Section IV T -Technical Specification

CENTRAL POWER RESEARCH INSTITUTE, BENGALURU/BHOPAL Web: www.cpri.in, www.tenderwizard.com/CPRI

Tender Enquery No: CPRIBLR20ERED56S596

Description of the Equipment/Goods/Services : Supply, Installation and Commissioning of TEMPERATURE CYCLIC CHAMBER

Note : 1) The technical bid submitted in other than this format is liable to be rejected.

2) All blue fields are mandatorily to be filled in.

Name and address of the bidder					
Quotation Number and Date					
			To be completed by the Bidder		
Sl.No.	Technical Specifications/Parameters	Qty	Detials of guaranteed technical parameters offered by the bidder	Guaranteed Technical Particulars (GTP)	Deviations from GTP
1	**Place where equipment /service to be supplied /provided- ERED, CPRI, Bengaluru, India**				
2	**Scope- Supply, installation, commisioning and training**	1 No.			
3	Introduction This Temperature cyclic chamber is suitable to carry out temperature cycling tests on self ballasted LED lamps and LED modules for general lighting as per IS : 16102 (part 2): 2017 and IS : 16103 (part 2): 2012 The test is made in a cabinet where temperature varies between - 15°C to + 55°C over a period of 4 Hours and for a total test duration of 250 periods,corresponding to total 1000 hours test. A 4 hour period consist of 1 hour holding at each extreme temperature and 1 hour transfer time at the rate of 1°C/ min between two extreme temperatures				
4	CONSTRUCTION				
4.1	This Temperature cyclic chamber should be constructed of double wall with puff insulation, the exterior should be made of sheet metal with powder coating. The interior should be made of stainless steel.				
4.2	The unit of vertical model should have door of front opening type with heavy duty hinges and locking arrangement.				
4.3	The door is provided with suitable size toughened vacuum glass to view the samples inside the chamber.				
4.4	The chamber should have 2 partitions, arranged with 20 no's of E27 holders(with B22 adopters) and 5 no's of 4 feet Tube lights to test LED lamps and 10 set of power socket suitable to test LED modules , LED tubes etc.				
4.5	The control unit should be provided on the side or at a suitable height from bottom of the chamber and should be fitted with ON-OFF switch, MCB, Indicator Lamp,6 inch or larger touch screen , Emergency switch, Auto transformer etc				
4.6	The unit is fitted with castor wheels for free movement of the chamber.				
5	REFRIGERATION and TEMPERATURE				
5.1	This refrigeration system should be air cooled refrigeration system with hermetically sealed compressors. System should works on environmental friendly refrigerant.				
5.2	Solenoid valve technology should be used to maintain the equalization pressure of the compressor to enable to start and stop the compressor at any point of time, so as to maintain the low temperature well within ±2°C accuracy.				

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6	REFRIGERATION and TEMPERATURE				
6.1	Heaters to be provided to generate the proper temperature inside the chamber, supply to the heaters and solenoid valves are controlled by PLC/MC programmer.				
6.2	RTD or K type or DS18B20 or its equivalent temperature sensors should be used to measure the temperature inside the chamber.				
7	TEMPERATURE RANGE				
7.1	The chamber should have temperature range from - 15°C to + 55°C and temperature uniformity of ±2°C.				
7.2	A 4 hour period should consist of 1 hour holding at each extreme temperature and 1 hour transfer time at the rate of 1°C/ min between two extreme temperatures. Should be programmable to chage the ranges and durations if required.				
7.3	Temperature ramp rate is approx 1°C/ min for both increasing and decreasing.				
8	STATUS - DEVICE UNDER TEST				
8.1	The LED lamp under testing should have a provision to turn ON and OFF the lamp as per IS requirement, for this an automated test system should be used, the lamps are controlled group wise by external microcontroller/PLC, which performs all the necessary operations as per the requirement.				
8.2	The chamber has provision to fit 30 LED products(20 LED lamps + 10 LED modules), which are divided into 3 groups,each Batch/group can be turned ON/OFF.				
8.3	ON/OFF condition of each lamp monitored individually.				
8.4	Periodic track of ON / OFF condition of each lamp should be done separately.				
8.5	Varying the ON duration/OFF duration of each group, as per a programmable setup, should be done using Touch screen.				
8.6	Recording of the date and time of failure of a lamp, individually should be provided				
8.7	The ON/OFF condition of each lamp is monitored individually using an externally mounted current sensor.				

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9	CONTROLS				
9.1	PLC or Microcontroller based Solenoid ON/OFF controller should be used to measure and control the parameters. All the parameters are programmable through the controller.				
9.2	RS 232 or USB based data logging provision should be provided, so that temperature & time log data can be saved to SD-Card or directly on to PC through the communication link.				
9.3	Lamp ON/OFF Status condition can be check in the controller.				
9.4	Sufficient memory should be provided to set the required program.				
10	Auto transformer				
10.1	The auto transformer should be provided along with system to set the required test voltage.				
10.2	Output Voltage: 0-300V at input voltage 240V				
10.3	Rated current : 6A				
10.4	Type: Air cooling type				
10.5	Quantity : 1 No.				
11	SAFETY				
11.1	The test samples should have separate protection from over current.				
11.2	Suitable rating MCB are provided for complete circuit protection.				
11.3	Emergency Stop on the control panel should be provided.				
11.4	Suitable earth point should be given.				
11.5	System health indicator LED should be provided.				

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12	PLC/MICROCONTROLLER DETAILS				
12.1	6 inch Touch screen LCD.				
12.2	Processor :Mitsubishi/Motorola Driver with ATMEL 2560 or its equivalent.				
12.3	Built-In 6 No SSR with 20A rating.				
12.4	Data logging through RS 232 or USB and Internal SD card of size 8GB				
12.5	30 No of channels provided to light up 30 lamps.				
12.6	5V,12V DC power supply.				
12.7	Battery backed EEPROM.				
12.8	32KB of program memory is provided				
12.9	1 NoThermocouple for ambient temp sensing.				
12.10.	Total elapsed no of cycles can be displayed in the screen.				
13	Timer Details:				
13.1	Operating Modes: HH: MM: SS				
13.2	Min Time Setting: 5 Sec				
13.3	Max Time Setting : 1000 Hours				
13.4	Programmable ON-OFF timing can be adjusted as per IS requirement.				
14	Temp controller and Sensor Details:				
14.1	Sensor type: RTD,K type, DS18B20 or its equivalent				
14.2	Range: -15 to 55 Deg cel				
14.3	Temp Display Modes: Kelvin, Celsius, Fahrenheit.				
14.4	Hall-Effect sensor is used to detect lamp ON-OFF status.				
15	Warranty - The equipement shall have One year warranty from the date of sucessful Installation				
16	Calibration - Wherever necessary calibration certificates traceable to ISO/IEC 17025 to be provided. Calibration Certificate shall be in the name of CPRI, Bangalore and calibration certificate shall cover all the parameters and ranges. The calibration certificate results shall adhere to specifications.				
17	TRAINING - Pre-despatch inspection at works and Training of officials of CPRI to carry out the tests as pe IS 16102 PART 2 at your works/labs to be clubbed.				

PN: 1) Mere statement of "Complied" do not suffice the requirement. The details of technical parameters in proof of CPRI requirements shall be furnished along with technical write-up, catalogues, brouchers, literatures, phamplates, or any other documents shall be submitted in hard copy along with technical bid.
2) Calibration reports/certificates, factory test reports/certificates from an accreditated agencies/facilites shall be submitted wherever applicable.
3) CPRI reserves the right to conduct "predispatch inspection" prior to dispatch at the works of the supplier and the expenditure towards PDI shall be borne by CPRI. However information regarding the redineess of the equipment/machinary for the PDI shall be communicated in writing at lease 70 days in advance.