



A RIPLEY® BRAND

RP450

Optical Power Meter User Guide



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Introduction

The RP460 Optical Power Meter is an ultra low cost, and compact power meter used for verifying both absolute and relative power across any given fiber. This document will serve as an overview of the major features and functions of the device and will offer tips for trouble shooting common issues in optical networks. If you are looking for a low cost device capable of saving and reporting take a look at the RP460 or RP560 if you want to use IOS or Android.

Device Overview



Important Safety Information



Read and understand all of the instructions and safety information in this manual before operating this tool.



Laser/LED Hazard

Avoid eye exposure to open fiber connectors and interfaces when working with fiber systems. They may be connected to a live laser source.

Do not look into the output port of a Laser or LED source.

Point fiber endfaces toward non-reflective surfaces to prevent reflection of laser.



Electric Shock Hazard

Pay attention to proper battery polarity. Do not mix battery types or manufacturers.

Do not open the unit with the exception of the battery compartment door.

Use this unit only for its intended purpose as outlined in this document.



Damage to Item Hazard

Do not leave item in direct sunlight or near heat sources, submerge in water, or subject unit to strong impact.

Cover the fiber interface with the flip-cap when not in use.



Do not throw this product away.

Contact your local recycling station to dispose of properly.

Setting Reference

Caution: Invisible LED/Laser Radiation

Please note that wavelengths used by optical laser sources are not visible to the human eye. Do not look directly into any fiber connector that may be live or any companion light source.

Since the light is invisible to the eye, the eye's natural blink reflex is suppressed. This can cause damage to the retina.

To set a reference first connect the RP45 and companion light source as shown below. Ensure the unit is in dBm and you are reading the correct output power for the laser/LED you are using (Lasers are calibrated at -5 (or -8 with tone on) and LEDs are calibrated at -22 (or 25 with tone on)). Next press and hold the Mode Button until you hear a short beep then a long beep. After this verify that the power meter now reads within .05 of 0 and is in dB mode.



Basic Testing

Absolute Measurements

The RP450 can be used to view the Absolute Power of a fiber by first ensuring the correct wavelength is selected, and that the unit is in dBm, then plugging the fiber into the power meter. The absolute power will be displayed in dBm on the screen along with any tone detected.



Relative/ Loss Measurements

The RP450 can also be used to view relative power, or loss across a fiber. To do this you have to first set a reference as described above and put the unit into dB mode. Next attach the fiber you want to measure inbetween the test jumper, and RP450 as shown below. This will show the relative loss in dB on the RP450.



Notes

Audible Alerts

The RP450 emits an audible beep each time a major function is used. To disable most beeps, ensure the unit is OFF. Press and hold the Save button, and turn the unit on. To re-enable beeps just repeat this process.

Disable Auto Off

The RP450 turns off automatically if no buttons are pressed for 5 minutes. To bypass this feature, hold the Power button for 3 seconds when powering on. A series of beeps will indicate that the unit's Auto Off feature has been disabled.

Maintenance

Low Battery

The RP450 provides over 100 hours of continued use under normal conditions. When the BATT indicator is shown on the device screen, the CR2 battery should be replaced or recharged if you have chosen rechargeable CR2 batteries.

Optical Connector Interface

The RP450 is equipped with a universal connector adapter that is compatible with many popular style connectors. The connector adapter interface should be kept covered and protected from contamination. Care must be taken to avoid objects that may damage the glass surface of the detector mount. If scratches or breaks occur on the surface, please contact Ripley for proper repair and re-calibration.

Certifications, Accessories, and Contact Info

Calibration Certificates

The RP450 comes calibrated and should be recalibrated every 2 years. Included with the RP450 is a calibration certificate, and free recalibration within 2 years of the date of purchase. To start the calibration process simply call or email technical support!

Warranty

The RP450 comes with a 2 year warranty for any manufacturer defects or damage due to reasonable use. To start the RMA process simply email or call technical support!

Optical Power Meter Accessories

OPM Adapters	
Part Number	Description
AC 020	2.5 mm Universal Adapter
AC 021	1.25 mm Universal Adapter
AC 026	SC Adapter
AC 027	ST Adapter
AC 028	FC Adapter
AC 029	LC Adapter

Patch Cord & Battery Accessories	
Part Number	Description
AC 500	SM SC-LC - 1m Simplex
AC 505	SM SC-ASC - 1m Simplex
AC 501	SM SC-SC - 1m Simplex
AC 502	SM LC-LC - 1m Simplex
AC 600	SC-SC - Simplex Bulkhead
AC 601	LC-LC - Simplex Bulkhead
AC 602	LC-LC - Duplex Bulkhead
AC300	CR2 Non-Chargeable Battery Pack (Pack of 5)
AC 310	CR2 Rechargeable Battery Charger w/2 Batteries
AC 311	CR2 Non-Chargeable Battery (Pack of 1)
AC 312	CR2 Rechargeable Battery (Pack of 1)

Specifications	
Detector Type	-02: InGaAs/ -04: Filtered InGaAs
Measurement Range	-02: +6 to -70 dBm / -04: +23 to -45 dBm
Wavelength Range	850 nm to 1650nm
Selectable Wavelengths	850 / 1300 / 1310 / 1490 / 1550 / 1611 / 1625
Resolution	0.01 dB
Absolute Accuracy	± 0.25dB (23°C ± 2°at 0dBm)
Optical Interface	Universal 2.5mm (Additional Adapters Available)
Display	LCD
Tone ID	2 kHz
Power	Push Button Toggle/Auto Off
Storage Temperature	-10°C to +55°C
Battery	-30°C to +70°C
Dimensions	6.1" x 0.94" x 0.75" (15.5cm x 2.38cm x 1.9cm)
Weight	3 oz (85.4 g)

Certifications and Contact Information



This product conforms with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). This product was tested by an ISO 17025 accredited laboratory and complies with the following CE directives and standards listed below:

Directives:

Electromagnetic Compatibility (2014/30/EU)

Low-Voltage (2014/35/EU)

Standards:

EMC: EN 61326-1:2013 Industrial

Safety: EN/IEC61010-1:2010+A1:2016




This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Contact Support

contact us with any questions pertaining to this or any other Ripley product.

 **Call Us:**
(603) 524-8350

 **Email Us:**
tech.support@odm.ripley-tools.com

 **Visit Us Online:** www.ripley-tools.com