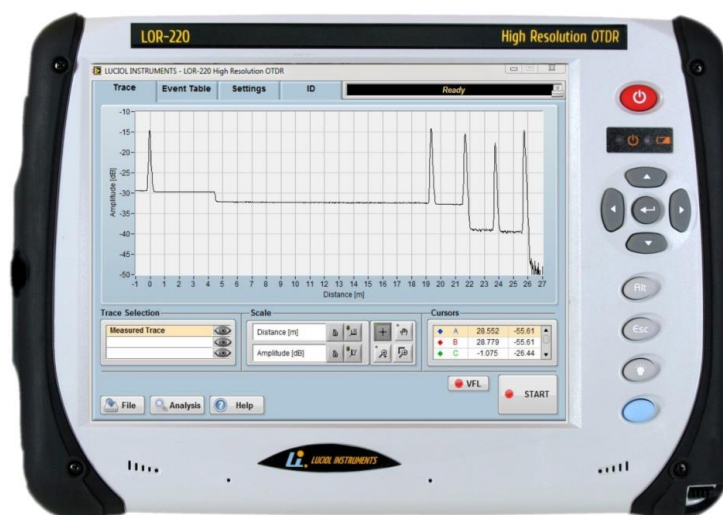


## High Resolution Optical Time-Domain Reflectometer



**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

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# SPECIFICATIONS

## Optical

Standard wavelength options\* ( $\pm 20$  nm):

1310 nm, 1480 nm, 1490 nm, 1550 nm, 1625 nm  
or 1650 nm

Standard fiber types\*:

Single Mode (9/125  $\mu$ m)  
Multimode (50 or 62.5/125  $\mu$ 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 range<sup>1</sup>:

Rayleigh backscattering<sup>2</sup>:  $> 14$  dB (S/N = 1)

Deadzones<sup>1</sup>:

Event dead-zone: 10 cm

Attenuation dead-zone<sup>3</sup>: 40 cm

Distance accuracy:

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

Reflectance accuracy<sup>1</sup>:  $\pm 1.5$  dB

Loss accuracy<sup>4</sup>:  $\pm 0.1$  dB  $\pm 0.02$  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)