

Optical Wavelength Laboratories

ZOOM 2 Series Test Kits

Optical Loss Testing

Quick Reference Guide

For part numbers:
KIT-Z2-WSSDxx
KIT-Z2-WSVSDxx
KIT-Z2-WSMDSDxx



NOTICE TO NEW USERS:

All personnel testing optical fibers should be adequately trained in the field of fiber optics before using any fiber optic test equipment.

If the user is not completely familiar with testing fiber optics, they should seek professional training. Such training can be acquired from a variety of sources, such as local hands-on training classes.

Valuable information about fiber optic testing can also be gathered from reading printed literature carefully or by thoroughly reading supplied operations manuals.

Fiber optic testers vary from other types of test equipment due to issues such as:

- 1) standards-based testing
- 2) proper fiber optic test procedures (FOTPs)
- 3) "zeroing" or referencing of power levels
- 4) determining the correct link budget to pass or fail by

Complete understanding of each of these issues is critical for performing proper fiber optic tests.

GETTING STARTED

Thank you for your purchase of this OWL certification test kit. Included in this kit is a ZOOM 2 optical power meter and a WaveSource singlemode fiber optic laser source. This quick reference guide will assist you in setting up your test kit for a standards-based certification test.

BEFORE YOU TEST

Prior to performing a certification test, there are a few things you need to know about your link:

- *Fiber Type*
- *Fiber Length*
- *Number of Connections (i.e. patch panels)*
- *Number of Splices*
- *Fiber Cabling Standard*
- *Connector Type*

It is also important to understand the definition of a fiber optic link as it pertains to the ZOOM 2:

A link is a group of fibers that have the same characteristics, and follow the same pathway from one end to the other.

Also, ensure that your patch cable connectors match the patch panel ports on the link under test.

QUICK REFERENCE GUIDES

Optical Power Meter: **ZOOM 2**

Fiber Optic Light Source: **WaveSource Series Singlemode Source**

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This quick reference guide demonstrates the procedure for performing a dual-wavelength insertion loss test at both 1310nm and 1550nm.



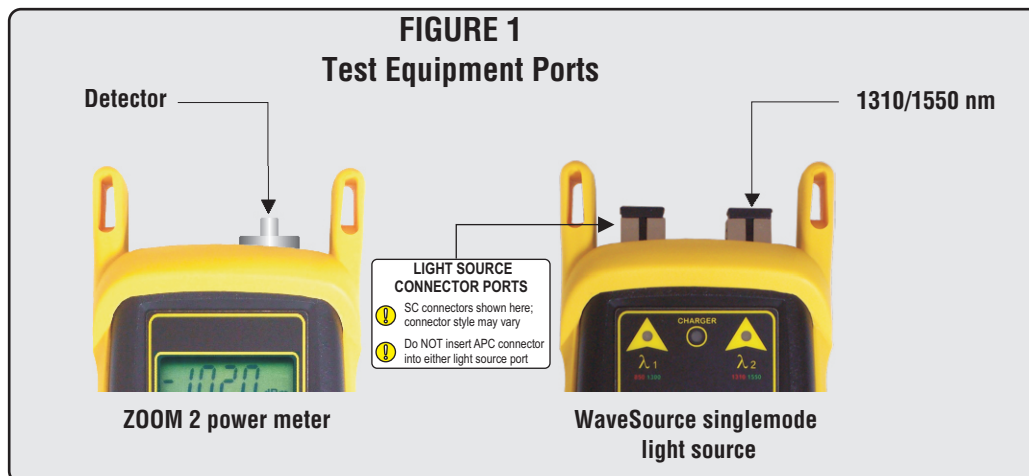
to test at only one wavelength, ignore the steps related to the other wavelength

There are three main parts to performing an insertion loss test:

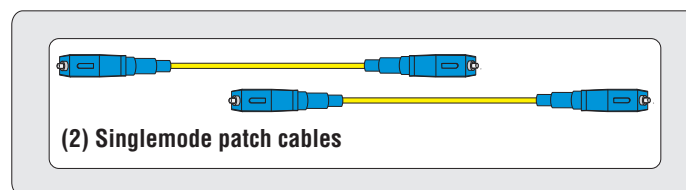
- PART 1** verify proper operation of the test equipment and patch cables;
- PART 2** set a reference for the wavelength(s) used during fiber link measurement; and
- PART 3** take measurements.

EQUIPMENT PORTS

Figure 1 shows the ports used during this procedure. These ports may vary depending upon the model of equipment.



REQUIRED ACCESSORIES



PART 1 - VERIFY PROPER OPERATION OF THE EQUIPMENT

- 1 Connect the power meter and light source together with the first patch cable as shown (Figure 2).
- 2 Press to power on the WaveSource singlemode light source. By default, the light source powers on to the MM PORT (left-hand side).
- 3 Press to switch the WaveSource to the SM PORT. The right-hand indicator LED should be **RED**.

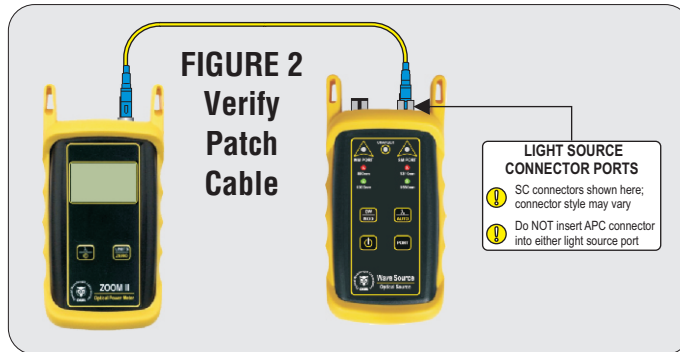
QUICK REFERENCE GUIDES

Optical Power Meter: **ZOOM 2**

Fiber Optic Light Source: **WaveSource Series Singlemode Source**

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PART 1 - VERIFY PROPER OPERATION OF THE EQUIPMENT, cont.



- 4 Press to power on the ZOOM 2.
- 5 Press on the ZOOM 2 several times until the wavelength is set to 1310nm.
- 6 The ZOOM 2 should show approximately -10.00 dBm. If the reading is below -11.00 dBm, the patch cable should be replaced.
- 7 Once proper operation has been verified, remove the first patch cable from both units and set it aside.
- 8 Connect the power meter and light source together with the second patch cable as shown in Figure 2.
- 9 The ZOOM 2 should show approximately -10.00 dBm. If the reading is below -11.00 dBm, the patch cable should be replaced.
- 10 Once proper operation has been verified, continue on to the next step.

PART 2 - SET REFERENCE

- 11 With the ZOOM 2 and WaveSource still set to 1310nm, press and hold button on the ZOOM 2 to set it the 1310nm reference.

The ZOOM 2 display now also should change to show readings in 'dB', and will be approximately 0.00 dB.

- 12 Press so that the ZOOM 2 is set to '1550nm'.
- 13 Press on the WaveSource once to set it to '1550nm'.
- 14 Press and hold on the ZOOM 2 to set the reference for 1550nm. Again, the ZOOM 2 display shows readings in 'dB', and will be approximately 0.00 dB.

PART 3 - TAKE READINGS

- 15 Leaving the patch cable attached to the WaveSource, remove the patch cable from the detector port on the ZOOM 2, and bring both units to the opposite ends of the link under test.


QUICK REFERENCE GUIDES

Optical Power Meter: **ZOOM 2**

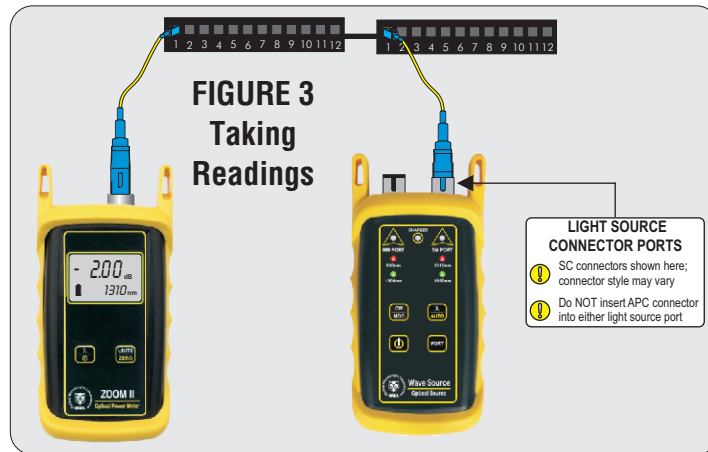
Fiber Optic Light Source: **WaveSource Series Singlemode Source**





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PART 3 - TAKE READINGS, cont.

 Remember to bring a patch cable with the ZOOM 2.

- 16 Connect the ZOOM 2 and WaveSource to the link under test as shown in Figure 3 below.



- 17 Press  on the ZOOM 2 several times until the wavelength is set to 1310nm.
- 18 Press  on the WaveSource once to set the wavelength is to 1310nm (the red LED will now be lit).
- 19 Record the 1310nm 'dB' loss value for the current fiber under test.
- 20 Disconnect both patch cables from the patch panels and move to the next port on the patch panels.
- 21 Repeat 19 and 20 for each fiber in the cable under test until all fibers have been tested at 1310nm.
- 22 Press  on the ZOOM 2 two times until the wavelength is set to 1550nm.
- 23 Press  on the WaveSource once to set the wavelength is to 1550nm (the green LED will now be lit).
- 24 Record the 1550nm 'dB' loss value for the current fiber under test.
- 25 Disconnect both patch cables from the patch panels and move to the next port on the patch panels.
- 26 Repeat 24 and 25 for each fiber in the cable under test until all fibers have been tested at 1550nm.