



FLS-50 OPTICAL LIGHT SOURCE

THE PERFECT TOOL FOR PROVIDING A STABLE LIGHT SOURCE
FOR SINGLE MODE FIBER MEASUREMENTS

INSTRUCTION MANUAL

FLS-50 Fiber Optic Light Source Manual

Delivering wavelength outputs of 1310 nm and 1550 nm at adjustable frequencies, the FLS-50 ensures accurate loss measurements for singlemode fiber optic cables. Pair it seamlessly with our FPM-50A, FPM-70, or FPM-55 Fiber Optic Power Meters or other compatible power meters for reliable and efficient performance testing.

This Product Includes:

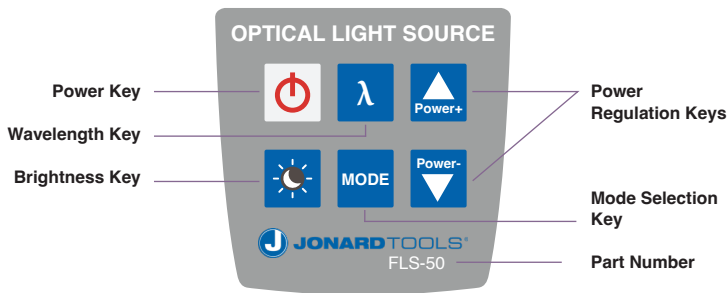
- Fiber Optic Light Source
- Instruction Manual
- (3) AA Batteries (required for operation)
- (2) Cleaning Swabs
- FC/UPC Adapters
- SC/UPC Adapters
- ST/UPC Adapters
- LC/UPC Adapter (Singlemode Only)
- Hard Carrying Case

Specifications

MODEL	FLS-50 FIBER OPTIC LIGHT SOURCE
Wavelength (nm)	1310/1550 \pm 20
Spectral width (nm)	\leq 5
Typical Output (dBm)	-7
Stability (dB, 15 min) ¹	\leq 0.05
Typical Output Power Adjustable Range (dB)	-5 ~ -12
Modulation Frequency (Hz)	CW, 270, 330, 1K, 2K
Interface Type	FC/SC/ST/FC-LC (UPC)
Display Size	2.4-inch LCD
Power Supply	1.5V* 3 AA alkaline batteries
Auto-off (min)	10
Continuous Working Hours (hr) ²	\geq 25
Operating Temperature (°C)	-10 ~ +60
Storage Temperature (°C)	-25 ~ +70
Dimensions	7.44" x 3.31" x 1.85" (189 mm x 84 mm x 47 mm)
Weight	0.64 lb (290 g)

1. Stability was measured when the device was warmed up for 15 min, using the 1550 nm wavelength.
2. To extend battery life, the backlight of the meter should be turned off.

Key Functions



Power Key: Power the device on or off.

Wavelength Key: Switches between the current operating wavelength and other selectable wavelengths: 1300/1550 nm.

Power Regulation Keys: Use these keys to adjust the output power from -5 ~ -12 dB.

Brightness Key: Adjust the brightness of the backlight.

Mode Selection Key: Press this key to adjust the frequency of the wave: OFF, CW (0 Hz), 270 Hz, 1000 Hz and 2000 Hz. Hold this key around 3 seconds to change to AUTO mode.

Screen Display



Mode: The selected light source output will appear in the top right corner: OFF, CW, 270 Hz, 330 Hz, 1000 Hz, 2000 Hz, or AUTO. AUTO is the automatic wavelength recognition function used when the light source is used with a compatible optical power meter (FPM-50A, FPM-55, or FPM-70). This eliminates the need to change the wavelength on both devices.

Auto-off feature: The Auto-off feature can be turned on and off by quickly pressing the power button. Its status is indicated in the upper left-hand corner of the LCD screen. When you see a power button symbol, auto-off is active.

Absolute Power Measurements Using a Fiber Optic Power Meter & Light Source

Using a power meter and light source, you can test the quality of a fiber optic cable. To do so, follow the instructions below:

Before You Start

You will need the following pieces of test equipment:

- Fiber Optic Power Meter, such as our FPM-50A, FPM-50S, FPM-70, or FPM-55
- Fiber Optic Light Source, such as our FLS-50 or FLS-55
- Fiber Optic Cleaning Tool or Wipes, such as FCC-125, FCC-250, FW-50, etc.
- Fiber Optic Cleaning Fluid, such as FCF-3, or 99% isopropyl alcohol
- If testing a Multimode cable, a mandrel is required

How to Test

1. Attach the necessary adapters to the Fiber Optic Light Source and Fiber Optic Power Meter.

NOTE: The Fiber Optic Light Source will only work with UPC connectors. The Power Meters can use either UPC or APC polished ferrule connectors.

2. Take your Test Cable and clean one of the end faces with Fiber Optic Cleaning Fluid and a Fiber Optic Cleaning Tool or Wipes.
3. Plug this end of the Test Cable into the Fiber Optic Light Source.

NOTE: When testing a multimode cable, the Test Cable needs to be attached to a mandrel to eliminate higher modes of light that interfere with test results.

4. Clean the other end's ferrule end face of the Test Cable and insert that end into the Fiber Optic Power Meter.
5. Turn on the Light Source and select the wavelength you want to test, with the frequency set to 0 Hz.

NOTE: For singlemode testing, 1310 nm or 1550 nm should be selected. For multimode testing, 850 nm or 1300 nm should be selected.

6. Turn on the Fiber Optic Power Meter and select the same wavelength that is set on the Light Source, and the Absolute Power of the Test Cable will be displayed.

Relative Power Measurements Using a Fiber Optic Power Meter & Light Source

Using a power meter and light source, you can also determine the amount of loss in a fiber optic cable. To do so, follow the instructions below:

Before You Start

You will need the following pieces of test equipment:

- Fiber Optic Power Meter, such as our FPM-50A, FPM-50S, FPM-70, or FPM-55
- Fiber Optic Light Source, such as our FLS-50 or FLS-55
- Fiber Optic Patch Cable with the same fiber type (G.652, G.655, G.657, etc.) as the test cable
- Fiber Optic Cleaning Tool or Wipes, such as FCC-125, FCC-250, FW-50, etc.
- Fiber Optic Cleaning Fluid, such as FCF-3, or 99% isopropyl alcohol
- If testing a Multimode cable, a mandrel is required

How to Test (One Cord)

One Cord testing is the simplest and fastest way to test a fiber optic cable. This test should be performed when testing short cables where the connector loss on each end is not critical.

NOTE: This test may not be accurate if the cable under test has different connector types on each end.

7. Attach the necessary adapters to the Fiber Optic Light Source and Fiber Optic Power Meter.

NOTE: The Fiber Optic Light Source will only work with UPC connectors. The Power Meters can use either UPC or APC polished ferrule connectors.

8. Take your Fiber Optic Patch Cable (also known as the Reference Cable) and clean one of the end faces with Fiber Optic Cleaning Fluid and a Fiber Optic Cleaning Tool or Wipes.
9. Plug this end of the Reference Cable into the Fiber Optic Light Source.

NOTE: When testing a multimode cable, the Reference Cable needs to be attached to a mandrel to eliminate higher modes of light that interfere with test results.

10. Clean the other end's ferrule end face of the Reference Cable and insert that end into the Fiber Optic Power Meter.

11. Turn on the Light Source and select the wavelength you want to test, with the frequency set to 0 Hz.
NOTE: For singlemode testing, 1310 nm or 1550 nm should be selected. For multimode testing, 850 nm or 1300 nm should be selected.
12. Turn on the Fiber Optic Power Meter and select the same wavelength that is set on the Light Source and press the Reference Key (REF) to store the current power value as the reference value.
13. Remove the Reference Cable from the Light Source and Power Meter and insert the Fiber Optic Cable you want to test.
NOTE: Follow the same cleaning procedure as done with the Reference Cable for the Test Cable before inserting it into the Light Source and Power Meter.
14. Once the Test Cable is inserted into both devices, the relative power (or loss of the test cable) will appear on the Power Meter's screen.

How to Test (Two Cords)

Two Cord testing is more accurate than One Cord testing, but it still includes the loss of one connection in the reference. This is useful when the cable under test uses two different connector types on each end.

You can test the loss of a fiber optic cable using two Reference Cables and a Connector Adapter by following the same procedure as One Cord testing. To do so:

1. Plug in one Reference Cable to the Light Source and Connector Adapter, and the other Reference Cable into the Connector Adapter and Power Meter.
2. Zero out the Reference Cables.
3. Replace the Reference Cable connected to the Connector Adapter and Power Meter with your Test Cable.

How to Test (Three Cords)

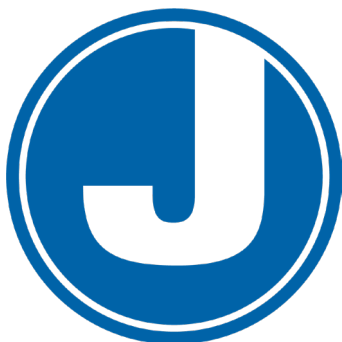
Three Cord testing is the most accurate method, as it excludes the loss of both connections to the cable under test. This is the preferred method for the most accurate results of fiber testing.

You can test the loss of a fiber optic cable using three Reference Cables and two Connector Adapters by following the same procedure as One Cord testing. To do so:

1. Plug in one Reference Cable to the Light Source and first Connector Adapter, one Reference Cable to the first Connector Adapter and the second Connector Adapter, and the last Reference Cable into the second Connector Adapter and the Power Meter.
2. Zero out the Reference Cables.
3. Replace the Reference Cable connected to both Connector Adapters with your Test Cable.

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