Precision Rated Optics

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OLM-212A-ORL

Optical Loss Meter

Operation Guide

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1. Summarize

OLM-212A-ORL optical loss & return loss meter uses a dedicated chip and surface mount technology, compact structure, stable performance and reliability. Of hand-held dual-wavelength light source, optical power, insertion loss and return loss tester. The light source it can output 1310nm and 1550nm wavelengths. The power meter can measure the 850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm wavelengths. OLM-212A-ORL can measure the return loss & insertion loss of 1310nm and 1550nm wavelengths.

Widely used for optical communications engineering construction building (such as optical metropolitan area network, cable television and long-distance trunk network, etc.), also apply to fiber optic cables, active and passive optical components such as R&D products.

Main features

- Optical probe material is imported
- Small power consumption
- Three kinds of modes Meter mode, return loss mode, insertion loss mode, linear optical power and logarithm optical power display
- Range automatic switching automatic shutdown, battery display and charge display, with the relative value measurement functions
- Small size, light weight, low power consumption, easy to carry
- Support remote upgrade, the user can go to our website to download the latest software and instrument upgrades

2. Safety Information

Warnings

Never look directly into optical outputs or a fiber while the equipment is on. Invisible laser beam may damage your eyes.

Do not short-circuit the terminal of AC adapter / charger and the batteries. Excessive electrical current may cause personal injury due to fumes, electric shock or equipment damage.

Connect AC power cord with the equipment and wall socket properly. While inserting the AC plug, make sure there is no dust or dirt on the terminals and both plugs are fully seated. Incomplete insertion may cause fuming, electric shock or equipment damage and may result in personal injury.

Do not operate the equipment near hot objects, in hot environments, in dusty/ humid atmosphere or when condensation is present on the equipment. This may result in electric shock, product malfunction or poor performance.

2.1 Discharged batteries

1) When the battery power is almost out, a warning indicator will blink. Please replace the batteries or plug in AC adapter to charge batteries.
2) Please make sure that you have turned the instrument on before charging the batteries. Unplug the AC adapter when the batteries are fully charged.
3) Please make sure the batteries are installed properly before charging them.
4) To eliminate the possibility of acid leakage, please take out the batteries if the unit will not be used for a long time.

2.2 AC operation

If the instrument is mainly used at one location the AC adapter can be used to power it instead of batteries. There is a DC input jack on the left side of the OLM-212A-ORL instrument casing into which the output cable of the AC adapter is plugged. And when the AC adapter is plugged in, the AC Indicator on the LCD will be displayed.

Note:

1) Power is supplied by the AC adapter even if battery is installed. The battery indicator is not displayed on the screen when AC adapter is in use.
2) Make sure that the operating voltage of the AC Adapter / Charger is the same as the local AC line voltage.

3. Preparing for Operation

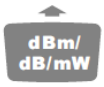
Unpacking the instrument
We suggest that you keep the original packing material. Using the original packing material is your guarantee of protecting the instrument during transit.

Checking the package contents
The standard accessories of OLM-212A-ORL are as follows:

Main unit, User's Guide, Quality Check Report, 2*Ni-MH Batteries Carrying Case, Optional accessories: AC Adapter

Checking for damage in transit
After unpacking the instrument, check to see whether it was damaged in transit. This is particularly likely if the outer casing is clearly damaged. If there is damage, do not attempt to operate the instrument or to repair it without authorization. Doing so can cause further damage and you may lose your warranty qualification.

4. Icons and Buttons

Icon/Button	Meaning
LD	Output of 1310nm and 1550nm and input of return loss test
850/1300/1310/ 1490/1550/1625nm	Optical Power Meter Current measured wavelength
REF	Optical Power Meter Current Reference power
270Hz, 1kHz, 2kHz	The modulation frequency identification from Optical Power Meter
TWIN	Auto-Wavelength Open ID of Optical Power Meter
SAVE 888	The currently stored data numbers, each mode can store 500 sets of data
PD	Optical Power Meter input
	Connected with the USB icon
	Using an external power supply icon
	Remaining battery capacity indicator
mw, uw, dBm	dBm, dB, mw, uw display
AUTO-OFF	Open the automatic shutdown logo, boot by default when you open the function
	Output wavelength of light source
	Own laser wavelength switching: 1310nm&1550nm
	Optical Power Meter-wavelength switching and delete data button
	Data storage and data viewing capabilities
	Mode instructions (Meter mode, return loss mode and insertion loss mode)
	Under optical Power Meter mode, automatic wavelength identification open and close buttons
	Under return Loss mode, optical return loss measurement zero key
	unit switching
	under Optical Power Meter mode, set / show the reference value, long press> 2s set the reference value, short press displays the reference value; under return loss mode, pre-calibration of optical return loss measurement
	Turn on and off the backlight
	Mode switching key, Meter , return loss, insertion loss
	Power switch, a short press start, long press > 2s shutdown, boot mode, a short press, open and turn off the automatic shutdown mode

5. Specifications

Return loss parameters	
Operation wavelength	1310nm, 1550nm
Measuring range	0~65dB
Calibration wavelength	1310nm&1550nm
Uncertainty	0~55dB: 0.4dB; 55~65d: 1dB
Display precision	0.1dB
Data storage	500
Power meter parameters	
Calibration wavelength	850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm
Measuring range	-70dBm~10dBm
Uncertainty	-70dBm ~ -60dBm: ± 1dB; -60dBm ~ 10dBm：± 0.2dB ± 1nw
Frequency identification	270HZ, 1KHZ, 2KHZ
Auto-identification	yes
Display precision	-70~-60dBm: 0.1dB; -60~+10dBm: 0.01dB
Data storage	500
Light source parameters	
Selective wavelength	1310nm, 1550nm
Output power	-2±0.5dB
Stability	0.05dB/min
Other parameters	
Adapter	yes
USB connector	-10˚C ~ +50˚C
Batteries	-20˚C ~ +70˚C
Working temperature	<90%
Storage temperature	2*AA Ni-MH 1.2V 2500mAh rechargeable
Humidity	Input: AC 100~240V 50/60Hz Output: DC6V/1A
Operation wavelength	1310nm, 1550nm
Measuring range	0~65dB

6. Operation Guide

Turn on
Press ON/OFF key to turn on. When the LCD screen displays animation, it means the instrument has begun normal operating mode. If the boot failed please check the battery power and connection.

Turn off
Long press ON/OFF button > 2s to shutdown. LCD screen will turn off. If connected to an external power supply, LCD screen displays external power symbols, such as when charging.

Low-power displays, and under voltage shutdown:
When the LCD screen displays zero voltage, please recharge or replace the battery. If there is a serious shortage of electricity, the meter will be issued under-voltage warning (buzzer will sound three episodes hoot) and shut down.

Open and turn off the automatic shutdown feature:
After 10 minutes without key operation, instrument will automatically shut down. To change the function, you can boot a long press start button > 2S; or in the boot state, short press ON / OFF key to turn off this feature, AUTO-OFF logo will not Showing . If you want to open, short press ON / OFF button to re-open, the LCD screen will display AUTO-OFF logo, in automatic shutdown mode, when only 10 seconds left to shutdown, instrument will be issued a warning instrument (buzzer episodes hoot), you can press any key to eliminate.

Working modes switching:
Press MODE key to achieve PM mode, RL mode and IL mode for switching. PM, RL, IL lights indicate the current mode of operation.

6.1. PM Mode (Optical Power Meter mode) operation:

In PM mode, PM lights on, other lights go out Wavelength switching: Press PDλ button to switch measuring wavelength(850nm/1300nm/1490nm/1550nm/1625nm),the default wavelength is 1550nm Relative value and power value switching: short press dBm / dB / mW, the screen display switches between the power value (dBm), the relative power value (dB), and absolute power value (mW).

Frequency Identification: When testing to a specific frequency (270Hz, 1kHz, 2kHz), it will display frequency value, when identificating the change from one frequency to another, the buzzer sounds soon as; when the optical power <-40dBm, the The instrument will not recognize the frequency.

Automatic wavelength identification: Press TWIN key to start automatic wavelength identification, screen displays: "TWIN" and identified specific wavelength.

6.2. RL mode (return loss measurement mode) operation:

In Return loss mode, RL lights on, PM lights and IL lights off, 1310 and 1550 lights One

1) Jumper selection criteria. According to the connection face of the device under test, choose a different standard jumper.
2) If the connection face of the device is PC type, select the APC-PC Standard Jumper, if the ends are APC, select the APC-APC Standard Jumper.
3) Make the return loss zero before measurement. Access the standard APC to the light output end, make the other end (i.e. terminal) to do non-reflective processing, and press the Zero key.
   Treatment methods for non-reflective ends are available, such as: make the end winding on a rod; put the end of the standard optical fiber into the matched solution.
4) Optical Return Loss pre-calibration before measurement: use standard fiber optic to connect light source and optical power meter, long press REF key> 2s.

Note

The optical return loss pre-zeroing and pre-calibration must be set after the light is stable, such as long boot measurement, it is recommended doing pre-zeroing and pre-calibration once an hour, just getting on the proposed machine preheat for 10 minutes or more

The Optical Return Loss pre-zeroing and pre-calibration is free sequence of requests, but you should do them together. After zeroing operation and calibration of optical return loss, access the measuring device, the screen displays the return loss values in the optical path, press dBm / dB / mW key to view the optical parameters; press dBm / dB/ mW key, if the display unit is dB, then the instrument displays the return loss value; if the unit is dBm, and the value shown below is1 (as shown in Figure 6), showed for the optical path of the returned optical power; When the unit is dBm, and the value shown below is 2, is displayed the input optical power (as shown in Figure 7)

6.3. IL mode (insertion loss measurement mode) operation:

In insertion loss measurement mode, IL light is on, PM light and RL light turned off, one of 1310 and 1550 light will on. The insertion loss zeroing before measurement: use standard optical fiber to connect the output and input port directly, long press REF button until the screen display as follows: 0.00. Make the metering device be in series into the optical path and the results are displayed on the LCD screen. When the unit is dB, then displayed insertion loss after zeroing, if the unit is dBm, then displayed the input optical power value. Press dBm / dB / mW button to switch its display, users can do analysis of optical path failure easily.

Data storage and viewing
Long press LOAD key> 2s to save the current measurement results

Short press LOAD key to do data viewing, press dBm / dB / mW, and ¤ (backlight) key to the next page

Data delete
Into the data view interface, flip to the data you want to delete, press PDλ button to delete the data.

7. Trouble shooting

Malfunction Type	Possible Cause	Recommended solution	Remarks
Failure to turn on/off	No power input	Plug in battery or AC	DIY Available
	Battery exhausted	Charge battery	DIY Available
	Reverse-installed battery	Re-install battery	DIY Available
		(Still doesn't work)	Return to factory
On&off disorder	Low battery	Charge battery or use AC power supply	DIY Available
Inaccurate measurement	Contaminated connector	Swab the dust by using an alcohol-impregnated thin cotton swab	DIY Available
	Connector unfitted	Re-install the connector	DIY Available
Error display	Humid environment	Try later while it is not too humid	DIY Available
	Magnetic field environment	Stay far away from magnetic field	DIY Available
	Metal dust environment	May cause damage on mainboard	Return to factory
	Humid environment	Try later while it is not too humid	DIY Available
On&off failure	Keypad short circuit	Replace keypad	Return to factory

8. Warranty

Three Years Limited Warranty
PRO products are warranted against the defective components and workmanship for a period of three years from the date of delivery to the original customer. Any product found to be defective within the warranty period would be returned to PRO authorized service center for repair, replacement and calibration.

Exclusions
The warranty on your equipment shall not apply to defects resulting from the following: Unauthorized repair or modification

Misuse, negligence, or accident

Returning Product
To return product, you may contact PRO to obtain additional information if necessary. To serve you better, please specify the reasons for the return.

All delivery and mails should be sent to the following address:

Precision Rated Optics, Inc.
Corporate Office
Billing & Processing
PO Box 877 Trexlertown, PA 18087

Precision Rated Optics, Inc.
Product Distribution Center Manufacturing & Testing
9999 Hamilton Blvd Breinigsville, PA 18031