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Ref No: IIT/ SIIC/Mole/Solar Panel Emulator/BV/19-11-2014

**INVITATION FOR QUOTATIONS FOR SUPPLY OF SOLAR PANEL EMULATOR**

Brief Description of the Goods	Specifications*	Qty.	Delivery Period	Place of Delivery	Installation Requirement if any
<b>SOLAR PANEL EMULATOR</b>	Mentioned below	01	20 Days	Central Store, IIT Kanpur	Yes

Solar Panel Emulator using programmable dc power sources of total capacity between 1.5 kW and 2.0 kW. Emulator supplied from 1-ph/3-ph nominal ac supply, mimicking terminal behavior of solar photovoltaic panels at its output (dc).

**Solar Panel Emulator General Specification**

- 1) Nominal Input Voltage : 230V A.C, +/- 15%, 50 Hz
- 2) Capable of continuous delivery of short-circuit current as per emulated I-V characteristic.
- 3) Number of Power Output : 4 Channels(DC V)
- 4) O/P voltage : 0-200V (all channels in series)
- 5) O/P Current : 0-32A (all channels in parallel)
- 6) Must ensure equal current division in any number of parallel connected channels/channel groups, when identical insolation defined on all channels.
- 7) Must ensure equal voltage division in any number of series connected channels/channel groups, when identical insolation defined on all channels.
- 8) In-built I-V profiles for amorphous silicon, mono-crystalline silicon, multi-crystalline silicon and high-efficiency solar modules at STC. Should automatically ensure appropriate scaling of profiles corresponding to user defined input data for environmental parameters like insolation vs. time and temperature vs. time.
- 9) Drift in I-V characteristics obtained at the terminals of each channel should not exceed 1% over 6 hours, with no change in user-defined environmental data.
- 10) Must have provision for creating user-defined I-V profiles using the following user-defined data:

- $V_{mp}$
- $V_{oc}$
- $I_{mp}$
- $I_{sc}$
- IV plot points (1000 points per plot), inputs from PC through Ethernet

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	- Voltage Selection ( $V_{mp}$ , $V_{oc}$ )
	- Current Selection ( $I_{sc}$ , $I_{mp}$ )
11) Relative Humidity	: up to 95%
12) Ambient Temperature	: 0-60°C
13) Resolution :	
Voltage	: 0.1V
Current	: 0.1A
14) Slew Rate	$\geq 1V/ms$
15) Output Capacitance	$\leq 100nf$
16) Line Regulation	
Voltage	: 250mV
Current	: 10mA
17) Load Regulation	
Voltage	: 250mV
Current	: 10mA
18) Output Ripple RMS	
Voltage	: Max 0.5% Output
Current	: 2.5mA
19) Mode Of Operation (04 Nos)	: Fixed mode, Table Mode, Simulator mode & Programming Mode
20) Protection	: Reverse output flow, Low & High input Voltage, High input current

Renowned Manufacturers like: Agilent, Ametek

#### Terms & Condition

##### 1. The scope includes:

- Setting up machine in IIT Kanpur.
- Initial Installation and configuration.
- Training.

##### 2. Bid Price

- The contract shall be for the full quantity as described above. Corrections, if any, shall be made by crossing out, initialing, dating and re writing.
- All duties, taxes and other levies payable on the raw materials and components shall be included in the total price. **Except Central Excise Duty & CDEC** (custom duty), as IIT Kanpur is exempted from these duty.
- Sales tax in connection with the sale shall be shown separately.
- The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- The Prices shall be quoted in Indian Rupees only.



3. Each bidder shall submit only one quotation.

4. **Validity of Quotation**

Quotation shall remain valid for a period not less than 60 days after the deadline date specified for submission.

5. **Evaluation of Quotations**

The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

- (a) are properly signed ; and
- (b) Conform to the terms and conditions, and specification

**The Quotations would be evaluated separately for each item**

Sales tax in connection with sale of goods shall not be taken into account in evaluation.

6. **Award of contract**

The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive (includes technically suitable) and who has offered the lowest evaluated quotation price.

6.1 Notwithstanding the above, **the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.**

6.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.

7. Payment shall be 90% against the delivery and 10% after satisfactory installation & configuration.

8. Warranty/ guarantee shall be 60 months to the supplied goods.

9. You are requested to provide your offer latest by 2.30 p.m. hours on 29/11/2014

10. We look forward to receiving your quotations and thank you for your interest in this project.



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**FORMAT OF QUOTATION \***

Sl. No.	Description Goods	Specifications	Qty.	Unit	Quoted Unit Rate in Rs.	Total Amount	
						In Figures	In Words
	<b>TOTAL</b>						
	<b>Sales Tax</b>						

**Gross Total Cost : Rs. ....**

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. ....(amount in figures ) (Rs. .... amount in words) within the period specified in the Invitation for Quotations.

We also confirm that the normal commercial warrantee/guarantee of 60 months shall apply to the offered goods.

**Signature of Supplier**

**SPECIAL CONDITION**

**1) Authorization from Manufacturer**

In the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' Manufacturer or producer to supply the goods in India.

**2) Proof of Manufacturing and past performance.**

Details of experience and past performance of the bidder on equipment



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offered and on those of similar nature within the past one years and details of current contracts in hand and other commitments.

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