XtendLan

Fiber tester

Optical power meter

XL-FM141

Optical power meter User's Manual

Fiber Tester

Laser Power

-70.00 dBm

1310nm

Set Hold ⏻

λ dBm/mW Ref

Optical Power Meter

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Overview

The handheld power meter XL-FM141 is designed specifically for installation and maintenance fiber optic network. Which is durable, accurate, low power consumption, small, light weight and easy to carry. It can be widely use in single mode, Multi mode fibers of LAN、FDDI、WAN、FTTH、CATV、CCTV and fields of construction, maintenance, surveillance, direct measurement of optical power and relative measurement of optical link loss etc.

Features

✧ Simple appearance, beautiful professionally designed with shock absorbing gum case，More effectively protect the optical power meter

✧ uses two AA batteries，Power supply for up to 72 hours

✧ linear（mW）& nonlinear（dBm）displaying function

✧ measured value display lock，Lock measured values of display

✧ FC / SC / ST interchangeable optical connector，be used for normal optical fiber

✧ Calibrated Wavelength (nm):850nm、1300nm、1310nm、1490nm、1550nm、1625nm

✧ Backlight display automatically or manually optional, automatically off can be set.

Specifications

Model	XL-FM141
Power Range (dBm)	−70～+10
Detector Type	InGaAs
Wavelength Range(nm)	800～1700
Uncertainly	±5%
Calibrated Wavelength (nm)	850、1300、1310、1490、1550、1625
Display Resolution	Linear：0.1% Nonlinear：0.01dBm
Operating Temperature(℃)	−10～+60
Storage Temperature(℃)	−25～+70
Auto off Time(min)	10-120，OFF
Battery operating Time (h)	72
Dimensions (mm)	190×100×48
Power	Two AA battery
Weight(g)	400

Front Panel
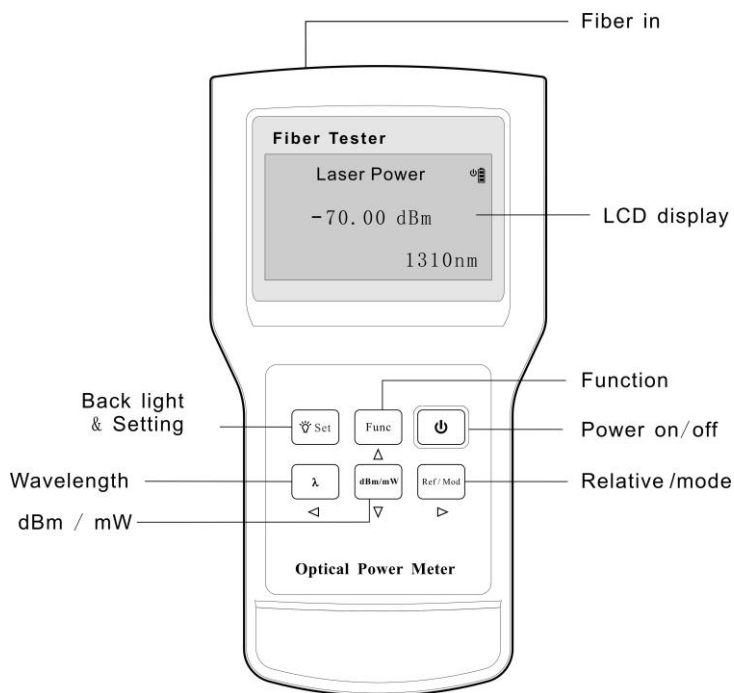

Function

LCD screen::

LCD screen display the data in dB，dBm，mW，uW，nW units，

Display the wavelength: 850/1300/1310/1490/1550/1625 nm。

✧ **Value of optical power:** Absolute measurement, display the current value of the measured optical power. Relative measurement shows the difference value between current measured value and reference value.

✧ **Optical power units:** Absolute measurement using mW, UW, NW, dBm display, Relative measurement using dB display.

✧ **Optical wavelength:** Optional 850/1300/1310/1490/1550/1625nm；

✧ **Relative measurement:** in a state of relative measurements Show "difference value", this is used to measure fiber loss, etc;

✧ **Automatic off:** Battery on the left shows " ⏻ " , indicates the state of automatic off. If not, it means disabled.

✧ **Battery level:** Real-time display battery level, when flashes, indicates the battery is low, it is necessary to change the battery.

1. Press and hold the key ⏻ turns on the device. When power is on, press and hold this key will turn off power.

2. Press this key λ , it has six wavelength can be choose:850nm、1300nm、1310nm、1490nm、1550nm、1625nm ,which is also display on LCD.

3. Press the key dBm/mW Choose a different display units convert of optical power measurement.

4. Press the key Ref to set absolute and relative measurement of the switching state of the reference value.

5. Press the key Hold to Lock screen display of measured values, Press again the lock be canceled.

6. Press the key $\boxed{\text{☼ Set}}$ to turn on or off the LCD backlight press and hold the key will Enter the system setting status，Setting menu language, auto shutdown time, backlight manually or automatically switch.

Operation

Switch on/off

1. Press and hold the key $\boxed{\text{⏻}}$ in the panel, the optical power meter turn on.

2. Press and hold the key $\boxed{\text{⏻}}$ in the panel again, the optical power meter turn off and no display on LCD.

Absolute optical power measurement

1. Switch on the optical Power Meter.

2. Insert the fiber to be test.

3. Set the Wavelength by pressing the key $\boxed{\lambda}$, to choose the wavelength to be tested, the default wavelength is 1310nm.

4. Screen shows the current measured value, press the key $\boxed{\text{dBm/mW}}$ to show absolute power values of the linear and nonlinear.

Relative optical power measurement

1. Set the wavelength for measurement

2. When in the absolute optical power measurement mode, insert the optical fiber to be measured, measuring the current optical power value.

3. Press the key | Ref | , and then the current optical power value is stored as the base reference value. (In dBm units)

4. Insert another fiber to be test, display the relative values of optical power.

Set the parameters of the optical power meter

Language: English   Select language of menu.

Shut down: 20Min   Setting the time of auto shut-down.(10-120Min,OFF)

       OFF: Disable the "Auto power off" function. 20Min means the Optical Power Meter will power off after 20 minutes when there is no any operation.

Backlight: Auto   Setting the backlight auto off or manual turn on.

       Auto: Press any key ,backlight is on and auto off after 8 seconds.

       Manual: Press | ☼ Set | , backlight is on, and press | ☼ Set | again, backlight is off.

Standard Package

The package includes the following components:

1) A handle power meter

2) Two AA batteries

3) Operating Manual

4) Toolkit

5) QC label

Maintenance

1) It is important to keep the sensor clean, all optical connectors and surfaces free from oil, dirt, or other contamination to ensure proper operation.

2) Keep using one type of adapter to avoid excess loss from different connectors.

3) Please use dust-proof cap to avoid Measurement error or contaminated exposed to the air long time when the meter not in use.

4) Please carefully plug in or pull out the connector, to avoid being scratched.

5) Please use lens paper with cleaning liquid for sensor's surface cleaning periodically, do it in clockwise direction carefully.

6) If not using a long time, please take out the battery.

Trouble-shooting

Description	Possible cause	Method
Can not be Switch on	Battery low	Change battery
switch on but no display	Battery low	Change battery
Faint LCD display	Battery low	Change battery
Value do not change or Slight changes	Light interface is polluted /Display is locked	Check light interface and clean sensor's interface

Supplementary

Making an Optical Loss Measurement

Step1.Set standard (reference) value

1) Turn on the optical power meter and select the proper wavelength by the key $\boxed{\lambda}$.

2) Turn on the optical light source and select the proper wavelength.(it takes 1-2miniutes to stabilize)

3))Connect the optical power meter to the light source meter using a fiber. Ref. Figure 1.

4) You can read the linear power value and nonlinear power value by

pressing $\boxed{\textbf{dBm/mW}}$ key to change the unit to dBm or nW.

5) Pressing the $\boxed{\text{Ref}}$ key , set the current power value as reference

value，the display data turn into a 0.00 (in dB units shown)

Fiber Tester
Laser Source
Mode：stable
Power：-6dBm
λ: 1310nm

Optical Laser Source

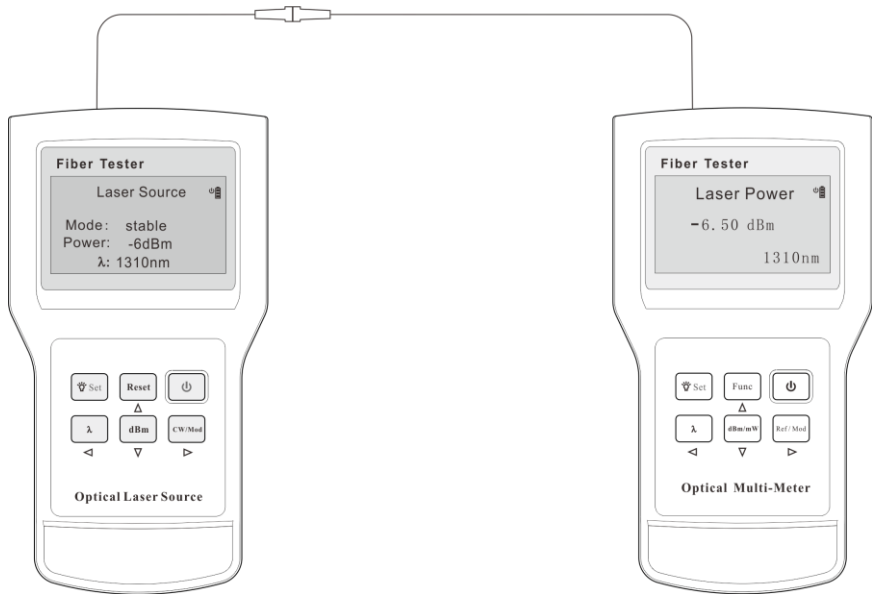Fiber Tester
Laser Power
-6.50 dBm
1310nm

Optical Multi-Meter

Figure 1.

Step 2 Optical Loss Measurements

1) Without removing the launch jumper from the optical light source , connect the optical light source and the optical power meter to the fiber under test.(Ref. Figure 2.)

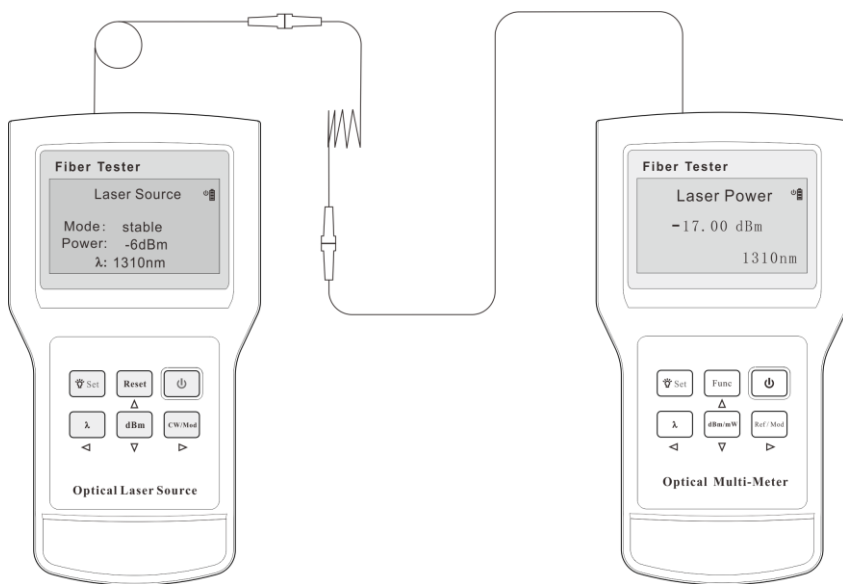2) The optical power meter displays the end-end loss of the fiber under test , the unit of loss value must be dB.

Fiber Tester

Laser Source

Mode: stable
Power: -6dBm
λ: 1310nm

Set   Reset   ⏻
△
λ   dBm   CW/Mod
◁   ▽   ▷

Optical Laser Source

Fiber Tester

Laser Power

-17.00 dBm

1310nm

Set   Func   ⏻
△
λ   dBm/mW   Ref/Mod
◁   ▽   ▷

Optical Multi-Meter

Figure 2.