WIREPATH
FIBER

WP-TEST-FIBER-400

Optical Power Meter

Owner's Manual

Ver. 170419-1000

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Chapter 2: Overview

The WP-TEST-FIBER-400 Optical Power Meter is a newly designed fiber optic tester intended for the installation, engineering acceptance, and maintenance of fiber networks.
Compared with other power meters, the WP-TEST-FIBER-400 Power Meter has more functions, including automatic wavelength identification, auto wavelength switching, intelligent backlight, and data saving via USB port.
Combined with its **matched handheld optical light source**, it offers a quick and accurate testing solution on both single mode and multimode fibers.

- Wave ID: Auto wavelength identification & switching
- Frequency ID: Auto frequency identification
- 2 types of backlight modes: manual or automatic (ambient light-driven), indicated by red or green LED lights.
- Intelligent backlight
- Storage of up to 1000 records, downloadable via USB cable
- USB communication port for downloading saved testing records
- Adjustable/storable reference power level
- User self-calibrating function
- Auto-off function
- Up to 200hrs battery life

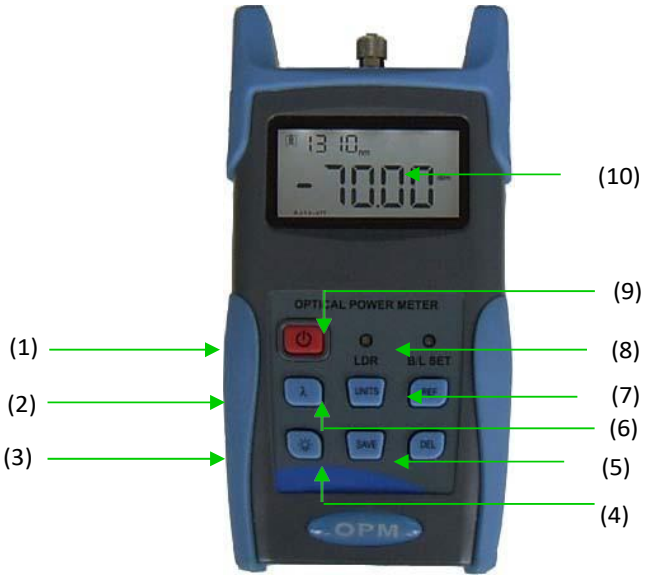
Chapter 3: Data Sheet

Model	A	C
Calibration Wavelength（nm）	850/1300/1310/1490/1550/1625	
Detector type	InGaAs	
Measurement Range（dBm）	-70 - +6	-50 -+26
Uncertainty (dB)	±0.15（3.5%）	
linearity (dB)	±0.02	
Display resolution(dB)	0.01	
Frequency ID（Hz）	270, 330,1K, 2K	
Wave ID（nm）	850,1300, 1310, 1490, 1550, 1625	
Date Storage Capacity	1000	
Communication Port	USB	
Standard Connector	FC /2.5mm universal	
Optional Optical Connector	SC/FC Type	
Optional Optical Connector	None	
Alkaline battery	3*AA, 1.5V	
Power Adapter(V)	8.4	
Battery Operating time (h)	200 without backlight	
Operation Temperature(C)	-10 - +60	
Storage Temperature(C)	-25 - +70	
Dimension(mm)	175*90*44.5	
Weight(g)	231	

Note: Battery operating time is effected by backlight power operation. If power backlight is running continuously, operation time will be shorter

Chapter 4: Function

4.1 Front



4-1

(1) Power Key: Press to turn unit on or off

Power Saving Mode: Quickly press Power Key to activate the Auto-Shut Off. When active, the unit will automatically shut off after 10 minutes idle time, whether using battery power supply or AC power supply. In Auto-Shut off mode, “auto-off” will display on the bottom left of the screen. This power saving setting is the default setting. The power meter will be in this mode when first turned on. Quickly press the power key to turn off auto power saving mode.

Power Saving (Auto-off)

(2) Wavelength Selection/Wavelength Identification

Quickly press this key to select the wavelength. It will display on the top left of the LCD screen. 1310nm is the default wavelength.

Calibrated wavelength

Press λ for 2 seconds to enter wavelength auto-identification mode. The upper right of the screen will display "AU". Press and hold this key to quit this function.

Wavelength auto-identification

(3) ☼ Backlight control (two modes of back light control; press this key to select):

- "LDR" indicates the intelligent backlight control mode. Power meter will activate/deactivate the backlight in 15 seconds based on ambient light. This is the default mode.
- Back light control key mode. Press ☼ to turn on/off the back light

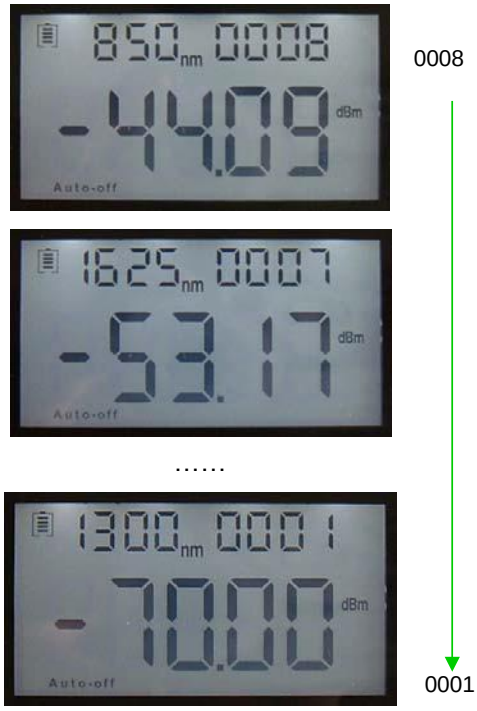
(4) SAVE Saving/Data-View key 。

Data-saving: can save up to 1000 records. SAVE. The screen will display the **data saving number.** If saving the data, double press SAVE to confirm

Current saving data (wavelength, output power-dBm)

Data Saving No.

Data view: Press and hold SAVE to enter the data view interface. Quickly press SAVE to view the data. Pressing again steps back through saved records.



(5) DEL Delete/Cancel Key。

1. Deleting Data: When viewing the data, press DEL to delete the record.

2. Cancel saving: When in the saving mode, press DEL to cancel the current data saving.

(6) UNITS Unit Selection Key

Press this key to switch between absolute measurement (dBm) and relative measurement (dB) and xW of the optical power.

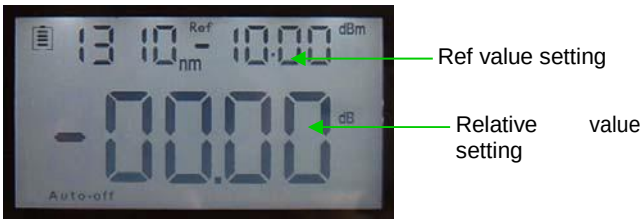
mW, dBmconversion：10 log(mW)=(dBm)

mW ,uW, nW conversion：1mW=103uW=106nW

(7) REF setting

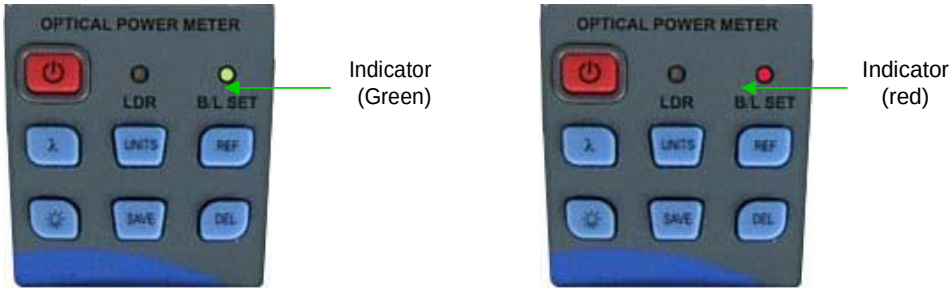
Stores the current power value as the reference value (displayed on the top right of the LCD screen) while “Ref” also displays on the top right. It will compare the current power with the reference power and show the relative power value in dB.

The relationship between relative value (dB), absolute value (dBm), and Ref value: relative value= ｜absolute value｜-｜Ref｜



(8) “B/L SET” backlight indicator

Lights indicate backlight control modes. Green light indicates that “LDR” intelligent backlight control mode is active. Red light indicates that key-control mode is active.



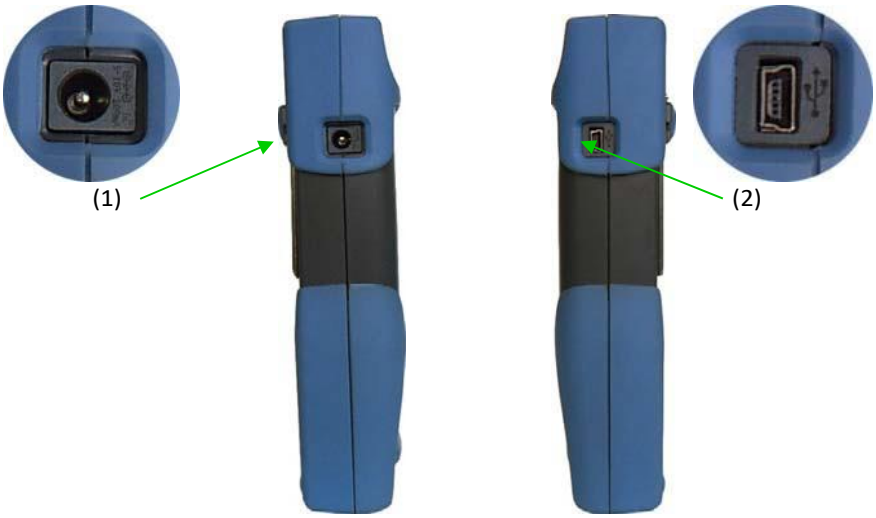
(9) “LDR” Intelligent backlight control

In the intelligent backlight control mode, the controller will automatically adjust the backlight according to ambient light in order to save the power.

(10) Screen

Displays the data and the instrument's working mode.

4.2 Sides



4-2left side 4-3 right side

(1) Power Supply unit port

Connect with the AC adaptor (fig. 4-4)。

4-4

Note：Use only the power supply unit supplied with the tester. Using other kinds of PSU may damage the instrument.

(2)USB Port。

Use the USB cable supplied to connect the Optical Power Meter to the USB port on PC (fig. 4-5).

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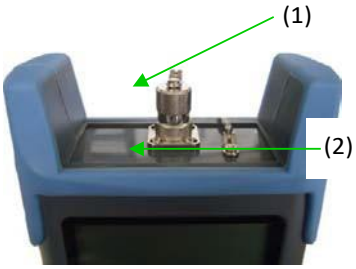
4-5

4.3 Top



4-6

(1) Dust Cap

Dust Cap: Place the dust cap over the connectors when not in use to protect the optical connector

(2) Optical Connector。

The standard for this power meter connector is SC & Φ2.5mm.

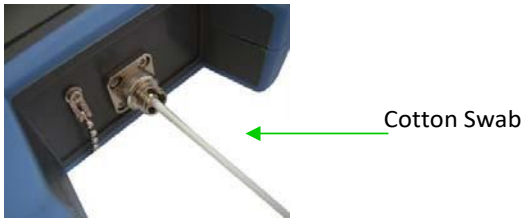
Note: When changing the optical connector, be careful of the connector and the end-face. FC connector can connect with FC adaptor; Φ2.5mm universal connector can connect with FC, SC, or ST adaptor. (Fig 4-9)

For LC testing, utilize included SC to LC reference patch cords and use included LC-type adaptors for double-ended testing.

FC Patch Cord SC Patch Cord ST Patch Cord

4-9

Note: dust on the connector will affect the accuracy of the measurement value. Clean the connector and the patch cord end before testing. Use isopropyl alcohol and a cotton swab to clean the connector. Moisten the cotton swab with alcohol, insert the cotton swab in the connector, slightly rotating the cotton swab. Dry using a second dry cotton swab. Fig. 4-10。



4-10

4.4 Back

4-11

(1) Label

Content includes function and instrument information

(2) Bracket

Collapsible metal bracket can be adjusted 0~90.

(3) Battery Pack

Holds 3 1.5 AA batteries.

Note: when inserting the batteries, note their positive (+) and negative (-) connector orientation. The negative battery connector should be against the spring. Recycle used batteries.

Chapter 5 Software

The data capture software for this product can downloaded from the product page support tab at snapav.com. Instructions for setup and use are included in the download.

Chapter 6 Operation Instruction and Notes

6.1 Powering the Optical Power Meter

The optical power meter can be powered by battery or AC power, giving total flexibility for most testing sites and situations

6.1.1 AA battery

When using AA battery, will display on the left top of the screen (6-1)。

Battery Power indicator

6-1

Power Grade：

70% - 100% power

40% - 70% power

30% - 40% power

20% - 30% power。

less than 20% power. The power meter will power off.

Inserting the battery, 6-2

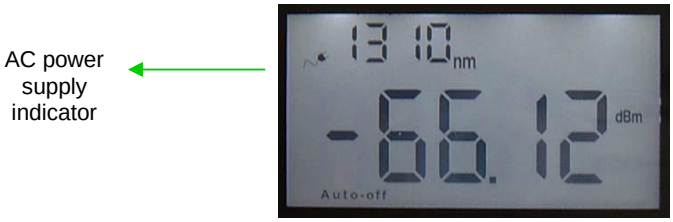
6-2

Push the clip fastener on the battery compartment cover down. Remove the battery compartment cover and remove all three batteries, making a note of their positive and negative connector orientation. The negative battery connector should be against the spring. Insert 3 new 1.5VV AA batteries. Refit the battery compartment cover. The clip fastener should click shut.

Note： Insert the batteries with their positive and negative connectors correctly aligned.

6.1.2 Power Supply Unit

When the battery is empty, the power supply unit can be used. At the top left of the screen, (6-3) will be displayed. When the battery is in the power meter and still charged, the tester will default to the AC power supply.



6-3

When using the AC adaptor, connect the power plug (pictured) and insert it in the AC adapter port.

6-4

Note: Only use the power supply unit supplied with the tester. Using another type of power supply may damage the instrument.

6.2 Powering on the optical power meter

Insert the battery or the PSU and press on the tester. At this time the laser is still off. The display will show no data as shown in figure 6-5

6-5

When the tester is in standby, press key to cancel or enable auto-off function. If auto-off function is selected, the "Auto-off" will display on the left bottom of the screen.

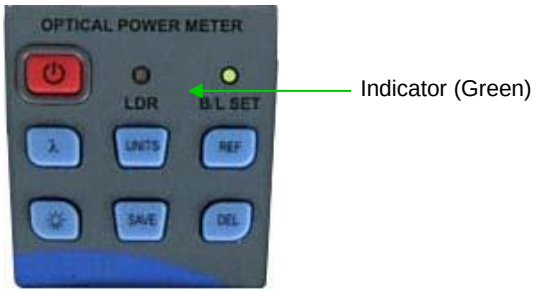
6.3 Backlight setting

After starting the optical power meter, press and hold to choose backlight control mode.

6.3.1 "LDR" Intelligent backlight control mode

Press and hold when "B/L SET" is green (6-6). After 10 seconds, the green indicator will turn

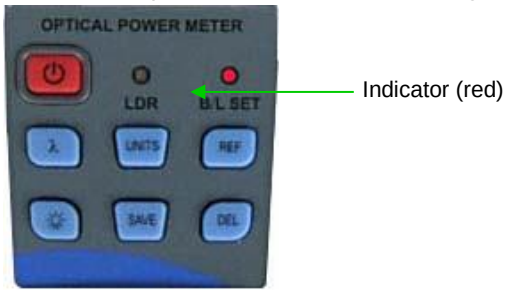
off. In LDR the controller will automatically adjust the backlight to the outside light within 15 seconds to save power.



6-6

6.3.2 Key Control Backlight Mode.

Press and hold , "B/L SET" (indicator turns red as in fig. 6-7) to enter key control backlight mode. After 10 seconds the indicator t u r n s off. Quick press to turn the backlight ON/OFF.



6-7

6.4 Output power measurement

Please also refer to the included FOA instructional on testing and visit www.foa.org.

6.4.1 Remove dust cap, connect the patch cord that will be used as a 0 dB reference.

Note: Make sure the connector and the end of patch cord are clean. Make sure to connect the correct patch cord.

6.4.2 Select the wavelength

Quick press λ to select the calibrated wavelength. **NOTE:** if the selected wavelength is not the same as the optical light source source wavelength measurement errors will occur. There are 6 calibration wavelengths available for selection. Always ensure that the power meter and light source are set to the same wavelength prior to testing (6-8).

6-8

6.4.3 Unit switch

Press UNITS to switch between absolute measurement (dBm), relative measurement (dB), and xW of the optical power (6-9).

6-9

6.4.4 Relative value measurement

Each wavelength can set the Ref value. Press REF to set the current value as the 0 dB ref value and automatically calculate out the relative value (top right of the screen will display the “ref” and setting dBm value 6-10) prior to link testing.

6-10

6.4.5 Data processing

Data saving and deleting. The power meter can store up to 1000 data records. To record a power measurement, press SAVE. The right top of the screen will display the data saving record number, e.g.: “0008”(6-11). To confirm the data record saved, double press SAVE to confirm or DEL to cancel the record. It is recommended to keep a written record by saved number to be added to the “Notes” field data after it is downloaded.

6-11

Data view & delete. Press and hold SAVE, to view the saving record number. The screen will display the most recently saved data. Quickly press SAVE to view the data from the last record (6-12). Press DEL to delete the record. Press and hold SAVE to exit the data view.

6-12

6.5 Wavelength Automatic Identification

- Connect power meter with its matched light source.
- Enable light source. Under “Wave ID” operation mode, press λ. Select desire wavelength. Hold CW/nm for few seconds. Light source will be enter Wave ID mode. “--AU” will be shown on the upper right of LCD as an indication.
- Once the ID information is detected from light source (press λ to change wavelength), after 3 to 5 seconds, the information on the optical power meter will change automatically according to the light source. Refer to figure 6-28.
- To exit Wave ID mode hold down λ to exit Wave ID mode from the power mete. Hold down CW/nm to exit Wave ID mode from the light source.

Matched Light Source Power Meter 6-28

6.6 Frequency Detection

Light source and power meter will both operate units at 270Hz in almost all testing conditions.

Note：Frequency ID and wave ID cannot be operated at the same time.

To avoid risk of serious eye damage, do not look into the optical port of laser source at any time.

6.7 Power off

Automatic power off: When auto-off function is activated, the unit will turn itself off automatically after 10minutes idle, whether on battery or AC power

Manual power off: Under any operation mode, hold down for a few seconds to turn the unit off.

Note: The unit will store the last calibration wavelength and backlight control mode automatically. This will be the default setting when the unit is next turned on.

Chapter 7 Troubleshooting

Problems	Possible cause	Solution
Faint display on the LCD screen	1. Power is off 2. The battery power is too low	1. Press key. 2. Change the batteries
Inaccurate measurements	1. Optical connector is not clean. 2. Incorrect fiber connection	1. Clean optical connectors 2. Reconnect the fiber

Chapter 8: General Maintenance

8.1 Always keep the connector ports of your power meter clean.

8.2 Do not use bad quality fiber optic connectors/adaptors to avoid damaging the detector interface and greatly affecting the performance of the unit.

8.3 Use only the adaptor supplied.

8.4 Place dust-proof cap over the optical ports when unit is not in use.

8.5 Connect/disconnect fiber connectors/adapters carefully to avoid scratches on the port of the power meter.

8.6 Clean the optical port of power meter regularly. Clean using cotton swabs supplied and isopropyl alcohol as directed.

Chapter 9 Quality Warranty

Details of warranty terms and conditions are given as below:

1) The company warrants that the light source will be free from defects in material and workmanship for a period of **18 months.** The date will be started from the date of goods shipment.
2) If any faults occur due to quality problems of the product during the warranty period, the company promises to repair or replace free of charge. The freight cost and related taxes will be shared by both parties. The company will pay the shipping cost from customer side to our factory and pay the import taxes related. Customer will pay the shipping cost from our factory to customer side and its local import taxes accordingly.
3) This warranty **is limited to** defects in workmanship and materials and does not cover damages from accident, acts of god, neglect, wrong usage or abnormal conditions of operation.
4) The company will charge corresponding fees for the cost of materials, repair and shipping in conditions of below:
   - Defects occurred under normal use and service but out of the warranty period.
   - Failures and damage occurred not because of defects in material and workmanship of products.
   - Failures and damage occurred because of failing to comply with the Operation Instructions.
   - Abnormal conditions of operation or handling such as artificial damage, or operating in abnormal conditions such as high temperatures, high voltage, humidity and etc. We will charge according to the actual failure rating.