



SATYENDRA NATH BOSE NATIONAL CENTRE FOR BASIC SCIENCES

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Ref. SNB/ENQ/MP/Power Meter & Sensor/15-16/205(WP)

15/05/2015

Sealed quotation is hereby invited for the following items

Sl. No.	PARTICULARS	Qty
01.	<u>POWER METER AND SENSOR</u> (See attached for Technical Specification)	01 SET

Note:

- 1) If quotation is in USD, CIF Kolkata Airport price should be quoted. In case of quotation in INR, FOR price upto S.N. Bose Centre need to be mentioned.
- 2) Validity of quotation should be 90 days from the date of submission
- 3) Minimum one (1) year standard onsite replacement warranty is to be provided from the date of delivery.
- 4) Authorisation Certificate for dealing with quoted items should be enclosed with the quotation.
- 4) Payment will be made after satisfactory receipt of the material at site.
- 5) Delivery period should be mentioned in the quotation.
- 6) Our ref. no. should be mentioned on top of the quotation envelope.
- 7) Quotation for the above item should reach this office by **4th June, 2015**

Thanking you,
Yours faithfully,

S. K. Singh
AR (Purchase)

Technical Specification of Touch Screen optical power meter with stabilized thermal power sensor

A. Specification of touch screen Power meter

Detector Compatibility	Photodiode Sensors Thermal Sensors Pyroelectric Sensors Photodiode Sensors: 5 mA (Max) Thermopile Sensors: 1 V (Max) Pyroelectric Sensors: 100 V (Max)
Display Type	5.7" TFT, 640 x 480 Pixels, 18 bit Color
Viewing Area	118 mm x 88 mm
Display Update Rate	Max 15 Hz
Display Format	Numerical, Bargraph, Trendgraph, Statistics, Simulated Analog Needle
Backlight Display	LED, Adjustable
Features	Rotatable Two Position Kickstand, Removable Rubberboot, Touch-Pen, Fixture for Optional Fiber Inspection Camera
Operating Temperature	0 °C to 40 °C
Storage Temperature	-40 °C to 70 °C
Current Input (Photodiode Sensors)	
Connector	DB9F, Left Side
Units	W, dBm, W/cm ² , A
Measurement Ranges	6 Decades; 50 nA - 5 mA Ranges Selectable in W, Sensor Dependent
Display Resolution	1 pA / Responsivity Value (A/W)
AD Converter	16 bit
Accuracy	±0.2% full scale (5 μA - 5 mA) ±0.5% full scale (50 nA)
Bandwidth	DC - 100 kHz, Dependent on Sensor and Settings
Wavelength Correction	nm (A/W)
Beam Area Setting	Diameter 1/e ² or Rectangular x,y
Voltage Input (Thermopile Sensors)	
Connector	DB9F, Left side
Units	W, dBm, W/cm ² , V
Measurement Ranges	4 Decades; 1 mV - 1 V Ranges Selectable in W, Sensor Dependent
Display Resolution	1 μV / Responsivity Value (V/W)
AD Converter	16 bit
Accuracy	±0.5% f.s. (10 mV - 1 V)

External Power Supply	5 VDC / 2.4 A with Power Cord
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USB Cable	USB Type A Connector to Mini USB Connector (2 m)
Cable for Analog Output	3.5 mm Audio Connector to Flying Leads (2 m)
External Memory	USB Flash Drive 2 GB
Instrument Drivers	on USB Flash Drive
Application Software	on USB Flash Drive
User Manual	Quick Reference as Hardcopy, Manual on USB Flash Drive
Optional Accessories	
Environmental Measurement Module	Displays Temperature and Relative Humidity
Fiber Inspection Camera Module	Monochrome Fiber Inspection Camera with Power Measurement Capability

B. Specification of Thermal Sensor

Detector Type	Stabilized Thermal Volume Absorber
Wavelength Operating Range	190 nm – 10.6 μ m
Optical Power Working Range	10 μ W – 1 W (3W _a)
Max Average Power Density	500 W/cm ²
Max Pulse Energy Density	0.2 J/cm ² (1 μ s Pulse), 2 J/cm ² (1 ms Pulse)
Linearity	\pm 0.5%
Resolution	1 μ W
Measurement Uncertainty	\pm 3% @ 1064 nm; \pm 5% @ 190 nm – 10.6 μ m
Typical Application	Low Power Lasers
Laser Types	Diode, Diode Arrays, He-Ne, Dye, Ion Lasers (Ar ⁺ , Kr ⁺)
Coating/Diffuser	Broadband
Cooling	Convection
Response Time	<1 s
Active Detector Area	10 mm x 10 mm
Input Aperture	\varnothing 10 mm
Cable Length	1.5 m
Connector	Sub-D 9p Male
Post Mounting	2 x 8-32 & M4 Thread
Aperture Thread	External SM1 (1.035"-40), Removable Adapter (2 x M2.5 x 4 Counter-Sunk Screw)

	±1% f.s. (1mV)
Bandwidth	DC - 10 Hz, Dependent on Sensor and Settings
Time Constant Correction Range	1 - 30 s
Wavelength Correction	Sensor Dependent; nm, (V/W)
Beam Area Setting	Diameter 1/e ² or Rectangular x,y
Voltage Input (Pyro Sensors)	
Connector	DB9F, Left side
Units	J, J/cm ² , W, W/cm ² , V
Measurement Ranges	4 Decades; 200 mV - 2V - 20 V - 100 V Ranges Selectable in J, Sensor Dependent
Display Resolution	100 µV / Responsivity Value (V/J)
AD Converter	16 bit
Accuracy	± 0.5% full scale
Trigger Threshold	0.1% - 99.9% full scale
Max Repetition Rate	3 kHz
Wavelength Correction	Sensor Dependent (nm, V/J)
Beam Area Setting	Diameter 1/e ² or Rectangular x,y
Analog Output	
Connector	Audio 3.5 mm, Left Side
Signal	Amplified Input Signal - Not Corrected
Voltage Range	0 to 2 V
Accuracy	±3%
Bandwidth	up to 100 kHz, Dependent on Sensor and Settings
Auxiliary In-/Output	
Connector	2 x 6 Pins, 0.1" Socket, Top Side
Function	External Trigger Input 4 x GPIO 2 x 10 bit ADC
Sensor Temperature Control	
Supported Temperature Sensor	Thermistor
Temperature Measurement Range	-10 °C to +80 °C
Sound	
Type	Speaker 300 Hz - 5 kHz
Function	Laser Tuning Support, Console Function Support
Memory	
Type	Nand Flash
Size	128 MB
Interfaces	
Type	USB2.0
Connector (Host)	Mini USB, Top Side
Connector (Device)	USB Type A, Left Side
Power Management	
Battery	LiPo 3.7 V 2600 mAh
Charger / DC Input	5 V / 2 A
Power Connector	Center Hole
Included Accessories	
Hardcase	For Console and Sensor(s)