



High Power Water-Cooled Thermopile Sensors to 5 kW

Measure Industrial CO₂ and Nd:YAG Lasers at Power Levels up to 5 kW with USB and RS-232 Direct Interfaces

Water-cooling and careful thermal management within these sensors enable them to deliver kW level power handling capacity. They can capably measure industrial CO₂ and Nd:YAG lasers at power levels from 100 W up to 5 kW.

USB and RS-232 sensor models plug directly into a PC or industrial controller. Communication with these models can be performed directly via host commands between host and sensor or through our PC software application (included).

FEATURES & BENEFITS

- Maximum power from 1 kW to 5 kW
- Minimum power down to 100 W
- Water-cooled
- 0.15 μm to 11 μm spectral range
- 50 mm aperture
- Direct USB and RS-232 interfaces
- RoHS compliant



High Power Water-Cooled Thermopile Sensors to 5 kW - USB/RS-232 Datasheet

SPECIFICATIONS	PM1K	PM3K	PM5K
Wavelength Range (μm)	0.25 to 10.6		
Power Range (W)	50 to 1000	50 to 3000	100 to 5000
Max. Intermittent Power ¹ (<5 min.) (W)	3000	5000	10,000
Noise Equivalent Power (mW)	20		
Maximum Power Density ² (kW/cm^2)	1 to 2.5		
Maximum Energy Density (mJ/cm^2)	600		
Response Time (sec.) (0% to 95%)			
Speed-up On	4		
Speed-up Off	6		
Detector Coating	Broadband		
Detector Element	Thermopile		
Detector Diameter (mm)	50		
Calibration Uncertainty (%) (k=2)	± 5		
Power Linearity (%)	± 1		
Spectral Compensation Accuracy (%)	± 1.5		
Calibration Wavelength (nm)	1070		
Cooling Method	Water		
Cable Type	USB and RS		
Cable Length (m)	2.5 (USB)/0.3 (RS)		
Part Number ³	1232163 (USB)	1276824 (USB) 1191293 (RS)	1215999 (USB)

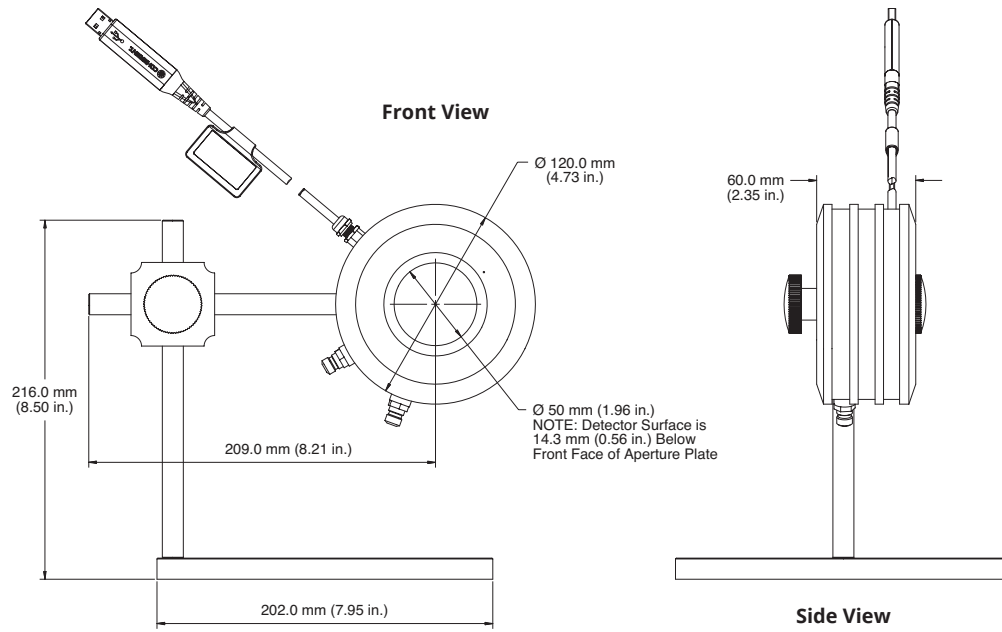
¹ Intermittent power levels may be sustainable for longer than 5 minutes when used with lasers with large diameter, non-Gaussian beam profiles. Monitor closely for coating damage if used longer than five minutes at higher powers.

² The damage resistance of the coating is dependent upon the beam size and profile, the average power level, and the water flow rate. Contact Coherent or your local representative for details related to your application.

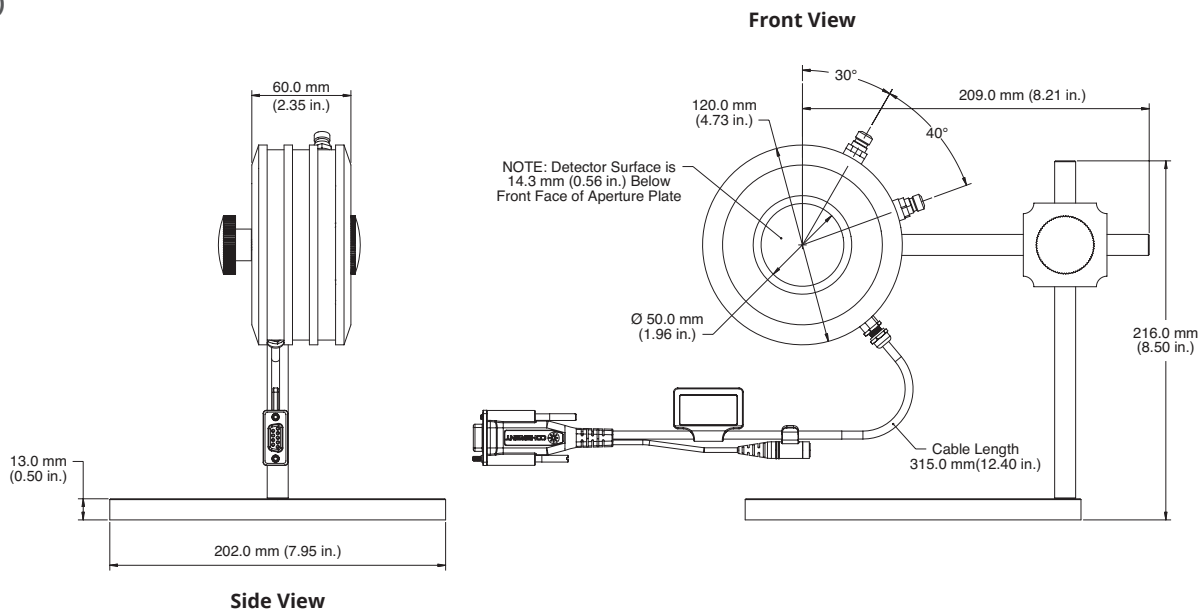
³ Software, water fittings and post stand included with kW sensors.

MECHANICAL SPECIFICATIONS

PM1K (USB)

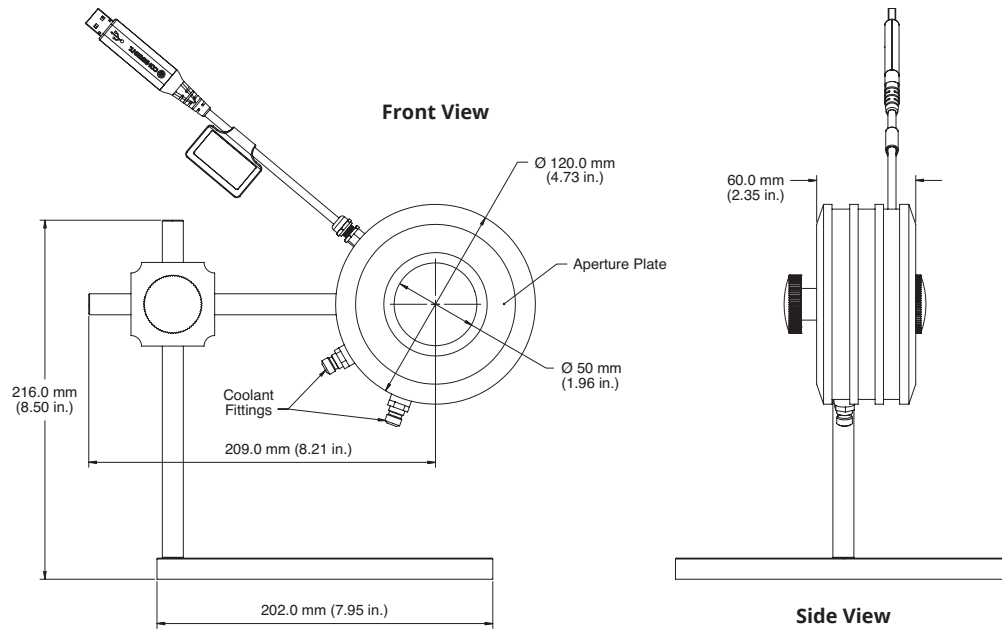


PM3K (RS)



MECHANICAL SPECIFICATIONS

PM5K (USB)



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all High Power Water-Cooled Thermopile Sensors. For full details of this warranty coverage, please refer to the Service section at www.coherent.com or contact your local Sales or Service Representative. MC-049-19-0M1119 Copyright ©2019 Coherent, Inc.