

# Compact Photonic Tools

## Optical Power Meter (cOPM-A1)



The Viavi Solutions Compact Photonic Tools offer a new portfolio of point solutions for fiber optic test applications. The cOPM-A1 Optical Power Meter is optimized for a number of applications ranging from general lab use to test and process automation for passive optical components. It can be used with both single-mode and multimode fiber and offers power levels from  $-80$  to  $+15$  dBm over a wavelength range of 800 to 1650 nm. The cOPM-A1 features high accuracy, high linearity, and extremely low polarization-dependent sensitivity.

Similar to the Viavi Multiple Application Platform (MAP-200), the cOPM-A1 detector heads use the AC100 interchangeable detector adapters that are available for most common connector types, as well as a fiber holder that permits bare fiber measurements. The cOPM-A1 Indium-Gallium-Arsenide (InGaAs) Optical Power Meter has a FC connector detector adapter as a standard accessory and an optional integrating sphere, which may be fastened to the front panel for increased power measurements to 33 dBm (2 W) with decreased polarization dependent loss (PDL) to 0.005 dB.

A simple, intuitive graphical user interface (GUI) and keypad minimizes training requirements. A universal serial bus (USB) interface may be used for test automation using a PC. While connected by USB, the cOPM-A1 does not require an additional mains connection, reducing cord tangle.

### Innovative Features Reduce Test Duration by 3X

The following two powerful features enable the cOPM-A1 to dramatically reduce test duration in manufacturing and minimize potential operator errors.

#### Key Features

- Operates over wide wavelength range (800 to 1650 nm)
- High power capability option can withstand up to 2W
- Low PDL  $<0.01$  dB
- Bare fiber measurement capability
- SCPI-compliant commands over USB automation interface
- Auto dark current measurements
- Perform simultaneous measurements on multiple wavelengths when used with cORL and cFPL units

#### Applications

- Serves as a basic tool for performing laboratory absolute optical power measurements
- Performs insertion loss testing of passive optical components
- Performs insertion loss testing of connectors and cables
- Performs optical power measurements in automated alignment stations



## Auto Dark Current

The cOPM-A1 removes the need for manual dark current measurements through innovative analogue circuit design. Typical power meters must be routinely and manually terminated to measure residual current from the photodiode. If this termination is not performed, or performed poorly, significant errors can result for low power measurements. The cOPM-A1 automatically conducts these measurements in the background, which results in zero downtime for a test station and simplifies daily start-up procedures.

## TWIN or TRIPLE Test

For Insertion Loss and Return Loss measurements, TWIN or TRIPLE tests dramatically lower test durations up to three times by allowing for the simultaneous measurement of two or three wavelengths. To enable TRIPLE Test, the cOPM-A1 is paired with either the cFPL-A1 Fabry-Perot Light Source or the cORL-A1 Optical Return Loss Meter. For additional information, refer to the cORL and cFPL data sheets.

## Specifications

Parameter	cOPM-A1
Sensor element	InGaAs
Wavelength range	800 to 1650 nm
Power range	-80 to +15 dBm
Display resolution	0.01 dB/0.001 µW
Fiber type	SMF and MMF with N/A <0.27
Maximum core diameter	62.5 µm
Uncertainty at reference condition <sup>1</sup>	±3%
Linearity at reference condition <sup>1</sup>	±0.06 dB, ±20 pW
Averaging time	200 µs
Recalibration period	1 yr
Warm-up time	5 min
Operating temperature	-10 to +55°C
Humidity	Noncondensing
Dimensions (W x H x D)	250 x 88 x 210 mm (9.84 x 3.46 x 8.27 in)
Weight	1.8 kg (4 lbs)
Remote interface	USB (through virtual com port driver)
Powering options	Auto sensing Mains 100 to 240 V AC, 50 to 60 Hz USB Direct from USB, no main required
Power consumption <sup>2</sup>	1.1 W

Integrated Sphere Parameter	AC330
Attenuation at reference <sup>3</sup>	-30.7 ±0.8 dB
Spectral range	800 to 1650 nm
Wavelength flatness <sup>4</sup>	<±1.5 dB
RL <sup>5</sup>	>65 dB (typical)
Relative uncertainty <sup>6</sup>	<±0.05 dB
Residual polarization dependent loss (PDL) <sup>7</sup>	<0.005 dB
Maximum power <sup>8</sup>	+33 dBm (2 W)
Operating temperature	10 to 40°C, RH 15 to 70%
Storage temperature	-30 to 60°C, RH 15 to 95% noncondensing

- Reference condition: -20 dBm (CW), 1310 ±1 nm, 23 ±3°C, to 75% RH, 9 to 50 µm
- When connected to the AC power plug
- Measured with wavelength of 1550 nm at 23 ±5°C and RH = 50% with straight connector
- From 850 to 1650 nm, refer to the wavelength of 1310 nm
- Measured at 1310 and 1550 nm with SM fiber and FC/APC connector
- At reference condition, with 8 degree angled connector, due to the polarization and interference
- Measured at 1550 nm
- Continuous Wave (CW) laser

## Ordering Information

Description	Part Number
<b>Base</b>	
Power meter with InGaAs Diode	BN2297/02
<b>Optional Accessories</b>	
<b>3 mm InGaAs MAP Power Meter</b>	
Detector cap	AC100
FC detector adapter	AC101
ST detector adapter	AC102
SC detector adapter	AC103
MT ribbon cable adapter	AC112
MU detector adapter	AC114
E2000 detector adapter	AC115
Magnetic fiber holder (requires AC121)	AC120
Single bare fiber plug (requires AC120)	AC121
+33 dBm integrating sphere	AC330



Contact Us **+1 844 GO VIAVI**  
(+1 844 468 4284)

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visit [viavisolutions.com/contacts](http://viavisolutions.com/contacts).

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