices	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
12.	Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy) of: - <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals 		

		(original and copy) to be provided; <ul style="list-style-type: none"> Advanced maintenance tasks documentation; Certificate of calibration and inspection 		
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08. Serological Water Bath (Capacity 12 litres)

S.No.	Specification	Requirement	Please Specify whether the quoted model/items meets the specification(Yes/No)	Specify Make and Model
1.	Application	The water bath is for routine use in microbiology protocols as well for solubilisation with precise temperature control.		
2.	Material construction of	<ul style="list-style-type: none"> Rounded, seamless stainless steel bath to prevent rust, chemical damage and contamination. Powder coating like epoxy coating exterior for easy cleanup corrosive resistant stainless steel Gable drip free lid 		
3.	Unit	<ul style="list-style-type: none"> Microprocessor controlled digital display. Instrument should have a separate operable drip free bath cover; Carrier racks should be given for flasks and test tubes racks. Convenient water bath drains. Water bath protective media should be there to prevent contamination and formation of algae. Easy cleaning 		
4.	Temperature	<ul style="list-style-type: none"> Temperature Range: Ambient to 90°C Temperature Accuracy: ± 0.3 °C Digital LED display for 		

		<ul style="list-style-type: none"> operating status of TEMP Over-Temperature Cut-Off Temperature calibration function 		
5.	Alarms	<ul style="list-style-type: none"> Audible warning safety signals should be there for high/low temperature warnings Low liquid level 		
6.	Calibration	<ul style="list-style-type: none"> Certificate from a ISO 17025 accredited lab for 3 different temperature points 		
7.	Operation and training component	<ul style="list-style-type: none"> The Manufacturer/ Supplier will have to carry out successful Installation at the laboratory premises (wherever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction 		
8.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. Manufacturer / Supplier should have ISO 13485 certification under ISO 9001 for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)/Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety 		
9.	Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality 		
10.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer; 		
11.	Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be 		

		adequately displayed		
12.	Warranty	<ul style="list-style-type: none"> Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		
13.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
14.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of: -</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection 		

09. Analytical Balance

S.No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification(Yes/No)	Specify Make and Model
1.	Application	Required to measure mass to a high degree of precision with a weighing capacity up to 220 g and a readability of 0.1 mg and protected by a draft shield or an enclosure.		

2.	Operational Requirements	<p>It should have</p> <ul style="list-style-type: none"> • Microprocessor based single pan top loading analytical balance with high accuracy and precision. • Digital display • Balance to be provided with transparent case. • Weighing with automatic and manual start and provision for data interface. 		
3.	Technical Specifications	<ul style="list-style-type: none"> • Weigh accurately up to 3rd decimal place. • Fully automatic time and temperature controlled internal calibration and balance should be capable to adjust itself Auto zero setting. • Weighing capacity up to 220g • Readability 0.1 mg, Repeatability 1 mg or less. 		
4.	Balance should have	<ul style="list-style-type: none"> • Fast dismantling chamber for easy cleanup 		
5.	Environmental factors	<ul style="list-style-type: none"> • Safety for electromagnetic compatibility. • The unit shall be capable of operating in ambient temperature of 20-30°C and relative humidity of 80%. 		
6.	Accessories	<ul style="list-style-type: none"> • All necessary accessories should be provided with unit. 		
7.	Calibration certificate	Certificate from a ISO 17025 accredited lab for 3 different weights.		
8.	Operation and training component	<ul style="list-style-type: none"> • The Manufacturer/ Supplier will have to carry out successful Installation at the laboratory premises (wherever the system has to be installed) and 		

		provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		
9.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601-1 General requirements (or equivalent BIS Standard)/Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety 		
10	Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality 		
11	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer; 		
12	Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed 		
13	Warranty	<ul style="list-style-type: none"> • Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		
14	Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		

15	Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy) of:- <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection 		
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10. Upright Frost Free Vertical Deep Freezer (-20 °C)

S. No.	Specifications	Requirement	Please Specify whether the quoted model/ items meets the specification (Yes/No)	Specify Make and Model
1.	Application	For storage of various biological products including, ATCC/MTCC/ Microbial cultures, enzymes, chemicals or material testing components for a longer period of time		
2.	Unit	<ul style="list-style-type: none"> • Interior: Full stainless steel which can be easily cleaned and eliminates any possibility of cross contamination • Cooling Type: Direct cooling • Should be Vertical(Upright)type • Microprocessor-based • Frost Free • Refrigerant: CFC – Free • Easy to read, LED control panel and alarm status with integrated diagnostics • Doors with key lock 		

		<ul style="list-style-type: none"> • Castors for easy movability 		
3.	Capacity	Capacity: 250 L or higher with a combination of sealed 5-7 pullout drawers / shelves of different sizes that can be adjusted for storage flexibility		
4.	Temperature	<ul style="list-style-type: none"> • Range - 10 ~ - 20 °C with temperature controller • Digital temperature display • LED Display for temperature and temperature history which can be downloaded via a USB port • Calibration facility 		
5.	Alarms	Acoustic/visual Safety alarms for <ul style="list-style-type: none"> • High/low temperature, • door ajar and • malfunction system alarms 		
6.	Optional Accessories:	Racks for 50 mm boxes (incl. dividers), Racks for 75 mm boxes (incl. dividers)		
7.	Voltage stabilizer	Suitable and compatible voltage stabilizer		
8.	Calibration	Certificate from an ISO 17025 accredited lab for 3 different temperature points.		
9.	Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction 		
10.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer/ Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS 		

		Standard)/Certified to be compliant with IEC 61010-1, IEC 61010-2- 40 for safety		
11.	Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality 		
12.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer; 		
13.	Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed 		
14.	Warranty	<ul style="list-style-type: none"> • Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		
15.	Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
16.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of: -</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection 		

11. UV-VIS Spectrophotometer

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Application	UV-Vis The system should be capable to measure all colorimetric based parameters in food and water samples as per FSSAI requirements including Enzyme assays, Kinetic assays and scans		
2.	System	A fully automated spectrophotometer with double beam optics with pre-programmed applications using conventional quartz / glass/plastic cuvettes with all the required accessories.		
3.	Operation keys	<ol style="list-style-type: none"> 1. Instrument should operate immediately after switch on with no warming uptime 2. Should be automatically programmed with on-board touch screen & soft keys 3. Capable to store method with analysis:> 100 method programs on the instrument, >1000 results with data, evaluation results and used parameters 		
4.	Optical Design	<ul style="list-style-type: none"> • Double Beam with sample and reference cuvette positions; Czerny-Turner Monochromatic/Holographic grating with sealed optics • Reference Compartment Should accommodate cells up to 10 mm path length as standard feature 		
5.	Light Source	<ul style="list-style-type: none"> • Halogen lamp for Visible range and Deuterium Lamp for UV range or Xenon Flash Lamp • Light source should be 		

		automatically selected as per wave length required.		
6.	Detector	Silicon Photodiode dual detector/PMT		
7.	Scan Ordinate Modes	Absorbance, % Transmittance, % Reflectance		
8.	Resolution	0.1nm or better.		
9.	Wavelength Range	190 –1100 nm		
10.	Wavelength Accuracy	± 0.3nm or better for entire range		
11.	Wavelength Repeatability	± 0.1nm or better		
12.	Scanning Speed	Selectable Variable wavelength scan rate 1nm/min to 3000 nm/min or better		
13.	Photometric Range	≥ 3.5A or better		
14.	Photometric Accuracy	0.5 A: ± 0.004A or better; 1A: ± 0.006A or better; 2A: ± 0.010A or better.		
15.	Noise	0A: ≤ 0.00006 A or better at 500 nm/700 nm		
16.	Drift	< 0.0005 A/hr (500 nm, 1 hour warm-up)		
17.	Baseline flatness	± 0.0005 Abs or better		
18.	Application Software	In built Software with large LCD display should be user friendly & simple for data handling with feature like easy to use report generator, real time display of concentration, time scan, photometric mode, single/multi-wavelength, capability for event recording (e.g., addition of reagents). Should be able to connect a USB keyboard, mouse and printer for operational convenience. Software should have built in or provision to build: a. Methods:		

		<ul style="list-style-type: none"> • Absorbance with one or more wavelengths, • Scans, Nucleic acids, Proteins, OD 600, • Evaluation: via factor, standard and calibration curve • Dual wavelength with subtraction and division evaluation <p>b. Method dependent evaluation:</p> <ul style="list-style-type: none"> • Absorbance, concentration via factor and standard • Concentration via standard series using Linear regression, Nonlinear regression with 2nd and 3rd degree polynomials • Spline analysis, • Linear interpolation (point to point evaluation) • Absorbance allocation via subtraction and division • Ratio 260/280, 260/230, Molar concentration and total yield for nucleic acids. <p>The software should be 21CFR part 11 compliant.</p>		
19.	Accessories and spares	<ul style="list-style-type: none"> • One pair each of 1 and 3 ml quartz cuvettes of 10 mm path length • One pair each of 1 and 3 ml glass cuvettes of 10 mm path length • Cuvette holder • Holmium oxide glass filters for wave length calibration. • NIST traceable Potassium dichromate 		
20.	Computer and printer	Latest configuration factory set branded PC system with 22-23" Full HD Monitor with printer –B/W – duplex- laser-legal, A4- 1200 dpi-up to 21 ppm –capacity with network card		
21.	UPS	Suitable UPS with 60 minutes backup power		

22.	Calibration	Certificate from an ISO 17025 accredited lab spectral calibration.		
23.	Compliance	IQ/OQ/PQ of instrument and Software should be provided along with document		
24.	Operation and training component	<ul style="list-style-type: none"> The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction 		
25.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)/Certified to be compliant with IEC 61010- 1, IEC 61010-2-40 for safety 		
26.	Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality 		
27.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer; 		
28.	Recommendations or warnings	<ul style="list-style-type: none"> Any warning signs would be adequately displayed 		
29.	Warranty	<ul style="list-style-type: none"> Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		
30.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and 		

		repairs in future after guarantee/warranty period should be attached;		
31.	Operating manuals, service manuals, other	Should provide 2 sets (hardcopy and soft-copy) of:- <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection 		

12. Binocular Microscope

S.No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Application	A System complete with illumination system is required. For viewing individual cells, even living ones with high magnification		
2.	Body	<ul style="list-style-type: none"> • Body-Single mold sturdy stable base stand, inclined Binocular body 30 °,360° rotatable head with focus adjustment controls. • A durable textured acid resistant finish • All optical parts including objectives, eye pieces and prisms should have anti- reflective coating which also gives anti- fungal property. 		

		<ul style="list-style-type: none"> All metallic parts should be corrosion- proof, acid proof and stain-proof. 		
3.	Eye piece	<ul style="list-style-type: none"> Highest quality 10 X/20mm wide angle anti fungus field eyepiece. One with pointer. Diopter adjustment must be present on both eye pieces. (the image of the object as seen through the binocular eyepiece should be well defined centrally in at least 2/3 field of view) Achromatic, wide field, 10 x with inbuilt pointer. The eyepiece should be aplanatic and have a minimum field number of 18 Diopter adjustment must be present on one/ both eye pieces or on the eye piece tube. 		
4.	Optical system	<ul style="list-style-type: none"> Optical system should be infinity corrected. Built-in LED light source with white light with intensity control and LED life of more than 10, 000Hrs. 		
5.	Objective	<ul style="list-style-type: none"> Parfocal, antifungal coated 4x, 10x, 40x and 100x (oil immersion) with semi planner achromatic correction. Objective should be well centered even if their position on turret is changed. 10x and 40x objectives should have numerical apertures of 0.25 and 0.65 respectively. 100x should have numerical aperture of 1.25 and should be of oil immersion. Unbreakable containers to be provided for storing the objectives. All objectives should be wide field, achromatic and par focal. 		
6.	Nose piece	<ul style="list-style-type: none"> Backward tilted revolving nose piece suitable to accommodate four objectives with click stop It should be provided with rubber ribbed grip for easy rotation mounted on a precision ball bearing mechanism for smooth and accurate alignment. Extra ports if 		

		any should be fitted with dust& fungal proof metallic/ebonite caps.		
7.	Focusing:	<ul style="list-style-type: none"> Coaxial coarse and fine focusing knob, capable of smooth, fine focusing movement sensitivity; minimum: 300 microns; focusing stop for slide safety. 		
8.	Stage	<ul style="list-style-type: none"> Stage uniformly horizontal, mechanical stage having dimensions of length 140 mm (+/- 20mm) with fine Vernier graduations (minimum reading accuracy of 0.1mm). It should be designed with convenient sub-stage vertical coaxial adjustment for slide manipulation. The stage should have ball-bearing arrangement to allow smooth travel in transverse directions i.e. 80 mm (+/- 5mm) and front to back direction, 50mm (+/- 5mm). 		
9.	Sub-stage condenser	<ul style="list-style-type: none"> Abbe-type condenser with numerical aperture (N.A.) 1.25 focusable with rack and pinion arrangement incorporating a spherical lens and an iris-diaphragm 		
10.	Sub-stage illuminator	<ul style="list-style-type: none"> The system should have a build-in variable light source(Illuminator). This light source should have a 20 W, 6 V Halogen lamps. The system should be provided with a step down transformer and an on-off switch and intensity control. The lamp should be provided with a lamp socket which has the facility or easy replacement of the bulb 		
11.	Power supply & protection	<ul style="list-style-type: none"> Voltage 220 V AC, 50Hz.should have one on-off power switch A plano-concave mirror in fork mounting should be supplied which would be attachable to the base for field use when power is not available. Should have over-charging cut-off 		

		with visual symbol		
12.	Battery backup	<ul style="list-style-type: none"> • Minimum 1Hour 		
13.	Operating and storage conditions	<ul style="list-style-type: none"> • Capable of operating continuously at ambient temperature of 10 to 50 ° C and relative humidity of 15 to 90% in ideal circumstances. • Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 °C and relative humidity of 15 to 90% 		
14.	Manual Accessories	<ul style="list-style-type: none"> • Working manual should be provided with each microscope. • Immersion oil 25 ml x2 vials • lens tissue paper 2 rolls or boxes) • Lens cleaning solution (100ml x 2 bottles) • One anti-static cleaning brush. • The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%. 		
15.	Digital camera	<ul style="list-style-type: none"> • 5 megapixel scientific grade (even at dim light) colour CCD camera along with image capture and analysis software and c-mount adapter. Resolution at least 2448 x 1920 effective pixel (4 x 4 binning and 2 x 2 binning) and 10 bit digitization. • Microscope should come alongwith PC (i5 6200U processor, 6 GB RAM, 1 TB HDD, DVR R/W, LED 20"). With UPS (minimum offline backup of 30 minutes). 		
16.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)/Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety 		

17.	Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality 		
18.	Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
19.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection 		
20.	Warranty	<ul style="list-style-type: none"> • Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		
21.	Operation and maintenance training	<p>The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.</p>		

13. Howard Mold Counter

S.No.	Specification	Requirement	Please Specify whether the quoted model/items meets the specification	Specify Make and Model

			(Yes/No)	
1.	Application	It is use in determining mold counts (is used mold fibers and spores) in tomato products and for mold counting in food quality control applications for other fruit based preparations and mold mycelia in butter and cream..		
2.	Counting chamber	Constructed entirely of glass. Centre of glass should contain a 15x20mm rectangle that is flanked by 0.1 mm shoulders on each side to support cover glass. Rectangle and Cover glass should have optically plane surfaces. Facilities for calibration of microscope		
3.	Eyepiece micrometer	Ruled into squares (grid), each of which is equal to 1/6 of the diameter of the eyepiece diaphragm opening		
4.	Cover slips	Thin - 28mm x 33mm x 0.5mm - 2 Nos Thick - 28mm x 33mm x 1.0mm - 2 Nos		
5.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. 		
6.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required; 		
7.	Demonstration and training	The supplier will have to carry out successful demonstration at our laboratory premises (wherever the system has to be installed)and provide on – site comprehensive training for scientific personnel operating the system till customer satisfaction with the system.		
8.	Warranty	<ul style="list-style-type: none"> Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		

14. Refrigerated Centrifuge

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify the Make and Model
1.	Application	A Multi-functional, general purpose High speed refrigerated bench top centrifuge with both fixed angle and swinging bucket rotors for sedimentation of samples with easy lift and safety lid		
2.	Base unit	<ul style="list-style-type: none"> • Table top centrifuge with maintenance free brushless motor and have low access height • CFC free refrigerant • LCD Digital Display of time, speed and Temperature and run conditions • Compatible with all fixed angle and swinging bucket rotors • Automatic rotor recognition facility • Automatic imbalance detection and cut-off • Should be programmable with easy preset programs for fast temperature for pre- cooling and short spin. • Should have motorized lid lock system 		
3.	Temperature range	<ul style="list-style-type: none"> • -5°C to 40°C, 4°C should be maintained at highest speed 		
4.	Speed	<ul style="list-style-type: none"> • Maximum speed: 6000 to 8000xg <p>RCF with 6 x 50 mL Fixed angle rotor or better</p>		
5.	Rotors	<ol style="list-style-type: none"> 1. Fixed Angle Rotor for 6 x50 ml Falcon tube with 8 adapters for 15 mL conical bottom culture tubes/falcon/oakridge 2. Rotor for 1.5-2.0 mL Eppendorf tubes (24 places or better) and adaptors for 0.2and 0.5 mL tubes 3. Deep-well micro plates rotor for 96 well plates 		

6.	Centrifuge tubes	<ul style="list-style-type: none"> To be provided with suitable 15 mL autoclavable screw capped tubes – 1 Packet/500Pc 1.5 ml to 2ml – 1 packet /500 pc and 50 mL autoclavable screw capped tubes - 1 Packet/500Pc 		
7.	Power requirement	<ul style="list-style-type: none"> 220 v to 240 v -50 Hz If a voltage stabilizer is required, it should be supplied along with the unit 		
8.	Voltage stabilizer	<ul style="list-style-type: none"> Suitable voltage stabilizer to be provided 		
9.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)/Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety 		
10.	Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality 		
11.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
12.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of: -</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection 		

13.	Warranty	<ul style="list-style-type: none"> Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		
14.	Operation and maintenance training	The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.		

15. BOD Incubator

S.No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify the Make and Model
1.	Application	For use in microbiological laboratories to measure biochemical oxygen demand (BOD). The incubators are used to sustain and control the humidity and temperature essential to perform many types of experiments in, microbiology and biology labs.		
2.	Double walled modular structure with 3” thick PUF insulation	<ul style="list-style-type: none"> i. Outer wall: Powder coated steel sheet with inner seamless round corner ii. Inner wall: Stainless steel SS-304 with ribs for adjusting removable perforated shelves at the height of 45mm. The nuts, screws and hinges of the inner chamber shall be of Stainless Steel. (*SS Grade X07Cr18Ni9 of IS 6911: 1992 or equivalent) iii. Perforated Stainless Steel- Partition tray (6nos.) 		

3.	Doors	<p>Double door type</p> <ul style="list-style-type: none"> • Inner Door: Full view inner acrylic door with aluminum channel boundary, closes on a resilient gasket and permits view of the specimens (inside the Incubator), without disturbing the thermal conditions inside the chamber. • Interior illumination • Outer Door: Powder coated steel sheet with resin baked finish 		
4.	Capacity	<ul style="list-style-type: none"> • 350-400Litres 		
5.	Temperature Range	<ul style="list-style-type: none"> • 5°C to 60°C with digital controller, • Temperature increments 0.1°C 		
6.	Temperature Control Accuracy	<ul style="list-style-type: none"> • ± 0.3 °C 		
7.	Distribution Accuracy/ uniformity	<ul style="list-style-type: none"> • ± 1 °C or better (at 37°C). 		
8.	Temperature display	<ul style="list-style-type: none"> • Microprocessor based Digital display of temperature and control along with calibration certificate by ISO17025 accredited agency. • Temperature recorder for inner chamber with maintenance free battery backup and auto charging of battery 		
9.	Air circulation	<ul style="list-style-type: none"> • With two completely in built motors along with fan to keep the temperature uniform throughout the chamber 		
10.	Heat up time & Cool Down time	<ul style="list-style-type: none"> • 30 min. up to 60 ° C without load. • 40 min. up to + 5 ° C without load 		
11.	Timer	<ul style="list-style-type: none"> • 0 to 24 hrs X 7 days cyclic ON /OFF timer for illuminating port 		
12.	Safety Alarms	<p>Provision for audio-visual alarm to indicate</p> <ul style="list-style-type: none"> • Door opening after 2min. • Self -diagnosis function including overheat 		

		<ul style="list-style-type: none"> Prevention and overcurrent Protection 		
13.	Computer Interface	RS 485 / RS232 interface for multiple & single communication port		
14.	Voltage stabilizer	Automatic Stabilizer, 4 KVA with TDR (3minutes) electronic type		
15.	Documents Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> Should be FDA/CE/BIS approved product. Manufacturer/ Supplier should have ISO 13485 certification under ISO 9001 for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)/Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety 		
16.	Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality 		
17.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
18.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of: -</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; Certificate of calibration and inspection Complete with IQ, OQ, PQ, Documents, Operations and Maintenance manuals 		

19.	Warranty	<ul style="list-style-type: none"> Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		
20.	Operation maintenance & training	The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.		

16. Micro Filtration Unit

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meet the specification (Yes/No)	Specify Make and Model
1.	Application	Membrane filtration assembly for microbial testing in drinking water (for total coliforms, E. coli etc.) and other beverage /filterable samples.		
2.	Manifold 3 place (SS)	<p>Universal manifold for Microbiological applications, compatible to Reusable and disposable funnels, each part autoclavable. For microbiology: Autoclavable funnels (100mL and 250 ml)</p> <ul style="list-style-type: none"> MOC: SS 316L, all parts autoclavable Dimensions (W*L*H) in mm: 168 x 433 x 117 Different filtration heads fit to both reusable and disposable filtration devices Easy to prevent biofilms easy access to all inner parts for efficient cleaning each component can be removed by hand and autoclaved Quick-fit connections for the vacuum tubing Low height for ease of use in laminar flow hoods Funnels 100mL -250mL size, MOC - Polypropylene, assuring leak-free operation and uniform microorganism 		

		recovers as well as an easy transfer of the membrane with forceps and prevents accidentally touching the filtration area		
3.	Filter Forceps	<ul style="list-style-type: none"> • Beveled, unserrated tips to protect delicate membrane surfaces • May be sterilized by autoclaving or flame-sterilization plastic support, MOC – SS. 		
4.	Vacuum Pump	<p>Vacuum Pump - Compact & modular, Maintenance-free technology, must directly connect to the filtration assembly, Compatible to be placed in LAF/Biosafety cabinet.</p> <ul style="list-style-type: none"> • Flow rate :3.8 to 4.0 L/min • Dimensions (W*L*H) in cm: 19.6 * 16.8 * 22.2 • Materials: Powder coated die cast aluminum body and pump head; Teflon, covered neoprene diaphragm; PTFE-coated internal pump surfaces; high-grade, stainless steel leaf valves • Complies with ISO Standard 8199 guidelines for microbiological analysis (Maximum vacuum delivered does not exceed 700mBar) • Noise level less than 60dB. • Vacuum pressure Maximum 700 mbar as per ISO 8199 		
5.	Membrane Filters and Accessories	<ol style="list-style-type: none"> 1. Stainless steel funnel 250 mL (2no) (47 mm dia), support frit and base, Stainless steel funnel cover – 4 sets 2. Rubber vacuum tubing 8 mm – 2 mtrs 3. stainless steel forceps – 8 nos 4. Sterile Nitrocellulose Gridded Membrane Filters (Pore size: 0.45µm, 47mm diameter) –100 x 4Packs 		

17. Digital pH meter

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model

1.	Application	For research with a comprehensive range of features and functions, making it suitable for general laboratory, QC and GLP based applications.
2.	Unit	Consisting of Tri-combination pH/ATC electrode with an electrode holder/arm with smooth movement and protection cover
3.	Working pH Range	0 – 14 pH
4.	pH resolution	± 0.01 pH
5.	Mv	<ul style="list-style-type: none"> • Range 0 - ±1999 • Accuracy±1mV • Resolution 1mV
6.	Temperature Compensation	0 to 100 ° C with ATC
7.	Temperature	Range -10 to +105°C Resolution 0.1°C Accuracy ±0.5°C ATC range 0 to 100°
8.	Calibration Points	<ul style="list-style-type: none"> • Should have 3 stage calibration with autobuffer recognition • NIST traceable buffer set 500 ml each (pH 4.0, 7.0 &9.0).
9.	Alarm	<ul style="list-style-type: none"> • Calibration reminder interval (1 to999hrs)
10.	Temperature Compensation	<ul style="list-style-type: none"> • Automatic
11.	Display	<ul style="list-style-type: none"> • Backlit blue LCD with operation icon • digital display with0.001 pH unit readability
12.	Accessories	<ul style="list-style-type: none"> • Extra Electrode • NIST Standard buffer solution (pH 4.0, 7.0, 10.01 x 500ml for each bottle) • standard electrode holder • Ac /DC Adaptor.
13.	Data storage& Output	Data storage facility and record maximum and minimum value. <ul style="list-style-type: none"> • RS.232C output and supply Data connector cable.
14.	Documents	<ul style="list-style-type: none"> • Manufacturer / Supplier should have

	Certificates Performance and safety standards (specific to the device type); Local and/or international	<p>ISO 13485 certification under ISO 9001 for quality standards.</p> <ul style="list-style-type: none"> Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)/ Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety 		
15.	Supplier/ Manufacturer	<ul style="list-style-type: none"> Must be ISO certified for quality 		
16.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
17.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; List of equipment and procedures required for local calibration and routine maintenance; Service and operation manuals (original and copy) to be provided; Certificate of calibration and inspection Complete with IQ, OQ, PQ, Documents, Operations and Maintenance manuals 		
18.	Warranty	<ul style="list-style-type: none"> Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories. 		

18. Fumigator

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification	Specify Make and Model

			(Yes/No)	
1.	Capacity	<ul style="list-style-type: none"> • 5 liters with easy cleaning facility 		
2.	Material of construction	<ul style="list-style-type: none"> • Tank, Flow control and Nozzle assembly (non-clogging vortex type) should be of SS316 grade, easy to clean, detachable and non-corrosive for chemical 		
3.	Particle size	<ul style="list-style-type: none"> • It should produce aerosols with particle size of less than 5microns • The blower head should be rust proof inert to Formaldehyde, KMnO₄, H₂O₂ and deliver aerosols uniformly. 		
4.	Unit	<ul style="list-style-type: none"> • It should be compatible with all disinfectant solutions usual concentration. • It should be compatible with maximum pH range (both acid and alkali). • The equipment should be of good quality and conform to national/international standards. 		
5.	Power supply	<ul style="list-style-type: none"> • The machine should operate on 220 +- 10 volts, 50 Hz, single phase, A.C • Provided with Cable should be at least 5 meters in length, ISI marked. 		
6.	Operation	<ul style="list-style-type: none"> • The discharge rate should not be less than 1Liter/25minutes. • The tank capacity, discharge rate and timer on the machine should be so that the disinfectant should be able to disinfect 4000-5000 cubic feet in one cycle of 2 hours(max). 		
7.	Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful demonstration at the laboratory premises (wherever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction 		
8.	Warranty	<ul style="list-style-type: none"> • Warranted for 03 years after satisfactory working excluding consumable parts and accessories. 		

9.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
10.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of:-</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; 		

19. UV Viewing Cabinet

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Application	Eyes are protected by the UV filter in the viewing window and used for inspecting thin-layer chromatograms or other objects under UV light in absence of ambient light.		
2.	Unit	<ul style="list-style-type: none"> User-safe, self-contained chamber with Convenient handling Clear viewing window (open/close via hinged door) through button operation for each of two UV tubes Homogeneous illumination of chamber 		
3.	Viewport	<ul style="list-style-type: none"> Soft rubber viewport and contrast control filter that absorbs UV energy to protect the eyes 		

4.	UV tubes	<p>Two UV tubes for illumination each 8W</p> <ul style="list-style-type: none"> • Long-wave UV light 366nm • Short-wave UV light 254nm) 		
5.	Safety timer	User safety through tilt sensor and timer (automatic switch- off after 10 min)		
6.	Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful demonstration at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction 		
7.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer/ Supplier should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601-General Requirements (or equivalent BIS Standard)/Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety 		
8.	Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality 		
9.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/ad-hoc) to be declared by the manufacturer; 		
10.	Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed 		
11.	Warranty	<ul style="list-style-type: none"> • Warranted for 03 years after satisfactory working excluding consumable parts and accessories. 		
12.	Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should 		

		be attached;		
13.	Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy) of:- <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; 		

20. Anaerobic Jar Filling System with 02 Nos Anaerobic Jar

S.No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.		The Anaerobic Jar Filling System is developed so to achieve an aerobic atmospheric condition inside the Jar in less than 1minute. Create atmosphere suitable for the culture of anaerobic as well as Microaerophilic bacteria. To achieve quick Anaerobic / Microaerophilic conditions, used unique vacuum technology along with purging technology. To be supplied with two(02) Nos of Anaerobic Jar.		

			No additional chemicals are needed to achieve an anaerobic / microaerophilic condition. Touch screen Display protected with security password. Touch screen display allows to control modified purging and vacuum time by end user. User friendly, through programmable touch screen display, automatically managed draining and filling of gases. Simple assembly, easy to connect from Jar to System & Disconnect (Vice Versa). Alternative gases like Nitrogen or gas like combination of CO ₂ , N ₂ or Co ₂ , N ₂ with 5 % H ₂ can also be connect.		
2.	Dimensions (W /D / H)		200 mm X 400 mm X 350 mm		
3.	Power Supply		230 V		
4.	Gas Supplies		N2 and ANO2 (CO ₂ :H ₂ :N ₂)(10:5:85)		
5.	Pressure		150 kg / cm ²		
6.	Touch Screen Display		HMI Type L 90 mm x D 50 mm		
7.	Salient Features		<ul style="list-style-type: none"> • Quick & Convenient Solution • Anaerobic Condition achieved within 1Minute • Touch Screen LCD Display • User Friendly • Simple Assembly with Alternative Users Option 		
8.	Warranty		Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
9.	Service contract clauses, including prices		List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
10.	Operating manuals, manuals, manuals	service other	<p>Should provide 2 sets (hardcopy and soft-copy) of: -</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; 		

			<ul style="list-style-type: none"> • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection 		
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21. Hot Air Oven

S.No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Application	For drying glassware and also for conditioning of heat sensitive media and to provide an optimal, homogeneous, temperature uniformity and stability to ensure drying is complete		
2.	Material construction of	<ul style="list-style-type: none"> • Should have double walled construction, with high quality insulated steel. Inner walls of 304 qualities SS, Outer walls of Epoxy Powder coated GI sheets. Seamless round corner • Facility for adjustable shelves, 10 removable shelves to be provided. • With internal lighting facility, Insulated door fitted with heavy hinges, mechanical door lock. Glass window may be provided to view samples. 		
3.	Capacity	<ul style="list-style-type: none"> • Approx. 200liters 		
4.	Temperature range	<ul style="list-style-type: none"> • Temperature should be microprocessor controlled • It should be Ambient +5°C to 250°C with temperature setting accuracy ± 0.5 °C with forced air circulation for temperature uniformity 		

		<ul style="list-style-type: none"> • Separate PT 100 sensor and display for temperature (LED) • Safety alarms with Auto cut off system 		
5.	Unit	<ul style="list-style-type: none"> • Air ventilators to be provided on both side • The equipment should be provided with microprocessor controlled digital display • Temperature homogeneity between top and bottom shelves should be maintained by forced circulation 		
6.	Calibration	<ul style="list-style-type: none"> • Certificate from a ISO17025 accredited lab for 3 different temperature points 		
7.	Power supply	All electrical peripherals required for smooth functioning e.g. voltage stabilizers should be provided.		
8.	Accessories	<ul style="list-style-type: none"> • Should have all the accessories required for the functioning of the equipment. 		
9.	Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard)/ Certified to be compliant with IEC 61010-1, IEC61010-2-40 for safety 		
10.	Supplier/ Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality 		
11.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer; 		
12.	Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed 		
13.	Warranty	<ul style="list-style-type: none"> • Warranted for 03 years after satisfactory working excluding consumable parts and 		

		accessories.		
14.	Service contract clauses, including prices	<ul style="list-style-type: none"> List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached; 		
15.	Operating manuals, service manuals, other manuals	<p>Should provide 2 sets (hardcopy and soft-copy) of: -</p> <ul style="list-style-type: none"> User, technical and maintenance manuals to be supplied in English language along with machine diagrams; Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; 		

22. Micropipettes (*6 No's)

S.No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Material	Fully Autoclavable		
2.	Capacity /Volume	20-200 micro liter (Variable) 100-1000 micro liter (Variable) 1-10ml (Variable) *2 eachx3=6		
3.	Feature	<ul style="list-style-type: none"> Single-channel/manual Volume lock to prevent drifting 		
4.	Accessory	<p>Tip boxes</p> <p>20µl to 200 µl (4 no boxes)</p> <p>100µl to 1ml (4 no boxes)</p> <p>1 ml to 10 ml (4 no boxes)</p> <p>Tips must be compatible to pipettes and tip boxes</p> <p>20µl to 200 µl (2 x 1000)</p> <p>100µl to 1ml (2 x 1000)</p> <p>1 ml to 10 ml (2 x 1000)</p>		

		Pipette Stand for 3-4 pipetes 4 No.s		
5.	Calibration	Certificate from ISO17025 accredited lab for 3 points		
6.	Warranty	03 years		

23. Carbon dioxide Incubator

S.No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	Capacity	45 litres or above		
2.	Display	LCD/LED		
3.	Chamber Material	Single mold 304 grade joint less stainless steel		
4.	Processor	microprocessor		
5.	Heating type	Air/Direct Heat		
6.	No. of shelves	2-3 minimum		
7.	Temp. control range	0 – 50 °C		
8.	Ambient temp. range	5 °C above ambient to 50 °C		
9.	Temp. control accuracy	± 0.1		
10.	Temp. uniformity	± 0.3		
11.	CO₂ sensor	IR sensor		
12.	CO₂ control range	0.1-20%		
13.	CO₂ stability	± 0.2%		
14.	CO₂ recovery time	0-10 min		
15.	CO₂ tank switch/alarm	Yes		
16.	Temp. recovery	5-15 min		
17.	Humidity	95±5%		
18.	Humidity recovery	10-20 min		
19.	Alarm	Audio & visual		
20.	Stacking	Possible		
21.	Cylinders	CO ₂ cylinders (2 nos.); Capacity- 9-10kg; Purity- 98.00%		

22.	Communication port	Yes		
23.	Power	AC 230V/6A, 50Hz		
24.	Power consumption	500-600W (max.); 50-100W at 37oC		
25.	Disinfection	Automatic system will be preferred		
26.	Calibration	Certificate from NABL accredited lab for 3 points		
27.	Warranty	03 years with user manual		

24. Frost free Two Door (side by side) Refrigerator

S.No.	Specifications	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
	Material Stainless steel		
1.	Capacity	1. 500 ltrs -01(approx) 2. 300 ltrs – 01(approx)	
2.	Adjustable Shelves	Tempered glass shelves 05 No.	
3.	Temperature Range	Digital display and temperature controls Refrigerator +2 to +8 °C	
4.	Audio alarm	Alarm is door is ajar for long	
5.	Inner body	Rust Free Material	
6.	Refrigerant	CFC / HCFC Free	
7.	Frost Free		
8.	Door Lock & Interior light. The unit to be provided with wheels for easy movement		
9.	Same Temperature: Top to Bottom, Fan forced air circulation to ensure stable & uniform preservation environment.		
10.	Microprocessor based Temperature Controller with Digital Display		
11.	In built Voltage Stabilizer High/Low cut with timer delay		
12.	Door Glass Heater for special heated front glass that enhances visibility and prevents unhygienic condensation		
13.	Warranty: 03years and Life time on motor		

Note 1: If the needs arise the successful bidder may also be allowed to deliver other approved or equivalent makes and models/ latest specification of the equipment quoted by other qualified bidders in the tender after approval from FSSAI HQs.

PART III- STANDARD CONDITIONS OF RFP

The Bidder is required to give confirmation of their acceptance of the Standard Conditions of the Request for Proposal mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e. Seller in the Contract) as selected by the Tender Inviting Authority (i.e. Buyer). Failure to do so may result in rejection of the Bid submitted by the Bidder.

2. **Law:** The agreement shall be considered and made in accordance with the law of the Republic of India. The Supply Order shall be governed by and interpreted in accordance with the laws of the Republic of India.

3. **Award of Contract:** The contract will be awarded to the lowest evaluated responsive bidder qualifying to the final round after scrutiny of the technical bids and demonstration of the accessories, i.e. after financial bid opening.

4. **Effective Date and Period of the Contract.** The contract shall be effective from the date of award of the contract by FSSAI for a period of 03 years or until the completion of the obligations of the parties under the contract, whichever is later. The deliveries and supplies and performance of the services shall commence from the date of the receipt of supply order by successful bidder.

5. **Arbitration.** All disputes or differences arising out of or in connection with the Contract shall be settled by bilateral discussions. Any dispute, disagreement or question arising out of or relating to the Contract or relating to construction or performance, which cannot be settled amicably, may be resolved through arbitration. The standard clause of arbitration is as per the Arbitration and Conciliation Act, 1996 of India. Venue of Arbitration shall be the place from where the contract has been issued i.e. New Delhi, India.

6. **Penalty for use of Undue influence.** The Seller undertakes that he has not given, offered or promised to give, directly or indirectly, any gift, consideration, reward, commission, fees, brokerage or inducement to any person in service of the Buyer or otherwise in procuring the Contracts or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the present Contract or any other Contract with the Government of India for showing or forbearing to show favour or disfavour to any person in relation to the present Contract or any other Contract with the Government of India. Any breach of the aforesaid undertaking by the Seller or any one employed by him or acting on his behalf (whether with or without the knowledge of the Seller) or the commission of any offence by the Seller or anyone employed by him or acting on his behalf, as defined in Chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act, 1986 or any other Act enacted for the prevention of corruption shall entitle the Buyer to cancel the contract and all or any other contracts with the Seller and recover from the Seller the amount of any loss arising from such cancellation. A decision of the Buyer or his nominee to the effect that a breach of the undertaking had been committed shall be final and binding on the Seller. Giving or offering of any gift, bribe or inducement or any attempt at any such act on behalf of the Seller towards any officer/employee of the Buyer or to any other person in a position to influence any officer/employee of the Buyer for showing any favour in relation to this or any other contract, shall render the Seller to such liability/ penalty as the Buyer may deem proper, including but not limited to termination of the contract, imposition of penal damages, forfeiture of the Bank Guarantee and refund of the amounts paid by the Buyer.

7. **Agents / Agency Commission:** The Seller confirms and declares to the Buyer that the Seller is the original manufacturer of the stores/provider of the services referred to in this Supply Order and has not engaged any individual or firm, whether Indian or foreign whatsoever, to intercede, facilitate or in any way to recommend to the Government of India or any of its functionaries whether officially or unofficially, to the award of the Supply Order to the Seller; nor has any amount been paid, promised or intended to be paid to any such individual or firm in respect of any such intercession, facilitation or recommendation. The Seller agrees that if it is established at any time to the satisfaction of the Buyer that the present declaration is in any way incorrect or if at a later stage it is discovered by the Buyer that the Seller has engaged any such individual/firm, and paid or intended to pay any amount, gift, reward, fees, commission or consideration to such person, party, firm or institution, whether before or after the signing of this Supply Order, the Seller will be liable to refund that amount to the Buyer. The Seller will also be debarred from entering into any Supply Order with the Government of India/FSSAI for a minimum period of five years.

8. **Non-disclosure of Supply Order documents:** Except with the written consent of the Buyer / Seller, other party shall not disclose the Supply Order or any provision, specification, plan, design, pattern, sample or information thereof to any third party.

9. **Termination of Contract:** The Buyer shall have the right to terminate this Contract in part or in full in any of the following cases: -

- a. The delivery of the material is delayed for causes not attributable to Force Majeure for more than (02 months) after the scheduled date of delivery.
- b. The Seller is declared bankrupt or becomes insolvent.
- c. The delivery of material is delayed due to causes of Force Majeure by more than (04 months).
- d. The Buyer has noticed that the Seller has utilized the services of any Indian/Foreign agent in getting this Supply Order and paid any commission to such individual/company etc.
- e. As per decision of the Arbitration Tribunal.

10. **Notices:** Any notice required or permitted by the Contract shall be written in the English language and may be delivered personally or may be sent by FAX or registered pre-paid mail/airmail, addressed to the last known address of the party to whom it is sent.

11. **Transfer and Sub-letting:** The seller has no right to give, bargain, sell, assign or sublet or otherwise dispose of the Empanelment contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the present Empanelment Contract or any part thereof.

12. **Patents and other Industrial Property Rights:** The prices stated in the present Empanelment Contract shall be deemed to include all amounts payable for the use of patents, copyrights, registered charges, trademarks and payments for any other industrial property rights. The Seller shall indemnify the Buyer against all claims from a third party at any time on account of the infringement of any or all the rights mentioned in the previous paragraphs, whether such claims arise in respect of manufacture or use. The Seller shall be responsible for the completion of the supplies including spares, tools, technical literature and training aggregates irrespective of the fact of infringement of the supplies, irrespective of the fact of infringement of any or all the rights mentioned above.

13. **Amendments**: No provision of present Empanelment Contract shall be changed or modified in any way (including this provision) either in whole or in part except by an instrument in writing made after the date of this Contract and signed on behalf of both the parties and which expressly states to amend the present Empanelment Contract.

14. **Taxes and Duties**

(i) **General**

- a. Bidders must indicate separately the relevant Taxes/Duties likely to be paid in connection with delivery of completed goods specified in RFP. In absence of this, the total cost quoted by them in their bid will be taken into account in the ranking of bids.
- b. If a Bidder is exempted from payment of any duty/tax upto any value of supplies from them, he should clearly state that no such duty/tax will be charged by them up to the limit of exemption which they may have. If any concession is available in regard to rate/quantum of any duty/tax, it should be brought out clearly. In such cases, relevant certificate will be issued by the Buyer later to enable the Seller to obtain exemptions from taxation authorities.
- c. Any changes in levies, taxes and duties levied by Central/State/Local government such as excise duty, Octroi/entry tax, GST etc. on final product upward as a result of any statutory variation taking place within contract period shall be allowed reimbursement by the Buyer, to the extent of actual quantum of such duty/tax paid by the Seller. Similarly, in case of downward revision in any such duty/tax, the actual quantum of reduction of such duty/tax shall be reimbursed to the Buyer by the Seller. All such adjustments shall include all reliefs, exemptions, rebates, concession etc, if any, obtained by the Seller. Section 64-A of Sales of Goods Act will be relevant in this situation.
- d. Levies, taxes and duties levied by Central/State/Local governments such as excise duty, Octroi/entry tax, GST etc. on final product will be paid by the Buyer on actuals, based on relevant documentary evidence. Taxes and duties on input items will not be paid by Buyer and they may not be indicted separately in the bids. Bidders are required to include the same in the pricing of their product.

(ii) **GST**

- a. If it is desired by the Bidder to ask for GST to be paid as extra, the same must be specifically stated. In the absence of any such stipulation in the bid, it will be presumed that the prices quoted by the Bidder are inclusive of GST and no liability of GST will be developed upon the Buyer.
- b. On the Bids quoting GST extra, the rate and the nature of GST applicable at the time of supply should be shown separately. GST will be paid to the Seller at the rate at which it is liable to be assessed or has actually been assessed provided the transaction of sale is legally liable to GST and the same is payable as per the terms of the Supply Order.

(iii) **Octroi Duty & Local Taxes**

- a. Normally, materials to be supplied to Government Departments against Government Supply Orders are exempted from levy of town duty, Octroi Duty, Terminal Tax and other levies of local bodies. The local Town/Municipal Body regulations at times, however, provide for such Exemption only on production of such exemption certificate from any authorized officer. Seller should ensure that stores ordered against Supply Orders placed by this office are exempted from levy of Town Duty/Octroi Duty, Terminal Tax or other local taxes and duties. Wherever required, they should obtain the exemption certificate from the Buyer, to avoid payment of such local taxes or duties.
- b. In case where the Municipality or other local body insists upon payment of these duties or taxes the same should be paid by the Seller to avoid delay in supplies and possible demurrage charges. The receipt obtained for such payment should be forwarded to the Buyer without delay together with a copy of the relevant act or by-laws/notifications of the Municipality of the local body concerned to enable him to take up the question of refund with the concerned bodies if admissible under the said acts or rules.

PART IV- SPECIAL CONDITIONS OF RFP

1. The Bidder is required to give confirmation of their acceptance of Special Conditions of the RFP mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e. Seller in the Contract) as selected by the Tender Inviting Authority (i.e. Buyer). Failure to do so may result in rejection of Bid submitted by the Bidder.

2. **Performance Guarantee:** The bidder will be required to furnish a Performance Guarantee to **FSSAI/State Food Commissioners or any office designated by FSSAI** by way of Bank Guarantee through a scheduled commercial bank authorized to conduct government business for a sum equal to 5% of the contract value within 15 days of receipt of the confirmed order. Performance Bank Guarantee should be valid for 60 days beyond all contractual obligations.

3. **Option Clause:** To take care of any change in the requirement during the period starting from issue of RFP till placement of the contract, Buyer reserves the right to 25% increase or decrease in the no. of laboratories without any change in the terms & conditions and prices quoted by the Seller. While awarding the contract, the quantity ordered can be increased or decreased by the Buyer within this tolerance limit.

4. **Payment Terms:** The payment will be made as per the following terms on production of the requisite documents:

S.N.	Amount to be paid, INR	Condition(s) for release
Part A		
1	80 % of the cost of equipment	On satisfactory installation and commissioning of the equipment
2	Balance 20% of the cost of equipment	On successful demonstration of the facility, training and validation
Part B		
1.	100% of the total cost of civil and electrical works	Running Bill after certification by FSSAI/State Civil/Electrical Empanelled Engineer
Part C		
1.	Manpower	The payment in respect of manpower will be released on half yearly basis, after it becomes due.

5. **Fall clause.** The following Fall clause will form part of the contract placed on successful bidder

- a. The price charged for the stores supplied under the contract by the Seller shall in no event exceed the lowest prices at which the Seller sells the stores or offer to sell stores of identical description to any persons/Organization including the purchaser or any department of the Central government or any Department of State government or any statutory undertaking of the Central or State government as the case may be

during the period till performance of all supply Orders placed during the currency of the rate contract is completed.

- b. If at any time, during the said period the Seller reduces the sale price, sells or offer to sell such stores to any person/organization including the Buyer or any Deptt, of Central Govt. or any Department of the State Government or any Statutory undertaking of the Central or State Government as the case may be at a price lower than the price chargeable under the contract, the Seller shall forthwith notify such reduction or sale or offer of sale to the Buyer and the price payable under the contract for the stores of such reduction of sale or offer of the sale shall stand correspondingly reduced.
- c. The Seller shall furnish the following certificate to the Paying Authority along with each bill for payment for supplies made against the Rate contract – “We certify that there has been no reduction in sale price of the stores of description identical to the stores supplied to the Government under the contract herein and such stores have not been offered/sold by me/us to any person/organization including the purchaser or any department of Central Government or any Department of a state Government or any Statutory Undertaking of the Central or state Government as the case may be upto the date of bill/the date of completion of supplies against all supply orders placed during the currency of the Rate Contract at price lower than the price charged to the government under the contract except for quantity of stores categories under sub-clauses (a),(b) and of sub-para (ii) above details of which -”.

6. **Risk & Expense clause:** -

(a) Should the stores or any instalment thereof not be delivered within the time or times specified in the contract documents, or if defective delivery is made in respect of the stores or any instalment thereof, the Buyer shall after granting the Seller 45 days to cure the breach, be at liberty, without prejudice to the right to recover liquidated damages as a remedy for breach of contract, to declare the contract as cancelled either wholly or to the extent of such default.

(b) Should the stores or any instalment thereof not perform in accordance with the specifications / parameters provided by the SELLER during the check proof tests to be done in the BUYER’s country, the BUYER shall be at liberty, without prejudice to any other remedies for breach of contract, to cancel the contract wholly or to the extent of such default.

(c) In case of a material breach that was not remedied within 45 days, the BUYER shall, having given the right of first refusal to the SELLER be at liberty to purchase, manufacture, or procure from any other source as he thinks fit, other stores of the same or similar description to make good: -

(i) Such default.

(ii) In the event of the contract being wholly determined the balance of the stores remaining to be delivered there under.

(d) Any excess of the purchase price, cost of manufacturer, or value of any stores procured from any other supplier as the case may be, over the contract price appropriate to such default or balance shall be recoverable from the SELLER. Such recoveries shall not exceed 10% of the value of the contract.”

7. **Force Majeure clause:** -

- a. Neither party shall bear responsibility for the complete or partial non performance of any of its obligations (except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the present contract), if the non-performance results from such Force Majeure circumstances as Flood, Fire, Earth Quake and other acts of God as well as War, Military operation, blockade, Acts or Actions of State Authorities or any other circumstances beyond the parties control that have arisen after the conclusion of the present contract.
- b. In such circumstances the time stipulated for the performance of an obligation under the present contract is extended correspondingly for the period of time of action of these circumstances and their consequences.
- c. The party for which it becomes impossible to meet obligations under this contract due to Force Majeure conditions, is to notify in written form the other party of the beginning and cessation of the above circumstances immediately, but in any case not later than 10 (Ten) days from the moment of their beginning.
- d. If the impossibility of complete or partial performance of an obligation lasts for more than 4 (four) months, either party hereto reserves the right to terminate the contract totally or partially upon giving prior written notice of 30 (thirty) days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

8. **Specification:** The following Specification clause will form part of the contract placed on successful Bidder - The Seller guarantees to meet the specifications as per Part-II of RFP and to incorporate the modifications to the existing design configuration to meet the specific requirement of the Buyer Services as per modifications/requirements recommended after the Maintenance Evaluation Trials. All technical literature and drawings shall be amended as the modifications by the Seller before supply to the Buyer. The Seller, in consultation with the Buyer, may carry out technical upgradation/alterations in the design, drawings and specifications due to change in manufacturing procedures, indigenization or obsolescence. This will, however, not in any way, adversely affect the end specifications of the equipment. Changes in technical details, drawings repair and maintenance techniques alongwith necessary tools as a result of upgradation/alterations will be provided to the Buyer free of cost within (7) days of affecting such upgradation/alterations.

9. **Quality:** The quality of the stores delivered according to the present Contract shall correspond to the technical conditions and standards valid for the deliveries of the same stores for in Seller's country or specifications enumerated as per RFP and shall also include therein modification to the stores suggested by the Buyer. Such modifications will be mutually agreed to. The Seller confirms that the stores to be supplied under this Contract shall be new i.e. not manufactured before (Year of Contract), and shall incorporate all the latest improvements and modifications thereto and spares of improved and modified equipment are backward integrated and interchangeable with same equipment supplied by the Seller in the past if any. The Seller shall supply an interchangeability certificate along with the changed part numbers wherein it should be mentioned that item would provide as much life as the original item.

10. **Inspection Authority:** Inspection may be carried out by a duly appointed Inspection Officer or duly constituted Inspection Committee before award of tender at the cost of the bidder.

11. **Franking clause:** The following franking clause will form part of the contract placed on successful Bidder –

- a. In the case of Acceptance of Goods “The fact that the goods have been inspected after the delivery period and passed by the Inspecting Officer/Committee will not have the effect of keeping the Contract alive. The goods are being passed without prejudice to the rights of the Bidder under the terms and conditions of the Contract”.
- b. In the case of Rejection of Goods “The fact that the goods have been inspected after the delivery period and rejected by the Inspecting Officer/Committee will not bind the Buyer in any manner. The goods are being rejected without prejudice to the rights of the Buyer under the terms and conditions of the Supply Order.”

12. **Warranty/Training:**The Seller has to warrant that the Goods supplied under this Contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The seller shall provide training for optimum use of equipment during the warranty period

13. **Warranty:** Warranty should be provided as mentioned against each equipment after successful installation of the instrument. Service and training during warranty period should be free of cost. This should cover the repair and maintenance with spare parts of the equipment purchased under the Supply Order. This will also include:

- i. **Preventive Maintenance Service:** The Seller will provide a minimum of two Preventive Maintenance Service visits during a year to the operating base to carry out functional check-ups and minor adjustments/tuning as may be required.
- ii. **Breakdown Maintenance Service:** In case of any breakdown of the equipment/system, on receiving a call from the Buyer, the Seller is to provide maintenance service to make the equipment/system serviceable.

(b) **Response time:** The response time of the Seller should not exceed 48 hours from the time the breakdown intimation is provided by the Buyer.

(c) Serviceability of 90% per year is to be ensured. This amounts to total maximum downtime of 37 days per year. Also unavailability should not exceed 2 working days at one time. Required spares to attain this serviceability may be stored at site by the Seller at his own cost. Total down time would be calculated at the end of the year. If downtime exceeds permitted downtime, Liquidated Damages would be applicable for the delayed period.

(d) Maximum repair turnaround time for equipment/system would be 3 days. However, the spares should be maintained in a serviceable condition to avoid complete breakdown of the equipment/system.

(e) **Technical Documentation:** All necessary changes in the documentation (Technical and Operators manual) for changes carried out on hardware and software of the equipment will be provided.

(f) During the Warranty period, the Seller shall carry out all necessary servicing/repairs to the equipment/system under Warranty at the current location of the equipment/system. Prior permission of the Buyer would be required in case certain components/sub systems are to be shifted out of location. On such occasions, before taking over the goods or components, the Seller will give suitable bank guarantee to the Buyer to cover the estimated current value of item being taken.

(g) The Buyer reserves its right to terminate the maintenance Supply Order at any time without assigning any reason after giving a notice of 1 month. The Seller will not be entitled to claim any compensation against such termination. However, while terminating the Supply Order, if any payment is due to the Seller for maintenance services already performed in terms of the Supply Order, the same would be paid to it as per the Supply Order terms.

14. Training: Training for the operation of instrument, software, data evaluation, trouble shooting and development of analytical methods will be provided free of cost during the warranty period.

15. **Uptime.** The successful bidder will guarantee to provide 90% uptime of all the systems during warranty and subsequent AMC. In case of failure to do so, proportionate payment will be deducted from the bank guarantee/payment due to the successful bidder. **A certificate as per Annexure III may be enclosed with the Technical Bid.**

16. **Indemnification.** The Seller shall, at all times, indemnify and keep indemnified the Buyer, free of cost, against all claims which may arise in respect of goods & services to be provided by the Seller under the contract for infringement of any intellectual property rights or any other right protected by patent, registration of designs or trademarks.

In the event of any such claim in respect of alleged breach of patent, registered designs, trademarks etc. being made against the Buyer, the Buyer shall notify the successful bidder of the same and the Seller shall, at his own expenses take care of the same for settlement without any liability to the Buyer.

The Seller/its Indian Agent/CMC Provider shall at all times, indemnify and keep indemnified the Buyer/ Government of India against all claims/ damages etc. for any infringement of any Intellectual Property Rights (IPR) while providing its services under Comprehensive Warranty/ CAMC.

17. **Presentation:** Technically qualified bidders may have to make a presentation before the Technical Evaluation Committee.

18. **Special conditions:**

(a) The bidder has to arrange supply of equipment/material as per the technical specification mentioned in para 2 of Part II of RFP.

(b) The bidder has to provide the after sales support for the equipment/material and other works done.

- (c) The certificate of fitness shall be obtained by the Seller.
- (d) Onsite performance evaluation of the equipment may be carried out for those who qualify in the technical bid.
- (e) The bidder will ensure that the equipment is properly insured for 110% of the order value to cover the transit upto site of installation of the equipment.
- (f) Best trade packing suitable for safe Rail/Road/Air transit shall be used subject to packing and marking being acceptable to the Inspecting Authority.

PART V- EVALUATION CRITERIA & PRICE BID ISSUE

1. **Evaluation Criteria**- The broad guidelines for evaluation of Bids will be as follows:
 - (a) Only those Bids will be evaluated which are found to be fulfilling all the eligibility and qualifying requirements of the RFP, both technically and commercially.
 - (b) In respect of Two-Bid system, the technical Bids forwarded by the Bidders will be evaluated by the Tender Inviting Authority with reference to the technical characteristics mentioned in the RFP. The compliance of Technical Bids would be determined on the basis of the parameters specified in the RFP.
 - (c) The commercial terms and documents submitted as part of the technical bids shall be scrutinized by a Technical Evaluation Committee constituted by the Tender Inviting Authority.
 - (d) The Technical Evaluation Committee may also verify the veracity of claims in respect of the known performance of the equipment offered, the experience and reputation of bidder in the field, the financial solvency etc.
 - (e) The decisions of the Technical Evaluation Committee on whether the tenders are responsive or non-responsive or requiring clarifications will be informed.
 - (f) The demonstration/presentation may also be conducted by Technical Evaluation Committee in which external experts from the User Institutions/funding agencies may be invited.
 - (g) The price Bids of only those Bidders will be opened whose Technical Bids are cleared after technical evaluation.
 - (h) The Lowest Bid will be decided upon the lowest price quoted by the particular Bidder as per the Price Format given at Para 2 below for each region separately. The consideration of taxes and duties in evaluation process will be as follows: -
 - L-1 bidder will be determined by excluding levies, taxes and duties levied by Central/State/Local governments such as excise duty, GST, Octroi/entry tax, etc. on Goods and Services as quoted by bidders.
 - Initially all labs in a zone will be offered to L1 bidder only. In case, L1 bidder expresses inability to complete the entire order in time due to capacity constraint, the bidder will have to take up at least 60 per cent labs (location of labs will be decided by QA Division, FSSAI as per requirement/priority). If the L1 bidder fails to take up at least 60 per cent labs, the bidder will be debarred and black listed for quoting without sufficient resources. Retendering will be done for the zone/lab area. Further, the particular L1 bidder who is blacklisted for non-performance in a zone will also not get the opportunity to set up labs in other zones, irrespective of the fact whether the bidder is L1 or higher in other zones.

(i) If L1 bidder executes order for at least 60 per cent labs in a zone, the balance labs will be offered to other technically qualified bidders at L1 rates in the ascending order of price quote, i.e. L2, L3, L4 etc. The labs which are not taken up by any of the bidders, will be retendered and L1 bidder will not be allowed to participate in the re-tendering process.

(j) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price will prevail and the total price will be corrected. If there is discrepancy between words and figures; the amount in words will prevail for calculation of price.

(k) The Lowest Acceptable Bid will be considered further for placement of Supply order after complete clarification and price negotiations as decided by the Tender Inviting Authority.

(l) The Bidders are required to spell out the rates of GST, etc. in unambiguous terms; otherwise their offers will be loaded with the maximum rates of duties and taxes for the purpose of comparison of prices. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of such duties will be entreated after the opening of tenders.

(m) Any other criteria as applicable to suit in a particular case.

2. **Price Bid Format:** The Price Bid Format is given below and Bidders are required to fill this up correctly with full details, as required under Part-II of RFP: -

Cost Details

Sl.No	Items	Qty	Eastern Region	North Eastern Region	Western Region	Northern Region	Southern Region
			(price in INR)				
PART X							
1.	X1	Setting up Clean Room and Associated Civil/Electrical Work(84 Sq mtr)	Per Sq meter				
	X2	Setting up Clean Room and Associated Civil/Electrical Work(120 Sq mtr)					
PART Y							
Instruments/Consumables							

2.	Laminar Air Flow	02					
3.	Bio Safety Cabinet Class II Type B2 (Total Exhaust)	01					
4.	Autoclave Vertical	03					
5.	Incubators: 1) Ambient to 70 °C and 2) 5 °C to 50°C	03					
6.	Digital Colony Counter	01					
7.	Lab Blender	02					
8.	Water Bath – Serological	01					
9.	Analytical Balance	03					
10.	Upright Frost Free Vertical Deep Freezer (-20 °C)	02					
11.	UV-Vis Spectrophotometer	01					
12.	Binocular Microscope	01					
13.	Howard Mold Counter	01					
14.	Refrigerated Centrifuge	02					
15.	BOD Incubator	02					
16.	Micro Filtration Assembly	02					
17.	Digital pH Meter	02					
18.	Fumigator	01					
19.	UV Viewing Chamber	01					
20.	Anaerobic Jar	01					
21.	Hot Air Oven	02					
22.	Micropipette	02 sets (each)					
23.	Carbon dioxide incubator	01					
24.	Frost Free Double door (side by side) Refrigerator	02					
PART Z							
25.	(i) 03Manpower as per Part C of Part II of RFP for 01st year						
	(ii) 03Manpower as per Part C of Part II of RFP for 2 nd						

	year					
	(iii) 03 Manpower as per Part C of Part II of RFP for 3 rd year					
26.	Total Cost(X1x84 + Y + Z)(Excluding Taxes and Duties)					
27.	Total Cost(X2x120 + Y + Z)(Excluding Taxes and Duties)					

Note1:

- a. The financial bid has to be punched on .xls file provided in CPP Portal and has to be signed by the authorized representative of the bidder with full name designation and seal. **The price of each item has to be quoted separately.** The above quote should include Clearing and Transportation charges.
- b. **A bidder may quote for one or more regions. Separate price has to be indicated for each of the regions, if the bidder so desires.**
- c. **This project is a turnkey project.** The bidder has to quote price for all the items mentioned above. In case bidder fails to quote price for all the items his bid will not be considered for evaluation. Consortium is allowed as a single entity or a subsidiary.
- d. Explanatory notes, if so desired, can be separately submitted along with the financial bid but financial bid in the above format is required to be submitted.
- e. Please indicate separately any duties, taxes.

Note 2: L-1 will be determined separately for Serial No.26 (84 sq mtr) and Serial No. 27 (120Sq mtr) of Cost Details based on Net amount (not including levies, taxes and duties levied by Central/State/Local governments such as excise duty, GST, Octroi/entry tax, etc. on final product) of all items/requirements as mentioned above.

Signature of bidder_____

Name in Block letter _____

Date_____

Capacity in which Signed_____

Declaration Form

I/We M/s. _____ represented by its Proprietor /
Managing Partner / Managing Director having its Registered Office at

_____ do
hereby declare that I/We have carefully read all the conditions of tender..... **dated**
..... for supply of floated by the Food Safety Standard Authority of
India, New Delhi and accepts all terms & conditions of the Tender.

Signature and Seal of the Bidder
Name in capital letters with Designation

NOTE:

1. This should be submitted on the letter head of the bidder company/firm.

Specification for Clean Room (Model layout area approx 84 sq. mtrs)

S. No	Specifications	Qty.
1.	<p>GENERAL: Design, Manufacture, procurement, installation, testing and commissioning of classified Food Microbiology Laboratory. The work shall be carried out to the specifications stated under however not limited to the same. Cost of additional works, if any, as against the below stated shall be deemed to be incorporated in the bid. The Laboratory shall be delivered fit for the purposes for which it is intended to as per the requirement and satisfaction of the Client and further shall satisfy all norms of Microbiology Food Lab prescribed by competent authority. Furnishing of design, drawings and obtaining necessary approval of the same from the competent authorities shall be part of the scope of the work. Pre--site Visit & Inspection is mandatory. <u>Laboratory must follow the minimum area availability to accommodate requisite equipment for performing required functions / in respective areas as per the Model layout.</u></p> <ol style="list-style-type: none"> 1. Sample receiving area, a documentation room and office area (unclassified). 2. Media preparation room with sterilization and washing area (having sufficient space to store dry Media/reagents and Prepared Media in Refrigerators) 3. Sample preparation room (ISO Class 7as per ISO 14644-1 and Class 10,000 as per FS209E equivalent) over pressure 45 pa. 4. Inoculation & Reference culture room ((ISO Class 7as per ISO 14644-1 and Class 10,000 as per FS209E equivalent) over pressure 30 pa. 5. Clean corridor minimum 4.5-6 feet wide. (As Per Space Availability at site) 6. Incubation room and enumeration room (ISO Class 8 as per ISO 14644-1) having space to accommodate 2-4 individual. The incubation room should be accessible from separate entry other than clean room such that, the analyst need not enter clean room to observe the results. The incubation room should be connected to Inoculation room and clean corridor through pass box in order to receive material to be incubated and for re inoculation whenever required. (Three way pass box from corridor can serve this purpose). 7. Small analysis room attached to Incubation room (ISO Class 8). 8. De-contamination room (Unclassified) having access to collect material after Incubation room and also from Inoculation /Reference Rooms. 9. Entry to clean Room through minimum 2 air lock rooms; AL1 (change room) and AL2. Exit from clean room through air lock AL2 and AL1 having different air pressure. 	--

	<p>10. Clean room must be provided with Emergency door/fire/smoke alarm and emergency bell.</p> <p>The necessary civil and electrical work shall be done as per the specifications. The class validation of 'clean area' shall be done and report should be submitted by the renderer through a third-party accredited agency. Equipment used for validation should have valid traceable calibration certificates. The furniture shall be supplied as per the specifications given below.</p>	
2.	<p>MODULAR PANELLING and FLOORING WORKS</p> <p>The entire lab as per the layout shall be made with clean room modular partitions as per the following specification:</p> <ol style="list-style-type: none"> 1. Wall panels: Pre-fabricated insulated sandwich panels made up of 0.8 mm GPSP (Galvanized Plain Skin Pass) GI sheet on both side with epoxy polyester powder coating and insulation of PUF with density 40 ± 2 Kg/m³. Overall thickness of the panel shall be 80 mm. 2. Cladding panels: Pre-fabricated insulated sandwich panels made up of 0.8mm GPSP GI sheet on both side with epoxy polyester powder coating and insulation of PUF with density 40 ± 2 Kg/m³. Overall thickness of the panel shall be 40mm. 3. Ceiling panels: Pre-fabricated insulated sandwich panels made up of 0.8mm GPSP GI sheet on both side with epoxy polyester powder coating and insulation of PUF with density 40 ± 2 Kg/m³. Overall thickness of the panel shall be 60mm. Panels shall be designed to fit within each other with self-supported system. Load bearing capacity of the panel shall be 150kg/cu.M. Necessary clean room lightings and provision for air conditioning outlets shall be provided. Suitable factory made cutouts wherever required should be provided in the wall panel as applicable for fan filter units, HEPA filters, light fixture, return air grills, power sockets, cables. Pipes, exhaust ducts, magnahelic gauge, smoke sensors, utilities etc. The space between the panels and ceiling must have access for cleaning and repair purpose. 4. Riser Panels: Pre-fabricated insulated sandwich panels made up of 0.8mm GPSP GI sheet on both side with epoxy polyester powder coating and overall thickness of the panel shall be 80mm with inbuilt riser duct along with perforated grill. <p>Note: The gaps between panels shall be suitably filled with metal filler/epoxy/ silicone for a perfectly flush finish. Panels should be easy to maintain, durable, antistatic/conductive and fire retardant. The panel should be easy to clean and extremely hygienic.</p> <ol style="list-style-type: none"> 5. View Panel/Window: The MOC is toughened & tempered double glass of minimum 5mm thickness. Minimum standard size must be 	--

1000mm(W) x 1000mm(H). (Size may vary according to situation & availability of space according to finalized layout). View panel should be placed 1000 mm – 1200 mm or above the finished floor level on the wall panel. All the joints between toughened glass and wall panel should be properly sealed by metal filler/Epoxy/silicone for perfectly flush finish. Panel should be easy to maintain, durable, antistatic, and fire retardant. Wherever possible windows must be kept to have a view of outside environment of the laboratory. Window must be sealed with double walled thickened glass (Minimum two windows from clean room to outside environment)

6. **Aluminum coving:** Installation of Extruded Aluminum anodized Powder Coated covings for Wall to Wall, Wall to ceiling panels shall be properly coved with R-50, R-75, 90°, 2D & 3D corners clip on type(male female connectors) so that there is no any dust deposition in the joints. Corners, internal & external cove joining pieces shall be properly sealed with silicone sealant.
7. **Clean Room Doors:** Air tight, swing configuration flush type door finishes shall be 45±1 mm thick with chemical resistance antifungal, antibacterial properties having 1.2 mm thick frame and 0.8mm powder coated GI sheet in door sandwich with self-extinguishing poly urethane form of density 40±2 kg/m³ suitable to fix on 60 mm thick panel with provision for double glazing glass having minimum 5 mm thick tempered glass. Also includes hardware like SS handle back to back, door closer, SS hinges, SS ball bearing nut hinges, concealed tower bolt for double door, both side lock and key arrangement, SS kick plate and suitable neoprene, Y seal type gasket may be used between the door jam and door step.
8. **Emergency:** Air tight, swing configuration flush type door finishes shall be 45±1 mm thick with chemical resistance antifungal, antibacterial properties having 1.2 mm thick frame and 0.8mm powder coated GI sheet in door sandwich with self-extinguishing poly urethane form of density 40±2 kg/m³ suitable to fix on 60 mm thick panel with provision for double glazing glass having minimum 5 mm thick tempered glass. Also includes hardware like SS handle back to back, TS-71 door closer, SS hinges, SS ball bearing nut hinges, concealed tower bolt for double door, both side lock and key arrangement, SS kick plate and suitable neoprene, Y seal type gasket may be used between the door jam and door step.

Exit door/Window with panic latch door Laboratory shall be provided wherever mentioned for personnel exit in case of an emergency.
(As per Space Availability at site)

9. **Door Accessories:** It includes hardware like

SS handle back to back,
TS-71 door closer,
SS hinges,
SS ball bearing but hinges,
concealed tower bolt for double door,

	<p>both side lock and key arrangement, SS kick plate and suitable neoprene, Y seal type gasket View panel</p> <p>10. Flooring: Seamless antistatic (EPOXY) floor – Laying 3mm (2+1) mm thick self-leveling epoxy floor. The existing floor should be properly cleaned up leveled and roughened to prepare the surface for application of epoxy primer, filling of small cracks and unevenness with epoxy repairing putty. Over a uniform cemented flooring 2 mm of hardener (screed compound) is applied after that 1 mm of semi liquid epoxy resin will be applied for smoothing. Epoxy used for this application will be self-leveling and clean room compatible made of (FOSROC OR SIKA) or equivalent. The installed floor should display good abrasion resistant & monolithic jointless surface. Shall be of stain proof, Scratch resistant, Uniform color and free of joints / undulations / bubbles etc. The floor level shall match with the surrounding area.</p> <p>Any cracks, pin holes, porosity etc shall not be acceptable and to be repaired by contractor to the full satisfaction of users before handing over.</p> <p>11. Wall to Floor coving – The cove shall be made with silica sand and (EPOXY) with a radius of 60mm or larger, with all wall / floor joints made as merging without any unevenness. The existing walls need to be cleaned before and any water seepage or termite / rodent infestation needs to be treated permanently in classified and unclassified area under scope of microbiology laboratory</p> <p>12. Wall panels should not have any sharp edges and corners and do not support bacteriological or fungicidal growth and is resistant to most chemicals used in the lab.</p> <p>13. Plumbing lines as required shall be provided. Water drain work with SS GMP TRAP & its Connect with main drain line including all related civil work. Connection to the drain pipe in wash area must not be open and cause of contamination. Water connections to sink must be provided.</p> <p>14. Exhaust line for autoclave, biosafety cabinet, laminar flow and other equipment shall be provided.</p> <p>15. The switch board should not have any sharp edges.</p> <p>16. All doors except the doors in change rooms shall have view panels.</p> <p>17. Air locking system to maintain different pressure at entry and exist area of clean room as shown in figure.</p> <p>18. Fresh air and exhaust should be provided for wash/sterilization and decontamination area.</p> <p>19. The bidder should do validation initially while commissioning and 1 more validations in an interval of 12 months.</p>	
3.	<p>1. Heating, Ventilation and Air conditioning system (HVAC)</p> <p>2. The following area shall be provided with ISO 7 (Class 10,000) with</p>	--

humidity control HVAC and maintained at 22 ± 3 °C and Relative Humidity $55 \pm 5\%$

- i. Clean corridor over pressure 40 ± 5 pa
- ii. Sample preparation room over pressure 45 ± 5 pa
- iii. Inoculation room & Reference culture room over pressure 30 ± 5 pa
- iv. Incubator room over 30 ± 5 pa (ISO Class 8))
- v. Entry and Exist at 15 to 30 pa respectively.

The following area shall be provided with unclassified AC ventilation

- i. Media preparation room/sterilization room/office room
- ii. Sample receipt/storage

Over

Overall air quality shall be Class 10,000 and should be class 100 at grill level of HEPA filter. (To achieve this air quality, if any additional items are required which are not mentioned in the technical specifications, shall be included in the offer.)

- i. Validation of HEPA filters by appropriate tests like PAO etc.
- ii. Air Velocity and Air pattern at outlet of terminal filtration unit / filters.
- iii. Air Particulate count.
- iv. Air Change rate calculation.
- v. Temperature & Humidity test.
- vi. Pressure differential levels of the Clean room / adjoining areas.
- vii. Positive pressure in Pascal as indicated for area

a. Air Handling Unit (Thermo-Acoustic Lined):

The air handling units shall be double skin (with high density puf insulation), sectional, special high static draw through/blow through type AHU's complete with thermal break profile consisting of mixing air plenum section, blower section with DIDW blower (Supply blower), DX type coil, humidifier section, coil section, fan and motor section, in suitable horizontal configuration. 'Zero leakage/Very low leakage' aluminium supply air dampers, return air damper, Unit base frame with vibration isolation pad, suitable inspection doors for filter, coil and blower section AHU, motor suitable with Variable frequency drive (VFD), drive set with coupling guard, vibration isolators, internal lights etc.

**Capacity –For lab area 900 ± 100 sqft (approx.. 84 sq.mtrs.)
AHU (2-3 No.s approx.. subject to Site Requirement): -**

Capacity – 10000 – 12000 CFM

(define after layout finalization)

1. Material and Construction

Housing / Casing

Thermo-acoustic panels shall be 46 ± 2 mm thick made of 0.6mm Pre-coated GSS on outside, 0.6mm Plain GI intermediate sheet & 0.6mm Plain GI perforated Inner sheet. There should not be any metal to metal contact between inner and outer skins of AHU casing to ensure thermal bridging. AHUs with mixing box or wherever fresh air is ducted shall be with thermal break profile.

Entire AHU to be mounted over Heavy Gauge Galvanized steel sheet.

Thermo-acoustic panels shall be 46 ± 2 mm thick:

(a) **23 ± 2 mm thick Thermal insulation-** CFC free injected PUF of density not less than 40 ± 2 kg/cu. m. sandwiched between Outer sheet of the panel made out of 0.80 mm pre-coated galvanized sheet with PVC guard on outside & 0.6mm Plain GI on inside.

(b) **Acoustic insulation-** 23 ± 2 mm thick Glass wool with Laminated tissue of density 70-80 kg/cu.m. between 0.6mm Plain GI outer sheet & 0.60mm Plain Perforated G.I. inner sheet. These panels shall be screwed from outside to the framework with gasket system to make the joints airtight.

Units shall be required with access door(s) for maintenance purpose.

The cooling coil Drain pan shall be made out of minimum 22G stainless steel sheet externally insulated with 13mm thick closed cell Nitrile rubber insulation (For coastal area insulation thickness 19 mm) with multiple slope to facilitate fast removal of condensate.

The AHU should be AHRI/Eurovent certified

- i. Duct air purification system (photo-hydro-ionization technique)
- ii. Chemical filters provision with full charge of granular media filter, painted cold-rolled steel construction, non-toxic and non-hazardous. Media consisting of following: - activated alumina and sodium permanganate & activated carbon permanganate.

b. Cooling coil

- i. Dx type coil (eg. 8.5 TR coil capacity and < 500 FPM velocity across coil.)
- ii. Coil shall be pitched in the unit casing for proper drainage
- iii. The tube should be of suitable dia inner grooved Copper, Tube thickness- 0.5 mm

- iv. Fin details: Plain Hydrophilic, 0.15 mm thick , Aluminum
- v. 10-12 FPI
- vi. Header and End Plate – GI
- vii. coil face area shall be designed as per coil capacity and design calculations shall be submitted
- viii. Coil row- 6/8 row deep
- ix. Coil, header all joints shall be suitable to withstand an inside pressure of 20 Kg/cm²

c. Fan

- i. Type- DIDW forward curve/backward curve (centrifugal)
- ii. Number of fans – 2 Nos per AHU. Each fan shall be of 100 percent capacity.
- iii. Connection - Flexible FRLS PVC sheet of minimum 1.5mm thick
- iv. Model - Suitable for desired air delivery (minimum) at desired static pressure
- v. Air outlet velocity- Not more than 10.0 M/sec.
- vi. Fan efficiency shall be more than 70 %. Fan curve shall be submitted for approval.
- vii. The fan shall be suitable for operational variable speed with varying airflow and static pressure requirement.
- viii. Heavy duty anti-vibration mount shall be provided for insulating the unit casing.
- ix. Flame retardant, water proof silicone rubber, impregnated flexible connection shall be provided at the fan discharge.
- x. The fan housing shall be of Galvanized sheet steel and the impellers shall be fabricated from heavy gauge Galvanized steel sheet as per approved manufacturers' standard. Fan impeller shall be mounted on solid shaft supported to housing with angle iron frame and pillow block heavy-duty ball bearings.

d. Motor

- i. Capacity- Rated kW of motor shall have at least 20% more than the calculated kW based on load, fan efficiency. A calculation sheet may be included in the technical offer.
- ii. No of motors per AHU-2 Nos, Each AHU fan have separate motor.
- iii. Totally enclosed fan cooled squirrel cage induction motor with IP-55 protection, class F insulation & selected for quiet running.
- iv. Rated voltage- 415V, 3 phase, 50Hz.
- v. Allowable variations- $\pm 10\%$, $\pm 3\%$ frequency, 5% total harmonic distortion during running and starting.
- vi. Type of starter- Suitable for DOL starting.
- vii. Voltage drop during start- The motor shall be able to accelerate with additional 15% voltage drop due to starting current.

e. Pulley

- i. Taper lock pulley for fan and motor with V-Belts shall be used in drive set. Protection mesh shall be also supplied for this area wherever required.

f. Frame

- i. Extruded aluminum section with thermal break section shall be provided below fan and motor. Spring mounted rubber pads shall be provided below this section to avoid any vibration.

g. Drain tray

- i. 20G - SS 304 with nitrile rubber/PUF insulation

h. Vibration isolation

- i. Suitable anti-vibration mounting shall be provided.

i. Filter

- i. AHU shall have two stage of filtration
- ii. Pre filter- Efficiency 90% down to 10 microns, Filter casing- Aluminum, Box type
- iii. Fine filter- Efficiency 95% down to 5 microns. Filter casing- Aluminum, Frame Al/GI. Fine filter shall be washable 5 ply HDPE. type – Flange type
- iv. Fresh Air to AHU shall be ducted along with pre Filter and Damper. Size of fresh air duct is approx. 400 x 400mm. Cost of damper and filter shall be included in cost of AHU.
- v. Dampers shall be opposed blade type. Blades shall be made of aerofoil design hollow extruded aluminum sections with integral gasket and assembled within a rigid extruded aluminum alloy frame. All linkages and supporting spindles shall be made of aluminum or nylon, turning in Teflon bushes. Manual dampers shall be provided with a bakelite knob for locking the damper blades in position. Linkages shall be extended wherever specified for motorized operation. Damper frames shall be sectionalized to minimize blade warping. Air leakage through dampers when in the closed position shall not exceed 1.5% of the maximum design air volume flow rate at the maximum design air total pressure.
- i. Application of **12 mm thick** XPE TOC Slim insulation Cross Linked polyethylene foam with aluminum metalized foil for insulation on Supply duct running inside building area and with UV Foils for insulation for supply Ducts running out side building area i.e. exposed to atmosphere
- j. Application of **09 mm thickness**. XPE TOC Slim insulation Cross

Linked polyethylene foam with aluminum metalized foil for insulation on Return duct running inside building area and with UV Foils for insulation for Return Ducts running out side building area i.e. exposed to atmosphere

- k. Installation, Testing & Commissioning of powder coated perforated (65%) supply and Return air grills made out of extruded Aluminum sheets
- l. Installation, Testing & Commissioning of Powder of suitable numbers and dimensions of coated **HEPA Filters (Efficiency, efficiency 99.99% for 0.3 microns** with individual test certificates.) housing with PAO & Pascal Pressure Test Point with canvas connection and VCD.
- m. Maximum sound limit in the corridor area shall be 50 to 60 db.
- n. Installation, Testing & Commissioning of Riser Filters.
- o. Installation of Magnehelic differential Pressure Gauge- Magnehelic gauge shall be provided for measuring differential pressure of clean room with adjoining area. Outer body of the magnehelic gauge shall be stainless steel **(0-20 / 0-30 / 0-50 MM WG IN AHU AND ± 30 / 50 PASCAL FOR ROOM)**
- p. Temperature and RH sensor to measure the temperature and humidity of each clean room. Accuracy levels: Temperature: ± 0.2 °C or better, RH: ± 1% or better.
- q. The electrical wiring inside the AHU room and interconnection between AHU and outdoor unit through required protective circuits in all manners including HP, LP with fully automatic control unit shall be provided.
- r. All the external ducting shall be made weather proof.
- s. **Fresh Air Louvers (Wherever specified)**

Louvers should be of aluminum construction duly anodized (more than 20 micron). Blades shall be of extruded aluminum sections fixed on a rigid aluminum frame. Supporting frames shall be provided for bigger louvers to ensure minimum warping.

13. Filters

Pre – filters (MERV-8/ G-4):

Cleanable filter made out of dry cleanable synthetic type minimum 50mm thick, shall be provided on the suction side of AHU as a standard equipment with the unit. These filters shall have the efficiency of 90% down to 10micron particle size. When these filters become loaded or full of dirt, it is removed from service and replaced by another filter. Face velocity across these filters shall not exceed 155 MPM.

14. Ultraviolet Germicidal Irradiation (UVGI) System

GENERAL

UVGI System shall be provided with the primary aim of achieving substantial reduction in bacteria and Virus, both airborne and on cooling coil surface (when used in AHU). The UVGI System shall preferably be 100% indigenous or American/Canadian make. Chinese origin manufactured or make of UVGI systems shall not be accepted.

Selection Criteria/Basis of Design: (Coil and Duct Mounted)

1. The UVGI system and fixtures should be installed in sufficient quantity and in such an arrangement so as to provide an equal distribution of UVC energy on the coil and in the drain pan and other surfaces prone to biofouling. To maintain energy efficiency, the UVC energy produced shall be of the lowest possible reflected and shadowed losses
2. The use of UV design and sizing software is recommended for proper system sizing and configuration. This UVGI system configuration software shall calculate the number of lamps, calculated UV intensities and placement of lamps for proper configuration. UVGI systems are intended to operate continuously, 24 hours a day. The UVGI system shall be designed to cover the entire face area of the cooling coil when installed in the AHU.
3. The UVGI system shall achieve near total elimination of bacteria/virus/ biomass on the cooling coil. Subsequently, the UVGI system may be kept in ON position 24/7 (even when the AHU is switched off or is not in operation) to ensure that the bacteria/virus does not reappear.
4. **Intensity:** The minimal UVC energy shall not be less than 4 micro W/cm² per inch of lamp at 1 Meter and not more than 30% loss is allowed over a 2 year period.
5. When Installed in the AHU, the UVGI system and fixtures shall be installed downstream of the cooling coil. The selection and placement of the UVGI system shall ensure full irradiation of the entire face area of the cooling coil and the UVC energy bathes all surfaces of the coil and drain pan.
6. The face velocity of dehumidified air over the coil will be 500 FPM or lower.
7. The UVGI System shall be free standing and be mounted in such a manner that lamps are in perpendicular position to air flow using Aluminum arrangement to be corrosion free.
8. In case system is to be installed in the Duct, same shall be installed at an appropriate location to provide sufficient residence time.
9. The UVGI system should comply and tested by internationally recognized testing lab like ETL, CSA or UL to following standards.

- **Luminaires:** IEC 60598 Luminaires, CSA C22.2 No. 250.0 Safety for Luminaires, UL 1598 Safety for Luminaires,

- **UL:** 867/CSA C22 NO. 187 standard (Ozone level must be within

the US EPA acceptable limit of 0.05 ppm)

- **UL:** 758 (for electric cables)
- **UL:** 224 (for Sockets and tubing)
- UV System with UL 1995 ABQK listed

10. The lamps and power supplies shall be rated for wet locations and air handler use.
11. The Duct mounted system same shall be installed at an appropriate location to provide enough residence time. The suitable length of straight duct should be provided by the HVAC Contractor/Customer at site. Please refer BOQ/Dwg. for the same.
12. The face velocity of dehumidified air over the coil will be 500 FPM or lower. When installed in the duct the face velocity can be higher and as per the duct design.

PRODUCT

1. The UV lamp shall be T5 Single ended four pin lamps
2. The UVGI system shall be suitable to operate with 230V+/-10V, single-Phase A.C. Supply
3. Units shall have UVC germicidal lamp of high output, 800m A each when measured at a horizontal distance of 8-10 inches from the lamp, HVAC type, assembled and tested. Components shall include a housing, high efficiency electronic power source, sockets and lamps, all constructed to withstand HVAC environments
4. Housings shall be made of robust materials, with Units having suitable electrical connectors to simplify wiring.
5. High efficiency electronic power sources shall be 115 or 208/230V AC. Installation of ballast and control electronics to be outside the AHU, in a separate control panel.
6. UV lamp shall be fabricated out of special high transmission glass, T5 (15mm) diameter. They shall produce 95% of their energy at 254 nm. UV lamp shall not produce ozone or other secondary contamination and to substantiate this, the lamps shall be tested by approved Indian Lab or internationally recognized lab for output performance of 254 nm. Lamp manufacturer to submit the certificate from this lab. The lamp shall be high output type and should not be lower than 800 mA. Special interior coating shall be provided to ensure high UV output overrated life
7. The internal wiring (UV resistant) for UV system shall be supplied by manufacturer/strategic business partner/ authorized dealers of manufacturer business partners only.
8. **The system shall have a separate Control Panel consisting of:**
 - a. Electronic Ballast with high power factor of > 0.90
 - b. Run hour meter
 - c. Mains on indicator lamp
 - d. MCB or Disconnect Switch

	<p>9. Each lamp shall have a useful service life of 18,000 hours with no more than a 30% output loss at the end of the two (2) years of continuous use. Lamps shall be shielded hard quartz hot filament type with a "getter" cathode filament guard (essential for the extended lamp life operation of two (2) years.</p> <p>10. Lamps used should be of UV -C ceramic lamp with pre -heat start having electronic ballast rated 15000 starts. Lamps should be hot cathode germicidal lamp</p> <p>11. Ballast: The power source i.e. ballast will be an electronic high frequency type, program start with a power factor greater than 0.90 and an energy conversion of at least 75%. It shall be a universal 120-277 VAC, 50-60 Hz, IP 64 Rated unit and be operationally reliable in indoor environments ranging from 45-degree F to 170-degree F. THD Value as per IEEE 519. The ballast shall carry Lifetime warranty against manufacturing defects</p>	
4.	<p>OUTDOOR CONDENSING UNITS (Packed ductable split AC)</p> <ol style="list-style-type: none"> 1. Capacity – 25 – 30 TR @ approx..900±100 sqft (approx.. 84 sq.mtrs.) (capacity will be defined after area finalization) 2. Refrigerant –R410A/R134a/R407/ecofriendly 3. Compressor Type - Hermetically Sealed Scroll/screw 4. No of Compressors = 1 5. Controller - Microprocessor based 6. Power Supply – 440 /380 V, 3 Phase, 50 Hz, AC 7. Tube material – inner grooved copper 8. Fin Material – hydrophobic coated aluminum 9. Condenser fan – Direct driven Axial fan 10. Fan material – Aluminum <ul style="list-style-type: none"> • The coil shall have minimum 9.52mm dia(O.D.) & made from seamless solid drawn copper tubes. The minimum thickness of tube shall be 0.3 mm for cooling coils. • The depth of the coil shall be such as to suit the requirements. Viz. re-circulated air applications, or 100% fresh air applications. The coil Row shall be selected as per the coil selection. Computerized cooling coil selection output shall be submitted. • Each section of the coil shall be fitted with flow and return headers to feed all the passes of the coil properly. The headers shall be of copper • The fins shall be of aluminum. The minimum thickness of the fins shall be 0.13 mm. Fin spacing shall be 11-12 fins per inch (4-5fins per cm). Fins may be sine wave/corrugated type. • The tubes shall be mechanically expanded for maximum thermal contact between fins and tubes. The fins shall be evenly spaced and upright. The fins bent during installation shall be carefully realigned. • The Coil Casing shall be of SS. For 100 % fresh air application, Fins shall be hydrophilic coated type. • Each coil shall be factory tested at 600 PSI. Pressure & Face velocity across coil shall not exceed 2.54 m/ s. 	--

	<p>AHU /CONDENSING UNITS should be</p> <ol style="list-style-type: none"> a. well mounted over cemented blocks and raised 2 feet above the ground/floor. b. kept under shade of fiber or metal for rain /dust protection. c. kept at a place easily accessible for maintenance and must not obstruct any passage or the activity of lab/neighborhood area. 	
5.	<p>Drain Pipe</p> <p>G.I drain pipe shall be 40 mm NB dia pipe having thickness of 2 mm (minimum). Pipe shall be insulated with 19 mm nitrile rubber and 28 gauge Aluminum cladding. Proper slope shall be maintained to drain out the AHU condensate. Pipe shall be erected with suitable fittings, accessories and supports.</p>	
6.	<p>Electrical works comprehensive</p> <ol style="list-style-type: none"> 1. The power required for the microbiology lab shall be taken from the main panel of the building. Necessary distribution panels shall be installed by the bidder. <ol style="list-style-type: none"> a. Adequate lightings shall be provided. b. The electrical inspectorate's approval shall be obtained by the bidder <p>Wiring and Accessories</p> <ol style="list-style-type: none"> 2. Supply & wiring for following points in surface / recessed mounted rigid medium gauge 20mm PVC conduit with all accessories, using 3 runs of 1.5 Sq mm FRLS PVC insulated stranded copper conductor single core wire for phase, neutral & earth, with modular 6A one way switch, modular plate, suitable GI box etc as required: 3. Light point / exhaust fan / turbo ventilator points as required 4. Supply & wiring for circuit / sub main wiring in surface / recessed mounted rigid medium gauge 25mm PVC conduit with all accessories in surface/recess 5. Supply and Fixing the following modular type switches & accessories with modular plates and suitable GI boxes and giving necessary connections as required <ol style="list-style-type: none"> i. 6A SP 5 pin shuttered modular type socket with switch in each switch board ii. 2 nos 6 A SP 5 pin shuttered modular type socket with 2 No's modular switch –UPS power. iii. 16A 5 pin shuttered modular type socket with switch iv. Provision for shifting existing switch board to a conventional location and giving connections etc. v. Supply and fixing 20 amps. 240 volts SP industrial type socket outlet (IPP) with 2 poles and earth, metal enclosed plug top including supply and fixing of one number 20 amps (10kA) SP MCB (C-Curve) in sheet steel enclosure on surface or in recess with chained metal cover for the socket outlet and complete with 	--

	<p>connections testing and commissioning etc. as required.</p> <p>vi. Installation of Clean Room Lights & Fixture with fitting with LED12" x 12</p> <p>vii. Installation & Testing of</p> <p>a. Modular Switches.</p> <p>b. Modular Sockets for various instruments in each room</p> <p>MCBs AND MCB DISTRIBUTION BOARDS</p> <p>i. Supply and installation of sheet steel, phosphatised and painted, dust and vermin proof enclosure of MCB 4 Way double cover Vertical DB – 3 Phase of including copper /brass bus bar, neutral link, earth bus and DIN rail with MCB/isolator/RCCB etc. fixed on wall using suitable anchor bolts or fixed in recess including cutting hole on the wall, making good the damages, colour washing etc. as required.</p> <p>ii. Supply and installation of sheet steel, phosphatised and painted, dust and vermin proof enclosure of UPS DB –6 way single Phase double cover (IP 42/43)230 V of including copper /brass bus bar, neutral link, earth bus and DIN rail with MCB/isolator etc. fixed on wall using suitable anchor bolts or fixed in recess including cutting hole on the wall, making good the damages, colour washing etc. as required</p> <p>Single line electrical distribution diagram should be submitted by the vendor along with the technical offer.</p>	
7.	<p>Wall mounted fans (In unclassified areas)</p> <p>Supply, conveyance, installation, testing and commissioning of wall mounted fans, as required. Fixing necessary bolt and nuts, making good the damages etc. as required including giving connections with required length of 24/0.20mm PVC insulated and PVC sheathed 3 core round copper conductor flex wire or with extended original wiring etc. and numbers as required.</p>	--
8.	<p>Lighting fixtures</p> <p>Supply and fixing cast aluminum down light fitting with 11 to 14 W CFLCFL (or equivalent LED) to false ceiling including giving connections with required length of 16/0.20mm PVC insulated and PVC sheathed 3 core round copper conductor flex wire conforming to relevant ISS or extending the original wiring and making good the surface as required (Wipro WCP 27118 SWG or equivalent make)</p>	--

9.	Validation of HVAC after completion 1) Documentation for DQ, IQ, OQ, PQ with certificates of all brought items. 2) Integrity test for HEPA Filter's once. 3) Room Pressure balancing once. 4) air velocity test 5) Particle count 6) Recovery Test 7) Air Flow Pattern	--
10.	Fire extinguisher Supply and installation of ABC type dry powder fire extinguisher of 2 kg. Capacity complete with initial charges and installation brackets	--
11.	Air curtain 1.7m length should be installed wherever required i. Type: Non-Recirculating, Horizontal mount ii. Suction: Front without duct iii. Discharge: Vertically down	--
12.	Hand Sanitizer (Manual Foot Operated dispenser for clean rooms) 1. The hand sanitizer should dispense disinfectant (Isopropyl alcohol) on to hands. 2. Body should be non-corrosive stainless-steel construction. 3. Tank capacity 500ml	Minimum 4 nos.
13.	Static Pass box .(As per Space Availability at site) Installation, Testing & Commissioning SS-304 static Pass Box fully automatic system, with electromagnetic interlocking system, digital display, UV & fluorescent light alarm system etc. (working size: 450mm W X 450mm D X 450mm H)	1-2 nos.
14.	Dynamic Pass box .(As per Space Availability at site) Installation, Testing & Commissioning SS-304 DYNAMIC Pass Box fully automatic system, with electromagnetic interlocking system, digital display, HEPA Filters, UV & fluorescent light alarm system etc. (working size: 450mm W X 450mm D X 450mm H)	4-5 nos.
15.	Cross over Bench at entry and exist of clean room and media room (as per approved layout) 1. SS 304, 18 & 16G combination, mat finish 2. Inside horizontal support 3. Bottom both side 30mm color for will be grouting 4. Approx size 1000 mm W x 400 mm D x 600mm H (can be modified to size)	2-3 nos.
16.	SS-304 Modular work bench with SS -304 top. (As per Space Availability at site)	3-4 No.s

	Table should be SS 304 without drawer and locker all exposed surfaces should be 18 gauge SS Size - 1500 MM x 750 MM (W) x 900 MM (H) (minor deviations acceptable)	
17.	SS-304 Modular Work bench With Granite top.(As per Space Availability at site) Installation & Commissioning SS304 with 1 drawer and 1 shutter door storage. Size - 1500 MM x 750 MM (W) x 900 MM (H) (minor deviations acceptable Table top should be provided with (18mm ±1mm) thick well-polished Black Granite.	4-5 No.s
18.	SS-304 Modular work Bench with Granite Top and Sink .(As per Space Availability at site) Stainless steel SS304 table of dimension 1800 x750 (W) x 900 mm (H) tabletop height from floor. Minor deviation in measurement is acceptable. Should have under bench drawers and shutters with locking arrangement. Table top should be provided with (18mm ±1mm) thick well polished Black Granite. Should be supplied with one sink (SS 304) at the right end of size 400 x 300 mm Approx (16x12 inches) sink joints should be continuously welded with two way water tap. Water connections and plumbing should be provided	1-2 No.s
19.	Movable trolley with lockable wheels SS 304, 18 & 16G combination, mat finish Size :- 2.5' x 2.5' with two shelf 2nos	2 No.s
20.	Revolving stool Installation & Commissioning of SS-304 WORKING STOOL for above bench SS 304, 18 & 16G combination, mat finish.	13-15 nos.
21.	UV Garment SS-304 Storage (in Air Lock 2 of entry to clean room) Garment storage cubicle complete SS304 construction SS rod for hanging folded garments. SS perforated shelves / tray (removable) at bottom for keeping mask and shoe cover etc. Fully toughened glass door/Acrylic UV light with fittings & limit switch Leveling legs. Approx internal dimension : 610(W)x 430(D)x 1335(H)mm with minor modifications as per available area	1 no.
22.	SS Dustbin :- Stainless steel foot operated dustbin of appropriate size as per requirement will be provided	7-8 No.s
23.	Sample/Chemical SS-304 Storage Cabinet: SS perforated 4 -5 No.s adjustable shelves/tray Fully toughened glass door/Acrylic	3-4 No.s

	Approx internal dimension: 610(W)x 430(D)x 1335(H)mm with minor modifications as per available area	
24.	Wall cabinets (over head racks):- SS wall cabinets of suitable size will be provided for storage.	4-5 No.s
25.	Air Conditioner 1.5 Tonne , 3 Star for office room	(1 No.)
26.	UPS 30KVA online: 3 phase with inbuilt Isolator and one hour back up. There should be dedicated line for UPS	01 No.s
27.	Stabilizer 50KVA	01 No.s

Specifications for Clean Room (Model layout area approx 120 sq. mtrs)

S.No	Specifications	Qty.
1.	<p>GENERAL: Design, Manufacture, procurement, installation, testing and commissioning of classified Food Microbiology Laboratory. The work shall be carried out to the specifications stated under however not limited to the same. Cost of additional works, if any, as against the below stated shall be deemed to be incorporated in the bid. The Laboratory shall be delivered fit for the purposes for which it is intended to as per the requirement and satisfaction of the Client and further shall satisfy all norms of Microbiology Food Lab prescribed by competent authority. Furnishing of design, drawings and obtaining necessary approval of the same from the competent authorities shall be part of the scope of the work. Pre--site Visit & Inspection is mandatory. <u>Laboratory must follow the minimum area availability to accommodate requisite equipment for performing required functions / in respective areas as per the Model layout .</u></p> <ol style="list-style-type: none"> 1. Sample receiving area, a documentation room and office area. 2. Media preparation room with sterilization and washing area(having sufficient space to store dry Media/reagents and Prepared Media in Refrigerators) 3. Sample preparation room (ISO Class 7as per ISO 14644-1 and Class 10,000 as per FS209E equivalent) over pressure 45 pa. 4. Inoculation & Reference culture room ((ISO Class 7as per ISO 14644-1 and Class 10,000 as per FS209E equivalent) over pressure 30 pa. 5. Clean corridor minimum 4.5-6 feet wide. (As Per Space Availability at site) 6. Incubation room and enumeration room (ISOCClass 8 as per ISO 14644-1) having space to accommodate 2-4 individual. The incubation room should be accessible from separate entry other than clean room such that, the analyst need not enter clean room to observe the results. The incubation room should be connected to Inoculation room and clean corridor through pass box in order to receive material to be incubated and for re inoculation whenever required. (Three way pass box from corridor can serve this purpose). 7. Small analysis room attached to Incubation room (ISO Class 8) 8. De-contamination room (Unclassified) having access to collect material after Incubation room and also from Inoculation /Reference Rooms. 	

	<p>9. Entry to clean Room through minimum 2 air lock rooms; AL1 (change room) and AL2. Exit from clean room through air lock AL2 and AL1 having different air pressure.</p> <p>10. Section for molecular analysis is also provided with three interconnected rooms as follows-</p> <ol style="list-style-type: none"> a. DNA extraction room (ISO class 7) over pressure 45 pa*. b. PCR Room (ISO class 7) over pressure 30 pa*. c. POST PCR Room (ISO class 7) over pressure 45 pa*. <p style="text-align: center;">(*PRESSURE IN PCR ROOMS CAN BE SET AS PER FUNCTIONS DECIDED BY LAB)</p> <p>11. Clean room must be provided with Emergency door/fire/smoke alarms and emergency bell.</p> <p>The necessary civil and electrical work shall be done as per the specifications. The class validation of 'clean area' shall be done and report should be submitted by the tenderer through a third-party accredited agency. Equipment used for validation should have valid traceable calibration certificates. The furniture shall be supplied as per the specifications given below.</p>	
2.	<p>MODULAR PANELLING and FLOORING WORKS</p> <p>The entire lab as per the layout shall be made with clean room modular partitions as per the following specification.</p> <ol style="list-style-type: none"> 1. Wall panels: Pre-fabricated insulated sandwich panels made up of 0.8 mm GPSP (Galvanized Plain Skin Pass) GI sheet on both side with epoxy polyester powder coating and insulation of PUF with density $40 \pm 2 \text{ Kg/m}^3$. Overall thickness of the panel shall be 80 mm. 2. Cladding panels: Pre-fabricated insulated sandwich panels made up of 0.8mm GPSP GI sheet on both side with epoxy polyester powder coating and insulation of PUF with density $40 \pm 2 \text{ Kg/m}^3$. Overall thickness of the panel shall be 40mm. 3. Ceiling panels: Pre-fabricated insulated sandwich panels made up of 0.8mm GPSP GI sheet on both side with epoxy polyester powder coating and insulation of PUF with density $40 \pm 2 \text{ Kg/m}^3$. Overall thickness of the panel shall be 60mm. Panels shall be designed to fit within each other with self-supported system. Load bearing capacity of the panel shall be 150kg/cu.M. Necessary clean room lightings and provision for air conditioning outlets shall be provided. Suitable factory made cutouts wherever required should be provided in the wall panel as applicable for fan filter units, HEPA filters, light fixture, return air grills, power sockets, cables. Pipes, exhaust ducts, magnahelic gauge, smoke sensors, utilities etc. The 	--

space between the panels and ceiling must have access for cleaning and repair purpose.

4. **Riser Panels:** Pre-fabricated insulated sandwich panels made up of 0.8mm GPSP GI sheet on both side with epoxy polyester powder coating and overall thickness of the panel shall be 80mm with inbuilt riser duct along with perforated grill.

Note: The gaps between panels shall be suitably filled with metal filler/epoxy/ silicone for a perfectly flush finish. Panels should be easy to maintain, durable, antistatic/conductive and fire retardant. The panel should be easy to clean and extremely hygienic.

5. **View Panel/Window :**The MOC is toughened & tempered double glass of minimum 5mm thickness. Minimum standard size must be 1000mm(W) x 1000mm(H). (*Size may vary according to situation & availability of space according to finalized layout*). View panel should be placed 1000 mm – 1200 mm or above the finished floor level on the wall panel. All the joints between toughened glass and wall panel should be properly sealed by metal filler/Epoxy/silicone for perfectly flush finish. Panel should be easy to maintain, durable, antistatic, and fire retardant. Wherever possible windows must be kept to have a view of outside environment of the laboratory. Window must be sealed with double walled thickened glass (Minimum two windows from clean room to outside environment) .
6. **Aluminum coving:** Installation of Extruded Aluminum anodized Powder Coated covings for Wall to Wall, Wall to ceiling panels shall be properly coved with R-50,R-75, 90°, 2D & 3D corners clip on type(male female connectors) so that there is no any dust deposition in the joints.Corners, internal & external cove joining pieces shall be properly sealed with silicone sealant.
7. **Clean Room Doors:** Air tight, swing configuration flush type door finishes shall be 45±1 mm thick with chemical resistance antifungal anti bacterial properties having 1.2 mm thick frame and 0.8mm powder coated GI sheet in door sandwich with self-extinguishing poly urethane form of density40±2 kg/m³suitable to fix on 60 mm thick panel with provision for double glazing glass having minimum 5 mm thick tempered glass. Also includes hardware like SS handle back to back, TS-71 door closer, SS hinges, SS ball bearing nut hinges, concealed tower bolt for double door, both side lock and key arrangement, SS kick plate and suitable neoprene, Y seal type gasket may be used between the door jam and door step.
8. **Emergency** Air tight, swing configuration flush type door finishes shall be 45±1 mm thick with chemical resistance antifungal anti bacterial properties having 1.2 mm thick frame and 0.8mm powder coated GI sheet in door sandwich with self-extinguishing poly urethane form of density40±2 kg/m³suitable to fix on 60 mm thick panel with provision for double glazing glass having minimum 5 mm thick tempered glass. Also includes hardware like SS handle back

to back, TS-71 door closer, SS hinges, SS ball bearing nut hinges, concealed tower bolt for double door, both side lock and key arrangement, SS kick plate and suitable neoprene, Y seal type gasket may be used between the door jam and door step.

Exit door/Window with panic latch door Laboratory shall be provided wherever mentioned for personnel exit in case of an emergency. **(As per Space Availability at site)**

9. **Door Accessories:** It includes hardware like

SS handle back to back,
TS-71 door closer,
SS hinges,
SS ball bearing but hinges,
concealed tower bolt for double door,
both side lock and key arrangement,
SS kick plate and s
uitable neoprene, Y seal type gasket
View panel

10. **Flooring:** Seamless antistatic **(EPOXY)** floor – Laying 3mm (2+1)mm thick self-leveling epoxy floor. The existing floor should be properly cleaned up and roughened to prepare the surface for application of epoxy primer, filling of small cracks and unevenness with epoxy repairing putty. Over a uniform cemented flooring 2 mm of hardener (screed compound) is applied after that 1 mm of semi liquid epoxy resin will be applied for smoothing. Epoxy used for this application will be self-leveling and clean room compatible made of **(FOSROC OR SIKA)** or equivalent. The installed floor should display good abrasion resistant & monolithic jointless surface. Shall be of stain proof, Scratch resistant, Uniform color and free of joints / undulations / bubbles etc. The floor level shall match with the surrounding area.

Any cracks, pin holes, porosity etc shall not be acceptable and to be repaired by contractor to the full satisfaction of users before handing over.

11. **Wall to Floor coving** – The cove shall be made with silica sand and **(EPOXY)** with a radius of 60mm or larger, with all wall / floor joints made as merging without any unevenness. The existing walls need to be cleaned before and any water seepage or termite / rodent infestation needs to be treated permanently in classified and unclassified area under scope of microbiology laboratory

12. Wall panels should not have any sharp edges and corners and do not support bacteriological or fungicidal growth and is resistant to most chemicals used in the lab.

13. Plumbing lines as required shall be provided. Water drain work with SS GMP TRAP & it's Connect with main drain line including all

	<p>related civil work. Connection to the drain pipe in wash area must not be open and cause of contamination. Water connections to sink must be provided.</p> <p>14. Exhaust line for autoclave, biosafety cabinet, laminar flow and other equipment shall be provided.</p> <p>15. The switch board should not have any sharp edges.</p> <p>16. All doors except the doors in change rooms shall have view panels.</p> <p>17. Air locking system to maintain different pressure at entry and exist area of clean room as shown in figure.</p> <p>18. The room and sterile corridor over pressure (high positive pressure) should be as indicated.</p> <p>19. Fresh air and exhaust should be provided for wash/sterilization and decontamination area.</p> <p>20. The bidder should do validation initially while commissioning and 1 more validations in an interval of 12 months.</p>	
3.	<p>1. Heating, Ventilation and Air conditioning system (HVAC)</p> <p>2. The following area shall be provided with ISO 7 (Class 10,000) with humidity control HVAC and maintained at 22 ± 3 °C and Relative Humidity $55 \pm 5\%$</p> <ul style="list-style-type: none"> i. Clean corridor over pressure 40 ± 5 pa ii. Sample preparation room over pressure 45 ± 5 pa iii. Inoculation room & Reference culture room over pressure 30 ± 5 pa iv. Incubator room over 30 ± 5 pa (ISO Class 8) v. DNA extraction and POST PCR in molecular section over pressure 45 ± 5 pa vi. PCR Room over pressure in molecular section 30 ± 5 pa vii. Entry and Exist at 15 to 30 pa respectively. <p>The following area shall be provided with unclassified AC ventilation</p> <ul style="list-style-type: none"> i. Media preparation room/sterilization room/office room ii. Sample receipt/storage <p>Overall air quality shall be Class 10000 and should be class 100 at grill level of HEPA filter. (To achieve this air quality, if any additional items are required which are not mentioned in the technical specifications, shall be included in the offer.)</p> <ul style="list-style-type: none"> i. Validation of HEPA filters by appropriate tests like PAO etc. ii. Air Velocity and Air pattern at outlet of terminal filtration unit / filters. iii. Air Particulate count. iv. Air Change rate calculation. v. Temperature & Humidity test. vi. Pressure differential levels of the Clean room / adjoining areas. vii. Positive pressure in Pascal as indicated for area 	--

a. Air Handling Unit(Thermo-Accoustic Lined):

The air handling units shall be double skin(with high density puf insulation), sectional, special high static draw through/blow through type AHU's complete with thermal break profile consisting of mixing air plenum section, blower section with DIDW blower (Supply blower), DX type coil, humidifier section, coil section, fan and motor section, in suitable horizontal configuration. 'Zero leakage/Very low leakage' aluminum supply air dampers, return air damper, Unit base frame with vibration isolation pad, suitable inspection doors for filter, coil and blower section AHU, motor suitable with Variable frequency drive (VFD), drive set with coupling guard, vibration isolators, internal lights etc.

Capacity –For lab area 1300±100sqft(approx.. 120sq.mtrs.)

AHU (3-4 No.s approx. subject to site requirement) :-

Capacity – 16000 - 18000 CFM

(define after .dwg finalization) .

Material and Construction

Housing / Casing

Thermo-accoustic panels shall be 46±2mm thick made of 0.6mm Pre-coated GSS on outside, 0.6mm Plain GI intermediate sheet & 0.6mm Plain GI perforated Inner sheet. There should not be any metal to metal contact between inner and outer skins of AHU casing to ensure thermal bridging. AHUs with mixing box or wherever fresh air is ducted shall be with thermal break profile.

Entire AHU to be mounted over Heavy Guage Galvanized steel sheet.

Thermo-acoustic panels shall be 46±2 mm thick:

(a) **23±2 mm thick Thermal insulation-** CFC free injected PUF of density not less than 40±2 kg/cu. m. sandwiched between Outer sheet of the panel made out of 0.80 mm pre-coated galvanized sheet with PVC guard on outside & 0.6mm Plain GI on inside.

(b) **Acoustic insulation-** 23±2mm thick Glass wool with Laminated tissue of density 70-80 kg/cu.m. between 0.6mm Plain GI outer sheet & 0.60mm Plain Perforated G.I. inner sheet. These panels shall be screwed from outside to the framework with gasket system to make the joints airtight.

Units shall be required with access door(s) for maintenance purpose.

The cooling coil Drain pan shall be made out of minimum 22G stainless steel sheet externally insulated with 13mm thick closed cell Nitrile rubber insulation (For coastal area insulation thickness 19 mm) with multiple

slope to facilitate fast removal of condensate.

The OEM should be AHRI/Eurovent certified

- i. Duct air purification system(photo-hydro-ionization technique)
- ii. Chemical filters provision with full charge of granular media filter, painted cold-rolled steel construction, non-toxic and non hazardous. Media consisting of following :- activated alumina and sodium permanganate & activated carbon permanganate.

b. Cooling coil

- i. Dx type coil (eg. 8.5 TR coil capacity and < 500 FPM velocity across coil.)
- ii. Coil shall be pitched in the unit casing for proper drainage
- iii. The tube should be of suitable dia inner grooved Copper , Tube thickness- 0.5 mm
- iv. Fin details: Plain Hydrophilic , 0.15 mm thick , Aluminum
- v. 10-12 FPI
- vi. Header and End Plate – GI
- vii. coil face area shall be designed as per coil capacity and design calculations shall be submitted
- viii. Coil row- 6/8 row deep
- ix. Coil, header all joints shall be suitable to withstand an inside pressure of 20 Kg/cm²

c. Fan

- i. Type- DIDW forward curve/backward curve (centrifugal)
- ii. Number of fans – 2 Nos per AHU. Each fan shall be of 100 percent capacity.
- iii. Connection - Flexible FRLS PVC sheet of minimum 1.5mm thick
- iv. Model - Suitable for desired air delivery (minimum) at desired static pressure
- v. Air outlet velocity- Not more than 10.0 M/sec.
- vi. Fan efficiency shall be more than 70 %. Fan curve shall be submitted for approval.
- vii. The fan shall be suitable for operational variable speed with varying airflow and static pressure requirement.
- viii. Heavy duty anti-vibration mount shall be provided for insulating the unit casing.
- ix. Flame retardant, water proof silicone rubber, impregnated flexible connection shall be provided at the fan discharge.
- x. The fan housing shall be of Galvanized sheet steel and the impellers shall be fabricated from heavy gauge Galvanized steel sheet as per approved manufacturers' standard. Fan impeller shall be mounted on solid shaft supported to housing with angle iron frame and pillow block heavy-duty ball bearings.

d. Motor

- i. Capacity- Rated kW of motor shall have at least 20% more than the calculated kW based on load, fan efficiency. A calculation sheet may

	<p>be included in the technical offer.</p> <ul style="list-style-type: none"> ii. No of motors per AHU-2 Nos, Each AHU fan have separate motor. iii. Totally enclosed fan cooled squirrel cage induction motor with IP-55 protection, class F insulation & selected for quiet running. iv. Rated voltage- 415V, 3 phase, 50Hz. v. Allowable variations- $\pm 10\%$, $\pm 3\%$ frequency, 5% total harmonic distortion during running and starting. vi. Type of starter- Suitable for DOL starting. vii. Voltage drop during start- The motor shall be able to accelerate with additional 15% voltage drop due to starting current. <p>e. Pulley</p> <ul style="list-style-type: none"> i. Taper lock pulley for fan and motor with V-Belts shall be used in drive set. Protection mesh shall be also supplied for this area wherever required. <p>f. Frame</p> <ul style="list-style-type: none"> i. Extruded aluminum section with thermal break section shall be provided below fan and motor. Spring mounted rubber pads shall be provided below this section to avoid any vibration. <p>g. Drain tray</p> <ul style="list-style-type: none"> i. 20G - SS 304 with nitrile rubber/PUF insulation <p>h. Vibration isolation</p> <ul style="list-style-type: none"> i. Suitable anti-vibration mounting shall be provided. <p>i. Filter</p> <ul style="list-style-type: none"> i. AHU shall have two stage of filtration ii. Pre filter- Efficiency 90% down to 10 microns, Filter casing- Aluminum, Box type iii. Fine filter- Efficiency 95% down to 5 microns. Filter casing- Aluminum, Frame Al/GI. Fine filter shall be washable 5 ply HDPE . type – Flange type iv. Fresh Air to AHU shall be ducted along with pre Filter and Damper. Size of fresh air duct is approx. 400 x 400mm. Cost of damper and filter shall be included in cost of AHU. v. Dampers shall be opposed blade type. Blades shall be made of aerofoil design hollow extruded aluminum sections with integral gasket and assembled within a rigid extruded aluminum alloy frame. All linkages and supporting spindles shall be made of aluminum or nylon, turning in Teflon bushes. Manual dampers shall be provided with a bakelite knob for locking the damper blades in position. Linkages 	
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shall be extended wherever specified for motorized operation. Damper frames shall be sectionalized to minimize blade warping. Air leakage through dampers when in the closed position shall not exceed 1.5% of the maximum design air volume flow rate at the maximum design air total pressure.

- i. Application of **12 mm thick** XPE TOC Slim insulation Cross Linked polyethylene foam with aluminum metalized foil for insulation on Supply duct running inside building area and with UV Foils for insulation for supply Ducts running out side building area i.e. exposed to atmosphere
- j. Application of **09 mm thickness**. XPE TOC Slim insulation Cross Linked polyethylene foam with aluminum metalized foil for insulation on Return duct running inside building area and with UV Foils for insulation for Return Ducts running out side building area i.e. exposed to atmosphere
- k. Installation, Testing & Commissioning of powder coated perforated (65%) supply and Return air grills made out of extruded Aluminum sheets
- l. Installation, Testing & Commissioning of Powder of suitable numbers and dimensions of coated **HEPA Filters (Efficiency, efficiency 99.99% for 0.3 microns** with individual test certificates.) housing with PAO & Pascal Pressure Test Point with canvas connection and VCD.
- m. Maximum sound limit in the corridor area shall be 50 to 60 db.
- n. Installation, Testing & Commissioning of Riser Filters.
- o. Installation of Magnehelic differential Pressure Gauge- Magnehelic gauge shall be provided for measuring differential pressure of clean room with adjoining area. Outer body of the magnehelic gauge shall be stainless steel(**0-20 / 0-30 / 0-50 MM WG IN AHU AND ± 30 / 50 PASCAL FOR ROOM**)
- p. Temperature and RH sensor to measure the temperature and humidity of each clean room. Accuracy levels: Temperature: ± 0.2 °C or better, RH: ± 1% or better.
- q. The electrical wiring inside the AHU room and interconnection between AHU and outdoor unit through required protective circuits in all manners including HP, LP with fully automatic control unit shall be provided.
- r. All the external ducting shall be made weather proof.
- s. **Fresh Air Louvers (Wherever specified)**

Louvers should be of aluminum construction duly anodized (more than 20 micron). Blades shall be of extruded aluminum sections fixed on a rigid aluminum frame. Supporting frames shall be provided for bigger louvers to ensure minimum warping.

13. Filters

Pre – filters (MERV-8/ G-4):

Cleanable filter made out of dry cleanable synthetic type minimum 50mm thick, shall be provided on the suction side of AHU as a standard equipment with the unit. These filters shall have the efficiency of 90% down to 10micron particle size. When these filters become loaded or full of dirt, it is removed from service and replaced by another filter. Face velocity across these filters shall not exceed 155 MPM.

14. Ultraviolet Germicidal Irradiation (UVGI) System

GENERAL

UVGI System shall be provided with the primary aim of achieving substantial reduction in bacteria and Virus, both airborne and on cooling coil surface (when used in AHU). The UVGI System shall preferably be 100% indigenous or American/Canadian make. Chinese origin manufactured or make of UVGI systems shall not be accepted.

Selection Criteria/Basis of Design: (Coil and Duct Mounted)

1. The UVGI system and fixtures should be installed in sufficient quantity and in such an arrangement so as to provide an equal distribution of UVC energy on the coil and in the drain pan and other surfaces prone to biofouling. To maintain energy efficiency, the UVC energy produced shall be of the lowest possible reflected and shadowed losses
2. The use of UV design and sizing software is recommended for proper system sizing and configuration. This UVGI system configuration software shall calculate the number of lamps, calculated UV intensities and placement of lamps for proper configuration. UVGI systems are intended to operate continuously, 24 hours a day. The UVGI system shall be designed to cover the entire face area of the cooling coil when installed in the AHU.
3. The UVGI system shall achieve near total elimination of bacteria/virus/ biomass on the cooling coil. Subsequently, the UVGI system may be kept in ON position 24/7 (even when the AHU is switched off or is not in operation) to ensure that the bacteria/virus does not reappear.
4. **Intensity:** The minimal UVC energy shall not be less than 4 micro W/cm² per inch of lamp at 1 Meter and not more than 30% loss is allowed over a 2 year period.
5. When Installed in the AHU, the UVGI system and fixtures shall be installed downstream of the cooling coil. The selection and placement of the UVGI system shall ensure full irradiation of the entire face area of the cooling coil and the UVC energy bathes all surfaces of the coil and drain pan.
6. The face velocity of dehumidified air over the coil will be 500 FPM or lower.
7. The UVGI System shall be free standing and be mounted in such a

manner that lamps are in perpendicular position to air flow using Aluminum arrangement to be corrosion free.

8. In case system is to be installed in the Duct, same shall be installed at an appropriate location to provide sufficient residence time.
9. The UVGI system should comply and tested by internationally recognized testing lab like ETL, CSA or UL to following standards.

- **Luminaires:** IEC 60598 Luminaires, CSA C22.2 No. 250.0 Safety for Luminaires, UL 1598 Safety for Luminaires,

- **UL:** 867/CSA C22 NO. 187 standard (Ozone level must be within the US EPA acceptable limit of 0.05 ppm)

- **UL:** 758 (for electric cables)

- **UL:** 224 (for Sockets and tubing)

- UV System with UL 1995 ABQK listed

10. The lamps and power supplies shall be rated for wet locations and air handler use.

11. The Duct mounted system same shall be installed at an appropriate location to provide enough residence time. The suitable length of straight duct should be provided by the HVAC Contractor/Customer at site. Please refer BOQ/Dwg. for the same.

12. The face velocity of dehumidified air over the coil will be 500 FPM or lower. When installed in the duct the face velocity can be higher and as per the duct design.

PRODUCT

1. The UV lamp shall be T5 Single ended four pin lamps
2. The UVGI system shall be suitable to operate with 230V+/-10V, single-Phase A.C. Supply
3. Units shall have UVC germicidal lamp of high output, 800m A each when measured at a horizontal distance of 8-10 inches from the lamp, HVAC type, assembled and tested. Components shall include a housing, high efficiency electronic power source, sockets and lamps, all constructed to withstand HVAC environments
4. Housings shall be made of robust materials, with Units having suitable electrical connectors to simplify wiring.
5. High efficiency electronic power sources shall be 115 or 208/230V AC. Installation of ballast and control electronics to be outside the AHU, in a separate control panel.
6. UV lamp shall be fabricated out of special high transmission glass, T5 (15mm) diameter. They shall produce 95% of their energy at 254 nm. UV lamp shall not produce ozone or other secondary contamination and to substantiate this, the lamps shall be tested by approved Indian Lab or internationally recognized lab for output performance of 254 nm. Lamp manufacturer to submit the certificate from this lab. The lamp shall be high output type and should not be

	<p>lower than 800 mA. Special interior coating shall be provided to ensure high UV output overrated life</p> <p>7. The internal wiring (UV resistant) for UV system shall be supplied by manufacturer/strategic business partner/ authorized dealers of manufacturer business partners only.</p> <p>8. The system shall have a separate Control Panel consisting of:</p> <p>a. Electronic Ballast with high power factor of > 0.90</p> <p>b. Run hour meter</p> <p>c. Mains on indicator lamp</p> <p>d. MCB or Disconnect Switch</p> <p>9. Each lamp shall have a useful service life of 18,000 hours with no more than a 30% output loss at the end of the two (2) years of continuous use. Lamps shall be shielded hard quartz hot filament type with a "getter" cathode filament guard (essential for the extended lamp life operation of two (2) years.</p> <p>10. Lamps used should be of UV -C ceramic lamp with pre -heat start having electronic ballast rated 15000 starts. Lamps should be hot cathode germicidal lamp</p> <p>11. Ballast: The power source i.e. ballast will be an electronic high frequency type, program start with a power factor greater than 0.90 and an energy conversion of at least 75%. It shall be a universal 120-277 VAC, 50-60 Hz, IP 64 Rated unit and be operationally reliable in indoor environments ranging from 45-degree F to 170-degree F. THD Value as per IEEE 519. The ballast shall carry Lifetime warranty against manufacturing defects</p>	
4.	<p>OUTDOOR CONDENSING UNITS (Packed ductable split AC)</p> <p>7.</p> <p>7. Capacity – 40-45 TR</p> <p style="padding-left: 40px;">@ approx..1300±100 sqft(approx.. 120sq.mtrs.)</p> <p>7. (capacity will define after area finalization)</p> <p>8. Refrigerant –R410A/R134a/R407/ecofriendly</p> <p>9. Compressor Type - Hermetically Sealed Scroll/screw</p> <p>10.No of Compressors = 1</p> <p>11.Controller - Microprocessor based</p> <p>12.Power Supply – 440 /380 V, 3 Phase, 50 Hz, AC</p> <p>13.Tube material – inner grooved copper</p> <p>14.Fin Material – hydrophobic coated aluminum</p> <p>15.Condenser fan – Direct driven Axial fan</p> <p>16.Fan material – Aluminum</p> <p>It shall be complete with compressor, condenser, suitable motor, microprocessor based control panel, capacity control device, safety & control instruments, cold insulation, interconnecting refrigerant/copper tubing (to be paid separately) refrigerant & oil, Liquid line strainers, de-hydrants, solenoid valves, shut off valves,</p>	--

	<p>safety & isolation valves, Suitable distributors, vibration isolators to minimize vibration, flexible connection at suction & discharge side of compressor etc. Air cooled condensing unit shall be suitable connected with the cooling coil (Dx) of the AHU along with thermostat, expansion valves fittings and accessories. Suitable power cable and control wiring from ODU to AHU shall be in the scope of the bidder.</p> <p>AHU /CONDENSING UNITS should be</p> <ol style="list-style-type: none"> a. well mounted over cemented blocks and raised 2 feet above the ground/floor b. kept under fiber or metal shade for rain /dust protection. c. kept at a place easily accessible for maintenance and must not obstruct any passage or the activity of lab/neighborhood area. 	
5.	<p>Drain Pipe</p> <p>G.I drain pipe shall be 40 mm NB dia pipe having thickness of 2 mm (minimum). Pipe shall be insulated with 19 mm nitrile rubber and 28 gauge Aluminum cladding. Proper slope shall be maintained to drain out the AHU condensate. Pipe shall be erected with suitable fittings, accessories and supports.</p>	
6.	<p>Electrical works comprehensive</p> <ol style="list-style-type: none"> 1. The power required for the microbiology lab shall be taken from the main panel of the building. Necessary distribution panels shall be installed by the bidder. <ol style="list-style-type: none"> a. Adequate lightings shall be provided. b. The electrical inspector's approval shall be obtained by the bidder <p>Wiring and Accessories</p> <ol style="list-style-type: none"> 2. Supply & wiring for following points in surface / recessed mounted rigid medium gauge 20mm PVC conduit with all accessories, using 3 runs of 1.5 Sq mm FRLS PVC insulated stranded copper conductor single core wire for phase, neutral & earth, with modular 6A one way switch, modular plate, suitable GI box etc as required: 3. Light point / exhaust fan / turbo ventilator points as required 4. Supply & wiring for circuit / sub main wiring in surface / recessed mounted rigid medium gauge 25mm PVC conduit with all accessories in surface/recess 5. Supply and Fixing the following modular type switches & accessories with modular plates and suitable GI boxes and giving necessary connections as required <ol style="list-style-type: none"> i. 6A SP 5 pin shuttered modular type socket with switch in each switch board 	--

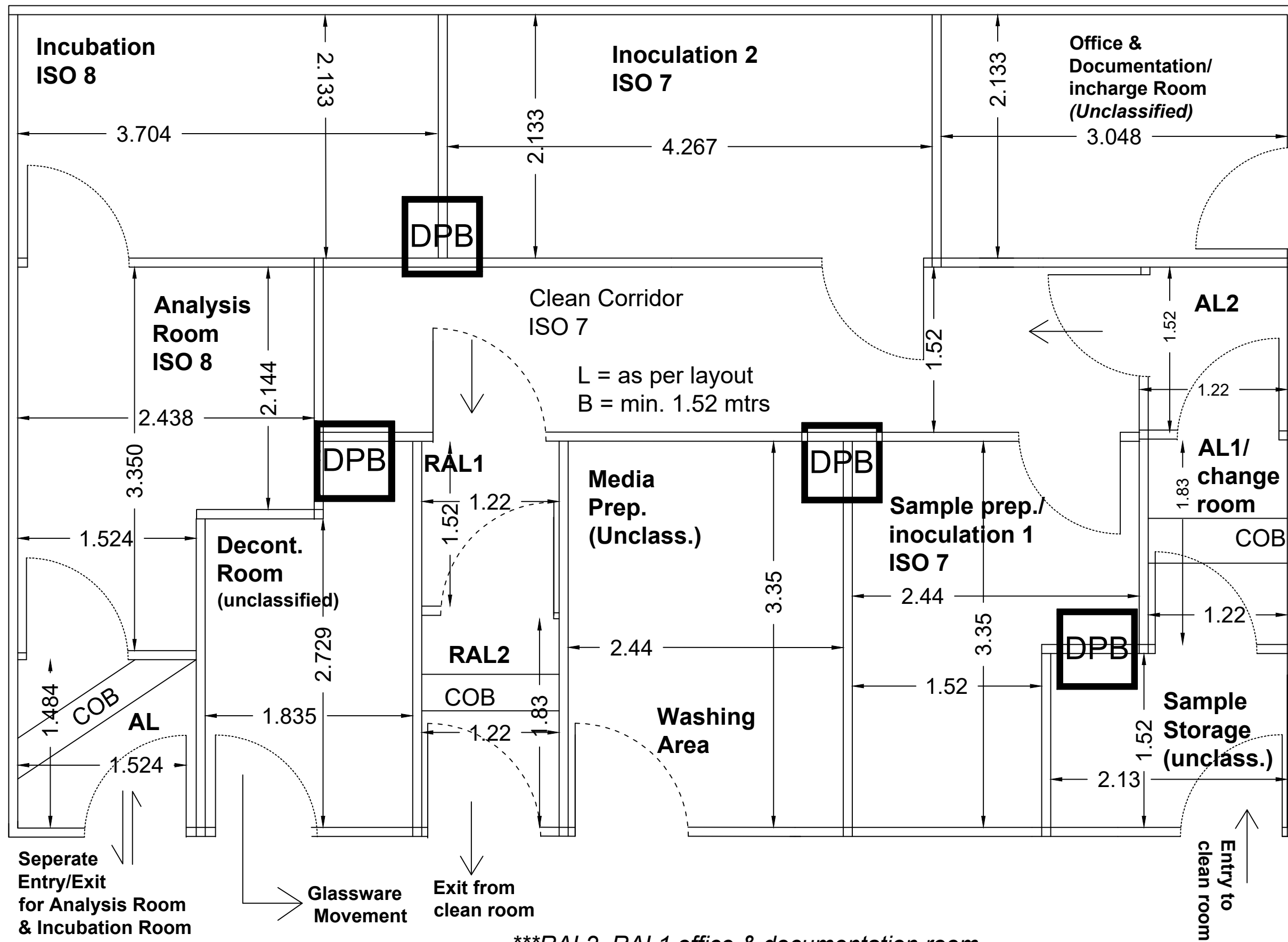
	<ul style="list-style-type: none"> ii. 2 nos 6 A SP 5 pin shuttered modular type socket with 2 No's modular switch –UPS power. iii. 16A 5 pin shuttered modular type socket with switch iv. Provision for shifting existing switch board to a conventional location and giving connections etc. v. Supply and fixing 20 amps. 240 volts SP industrial type socket outlet (IPP) with 2 poles and earth, metal enclosed plug top including supply and fixing of one number 20 amps (10kA) SP MCB (C-Curve) in sheet steel enclosure on surface or in recess with chained metal cover for the socket outlet and complete with connections testing and commissioning etc. as required. vi. Installation of Clean Room Lights & Fixture with fitting with LED12" x 12 vii. Installation & Testing of <ul style="list-style-type: none"> c. Modular Switches. d. Modular Sockets for various instruments in each room <p>MCBs AND MCB DISTRIBUTION BOARDS</p> <ul style="list-style-type: none"> i. Supply and installation of sheet steel, phosphatised and painted, dust and vermin proof enclosure of MCB 4 Way double cover Vertical DB – 3 Phase of including copper /brass bus bar, neutral link, earth bus and DIN rail with MCB/isolator/RCCB etc. fixed on wall using suitable anchor bolts or fixed in recess including cutting hole on the wall, making good the damages, colour washing etc. as required. ii. Supply and installation of sheet steel, phosphatised and painted, dust and vermin proof enclosure of UPS DB –6 way single Phase double cover (IP 42/43)230 V of including copper /brass bus bar, neutral link, earth bus and DIN rail with MCB/isolator etc. fixed on wall using suitable anchor bolts or fixed in recess including cutting hole on the wall, making good the damages, colour washing etc. as required <p>Single line electrical distribution diagram should be submitted by the vendor along with the technical offer.</p>	
7.	<p>Wall mounted fans (In unclassified areas)</p> <p>Supply, conveyance, installation, testing and commissioning of wall mounted fans, as required. Fixing necessary bolt and nuts, making good the damages etc. as required including giving connections with required length of 24/0.20mm PVC insulated and PVC sheathed 3 core round copper conductor flex wire or with extended original wiring etc. and numbers as required.</p>	--
8.	<p>Lighting fixtures</p> <p>Supply and fixing cast aluminum down light fitting with 11 to 14 W CFLCFL (or equivalent LED) to false ceiling including giving connections with required length of 16/0.20mm PVC insulated and</p>	--

	PVC sheathed 3 core round copper conductor flex wire conforming to relevant ISS or extending the original wiring and making good the surface as required (Wipro WCP 27118 SWG or equivalent make)	
9.	Validation of HVAC after completion <ol style="list-style-type: none"> 1) Documentation for DQ, IQ, OQ, PQ with certificates of all brought items. 2) Integrity test for HEPA Filter's once. 3) Room Pressure balancing once. 4) Air velocity test 5) Particle count 6) Recovery Test 7) Air Flow Pattern 	--
10.	Fire extinguisher Supply and installation of ABC type dry powder fire extinguisher of 2 kg. Capacity complete with initial charges and installation brackets	--
11.	Air curtain 1.7m length should be installed wherever required <ol style="list-style-type: none"> i. Type: Non-Recirculating, Horizontal mount ii. Suction: Front without duct iii. Discharge: Vertically down 	--
12.	Hand Sanitizer (Manual Foot Operated dispenser for clean rooms) <ol style="list-style-type: none"> 1. The hand sanitizer should dispense disinfectant (Isopropyl alcohol) on to hands. 2. Body should be non-corrosive stainless-steel construction. 3. Tank capacity 500ml 	Minimum 4 nos.
13.	Static Pass box .(As per Space Availability at site) Installation, Testing & Commissioning SS-304 static Pass Box fully automatic system, with electromagnetic interlocking system, digital display, UV & fluorescent light alarm system etc. (working size: 450mm W X 450mm D X 450mm H)	1-2 nos.
14.	Dynamic Pass box .(As per Space Availability at site) Installation, Testing & Commissioning SS-304 DYNAMIC Pass Box fully automatic system, with electromagnetic interlocking system, digital display, HEPA Filters, UV & fluorescent light alarm system etc. (working size: 450mm W X 450mm D X 450mm H)	4-5 nos.
15.	Cross over Bench at entry and exist of clean room and media room (as per approved layout) <ol style="list-style-type: none"> 1. SS 304, 18 & 16G combination, mat finish 2. Inside horizontal support 3. Bottom both side 30mm color for will be grouting 4. Approx size 1000 mm W x 400 mm D x 600mm H (can be modified to 	2-3 nos.

	size)	
16.	<p>SS-304 Modular work bench with SS -304 top.(As per Space Availability at site) Table should be SS 304 without drawer and locker all exposed surfaces should be 18 gauge SS. Size - 1500 MM x 750 MM (W) x 900 MM (H) (minor deviations acceptable)</p>	3-4 No.s
17.	<p>SS-304 Modular Work bench With Granite top.(As per Space Availability at site) Installation & Commissioning SS304 with 1 drawers and 1 shutter door storage. Size - 1500 MM x 750 MM (W) x 900 MM (H) (minor deviations acceptable) Table top should be provided with (18mm ±1mm) thick well-polished Black Granite.</p>	4-5 No.s
18.	<p>SS-304 Modular work Bench with Granite Top and Sink .(As per Space Availability at site) Stainless steel SS304 table of dimension 1800 x750 (W) x 900 mm (H) tabletop height from floor. Minor deviation in measurement is acceptable. Should have under bench drawers and shutters with locking arrangement. Table top should be provided with (18mm ±1mm) thick well polished Black Granite. Should be supplied with one sink (SS 304)at the right end of size 400 x 300 mm Approx (16x12 inches) sink joints should be continuously welded with two way water tap . Water connections and plumbing should be provided</p>	1-2 No.s
19.	<p>Movable trolley with lockable wheels SS 304, 18 & 16G combination, mat finish Size :- 2.5' x 2.5' with two shelf 2nos</p>	2 No.s
20.	<p>Revolving stool Installation & Commissioning of SS-304 WORKING STOOL for above bench SS 304, 18 & 16G combination, mat finish.</p>	13-15 nos.
21.	<p>UV Garment SS-304 Storage (in Air Lock 2 of entry to clean room) Garment storage cubicle complete SS304 construction SS rod for hanging folded garments. SS perforated shelves / tray (removable) at bottom for keeping mask and shoe cover etc. Fully toughened glass door/Acrylic UV light with fittings & limit switch Leveling legs. Approx internal dimension : 610(W)x 430(D)x 1335(H)mm with minor</p>	1 no.

	modifications as per available area	
22.	SS Dustbin :- Stainless steel foot operated dustbin of appropriate size as per requirement will be provided	7-8 No.s
23.	Sample/Chemical SS-304 Storage Cabinet: SS perforated 4 -5 No.s adjustable shelves/tray Fully toughened glass door/Acrylic Approx internal dimension: 610(W)x 430(D)x 1335(H)mm with minor modifications as per available area	3-4 No.s
24.	Wall cabinets (over head racks):- SS wall cabinets of suitable size will be provided for storage .	4-5 No.s
25.	Air Conditioner 1.5 Tonne, 3 Star for office room	(1 No.)
26.	UPS 30KVA online: 3 phase with inbuilt Isolator and one hour back up. There should be dedicated line for UPS	01 Nos
27.	Stabilizer 50KVA	01 Nos

Microbiology Model Layout 1 (Approx. 84 sq. mtrs.)



Seperate Entry/Exit for Analysis Room & Incubation Room

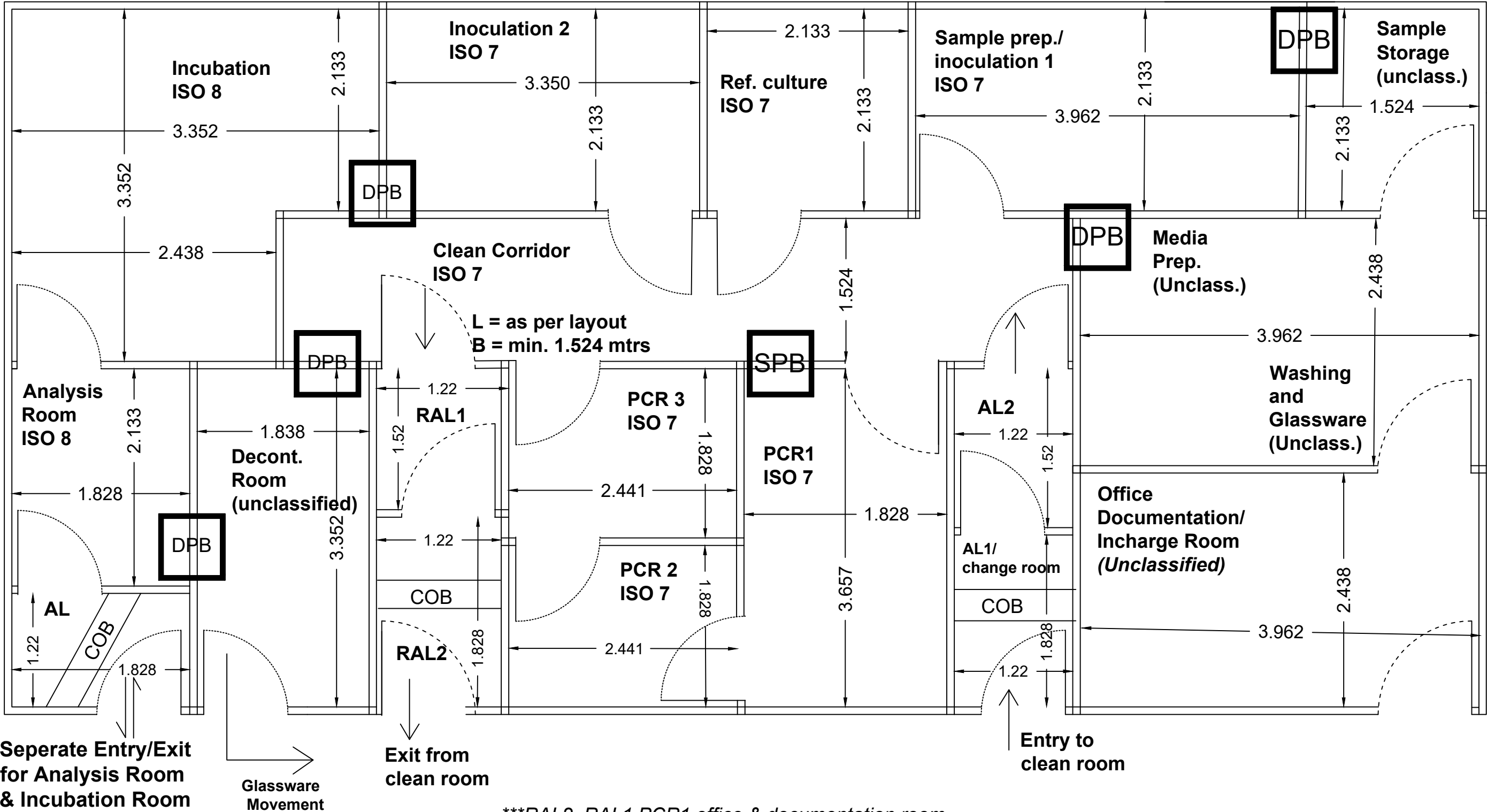
Glassware Movement

Exit from clean room

Entry to clean room

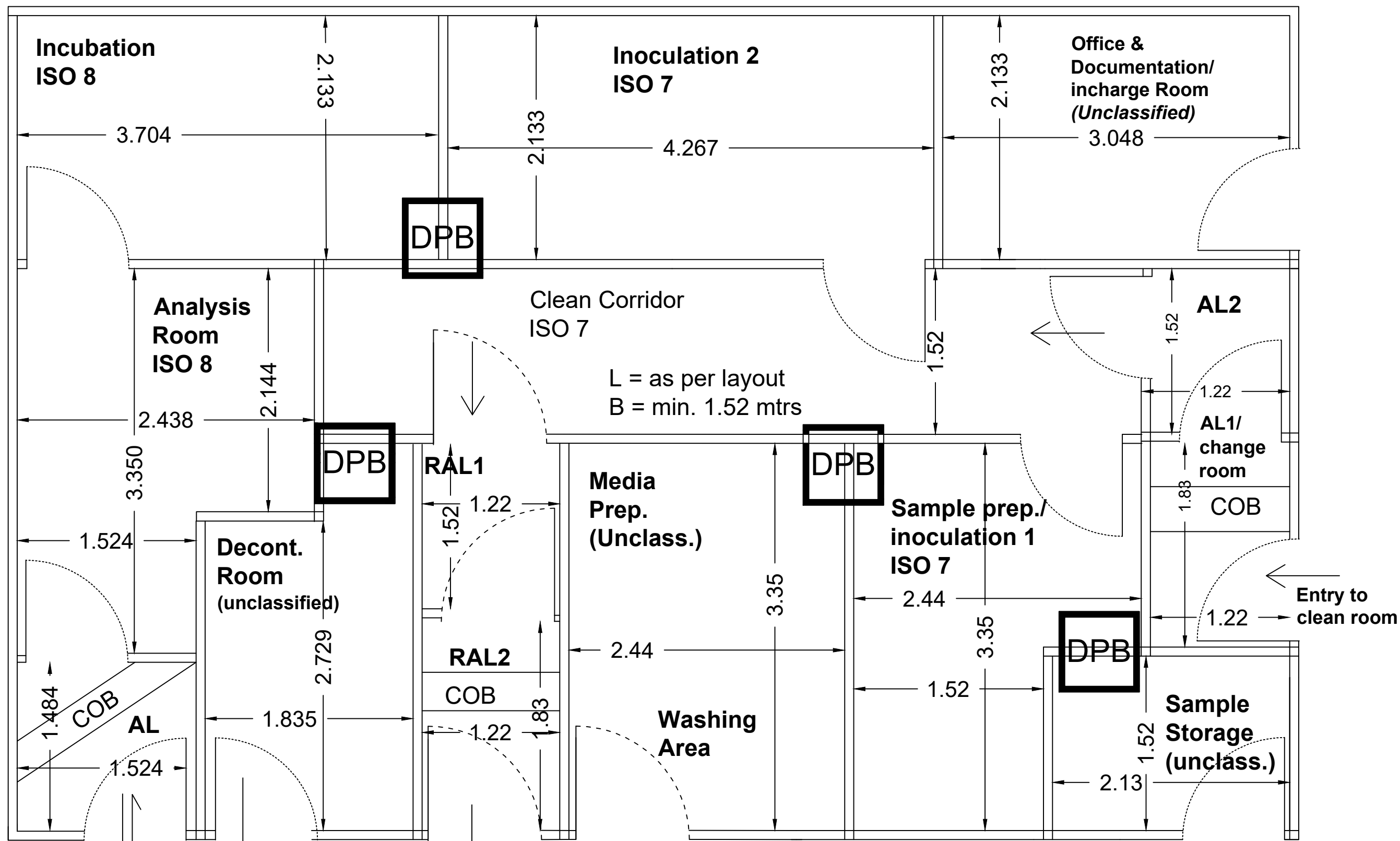
***RAL2, RAL1, office & documentation room, washing area should be atleast = 1000mm wide rest doors should be atleast 900mm wide

Model Microbiology laboratory Layout 1 with Molecular Biology (approx. 120 sq. mtrs.)



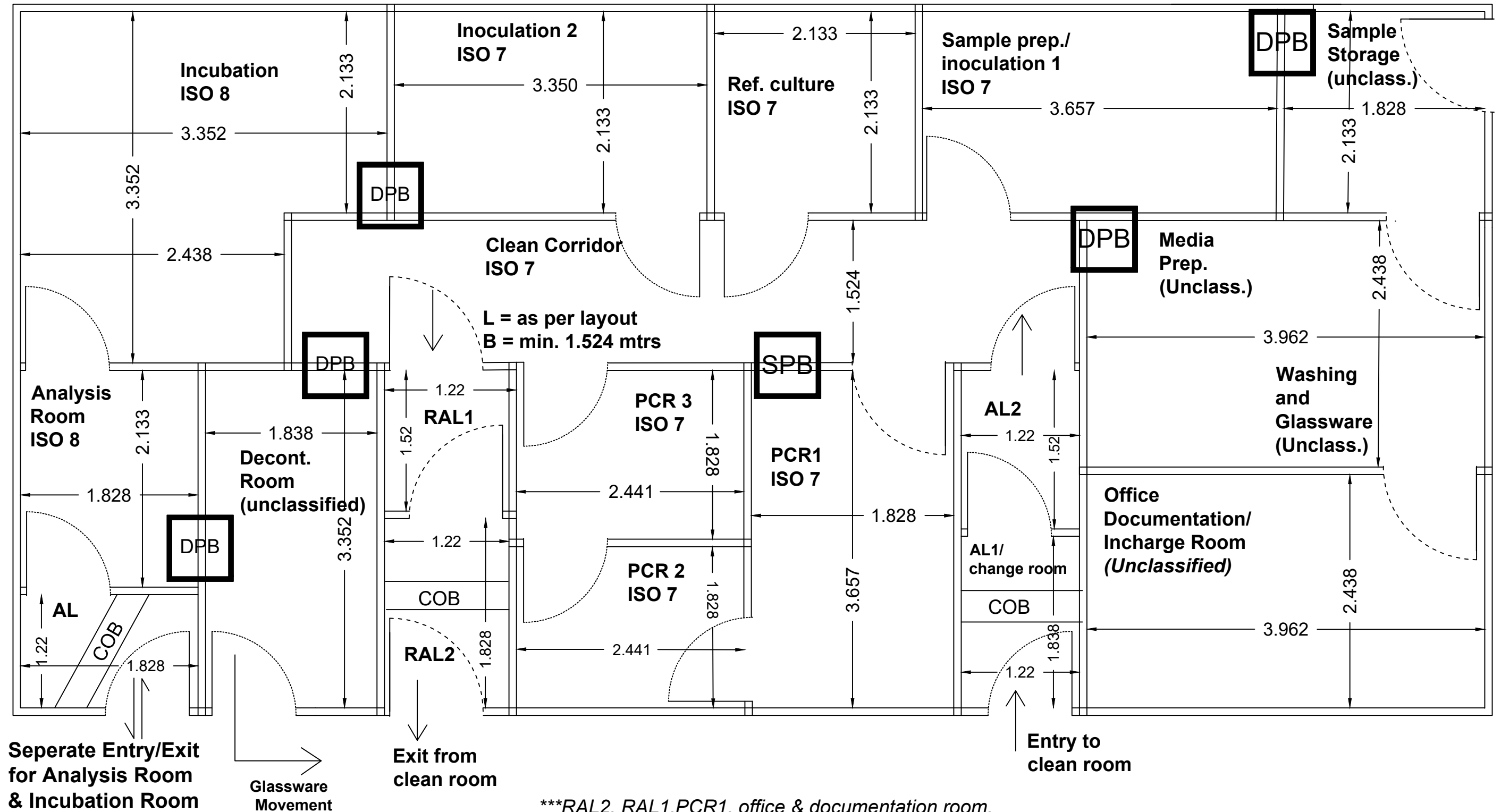
***RAL2, RAL1, PCR1, office & documentation room, media prep. room doors should be atleast = 1000mm wide
rest doors should be atleast 900mm wide

Microbiology Model Layout 2 (Approx. 84 sq. mtrs.)



***RAL2, RAL1, office & documentation room, washing area should be atleast = 1000mm wide rest doors should be atleast 900mm wide

Model Microbiology laboratory Layout 2 with Molecular Biology (approx. 120 sq. mtrs.)



***RAL2, RAL1, PCR1, office & documentation room,
media prep. room doors should be atleast = 1000mm
wide
rest doors should be atleast 900mm wide

CERTIFICATE OF GUARANTEE/WARRANTY

- i. I/We certify that the standard guarantee/warranty shall be for a period of 36 months starting from the date of satisfactory installation, commissioning and handing over of the equipment and of the works conducted therewith covered under the Supply order in working order. During the guarantee/warranty period. I/we shall provide free “after sale service” and the replacement of any part(s) of the equipment or rectification of defects of work of the equipment will be free of cost. The replacement of the parts shall be arranged by us, at our own cost and responsibility. We undertake that the above guarantee/warranty shall begin only from the date of satisfactory and faultless functioning of the equipment for 60 days **at the place designated by FSSAI**. The benefit of change in dates of the guarantee/warranty period shall be in the interest of the user/your organization.
- ii. During the warranty period, we shall provide at least **02 preventive maintenance service per year**.
- iii. Uptime Guarantee: During the guarantee/warranty period, we will be responsible to maintain the equipment in good working conditions for a period 328 days (i.e. 90% **uptime**) in a block of 365 days.
 - a. All the complaints will be attended by us within 02 working days of receipt of the complaint in our office.
 - b. In case there is delay of more than 02 days in attending to a complaint from our side then you can count the number of days in excess of the permissible response time in the downtime. The above said response time of 2 days for attending to a complaint by us will not be counted in the downtime.
 - c. **Penalty:** We shall pay a penalty equivalent to **0.5 %** of the order value of the equipment for every week or part thereof delay in rectifying the defect.

Note: The right to accept the reason (s) for delay and consider reduction or waive off the penalty for the same shall be at the sole discretion of FSSAI/State Food Commissioners or any office designated by FSSAI

- iv. We undertake that all the spares/consumables related to equipment & exclusively supplied by manufacturer/supplier of the equipment shall be covered under warranty. Nothing shall be payable on account of these items during warranty by the Buyer.
- v. We certify that the equipment being/quoted is the latest model and that spares for the equipment will be available for a period of at least 10 years and we also guarantee that we will keep the organization informed of any update of the equipment over a period of 5 years.
- vi. We guarantee that in case we fail to carry out the maintenance within the stipulated period, **at the place designated by FSSAI, FSSAI/State Food Commissioners or any office designated by FSSAI** reserves the right to get the maintenance work carried out at our risk, cost and responsibility. All the expenses including excess payment for repairs/maintenance shall be adjusted against the Performance Bank Guarantee. In case the expenses exceed the amount of Performance Bank Guarantee, the same shall be recoverable from us with/without interest in accordance with the circumstances.

- vii. We shall try to repair the equipment **at the place designated by FSSAI** itself. However, the equipment will be taken to our site on our own expenses in case it is not possible to repair the same **at the place designated by FSSAI**. We shall take the entire responsibility for the safe custody and transportation of the equipment taken out for repairs till the equipment is rehabilitated to the **place designated by FSSAI** after repairs Any loss of equipment or its accessories under its charge on account of theft, fire or any other reasons shall be at our sole risk and responsibility which will be compensated to the Buyer for such losses at the order value for the damaged/lost equipment/part, including accessories.
- viii. We undertake to perform Quality check after every major repair/breakdown/taking the equipment for repair **at the place designated by FSSAI**.
- ix. In case of extended guarantee/warranty, we undertake to carry out annual calibration/IPV of the equipment.
- x. We guarantee that we will supply spare parts if and when required on agreed basis for an agreed price. The agreed basis could be an agreed discount on the published catalogue price.
- xi. We guarantee to the effect that before going out of production of spare parts, we will give adequate advance notice to you so that you may undertake to procure the balance of the life time requirements of spare parts.
- xii. We guarantee the entire unit against defects of manufacture, workmanship and poor quality of components.

- xiii. We undertake to provide PM kit as per requirement to meet uptime guarantee condition.

1. Authorized signatory
(with seal)

Date

Place

2. Authorized signatory

NOTE:

- 1. This should be submitted on the letter head of the bidder company/firm.

FORMAT FOR NON BLACKLISTING OF SUPPLIER

I/ We _____Manufacturer/partner/Authorized Distributor/Agent (strike out which is not applicable) of (Supplier) _____ do hereby declare and solemnly affirm that the individual/firm/company is not black-listed by the Union/State Government/Autonomous body. Any partner or shareholder thereof is not directly or indirectly connected with or has any subsisting interest in business of my/our firm.

DEPONENT

Address _____

I/ We hereby solemnly declare and affirm that the above declaration is true and correct to the best of my knowledge and belief. No part of it is false and nothing has been concealed.

Dated:

DEPONENT

(Note: To be furnished on Rs.50/- non-judicial stamp paper duly attested by the Executive Magistrate/Notary Public/Oath Commissioner.)

General Information about the Bidder

1	Name of the Bidder					
	Registered address of the firm					
	State		District			
	Telephone No.		Fax			
	Email		Website			
Contact Person Details						
2	Name		Designation			
	Telephone No.		Mobile No.			
Communication Address						
3	Address					
	State		District			
	Telephone No.		Fax			
	Email		Website			
Type of the Firm (Please <input type="checkbox"/> relevant box)						
4	Private Ltd.	<input type="checkbox"/>	Public Ltd.	<input type="checkbox"/>	Proprietorship	<input type="checkbox"/>
	Partnership	<input type="checkbox"/>	Society	<input type="checkbox"/>	Others, specify	<input type="checkbox"/>
	Registration No. & Date of Registration.					
Nature of Business (Please <input type="checkbox"/> relevant box)						
5	Original Manufacturer	<input type="checkbox"/>	Equipment	<input type="checkbox"/>	Authorized Dealer /Representative	<input type="checkbox"/>
	Direct Importer		<input type="checkbox"/>	Others, specify.		
Key personnel Details (Chairman, CEO, Directors, Managing Partners etc.)						
6	in case of Directors, DIN Nos. are required					
	Name			Designation		
	Name			Designation		
Bank Details						
7	Bank Account No.				IFSC Code	
	Bank Name & Address				Branch Name	
	Tel No				Email ID	
8	<i>Whether any criminal case was registered against the company or any of its promoters in the past?</i>					Yes / No
9	<i>Other relevant Information provided * (Here enclose the details such as presentation on the details of the bidder in a CD preferably; please avoid submission of detailed leaflets/brochures etc., if possible.)</i>					
Date:			Office Seal			Signature of the bidder / Authorized signatory

Signature and Seal of the Bidder

Name in capital letters with
Designation

COMPLIANCE SHEET

Specifications as per indent (point wise)	Compliance of the quoted model	Compliance of alternate model, if any	Remarks (Deviations)

Place:

Signature and seal of the Manufacturer/Bidder

Date:

NOTE:

1. This should be submitted on the letter head of the bidder company/firm.
2. Compliance statement should be supported with the printed catalogue mentioning page number and clearly highlighting the required tender specifications in the catalogue.
3. Where there is no deviation, the statement should be returned duly signed with an endorsement indicating "No Deviations"

Furnishing of wrong statement may lead to debar from the future purchases of FSSAI.

LIST OF MICROBIOLOGY LABORTORY

S. No.	State	Name and Address of SFTL	Covered Area Available for Microbiology Laboratory (Sq Meters)
Eastern Region			
1.	Bihar	Combined Food and Drug Lab, Agamkuan, Patna-7	83.61
2.	Chhattisgarh	State Food Testing Laboratory, Kalibadi, Near Mahila Thana, Raipur Chhattisgarh	100.33
3.	Jharkhand	State Food Testing Laboratory, RCH campus, Namkum, Ranchi-834010	185
4.	Odisha	State Food Testing Laboratory, O/o the Deputy Director-Cum-Food Analyst, State Food Testing Laboratory, Convent Square, Near Ram Mandir, Kharvel Nagar, Bhubaneswar, Odisha- 751001	168.15
5.	West Bengal	West Bengal Public Health Laboratory, 2, Convent Lane, Kolkata -700015	102.19
North Eastern Region			
6.	Assam	State Public Health Laboratory, Bamuni Maidam, Guwahati 21, Assam, 781021	139.91
7.	Manipur	State Public Health Laboratory, R. D Wing Complex, Lamphet, Imphal, Manipur, 795004	316
8.	Meghalaya	Food Testing Laboratory, Pasteur Hill, Shillong -793001	190.8
9.	Nagaland	State Public Health Laboratory, Paramedical Colony, Kohima-797001, Nagaland	93.33
10.	Tripura	Regional Food Testing Laboratory, Agartala, 799006	110.11
11.	Sikkim	State Food Laboratory, Chewatar, Singtam, Sikkim, 737128	270.01

Northern Region			
12.	Delhi	Food Laboratory, A-20 lawrence road industrial area, Delhi -110035	265.33
13.	Haryana, Chandigarh	State Food, Water and Excise Lab, Sector-11, D Chandigarh	167.22
14.	Himachal Pradesh	Composite Testing Laboratory Kandaghat Disst. Solan H.P. Pin- 173215	200
15.	Punjab	Food and Drug Testing Building, Kharar, Near Civil Hospital, District -SAS Nagar, Punjab, 140301	177
16.	Uttar Pradesh	Government Public Analyst Laboratory ,Sec-C, Aliganj, Lucknow, UP-226024	149
17.		Regional Public Analyst Laboratory, Medical College Compound, Meerut,250004	92.3
18.		Regional Public Health Laboratory, Shivpur, Varanasi	184
19.	Uttarakhand	State Food and Drug Testing Laboratory, Kiccha road, Rudrapur, Distt. US Nagar	111.5
Western Region			
20.	Gujarat	Regional Food Laboratory,University road, Near Forensic Science Laboratory, Rajkot 360 005	109.65
21.		Food and Drugs Laboratory, Near Polytechnic College , Nizam Pura, Vadodara-390002	240
22.		Regional Food Laboratory, Near Mahakali Temple, New Lotus Ring Road, Bhuj - Kachchh - 370001	127
23.	Madhya Pradesh	State Food Testing Laboratory, Idgah Hills, Bhopal	102.2
24.	Maharashtra	Foods and Drugs Administrations Laboratory. Plot-341, Foods and Druds Administraion, Opposite RBI , Bandra, Kurla Complex, Bandra E, 400051, Mumbai.	130
25.		FDA Laboratory, 3rd Floor, Nath Supermarket, Aurangapura, Aurangabad, 431001	201.59
26.	Rajasthan	Food Analysis and Public Health Laboratory , Near IAM hall, Near	120

		Blood Bank, MBS Hospital, Nayapura Kota, Rajasthan, 324001	
27.		Food Safety and Standards Laboratory, Rajiv Gandhi Hospital Campus, Alwar –	108
28.		Public Health Laboratory, Jodhpur, C-27 Railway Road, Near Olympic Tower	172
29.		Public Health Lab, Maharana Bhupal Govt. Hospital Campus Udaipur- 313001	89.19
30.		State Central Public Health Laboratory, Mini Swasthaya Bhawan Mandir Marg, Sethi Colony, Jaipur (302004)	110
Southern Region			
31.	Andhra Pradesh	Regional Public Health Laboratory, Vishakhapatnam	233.00 (Under Construction)
32.	Karnataka	State Food Laboratory, PHI Compound, Sheshadri Road, Bangalore-560001	133.00
33.		Divisional Food Laboratory, Umar Khyam Road, Tilak Nagar, Mysore - 570 001	135
34.		Divisional Food Laboratory, Vaccine Institute Campus, Tilakwadi, Belagavi	120
35.	Kerala	Government Analysts' Laboratory, Red Cross Road, Thiruvananthapuram-695035	120.08
36.		Regional Analytical Laboratory, Malapparamba, Kozhikode	131.42
37.		Regional Analytical Laboratory, Ernakulam	111.48
38.	Puducherry	Department of Food and Drug Testing, Indira Nagar, Gorimedu	110.4
39.	Tamil Nadu	Food Analysis Laboratory, No.219, Race Course Road, Coimbatore - 641018	130
40.		Food Analysis Laboratory, Guindy, King Institute Campus, Chennai, Tamilnadu - 600032	287

CONSORTIUM AGREEMENT FORMAT

CONSORTIUM AGREEMENT

(To be executed on stamp paper of appropriate value)

THIS **CONSORTIUM**AGREEMENT is entered into on this the..... day of
..... 2020

AMONGST

1. {..... , a company incorporated under the provisions of Companies Act,1956/
a partnership firm registered under the Indian Partnership Act, 1932/ Limited
LiabilityPartnershipAct,2008} andhavingits {registeredoffice/ office} at.....
(hereinafter referred to as the “**First Part**” or the “**Primary Bidder**” which expression shall,
unless repugnant to the context include its successors and permitted assigns)
AND

2. {..... , a company incorporated under the provisions of Companies Act,1956/
a partnership firm registered under the Indian Partnership Act, 1932/ Limited
LiabilityPartnershipAct,2008} and having its{registered office/office} at.....
(hereinafter referred to as the “**Second Part**” or the “**1st Consortium Member**” which
expression shall, unless repugnant to the context include its successors and permitted
assigns)
AND

3. {..... , a company incorporated under the provisions of Companies Act,1956/
a partnership firm registered under the Indian Partnership Act, 1932/ Limited
LiabilityPartnershipAct,2008} and having its{registered office/office}at.....
(hereinafter referred to as the “**Third Part**” or the “**2nd Consortium Member**” which
expression shall, unless repugnant to the context include its successors and permitted
assigns)

The above mentioned parties of the FIRST, SECOND and THIRD PART are collectively
referred to as the “**Parties**” and each is individually referred to as a “**Party**”

WHEREAS:

A. Food Safety and Standards Authority of India (hereinafter referred to as the “FSSAI”
which expression shall, unless repugnant to the context or meaning thereof, include
its administrators, successors and assigns) has invited bids (“**bids**”) by its tender
vide reference No _____ dated _____(hereinafter referred
as “**RFP**”) for “**Setting Up Microbiology Section And Installation Of Equipment**”

on turnkey basis in 05 (Five) Regions i.e. Eastern, North Eastern, Western, Northern and Southern”).

- B. The Parties are interested in jointly bidding for the Contract as members of a Consortium and in accordance with the terms and conditions of the Tender Bidding Documents in respect of the Contract, and
- C. It is a necessary condition under the Bidding Documents that the members of the Consortium shall enter into a Consortium Agreement (the “**Agreement**”) and furnish a copy thereof with the bid.

NOW IT IS HEREBY AGREED as follows:

1. Definitions and Interpretations

In this Agreement, the capitalized terms shall, unless the context otherwise requires, have the meaning ascribed thereto under the Bidding Documents.

2. Consortium

The Parties do hereby irrevocably constitute a consortium (the “**Consortium**”) for the purposes of jointly participating in the bidding process for the Project.

The Parties hereby undertake to participate in the bidding process only through this Consortium and not individually and/ or through any other Consortium constituted for this Contract, either directly or indirectly or through any of their associates.

3. Role of the Parties

The Parties hereby undertake that Party of the First Part is fulfilling the prequalification criteria as per the requirement of “**Tender**” in all respects and shall be the “**Primary Bidder**” of the Consortium and shall have the Power of Attorney from all Parties for conducting all business for and on behalf of the Consortium during the Bidding Process and until the signing of the Contract when all the obligations of the Consortium shall become effective.

The project shall be executed by the “**Primary Bidder**” as a whole and solely responsible to C-DAC for all the activities mentioned in the Tender Document including financial liabilities(Reference to the Tender Document).

4. Joint and Several Liability

The Parties do hereby undertake to be jointly and severally responsible for all obligations and liabilities relating to the Project and in accordance with the terms of the Tender Bidding Documents and the Contract, during subsistence of the Contract.

5. Representation of the Parties

Each Party represents to the other Parties as of the date of this Agreement that:

- a. Such Party is duly organised, validly existing and in good standing under the laws of India and has all requisite power and authority to enter into this Agreement;
- b. The execution, delivery and performance by such Party of this Agreement has been authorised by all necessary and appropriate corporate or governmental action and a copy of the extract of the charter documents and board resolution or any other resolution/ Power of Attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Consortium Member is annexed to this Agreement, and will not,
 - i. require any consent or approval not already obtained;
 - ii. violate any Applicable Law presently in effect and having applicability to it;
 - iii. violate the memorandum and articles of association, bye-laws or other applicable organisational documents thereof;
 - iv. violate any clearance, permit, concession, grant, license or other Governmental authorisation, approval, judgment, order or decree or any mortgage agreement, indenture or any other instrument to which such Party is a party or by which such Party or any of its properties or assets are bound or that is otherwise applicable to such Party; or
 - v. create or impose any liens, mortgages, pledges, claims, security interests, charges or encumbrances or obligations to create a lien, charge, pledge, security interest, encumbrances or mortgage in or on the property of such Party, except for encumbrances that would not, individually or in the aggregate, have a material adverse effect on the financial condition or prospects or business of such Party so as to prevent such Party from fulfilling its obligations under this Agreement;
- this Agreement is the legal and binding obligation of such Party, enforceable in accordance with its terms against it; and
- there is no litigation pending or, to the best of such Party's knowledge, threatened to which it or any of its Affiliates is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfillment of its obligations under this Agreement.

6. **Conflict of Interest:**

The Parties herein undertake to take all necessary measures in order to avoid any conflict of interest during the performance of the project or the contract for “**Setting Up Microbiology Section And Installation Of Equipment**” on turnkey basis in 05 (Five) Regions i.e. Eastern, North Eastern, Western, Northern and Southern”.

7. **Post Contract Liabilities:**

For any loss or damage on account of any breach of this Agreement or the contract for “**Setting Up Microbiology Section And Installation Of Equipment**” on turnkey basis in 05 (Five) Regions i.e. Eastern, North Eastern, Western, Northern and Southern” or any shortfall in the execution of the Project, meeting the guaranteed performance / parameters as per technical specifications / documents relating to the Tender, “**Primary Bidder**” undertake to promptly make good such loss or damage on F S S A I demand without any demur. FSSAI shall have the right to proceed against any one of the Parties herein in this regard without establishing the individual liability of such party and it shall neither be necessary nor

obligatory on the part of FSSAI to proceed against the “**Primary Bidder**” before proceeding against the other Parties herein.

8. Assignment:

The rights and obligations of First and Second Consortium Member under this Agreement shall not be assigned to any third party without the prior written consent of FSSAI.

9. Employers’ responsibility:

Each Party will be responsible according to the applicable laws and rules for their own personnel and property.

10. Insurance:

The Parties herein shall at their own expense take out and maintain insurance cover as may be necessary to cover their liabilities.

11. Applicable Law:

This Consortium Agreement shall be governed, construed and interpreted in accordance with the laws of India and the Courts in Delhi/New Delhi (Name of the place) shall have the exclusive jurisdiction in all matters arising hereunder.

12. Termination

This Agreement shall be effective from the date hereof and shall continue till the expiry of the Defect Liability period under the Agreement. However, in case the Consortium is either not pre-qualified or does not get selected for award of the Contract, the Agreement will stand terminated in case the Consortium is not pre-qualified or upon return of the tender EMD by FSSAI to the Consortium, as the case may be. None of the parties will be entitled to terminate their association with the Consortium, till return of the tender EMD by the Consortium or payment of the amount specified in the Financial Bid by the Consortium, whichever is later.

13. Indemnification:

All consortium members of this agreement shall fully indemnify, hold harmless and defend FSSAI and its officers etc., from and against all claims, liabilities, suits, damages including any criminal liability due to false declaration by the consortium members with regard to this Agreement (or) Tender transaction (or) Project (or) contract etc., caused due to negligence/commission/omission of the any of the consortium members (or) its employees and agents including representatives (or) sub-contractors (or) any other person claiming (or) any other person claiming under this tender (or) under the applicable laws of India.

The Parties acknowledge and accept that this Agreement shall not be amended by the Parties without the prior approval of FSSAI.

IN WITNESS WHEREOF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED

SIGNED, SEALED AND DELIVERED

For and on behalf of

For and on behalf of

LEAD MEMBER by:

SECOND PART

(Signature)

(Signature)

(Name)

(Name)

(Designation)

(Designation)

(Address)

(Address)

SIGNED, SEALED AND DELIVERED

For and on behalf of

THIRD PART by:

(Signature)

(Name)

(Designation)

(Address)

In the presence of:

1.

2.

Notes:

1. *The mode of the execution of the Consortium Agreement should be in accordance with the applicable laws.*
2. *Each Consortium Agreement should attach a copy of the extract of the charter documents and documents such as resolution / Power of Attorney in favour of the person executing this Agreement for the delegation of power and authority to execute this Agreement on behalf of the Consortium Member.*

-sd/-

(Ravinder Kumar Narula)
Assistant Director(QA)