

PM10K+ LASER POWER SENSOR

Large Area Water-Cooled kW Sensors

These 10 kW water-cooled laser power sensors feature a 65 mm x 65 mm sensor with the BB+ coating that can handle power densities from 6 kW/cm² (at 1kW) to 2.7 kW/cm² (at 10 kW). The sensor can measure up to 10 kW continuously and up to 12 kW on an intermittent basis. You can choose from USB + DB-25 or RS-232 communication options. DB-25 + USB sensor models are compatible with Coherent's stand-alone power meters, which can be ordered separately.



FEATURES

- Power handling up to 10 kW continuous and 12 kW intermittent
- Fast 2 second measurement speed
- BB+ Coating with high power density threshold
- Broadband coating from 190 nm to 11 microns
- Large 65 x 65 mm diameter active area
- Flexible dovetail mount
- DB25 + USB and RS232 configurations
- Safety interlock monitors temp and water flow conditions

APPLICATIONS

- Laser Power Monitoring of CW or Modulated Lasers
- Manufacturing, QA, and Engineering Applications
- Commercial OEM Integration
- Laser Welding, Cutting, Brazing Processes

PM10K+ LASER POWER SENSOR

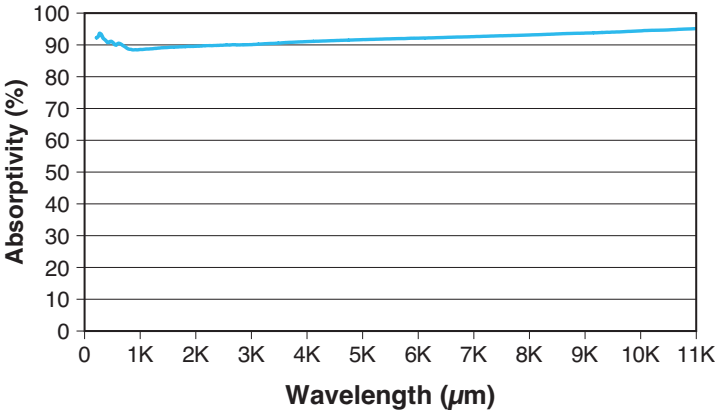
Specifications	PM10K+
Wavelength Range (μm)	0.19 to 11
Power Range ¹ (W)	100 to 10,000
Maximum Intermittent Power (kW) (<5 min.)	12 (beam size dependent)
Noise Equivalent Power (W) (at 6 lpm) USB and RS-232 DB-25 with meter	<0.2 <1.0
Maximum Power Density (kW/cm^2)	6.0 at 1 kW 2.6 at 5 kW 2.7 at 10 kW 2.5 at 12 kW
Recommended Minimum Beam Size ² (mm)	6.5 at 1 kW 22 at 5 kW 31 at 10 kW 35 at 12 kW
Minimum Water Flow Rate ³ (lpm)	6 (~10 PSI)
Water Temperature Range ($^{\circ}\text{C}$)	10 to 25
Response Time (0 to 99%) (at 6 lpm) Speed-up On (seconds) Speed-up Off (seconds)	<3 10
Maximum Energy Density (mJ/cm^2) (1064 nm, 10 ns)	600
Detector Coating	BB+
Detector Dimensions (mm)	65 x 65
Calibration Uncertainty (%)	± 3
Power Linearity (%)	± 2
Spectral Compensation Accuracy (%)	± 1.5
Calibration Wavelength (nm)	1070
Cooling Method	Water
Interface Type	DB-25 + USB, RS-232
Cable Length (m)	2.0 (DB-25)
Part Number DB-25 + USB RS-232	2293937 2293938

Notes:

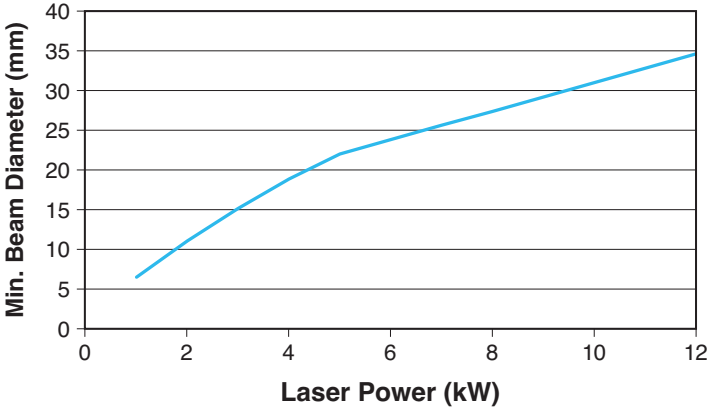
- Lower power measurements are possible for short durations (down to ~20x electrical NEP) or when water temp is very stable. Minimum power reflects typical water flow variation with chiller in lab environment.
- Beam size numbers are for Gaussian beams.
- Water temp. should be stable to <3 $^{\circ}\text{C}$ change per min. and <1 LPM variation in flow rate for best measurement stability.

Typical Performance Data

BB+ Absorber Coating Optical Absorptivity



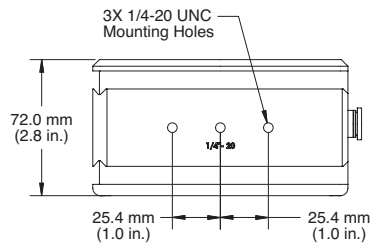
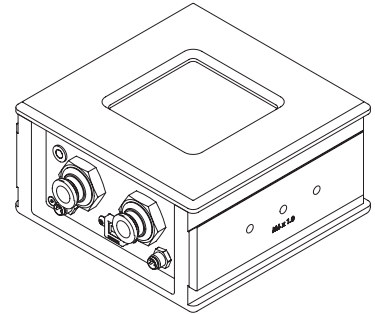
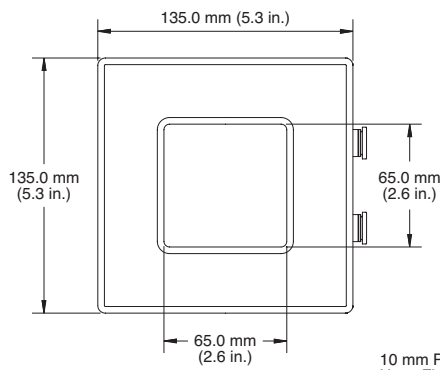
PM10K Minimum Beam Diameter vs Power



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Mechanical Specifications

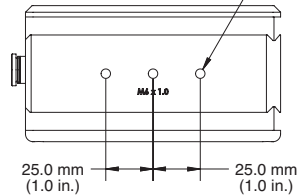
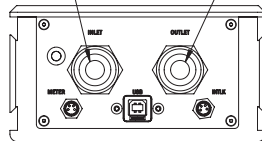
PM10K+ DB-25 + USB



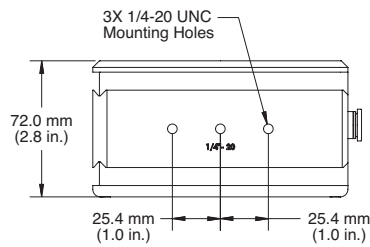
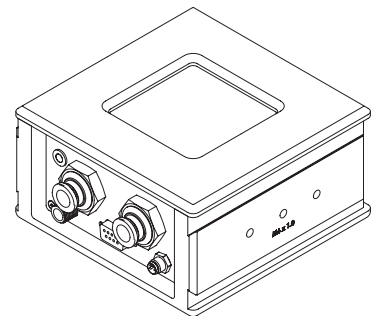
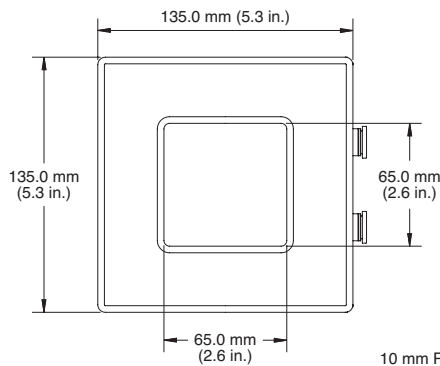
10 mm Push to Connect Hose Fitting - Inlet

10 mm Push to Connect Hose Fitting - Outlet

3X M6X1.0 - 6H Mounting Holes



PM10K+ RS-232



10 mm Push to Connect Hose Fitting - Inlet

10 mm Push to Connect Hose Fitting - Outlet

3X M6X1.0 - 6H Mounting Holes

