

LCOPM 3

Optical LAN - WDM Power Meter

Operating Manual



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1. Introduction

1.1 Special Features

- Automatic wavelength and power measurement
- Convenient size and weight to carry
- Easy to handle
- 1500 measurement data can be stored in the internal memory
- Auto power off function based on the set time
- Fast response speed
- 2.8" TFT Color LCD
- Changeable Adapter



1.2 Accessories

item	quantity
Main unit	1 unit
Rubber Case	1 piece
USB Data Cable	One
5-pin charger (optional)	One
operating instructions	Part 1

1.3 Optical Standards

-wavelength

	Parameters	unit	spec
LR-8	Number of Channels	Ch.	8+ Total Power
	Channel	Thz	235.4 ~ 229.0
		nm	1273.54 ~ 1309.14
	Channel Spacing	GHz	800
	Central Wavelength	nm	1273.54 / 1277.89/ 1282.26/1286.66/ 1295.56/1300.05/1304.58/1309.14
CWDM4	Number of Channels	Ch.	4+ Total Power

	Channel	Thz	235.87 ~ 225.24
		nm	1271.00 ~ 1331.00
	Channel Spacing	GHz	40
	Central Wavelength		1271.00/1291.00/1311.00/1331.00
PM	Number of Channels	Ch.	3
	wavelength	nm	850/1310/1550

-power

Parameters	unit	spec
Measurement range	dBm	+10 ~ -40
accuracy	dB	±0.5(@ -40dBm)
resolution	dB	0.01
Display units		dB / dBm

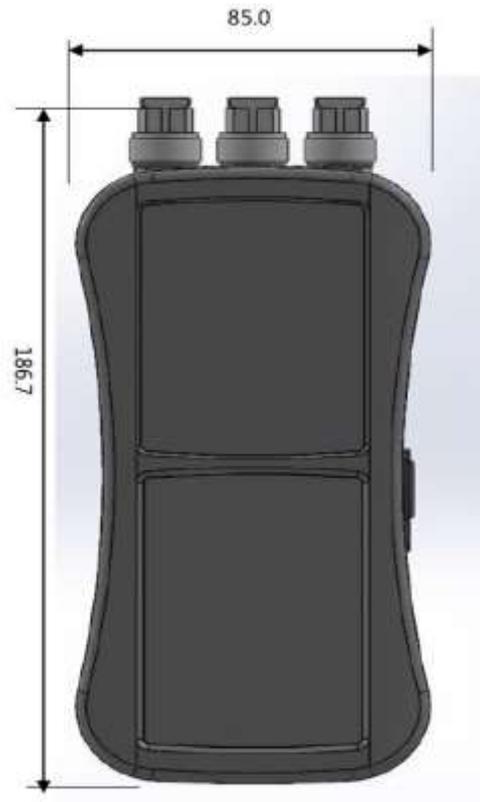
-connector

Optical connector adapter can be changed .

FC, ST, SC, LC

1.4 Specifications

- Power : 1900mAh 3.7v
- Current consumption : Max. 0.25A
- Power Consumption : Max. 0.925W
- Weight : 260g
- Width : 85.2mm
 - Length : 186.7mm
- Display size : 2.8 inch
 - Operating temperature : -20 ~ +55°C
- Continuous use time
 - : 450 minutes when fully charged
- Humidity of the operating environment
 - : ~ 90% RH from 0 ~ +40 °C



1.5 Charging Method

- Insert the 5-pin charger cable into the hole on the right side of the LCOPM3 and connect it to a PC or adapter to charge.

- Display when charging :

LED Color	LED Operation	Charging Status
red	On	Charging
green	On	Charging complete

1.6 Usage Notes

Please read the following precautions carefully and use the product correctly. If the product malfunctions due to improper use without following the precautions, we will not be able to provide after-sales service for the product.

- Do not subject this product to direct, strong impact.
- Do not disassemble the LCOPM3 or remove any parts.
- Be careful when cleaning the measuring area to avoid scratches or the inclusion of foreign objects.
- After using this device, please put the cap back on to protect it from foreign objects.
- Be careful not to let water get into the product.
- Please switch off after use.
- Store in a cool, dry place.

2. How To Operate

2.1 Explanation of Operating Keys

Key	function
	Power On/Off
	Auto/Manual Power Meter Value Display
	CWDM Wavelength Measurement
	L R4/8 Scan wavelength and display value
	Each time you press the button, the display switches between dB and dBm values for that wavelength.
	Scroll the screen up
	Displays dB and dBm values of LR8/CWDM4 wavelengths in a graph
	Loading save data
	Decision
	Save scanned data to the device
	cancel
	Scroll down the screen

	Managing your settings and data
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2.2 Screen Information

1) Power On/Off

- With the power off  Press the button for 2 seconds or more to turn the power on.
- With the power on  Press the button for more than 2 seconds to turn off the power .

2) The power meter

- Power measurements are updated in real time.



- Press the button to select the wavelength in PM mode (850/1310/1550)

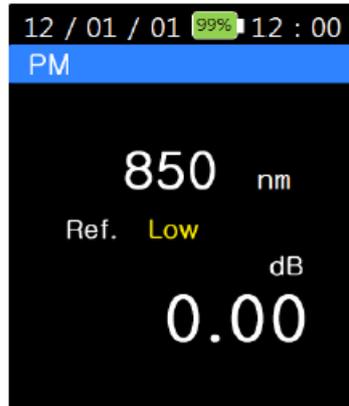


You can press to change the wavelength .





- You can change the dB/dBm of the selected wavelength .



3) CWDM



- CWDM function The moment you press the button, it scans the incoming light source and This function displays one wavelength at a time.



-LWDM screen You can press the button to switch between auto and manual mode. Auto mode will display the strongest power value in code.



Manual mode Auto mode



-Manual mode wavelength selection You can change it with the button.

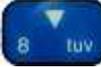
4) LR4/8

- The LR4/8 button is a function that measures the power of eight wavelengths of light at once.

-You can choose between Repeat Scan and Single Scan from the SCAN Type menu

- Repeat Scan reflects the input light power in real time,

Single method  Displays the light power at the moment the button is pressed.

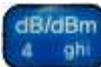
-You   can select the wavelength to scan with the button. (LR4 / LR8)



SCAN	Repeat
Total	Low dBm
1295.56	Low dBm
1300.05	Low dBm
1304.58	Low dBm
1309.14	Low dBm

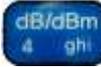
SCAN	Repeat
Total	Low dBm
1273.54	Low dBm
1277.89	Low dBm
1282.26	Low dBm
1286.66	Low dBm
1295.56	Low dBm
1300.05	Low dBm
1304.58	Low dBm
1309.14	Low dBm
LR8	

5) dB/dBm

- The light source at the time the user  presses the button becomes the reference value. In other words, the light source at that time becomes 0.00dB .

-The dB value of the light source you want to measure will then be measured automatically.

-   Button will take you to the LR4/LR8 screen.

-If you still want to change to dBm value,  press the button.

6) Graph

- Press  the button and then the button  to display the dB/dBm values of the scanned wavelengths in a graph, as shown below .

-   LR4/LR8 with button You can now move to the Graph screen.



-  Press the button again, the dB/dBm value will be displayed in a text screen .

How to scan LR4/8 CWDM4

Total	Low	dBm
1295.56	Low	dBm
1300.05	Low	dBm
1304.58	Low	dBm
1309.14	Low	dBm

LR4

Total	Low	dBm
1273.54	Low	dBm
1277.89	Low	dBm
1282.26	Low	dBm
1286.66	Low	dBm
1295.56	Low	dBm
1300.05	Low	dBm
1304.58	Low	dBm
1309.14	Low	dBm

LR8

- On  the LWDM screen , press the button to scan the L R4/8 wavelengths.

- You   can check the LR4/LR8 optical power value with the button .



The screenshot shows the LR8 Scan screen with the following data:

Total	Low	dBm
1271.00	Low	dBm
1291.00	Low	dBm
1311.00	Low	dBm
1331.00	Low	dBm

At the top of the screen, it displays '12 / 01 / 01' with a 99% battery icon and '12 : 00'. A blue bar at the top contains 'SCAN' and 'Repeat'. At the bottom, it says 'CWDM4'.

-On the LR8 Scan screen  Press to scan CWDM4 .

-On each LR8, CWDM4 Scan screen  When you press the button, the Graph screen will be displayed.

7) Recall

-Press  the button to load the saved data.



The screenshot shows the LR8 Recall screen with the following data:

Recall
130601 00 : 00 : 00
130501 00 : 00 : 00
130401 00 : 00 : 00
130301 00 : 00 : 00
130201 00 : 00 : 00
130104 00 : 00 : 00
130103 00 : 00 : 00
130102 00 : 00 : 00
130101 00 : 00 : 00

At the top of the screen, it displays '00 / 01 / 01' with a 99% battery icon and '12 : 00'. A blue bar at the top contains 'Recall'. At the bottom right, there is a green downward arrow.

-Use the arrow keys to select the data you want to check.  When you press the button,

You can check the details of the saved data.

8) Save

- When you press the button on the SCAN or Graph screen , the screen below will appear.



-The name of the data will be saved with the date and time when the save button is pressed.

-On this screen  Press the button and the data will be saved.

-  Press the button, You can switch T-> F mode.

- T: You can write text.

- F:  Press the button to delete the text

- To change the name of the saved data, press the keypad to set the name.

Example) Data 1



-To cancel saving:  Please press the button (when on F screen) .

2.3 Menu

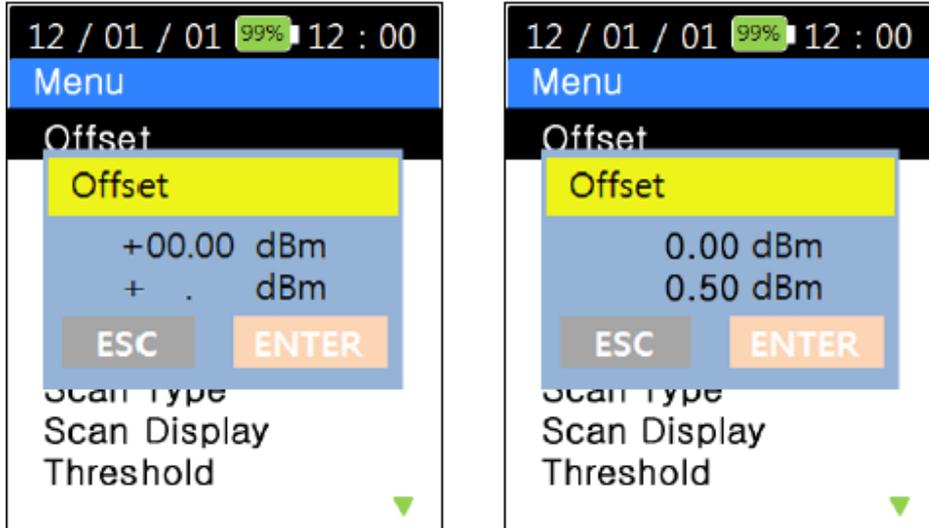


-  When you press the button, LCOPM3 The settings related items will be displayed.

- Menu has 'Offset' , ' Auto Power Off ' , 'Time 'Set'Time setting , 'File Delete'Data deletion , 'File Format'Data format , ' System Info'System information , 'Scan Mode'Scan mode , 'Scan 'Display' scan display , ' Threshold' threshold setting, 'Graph Color' graph color , and ' Display unit' display unit , ' Factory Reset ' There is a factory reset setting .

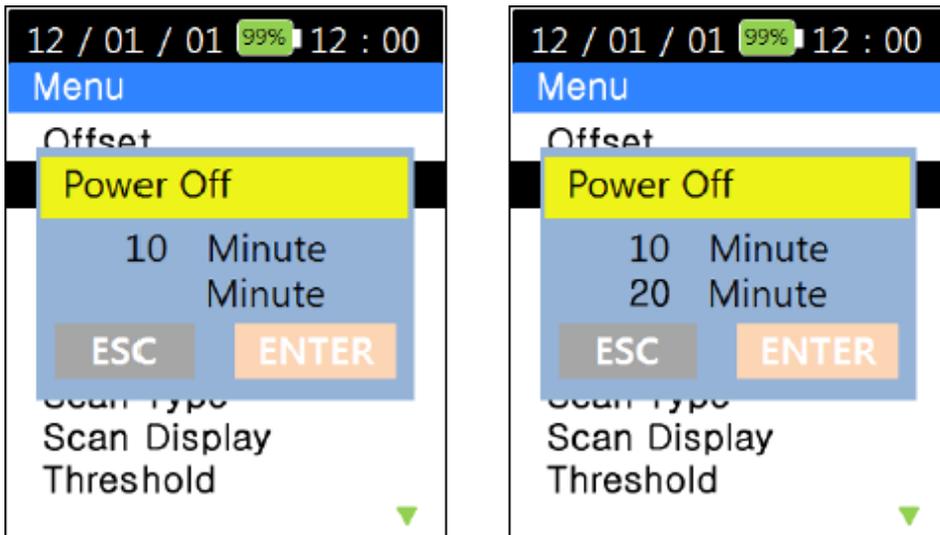
1) Offset

- Click Offset and the screen below will appear.
- The reference value is 0.00dBm .
- The offset can be set within the range of ± 25.99 dBm .



- Click Offset and the screen above will appear.

2) Auto Power Off

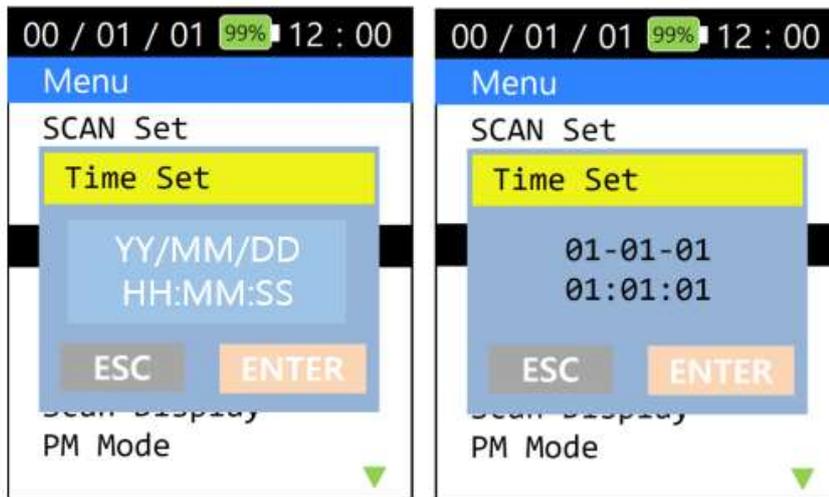


- The power will automatically turn off if no operation is performed for a certain period of time .
- When you press 'Auto Power OFF' , the screen above will appear.
- The default setting is 5 minutes.

-User can input desired Auto Power Off value and then  Press the button to save.

- Auto Power Off will be saved for a minimum of 5 minutes and a maximum of 600 minutes.

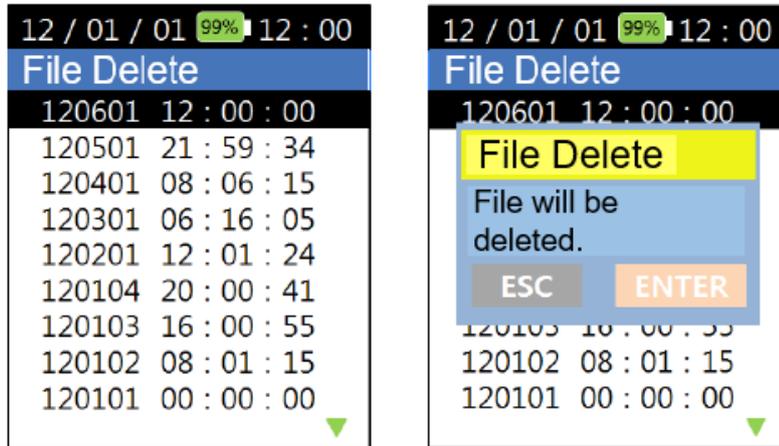
3) Time Set



- Set the time with 'Time Set' . When you press this, the screen above will appear where you can set the time.

-After the user enters the desired current date and time  Press the button to save.

4) File Delete

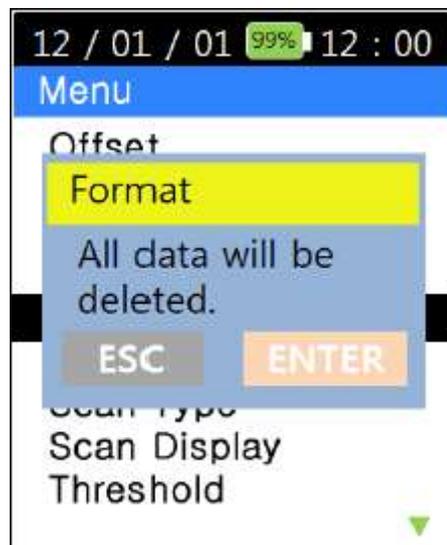


- Press 'Data Delete' to erase the data stored in the device. When you press this, the saved data will appear as shown above.

- Use the arrow keys to select the data you want to delete  When you press the button, a message will appear as shown in the upper left.

- Press the button to delete  or the button to cancel .

5) Data Format



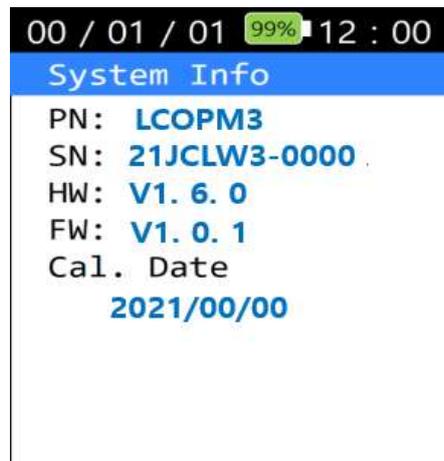
- 'Format' will erase all data stored in the device. Pressing this will display the saved

data as shown above.

-Press button if you want to erase all data  or button if you want to cancel



6) System Info



- You can check the product information of LCOPM3.

7) Scan Mode

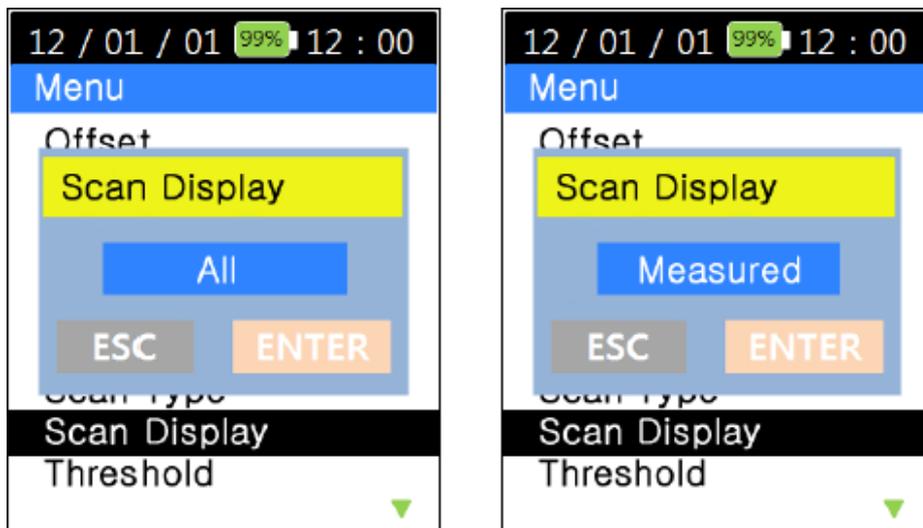
- 'Scan Mode' : 'LWDM' and 'Repeat' mode that reflects the optical power input on the

'SCAN' screen in real time. You can  also  select 'Single' mode which will scan once and display the value when you press the button .

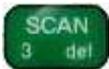


You can select it with the button.

8) Scan Display



- 'Scan Display' allows you to select the wavelength to be 'Displayed' by pressing the button



. 'All' and 'Measured' can be selected by pressing the button.



Select 'Measured' to display only the wavelengths detected within the measurement range.

-Select the desired SCAN Display and  press the button.

9) Threshold

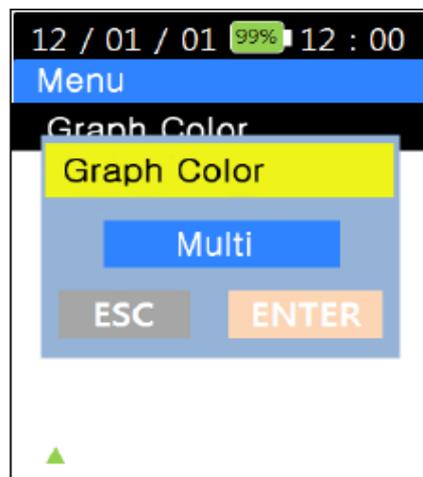
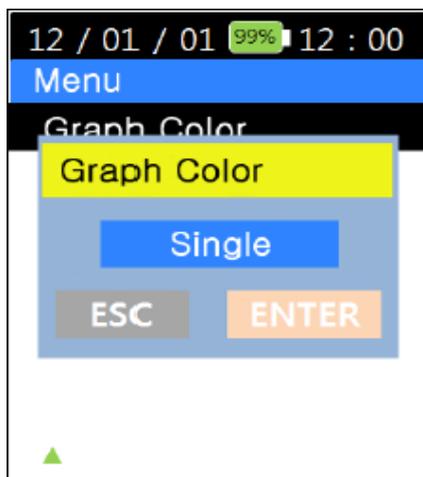
- You can change the reference line on the graph screen using 'Threshold'.
- You can turn the Threshold setting on or off by selecting Turn On or Turn Off .
- You can check the changed threshold on the graph screen.



10) Graph Color

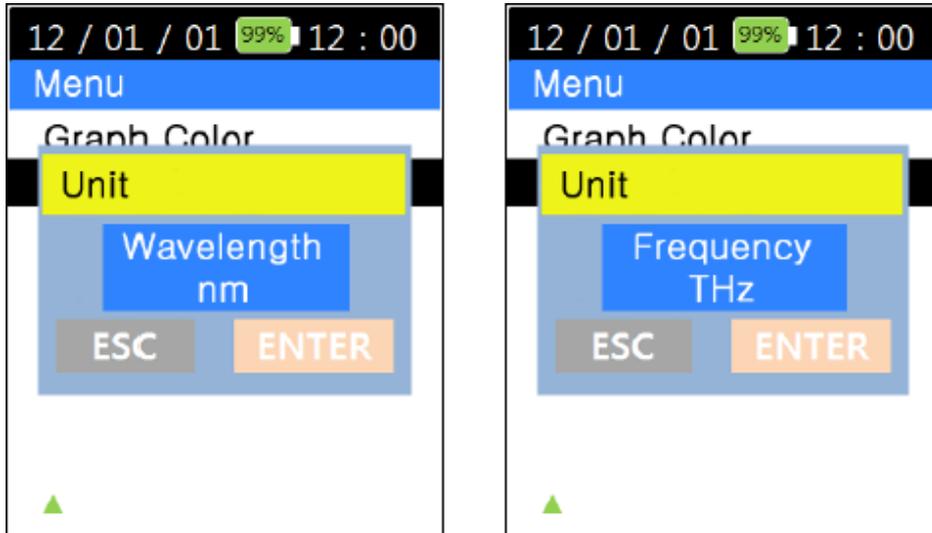
In 'Graph Color' , you can choose between Multi , which displays each wavelength in its own color , and Single , which displays the graph in one color.

-   After changing with the button  button to select.



11) Display Unit

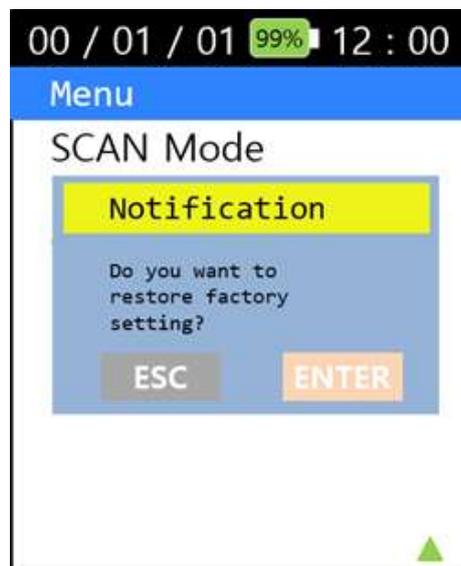
-This function displays the wavelength of the input light as a frequency.



- After changing with the button button to select.

12) Factory Reset

-Return the device settings to the original settings.



- You can perform initialization by pressing the ' ENTER ' button in the ' Factory Reset ' setting .