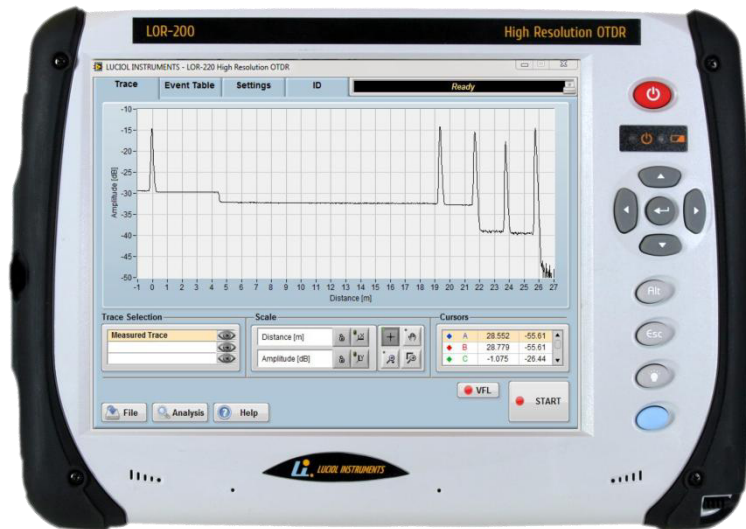


LOR-200

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 μ m)
Multimode (50/125 or 62.5/125 μ m)

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 μ s

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 range¹:

Rayleigh backscattering²:
30 dB for pulsewidth = 1 μ s (S/N=1)
15 dB for pulsewidth = 2 ns (S/N =1)

Deadzones¹:

Event deadzone: 20 cm
Attenuation deadzone³: 50 cm

Distance accuracy:

$\pm (10 \text{ mm} + 5 \times 10^{-5} \times [\text{fiber length}])$

Reflectance accuracy¹: ± 1.5 dB

Loss accuracy⁴: ± 0.1 dB ± 0.02 dB/dB

Hardware

OS: Windows 10 Home 32-bit

Processor: Intel N3350, 2x 2.4 GHz

RAM: DDR3L, 4 GB

Storage: SSD, 120 GB (more optional)

Display: Touchscreen TFT 10.4" (800x600)

Interfaces: 2x Ethernet RJ45
4x USB 3.0
1x HDMI
1x Headphone/Microphone
Wifi/Bluetooth (optional)

Power rating: 15V/4 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

Battery charging time: 3.5 h

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° (-4° to 140°F)

Relative humidity: $\leq 80\%$ (0 to 30°C), decreasing
linearly to 50% at 40 °C

Maximum operation altitude: 2000 m

Pollution degree: 2

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)

LOR-200/220-U

High Resolution Optical Time-Domain Reflectometer Table Top Format



Compact table top
format

USB connection to
external PC

Available for
LOR-200 and
LOR-220 OTDR

The LOR 200/220-U is a table top packaging option for the Luciol Instruments OTDR module. This option requires an external PC for control and operation. It is equipped with a standard USB port for convenient and easy connection to most Windows based PC.

The LOR-200/220-U option is available for all instruments from the LOR-200/220 family.

APPLICATIONS

- Laboratory environment OTDR testing
- Test bench integration
- And more...

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SPECIFICATIONS

Optical:

See LOR-200/220 datasheets

System requirements:

OS:

Windows 10 (32 and 64 bit)

Processor:

Pentium III/Celeron 866 MHz or equivalent

RAM:

1 GB

Disk Space:

500 MB

Interface:

1x USB Type 2

Power input:

DC input: 15V ($\pm 10\%$); 1 A

AC adapter: 100-240 VAC; 50/60 Hz; 1.4 A

Dimensions:

310 x 225 x 60 mm

Weight:

1.9 kg

Environmental:

Operating temperature: 0° to +40°C (32° to 104° F)

Storage temperature: -20° to +60° (-4° to 140°F)

Relative humidity: $\leq 80\%$ (0 to 30°C), decreasing linearly to 50% at 40 °C

Max. operation altitude: 2000 m / 5000 m (option)

Pollution degree: 2

OPTIONS AVAILABLE

-VFL

Visual Fault Locator on the OTDR output; can be used as a fiber identifier.

ORDERING INFORMATION

LOR-22X-U-YYYY-W1(/W2/W3/W4)-CC

X = # of wavelengths

YYYY = Fiber type

W1, W2...: Wavelengths

CCC: Connector type (ASC, AFC, SC, FC, ST)

Ordering example:

LOR-222-U-MMF62-670FP/850FP-FC

(LOR-220 for 62.5/125 μm fiber, with 2 wavelengths (670 nm and 850 nm), FC/PC connector.)

Other packaging options e.g. rack mounting are available on a custom basis. Contact Luciol Instruments with your special requirements.

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