

OPTICAL VECTOR ANALYZER (CTe/STe)

Luna Technologies' Optical Vector Analyzer (OVA) is the fastest, most accurate and economical tool for loss, dispersion and polarization measurements of modern optical networking equipment. The OVA is the ideal tool for single connection, all-parameter characterization of fiber components from couplers to specialty fiber and everything in between (fiber Bragg gratings, arrayed waveguide gratings, free-space filters, tunable devices, amplifiers, ...)

With the OVA, development cost, production cost, and time to market for DWDM components can be reduced by up to sixty percent. Luna's OVA characterizes passive optical components with industry-leading speed and accuracy, all with a single sweep of a tunable laser. Our patented technique allows direct measurement of a passive device's linear transfer function. Using the linear transfer function the OVA provides **instant access** to:

- Insertion Loss (IL)
- Polarization Dependent Loss (PDL)
- Polarization Mode Dispersion (PMD) and 2nd order PMD
- Chromatic Dispersion (CD)
- Group Delay (GD)
- Optical Time Domain response
- Jones Matrix elements
- Optical Phase Response

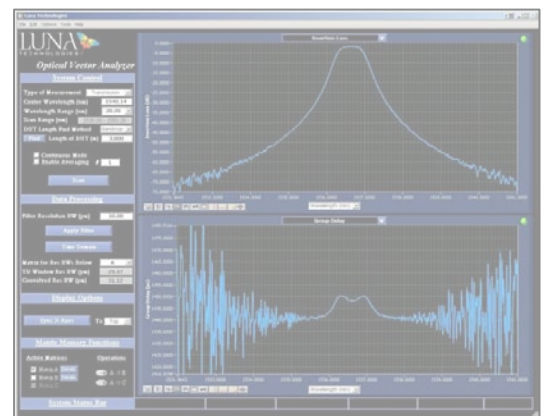
The OVA's future-proof design also allows access to new standards like second order PMD. Luna's unique time domain windowing feature enables the operator to examine a device's impulse response, revealing the causes of degraded specifications.



The industry's first completely integrated, single-scan, self-calibrating solution for all-parameter characterization of passive optical components.

KEY FEATURES AND PRODUCT HIGHLIGHTS

- All-parameter analysis*
- Total system integration*
- High resolution C-L band capability*
- Real-time measurements*
- Integrated, easy to use interface*
- Time domain viewing*
- Complete polarization response*



OPTICAL VECTOR ANALYZER

Parameter	Fast mode*		Averaging Mode		Units	
	Option	CTe	STe	CTe		STe
Wavelength range:		1290 -1370 or 1525-1605			nm	
Wavelength:						
Standard Resolution		3.2		3.2	pm	
High Resolution		1.6		1.6	pm	
Accuracy ¹		± 1.5		± 1.5	pm	
Repeatability		± 0.1		± 0.1	pm	
Optical phase error		± 0.05		± 0.0075	radians	
Loss characteristics:						
Dynamic range ²		60		98	dB	
Ripple		± 0.05		± 0.01	dB	
Resolution		± 0.05		± 0.002	dB	
Insertion Loss Accuracy ³		± 0.1		± 0.05	dB	
Return Loss Accuracy ³		± 0.2		± 0.1	dB	
Chromatic dispersion:						
Accuracy ³		± 15		± 3	± 5	ps/nm
Group delay:						
Range ⁴		3 or 6		3 or 6	ns	
Accuracy ³		± 0.2	± 0.5	± 0.05	± 0.1	ps
Loss range ²		40		60	dB	
PMD:						
Range ⁴		3 or 6		3 or 6	ns	
Accuracy ³ – 1 st Order		± 0.03(100pm steps) ± 0.15 (30pm steps)		± 0.05	ps	
Accuracy ³ – 2 nd Order		± 10		± 2	ps ²	
Loss range ²		35		50	dB	
PDL:						
Extinction ratio		40		50	dB	
Accuracy ³		± 0.05		± 0.03	dB	
Measurement Timing:						
Laser sweep rate		70	35	70	35	nm/s
All-parameter measurement rate ⁵		55	100	55	100	ms/nm
Fully specified measurement time ⁶		12	20	12	20	s
Real-time mode update rate ⁷		4	3	NA	NA	Hz
Maximum device length (including leads)		30	70	30	70	meters

1- Accuracy maintained by an internal NIST-traceable HCN gas cell.

2- 90, 60 and 50 dB dynamic ranges in 'Averaging Mode' for IL, GD and PMD are with the "High Dynamic Range Averaging" option installed and enabled.

3- **Fast Mode:** no averaged calibration scans, 4 averaged measurement scans, 30 pm resolution bandwidth, 8 m device length (accuracies verified using NIST certified artifacts except for IL).

Averaging Mode: 4 averaged calibration scans, 64 averaged measurement scans, 30 pm resolution bandwidth, 8 m device length (accuracies verified using NIST certified artifacts except for IL)

4- Specifies the total device impulse-response duration that may be captured.

5- Combined laser sweep and analysis time per scan.

6- Measurement with full specification (see note 2) over Fast Mode: 40 nm range, and Averaging Mode: 2.5 nm range. Excludes calibration time.

7- For 2 nm scan range.

*results are typical

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

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OPTICAL VECTOR ANALYZER

Purchasing Options

Part Number	Description
OVA CTe/STe All Parameter Analyzer	Contains: Personal computer, 17" flat screen monitor, OVA mainframe, software, all associated cables for IL, RL, Time domain impulse response window, PMD and PDL, CD, GD, Jones Matrix Amplitude, Jones Matrix Wavelength, Time domain amplitude, Storage of Jones Matrix, linear transfer function data files, for devices up to 30 meters in optical length in transmission or 15 meters in reflection (CTe), OR for devices up to 70 meters in optical length in transmission or 35 meters in reflection (STe)
Select either option 001 or 002	
Option 001C	C Band
Option 001L	L Band
Option 001O	O Band (1290-1370 nm)
Option 002	C+L Band
Option 003	GPIB remote control card and cable
Option 004	Desktop Analysis Software
Option 005	Adds OFDR analysis to the all parameter analyzer
Option 006	Polarization Analysis Software
Option 007	Expanded Dynamic Range

Calibration & Repair
www.raeservices.com