Optical Wavelength Laboratories

Silicon ZOOM 2 Series Test Kits

Optical Loss Testing

Quick Reference Guide

For part numbers:
KIT-Z2S-D285st
KIT-Z2S-D285sc

Quick Reference Guide
Silicon ZOOM 2 Series
Firmware Version 2.56

Revision 1.3
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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 optical loss test kit. Included in this kit is a Silicon ZOOM 2 optical power meter and a Dual OWL 850 multimode fiber optic light source.

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 Silicon 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

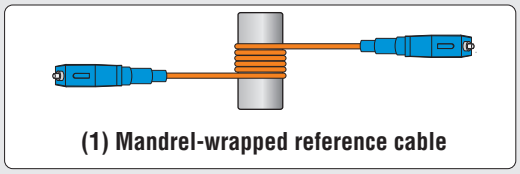
Optical Power Meter: **SILICON ZOOM 2**
Fiber Optic Light Source: **DUAL OWL 850**

This quick reference guide provides instructions for performing a fiber optic insertion loss test using a Silicon ZOOM 2 optical power meter and a Dual OWL 850 multimode fiber optic light source.

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.

REQUIRED ACCESSORIES



(1) Mandrel-wrapped reference cable



(1) Straight patch cable

ensure test cables have the proper core size and connector type

multimode reference cables must be wrapped and secured around a mandrel as required by national and international Fiber Optic Test Procedures (Figure 1)

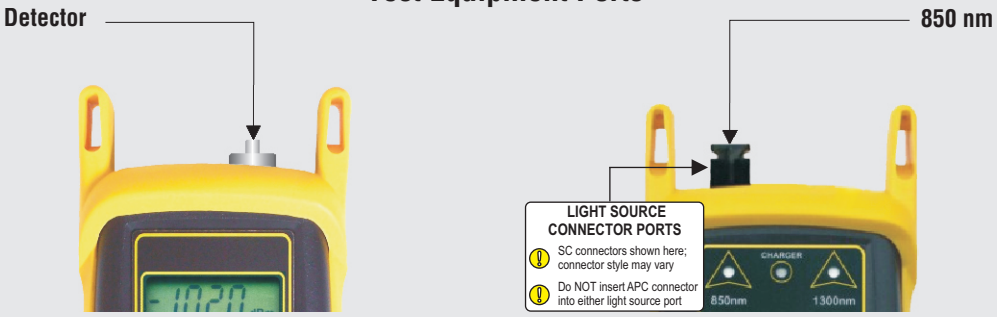
Core Size	50/125 µm	62.5/125 µm
Diameter	0.9 in.	0.7 in.
Wraps	5	5

Figure 1

EQUIPMENT PORTS

Figure 2 shows the ports used during this procedure. These ports may vary depending upon the model of equipment.

FIGURE 2
Test Equipment Ports



Silicon ZOOM 2 power meter

Dual OWL 850 multimode light source

Optical Power Meter: **SILICON ZOOM 2**
Fiber Optic Light Source: **DUAL OWL 850** **PAGE 2 of 4**

PART 1 – VERIFY PROPER OPERATION OF THE EQUIPMENT

1. Connect the power meter and light source together with the straight patch cable (Figure 3).

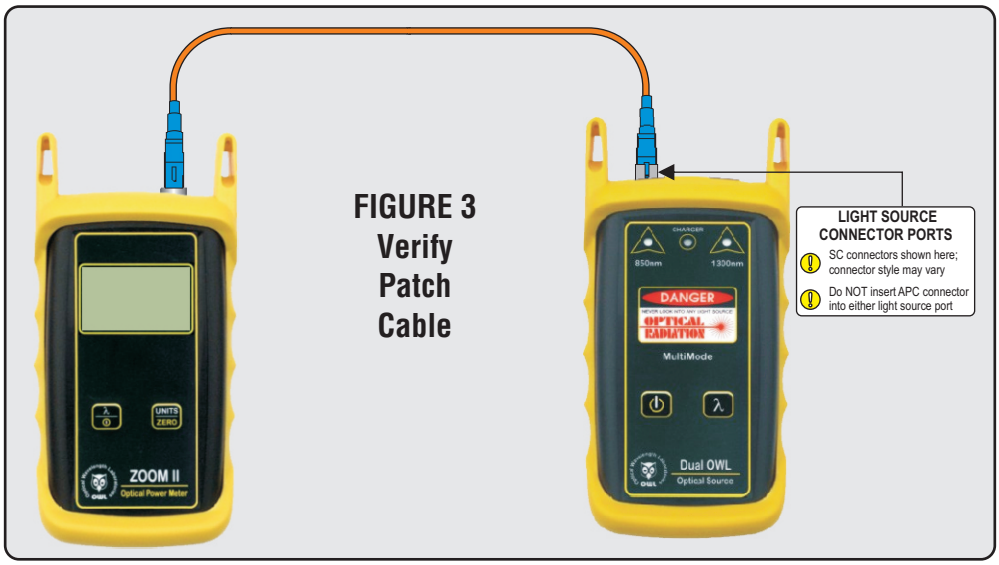


FIGURE 3
Verify Patch Cable

2. Press ⏻ to power on the Dual OWL 850 multimode light source. The left-hand indicator LED will be lit.
3. Press λ to power on the Silicon ZOOM 2 optical power meter.
4. Press λ on the Silicon ZOOM 2 so that the wavelength is set to **'850nm'**.
5. If necessary, press UNITS ZERO so that the Silicon ZOOM 2 is set to **'dBm'**.
6. Compare the reading on the Silicon ZOOM 2 to Table 1 for acceptable power levels. The patch cable should be replaced if it is below the acceptable power level.

Core Size	Acceptable Power Level	Replace at
62.5/125 µM	-19.0 to -21.0 dBm	-21.00 dBm
50/125 µM	-22.0 to -24.0 dBm	-24.00 dBm

TABLE 1

7. Once proper operation has been verified, remove the straight patch cable from both units and set it aside.

(continue procedure on next page)

Optical Power Meter: **SILICON ZOOM 2**
Fiber Optic Light Source: **DUAL OWL 850** **PAGE 3 of 4**

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

8 Connect the power meter and light source together with the mandrel-wrapped patch cable (Figure 4).

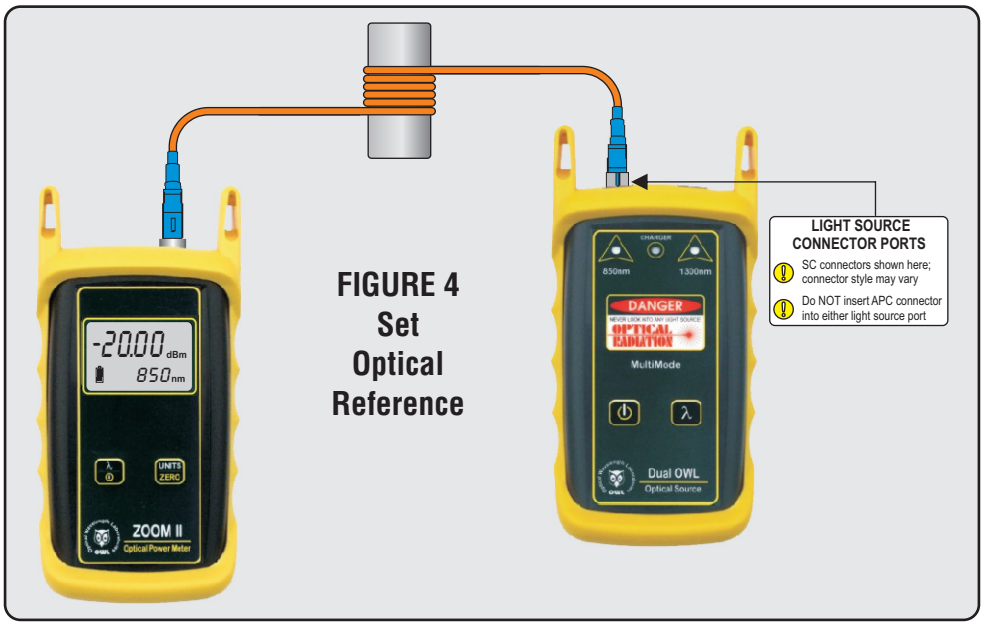


FIGURE 4
Set Optical Reference

9 Compare the reading on the Silicon ZOOM 2 to Table 1 for acceptable power levels. The patch cable should be replaced if it is below the acceptable power level.

10 Without disconnecting the mandrel-wrapped patch cable, continue on to the next step.

PART 2 – SET REFERENCE

Setting a reference is commonly referred to as "zeroing".

11 Ensure the power meter and light source are still connected together (Figure 4), then press and hold UNITS ZERO on the Silicon ZOOM 2 to set the reference for 850nm.



The Silicon 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 850nm.

(continue procedure on next page)

Optical Power Meter: **SILICON ZOOM 2**
Fiber Optic Light Source: **DUAL OWL 850** **PAGE 4 of 4**

PART 3 – TAKE READINGS

12 Disconnect the patch cable from the detector port on the Silicon ZOOM 2.

do not disconnect the mandrel-wrapped patch cable from the Dual OWL 850 until all fibers in the link have been tested

13 Connect both units with their appropriate test cables to opposite ends of the link under test (Figure 5).

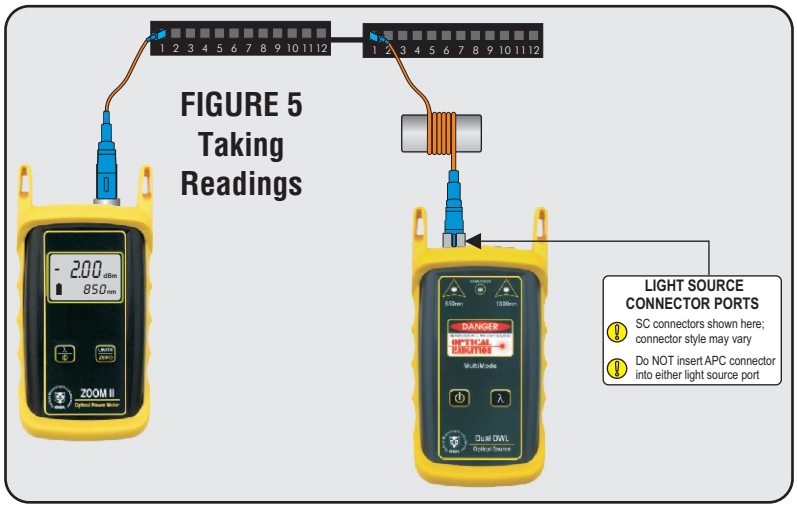


FIGURE 5 Taking Readings

14 Record the reading for the current fiber under test.

15 Disconnect the patch cables from both ends of the patch panel and move to the next port on the patch panel.

16 Repeat 14 and 15 for each fiber in the cable under test until all fibers have been tested at 850nm.

(end of procedure)