Source Mode

	E6001A	E6003A, E6003B, E6004A, E6008B	E6005A, E6009A	E6012A
	built-in CW laser source	**built-in CW dual laser source**	**built-in CW dual laser source**	**built-in CW dual laser source**
CW output power		-3 dBm	-20 dBm (850 nm), -13 dBm (1300 nm)	-3 dBm
CW stability (15 min., T=const.) after 10 minute warm-up with CW on		±0.1 dB	±0.15 dB	±0.1 dB / ±0.15 dB
Optical output	User-exchangeable Connector Interfaces			
Source Mode Modulation	270 Hz, 1 KHz, and 2 KHz squarewave			

Pulsewidth

You can select any of the following pulsewidths:

- 10 ns, 30 ns, 100 ns, 300 ns, 1 µs, 3 µs, and 10 µs (all modules). You can also select 5 ns for all multimode modules, and 20 µs for E6003B, E6008B, and E6012A.

With the E6005A module, you can select a pulsewidth from 5 ns to 100 ns at 850 nm, and from 5 ns to 10 µs at 1300 nm.

With the E6009A module, you can select a pulsewidth from 5 ns to 100 ns at 850 nm, and from 5 ns to 1 µs at 1300 nm.

Output Connector

- Optional Diamond HMS-10, FC/PC, DIN 47256, ST, Biconic, SC, NEC D4. All options are user-exchangeable.

Documentation

- **3.5" floppy disk drive:** for high density 720/1440 kByte floppy disks. MS-DOS format compatible. Reduced operating temperature of 5° to 45° C, with 35% to 80% humidity at 40° C.
- **Memory Card:** PCMCIA Type II. SRAM up to 2 MB
- **Flash Disk**: 440 MB with up to 13000 traces (typical with 16000 data points).
- **Internal memory:** up to 300 traces (typical with 4000 data points).
- **Trace format:** compliant to SR-4731 of Bellcore Version 2.0 OTDR Data Format.
- **Trace information:** 5 comment labels of up to 15 alphanumeric characters, and 5 comments of up to 41 alphanumeric characters are provided for each trace.
- **Real-time clock and date**

Scan Trace

- **Type of events:** reflective and non-reflective.
- **Maximum number of events:** 100.
- **Threshold for non-reflective events:** 0.0 to 5.0 dB, selectable in 0.01 dB steps.
- **Threshold for reflective events:** -14.0 to -65.0 dB, selectable in 0.1 dB steps.

- **Threshold for fiber breaks:** 0.1 to 10 dB, selectable in 0.1 dB steps.
- **Fiber End Threshold**: 0.1 to 20 dB, selectable in 0.1 dB steps.

Display

- **Color or monochrome VGA-LCD:** 18.3 cm (7.2”)
- **Display points:** 640 x 480 points
- **Measurement update rate**: two measurements per second in refresh mode.

Interfaces

RS232C

- **Maximum baud rate**: 115200 bps
- **Transmission time** at 115200 baud for trace data: 4000 points at approx. 1 second; 16000 points at approx. 4 seconds.
- **Centronics**: Standard parallel port (SPP).
- **Keyboard**: PS2 (Min-DIN). For English Standard, PS2, or AT keyboard.

General

- **Automatic setup and analysis**
- **Instrument settings:** storage and recall of user-selectable instrument settings.
- **Laser Safety Class (E6001A-E6005A and E6008B-E6012A):** 21 CFR Class 1, IEC 825 Class 3A
- **Recommended recalibration period:** 2 years.

  For modules only: no calibration on mainframe.

- **Dimensions:** 194 mm H, 290 mm W, 75 mm D (7.7” x 11.4” x 3.0”).
- **Weight:** net < 2.9 kg (6.4 lbs), typical, including battery pack and OTDR module.

Built in Applications

Automatic Multi Fiber Test

Pass/Fail Test

Fiber Break Locator

Power Meter / Loss Test mode

Visual Fault Finder mode

Optical Return Loss

Easy OTDR

OTDR Training

OTDR Assistant

Environmental

See “Operating and Storage Environment” on page 179

Power

See also “AC Line Power Supply Requirements” on page 177 and “DC Power Supply Requirements” on page 179.

- **AC**: 100 -240 Vrms ± 10% 50-60 Hz
- **DC**: 16 - 24 V
- **External Battery:** NiMH typically 8 hours continuous operation (minimum 4 hours). Charging time < 3 hours, non-operating.

  These characteristics apply to the black and white display (option #006) only.

- **Low battery indicator**
- **Battery charge status**

Module Specifications/ Characteristics

Specifications: Optical Performance

Measured at 22 °C ± 3°C. Guaranteed specifications unless otherwise noted. **Bold** values are typical specifications

Module	**E6001A**				**E6003A**			
Central Wavelength	**1310** ±25 nm				**1310**±25 nm/ **1550**±25 nm			
Applicable Fiber	single-mode				single-mode			
Pulsewidth	10ns	100ns	1µs	10µs	10ns	100ns	1µs	10µs
Dynamic Range[1] *[dB]*	13	18	23	28 **30**	19/17	24/22	30/29	35/34
Event Deadzone [2]	5 m (**3 m**)				5 m (**3 m**)			
Attenuation Deadzone [3]	25 m				20/25 m			
Attenuation Deadzone [4]	**10 m**				**10/12m**			

Module	**E6003B**					**E6004A**			
Central Wavelength	**1310**±25 nm/ **1550**±25 nm					**1310**±25 nm/ **1550**±25 nm			
Applicable Fiber	single-mode					single-mode			
Pulsewidth	10ns	100ns	1µs	10µs	20µs	10ns	100ns	1µs	10µs
Dynamic Range[1] *[dB]*	19/17	24/22	30/29	38/37	**40/39**	13/13	18/18	23/23	28/28 **30/30**
Event Deadzone[2]	5 m (**3 m**)					5 m (**3 m**)			
Attenuation Deadzone [3]	20/25 m					25/25 m			
Attenuation Deadzone [4]	**10/12m**					**10/12m**			

Module	E6008B	E6012A
Central Wavelength	**1310**±25 nm/ **1550**±25 nm	**1550**±25 nm/ **1625**±20 nm
Applicable Fiber	single-mode	single-mode
Pulsewidth	10ns 100ns 1µs 10µs 20µs	10ns 100ns 1µs 10µs 20µs
Dynamic Range[1] *[dB]*	24/22 29/27 35/34 42/41 **45/43**	22/18 27/24 34/30 41/37 **- / 40** **43/ -**
Event Deadzone[2]	5 m (**3 m**)	5 m (**3 m**)
Attenuation Deadzone [3]	20/25 m	25/28 m
Attenuation Deadzone [4]	**10/12m**	**12/14m**

Module	E6005A	E6009A
Central Wavelength	850±30 nm / 1300±30 nm	850±30 nm / 1300±30 nm
Applicable Fiber	multimode 62.5 µm	multimode 62.5 µm
Pulsewidth	10ns 100ns 1µs 10µs	10ns 100ns 1µs
Dynamic Range [5] *[dB]*	19/17 26/22 - /28 - /34	12/12 18/18 - /23
Event Deadzone [6]	3 m	3 m
Attenuation Deadzone[7]	10 m	10 m

The guaranteed values above are tested specifications. Agilent OTDR modules have the pulsewidths listed in “Pulsewidth” on page 207.

Notes:

1 Measured with a standard single-mode fiber at SNR=1 noise level and with 3 minutes averaging time. Optimize mode: dynamic

2 Reflectance ≤ -35 dB at 10 ns pulsewidth, and with span ≤ 4 km, optimize resolution.

Typical specification at Reflectance ≤ -35 dB at 10 ns pulsewidth, and with span ≤ 400 m at 8 cm sample spacing, optimize resolution.

3 Guaranteed Specification at Reflectance ≤ -35 dB at 30 ns pulsewidth, and with span ≤ 4 km. Optimize mode: resolution.

4 Typical Specification at Reflectance ≤ -50 dB at 30 ns pulsewidth, and with span ≤ 4 km (typical value).

5 Measured with a standard 62.5 µm guided index multimode fiber at SNR=1 noise level and with 3 minutes averaging time, optimize dynamic.

6 Reflectance ≤ -35 dB at 5 ns pulsewidth, and with span ≤ 4 km, optimize resolution.

7 Reflectance ≤ -35 dB at 10 ns pulsewidth, and with span ≤ 4 km.

Characteristics

Distance Accuracy [A]

- **Offset Error**: ± 1 m
- **Scale Error**: ± 10^{-4}
- **Sampling Error**: ± 0.5 sampling spacing

Loss/Reflectance Accuracy [B]

- **Backscatter Measurements**: ± 0.05 dB (1dB step), typical
- **Reflectance Measurements**[C]: ± 2.0 dB, typical

Acoustic Noise Emission

< 40dBA, not continuous.
Data are results from type tests per ISO 7779 (EN 27779).

Notes:

A Total distance accuracy = ± (offset error + scale error*distance + sampling error).

B SNR ≥ 15 dB and with 1 µs, averaging time max. 3 minutes.

C -20 dB to -60 dB