

Specifications

Light source	650 nm red laser diode and monitor, with multi-quantum well structure
Central wavelength	
Nominal	650 nm
Range (typical)	645 nm to 660 nm
Spectral width	< 2 nm
Peak power output ^{1, 2, 3}	
Into SMF-28 fiber, CW or MOD output mode	1.0 mW (0 dBm) maximum 316 µW (-5 dBm) minimum
Maximum emitted power	2.0 mW
MOD output frequency	< 3 Hz, approximate
Power requirements	Two (2) 1.5 V alkaline batteries
Battery life	Approx. 48 hrs. continuous operation
Connector interface	2.5 mm "quick connect" port ²
CDRH	Class IIIa
Environmental	
Operating temperature	-10 °C to +50 °C
Storage temperature	-40 °C to +60 °C
Humidity	0 to 95% RH, non-condensing
Weight and dimensions	22.9 x 2.54 cm (9 x 1 in.) 200 g (7 oz) with batteries and pouch

¹ Within specified ambient environment of +20 °C to +25 °C.

² APC-type ferrule coupling efficiency reduced by > -3 dBm.

³ Output power with beam collimator may exceed 1 mW. Product complies with CDRH Class II, 1 mW max. without collimator accessory and IEC 825-1: 1993, 5 mW max.



Do not discard this product or throw away!
For recycling information, go to www.greenlee.com.

All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

KEEP THIS MANUAL

CE Declaration of Conformity

We,

Greenlee Textron Inc.
4455 Boeing Drive, Rockford, IL 61109-2988 USA

declare under sole responsibility that the 170XL Visual Fault Finder laser source, manufactured in the United States of America, meets the intent of the directive 89/336/EEC for electromagnetic compatibility. Compliance was demonstrated to the following specifications as listed in the official Journal of the European Communities:

EN 50081-1, Emissions:

EN 55022 Radiated, Class B
EN 55022 Conducted, Class B
EN 60555-2 Power Harmonics

EN 50082-1, Immunity:

IEC 801-2 Electrostatic Discharge
IEC 801-3 RF Radiated
IEC 801-4 Fast Transients
IEC 801-5 Surge

Warranty Information

Greenlee Textron Inc. warrants this product to be free from defects in material and workmanship for a period of one (1) year from the date of purchase. During the warranty period we will, at our option, either repair or replace any product that proves to be defective. To exercise this warranty, write or call your local Greenlee representative, or contact Greenlee directly.

You will be given prompt assistance and return instructions. Send the instrument, transportation prepaid, to the indicated service facility. Repairs will be made and the instrument will be returned, transportation prepaid. Repaired products are warranted for the balance of the original warranty period, or at least 90 days.

Limitation of Warranty

This warranty does not apply to defects resulting from unauthorized modification or misuse of any product or part. This warranty is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular use. Greenlee Textron Inc. shall not be liable for any indirect, special, or consequential damages.

INSTRUCTION MANUAL



170XL Visual Fault Finder



Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

Register this product at www.greenlee.com



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Description

The Greenlee Communications 170XL Visual Fault Finder is a pocket-sized, rugged, and splash-proof handheld instrument incorporating a stabilized, high output 650 nm laser diode. Providing up to 48 hours of continuous operation using two AA-size alkaline batteries, the 170XL can clearly locate breaks and bending losses in optical fibers up to 5 km in length. A rotary switch on the instrument permits the user to select between continuous wave (CW) and a blink (MOD) mode that increases viewing contrast, or to switch the instrument off with one hand. The 170XL is fitted with a universal “quick connect” output port that enables convenient temporary coupling with all 2.5 mm fiber optic connectors.

Safety

Safety is essential in the use and maintenance of Greenlee tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose of this Manual

This manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the Greenlee Communications 170XL Visual Fault Finder.

Keep this manual available to all personnel. Replacement manuals are available upon request at no charge at www.greenlee.com.

Standard Contents

- 1 170XL Visual Fault Finder
- 1 Nylon carrying pouch
- 1 instruction manual
- 2 1.5 V alkaline batteries

Optional Accessories

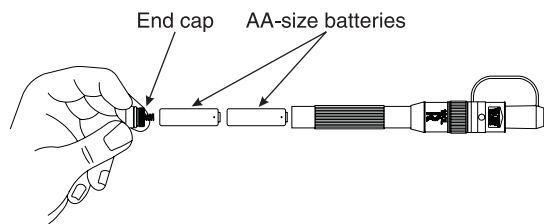
946 adapter cleaning wands (for cleaning output port)

Battery Installation/Replacement

The 170XL is shipped without the batteries installed.

The two AA-size alkaline batteries shipped with the instrument must be installed before use. Greenlee does not recommend the use of non-alkaline or rechargeable batteries in the instrument.

Note: If the LED indicator appears dim during operation, it is time to replace the batteries in the unit.



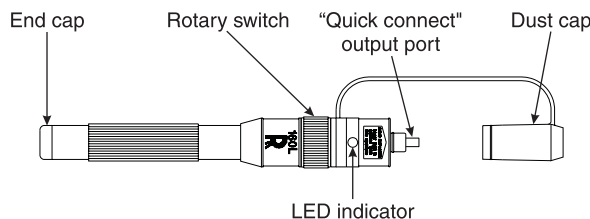
To install or replace the batteries, do the following:

1. Make sure the rotary switch is in the OFF position.
2. Unscrew the end cap by turning it counterclockwise, and then remove the used batteries, if any.

3. Insert two new AA-size alkaline batteries, positive end first, as shown in the above illustration.
4. Replace the end cap, turning it clockwise to tighten it in place.

Operation

Controls and Indicators



Using the 2.5 mm “Quick Connect” Output Port

1. Insert the ferrule of a fiber optic connector into the “quick connect” output port, ensuring that it seats completely. The user should always clean the end face of the connector before inserting it in the “quick connect” output port.
2. Rotate the switch to the desired operating mode by moving it to the right. The first position puts the instrument in continuous wave (CW) mode. The second position puts the instrument in blink (MOD) mode. The LED indicator on the unit will illuminate steadily in CW mode. It will blink in MOD mode.
3. Refer to the “Applications” section for instructions on tracing faults in optical fibers.

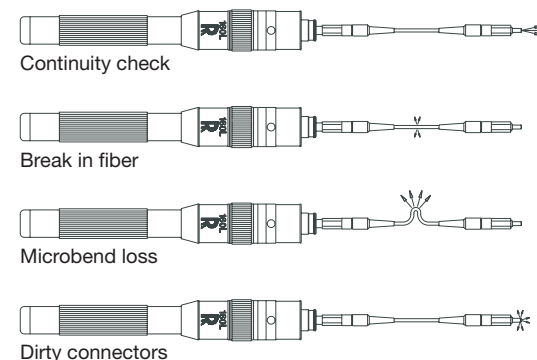


WARNING

Do not look directly into the output port when the instrument is ON. Never use a viewing instrument such as a magnifier or microscope to view the free end of any optical fiber connected to the 170XL Visual Fault Finder. The use of viewing on active fibers can focus an intense laser beam onto the retina of the eye, resulting in permanent damage or blindness.

Always aim the free end of an active fiber at a non-reflective surface.

Applications



The 170XL Visual Fault Finder is designed to quickly locate breaks in optical fibers. Any interruption in continuity will be indicated by red light escaping from the fiber. Light can also escape from the fiber if it is stressed or bent too tightly. In either case, escaping light is a sure sign of a problem.

The 170XL can also be used to check the condition of ceramic ferrules. A fiber break inside, or past, the ferrule will make it glow. If the entire connector glows, it is definitely bad.

A glowing ferrule can also indicate a bad end face polish. If the end face polish is bad, light in the fiber will be reflected internally and be visible through the ferrule.

Cleaning

Cleaning the Output Port

Cleaning all connectors before coupling them to the 170XL Visual Fault Finder will ensure proper maintenance of the output port and laser lens. Users should always cover the output port with the dust cap when the instrument is not in use.

If binding or stickiness is felt when inserting connectors into the output port, the ceramic sleeve should be cleaned. To clean the sleeve, insert a Greenlee 946 cleaning wand into the output port until it stops. Twist the wand, remove it, and discard. Do not reuse the cleaning wand.

Cleaning the Laser Lens

If the intensity of the light output decreases considerably despite the batteries being in good condition, the laser lens is probably dirty. Loose dirt can be removed by applying suction to the output port.

Note: Do not blow air into the output port to remove dirt particles. Doing so will only pack the dirt and make it harder to remove.

If the lens is extremely dirty, flush out the output port with a small amount of reagent-grade isopropyl alcohol, and then apply gentle suction to remove any remaining dirt. Make sure that all residual alcohol has evaporated before resuming testing.