

**Instrument Design Development Centre
INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI-110016**

NOTICE INVITING QUOTATIONS

Ref: IITD/IDDC/ALV/SAS/

Date: February 11, 2013

DUE DATE: March 1, 2013; 5PM

Sealed quotations are invited for the supply of one in number **Solar Array Simulator** with the below mentioned specifications.

Parameters	
Output Voltage	0-450/600V
Output Current	0-11.5/8.5A
Output Power	5kW
Input Specifications	
AC Input Voltage 3 phase, 3 Wire + ground	380/400 (operating range: 342V to 440V)
AC Frequency Range	47-63 Hz
Over voltage protection adjustment range	
Range	0-110% programmable from front panel or digital
Operating Temperature range	0-50°C
Available Input/Output	Standard USB and RS-232 Interface or Ethernet or GPIB or all of the mentioned interfaces.
Programmable Parameters	
Temperature	-35°C to 80°C
Irradiance Level Fill Factor	0 to 2000W/m ²
Simulation Time	Minimum 15,000 seconds
PV Curve	Minimum number of data points should be 128 with 16-bit linear interpolation to generate the required I-V curve accurately.
MPPT Tracking	Up to 75Hz (minimum)
Dynamic simulation	The system should be capable of Dynamic simulation for simulation of various irradiance and temperature profiles for various conditions such as clear Sky, partly cloudy or mostly cloudy Conditions.
Programming	The system should have ability to program I-V curves, it also should support loading of the I-V characteristics. It also should support custom input data including "multiple hump" characteristics to create complex I-V curves.

Other Requirements:-

The solar array simulator (SAS) supporting software is to be provided with the equipment.

- The PV array simulator should have facility to simulate the I-V curves/data of any kind of PV array's operating conditions, such as partial/ complete shadowing of solar cell(s), PV module, panel, bypass diode failure etc. Simulation of dynamic irradiation intensity and temperature level from clear day to cloud cover conditions.
- Solar Array Simulator should have a feature of future expandability in terms of output power.
- Some preloaded Photovoltaic current vs voltage (I-V) curves and programs need to be provided with the equipment software.
- The simulator should have a built-in 16 bit digital control and precision voltage & current measurement circuits with a voltage accuracy of 0.05% and a current accuracy of 0.1%.
- Proper cooling arrangement for the equipment should be provided (if required).
- Any other features should be clearly mentioned in the technical bid.
- All sorts of precautions and protection needed while the operation should be informed beforehand.

Terms and Conditions:

1. Please submit the TECHNICAL and FINANCIAL bids in separate sealed envelopes. Mark the two envelopes clearly as "_Technical Bid" and "_Financial Bid" respectively. Both the sealed envelopes should be sent in a single sealed envelope, clearly marked as "**Quotation for Solar Array Simulator**". The quote should reach the following address on or before **1st March 2013**.

Prof. A.L.Vyas
Room No. WS 136
Instrument Design Development Centre
Indian Institute of Technology Delhi
Hauz Khas, New Delhi-110016

2. Please quote prices for FOB New Delhi, inclusive of all taxes and duties.
3. Quote should be in Indian Rupees for agents of Indian manufacturers, or in foreign currency, for agents of foreign manufacturers, and needs to be valid for at least three months.
4. Attach all the technical literature and a list of similar installations done in India.
5. If the quote is being submitted by a representative of the manufacturer, a valid agency-ship or dealership certificate authorizing the agent to quote to IIT Delhi on behalf of the manufacturers should be enclosed.
6. Complete set of manuals for the operation of the equipment should be given.
7. Clearly specify the installation requirements - such as space, power, frequency, environment etc.
8. If the item quoted is proprietary in nature, please enclose proprietary certificate from the principals stating, "_Certified that _ is a proprietary item of M/s and no other manufacturer makes this item."
9. Please specify all of your terms and conditions clearly, including delivery period.

10. Mode of payment for purchases in foreign currency is through irrevocable letter of credit, or through wire transfer on delivery. Only bank charges within India are payable by IIT Delhi, all bank charges outside India are the responsibility of the seller. For purchases in INR, payment is on delivery.
 11. The Institute reserves the right to accept or reject any or all quotations without assigning any reasons thereof.
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