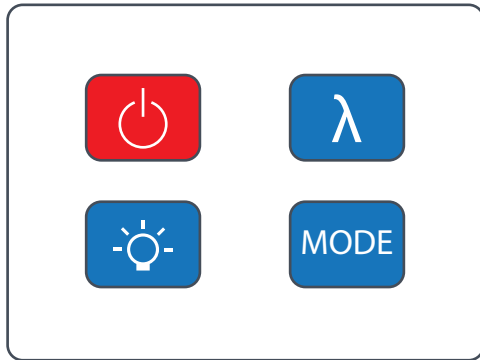




WARNING: LIGHT SOURCE LASER DOES NOT OPERATE AT VISIBLE WAVELENGTH. LIGHT IS NOT VISIBLE WHEN LASER IS ACTIVE. TO AVOID THE RISK OF EYE DAMAGE, DO NOT LOOK AT LASER WHEN LIGHT SOURCE IS OPERATIONAL.



Multimode Optical Light Source (Blue)

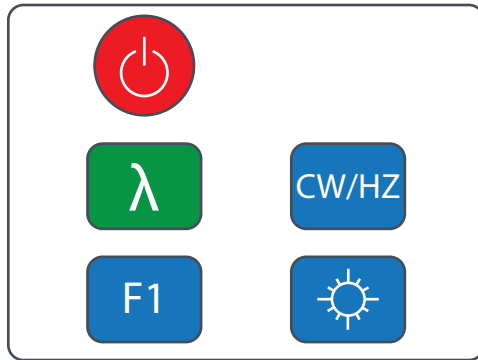
Power Button:

Quick press turns on the device
Long press turns off the device

Wavelength (λ) Button: Selects the carrier wavelength of the signal

Lightbulb Button: Turns backlight on and off

MODE Button: Selects the pulse frequency



Single Mode Optical Light Source (Orange)

Power Button:

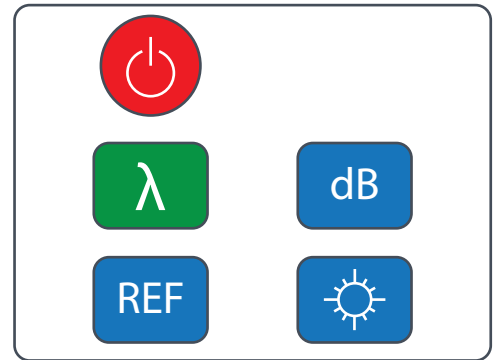
Quick press turns on the device
Quick press turns off the device

Wavelength (λ) Button: Selects the carrier wavelength of the signal

CW/HZ Button: Selects the pulse frequency

F1 Button: No function

Light Button: Turns on light LED near test port



Optical Power Meter (Orange)

Power Button:

Quick press turns on the device
Quick press turns off the device

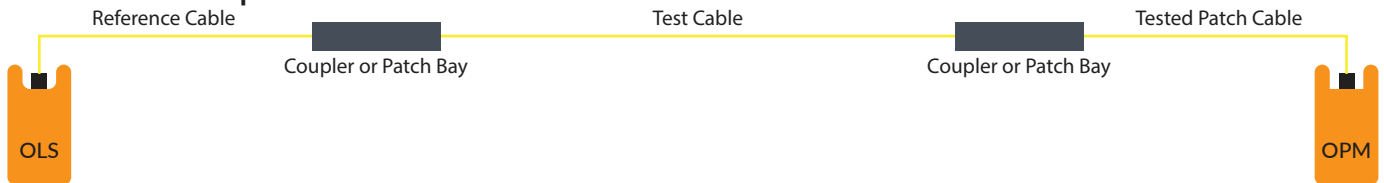
Wavelength (λ) Button: Selects the carrier wavelength of the signal

dB Button: Selects the meter mode (dBm, dB, mw/uw)

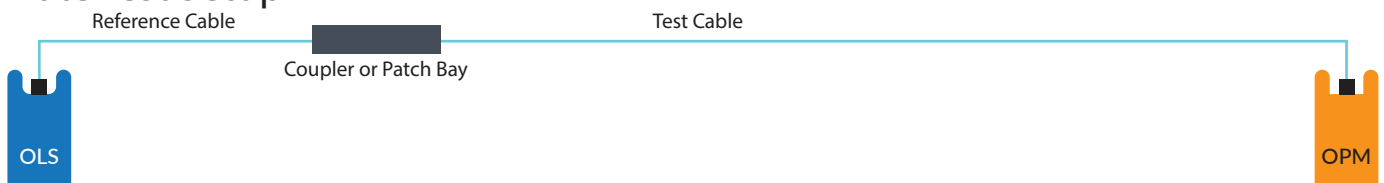
REF Button: Press and hold to save reference setting

Light Button: Turns on light LED near test port

Optimal Test Setup



Alternate Test Setup



Prep the Test Devices

1. Select the correct optical light source (OLS) for the fiber type being tested.
2. Turn on the OLS and optical power meter (OPM).
3. Set both devices to the desired wavelength by pressing the λ button on each unit.
 - a. For multimode (MM) testing, select 850nm.
 - b. For single mode (SM) testing, select 1310nm.
4. On the OLS, set the pulse frequency to 1 KHz/1000 Hz.
 - a. MM OLS: *MODE* button
 - b. SM OLS: *CW/HZ* button

Calibrate the OPM

1. If testing with SC connectors, connect the reference cable with SC connectors between the OLS and OPM.
 - a. Yellow is the SM reference cable.
 - b. Aqua is the MM reference cable.
2. If testing with LC connectors, connect the reference cable with LC connectors to the LC to SC adapters before connecting it between the OLS and OPM.
 - a. Blue is the SM adapter.
 - b. Beige is the MM adapter.
3. Once the cables are connected, press and hold the *REF* button for two seconds.
4. The OPM should now read 0dB.

Test the Cable

1. If testing with SC connectors, connect the cable with SC connectors between the OLS and OPM.
2. If testing with LC connectors, connect the cable with LC connectors to the LC to SC adapters before connecting it between the OLS and OPM.
3. Once the cables are connected, read the dB value on the OPM. It should be less than or equal to the *Signal Loss Calculation*.

Abbreviations Used

MM	Multimode	SM	Single Mode
OLS	Optical Light Source	OPM	Optical Power Meter

Signal Loss Calculation (based on information provided by thefoa.org)

Use the following calculations to determine the acceptable signal loss for the cable being tested. If the value is less than or equal to what is read on the meter, your cable and connectors are good. If the value is greater, there may be damage to the cable, the connectors may need to be reterminated, the connectors may need to be cleaned, or a connector isn't fully seated in a testing device.

MM at 850nm:

- 0.1 dB per 100 ft
- 0.5 dB per connector
- 0.3 dB per splice/coupler/adaptor

SM at 1310nm:

- 0.1 dB per 600 ft
- 0.5 dB per connector
- 0.15 dB per splice/coupler/adaptor

Example: Testing a 300ft MM cable run between two patch panels with 2 meter long patch cables at each end with LC connectors.

There will be an adapter on each test device (2 total). There will be a coupler on each patch panel (2 total). There will be two connectors on each cable (6 total). The patch cable lengths are negligible.

$$(0.1 * 3) + (0.3 * 4) + (0.5 * 6) = 0.3 + 1.2 + 3 = 4.5 \text{ dB of loss}$$