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OPTO-ELECTRONICS INC.

RESEARCH IN ELECTRO-OPTICS

MODEL OFM1020 AVIONICS OTDR

DESCRIPTION

The OFM1020 is a short haul, high resolution OTDR which has been designed specifically to characterize and fault find the short runs encountered in aircraft, spacecraft and Naval fiberoptic optical harnesses. The high resolution coupled with high sensitivity enables the OFM to make return loss and insertion loss measurements of closely spaced components. The harnesses can be Mapped into the OFM1020 memory and subsequently Tested at any time.

At power-ON, the OFM1020 automatically performs a series of self checks to verify that the system is ready to operate correctly. An internally installed standard provides for a periodic on-site calibration verification.

The on-screen menu steps the operator through the MAPing process during which each harness feature is MAPped, edited if desired and stored.

Testing a previously MAPped system requires the system ID and Link number to be entered by the operator. The Link is then automatically tested at the push of a button. Results are displayed with any failures indicated.

There is a separate OFM1020 model for each multimode fiber size of the harness to be tested. This is required in order to provide the correct launch conditions for the particular fiber size.

The Diamond optical connector on the front panel was chosen to provide ease of access to the internal fiber face for cleaning. In addition, this connector has easily changed adaptors to accommodate different connector styles. The OFM1020 is provided with the two common (ST and FC) optical adaptors.

The OFM1020 is encased in a sealed and ruggedized metal box to protect it against the elements and rough handling. A removable front cover provides access to the working interface. The power connection and various electrical outputs can also be sealed when not in use. Retractable handles make this portable instrument easy to carry.

The power requirements of the OFM1020 can be met with standard ac line voltage at 60 to 400 Hz or by battery power at 28 volts.



The OFM1020
Benchtop harness measurements

STANDARD MODELS

Standard models operate at 850 nm.

OFM1020 - 850MM50	OFM1020 - 850MM50 - CAL
OFM1020 - 850MM62	OFM1020 - 850MM62 - CAL
OFM1020 - 850MM100	OFM1020 - 850MM100 - CAL

OPTIONS

Fiber size: 50/125; 62.5/125; 100/140

Diamond connector adaptor: ST; FC

U.S.A.:
Opto-Electronics Inc.
Unit 230, 775 Main St.
Buffalo, NY 14203
Tel: (716) 856-1322

INTERNATIONAL:
Opto-Electronics Inc.
Unit 9, 2538 Speers Rd.
Oakville, ON, Canada L6L 5K9
Tel: (905) 827-6214 Fax: (905) 827-6216

INTERNET:
Email: sales@opto-electronics.com
Visit our website at: www.opto-electronics.com

TYPICAL PERFORMANCE

DEADZONE

Fresnel Mode	0
Rayleigh Mode	Less than 20 cm (8 in) from a -35 dB event

DISTANCE

Range	From 0 to 460 m (1,500 ft)
Accuracy	±2.5 cm (1 inch)
Single Point Resolution	1 cm (0.4 in) for SNR>50
Two Point Resolution	13 cm (5 in) for SNR>50

RETURN LOSS

Dynamic Range	>90 dB
Accuracy	±0.5 dB for RL<75, ±1.0 dB for RL>75 dB

INSERTION LOSS

Dynamic Range, Fresnel	>40 dB
Accuracy, Fresnel	±0.3 dB for SNR>50
Dynamic Range, Rayleigh	>20 dB
Accuracy, Rayleigh	±0.05 dB for SNR>50

GENERAL SPECIFICATIONS

Size	36x46x20 cm (14x18x8 in)	Operation	Real-time	Storage Temp.	-40 to +60 0C
Weight	11 kg (25 lb)	Measurement	Map/Test	Operating Temp.	-20 to +45 0C
Power; ac	110 V, 60/400Hz	Map Time	10 sec / Link	Humidity	5% - 95 %
Power, dc	28 V	Test Time	5 sec / Link	Dust/Waterproof	Yes
Vibration	3 g	Memory	Flash	RF Proof	Yes
Shock	46 cm (18 in)	Interface	RS232	Explosion Proof	Yes

ORDERING and SHIPPING INFORMATION

Standard models:	Order as listed overleaf-indicating adaptor type.
Included Items:	A Metal Carrying Case, Reference Manual and Disk, Power Cord, OFM-Computer cable.
Delivery:	8 to 12 weeks ARO.
Shipping weight:	Approximately 25 lbs (This includes the metal carrying case.)

OTHER INFORMATION

A booklet is available with detailed specifications, general information and application notes.
A two-day training course is offered, at the Oakville plant, free of charge with an OFM purchase.
Detailed applications notes are being continuously prepared. An updated list is available at our website.

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