

# USER MANUAL

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## OPM-300

## Optical Power Meter



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OPM-300 User Manual

Optical Power Meter

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All specifications are subject to change without prior notice.



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# 1. Overview

Our designs series optical power meter to meet the high demand. It intergrades the handheld optical power meter and the intelligent optical power meter in one unit. It can be used for the absolute power measurement and relative measurement of the link loss in dB. Its compact size, friendly operation interface, broad power measurement range, high precision and brand-new user automatic calibration function and high performance in application makes it an ideal tool for optical fiber network.

## **Handheld Power Meter Specification Model:**

Handheld Power Meter A--Wavelength: 850nm, 980nm, 1300nm, 1310nm, 1550nm

Measurement Range: -70 to +3dBm

Handheld Power Meter B--Wavelength: 850nm, 980nm, 1300nm, 1310nm, 1550nm

Measurement Range: -50 to +26dBm

## 2. Specifications

Model	Handheld Meter A	Power	Handheld Meter B	Power
Wavelength Range (nm) <sup>*1</sup>	800~1600			
Detector Type	InGaAs			
Measurement Range (dBm) <sup>*2</sup>	-70~+3		-50~+26	
Uncertainty <sup>*3</sup>	±0.15dB			
Accuracy	Linear 0.1% or Nonlinear 0.01dBm			
Operating Temperature (°C)	-10~+60			
Storage Temperature (°C)	-25~+70			
Auto-off Time (min)	10			
Operating Time (h)	≥130			
Battery	3 AA1.5V			
Weight (g)	200			
Dimensions (mm)	152X74X26			

### Notes:

- 1. Wavelength Range:** Specified standard operating wavelength range in which the Power Meter can work properly under certain technical specifications.
- 2. Power Measurement Range:** The maximum and minimum range in which the Power Meter can work properly.
- 3. Uncertainty:** Difference between two measurement results that were tested by Power Meter and another Standard Power Meter respectively.

### **3. Standard packages**

<b>1. Handheld Power Meter.....</b>	<b>1</b>
<b>2. Manual.....</b>	<b>1</b>
<b>3. Protective Holster.....</b>	<b>1</b>
<b>4. 1.5V AA Battery.....</b>	<b>3</b>
<b>5. Cotton Swabs.....</b>	<b>1</b>



## 4. Components Guide



### (1) LCD:

The LCD screen displays the measurement tested in dB, dBm, mW, uW, nW unit; the selected wavelength; the current operating situation and so on.

### (2) ON/OFF Key:

Press the key to turn the unit on/off.

### (3) dB Key:

To test the power value under certain wavelength.

### (4) ZERO Key:

Press the key for auto-zero.

### (5) “λ” Key:

Switch the operating wavelength between 850、 980、 1300、 1310 and 1550nm.

### (6) LIGHT Key:

To turn the background light on/off .

## 5. Operation and Notes

### 5.1 ON/OFF

- (1) Press the On/Off key for a few seconds to turn on the unit
- (2) Press the On/Off key for a few seconds to turn off the unit

### 5.2 Absolute power measurement

- (1) Turn on the Power Meter
- (2) Press the  $\lambda$  key to switch between the wavelengths. The default wavelength is 1310nm.
- (3) Connect the light to be measured, and then reading will be displayed on the LCD screen, including Linear and nonlinear value.

### 5.3 Relative power measurement.

- (1) Select the wavelength to be measured.
- (2) Under "Absolute power measurement mode", connect to the light to be tested.
- (3) Press dB key, then current power value is stored as a reference value in dB unit. At the same time it also display the current absolute power value and current relative value is 0dB.
- (4) Connect to another beam of light to be tested, display the current relative power value and absolute power value under tested..

### 5.4 Special function

JW 3208 have 3 kinds of working mode: (1) Factory Mode  
(2) User Mode  
(3) Working Mode

5.4.1 Factory Mode: The factory is responsible for the test and calibration

5.4.2 User Mode: Press the  $\lambda$  + Light key synchronously, then enter the User mode. Numeral "1" will be displayed on the top right corner. Press the  $\lambda$  + Light key synchronously once again, it exit from the User mode and enter the Working mode. Numeral "0" will be displayed on the top right corner.

Function	Button	----
Plus 0.05	Light	----
Minus 0.05	dB	----
Store	Zero	----
Switch Wavelength	$\lambda$	----
Return to the Factory Setting	$\lambda$ + Zero	----

**Notes:** If any errors or mistakes caused by the user self-calibration operation, please press the  $\lambda$  + Zero synchronously under the user mode to go back to the factory setting.

(1) Auto-off : Press LIGHT + dB key to turn on the auto-off function. The auto-off symbol will be displayed on the top right. The unit will be turn off automatically after 10 minutes idle time.

(2) Background light On/Off: Under the Working Mode, press LIGHT to turn the background light On/Off. A little sun symbol will be displayed on the top right.

## Appendix:

### Optical fiber loss measurement

#### Step 1- Optical Reference Level

- Turn on optical power meter and press the  $\lambda$  key to select the wavelength.
- Turn on optical light source (emitting source) and select the wavelength. Wait for 1-2 minutes until it stabilize.
- Select a piece of patch cords, which is used to connect with the light source, we call it emitting patch cords. Cleaning connector of the patch cords. The fiber of the emitting source patch cords must be the same fiber type as the fiber under test.
- Connect the light source (emitting source) with the Handheld Power Meter through the emitting source patch cords

- Handheld Power Meter get the power measurement value.  
This value should be close to the one that light source (emitting source) set. If it has wide disparity, please make sure the fiber connection is clean properly else replace another jumpers.
- Press the dB key; the reading 0.00dB will be displayed on the screen. The tested power values will be set to the reference value.

### **Step 2-Optical Loss Measurement**

- Keep the emitting source patch cords connection with the light source (emitting source).
- Connect the Handheld Power Meter and light source (emitting source) to the optical fiber link respectively.

**Notes:** cleaning all the connectors surface including all the necessary optical adaptors. The reading in dB unit displayed on the screen is the tested optical fiber link loss.(also display the current absolute optical power value in dBm unit).

## **6. Maintenance**

1. It is important to keep all optical connectors and surfaces free from oil, dirt or other contamination to ensure proper operation.
2. Keep using one type of adapter to avoid excess loss from different connectors.
3. Please use dust proof cap for protection to avoid begin scratched or contaminated when Handheld Power Meter not in operation.
4. Light interface is sensitive, please carefully plug in and pull out the connectors.
5. Please use clean cotton to clean the sensor surface, clean it in clockwise direction carefully.
6. If does not need to use for a long time, please take out the battery.

## 7. Troubleshooting

<u>Description</u>	<u>Problem</u>	<u>Method</u>
Faint LCD display	Battery is weak	Change battery
No display after turning on the unit	Battery is weak/Others	Turn on the unit again/Change battery
Insensitive display in LCD	Light interface is polluted/ broken/Display locked	Check connector carefully and clean sensor's interface

## 8. Change Battery

- 8.1 If you find battery is weak while operating it, please immediately turn the unit off and change a new battery.

## **9. Quality of Services**

**Caution: Repair it in the field is NOT recommended.**

### **9.1 18 months Warranty for Our Handheld Power Meter**

We, CTC Union Technologies Co., Ltd. Offer the warrant that every Handheld Power Meter will be free from defects in material and workmanship for a period of 18 months.

This warranty covers the original user only and is not transferable. Should the device fail at any time during this warranty period, We will, at its sole discretion, replace, repair or refund the purchase price of the product.

This warranty is limited to defects in workmanship and materials and does not cover damage from accident, acts of God, neglect, contamination, misuse or abnormal conditions of operation or handling. To establish original ownership and provide date of purchase, please complete and return the registration card to CTC Union. This warranty will not go into effect until we have received the warranty registration.

A warranty registration card is included with the original shipment of equipment. Please take a few moments to fill out the card and mail or fax it to us to ensure proper initiation of your warranty term. To return a defective product for warranty coverage, contact us for a written authorization. Failure to properly protect the product during shipping may avoid this warranty. We will pay the return transportation fee for products repaired or replace in warranty. Before making an repair not covered the warranty, We will estimate cost and obtain authorization, then invoice for repair and return transportation. We reserves the right to charge for all testing and shipping costs incurred, if test results determine that the device is without defect.

**Warranty Registration Card**

*Serial Number:* \_\_\_\_\_

**Model Number:** \_\_\_\_\_

**Date of Purchase:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Company Address:** \_\_\_\_\_

**TEL:** \_\_\_\_\_ **FAX:** \_\_\_\_\_

**E-mail:** \_\_\_\_\_

**Note:** Please post this note within one month of your purchase to Our.

**YOUR OPINION**

**Do you have any comments on the quality of this product or the service from us?**

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## Network Testers

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