Terahertz Technologies Inc.

VFL-280

Visible Fault Locator

Operating Manual

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Introduction

The VLF-280 Visible Laser Fault Locator is battery operated, stabilized, visible laser diode optical source with provision for coupling the laser output to a connectorized fiber. It is intended to allow the precise location of a break or severe micro bend in a fiber or cable under test by viewing the emission of visible light at the fault.

Unpacking and Inspection

Prior to shipment this instrument was inspected and found to be free of mechanical and electrical defects. Upon acceptance by the carrier he assumes responsibility for its safe arrival. After unpacking, examine the unit for any evidence of shipping damage. Should you receive this instrument in a damaged condition, apparent or concealed, it must be noted on the freight bill or express receipt and signed by the carrier's agent. Failure to do so could result in the carrier refusing to honor the claim. Upon filing a claim TTI should be notified.

Power Requirements

This instrument is designed for operation with 2 AA Alkaline batteries. Ensure that the power switch is in the off position during battery replacement.

Safety Considerations

Never look directly into the fiber optic connector or the end of a fiber attached to the unit while it is energized. To do so will expose you to laser radiation which is in excess of Class I safety limits.

This unit is classified as a Class II laser system and must be used with all commensurate safety precautions.

Specifications

Output Power	1mW max
Wavelength	650 nm +/- 5nm
Pulse Rate	6 Hz
Emission Indicator	LED
Standard F/O Connector	Universal 2.5 mm
Duty Cycle	50%
Battery	2 (AA) Alkaline
Battery Life	>100 hrs.
Size	4.0” L x 2.5” W x 1.1” D
Weight	4.2 oz.
Operating Temperature	-10 to 50 C
Storage Temperature	-30 to 60 C
Auto Shut-Off	20 Min.
Laser Classification	Class II

Operation

The VLF-280 is a hand-held battery powered stabilized fiber optic laser source that emits visible (red) light at 650 nm. Its intended function is to allow an operator to identify the exact location of a break, microbend, or other discontinuity in a fiber optic cable. As the radiation is visible, light emanating from a break or microbend enables the user to locate the exact position of a fault even at very short distances that would not be detectable by conventional means such as an Optical Time-Domain Reflectometer, (OTDR). It is also useful for identifying a particular fiber in a cable by exciting the fiber to be located with visible radiation.

The fiber to be tested is connected to the source by means of a standard 2.5 mm fiber optic connector. The source may be used in one of its two modes, Modulated or Continuous. In the modulated mode the laser is turned on and off at a 6 Hz rate. The laser is on for approximately one third of the cycle. This mode is helpful in permitting the user to identify the source radiation in the presence of high levels of ambient light. It also aids in conserving battery life.

The VFL-280 has a power saver feature and will power down after twenty minutes. To deactivate the power saver feature, simply depress the I/O key for three seconds when turning on the unit or simply cycle the unit between modulate and constant mode periodically.

The usable range for fault location depends on many factors, the type of fiber, the type of cable, the overall loss incurred in the fiber and the amount of radiation at the fault itself.

This instrument is designed for operation with 2 AA Alkaline batteries. Ensure that the power switch is in the off position during battery replacement. red meters to 1 or 2 Km are typical for singlemode fiber.

Never view the light emanating from the fiber directly. Place a white piece of paper at the end of the fiber and look for the presence of a red spot on the paper.

Operation

Continued

Locating Micro Bends and Breaks

1. Remove the dust cap from the fiber optic connector. At tach he connector of the fiber to be tested to the unit.

2. Energize the unit by depressing the I/O key, then select either constant or modulated modes.

3. Light will be coupled to the fiber under test and the light will be visible at a break or a region of high micro bending. This assumes that the fiber jacketing is not completely opaque. If the fiber is inside a completely opaque loose tube buffer, the unit will obviously not be usable for its intended purpose.

4. If testing a long fiber, it is recommended that the ambient light level be reduced so that the operator may more easily distinguish the laser light from room light.

Fiber Identifying

Use the VFL-280 as a fiber identifier by connecting the VFL-280 to the fiber to be identified and seeing which fiber at the opposite end of the cable is illuminated.

Battery Replacement

Ensure the unit is powered down, remove the battery door on back cover and replace batteries with 2 AA Alkaline batteries.

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 WARRANTY REPAIRS, call us to obtain a Returned Material Authorization number, (RMA Number). All products are to be returned to TTI with freight charges prepaid. Those products sent under warranty will be returned to our customers prepaid. 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.

LIMITED WARRANTY

TERAHERTZ TECHNOLOGIES INC. ("TTI") WARRANTS THAT TO THE FIRST PURCHASER, FOR A PERIOD OF TWO YEARS FROM THE DATE OF RECEIPT, THAT THIS PRODUCT ("THE PRODUCT") WILL BE FREE FROM DEFECTS IN MATERIALS AND MANUFACTURING. THE FOREGOING WARRANTY IS THE ONLY WARRANTY, EXPRESS OR IMPLIED, GIVEN BY TTI, I.E., THERE IS NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. TTI HEREBY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY OTHER THAN THE WARRANTY IN THE FIRST SENTENCE TO THE FULLEST EXTENT PERMITTED BY LAW. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY IS REPAIR OR REPLACEMENT AT TTI'S OPTION OF ANY PRODUCT THAT PROVES TO BE DEFECTIVE IN MATERIALS OR MANUFACTURING WITHIN TWO YEARS OF RECEIPT OF THE PRODUCT. NOTE: THIS WARRANTY DOES NOT APPLY TO ANY PRODUCT WHICH HAS BEEN SUBJECT TO MISHANDLING, MISUSE, OR SERVICE BY UNAUTHORIZED PERSONNEL OR TO ANY PRODUCT WHICH HAS BEEN DAMAGED, MODIFIED, ALTERED OR TAMPERED WITH.TO THE FULLEST EXTENT OF THE LAW, TTI DISCLAIMS ALL LIABILITY FOR ANY OTHER DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ALLEGED TO BE CAUSED BY A DEFECTIVE PRODUCT, I.E., TTI WILL NOT BE RESPONSIBLE FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OTHER THAN THE COST OF REPLACING THE PRODUCT OR ANY OTHER MONETARY DAMAGE SUCH AS LOST WAGES OR PROFITS CAUSED BY ANY USE, ATTEMPTED USE OR INABILITY TO USE THE PRODUCT. NOTE: BY USING THE PRODUCT, YOU AGREE THAT REPAIR OR REPLACEMENT AT TTI'S OPTION WILL FULLY SATISFY TTI'S WARRANTY OBLIGATION TO YOU, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHER APPLICABLE LAW.