

NOTICE

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The information contained in this document is assumed to be correct and current. The manufacturer is not responsible for errors of omissions and reserves the right to change specifications at any time without notice.

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1. Overview

HW3307C Return Loss/Insertion Loss Test Stations are widely used to test the insertion loss and return loss of the fiber cables, fiber optical active components and fiber optical passive components.

It is essential and ideal tool for the test, research, development, construction and maintenance of the manufacturers, research institutions and network service providers and carriers.

Features:

(1) High measurement accuracy

It has the stable output power, fast test and wide test range by adopting the built-in laser isolator, advanced microelectronics technology, optical test instrument and software.

(2) Synchronously auto-setting wavelength

In return loss test mode, the unit will automatically and synchronously set the same wavelength for the light source and power meter. In power meter mode, the wavelength of power meter could be set separately.

(3) Multiple working modes

This unit integrates three working modes in one, they are return loss test, optical power test and insertion loss test.

(4) Easy Operation

Insertion loss /return loss will test synchronously without switching the button. The return loss value and insertion loss value are displayed separately on the two LCD screen of the unit. By the “zero” and “ref” keys, this unit will store the corresponding calibration value and keep it valid when the unit is turned on again next time and even the power supply is suddenly cut off.

(5) Human Engineering Design

By adopting the high-quality mental material, this refrains the unit from the electrical interference under the production condition. [The button is durable in use and smooth and](#)

pleasant to the touch.

(6) Universal optical connector, easy cleaning

The connectors of light source and power meter are all movable and easily took out to clean the detector of power meter or inside APC adaptor of the light source, or replaced with another type of connector.

(Note:While detaching,revolving optical connector adapters of OPM&OLS only and then pull out connector adapters would be okay)



This connector of light source is movable and easy to be cleaned.



This connector of power meter is also movable. When it is not in operation, please cover the dust-cap to keep it clean

(7) USB Port

The test results could be sent to the computer or printer through the USB port. On-line displaying current measurements and measurement results can be saved by foot switch.

2. Specifications

Model	HW-3307C
Optical Return Loss Test	
Wavelength	850/1300nm (50/125 or 62.5/125)
Optic Connector	FC/PC
Return Loss measurement Range	0 ~ 75dB

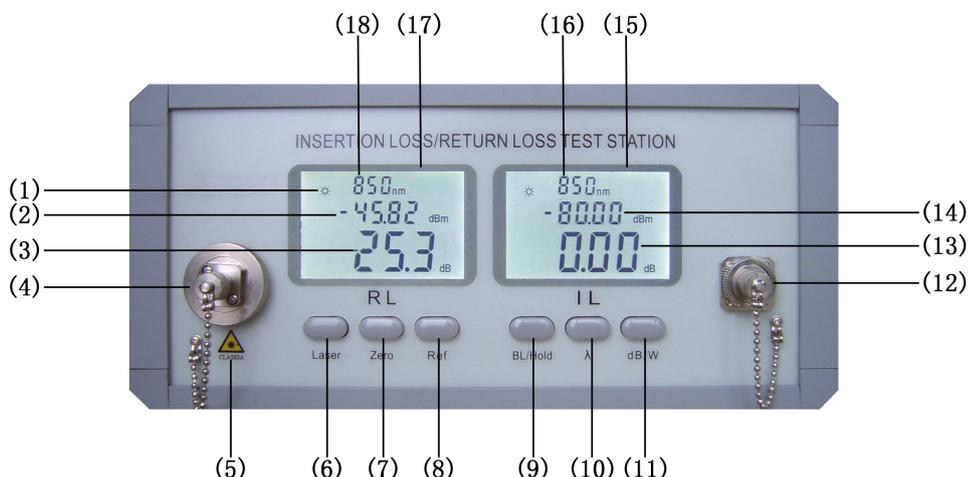
Output Stability of laser source	0.05dB(1 hour@25°C)
Measurement accuracy	±0.4dB
Resolution	0.01dBm/0.1dB
Optical Insertion Loss Test	
Wavelength Range	800~1700nm
Calibrated wavelength	850/1300/1310/1550nm,
Optic Connector (Power Meter)	Interchangeable FC/SC/ST Universal 2.5mm /1.25mm adaptors
Photo detector	InGaAs
Display modes	dBm/dB/xW
Measurement range	+3 ~ -80 dBm
Resolution	Non-linear <u>0.01dB</u> ; Linear: 0.001nw/μW/mW
Testing Modes	Linearity/Non-Linearity
Measurement accuracy	0.25dB
Other Specification	
Communicating Port	USB
Power Supply	<u>AC 170-260V</u>
Operation Temperature	-5°C ~ +40°C
Dimensions	280X260X120mm
Weight	3kg

3. Standard Packages

(1) Main Body.....	1
(2) P.S. Cable	1
(3) FC Adaptor, SC Adaptor, ST Adaptor.....	1
(4) 2.5mm Universal, 1.25mm Universal Adaptor.....	1
(5) Operating manual.....	1

(6) FC/PC-FC/PC patch cord.....1
 (7) Extinction Module.....1
 (8) Cleaning Cotton Swab.....1
 (9) Desiccant1
 (10) Fuse.....1
 (11) USB Cable (Optional accessory).....1
 (12) Foot Pedal (Optional accessory)..1
 (13) CD.....1

4. Panel and Function



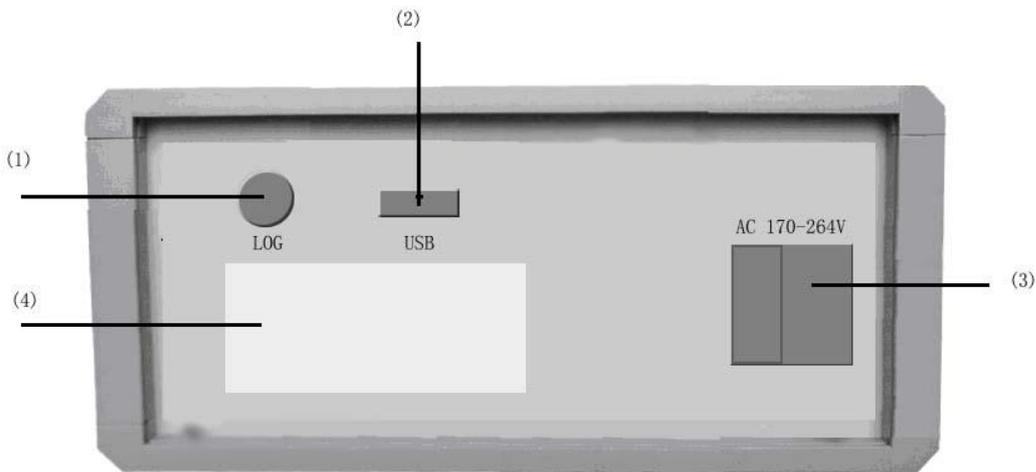
(Front Panel)

(-) Front Panel

- (1) Laser Symbol: it means the internal light source is valid.
- (2) Optical power on the return loss side (unit:dBm)
- (3) Measurement value of the return loss (unit:dBm)
- (4) Light source port and dust-proof cap
- (5) The symbol of laser grades.
- (6) Laser: use to select the wavelength
- (7) Zero: Zero the return loss value before the measurement
- (8) Ref: Calibrate the reference value of the return loss
- (9) BL/hold: Select the backlight or eliminate the dark current
- (10) λ:switch the wavelength

- (11) dB/w: Zero the insertion loss value before the measurement
Press this key for 3 seconds to switch the W unit and press again to return to dB unit.
- (12) The connector of power meter and dust-proof cap
- (13) LCD Screen of the insertion loss
- (14) Current wavelength of the insertion loss
- (15) Current wavelength of the internal light source
- (16) LCD Screen of the return loss
- (17) Measurement value of return loss
- (18) Optical power on the return loss side.

(二) Rear Panel

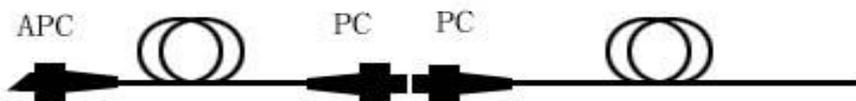


- (1) LOG: foot pedal jack for data logging
- (2) USB port
- (3) Socket and switch of the AC power
- (4) Product label

5. Operation Instructions

- (1) Select the calibration patch cord according to the measurement patch cord.

For example to test the FC/PC –FC/PC patch cords.

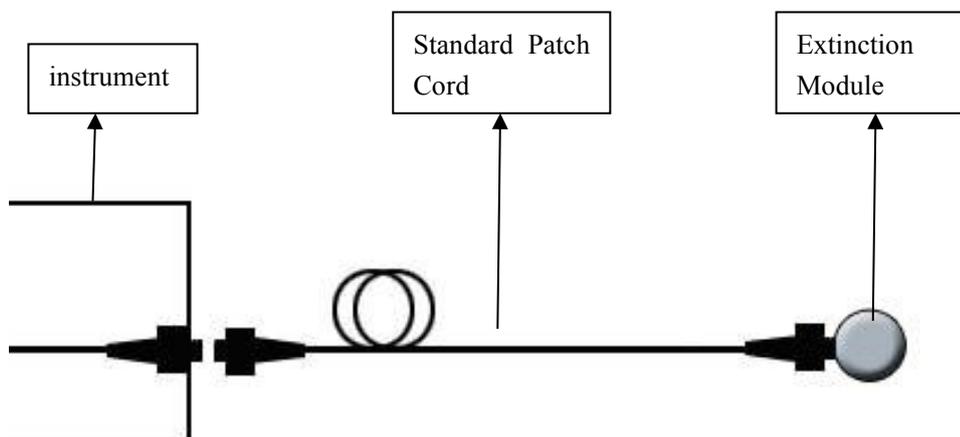


Calibration Patch cord

Measurement Patch cord

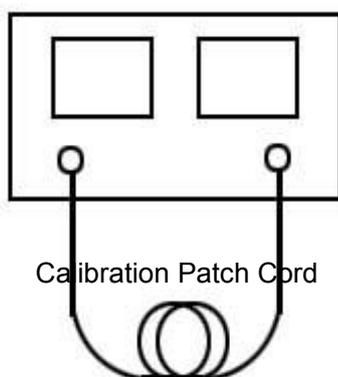
(2) Zero the return loss value before the test.

Press "Laser" key to select the wavelength. Connect starting end of the calibration patch cord to the port of the light source and insert the other end (terminating end) of the calibration patch cord in the extinction module. At this moment, the optical power value on the return loss side should be between -60dBm to -70dBm. Then press "ZERO" key until the LCD of the return loss display "-00-". If a measurement is to be made at another wavelength, press "laser" key to switch the wavelength and then press "ZERO" key again.



(3) Calibrate the reference value of the return loss before the test. Loosen and spread the wrapped calibration patch cord. Insert the terminating end of the calibration patch cord into the connector of the power meter, then press "Ref" key.

If a measurement is to be made at another wavelength, press "laser" key to switch the wavelength and then press "Ref" key again.

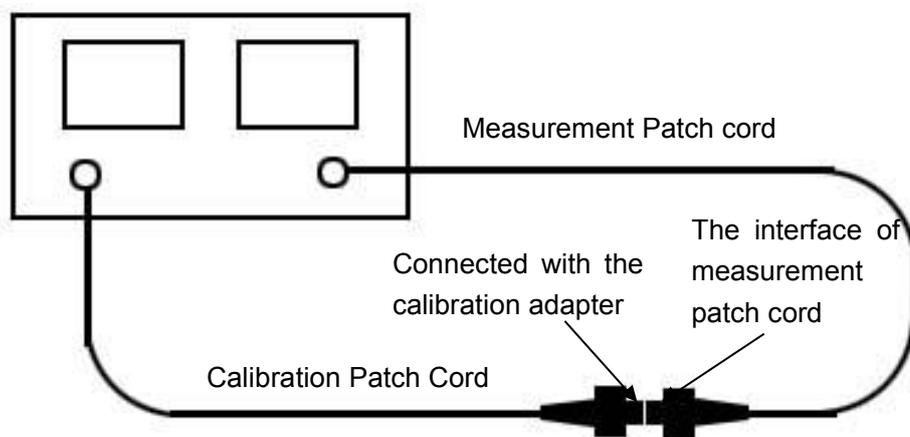


(4) Zero the insertion loss before the test. Insert the end of the calibration patch cord in the connector of the power meter, press “dB/w” key.

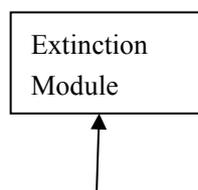
If a measurement is to be made at another wavelength, press “laser” key to switch the wavelength and then press “dB/w” key again.

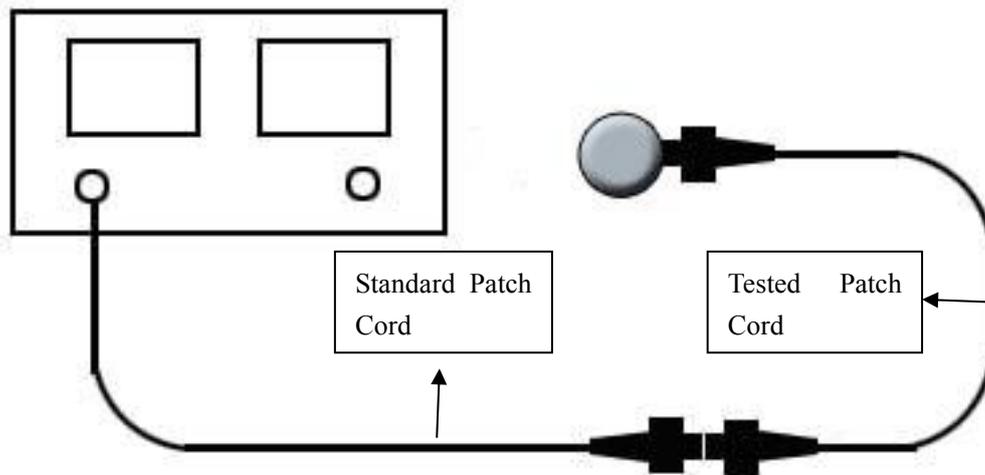
(5) Test the insertion loss. Use the calibration adapter to connect the end of the calibration patch cord to the starting end of the measurement patch cord. Plug the end of the measurement patch cord into the power meter’s port. Then the value displayed on IL side is the insertion loss of the measurement patch cord.

If a measurement is to be made at another wavelength, press “Laser” key to check another one’s test result.



(6) Test the return loss. Insert the tested patch cord in the extinction module, and then the value displayed on the RL side is the return loss of the measurement patch cord. If a measurement is to be made at another wavelength, press “Laser” key to check another test result.





(7) Do next test. Just repeat the step 5 and 6.

(8) If you change the calibration patch cord, you have to start the operation from step 1.

If you do not change the calibration patch cord, you just need to repeat the step 5&6 even the unit is turned off and re-started.

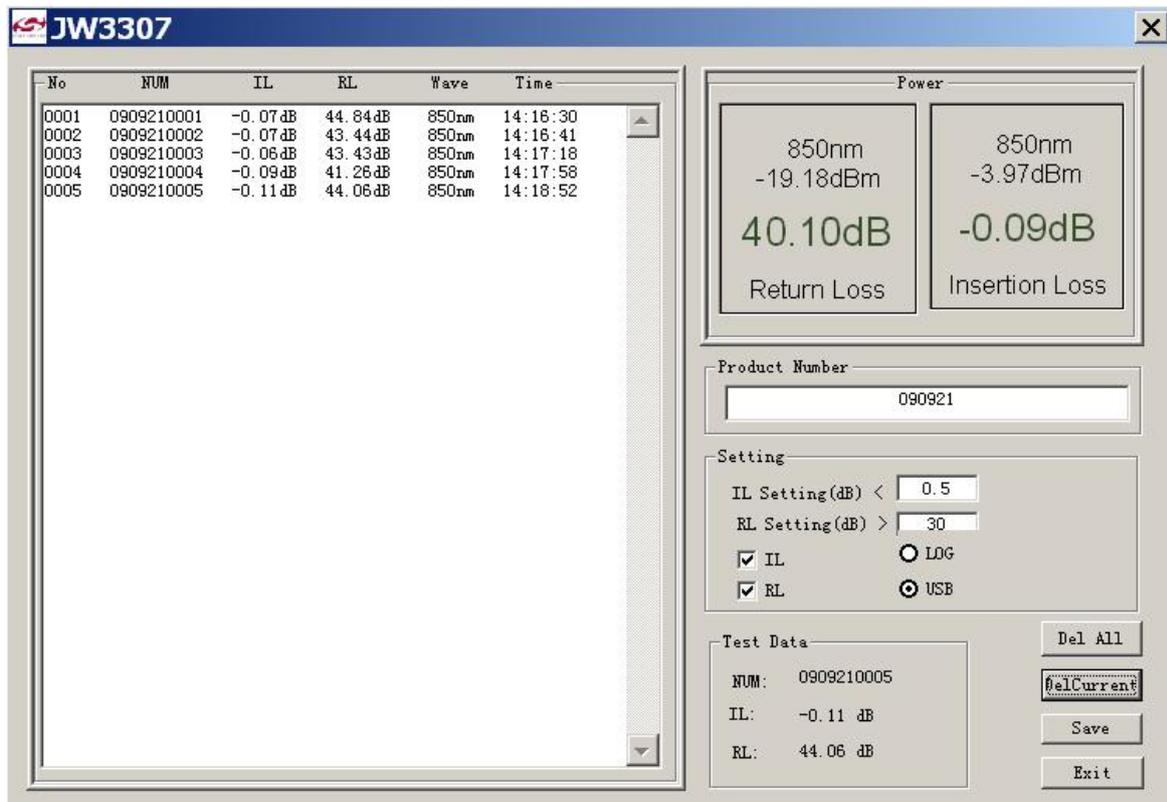
6 Logging test results

(1) Plug the foot pedal into the log jack on the rear panel of the instrument. And use the USB cable to connect the unit with the computer.

(2) Turn on the unit. The system will indicate you that there is new hardware and need to

add USB drive program. Insert the provided CD and add the USB drive program.

(3) Copy the HW3307.exe to your computer and run it.



- A.** Power Frame: it displays the insertion loss and return loss simultaneously.
- B.** Product Number: User could enter the product number freely. The default one is date. The product number is composed of the entered characters and 4-digit number which is automatically generated by the system.
- C.** Setting Frame: it displays the user self-setting data for the return loss or insertion loss, within which the test results will be regards as valid. You could select IL or RL test by ticking the option frame.
- D.** Test Data Frame: it displays the number, insertion loss and return loss of the current test record.
- E.** DELCURRENT: delete the current test record
- F.** DELALL: delete all the test records
- G.** Save: save the test results
- H.** Exit: exit from this program
- (4) If you want to store the test results during the measurement, step the foot pedal and then the test information will be displayed on the right interface of this software. The system

will decide whether the data is valid according to the use self-setting value of the insertion loss and return loss.

- (5) Click “Save” to store the test results after your test. The file’s format is “.txt”

7. Notice and Troubleshooting

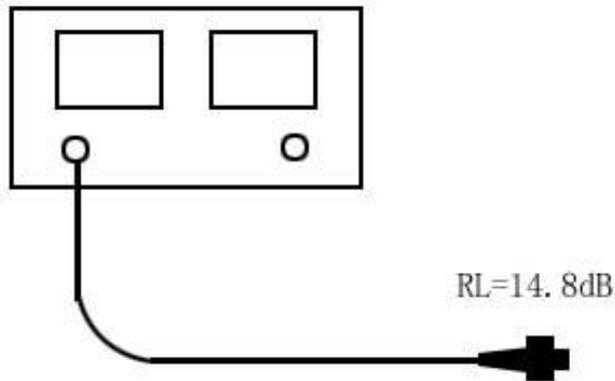
- (1) The output of the laser and erbium doped fiber amplifier is invisible laser radiation. Please do not directly look into the port of the light source and interface of the patch cord connected to the light source when it is in use.
- (2) This is a high accuracy instrument. The interface connected to the light source must be APC and clean with any scratches. Otherwise it would damage the surface of the internal light source.
- (3) We recommend you to inspect and clean the surface of the fiber before the test.
- (4) We recommend you to use the 1 meter length calibration patch cord.
- (5) We suggest you use a wrapping stick with the diameter 3-5mm and wrapping rings should be at least 5 rings.
- (6) After the long time use, the insertion loss test should not be very accurate caused by the internal dark current. We call it “system drift”. Under this situation, please cover the dust-proof cap tightly and press “BL/Hold” for 5 seconds until the screen displays “zero”. Then you could press “ λ ” to confirm the operation.
- (7) If the calibration patch cord is APC-PC, please plug the terminating end of calibration patch cord out of the power meter’s port after the step 4 (Zero the insertion loss before the test). At this moment, the return loss value should be 14.8dB. We take it as a correct value if it is between 14-17dB. Because there is also some error caused by the system and components. You could revise it or not.

The method of revision is

- 1) Press the “Ref” key for 5 seconds until the “Ref?” displays on the screen.
- 2) Press “ λ ” to confirm the operation.
- 3) Press any key to exit

If the value is larger than 17dB or smaller than 14dB, the possible reasons could be

- 1) The wrapped calibration patch cord is not been spread well
- 2) The connector of the calibration patch cord is dirty and need to be cleaned.
- 3) The surface of the calibration patch cord is scratched and need to be changed.
- 4) The surface of the internal light source is dirty and need to be cleaned.



(8) Press "Zero" before the step 2 (Zero the return loss value before the test.), if the wrong indication of "-E0-" displayed on the screen, it means the power meter value is too large, the possible reasons are

- 1) Please check the surface of the starting end of the calibration patch cord to ensure it is clean and without any scratches.
- 2) The calibration patch cord is broken and need to be changed.
- 3) If the calibration patch cord is totally ok, then we should inspect the PC surface of internal light source with a microscope. Screw off the power meter's port and pull out it gently to check whether it is dirty or scratched.

(9) Before the step 2 (Zero the return loss value before the test.), press "Zero" key. If the power value on the screen is larger than -30dBm, please solve it by referring to the above operation.

(10) Before the step 4 (Zero the insertion loss value before the test.), press "dB/w" key. If the wrong indication of "-E1-" displayed on the screen, it means the output power of light source is too low, the possible reasons are

- 1) Bad connection between the terminating end of the calibration patch cord and power meter.
- 2) The calibration patch cord is broken by the bad wrapping and need to be replaced.
- 3) The optical path of internal light source is defective.

8. Maintenance

- 1) Keep the surface of the sensor free from oil, dirt, or other contamination to ensure proper operation. Do not use the unclean and non-standard adapter or insert the badly polished interface.
- 2) Try to use the same kind of adapter.
- 3) Please use dust-proof cap to keep it clean when it is not in operation
- 4) Please carefully plug in and pull out connectors to avoid it being scratched.
- 5) Please regularly and gently clean the surface of the sensor with special cleaning swabs

9. Quality of Services

Caution: Repair it in the field is Forbidden.

18 months warranty for Our HW-3307C Insertion loss/Return loss test station

We warrant that HW-3307C Insertion loss/Return loss test station will be free from defects in material and workmanship for 18 months. Should the device fail at any time during this warranty period, we will, at its sole discretion, replace, and repair or refund the purchase price of the product. The worth of the repair or replace will not be higher than purchasing price of this unit.

9.2 If the problems occurred can not be solved by the trouble shooting methods, please contact us or the local distributor directly.

9.3 This warranty is limited to defects in our production, workmanship or material, we will repair or replace the unit free of charge. This warranty only applies to the unit under normal

operation without any damage or wrong operation.

The warranty does not include the following problems:

1. Repair the unit by yourself without our official authorization.
2. Wrong operation or accident,

9.4 As to the freight cost caused by repair or replace the unit under the warranty, it will be shared by the customer and Fibretool.

Warranty Registration Card

A warranty registration card is included with the original shipment of equipment. Please take a few moments to fill out the card and mail or fax it to us to ensure proper initiation of your warranty term and our maintenance, calibration or tracking of this unit.

Warranty Registration Card

Serial Number: _____
Model Number: _____
Date of Purchase: _____
Company Name: _____
Company Address: _____
TEL: _____ FAX: _____
E-mail: _____

Note: Please fax this note within one month from the date of receiving units.

YOUR OPINION

Do you have any comments on the quality of this product or the service from Fibretool?
