

PM10K LASER POWER SENSOR

Large Area Water-Cooled kW Sensors

These 10 kW water-cooled laser power sensors feature a 65 mm diameter sensor with the BB+ coating that can handle power densities from 6 kW/cm² (at 1 kW) to 3 kW/cm² (at 10 kW). You can choose from USB + DB-25 or RS-232 communication options, and you can also opt for a beam capture module that safely absorbs 99% of the laser light. DB-25 + USB sensor models are compatible with Coherent's stand-alone power meters, which you can order separately.



FEATURES

- Power handling up to 10 kW
- 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
- Optional Beam Trap module to absorb 99% of laser light
- Safety interlock monitors temp and water flow conditions

APPLICATIONS

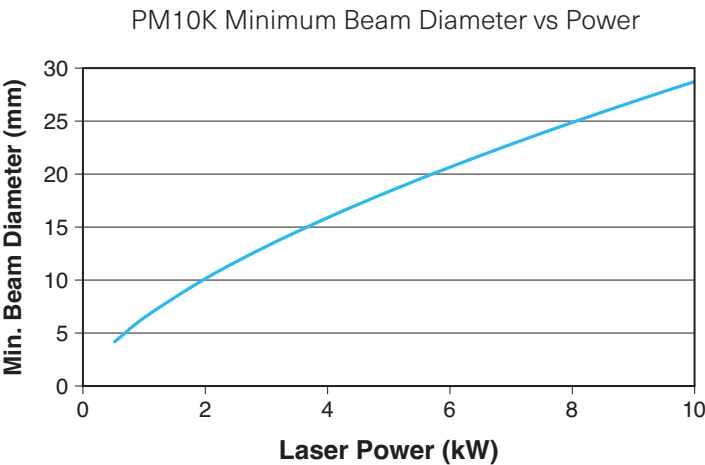
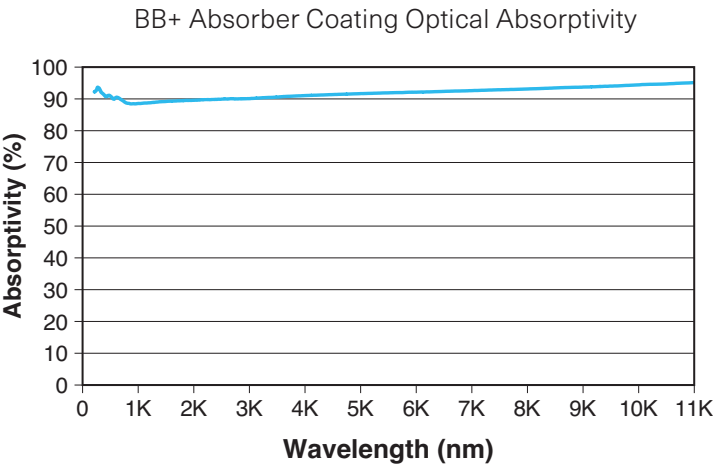
- Laser Power Monitoring of CW or Modulated Lasers
- Manufacturing, QA, and Engineering Applications
- Commercial OEM Integration
- Laser Welding, Cutting, Brazing Processes

Specifications	PM10K
Wavelength Range (μm)	0.19 to 11
Power Range ¹ (W)	100 to 10,000
Maximum Intermittent Power (kW)	12 (beam size dependent)
Signal to Noise Ratio	>200:1
Maximum Power Density (kW/cm^2)	6.0 at 1 kW 3.9 at 5 kW 3.0 at 10 kW
Recommended Minimum Beam Size ² (mm)	6.5 at 1 kW 18 at 5 kW 29 at 10 kW
Minimum Water Flow Rate ³ (Lpm min.)	6 at 10 kW (~10 PSI)
Response Time (0 to 95%) (at 6 Lpm) Speed-up On (seconds) Speed-up Off (seconds)	1.5 3
Response Time (0 to 99%) (at 6 Lpm) Speed-up On (seconds) Speed-up Off (seconds)	2 5.5
Maximum Energy Density (mJ/cm^2) (1064 nm, 10 ns)	600
Detector Coating	BB+
Diffuser	None
Detector Dimensions (mm)	65 x 65
ISO 17025 Calibration Uncertainty (%)	± 3
Power Linearity (%)	± 2
Spectral Compensation Accuracy (%)	± 1.5
Calibration Wavelength (nm)	1070
Cooling Method	Water
Cable Type	PM DB-25, USB, RS-232 models
Cable Length (m)	2.0 (DB25)
Part Number DB-25 + USB RS-232	2293937 TBD

Notes:

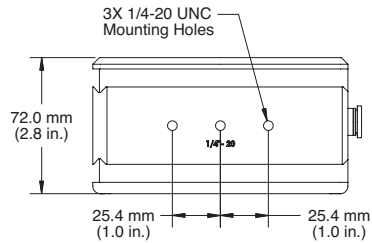
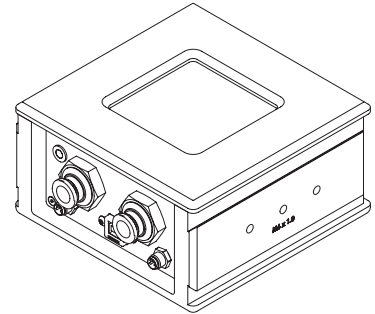
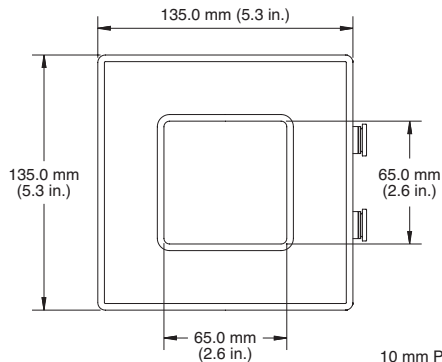
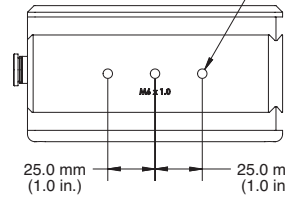
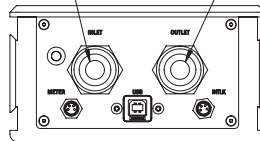
1. Lower power measurements are possible for short durations (down to ~20x electrical NEP) or when water temp is very stable. Minimum power reflects typical water flow variation with chiller in lab environment.
2. Beam size numbers are for Gaussian beams.
3. Water temp should be stable to <3 degC change per min. and <1 LPM/min variation in flow rate for greatest accuracy.

Typical Performance Data

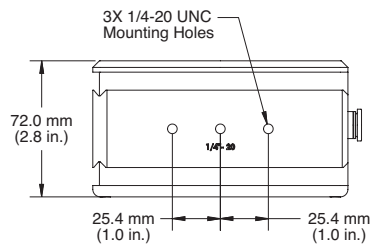
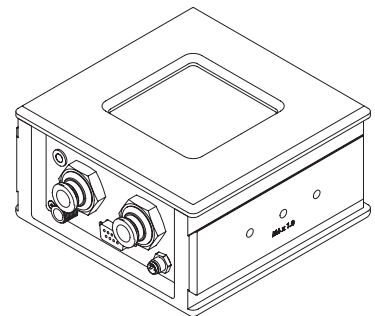
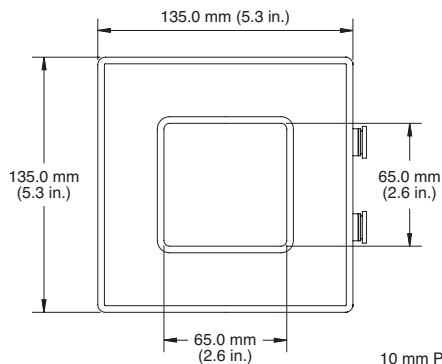


Mechanical Specifications

PM10K DB-25

10 mm Push to Connect
Hose Fitting - Inlet10 mm Push to Connect
Hose Fitting - Outlet3X M6X1.0 - 6H
Mounting Holes

PM10K RS-232

10 mm Push to Connect
Hose Fitting - Inlet10 mm Push to Connect
Hose Fitting - Outlet3X M6X1.0 - 6H
Mounting Holes