



FiberLink® 6658 Series



Optical Length Tester

Installation and Operations Manual

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Welcome

FiberLink 6658 Optical Length Tester is designed to measure the length of both single mode and multimode fibers. It uses a “round robin” technique for fiber measurement; in other words, it uses two optical fibers looped back at the far end of the link. The round trip time is converted to kilometers, then the FiberLink 6658 automatically divides the round trip length by two to give the end-to-end length of the fiber. This technique allows the FiberLink 6658 to be very accurate up to ± 2.5 meters.

Note: FiberLink 6658 is not designed to measure distance to a fault like an OTDR.

Features

- Can be used as a fiber optic power source
- Extended battery life - up to 10 hours on one 9V battery
- Comes equipped with a rugged and durable rubber boot to protect the instrument from drops and other hazards
- Optional ruggedized carrying cases available to accommodate 3 or 6 test devices

Package Contents

- One FiberLink 6658
- This User's Manual
- One Non-Rechargeable Lithium Battery (Pre-installed in unit)

Technical Specifications

Specifications

Launch Method	FP Laser
Output Power	0.1 milliwatts
Resolution	up to 0.001 kilometers
Accuracy	± 2.5 meters
Measurement Range	25 kilometers
Battery Life	10 hours
Operating Temperature	0 - 55° C
Low Battery Indicator	Yes
Connector Style	ST
Dimensions	2.75" x 4.94" x 1.28"
Weight (with battery)	154 grams

**DANGER!**

This device emits invisible infrared electromagnetic radiation which can be harmful to human eyes. The radiation from this optical connector, if viewed at close range with no fiber optic cable connected to the optical connector, may be sufficient intensity to cause instantaneous damage to the retina of the eye. Direct viewing of this radiation should be avoided at all times!



1**ST Optical Output Port:**

This ST connector port houses a laser diode that emits invisible light into an optical fiber.

2**Laser On/Length Test Switch:**

The mode selector switch has three positions from left to right as follows:

Laser On (Left): Unit is on, unit will output continuous laser light to be used for optical power measurements

Off (Middle): Unit is off

Length Test (Right): Unit is on, unit will output pulses of laser light and calculate the length of the fiber

3**Detector Port:**

This ST connector port houses a photodiode used to receive light from an optical fiber. This port is used for Length Test operations only.

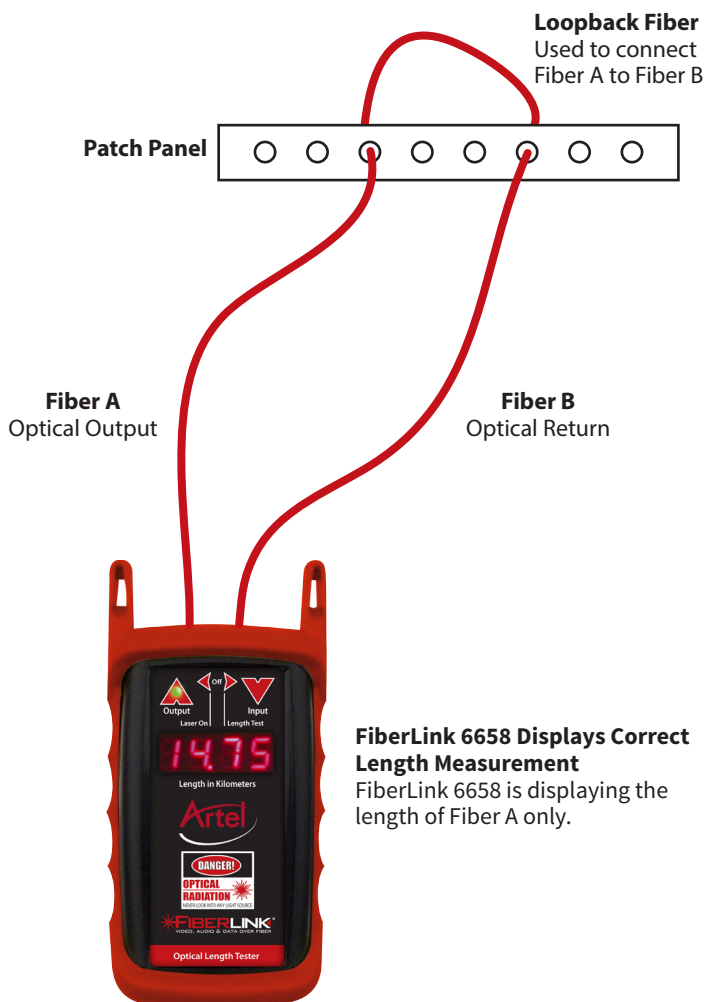
4**Power LED**

Indicates the FiberLink 6658 is in Laser On or Length Test mode.

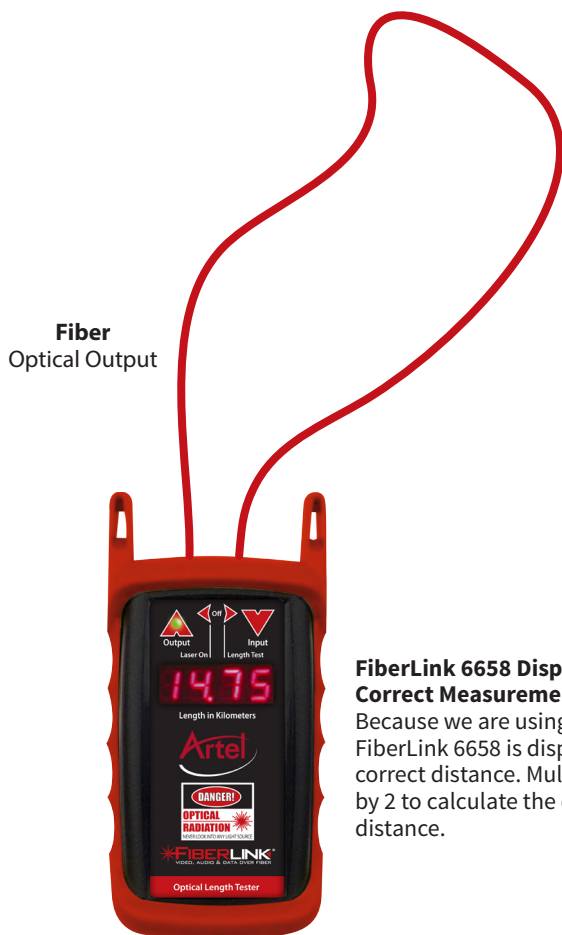
5**LED Display**

Displays the measure length of the optical fiber in kilometers. If the display shows all dashes, the FiberLink 6658 is not receiving enough light to calculate distance. This indicates that the measured link is too long or there is a problem with one of the fibers being used.

Taking measurements using two fibers:



Taking measurements using one fiber:



FiberLink 6658 Displays Half the Correct Measurement

Because we are using one fiber, FiberLink 6658 is displaying half the correct distance. Multiply this value by 2 to calculate the correct, full distance.

Operating Pointers

Remember to check attenuation of the fiber optic cable. The system will only operate properly if these specifications fall within the range of the system's loss budget.

Troubleshooting

Multimode fiber optic cable contains an optical fiber with a light carrying "core" that is only .0025 inches (62.5 microns) in diameter. Single mode fiber optic cable has an even smaller "core," only .00032 to .0004 inches (8-10 microns). This is smaller than a human hair! Therefore, any minute particles of dirt or dust can easily block the fiber from accepting or radiating light. To prevent this from happening, always use the provided dust caps whenever optical connectors are exposed to air. It is also a good idea to gently clean the tip of an optical connector with a lint-free cloth moistened with alcohol whenever dust is suspected.

The status of the LED's should provide the first clue as to the origin of any operational failure. If these are off, it usually means that the battery has failed in the unit.

If, after reviewing the above possibilities, the system is still not operating, please contact the Customer Service Department for further assistance. If you suspect your problem is caused by the optics or the fiber optic cable, and you have an optical power meter, please take the appropriate measurements prior to contacting support.

Maintenance and Repairs

The FiberLink 6656 Series has been manufactured using the latest semiconductor devices and techniques that electronic technology has to offer. They have been designed for long, reliable and trouble-free service and are not normally field repairable.

Should difficulty be encountered, Communications Specialties maintains a complete service facility to render accurate, timely and reliable service of all products.

The only maintenance that can be provided by the user is to ascertain that optical connectors are free of dust or dirt that could interfere with light transmission and that connections are secure and accurate.

All other questions or comments should be directed to our Customer Service Department. It should be noted that many “problems” can easily be solved by a simple telephone call.

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