



# OSA-710

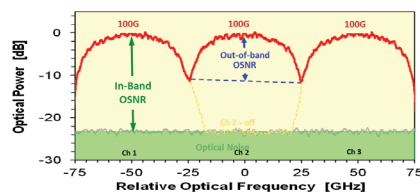
## First In-Service Pol-Mux Optical Spectrum Analyzer.



Characterize and diagnose 40/100/200G, and 400G traffic without shutting down the network or individual channels

Measuring Optical Signal-to-Noise-Ratio (OSNR) in live Dense Wavelength Division Multiplexing (DWDM) systems using polarization multiplexed transmission (Pol-Mux) is an unsolved challenge. Viavi's Pol-Mux OSA-710 is the first instrument to use a novel spectral correlation technique (SCorM, Viavi patent) to enable the measurement of in-band OSNR, and per channel chromatic dispersion of 40 Gb/s, 100 Gb/s, 200 Gb/s and 400 Gb/s coherent transmission signals utilizing Pol-Mux in a live system, without shutting down the network or individual channels.

The method is independent of modulation format and data rate and is tolerant of large amounts of chromatic dispersion (CD) and polarization mode dispersion (PMD) as well as spectral filtering in ROADMs. The use of ultra-high resolution coherent receivers provides complete signal characterization in amplitude, frequency, phase, and polarization to be independent of modulation formats.



Viavi's SCorM method enables the first ever measurements of in-band OSNR in live, coherent systems with Pol-Mux. The OSA-710 will significantly simplify optical testing during installation, commissioning and maintenance, and minimize overall system downtime and man-hours.

### Configuration: OSA-710 Kit

**OSA-710:** Optical spectrum analyzer module

**UTM-710:** Utility Module (optional) includes optical pre-amplifier for low ch-power applications and optical pre-filter for high channel count applications.



### Benefits

- Industry's first OSA that measures in-band OSNR on Pol-Mux signals
- First instrument that measures per channel CD
- Characterize traffic without shutting down the network or individual channels

### Key features

- Supports PM-BPSK, PM-QPSK, and PM-xQAM modulation formats
- Tolerant of ROADM filtering and of high CD and PMD
- Ultra-high resolution, coherent OSA for testing Nyquist- and Super-Channels
- WDM-Expert software for auto-identification of data-rate in mixed trafficpipes

### Applications

- Core and metro DWDM networks with or without ROADMs
- Undersea communication links
- Qualification of any fiber optic link utilizing coherent detection

## Specifications (preliminary)

Technical specifications OSA-710 <sup>(1)</sup>			
<b>Spectral</b>			
Wavelength/frequency range	1527.6 – 1565.50 nm / 196.25 – 191.50THz		
Abs. wavelength accuracy	±10 pm / ± 1250 MHz		
Resolution bandwidth	< 1 pm / < 100 MHz		
Min channel spacing for signal separation	<8pm / <1 GHz		
Number of optical channels	Up to 256		
Display resolution	0.001 nm / 100 MHz		
<b>Power</b>			
Input power range (per channel) <sup>(2)</sup>	-40 to +10 dBm		
Max. non-destructive total power	+23 dBm		
Noise floor	< -65 dBm		
Abs. power accuracy	±0.6 dB		
Display resolution	0.01 dB		
<b>OSNR</b>			
OSNR measurement modes	Out-of-band (IEC 61280-2-9), In-band (spectral correlation)		
OSNR measurement range <sup>(3)</sup>	Up to > 30 dB		
OSNR measurement accuracy <sup>(3)</sup>	±0.5dB		
Modulation formats	all formats supported incl. DP-xPSK, DP-xQAM and Nyquist shaped signals		
<b>Chromatic dispersion</b>			
Measurement mode	In-service measurement of the chromatic dispersion per channel		
Measurement range	Up to >50.000 ps/nm		
<b>Measurement Modes</b>			
Analysis	In-band OSNR, WDM, Drift, DFB, CD		
Display	Graph, WDM Table, Graph + Table		
<b>UTM-710: Utility Module</b>			
Required for systems with >4 channels and/or channel power <-20dBm. Includes optical pre-amplifier and optical pre-filter			
<b>Optical Interfaces</b>			
OSA-710, UTM-710	SM-APC		
Optical adapters	Interchangeable, type 2150/00.xx FC, SC, ST, LC, DIN		
ORL	>35 dB		
<b>Temperature</b>			
Operating	+0 to +30°C / 32 to 86°F		
Storage	-20 to +60°C /-4 to 140°F		
<b>Dimensions and weight</b>			
OSA-710 module	39x250x305 mm / 1.5x9.8x12 in 1.8 kg / 4 lbs		
UTM-710 module	39x250x305 mm / 1.5x9.8x12 in 1.8 kg / 4 lbs		
<small>(1) Unless otherwise specified, all specifications are based on a temperature of 23°C ±2°C with an FC/APC connector after warm-up            (2) Measured in 0.1nm bandwidth            (3) Valid for OSNR measurements according IEC 61280-2-9. For in-band OSNR measurements at 100Gps DP-QPSK signals and &gt;-20dBm/ch: OSNR range = 10 to 25 dB, OSNR accuracy = ±1 dB</small>			
<b>Ordering information</b>			
OSA-710 module	91.11/2323	OSA-710 Kit (OSA-710 + UTM-710)	2323/91.31
UTM-710 module	91.21/2323		



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