High-Sensitivity Optical Power Sensors

10 nW to 50 mW, CW

OP-2/LM-2

Features

- **Si, Ge photodiodes**
- **Spectral range: 250 nm to 1800 nm**
- **Fiber-optic connector (optional, see page 71)**
- **1000:1 attenuator for measurement to 5W (optional, see page 70)**

These high-sensitivity semiconductor sensors are ideal for CW laser measurements in the nW to low mW level. They typically saturate in the 10 to 50 mW level, depending upon the model. For linear operation up to a maximum of 5 Watts, an optional 1000:1 attenuator is used. Light shield is removable.

OP-2 models are compatible with FieldMate, FieldMaxII and LabMax meters. LM-2 models are directly compatible with LabMax meters.

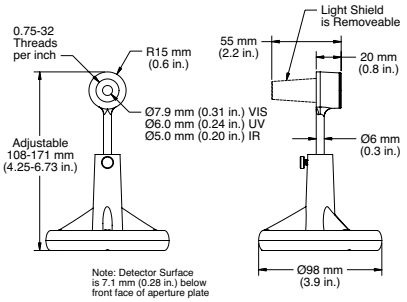
Device Specifications

**C24

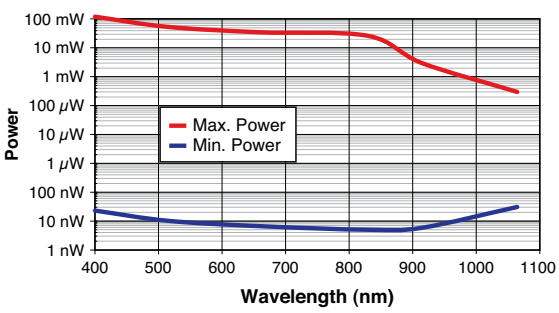
Model	OP-2/LM-2 UV	OP-2/LM-2 VIS	OP-2/LM-2 IR
Detector Material	Silicon		Germanium
Wavelength Range (µm)	0.25 to 0.4	0.4 to 1.06	0.8 to 1.80/0.8 to 1.5[1]
Power Range	10 nW to 30 mW	10 nW to 30 mW[2]	10 nW to 10 mW
Resolution (nW)		1	
Max. Power Density	0.3 W/cm²	1.0 W/cm²	0.5 W/cm²
Active Area Diameter (mm)	6	7.9	5
Calibration Uncertainty (%)(k=2)	±8	±5	±4.5
Calibration Wavelength (nm)	Monochromator calibration across wavelength range		
Cooling Method	Air-cooled		
Connector Type	OP DB-25/LM DB-25		
Cable Length (m)	1.8		
Part Number			
OP-2	1098401	1098313**	1098416**
LM-2	1098390	1098298**	1098342

[1] OP-2 IR and LM-2 IR have different spectral ranges.
[2] Power range is wavelength dependent. See chart below.
** C24 Quick Ship program: eligible for next business day shipment.

OP-2 UV/OP-2 VIS/OP-2 IR
LM-2 UV/LM-2 VIS/LM-2 IR



Measurable Power vs. Wavelength
OP-2 VIS and LM-2 VIS



Accessories

1000:1 Attenuator (see page 70)

Fiber-Optic Connector Adapters (see page 71)

High-Sensitivity Thermopile Power Sensors

100 µW to 2W

PS19Q, PS19, PS10 and PM3

Features

- **Thermally stabilized designs**
- **Spectrally flat from 0.3 µm to 11 µm**
- **10 µW resolution**
- **Fiber-optic connectors (optional, see page 71)**

The PS10 and PS19 model sensors are thermally stabilized, amplified thermopile power sensors with a broad spectral response, high sensitivity, and a large active area. These sensors are ideal for measuring laser diodes, HeNe and HeCd lasers, and small ion lasers. The PS10 model includes a light tube mounted to the front of the housing, which minimizes the effects of background radiation. The light tube can be removed and replaced by FC or SMA fiber connectors (see Accessories - page 71). Where optimum stability is required, specify the PS10Q or PS19Q, which include a wedged quartz window for applications from 0.3 to 2.0 µm. The quartz window more effectively eliminates thermal background radiation and the effects of air currents.

Device Specifications

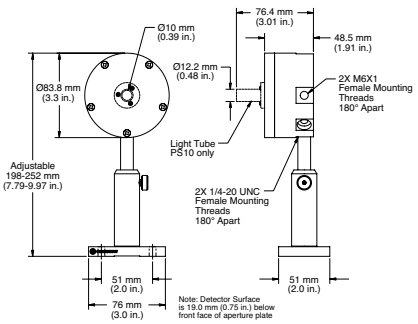
ISO/IEC 17025:2005

AC-1630

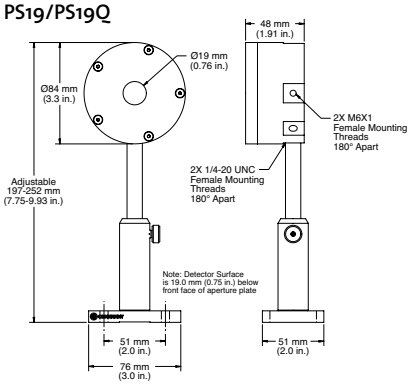
Model	PS10[2]	PS10Q	PS19	PS19Q	PM3[2]	PM3Q
Wavelength Range (µm)	0.19[3] to 11	0.3 to 2	0.19[3] to 11	0.3 to 2	0.19[3] to 11	0.3 to 2
Power Range	100 µW to 1W				500 µW to 2W	
Resolution (µW)	10				50	
Max. Intermittent Power (W)(<5 min.)	3					
Max. Thermal Drift[1]	±40 µW	±20 µW	±400 µW	±20 µW	±1 mW	±500 µW
Max. Avg. Power Density	0.5 kW/cm²					
Max. Pulse Energy Density	50 mJ/cm², 10 ns , 1064 nm					
Response Time (sec.)	2					
Detector Coating	Black					
Quartz Filter Window	No	Yes	No	Yes	No	Yes
Active Area Diameter (mm)	10		19		19	10
Calibration Uncertainty (%)(k=2)	±1					
Calibration Wavelength (nm)	514					
Cooling Method	Air-cooled					
Cable Type	PM DB-25					
Cable Length (m)	2					
Part Number	1098350**	1098400	1098413**	1098341**	1098336	1098419

[1] Power stability over 30 minutes in a typical lab environment.
[2] Light tube supplied with PS10 and PM3 models only.
[3] 190 nm to 300 nm operation restricted to <100 mW average power and <250W/cm² power density.
** C24 Quick Ship program: eligible for next business day shipment.

PS10/PS10Q



PS19/PS19Q



PM3/PM3Q