

FLS-1350 Fiber Optic Laser Source Operating Instructions

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Introduction

The FLS-1350 is a shirt-pocket size stabilized fiber optic laser light source that delivers a fixed amount of optical power, (selectable in wavelength from either 1310 or 1550 nm) into a single mode optical fiber. The output power emanates from a single output connector (FC or ST) which eliminates the need to disturb the fiber under test when performing dual wavelength testing. A square wave modulation mode is provided with selectable frequencies of 2 KHz, 1 KHz or 270 Hz that accommodates all popular fiber identifiers. Two LCD displays inform the user of the exact wavelength in use as well as the modulation mode. Four type N cells that operate the unit for approximately 15 hours power the unit. An Auto-Shutdown feature allows the unit to shut itself down after 15 minutes without a keystroke.

Specifications

Optical Power Output -10 dBm (100 microwatts),
with option HP: 0 dBm (1 mW)

Wavelengths: 1270 to 1330 nm, or 1510 to 1580 nm.,
the measured laser wavelength is indicated on LCD display

Laser Type Multi-Quantum-Well, Fabry-Perot

Display 2 LCD 0.2 in. high digits, Annunciators:
Wavelength, Modulation modes, Low Battery, Auto Shutdown

Fiber Connector Interface FC or ST connectors

Stability: +/- .05 dBm / 8 hrs at constant temperature after 5 minute warm-up

Temperature Stability: +/- .02 dB/C

Controls Power, Laser Power, Mod Freq, λ (wavelength select)

Power Four type N Alkaline cells power the unit for approximately 15 hours

Temperature Range Operating: -15 C to 50 C

Storage: -25 C to 60 C

Size: 5" L x 2.5" H x 1" D, 130 mm L x 64 mm H x 25 mm D

Weight 7.9 oz., 225 g

Power Considerations

Four alkaline N cells power the FLS-1350. Access to the battery compartment is accomplished by sliding out the battery door on the rear of the instrument. **Make sure that the batteries are installed correctly as indicated by the polarity markings on the printed circuit board.** (The button on the battery is positive, +.) The batteries will power the unit with the laser ON for about 15 hours. When the Battery Low annunciator is displayed, the unit may be operated for another 10 minutes or so. If the batteries are discharged still further, the unit will shut itself off and will not stay on. This prevents the user from making inaccurate measurements. Values for wavelength selection and modulation modes are maintained as long as batteries are in the unit. Upon disconnecting the batteries, the unit will be reset to the CW mode, a wavelength setting of 1310 nm and the laser will be turned off. Replace batteries every six months to prevent leakage/corrosion. If, after inserting batteries, power problems are encountered, the user should recheck polarity and battery contacts. If contacts are bent, reposition to insure good battery connections.

Controls

Power

This key alternately energizes and de-energizes the unit. Holding the key down for at least three seconds will invoke the **Auto-Shutdown** mode. If already in the **Auto-Shutdown** mode this action will disable it.

λ

This key selects the wavelength of the laser that is to be used. The measured value of the laser wavelength is displayed in the left hand window. Most sources of this type are specified with a design wavelength and a tolerance such as 1310 nm +/- 20 nm. The FLS-1350 displays the actual wavelength of the laser in the unit as measured during calibration. Typical displays might be 1307 nm and 1554 nm

Laser
Power

This control alternately turns the selected laser on and off. The left hand LCD window indicates the status of the laser. The wavelength selection and/or the modulation mode may be changed while the laser is activated

Mod
Freq

This control selects how the laser is to be modulated. Each push of this button advances the arrow in the right hand LCD window in the following sequence: CW to 270 Hz, to 1000 Hz, to 2000 Hz and back to CW. CW (continuous wave) indicates that the output is constant with no modulation. In each of the other selections the laser is modulated at the rate indicated with a 50 % duty cycle square wave. These are the popular frequencies used by a number of fiber identifiers of various manufacturers.

Operating Considerations

Laser Safety: Never look into the output port with the unit powered up. Invisible laser radiation is emitted from the fiber output connector.

Connecting to a fiber optic cable: The bracket located at the right of the unit is equipped with either an FC, ST or universal 2.5 mm receptacle. Simply insert the ferrule into the receptacle and lock it down. Never touch connector tips with your fingers as body oils and dirt may impair connector performance. The output fiber is 9/125 um single mode fiber. Fibers with cores of this size and larger are appropriate for use with this instrument.

Cleaning: If the output connector should become soiled, clean by using a fiber optic connector swab and isopropyl alcohol. If the LCD display becomes dirty, clean with a soft cloth and a mild water and soap solution

Connector: Keep the output connector covered when not being used to prevent the intrusion of dust or dirt

Carrying Case: The FLS-1350 has a rugged transit and storage case. The unit be stored in this case when not in use. The FLS-1350 is water-resistant but not waterproof. Should the unit become wet, dry thoroughly prior to using

REPAIR INFORMATION

Products manufactured by Terahertz Technologies Inc. are designed and fabricated to provide reliable performance. However, in the event that service is required, both telephone technical assistance and factory repair services are available. Call (315) 736-3642 for information.

For IN-WARRANTY REPAIRS, call us to obtain a Returned Material Authorization number, (RMA Number). All products are to be returned to TTI with freight charges pre-paid. Those products sent under warranty will be returned to our customers pre-paid. We cannot be responsible for returned products that do not reference the TTI RMA number.

For OUT-OF-WARRANTY repairs, services are billable for both time and materials

Warranty And Repair Information

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