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MAP Polarization Controller





For stand-alone applications, the MAP Polarization Controller may be used as a benchtop

Applications

- Passive component PDL and polarization mode dispersion (PMD) measurements
- EDFA noise and polarization dependent gain (PDG) measurements
- 10 GbE transceiver worst-case relative intensity noise and dispersion penalty measurements
- Optical signal to noise ratio (OSNR) and extinction ratio (ER) measurements

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

- Complete polarization control
 - Designed to meet IEEE Std. 802.3aeTM 10 GbE testing requirements
 - Designed to perform fast polarization dependent loss (PDL) measurements (4-state Mueller method)
 - Compact single width cassette
 - Very high angular accuracy and absolute fast axis alignment accuracy

The Multiple Application Platform (MAP) Polarization Controller Cassette provides an efficient and precise way of creating any state of polarization. It can also be used as part of a polarization state analyzer.

The single width MAP Polarization Controller Cassette is comprised of three rotating elements: a high extinction ratio polarizer, a quarter-wave plate and a half-wave plate. Each element can be controlled locally from the MAP local interface or remotely through the RS-232 or GPIB. The controller configuration can be offered with a single-mode (SM) or a polarization maintaining fiber (PMF) input.

The polarization controllers can be combined with other instruments to complete measurement test systems such as erbium-doped fiber amplifier (EDFA) or passive component test sets.



Specifications

Parameter	1310 nm	1550 nm	
Wavelength range	1260 to 1360 nm	1420 to 1630 nm	
Insertion loss (IL) ^{1,3}	< 1.5 dB	< 1.5 dB	
IL variation with wavelength ^{1,3}	± 0.1 dB	± 0.1 dB	
IL variation with rotation ^{1,3,4}	± 0.05 dB	± 0.05 dB	
Return loss (RL)	> 45 dB	> 45 dB	
Extinction ratio ²	> 40 dB		
Fast axis alignment accuracy	< ± 0.5 °		
Angular accuracy	± 0.1 °		
Rotational resolution	0.075 °		
Maximum rotational speed per element	900 °/s		
Maximum optical input power	100 mW		
Calibration	2	years	
Operating temperature	10 to 40 °C		
Storage temperature	-30 to 60 °C		
Humidity	Maximum 95% RH from 10 to 40 °C non-condensing		
Dimensions (W x H x D)	4.06 x 13.24 x 39.5 cm		
Weight	1.6 kg		

1. From 1520 to 1630 nm for the 1550 nm version.

2. Measured with a $>45~\mathrm{dB}$ polarized narrow spectral line source.

3. At 23 °C \pm 5 °C.

4. IL variation using an incoherent (broadband) source with both waveplates rotating at differing rates.

Ordering Information

MAPP+1	0				
Cod	e Model	Code	Wavelength (nm)	Code	Connector Type
1S	Controller SMF input	3	1260 to 1360	FP	FC/PC
1P	Controller PMF input	5	1420 to 1630	FA	FC/APC
	(FC connectors,			SC	SC/PC
	1550 nm only)	_		SU	SC/APC

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