



# Water-Cooled Thermopile Sensors to 5 kW

## Compact, USB Water-Cooled Laser Power Sensors

These compact sensors are particularly useful when space is an issue. They must be water-cooled to achieve the full power rating, and they can also be used air-cooled (stand-alone or mounted to a heat sink) for stand-alone intermittent application of power.

### FEATURES

- Compact designs
- Use water-cooled or air-cooled
- 19 mm and 50 mm apertures

### APPLICATIONS

- Medical
- Scientific
- Industrial
- General Laser Power  
Measurement to 5 kW



# Water-Cooled Thermopile USB/RS Sensors to 5 kW Datasheet

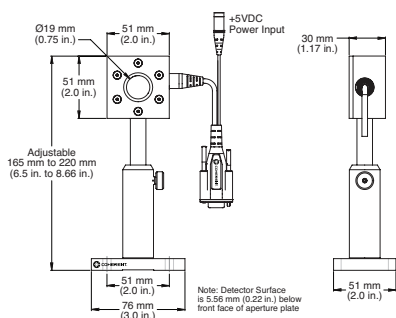
SPECIFICATIONS	PM10-19C	PM100-19C	PM150-19C	PM150-50C
Wavelength Range ( $\mu\text{m}$ )	0.19 to 11			
Power Range (water-cooled)	10 mW to 10 W	300 mW to 100 W	300 mW to 150 W	300 mW to 150 W
Maximum Intermittent Power (W) (<5 min.)	5 (air-cooled)	100	20 (air-cooled)	80 (air-cooled)
Long-Pulse Joules (J)	0.5 to 10	1 to 100	1 to 150	1 to 150
Noise Equivalent Power (mW)	0.2	1	1	1
Maximum Power Density ( $\text{kW}/\text{cm}^2$ )	6			
Maximum Energy Density ( $\text{mJ}/\text{cm}^2$ )	600 (10 ns , 1064 nm)			
Response Time (sec.) (0% to 95%)				
Speed-up On	2	2	2	3
Speed-up Off	4	4	4	12
Detector Coating	Broadband			
Detector Element	Thermopile			
Optic	None			
Detector Diameter (mm)	19	19	19	50
Calibration Uncertainty (%) (k=2)	$\pm 2$			
Power Linearity (%)	$\pm 1$			
Spectral Compensation Accuracy (%)	$\pm 1.5$			
Long-Pulse Joules Accuracy (%)	$\pm 3$			
Calibration Wavelength (nm)	10,600			
Cooling Method	Water/Air (intermittent)			
Cable Type	USB and RS			
Cable Length (m)	2.5 (USB)/0.3 (RS)			
Part Number				
USB	1168344	1288940	1168346	1168348 <sup>1</sup>
RS-232	1168345		1168347 <sup>1</sup>	1168349 <sup>1</sup>

<sup>1</sup> 1 Day Ship program: eligible for next business day shipment.

## MECHANICAL SPECIFICATIONS

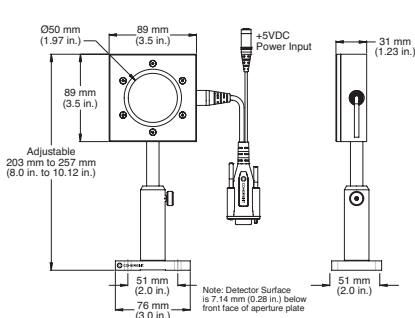
### PM10-19C/PM150-19C

(shown with PowerMax-RS cable)

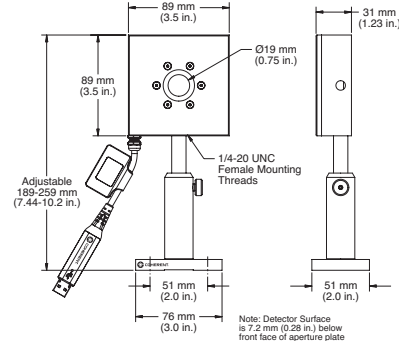


### PM150-50C

(shown with PowerMax-RS cable)



### PM100-19C



## Water-Cooled Thermopile USB/RS Sensors to 5 kW Datasheet

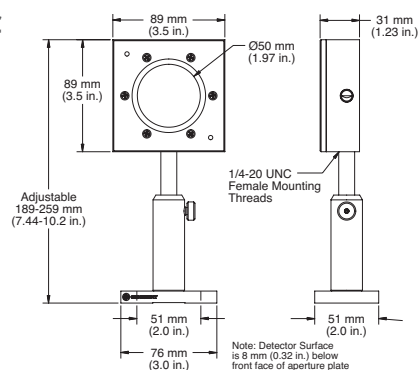
SPECIFICATIONS	PM150-50XC	PM1KX-100	PM5K-100
Wavelength Range (µm)	0.15 to 1	0.15 to 1	0.25 to 10.6
Power Range	300 mW to 150 W	50 W to 1000 W	100 W to 5000 W
Noise Equivalent Power (mW)	1	20	20
Maximum Power Density <sup>1</sup> (kW/cm <sup>2</sup> )	6	1 to 2.5	1 to 2.5
Maximum Energy Density (mJ/cm <sup>2</sup> )	600		
Response Time (sec.) (0% to 95%)			
Speed-up On	3	4	4
Speed-up Off	12	6	12
Detector Coating	UV	UV	Broadband
Detector Element	Thermopile		
Detector Diameter (mm)	50	100	100
Calibration Uncertainty (%) (k=2)	±2	±3	±5
Power Linearity (%)	±1		
Spectral Compensation Accuracy (%)	±1.5		
Calibration Wavelength (nm)	524	1070	1070
Cooling Method	Water		
Cable Type	USB and RS		
Cable Length (m)	2.5 (USB)/0.3 (RS)		
Part Number <sup>2</sup>			
USB	–	–	1235755
RS-232	1305568	1214871	–

<sup>1</sup> 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.

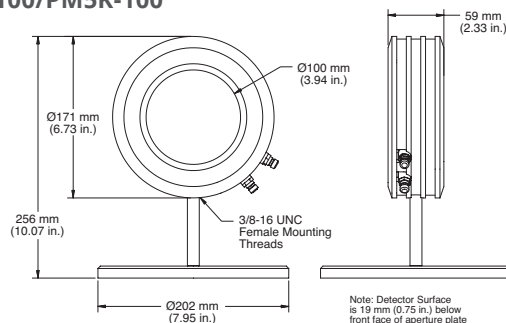
<sup>2</sup> Software, water fittings and post stand included.

## MECHANICAL SPECIFICATIONS

### PM150-50XC



### PM1KX-100/PM5K-100



Coherent, Inc.,  
 5100 Patrick Henry Drive Santa Clara, CA 95054  
 p. (800) 527-3786 | (408) 764-4983  
 f. (408) 764-4646

[tech.sales@coherent.com](mailto:tech.sales@coherent.com) [www.coherent.com](http://www.coherent.com)

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 Thermopile Sensors. For full details of this warranty coverage, please refer to the Service section at [www.coherent.com](http://www.coherent.com) or contact your local Sales or Service Representative.  
 MC-013-21-0M0621 Copyright ©2021 Coherent, Inc.