Precision Rated Optics

Work with a PRO!

LS-500D

Handheld Laser Source

Operation Guide

Rev. 12.31.20

Table of Contents

Chapter 1 Using This Manual

This manual contains operation information for the Precision Rate Optics LS-500D Handheld Laser Source. This laser source may be operated by using the key pad buttons.

Precautions

Laser sources are optical instruments that do emit laser radiation and though this level of radiation is not considered a danger; there are safety considerations and certain practices that should be followed.

Please read and follow all warning and caution information noted in this manual.

There are warnings, cautions and notes posted throughout this manual.

Warning

A warning alerts to situations that could cause personal injury.

Caution

A caution alerts to situations that may cause damage to the equipment or produce poor testing conditions resulting in inaccurate test results.

Note

A special annotation that will assist the user with operational features.

Chapter 2 Safety

Prior to operating the equipment in any way, it is highly suggested the user reads all safety information.

The information in this chapter pertains to safety consideration of Laser Sources in general.

This product has been designed and tested in accordance with the manufacturer's safety standards, and has been supplied in a safe condition.

This document contains information that must be followed by the user to ensure safe operation and to maintain the product in a safe condition. Failure to follow these safety warnings and cautions can result in harm to the user or damage to the instrument.

Warning

Personnel should always be aware when working with fiber optic test equipment that active fibers may be present, therefore infrared optical energy may be present.

Warning

Never look directly into the end of a connected fiber optic cable or fiber optic interface of optical test equipment, to do so could expose the user to laser radiation and could result in personal injury.

Warning

To Prevent Fire or Shock Hazard:

- Do not install battery types other than those specified
- Do not puncture batteries.
- Do not incinerate batteries.
- All batteries should be disposed of in a proper manner.

Failure to follow these caution statements could cause unsafe conditions for the operator and equipment and may void the warranty.

Failure to follow these cautions statements may void the warranty of, or cause damage to this equipment.

Caution

Fiber-optic connectors are easily contaminated or damaged. The connection to the Laser Source is physical contact type of connections and dirty or damaged connectors may impair the instruments capabilities at minimum and at worst result in the need to return the Laser Source to the factory for expensive repairs. Prior to making any connection to the unit, ensure that all proper cleaning procedures have been followed.

Chapter 3 Summary

The Precision Rated Optics LS-500D Handheld Laser Source is designed for fiber optic network site installation, acceptance and maintenance of fiber optic cable, optical passive components of the transmission and loss measurement. The LS-500D Handheld Laser Source with hand-held optical power meter use, can provide you with a fiber network precision test solution. According to the user's needs to provide 1 to 4 wavelengths of stable output, and with continuous power adjustable, modulated light output and other functions, backlight intelligent control, environmentally friendly design and energy efficiency. The user can control the backlight display and automatic shutdown function.

Product features:

- Support CW and a variety of modulation light output
- Output optical power adjustable, Adjustment range 6dB, step 1dB (Optional)
- Support automatic shutdown
- Backlight intelligent control
- Supports single wavelength, combined wavelength customization

Technical index: (The following indicators test at the temperature 23℃±5℃)

Parameters	Specifications
Wavelength range	1310/1550±20nm
Fiber Type	9/125um
Optical connector	FC/SC/ST (FC-LC adapter option)
Laser type	FP-LD
Output power	≥-5dBm
Stability	±0.02dB/8h
Modulation mode	CW, 270Hz/1kHz/2kHz
Power regulation	0 - 6dB, 1dB step
Operating temperature	-10℃ to +50℃
Storage temperature	-40℃ to +70℃
Relative humidity	0 - 95% Non-condensing
Battery continuous working hours	≥72h (LS function)
Size	7.32in x 3.94in x 1.97in (186mm x 100mm x 50mm)
Power	Three AA batteries/ 1500mAh Lithium battery (optional)
Net weight	4.94oz / 5.29oz (140g / 150g)

Chapter 4 Operation Instructions

1. : Multi-function key
   Press about 1s boot; boot state, press it open backlight, and then click to close the backlight; press 3s or more, shut down;
2. λ1: Multi-mode laser on / off button (Some models have this feature)
   Each time you press, the wavelengths are displayed as “850nm”, “1300nm”, “OFF” in turn;
3. λ2: Single mode laser on / off button
   Each time you press, the wavelengths are displayed as “1310nm”, “1550nm”, “OFF” in turn;
4. : Attenuation value increase key (Some models have this feature)
   Each press, attenuation increased by 1dB;
5. : Attenuation value reduce key (Some models have this feature)
   Each press, attenuation reduced by 1dB;
6. MOD: Modulation frequency setting key
   Press the first time, the frequency display "CW", each click, followed by circular display “270Hz”, “1kHz”, “2kHz”.

Standard configuration

Optical laser source mainframe, Operation Instructions, AA batteries x3, FC/UPC connector, SC connector.

Note: Charging lithium battery charging voltage is 5V, you can charge it with your mobile phone charger.

Solutions to common faults

Trouble shooting	Possible causes	Solution
LCD faint display	Insufficient capacity	Replace batteries
Unable to display on boot	Insufficient capacity or others	Restart or replace the battery
LCD abnormal display	Joint fault, dirty or locked	Reconnect the connector and clean the sensor

Daily maintenance:

1. Please keep the sensor face clean, avoid contaminations from oil or dirt, only use standard adapter connector. Make sure to use the correct end face polish, otherwise it will damage the end face of the sensor and result in test errors and/or unit repair.

2. Avoid changing adapter when possible. Frequent adapter changing may cause transfer of dirt to sensor face.

3. When the laser source is not in use, cover the dust cap immediately to avoid needing to clean the end face and prevent measurement error from being exposed to dust for prolonged periods of time.

4. Carefully plug optical adapter connector to avoid port scratches.

5. Periodically clean the sensor surface. When cleaning the sensor surface, wipe gently in the in a circular motion with a lint-free cleaning swab.

Chapter 5 Repair/Warranty

5.1 Repair Information

If repair is required, simply call PRO at 888-545-1254 for return instructions and a RMA number.

5.2 Warranty Information

This product, including all mechanical, electrical, and optical parts and assemblies are unconditionally warranted to be free of defects in workmanship and material for a period of one (1) year from the date of delivery.

This warranty does not apply to expendable parts such as batteries or optical panel connectors, nor to any instrument or component which has been subjected to misuse, alteration, or fiber connector damage. It is the customer's responsibility to understand all the instructions and specifications prior to operating this instrument. This warranty does not extend to any loss or damage consequent to the failure of the warranted product.

Precision Rated Optics, Inc.
Corporate Office
121 Park Avenue
Quakertown, PA 18951