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MAP Power Meter

3 mm InGaAs Power Meter with Dual Detector Configuration

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

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.

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

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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
Sensor 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	± 2.5 % (1200 ≤ λ ≤ 1550 nm)[2] ± 4.0 % (800 ≤ λ< 1200 nm)[2] ± 3.5 % (1550 ≤ λ ≤ 1600 nm)[2] ± 4.0 % (1600 ≤ λ ≤ 1630 nm)[2]	± 4 %[3] N/A N/A N/A
Total uncertainty[4,5]	± 4.5 % ± 5 pW (800 ≤ λ ≤ 1630 nm)	± 5.5 % ± 100 pW
Relative uncertainty		
Polarization[6]	± 0.01 dB	< 0.01 dB
Spectral ripple[7]	± 0.005 dB	< 0.01 dB
Linearity (at T = 23 ± 5 °C)	1520 ≤ λ ≤ 1570 nm -65 to 10 dBm < ± 0.02 dB	± 0.025 dB[8]
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 year	
Warm-up time	20 minutes	
Operating temperature	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 µW (- 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 ± 3 °C.
4. Operating conditions: NA of fiber ≤ 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 ± 30 nm) and constant power; Straight connector; T = 23 ± 5 °C.
7. Ripple: 1545 ≤ λ ≤ 1565 nm; Fixed state of polarization; Constant power; Straight connector; T = 23 ± 5 °C.
8. For 3 dBm > P > - 30 dBm.
9. RL: At 1310 nm and 1550 nm; 8 ° angled connector; T = 23 ± 5 °C.
10. Noise: Averaging time 1 s; Observation time 300 s; Wavelength 1550 nm; T = 23 ± 5 °C.

Integrating Sphere Specifications

Parameter	AC330
Attenuation at reference[1]	-30.7 ± 0.8 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 ± 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.

Ordering Information

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

MAPM +2P [S] [ ] [ ]

Code	Detector Type
S	Performance standard

Code	Detector[1] Type
1	3 mm InGaAs
2	10 mm Ge

Code	Detector[2] Type
0	None
1	3 mm InGaAs
2	10 mm Ge[1]

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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