

OPM1 and OLS1 Series Quick Reference Guide

It is important to keep all optical connections and surfaces clean to ensure accurate measurements and operation. Always clean all test jumpers before conducting test procedures outlined in this guide. Follow your company's approved cleaning procedures.

OLS1 LED Light Source

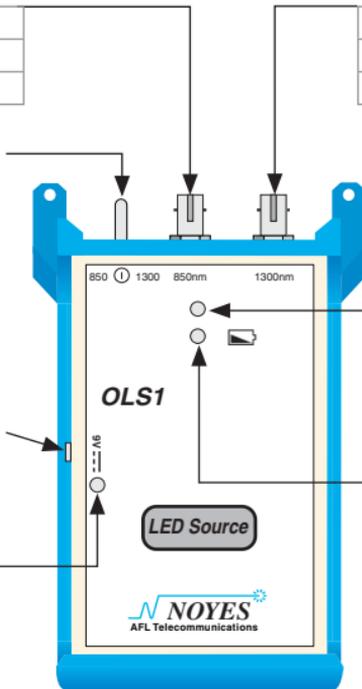
Model	Output port
OLS1-1C	660 nm
OLS1-2C	850 nm

Model	Output port
OLS1-1C	850 nm
OLS1-2C	1300 nm

Wavelength/Power Off switch - selects optical wavelength or disables unit (ⓐ position).

Power port - interface for an AC power adapter.

Power indicator - lights up when the correct AC power adapter is connected.



Active Output indicator - lights up when one of the output ports is ON.

Low battery indicator - when ON, indicates a low battery condition. Battery replacement is required.

OPM1 Optical Power Meter

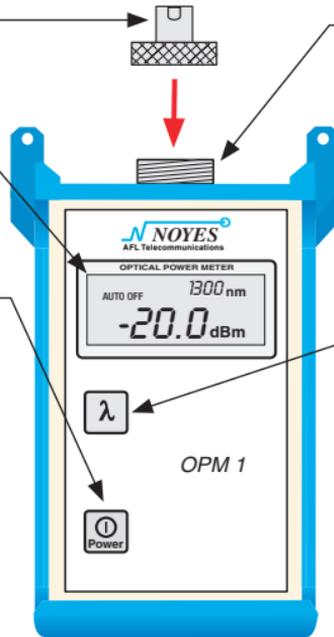
Adapter cap - OPM1 must be equipped with an adapter cap.

Display - shows measured power and calibrated wavelength.

Power key - press to turn the unit On/Off. OPM1 turns off automatically five minutes after the last key press. To disable the Auto Off feature, press and hold this key during power up until the letter P appears on the display.

Optical input (adapter cap mount) - accepts AFL-Noyes thread-on adapter caps. Adapter caps for different connector styles are available from AFL-Noyes.

λ Wavelength key - press to select the calibrated wavelength. Holding the λ key until the word HELD appears, briefly displays the percentage of battery life remaining.



Low battery indicator - if shown, indicates a low battery condition.

Auto Off indicator - if shown, OPM1 automatically turns off five minutes after last key press.

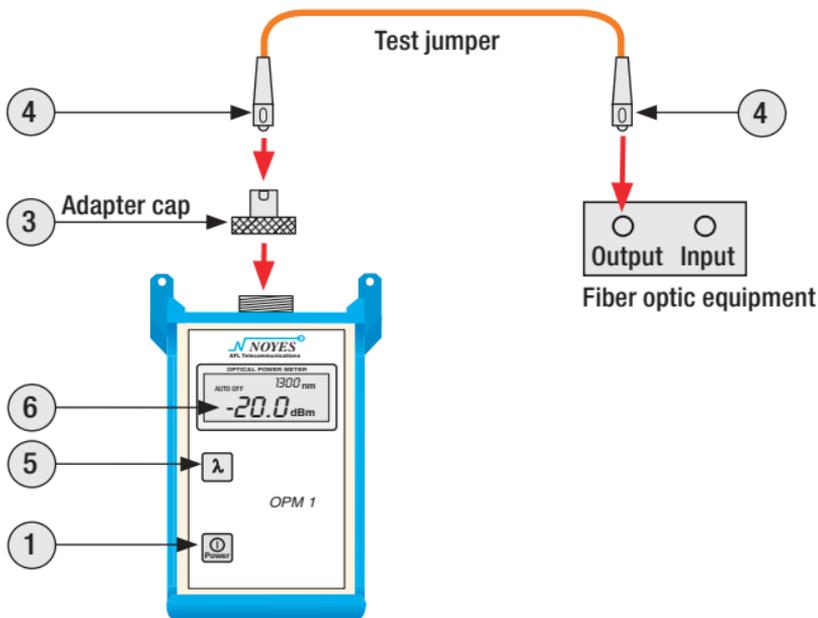
Wavelength indicator - shows the selected test wavelength.

Power reading - displays measured power [dBm]. If power is too high or low for the OPM1 to measure, this field shows HI or LO.



Measuring Optical Power

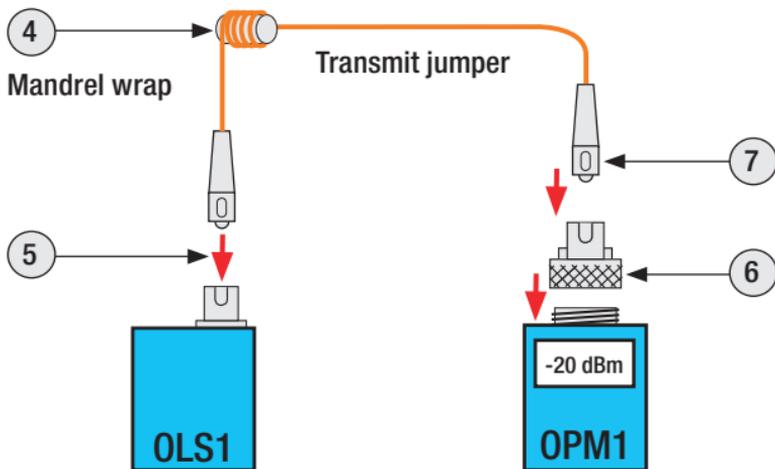
1. Turn on the OPM1 optical power meter.
2. Select the appropriate fiber optic test jumper. The fiber type of this jumper must be the same as the fiber type normally connected to the output to be measured.
3. Mount the appropriate adapter cap on the OPM1 optical input. This adapter cap must match the connector on the end of the test jumper you will connect to the OPM1.
4. Connect one end of the test jumper to the OPM1 (adapter cap) and the other end to the optical output to be measured.
5. Press the λ key to select the calibrated wavelength that matches the nominal wavelength of the source being measured.
6. Read the displayed power measurement (dBm).



Testing Multimode Links

Step I - Set the Reference (One Jumper Method)

1. Turn on the OPM1 optical power meter and OLS1 optical light source. Allow the light source to stabilize (minimum of 2 minutes).
2. Set both instruments to the desired test wavelength.
3. Select the appropriate fiber optic transmit and receive test jumpers. These jumpers must match the fiber type of the link to be tested.
4. Wrap and secure the transmit jumper five times around the appropriate diameter mandrel.
Note: Clean both ends of the transmit jumper.
5. Connect the transmit jumper to the output port of the OLS1.
6. Mount an adapter cap on the OPM1 that matches the free connector on the transmit jumper.
7. Connect the free end of the transmit jumper to the OPM1. The OPM1 will measure and display optical power in dBm.
8. If measured output power is outside of the normal range (specified by manufacturer), clean all fiber connections or replace the transmit jumper.



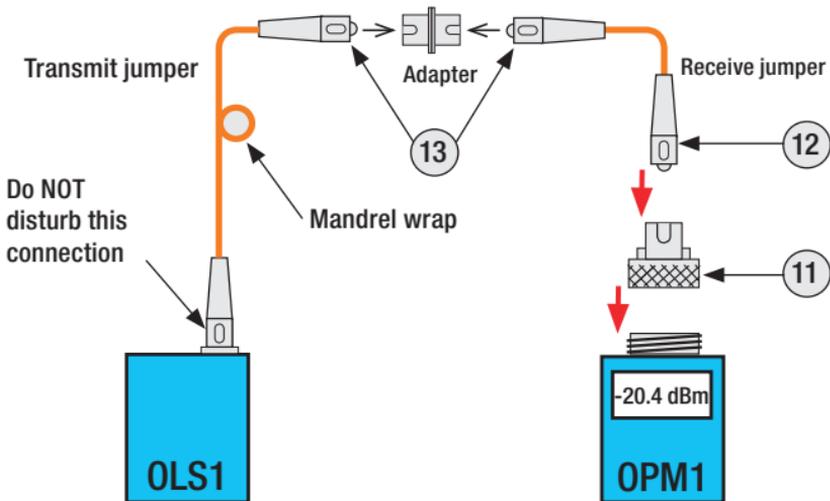
Testing Multimode Links

Repeat steps 4 to 7.

- If the displayed power level is acceptable, record it. This is the reference power level at the current wavelength.

Step II - Verify Test Jumpers

- Disconnect the transmit jumper from the OPM1.
Note: Do not disturb the transmit jumper at the OLS1 end.
- If necessary, change the OPM1 adapter cap to match the connector on the receive jumper that will be connected to the OPM1.
Note: Clean both ends of the receive jumper.
- Connect the receive jumper to the OPM1.
- Mate free ends of the transmit and receive jumpers using the appropriate adapter.
- Record the displayed power level. The difference between the reference power level (from step 9) and the displayed power level will be the test jumper loss in dB.
- Verify that the insertion loss of this mated connector pair is under 0.75 dB, the maximum allowed by the TIA (Noyes recommends 0.4 - 0.5 dB typical)



Testing Multimode Links

- If the insertion loss is not acceptable, disconnect the transmit and receive jumpers at the adapter, clean the free ends of both test jumpers and repeat steps 13 and 14.

15. If the insertion loss is acceptable, disconnect the transmit and receive jumpers at the adapter.
16. Move the OPM1 and OLS1 to opposite ends of the link to be tested.

Step III - Measure Multimode Link Insertion Loss

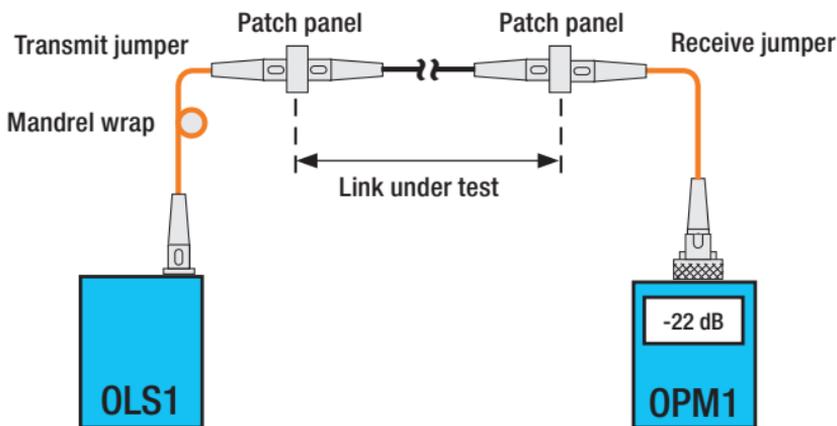
17. Connect the free ends of the transmit and receive jumpers to the multimode link under test.

Note: Clean jumper end that connects to patch panel prior to every test.

18. Record the displayed power level.

The difference between the reference power level (from step 9) and the displayed power level will be the link insertion loss in dB.

19. Record link insertion loss at the current test wavelength.
20. Repeat steps 17 to 19 for all links to be tested at the current wavelength.



Cleaning Tips

IMPORTANT! Inspect optical connectors after cleaning to ensure cleaning was successful and to verify the end-face is not damaged (cracked, pitted, etc.).

CAUTION! Never view a live fiber. Laser radiation is harmful to eyes.

AFL recommends cleaning test cables using a Cletop cassette cleaner or a One-Click Cleaner. Visit our web at www.AFLtele.com/go/Clean for more information.

CAUTION! Before conducting the following procedures be sure to have the instruments turned OFF.

To Clean the OPM1 Optical Port

1. Unscrew the adapter cap from the adapter cap mount.
2. Use lint-free optical cleaning wipes such as AFL FiberWipes and optical quality cleaning fluid such as AFL FCC2 connector cleaning fluid.
Note: if using isopropyl alcohol (IPA), be sure to use 99% pure IPA that has not been contaminated.
 - Dampen a portion of the wipe with the cleaning fluid.
 - Gently wipe the exposed OPM port starting with the wet section of the wipe and pulling it to the dry section.
Note: Starting with the wet cleaning and finishing in the dry improves cleaning action, reduces static buildup, and finishes with the end-face dry.
3. Using a can of filtered compressed air (held vertically), blow out any contaminants from the adapter cap.
4. Replace the adapter cap once the cleaning is complete.

To Clean the OLS1 Ports

AFL One-Click Cleaner method

1. Remove the protective dust cover from the tip of the One-Click Cleaner.
2. Insert the tip of the One-Click Cleaner into the optical output port and gently press the body of the One-Click Cleaner until an audible “click” is heard.
3. Remove the One-Click Cleaner.

Safety Information

WARNING! Use of controls or adjustments other than those specified herein may result in hazardous radiation exposure.

The OLS1 optical light source is a **CLASS I LED PRODUCT**.

WARNING! Use only the specified AC adapter. Use of another type of AC adapter can damage the instrument and create the danger of fire and electrical shock.

CAUTION! To avoid serious eye injury, never look directly into the optical outputs of fiber optic network equipment, test equipment, patch cords, or test jumpers. Always assume that optical outputs are on.

NOTICE! AFL-Noyes power meters and light sources contain no user serviceable parts. Except for changing batteries and cleaning optical ports, these units must be returned to Noyes or authorized agents for repair and calibration.

IMPORTANT! Proper care in handling should be taken when using any precision optical test equipment. Scratched or contaminated optical connectors can impact the performance of the instrument. It is important to keep the dust caps in place when the unit is not being used.

Please visit our web at www.AFLtele.com/go/Noyes for updates and additional information.



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