



Precision Rated Optics

Work with a **PRO!**

PON-301B

PON Meter



Operation Guide

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Safety Instructions

Safety Terms Used in This Manual

WARNING: identifies any procedure or practice that if not followed could result in serious injury.

CAUTION: identifies any procedure or practice that if not followed could result in damage to the instrument or serious injury.

NOTE: identifies information that may be beneficial during the use and maintenance of the instrument.

Battery: Battery for this instrument is rechargeable NiMH battery. If unused for a long time, battery should be recharged before being used. If the instrument is left idle for more than two months, it should be recharged to maintain adequate power volume.

Battery Power: Do not recharge batteries for more than 8 hours. Do not take batteries out without technical staff's help. Do not expose batteries to fire or intense heat. Do not open or mutilate batteries. Avoid touching the electrolyte in the batteries, which is corrosive and may cause injuries to eyes, skin or damage to clothes.

External Power: All hand-held instruments from our company support external power.
Power requirements: DC 13.8V/1 .2A.

Laser Radiation: To avoid serious eye injury, never look directly into the optic outputs of fiber optic network equipment, test equipment, patch cords, or test jumpers.

- Always avoid looking directly into the optic output port, when the instrument is working.
- Always replace protective dust caps on the detector port when the instrument is not being used.
- Always avoid looking directly at the unconnected end of optic fiber in testing and make the unconnected end pointing at a non-reflective object, if possible.

1. General Information

1. Scope of this Manual

Thank you for purchasing Precision Rated Optics instruments. Please read this manual carefully before using any of Precision Rated Optics series fiber-optic instruments. Always observe the warnings and cautions appearing throughout this manual.

This manual contains the information necessary for proper operation and maintenance of Precision Rated Optics series optical test meters, troubleshooting instructions as well as information regarding obtaining services.

All Precision Rated Optics series optical test meters are carefully assembled and undergo a rigorous mechanical, electrical, and optical inspection prior to shipment. Beside the instrument, the package should also include a data transfer cable, power adapter, software installation disk and this users' manual etc. For detailed information, refer to the packing list

Upon receiving the instrument, please check for any obvious signs of physical damage that may have occurred during shipment. Report any damage to the shipping agent or the representative of Precision Rated Optics Technologies Inc. immediately. Retain the original packing materials in case reshipment becomes necessary.

1.2. Unpacking and Inspection

This instrument has been carefully packed in accordance with standard shipping procedures. Examine the instrument for damage that may have occurred during shipment. If you find any damage or the instrument is not working, or if any of the following items are not included, please contact your representative of Precision Rated Optics Technologies, Inc.

If necessary, you may contact the Representative of Precision Rated Optics Technologies for Mainland directly or contact Precision Rated Optics.

NOTE

To return the instrument in the case of repair, calibration or other maintenance, please note the following:

- 1) Be sure to pack the instrument with soft cushion like Polyethylene, so as to protect the shell of the instrument.
- 2) Please use the original hard packing box. If use other packing material, please ensure at least 1.2 inch soft material around the instrument.
- 3) Be sure to correctly fill out and return the warranty registration card which should include the following information: company name, postal address, contact, phone number, and email address and problem description.
- 4) Be sure to seal the packing box with exclusive tape.
- 5) Be sure to ship to your representative or the agent of the Company in a reliable way.

1.3 Introduction

Precision Rated Optics PON-301B is specially designed for FTTx/PON test of next-generation optical network which features handheld, intelligent and high performance.

Features:

- Simultaneous measurement of PON signals: 1310/1490/1550nm wavelength-voice, data and video
- Simply connect the fiber and read the results
- TFT color screen.
- Dual Port pass-through test
- On-site test and measurement of PON signals, anywhere on the network without interrupting the services.
- Burst detection of 131 Onm upstream signal
- Pass/Warning/Fail assessment on PON-301B unit
- Built-in clock
- Test optic cable and fiber No. are Editable.

2. Basic Operations

2.1 Foreword

This part introduces the basic operations of the Precision Rated Optics series hand-held PON Power Meter. Specific operations of each type are elaborated in "Specific Functions and Operations", chapter 3 of this manual. Please read this manual carefully for optimal operation. Should you encounter any problems during operation, you are welcome to contact the technical staff of our company or agents.








2.2 Instrument Interfaces Instructions



2.2.1 Instrument Ports

- 1) **OLTPort**
FC !PC connector is used for the optical power test interface. (SC and ST are interchangeable).
- 2) **ONU Port**
FC !PC connector is used for the optical power test interface. (SC and ST are interchangeable).
- 3) **Power Adapter Jack**
Power Adapter Jack requirements: 5V DC@750mA

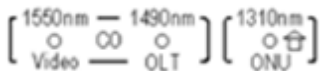
2.2.2 Keypad Functions

	This key turns the instrument on and off.
	Switch operation wavelength modes.
	Switch setting terms; modulate parameter values under the setting state.
	Switch interface of functions; modulate digit of parameters under the setting state.
	Enter or exit setting interface; hold for auto power off setting, press again exit the auto power off setting.
	Confirm the current selection. Store the current testing record under the “measure and save” interface.
	Adjust the backlight brightness.

2.2.3 Indicator light



Charging light.



Test result indicator light. Works when "threshold switch" is on only.

2.3 Install and Replace of Battery

All Precision Rated Optics series p aim Light Meter use Lithium Ion batteries and one battery for one unit. Make sure battery loads in right place before use it.

The low battery sign will be shown on LCD when battery is low. The battery needs to be charged when LCD is getting dark which also means the output power is not stable.

NOTE

Please take the battery out if long time no use.

2.4 Connector Cleaning

Please follow the instructions below when cleaning:

- Turn off the instrument before cleaning.
- Non-compliant operation may result in hazardous radiation exposure.
- Turn off laser source before cleaning optical interface.
- Always avoid looking directly into the optical output port when the instrument is working laser is invisible and can cause serious eye damage.
- Disconnect instrument from power supply before cleaning to prevent electric shock.
- Do not install unauthorized parts or make unauthorized adjustments on instrument.
- Please consult qualified professional about maintenance and repair services.

Always clean optical connector before using optical power meter to ensure accurate measurement. Clean the optical connector gently with cleaning swab.

Inappropriate maintenance may result in low performance or error:

- Distance error increases;
- Linearity error;
- Extra optical power attenuation;
- Received optical power is beyond normal range.

3. Operation Guide

3.1 Main Interface


Press  button, the starting up interface will be shown first. Show as figure 3.1.



Figure 3.1

Enter [Meas&Save] interface (the default interface), as shown in Figure 3.2.

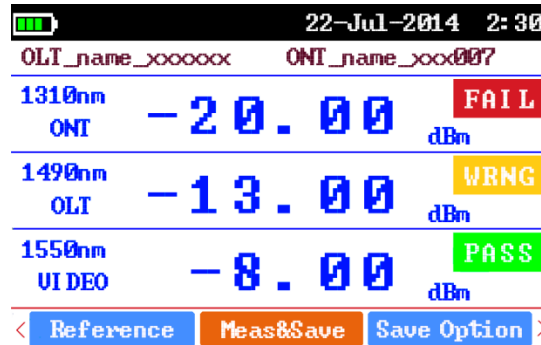
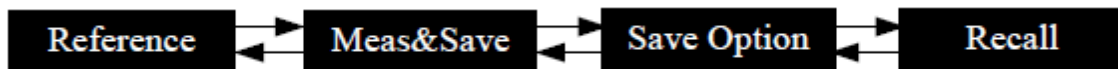


Figure 3.2

Press and to toggle between following interfaces:



3.2 Setup Menu

After power on, in any of the following interfaces: [Reference], [Meas&Save], [Save Option] and [Recall],

press to enter/quit Setup menu as shown in Figure 3.3.

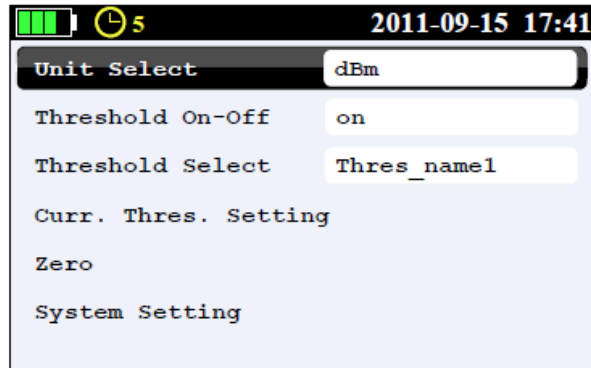


Figure 3.3

3.2.1 Setup - Unit Select

Press and to highlight [Unit Select] as shown in Figure 3.3.

Press to toggle between displayed units and press to quit Setup menu.

3.2.2 Setup - Threshold On-Off

Press  and  to highlight [Threshold On-Off] as shown in Figure 3.4.

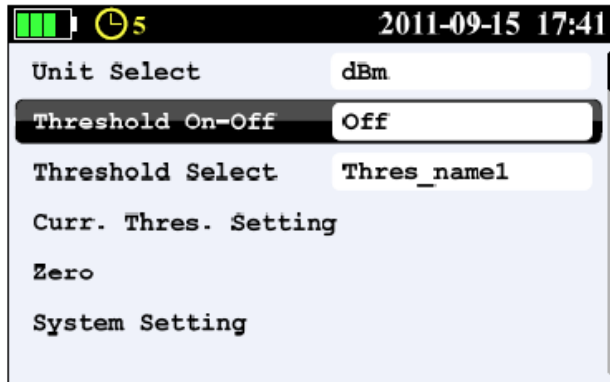




Figure 3.4

Press  to turn on/off threshold and press  to quit Setup menu.

NOTE

When threshold is on, PON-301B will automatically compare measurement results with the thresholds setting and indicate "PASS", "WRNG", "FAIL" status of each wavelength through the indicators on

3.2.3 Setup - Threshold Select

Press  and  to highlight [Threshold Select] as shown in Figure 3.5.

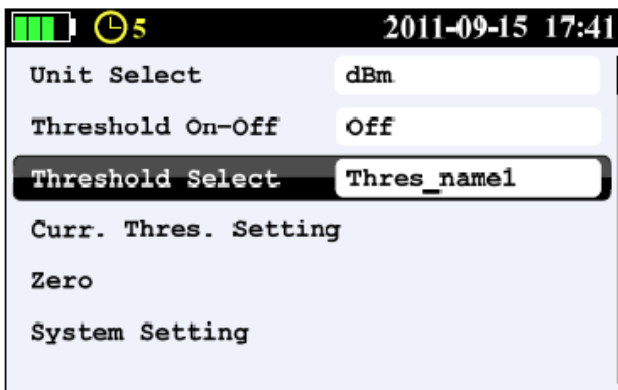


Figure 3.5

Press and press and to toggle between threshold settings as shown in Figure 3.6.

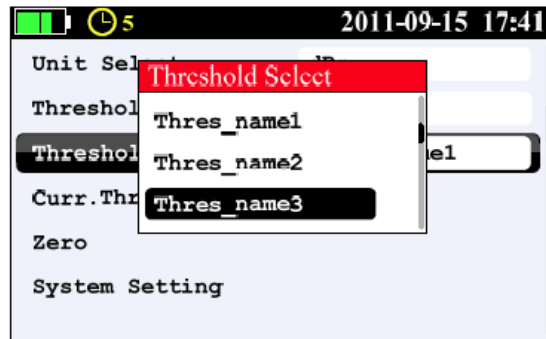


Figure 3.6

Press to select threshold setting.

3.2.4 Setup – Current Threshold Setting

Press and to highlight [Curr. Thres. Setting] as shown in Figure 3.7.

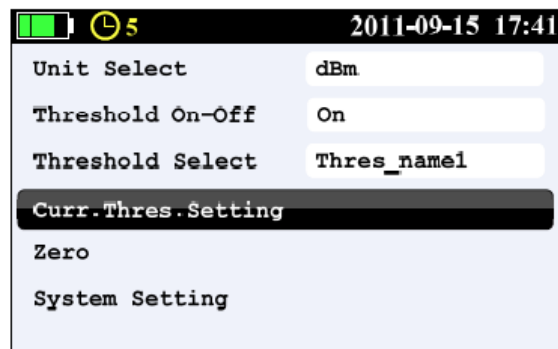


Figure 3.7

Press to enter [Curr. Thres. Setting] as shown in Figure 3.8.

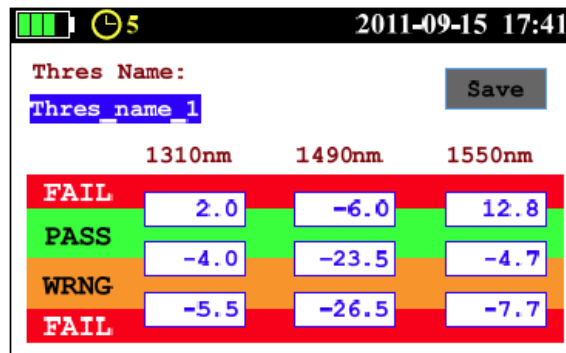


Figure 3.8

Press button to select the digit to be adjusted and press to adjust in pop-up number pad. Select "OK" and press to confirm; Select "Cancel" and press to cancel or press to cancel and quit number pad. Select "Save" in the right upper corner of the interface shown in Figure 3.8 and press to save setting.

You can also change the threshold name using the same operations as above.

3.2.5 Setup - Zero

Press  and  to highlight [Zero] as shown in Figure 3.9.

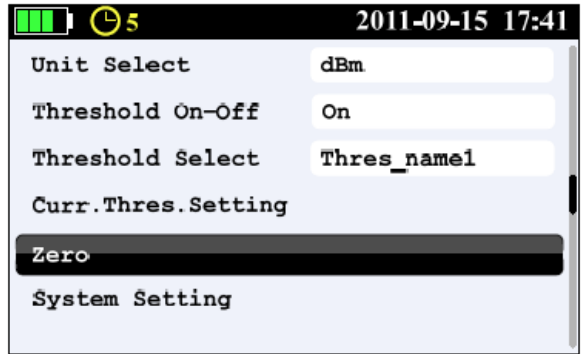



Figure 3.9

First put the duct cap on optical connector, select [Zero] and press  to perform auto zeroing. Zeroing is successful when "OK" appears. If zeroing fails, retry zeroing. If zeroing fails anyway, please contact your local Precision Rated Optics representative.

3.2.6 Setup - System Setting

Press  and  to highlight [System Setting] as shown in Figure 3.10.

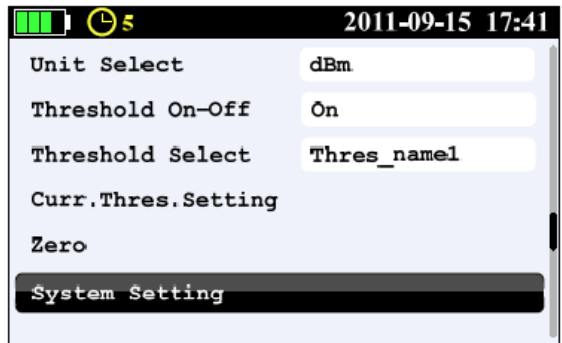


Figure 3.10

Press  to enter System Setting as shown in Figure 3.11.

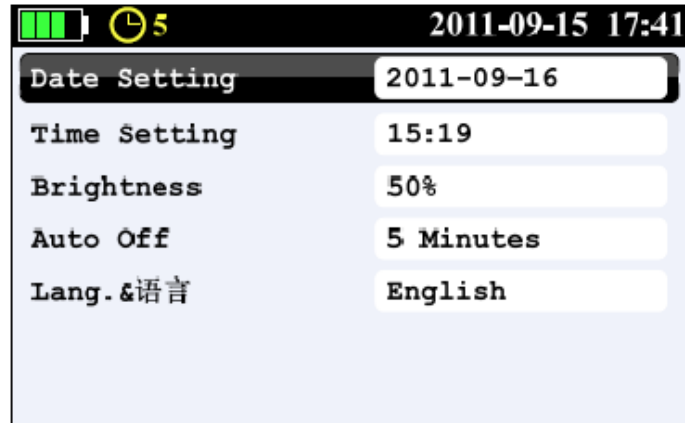







Figure 3.11

In System setting, you can adjust Date, Time, screen Brightness, Auto Off and Language. Press  and  to toggle between items; press  and  to select the digit position to be adjusted; press  to confirm; press  to cancel and quit.

3.2.7 Setup - USB Configuration

Press  and  to highlight [USB Config] as shown in Figure 3.1 2.

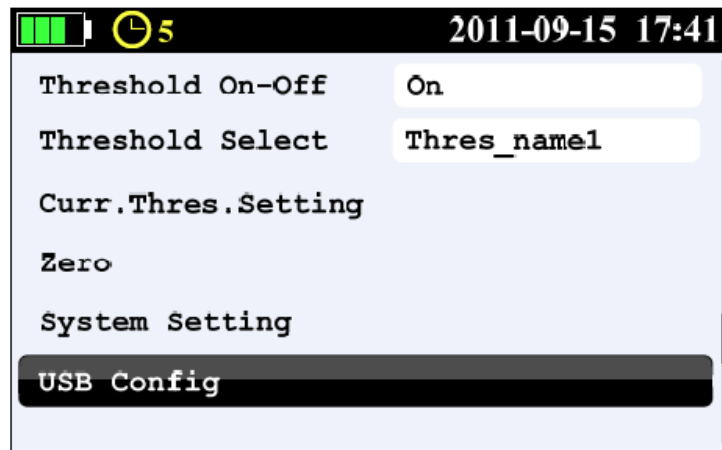



Figure 3.12

Press  to enter USB configuration interface. Select "Mass Storage" to enable PON-301B as an USB storage device when connected to PC for easy file management of the test data.

3.2.8 Setup - Device Info

Press  and  to highlight [Device Info] as shown in Figure 3.13.

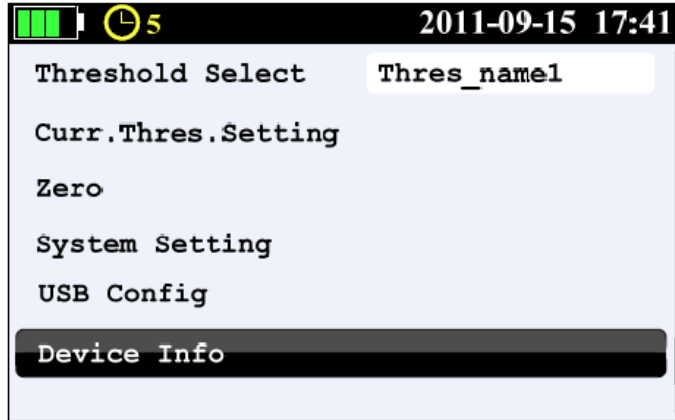


Figure 3.13

Press  to enter Device Info interface to check PON-301B software/hardware version and storage information.

3.3 Reference Menu

After PON-301B is powered on, press  and  to enter [Reference] menu as shown in Figure 3.14.

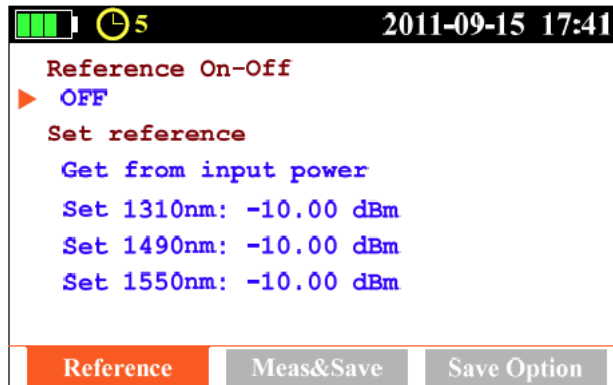









Figure 3.14

Press  and  to toggle between "Reference On-Off" and "Set reference". "Reference On-Off": Press  to enable/disable reference setting. "Set reference" : Set current measured power value as reference value or press     to manually set reference value.

3.4 Measure and Save Menu

Press and to [Meas&Save] Menu as shown in Figure 3.1 5.

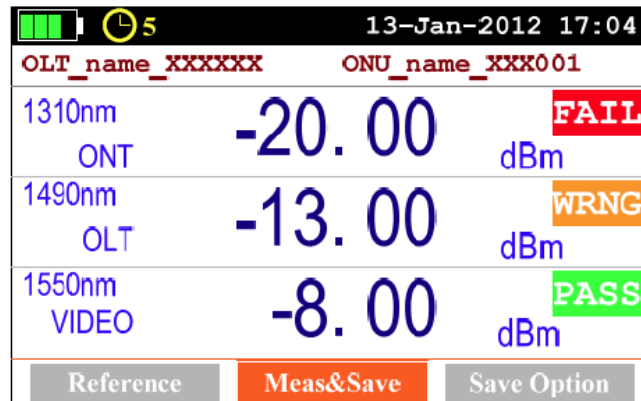


Figure 3.15

In [Meas&Save] Menu, PON-301B displays 1310/1490/1550nm measured power values simultaneously. If threshold is enabled, the indicators on PON-301B front panel will illuminate with different colors to show "Pass"/ "Warning" I "Fail" status of signals' power.

In [Meas&Save] Menu , press to save current measured data.

NOTE

In [Meas&Save] Menu, when file name set, PON-301B will automatically name the saved file in sequence.

3.5 Save Option Menu

Press and to enter [Save Option] menu as shown in Figure 3.16.

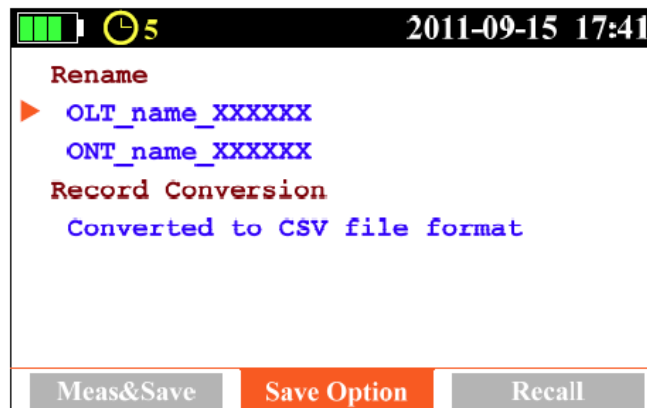


Figure 3.16

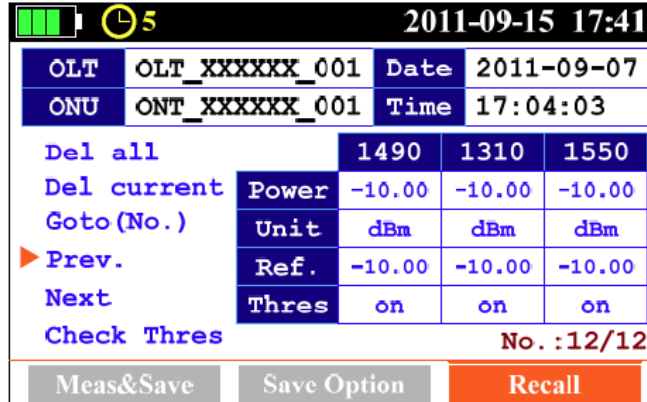
Press and to toggle between "Rename" and "Record Conversion" in Figure 3.16.

"Rename": Press to enable file name modification.

"Record Conversion": User can convert saved data to .CSV format which can be opened by MS Excel Program.

3.6 Recall Menu

Press  and  to enter [Save Option] menu as shown in Figure 3.16.



OLT	OLT_XXXXXX_001	Date	2011-09-07	
ONU	ONT_XXXXXX_001	Time	17:04:03	
Del all		Power	1490	1310 1550
Del current		Unit	-10.00	-10.00 -10.00
Goto (No.)		Ref.	dBm	dBm dBm
▶ Prev.		Thres	-10.00	-10.00 -10.00
Next			on	on on
Check Thres			No. :12/12	

Figure 3.17

In Figure 3.17, user can delete file, review saved file and reviewed threshold information

4. Maintenance and Calibration

4.1 Light Ports Cleaning

Light Ports must be kept clean. Use the special alcohol to clean optic output. Always replace protective dust caps after using, and keep the protective dust caps clean.

4.2 Calibration Requirements

Calibration of the instrument is recommended every two years. Please contact our representatives or nearby customer service centers for proper calibration.

5 Warranty Information

5.1 Terms of Warranty

All Precision Rated Optics products are warranted against defective material and workmanship for a period of one (1) year from the date of shipment to the original customer. Any product found to be defective within the warranty period would be repaired or replaced by Precision Rated Optics Technologies Inc. free of charge. In no case will Precision Rated Optics Technologies, Inc. liabilities exceed the original purchase price of the product. This warranty does not cover accessories or optional parts.

5.2 Exclusions

The warranty on your equipment shall not apply to defects resulting from the following:

- 1) Unauthorized repair or modification;
- 2) Misuse, negligence, or accident.

Precision Rated Optics Technologies, Inc. reserves the right to make changes to any of its products at any time without having to replace or change previously purchased units.

5.3 Warranty Registration

A warranty registration card is included with the original shipment of equipment. Please spare a few moments to fill out the card and mail or fax it to the local Customer Service Center of Precision Rated Optics Technologies, Inc. to ensure proper initiation of your warranty term and scope of your warranty.

5.4 Returning Equipment

To return equipment for reasons of yearly calibration or other, please contact the local Customer Service Center of Precision Rated Optics Technologies, Inc. to obtain additional information and a RMA# (Return Materials Authorization number). And describe briefly reasons for the return of the equipment, to allow us offer you more efficient service.

5.5 Contacting Customer Service

Please check our website (www.PrecisionRatedOptics.com) for updates to this manual and additional application information. If you need technical or sales support, please contact local Precision Rated Optics Technologies Customer Service.



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