

Data Sheet

VIAVI

8100-Series OTDR EVO Modules

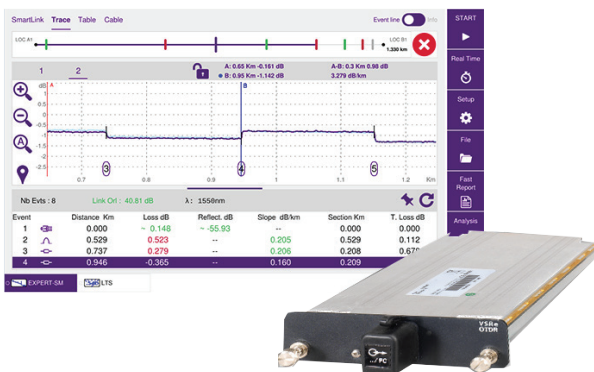
For OneAdvisor 800 Fiber platform

The VIAVI Solutions® 8100-Series OTDR EVO family transforms fiber testing. Connect the OTDR EVO family anywhere on the fiber to characterize single-mode and multimode fibers for commissioning, network upgrades, and troubleshooting with the added insurance of workflow optimization and accurate fiber-link fingerprinting.

The OTDR EVO family's optical performance combined with the One Advisor 800 Fiber's ensures that testing jobs are performed right—the first time.

Standard testing features include:

- Automatic macrobend detection
- Summary results table with pass/fail analysis
- FastReport onboard report generation



Applications

- Metro and ultra-long-haul fiber network characterization
- Advanced FTTH PON network qualification and troubleshooting
- Upgrading core fiber networks to 40 and 100 G
- Remotely monitoring fiber while in or out of service
- Advanced Tier-2 certification for enterprise and data center networks

Key Benefits

- Industry-leading dead zone performance for full element event characterization on fiber links
- Includes an integrated power meter, light source, and OTDR in a one-port tool for added flexibility
- Traffic detection avoids risking live signal interference or optical transmitter damage during an OTDR test
- Eliminates OTDR interpretation errors with Smart Link Mapper (SLM) without compromising on test time
- Reduces event loss measurement uncertainty and improves measurement repeatability

Key Features

- Up to 50 dB dynamic range
- Integrated CW light source and broadband power meter (single-mode wavelengths)
- PON-optimized to test through a 1x128 splitter
- Built-in encircled flux multimode source compliant with IEC 61280-1-4 and TIA-526-14-B



Specifications (Typical at 25°C)

| General | |
|---|--|
| Weight | approx. 500 g (1.1 lb) |
| Dimensions (W x H x D) | 213 x 124 x 32 mm (8.38 x 4.88 x 1.26 in) |
| Laser safety class (21 CFR) | Class 1 |
| Distance units | Kilometer, meter, feet, and miles |
| Group index range | 1.30000 to 1.70000 in 0.00001 steps |
| Number of data points | Up to 256,000 data points |
| Distance Measurements | |
| Mode | Automatic or dual cursor |
| Display range | Single-mode: 0.1 – 400 km Multimode: 0.05 – 10 km |
| Display resolution | 1 cm |
| Cursor resolution | From 1 cm |
| Sampling resolution | From 4 cm |
| Accuracy (Excluding group index uncertainties) | Single-mode: $\pm(0.75 \text{ m} + \text{sampling resolution} + 0.001\% \times \text{distance})$ Multimode: $\pm(0.33\text{m} + \text{sampling resolution} + 0.001\% \times \text{distance})$ |
| Attenuation Measurements | |
| Mode | Automatic, manual, 2-point, 5-point, and LSA |
| Display resolution | 0.001 dB |
| Linearity | Single-mode: $\pm 0.03 \text{ dB/dB}$ Multimode: $\pm 0.05 \text{ dB/dB}$ |
| Threshold | 0.01 to 4.99 dB in 0.01 dB steps |
| Reflectance/ORL Measurements | |
| Mode | Automatic or manual |
| Reflectance accuracy | $\pm 2 \text{ dB}$ |
| Display resolution | 0.01 dB |
| Threshold | -11 to -99 dB in 1 dB steps |

| OTDR Modules | 8100A | 8100C | 8100D |
|---|--|---|---|
| Central wavelength ¹ | 850 +10/-30 nm; 1300 ±20 nm; 1310 ±20 nm; 1550 ±20 nm; 1625 ±20 nm | 1310 ±20 nm; 1550 ±20 nm; 1625 ±10 nm; 1650 +15/-5 nm | 1310 ±20 nm; 1550 ±20 nm; 1625 +15/-5 nm; 1650 ±1 nm |
| Dynamic range ² | Multimode: 24/24 Single-mode: 40/40/40 dB | 47.5/47/47.5/46 dB | 50/50/50/48 dB |
| Pulse width | Multimode: 1 ns to 20 µs Single-mode: 3 ns to 20 µs | 2 ns to 20 µs | 2 ns to 20 µs |
| Event dead zone ³ | Multimode: 0.25 m Single-mode: 0.60 m | 0.5 m ⁹ | 0.5 m |
| Attenuation dead zone ⁴ | 2 m | 2 m | 2.5 m |
| Splitter attenuation dead zone | 25 m after a 15 dB splitter loss (single-mode only) | 25 m after a 15 dB splitter loss/60 m after a 18 dB splitter loss | 15 m after a 15 dB splitter loss |
| Power meter | | | |
| Calibrated wavelengths ⁵ | N/A | 1310/1490/1550/1625 nm | 1310/1490/1550/1625 nm |
| Power range | | -3 to -55 dBm | -5 to -55 dBm |
| Accuracy ⁶ | | ±0.5 dB at -30 dBm | ±0.5 dB at -30 dBm |
| Continuous wave light source⁷ | | | |
| Wavelengths | 850/1300/1310/1550/1625 nm | 1310/1490/1550/1625 nm | 1310/1550/1625 nm |
| Output power | 0 dBm | -3.5 dBm | 0 dBm |
| Stability | ±0.2 dB @25°C over 1 hr | ±0.1 dB at 25°C over 1 hour | ±0.1 dB at 25°C over 1 hour |
| Operating modes ⁸ | CW (single-mode only), 270 Hz, 330 Hz, 1 kHz, 2 kHz, Twintest | CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz, TWINtest | 270 Hz, 330 Hz, 1 kHz, 2 kHz, TWINtest |

1. Laser at 25°C and measured at 10 µs.

2. The one-way difference between the extrapolated backscattering level at the start of the fiber and the RMS (SNR=1) noise level, after 3 minutes averaging using the largest pulse width.

3. Measured at ±1.5 dB below the peak of an unsaturated reflective event using the shortest pulse width.

4. Measured ±0.5 dB from the linear regression using an FC/UPC reflectance and the shortest pulse width.

5. 1625 nm is not available on the 8138C-65 version.

6. At calibrated wavelengths.

7. At calibrated wavelengths; multimode source (850 nm) is compliant to the IEC 61280-1-4 standard related to the encircled flux.

8. Subtract 3 dB when in modulation mode (270 Hz/330 Hz/1 kHz/2 KHz).

9. Measured at 1.5 dB below the peak of an unsaturated 27 dB reflective event using the shortest pulse width.

Ordering Information

| Description | Part Number |
|---|--|
| 8100A Modules | |
| 850/1300/1310/1550 nm OTDR module ² | E8146A |
| 850/1300/1310/1550/1625 nm OTDR module ² | E8156A |
| 8100C Modules | |
| 1550 nm OTDR module ¹ | E8115C |
| In-service 1625 nm OTDR module ¹ | E81162C |
| In-service 1650 nm OTDR module ¹ | E81165C |
| 1310/1550 nm OTDR module | E8126C |
| 1310/1550/1625 nm OTDR module | E8136C |
| 8100D Modules | |
| 1550 nm OTDR module ¹ | E8115D |
| In-service 1625 nm OTDR module ¹ | E81162D |
| In-service 1650 nm OTDR module ¹ | E81165D |
| 1310/1550 nm OTDR module | E8126D |
| 1550/1625 nm OTDR module ¹ | E8129D-62 |
| 1310/1550/1625 nm OTDR module | E8136D |
| Universal Optical Connectors | |
| Straight connectors | EUNIPCFC, EUNIPCSC, EUNIPCST, EUNIPCDIN |
| 8° angled connectors | EUNIAPCFC, EUNIAPCSC, EUNIAPCDIN |

1. Source and power meter not available on these versions.

2. APC connector not available on these versions.

For more information about the [One Advisor 800](#), refer to its respective data sheets.

VIAVI Care Support Plans



Increase your productivity for up to 5 years with optional VIAVI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

Plan availability depends on product and region. Not all plans are available for each product or in every region. To find out which VIAVI Care Support Plan options are available for this product in your region, contact your local representative or visit: viavisolutions.com/viavicareplan

Features

*5-year plans only

| Plan | Objective | Technical Assistance | Factory Repair | Priority Service | Self-paced Training | 5 Year Battery and Bag Coverage | Factory Calibration | Accessory Coverage | Express Loaner |
|---|------------------------------------|----------------------|----------------|------------------|---------------------|---------------------------------|---------------------|--------------------|----------------|
|  BronzeCare | Technician Efficiency | Premium | ✓ | ✓ | ✓ | | | | |
|  SilverCare | Maintenance & Measurement Accuracy | Premium | ✓ | ✓ | ✓ | ✓* | ✓ | | |
|  MaxCare | High Availability | Premium | ✓ | ✓ | ✓ | ✓* | ✓ | ✓ | ✓ |



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