

Data Sheet

VIAMI

Optical Dispersion Measurement Module (8100 Series)

For OneAdvisor 800 platform

The VIAMI Optical Dispersion Measurement (ODM) module is a compact, single test port, field test solution combining Chromatic Dispersion (CD), Polarization Mode Dispersion (PMD) and Attenuation Profile (AP) measurements in a single module.

Fiber optic cables are essential to delivering high-speed data services however, as data rates/modulation schemes continue to increase, dispersion effects become more pronounced, especially for high-speed 400G services.

Dispersion testing enables high speed network owner/operators and dark fiber providers to identify any potential issues with fibers and take corrective measures promptly. Ensuring optimal network performance from day 1, and reduced downtime preventing revenue loss due to network disruptions. Furthermore, dispersion testing can help network owners comply with industry standards and regulations, ensuring that their network is secure and reliable.

Rapidly deploy 200/400G (and beyond) with flawless first-time activation by comprehensively validating all aspects of a fiber (CD, PMD, AP, IL, ORL, OTDR) with a single test solution.



OneAdvisor 800 All-in-One wireline and wireless network installation and maintenance test solution

Key Features

- Combined CD, PMD, and AP in one plug-in module
- Provides the most integrated dispersion solution for fiber optic networks field testing
- Patented phase-shift solution for CD measurement
- Single connection and fast measurement time for improved efficiency

Use Cases and Applications

- Complete and accurate fiber characterization of very high-speed networks (10 to 400 Gb/s)
- Base-line testing for any CWDM/DWDM system including amplified links
- Qualify transport, metro data center interconnect, cellular backhaul and medium-haul fiber optic links
- Identify unknown fiber types by combining results of 3 test parameters

Typical Specifications¹ at 25°C

Weight	600g (1.32lbs)
Dimensions (w × h × d)	213 × 124 × 32 mm (8.38 × 4.88 × 1.26 in)
Applicable fiber	SMF 9/125 μm
Interchangeable optical connectors	FC, SC, LC

Chromatic Dispersion

Description	Long Range 81LRODM2		Medium Range 81MRODM2	
	80 km G652	10 km G655	80 km G652	10 km G655
Wavelength acquisition range	1260-1640 nm		1435-1640 nm	
Wavelength measurement range	1260-1650 nm		1260-1650 nm	
Wavelength uncertainty	±0.1 nm			
Minimum length	1 km			
Dynamic range ⁶	45 dB		30 dB	
	55 dB ²		40 dB ²	
Zero dispersion wavelength uncertainty (nm)	±1.5	±1.5	n/a	±4.5
Zero dispersion wavelength repeatability ³ (nm)	0.1	0.1	n/a	0.4
Dispersion uncertainty ^{4, 5} (ps/nm.km)	±0.05	±0.1	±0.06	±A0.3
Dispersion repeatability ^{3, 4} (ps/nm.km)	0.007	0.007	0.04	0.04
Slope at zero wavelength repeatability ³	0.5%	0.1%	n/a	n/a
Measurement time	40 s to 80 s		10 s to 30 s	

Polarization Mode Dispersion

Description	Long Range 81LRODM2		Medium Range 81MRODM2	
	80 km G652	10 km G655	80 km G652	10 km G655
Dynamic range ⁶	58 dB		45 dB	
	65 dB ²		55 dB ²	
PMD measurement range ⁷	0.08 to 130 ps			
PMD absolute uncertainty ^{8, 9}	±0.02 ps ±2% PMD			
PMD repeatability ^{8, 9}	0.025 ps			
Measurement time ¹⁰	16 seconds, independent of PMD value		8 seconds, independent of PMD value	

Attenuation Profile

Description	Long Range 81LRODM2	Medium Range 81MRODM2
Dynamic range ⁶	54 dB	45 dB
	64 dB ²	55 dB ²
Wavelength uncertainty	±0.1 nm	
Measurement uncertainty ¹¹		
@ 1310 nm	0.006 dB/km	n/a
@ 1550 nm	±0.003 dB/km	
@ 1625 nm	±0.004 dB/km	
Measurement time ¹⁰	6 seconds	3 seconds

¹With broadband source module E81BBS2A unless specified

²With handheld broadband source OBS550 in High Dynamic mode

³Repeatability refers to the typical one-sigma standard deviation value, obtained for system cycling over 20 measurements

⁴1530-1570 nm band

⁵Excluding reference fiber uncertainties

⁶With averaging

⁷Up to 60 ps in strong mode coupling

⁸Weak mode coupling, between 0.1 ps and 60 ps DGD range

⁹Up to 35 dB attenuation and METAS standard traceable

¹⁰Minimum value without averaging

¹¹Measured with 80 km G.652 fiber

Ordering Information

Optical Dispersion Measurement Modules

Catalog number	Description
E81MRODM2-APC	Medium range Optical Dispersion Measurement module with APC connector
E81MRODM2-PC	Medium range Optical Dispersion Measurement module with PC connector
E81LRODM2-APC	Long range Optical Dispersion Measurement module with APC connector
E81LRODM2-PC	Long range Optical Dispersion Measurement module with PC connector

Broadband Sources

Catalog number	Description
2279/32	Handheld Broadband Sources for CD/PMD/AP (1460–1640 nm)
2279/33	Handheld Broadband Sources for CD/PMD/AP (1460–1640 nm)
E81BBS2A-APC	Broadband Source module for CD/PMD/AP (1260–1640 nm) with APC connector
E81BBS2A-PC	Broadband Source module for CD/PMD/AP (1260–1640 nm) with PC connector
EUSCADS, EULCADS, EUFCADS	Universal PC connector adapters
EUSCADS-APC, EULCADS-APC, EUFCADS	Universal APC connector adapters



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