



Wide Single-Range Optical Power Meter

OPM-230



Product Overview

The Wide Single-Range Optical Power Meter (OPM-230) is the latest development in Santec power meters utilizing a logarithmic gain circuit to provide 80+ dB range in a single gain stage while maintaining high accuracy and fast measurement speed.

It is ideal for applications such as optical alignment or swept wavelength tests where reliable measurements are required at both high and low power.

Analog outputs with selectable voltages (2.5, 5 and 10 V) and a trigger input make it easy to integrate into more complex and automated test systems. Programming through USB or Ethernet are possible with detailed programming guides and samples available

Features

- 80+ dB dynamic range in one gain
- Analog output with selectable voltages (2.5, 5 and 10V)
- Free-space 2 mm InGaAs detector
- 840 to 1700 nm wavelength range
- FC, SC, LC, MPO and more detector adapters
- Trigger input and 128,000 points data logging per detector
- Touch screen display
- USB or Ethernet



Applications

- Optical alignment
- Transceiver testing
- Laser and amplifier characterization
- Transient testing
- Lab and R&D



Optical Alignment

For alignment applications using analog outputs, covering a wide power range in a single gain stage simplifies the system integration. It allows continuous power feedback from first light to optimal alignment without a sudden drop in voltage as gain ranges switch over. The OPM-230's 2mm InGaAs detector's range covers from 8 to -75 dBm.

Flexibility

Choose our remote-head option to give yourself maximum flexibility. There is a threaded mounting hole to help attach it to your work bench. The OPM-230 can be configured with up to 4 detectors.



Automated Measurements Made Easy

It's never been easier to integrate a power meter in an automated process. The OPM-230 is programmable via simple SCPI commands through USB or Ethernet. Automation is further facilitated with our patented, interchangeable SD Slide Detector Adapters

Touch Screen Display

The large and intuitive touch screen display allows you to clearly see the measured values and easily change your power meter settings such as wavelength, averaging time, min/max function etc.



High Speed

With stable readings at averaging times as short as 50 μ s and 128,000 point data logging, the OPM-230 can capture transient behaviors and is suitable for high speed applications.

OPM-230 Optical / Electrical Specifications

Parameter	Specification
Detector Type	2 mm InGaAs
Wavelength Range (nm) ¹	840 to 1700
Power Range (dBm)	+8 to -75 ¹
Max Safe Power (dBm)	16
Uncertainty at Ref Conditions ^{2, 3, 4}	$\pm 6\%$ (840 to 1260 nm) $\pm 5\%$ (1260 to 1650 nm)
Power Resolution (dB)	0.001
Wavelength Resolution (nm)	1
Linearity (dB) ^{2,3}	$\pm 0.04 + 20 \text{ pW}$ (840 to 1260 nm) $\pm 0.03 + 5 \text{ pW}$ (1260 to 1650 nm)
Polarization Dependent Responsivity (dB) ³	0.015
Averaging Time	50 μ s to 1 second
Analog Output (V)	Selectable 2.5, 5 or 10
Data Logging	128,000 points per detector
Remote Interface	USB or Ethernet
Display	5" touch screen
Input Voltage	100 – 240 V AC, 50 – 60 Hz
Power Consumption (VA)	60 maximum

Notes:

¹ Upper limit is wavelength and PD dependent, longer wavelengths may not reach up to 8 dBm

² Averaging time $\geq 10 \text{ ms}$

³ At ambient temperature $23 \pm 3 \text{ }^{\circ}\text{C}$, within 1 year of calibration

⁴ At -10 dBm, CW source, FWHM of source < 10 nm, center wavelength of source within 0.5 nm of OPM-230 setting

⁵ Up to 10 kHz bandwidth

OPM-230 Mechanical / Environmental Specifications

Parameter		Specification
Unit Dimensions W x H x D (cm)	OPM-230	23.5 x 12 x 32.5
	RD-IN2-OPM-230	8.5 x 5 x 13.3
Remote-head Mounting Hole Thread Size		M6
Shipping Box Dimensions W x H x D (cm)		36.5 x 39 x 53
Unit Weight (kg)	OPM-230	3
	RD-IN2-OPM-230	0.4
Total Shipment Weight (kg) ¹		4
Operating Temperature (°C)		5 to 40
Storage Temperature (°C)		-40 to 70
Humidity (Non-condensing)		Maximum 95% RH from 5 to 40 °C

Notes:

¹ OPM-230 only. Add weight for each remote-head

Ordering Scheme & Instructions

1. Configure OPM Wide Single-Range Optical Power Meter

OPM-230 -



DETECTOR TYPE	
IN2	2 mm InGaAs
R	Remote-head port

NUMBER OF DETECTORS	
01	1 detector
02	2 detectors
03	3 detectors
04	4 detectors

CHASSIS SIZE	
1H	1U half rack (no display)
2H	2U half rack (with display)

NUMBER OF DETECTORS	
01	1 detector
02	2 detectors
03	3 detectors
04	4 detectors

DETECTOR TYPE	
IN2	2 mm InGaAs
R	Remote-head port

**Optional 2nd detector type
(leave blank if only 1 detector type)*

2. Add Accessories

Remote-head Detectors

RD - - OPM-230

DETECTOR TYPE	
IN2	2 mm InGaAs

Slide Detectors Adapters

SD -



TYPE							
FC	FC	DSN	Duplex SN	MT	MT	BSF	Bare single fiber
SC	SC	MDC	MDC	SLED-FH-60	Fujikura FH-60	BSF-BARREL	Barrel for SD-BSF
LC	LC	U12	Universal 1.25 mm	SLED-FHM-12	Sumitomo FHM-12	BRF	Barrel ribbon fiber
MPO	Universal MPO	U25	Universal 2.5 mm	SLED-BARREL	Barrel for SD-SLED-x	BRF-BARREL	Barrel for SD-BRF

*many more detector adapters available upon request.



In the Box

OPM-230 - High Performance Optical Power Meter

- OPM-230
- Optional: remote-head detector and remote-head cable (1.5 m)
- Calibration certificate
- Detector cap (SD-CAP)
- AC power cord
- USB A to USB B cable (1.5 m)
- Ethernet cable (1.5 m)



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