

**TECHNICAL SPECIFICATIONS AND OTHER ALLIED REQUIREMENTS**

SI No.	Description of items	Quantity
PUR/236/SET/MP/E/2020-21		
1	Digital Infrared 2 – colour pyrometer Temperature Measuring Range (Degree Centigrade). Minimum: 1350 or less to Maximum: 3000 or more (Details as per Annexure – I)	1

**1. WARRANTY**

- 1.1. Comprehensive on-site warranty for a period of one year must be provided to be effective from the date of successful completion of the job and final acceptance of the items / equipment at the user's laboratory / Institute.

**2. QUALIFICATION REQUIREMENT**

Non-OEM Bidders must furnish the Manufacturer's Authorization Form (MAF) in CSIR prescribed format failing which their offer will be rejected.

## Annexure - I

### Digital infrared 2- colour pyrometer

#### Technical Specifications

The two colour pyrometer should be compatible for measuring temperature of molten pool created by laser material interaction. The temperature monitoring will be carried out through fixing only temperature sensor with fiber optic pyrometer. Pyrometer should be able to measure minimum target size of 0.6 mm in dust and smoke environment.

S.N.	Items	Specifications
1.	Temperature measuring range (°C)	Minimum: 1350 or less to Maximum: 3000 or more
2.	Spectral range (nm)	Should not fall within 900 to 1000
3.	Response time (t90) (μs)	<100
4.	Sampling rate (kHz)	10
5.	Resolution	0.1°C or better
6.	Accuracy	0.5% of the measured value in °C or ±2°C or better
7.	Uncertainty	Less than 0.75% of the reading
8.	Repeatability	Less than 0.3% of the reading
9.	Sighting system / aiming	LED or Laser
10.	Data acquiring	Provision for data acquiring in single colour or two colour mode
11.	Analog output	2 configurable analog outputs 0 - 20 mA or 4 - 20 mA or 0-5 V / 0-10 V, load max. 500Ω.
12.	Software	User friendly output to plot temperature vs time from Microsoft Excel or word pad.
13.	Integrated pilot light beam	Manual adjusting of the pyrometer focus to the point of measurement.
14.	Optics	Optics protective window:
15.	Fiber optic length	More than 1500 mm
16.	Relative Humidity	No condensing condition
17.	Warranty	The system and accessories should have one-year warranty.
18.	Documents in English both hardcopy and softcopy	<ol style="list-style-type: none"> <li>1. Operation and maintenance manuals, troubleshooting procedures, calibration methods, wiring and other schematic diagrams, list of components, spares and accessories.</li> <li>2. Calibration certificates for sensors, instruments, gauges, display units etc. to be provided.</li> <li>3. Software upgrades pertaining to the supplied Unit should be provided free of cost as and when new versions are released by the OEM till warranty period.</li> <li>4. Safety and security instruction manual should be provided.</li> </ol>
19.	Inspection	<ol style="list-style-type: none"> <li>1. Inspection will be done at CSIR-CMERI Durgapur by using it for laser material processing thorough entire specified temperature range</li> <li>2. Demonstration of accuracy and resolution at CSIR-CMERI Durgapur</li> </ol>
20.	Supply	Software, cables, connectors, required optics and other drawings etc.

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