Foundation for Innovative New Diagnostics India
(FIND India)

Advertised Tender Enquiry (ATI)

Bid Document
for

Procurement for Supply, Installation and Commissioning of Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection System and related services for Drug-resistant Tuberculosis (DR-TB) centers across India

Bid Ref. No.:
SAMS/FIND/Proc/Equipment/ATE/05/2025
dt. 01/05/2025

(Procurement Agency)

Strategic Alliance Management Services P. Ltd.
B-18, Sector-06, NOIDA, Gautam Budh Nagar (U.P.)- 201301
Email: procurement@samsconsult.com, Website: www.samsconsult.com

Checklist for bidders for submission in Proposal

(Bidders need to submit below filled and signed checklist mandatorily and provide all the required documents along with the technical proposal)

<table>
<tr><th>Sl. No.</th><th>Documents to be submitted along with Technical Proposal</th><th>Page No.</th><th>Remarks (if any)/ Yes/ No</th></tr>
<tr><td>1</td><td colspan="3">Documents required for Preliminary examination</td></tr>
<tr><td>i.</td><td>The bidder and consortium partner (if any) should submit the Power of Attorney in favor of the authorized signatory of Bid authorized signatory.</td><td></td><td></td></tr>
<tr><td>ii.</td><td>Bid is signed by authorized signatory (each and every page)</td><td></td><td></td></tr>
<tr><td>iii.</td><td>Copy of Certificate of GST Registration of bidder and Consortium partner(s) (as the case may be).</td><td></td><td></td></tr>
<tr><td>iv.</td><td>Copy of MSME registration (if applicable)</td><td></td><td></td></tr>
<tr><td>v.</td><td>Copy of PAN Card of bidder and Consortium partner(s) (as the case may be)</td><td></td><td></td></tr>
<tr><td>vi.</td><td>Certificate of Incorporation/ Registration of the bidder / Article and Memorandum of Association or any such registration document such as partnership deed etc. of bidder and Consortium partner(s) (as the case may be). Letter of consortium agreement should be submitted to by the lead partner to mentioned who is the lead partner and all the relevant details as per Form provided in Section VI - Bidding Forms.</td><td></td><td></td></tr>
<tr><td>vii.</td><td>Bidder should submit Notarized Affidavit (on stamp paper of Rs. 100) that giving undertaking that "bidder and consortium partner (if any) is currently not debarred / blacklisted by MOH&FW / GOI / any other Central Govt. / Department or State Government / any other Govt agency/ UNOPS/UNDP / any other UN organizations / SAMS and the Global Fund as on the date of opening of bid.</td><td></td><td></td></tr>
<tr><td>viii.</td><td>Bid Security Declaration (format of bid security declaration form enclosed at Annexure Z) furnished in accordance with ITB Para 19 (for MSME exempt from Bid Security), or for Bidders submitting Bid Security- FDR/Bank Guarantee/Demand Draft/RTGS payment Proof /Receipt of the deposit of Bid Security (if deposited before submission of the bid),</td><td></td><td></td></tr>
<tr><td>ix.</td><td>the bid is valid for the period, specified in the Bidding Documents,</td><td></td><td></td></tr>
<tr><td>x.</td><td>Bidder and consortium partner (if any) agreed to terms and conditions of bid including delivery period</td><td></td><td></td></tr>
<tr><td>xi.</td><td>Bidder and consortium partner (if any) has agreed to submit an unconditional Bid and give the required performance security as mentioned in the bid document</td><td></td><td></td></tr>
<tr><td>xii.</td><td>whether any other conditions specified in the Bidding Documents are fulfilled.</td><td></td><td></td></tr>
<tr><td>xiii.</td><td>The Bidder and consortium partner (if any) is eligible to supply the goods required under this bid as per basic eligibility specified under ITB para 5 above.</td><td></td><td></td></tr>
<tr><td colspan="4"></td></tr>
<tr><td>2</td><td colspan="3">Documents required for Eligibility Criteria and Technical Evaluation</td></tr>
<tr><td>i</td><td>Letter of Technical Bid as per Form provided in Section VI – Bidding Forms,</td><td></td><td></td></tr>
<tr><td>ii</td><td>Bidder Information Form as per Form provided in Section VI: Bidding Forms, along with following supporting documents
a) Organizational chart, a list of Board of Directors, and the beneficial ownership.
b) Bidder should submit Copies of audited financial statements of accounts (if applicable) (including auditor’s reports) / CA certified turnover certificate and IT returns for last three financial years (i.e. 2021-22, 2022-23 and 2023-24) and Consortium partner(s) (as the case may be).</td><td></td><td></td></tr>
<tr><td>iii</td><td>Documents establishing the compliance of Goods in accordance with ITB Para 16,
1) Technical Specification Compliance Form (Technical Compliance Sheet) as per Form provided in Section VI: Bidding Forms, along with necessary certifications and technical catalogue / brochure/ data sheet.</td><td></td><td></td></tr>
<tr><td>iv</td><td>The bidders is required to submit the details for each schedule separately, as specified in Annexures X1 to X5 as mentioned below:
<table>
<tr><th>Sch. No.</th><th>Name of Schedule</th><th>Name of Annexures</th></tr>
<tr><td>1</td><td>Central</td><td>Annexure X1</td></tr>
<tr><td>2</td><td>East & North-East</td><td>Annexure X2</td></tr>
<tr><td>3</td><td>North</td><td>Annexure X3</td></tr>
<tr><td>4</td><td>South</td><td>Annexure X4</td></tr>
<tr><td>5</td><td>UP + UK & West</td><td>Annexure X5</td></tr>
</table></td><td></td><td></td></tr>
</table>

v	the documentary evidence that the Goods conform to the technical specifications and standards specified in Section V - Schedule of Requirements		
vi	Documents establishing bidders' qualification in accordance with ITB Para 17.2, - The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction that the Bidder meets each of the qualification criterion specified in Section IV - Qualification and Evaluation Criteria.		
vii	Manufacturer's Authorization, in case bid is submitted by an Agent, as per Form given in **Section VI: Bidding Forms**,		
viii	Details of Implementation Plan and timelines for project as per **Section VI – Bidding Forms, including the following:-** **Implementation plan and timelines for project including:** ·the initial assessment of sites for finalizing the requirement, ·procurement and delivery of fixtures, ·installation followed by efficacy and safety testing for commissioning and subsequent maintenance services, ·existing service delivery network which can also provide UVGI maintenance services ·Manufacturing capabilities (number of fixtures produced per month) Timelines to be provided as a Gantt Chart for execution of the entire project Bidder is expected to share a detailed plan along with the bid which shall be reviewed as part of the technical evaluation. Prospective bidders will also be required to make a presentation on the same.		
ix	Proforma for Performance Statement (for a period of last five years) as per format given in Section VI: Bidding Forms along with supporting documents such as a) Purchase Order (signed & stamped) and Certificate of installation (signed & stamped) from all the sites issued in the last 5 years for ; - installation - for installation and maintenance during warranty period - maintenance services beyond the warranty period, - Copy of invoices - Proof of Payment received from Purchasers - Documentary evidence (Client's certificate) in support of satisfactory completion of contract b) Successful Demonstration and user feedback from any site within India where the vendor has installed Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection Systems		
x	Proforma for other Details of Bidder, Manufacturer and its Bank as per format given in **Section VI: Bidding Forms**,		
xi	Organizational chart, a list of Board of Directors, and the beneficial ownership.		
xi	Any other document **as required in the BDS**		
3	**Documents required for Financial Evaluation**		
ii.	Letter of Financial Bid as per Form provided in **Section VI – Bidding Forms**,		
iii.	Price Schedule prepared in accordance with **ITB Para 14**, **(bidders should submit the price schedule in separate folders as per the schedules quoted)**		

Section I - Notice Inviting Bids

for

Procurement for Supply, Installation and Commissioning of Upper UVGI/GUV systems and related services for Nodal DRTB Centres Across India

Bid Ref. No.: SAMS/FIND/Proc/Equipment/ATE/05/2025 Dt: 01/05/2025

1. Strategic Alliance Management Services Pvt. Ltd. (SAMS) has been engaged by "Foundation for Innovative New Diagnostics India" (FIND India), New Delhi (a not-for-profit Company created under Section 8 (Indian) Companies Act, 2013) for providing procurement consultancy services for equipment, goods, works and services for TB Laboratories established across India under National Tuberculosis Elimination Programme (NTEP), Ministry of Health and Family Welfare, Govt. of India.

2. SAMS hereby invites bids **(offline)** from eligible and qualified bidders for the supply and installation of **Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection System** and related services to be supplied at various consignees as per details given in the bid document.

3. **Bids are invited in 5 different Schedules as tabulated below, wherein bidders are allowed to submit bids for any or all of the schedules as specified below:**

Description of item to be procured	Sch. No.	Name of Schedule	No. of State	Name of states	No. of Sites
Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection System and related services with 1 year of comprehensive warranty + 4 years of comprehensive maintenance services This also includes initial assessment for UVGI/GUV requirement and installation plan, which will be to be carried out along with relevant stakeholders from FIND India, SAMS and institute.	1	Central	3	Chhattisgarh, Madhya Pradesh & Rajasthan	22
	2	East & North-East	11	Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Odisha, Sikkim, Tripura & West Bengal	26
	3	North	6	Delhi, Haryana, Himachal Pradesh, J&K, Ladakh & Punjab	13
	4	South	6	Puducherry, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu & Telangana	25
	5	UP + UK & West	4	Gujarat, Maharashtra, Uttar Pradesh & Uttarakhand	30

4. The selected bidder(s) and consortium partner (if any) shall be required to visit the respective mentioned sites post award of contract for assessment of actual number of UVGI/GUV fixtures requirement based on the site feasibility and UV dosage required to create a killing/ UV disinfection zone and they have to submit the design/ layout of the facility showing the placement of UVGI/GUV along with the required quantities and the related work that they need to carry out at the site. The cost of the above assessment needs to be taken into account at the time of submission of the unit cost in the financial bid.

5. The Purchaser or it's representative may conduct the Inspections for the goods any time before or after the dispatch of goods. Post award of contract '**lot quality check' of the fixtures (for different models to be supplied by vendor) will be conducted under which** one fixture of each model from identified lots/ batches will undergo quality check i.e. verification testing of the total UVC Output, Efficacy test and Safety test (3 tests). In case the 'fixture fails any or all the mentioned tests, repeat tests (twice) will be conducted by the purchaser on another two fixtures of the same lot/batch. If two out of the three fixtures fail on any of the of the parameters the entire lot/batch will be rejected Cost for shipment of these fixtures to and fro for testing will be borne by the vendor.

   5.1 **Penalties on account of quality failure:** If the tested fixtures do not conform to prescribed tender standards, the vendor will be liable to replace the entire quantity of the failed batch/batches irrespective of installation within the timeline given by the purchaser at their own expense, failing which the contract will be cancelled partly or wholly, and the performance security will be forfeited accordingly. The vendor will also be responsible for removal of the failed batch/batches from the sites including de-installation at their own cost. The replaced items will be randomly tested for quality at the Purchaser's designated site. Cost for shipment of these fixtures to and fro for testing will be borne by the vendor. In case the product fails re-testing, the order will be cancelled, the performance security will be forfeited, and the vendor will be blacklisted.

6. Bidding will be conducted through the 'Advertised Tender Enquiry' method and procedures as set out in the 'General Financial Rule – 2017' and Manual for Procurement of Goods (updated till July, 2024) issued by the Department of Expenditure, Ministry of Finance, Govt. of India (latest update).

7. The Purchaser reserves the right to split the contract quantity in any or all of the schedules between two or more qualified Bidders at its sole discretion. The order may be split amongst minimum of two qualified bidders for tendered product in the ratio of 70:30 (with 70% of the order given to lowest evaluated bidder i.e. L1 and the balance 30% to the 2nd lowest bidder i.e. L-2), if the L2 bidder agrees to match the unit cost quoted by L-1 bidder. If required the order may be split between three qualified bidders in the ratio of 50:30:20 with 50% order to L1, 30% order to L2 and 20% order to L3, if L-2 and L-3 agree to match the price quoted by L-1 Bidder. However, the split ratio may be changed by the purchaser at its sole discretion based on the project requirements. This split will be decided at the time of the contract award. The bidders will not be allowed to revise their bids on account of this split.

8. Bidders and consortium partners (if any) are required to submit Bid Security for the amount and form mentioned in the Bid Documents. Certain classes of Bidders are exempted from the submission of Bid Security. Details are given in the Bidding Documents.

9. The Bid Document can be freely downloaded from the website www.samsconsult.com starting from **10.00 AM on 01/05/2025.** Bidders shall be solely responsible for checking the above website for any addendum/amendment issued subsequent to publication of this NIB and take the same into consideration while preparing and submitting their bids.

10. Bidders' representatives are invited to attend an offline/in-person (physical) **pre-bid meeting at 11.00 AM on 09/05/2025** at the address mentioned above. Please note that non-attendance at the pre-bid meeting will not be the cause of the disqualification of bidders. Bidders can also participate in an online pre-bid meeting through **Microsoft Teams link** https://teams.live.com/meet/9318044786310?p=HoHNutMTZRAB2r94eo at the scheduled time and date of pre-bid meeting. Bidders who are unable to attend the pre-bid meeting (online or

offline) can send their written requests for clarification, if any up to **05.00 PM on 08/05/2025** at email procurement@samsconsult.com.

11. **Bids must be submitted in hard copies on or before 03:00 PM on 21/05/2025 by Bidders at the office of the Purchaser.**

12. **The Technical Bids will be opened on the same day (i.e. 21/05/2025) at 04.00 PM in the presence of the bidder's representatives, who choose to attend the technical bid opening meeting. Late bids will be rejected.**

Sanjay Rastogi
Director, SAMS

Table of Contents

Section II - Instructions to Bidders

A. GENERAL

1. Introduction

1.1 In connection with the Notice Inviting Bids (NIB) for Procurement of Goods, Equipment and related services as **specified in the Section III - Bid Data Sheet (BDS)**, the Purchaser **as specified in the BDS**, has issued these Bidding Documents for the supply of Goods, Equipment and related services **as specified in Section V - Schedule of Requirements**.

1.2 This Section provides the relevant information as well as instructions to assist prospective bidders in preparation and submission of bids. It also includes the mode and procedure to be adopted by the Purchaser for receipt and opening as well as scrutiny and evaluation of bids and subsequent placement of award of contract.

1.3 Before preparing the bid, and submitting the same to the Purchaser, the bidder should read and examine all the terms & conditions, instructions etc. contained in the Bidding Documents. Failure to provide required information or to comply with the instructions incorporated in this Bidding Documents may result in rejection of bids submitted by bidders.

1.4 The bidder and consortium partner (if any) shall bear all costs and expenditure incurred and/or to be incurred by it in connection with its bid including preparation, mailing and submission of its bid and subsequently processing the same. The Purchaser shall, in no case be responsible or liable for any such cost, expenditure etc. regardless of the conduct or outcome of the bidding process.

2. Language of Bids

2.1 Bid submitted by the bidder and consortium partner (if any) and all subsequent correspondences and documents relating to the bid exchanged between the bidder and the Purchaser, shall be written in English language. However, the language of any printed literature furnished by the bidder in connection with its bid may be written in any other language, provided the same is accompanied by a self-certified English translation and, for purposes of interpretation of the bid, the English translation shall prevail**.**

3. Code of Integrity

3.1 The Purchaser and all officers or employees of the purchaser, whether involved in the procurement process or otherwise, or Bidders and their representatives or consultants or service providers participating in a procurement process or other persons involved, directly or indirectly in any way in a procurement process shall maintain an unimpeachable standard of integrity.

3.2 The Purchaser and Bidders to uphold the Code of Integrity, which prohibits officers or employees of the Purchaser or a person participating in a procurement process, in respect of the following:

(i) any offer, solicitation or acceptance of any bribe, reward or gift or any material benefit, either directly or indirectly, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process,,

(ii) any omission, including a misrepresentation that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation,,

(iii) any collusion, bid rigging or anti-competitive behaviour to impair the transparency, fairness and progress of the procurement process,,

(iv) improper use of information shared between the Purchaser and the bidders with an intent to gain unfair advantage in the procurement process or for personal gain,,

(v) any financial or business transactions between the bidder and any officer or employee of the Purchaser, who are directly or indirectly related to tender or execution process of contract,,

(vi) any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process,,

(vii) any obstruction of any investigation or audit of a procurement process,,

(viii) making false declaration or providing false information for participation in -
a) tender process or to secure a contract,,

b) disclosure of Conflict of Interest,,

c) disclosure by the bidder of any previous transgressions with any entity in India or any other country during the last three years or of any debarment by any other Procuring Entity.

3.3 In case of any breach of the Code of Integrity by a bidder or a prospective bidder, the Purchaser after giving a reasonable opportunity of being heard, may take appropriate measures including –

a) exclusion of the bidder from the procurement process

b) calling off of pre-contract negotiations and forfeiture or encashment of bid security

c) forfeiture or encashment of any other security or bond relating to procurement

d) recovery of payments made by the Purchaser along with interest thereon at bank rate

e) cancellation of the relevant contract and recovery of compensation for loss incurred by the Purchaser

f) debarment of the bidder from participation in any future procurements of Purchaser for a period not exceeding three years.

4. Conflict of Interest

4.1 Conflict of Interest for the Purchaser or its personnel and bidders is considered to be a situation in which a party has interests that could improperly influence that performance of its duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.

4.2 Purchaser describes the situations in which a Purchaser or its personnel may be considered to be in Conflict of Interest include, but are not limited to the following -

a) Conflict of Interest occurs when the private interests of Purchaser or its personnel, such as personal, non-official, extra- professional or other relationships or personal financial assets, interfere or appear to interfere with the proper performance of its professional functions or obligations as a procurement official,,

b) within the procurement environment, a Conflict of Interest may arise in connection with such private interests as personal investments and assets, political or other social activities and affiliations while in the service of the Purchaser, employment after retirement from service or of relatives or the receipt of a gift that may place the Purchaser or its personnel in a position of obligation,,

c) Conflict of Interest also includes the use of assets of the Purchaser including human, financial and material assets, or the use of the office of the Purchaser or knowledge gained from official functions for private gain or to prejudice the position of someone the Purchaser or its personnel does not favour

d) Conflict of Interest may also arise in situations where the Purchaser or any of its personnel is seen to benefit directly or indirectly or allow a third party, including family, friends or someone they favour, to benefit directly or indirectly from the decision or action of the Purchaser,

4.3 The situations in which bidders participating in a procurement process or their representatives may be considered to be in Conflict of Interest include, but are not limited to the following –

a) If they or their personnel or representatives or agents have any relationship or financial or business transactions or interests with any official of the Purchaser that are directly or indirectly involved in or related to the procurement process or execution of contract,

b) If they receive or have received any direct or indirect subsidy from any other bidder,

c) If they have the same legal representative for purposes of the bid,

d) If they have a relationship with each other, directly or through common third parties that puts them in a position to have access to information about or influence on the bid of another,

e) If they participate in more than one bid in the same bidding process,

f) If they have controlling partners in common,

g) If a bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the subject matter of procurement of the bidding process or were involved in such preparation in any way,

4.4 In the 'Letter of Technical Bid' to be submitted by the bidder, as per format given in **Section VI - Bidding Forms**, all bidders shall provide a signed statement that the bidder is neither associated nor has been associated directly or indirectly with the consultant or any other entity that has prepared the design, specifications and other

documents for the subject matter of procurement or is being proposed as Project Manager for the contract,

4.5 In case of a holding company having more than one independently manufacturing unit or more than one unit having common business ownership or management, only one unit shall be allowed to submit bid or quote to prevent any Conflict of Interest. Similar restrictions shall apply to closely related sister or subsidiary companies. Such bidders must proactively declare such sister or subsidiary company or common business or management units in similar lines of business,

4.6 In cases of agents quoting in offshore procurements on behalf of their principal manufacturers, one agent shall not represent two manufacturers or quote on their behalf in a particular bid enquiry to prevent any Conflict of Interest.

4.7 In case the bidder is found to have a conflict of interest anytime during the bidding process or post award of contract the Purchaser after giving a reasonable opportunity of being heard can take appropriate actions including–

a) exclusion of the bidder from the procurement process

b) calling off of pre-contract negotiations and forfeiture or encashment of bid security

c) forfeiture or encashment of any other security or bond relating to procurement

d) recovery of payments made by the Purchaser along with interest thereon at bank rate

e) cancellation of the relevant contract and recovery of compensation for loss incurred by the Purchaser

f) debarment of the bidder from participation in any future procurements of Purchaser for a period not exceeding three years.

5. Eligible Bidders and Goods

5.1 Bidder shall be a private entity, government-owned entity or, any combination of these having a formal intent and legal competency to enter into an agreement or contract and are registered under respective Act and Jurisdiction in India or any other country with which India has not banned trade relations. The bidder may form Consortium with other firms to enhance their qualifications. In such a case, the lead firm / bidder along with all the Consortium members shall be jointly and severely liable for satisfactory performance of services, in case contract is awarded.

5.2 Bidder and consortium partner (if any) should not have a Conflict of Interest as prescribed and specified in ITB Para 4, which materially affects fair competition.

5.3 In addition, any bidder and consortium partner (if any) participating in the procurement process shall –

(i) have fulfilled his obligation to pay such of the tax payable to the Central Government or the State Government or any local authority,

(ii) not be insolvent, in receivership, bankrupt or being wound up, not have its affairs administered by a court or a judicial officer, not have its business activities suspended and must not be the subject of legal proceedings for any of the foregoing reasons,

(iii) not have, and their directors and officers have not been convicted of any criminal offence related to their professional conduct or the making of false statements or misrepresentations as to their qualifications to enter into a procurement contract within a period of three years preceding the commencement of the procurement process, or not have been otherwise disqualified pursuant to debarment proceedings,

(iv) the bidder and consortium partner (if any) not be debarred by any Procuring Entity under the State / UT Government, the Central Government, Autonomous body, Authority by whatever name called under them, UNOPS, UNDP, SAMS or GFATM as on the date of opening of bids.

5.4 All goods to be supplied under the contract shall have their origin in India or any other country with which India has not banned trade relations. The term "origin" used in this clause means the place where the goods are mined, grown, produced, or manufactured or from where the related services are arranged and supplied.

5.5 Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. Where applicable, evidence of valid registration by the Competent Authority shall be attached, failing which their bids shall be rejected. The Competent Authority for the purpose of this clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). More details may be found in the Office Memorandum (O.M.) Ref. F.No.6/18/2019-PPD dated 23/7/2020 issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Govt. of India. Further, A contractor shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority in India. Bidders are required to certify about compliance of above requirement in the Letter of Technical Bid: Bidding FORMs of section -VI of the Bid Document to the above effect. If such a certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law.

5.6 In the 'Letter of Technical Bid' to be submitted by the bidder and consortium partner (if any), as per format given in **Section VI - Bidding Forms**, all bidders shall provide a signed statement that the bidder fulfils the eligibility requirements given in ITB Para 5,

6. Bidders' Qualification

6.1 Bidders and consortium partner (if any) should substantially meet the qualification criteria as stipulated in the **Section IV - Evaluation and Qualification Criteria**.

6.2 Bidders and consortium partner (if any) should fill and submit the "Proforma for Performance Statement (for a period of last five years)" provided in **Section VI - Bidding Forms** to provide relevant information and documents in support of fulfilment of bidder's qualification, along with its bid.

B. BIDDING DOCUMENTS

7. Content of Bidding Documents

7.1 The Bidding Documents shall include the following Sections, which should be read in conjunction with any Amendment issued in accordance with ITB Para 10.

- Section I Notice Inviting Bids (NIB)
- Section II Instructions to Bidders (ITB)
- Section III Bid Data Sheet
- Section IV Evaluation and Qualification Criteria
- Section V Schedule of Requirements
- Section VI Bidding Forms
- Section VII General Conditions of Contract (GCC)
- Section VIII Special Conditions of Contract (SCC)
- Section IX Contract Forms

7.2 Unless downloaded directly from the Purchaser's website **as specified in the BDS**, Purchaser shall not be responsible for the correctness of the Bidding Documents, responses to requests for clarification, the Minutes of the Pre-bid meeting, if any, or Amendment(s) to the Bidding Documents in accordance with ITB Para 10.

7.3 Bidders and consortium partner (if any) are expected to examine all instructions, forms, terms, and specifications in the Bidding Documents and to furnish with its Bid all information or documentation as is required by the Bidding Documents.

8. Clarifications of Bidding Documents

8.1 A Bidder and consortium partner (if any) requiring any clarification of the Bidding Documents shall contact the Purchaser in writing at the Purchaser's address **specified in the BDS**. The Purchaser will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of bids as **specified in the BDS.**

8.2 The Purchaser shall also promptly publish brief description of the enquiry but without identifying its source and its response at its website as **specified in the BDS**.

8.3 Should the clarification result in changes to the essential elements of the Bidding Documents, the Purchaser shall amend the Bidding Documents following the procedure given under ITB Para 10.

9. Pre-Bid Meeting

9.1 In order to provide response to any doubt regarding Bidding Documents, or to clarify issues, a pre-bid meeting may be scheduled, **if specified in the BDS**.

9.2 During the pre-bid meeting, the clarification sought by representative of prospective bidders shall be responded appropriately. However, they shall be asked to submit their written request by close of business on the next working day. The Purchaser shall publish written response to such requests for clarifications, without identifying its source. In case required, amendment(s), in terms of ITB Para 10 below shall be issued, which shall be binding on all prospective bidders.

10. Amendments to Bid Documents

10.1 At any time prior to the deadline for submission of bids, the Purchaser may, pursuant to ITB Para 8 and 9 and for any reason deemed fit, amend or modify the Bidding Documents by issuing Amendment(s).

10.2 Such Amendment(s) will be published on Purchaser's website **as specified in the BDS** and the same shall be binding on all prospective Bidders.

10.3 In order to give reasonable time to prospective bidders to take necessary action in preparing their bids, the Purchaser may, at its discretion extend the deadline for the submission of bids and other allied time frames, which are linked with that deadline.

10.4 Any bidder and consortium partner (if any) who has downloaded the Bidding Documents should check the Amendment(s), if any, issued on the Purchaser's website. The Purchaser shall not be responsible in any manner if prospective Bidders miss any Amendment(s) published on Purchaser's website.

C. PREPARATION OF BIDS

11. Documents Comprising the Bid

11.1 The bidder and consortium partner (if any) shall submit bids (hard copies) in two envelopes - one envelope containing the Technical Bid and the other the Financial Bid. The Bid shall comprise the following:

Technical Bid:

i) Letter of Technical Bid as per Form provided in **Section VI – Bidding Forms**,
ii) Letter of Association from of all Consortium Partners (maximum two) to associate with the prime bidder (in case bidder has formed consortium) as per Form provided in **Section VI- Bidding Forms**;
iii) Bid Security Amount/Declaration furnished in accordance with **ITB Para 19**,
iv) Bidder Information Form as per Form provided in **Section VI: Bidding Forms**,
v) Technical Compliance Sheet as per Form provided in **Section VI: Bidding Forms,**
vi) Documents establishing the compliance of Goods in accordance with **ITB Para 16**,
vii) Documents establishing bidders' qualification in accordance with **ITB Para 17.2**,
viii) Manufacturer's Authorization, in case bid is submitted by an Agent or dealer, as per Form given in **Section VI: Bidding Forms**,
ix) Proforma for Performance Statement (for a period of last five years) as per format given in **Section VI: Bidding Forms** along with supporting documents,
x) Proforma for other Details of Bidder, Manufacturer and its Bank as per format given in **Section VI: Bidding Forms**,
xi) Any other document **as required in the BDS**

Financial Bid:

i) Letter of Financial Bid as per Forms provided in **Section VI – Bidding Forms**,
ii) Price Schedule prepared in accordance with **ITB Para 14**,

12. Letter of Technical Bid, Financial Bid and Price Schedule

12.1 The Letter of Technical Bid, Letter of Financial Bid and Price Schedule shall be prepared as per the Forms furnished in **Section VI: Bidding Forms**. The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled-in with the information requested.

13. Alternative Bids

13.1 Unless otherwise **specified in the BDS**, alternative bids shall not be considered.

14. Bid Prices

14.1 The prices quoted by the Bidder in the Price Schedule shall conform to the requirements specified below.

14.2 Equipment thereunder must be listed and priced separately in the Price Schedule. The price quoted shall correspond to 100% of the items.

14.3 The price to be quoted in the 'Letter of Financial Bid' in accordance with ITB Para 12.1 shall be the total price of the bid.

14.4 The price quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and shall not be subject to variation on any account, **unless otherwise specified in the BDS**. The bid submitted with adjustable price quotation shall be treated as nonresponsive and shall be rejected.

14.5 The price shall be quoted as specified in the Form of Price Schedule given in **Section VI - Bidding Forms**. The dis-aggregation of price components is required solely for the purpose of facilitating the comparison of bids by the Purchaser. This shall not in any way limit the Purchaser's right to contract on any of the terms offered. Prices shall be entered in the following manner:

(i) the unit and total price of the Goods on DDP (Delivered Duty Paid) – Consignee Location basis,

(ii) the price of related services as specified in Section V - Schedule of Requirements,

(iii) Goods and Services Tax (GST) payable on the Goods and related services if the contract is awarded

15. Bid Currency

15.1 The bidder and consortium partner (if any) should submit its quote in Indian Rupees only.

15.2 Bids, where prices are quoted in any other currency shall be treated as nonresponsive and rejected.

16. Documents establishing the compliance in respect of Goods

16.1 To establish the conformity of the Goods to the Bidding Documents, the Bidder shall furnish as part of its Bid, **Technical Compliance Sheet** as per Form provided in **Section VI: Bidding Forms** and the documentary evidence that the Goods conform to the technical specifications and standards specified in **Section V - Schedule of Requirements**.

16.2 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods, demonstrating substantial responsiveness of the Goods to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the **Section V - Schedule of Requirements.**

16.3 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section V - Schedule of Requirements.

17. Documents establishing the eligibility and Qualification of the Bidder

17.1 To establish Bidder's eligibility in accordance with ITB Para 5, Bidders shall complete the Letter of Technical Bid, included in **Section VI - Bidding Forms.**

17.2 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction that the Bidder meets each of the qualification criterion specified in **Section IV - Qualification and Evaluation Criteria**.

18. Period of validity of Bids

18.1 Bids shall remain valid for the period **specified in the BDS** after the bid submission deadline date prescribed by the Purchaser in accordance with ITB Para 22.1. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its bid.

18.3 The Bidder and consortium partner (if any) who agrees to the extension of the period of validity of bids so requested by the Purchaser shall also extend the period of validity of bid securities submitted by them or submit new bid security to cover the extended period of validity of their bids. A bidder whose bid security is not extended or new bid securities not submitted shall be considered to have refused the request to extend the period of validity of its bids and rejected as non-responsive. The decision of the Purchaser will be final and binding in this regard.

19. Bid Security

19.1 Bidders and consortium partner (if any) shall furnish as part of their bid, a Bid Security/ Earnest Money Deposit (EMD) as per the details mentioned below in the table in the form of FDR/ BG/ DD in the favour of Strategic Alliance Management Services Pvt. Ltd., payable at Noida. EMD can also be deposited online through RTGS as per details given below:

Name of Bank : Kotak Mahindra Bank
Account Name: Strategic Alliance Management Services Pvt Ltd.
Account No. 9447736992
IFSC : KKBK0000181
Branch: Sector 18 Noida

Sch. Nos.	Name of Schedules	Earnest Money Deposit (EMD) (In Rs.)
1	Central	7,90,000
2	East & North-East	9,80,000
3	North	9,15,000
4	South	6,45,000
5	UP + UK & West	9,40,000

19.2 For FDR/BG (pledged in the name of Strategic Alliance Management Services Pvt. Ltd., Noida) if opted for, originals should reach the SAMS office within 2 days of the submission deadline. Any delay by post or courier shall not be entertained.

19.3 The Original copy of EMD receipt (of any form) should be enclosed along with the Original Technical bid.

19.4 Any bid not accompanied by Bid Security Amount as specified in ITB Para 19.1 above shall be rejected by the Purchaser as non-responsive.

19.5 No interest shall be payable by the Purchaser for the sum deposited as earnest money deposit.

19.6 The EMD of the unsuccessful bidders would be returned back within one month of signing of the contract.

19.7 The EMD shall be forfeited by the Purchaser in the following events:

(a) When the bidder withdraws or modifies its bid during the validity of bids as specified in the Letter of Bid, or

(b) when the bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity, (i) fail or refuses to execute the Contract, or (ii) fail to furnish the Performance Security, if required in accordance with the Bid Documents.

(c) If the bidder tries to influence the evaluation process.

19.8 The Micro and Small Enterprise (MSE) bidders, registered with MSME or those registered with NSIC or are registered with Central Purchase Organisation or the concerned Ministry or Department or Startups as recognised by Department of Industrial Policy & Promotion (DIPP) are exempted from submission of bid security. In such case, bidder should submit copy of MSME or National Small Industries Corporation (NSIC) registration and documents showing exemption from submission of bid security. In lieu of bid security bidder needs to submit the bid security declaration form (format of bid security declaration form enclosed at annexure Z).

20. Format and Signing of Bids

20.1 The Bidder and consortium partner (if any) shall submit the bids as specified in ITB 11.

20.2 The Technical Bid and original of the Financial Bid shall be typed or written in ink with all pages serially numbered and signed by the bidder or a person duly authorized to sign on behalf of the bidder in token of acceptance of the terms and conditions of the Bidding Documents. This authorization shall consist of a written confirmation **as specified in the BDS** which shall be attached to the Bid.

20.3 Any corrections in the bid such as interlineations, erasures, or overwriting shall be valid only if they are duly signed or initiated by the person signing the bid.

D. SUBMISSION AND OPENING OF BIDS

21. Submission of Bids

21.1 Bidders and consortium partner (if any) should submit their bids either by post or by hand or drop in the box earmarked by the Purchaser. Bids so submitted shall enclose the original and one copy of the Technical Bid in separately sealed envelopes duly marked as "ORGINAL" and "COPY" and original of Financial Bid duly marked as "ORIGINAL" in separately sealed envelope. The envelopes containing the original and the copies of Technical Bid and original of Financial Bid shall then be enclosed in one single sealed outer envelope. **A SOFT VERSION OF THE TECHNICAL BID SHALL ALSO BE PROVIDED IN A READABLE FORMAT IN A PEN DRIVE.**

21.2 The inner and outer envelopes shall bear the following :

a) name and complete address along with the mobile, telephone number and email address of the Bidder,
b) complete postal address of the Purchaser,
c) specific identification mark / Bid Ref. No. and subject matter of procurement,
d) a warning 'not to open before the time and date for bid opening' as indicated in the Bidding Documents

21.3 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility about its consequences viz. misplacement or premature opening of the bid

22. Deadline for Submission of Bids

22.1 Bids must be submitted before the given deadline and no later than the date and time **specified in the BDS**.

22.2 The date of submission and opening of bids shall not be extended except when –

a) Adequate number of bids have not been received within the given time and the Purchaser is of the opinion that further bids are likely to be submitted if time is extended, or
b) the Bidding Documents are required to be substantially modified because of discussions in pre-bid meeting or otherwise and the time for preparations of bids

by the prospective bidders appears to be insufficient for which such extension is required.

22.3 In cases where the time and date of submission of bids is extended, an amendment to the Bidding Documents shall be issued in accordance with ITB Para 10, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline extended

22.4 If the due date for submission of bids declared as non-working day, the bids shall be received and opened at the same time and hour on the next working day.

23. Late Bids

23.1 Bidder and consortium partner (if any) will not be able to submit bids after closing of the deadline (date and time) for the submission of the bid as specified in the BDS.

24. Withdrawal, Substitution and Modification of Bids

24.1 A bidder may withdraw, substitute, or modify its bid after it has been submitted, prior to the submission date and time, by sending a written notice duly signed by the bidder or his representative authorized in writing and such letter of authority shall be enclosed with the bid. The corresponding substitution or modification of the bid contained in sealed envelopes as required must accompany the written notice. Such written notice shall be –

a) submitted in accordance with the Bidding Documents with the envelope clearly marked as “Withdrawal – Technical Bid / Financial Bid,” “Substitution – Technical Bid / Financial Bid,” or “Modification – Technical Bid/ Financial Bid” as applicable, and
b) received by the officer authorized to receive the bids prior to the last time and date fixed for receiving of bids.

24.2 Bids requested to be withdrawn shall be returned unopened to the bidders.

24.3 No bid shall be withdrawn, substituted, or modified after the time and date fixed for submission of bids as specified in the BDS.

25. Opening of Bids

25.1 The Purchaser will open all bids, in the presence of Bidders representatives who choose to attend at the time, on the date, and at the place specified in the **Key Bidding information.** Bidders’ representatives shall sign the attendance sheet as proof of their attendance. The bidders who are not able to attend bid opening may choose to attend bid opening remotely using Skype call setup by SAMS.

25.2 The Technical Bid shall be opened at the first instance **at 04.00 PM on 21/05/2025.** During the Technical Bid opening, the Bid opening official(s) will read the salient features of the bids like Bid Security Declaration and any other special features of the bids, as deemed fit by the bid opening official(s).

25.3 The Purchaser will prepare minutes of the technical bid opening at the end of the opening session, including, as a minimum: the name of the Bidder, the presence or absence of a bid security etc. The minutes should be distributed to all Bidders who attended the meeting and will also be uploaded on Purchasers website.

25.4 After the technical evaluation of bids are completed, the Purchaser shall notify

those Bidders whose Bids are found non-responsive at technical evaluation stage and their Financial Bids will not be opened.

25.5 The Purchaser shall simultaneously notify in writing those Bidders that have qualified during technical evaluation stage and inform them of the date, time and location for the opening of the Financial Bids. The opening date should allow the Bidders sufficient time to make arrangements for attending the opening. The Bidder's attendance at the opening of the Financial Bids is optional and is at the Bidder's choice.

25.6 The Financial Bids shall be opened by the Purchaser in the presence of the representatives of those Bidders found qualified during technical evaluation stage. These Financial Bids shall then be opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Bidders who have submitted their Bids.

E. EVALUATION AND COMPARISON OF BIDS

26. Confidentiality

26.1 Information relating to the evaluation of bids and recommendation of contract award, shall not be disclosed to bidders or any other persons not officially concerned with the bidding process until information on Contract Award is communicated to all Bidders

26.2 Any effort by a Bidder to influence the Purchaser in the evaluation or contract award decisions may result in the rejection of its Bid.

26.3 Notwithstanding ITB Para 26.2, from the time of bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.

27. Preliminary Examination of Bids

27.1 The Bid Evaluation Committee constituted by the Purchaser shall conduct a preliminary scrutiny of the opened bids at the beginning to assess the prima-facie responsiveness and record its findings thereof particularly in respect of the following:

(a) bidder should submit the Power of Attorney in favour of the authorized signatory of the Bid.
(b) that the bid is signed by authorised signatory (each and every page)
(c) copy of Certificate of GST Registration and Consortium partner(s) (as the case may be)
(d) copy of MSME registration (if applicable)
(e) copy of PAN Card of the Bidder and the Consortium partner(s) (as the case may be)
(f) certificate of Incorporation/ Registration of the bidder / Article and Memorandum of Association or any such registration document such as partnership deed etc. and Consortium partner(s) (as the case may be).
(g) bidder should submit Notarized Affidavit (on stamp paper of Rs.100 that giving undertaking that "bidder and consortium partners (if any) is/are not debarred/ blacklisted by MOH&FW / GOI / any other Central Govt. / Department or State Government / any other Govt agency/UNOPS/UNDP / any other UN organizations / SAMS and the Global Fund as on the date of opening of bid.

(h) bid Security Declaration (format of bid security declaration form enclosed at Annexure Z) furnished in accordance with ITB Para 19 (for MSME exempt from Bid Security), or for Bidders submitting Bid Security- FDR/Bank Guarantee/Demand Draft/RTGS payment Proof /Receipt of the deposit of Bid Security (if deposited before submission of the bid),
(i) the bid is valid for the period, specified in the Bidding Documents,
(j) bidder agreed to terms and conditions of bid including delivery period
(k) that the bid is unconditional and that the bidder has agreed to give the required performance security,
(l) whether any other conditions specified in the Bidding Documents are fulfilled.
(m) bidder is eligible to supply the goods required under this bid as per basic eligibility specified under ITB para 5 above.

28. Clarification of Bids

28.1 To assist in the examination, evaluation, comparison and qualification of the bids, the Bid Evaluation Committee may, at its discretion, ask any bidder in writing for clarification by a specific date regarding its bid specifically therein that if the bidder does not comply or respond by that date his bid shall be liable to be rejected. The request of the Committee for clarification and the response of the bidder thereto shall be in writing. Depending on the outcome, such bids shall be ignored or considered further,

28.2 Any clarification submitted by a bidder with regard to his bid that is not in response to a request by the Committee specifically shall not be considered,

28.3 No change in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Committee in the evaluation of the financial bids,

28.4 No substantive change to qualification information or to a submission, including changes aimed at making an unqualified bidder, qualified or an unresponsive submission, responsive shall be sought, offered or permitted under any circumstances,

28.5 All communication generated as above shall be included in the record of the procurement proceedings.

29. Immaterial Non-conformities in Bids

29.1 The Bid Evaluation Committee may waive non-conformities in the bid that do not constitute a material deviation, reservation or omission and deem the bid to be responsive,

29.2 The Bid Evaluation Committee may request the bidder to submit necessary information or documents which are historical in nature like audited statements of accounts, GSTIN Registration Certificate, etc. within a reasonable period of time. Failure of the bidder to comply with the request within the given time shall result in the rejection of its bid,

29.3 The Bid Evaluation Committee may rectify immaterial non-conformities or omissions on the basis of the information or documentation received from the bidder under ITB Para 29.2.

30. Determination of Technical Responsiveness

30.1 The Bid Evaluation Committee constituted by the Purchaser shall determine the responsiveness of a bid to the Bidding Documents based on the contents of the bid submitted by the Bidder,

30.2 A bid shall be deemed to be substantially responsive if it meets the requirements of the Bidding Documents without any material deviation, reservation, or omission where: -

(a) "deviation" is a departure from the requirements specified in the Bidding Documents,
(b) "reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents, and
(c) "omission" is the failure to submit part or all of the information or documentation required in the bidding documents.

30.3 A "material deviation, reservation, or omission" is one that,

(a) If accepted, shall:-
    (i) effect in any substantial way the scope, quality, or performance of the subject matter of procurement specified in the Bidding Documents, or
    (ii) limit in any substantial way, inconsistent with the Bidding Documents, the rights of the Purchaser or the obligation of the Bidder under the proposed contract, or
(b) if rectified shall unfairly affect the competitive position of other Bidders presenting responsive bids,

30.4 The Bid Evaluation Committee shall examine the technical aspects of the bid in particular to confirm that all requirements of Bidding Documents have been met without any material deviation, reservation or omission,

30.5 The Bid Evaluation Committee shall regard a bid as responsive if it conforms to all requirements set out in the Bidding Documents, or contains minor deviations that do not materially alter or depart from the characteristics, terms, conditions and other requirements set out in the Bidding Documents, that is, there is no material deviation, or if it contains errors or oversights that can be corrected without any change in the substance of the bid,

30.6 Bids that are not responsive or contain any material deviation shall be rejected. Bids declared as non-responsive shall be excluded from any further evaluation.

30.7 Product testing will be conducted for the technically responsive bids as mentioned in the Section IV (Evaluation and Qualification Criteria)

31. Nonconformities, Errors and Omissions

31.1 Provided that a Bid is substantially responsive, the Bid Evaluation Committee may waive any nonconformities in the Bid.

31.2 Provided that a bid is substantially responsive, the Purchaser or authorised representative may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the bid related to documentation requirements. Such

omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

31.3 Provided that a bid is substantially responsive, the Bid Evaluation Committee shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component.

32. Qualification of the Bidder

32.1 The Purchaser shall determine to its satisfaction whether the Bidder meets the qualifying criteria **specified in Section IV - Evaluation and Qualification Criteria**

32.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB Para 17

32.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Purchaser/ Evaluation Committee shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.

33. Financial Evaluation and Comparison of Bids

33.1 In order to evaluate Financial Bids, the Purchaser shall consider the following:

(a) evaluation will be done for Items, as **Section IV – Evaluation and Qualification Criteria ,** and the Bid Price as quoted in accordance with ITB Para 14.
(b) price adjustment for correction of arithmetic errors in accordance with ITB 34
(c) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 31
(d) the additional evaluation factors are specified in **Section IV: Evaluation and Qualification Criteria**

33.2 The Purchaser shall compare the evaluated prices of all substantially responsive bids established in accordance with ITB 33 to determine the lowest evaluated bid. The comparison shall be on the basis of DDP (place of final destination) prices, together with prices for any required installation, training, commissioning and other services. The evaluation of a bid will include and take into account IGST / SGST / CGST payable on the Goods and related services if the contract is awarded to the Bidder.

34. Correction of Arithmetical Errors

34.1 Provided that the Bid is substantially responsive, the Bid Evaluation Committee shall correct arithmetical errors in the following cases, namely:

(a) 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 shall prevail and the total price shall be corrected, unless in the opinion of the Committee there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected,

(b) if there is an error in a calculation of the total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected, and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

34.2 If the price bid is ambiguous leading to two equally valid total price amounts, the bid shall be treated as non-responsive and rejected.

34.3 Bidders and consortium partner (if any) shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB Para 34.1, shall result in the rejection of the Bid.

35. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids

35.1 The Purchaser reserved the right to accept or reject any bid, either partially or entirely, and to cancel or annul the bidding process partially or entirely and reject all bids at their sole discretion, at any time before a contract is awarded without assigning any reason whatsoever and without thereby incurring any liability to the affected bidder or bidders on the grounds of purchaser's action. In case of cancellation / annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

F. AWARD OF CONTRACT

36. Award Criteria

36.1 The contract will be awarded to the lowest priced evaluated responsive bidder for each schedule, decided by the Purchaser based on the evaluation criteria defined above.

36.2 The Purchaser reserves the right to split the contract quantity in any or all of the schedules between two or more qualified Bidders at its sole discretion. The order may be split amongst minimum of two qualified bidders for tendered product in the ratio of 70:30 (with 70% of the order given to lowest evaluated bidder i.e. L1 and the balance 30% to the 2nd lowest bidder i.e. L-2), if the L2 bidder agrees to match the unit cost quoted by L-1 bidder. If required the order may be split between three qualified bidders in the ratio of 50:30:20 with 50% order to L1, 30% order to L2 and 20% order to L3, if L-2 and L-3 agree to match the price quoted by L-1 Bidder. However, the split ratio may be changed by the purchaser at its sole discretion based on the project requirements. This split will be decided at the time of the contract award. The bidders will not be allowed to revise their bids on account of this split.

37. Purchaser's Right to vary Quantities at the time of Award as well as during the validity of the Contract.

37.1 At the time the Contract is awarded and till the validity of the contract, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section V, Schedule of Requirements, provided this does not exceed the percentages **specified in the BDS,** and without any change in the unit prices or other terms and conditions of the bid and the Bidding Documents.

38. Notification of Award / Letter of Acceptance

38.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Purchaser will pay the Supplier in consideration of the supply of Goods (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").

38.2 Until a formal Contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

38.3 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after Notification of Award in accordance with ITB Para 38.1, requests in writing the grounds on which its bid was not selected.

39. Performance Security

39.1 Within twenty-eight (28) days of the receipt of Letter of Acceptance from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC, using the Performance Security Form included in **Section IX: Contract Forms**, or another Form acceptable to the Purchaser.

39.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose bid is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

39.3 The validity of the performance security shall be for a period of 45 days beyond the date of completion of all contractual obligations.

40. Signing of Contract

40.1 Promptly after notification of Award, the Purchaser shall send the successful Bidder the Contract Agreement.

40.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.

Section III – Bid Data Sheet (BDS)

The following specific data for the goods and related services to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB

ITB Para Reference	Particulars
	A. General
ITB 1.1	The reference number of the Notice Inviting Bids (NIB) is: ***SAMS/FIND/Proc/Equipment/ATE/05/2025*** The Purchaser is: Strategic Alliance Management Services Pvt. Ltd, B-18, Sector-06, NOIDA Gautam Budh Nagar (U.P.)- 201301
ITB 7.2	http://www.samsconsult.com/FIND.aspx
	B. Bidding Documents
ITB 8.1	The Purchaser's address for the purpose of any clarification is: Strategic Alliance Management Services Pvt. Ltd, B-18, Sector-06, NOIDA Gautam Budh Nagar (U.P.)- 201301 *E-mail: procurement@samsconsult.com* *Phone:* 0120-4161355, 56, 57 Requests for clarification should be received by the Purchaser no later than: 05.00 PM **08/05/2025**
ITB 8.2	http://www.samsconsult.com/FIND.aspx
ITB 9.1	Pre-Bid Meeting shall be scheduled on hybrid mode (online & offline): **Yes** as per the details mentioned below:- Time, date, venue and name of contact for pre-bid meeting are specified as under: Time and Date: **11.00 AM on 09/05/2025** Name of contact person: **Mr. Dinesh Kumar, Sr. Manager** (**Procurement)** Contact Details: **Mobile: 8800257774,** **e-mail: kumard@samsconsult.com**, **procurement@samsconsult.com** Address of Venue: Strategic Alliance Management Services Pvt. Ltd, B-18, Sector-06, NOIDA Gautam Budh Nagar (U.P.)- 201301 The prospective bidders who wish to join the online meeting may do so using the below-mentioned link:- https://teams.live.com/meet/9318044786310?p=HoHNutMTZRAB2r94eo
ITB 10.2	http://www.samsconsult.com/FIND.aspx
	C. Preparation of Bids
ITB 11.1 (xii)	The Bidder and consortium partner (if any) shall submit the following additional documents in its Bid: **None**
ITB 13.1	Alternative Bids ***shall not be*** considered.
ITB 14.4	The price quoted by the bidder and consortium partner (if any) shall be **fixed** during the Bidder's performance of the Contract and shall not be subject to variation on any account, **except for GST, payable on Goods and related services**.
ITB 18.1	The bid validity period shall be ***120 days after the deadline for bid submission.***

ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder and consortium partner (if any) shall consist of**:** **(1) Copy of Resolution of Board of Directors** **(2) Authorization Letter issued by Competent authority on bidder firms letter head / official stationary**
	D. Submission and Opening of Bids
ITB 22.1	Purchaser's address for bid submission is: ***Strategic Alliance Management Services Pvt. Limited (SAMS), B-18, Sector-6, Noida, G.B. Nagar, Uttar Pradesh – 201031.*** The deadline for Bid Submission is: **03.00 PM on 21/05/2025.**
ITB 25.1	The bid opening shall take place at ***Strategic Alliance Management Services Pvt. Limited (SAMS), B-18, Sector-6, Noida, G.B. Nagar, Uttar Pradesh – 201031.*** The date and time for Bid opening is: **04.00 PM on 21/05/2025.** The prospective bidders who wish to join the online meeting may do so using the below-mentioned link:- https://teams.live.com/meet/933504545130?p=YE1qv2r3SzLO1RTELz
	F- Award of Contract
ITB 37.1	The maximum percentage by which quantities may vary is: **±35%** ***(plus/ minus Thirty Five percent)***

Section IV – Evaluation and Qualification Criteria

This Section contains all the criteria that the Purchaser shall use to evaluate a bid and qualify the Bidders in accordance with ITB 30 and 32. No other factors, methods or criteria shall be used.

Evaluation (ITB 32 & ITB 33.1)

The Purchaser shall use the Least Cost Selection (LCS) Selection) criteria and methodologies listed in this Section to evaluate Bids. By applying the criteria and methodologies as listed below, the Purchaser shall determine the Most Advantageous Bid.

A – Minimum Eligibility Criteria

1. Bidder and or consortium partner (if any) should be in the continuous business of manufacturing / supplying similar Goods as specified in the bid during last minimum of three years prior to bid opening. Similar goods refer to **Upper Room UVGI/GUV/GUV Disinfection System**.

2. **Financial Capability Assessment :** To qualify **for each Schedule**, the bidder and consortium partner (if any) should have achieved an average annual turnover during the last three financial years (i.e. 2021-22, 2022-23 and 2023-24).

   In support of the above qualification requirement, bidder and consortium partner (if any) should submit Copies of ***audited financial statements of accounts*** (if applicable) (including *auditor's reports)* / CA certified turnover certificate and IT returns for last three financial years (i.e. 2021-22, 2022-23 and 2023-24).

Sch. No.	Name of Schedule	Average Annual Turnover requirement over last three F.Y. (i.e. 2021-22, 2022-23 and 2023-24) (INR)
1	Central	94,30,000
2	East & North-East	1,17,50,000
3	North	1,09,60,000
4	South	77,40,000
5	UP + UK & West	1,12,70,000

Relaxation for Startup and Micro & Small Enterprises (MSEs) regarding Prior Experience-Prior Turnover criteria:

Vide Policy Circular No. 1(2)(1)/2016-MA dated 10.03.2016 of MoMSME, the condition of prior turnover and prior experience with respect to Micro and Small Enterprises is relaxed in the tender subject to meeting of quality and technical specifications, i.e. the MSEs must have the technical capability to deliver the goods and services as per prescribed technical and quality specifications. Further, as per Department of Expenditure, Ministry of Finance OM No. F.20/2/2014/PPD-(Pt) dated 25.07.2016 circulated vide note F. No. 24/2/2013/Fin-I dated 02.08.2016, relaxation of the condition of prior turnover and prior experience in public procurement has been extended to all Startups (whether MSE or not) subject to meeting of quality and technical specifications in accordance with the relevant provisions [Rule 173(i)(b) of GFR, 2017]. It has subsequently been clarified by the Department of Expenditure, MoF vide OM No. F.20/2/2014/PPD- (Pt) dated 20.09.2016 that there may be circumstances (like procurement of items related to public safety, health, critical security operations and

equipment, etc.) where procuring entities may prefer the vendors to have prior Experience rather than giving orders to new entities. For such procurements, wherever adequate justification exists, the procuring entities may not relax the criteria of prior experience/ turnover for Startups/ MSEs.

In view of the above, ***startups and Micro, Small, and Medium Enterprises (MSMEs) will not be granted relaxation from the requirements for prior experience and prior turnover*** *in the specific context discussed. This clarification highlights that, while general policies typically support startups and MSMEs by relaxing such criteria, these relaxations are deemed inapplicable in this instance. The decision is driven by the critical nature of the procurement, involving factors like public safety, essential operations, or other sensitive scenarios, where proven reliability and expertise are paramount.*

3. Substantially responsive and conforms to the technical specifications for Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV)/ GUV Disinfection System ***(refer detailed technical specifications given in Section V – Schedule of Requirements).*** Bidder needs to submit their bid as per the Technical Specification Compliance Form given in Section VI – Bidding Forms along with the catalogue, certification as mentioned in the technical specifications and test reports of UVGI/GUV/ GUV system

4. In case Bidder or consortium partner (if any) is non-manufacturer, Bidder needs to submit the Authorization Certificate from the manufacturer (OEM certificate) which shall be valid at least on the date of bid opening (Refer attached format regarding OEM Certification). The non-manufacturer Bidder shall represent one Manufacturer only. Also, one Manufacturer Bidder needs to authorize only one bidder for the said procurement.

5. Bidder or consortium partner (if any) must provide combination of at least two fixtures of different total UVC_{254} output of which, one fixture will be with total UVC_{254} output $\leq$ 0.5 W and other fixture/s being > 0.5 W but **(not more than 1 W)** to match with the total volumetric dose requirement in respective areas where they will be installed.

Bids not adhering to the above minimum requirements shall not be taken up for further stages of evaluation.

Documentary Evidence

The Bidder and consortium partner (if any) shall furnish the following documentary evidence to demonstrate that it fulfills the minimum criteria related to bidders' experience and technical capacity, as above:

a) In support of the bidder's existence, the bidder or consortium partner (if any) should submit valid copies of documentary evidence that they are registered under respective Act and Jurisdiction in India (like company/ firm incorporation along with GST registration certificates).

b) Details of past experience in support of qualification requirement given in para–A1 above including past performance of the Goods offered and on those of similar nature during the last minimum of three years prior to bid opening, details of current contracts in hand and other commitments (as per form given in Section VI, Bidding Forms- Performance

Statement Form). Bidders Or consortium partner (if any) need to submit a copy of contracts/ purchase orders to show experience of similar goods.

c) In support of the financial capability/ turnover criteria, as given in para-A2 above, bidder or consortium partner (if any) should submit copies of audited financial statements of accounts (including balance sheet/profit and loss account/auditor's reports/ IT returns) certified by the auditor of the Bidder for last three financial years (2021-22, 2022-23 and 2023-24).

d) Bidder and consortium partner (if any) needs to submit their bid as per the Technical Specification Compliance Form given in Section VI – Bidding Forms along with the catalogue, certification as mentioned in the technical specifications and test reports of UVGI/GUV/ GUV system. The bidder must provide this for minimum two different models with different UVC_{254} output of which, one fixture will be with UVC_{254} output $\leq$ 0.5 W and other fixture/s being > 0.5 W **(but not more than 1 W)** to match with the total volumetric dose requirement in respective areas where they will be installed.

e) Valid Manufacturer Authorization Certificate as per the form given in **Section VI: Bidding Forms.**

I. Technical Evaluation

After preliminary scrutiny of bids in accordance with ITB Para 27 as well as compliance with the minimum eligibility criteria above, Bidder's shall be assessed for their qualification for the UVGI/GUV fixtures as quoted by them against the scoring criteria given below:

Part A – The bidder should qualify with minimum 50% of marks (minimum 40 marks) (Maximum score – 80)

Sl. No.	Technical Criteria	Maximum Marks
I	Bidder and consortium partner(s) (as the case may be) together should have Experience of installation and maintenance of Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV)/ GUV Disinfection Systems a) Only Installation – **10 Marks** b) Installation and maintenance during warranty period- 1**5 Marks** **c)** Installation and maintenance services during warranty period and maintenance services beyond the warranty period – **20 Marks** Documents to be provided: - - For 1a – Copy of purchase order and signed and stamped certificate of installation issued by the user/e-mail confirmation/ /any other relevant document. - For 1b – Copy of purchase order and signed and stamped certificate of installation and maintenance services issued by the user//e-mail confirmation/any other relevant document - For 1c –In addition to 1a & 1b, the additional copy of AMC/ CMC contract and/or proof of maintenance services beyond the warranty period	**20**
II	The Bidder, along with its consortium partner(s) (if applicable), must collectively demonstrate the installation of a total number of Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) or GUV disinfection fixtures within the last five years as follows: - - Up to 50 – **10 Marks** - 51 – 100 – **15 Marks** - More than 100 – **s0 Marks**	**20**

Sl. No.	Technical Criteria	Maximum Marks
	Purchase Order and signed and stamped **certificate of installation or e-mail confirmation/ any other relevant document** (mandatory) from all the sites issued in the last 5 years	
III	**No. of Upper room GUV fixtures proposed for each schedule:** - Total number of upper room GUV fixtures proposed by the bidder >130% of the estimated number – 5 marks - Total number of upper room GUV fixtures proposed by the bidder between 121% - 130% of the estimated number – 10 marks - Total number of upper room GUV fixtures proposed by the bidder between 111% - 120% of the estimated number – 15 marks - Total number of upper room GUV fixtures proposed by the bidder within 110% of the estimated number – 20 marks **The estimates are based on a combination of ≤ 0.5W and >0.5W (but not more than 1 W) (total UVC_{254} output) fixtures without compromising safety.**	**20**
IV	**Implementation plan and timelines for project including: the plan should be comprehensive for each Sch. proposed** • the initial assessment of sites for finalizing the requirement, • procurement and delivery of fixtures, • installation followed by efficacy and safety testing for commissioning and subsequent maintenance services, • existing service delivery network which can also provide UVGI/GUV maintenance services • Manufacturing capabilities (number of fixtures produced per month) Timelines to be provided as a Gantt Chart for execution of the entire project Bidder and consortium partner(s) (as the case may be) together should have expected to share a detailed plan along with the bid which shall be reviewed as part of the technical evaluation. Prospective bidders will also be required to make a presentation on the same. Key points of assessment (for 20 marks): 1. The presentation includes a a. Gantt chart / or any other way to depict the clear **overall plan** with timelines for assessment, procurement, installation and safety measure plan (**4 marks)** b. Manufacturing capabilities with mention of time required for staggered manufacturing and have provided plan for region/ state wise supply with time- lines (**4 marks)** c. Details provided of delivery network across the country and qualified HR involved for assessment, installation and maintenance (**4 marks)** **d.** Plan for commissioning installation, documentation details while commissioning; safety procedures used while installation, institute level training plan and signages after installation, including availability of calibrated radiometer UVC_{254} **(4 marks)**	**20**

Sl. No.	Technical Criteria	Maximum Marks
	e. A clear <u>maintenance plan post installation</u> is included with <u>mention of experience</u> that vendor has of AMC/ CMC **(4 marks)** **Note:** Under each point (from a – e), the score can be divided equally into underlined points. If any of the underline points are missed, then the score will be provided accordingly.	
TOTAL:		**80**

Part B – Product acceptance testing and a model will be considered as qualified if it passes all three sub criteria given below :

a) Testing the total UVC Output
b) Efficacy test
c) Safety test

III	**Product Testing:** **a) <u>Testing the total UVC output</u>** of the upper room GUV fixture model (Lab based) Methodology for Total UVC output test: - The above test will be performed for the models based on "**Steve Rudnick method"** by using calibrated radiometer and detector. **Refer Annex 5** of technical specifications for details. - Warm-up time of at least 30 mins to be allowed before the test is performed. - This testing shall be performed by an independent agency or an independent external consultant. - Variation acceptable is ± 20 % with the manufacturer claimed test report submitted in the technical proposal. - It is recommended that bidders should bring two sets of each model of the fixtures they have quoted. - The output test will be performed on the first fixture of the quoted models. If it passes, then efficacy and safety test will be performed for this fixture. - if the first fixture fails the output test, then the test will be performed on the second fixture. If the second fixture passes, then the efficacy and safety test will be performed for the second fixture. - If both fixtures of the same model fail this testing, then that model will not be evaluated further. b) Irradiance measurement (Performance testing of upper room GUV fixtures) **<u>Efficacy test</u>: -** Methodology for Efficacy test: (Refer to technical specifications for details) - The Upper room UVGI/GUV fixture will be placed on a table in such a way that it faces the wall and the distance between the wall and the	

face of the fixture (outermost edge of the louvers) is 102 cm (considering the depth of the detector is 2 cm). Warm-up time of at least 30 mins to be allowed and Irradiance will be measured from the fixture along the center line and must meet the manufacturer's claims of minimum irradiance at this location (µW/cm2).

- Variation acceptable is ± 20 % with the manufacturer claimed test report submitted in the technical proposal.
- The efficacy test will be performed on the first fixture of the quoted models. If it passes, then safety test will be performed for this fixture.
- if the first fixture fails the efficacy test, then the test will be performed on the second fixture. If the second fixture passes, then the safety test will be performed for the second fixture.
- If both fixtures of the same model fail this testing, then that model will not be evaluated further.

c. Safety test: -

Methodology for safety test: (Refer to technical specifications for details)

- The Upper UVGI/GUV fixture will be installed at a height recommended by the OEM and warm-up time of at least 30 mins to be allowed.
- Safety test will be performed in the occupied zone at different locations like center, left and right from the fixture at various distances from the installed fixture.
- The maximum effective irradiance at eye level {~ 6ft (183 cm) height, ~ 4ft (122 cm) height and ~ 3ft (92 cm) height to correspond to the eye levels at standing, sitting and pillow levels respectively} measured by a calibrated radiometer from ground level.

  Eye safety measurement **with FOV cone** should not exceed **0.2 µW/cm2**.
  Skin safety measurement **without FOV cone** should not **exceed 0.35 µW/cm2**.
  Note: In any case, it should not exceed the threshold limit value (TLV) for UVC_{254} exposure.

- No variations are acceptable.
- The safety test will be performed on the first fixture of the quoted models.
- if the first fixture fails the safety test, then the test will be performed on the second fixture. If the second fixture passes, then in this case the test readings of the second fixture will be considered for the final scoring.
- If both fixtures of the same model fail this testing, then that model will not be evaluated further.
-

Note:

- Product testing shall be done by SAMS through an independent agency/ consultant using a calibrated radiometer in the presence of the bidder representative.
- Bidders shall be informed to submit the fixtures for product testing only after passing the minimum eligibility criteria. They will be required to bring the fixtures to pre-decided sites within three days of intimation and install them in a technically appropriate manner at their own cost.

	- As mentioned above, it is recommended that bidders should bring two sets of each model of the fixtures they have quoted. - If the first fixture fails any of the product tests, then the testing will be conducted on the second fixture of the same model. In this case the test readings of the second fixture will be considered for the final scoring. - If the bidder submits only one set of each model of the fixtures they have quoted, then in this case test readings of the first fixture will be considered for the final scoring. - Burn in time of UVC lamp should be met before bringing the fixture for product testing - Ensure that the fixtures (louvers, reflectors, baffles, lamps) are cleaned recently with lint-free cloth and 70 % alcohol (free from surfactants, detergents and dyes).	

Technical Evaluation: -

- The **minimum marks** for qualifying the technical stage of evaluation for **Part A are 40 marks**. The proposals **not scoring this minimum mark in Part A of the technical evaluation shall not be taken up** for further stage of Product testing.

- If **any of the model fails in the product testing (Part B), then the bid shall not be taken** up for a further stage of financial evaluation.

B. Financial Evaluation

- Financial evaluation: shall be conducted only for technically qualified schedules. The evaluation will identify the lowest evaluated, financially responsive bidder for each schedule, including the related services and the applicable comprehensive one-year warranty, as specified in the bid document.

- Apart from the above, Bidders must provide the CMC rates for additional four (4) years. The CMC rates for additional four years should be inclusive of all taxes/GST (INR) ***which will not be a part of the financial evaluation criteria***. **However, in case of extension at that time, these rates would be considered for extension.**

Section V – Schedule of Requirements

A. List of Goods and Equipment required:

Description of item to be procured	Sch. No.	Name of Schedule	No. of State	Name of states	No. of Sites
Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection System and related services with 1 year of comprehensive warranty + 4 years of comprehensive maintenance services This also includes initial assessment for UVGI/GUV requirement and installation plan, which will be to be carried out along with relevant stakeholders from FIND India, SAMS and institute.	1	Central	3	Chhattisgarh, Madhya Pradesh & Rajasthan	22
	2	East & North-East	11	Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Odisha, Sikkim, Tripura & West Bengal	26
	3	North	6	Delhi, Haryana, Himachal Pradesh, J&K, Ladakh & Punjab	13
	4	South	6	Puducherry, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu & Telangana	25
	5	UP + UK & West	4	Gujarat, Maharashtra, Uttar Pradesh & Uttarakhand	30

Delivery & Completion Schedule

The delivery installation, commissioning and validation should be completed within **150 days** from the date of issue of the Notification of Award (NOA).

NOTE:

1. The Consignee list of UVGI/GUV fixtures is provided later at the time of award of contract. The contract will be awarded upfront for Supply, Installation and Commissioning of Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) with one-year comprehensive warranty.

2. Kindly refer to the detailed Technical Specifications for Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection System as laid down under this Section i.e. Section V – Schedule of Requirements**.**

3. The selected bidder(s) are required to visit the respective mentioned sites for assessment of actual number of UVGI/GUV fixtures requirement based on the site feasibility and UV dosage required to create a killing/ UV disinfection zone and they have to submit the design/ layout of the facility showing the placement of UVGI/GUV along with the required quantities and work they need to carry out at the site. Hence, the above criteria needs to be taken into account at the time of submission of the unit cost.

4. Although, there would be a separate vendor/contract for civil work/renovation, however, minor civil works *(Anti-UVGI/GUV reflection painting, electrical plug points as mentioned in Technical Specifications)* required for UVGI/GUV will have to be done by the supplier of UVGI/GUV.

Related Services:

Comprehensive Warranty and comprehensive maintenance services of UVGI/GUV:

- The UVGI/GUV assembly shall be guaranteed against unsatisfactory performance and/ or break down due to defective design, workmanship, or material for a period of **one year** from the date of commissioning at the site**.** The equipment or components or any part thereof or consumable items like (UV Lamp, louvers, fixtures, electrical components etc.), so found defective/required for routine replacement during the guarantee/ warranty/CMC period shall be forthwith repaired or replaced free of cost to the entire satisfaction of the site.

- Supplier to arrange periodic preventive maintenance and breakdown service visit during the warranty period as under:-
  - **1st visit :** Inspection and cleaning of UV lamp to be carried out at 3 months (± 15 days) after installation.
  - **2nd visit:** Preventive maintenance should be done on each UVGI/GUV assembly at 6 months (± 15 days) after installation . Preventive maintenance includes periodic inspection, cleaning, performance testing, Efficacy test, safety test of the UVGI/GUV systems. Performance, efficacy, and safety test to be done on similar manner as during the commissioning process.
  - **3rd visit:** Inspection and cleaning of UV lamp to be carried out at 9 months (± 15 days) after installation .
  - **4th visit:** Yearly Preventive maintenance should be done on each UVGI/GUV assembly at 12 months (± 15 days) after installation with replacement of new UV lamp. Preventive maintenance includes inspection, cleaning, performance testing, Efficacy test, safety test of the UVGI/GUV systems. Performance, efficacy, and safety tests are to be done in a similar manner as during the commissioning process. UV lamp of the same wattage and specification to be replaced after every 9000 hours or within 12 months or whichever occurs earlier. The ineffective lamps to be taken out of the facility and to be disposed as per guidelines.

- All the safety log sheet and the test certification report to be maintained and handover to the respective sites after completion of preventive maintenance.

- Sufficient spare part should be available readily for early resolution of the UVGI/GUV system, in case of breakdown.

Submission of Schedule wise proposed Upper room air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection System:

The Bidder should provide combinations of two or more fixtures of which one should be ≤ 0.5 W and other fixture/s being > 0.5 W (**but not more than 1 W**) to match with the total volumetric dose requirement (As per column M) in respective areas where they will be installed. Kindly ensure that the total proposed volumetric dosing should not vary +/- 15% from the required volumetric dosing (as per Colum M) as detailed in the schedule-wise annexures. The bidders are required to submit the details for each schedule separately, as specified in Annexures X1 to X5 as mentioned below :

Sch. No.	Name of Schedule	Name of Annexures
1	Central	Annexure X1
2	East & North-East	Annexure X2
3	North	Annexure X3
4	South	Annexure X4
5	UP + UK & West	Annexure X5

B. Technical Specifications

Upper room Germicidal Ultraviolet (GUV) System Technical Specifications

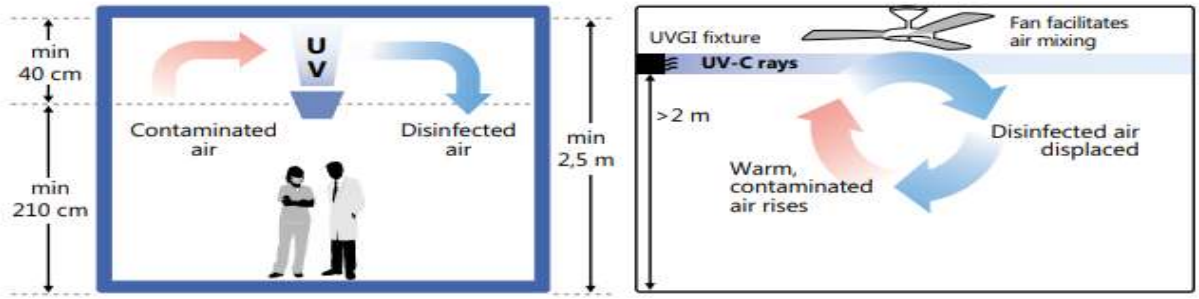
Upper room Germicidal Ultraviolet (GUV) System Technical Specifications

Contents

I. Background:

GUV is the current term for what used to be termed "ultraviolet germicidal irradiation" (UVGI). The term "GUV" is preferred because patients and the community may wrongly associate "irradiation" with exposure to harmful ionizing radiation that may cause cancer.

GUV is capable of inactivating various bacteria, viruses, fungi, and spores so that they are unable to replicate these cells. The upper room GUV system is designed specifically for upper air irradiation to control the spread of airborne microorganisms in hospitals, DR-TB Wards, clinics, offices, etc. While deploying them, care should be taken to minimize the UV exposure to people in the lower portion of that room. Upper-room GUV systems are generally custom designed for the space in which they will be used. Considering the site conditions and requirements, the GUV fixtures can be installed as wall mounted and as well as ceiling suspended. It should not be exclusively designed to be installed on false ceilings. The lamp fixture is equipped with louvers to direct the radiation horizontally and away from the lower part of the room, covering the entire cross-sectional area of the upper room at a height above head level for air disinfection. Disinfection is achieved through the rapid dilution of contaminated lower room air with clean irradiated upper room air.



Source: images supplied by GB Migliori.

II. Basic Specifications of Upper room GUV system:

a. The GUV system shall be suitable to operate with 230 V ± 15%, 50Hz single phase AC Supply. The power supply shall be made available near to the GUV assembly.
b. The GUV system should be installed either wall mounted, or ceiling suspended with louvers that direct UVC energy above contact level with occupants, ensuring that they are ideal for air disinfection in occupied rooms.
c. The base of the lamp is shielded to direct the radiation upward and outward to create an intense zone of UVC_{254} in the upper air while minimizing the level of UVC_{254} in the lower (occupied) portion of the room or area.
d. Irradiation: GUV fixtures should be placed such that radiation in the upper room is relatively uniform, continuous and complete. The number of fixtures needed to reach the target effective dose depends on the room volume (in m^3/ft^3), area (in m^2/ ft^2) and shape, and the UVC_{254} output of the fixtures. The UVGI system and fixtures are to be installed in sufficient

quantity and in such an arrangement to provide a uniform and effective distribution of UVC radiation in the room.

e. The target UVC_{254} dose required to effectively disinfect TB can be calculated using the size of the room in volume (height × width × length) or area (width × length). The volumetric dosing criterion is **12 mW/m^3**. The area dosing criterion is **35 mW/m^2**, assuming a maximum functional ceiling height of 3 m or less (as per WHO operational handbook on tuberculosis, Module 1: Prevention – infection prevention and control**, Annex 1**).
Note: Considering both safety and efficacy point of view, the volumetric dosage should be in ***between 10 -12 mW/m^3 and should not exceed 12 mW/m^3****.*

f. The maximum effective irradiance at eye level (~6ft height) and below measured from ground level should be **≤ 0.2 µW/cm^2 in the occupied space and at any case it should not exceed the threshold limit value (TLV) for UVC_{254} exposure.**
Note: The TLV for UVC_{254} for eye exposure is **6 mJ/cm^2** (TWA* for eye is **0.2 µW/cm^2)** whereas for skin exposure it is **10 mJ/cm^2** (TWA for skin is **0.35 µW/cm^2**).
* TWA: Time weighted Average

The above specifications are based on the following guidelines / references:

- Guidelines on Airborne infection control in healthcare and other settings of NTEP, MoHFW, GoI 2010 (**Annex 2A**)
- WHO operational handbook on tuberculosis, Module 1: Prevention – infection prevention and control, 2023 (**Annex 1**)
- The Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE) ISHRAE -Position Paper on the use of technologies associated with UVGI for AIC with particular emphasis on SARS CoV2 virus published in August 2021 (**Annex 2B**)
- Environmental Control for Tuberculosis: Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by US DHHS, CDC and National Institute for Occupational Safety and Health (NIOSH) published in March 2009 (**Annex 2C**)
- Tuberculosis Infection Control, A Practical Manual for preventing TB | 2024 2nd Edition, Curry International Tuberculosis Center (**Annex 2D**)

III. UV Lamps specifications

The UV lamps shall meet the following criteria:

a. The lamp shall produce **UV-C of 254nm** wavelength required to achieve the required parameters as per NETP guidelines on AIC in healthcare and other settings 2010 (**Annex 3A**).
b. UV lamps shall be fabricated out of special high transmission Quartz glass with low amount of mercury (i.e., 5 mg or less) and shall have high output, hot cathode. The UV lamp should be low pressure mercury lamp and should produce a minimum of 95% of their UV irradiation at 254 nm. Material safety data sheets (MSDS) should be provided from the lamp manufacturer.
c. Amalgam UVC lamps should not be used in the Upper Room GUV fixtures.

d. The effective life of lamps shall be guaranteed for a minimum of **9000 hours** with full intensity of operation (ref: US DHHS, CDC and NIOSH guidelines published in March 2009 **Annex 3B**).
e. The electronics ballast should be solid state electronic, preheat or rapid start or program start circuit type, shall be high power factor, Sound Rating A and shall have harmonic distortion in accordance with ANSI/ ASHRAE standards and have a total harmonic distortion of less than 10%.
f. The OEM should ensure compatibility between UVC lamp and the electronic ballast.

References:

- 2016 ASHRAE handbook- HVAC Systems and Equipment 17.4 (**Annex 3C**) and
- Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by US DHHS, CDC and NIOSH published in March 2009 (**Annex 3B**).

IV. Assembly/ Fixture specifications

a. The UVC output (radiant flux) of each fixture model, in watts, should be specified by the manufacturer in addition to the total lamp electric wattage.
b. Housings shall be made of robust materials (stainless steel or aluminum or any equivalent), with units having suitable electrical connectors to simplify wiring.
c. All the housing which includes components like electronic power source, sockets, louvers, reflectors, UV lamp, etc. should be capable of withstanding UV radiation.
d. Should have louvers coated with non-reflective material (anodized) to optimize UV performance.
e. The reflector should be made of aluminum and must be parabolic in shape and positioned to direct and maximize the fixture UVC output.
f. The GUV fixtures are to be installed, by the identified vendor, as per the design and arrangement of the room, to provide maximum coverage of UVC energy in the upper room area and limit UVC irradiance in the occupied room space below **0.2 µW/cm^2**.

Reference:

- Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by US DHHS, CDC and National Institute for Occupational Safety and Health (NIOSH) published in March 2009 (**Annex 4**)

V. Certificates /Test reports:

a. The supplier shall provide the manufacturer's test certificates/ reports for the main items like UV lamps and ballast. The factory performance test certificate shall include details such as
   - No ozone emissions and other secondary contamination,

- UVC irradiance in μW/cm^2 at 254 nm measured in front of a fixture center in kill zone at a distance 1meter from the fixture opening.
- Life span of UV lamp
- Ballast specifications
- Recommended height of installation from the floor (i.e. bottom of UVC_{254} fixture)

b. The supplier must provide test reports for the rated total UVC output in Watts of the GUV fixture in accordance with the manufacturer's claim, which can be confirmed and documented by independent third-party measurements during the procurement process.

c. The supplier must provide valid UV lamp wavelength of 254 nm +/-1 nm acceptance certificate from testing laboratories like the Central Institute of Road Transport (**CIRT**) or the Council of Scientific and Industrial Research (CSIR) or Underwriter Laboratories.

d. The original equipment manufacturer or its contract manufacturer must have a management system certified to ISO 9001 or ISO 13485:2016 (Medical devise- Quality Management System).

VI. Product Testing

These are pre-purchase procedures to confirm that the product is as per the User Requirement Specifications.

1. **Testing the total UVC output of the upper room GUV fixture model (Lab based):** This testing shall be performed by an independent agency or an independent external consultant using "**Steve Rudnick method"** (Annexure 5) for the UVC output measurement. This is a lab-based procedure and should be employed whenever new models are inducted into the system. All models being considered for installation should have the claimed output verified in a laboratory. All GUV fixture models (low output, medium output and high output) of the specific manufacturer must be tested.

   If feasible the test can be performed by NRTL (Nationally Recognized Testing Laboratory) by the Integrity Shere method of gonioradiometry method, whenever in-country resources are available.

2. **Irradiance (Performance testing of upper room GUV fixtures: Lab-based and facility based**): This is the measurement of Irradiance at lower occupied and upper killing zones. The performance testing should include **Safety testing and Efficacy testing**. Measurement of irradiance should be made by using a **calibrated UVC_{254} radiometer.**

   a) **Radiometer Requirements**
      - The radiometer should provide fast and accurate readings with digital readability for measuring irradiance for UV-C low-pressure Hg germicidal lamps and fixtures for disinfection of air and surfaces (254 nm wavelength).
      - A radiometer with a reading range of 0.1 to 2000 μW/cm^2 should be employed.
      - The detector should be designed for Spectral response to wavelength of 254 nm with a cosine correction.

- Field of view (F.O.V) cone (+/- 40^0) shall be used for eye safety measurements
- The radiometer calibration certificate should evidence the accuracy as follows:

- The accuracy for UV irradiance from 1 to 2000 μW/cm^2 should be ±10% as compared to the reference standard.
- for UV irradiance of 0.05–1 μW/cm^2, it should be ±0.05 μW/cm^2 to the reference standard.

- The detailed specifications of calibrated radiometer and detector are enclosed as **Annex 6.**

b) **Safety test:**

- Irradiance measurements are only the first step in calculating the risk for room occupants. Ideally, dose estimates would be made using the irradiance levels and the duration of exposure based on occupant activities (time sitting, standing, looking toward or away from lamp sources, etc.). These estimates are important because a worker could be exposed to a very high irradiance level for a short time and then to low irradiance levels for the remainder of an eight-hour work shift and the cumulative dose will still be below the UVC_{254} TLV safety limitations. Since each room/ space is different, one must evaluate where occupants will be in relation to potential upper-room UVC_{254} exposure. (Are they standing 100% of the time? Sitting? Constantly moving within the area?)
- The maximum **effective** irradiance at eye level {~ 6ft (1.82 m or 183 cm) height, ~ 4ft (1.22 m or 122 cm) height and ~ 3ft (0.92 m or 92 cm) height to correspond to the eye levels at standing, sitting and pillow levels respectively} measured by a calibrated radiometer from ground level, should be **≤ 0.2μW/cm^2** in the occupied space. Details of performing the test and recording results and their interpretation are provided in **Annexure 7**.
- In any case, it should not exceed the threshold limit value (TLV) for UVC_{254} exposure**.**

Note: The TLV for UVC_{254} for eye exposure is **6 mJ/cm^2** (TWA* for eye is **0.2 μW/cm^2)** whereas for skin exposure it is **10 mJ/cm^2** (TWA for skin is **0.35 μW/cm^2**).

* TWA: Time weighted Average

- If there is more than one UVC_{254} fixture in a room, additional measurements should test the space for potential "hot spots" of irradiance. Hot spots can form if there are overlapping areas of irradiance from two separate fixtures or due to reflection of UV rays off reflective surfaces such as metal equipment or reflective paint.
- The UVC irradiance should be checked every time the system is uninstalled and reinstalled after lamp changing, any adjustments of the fixture, and semiannually thereafter.

c) **Efficacy Test:**
   - This is the measurement of irradiance in the upper killing zone (needs to be performed at 1 meter distance from the fixture along the center line and must meet the manufacturer's claims of minimum irradiance at this location ($\mu W/cm^2$). Details of performing the test, recording results and interpretation are provided in **Annexure 8**)
   - Irradiation is inversely proportional to the square of the distance from the radiation source. Increasing distance from the fixture will show decreasing irradiance. (As the distance increases arithmetically, the irradiance drops geometrically. Example, if the irradiance at 1m is 300 $\mu W/cm^2$, at 2 m it will be $1/4^{th}$, i.e., appr 75 $\mu W/cm^2$, and at 3 m it will be $1/9^{th}$, i.e. approximately, 33.33 $\mu W/cm^2$.
   - The UVC irradiance should be checked every time the system is uninstalled and reinstalled.

VII. Installation, Testing and Commissioning Process:

1. Deciding on the number of fixtures, outputs and the placement of the fixtures:

a) The configuration of the room as well as the purpose (waiting area/ OPD/ ward) should be taken into consideration. In waiting areas and OPDs, etc. the time of exposure is limited to a maximum of 4-6 hrs., whereas in the wards there will be prolonged exposure.
b) The number of fixtures needed to reach the target effective dose depends on the size of the room based on room volume (ft^3 or m^3), area (ft^2 or m^2), room shape, ceiling height, type of fixtures available, initial purchase as well as maintenance costs, how occupants will utilize the space and the total UVC_{254} output of the fixtures.
c) The volumetric dosage for each room or area is 10 to 12 mW/m^3. An area dosing of $35mW/m^2$ may also be employed if the room's height is 3 m or less. It is preferable to use volumetric dosing criteria.
d) Locate UR UVC_{254} fixtures so that irradiation in the upper room is relatively uniform, continuous, and complete. To ensure safe levels of UVC irradiance in the occupied areas, choose optimal fixture location(s) considering overlapping irradiation from several fixtures, possible UVC reflection from low and reflective ceiling, walls, objects suspended to the ceiling, metal objects or reflective paints.
e) Principles for commissioning and installation should be based on a combination of fixtures. Combination of low and medium UVC output to be used for smaller rooms, while high UVC output fixtures to be considered for larger rooms.
   Some examples are as follows.

- suppose a room/facility is 4.5 m long, 4.5 m wide and 3 m high. The total volume of the room is 4.5*4.5*3 = 60.75 m^3. With volumetric dose of 10 to 12 mw/m^3 requirement, the total UVC output required for this facility here will be 607 to 729 mw or 0.6 to 0.72 watts.

One can use a fixture with an output of one medium UVC output: one fixture with a total UVC output of 0.7 watt meets the dosing requirement for such a room.

- suppose a room/facility is 5.7 m long, 6.5 m wide and 3.4 m high. The total volume of the room is 5.7 *6.5*3.4 = 126 m^3. With volumetric dose of 10 to 12 mw/m^3 requirement, the total UVC output required for this facility here will be 1260 to 1512 mw or 1.26 to 1.51 watts. In such a case, one can use a fixture with an output of one large UVC output fixture of 1.2 watt and one small UVC output fixture of 0.3 watt, or two fixtures with total UVC output of 0.7 W (whichever will allow more uniform irradiance in the upper room space and lower levels of UVC irradiance in the occupied space) to meet the dosing and safety requirements.

2. Installation Process:

- Only experienced service technicians who have received training on the installation and placement of UR GUV fixtures should install the systems and their certification of training should be submitted at the time of installation.
- The GUV system shall be installed either wall mounted, or ceiling suspended mounted with louvers that direct UVC energy above contact level with occupants, ensuring that they are ideal and safe for air disinfection in occupied rooms.
- The installation must be done in the manner that no direct human eye contact with the UV occurs during regular operation.
- The direction and vertical dimension of the UVC_{254} beam must be balanced to ensure both safe UVC_{254} irradiation levels in the occupied space and well as minimizing loss of UVC_{254} energy due to losses when the UVC_{254} beam hits a surface.
- The GUV fixtures should be installed at least 40 cm below the ceiling (i.e. bottom of UVC_{254} fixture to the ceiling).
- All the physical structures such as walls, ceiling fans, switch sockets, split AC, etc. which fall in the UV radiation zone must be anti UV reflection painted (using titanium oxide containing paint or other suitable mechanisms).
- Dedicated ON/OFF switch and socket should be provided for each GUV fixture. Power supply 230 V ± 15%, 50 Hz single phase AC, must be made available by the sites. Plugs to be adapted to meet the country's requirements. The line cord / Power cord supplied with the equipment shall be of acceptable durability, length, and current carrying capacity complying with Indian Standards.
- The ON/OFF switch to be located in the same area below the Upper GUV fixtures and at a reachable height.
- Proper and suitable earthing connections are to be made for the GUV system.

3. Testing and commissioning:

a) The performance of GUV fixtures should be measured 4 days after initial installation, and operation for at least 100 hours till the UV lamp completes the burn-in time and stabilizes its UV flux.

b) Performance testing including safety testing and efficacy testing are to be carried out (measurement of Irradiance at lower occupied and upper killing zones as specified above). Refer section on Product Testing, part 2.

c) The UV irradiance should be checked every time the system is uninstalled and reinstalled, after any kind of repair, re-lamping, and thereafter on a regular basis every 6 months.

d) For the fixture commissioning (acceptance) measured in accordance with the "Upper room UVC fixture efficacy assessment recommendations" UVC_{254} irradiance should be within the range of ± 20% of standard value provided for the particular model by the manufacturer.

e) For the fixture commissioning (acceptance) measured in accordance with the "Upper room UVC safety assessment recommendations" UVC_{254} irradiance should not exceed 0.2 $\mu W/cm^2$ at eye level. Follow "Upper room UVC safety assessment" recommendations for safety assessment and results interpretation.

f) One set of Manufacturer catalogues, Test reports for safety and efficacy, etc. and System Operation and Maintenance Manuals shall be submitted to the site.

g) Proper safety and operational training i.e., daily use, safety precautions, periodic maintenance, and follow-up of breakdown, PM/calibration services and replacement of lamp, etc. shall be imparted to the hospital personal/ contract staff and shall be documented. Suspicion of Ozone production and warning thereof may be emphasized. Possible UV overexposure complaints submission policy should be made available for room occupants.

h) UVC_{254} Safety Education and signage:
Staff and clients may have concerns about health hazards from UVC_{254}. To address these, facilities should provide simple education on purpose, benefits and risks associated with upper room UVC_{254}, for example, by:

- Posting a UVC_{254} information sheet on the wall of the room for occupants (staff and clients)
- Posting warning signs, in all appropriate languages, on the GUV fixtures and other locations as appropriate (e.g. overhead storage areas), with an appropriate message, depending on the type of GUV system.

Examples of appropriate wording for warning signs on UVC_{254} systems:

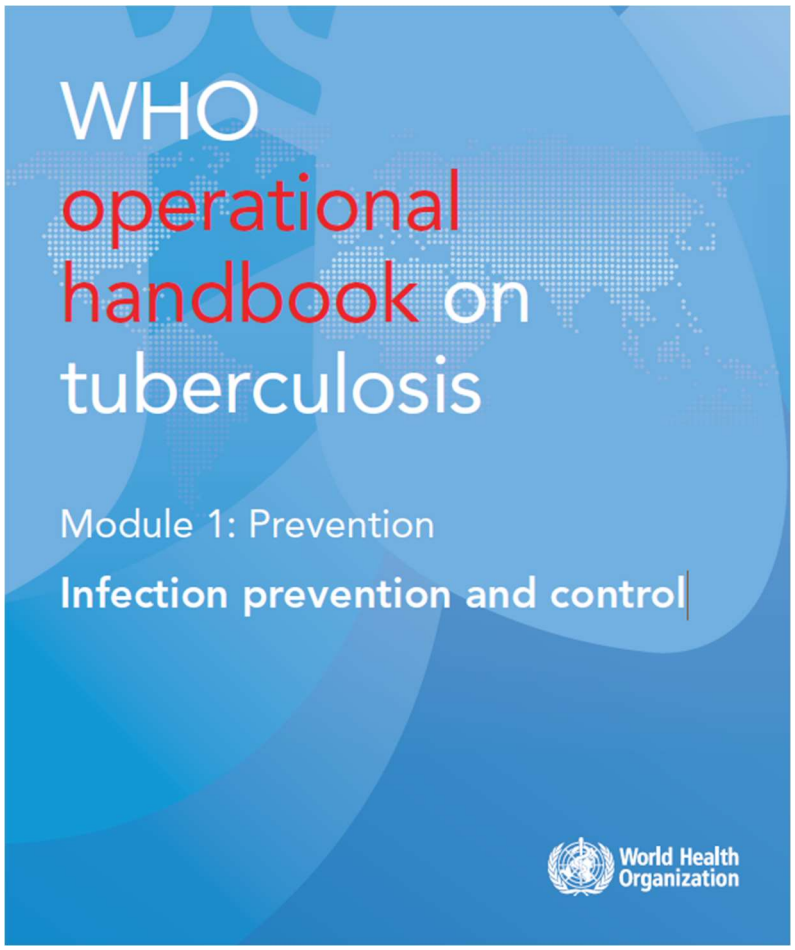
Source: Curry International Tuberculosis Center (2022) (20).

VIII. Comprehensive Warranty and Comprehensive Maintenance Services of GUV Fixtures:

a) The GUV assembly shall be guaranteed against unsatisfactory performance and/or breakdown due to defective design, workmanship, or material for a period of one **year** from the date of commissioning at the site **and for an additional 4 years of CMC period**. The equipment or components or any part thereof or consumable items like (UV Lamp, louvers, fixtures, electrical components etc.), so found defective/required for routine replacement during the guarantee/ warranty/ CMC period shall be forthwith repaired or replaced free of cost to the entire satisfaction of the site.
b) Supplier to arrange periodic preventive maintenance and breakdown service visit.
c) Periodic inspection and cleaning of UV lamps are to be carried out every **3 months.**
d) **Preventive maintenance** should be done on each GUV assembly every **6 months.** Preventive maintenance includes periodic inspection, cleaning, performance testing, including efficacy test, and safety test of the GUV systems. Performance testing, including efficacy and safety tests, to be done in a similar manner to the commissioning process. If during the measurements, after cleaning, a 30% or more fall in irradiance is noticed at 1 meter in front of the fixture, in the efficacy test, the lamp and reflector should be cleaned by 70% alcohol solution (without added dyes or other substances) or replaced with a new lamp. The cloth used for cleaning should be clean and lint free.
e) UV lamp of same wattage and specification to be replaced in case of lamp failure, or after every 9000 hours or approximately every 12 months or whichever occurs earlier. The ineffective lamps are to be taken out of the facility and to be disposed of as per guidelines.
f) All the safety log sheets and the test certification report to be maintained and handed over to the respective sites after completion of preventive and catastrophic maintenance (repairs).
g) Sufficient spare parts should be available for early resolution of the GUV system.
h) In case of breakdown, the service provided should be able to provide service across all sites within 1- 2 days after receipt of breakdown report for the metro locations, and within 3-5 days for the non-metro located instruments. Remote support should be provided in case of emergency. Contact information and breakdown report submission policy should be documented and made available for facility administration.

IX. Annexures

<u>Annex 1:</u> WHO operational handbook on tuberculosis Module 1: Prevention Infection prevention and control for volumetric dosing requirement



The target UVC_{254} dose required to effectively disinfect for TB can be calculated using the size of the room in volume (height × width × length) or area (width × length). The volumetric dosing criterion is **12 mW/m^3** and the area dosing criterion is **35 mW/m^2**, assuming a maximum functional ceiling height of 3 m or less. A separate set of exposure dose criteria are used for the safety of room occupants.

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WHO operational handbook on tuberculosis:
Module 1: Prevention – infection prevention and control

<u>Annex 2 A</u>: Guidelines on Airborne infection control in healthcare and other settings of NTEP, MoHFW, GoI 2010

Guidelines on Airborne Infection Control in Healthcare and Other Settings

April 2010
Directorate General of Health Services
Ministry of Health & Family Welfare
Nirman Bhawan, New Delhi

UVGI Safety Considerations

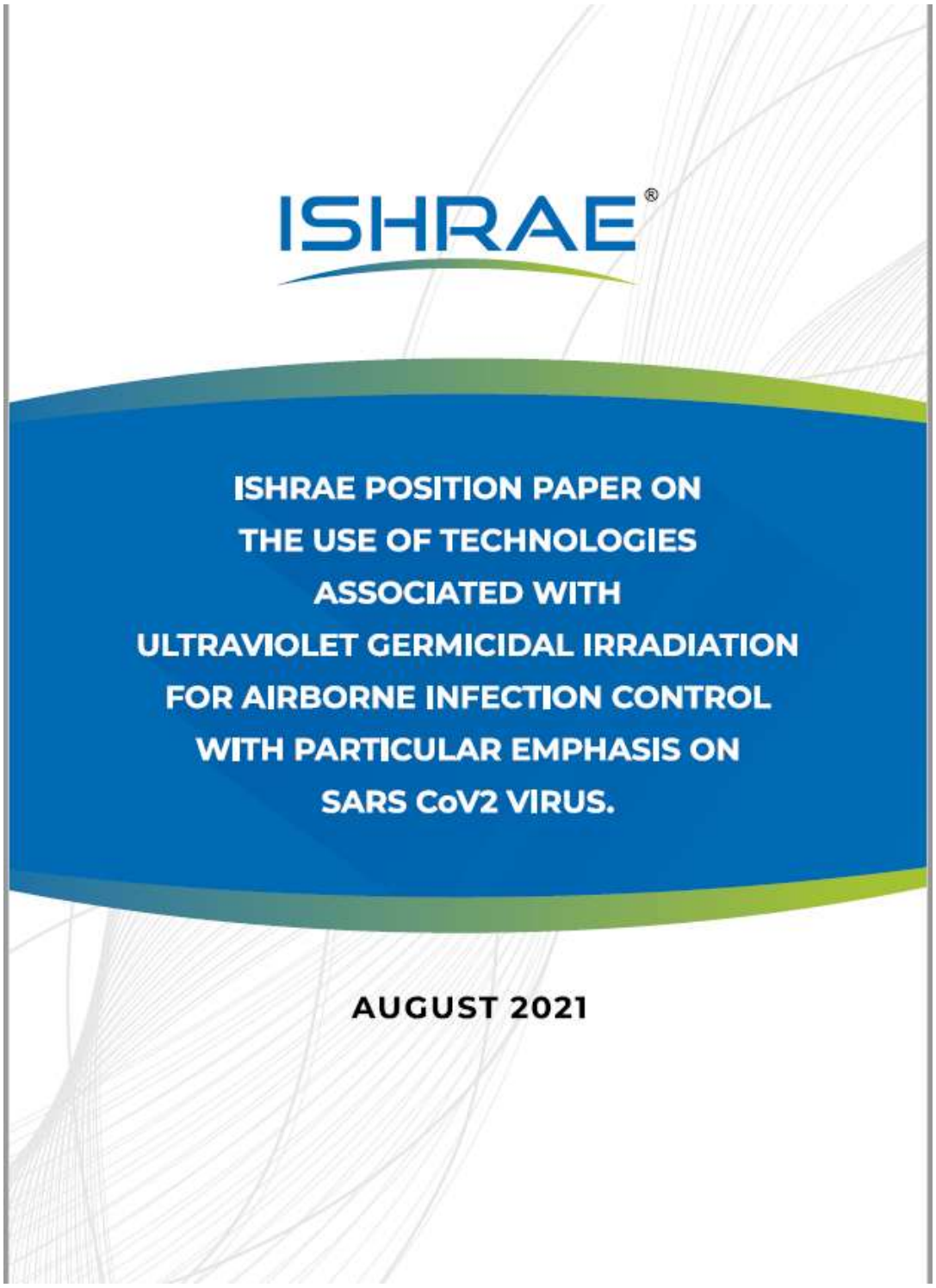
Overexposure to UVGI can cause painful but transient dermatitis or keratoconjunctivitis, similar to that caused by sun overexposure. The 8-hour exposure dose limit (threshold limit value) for germicidal UV is 6.0 mJ/cm^2. This translates to 0.2 uW/cm^2 of measured UV intensity at eye level for areas where exposure will be constant everyday, such as the head of the patient's bed. In other areas where persons would be present only transiently, such as hallways, the intensity could be up to 2.0 uW/cm^2

The only way to tell if an installation is safe is to measure radiation levels in the occupied part of the room. Measurements should be made at numerous locations and elevations where people may be exposed for long time periods. For example, in an inpatient ward, readings should be taken at the heads of beds as well as the center and corners of the room.

Planning a UVGI installation

Specific suggestions for planning UVGI installations are given in **Appendix 5**. In general, one rule of thumb is to install the required number of fixtures necessary to achieve continuous, uniform upper-air exposure. Some sources have suggested approximately 30 W UV lamp power for every 200 ft^2 (19 m^3) of floor area, though this rule of thumb would be adjusted based on local building features. UVGI fixtures should usually not be open, directed at the ceiling, unless the area is one where persons will not be continuously exposed, like a corridor. Open upper air bulb installations frequently create high reflectivity, and tend to accumulate dust easily on the bulb, requiring frequent cleaning and maintenance.

<u>Annex 2B</u>: ISHRAE -Position Paper on the use of technologies associated with UVGI for AIC with particular emphasis on SARS CoV2 virus (August 2021)



3.3 UVC UPPER AIR DISINFECTION:

Upper zone irradiation units are proven to be highly effective in Hospitals and such other applications, and UV-C lamps disinfect the air coming in its range either through normal convection currents or through mechanical air flows. The lamp holder will be equipped with a set of baffles which are designed to deflect practically all the radiation emitted by the lamps to the top portion of the room. The design of the unit and its installation will be such that leakage of UV radiation into the occupied zone should be validated with in ACGIH [(k)] limits (0.1µw/cm^2 for broadband UV or 0.2µw/cm^2 for UV-C at a wavelength of 254 nm). This will determine how much of UV lights can be safely installed within the space.

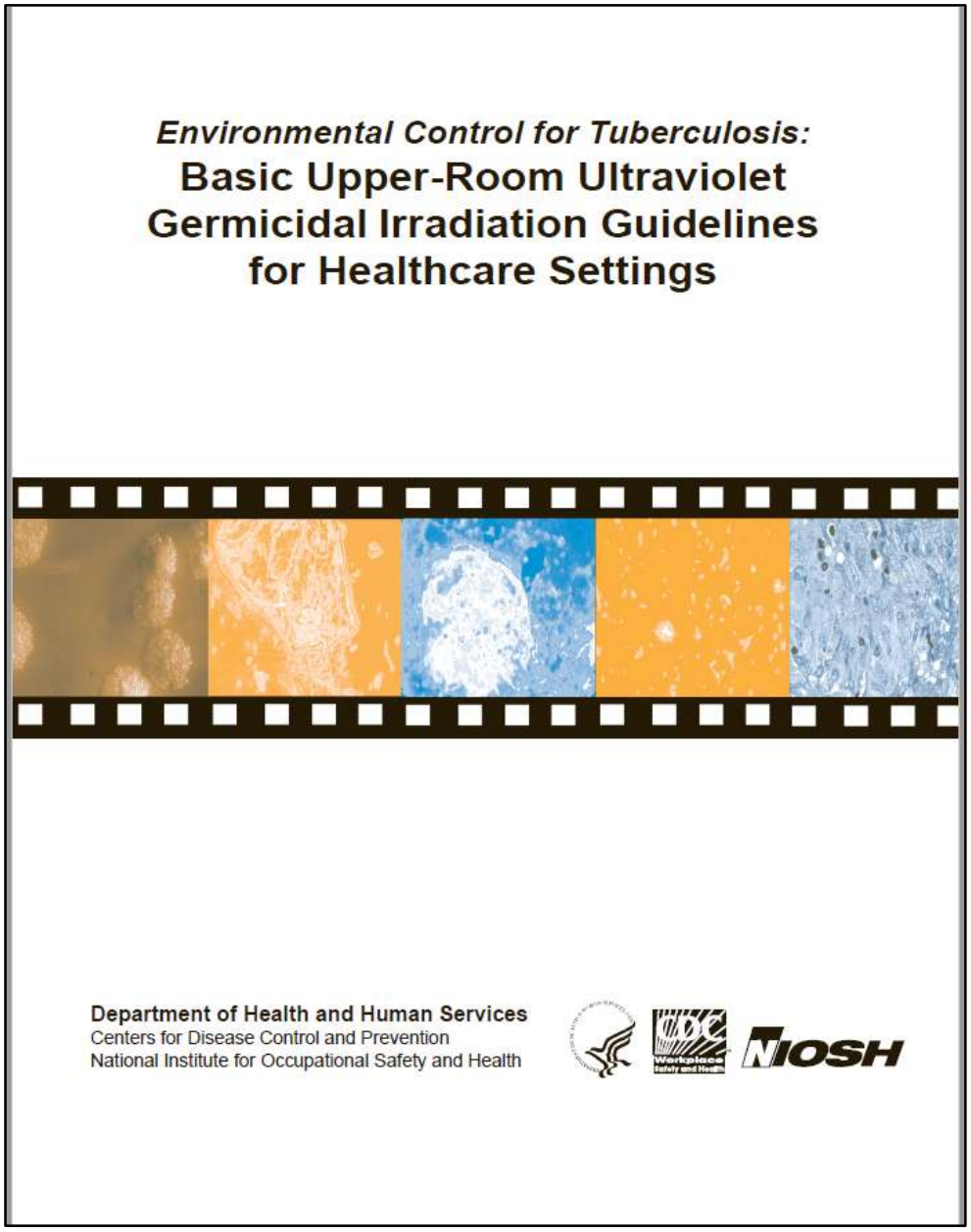
3.3 .1 INSTALLATION/ MAINTENANCE:

The fixtures mounted in occupied spaces should be at a minimum height of 2.15m from floor level.

- Requires low UV-reflectivity of walls and ceilings
- Ventilation should maximize air mixing.
- Use supplemental fans where air movement is insufficient.

Cleaning of lamps and replacement of lamps should be as detailed in Section 3.1.1.

<u>Annex 2C:</u> Environmental Control for Tuberculosis: Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by DEPARTMENT OF HEALTH AND HUMAN SERVICES, Centers for Disease Control and Prevention and National Institute for Occupational Safety and Health (March 2009)



DISCLAIMER

ORDERING INFORMATION

To receive documents or other information about occupational safety and health topics, contact NIOSH at

Telephone: **1–800–CDC–INFO** (1–800–232–4636)
TTY: 1–888–232–6348
E-mail: cdcinfo@cdc.gov
or visit the NIOSH Web site at **www.cdc.gov/niosh**.

For a monthly update on news at NIOSH, subscribe to NIOSH eNews by visiting **www.cdc.gov/niosh/eNews**.

DHHS (NIOSH) Publication No. 2009–105

March 2009

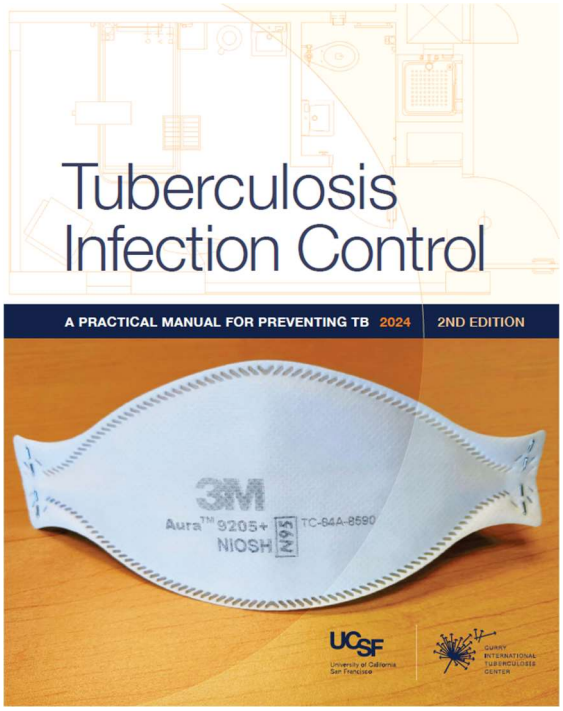
[2007]. The CDC/NIOSH recommended exposure limit (REL) is designed to protect workers against eye and skin injury. Detailed examples for calculating the REL at different UV wavelengths are provided in the CDC/NIOSH [NIOSH 1972] criteria document.

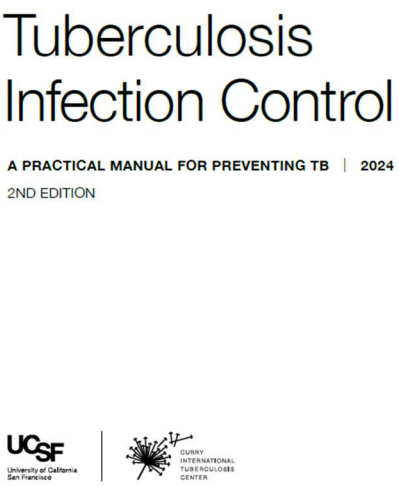
Based on the CDC/NIOSH REL, the maximum recommended exposure to UV is 6 mJ/cm^2 at 254 nm for a daily 8 h work shift. The ACGIH threshold limit value (TLV) at 254 nm is 6 mJ/cm^2 in an 8 h period. These recommended exposures correspond to a maximum recommended irradiance of 0.2 $\mu W/cm^2$ for 8 h exposure to UVGI at a wavelength of 254 nm. The ACGIH TLV also stipulates that these values should be used as a guide for control of exposure to continuous sources for exposure durations equal to or greater than 0.1 seconds.

Upper-room UVGI system designers have used 0.2 $\mu W/cm^2$ as the maximum lower (occupied) room irradiance [First et al. 2005; Nardell et al. 2008] to limit the irradiance level in the lower room to the 8 h REL. Some researchers [First et al. 2005; Nardell et al. 2008] believe this limits the irradiation level in the upper room thereby decreasing the potential effectiveness of the system. Many workers move around during the course of their work and may not be exposed to a single irradiance level during their work shifts [CDC 2005a; First et al. 2005; Nardell et al. 2008].

The recommended permissible exposures for various times to UVGI at 254 nm are provided in Table 1. Recommended exposures for work shifts of greater than 8 h in a 24 h period can be calculated using the formula provided in Table 1 and noted by permissible exposure times (PET). The recommended levels should not be used for photosensitive persons, persons concomitantly exposed to systemic or topical photosensitizing agents, or persons who have had the lens of the eye removed during cataract surgery. Workers exposed to UVGI above the REL require the use of personal protective clothing and equipment to protect their eyes and skin.

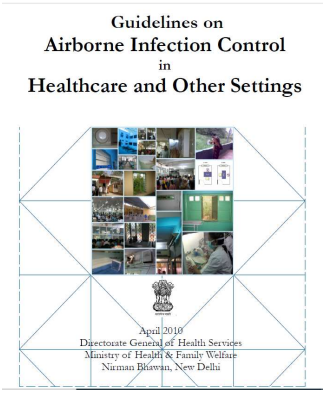
<u>Annex 2D</u>: Tuberculosis Infection Control, A PRACTICAL MANUAL FOR PREVENTING TB | 2024 2ND EDITION, CURRY INTERNATIONAL TUBERCULOSIS CENTER





Time-weighted average (TWA) exposure: In a simplified approach, the UVC_{254} eye TLV dose limit of 6 mJ/cm² for an 8-hour period can be generalized as being equivalent to **an average irradiance level of 0.21 µW/cm² over the entire 8-hour period.** If the continuous UVC_{254} exposure was over a 4-hour period, with no other UVC_{254} exposure, the average irradiance level would be 0.42 µW/cm². This is called the time-weighted average (TWA) irradiance.

<u>Annex 3 A:</u> UVGI wavelength (Guidelines on Airborne infection control in healthcare and other settings of NTEP, MoHFW, GoI 2010)



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- Maintenance is critical, and should include cleaning with spirit at least twice-monthly (or more frequently in dusty environments) and periodic bulb replacements. If the UVGI is not maintained, it may become ineffective, providing a false sense of security to staff and patients. If maintenance and prompt bulb replacement with the correct product cannot be guaranteed, than UVGI should not be used.
- Installations should seek to irradiate the maximal air volume with the highest intensity UV, while keeping staff and patient exposure to less than 6.0 mg/cm^2 over an 8-hour period.
- Avoid installations that directly irradiate patients or have bulbs routinely visible.
- No obstruction should be placed be between the UV bulb and the air that it is supposed to irradiate; e.g. transparent plastic bulb covers will absorb all UV radiation at germicidal wavelengths.

Ultraviolet germicidal irradiation (UVGI) uses a type of radiation that has been shown to kill or inactivate M. tuberculosis in air. UVGI is maximally germicidal at a wavelength of 254nm (UV-C, or short-wavelength UV). This sort of UV radiation differs from the longer wavelength UV in sunlight (UV-A and UV-B), in that UV-C penetrates poorly.

UV-C UVGI devices may be sometimes less expensive than structural alteration of the facility for ventilation purposes. Several studies have shown that a well-designed and maintained UVGI upper room system can disinfect Mycobacterium (or surrogate test organisms), with an efficiency of 10–20 equivalent air changes per hour. It has been estimated that when an average UVGI intensity of 10 µW/cm2 is present, 63% of airborne tuberculosis germs that arrive in that "kill zone" will be killed in 24 seconds, and 99% will be killed in 2 minutes.

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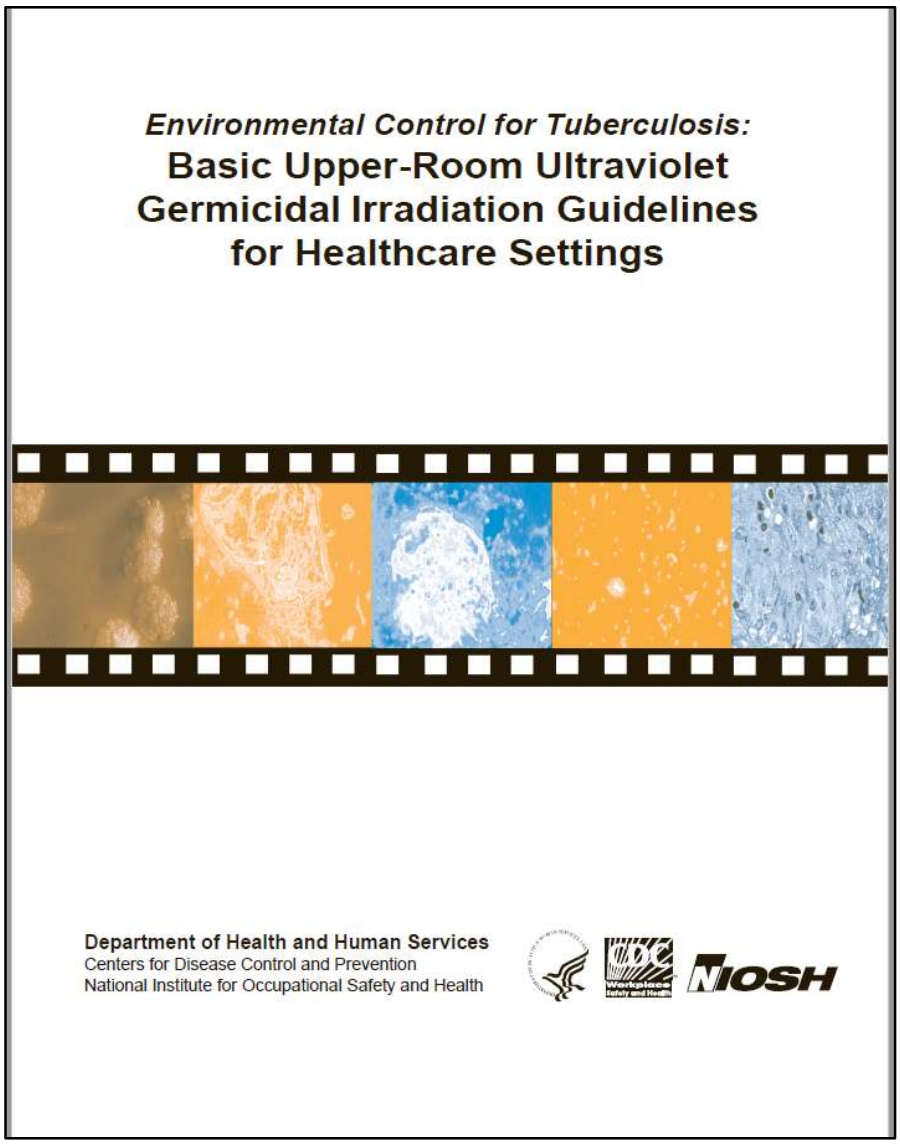
<u>Annex 3B</u>: UVGI Lamp specifications- Environmental Control for Tuberculosis: Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by US DHHS, CDC and NIOSH in March 2009



4.1.1 Other Considerations

UV lamps are potentially hazardous since they emit UV-C radiation, contain mercury, and may cause cuts or lacerations if broken. Therefore, in accordance with 29 CFR† 1910.1200, material safety data sheets (MSDS) should be requested from the lamp manufacturer and be readily available to workers. The MSDS should provide information about the hazards associated with UV lamps, health effects, and precautions for safe handling and disposal.

If a lamp is broken at the worksite, at a minimum, hand and eye protection should be used for clean up. Clean up should only be performed by trained workers. The waste from the broken lamp should be disposed of as hazardous waste in the same manner as that indicated below for lamp disposal. To reduce potential mercury exposure to persons near broken lamps and since all lamps must eventually be discarded, each lamp should contain only a relatively low amount of mercury (i.e., 5 mg or less).

UV lamps require a ballast to operate. The ballast provides a high initial voltage to initiate the discharge and then quickly limits the lamp current to sustain the discharge safely. Most lamp manufacturers recommend one or more ballasts to operate their lamps. The ballasts recommended by the manufacturer should be used for each lamp type [Philips 2006; VanOsdell and Foarde 2002].

UV lamp ballasts that cause harmonic distortion may affect sensitive electronic equipment in healthcare facilities. Therefore, new or replacement ballasts should be solid state electronic and have a total harmonic distortion of less than 10% and comply with all Federal Communications Commission (FCC) rules and regulations, Title 47 CFR Part 18 for nonconsumer equipment. Electronic preheat ballasts provide the proper conditions for long lamp life, especially if the lamps are switched off and on frequently. The average lamp life will be longer if a UVGI system is only used intermittently. [Philips 2006].

4.1.2 Lamp Life

Several manufacturers of UV lamps consider 8,000 h or 9,000 h to be the effective lamp life for UVGI lamps made for upper-room systems [GE 2005; Osram 2005; Philips 2006]. The average effective life of a lamp decreases the more frequently it is turned on/off and may decrease relative to the difference between the ambient temperature of the lamp and the temperature at which the rated average lamp life was determined [Philips 2006].

Periodic replacement (e.g., on a yearly basis) of all (or a group) of UV lamps at one time may be more cost effective than spot replacement considering the time spent by maintenance personnel. Therefore, for many upper-room UVGI systems, group lamp replacement once a year would help to ensure an effective level of UV irradiation and may be cost effective.

†*Code of Federal Regulations*. See CFR in references.

Annex 3C: UVGI Lamp specifications: 2016 ASHRAE handbook- HVAC Systems and Equipment 17.4

ozone-producing wavelength of 185 nm is filtered out. Quartz glass (hard) can be used to produce UV lamps either with the 253.7 nm output wavelength or with both the 185 and 253.7 nm output wavelengths by changing its transmission properties with internal glass coatings.

To maintain UV output over time, the inside of the glass/quartz tube can also be coated with a special protective layer to slow down the decrease of UV transmission over time.

Mercury can be present in UV lamps as a pure metal or as an amalgam. The amount of mercury is always (slightly) overdosed because some mercury will be chemically bound during the life of the lamp. The actual amount of mercury in the lamp varies, depending on the application, but it can be very small (less than 5 mg). An amalgam is used in lamps having a higher wall temperature because of their higher design working currents. The amalgam keeps the mercury pressure constant over a certain temperature range, providing more stable UV output over that range.

UV-C Lamp Ballasts

All gas discharge lamps, including UV lamps, require a ballast or electronic power supply to operate. The ballast provides a high initial voltage to initiate the discharge, and then rapidly limits the lamp current to safely sustain the discharge. Most lamp manufacturers recommend a particular ballast to operate their lamps, and the American National Standards Institute (ANSI) publishes recommended lamp input specifications for all ANSI type lamps. This information, together with operating conditions such as line voltage, number of switches, etc., allows users to select the proper ballast. Ballasts are designed to operate a unique lamp type; however, typical modern electronic ballasts often adequately operate more than one length, number, or even type of lamp.

It is strongly advised to use the recommended ballast for each lamp type because less than optimum conditions will affect the lamp's starting characteristics, UV-C output, and operating life.

Circuit Type and Operating Mode. Ballasts and electronic power supplies for low-pressure mercury lamps are designed according to the following primary lamp operation modes:

- In **preheat**, lamp electrodes are heated before beginning discharge, and no auxiliary power is applied across the electrodes during operation.
- In **rapid start**, lamp electrodes are heated before and during operation. The ballasts have special secondary windings to provide the proper low voltage to the electrodes during operation. The advantages include smooth starting, longer lamp life, and dimming capabilities.
- **Program start** ballasts incorporate starting steps. The first step applies voltage to electrodes until they are heated to an optimal temperature. The second step applies a lower voltage across the electrodes, thus igniting them with a minimal loss of the filaments' emissive material. This minimal loss ideally equates to a longer lamp life.
- **Instant-start** ballasts do not heat the electrodes before operation. Ballasts for instant-start lamps are designed to provide a relatively high starting voltage (compared to preheat and rapid-start lamps) to initiate discharge across the unheated electrodes. They are not recommended for cold-air applications or if frequent switching is needed.

Preheat mode is more efficient than rapid start, because separate power is not required to continuously heat the electrodes. Electronic ballasts with preheat or program start offer smooth starting, long life, and good switching behavior.

Instant-start operation is more energy efficient than rapid or program start, but output is generally lower and lamp life can be shorter when lamps are frequently switched on and off.

Energy Efficiency. UV lamps convert roughly 30 to 40% of the input power to UV output. Additionally, some of the power supplied into a UV lamp/ballast system produces waste heat energy. There are two primary ways to improve efficiency of a UV lamp/ballast system:

- Use ballasts with a high power factor
- Operate lamp(s) with designed electrical power supplies (recommended)

Newer, more energy-efficient electronic ballasts improve lamp/ballast system efficacy.

Electronic ballasts operate lamps at high frequency (typically more than 20 kHz), allowing the lamps to convert power to UV more efficiently than if operated by electromagnetic ballasts (60 Hz). For example, lamps operated on electronic ballasts can produce over 10% more UV output than if operated on electromagnetic ballasts at the same power input levels.

Power Factor. The ballast power factor is a measure of the actual output for a specific lamp/ballast system relative to the rated output measured with reference ballast under ANSI test conditions (open air at 77°F). It is not a measure of energy efficiency. However, a high power factor ballast does a better job at correcting electrical waveform distortions to deliver current to a lamp in a more energy-efficient manner. For new equipment, high ballast factors are generally the best choice, because fewer lamps and ballasts are needed to reach the system's required UV output.

Audible Noise. Because electronic high-frequency ballasts have smaller magnetic components, they typically have a lower sound rating and should not emit perceptible hum. Most electronic ballasts are A-rated for sound.

EMI/RFI. Because they operate at high frequency, electronic ballasts may produce electromagnetic interference (EMI), which can affect any operating frequency, or radiofrequency interference (RFI), which applies only to radio and television frequencies. This interference could affect the operation of sensitive electrical equipment, such as system controls, televisions, or medical equipment. Good-quality electronic ballasts should incorporate features necessary to maximize protection for the operating environment and to operate well within regulatory limits.

Inrush Current. All electrical devices, including ballasts, have an initial current surge that is greater than their steady-state operating current. National Electrical Manufacturers Association (NEMA) *Standard* 410 covers worst-case ballast inrush currents. All circuit breakers and light switches are designed for inrush currents. The electrical system should be designed with this issue in mind.

Total Harmonic Distortion (THD). Harmonic distortion occurs when the wave-shape of current or voltage varies from a pure sine wave. Except for a simple resistor, all electronic devices, including electromagnetic and electronic ballasts, contribute to power line distortion. For ballasts, THD is generally considered the percent of harmonic current the ballast adds to the power distribution system. ANSI *Standard* C82.11 for electronic ballasts specifies a maximum THD of 32%. However, most electric utilities now require that the THD of electronic ballasts be 20% or less.

Dimming. Unlike incandescent lamps, a UV lamp can only be dimmed when its electrode temperature is maintained while the lamp arc current or voltage is reduced.

Electronic dimming ballasts alter the output power to the lamps in the ballast itself, driven by a low-voltage signal into the driver circuit. This allows control of one or more ballasts independent of the electrical distribution system. With dimming electronic ballast systems, a low-voltage control network can be used to group ballasts into arbitrarily sized control zones. Dimming range differs greatly; most electronic dimming ballasts can vary output levels between 100% and about 10% of full output, but ballasts are also available that operate lamps down to 1% of full output.

lamp's starting characteristics, UV-C output, and operating life.

Circuit Type and Operating Mode. Ballasts and electronic power supplies for low-pressure mercury lamps are designed according to the following primary lamp operation modes:

- In **preheat**, lamp electrodes are heated before beginning discharge, and no auxiliary power is applied across the electrodes during operation.
- In **rapid start**, lamp electrodes are heated before and during operation. The ballasts have special secondary windings to provide the proper low voltage to the electrodes during operation. The advantages include smooth starting, longer lamp life, and dimming capabilities.
- **Program start** ballasts incorporate starting steps. The first step applies voltage to electrodes until they are heated to an optimal temperature. The second step applies a lower voltage across the electrodes, thus igniting them with a minimal loss of the filaments' emissive material. This minimal loss ideally equates to a longer lamp life.
- **Instant-start** ballasts do not heat the electrodes before operation. Ballasts for instant-start lamps are designed to provide a relatively high starting voltage (compared to preheat and rapid-start lamps) to initiate discharge across the unheated electrodes. They are not recommended for cold-air applications or if frequent switching is needed.

the same power input levels.

Power Factor. The ballast power factor is a measure of the actual output for a specific lamp/ballast system relative to the rated output measured with reference ballast under ANSI test conditions (open air at 77°F). It is not a measure of energy efficiency. However, a high power factor ballast does a better job at correcting electrical waveform distortions to deliver current to a lamp in a more energy-efficient manner. For new equipment, high ballast factors are generally the best choice, because fewer lamps and ballasts are needed to reach the system's required UV output.

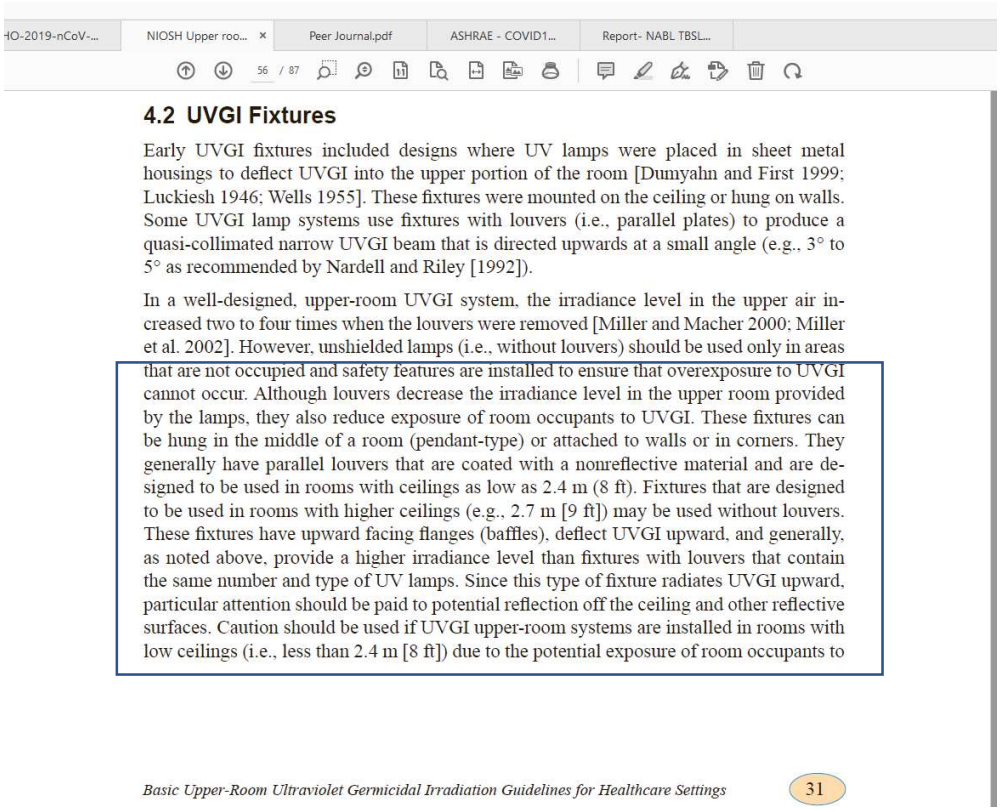
Audible Noise. Because electronic high-frequency ballasts have smaller magnetic components, they typically have a lower sound rating and should not emit perceptible hum. Most electronic ballasts are A-rated for sound.

electrical system should be designed with this issue in mind.

Total Harmonic Distortion (THD). Harmonic distortion occurs when the wave-shape of current or voltage varies from a pure sine wave. Except for a simple resistor, all electronic devices, including electromagnetic and electronic ballasts, contribute to power line distortion. For ballasts, THD is generally considered the percent of harmonic current the ballast adds to the power distribution system. ANSI *Standard* C82.11 for electronic ballasts specifies a maximum THD of 32%. However, most electric utilities now require that the THD of electronic ballasts be 20% or less.

Dimming. Unlike incandescent lamps, a UV lamp can only be

<u>Annex 4</u>: UVGI Fixture Specifications: Environmental Control for Tuberculosis: Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by US DHHS, CDC and NIOSH in March 2009



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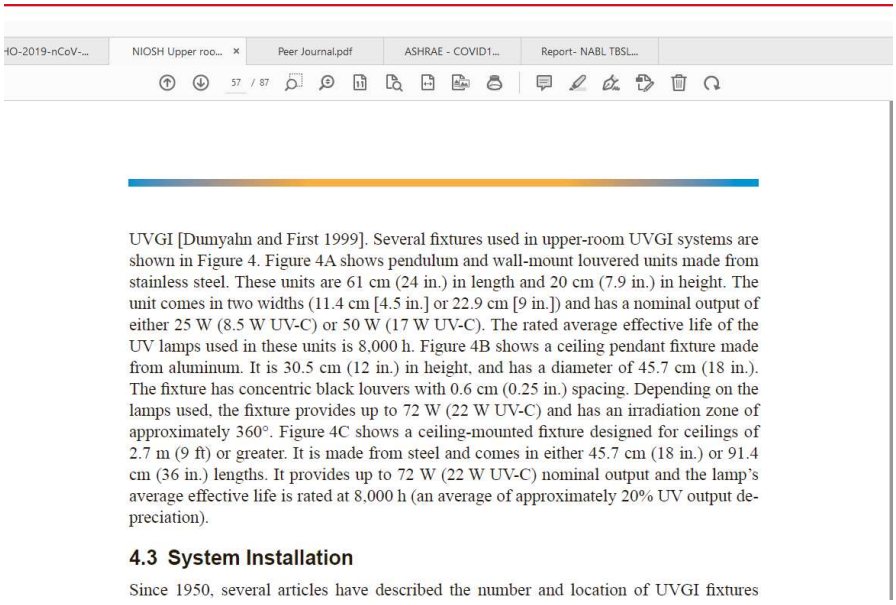
4.2 UVGI Fixtures

Early UVGI fixtures included designs where UV lamps were placed in sheet metal housings to deflect UVGI into the upper portion of the room [Dumyahn and First 1999; Luckiesh 1946; Wells 1955]. These fixtures were mounted on the ceiling or hung on walls. Some UVGI lamp systems use fixtures with louvers (i.e., parallel plates) to produce a quasi-collimated narrow UVGI beam that is directed upwards at a small angle (e.g., 3° to 5° as recommended by Nardell and Riley [1992]).

In a well-designed, upper-room UVGI system, the irradiance level in the upper air increased two to four times when the louvers were removed [Miller and Macher 2000; Miller et al. 2002]. However, unshielded lamps (i.e., without louvers) should be used only in areas that are not occupied and safety features are installed to ensure that overexposure to UVGI cannot occur. Although louvers decrease the irradiance level in the upper room provided by the lamps, they also reduce exposure of room occupants to UVGI. These fixtures can be hung in the middle of a room (pendant-type) or attached to walls or in corners. They generally have parallel louvers that are coated with a nonreflective material and are designed to be used in rooms with ceilings as low as 2.4 m (8 ft). Fixtures that are designed to be used in rooms with higher ceilings (e.g., 2.7 m [9 ft]) may be used without louvers. These fixtures have upward facing flanges (baffles), deflect UVGI upward, and generally, as noted above, provide a higher irradiance level than fixtures with louvers that contain the same number and type of UV lamps. Since this type of fixture radiates UVGI upward, particular attention should be paid to potential reflection off the ceiling and other reflective surfaces. Caution should be used if UVGI upper-room systems are installed in rooms with low ceilings (i.e., less than 2.4 m [8 ft]) due to the potential exposure of room occupants to



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UVGI [Dumyahn and First 1999]. Several fixtures used in upper-room UVGI systems are shown in Figure 4. Figure 4A shows pendulum and wall-mount louvered units made from stainless steel. These units are 61 cm (24 in.) in length and 20 cm (7.9 in.) in height. The unit comes in two widths (11.4 cm [4.5 in.] or 22.9 cm [9 in.]) and has a nominal output of either 25 W (8.5 W UV-C) or 50 W (17 W UV-C). The rated average effective life of the UV lamps used in these units is 8,000 h. Figure 4B shows a ceiling pendant fixture made from aluminum. It is 30.5 cm (12 in.) in height, and has a diameter of 45.7 cm (18 in.). The fixture has concentric black louvers with 0.6 cm (0.25 in.) spacing. Depending on the lamps used, the fixture provides up to 72 W (22 W UV-C) and has an irradiation zone of approximately 360°. Figure 4C shows a ceiling-mounted fixture designed for ceilings of 2.7 m (9 ft) or greater. It is made from steel and comes in either 45.7 cm (18 in.) or 91.4 cm (36 in.) lengths. It provides up to 72 W (22 W UV-C) nominal output and the lamp's average effective life is rated at 8,000 h (an average of approximately 20% UV output depreciation).

4.3 System Installation

Since 1950, several articles have described the number and location of UVGI fixtures

<u>Annex 5</u>: A simple method for evaluating the performance of louvered fixtures designed for upper-room UVGI (Steve Rudnick method for measuring fixture output)

A simple method for evaluating the performance of louvered fixtures designed for upper-room UVGI

Stephen N. Rudnick[a,b,1], Edward A. Nardell[a,c]

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Abstract

The ultraviolet emission rate of fixtures designed for upper-room ultraviolet germicidal irradiation (UVGI) is clearly an important parameter for specifying the UV dosing requirements for a particular application—that is, determining how many UV fixtures should be installed in a given room. UV emission rate is also important for determining energy-use efficiency—the ratio of a fixture's UV emission rate to the required electrical power input—which is a parameter that can be used to rank and to improve fixtures. In this paper, we described and validated "UV sensor traverse," a simple method for measuring UV emission rate by traversing the louvered face of a fixture with a UV sensor. Using this method, we showed that a commercially available fixture having a cylindrical parabolic reflector with a tubular lamp has about 84% of the UV radiation exiting the fixture emitted from the back half of the lamp, compared with only 21% for a fixture having a flat reflector and compact lamps. The energy-use efficiency of the former fixture is about five times greater than that of the latter fixture. In the fixture with the cylindrical parabolic reflector, UV rays are redirected so that they tend to be parallel to the louvers, allowing significantly more of the UV radiation emitted from the back of the lamp to exit the fixture than a fixture with a flat reflector, which simply changes the direction of the UV rays.

Total UVC output measurement of upper room GUV fixture: StephenRudnick's method

Total UVC output of upper room germicidal ultraviolet (UR GUV) fixture is key parameter of a fixture model, characterizing the total amount of 254 nm GUV irradiated into the room space for air disinfection. It is useful for fixture installation planning according to volume- or floor area UR GUV dosing recommendations and for fixture model acceptance in frame of the procurement process. The term "UV emission rate" is used as equivalent of the above-mentioned term.

Only a portion of electricity energy supplied to the low-pressure mercury lamp is converted into254 nm GUV (usually up to 30%), and only a portion of the latter is irradiated from the UR GUV fixture into the room space. This amount of 254 nm GUV energy, measured in Watts (W) or milliwatts (mW) is called total UVC output of a fixture.

The proposed simplified method[1] was developed by Prof. Stephen Rudnik, Department of Environmental Health, Harvard T.H. Chan School of Public Health, and Prof. Edward A. Nardell, Harvard Medical School, Boston, MA, USA. In slightly modified format It was verified in VladimirCenter of Excellence for TB IPC, Vladimir Regional TB Control Center, Russia for measurements of UR GUV fixtures produced in Russia and proved to be both feasible and precise comparing to results of measurements using much more sophisticated method - an integrated sphere conducted by of Prof. Wilhem Leuschner, Department of Electrical, Electronic & Computer Engineering, University of Pretoria, South Africa.

The method is based on the UVC sensor traverse principle and requires a UVC meter and 254 nmdetector with adequate measurement range.

The UVC lamp burn-in and warm-up times may affect the measured value of emission rates of GUV fixtures. Prior to making irradiance and total UVC output measurements, all fixtures have to be operated for at least 100 hours for burn-in and for at least 30 min for warmup after the fixtures have been turned on.

For safety reasons to avoid overexposure to eyes and skin, the measurement should be performed in a separate room without occupants who are not directly involved in the procedure. All individuals (2 – 3 persons) staying in the room and performing the measurements must wear eye and skin protection (glasses, face shields, long sleeves, gloves).

For measurements UR UVC fixture should be placed on a bench, with a "louvered face" directedvertically upwards to the ceiling. A "louvered face" is defined as the front edges (parallel to the outermost edge of the louvers) of the fixture's closely spaced, nearly horizontal louvers and the openings surrounding them through which UVradiation exits the fixture and enters the upper room space.

For calculation of total UVC output of a fixture, numerous systematic consecutive measurements of UVC irradiance should be thoroughly performed and recorded, by placing the 254 nm detector in the positions on the louvered face plane described below. The positioning of a detector depends on the diameter of its UV sensing window and dimensions of a fixture louvered face. The detector positioning method described below should be used for model UV-3718 detector (Gigahertz Optik GmbH, Türkenfeld, Germany) with UV sensing window diameter 11mm (figure 1).

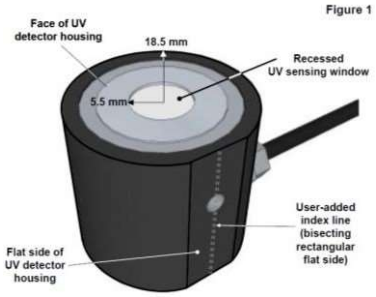


Figure 1

For other UVC detector models the positioning should be modified according to the sensing window diameter in order to position them (windows) so they have minimal overlap, without being separated from each other. (figure 2).

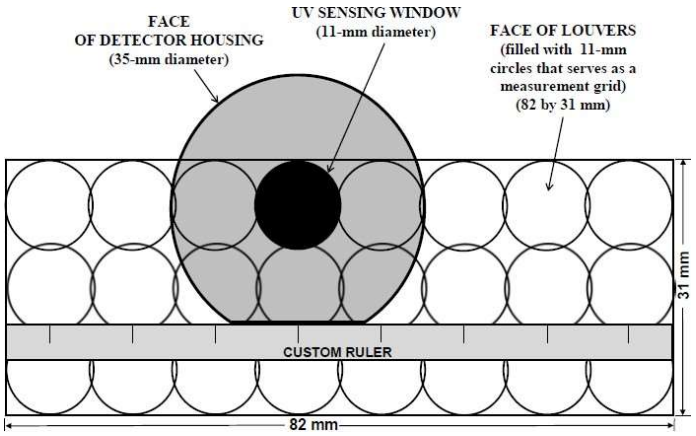


Figure 2

Figure 2 is an example of a schematic diagram of the louvered face of a hypothetical fixture withthe face of the UV detector (gray area), including its UV sensing window (black area), superimposed. The louvered face shown in this figure, which is used below to describe the measurement procedure is relatively small (82 by 31 mm) compared with the louvered faces of commercially available upper-room GUV fixtures. To provide a grid for irradiance measurements, one should visualize the fixture's louvered face filled with circles whose radii are equal to the radius of the UV sensing window (5.5 mm for UV-3718 detector shown in Figure 1).The circles are positioned so they have minimal overlap, without being separated from each other. For the louvered face shown in Figure 2, there could be 7.45 circles (82/11) per horizontal row; however, in order to eliminate edge effects and have adjacent circles slightly overlapping each other, the number of circles in a horizontal row was rounded up to 8. Therefore, in eachrow, there are 8 circles with their centers separated by 10.25 mm (82/8). Similarly, in the vertical direction, there are 3 circles per column whose centers are 10.33 mm apart (31/3).Thus, in this example the louvered face contains 24 slightly overlapping circles.

For faster and more precise probe positioning a custom ruler (described below) and marker canbe used to draw an index line that bisects the flat rectangular surface of the UV-3718 detector'shousing as shown in Figure 1. If the detector model does not have a flat rectangular surface, then a vertical index line can be placed anywhere on the cylindrical surface of the detectorhousing.

A custom ruler should be used whose length is equal to the width of the fixture louvered face. The ruler's width and thickness can have any convenient dimensions. However, the thickness should be sufficient to allow the UV detector to slide along the ruler's edge. For louvered facesthat are flat, the custom ruler can be made from any material having a straight edge. If the louvered face is curved, the custom ruler must be made from a flexible material, such as plasticor aluminum, so that it can bend.

Marks that correspond to the centers of the 8 circles contained in a row—that is, every 10.25 mm (82/8) for the louvered face shown in Figure 2 —are made on the ruler. The number of circles in arow and number of rows should be calculated according to fixture louvered face dimensions using the method described above.

The ruler is taped to the fixture's face such that when the flat rectangular side of the detector's housing is resting on the edge of the ruler with its index line aligned with the first mark on the ruler and the face of the detector housing in physical contact with the edges of the louvers, the UV sensing window of the detector will be coincident with the first circle in the top row. Because the detector's sensing window is slightly recessed, it does not make physical contact with the edges of the louvers, which might scratch the sensing window. The reading of the 254 nm irradiance (in $\mu W/cm^2$ or mW/cm^2) is recorded into the spreadsheet (attached), or, if UVC meter model allows, the measured irradiance recorded into its memory. The detector is slid horizontally such that the index line on the detector aligns with the second ruler mark. The next irradiance reading is recorded into the spreadsheet or "enter" button on the UVC meter is again pressed for storing data in the memory. This procedure is continued for each of the marks on the ruler.

The ruler is then moved down (10.33 mm for the described example) and taped so that the sensing window of the detector is coincident with the first circle in the second row of circles. Irradiance measurements are recorded for all of the circles in the second row. This procedure isrepeated for the remaining rows of circles.

It is important to make sure that at the edges of the louvered face the sensing window should notoverlap the edge, so measurements performed exclusively over the louvered face, through which UVC is irradiated into the room space.

In order to be avoid measurement and calculation error, the procedure described above should be repeated at least three times for each fixture model.

For calculation of fixture's total UVC output the following equations should be used.
The measured Mean irradiance ($\bar{E}$) corresponding to all of the circles filling the louvered face of the fixture can be calculated from Equation 1:

$$\overline{E} = \frac{1}{n}\sum_{i=1}^{n} E_i \qquad (1)$$

where n is the number of circles filling the fixture's louvered face and E_i is the UVC irradiance for the i^{th} circle. Since irradiance reading for each circle is representative of the section of the louvered face where it is located, then a fixture's total UVC output (P_f), the primary measure of an upper-room UV fixture's potential effectiveness, can be estimated from Equation 2:

$$P_f = \overline{E}A \quad (2)$$

where A is the area of the rectangular region that encloses the louvers and all of the openings where UV radiation exits the fixture. For example, in Figure 2, A = 82 mm x 31 mm = 2540 mm^2.

For the calculations measurement unit's conversion should be as follows:

UVC irradiance: 1 000 µW/cm^2 = 1 mW/cm^2

Area: 100 mm^2 = 1 cm^2

UVC output: 1 000 000 µW = 1 000 mW = 1 W

The attached spreadsheet which is provided as a soft copy (Annexure 5.A) can be used for UVC irradiance recordings and calculation of a fixture total UVC output after easy modification based on a fixture louvered face dimension.

There can be potential variation in the measurement due to inter-observer variance and due to the UVC254 radiometer variance. Hence, the acceptable variation in total fixture UVC output can be considered as ± 20 % with the manufacturer claimed UVC output.

Annex 6: Technical specifications UVC Radiometer and Sensor/ detector

Description:

The handheld UVC radiometer provides fast and accurate readings with digital readability for measurement of Irradiance for UV-C low-pressure Hg germicidal lamps and fixtures for disinfection of air and surfaces (254 nm wavelength). In addition to checking the desired germicidal effect of high intensity UV radiation, the potential risk of skin and eyes overexposure from relatively low UV intensity must also be determined if there is the possibility of human exposure to UV radiation. Carrying out both measurements with one device requires UV radiometers with a very large dynamic range.

Radiometer:

- Irradiance Measurement Range: at least **0.1–2000 µW/cm^2**
- Resolution: **0.01 µW/cm2 or better**
- Accuracy: UV irradiance of more than 1 to 2000 µW/cm2 should be ±10% of the reading and UV irradiance of 0.05–1 µW/cm2 should be ±0.05 µW/cm2.

Sensor/ detector:

- Designed for Spectral response to Wavelength of 254 nm with a cosine correction.
- Field of view (F.O.V) cone (+/- 40^0) shall be used for eye safety measurements.
- Manufacturers should state clearly the reading measured as spectral or effective irradiance.
- Should have an exclusive UVC sensor/ detector with correction filter with accuracy of ± 5% or better.
- It should be separated from the Radiometer and have a flexible metal shielded cable at least 2 m long and protective cap for the optics filter.
- Large LCD display, easy to read.
- Display of irradiance in µW/cm^2 or mW/cm2 with peak-hold function for stored the desired value on display.
- Options of Zero Adjustment
- Operating Temperature: 05 deg C to 40 deg C
- Operating Humidity: up to 80% RH
- Accessories to be provided: User Manual 1 Pc; UVC sensor / detector probe- 1pc; Hard carrying case 1 pc.
- Manufacturer testing certificate to be provided along with each unit.
- Calibration Certificate: Third party calibration certificate with specified validity of calibration and traceability to National/ international standards needs to be provided for both wavelength and intensity.
- Warranty: The UVC Radiometer supplied shall have a minimum period of one year warranty.

<u>Annexure 7</u>: Upper room UVC safety assessment (Safety Test)

The purpose of the UR UVC safety assessment is to make sure that there is no risk of UVC overexposure for people in the entire occupied area of a room where UR GUV fixture(s) installed and continuously used.

UR GUV safety assessment should be performed:

1. After all the fixtures are installed in a room, for their commissioning.
2. On a regular basis as part of fixture performance monitoring and maintenance
3. In case of any complaints received from room occupants related to possible UV overexposure (eye or skin irritation signs).
4. After re-lamping
5. After repair, adjustment or relocation of fixture(s).
6. After implementation of any corrective actions aimed at reducing the irradiance levels in occupied areas of a room.

The UVC lamp burn-in and warm-up times may affect the measured value of emission rates of GUV fixtures. Prior to making irradiance and total UVC output measurements, all fixtures have to be operated for at least 100 hours for burn-in and for at least 30 minfor warmup after the fixtures have been turned on.

For UR GUV safety assessment **all other UV fixtures** in a room should be turned ON. UVC_{254} meters with 254 nm detector (sensor) should be used for measurement of $UVC_{254.}$ irradiance in occupied room space.

All assessment results should be recorded and kept for future reference and maintenance planning.

For UR GUV safety assessment, the following steps should be taken:

1. Make sure that all fixtures have been operated with GUV lamp installed for at least 100 hours and have been turned on for at least 30 minutes.
2. Make sure that fixture lamps and reflectors have been recently cleaned by alcohol solution.
3. Make sure that the calibrated UVC meter and detector used for the assessment are designed for UVC_{254} irradiance measurement.
4. For safety assessment turn ON all UV fixtures (or other UV sources if applicable) in a room.
5. Remove the protective cap from the detector. If needed clean its sensing window with alcohol or acetone using cotton swab or a clean cloth.
6. Turn on UVC meter and use PEAK mode for UVC_{254} irradiance measurement.
7. Perform UVC_{254} irradiance measurements in the entire occupied room area in all. horizontal directions at standing height (71 in or 1.8 m or 6 feet), at sitting height (51 in or 1.3 m or 4 feet) and at pillow level height (36 in or 0.91 m or 3 feet).
8. Make sure to take irradiance measurement while UVC detector oriented in the most probable directions of occupant eyes in the particular room area.
9. In hospital patients' rooms measurements should be taken at sleeping level in all directions (horizontal, diagonal and vertical).

10. In areas where children may be present (waiting areas, children's ward etc.) measurements should be taken also at floor level in all directions.
11. Make additional measurements in occupied areas of a room where the highest UVC exposure may be expected:
    a. In front of installed UR GUV fixtures or in front of opposite wall from a fixture.
    b. Under the low and reflective ceiling.
    c. In front of objects suspended to the ceiling.
    d. In front of metal objects or reflective paints.
    e. In overlapping irradiation areas of two or more UR GUV fixtures.
12. Most careful irradiance measurement should be performed in areas where room occupants may spend more than 2 – 3 hours a day in one position: patient rooms, nurse stations, physician offices, crowded waiting areas etc. UVC detector should be oriented in the same directions as most typical directions of occupants' eyes.
13. UVC_{254} irradiance levels over 0.2 $\mu W/cm^2$ in areas where occupants may stay for most prolonged time, listed in paragraph 12, may cause UVC overexposure.
14. All locations in a room where measured UVC_{254} irradiance levels exceed safe levels listed in paragraph 13, should be recorded using the attached log format.
15. To reduce UVC_{254} irradiance levels to safe levels the following measures may be recommended:
    a. UR GUV fixture adjustment.
    b. Decreasing GUV lamp flux intensity using a lamp dimmer, if available.
    c. Replacement of UR GUV fixture by the lower total UVC output model.
    d. Relocation of sitting arrangements, beds, benches, desks.
    e. Relocation UR GUV fixture in another position.
    f. In case of intensive UV reflection – relocation of reflecting objects, repainting using non-reflective paints (containing titanium dioxide).
16. After corrective actions UR GUV fixture(s) should be reassessed for efficacy and a room – for UR GUV safety.

Upper Room GUV Safety Assessment Log

Healthcare Facility _____

Date	Room	Reason for safety assessment (installation, routine maintenance, complaints, fixture repair, re-lamping etc.)	UVC_{254} irradiance exceeds 0.2 $\mu W/cm^2$ (Yes/No) **If *yes*, enter data in the following table**	Recommendations	Name	Signature

If areas with UVC_{254} irradiance above safe levels (paragraph 12, 13) detected, describe them in the following table:

Date	Room	Location of UVC_{254} irradiance above safe levels	Are room occupants likely to spend more than 2 hrs per day at this location? Yes/No	Height of UVC_{254} irradiance above safe levels	Direction of UVC_{254} irradiance above safe levels	Measured UVC_{254} irradiance $\mu W/cm^2$	Recommendations	Name	Signature

Annexure 8: Upper room UVC fixture efficacy assessment

Upper-room UVC fixtures are expected to create a disinfection zone located in upper room space above the people occupying a room to reduce the risk of disease transmission by infectious pathogens in the air. Effectiveness of air disinfection depends on the amount of UVC energy (radiant flux) irradiated by a fixture into upper room space. This parameter called total UVC output can be measured only in laboratory conditions using specialized methods and equipment. It is therefore impossible to measure the total UVC output for installed fixture infield settings.

For assessment of a fixture effectiveness a reference value of actual UVC254 irradiance taken at a fixed distance 1 meter from a fixture center, in front of a fixture louvered window should be used. This irradiance value, which can be taken for every installed fixture in field settings, should be used as an easily available indicator for assessment of UR GUV fixture effectiveness. This reference UVC_{254} irradiance value should be provided by fixture manufacturer (supplier) for a model and can be verified during procurement process and used as reference during fixture installation, acceptance and maintenance.

UR GUV fixture effectiveness assessment should be performed:

1. By manufacturer or third independent party for every UR fixture model.
2. After fixture installation for its commissioning. Measured value in µW/cm2 should becompared with the reference value for the fixture model provided by manufacturer.
3. On a regular basis as part of fixture performance monitoring and maintenance
4. After re-lamping or any other repairs of the fixture.

All fixture assessment results should be recorded and kept for future reference and maintenance planning.

The UVC lamp burn-in and warm-up times may affect the measured value of emission rates of GUV fixtures. Prior to making irradiance and total UVC output measurements, all fixtures have to be operated for at least 100 hours for burn-in and for at least 30 min for warmup after the fixtures have been turned on.

For health safety reasons to avoid overexposure to eyes, personnel performing measurements inirradiated upper room space must wear eye protection (glasses or face shields).

UVC_{254} meter with 254 nm detector (sensor) should be used for measurement of UVC254 irradiance as indicator of UR GUV fixture effectiveness.

Irradiation is inversely proportional to the square of the distance from the radiation source. It is therefore very important to position a detector for every assessment at exactly the same distance, at the height and in front of a fixture louvered window, and to direct its sensing window exactly towards a fixture. For data consistency, it is recommended to mark a location on a floor in front of a fixture center line at the standard measurement distance 1 meter.

Since a detector should be positioned high in the upper room space irradiated by GUV, it is recommended to attach it to 1.5 – 2 m long stick. For keeping records of fixtures effectiveness andsafety assessments they should be marked by clearly visible numbers.

For UR GUV fixture effectiveness assessment, the following steps should be taken:

1. Make sure that a fixture has been operated with the installed GUV lamp for at least 100hours and has been turned on for at least 30 minutes.
2. Make sure that the fixture lamp and reflector have been recently cleaned by alcohol solution.
3. Make sure that UVC meter and detector are designed for UVC_{254} irradiance measurement.
4. Put on safety glasses or a face shield.
5. Remove the protective cap from the detector. If needed clean its sensing window with alcohol or acetone using cotton swab or a clean cloth.
6. Turn on UVC meter and use PEAK mode for UVC irradiance measurement.
7. Holding vertically a stick with an attached detector to its upper end, position the detector precisely at the standard distance (1 meter) in front of a fixture louvered window center, with sensing window directed to a fixture. Use marked on the floor location (if available) in front of a fixture toprecisely position a detector at the standard distance.
8. Slowly moving detector up and down, side to side, monitor UVC irradiance shown on ameter display, and find the highest (peak) irradiance value in $\mu W/cm^2$ received and record it into the attached log table.
9. If recorded irradiance value is substantially lower than previously recorded one (or thanmanufacturers reference value for the model), repeat measurement after thorough cleaning of the fixture lamp and reflector.

   Note: There can be potential variation in the measurement due to inter-observer variance and due to the UVC254 radiometer variance. Hence, the acceptable variation in the irradiance measurement can be considered as ± 20 % with the manufacturer claimed measurement.

10. If even after cleaning irradiance remains below 70% of the reference value for the model, the fixture should be re-lamped.

Upper Room GUV Fixture Effectiveness Assessment Log

Health care Facility _____

Reference UVC_{254} irradiance standard distance (1 meter)

Room	Fixture #	UVC_{254} irradiance, µW/cm^2	
		Manufacturer's model value	Fixture acceptance value

Date	Room	Fixture#	Reason for effectiveness assessment (installation, Routine maintenance, fixture repair, re- lamping etc.)	UVC_{254} Irradiance at 1 meter), µW/cm^2	Difference with previous value, ±%	Recommendations	Signature

Section VI – Bidding Forms

Letter of Technical Bid

The Bidder must prepare the Letter of Technical Bid on its letterhead clearly showing the Bidder's complete name and address.

Note: All italicized text is for use in preparing these forms and shall be deleted from the final products.

Date: **[insert date (as day, month and year) of Bid Submission]**

Bid Ref. No.: **[*insert number of bidding process*]**

To: **[*insert complete name of Purchaser*]**

(a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB 10). We are hereby submitting our Proposal, which includes this Technical Proposal and a Financial Proposal for following Schedules:

Sch. No.	Name of Schedule	No. of State	No. of Sites	Applied / Not Applied
1	Central	3	22	
2	East & North-East	11	26	
3	North	6	13	
4	South	6	25	
5	UP + UK & West	4	30	

(b) We meet the eligibility requirements and have no Conflict of Interest in accordance with ITB 4,

(c) We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods:**[*insert table giving brief description of the Goods, Equipment and Related Services*]**,

(d) Our bid shall be valid for a period fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period,

(e) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents,

(f) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB 4.3(e), other than alternative bids submitted in accordance with ITB 13,

(g) We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not debarred by any Procuring Entity under the State

/ UT Government, the Central Government, Autonomous body, Authority by whatever name called under them, UNOPS, UNDP, SAMS or GFATM as on the date of opening of bids,

(h) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any activities which is in contravention of the Code of Integrity proscribed in ITB Para 3 of the Bidding Documents,

(i) We hereby certify that we are neither associated nor has been associated directly or indirectly with the consultant or any other entity that has prepared the design, specifications and other documents for the subject matter of procurement or is being proposed as Project Manager for the contract

(j) We hereby certify that we have fulfilled our obligations to pay all such taxes as payable to the Central Government or the State Government or any local authority,

(k) We hereby certify that we are not insolvent, in receivership, bankrupt or being wound up, not have its affairs administered by a court or a judicial officer, not have its business activities suspended and must not be the subject of legal proceedings for any of the foregoing reasons,

(l) We hereby certify that our directors and officers have not been convicted of any criminal offence related to their professional conduct or the making of false statements or misrepresentations as to their qualifications to enter into a procurement contract within a period of three years preceding the commencement of the procurement process, or not have been otherwise disqualified pursuant to debarment proceedings,

(m) I/We hereby declare that we have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries. I/We certify that our Organization _____ (add name and address of registered office of bidder is not from such a country, or if from such a country, has been registered with the Competent Authority and will not subcontract any work to a contractor from such countries unless such contractor is registered with the competent authority (wherever applicable, evidence of valid registration by the Competent Authority shall be attached). I/We hereby certify that our organization fulfils all requirements in this regard and is eligible to be considered.

(n) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.

Name of the Bidder _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder _____

Title of the person signing the Bid _____

Signature of the person named above _____

Bidder Information Form

[The Bidder and consortium partner (if any) shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: *[insert date (as day, month and year) of Bid Submission*]

Bid Ref. No.: *[insert number of bidding process]*

1. Bidder's Name *[insert Bidder's legal name]*
2. Bidder's year of registration: *[insert Bidder's year of registration]*
3. Bidder's Address: *[insert Bidder's legal address]*
4. Bidder's Authorized Representative Information Name: *[insert Authorized Representative's name]* Address: *[insert Authorized Representative's Address]* Telephone/Fax numbers: *[insert Authorized Representative's telephone/fax numbers]* Email Address: *[insert Authorized Representative's email address]*
5. Attached are copies of original documents of*[check the box(es) of the attached original documents]* • Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.3. • Organizational chart, a list of Board of Directors, and the beneficial ownership. • GSTIN Registration Certificate • Copies of audited financial statements of accounts (including balance sheet/profit and loss account/auditor's reports/ IT returns) certified by the auditor of the Bidder for last three financial years 2021-22 ,2022-23 and 2023-24). • Any other document

Proforma for Other Details of Bidder, Manufacturer and its Bank

1. Name & full address of the Manufacturer:

2. (a) Telephone & Fax No Office /Works

(b) Email

3. Location of the manufacturing factory.

4. Name & full address of the Bidder

5. (a) Telephone/Mobile & Fax No Office/Factory/Works

(b) Email

6. Details of two Persons that Purchaser may contact for requests for clarification during bid evaluation:

	1st	2nd
(i) Name: (ii) Tel number (direct): (iii)Mobile No. (iv) Email address		

7. Bank details from where the Bank Guarantee for Bid Security has been issued:

(i) Name and address of the Bank:

(ii) Name of the contact Person

(iii) Phone number/Mobile

(iv) Fax Number

(v) Email address

Signature and seal of the Bidder

ORIGINAL EQUIPMENT MANUFACTURER (OEM)

MANUFACTURER'S AUTHORIZATION LETTER FORMAT

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the ***BDS.****]*

Date: *[insert date (as day, month and year) of Bid Submission]*

Bid Ref. No.: *[insert number of bidding process]*

To: *[insert complete name of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer],* who are official manufacturers of*[insert type of goods manufactured],* having factories at [insert full address of Manufacturer's factories], do hereby authorize *[insert complete name of Bidder]* to submit a bid, the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods],* and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 29 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Dated on _____ day of _____, _____ *[insert date of signing]*

Proforma for Performance Statement (for a period of last five years)

Name of the Firm_____

Order placed by (full address of Purchaser)	Order No. and Date	Description and quantity of ordered goods	Maintenance Services provided-Yes/No	Value of order	Date of completion of delivery		Remarks indicating reasons for late delivery, if any	Has the supply and installation of goods been satisfactory ?*	Is safety test performed satisfactorily Yes/No	Is efficacy Test performed Satisfactorily Yes/No
					As per contract	Actual				

Signature and seal of the Bidder

The Bidder shall also furnish the following documents in connection with their past performance:

i. Copy of Purchase Orders
ii. Copy of Invoices
iii. Proof of Payment received from Purchasers
iv. Documentary evidence (Client's certificate) in support of satisfactory completion of contract

Form of Consortium Agreement

(on the letterhead of Lead partner)

Date: *[date (as day, month and year)]*
Bid Ref. No.: *[number of bidding process]*

Ref:

To
The Director
M/s Strategic Alliance Management Services Pvt. Ltd. B-18, Sector-6,
Noida, G.B. Nagar
Uttar Pradesh - 201301

Subject: Submission of Consortium Agreement.

Dear Sir,

In reference to [mention the project/tender name and reference number], we, the undersigned consortium members, hereby submit the consortium agreement as per the requirements of the bid document.

We confirm that [Name of the Lead Partner] has been nominated as the Lead Partner of the consortium. The Lead Partner shall act on behalf of the consortium in all matters related to the above-mentioned project/tender, including correspondence, submissions, and execution of contractual obligations.

The members of the consortium are as follows:

1. **Lead Partner:**
   Name: [Insert Name]
   Address: [Insert Address]
   Contact: [Insert Contact Details]
2. **Consortium Member(s):**
   - Name: [Insert Name]
     Address: [Insert Address]
     Contact: [Insert Contact Details]
   - Name: [Insert Name]
     Address: [Insert Address]
     Contact: [Insert Contact Details]

We agree and affirm that:

1. [Lead Partner Name] will have the primary responsibility for the execution of the contract on behalf of the consortium.

2. All consortium members shall be jointly and severally liable for the performance of the contract.
3. The roles, responsibilities, and financial contributions of each member are detailed in the attached consortium agreement document.

For any further clarification or documentation, please feel free to contact the undersigned.

Thanking you,

Yours faithfully,

[Name of the Authorized Representative]
[Designation]
[Lead Partner Name]
[Contact Information]

Form for submission of Schedule wise proposed Upper room air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection System:

The Bidder should provide combinations of two or more fixtures of which one should be ≤ 0.5 W and other fixture/s being > 0.5 W but (**not more than 1 W**) to match with the total volumetric dose requirement (As per column M) in respective areas where they will be installed. Kindly ensure that the total proposed volumetric dosing should not vary +/- 15% from the required volumetric dosing (as per Colum M) as detailed in the schedule-wise annexures. The bidders are required to submit the details for each schedule separately, as specified in Annexures X1 to X5 as mentioned below :

Sch. No.	Name of Schedule	Name of Annexures
1	Central	Annexure X1
2	East & North-East	Annexure X2
3	North	Annexure X3
4	South	Annexure X4
5	UP + UK & West	Annexure X5

Note: Excel sheets are enclosed separately with the bid document.

Annexure Z

Form of Bid Security Declaration

(Only MSME bidders are requested to submit the Bid Security Declaration on Rs. 100/- stamp paper)

[Please refer to ITB Para 19 of the Bid Document]

[The Bidder shall fill in this form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: *[date (as day, month and year)]*
Bid Ref. No.: *[number of bidding process]*

Ref:

To
The Director
M/s Strategic Alliance Management Services Pvt. Ltd. B-18, Sector-6,
Noida, G.B. Nagar
Uttar Pradesh - 201301

We, the undersigned, declare that:

We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with the Purchaser for the period of 2 (two) years starting on *the date of suspension,* if we are in breach of our obligation(s) under the bid conditions, because we:

(a) have withdrawn our Bid during the period of bid validity specified in the Letter of Technical Bid; or

(b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract; or (ii) fail or refuse to furnish the Performance Security, if required, in accordance with the ITB.

We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Name of the Bidder_____

Name of the person duly authorized to sign the Bid on behalf of the Bidder_____

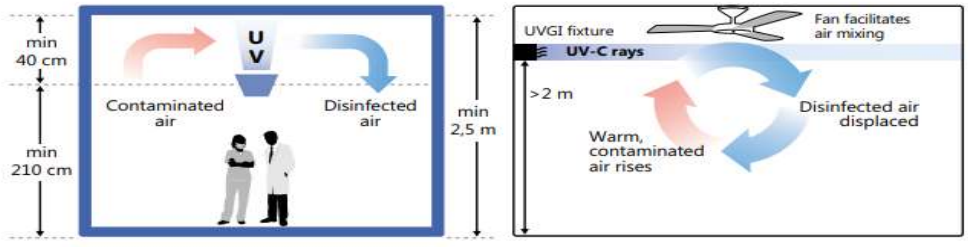
Title of the person signing the Bid_____

Signature of the person named above_____

Date signed _____

Technical Specification Compliance Form

Bidders must complete the table below (also bidder to provide relevant catalogue/ description/ methodology of installation/ verification/ certificate/ references as appropriate while informing compliance in Bidder's specification column)

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
I	GUV is the current term for what used to be termed "ultraviolet germicidal irradiation" (UVGI). The term "GUV" is preferred because patients and the community may wrongly associate "irradiation" with exposure to harmful ionizing radiation that may cause cancer. GUV is capable of inactivating various bacteria, viruses, fungi, and spores so that they are unable to replicate these cells. The upper room GUV system is designed specifically for upper air irradiation to control the spread of airborne microorganisms in hospitals, DR-TB Wards, clinics, offices, etc. While deploying them, care should be taken to minimize the UV exposure to people in the lower portion of that room. Upper-room GUV systems are generally custom designed for the space in which they will be used. Considering the site conditions and requirements, the GUV fixtures can be installed as wall mounted and as well as ceiling suspended. It should not be exclusively designed to be installed on false ceilings. The lamp fixture is equipped with louvers to direct the radiation horizontally and away from the lower part of the room, covering the entire cross-sectional area of the upper room at a height above head level for air disinfection. Disinfection is achieved through the rapid dilution of contaminated lower room air with clean irradiated upper room air.  *Source*: images supplied by GB Migliori.	
II	**Basic Specifications of Upper room GUV system:**	
a	The GUV system shall be suitable to operate with 230 V ± 15%, 50Hz single phase AC Supply. The power supply shall be made available near to the GUV assembly.	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
b	The GUV system should be installed either wall mounted, or ceiling suspended with louvers that direct UVC energy above contact level with occupants, ensuring that they are ideal for air disinfection in occupied rooms.	
c	The base of the lamp is shielded to direct the radiation upward and outward to create an intense zone of UVC_{254} in the upper air while minimizing the level of UVC_{254} in the lower (occupied) portion of the room or area.	
d	Irradiation: GUV fixtures should be placed such that radiation in the upper room is relatively uniform, continuous and complete. The number of fixtures needed to reach the target effective dose depends on the room volume (in m^3/ft^3), area (in m^2/ ft^2) and shape, and the UVC_{254} output of the fixtures. The UVGI system and fixtures are to be installed in sufficient quantity and in such an arrangement to provide a uniform and effective distribution of UVC radiation in the room.	
e	The target UVC_{254} dose required to effectively disinfect TB can be calculated using the size of the room in volume (height × width × length) or area (width × length). The volumetric dosing criterion is **12 mW/m^3**. The area dosing criterion is **35 mW/m^2**, assuming a maximum functional ceiling height of 3 m or less (as per WHO operational handbook on tuberculosis, Module 1: Prevention – infection prevention and control**, Annex 1**). *Note: Considering both safety and efficacy point of view, the volumetric dosage should be in **between 10 -12 mW/m^3 and should not exceed 12 mW/m^3**.*	
f	The maximum effective irradiance at eye level (~6ft height) and below measured from ground level should be **≤ 0.2 µW/cm^2 in the occupied space and at any case it should not exceed the threshold limit value (TLV) for UVC_{254} exposure.** Note: The TLV for UVC_{254} for eye exposure is **6 mJ/cm^2** (TWA* for eye is **0.2 µW/cm^2)** whereas for skin exposure it is **10 mJ/cm^2** (TWA for skin is **0.35 µW/cm^2**). * TWA: Time weighted Average The above specifications are based on the following guidelines / references: o Guidelines on Airborne infection control in healthcare and other settings of NTEP, MoHFW, GoI 2010 (**Annex 2A**) o WHO operational handbook on tuberculosis, Module 1: Prevention – infection prevention and control, 2023 (**Annex 1**) o The Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE) ISHRAE -Position Paper on the use of technologies	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
	associated with UVGI for AIC with particular emphasis on SARS CoV2 virus published in August 2021 (**Annex 2B**) o Environmental Control for Tuberculosis: Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by US DHHS, CDC and National Institute for Occupational Safety and Health (NIOSH) published in March 2009 (**Annex 2C**) o Tuberculosis Infection Control, A Practical Manual for preventing TB | 2024 2nd Edition, Curry International Tuberculosis Center (**Annex 2D**)	
III	**UV Lamps specifications** The UV lamps shall meet the following criteria:	
a	The lamp shall produce **UV-C of 254nm** wavelength required to achieve the required parameters as per NETP guidelines on AIC in healthcare and other settings 2010 (**Annex 3A**).	
b	UV lamps shall be fabricated out of special high transmission Quartz glass with low amount of mercury (i.e., 5 mg or less) and shall have high output, hot cathode. The UV lamp should be low pressure mercury lamp and should produce a minimum of 95% of their UV irradiation at 254 nm. Material safety data sheets (MSDS) should be provided from the lamp manufacturer.	
c	Amalgam UVC lamps should not be used in the Upper Room GUV fixtures.	
d	The effective life of lamps shall be guaranteed for a minimum of **9000 hours** with full intensity of operation (ref: US DHHS, CDC and NIOSH guidelines published in March 2009 **Annex 3B**).	
e	The electronics ballast should be solid state electronic, preheat or rapid start or program start circuit type, shall be high power factor, Sound Rating A and shall have harmonic distortion in accordance with ANSI/ ASHRAE standards and have a total harmonic distortion of less than 10%.	
f	The OEM should ensure compatibility between UVC lamp and the electronic ballast. *References*: o 2016 ASHRAE handbook- HVAC Systems and Equipment 17.4 (**Annex 3C**) and	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
	o Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by US DHHS, CDC and NIOSH published in March 2009 (**Annex 3B**).	
IV	**Assembly/ Fixture specifications**	
a	The UVC output (radiant flux) of each fixture model, in watts, should be specified by the manufacturer in addition to the total lamp electric wattage.	
b	Housings shall be made of robust materials (stainless steel or aluminum or any equivalent), with units having suitable electrical connectors to simplify wiring.	
c	All the housing which includes components like electronic power source, sockets, louvers, reflectors, UV lamp, etc. should be capable of withstanding UV radiation.	
d	Should have louvers coated with non-reflective material (anodized) to optimize UV performance.	
e	The reflector should be made of aluminum and must be parabolic in shape and positioned to direct and maximize the fixture UVC output.	
f	The GUV fixtures are to be installed, by the identified vendor, as per the design and arrangement of the room, to provide maximum coverage of UVC energy in the upper room area and limit UVC irradiance in the occupied room space below **0.2 µW/cm^2**. *Reference*: o Basic Upper-Room Ultraviolet Germicidal Irradiation Guidelines for Healthcare Settings published by US DHHS, CDC and National Institute for Occupational Safety and Health (NIOSH) published in March 2009 (**Annex 4**)	
V	**Certificates /Test reports:**	
a	The supplier shall provide the manufacturer's test certificates/ reports for the main items like UV lamps and ballast. The factory performance test certificate shall include details such as ▪ No ozone emissions and other secondary contamination, ▪ UVC irradiance in µW/cm^2 at 254 nm measured in front of a fixture center in kill zone at a distance 1meter from the fixture opening. ▪ Life span of UV lamp	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
	▪ Ballast specifications ▪ Recommended height of installation from the floor (i.e. bottom of UVC_{254} fixture)	
b	The supplier must provide test reports for the rated total UVC output in Watts of the GUV fixture in accordance with the manufacturer's claim, which can be confirmed and documented by independent third-party measurements during the procurement process.	
c	The supplier must provide valid UV lamp wavelength of 254 nm +/-1 nm acceptance certificate from testing laboratories like the Central Institute of Road Transport (**CIRT**) or the Council of Scientific and Industrial Research (CSIR) or Underwriter Laboratories.	
d	The original equipment manufacturer or its contract manufacturer must have a management system certified to ISO 9001 or ISO 13485:2016 (Medical devise-Quality Management System).	
VI	**Product Testing** These are pre-purchase procedures to confirm that the product is as per the User Requirement Specifications.	
1	**Testing the total UVC output of the upper room GUV fixture model (Lab based):** This testing shall be performed by an independent agency or an independent external consultant using "**Steve Rudnick method"** (Annexure 5) for the UVC output measurement. This is a lab-based procedure and should be employed whenever new models are inducted into the system. All models being considered for installation should have the claimed output verified in a laboratory. All GUV fixture models (low output, medium output and high output) of the specific manufacturer must be tested. If feasible the test can be performed by NRTL (Nationally Recognized Testing Laboratory) by the Integrity Shere method of gonioradiometry method, whenever in-country resources are available.	
2	**Irradiance (Performance testing of upper room GUV fixtures: Lab-based and facility based**): This is the measurement of Irradiance at lower occupied and upper killing zones. The performance testing should include **Safety testing and Efficacy testing**. Measurement of irradiance should be made by using a **calibrated UVC_{254} radiometer.**	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) Make: …… Model:……
a	**Radiometer Requirements** o The radiometer should provide fast and accurate readings with digital readability for measuring irradiance for UV-C low-pressure Hg germicidal lamps and fixtures for disinfection of air and surfaces (254 nm wavelength). o A radiometer with a reading range of 0.1 to 2000 $\mu W/cm^2$ should be employed. o The detector should be designed for Spectral response to wavelength of 254 nm with a cosine correction. o Field of view (F.O.V) cone (+/- 40^0) shall be used for eye safety measurements o The radiometer calibration certificate should evidence the accuracy as follows: - The accuracy for UV irradiance from 1 to 2000 $\mu W/cm^2$ should be ±10% as compared to the reference standard. - for UV irradiance of 0.05–1 $\mu W/cm^2$, it should be ±0.05 $\mu W/cm^2$ to the reference standard. o The detailed specifications of calibrated radiometer and detector are enclosed as **Annex 6.**	
b	**Safety test:** o Irradiance measurements are only the first step in calculating the risk for room occupants. Ideally, dose estimates would be made using the irradiance levels and the duration of exposure based on occupant activities (time sitting, standing, looking toward or away from lamp sources, etc.). These estimates are important because a worker could be exposed to a very high irradiance level for a short time and then to low irradiance levels for the remainder of an eight-hour work shift and the cumulative dose will still be below the UVC_{254} TLV safety limitations. Since each room/ space is different, one must evaluate where occupants will be in relation to potential upper-room UVC_{254} exposure. (Are they standing 100% of the time? Sitting? Constantly moving within the area?) o The maximum **effective** irradiance at eye level {~ 6ft (1.82 m or 183 cm) height, ~ 4ft (1.22 m or 122 cm) height and ~ 3ft (0.92 m or 92 cm) height to correspond to the eye levels at standing, sitting and pillow levels respectively} measured by a calibrated radiometer from ground level, should be ≤	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
	0.2µW/cm² in the occupied space. Details of performing the test and recording results and their interpretation are provided in **Annexure 7**. o In any case, it should not exceed the threshold limit value (TLV) for UVC_{254} exposure**.** Note: The TLV for UVC_{254} for eye exposure is **6 mJ/cm²** (TWA* for eye is **0.2 µW/cm²)** whereas for skin exposure it is **10 mJ/cm²** (TWA for skin is **0.35 µW/cm²**). * TWA: Time weighted Average o If there is more than one UVC_{254} fixture in a room, additional measurements should test the space for potential "hot spots" of irradiance. Hot spots can form if there are overlapping areas of irradiance from two separate fixtures or due to reflection of UV rays off reflective surfaces such as metal equipment or reflective paint. o The UVC irradiance should be checked every time the system is uninstalled and reinstalled after lamp changing, any adjustments of the fixture, and semiannually thereafter.	
c	**Efficacy Test:** o This is the measurement of irradiance in the upper killing zone (needs to be performed at 1 meter distance from the fixture along the center line and must meet the manufacturer's claims of minimum irradiance at this location (µW/cm²). Details of performing the test, recording results and interpretation are provided in **Annexure 8**) o Irradiation is inversely proportional to the square of the distance from the radiation source. Increasing distance from the fixture will show decreasing irradiance. (As the distance increases arithmetically, the irradiance drops geometrically. Example, if the irradiance at 1m is 300 µW/cm², at 2 m it will be 1/4th, i.e., appr 75 µW/cm², and at 3 m it will be 1/9th, i.e. approximately, 33.33 µW/cm². o The UVC irradiance should be checked every time the system is uninstalled and reinstalled.	
VII	**Installation, Testing and Commissioning Process:**	
1	**Deciding on the number of fixtures, outputs and the placement of the fixtures:**	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
a	The configuration of the room as well as the purpose (waiting area/ OPD/ ward) should be taken into consideration. In waiting areas and OPDs, etc. the time of exposure is limited to a maximum of 4-6 hrs., whereas in the wards there will be prolonged exposure.	
b	The number of fixtures needed to reach the target effective dose depends on the size of the room based on room volume (ft^3 or m^3), area (ft^2 or m^2), room shape, ceiling height, type of fixtures available, initial purchase as well as maintenance costs, how occupants will utilize the space and the total UVC_{254} output of the fixtures.	
c	The volumetric dosage for each room or area is 10 to 12 mW/m^3. An area dosing of $35mW/m^2$ may also be employed if the room's height is 3 m or less. It is preferable to use volumetric dosing criteria.	
d	Locate UR UVC_{254} fixtures so that irradiation in the upper room is relatively uniform, continuous, and complete. To ensure safe levels of UVC irradiance in the occupied areas, choose optimal fixture location(s) considering overlapping irradiation from several fixtures, possible UVC reflection from low and reflective ceiling, walls, objects suspended to the ceiling, metal objects or reflective paints.	
e	Principles for commissioning and installation should be based on a combination of fixtures. Combination of low and medium UVC output to be used for smaller rooms, while high UVC output fixtures to be considered for larger rooms. Some examples are as follows. - suppose a room/facility is 4.5 m long, 4.5 m wide and 3 m high. The total volume of the room is 4.5*4.5*3 = 60.75 m^3. With volumetric dose of 10 to 12 mw/m^3 requirement, the total UVC output required for this facility here will be 607 to 729 mw or 0.6 to 0.72 watts. One can use a fixture with an output of one medium UVC output: one fixture with a total UVC output of 0.7 watt meets the dosing requirement for such a room. - suppose a room/facility is 5.7 m long, 6.5 m wide and 3.4 m high. The total volume of the room is 5.7 *6.5*3.4 = 126 m^3. With volumetric dose of 10 to 12 mw/m^3 requirement, the total UVC output required for this facility here will be 1260 to 1512 mw or 1.26 to 1.51 watts. In such a case, one can use a fixture with an output of one large UVC output fixture of 1.2 watt and one small UVC output fixture of 0.3 watt, or two fixtures with total UVC output of 0.7 W (whichever will allow more uniform irradiance in the upper room space and lower levels of UVC irradiance in the occupied space) to meet the dosing and safety requirements.	
2	**Installation Process:**	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) Make: …… Model:……
a	Only experienced service technicians who have received training on the installation and placement of UR GUV fixtures should install the systems and their certification of training should be submitted at the time of installation.	
b	The GUV system shall be installed either wall mounted, or ceiling suspended mounted with louvers that direct UVC energy above contact level with occupants, ensuring that they are ideal and safe for air disinfection in occupied rooms.	
c	The installation must be done in the manner that no direct human eye contact with the UV occurs during regular operation.	
d	The direction and vertical dimension of the UVC_{254} beam must be balanced to ensure both safe UVC_{254} irradiation levels in the occupied space and well as minimizing loss of UVC_{254} energy due to losses when the UVC_{254} beam hits a surface.	
e	The GUV fixtures should be installed at least 40 cm below the ceiling (i.e. bottom of UVC_{254} fixture to the ceiling).	
f	All the physical structures such as walls, ceiling fans, switch sockets, split AC, etc. which fall in the UV radiation zone must be anti UV reflection painted (using titanium oxide containing paint or other suitable mechanisms).	
g	Dedicated ON/OFF switch and socket should be provided for each GUV fixture. Power supply 230 V ± 15%, 50 Hz single phase AC, must be made available by the sites. Plugs to be adapted to meet the country's requirements. The line cord / Power cord supplied with the equipment shall be of acceptable durability, length, and current carrying capacity complying with Indian Standards.	
h	The ON/OFF switch to be located in the same area below the Upper GUV fixtures and at a reachable height.	
i	Proper and suitable earthing connections are to be made for the GUV system.	
3	**Testing and commissioning:**	
a	The performance of GUV fixtures should be measured 4 days after initial installation, and operation for at least 100 hours till the UV lamp completes the burn-in time and stabilizes its UV flux.	
b	Performance testing including safety testing and efficacy testing are to be carried out (measurement of Irradiance at lower occupied and upper killing zones as specified above). Refer section on Product Testing, part 2.	
c	The UV irradiance should be checked every time the system is uninstalled and reinstalled, after any kind of repair, re-lamping, and thereafter on a regular basis every 6 months.	
d	For the fixture commissioning (acceptance) measured in accordance with the "Upper room UVC fixture efficacy assessment recommendations" UVC_{254} irradiance should	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
	be within the range of ± 20% of standard value provided for the particular model by the manufacturer.	
e	For the fixture commissioning (acceptance) measured in accordance with the "Upper room UVC safety assessment recommendations" UVC_{254} irradiance should not exceed 0.2 $\mu W/cm^2$ at eye level in areas where occupants may stay longer than 2 hours per day, and 0.4 $\mu W/cm^2$ in other occupied areas. Follow "Upper room UVC safety assessment" recommendations for safety assessment and results interpretation.	
f	One set of Manufacturer catalogues, Test reports for safety and efficacy, etc. and System Operation and Maintenance Manuals shall be submitted to the site.	
g	Proper safety and operational training i.e., daily use, safety precautions, periodic maintenance, and follow-up of breakdown, PM/calibration services and replacement of lamp, etc. shall be imparted to the hospital personal/ contract staff and shall be documented. Suspicion of Ozone production and warning thereof may be emphasized. Possible UV overexposure complaints submission policy should be made available for room occupants.	
h	UVC_{254} Safety Education and signage: Staff and clients may have concerns about health hazards from UVC_{254}. To address these, facilities should provide simple education on purpose, benefits and risks associated with upper room UVC_{254}, for example, by: • Posting a UVC_{254} information sheet on the wall of the room for occupants (staff and clients) • Posting warning signs, in all appropriate languages, on the GUV fixtures and other locations as appropriate (e.g. overhead storage areas), with an appropriate message, depending on the type of GUV system. Examples of appropriate wording for warning signs on UVC_{254} systems: EXAMPLE. **Educational sign at occupant level** **FOR YOUR SAFETY** THIS BUILDING IS EQUIPPED WITH UPPER-ROOM UVC_{254} AIR DISINFECTION SYSTEMS *Source:* Curry International Tuberculosis Center (2022) *(20)*. EXAMPLE. **Safety warning sign near areas needing precaution** **CAUTION** **Ultraviolet Energy** Turn off UVC_{254} lamps before entering the upper part of the room (space above the UVC_{254} fixtures).	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) Make: …… Model:……
		
VIII	**Comprehensive Warranty and Comprehensive Maintenance Services of GUV Fixtures:**	
a	sThe GUV assembly shall be guaranteed against unsatisfactory performance and/or breakdown due to defective design, workmanship, or material for a period of one **year** from the date of commissioning at the site **and for an additional 4 years of CMC period**. The equipment or components or any part thereof or consumable items like (UV Lamp, louvers, fixtures, electrical components etc.), so found defective/required for routine replacement during the guarantee/ warranty/ CMC period shall be forthwith repaired or replaced free of cost to the entire satisfaction of the site.	
b	Supplier to arrange periodic preventive maintenance and breakdown service visit.	
c	Periodic inspection and cleaning of UV lamps are to be carried out every **3 months.**	
d	**Preventive maintenance** should be done on each GUV assembly every **6 months.** Preventive maintenance includes periodic inspection, cleaning, performance testing, including efficacy test, and safety test of the GUV systems. Performance testing, including efficacy and safety tests, to be done in a similar manner to the commissioning process. If during the measurements, after cleaning, a 30% or more fall in irradiance is noticed at 1 meter in front of the fixture, in the efficacy test, the lamp and reflector should be cleaned by 70% alcohol solution (without added dyes or other substances) or replaced with a new lamp. The cloth used for cleaning should be clean and lint free.	
e	UV lamp of same wattage and specification to be replaced in case of lamp failure, or after every 9000 hours or approximately every 12 months or whichever occurs earlier. The ineffective lamps are to bere taken out of the facility and to be disposed of as per guidelines.	
f	All the safety log sheets and the test certification report to be maintained and handed over to the respective sites after completion of preventive and catastrophic maintenance (repairs).	

Sl. No.	Bid Technical Specification (Main)	Bidder's Specification (technical compliance/ Deviation, if any) **Make: ……** **Model:……**
g	Sufficient spare parts should be available for early resolution of the GUV system.	
h	In case of breakdown, the service provided should be able to provide service across all sites within 1- 2 days after receipt of breakdown report for the metro locations, and within 3-5 days for the non-metro located instruments. Remote support should be provided in case of emergency. Contact information and breakdown report submission policy should be documented and made available for facility administration.	

Details of Implementation Plan and Timelines

(the plan should be comprehensive for each schedule proposed)

The prospective bidder should provide here the following details:-

- the initial assessment of sites for finalizing the requirement,
- procurement and delivery of fixtures,
- installation followed by efficacy and safety testing for commissioning and subsequent maintenance services,
- existing service delivery network which can also provide UVGI maintenance services
- Manufacturing capabilities (number of fixtures produced per month)

NOTE - Timelines to be provided as a Gantt Chart for execution of the entire project. The above details should be a part of the Technical Bid submitted by the Bidder.

Letter of Financial Bid

Form FIN I - Price Bid Form
[to be submitted with Price Bid only]

To,
The Director,
M/s Strategic Alliance Management Services Pvt. Ltd. (SAMS),
B-18, Sector-6, Noida,
G.B. Nagar – 201301 (U.P.)

Dear Sir,

Subject: Bid for supply, installation, testing and commissioning of **Upper Room Air Ultraviolet Germicidal Irradiation (UVGI/GUV) Disinfection System** and related services under the National Tuberculosis Elimination Programme (NTEP)

Bid Ref. No. ……

1. We, [***Name of Bidder***], hereby submit a bid for the above- referenced Goods in response to the above-referenced ITB for following schedule.

Sch. No. (anyone or all schedules quoted by the Bidder)	Schedule Name (anyone or all schedules quoted by the Bidder)	Total No. of UVGI/GUV proposed*	Schedule wise total cost (including GST)

the bidder/ consortium if any should ensure that total number of GUV proposed in Technical bid should be same as mentioned here

2. We warrant that in preparing and submitting this bid, we have complied with, and are willing to be bound by, any and all of the requirements and provisions of the above- referenced ITB, including the terms and conditions of the Contract as set out in the Bid Documents.

3. The cost in the financial bid submitted for each schedule should include all the expenses related to transportation , loading and unloading etc.

4. Based on the above, our proposed **Total Contract Price is Rs. …….. for ……. schedules** (amount in words) plus current applicable taxes/ GST shall be Rs…….. and as per FIN-2 Form attached

5. I, the undersigned, certify that I am duly authorized by [***insert name of bidder***] to sign this bid and bind [***insert name of bidder***]:

Name: _____

Title: _____

Date: _____

Signature: _____

Form FIN-2 : Form of Price Bid

(The FIN 2 Form should be submitted for each schedule in separate sealed Envelope)

Lump sum Contract Price

(To be submitted for each quoted Schedules individually)

Sch. No. 1 : Central

Sl. No.	Type of fixture	Quantity (nos.)	Unit cost # (INR)	Total cost (INR)	Applicable taxes/ GST (INR)	Total Cost including taxes/GST (%age and value in INR)
		A	*B*	*C (A*B)*	*D*	*E(C+D)*
1	Fixture output (_____)					
2	Fixture output (_____)					
3	Fixture output (_____)					
4	Fixture output (_____)					
5	Fixture output (_____)					
Grand Total						

 # Lump sum unit cost inclusive of initial assessment of sites, cost of equipment including delivery on DDP basis, installation, testing and commissioning along-with related services and 1 year comprehensive warranty.

Sch. No. 2 : East & North East

Sl. No.	Type of fixture	Quantity (nos.)	Unit cost # (INR)	Total cost (INR)	Applicable taxes/ GST (INR)	Total Cost including taxes/GST (%age and value in INR)
		A	*B*	*C (A*B)*	*D*	*E(C+D)*
1	Fixture output (_____)					
2	Fixture output (_____)					
3	Fixture output (_____)					
4	Fixture output (_____)					
5	Fixture output (_____)					
Grand Total						

 # Lump sum unit cost inclusive of initial assessment of sites, cost of equipment including delivery on DDP basis, installation, testing and commissioning along-with related services and 1 year comprehensive warranty

Sch. No. 3 : North

Sl. No.	Type of fixture	Quantity (nos.)	Unit cost # (INR)	Total cost (INR)	Applicable taxes/ GST (INR)	Total Cost including taxes/GST (%age and value in INR)
		A	*B*	*C (A*B)*	*D*	*E(C+D)*
1	Fixture output (_____)					
2	Fixture output (_____)					
3	Fixture output (_____)					
4	Fixture output (_____)					
5	Fixture output (_____)					
Grand Total						

 # Lump sum unit cost inclusive of initial assessment of sites, cost of equipment including delivery on DDP basis, installation, testing and commissioning along-with related services and 1 year comprehensive warranty

Sch. No. 4 : South

Sl. No.	Type of fixture	Quantity (nos.)	Unit cost # (INR)	Total cost (INR)	Applicable taxes/ GST (INR)	Total Cost including taxes/GST (%age and value in INR)
		A	*B*	*C (A*B)*	*D*	*E(C+D)*
1	Fixture output (_____)					
2	Fixture output (_____)					
3	Fixture output (_____)					
4	Fixture output (_____)					
5	Fixture output (_____)					
Grand Total						

 # Lump sum unit cost inclusive of initial assessment of sites, cost of equipment including delivery on DDP basis, installation, testing and commissioning along-with related services and 1 year comprehensive warranty

Sch. No. 5 : UP + UK & West

Sl. No.	Type of fixture	Quantity (nos.)	Unit cost # (INR)	Total cost (INR)	Applicable taxes/ GST (INR)	Total Cost including taxes/GST (%age and value in INR)
		A	*B*	*C (A*B)*	*D*	*E(C+D)*
1	Fixture output (_____)					
2	Fixture output (_____)					
3	Fixture output (_____)					
4	Fixture output (_____)					
5	Fixture output (_____)					
Grand Total						

 # Lump sum unit cost inclusive of initial assessment of sites, cost of equipment including delivery on DDP basis, installation, testing and commissioning along-with related services and 1 year comprehensive warranty

Note :

1. Financial evaluation: Quotations that are found to be technically qualified shall be evaluated based on the lowest price with related services and applicable comprehensive 1 year warranty as specified in the bid document.
2. Apart from the above, Bidders must provide the **CMC rates for additional four (4) years** as per the format given at Annexure 1 of Form Fin 2.** The CMC rates for additional four years should be inclusive of all taxes/GST (INR) which will not be a part of the financial evaluation criteria. **However, in case of extension at that time, these rates would be considered for extension.**
   Bidders are requested to fill up the price bid form as per the format mentioned above *(if there is any confusion during the submission of financial bid, kindly contact* SAMS Team). The bidder must quote for all the items with 100% quantity. Bidder who does not quote for all items with full quantity will be disqualified.

The bidders should submit their quote inclusive of all the related services. Please refer to Section V – Schedule of Requirements for the same. However, if required the Purchaser can ask for the breakup of the unit cost from the Bidder during financial evaluation of the bids'

Annexure 1 to FIN 2

CMC rates for 4 years after warranty period (these rates will not be applicable for financial evaluation).

Sch. No. 1 : Central

Sl. No.	State	Total no of fixtures proposed	CMC rates for four (4) years after warranty period inclusive of all taxes/GST (In INR)								Grand Total of all 4 years CMC Cost along with GST
			1st Year CMC		2nd Year CMC		3rd Year CMC		4th Year CMC		
			CMC rates for 1st year after warranty period	GST/Tax on 1st year CMC	CMC rates for 2nd year after warranty period	GST/Tax on 2nd year CMC	CMC rates for 3rd year after warranty period	GST/Tax on 3rd year CMC	CMC rates for 4th year after warranty period	GST/Tax on4th year CMC	
1	Chhattisgarh										
2	Madhya Pradesh										
3	Rajasthan										

Sch. No. 2 : East and North East

Sl. No.	State	Total no of fixtures proposed	CMC rates for four (4) years after warranty period inclusive of all taxes/GST (In INR)								Grand Total of all 4 years CMC Cost along with GST
			1st Year CMC		2nd Year CMC		3rd Year CMC		4th Year CMC		
			CMC rates for 1st year after warranty period	GST/Tax on 1st year CMC	CMC rates for 2nd year after warranty period	GST/Tax on 2nd year CMC	CMC rates for 3rd year after warranty period	GST/Tax on 3rd year CMC	CMC rates for 4th year after warranty period	GST/Tax on4th year CMC	
1	Arunachal Pradesh										
2	Assam										
3	Bihar										
4	Jharkhand										
5	Manipur										
6	Meghalaya										
7	Mizoram										
8	Odisha										
9	Sikkim										
10	Tripura										
11	West Bengal										

Sch. No. 3 : North

Sl. No.	State	Total no of fixtures proposed	CMC rates for four (4) years after warranty period inclusive of all taxes/GST (In INR)								Grand Total of all 4 years CMC Cost along with GST
			1st Year CMC		2nd Year CMC		3rd Year CMC		4th Year CMC		
			CMC rates for 1st year after warranty period	GST/Tax on 1st year CMC	CMC rates for 2nd year after warranty period	GST/Tax on 2nd year CMC	CMC rates for 3rd year after warranty period	GST/Tax on 3rd year CMC	CMC rates for 4th year after warranty period	GST/Tax on4th year CMC	
1	Delhi										
2	Haryana										
3	Himachal Pradesh										
4	J&K										
5	Ladakh										
6	Punjab										

Sch. No. 4 : South

Sl. No.	State	Total no of fixtures proposed	CMC rates for four (4) years after warranty period inclusive of all taxes/GST (In INR)								Grand Total of all 4 years CMC Cost along with GST
			1st Year CMC		2nd Year CMC		3rd Year CMC		4th Year CMC		
			CMC rates for 1st year after warranty period	GST/Tax on 1st year CMC	CMC rates for 2nd year after warranty period	GST/Tax on 2nd year CMC	CMC rates for 3rd year after warranty period	GST/Tax on 3rd year CMC	CMC rates for 4th year after warranty period	GST/Tax on4th year CMC	
1	Puducherry										
2	Andhra Pradesh										
3	Karnataka										
4	Kerala										
5	Tamil Nadu										
6	Telangana										

Sch. No. 5 : UP+UK & West

Sl. No.	State	Total no of fixtures proposed	CMC rates for four (4) years after warranty period inclusive of all taxes/GST (In INR)								Grand Total of all 4 years CMC Cost along with GST
			1st Year CMC		2nd Year CMC		3rd Year CMC		4th Year CMC		
			CMC rates for 1st year after warranty period	GST/Tax on 1st year CMC	CMC rates for 2nd year after warranty period	GST/Tax on 2nd year CMC	CMC rates for 3rd year after warranty period	GST/Tax on 3rd year CMC	CMC rates for 4th year after warranty period	GST/Tax on4th year CMC	
1	Gujarat										
2	Maharashtra										
3	Uttar Pradesh										
4	Uttarakhand										

Section VII – General Conditions of Contract
Table of Clauses

Section VII. General Conditions of Contract

1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned to them:

(a) "Contract" means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
(b) "Contract Documents" means the documents listed in the Contract Agreement, including any amendments thereto.
(c) "Contract Price" means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.
(d) "Day" means calendar day.
(e) "Completion" means the fulfilment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
(f) "GCC" means the General Conditions of Contract.
(g) Goods may include all articles, material, commodities, electricity, livestock, furniture, fixtures, raw material, spares, instruments, software, machinery, equipment, industrial plant, vehicles, aircraft, ships, railway rolling stock and any other category of goods, whether in solid, liquid or gaseous form, purchased or otherwise acquired for the use of a procuring entity as well as services or works incidental to the supply of goods of the value of services or works or both does not exceed that of the goods themselves.
(h) "Purchaser" means the entity purchasing the Goods, **as specified in the SCC**.
(i) "SCC" means the Special Conditions of Contract.
(j) "Subcontractor" means any person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
(k) "Supplier" means the person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
(l) "Consignee Location" means the place named in the **Schedule of Requirements**.

2. Contract Documents

2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof)

are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

3. Code of Integrity

3.1 The Purchaser and all officers or employees of the purchaser, whether involved in the procurement process or otherwise, or Bidders and their representatives or consultants or service providers participating in a procurement process or other persons involved, directly or indirectly in any way in a procurement process shall maintain an unimpeachable standard of integrity.

3.2 Purchaser prescribes to its personnel and Bidders to uphold the Code of Integrity, which prohibits officers or employees of a bidder or a person participating in a procurement process the following:

(i) any offer, solicitation or acceptance of any bribe, reward or gift or any material benefit, either directly or indirectly, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process,

(ii) any omission, including a misrepresentation that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation,

(iii) any collusion, bid rigging or anti-competitive behaviour to impair the transparency, fairness and progress of the procurement process,

(iv) improper use of information shared between the procuring entity and the bidders with an intent to gain unfair advantage in the procurement process or for personal gain,

(v) any financial or business transactions between the bidder and any officer or employee of the Purchaser, who are directly or indirectly related to tender or execution process of contract,

(vi) any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process,

(vii) any obstruction of any investigation or audit of a procurement process,

(viii) making false declaration or providing false information for participation in -

a) tender process or to secure a contract,

b) disclosure of Conflict of Interest,

c) disclosure by the bidder of any previous transgressions with any entity in India or any other country during the last three years or of any debarment by any other Procuring Entity

3.3 In case of any breach of the Code of Integrity by a bidder or a prospective bidder, as the case may be, the Purchaser after giving a reasonable opportunity of being heard, may take appropriate measures including –

a) exclusion of the bidder from the procurement process,

b) calling off of pre-contract negotiations and forfeiture or encashment of bid security,

c) forfeiture or encashment of any other security or bond relating to procurement,

d) recovery of payments made by the Purchaser along with interest thereon at bank rate,

e) cancellation of the relevant contract and recovery of compensation for loss incurred by the Purchaser,

f) debarment of the bidder from participation in any future procurements from Purchaser for a period not exceeding three years.

4. Interpretation

4.1 If the context so requires it, singular means plural and vice versa.

4.2 Incoterms

a) Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms.
b) The term DDP and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms **as specified in the SCC** and published by the International Chamber of Commerce in Paris, France**.**

4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Contract.

4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Non-waiver

(a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in English language. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by a self-certified accurate translation of the relevant passages in English language**,** in which case, for purposes of interpretation of the Contract, this translation shall govern.

5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Supplier.

6. Joint Venture or Consortium

6.1 Bidders in the form of Consortium or Joint Venture are allowed to bid against this tender.

7. Eligibility

7.1 The Supplier and its Subcontractors shall have the nationality of any country with which India has not banned trade relations.

7.2 All Goods to be supplied under the contract shall have their origin in India or any other country with which India has not banned trade relations. The term "origin" used in this clause means the place where the goods are

mined, grown, produced, or manufactured or from where the related services are arranged and supplied

8. Notices

8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the **address specified in the SCC.** The term "in writing" means communicated in written form with proof of receipt.

8.2 A notice shall be effective from the date of delivery or on the notice's effective date, whichever is later. In case of electronic mode of communication, a notice shall be effective from the time of sending of the electronic communication.

9. Governing Law

9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Union of India.

10 Settlement of Disputes

10.1 The Purchaser and the Supplier shall make every effort to resolve amicably any disagreement or dispute arising between them under or in connection with the Contract.

10.2 Dispute Redress mechanism/ Committees: 2-tier (Procuring entity level headed by the Director, State Redress Committee).

10.3 If, the dispute is not settled through dispute settlement mechanism and if after sixty (60) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration wherever applicable, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure **specified in the SCC.**

10.4 Notwithstanding any reference to arbitration herein,

(a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree, and

(b) the Purchaser shall not be required to pay the Supplier any monies to the Supplier in respect of the matter related to the arbitration unless otherwise agreed.

11. Inspections and Audit by the Purchaser

11.1 The Supplier shall keep, and shall make all reasonable efforts to cause its Subcontractors to keep, accurate and systematic accounts and records in respect of the Goods in such form and details as will clearly identify relevant time changes and costs.

11.2 The Supplier shall permit, and shall cause its Subcontractors to permit, the Purchaser and/or persons appointed by the Purchaser to inspect the

Supplier's offices and all accounts and records relating to the performance of the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the Purchaser, if requested. The Supplier's and its Subcontractors and consultants' attention is drawn to Clause 3 [Code of Integrity], which provides, inter alia, that acts intended to materially impede the exercise of the Purchaser's inspection and audit rights provided for under this Sub-Clause 11.1 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Purchaser's prevailing sanctions procedures)

12. Scope of Supply

12.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.

13. Delivery and Documents

13.1 Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule of Requirements. The details of shipping and other documents to be furnished by the Supplier are specified in the **SCC.**

14. Supplier's Responsibilities

14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.

15 Contract Price

15.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the **SCC.**

16. Terms of Payment

16.1 The Contract Price, including any Advance Payments, if applicable, shall be paid as specified in the **SCC.**

16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and related services performed, and by the documents submitted pursuant to GCC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.

16.3 Payments shall be made by the Purchaser, after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it subject to the defect liability as specified in the SCC.

16.4 The payments shall be made to the Supplier under this Contract in Indian Rupees only.

17. Taxes and Duties

17.1 The Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

18. Performance Security

18.1 If required as specified in the SCC, the Supplier shall, within twenty eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount specified in the **SCC.**

18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

18.3 The Performance Security if required, shall be denominated in Indian Rupees and shall be in one of the format stipulated by the Purchaser in the **SCC**.

18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than sixty (60) days following the date of Completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless specified otherwise in the **SCC.**

19. Copyright

19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party

20. Patent Indemnity

20.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 20.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(a) the installation of the Goods by the Supplier or the use of the Goods at the Purchaser's Site, and
(b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

20.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 20.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

20.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

20.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

20.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

21. Confidential Information

21.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.

21.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.

21.3 The obligation of a party under GCC Sub-Clauses 21.1 and 21.2 above, however, shall not apply to information that:

(a) the Purchaser or Supplier need to share with the such institution(s) participating in the financing of the Contract,
(b) now or hereafter enters the public domain through no fault of that party,
(c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party, or
(d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

21.4 The above provisions of GCC Clause 21 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

21.5 The provisions of GCC Clause 21 shall survive completion or termination for whatever reason, of the Contract.

22. Subcontracting

22.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the bid. Such notification, in the original bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

22.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.

23. Specifications and Standards

23.1 Technical Specifications and Drawings

(a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section V, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods' country of origin.
(b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
(c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.

24. Packing and Documents

24.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

24.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the **SCC,** and in any other instructions ordered by the Purchaser.

25. Insurance

25.1 Unless otherwise specified in the **SCC,** the Goods supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the **SCC.**

26. Transportation and Incidental Services

26.1 Unless otherwise specified in the **SCC,** responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.

26.2 The Supplier may be required to provide any or all of the following services, including additional services, if any, **specified in SCC:**

(a) performance or supervision of on-site assembly and/or start-up of the supplied Goods,

(b) furnishing of tools required for assembly and/or maintenance of the supplied Goods,

(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods,

(d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract, and

(e) training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

26.3 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services

27. Inspections and Tests

27.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods as are specified in the **SCC.**

27.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the Goods' final destination, or in another place in the Purchaser's Country as specified in the **SCC.** Subject to GCC Sub-Clause 27.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

27.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 27.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

27.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

27.5 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

27.6 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 27.4.

27.7 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 27.5, shall release the Supplier from any warranties or other obligations under the Contract.

28. Liquidated Damages

28.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the **SCC** of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the **SCC.** Once the

maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

29. Warranty

29.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

29.2 Subject to GCC Sub-Clause 23.1(b), the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the state.

29.3 Unless otherwise specified in the **SCC,** the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof, as the case may be, have been delivered to and accepted at the final destination indicated in the **SCC.**

29.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

29.5 Upon receipt of such notice, the Supplier shall, within the period specified in the **SCC,** expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

29.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the **SCC,** the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29.7 The payment related to warranty shall be released as specified in the **SCC.**

29.8 The liquidated damages applicable on warranty period shall be as specified in the **SCC.**

30 Limitation of Liability

30.1 Except in cases of criminal negligence or willful misconduct, the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the supplier to indemnify the purchaser with respect to patent infringement.

31. Change in Laws and Regulations

31.1 Unless otherwise specified in the Contract, if after the date of 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in India (which shall be deemed to include any change in

interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. Force Majeure

32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

32.2 For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

33. Change Orders and Contract Amendments

33.1 The Purchaser may at any time order the Supplier through notice in accordance to GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:

(a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser,
(b) the method of shipment or packing,
(c) the place of delivery, and
(d) the related services to be provided by the Supplier.

33.2 If any such change causes an increase or decrease in the cost of, or the time required for the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within

twenty-eight (28) days from the date of the Supplier's receipt of the Purchaser's change order.

33.3 Prices to be charged by the Supplier for any related services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

33.4 Subject to the above, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

34. Extensions of Time

34.1 If at any time during performance of the Contract, the Supplier or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of related services pursuant to GCC Clause 14, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 28, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. Termination

35.1 Termination for Default

(a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:

i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34,

ii) if the Supplier fails to perform any other obligation under the Contract, or

iii) if the Supplier, in the judgment of the Purchaser has engaged in breach of Code of Integrity, as defined in GCC Clause 3, in competing for or in executing the Contract.

(b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar

Goods procured by the Purchaser.. However, the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency.

The Purchaser may at any time terminate the Contract by giving notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser

35.3 Termination for Convenience.

The Purchaser, by notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

to have any portion completed and delivered at the Contract terms and prices, and/or

to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for materials and parts previously procured by the Supplier.

36. Assignment

36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

Section VIII – Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC

GCC 1.1(h)	The Purchaser is: Strategic Alliance Management Services Pvt. Ltd., on behalf of FIND India
GCC 1.1 (l)	The Project Site(s)/Final Destination(s) is **Specified in Schedule of Requirement.**
GCC 4.2 (b)	The version edition of Incoterms shall be *2020*
GCC 8.1	For **notices**, the Purchaser's address shall be: _____ For **notices**, the Supplier's address shall be: _____
GCC 10.3	The rules of procedure for arbitration proceedings pursuant to GCC Clause 10.3 shall be as follows: i) In case of Dispute or difference arising between the Purchaser and a supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996 and as amended upto date. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Purchaser and the Supplier. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed in accordance with the provisions of the Arbitration and Conciliation Act 1996. ii) If one of the parties fails to appoint its arbitrator in pursuance of sub clause (a) above, within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the appointment of the Arbitrator shall be made in accordance with the provisions of the Arbitration and Conciliation Act 1996. iii) The venue of Arbitration shall be New Delhi and the language of the arbitration proceedings and that of all councils and communications between the parties shall be English.

	iv) The decision of the majority of arbitrators shall be final and binding upon parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself. v) The provisions of the Arbitration and Conciliation Act of 1996 along with the Rules herewith and any statutory modification or reenactment thereof shall apply to arbitration proceedings. vi) If a dispute under the Supplier Contract raises the same issues as those in respect of a related dispute with another supplier contract, the Purchaser will have the option of having the arbitration proceedings joined.
GCC 13.1	Details of Documents to be furnished by the Supplier are: (i) One original and two copies of the supplier's commercial invoice in name of Purchaser, indicating the Contract number, Goods description, quantity, unit price, and total amount being claimed. Invoices must be signed in original and must be stamped in case of bidder or individual/ proprietorship firm/ partnership firm/ LLP or must have a common seal in case of Company (as the case may be)." (ii) Two copies of the packing list identifying contents of each package (iii) One original of the manufacturer's Warranty Certificate covering all items supplied, (iv) Original and two copies of Certificate of Inspection furnished to supplier by the nominated agency (where inspection is required), (v) Original and two copies of Internal Test Analysis Report of the Manufacturer for the items offered (vi) Original of supplier's Certificate of Origin covering all items supplied, (vii) Any other/additional procurement-specific documents required for delivery/payment purposes showing delivery up to final destination.
GCC 15.1	The prices charged for the Goods supplied and the related Services performed shall be fixed during the performance of the contract.
GCC 16.1	The payment under this Contract shall be released by the Purchaser after due scrutiny, verification of documents submitted by supplier. Payment shall be made by Electronic clearing systems (ECS) to the Supplier's nominated bank account. The method and conditions of payment to be made to the Supplier shall be as follows: [*the clauses below are suggestive, the purchaser may modify as appropriate]*

	(a) ***On Delivery: Forty (40) percent** of the Contract Price of the Goods delivered to the consignee shall be paid within sixty (60) days of submission of documents specified in SCC Clause 13 above and Consignee Receipt Certificate **as mentioned at Annexure Y1**. (b) **On Successful Installation, commissioning, testing and validation of equipment: Fifty (50) percent** of the Contract Price of Goods received shall be paid within sixty (60) days of receipt of Final Acceptance Certificate issued by the consignee **as mentioned at Annexure Y2**. (c) **On provision of maintenance services: Ten (10) percent** of the Contract Price of the Goods to be released basis successful provision of maintenance services as per the attached formats **as mentioned at Annexure Y3**. Note: The bidder needs to plan for 4 visits during the one year of warranty period, as under: o **1st visit :** Inspection and cleaning of UV lamp to be carried out at 3 months (± 15 days) after installation. o **2nd visit:** Preventive maintenance should be done on each UVGI/GUV assembly at 6 months (± 15 days) after installation . Preventive maintenance includes periodic inspection, cleaning, performance testing, Efficacy test, safety test of the UVGI/GUV systems. Performance, efficacy, and safety test to be done on similar manner as during the commissioning process. o **3rd visit:** Inspection and cleaning of UV lamp to be carried out at 9 months (± 15 days) after installation . o **4th visit:** Yearly Preventive maintenance should be done on each UVGI/GUV assembly at 12 months (± 15 days) after installation with replacement of new UV lamp. Preventive maintenance includes inspection, cleaning, performance testing, Efficacy test, safety test of the UVGI/GUV systems. Performance, efficacy, and safety tests are to be done in a similar manner as during the commissioning process. UV lamp of the same wattage and specification to be replaced after every 9000 hours or within 12 months or whichever occurs earlier. The ineffective lamps to be taken out of the facility and to be disposed as per guidelines. .**Note:** - Liquidated damages as referred to in GCC 28.1 for will be applicable for each stage.
GCC 18.1	Within 28 days after the Supplier's receipt of Notification of Award, the Supplier shall furnish Performance Security to the Purchaser for an amount of **5%** of the contract value, valid for a period of 45 days beyond the date of completion of all contractual obligations.

GCC 18.3	The performance security shall be in the form of a bank guarantee and the named beneficiary shall be **_____ [name of purchaser]**. The bank guarantee shall be issued by a Scheduled Bank in India and in the format provided in the Bidding Documents.
GCC 18.4	The Performance Security will be discharged and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligation, under the contract.
GCC 24.2	Packing Instructions: The Supplier will be required to make separate packages for each Consignee. Each package will be marked with proper paint/indelible ink with the following: *[insert as required]*
GCC 25.1	The insurance shall be in an amount equal to 110 percent of the CIP value of the Goods from "warehouse" to "warehouse" on "All Risks" basis, including war risks and strikes showing purchaser as Beneficiary.
GCC 26.1	The Supplier is required under the Contract to transport the Goods to the specified place of final destination. Transportation to such place of destination, including unloading, insurance and storage, as shall be specified in the Contract, shall be arranged by the Supplier, and related costs are included in the Contract Price.
GCC 26.2	Incidental services to be provided are: As per Section – V Schedule of Requirement – Technical Specifications
GCC 27.1	The Supplier shall conduct tests to confirm that the goods supplied are as per specification and enclose the test and inspection certificate along with supply.
GCC 27.2	The Purchaser or his representative may conduct the Inspections of the facility any time before the award of contract and also conduct Inspection for the Goods any time before or after the dispatch of Goods. **Pre-dispatch lot quality check of the fixtures (for different models to be supplied by vendor):** One fixture of each model from each lot/ batch will undergo quality check i.e. verification testing of the total UVC Output, Efficacy test and Safety test (3 tests). In case the 'fixture fails any or all the mentioned tests repeat tests (twice) will be conducted by the purchaser on another two fixtures of the same lot/batch. If two out of the three fixtures fail on any of the of the parameters the entire lot/batch will be rejected.. Cost for shipment of these fixtures to and fro for testing will be borne by the vendor. Unless the Goods supplied according to the Schedule of Requirements is satisfactorily installed and training on use of the equipment is provided, the Consignee will not issue the Final Acceptance Certificate.

GCC 28.1	The liquidated damages for each stage shall be calculated as under:- ▪ If the Supplier fails to complete Step-1 and Step-2 of the contract (i..e delivery, installation, commissioning, testing and validation of equipment and training to the user) within 150 days of issue of NOA, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, one-half percent (0.5%) per week of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of 10% ▪ If the Supplier fails to complete/provide related services as defined in step-3 of the contract (i..e inspection/preventive maintenance, change of UGVI lamp and repair and maintenance service) within due date as defined as SLA, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, one-half percent (0.5%) per week of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of 10%.
GCC 29.3	In partial modification of the provisions, the warranty period shall remain valid for the period specified in Schedule of Requirements For purposes of the Warranty, the place(s) of final destination(s) shall be: as specified in the schedule of requirement The consignees mentioned in the Schedule of Requirement (Section V)
GCC 29.5	The supplier shall visit each site (as laid down in Section V - technical specifications) for preventive maintenance of equipment. During such visits, shall provide operational training to concerned staff on use of equipment. The Schedule of such visits should be shared with consignee in advance. The manufacturer should be able to provide service of equipment across the State within **1- 2 days** after receipt of breakdown report for the metro location and within **3-5 days** for the non-metro located instruments, failing which a penalty will apply.
GCC 29.7	The balance payment of 10% to be released on annually basis and after deduction of applied LD*, if applicable.*
GCC 35.3	The Notice Period shall be 30 (thirty) days.
GCC 18 and 29.8	During the Warranty period in case of non-compliance of the above, liquidated damages at the rate of 0.5% per non-functional unit (as per Contract Price) per week beyond timeline given above (for metro and non-metro located instruments) shall be imposed and equivalent amount shall be deducted up to a maximum deduction of 10% of the contract price.

Section IX - Contract Form

Contract Agreement

[The successful Bidder shall fill in this form in accordance with the instructions indicated]

THIS AGREEMENT made

the *[insert: **number**]* day of *[insert: **month**]*, *[insert: **year**]*.

BETWEEN

(1) *[insert complete name of Purchaser]*, a *[insert description of type of legal entity, for example, an agency of the Ministry of .... of the Government of { insert name of Country of Purchaser }, or corporation incorporated under the laws of { insert name of Country of Purchaser }]* and having its principal place of business at *[insert address of Purchaser]* (hereinafter called "the Purchaser"), of the one part, and

(2) *[insert name of Supplier]*, a corporation incorporated under the laws of *[insert: country of Supplier]* and having its principal place of business at *[insert: address of Supplier]* (hereinafter called "the Supplier"), of the other part :

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., *[insert brief description of Goods and Services]* and has accepted a Bid by the Supplier for the supply of those Goods and Services

The Purchaser and the Supplier agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other contract documents.

   (a) the Letter of Acceptance
   (b) the Letter of Technical Bid and Financial Bid
   (c) the Addenda Nos._____ (if any)
   (d) Special Conditions of Contract
   (e) General Conditions of Contract
   (f) the Specification (including Schedule of Requirements and Technical Specifications)
   (g) the completed Schedules (including Price Schedule)
   (h) any other document listed in GCC as forming part of the Contract

3. In consideration of the payments to be made by the Purchaser to the Supplier as specified in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Union of India on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed: *[insert signature]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness]*

For and on behalf of the Supplier

Signed: *[insert signature of authorized representative(s) of the Supplier]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness]*

Letter of Acceptance

[on letterhead paper of the Purchaser]

. . . . . ***date***. . . . . .

To: ***[insert name and address of the Supplier]***

Subject: ***Contract No.*** . . . . . .

This is to notify you that your Bid dated _____ [insert ***date of bid submitted by the bidder]*** for the execution of _____ *[insert* ***brief description of Goods and related services]*** against Bid Invitation Ref. No. _____ ***(insert Bid Ref. No.]*** is hereby accepted by the Purchaser for the Contract Amount of Rs. _____ *[insert* ***amount in numbers and words]***, as corrected and modified in accordance with the Instructions to Bidders.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, the Performance Security Form included in Section IX, Contract Forms of the Bidding Documents.

Authorized Signature: .....

Name and Designation of Signatory: .....

Name of Purchaser: .....

Performance Security
Bank Guarantee

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

Beneficiary: *[insert name and Address of Purchaser]* **Date:** _ *[Insert date of issue]*

PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _ *[insert name of Supplier]* (hereinafter called "the Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the supply of _ *[insert name of contract and brief description of Goods and related Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of*[insert amount in figures]* ()*[insert amount in words]*,[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2… [2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

_____
signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

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[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance.*

[2] *Insert the date twenty-eight days after the expected completion dates described in GC Clause 18.4. The Purchaser should note that in the event of an extension of this date for completion of the Contract, the Purchaser would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

Annexure Y1 - Acknowledgement of Receipt of Goods (for 40% Payment)

(This certificate is to be issued to SAMS and copy to Supplier and FIND India*. All the three copies 'should be signed in ORIGINAL'.)*

CONSIGNEE RECEIPT CERTIFICATE (CRC)

CRC No. **Date**

To
Strategic Alliance Management Services Pvt. Ltd,
B-18, Sector-06, NOIDA
Gautam Budh Nagar (U.P.)- 201301

This is to certify that the Goods as detailed below have been received

Project Name	Procurement Services to Foundation for Innovative New Diagnostics India (FIND India)
Purchaser	Strategic Alliance Management Services Pvt. Ltd., on behalf of FIND India
Contract i.e. NOA No. & Date	
Description of Goods Supplied Name of Equipment/ Laboratory Materials: Schedule No. as per Contract: Model: Serial No.:	
Packing and labeling details	
Date of manufacturing	
Date of Expiry	
Quantity supplied in Numbers	
Name of Supplier	
Invoice No. and Date	
Date of Delivery at Consignee Destination site	
Consignee full Address Name Address Contact No. Fax No.	

Seal Signature of Designated Consignee
Name :
Designation:
Seal:
Contact No:
Fax No. :

Copy To: (with Original Stamp and signature)

1. To Supplier
2. Foundation for Innovative New Diagnostics (FIND India), Flat No. 6 & 8 – 14, 9th Floor, Vijaya Bank Building, 17, Barakhamba Road, New Delhi -110001, India

Annexure Y2 - Final Acceptance Certificate (for 50% Payment)

(This certificate is to be issued to SAMS and copy to Supplier. All the three copies 'should be signed in ORIGINAL'.)

FINAL ACCEPTANCE CERTIFICATE (FAC)

FAC No. **Date:**

To
Strategic Alliance Management Services Pvt. Ltd,
B-18, Sector-06, NOIDA
Gautam Budh Nagar (U.P.)- 201301

Project Name	Procurement Services to Foundation for Innovative New Diagnostics India (FIND India)
Purchaser	Strategic Alliance Management Services Pvt. Ltd., on behalf of FIND India
Contract i.e. Notification of Award No. & Date	
Description of Goods Supplied Name of Equipment: Schedule No. as per Contract: Model: Serial No.:	
Name of Supplier	
Quantity Supplied in Numbers	
List with name of all or any accessories as per contract supplied with the equipment	
Date of Installation, testing and commissioning	
Is successful Installation, testing and commissioning of equipment supplied, upto the satisfaction of User done or not **(Yes/No)** Annexure Y2 – A needs to be submitted	
Date of Final Acceptance	
Invoice No. and Date	
Date of entry in Asset register	
Consignee full Address Name Address Contact No.	

CERTIFICATE

This is to certify that we have received medical Equipment/ lab materials as detailed above in good condition in accordance with the Technical specifications and conditions of the NOA/ Contract and the same has been successfully Installed and Commissioned (if, applicable) on _____ to the satisfaction of all users and entered in the Asset/Consumable/Non-Consumable Register at page no. _____ on _____

Seal & Signature of Designated Consignee
Name:
Designation:

Copy To: (with Original Stamp and signature)

(1) To Supplier
(2) Foundation for Innovative New Diagnostics (FIND India), Flat No. 6 & 8 – 14, 9th Floor, Vijaya Bank Building, 17, Barakhamba Road, New Delhi -110001, India

Annexure Y2 - A

Upper UVGI/GUV Installation report and checklist

Name of Site: Address: Contact Person: Contact Number:	Supplier details:
Equipment Details Make: Model: Sr. No: Installation Location: Fixture Type: Wattage of UV Lamp: Wattage of GUV Fixture:	Date of installation: Name of Engineer: Contact no:

Master Instruments used for Installation

Multimeter Make:		Model:				Radiometer Make:	Sr. No:
Sr. No:		Calibration certificate no:					
Voltage			Installation Height			Model:	Calibration certificate no:
P-N :	N-E:	P-E:	Room Height				

Checkpoint	Yes	No	Checkpoint	Yes	No
Physical damage to UV lamp			Whether Safety and operational training to user		
Physical Damage to Fixture			Submission of Manufacturer catalogues, Test certificates etc.		
Provision of dedicated on/Off switch (the same area below the Upper UVGI/GUV fixtures)					
Any obstructions in the Kill zone					

Upper UVGI/GUV Installation report and checklist					
Test performed (Checkpoint)	**Yes**	**No**	**Observed parameters/ Values**	**Pass / Fail**	**Acceptable Tolerance Range**
Safety test					Eye safety measurement with FOV cone should not exceed 0.2 µW/cm2. Skin safety measurement without FOV cone should not exceed 0.35 µW/cm2. Note: In any case, it should not exceed the threshold limit value (TLV) for UVC_{254} exposure.
Efficacy Test – UVC irradiance check					Variation acceptable is ± 20 % with the manufacturer claimed test report submitted in the technical proposal.
Observation/ Recommendation by Engineer Sign & stamp of Agency					
Observation/ Recommendation by Authorized signatory Sign & stamp of Institute					

Annexure Y3 -Warranty Service Performance Certificate (for 10% Payment on annual basis)

(This certificate is to be issued to SAMS and copy to Supplier. All the three copies 'should be signed in ORIGINAL'.)

WARRANTY SERVICE PERFORMANCE CERTIFICATE (WSPC)

FAC No. **Date:**

To
Strategic Alliance Management Services Pvt. Ltd,
B-18, Sector-06, NOIDA
Gautam Budh Nagar (U.P.)- 201301

Project Name	Procurement Services to Foundation for Innovative New Diagnostics India (FIND India)	
Purchaser	Strategic Alliance Management Services Pvt. Ltd., on behalf of FIND India	
Contract i.e. Notification of Award No. & Date		
Description of Goods Supplied Name of Equipment: Schedule No. as per Contract: Model: Serial No.:		
Name of Supplier		
Quantity Supplied in Numbers		
Is warranty service performed up to the satisfaction of User done or not **(Yes/ No)**		
Whether training provided to all users up to the satisfaction or not **(Yes/ No)**		
Guarantee Card handing over (date and details)		
Date of 1st visit: Quarterly Preventive maintenance visit Annexure Y3 – A needs to be submitted		
Date of 2nd visit: Half yearly Preventive maintenance visit Annexure Y3 – B needs to be submitted		
Date of 3rd visit: Quarterly Preventive maintenance visit Annexure Y3 – A needs to be submitted		
Date of 4th visit: Yearly Preventive maintenance visit Annexure Y3 – C needs to be submitted		
Date of Warranty Service Performance		
Consignee full Address Name Address Contact No.		

CERTIFICATE

This is to certify that we have received warranty service performed for Upper room UVGI/GUV Disinfection System in accordance with the Technical specifications and conditions of the NOA/ Contract on _____ to the satisfaction of all users and entered in the Asset Register at page no. _____ on _____

Seal & Signature of Designated Consignee
Name:
Designation:

Copy To: (with Original Stamp and signature)

(1) To Supplier
(2) Foundation for Innovative New Diagnostics (FIND India), Flat No. 6 & 8 – 14, 9th Floor, Vijaya Bank Building, 17, Barakhamba Road, New Delhi -110001, India

Annexure Y3 - A

GUV Device Quarterly Maintenance Report /Checklist

Name of Site: Address: Contact Person: Contact Number:	Supplier details:
Equipment Details Make: Model: Sr. No: Installation Location: Fixture Type: Wattage of UV Lamp: Wattage of GUV Fixture:	Date of installation: Name of Engineer: Contact no:

Master Instruments used during the PM

Multimeter Make:		Model:			
Sr. No:		Calibration certificate no:			
Voltage					
P-N :	N-E:	P-E:			

Checkpoint	Yes	No	Checkpoint	Yes	No
Any physical damage to UV lamp			Cleaning of GUV Fixture system		
Any Physical Damage to Fixture			Cleaning of UVGI/GUV Lamp		
Any obstructions in the Kill zone			Check for damage to wiring		

Observation/ Recommendation by Engineer

Sign & stamp of Agency

Observation/ Recommendation by Authorized signatory

Sign & stamp of Institute

Annexure Y3 - B

GUV Device Half Yearly PM Report /Checklist

Name of Site: Address: Contact Person: Contact Number:	Supplier details:
Equipment Details Make: Model: Sr. No: Installation Location: Fixture Type: Wattage of UV Lamp: Wattage of GUV Fixture:	Date of installation: Name of Engineer: Contact no:

Master Instruments used during the PM

Multimeter Make:	Model:	Radiometer Make:	Sr. No:
Sr. No:	Calibration certificate no:	Model:	Calibration certificate no:
Voltage	P-N: N-E: P-E:		

Checkpoint	Yes	No	Checkpoint	Yes	No
Physical damage to UV lamp			Whether Safety and operational training to user		
Physical Damage to Fixture			Submission of Manufacturer catalogues, Test certificates etc.		
Provision of dedicated on/Off switch (the same area below the Upper UVGI/GUV fixtures)			Any obstructions in the Kill zone		

Test performed (Checkpoint)	Yes	No	Observed parameters/ Values	Pass / Fail	Acceptable Tolerance Range
Safety test					Eye safety measurement with FOV cone should not exceed 0.2 µW/cm2. Skin safety measurement without FOV cone should not exceed 0.35 µW/cm2. Note: In any case, it should not exceed the threshold limit value (TLV) for UVC_{254} exposure.
Efficacy Test – UVC-irradiance check					If recorded irradiance value is substantially lower than previously recorded one (or thanmanufacturers reference value for the model), repeat measurement after thorough cleaning of the fixture lamp and reflector. If even after cleaning irradiance remains below 70% of the reference value for themodel, the fixture should be re-lamped.

Observation/ Recommendation by Engineer

Sign & stamp of Agency

Observation/ Recommendation by Authorized signatory

Sign & stamp of Institute

Annexure Y3 - C

Upper UVGI/GUV Yearly PM Report and checklist

Name of Site: Address: Contact Person: Contact Number:	Supplier details:
Equipment Details Make: Model: Sr. No: Installation Location: Fixture Type: Wattage of UV Lamp: Wattage of GUV Fixture:	Date of installation: Name of Engineer: Contact no:

Master Instruments used for Installation

Multimeter Make:		Model:			Radiometer Make:	Sr. No:	
Sr. No:		Calibration certificate no:					
Voltage			Installation Height		Model:	Calibration certificate no:	
P-N :	N-E:	P-E:	Room Height				

Checkpoint	Yes	No	Checkpoint	Yes	No
Replacement of UV Lamp of same wattage			Cleaning of GUV Fixture system		
The ineffective lamps to be taken out of the facility and to be disposed as per guidelines			Check for damage to wiring		
Any physical Damage to Fixture			Submission of the test certification report		
Any obstructions in the Kill zone					

Upper UVGI/GUV Yearly PM Report and checklist						
Test performed (Checkpoint)	**Yes**	**No**	**Observed parameters/ Values**	**Pass / Fail**	**Acceptable Tolerance Range**	
Safety test					Eye safety measurement with FOV cone should not exceed 0.2 µW/cm2. Skin safety measurement without FOV cone should not exceed 0.35 µW/cm2. Note: In any case, it should not exceed the threshold limit value (TLV) for UVC_{254} exposure.	
Efficacy Test – UVC-irradiance check					If recorded irradiance value is substantially lower than previously recorded one (or thanmanufacturers reference value for the model), repeat measurement after thorough cleaning of the fixture lamp and reflector. If even after cleaning irradiance remains below 70% of the reference value for the model, the fixture should be re-lamped.	
Observation/ Recommendation by Engineer Sign & stamp of Agency						
Observation/ Recommendation by Authorized signatory Sign & stamp of Institute						