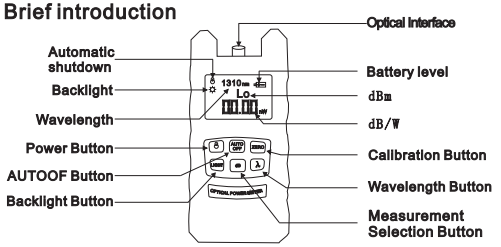
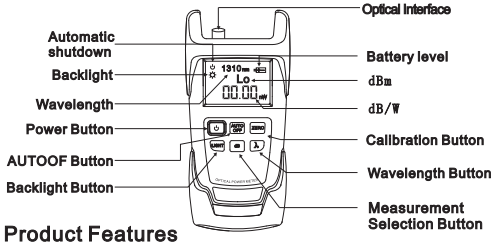
# User Manual

## Summary

The handheld optical power meter is specially designed for installation, debugging and maintenance of fiber network. And it is durable, accurate and portable. It has delicate appearance, a optional backlight display, as well as an auto shutdown function.Besides ,it has a wide range of wavelengths, accurate testing accuracy, calibration function and available general interface. Both linear index (mW) and nonlinear index (dBm) are displayed on the LCD screen.

## Brief introduction




## Product Features

User can calibrate the meter by himself.
It uses Alkaline battery NO.5 which will normally yield approximately 40 hours of continuous operation.
Both linear index (mW) and nonlinear index (dBm) are displayed on the same screen.
It is supplied with a SC optical adapter and there are FC and ST available as options.
Optional Auto-off function is available.
Optional Backlight switch can be set from the front panel.

## TECHNICAL PARAMETERS

| | |
|---|---|
| Power Detecting range | −70~+10dbm |
| Probe | InGaAs |
| Wavelength(nm) | 800~1700 |
| Standard Degree | 850、980、1300、1310、1490、1550、1625 |
| Display Resolution | 0.01dBm |
| Working Temp(℃) | −10~+60 |
| Storage Temp (℃) | −25~+70 |
| Automatic Shutdown Time(min) | 10 |
| Battery | More than 40 hours |
| Overall Dimension(mm) | 180c×83×28 |
| Power Supply | Li-On rechargeable or Alkaline battery NO.5 |
| Weight(g) | |

## Note

1.Wavelength range : The optical power meter designed within this wavelength range, a standard operating wavelength range from λmin to λmax is capable of operating under the specified index.
2.Power Detecting range: the range of the maximum light power according to the specified index
2.Uncertainty: The error between the test result of a given optical power and the standard optical power

## FUNCTION

**1.LCD display**
The LCD display shows the optical power in forms of dB, dBm, mW, uW, nW. And it can show the wavelength by 850nm,980nm,1300nm, 1310nm, 1550nm,1625nm etc.

**2.ON/OFF Button**
Press the ON/OFF button and hold for 1 second to turn the meter on. When on, press the ON/OFF button to turn the meter off.

**3. dB Button**
This button is used to select either dBm or mW between the absolute and relative measurements of optical power.

**4. ZERO Button**
Press the ZERO Button to calibrate.

**5.λ Button**
This button is used to select the wavelength, 850nm, 980nm, 1300nm, 1490nm, 1550nm, and 1625nm.
Press the button repeatedly to step through the wavelengths.

**6.Light Button**
Press the LIGHT button to turn on or turn off the backlight.

**7.AUTOOF Button**
Press the AUTOOFF Button to turn on or turn off the auto-shutdown function.

## Instructions

### Turning meter ON/OFF

1. Press the ON/OFF button to turn it on.
2. Press the ON/OFF button to turn it off.

### ABSOLUTE POWER MEASUREMENT

1. Firstly, turn on the optical power meter.
2. Secondly, press the λ button to select wavelengths. And default is 1310nm.
3. Connect the output port of the light source with the detecting port of the fiber power meter.
Then the LCD display now shows the actual output power of the light source including linear and nonlinear values.

### Relative power(LOSS)measurement

1. Firstly, press the λ button to select wavelengths.
2. Secondly, connect the output port of the light source with the detecting port of the fiber power meter in absolute power measurement mode. Then the LCD display shows the actual output power of the light source.
3. Thirdly, press dB button and the power value will be saved as the current reference value.
4. Lastly, connect the other light source to be tested, then the LCD display now shows the absolute and relative output power of the light source being tested.

## Specialized Fuction

It has three modes, factory mode, user mode, work mode.
Default state is work mode.
Factory mode
The optical meter is tested and calibrated by factory in factory mode.
User modification mode
Press λ+Light buttons together to exit user mode and enter work mode. And the end of the first line of the LCD display shows ''nm''.

## KEY COMBINATION

| Function | Button |
|---|---|
| Increases the displayed value by0.05dB | Light |
| Decreases the displayed value by 0.05dB | dB |
| Save the value calibrated. | Zero |
| Select the wavelengths | λ |
| set factory default state | λ+Zero |

Note: If the user has any deviation or operational error in the calibration, he can press the λ and ZERO keys at the same time in 'user modification' mode to restore the power meter to the factory default state.

## 10-minute auto shutdown function

Press AUTOOFF button to turn on/off auto shutdown function. When auto shutdown function is on, there is a flag of shutdown on the upper left of the LCD display and the meter will close after 10 minutes without any button pressed.

## Backlight function

Press LIGHT button to turn on/off the backlight when meter is on. When the backlight is on, there is a small sun flag on the upper left of the LCD display.

## Serial debugging function

Connect the serial port connection end with the PC serial port terminal, and the instrument can be read and tested by PC.

## Standard configuration

| Standard configuration | |
|---|---|
| Optical power meter | Data cable(option) |
| A pair of AA batteries | Rechargeable lithium battery(option) |
| warranty registration card | Certificate of soundness |
| Oxford soft package | |

## MAINTENANCE

1. Keep the surface of the probe clean and keep it away from oil, pollution and dust. Do not use uncleanly, nonstandard adapter. And do not insert probe into poor polishing surfaces. Otherwise, it will damage the probe.
2. Try to use only one kind of adapter.
3. Remember to cover the dust-cap when not using the meter to keep away from dust which may cause measure error.
4. Insert or unplug the light adapter connector carefully to avoid scratches on the port.
5. Please regularly use cotton swab to lightly clean the surface of the probe to keep it clean.

## TROUBLESHOOTING

| Problem | Possible reason | Corrective measure |
|---|---|---|
| Low LCD Display | Low battery power | Either use AC adaptor or change the battery |
| Failed to start / no screen display | battery is dead | Change battery |
| Low output power of light source | Dirty connectivity port of light source | Clean the connectivity port thoroughly or check whether the adapter is connected correctly |

## Warranty

Repair the meter by users is not suggested.

1. The meter has a 18-month free from defects warranty period. This warranty is from the date of delivery and shall be guaranteed for any defects or faults caused by material quality or nonperformance. Performance under normal operating conditions is fully guaranteed. Under this guarantee the company reserves the right to carry out any maintenance it deems necessary to restore the meter to optimal performance. If maintenance fails then the unit will be replaced. In any cases, the cost for warranty will not excess the price of each product.

2. If there is any problem that user can not solve with the help of TROUBLESHOOTING, user should contact our Marketing Department or our local agents instead of opening the cabinet by yourself.

3. This warranty is from the date of delivery and shall be guaranteed for any defects or faults caused by material quality or nonperformance. Performance under normal operating conditions is fully guaranteed. If any of the following conditions takes place, the warranty shall be null and void.

1 ) Repair or alter the meter without authority.

2 ) Improper use, negligent use, accident.

There is a warranty registration card for each meter. Please fill in the card and send it back to our company together with the copy of the invoice as root records for that we will need to carry out maintenance, technical innovation and calibration of your meters in the future.

## Appendix: RELATIVE POWER (LOSS) MEASUREMENT

### Firstly set up reference value

Turn on the optical meter, then press the λ to select the wavelength being tested.
Turn the light source on and select the wavelength to be tested and wait for light to be steady (it takes about 1-2 minutes)
Use two fiber optic jumpers to connect the output port of the light source, and with the detecting port of the optical power meter. And clean the adapters of fiber optic jumpers.Note: The fiber optic jumpers connected to light source must be the same as that the network to be tested uses.
Then use the emission source jumper connect the output port of the light source, and with the detecting port of the optical power meter.
User needs the optical power value as reference.
Note: The optical power value received from the light source should be close to the light source, if not , please clean the surface of connection carefully or replace the fiber optic jumpers connected to light source.
When the power meter displays the optical power value received from the light source, press dB button and the power value will be saved as the current reference value . At this point, the dB reading is 0.00.
Note: After zeroed, it is normal that the number of digits after the decimal point will change slightly.

### RELATIVE POWER (LOSS) MEASUREMENT

Keep the fiber optic jumpers connecting to light source and connect to the network that is to be tested.
Note: Clean all connection surfaces including the required fiber optic adapters.
The reading on the LCD screen shows the insertion loss of the network being tested. (the absolute optic value is showed in dBm.)