



# Air-Cooled Thermopile Sensors to 150 W

## Convection, Air-Cooled Thermopile Sensors for Measuring Laser Power to 150 W

These air-cooled, surface absorbing sensors are intended for measurement of low to medium power pulsed and CW lasers from the 10 mW to 150 W power range.

Convection cooling makes them simple to operate as well as mechanically compact. Product numbers ending in "X" are specifically optimized for use with excimer lasers operating in the ultraviolet (150 nm to 400 nm).

USB and RS-232 sensor models plug directly into a PC or industrial controller. Communication with these models can be performed directly via host.

### FEATURES

- Maximum powers from 2 W to 150 W
- Minimum power down to 10 mW
- Broadband and Excimer coatings
- Convective air-cooled
- 0.15  $\mu\text{m}$  to 11  $\mu\text{m}$  spectral range
- 19 mm and 50 mm diameter active areas
- USB and RS-232 models
- RoHS Compliant

### APPLICATIONS

- Medical
- Scientific
- Industrial
- General Laser Power Measurement from mW to 150 W

**COHERENT**  
Superior Reliability & Performance

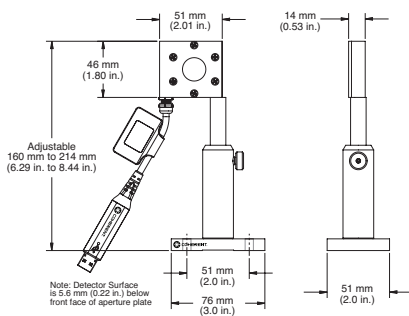
| SPECIFICATIONS                                     | PM2                  | PM10                       | PM30                                       |
|----------------------------------------------------|----------------------|----------------------------|--------------------------------------------|
| Wavelength Range ( $\mu\text{m}$ )                 | 0.19 to 11           |                            |                                            |
| Power Range                                        | 5 mW to 2 W          | 5 mW to 10 W               | 100 mW to 30 W                             |
| Long-Pulse Joules Range (J)                        | 0.5 to 2             | 0.5 to 10                  | 0.5 to 50                                  |
| Maximum Intermittent Power (<5 min.) (W)           | 5                    | 30                         | 50                                         |
| Noise Equivalent Power (mW)                        | 0.2                  | 0.2                        | 0.5                                        |
| 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                          | 3                                          |
| Speed-up Off                                       | 4                    | 4                          | 4                                          |
| Detector Coating                                   | Broadband            |                            |                                            |
| Detector Element                                   | Thermopile           |                            |                                            |
| Optic                                              | None                 |                            |                                            |
| Detector Diameter (mm)                             | 19                   |                            |                                            |
| 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                                     | Air                  |                            |                                            |
| Cable Type                                         | USB and RS           |                            |                                            |
| Cable Length (m)                                   | 2.5 (USB)/0.3 (RS)   |                            |                                            |
| Part Number <sup>1</sup>                           | 1174264 (USB)        | 1174262 (USB) <sup>2</sup> | 1174257 (USB) <sup>2</sup><br>1174258 (RS) |

<sup>1</sup> Software and post stand included.

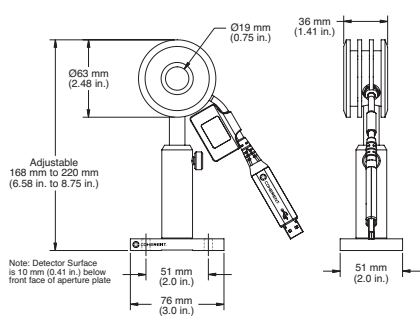
<sup>2</sup> C24 Quick Ship program: eligible for next business day shipment.

## MECHANICAL SPECIFICATIONS

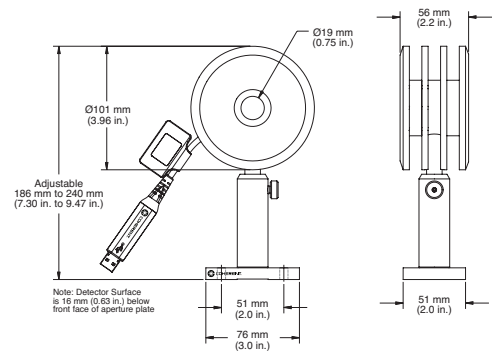
### PM2



### PM10



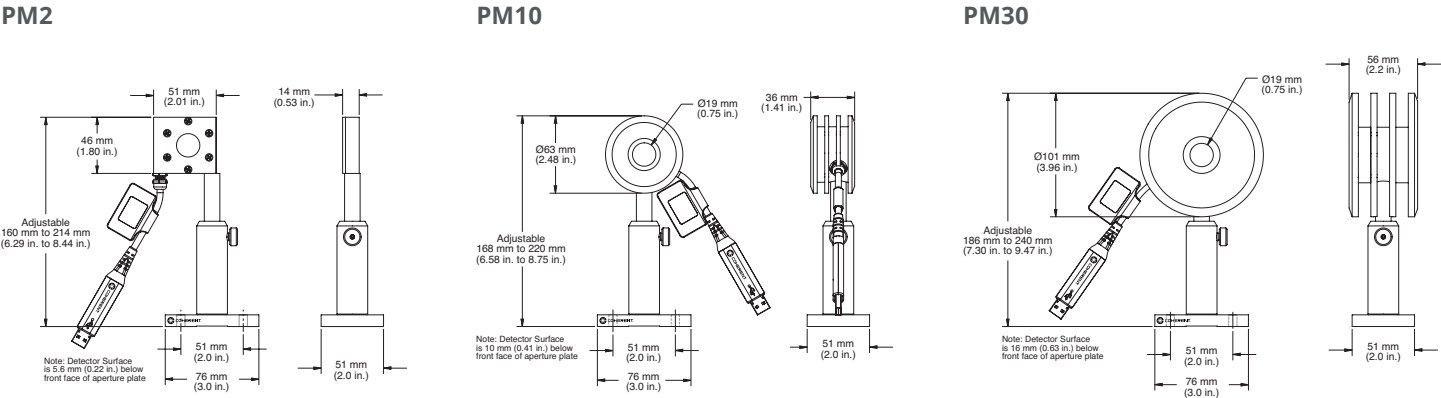
### PM30



| SPECIFICATIONS                               | PM2X                          | PM10X                         | PM30X                         |
|----------------------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Wavelength Range (µm)                        | 0.15 to 1                     |                               |                               |
| Power Range                                  | 5 mW to 2 W                   | 5 mW to 10 W                  | 10 mW to 30 W                 |
| Long-Pulse Joules Range (J)                  | 0.5 to 2                      | 0.5 to 10                     | 0.5 to 50                     |
| Maximum Intermittent Power (<5 min.) (W)     | 5                             | 30                            | 50                            |
| Noise Equivalent Power (mW)                  | 0.2                           | 0.2                           | 0.5                           |
| Maximum Power Density (kW/cm <sup>2</sup> )  | 6                             |                               |                               |
| Maximum Energy Density (mJ/cm <sup>2</sup> ) | 600 (10 ns, 1064 nm)          |                               |                               |
| Response Time (sec.) (0 to 95%)              |                               |                               |                               |
| Speed-up On                                  | 2                             | 2                             | 3                             |
| Speed-up Off                                 | 4                             | 4                             | 4                             |
| Detector Coating                             | UV                            |                               |                               |
| Detector Element                             | Thermopile                    |                               |                               |
| Optic                                        | None                          |                               |                               |
| Detector Diameter (mm)                       | 19                            |                               |                               |
| Calibration Uncertainty (%) (k=2)            | ±1                            |                               |                               |
| Power Linearity (%)                          | ±1                            |                               |                               |
| Spectral Compensation Accuracy (%)           | ±1.5                          |                               |                               |
| Long-Pulse Joules Accuracy (%)               | ±3                            |                               |                               |
| Calibration Wavelength (nm)                  | 514                           |                               |                               |
| Cooling Method                               | Air                           |                               |                               |
| Cable Type                                   | USB and RS                    |                               |                               |
| Cable Length (m)                             | 2.5 (USB)/0.3 (RS)            |                               |                               |
| Part Number <sup>1</sup>                     | 1257617 (USB)<br>1230323 (RS) | 1184874 (USB)<br>1236447 (RS) | 1263294 (USB)<br>1174259 (RS) |

<sup>1</sup> Software and post stand included.

MECHANICAL SPECIFICATIONS

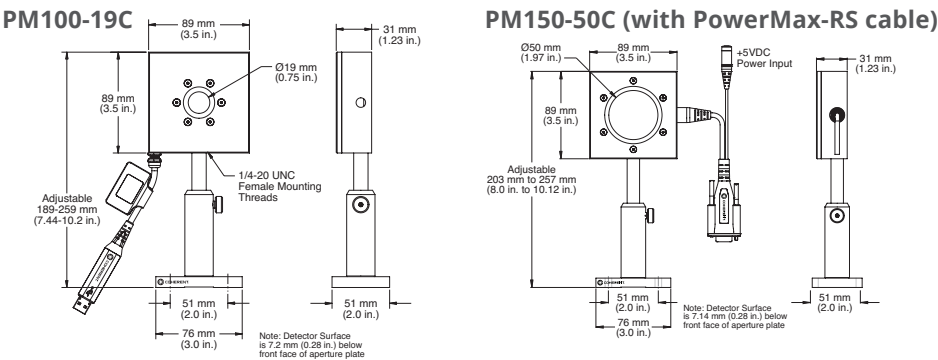


Air-Cooled Thermopile Sensors to 150 W Datasheet

| SPECIFICATIONS                           | PM100-19C                | PM150-50C                                               |
|------------------------------------------|--------------------------|---------------------------------------------------------|
| Wavelength Range (µm)                    | 0.19 to 11               |                                                         |
| Power Range (water-cooled)               | 300 mW to 100 W          | 300 mW to 150 W                                         |
| Long-Pulse Joules Range (J)              | 1 to 100                 | 1 to 150                                                |
| Maximum Intermittent Power (<5 min.) (W) | 100                      | 80 (air-cooled)                                         |
| Noise Equivalent Power (mW)              | 1                        |                                                         |
| Maximum Power Density (kW/cm²)           | 6                        |                                                         |
| Maximum Energy Density (mJ/cm²)          | 600 (10 ns, 1064 nm)     |                                                         |
| Response Time (sec.) (0 to 95%)          |                          |                                                         |
| Speed-up On                              | 2                        | 3                                                       |
| Speed-up Off                             | 4                        | 12                                                      |
| Detector Coating                         | Broadband                |                                                         |
| Detector Element                         | Thermopile               |                                                         |
| Optic                                    | None                     |                                                         |
| Detector Diameter (mm)                   | 19                       | 50                                                      |
| Calibration Uncertainty (%) (k=2)        | ±2                       |                                                         |
| Power Linearity (%)                      | ±1                       |                                                         |
| Spectral Compensation Accuracy (%)       | ±1.5                     |                                                         |
| Long-Pulse Joules Accuracy (%)           | ±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                              | 1288940 (USB)            | 1168348 (USB) <sup>1</sup><br>1168349 (RS) <sup>1</sup> |

1 C24 Quick Ship program: eligible for next business day shipment.

MECHANICAL SPECIFICATIONS



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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 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.

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