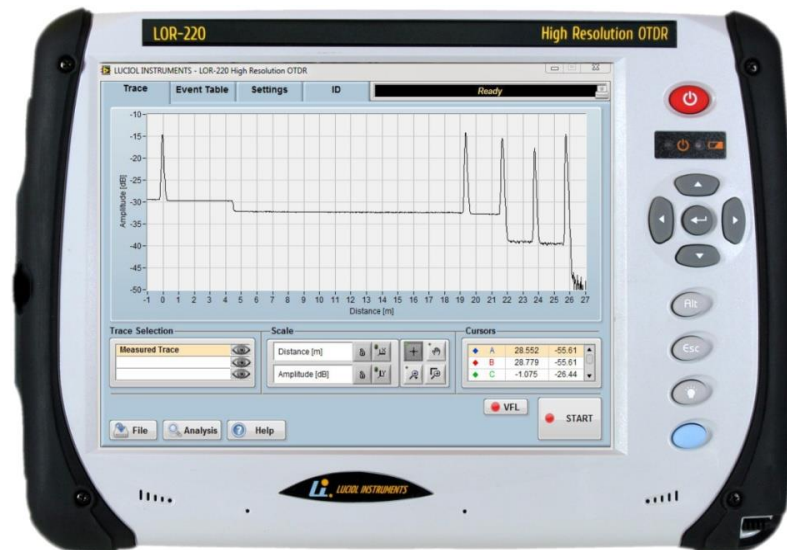


High Resolution Optical Time-Domain Reflectometer



**Wavelength range
1000-1650 nm**

**Single or dual
output (SMF/ MMF)**

**Industry-leading
resolution (1 ns
pulses)**

**Fully portable OTDR
format**

**High dynamic range
with short pulses**

**Measures IL and
ORL for all types of
connectors**

**Up to four
wavelengths**

**Custom systems for
most fiber types
and wavelengths**

**Patented design; US
patent # 7,593,098**

The LOR-220 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.

With a fixed pulse-width of only 1 ns the LOR-220 distinguishes events with 10 cm separation and has a 40 cm attenuation dead-zone. Its unique dynamic range for short pulse lengths (> 14 dB for 1 ns pulses) enables testing optical assemblies with high insertion losses, even over very short distances.

The LOR-220 can **characterize** the original assembly, **monitor** possible evolution for preventive maintenance purposes and **troubleshoot** in case of a fault in the optical link.

The IR version of the LOR-220 is available for up to four wavelengths in the range of 1000-1650 nm and for several fiber types. Even two different fiber types can be combined in a single instrument when choosing the dual output option.

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.
- Fiber optic sensors and fiber assemblies.
- Fiber manufacturing and verification.
- Loss and optical return loss testing for optical components.
- Aviation, aerospace, defense, telecommunication and more

SPECIFICATIONS

Optical

Standard wavelength options* (± 20 nm):
1310 nm, 1480 nm, 1490 nm, 1550 nm, 1625 nm
or 1650 nm

Standard fiber types*:
Single Mode (9/125 μ m)
Multimode (50 or 62.5/125 μ m)

Optical connector:
Universal, APC or PC type, with FC, SC or ST
adapter

Optical pulse width: 1 ns

Measurement range:
0.5, 1.2, 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 (250 ps)

Dynamic range¹:
Rayleigh backscattering²: > 14 dB (S/N =1)

Deadzones¹:
Event dead-zone: 10 cm
Attenuation dead-zone³: 40 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 11 (Windows 10 on request)
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: $\leq 80\%$ (0 to 30°C), decreasing
linearly to 50% at 40 °C
Maximum operation altitude: 2000 m
Pollution degree: 2

Options:

-FSV

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

-DOP

Dual output with two different fiber types. **

-OSW

Optical switch for semi-automatic multi fiber
testing. Internal (up to 12 channels) or external
switch with USB connection. **

Ordering information

LOR-22X-FFF-W1(/W2/W3/W4)-CC;
X= # of wavelengths;
FFF= fiber type: SMF, MMF62, MMF50
W1, W2...: wavelengths with source type (FP
lasers, LED
CC= connector type: ASC, AFC, SC, FC, ST, LC

Ordering example:

LOR-223-SMF-1310FP/1480FP/1625FP-AFC
LOR-220 SMF, with 3 wavelengths, one FP laser at
1310 nm, one FP laser at 1550 nm, and one FP laser
at 1625 nm, FC/APC connector.

*Other wavelengths and configurations are
available on a custom basis. Please contact Luciol
Instruments with your special requirements.

** Please contact Luciol Instruments for details

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)

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