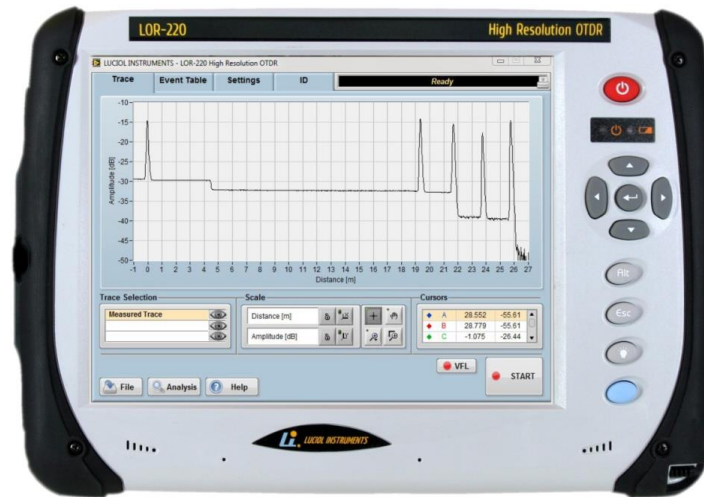


High Resolution Optical Time-Domain Reflectometer



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)