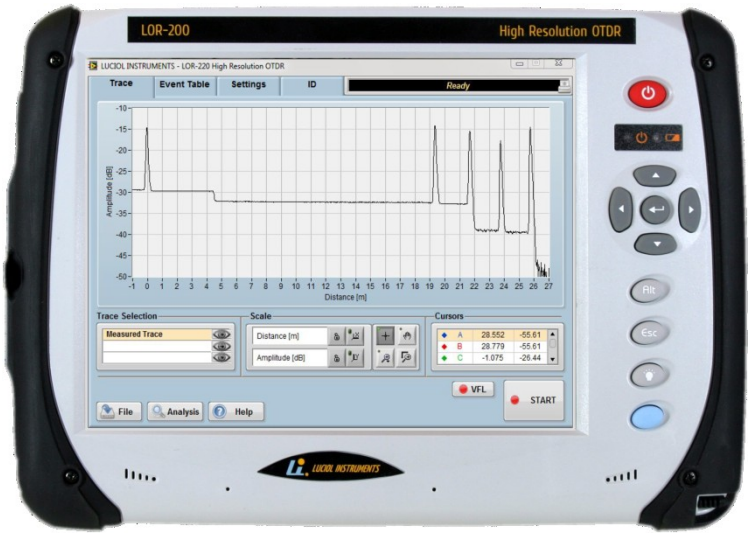
LOR-200

High Resolution
Optical Time-Domain Reflectometer



Industry-leading resolution (2 ns pulses)

Fully portable OTDR format

High dynamic range with short pulses

Measures IL and ORL for all types of connectors

1625 nm option with matched filter for live PON applications

Up to four wavelengths

Custom systems for most fiber types and wavelengths

Patented design; US patent # 7,593,098

The LOR-200 from Luciol Instruments is a fully portable high resolution OTDR. It is similar in shape and feel to a standard OTDR, but achieves unprecedented resolution. The LOR-200 distinguishes events with 20 cm separation and has a 50 cm attenuation deadzone. Its unique dynamic range for short pulse lengths (up to 15 dB for 2 ns pulses) enables to see through optical splitters, even over very short distances. The 1625 nm option with matched filter allows the use of the LOR-200 on live PONs, without disturbing the transmission.

APPLICATIONS

- See and localize events, which no other OTDR can show, such as weak reflections or attenuations immediately after a larger reflection or an optical splitter.
- Installation and maintenance of PONs and any type of optical network, where the conjunction of high resolution and high dynamic range is a must.
- Fiber optic sensors and fiber assemblies.
- Fiber manufacturing and verification.
- Loss and Optical Return Loss testing for optical components.
- Aviation and aerospace.

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SPECIFICATIONS

Optical

Standard wavelength options* (±20 nm):
1310 nm; 1480 nm; 1490 nm; 1550 nm; 1625 nm or 1650 nm (both with matched filter for active PON monitoring);
Standard fiber types*:
Single Mode (9/125 µm)
Multimode (50 or 62.5/125 µm)
Optical connector:
Universal, APC or PC type, with FC, SC or ST adapter
Optical pulse widths:
2 ns, 5 ns, 10 ns, 30 ns, 100 ns, 300 ns, 1 µs
Measurement range:
1.25, 2.5, 5, 10, 20, 40, 80, 160 km
Distance units:
kilometer, meter, feet, miles, time(ns)
Sampling resolution:
any multiple of 2.5 cm (250ps)
Dynamic range[1] :
Return loss: 98 dB (-10 dB to -108 dB)
Rayleigh backscattering[2]:
30 dB for pulsewidth = 1 µs (S/N=1)
15 dB for pulsewidth = 2 ns (S/N =1)
Deadzones[1]:
Event deadzone: 20 cm
Attenuation deadzone[3]: 50 cm
Distance accuracy:
± (10 mm + $5x10^{-5}$ x[fiber length])
Reflectance accuracy[1]: ± 1.5 dB
Loss accuracy[4]: ± 0.1 dB ± 0.02 dB/dB

Hardware

OS: Windows 10 Home 32-bit
Processor: AMD G T40E, 2x 1 GHz
RAM: DDR3, 4 GB
Storage: SSD, 120 GB (more optional)
Display: Touchscreen TFT 10.4”; 800X600
Interfaces: Ethernet RG45; 2x USB Type 2; VGA; Serial port.
Power rating: 15V; 3.2 A
Power input: AC operation with 100 to 240 VAC, 50/60 Hz universal adapter;
DC operation on batteries (Li Ion, 6.2 Ah)
Battery operating time: 5 h, charging: 3.5h
Size: 320 x 240 x 90 mm; Weight: 3.1 kg

Environmental

Operating temperature:
0˚ to +40˚C (32° to 104° F)
Storage temperature:
-20˚ to +60˚C (-4° to 140° F)
Humidity: 0% to 90% non-condensing

OPTIONS AVAILABLE

-OPM : Optical power meter
Wavelengths: 850 nm, 1310, 1550 and 1610 nm.
Range: -50 dBm to +8 dBm for 850 nm ;
-55 dBm to +3 dBm for 1310, 1550 and 1610 nm;
Linearity: ± 0.05 dB (between -45 and 0 dBm)
Absolute power uncertainty: ± 0.2 dB
Resolution: ± 0.01 dB

-FSL: Fiber microscope
End-face verification of connectors, USB connection, Video displayed on LOR screen.

ORDERING INFORMATION

LOR-200
LOR-20X-FFF-W1(/W2/W3/W4)-CC;
X= # of wavelengths;
FFF= fiber type: SMF, MMF62, MMF50;
W1, W2…: wavelengths with source type (FP or DFB lasers, LED), add -F for filtered wavelength;
CC= connector type: ASC, AFC, SC, FC, ST.

Ordering example:
LOR-203-SMF-1310DFB/1480FP/1625DFB-F-FC
LOR-200 SMF, with 3 wavelengths, one FP laser at 1310 nm, one FP laser at 1550 nm, and one DFB laser with optical filter at 1625 nm, FC connector.

*Other wavelengths and configurations are available on a custom basis. Contact the factory with your special requirements.

Notes:
1: Typical;
2: At a wavelength of 1310 nm;
3: For ORL = 45 dB.
4: For a LED source (or FP under specific conditions)

Luciol Instruments SA; 7 B Route Suisse ; 1295 Mies ; Switzerland.
Tel : +41 22 755 56 50 ; Fax : +41 22 755 56 67
Mail : info@luciol.com
Web : www.luciol.com

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