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WARNING

Security rules:

To protect the instrument from being damaged, do not use under the high temperature, high pressure, wet or other prohibited condition.

Do not personally take apart or repair the instrument.

Quality assurance:

We assure that each unit meets the declared specification.

Notice:

Technical Parameter is subject to change without notice.

Handheld optical power meter manual

SD 503

1 Model

A)measurement range:
-70~+10dBm，calibrated wavelength：850nm、1300nm、1310nm、1490nm、1550nm、1625nm

B) measurement range:
-50~+26dBm，calibrated wavelength：850nm、1300nm、1310nm、1490nm、1550nm、1625nm

2 Features

- ✧ High measurement accuracy and display resolution
- ✧ Quick response and measurement: when power changing, it can track and real-time display the output power
- ✧ Wide measurement range: 80dB range
- ✧ Six calibrated wavelength: 850nm、1300nm、1310nm、1490nm、1550nm and 1625nm(other wavelength could be provided on request)
- ✧ Absolute and relative measurement
- ✧ Real-time monitoring and displaying the battery level
- ✧ Auto-off function
- ✧ Backlight function
- ✧ Alkaline battery

✧ User self-calibration function

3 Specifications

Measurement range dBm	-70～+10 dBm	-50～+26 dBm
	Other range is on request	
Wavelength range（nm）	800～1650	
Calibrated wavelength	850nm 、 1300nm 、 1310nm 、 1490nm 、 1550nm 、 1625nm （optional other wavelength）	
Detector	InGaAs	
Accuracy	<±3% （-10dBm、22℃）	
Resolution	Linearity：0.1%，Non-linearity：0.01dBm	
Working temperature	-10℃～+50℃	
Storage temperature	-20℃～+70℃	
Relative humidity	90%（＋30℃），	
connector	Movable FC/PC，optional ST、SC	
Power supply	3pcs AAA batteries	
DC	Optional accessory. AC working range is AC90-240	
Working hours	>120 hours（without backlight）	
weight(g)	160g	
dimension(mm)	125×65×29	

4 Standard Accessories

1) power meter……1
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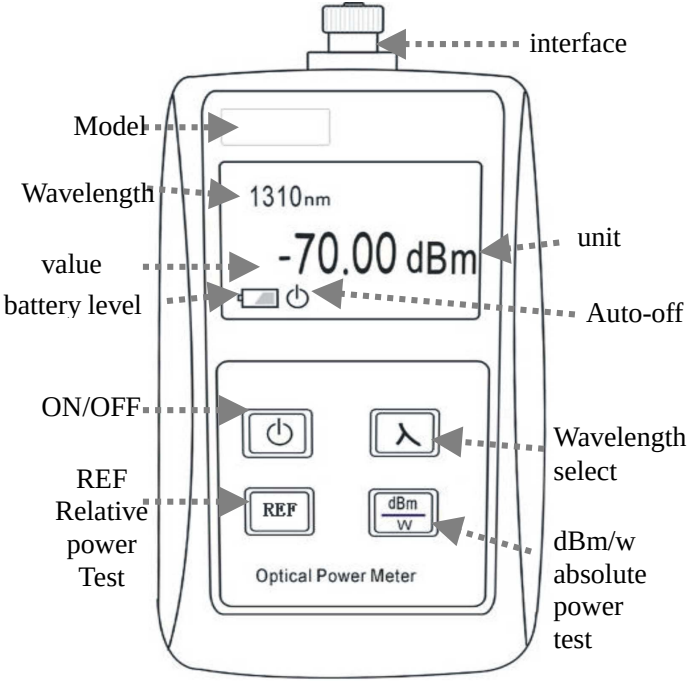
4) battery(AAA, transportation permit) ……3
5) certificate ……1

5 simply operation

1) ON/OFF: press it for a few seconds to turn it on/off .click to turn on/off back light，
2) λ:switch the wavelength
3) dB: press 2 seconds to enter the relative measurement mode.
4) dBm/W:press it to enter the relative measurement mode.
5) Replace the battery when the power is low
6) Take out the battery when not in use for a period of time
7) Refer to the back label for operation

6 Appearance and function

6.1 LCD Screen



Wavelength： display the wavelength, such as 850nm、1300nm、1310nm、1490nm、1550nm and

1625nm；

Power value：

- ✧ it displays the current output power under **absolute test mode**
- ✧ it displays the difference between the current output power and reference power under **relative test mode**

Unit： mW、uW、nW、dBm、dB

Relative test： press dB to start relative test

Auto-off： activate the 10-minute auto off function

Battery level： real-time indicate the battery level. When blank, it indicates the power is too low

6.2 Function

1) ON/OFF：click ON/OFF to turn it on. press for 3 seconds to turn it off. Under power-on mode, press this key shortly to activate or deactivate the 10-minute auto off function
2) dBm/W：press dBm/W to enter absolute test mode. Press it again to switch the test unit.
3) λ：switch the wavelength from 6 calibrated wavelength
4) dB：press dB key once to enter relative test and it has 3 working mode:

A) directly enter the relative test: under absolute test, press this key to enter the relative test. now the Ref value shows the previous power values.

B) Reference value storage：when enter the relative test, press dB for 2 seconds to save the current absolute power value as REF value and show the relative power value in dB unit

c) Enter the relative test and save current reference value: under the absolute test mode, press dB for 2 seconds to enter the absolute test mode and save the current value as reference value which is showed in Ref position. Now the value in dB unit on the screen is the difference between the real test value and reference value.

5) Backlight is on when turning on the unit. it would auto turn off 1 minute later. You could press any key to turn it on for 1 minute again.

7 Operation

7.1 Turn on/off

✧ Press ON/OFF shortly to turn on the unit. press it for a few seconds to turn it off and click it to activate or deactivate the auto-off function.

7.2 Absolute power measurement

✧ Connect the power meter with optical signal
✧ Turn on the power meter
✧ Choose the correct wavelength via λ key.
✧ If the tested wavelength is not exactly same to the one in the power meter, then choose a

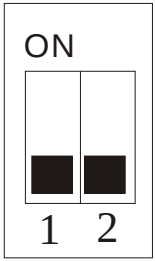
close one from the power meter.

- ✧ Press dBm/W to choose the display unit. the default wavelength is 1310nm and working mode is dBm.
- ✧ Then the power meter will show the test power value.

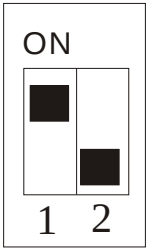
7.3 Relative power test

- ✧ Set wavelength
- ✧ Press dB for 2 seconds to enter the relative test mode. now LCD screen display 00.00dB
- ✧ Connect it to the test signal. the current value is difference between the tested value and reference value.
- ✧ Reference value is in the Ref position
- ✧ Press dBm/W to review the current absolute power value. Press dB to review the current reference value

7.4 User self-calibration function



Work position



Self-calibration position

- ✧ Take out the battery and pull up the switch 1 to “ON” position.
- ✧ Put the battery back to the battery compartment and turn on the unit to choose the wavelength for calibration.
- ✧ Now connect it with pigtail and press REF or dBm/W to increase or decrease the data by 0.05dB.
- ✧ When the value is same to the one in the standard power meter(or lower 0.03dB), press on/OFF to save the changed result.
- ✧ Repeat above operation for other wavelength
- ✧ After recalibrate each wavelength, please pull down the switch 1 (come back to the position, the opposition of the “ON”)and turn off the meter
- ✧ End the user self calibration operation

7.5 Auto off function

The auto off is on when turning on the unit. Press ON/OFF to activate or deactivate it.

7.6 Replace battery

- ✧ If the battery level is very low, please turn off the unit immediately and replace the batteries
- ✧ Take out the battery if not in use for a period of time
- ✧ **NOTE: do not charge the non-rechargeable battery, dangerous!**

8 Maintenance

1) keep all optical connectors and surfaces free from oil, dirt or other contamination to ensure proper operation.
2) Keep using the same type of connector
3) Please cover the dust cap when not in use to keep the connector clean.
4) Carefully plug in or out the adapter
5) Regularly clean the connector.
6) Take out the battery when not in use for a period of time.

9 Problems

Problem	Reason	Solution
Faint LCD screen	Lower power	Replace the battery
No backlight	Lower power	Replace the battery
No display when turning on	Lower power/other	Turn on again or replace battery
Fail to turn on	Lower power	Replace the battery
No changing on LCD screen	Lower power	Replace the battery
In sensitive LCD screen	Dirty or polluted connector	Use the correct connector and clean it.

10 Warranty notice

Warranty Period：

It is within 18 months from the date of purchase

Warranty clause：

一、Under the warranty, we would repair the problems caused under the normal operation free of charge.

Note: remember to show us the warranty card when repair

二、For the following situation, we have to charge certain cost：

1) Out of the warranty；
2) Fail to provide the warranty card
3) alter and omit the warranty card
4) Wrong operation including the problem caused by human actors, abnormal working environment and so on.
5) Problems or damages are not caused by the products quality
6) Do not operate it according to this manual.

三、For the following situation, we do not repair it

1) Damaged seal label.
2) Take apart it without our agreement
3) Other companies products

Quality certificate

Product name：**handheld optical power meter**
Product model：
Serial number：
Date of production：
Inspection ：

Warranty card

Date of purchase：
Customer name：
Customer address：
Customer phone：
Distributor name：
Distributor phone；
Posted back to：