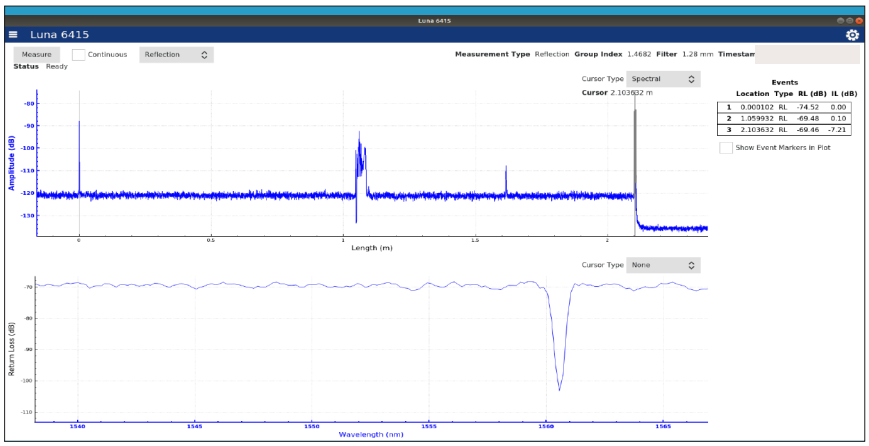
Luna 6415

Lightwave Component Analyzer

The Luna 6415 Lightwave Component Analyzer is a fast and simple-to-use tool for testing passive optical components and modules. The 6415 measures and analyzes the Insertion Loss (IL) and Return Loss (RL) distribution, as well as length, working in either reflection or transmission mode.

The 6415 utilizes optical frequency domain reflectometry (OFDR) technology to measure backscattered or transmitted light as a function of distance. Extremely high sensitivity and sampling resolution (20 µm) make the 6415 an ideal analyzer for photonic integrated circuits (PICs) and silicon photonics. The Luna 6415 reduces the cost and complexity of test while increasing throughput by measuring RL, IL and length in reflection or transmission with a single instrument.



Measuring in reflection mode, the Luna 6415 measures return loss versus length. The bottom plot shows the spectral content of the identified reflection event (filter).

High-Speed and High-Resolution OFDR Measurements for Manufacturing Test

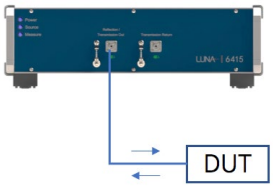
KEY FEATURES

- Return loss (RL) and insertion loss (IL) analysis
- Analyze components in reflection and transmission
- Trace distributed RL over length of optical path
- Spectral analysis of RL and IL
- Detect and precisely locate reflective events and measure path length (up to 200 m)
- Speed, resolution and accuracy for optimizing production test - 20 µm sampling resolution

APPLICATIONS

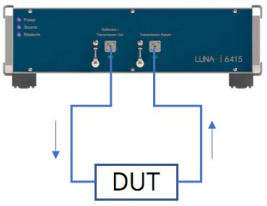
- Spatial RL testing
- Automated IL test and analysis
- Skew measurement with sub-picosecond resolution
- PLCs, waveguide devices, AWGs, ROADMs, etc.
- Couplers, switches, beam splitters

Reflection Measurements



- Reflectivity, RL versus length
- Event loss measurement (RL, IL)
- RL spectral amplitude analysis
- Event length measurement

Transmission Measurements



- Total Insertion Loss (IL)
- Spectral amplitude response
- Total path length

PERFORMANCE

PARAMETER		SPECIFICATION
Measurement		
Sampling resolution (two-point)[1]		20 µm
Measurement length modes	Reflection	20, 50, 200[2]
	Transmission	40, 100, 400[2]
Wavelength accuracy[3]		1.5 pm
Time-of-flight delay accuracy[3]		± 0.0034 %
Center wavelength		1546.69 nm
Measurement time (20 m length mode)		0.08 s
Maximum optical power		5 mW
Return Loss Measurements (Reflection Mode)		
RL dynamic range[4]		70 dB
Total range[5]		0 to -130 dB
Sensitivity[5]		-135 dB
Resolution[6]		± 0.1 dB
Accuracy[6]		± 0.5 dB
Insertion Loss Measurements (Reflection/Transmission)		
IL dynamic range, in transmission mode		70 dB
IL dynamic range, in reflection mode[7]		15 dB
Resolution[8]		± 0.1 dB
Accuracy[8]		± 0.2 dB
Physical and Interfaces		
Remote interface		SCPI API over TCP/IP
Optical connector type		FC/APC
Operating power (max)		50 W
Weight (controller not included)		13 lb (6 kg)
Case size		13.5 x 13.9 x 4.3 in (34 x 35 x 11 cm)

ORDERING

Product #	Description	Includes
Luna 6415	Lightwave Component Analyzer	Luna 6415 mainframe for C band with measurement length modes of 20 m and 50 m, instrument controller (workstation-class laptop), application software and accessory kit.
OPT06450	Extended range option	Extends measurement length of Luna 6415 to 200 m in reflection (400 m in transmission)

NOTES

1. Distance between two sample points along the length axis in SMF-28.
2. With extended range option OPT06450.
3. Accuracy guaranteed via internal NIST-traceable HCN gas cell.
4. Range between strongest reflection greater than -60 dB and noise floor.
5. Noise floor return loss at half of maximum length.
6. Measured with 1 cm integration width.
7. Two way loss before backscatter reaches noise floor and IL measurements are no longer possible.
8. Measured with 10 cm integration width.

LUNA

+1.866.586.2682
solutions@lunainc.com
www.lunainc.com

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