

Optical Wavelength Laboratories

ZOOM 2 Series Test Kits

Optical Loss Testing

Quick Reference Guide

For part numbers:
KIT-Z2-L2xx
KIT-Z2-L213xx
KIT-Z2-L215xx
KIT-Z2-D2xx-L2xx
KIT-Z2-D285xx-L213xx



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 Laser OWL 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: **LASER OWL Series Singlemode Sources**

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



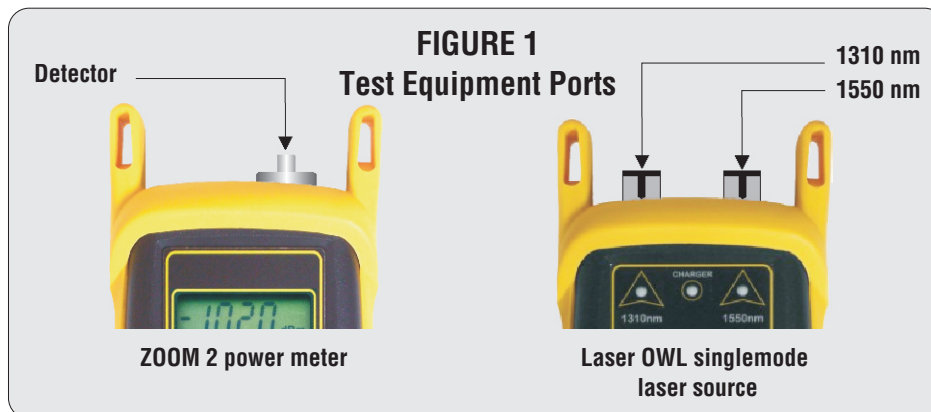
to test at only one wavelength, ignore the steps related to the other wavelength

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

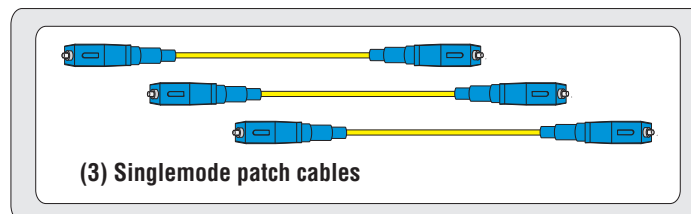
- PART 1** verify proper operation of the test equipment and patch cables;
- PART 2** set a reference for the wavelength(s) used during fiber link measurement; and
- PART 3** take measurements.

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 in Figure 2.
- 2 Press  to power on the Laser OWL singlemode laser source. The 1310nm port powers on first by default.
- 3 Press  to power on the ZOOM 2 optical power meter.
- 4 Press  several times on the ZOOM 2 until the wavelength is set to 1310nm.

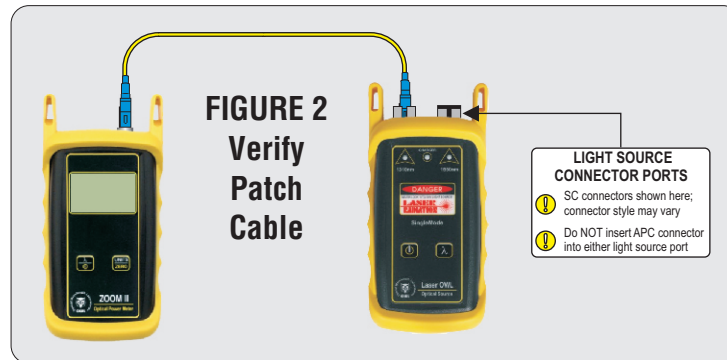
QUICK REFERENCE GUIDES

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



- 5 The ZOOM 2 should show approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.
- 6 Once proper operation has been verified, remove the first patch cable from both units and set it aside.
- 7 Connect the power meter and light source together with the second patch cable as shown in Figure 2.
- 8 The ZOOM 2 should show approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.
- 9 Once proper operation has been verified, remove the second patch cable from both units and set it aside.
- 10 Connect the power meter and light source together with the third patch cable as shown in Figure 2.
- 11 The ZOOM 2 should show approximately -10.00 dBm. If the reading is below -12.00 dBm, the patch cable should be replaced.
- 12 Once proper operation has been verified, continue on to the next step.

PART 2a - SET REFERENCE (1310nm)

✓ **Setting a reference is commonly referred to as “zeroing”.**

- 13 With the power meter and light source still connected as shown in Figure 2, press and hold **UNITS ZERO** button on the ZOOM 2 to set the reference for 1310nm.

The ZOOM 2 display should change to show readings in 'dB', and the power reading should be approximately 0.00 dB. This means that the meter and light source have been successfully “zeroed” at 1310nm.



🔑 Testing at 1310nm ONLY – skip to **PART 3a**

🔑 Testing at 1310 and 1550nm – continue with **PART 2b**

QUICK REFERENCE GUIDES

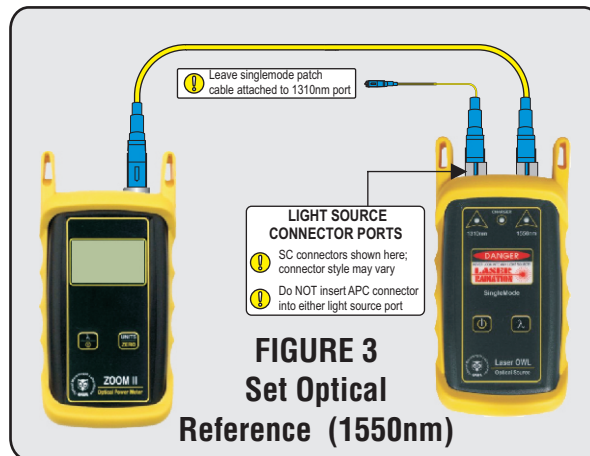
Optical Power Meter: **ZOOM 2**

Fiber Optic Light Source: **LASER OWL Series Singlemode Sources**

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PART 2b - SET REFERENCE (1550nm)

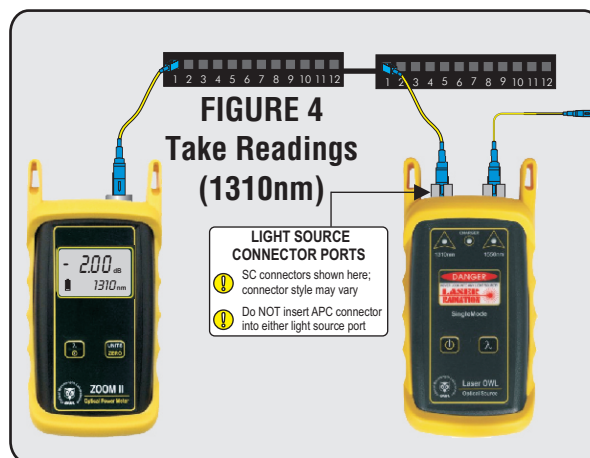
- 14 Connect a singlemode patch cable to the 1550nm port on the Laser OWL and the detector port on the ZOOM 2 (Figure 3).



- 15 Press $\frac{\lambda}{0}$ several times until the ZOOM 2 is set to 1550nm.
- 16 Press and hold **UNITS ZERO** on the ZOOM 2 to set the reference for 1550nm. The ZOOM 2 display should show a power reading of approximately 0.00 dB. This means that the meter and light source have been successfully “zeroed” at 1550nm.

PART 3a - TAKE READINGS (1310nm)

- 17 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.
- 18 Connect the ZOOM 2 and Laser OWL to the link under test as shown in Figure 4 below.



- 19 Press $\frac{\lambda}{0}$ several times until the ZOOM 2 is set to 1310nm.

QUICK REFERENCE GUIDES

Optical Power Meter: **ZOOM 2**

Fiber Optic Light Source: **LASER OWL Series Singlemode Sources**

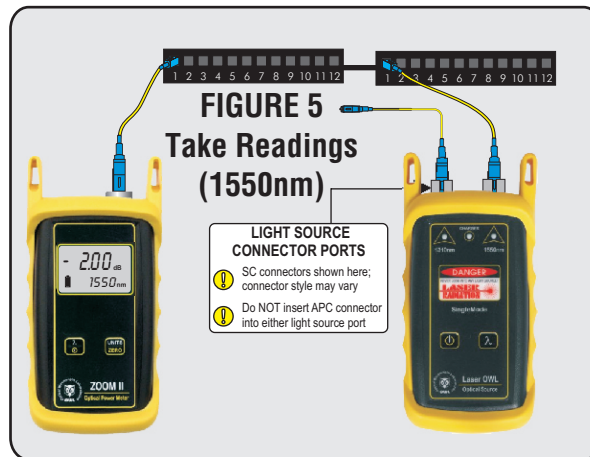
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PART 3a - TAKE READINGS (1310nm), cont.

- 20 Record the reading for the current fiber under test.
- 21 Disconnect the patch cables from both ends of the patch panel and move to the next port on the patch panel.
- 22 Repeat 20 and 21 for each fiber in the cable under test until all fibers have been tested at 1310nm.

PART 3b - TAKE READINGS (1550nm)

- 23 For testing 1550nm, again connect to the first fiber under test, except this time use the patch cable connected to the 1550nm port (Figure 5).



- 24 Press $\frac{\lambda}{0}$ several times until the ZOOM 2 is set to 1550nm.
- 25 Record the reading for the current fiber under test.
- 26 Disconnect the patch cables from both ends of the patch panel and move to the next port on the patch panel.
- 27 Repeat 25 and 26 for each fiber in the cable under test until all fibers have been tested at 1550nm.

(end of procedure)