OPTICAL INSTRUMENTS SERIES

USER'S GUIDE TO THE OFL-301A

FIBER RANGER

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1. Inroduction

The OFL-301A fiber ranger is a high performance fiber fault locator which can be used to detect the fiber fault location and display the exact distance on the coloured LCD. The OFL-301A is designed to be palm sized, lightweight, easy carry and simple operated which can be an ideal instrument for fiber installation, detection and maintenance.

Main features:

- Palm design, hi-technology chip, reliable performance,accurately detects fiber fault location.
- 2-language,4-shifts,5-international displaying unit choices
- Easy-to-use operation
- Small size,lightweight, easy to carry out for maintenance.
- Four pieces of built-in NiMh rechargeable Batteries,continuously measures up to 15000 times.
- USB interface real clock display available

2. Specification

Item / Model No.		OFL-301A
Fiber Type		9/125 μm Single Mode
Wavelength		1550 ± 20nm
Emitter Type		LD
Connector Type		FC/PC (interchangeable SC,ST)
Pulse Width		10ns/20ns/40ns/80ns/160ns/320ns/640ns/1280ns/ 2560ns/5120ns/10240ns/20480ns
Max. Output Power		90 mW
Max. Measurement Range		100 Km(Reflection event, >1dB)
Distance Accuracy	Reflection event	± (2 + 0.1% x Distance)
	Non-Reflection event	± (100 + 0.5% x Distance)
Data Storage		260 measurements
Dead Zone		10 m (Reflection event)
Power Supply		AC/DC adaptor &. Rechargeable Batteries* 4
Battery Life		5,000 times measurement
Operating Temp.		-10 ~ +50°C
Storage Temp.		-20 ~ +60°C
Humidity		0 ~ 85% (non-condensing)
Communication Port		Mini USB
Weight		400 g
Dimension		190*105*55 mm
Max Event No.		13 Refective event+13 Non-refective event

VFL	Wavelength	650±10nm
	Output Power	<7mW
	Modulated Frequency	2Hz

Note: Specifications subject to change without notice.

3.Warranty

Three Years Limited Warranty

Products are warranted against the defective components and workmanship for a period of three years from the date of delivery to the original customer. Any product found to be defective within the warranty period would be returned to authorized service center for repair, replacement and calibration.

Exclusions

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

- Unauthorized repair or modification including battery replacement
- Misuse, negligence, or accident

Returning Product

To return product, you may contact us to obtain additional information if necessary. To serve you better, please specify the reasons for the return.

All delivery and mails should be sent to the following address:

Precision Rated Optics
1450 Greenwich St. Suite #303
San Francisco CA 94109
Phone number: 415-738-3476

4. Safety Information

Warnings!

- Never look directly into optical outputs or a fiber while the equipment is on.Invisible laser beam may damage your eyes.
- Do not short-circuit the terminal of AC adapter / charger and the batteries.Excessive electrical current may cause personal injury due to fumes,electric shock or equipment damage.
- Connect AC power cord with the equipment and wall socket properly. While inserting the AC plug, make sure there is no dust or dirt on the terminals and both plugs are fully seated. Incomplete engagement may cause fuming, electric shock or equipment damage and may result in personal injury.
- Do not operate the equipment near hot objects, in hot environments, in dusty/ humid atmosphere or when condensation is present on the equipment. This may result in electric shock , product malfunction or poor performance.

4.1 Discharged batteries

Remarks:

1) When the battery power is almost out, there will be a warning of indicator keeps blinking, then please replace the batteries or plug in AC adapter to charge batteries.

2) Please make sure that you have turned the instrument on before charge the batteries, unplug the AC adapter when the batteries are fully charged.

3) Please make sure the batteries are well placed before charge them.

4) To eliminate the possibility of acid leakage, please take out the batteries if the unit will not be used for a long time.

4.2 AC operation

If the instrument is mainly used at one location, e.g. in a laboratory or test department, the AC adapter can be used to power it instead of batteries. There is a DC input jack on the left side of the OFL-301A instrument casing into which the output cable of the AC adapter is plugged. And when the AC adapter is plugged in, the AC Indicator on the LCD will be displayed.

Note:
1 Power is supplied by the AC adapter even if battery is fitted. And the battery indicator is not displayed on the screen when AC adapter is plugged.
2 Make sure that the operating voltage of the AC Adapter / Charger is the same as the local AC line voltage.

5. Preparing for Operation

Unpacking the instrument

Packing material

We suggest that you keep the original packing material. Using the original packing material is your guarantee of protecting the instrument during transit.

Checking the package contents

The standard accessories of OFL-301A are as follows:

- Main unit
- Quality Check Report
- Carrying Case
- User's Guide
- 4*Ni-MH Batteries

Optional accessories: AC Adapter

Checking for damage in transit

After unpacking the instrument, check to see whether it was damaged in transit. This is particularly likely if the outer casing is clearly damaged. If there is damage, do not attempt to operate the instrument or to repair it without authorization. Doing so can cause further damage and you may lose your warranty qualification.

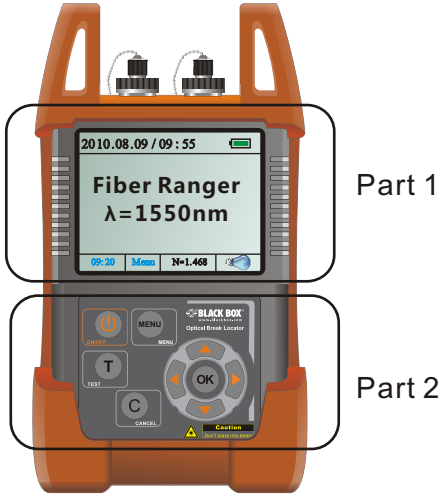
6. Operation

Instrument Panel can be devided into two parts:

First part is LCD display.

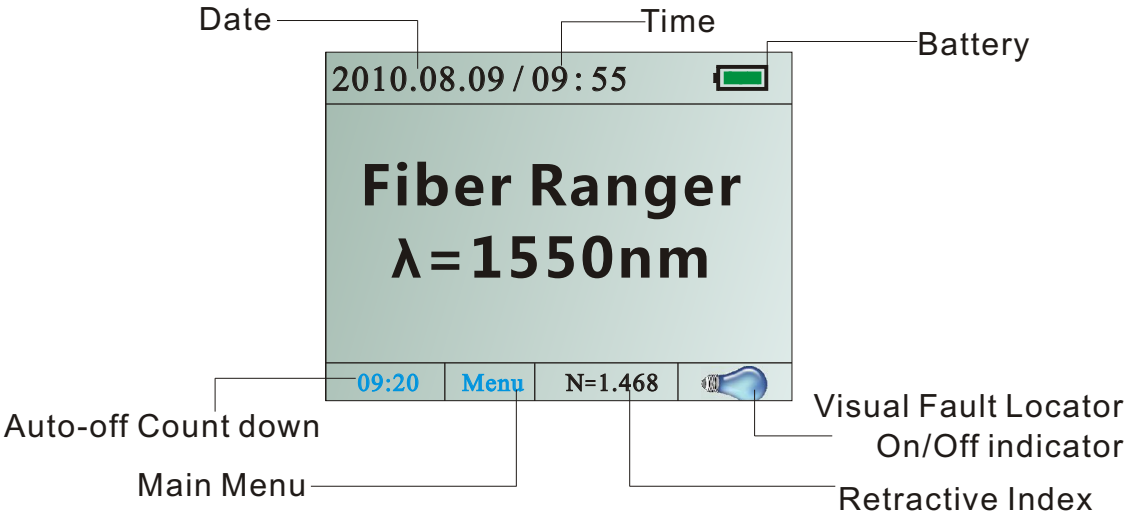
Second part is Operation keys.

Type of fiber connector: FC/PC,SC/PC,ST/PC.



6.1 Key's Functions

	Press the key to power on the unit.The unit will turn off automatically if no keypressing happens in 10 minutes; if pressing down the key for longer than 2 seconds,the unit will be turned on with "auto off" function deactivated;when the unit is in the state of power on, if pressing down the key for longer than 2 seconds,the unit will be shutted down.
	Exit the current working states
	Start test
	Press the key to enter or quit menu
	Confirm to proceed
	<Up>,<Down> arrow key.
	<right>,<left> arrow key.


Date
Time
Battery
2010.08.09 / 09 : 55
Fiber Ranger
λ=1550nm
09:20
Menu
N=1.468
Auto-off Count down
Main Menu
Visual Fault Locator
On/Off indicator
Retractive Index

6.2 Keypress Function

Turning the instrument on and off:

Press the "ON/OFF" key briefly, the instrument powers on.

Press the "ON/OFF" key >2second, the instrument powers off.

Note: Auto-off function

The instrument powers off if no keypress happends in 10 minutes.

Press the "ON/OFF" key for about 2 seconds to power on the instrument with "Auto-off" function deactivated.

6.3 Menu Introduction

Press MENU to enter the main menu interface

1) Refractive Index Setting
2) Threshold<3&1>
3) Unit Set<m>
4) Load Data
5) Date&time Set
6) Back Light
7) Pulse width set<5120 ns>
8) Help
9) Language

Refractive Index Setting:

Move the cursor to refractive index setting,press ok to enter the setting menu,press right/left to move the cursor,press up/down to change the index value,press ok to save it and quit,press c to quit directly.

English menu

Threshold Setting:

There are reflection events threshold setting and non-reflective event threshold setting.

Place the cursor to threshold setting menu, press the OK key to enter the threshold settings menu, press LEFT / RIGHT to switch between reflection events threshold setting and non-reflective event threshold setting; press UP / DOWN key to edit the corresponding threshold value, press OK key to save and exit. Press the "C" key exit without saving.

Unit Setting:

Move the cursor to the unit setting menu,press ok to enter it,press up/down/right/left to choose the unit,press ok to save it and quit,press c to quit directly

Data Review:

Place the cursor to Data Review menu, press the "OK" button to enter it. The number in red is with storage of data; the number in black is without storage of data.

Each number stores one sets of testing results of one testing , each set of data is up to 13 reflection events and 13 non-reflective event data.

Place the cursor to the appropriate data number, press the OK button to enter the data in list form. Press MENU button to locate the desired number fast, input the number with LEFT / RIGHT/UP / DOWN key, and then OK button to enter the data in list form.

Date&time Setting:

Press up/down/right/left to choose the data. Press MENU to edit it, and the search can be started from anywhere by entering a starting number; press "C" to quit the submenu. Or you can set the date and time by using the simulating software on PC.

Backlight Setting:

Move the cursor to data and time setting menu, press ok to enter the submenu; press right/left to choose the term, press up/down to change the value, press ok to save it and quit, press "C" to quit directly.

Pulse width set:

Move the cursor to pulse width setting menu, press ok to enter the submenu; press right/left/up/down to choose the pulse width, press ok to save it and quit, press "C" to quit directly.

Language Setting:

Move the cursor to language setting menu, press ok to enter the submenu, choose the language between simplified Chinese and English

Data deleting:

Data can be deleted by PC through simulating software or by head piece,simply press menu key to delete data and keep press it for longer than 2 seconds,all data can be deleted

6.4 Testing Operation

Testing:
Set the appropriate threshold level and pulse width before testing, and then press "T" to start measure. (Hint: threshold level, pulse width, and measure distances are tightly related. Shorter distance should choose the smaller pulse width, while longer distance should choose the bigger pulse width. The pulse width needs to be set according to practical situation.)

Reading data from PC:
There will be a USB logo displaying in the screen when a USB device connect to the instrument.Then you may read the data by using the simulating software.

Operation of visual fault locator :
In the main interface, press and DOWN keys > 2S to switch between---On , 2Hz output, Off.

AC adapter usage:
There will be an AC adapter logo displaying in the screen and battery logo disappears when the AC adapter is connected with the instrument. In the reverse case,a bettery logo will be displaying in the screen and AC adaptor logo disappears.

6.5 Maintenance:

1) Clean the fiber connector and connecting flange on a regular basis.
2) Use the standard fiber connectors to proceed the test.
3) Please use the dust-proof cap to secure the connector to be scratched or contaiminated everytime when the product is not in operation.
4) Make sure that the operating voltage of the AC adapter/charger is the same as the local AC line voltage.
5) To eliminate the possibility of acid leakage,please take out the batteries if the unit will not be used for a long time.
6) Do not fix the instrument in private, or it may cause permanent damage to the instrument and it will loss the warranty qualification.

6.6 Attentions:

1) Please make sure the fiber connector is clean before test.
2) The batteries and the AC adaptor can work at the same time, but it doesn't work as recharge function in that case, take out the batteries if the batteries needs to be recharge, use the exclusive recharger to recharge batteries.
3) Please cover the protective dust cap when it is not in use.
4) Do not connect laser source to this instrument directly, In case of the damage to optical sensors.
5) Make sure the test fiber were well connected with fiber interface before the testing starts, the fiber can not be pulled out during the period of testing time, or the refractive effects may damage the instrument .
6) The light pulse generated by the testing instrument may damage the eyes so do not look into the light pulse.

6.7 Trouble shooting

Malfunction Type	Possible Cause	Recommended solution	Remarks
Failure to turn on/off	No power input	Plug in battery or AC	DIY Available
	Battery exhausted	Charge battery	DIY Available
	Reverse-installed battery	Re-install battery	DIY Available
		(Still doesn't work)	Return to factory
On&off disorder	Low battery	Charge battery or use AC power supply	DIY Available
Inaccurate measurement	Contaminated connector	Swab the dust by using an alcohol-impregnated thin cotton swab	DIY Available
	Connector unfitted	Re-install the connector	DIY Available
Error display	Humid environment	Try later while it is not too humid	DIY Available
	Magnetic field environment	Stay far away from magnetic field	DIY Available
	Metal dust environment	May cause damage on mainboard	Return to factory
	Humid environment	Try later while it is not too humid	DIY Available
On&off failure	Keypad short circuit	Replace keypad	Return to factory

Warm advice:This test instrument is available for single-mode optical fiber measurement only.