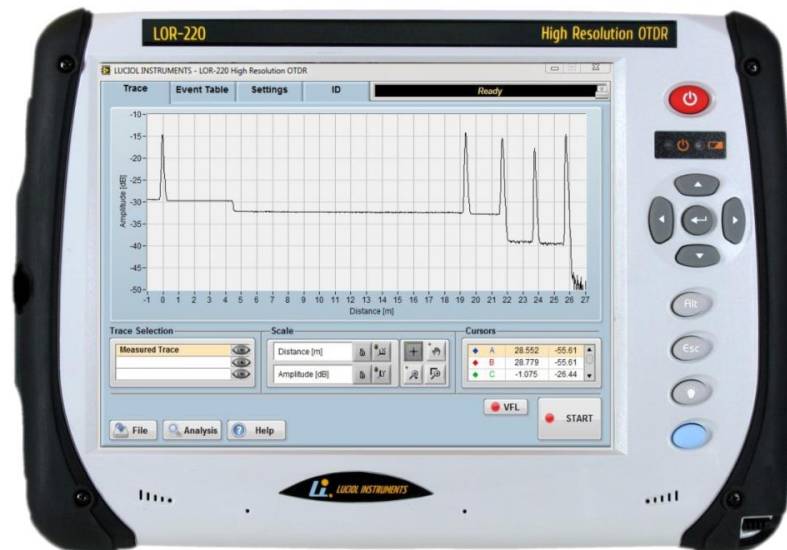


## High Resolution Optical Time-Domain Reflectometer



Wavelength range  
500-1064 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 (> 20 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 VIS/NIR version of the LOR-220 is available for up to four wavelengths in the range of 500-1064 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

- Aviation, aerospace, defense, transportation, oil and gas and more
- 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.

# SPECIFICATIONS

## Optical

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

670 nm, 850 nm

Standard fiber types\*:

Multimode 200, 105, 62.5 or 50  $\mu$ m cores

Single Mode 5/125  $\mu$ m

Optical connector:

Universal, PC or APC 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:  $> 20$  dB (S/N =1)

Deadzones<sup>1</sup>:

Event dead-zone: 10 cm

Attenuation dead-zone<sup>2</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>1</sup>:  $\pm 0.1$  dB  $\pm 0.02$  dB/dB (MMF)

## 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:

### -VFL<sup>3</sup>

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

### -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

CC= connector type: ASC, AFC, SC, FC, ST, LC

## Ordering example:

LOR-222-MMF62-670/850-FC-VFL

LOR-220 for MMF 62.5  $\mu$ m with 2 wavelengths at 670 and 850 nm, FC connector, with VFL.

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\*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: For ORL = 45 dB

3: Available with 670 nm option only

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