Test & Inspection

Accelerate Testing with ROGUE® OTDR and aeRos® Workflow Management

NEW

ROGUE OTDR Modules with Source, Power Meter, VFL

Features
- Quad single-mode/multimode or Dual single-mode OTDRs
- Fast acquisition plus TruEvent® for accurate event analysis
- Intuitive LinkMap® display for easy results interpretation
- Hot-swappable into ROGUE cB1 or iB1 Base units
- Use with aeRos cloud-based workflow management software
- Integrated Source, Power Meter and Visual Fault Locator (VFL)

Applications
- Installation verification of single-mode or multimode networks
- Unidirectional or bidirectional OTDR testing
- Insertion loss testing using integrated source and power meter
- Pinpoint macro-bends and breaks with integrated VFL
- View results and generate reports anywhere, anytime using aeRos
- Fast MPO multi-fiber testing using optional multi-fiber switch

AFL LinkMap® OTDR

Accelerate OTDR testing and reporting: Download pre-configured test setups and pass/fail limits for fast, easy troubleshooting or guided unidirectional or bidirectional testing of entire multi-fiber cables. Test results are automatically uploaded for cloud-based reporting using AFL's aeRos Workflow Management software.

Simplify optical network troubleshooting: Avoid test setup errors using aeRos-configured test settings. Simplify results interpretation using LinkMap network display. Color-coded icons easily identify passing and failing network connections. Toggle between LinkMap and Trace view at the touch of an icon.

Control and access from your mobile device: Download and install the free ROGUE LinkMap OTDR App to control and configure OTDR, source, power meter or VFL operation from your smartphone or tablet. View results directly on your mobile device and save or share as you wish.

ROGUE OTDR modules are available in both quad single-mode/multimode and dual single-mode configurations. Select the most appropriate ROGUE OTDR for your application needs:

- RG-2100-Q01/Q02: Quad OTDRs for testing both single-mode and multimode networks.
- RG-2100-S01/S02: Dual single-mode OTDRs for your single-mode only test applications.

OTDR modules include Visual Fault Locator (VFL) and are offered with optional integrated stable Optical Light Source (OLS) and Optical Power Meter (OPM).

ROGUE OTDR Kits are also available, combining OTDR module with ROGUE Carrier or Base and accessories.

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Specifications[a]

OTDR	MM	SM
OTDR Emitter Type	LED	Laser
Safety Class	Class 1 FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Wavelengths	850/1300 ±20 nm	1310/1550 ±20 nm
Fiber Type	Multimode; Compatible with OM1, OM2, OM3, OM4, OM5	Single-mode; Compatible with all G.652, G.655, and G.657 SMF
Connector Type	User-specified UPC or APC ferrule with interchangeable UCI adapters	
Dynamic Range[b]	≥29/29 dB	≥37/36 dB
Event Dead Zone[c]	≤0.8 m @ 850/1300 nm typical	≤0.8 m @ 1310/1550 nm typical
Attenuation Dead Zone[d]	≤3.0 m	≤3.5 m
Pulse widths	3, 5, 10, 30, 100, 200, 500 ns; 1 µs	3, 5, 10, 30, 100, 200, 500 ns; 1, 2.5, 5, 10, 20 µs
Range Settings	250 m to 30 km	250 m to 240 km
Data Points	Up to 300,000	
Data Point Spacing	≤5 cm to ≤16 m	
Index of Refraction	1.3000 to 1.7000	
Distance Uncertainty (m)	±(1 + 0.0025% x distance + data point spacing)	
Linearity	±0.03 dB/dB	
Loss Threshold	≤0.02 dB	
Loss Resolution	0.001 dB	
Reflectance Range (typical)	850 nm: -20 to -58 dB 1300 nm: -20 to -63 dB Reports saturated/clipped reflections	1310 nm: -20 to -65 dB; 1550 nm: -20 to -65 dB Reports saturated/clipped reflections
Reflectance Resolution	0.01 dB	
Reflectance Accuracy	±2 dB	
Trace File Format	SR-4731 Issue 2	
Internal Launch Fiber	≥50 m internal launch fibers (SMF and MMF)	
OTDR Modes	Supports Auto, Expert, Real-Time	
Live Fiber Protection	No OTDR damage when connected to live fiber delivering ≤ +3 dBm at wavelength(s) in range 825 to 1675 nm	
Live Fiber Detection	Reports live fiber when optical signal detected with wavelength in range 825 to 1675 nm, average power level ≥-35 dBm and either CW or modulation frequency ≥270 Hz	

Notes:
a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.
b. SNR=1, longest range and pulse width, 3 minute averaging
c. Maximum distance between two points 1.5 dB down each side of a trace spike caused by an event with a -45 dB (or smaller) reflectance. Test pulse width is 3 or 5 ns.
d. Maximum distance from the start of a trace spike caused by an event with a -45 dB (or smaller) reflectance, to the point where the trace returns to and stays within ± 0.5 dB of backscatter. Test pulse width is 3 or 5 ns.

www.AFLglobal.com or (800) 321-5298, (603) 528-7780

Accelerate Testing with ROGUE® OTDR and aeros® Workflow Management

Specifications[a]

OPTICAL POWER METER (OPM)	
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550, 1625, 1650 nm
Detector Type	InGaAs PIN, 2 mm diameter
Measurement Range	+3 to -70 dBm
Wave ID	Automatically synchronizes and measures 1, 2 or 3 λ Wave ID combinations
Range	+3 to -40 dBm @ 850 nm; +3 to -50 dBm @ 1300, 1310, 1550 nm
Tone Detect	Auto-detects 270, 330 Hz; 1, 2 kHz tones;
Accuracy	±5% @-10 dBm
Linearity	±0.1 dB (-3 to -40 dBm); ±0.25 dB (-40 to -50 dBm)
Measurement Units	Power in dBm, nW, µW, mW; Loss in dB; 0.01 dB resolution

OPTICAL LIGHT SOURCE	MULTIMODE	SINGLE-MODE
Emitter Type	LED	Laser
Safety Class	Class 1 FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Center Wavelengths	850/1300 ± 20 nm	1310/1550 ±20 nm
Launch Condition	Controlled Launch at 850 nm (comparable to encircled flux into OM4)	N/A
Spectral Width (FWHM)	N/A	5 nm max
Internal Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID	270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID
Wave ID (nm)	850, 1300, 850/1300	1310, 1550, 1310/1550
Output Power	-20 dBm ± 1.5 dB (CW, 850 or 1300 nm into 50 µm MMF)	-1 dBm ± 1.5 dB (CW, 1310 or 1550 nm into SMF-28)
Output Power Stability	≤± 0.2 dB (15 min. after 30 min. warm-up); ≤ ±0.1 dB (8 hours after 2 hours warm-up)	

VISUAL FAULT LOCATOR (VFL)	
Emitter Type	Visible red laser, 650 ±20 nm
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC EN60825-1: 2007-03
Output Power (nominal)	0.8 mW into single-mode fiber
Modes	CW and 2 Hz flashing

GENERAL	
Size	135 x 122 x 43 mm (5.4 x 4.8 x 1.7 in)
Weight	0.4 kg (0.9 lb)
Operating Temperature	-18°C to +50°C, 0 to 95% RH (non-condensing)
Storage Temperature	-30°C, to +60°C, 0 to 95% RH (non-condensing)
CE Safety & EMI/RFI	EN61010-1; EMI/RFI: EN55011, EN61326-1, GR-196-CORE 4.5.1
RoHS	2011/65/EU

Notes:
a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.
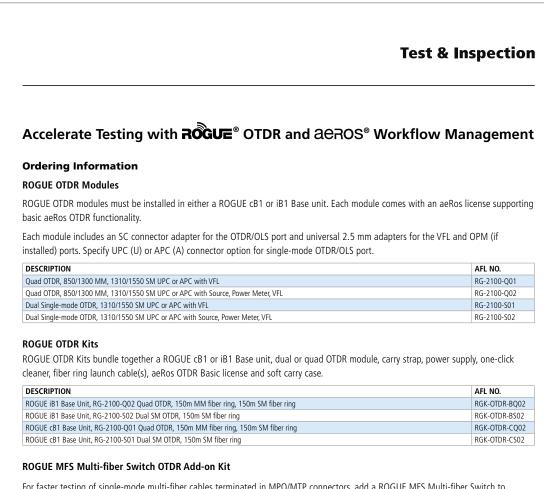
LASER COMPONENTS®

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Ordering Information

ROGUE OTDR Modules

ROGUE OTDR modules must be installed in either a ROGUE cB1 or iB1 Base unit. Each module comes with an aeRos license supporting basic aeRos OTDR functionality.

Each module includes an SC connector adapter for the OTDR/OLS port and universal 2.5 mm adapters for the VFL and OPM (if installed) ports. Specify UPC (U) or APC (A) connector option for single-mode OTDR/OLS port.

DESCRIPTION	AFL NO.
Quad OTDR, 850/1300 MM, 1310/1550 SM UPC or APC with VFL	RG-2100-Q01
Quad OTDR, 850/1300 MM, 1310/1550 SM UPC or APC with Source, Power Meter, VFL	RG-2100-Q02
Dual Single-mode OTDR, 1310/1550 SM UPC or APC with VFL	RG-2100-S01
Dual Single-mode OTDR, 1310/1550 SM UPC or APC with Source, Power Meter, VFL	RG-2100-S02

ROGUE OTDR Kits

ROGUE OTDR Kits bundle together a ROGUE cB1 or iB1 Base unit, dual or quad OTDR module, carry strap, power supply, one-click cleaner, fiber ring launch cable(s), aeRos OTDR Basic license and soft carry case.

DESCRIPTION	AFL NO.
ROGUE iB1 Base Unit, RG-2100-Q02 Quad OTDR, 150m MM fiber ring, 150m SM fiber ring	RGK-OTDR-BQ02
ROGUE iB1 Base Unit, RG-2100-S02 Dual SM OTDR, 150m SM fiber ring	RGK-OTDR-BS02
ROGUE cB1 Base Unit, RG-2100-Q01 Quad OTDR, 150m MM fiber ring, 150m SM fiber ring	RGK-OTDR-CQ02
ROGUE cB1 Base Unit, RG-2100-S01 Dual SM OTDR, 150m SM fiber ring	RGK-OTDR-CS02

ROGUE MFS Multi-fiber Switch OTDR Add-on Kit

For faster testing of single-mode multi-fiber cables terminated in MPO/MTP connectors, add a ROGUE MFS Multi-fiber Switch to your OTDR test kit. Connect the ROGUE MFS to the OTDR's test port, then connect MFS to the network's MPO/MTP connector to automatically test up to 12 fibers terminated in the MPO connector.

INCLUDES			
12F MFS SWITCH	TEST CORD	MPO LAUNCH CABLE	AFL NO.
SM, SC/UPC-MPO/APC	SM, SC-SC, 0.3 m	12F, MPO-APC unpinned conn., 30 m	RGK-MPO-SM-OTDR-ADD

ROGUE OTDR Mobile Apps

The LinkMap OTDR mobile App to configure, control and access results from your Android device is available for free download from Google Play.