



Noyes Test and Inspection Division
16 Eastgate Park Road, Belmont, NH 03220 USA
TEL: (800) 321-5298 (NORTH AMERICA) TEL: (603) 528-7780
FAX: (603) 528-2025 WEB: www.AFLglobal.com

Authorized Service Center

OLS1D LED Laser Light Source with Wave ID Verification and Calibration



Manufacture Dates: 4/2007 -



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History of Revisions

Document Number	Issue Date	Revision Number	Action	Description
OLS1-00-3001	7/19/2012	A	Update/Release	New format D13-0180

Relevant Advisory Bulletins

Refer to the following Advisory Bulletins for the most current information about product revisions which have affected the content of this manual.

Advisory Bulletin Number	Issue Date	Revision Number	Service Manual Content Affected

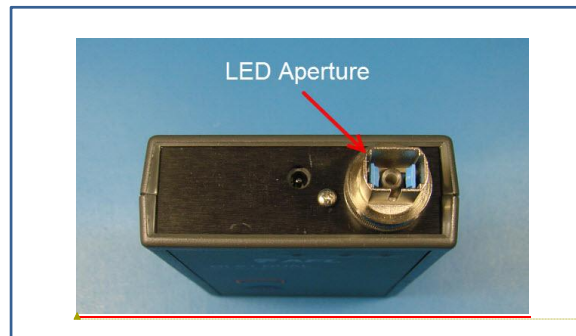


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ENVIRONMENT, SAFETY, AND HEALTH

Do not look into test port aperture while operating unit!

The test port emits infrared LED radiation. The output from the test port does not pose a hazard; however, it is good practice to avoid exposure.



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NOTE: FOR THE LATEST SOFTWARE UPDATES AND INSTRUCTIONS LOG ONTO:
WWW.AFLGLOBAL.COM AND DOWNLOAD THE APPROPRIATE FILES.



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1. EQUIPMENT AND SKILLS

Equipment

The following equipment is required to perform tasks outlined in this document:

Inspection Scope: VS300, OFS300, or equivalent.

OPM4-6D: Optical Power Meter

Fluke 8060A: Digital Multimeter (or equivalent)

4050-00-0229PR: Noyes DC Power Adapter

OLTK-00-1ENG: Quick Reference Guide

OLTK-00-1000: User Guide

Various Adapter Caps

Multimode (MM) Cables

Ground Strap

Antistatic Mat

Optical grade cleaning supplies

CLNG-00-1ENG: Fiber Optic Cleaning and Inspection Quick Reference Guide

Skills

The following skills are required to perform tasks outlined in this document:

- Read, write, and comprehend English.
- Knowledge equivalent to or greater than, an Electronic Technician by degree or experience.
- Has worked as an Electronic Technician with Test and Measurement equipment.
- Know how to fusion splice fiber optic cable.
- Experience with handling bare fiber preferred.

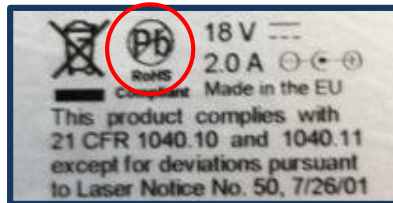
Electro Static Discharge (ESD)



The LS1D has components that are static sensitive. Proper ESD practices must be maintained at all time.

Restrictions of Hazardous Substances (RoHS)

It may appear on the back of the unit, as well as on individual circuit boards.



2. GENERAL TROUBLESHOOTING, INSPECTION, AND TESTING

To troubleshoot general issues, inspect, or test unit:

1. Inspect unit for visible damage.
2. Inspect test port end face for cleanliness, and for any damage.
3. Verify unit powers on.
4. Verify all keys on the keypad properly function.
5. Verify the unit has the latest software.

If an issue arises that prevents completion of these steps, send unit to AFL Belmont Service Facility at this address:

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16 Eastgate Park Drive
Belmont, NH USA 03220
+1-603-528-7780
+1-800-321-5298

3. OPTICAL PORT INSPECTION AND CLEANING

To inspect and clean Optical Ports:



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1. Remove Adapter Cap from test port.
2. Inspect for broken Split sleeves.

Note: This is a very common failure!

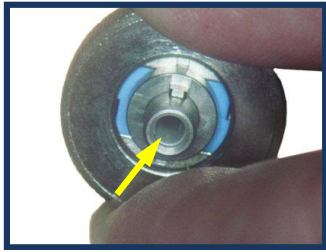


Image 1: Split sleeve

3. **Verify unit is off** and inspect ferrule with VS300 Inspection Scope.
4. Clean ferrule with optical grade wipe and 99% Isopropyl Alcohol (IPA).

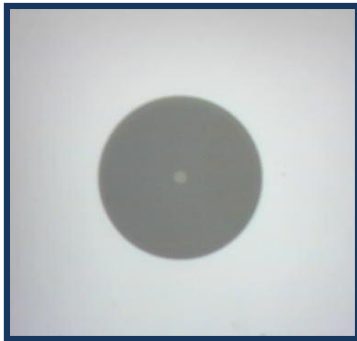


Image 2: Clean Ferrule (SM ferrule shown)

5. If OLS test port ferrule is damaged and cannot be cleaned, replace internal FC Pigtail

4. OLS OUTPUT VERIFICATION

To verify OLS Output:

1. Inspect and clean test port. **Refer to Section 3, Optical Port Inspection and Cleaning.**
2. Use a 62.5/125 μ m multimode jumper cable to connect reference OPM to OLS output port.
3. Power OPM on and set to 850 nm.
4. Power unit on and set output to 850/1300 nm (WaveID).
5. Verify OPM changes to 850 and 1300.
6. Output power should be -19 dBm on both wavelengths.
7. Change OLS to 850 nm. Verify OPM changes to 850 nm. Note output power reading.
8. Power unit off.

5. OLS OUTPUT CALIBRATION

To calibrate OLS Output:

1. Inspect and clean test port. **Refer to Section 3, Optical Port Inspection and Cleaning instructions.**
2. Connect reference OPM to OLS output port via a 62.5/125 μ m multimode jumper cable. (See **Figure 3 for test setup.**)
3. Turn on the reference OPM and set to measure 850nm.
4. Press and hold the [850nm/1300nm] key and [PWR] key simultaneously. (See **Figure 2.**)
5. Release the [PWR] key.
6. Release the [850nm/1300nm] key once the Low Battery LED turns on.
7. Verify the 850 LED is illuminated on UUT's overlay.
8. By pressing the [850nm/1300nm] key, adjust the output power of the 850nm laser to -19dBm. (Press the [PWR] key to toggle between adjusting power up or down.)
9. Press and hold the [PWR] key for 5 seconds to set the UUT to 1300nm. Verify the 1300 LED is illuminated on the UUT's overlay.
10. Set the reference OPM to measure 1300nm.
11. By pressing the [850nm/1300nm] key, adjust the output power of the 1300nm laser to -19dBm. (Press the [PWR] key to toggle between adjusting power up or down.)



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12. Press and hold the [PWR] key for 5 seconds to exit the calibration mode.
13. Cycle the power on the UUT.

6. SUMMARY

1. Clean optical ports.
2. Functionally test unit.
3. Record ***Before*** data on Calibration form.
4. Verify OLS output power is -19 dBm on both wavelengths.
5. Verify WaveId output
6. Record ***after*** data on Calibration form.

If these steps cannot be completed, or a fault not listed in this manual is found, send the unit to the following address:

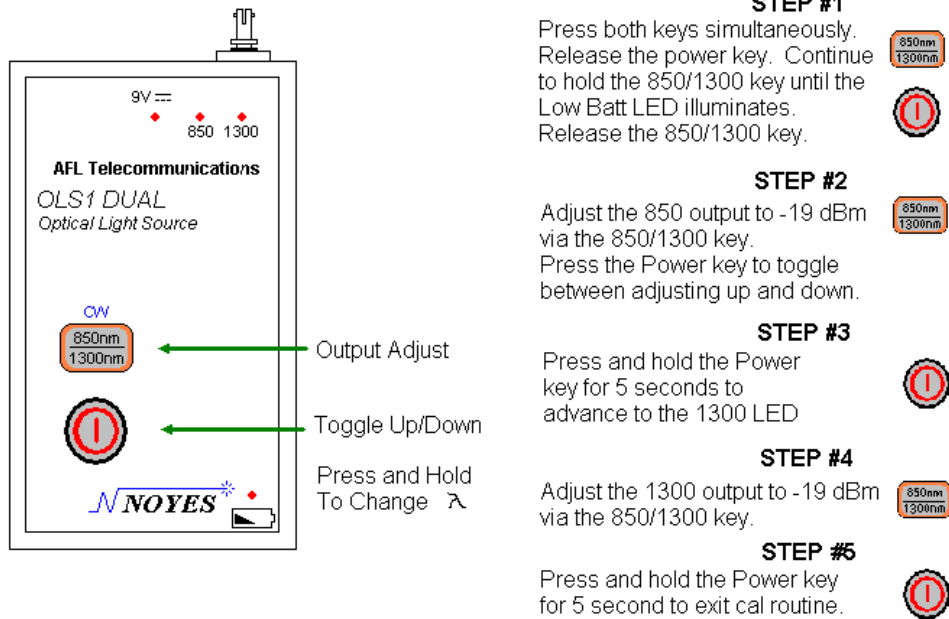
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FIGURE 1: OLS OUTPUT CALIBRATION





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FIGURE 2: OLS VERIFICATION/CALIBRATION TEST SETUP





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FIGURE 3: TROUBLESHOOTING TABLE

Problem	Possible Cause	Corrective Action
1. Unit does not power on.	a. Batteries	- Remove battery and measure cell voltage. - If okay, reinstall. If voltage below 1.0 Vdc per cell, replace batteries. - Power unit on, If unit does not power on, cause is not batteries.
3. LED output too low/no output	a. UCI Adapter	Inspect split ceramic sleeve for damage. If broken, replace.
	b. Test port connector/ferrule	- Inspect test port connector ferrule with scope for cleanliness/damage. - If dirty, clean connector and rescope.
	d. LED	Measure output power for each wavelength at the test port. Output in CW mode should be ~ -19dBm.
4. LED output too high	a. Accidental reset to default calibration values	Recalibrate output. If output(s) can be set to proper level, then the check is done.