

Tender DOCUMENT

For

Supply & Installation of “UV Chamber” Supplies with complete accessories



NIT NO: 01/05(01)/2015/NISE-PVTF

Closing Date: 15/07/2016

At

NATIONAL INSTITUTE OF SOLAR ENERGY

Gurgaon-Faridabad Road, Gwal Pahari, Gurgaon, Haryana,

INDIA

Telefax No. : +91-124-2579212

File No: 01/05(01)/2015/NISE-PVTF

National Institute of Solar Energy

**Faridabad-Gurgaon Road
Gwal Pahari, Gurgaon-122003 Haryana**

TENDER NOTICE

Subject: Supply & Installation of “UV Chamber” with complete accessories at National Institute of Solar Energy, Gurgaon.

On behalf Office of Director General, National Institute of Solar Energy sealed tenders are invited from reputed agencies in two parts (Technical and Commercial separately) for supply & installation of “*UV Chamber*” with complete accessories at National Institute of Solar Energy, Gwal Pahari, Gurgaon, Haryana, India. The important dates and information are given below in the table:

Tender Details

Sl. No.	Description	Details
1	Notice Inviting Bid(NIT) No	<u>01/05(01)/2015/NISE-PVTF</u>
2	Scope of work	Supply, Installation and warranty for min 1 year after commissioning, of “ <i>UV Chamber</i> ” with complete accessories at NISE.
3	“ <i>UV Chamber</i> ”	As Per Standards IEC 61215/61646:2005, IEC 61345.
4	Place of submission of bid document and address for communication # The Envelop should be super scribed as Tender for “ <i>UV Chamber</i> ”	NATIONAL INSTITUTE OF SOLAR ENERGY Gurgaon-Faridabad Road, Gwal Pahari, Gurgaon,Haryana-122003, India *Tenders may be dropped in Tender Box located in the old building of NISE Campus*
5	Availability of Tender Document	The Tender document can be downloaded from the website of NISE: www.nise.res.in
6	Last date & time of submission of bid	15/07/2016 at 12.00 Noon
7	Date & time of opening of Part – I(Technical Bids)	The technical bids shall be opened on the same day at 3.00 P.M.
8	Date & time of opening of Part – II (Price-Bid)	Date & time of opening of Commercial bids of the technically qualified bidders will be intimated in due course
9	Earnest Money (Refundable to the unsuccessful bidders)	Rs.25,000/-

10	Time of supply	Maximum six week, after issue of P.O.
11	Validity of offer	The offer will remain valid for 4 months from the date of tender publication date
12	Validity of earnest money	The earnest money shall be submitted by the bidder in the form of CDR/FDR/BG from any bank operations in India pledged to the Director General NISE. This shall remain valid for 12 months from the date of submission of bids.

DETAILED TENDER NOTICE

Name of Work: Supply and Installation of “*UV Chamber*” with complete accessories at NISE.

1. ELIGIBILITY CRITERIA

- 1.1 The original manufacturers or their authorized suppliers who have past experience of manufacturing, or authorized Indian supplier whoever have supplied at Least 3 systems. A list of clients should be enclosed.

TECHNICAL SPECIFICATIONS OF UV CHAMBER

SL No	PARAMETERS	SPECIFICATIONS
1.	Test plane Area	Min Dimension should be Length 2.2m , Width 1.5m
2.	Operating Temp Range	55-65°C
3.	Temperature non uniformity	±2°C
4.	UV Source	As Per Standards IEC 61215/61646:2005, IEC 61345
5.	UV radiation non uniformity	Less than ±15% over the test plane
6.	UV radiometer	should measure UV-A, UV-B (280nm to 400nm)
7.	UV integrator	Should indicate integrated value of UV dose on the test plane for UV-A, UV-B in W/m ²
8.	Module temperature measurement	At least four temperature sensors (R _{TD}) for monitoring temperature on the module rear side. The module temperature sensors shall be calibrated. The calibration shall be traceable to a national/international reference with a max. uncertainty of ±0.5 °C, repeatability ±0.5 °C
9.	Control Panel and Programming	Touch Screen / interface with laptop & Software for monitoring, data-logging and Trend Graphs.
10.	Acoustic alarm	In case of any error/warning .
11.	Input AC power requirement	1-phase 230V±10% or 3-phase 440V±10%, Frequency: 50Hz (Automatically Resume the test when there is power-cut)
12.	Guaranty/Warranty.	1 year after the installation, commissioning and successful

		trail run at NISE
13.	Calibration certificate	Calibration certificate for temperature monitoring and UV radiometer should be provided From an accredited laboratory with traceability to national/international reference.
14.	Safety Protection	<ol style="list-style-type: none"> 1. Reverse phase sequence protection for three phase 2. Shock proof body 3. Emergency stop 4. Door Interlock 5. Temperature Protection 6. UV protected glass window

Chamber Construction:

The chamber should be able to accommodate a test sample of **min size 2.2mx 1.5 m** with at least four temperature sensors and UV radiometer which can measure UV-A and UV-B. Chamber should work at an ambient temperature at approx. $45\pm 5^{\circ}\text{C}$. Small vent/port shall be provided for cabling of module. **The system should have proper arrangement for UV ventilation**

Components of Chamber:

UV Lamp:

A UV light source capable of producing UV irradiation with an irradiance uniformity of less than $\pm 15\%$ over the test plane of the module(s) with no appreciable irradiance at wavelengths below 280 nm and capable of providing the necessary irradiation in the different spectral regions, Assuring that at wavelengths between 280 nm and 400 nm which does not exceed 250 Wm^{-2} and that it has a uniformity of less than $\pm 15\%$ or better over the test plane.

The test samples subjected to a total UV irradiation of $15\text{ kWh}\cdot\text{m}^{-2}$ in the wavelength range between 280 nm and 400 nm, with at least 3%,but not more than 10% in the wavelength band between 280 nm and 320 nm, while maintaining the module temperature within the prescribed range. Should follow the standard IEC 61345, IEC 61215.

The intensity of the UV lamp should be in between 80 to $250\text{ W}/\text{m}^2$.

Temperature control:

The temperature should be controlled (programmable) in the range of $60\pm 5^{\circ}\text{C}$.

Four temperature sensors, capable to measure the test apparatus with $\pm 0.5\%$ accuracy. The Equipment must be capable of maintaining the module temperature at $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ while module is irradiated by UV light.

Module temperature measurement:

At least four module temperature sensors (R_{T_D}) for monitoring module rear side, with a max. Uncertainty of $\pm 0.5^{\circ}\text{C}$

UV Radiometer:

UV Radiometer which is capable of measuring both UV-A and UV-B within the prescribed wavelengths.

High precision radiometer of internationally prominent suppliers like EPPLY, Kipp & Zonnen should be used. The calibration of radiometer should be traceable to world radiation standard (WRS).

UV Integrator:

Should indicate measured UV irradiance on the test plane for UV-A, UV-B in W/m^2 individually, with a least count of ≥ 0.001 .

Calibration certificate:

Calibration certificate must be provided on the date of installation and commissioning for the UV radiometer, temperature sensors (R_{TD}) from any national/international accredited body.

Testing Conditions:

AS per standards: IEC 61215:2005/61646 and IEC 61345.

Safety Considerations:

Electrical safety: Chamber should have complete set of electrical section with fuses protection, switch-control, and regulation appliances as well as operation, monitoring and alarm elements. Each functional circuit is equipped with its own safety device and in the event of trouble, turns off the affected circuit or entire chamber. Wiring and electrics should be governed by the latest technology and strictly conform to safety regulations for electrical installations and materials as well as to relevant regulations.

Temperature Safety: Chamber should have protection for heaters by a safety thermostat with an additional temperature limiter. Safety thermostat with restart locking should switch-off the entire chamber in case of failures.

Training, Installation and Commissioning:

1. Operation & Maintenance training should be provided at NISE Campus after commissioning.
2. Installation & Commissioning should be at NISE Campus.

2. EARNEST MONEY DEPOSIT (EMD)

A sum of Rs.25,000/- should be submitted as Earnest Money Deposit (EMD) **along with the technical bid** in the form of **bank demand draft/Bank Guarantee** drawn in favor of “National Institute of Solar Energy” and payable at Gurgaon, Haryana”. The EMD of the accepted tender will be retained as Security Deposit and the EMD of other unsuccessful bidders would be returned.

3. RATES:

The rates should be quoted specifically on the following lines:

- a. Firm and final cost of the “**UV Chamber**” as per the above specifications and features along with costs of the installation charges as per the above specifications and features, should be provided.
- b. Taxes and freight etc. if any applicable should be indicated separately and clearly.

4. **DELIVERY PERIOD:** “*UV Chamber*” with complete accessories should be delivered in a single consignment at the site/consignee within 6 to 8 weeks from the date of issue of confirmed supply order.
5. **INSPECTION:** The supplier should satisfy himself/herself that “*UV Chamber*” with complete accessories at NISE is as per the above specifications and features along with options, accessories, conform to the specifications by carrying out complete pre-inspection of each component before dispatch.
6. **CONSIGNEE:** Director (SPV)/ Store Keeper, National Institute of Solar Energy, Ministry of New and Renewable Energy, Gwal Pahari, Gurgaon, 122003 Haryana, India.
7. **GUARANTEE/WARRANTY:** Measuring instruments supplied should be covered by standard terms of warranty for a period of min12 months from the date of installation.
8. **PENALTY:**
 - i. The supplier shall supply the stores in accordance with the particulars as expressly specified at the time/times and at the place/places only.
 - ii. The time for and the date of the stores stipulated shall be deemed to be the essence of the supply/work order.
 - iii. If for any reasons the contractor is unable to adhere to the contract delivery dates, he may seek extension in delivery/completion dates well in time by sending a request in writing in this regard to the office issuing the contract/supply order. The purchaser reserves the right to allow the extension of delivery period subject to such conditions as he may think fit. However, the decision of the purchaser shall be final and binding.
9. **DISPUTES:** In case of any dispute the decision of the Director General, National Institute of Solar Energy will be final and binding on both parties. Further dispute, if any will be settled in the Court of Law at New Delhi jurisdiction only.
10. **VALIDITY:** The Tenders should be valid for 180 days from the date of opening.
11. **REJECTION:** Incomplete, conditional, fax, late tenders and tenders without EMD will be rejected summarily. Director General, National Institute of Solar Energy reserves the right to reject any or all the tenders at his discretion without assigning any reason whatsoever.
12. **SUBMISSION OF TENDERS :** Sealed tenders are to be submitted in two parts i.e. **Part-I containing Technical competence/literature along with Demand Draft for EMD, and Part-II containing only commercial invoice in a separate sealed envelope, super scribed as commercial bid.** Both the technical and commercial envelopes should be kept in large size sealed envelope super-scribed “*UV Chamber*” at NISE and addressed to: Director (SPV), National Institute of Solar Energy, Gurgaon – Faridabad Road, Gwal Pahari, Gurgaon 122003, Haryana, India.

DR RAJESH KUMAR
DEPUTY DIRECTOR GENERAL