

OPM 3034 Optical Power Instrument

# Handheld Optical Power Meter

## User Manual

For

Models OPM-3034B and OPM-3034C

(Revision: 1.0)

Distributed by:



Manufactured by: Lightcomm Technology Co., Ltd.

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# OPM 3034 Optical Power Instrument

## 1. Introduction

The OPM-3034B and OPM-3034C series handheld optical power meters are designed for optical power measurements within the wavelength range from 800 to 1650nm. The power meters are calibrated at four frequently used wavelengths: 850nm, 980nm, 1310nm, and 1550nm and are ideal for both single and multi-mode fiber system testing. The optical power measurement results can be displayed in linear (mW), logarithmic (dBm), and relative power (dB) modes. The user can choose one of these modes for absolute power or relative loss measurements.

## 2. Features

- Small size and light weight
- Backlit LCD display
- Changeable adapters (FC, SC and ST)
- Long battery lifetime – over 48 hrs for two AA batteries.

## 3. Specifications

Model	OPM-3034B	OPM-3034C
Measurement Range (dBm)* <sup>1</sup>	-60□+10	-40□+27
Wavelength Range	800 □ 1650 nm	
Detector	InGaAs	
Accuracy* <sup>2</sup>	± 5%	
Display Resolution	Linear: 0.1% Logarithm: 0.01dBm	
Operating Temperature	0 □ +40 □	
Storage Temperature	-10 □ +60 □	
Auto-off Time	10 minutes	
Battery lifetime* <sup>3</sup>	48 hours	
Power Supply	Two AA-Size batteries (or) AC/DC 6V power supply	
Weight	250 g	
Dimensions	110 x 68 x 27 mm	

### Notes:

#### 1). Measurement Range:

The optical power meter will display the actual measured power within the specified range of the power

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meter. When the measured power is lower than the measurement range, the power meter will display “LO”; and when the measured power is higher than the measurement range, the power meter will show “HI”.

## 2). Accuracy:

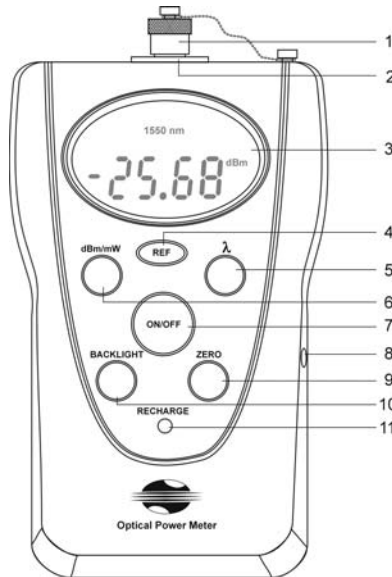
The specified accuracy is at the calibrated wavelengths only.

## 3). Battery lifetime:

Measurement condition: two AA alkaline batteries on LCD backlight off condition.

## 4. Display and Keypad

### 4.1 Instrument Front Panel



**Fig 4.1 Instrument Front Panel**

### 4.2 Instrument Features

#### (1) Optical Adapter Cap

Protects the FC optical adapter.

#### (2) Optical Input Adapter

The FC adapter is standard. SC and ST adapters are available as options.

#### (3) Liquid Crystal Display (LCD)

Displays the calibrated wavelength, measured power, the linear/logarithmic/relative measurement modes, and the low battery alarm.

#### (4) [REF] Key

Press this key to set the current measured power as the referent point. Subsequent measurements compare the relative power (loss or gain) in dB to this point.

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**(5) [ $\lambda$ ] Key**

Press this key to select the calibrated wavelength. Four wavelengths were available: 850nm, 980nm, 1310nm, and 1550nm. (The default wavelength is set at 1550nm.)

**(6) [dBm/mW] Key**

Press this key to select the linear (mW) or logarithmic (dBm) modes.

**(7) [ON/OFF] Key**

Press this key to turn the power meter. on or off.

The power meter will automatically turn off if there is no operation in 10 minutes.

**(8) 6V DC adapter**

Accept the AC/DC power transformer as power supply.

**(9) [ZERO] Key**

Press this key for power meter zero calibration, “Null” will be displayed when the power meter is zeroing.

The power meter zero calibration must be done with no input optical power to the meter.

**(10) [BACKLIGHT] Key**

Press this key to turn ON/OFF the LCD backlight. The LCD backlight will turn off automatically if there is no operation in 1 minute.

**(11) 6V DC Adapter Indicator**

This indicator has a red and green mode. With the instrument off and no batteries, the red light indicates the 6V DC adapter as the power supply. The green light will illuminate if the instrument is turned ON with the 6 Volt DC adapter only and no batteries in the unit. With batteries in the instrument and the 6 Volt DC adapter plugged into it, the red light indicates the batteries are being recharged and the green light indicates the batteries are fully charged.

**5. Operation**

**5.1 To Turn ON/OFF**

1. Put in two AA size batteries into the instrument, or connect the 6V AC/DC transformer to the DC adaptor.
2. Press the [ON/OFF] key. The LCD display turns on. The power meter is ready for use.
3. After finishing the measurement, press [ON/OFF] key, the power meter turns off.
4. The power meter will automatically turn off if there is no button pressed in 10 minutes.

**5.2 Zero calibration**

Turn on the power meter, put the protection cap on the optical input adapter to make sure there is no light enter the power meter, then press the [ZERO] key to calibrate the power meter. This process will take about 2 seconds. The LCD will show NULL

during the zero calibration.

**5.3 Absolute power measurement**

1. Turn on the instrument and select a wavelength with [ $\lambda$ ] key. (The default wavelength is set at 1550nm.) For other wavelengths continue to press the [ $\lambda$ ] key.
2. Press [**dBm/mW**] key to select the linear or logarithmic measurement mode.

**5.4 Relative power measurement.**

1. Measure the optical input power.
2. Press [**REF**] key to set the current optical power as the referent point. The LCD will show 0.00dB at this referent point.
3. When the input optical power is changed, the power meter will show the difference between the measured optical power and the referent power in dB.

**5.5 Power saving functions**

The power meter will turn off automatically if there is no operation in 10 minutes.

The LCD backlight will turn off automatically if there is no operation in 1 minute.

**6. Maintenance**

1. Keep the power meter optical input adapter clean. Carefully insert and remove the optical connectors to avoid photo detector damage.
2. Always cover the adapter with its protective dust cover when the optical power meter is not in use.
3. If the power meter is not expected to be in use for a long time, always remove the batteries to avoid potential battery leakage damage.

**7. Trouble-shooting**

Description	Probable cause	Solutions
Faint LCD display	Low Battery	Change or recharge batteries
Turn ON but no display	Low Battery	Change or recharge batteries
	Others	Turn ON again
Questionable Reading value	Incorrect optical connection	Check the input connector
	Dirty photo detector	Clean the photo detector

**8. Changing the Batteries**

1. Before change the batteries, please turn off the power meter.
2. When recharging the rechargeable batteries, the recharge time should be about 6 to 8 hours to get the full power. The recharge time should be not more than 24 hours to avoid

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damage the batteries.

3. The power meter can use a 6V AC/DC transformer for power supply.

### **9. Warranties**

1. The power meter instrument will be repaired free of charge for labor and materials within the warranty period. The term of the Company Warranty is one year after the date of delivery.

2. Any damage to the power meter instrument due to improper use or mishandling are not covered by the Company Warranty. This determination is made at the sole discretion of the Company.

### **10. Package list**

The optical power meter package contains:

- a. One handheld optical power meter instrument
- b. One user manual
- c. One instrument protection cover
- d. Two AA alkaline batteries
- e. One 6V AC/DC power supply
- f. One FC optical connector adapter
- g. (Optional) SC and/or ST adapters