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MAP Power Meter







For stand-alone applications, the MAP Power Meter may be used as a benchtop

Applications

- Dense wavelength division multiplexing (DWDM) channel measurements (Up to 128 channels/controller addresses)
- Amplifier characterization (Up to 2 W of input power)
- Bit error rate (BER) testing
- Precise optical power control (± 0.01 dB)
- · Receiver and transmitter testing

Safety Information

 This cassette, when installed in a MAP chassis, complies to CE requirements plus UL3101-1 and CAN/CSA-C22.2 No. 1010.1

Key Features

- Low PDL (< 0.01 dB)
- Wide wavelength range (800 to 1650 nm)
- High power option (2 W)
- Dual detector option
- Bare fiber measurements capability

JDSU offers two types of Multiple Application Platform (MAP) Power Meter Cassettes. The first is a power meter with a 3 mm InGaAs detector and the second is a power meter with 10 mm Ge detector.

3 mm InGaAs MAP Power Meter

The Power Meter is optimized for applications using single-mode (SM) or multimode (MM) fiber to measure power levels from - 80 to 10 dBm over the wavelength range of 800 to 1650 nm. It features a high accuracy, high linearity and extremely low polarization dependant loss (PDL). The MAP Power Meter Cassette with 3 mm InGaAs detector is available in single or dual configuration and comes with an analog electrical output for external monitoring. The averaging time can be set as low as 100 µs for high-speed applications.

For ultimate flexibility, the detector heads were designed with the JDSU AC100 interchangeable detector adapters. Detector adapters are available for six connector types as well as a fiber holder that permits bare fiber measurements (please refer to the Optional Accessories section). The cassette is supplied with an FC detector adapter as a standard accessory. An optional integrating sphere may be fastened to the front panel allowing for increased power measurement capability to 33 dBm (2 W) with decreased PDL to 0.005 dB.

10 mm Ge MAP Power Meter

This versatile power meter can be used in applications using standard SM or MM fiber as well as SM or MM ribbon cable with fiber counts as high as 72 (see Specifications for further details). The power meter can accurately measure power levels from -50 to 3 dBm over the wavelength range of 800 to 1650 nm.

The detector heads are compatible with the JDSU AC400 series interchangeable detector adapters (please refer to the Optional Accessories section). The cassette is supplied with an FC detector adapter as a standard accessory.



Dual Detector Power Meter with an Integrating Sphere on Detector 2



10 mm Ge Power Meter

Specifications

Parameter	3 mm InGaAs MAP Power Meter	10 mm Ge MAP Power Meter		
ensor element 3 mm InGaAs		10 mm Ge		
Wavelength range	800 to 1650 nm	800 to 1650 nm		
Power range	-80 to 10 dBm	-50 to 3 dBm		
Fiber type	SMF and MMF with N/A ≤ 0.27			
Maximum core diameter for single fiber	62.5 μm (N/A ≤ 0.27)			
Maximum core diameter for ribbon cable ¹	N/A	62.5 μm (N/A ≤ 0.27)		
Uncertainty at reference condition	$\pm 2.5 \% (1200 \le \lambda \le 1550 \text{ nm})^2$	± 4 % ³		
	$\pm 4.0 \% (800 \le \lambda < 1200 \text{ nm})^2$	N/A		
	$\pm 3.5 \% (1550 \le \lambda \le 1600 \text{ nm})^2$	N/A		
	$\pm 4.0 \% (1600 \le \lambda \le 1630 \text{ nm})^2$	N/A		
Total uncertainty ^{4,5}	$\pm 4.5 \% \pm 5 \text{ pW } (800 \le \lambda \le 1630 \text{ nm})$	± 5.5 % ± 100 pW		
Relative uncertainty				
Polarization ⁶	± 0.01 dB	< 0.01 dB		
Spectral ripple ⁷	\pm 0.005 dB	< 0.01 dB		
Linearity (at $T = 23 \pm 5$ °C)	$1520 \le \lambda \le 1570 \text{ nm}$ $\pm 0.025 \text{ dB}^8$			
	-65 to 10 dBm			
	$< \pm 0.02 \text{ dB}$			
Return loss (RL) ⁹	> 55 dB	> 50 dB		
Noise ¹⁰ (peak to peak)	< 5 pW	< ± 100 pW		
Averaging time	100 μs to 5 s	100 μs to 5 s		
Analog output	0 to 2 volts	N/A		
Recalibration period	1 yea	1 year		
Warm-up time	20 min	20 minutes		
Operating temperature	5 to 40	5 to 40 °C		
Humidity	non-condensing			
Dimensions (W x H x D)	4.06 x 13.24 x 39.5 cm	8.12 x 13.24 x 39.5 cm		
Weight	1.2 kg			

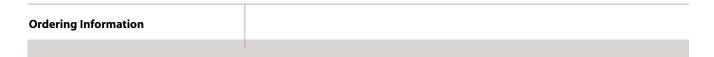
- 1. Six rows of 12 fibers with a 0.250 mm vertical and horizontal pitch.
- 2. Reference condition: Fiber type: SMF-28, Ambient temperature: 23 ± 3 °C, Spectral width of source: < 1 nm, Optical power on detector: $100 \mu W$ (- 10 dBm).
- 3. Reference condition: CW laser with P = -10 dBm; Wavelength 1550 nm; FWHM < 10 nm; SM fiber with single channel FC connector adapter; Ambient temperature 25 \pm 3 °C.
- $4. \ \ Operating conditions: NA \ of \ fiber \leq 0.27 \ Temperature, humidity \ and \ power \ ranges: as \ specified. For FC/APC \ connector \ N/A = 0.27 \ add \ 1\%.$
- 5. For wavelengths >1600 nm and temperatures > 35 °C add 1.0 %.
- 6. Polarization: Polarization states at fixed wavelength (1550 \pm 30 nm) and constant power; Straight connector; T = 23 \pm 5 °C.
- 7. Ripple: $1545 \le \lambda \le 1565$ nm; Fixed state of polarization; Constant power; Straight connector; $T = 23 \pm 5$ °C.
- 8. For 3 dBm > P > 30 dBm.
- 9. RL: At 1310 nm and 1550 nm; 8 ° angled connector; T = 23 \pm 5 °C.
- 10. Noise: Averaging time 1 s; Observation time 300 s; Wavelength 1550 nm; T = 23 \pm 5 °C.

Integrating Sphere Specifications

Parameter	AC330
Attenuation at reference ¹	$-30.7 \pm 0.8 \text{ dB}$
Spectral range	800 to 1650 nm
Wavelength flatness ²	< ± 1.5 dB
RL ³	> 65 dB (typical)
Relative uncertainty ⁴	< ± 0.05 dB
Residual polarization dependent loss (PDL) ⁵	< 0.005 dB
Maximum power ⁶	+ 33 dBm (2 W)
Operating temperature	10 to 40 °C, RH 15 % to 70 %
Storage temperature	-30 to 60 °C, RH 15 % to 95 % non-condensing

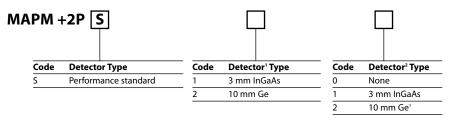
- 1. Measured with wavelength of 1550 nm at 23 \pm 5°C and RH = 50% with straight connector.
- 2. From 850 nm to 1650 nm, refer to the wavelength of 1310 nm.
- 3. Measured at 1310 nm and 1550 nm with SM fiber and FC/APC connector.
- 4. At reference condition, with 8 degree angled connector, due to the polarization and interference.
- 5. Measured at 1550 nm.
- 6. Continuous Wave (CW) laser.





For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide or via e-mail at customer.service@jdsu.com.

Sample: MAPM+2PS12



- 1. Not applicable if a 10 mm detector has been ordered for detector
- 2. A Dual 10 mm Ge detector cannot be ordered.

Optional Accessories

3 mm InGaAs MAP Power Meter

Product Code	Description
AC100	Detector cap
AC101	FC detector adapter
AC102	ST detector adapter
AC103	SC detector adapter
AC112	MT ribbon cable adapter
AC114	MU detector adapter
AC115	E2000 detector adapter
AC120	Magnetic fiber holder (requires AC121)
AC121	Single bare fiber plug (requires AC120)
AC330	+33 dBm integrating sphere

10 mm InGaAs MAP Power Meter

Product Code	Description
AC400	Detector cap
AC401	FC/PC adapter
AC402	MPO/MTP adapter

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