High-Performance Full-Band OSAs

OSA-500R

Test xDWM networks and optical components with fullband, high-performance optical spectrum analyzers.

Targeted for advanced test of high speed and xDWM networks, the OSA-500R modules are a high performance solution for full-band spectral testing. The industry-leading 0.038 nm optical resolution bandwidth makes the OSA-500R optical spectrum analyzer ideal for unmatched performance testing in ultradense wavelength-division multiplexing (DWDM) networks with channel spacing down to 25 GHz.

OSA-500R includes an internal wavelength calibrator that guarantees 0.010 nm unsurpassed wavelength accuracy without external recalibration.

Combining very high optical resolution using innovative free-space optics with full-band measurement capability make VIAVI OSAs ideal portable solutions for testing wavelength division multiplexing (xWDM) systems during provisioning, maintenance, and upgrades.

Key Benefits

- Simple automated testing with pass/fail analysis at the push of a button
- Get true OSNR results in seconds with the fastest in-band OSA (by 40%)
- Optimize service quality with accurate, reliable OSNR measurements
- Eliminate wavelength calibration with a self-calibrating OSA that cuts maintenance costs in half

Key Features

- Full-band 1250–1650 nm for CWDM and DWDM networks
- Ultra-high 0.038 nm optical resolution bandwidth
- Industry-leading 0.01 nm wavelength accuracy
- Future-proof signal analysis for 100/200/400/800 G data rates, and 100G polarization multiplexing channels OSNR on line measurement (without channel overlap)
- In-band capability to measure true OSNR in ROADM

Applications

- Provisioning and troubleshooting ROADM networks
- Deploying and maintaining DWDM Metro and Core networks
- Testing 100/200/400/800 G interfaces and networks
- Installing and maintaining CWDM systems in CATV, Access, and Mobile Backhaul

Specifications[1]

Spectral Measurement	
Wavelength range	1250 to 1650 nm
Resolution bandwidth (FWHM)[2]	0.038 nm
Abs. wavelength accuracy[2]	± 0.01 nm
Wavelength reference	internal, physical constant
Wavelength recalibration period	internal recalibration (no factory recalibration required)
Readout resolution	0.001 nm
Measurement samples	120,000
Power Measurement	
Dynamic range[3]	–70 to +23 dBm
Absolute accuracy[2,4]	±0.5 dB
Total safe power	+20 dBm
Readout resolution	0.01 dB
Linearity[5]	±0.1 dB
Flatness[2]	±0.25 dB
WDM Measurement	
Optical rejection ratio[2]	
At ±0.2 nm (for 50 GHz ch-spacing)	40 dBc
At ±0.4 nm (for 100 GHz ch-spacing)	47 dBc
Channel spacing	25 to >200 GHz, CWDM
Number of optical channels	256
Data signals	up to 1 TBps
Modulation formats (Such as NRZ/RZOOK, DB, PSBT, CSRZ, DPSK, BPSK, QPSK, and PM QPSK)	All formats supported
Scanning time (including WDM analysis)	
Full band	<5 s
C-band	1 s
Measurement Modes	
Analysis	WDM, Drift, DFB, LED, FPL, EDFA in-band OSNR, ST
Display	Graph, WDM table, graph and table
In-band OSNR	
I-OSNR dynamic range	up to >30 dB
PMD tolerance[6]	up to 25 ps
Measurement accuracy[7]	±0.5 dB
Data signals[8]	up to 400 Gbps
Optical Interfaces	
Optical port	universal SM-PC, universal SM-APC
Connectors	FC, SC, ST, LC, DIN
ORL[9]	>35 dB
Dimensions	
Weight (module)	2.2 kg (4.6 lb)
Size (module)	50 x 250 x 305 mm (20 x 98 x 120 in)
Temperature	
Operating	+0 to +45°C (32 to 113°F)
Storage	–20 to +60°C (–4 to 140°F)
Relative humidity	0 to 95% noncondensing

1. Unless otherwise specified, all specifications are based on a temperature of 23°C ±2°C with an FC/PC connector after warm-up
2. Typical for 1520 to 1565 nm at 18 to 28°C
3. Max. power per channel +15 dBm
4. At –10 dBm, including PDL
5. Signal power from –40 dBm to +10 dBm
6. For data rates up to 10 Gbps
7. Typ ±0.5 dB for OSNR <25 dB, signal power >–25 dBm, PMD <25 ps
   Typ. ±1 dB for data rates ≥40 Gbps with ch-spacing ≥100 GHz
8. Except for dual pol-mux and fast polarization scrambled signals
9. At 1550 nm

Ordering Information

Description	Part Number
ROADM, In-Band OSNR OSA-500R	
OSA-500R, PC-version	2281/91.55
OSA-500R, APC-version	2281/91.65
OneAdvisor 1000 with OSA-500R package	ONA1000-OSA500R-P1
Application Software for Report Generation	
Optical fiber cable software	EOFS200

VIAVI Care Support Plans

Increase your productivity for up to 5 years with optional VIAVI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

Plan availability depends on product and region. Not all plans are available for each product or in every region. To find out which VIAVI Care Support Plan options are available for this product in your region, contact your local representative or visit: viavisolutions.com/viavicareplan

Features

*5-year plans only

Plan	Objective	Technical Assistance	Factory Repair	Priority Service	Self-paced Training	5 Year Battery and Bag Coverage	Factory Calibration	Accessory Coverage	Express Loaner
BronzeCare	Technician Efficiency	Premium	✓	✓	✓				
SilverCare	Maintenance & Measurement Accuracy	Premium	✓	✓	✓	✓*	✓		
MaxCare	High Availability	Premium	✓	✓	✓	✓*	✓	✓	✓

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