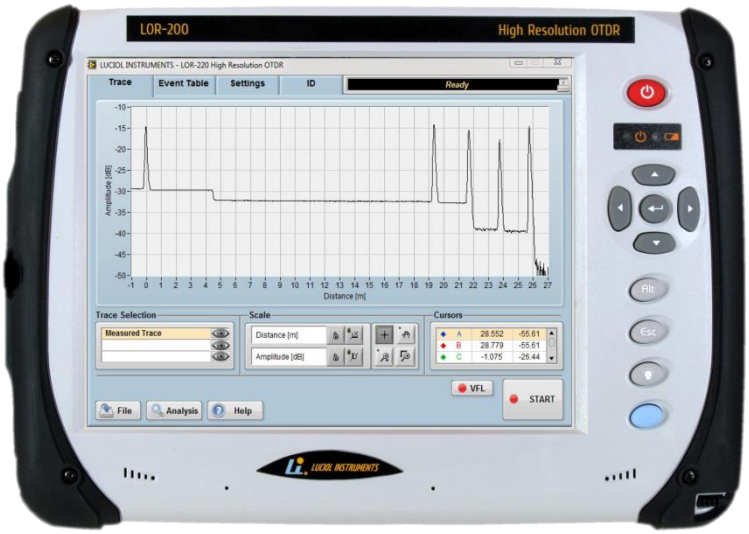
# LOR-200

## 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.

LUCIOL INSTRUMENTS

# 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 (50/125 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]:
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
Processor: Intel N4200
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: ≤80% (0 to 30°C), decreasing linearly to 50% at 40 °C
Maximum operation altitude: 2000 m
Pollution degree: 2

## OPTIONS AVAILABLE

**-FSV**
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 lasers, LED), add -F for filtered wavelength;
CC= connector type: ASC, AFC, SC, FC, ST.

Ordering example:
LOR-203-SMF-1310FP/1480FP/1625FP-F-FC
LOR-200 SMF, with 3 wavelengths, one FP laser at 1310 nm, one FP laser at 1550 nm, and one FP 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 - 7B Route Suisse - 1295 Mies - Switzerland.
Tel : +41 22 755 56 50
Mail : info@luciol.com
Web : www.luciol.com