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To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

**NOTE**

As the laser is harmful to the eyes, do not attempt to disassemble the cabinet.

### Precautions for Use

**Use batteries**
At the same time, can not use different style or different capacitance batteries. And only charge the rechargeable batteries.

**Avoiding condensation problems**
As much as possible, avoid sudden temperature changes. Do not attempt to use the drive immediately after moving it from a cold to a warm location, to raising the room temperature suddenly, as condensation may form within the drive. If the temperature changes suddenly while using the drive, stop using it and take out batteries for at least an hour.

**Storage**
When long time no use, must take out the batteries to avoid destroying the device.
Check the accessories
Standard Edition

Host
Rubber Jacket
User's Guide
Soft Bag
Description

1  OPM connector
2  AC/DC Socket
3  LCD
4  Power Button
5  Wavelength/Unit Select Button
6  REF setting Button
7  VFL Control Button
Installing the battery

1. Pull the battery cover
2. Installing the battery
3. Push the battery cover
4. Complete
Press 'on/off' button to turn on the meter.
Press button again for two seconds or more to turn off the meter.

This meter has power-saving function, if ten minutes without any operation, the device will automatically shut down. If you need to disable this function, only need to press the 'on/off' button for 2 seconds when you turn on the meter till it displays 'PERM'.

OPTICAL POWER METER
Backlight and Visual Fault Locator Function (VFL is Optional)

When the meter is power on, short press the ' button, you can control the backlight function on or off. The backlight function is used when you want to use the meter at night or darker occasions.

Meter with visual fault locator, you can short press the ' button to control VFL on---glint---off.
Wavelengths

According to the project, we need to measure optical signals of different wavelengths. Then we need to select a corresponding wavelength to measure the optical power. If the wavelength needs to be measured does not match with the wavelength we select on the optical power meter, it will lead to the measuring values meaningless.

Press \( \lambda \) button, the meter will change wavelength, and display.

This series of optical power meter calibration measured wavelength are: 850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm.
The numeric relationship between mW value and dBm value is:

\[ 10 \log_{10}(mW) = \text{dBm} \]
Reference

'REF' Button is used to set or check the reference value. Short press this button, the display will show 'REF' and the dBm value saved as reference value. When long press for two seconds or more, the device will save the current dBm value as a new reference value. Meanwhile the 'REF' sign will flash three times on the display. After that will show the dB value .

(Each wavelength can set their own reference value)
Power Indicator

Four levels indication of power detection

- Represents the remaining 80%–100% electricity
- Represents the remaining 40%–80% electricity
- Represents the remaining 20%–40% electricity
- Represents the remaining electricity less than 20%
Charge

The instrument has a charging function. When user rechargeable batteries and a low battery indication shows on the instrument, you should promptly shut down it and recharge. Long time undervoltage will shorten the lifetime of the rechargeable battery.

Connect the AC adapter to the device correctly, it can charge automatically. Besides, computer USB port can also be used for charging. The battery remaining indicator keeps flashing during charging. It will stop when the charging is finished. The battery has finished the fast recharge and can be used directly. If you do not stop recharging at this time, the instrument will continue the trickle charge state, using small current to supply natural discharge. But this process is not more than 48 hours.

The instrument can still be used while charging. But do not plug in the AC adapter when it is not rechargeable battery inside, or it will cause a high temperature and combustion, even explosion.
### Detail Parameters

<table>
<thead>
<tr>
<th></th>
<th>T</th>
<th>C</th>
<th>Customize</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Range</td>
<td>-70~ +10dBm</td>
<td>-50~ +26dBm</td>
<td></td>
</tr>
<tr>
<td>Wavelength cal.</td>
<td>850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>+10~ -60dBm(0.01dB), -60~ -70dBm(0.1dB)</td>
<td>+26~ -40dBm(0.01dB), -40~ -50dBm(0.1dB)</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.2dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linearity</td>
<td>±2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detector type</td>
<td>InGaAs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiber optic adapter</td>
<td>FC or customize</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REF setting</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>response range</td>
<td>700~1700nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freq. Identification</td>
<td>270Hz/1KHz/2KHz(Optic power &gt;-30dBm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Type</td>
<td>AA * 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery lifetime</td>
<td>&gt;160H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterproof</td>
<td>Can prevent small splash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>140mm * 62mm * 32mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>174g</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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**NOTE**

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**Precautions for Use**

**Use batteries**
At the same time, cannot use different style or different capacitance batteries. And only charge the rechargeable batteries.

**Avoiding condensation problems**
As much as possible, avoid sudden temperature changes. Do not attempt to use the drive immediately after moving it from a cold to a warm location, or raising the room temperature suddenly, as condensation may form in the drive. If the temperature changes suddenly while using the drive, stop using it and take out batteries for at least an hour.

**Storage**
When long time no use, must take out the batteries to avoid destroying the device.
Check the accessories
Standard Edition

Host

Rubber Jacket

User’s Guide

Soft Bag
Description

1 Laser Source Connector
2 AC/DC Socket
3 LCD
4 Power Button
5 Wavelength ID
6 Output wavelength switch button
7 Load modulation
Installing the battery

1. Pull the battery cover
2. Installing the battery
3. Push the battery cover
4. Complete
Press 'button to turn on the meter. Press button again for two seconds or more to turn off the meter.

This meter has power-saving function, if ten minutes without any operation, the device will automatically shut down. If you need to disable this function, only need to press the 'button for 2 seconds when you turn on the meter till it displays 'PERM'. 
Backlight Function

When the meter is power on, short press the ' button, you can control the backlight function on or off. The backlight function is used when you want to use the meter at night or darker occasions.
After pressing 'λ' button, you can select the required output wavelengths. Details refer to the parameters table.

The power meter or other measuring equipments should select correspond wavelength of laser source.
Modulation output

After pressing 'MOD' button, you can load a modulation current output laser.

This instrument has three modulation for selection: 270Hz, 1KHz, 2KHz.
Wavelength identification

Press 'ID' Button, the laser source will output with wavelength ID and LCD will display 'Id'. and if works with the paired power meter with WAVEID function, the optical power meter will change to the same wavelength automatically.
Power Indicator

Four levels indication of power detection

- Represents the remaining 80%---100% electricity
- Represents the remaining 40%---80% electricity
- Represents the remaining 20%---40% electricity
- Represents the remaining electricity less than 20%
The instrument has a charging function. When user rechargeable batteries and a low battery indication shows on the instrument, you should promptly shut down it and recharge. Long time undervoltage will shorten the lifetime of the rechargeable battery.

Connect the AC adapter to the device correctly, it can charge automatically. Besides, computer USB port can also be used for charging. The battery remaining indicator keeps flashing during charging. It will stop when the charging is finished. The battery has finished the fast recharge and can be used directly. If you do not stop recharging at this time, the instrument will continue the trickle charge state, using small current to supply natural discharge. But this process is not more than 48 hours.

The instrument can still be used while charging. But do not plug in the AC adapter when it is not rechargeable battery inside, or it will cause a high temperature and combustion, even explosion.
## Detail Parameters

<table>
<thead>
<tr>
<th>Type Suffix</th>
<th>Dual wavelength</th>
<th>Three wavelength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-M3M8</td>
<td>-S3S5S6</td>
</tr>
<tr>
<td>Output λ (nm)</td>
<td>850 1300 1550</td>
<td>1310 1490 1550 1625</td>
</tr>
<tr>
<td>Output power</td>
<td>&gt;-10dBm</td>
<td>&gt;-6dBm</td>
</tr>
<tr>
<td>Laser Type</td>
<td>850nm,1300nm,1310nm,1550nm@FP</td>
<td>1490nm,1625nm@DFB</td>
</tr>
<tr>
<td>Optic adapter</td>
<td>FC/PC or customize</td>
<td></td>
</tr>
<tr>
<td>Modulation wave</td>
<td>270Hz/1KHz/2KHz</td>
<td></td>
</tr>
<tr>
<td>Auto off</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Battery Type</td>
<td>AA * 2</td>
<td></td>
</tr>
<tr>
<td>Battery lifetime</td>
<td>&gt;40H</td>
<td></td>
</tr>
<tr>
<td>Waterproof</td>
<td>Can prevent small splash</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>140mm * 62mm * 32mm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>174g</td>
<td></td>
</tr>
</tbody>
</table>
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**Precautions for Use**

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At the same time, cannot use different style or different capacitance batteries. And only charge the rechargeable batteries.

**Avoiding condensation problems**
As much as possible, avoid sudden temperature changes. Do not attempt to use the drive immediately after moving it from a cold to a warm location, to raising the room temperature suddenly, as condensation may form within the drive. If the temperature changes suddenly while using the drive, stop using it and take out batteries for at least an hour.

**Storage**
When long time no use, must take out the batteries to avoid destroying the device.
Check the accessories
Standard Edition

Host

Rubber Jacket

User’s Guide

Soft Bag
Description

1  VFL connector
2  AC/DC Socket
3  LCD
4  Power Button
5  Glint Control Button
Installing the battery

1. Pull the battery cover
2. Installing the battery
3. Push the battery cover
4. Complete
Press ' on button to turn on the meter. Press button again for two seconds or more to turn off the meter.

This meter has power-saving function, if ten minutes without any operation, the device will automatically shut down. If you need to disable this function, only need to press the ' on button for 2 seconds when you turn on the meter till it displays 'PERM'.

When the meter is power on, short press the ' on button, you can control the backlight function on or off.
Glint Function

Glint function can allow the output laser shine intermittently. It plays the role of indicating the breakpoint. You can find the breakpoint easily at night or in darker occasions.

Press 'Glint' button after booting, the red laser will flash and it will show Glint on the display screen at the same time. Press this button again, the instrument will output continuous lasers, and Glint indicator will shut down.
Power Indicator

Four levels indication of power detection

- Represents the remaining 80%---100% electricity
- Represents the remaining 40%---80% electricity
- Represents the remaining 20%---40% electricity
- Represents the remaining electricity less than 20%
Charge

The instrument has a charging function. When use rechargeable batteries and a low battery indication shows on the instrument, you should promptly shut down it and recharge. Long time undervoltage will shorten the lifetime of the rechargeable battery.

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The instrument can still be used while charging. But do not plug in the AC adapter when it is not rechargeable battery inside, or it will cause a high temperature and combustion, even explosion.
<table>
<thead>
<tr>
<th></th>
<th>V1</th>
<th>V10</th>
<th>V15</th>
<th>V20</th>
<th>V25</th>
<th>Customize</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output power</td>
<td>&gt;1mW</td>
<td>&gt;10mW</td>
<td>&gt;15mW</td>
<td>&gt;20mW</td>
<td>&gt;25mW</td>
<td></td>
</tr>
<tr>
<td>Connector Type</td>
<td>2.5mm UPP or customize</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Type</td>
<td>AA * 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery lifetime</td>
<td>&gt; 50 hours of operation (1mW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glint</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterproof</td>
<td>Can prevent small splash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>140 (L) * 62 (W) * 32 (H)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>174</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
USER'S GUIDE
Optical Multi Meter
WARNING

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At the same time, can not use different style or different capacitance batteries. And only charge the rechargeable batteries.

Avoiding condensation problems
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Storage
When long time no use, must take out the batteries to avoid destroying the device.
Check the accessories
Standard Edition

Host

Rubber Jacket

User's Guide

Soft Bag
Description

1 Laser source connector
2 OPM connector
3 AC/DC Socket
4 Power Button
5 Modulation/Output wavelength switch button
6 LCD
7 Wavelength/Unit Select Button
8 REF setting Button
1. Pull the battery cover
2. Installing the battery
3. Push the battery cover
4. Complete
Press the button to turn on the meter. Press button again for two seconds or more to turn off the meter.

This meter has power-saving function, if ten minutes without any operation, the device will automatically shut down. If you need to disable this function, only need to press the button for 2 seconds when you turn on the meter till it displays 'PERM'.
Backlight Function

When the meter is power on, short press the ' ' button, you can control the backlight function on or off. The backlight function is used when you want to use the meter at night or darker occasions.
OPM - Select Wavelength

After pressing 'λ' button, you can select the required output wavelengths. Details refer to the parameters table.

The power meter or other measuring equipments should select correspond wavelength of laser source.
Button can be used to change the display unit of the measurement data to meet the different requirement. When press and hold this button for two seconds, the display will successively show the dBm value and mW/uW value.

The numeric relationship between mW value and dBm value is:

\[ 10 \log_{10}(\text{mW}) = \text{(dBm)} \]
OPM - Reference

'REF' Button is used to set or check the reference value. Short press this button, the display will show 'REF' and the dBm value which has been set up. When long press for two seconds or more, the device will use the current measurements to overwrite the original setting value and set it as a new preference value. Meanwhile the 'REF' sign will flash three times on the display. After that will show the difference(dB).

(Each wavelength can set their own reference value)
OLS - Select Wavelength

After pressing 'MOD' button for 2 seconds, you can select the required output wavelengths. Details refer to the parameters table.

The power meter or other measuring equipments should correspond the wavelength of the light source.
After pressing 'MOD' button, you can load a modulation current output laser.

This instrument has three modulation for selection: 270Hz, 1KHz, 2KHz.
Power Indicator

Four levels indication of power detection

- Represents the remaining 80%---100% electricity

- Represents the remaining 40%---80% electricity

- Represents the remaining 20%---40% electricity

- Represents the remaining electricity less than 20%
The instrument has a charging function. When use rechargeable batteries and a low battery indication shows on the instrument, you should promptly shut down it and recharge. Long time undervoltage will shorten the lifetime of the rechargeable battery.

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### Optical power meter Detail Parameters

<table>
<thead>
<tr>
<th></th>
<th>T</th>
<th>C</th>
<th>Customize</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Range</td>
<td>-70~ +6dBm</td>
<td>-50~ +26dBm</td>
<td></td>
</tr>
<tr>
<td>Wavelength cal.</td>
<td>850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>+6~ +60dBm(0.01dB), -60~ -70dBm(0.1dB)</td>
<td>+26~ -40dBm(0.01dB), -40~ -50dBm(0.1dB)</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.2dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linearity</td>
<td>±2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detector type</td>
<td>InGaAs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiber optic adapter</td>
<td>FC or customize</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response range</td>
<td>700~1700nm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Optical laser source Detail Parameters

<table>
<thead>
<tr>
<th></th>
<th>Dual wavelength</th>
<th>Three wavelength</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type Suffix</td>
<td>-M3M8</td>
<td>-S3S5</td>
<td>-S3S4S5</td>
</tr>
<tr>
<td>Output λ (nm)</td>
<td>850 1300</td>
<td>1310 1550</td>
<td>1310 1490 1550</td>
</tr>
<tr>
<td>Output power</td>
<td>&gt;-10dBm</td>
<td></td>
<td>&gt;-6dBm</td>
</tr>
<tr>
<td>Laser Type</td>
<td>850nm, 1300nm, 1310nm, 1550nm@FP</td>
<td>1490nm, 1625nm@DFB</td>
<td></td>
</tr>
<tr>
<td>Optic adapter</td>
<td>FC/PC or customize</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modulation wave</td>
<td>270Hz/1KHz/2KHz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Part of Public Detail Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto off</td>
<td>Yes</td>
</tr>
<tr>
<td>Battery Type</td>
<td>AA * 2</td>
</tr>
<tr>
<td>Battery lifetime</td>
<td>&gt;40H</td>
</tr>
<tr>
<td>Waterproof</td>
<td>Can prevent small splash</td>
</tr>
<tr>
<td>Size</td>
<td>140mm<em>62mm</em>32mm</td>
</tr>
<tr>
<td>Weight</td>
<td>200g</td>
</tr>
</tbody>
</table>