

# OTDR AE 3100 A

WAVELENGTH  
HANDHELD OTDR



## KEY FEATURES

- High performance OTDR for FTTx and RFoG networks
- 7", 800x480 LCD touchscreen places power and convenience at your fingertips
- Excellent short-distance performance with 0.8m event deadzone and 4m attenuation deadzone
- Dual-wavelength testing with broad dynamic range coverage (28 - 45dB)
- Minimum 5cm resolution
- Intelligent event analysis
- Excellent stability and repeatability
- "FiberPath" fiber link mapping mode
- Multiple options for your measurement needs, including: VFL, power meter, light source, and optical fiber microscope
- Complete user data ports: supports LAN, USB, SD, & more

## OVERVIEW

From Deviser Instruments' 4th generation of OTDR, the fieldportable AE3100 marks a giant leap forward in fiber-optic measurement performance and utility. Models A through F can test the 1310nm and 1550nm wavelengths with dynamic range up to 45dB. Input signals that contain both 1310nm & 1550nm wavelengths are automatically filtered. Featuring intuitive touchscreen controls and real-time data analysis, the AE3100 is the ideal test instrument for constructing, deploying, maintaining, and authenticating FTTx networks - as well as verifying access networks. Multiple models and configuration options ensure your unique measurement needs are covered

## APPLICATIONS

Construction, deployment, maintenance, and authentication of the following networks:

- FTTx
- Long Haul Networks
- Passive Optical Networks (PON)
- Local Area Networks (LAN)
- Metropolitan Area Networks (MAN)

Also see AE3100 models CP, DP, EP, and G for triple- and quadruple-wavelength measurements with dynamic range up to 43dB, and models M, CM, DM, and EM for multi-mode testing.

## Model Guide

Model	Wavelengths (nm)	Dynamic Range (dB)	Event Deadzone* (m)	Att. Deadzone* (m)
A	1310 / 1550 (± 20)	≥ 30 / 28	≤ 1.5	≤ 5.0
B		≥ 34 / 32	≤ 1.0	
C		≥ 36 / 34	≤ 0.8	≤ 4.0
D		≥ 40 / 38		≤ 3.0
E		≥ 43 / 41		
F		≥ 45 / 43		

\* At 25°C ± 5°C; 5ns pulse width; non-saturated reflective event; 5cm distance resolution.



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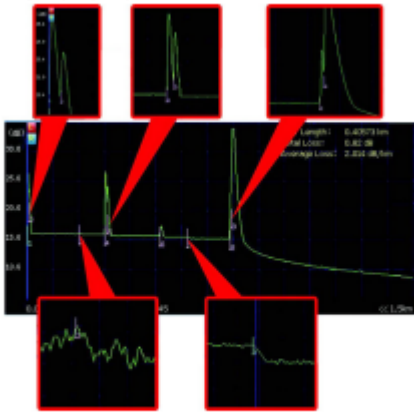
## FiberPath™

FiberPath simplifies the interpretation of OTDR traces by identifying link elements and displaying the link map in an easy-to-understand format. Experienced and inexperienced technicians alike will appreciate the simplified display.



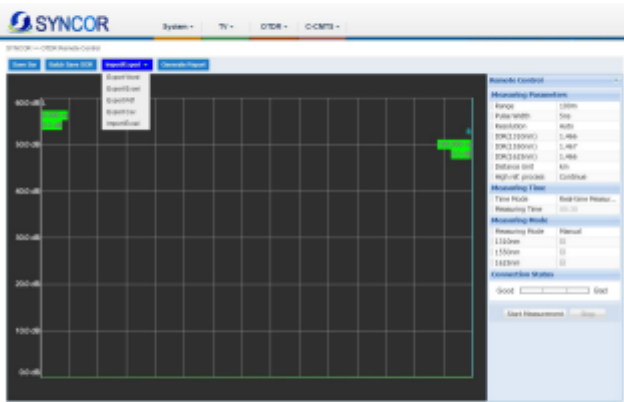
## OTDR

This high-performing OTDR is the ideal solution for testing optical fiber in RFoG and FTTx applications. The OTDR can identify and locate link impairments and measure the insertion loss by LSA, 2Pt and 4Pt methods. The unit also measures optical return loss (ORL).



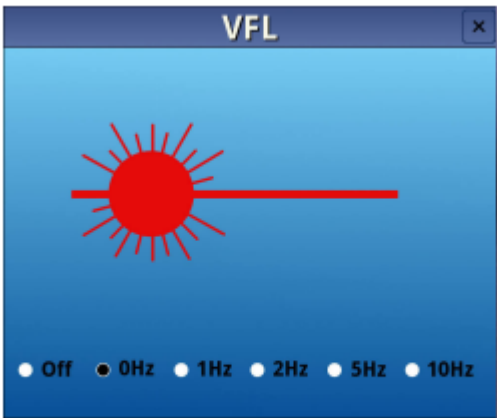
## Remote Control

In conjunction with the SYNCOR PC-based asset and test data management system, users can issue test orders and collect measurement data remotely from AE3100 units deployed to the field.



## Optical Measurements

The AE3100 includes a suite of optical measurement tools, including a power meter, laser source, and visual fault locator (shown below). The unit is available in numerous wavelength configurations for ensuring proper levels in networks such as RFoG and FTTx.



Pictured: Visual Fault Locator (VFL) beam illuminates bends, splices, and faults in optical fibers, with an effective range of up to 10km.



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## SPECIFICATIONS

AE3100 Model	A		B	C	D	E	F
General							
Wavelength Accuracy	± 20nm						
Event Deadzone	≤ 1.5m	≤ 1.0m	≤ 0.8m				
Attenuation Deadzone	≤ 5.0m		≤ 4.0m	≤ 3.0m			
Measurement Range	100m, 400m, 1.5km, 3km, 6km, 12km, 25km, 50km, 100km, 200km, 400km						
Pulse Width	3ns, 5ns, 10 ns, 30 ns, 50 ns, 100 ns, 200 ns, 500 ns, 1μs, 2μs, 5μs, 10μs, 20μs						
Sampling Resolution	10cm ~ 12.8m		5cm ~ 12.8m				
Sampling Points	Up to 256,000						
Distance Accuracy (m)	± (0.75m + 0.005% x Distance + Sampling Res.)		± (0.75m + 0.001% x Distance + Sampling Resolution)				
Group Refractive Index	1.30000 ~ 1.70000						
Linearity	0.05 dB/dB		0.03 dB/dB				
Loss Threshold	0.001dB						
Loss Resolution	0.001 dB						
Refresh Rate	4 fields/second						
Reflectance Accuracy	± 2dB						
Measurement Time Range	5s ~ 5min, real time						
Data Storage	Holds >80,000 OTDR traces, exportable to USB / SD card / computer						

Functions & Accessories			
Test Modes	Manual; Auto	File Format	Compatible with Bellcore GR 196 v1.1 (*.SOR)
Limit Settings	Manual; Auto	Loss Test Type	LSA, 2pt, 4pt
Limit Profiles	8 customizable profiles	UI Style	4 styles available
Distance Shift	Yes; display negative events	FiberPath Linear View	✓
Real-Time Testing	✓	Touchscreen Keyboard	✓
Self-Correcting	✓	Web Browser	✓
Online Help	✓	Auto Shutdown/Sleep	✓
Factory Reset	✓	MacroBending Test	✓
Multi-Lingual File Naming	✓	Dual/Quad-λ Testing	✓
Screenshots	✓	Multi-Trace Comparison	✓



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## SPECIFICATIONS (CONT´D)

AE3100 Model		A / B	C / D / E / F
Functions & Accessories (cont'd)			
Optical Power Meter	Calibration $\lambda$	1310 / 1550nm	
	Operating $\lambda$	850 / 980 / 1300 / 1310 / 1490 / 1550 / 1610nm	
	Range	Select from [-70 ~ +10dBm] or [-50 ~ +26dBm]	
	Resolution	$\pm 0.17$ dB	
Laser	Wavelength	1310 / 1550nm	
	Output Power	> -11dBm	> -4dBm
	Modes	CW / 1kHz / 2kHz / 1kHz + Flash / 2kHz + Flash	
VFL	Wavelength	650 $\pm$ 10nm	
	Power	1mW	
	Compliance	Laser Safety Class II	
USB FiberSpot Mode		Available by option only	
FiberPath		Available by option only	
Fiber Cleaning Pen		Up to 200 uses	
Remote Testing		Requires SYNCOR software configuration	
Cloud Asset Management		Requires SYNCOR software configuration	
Optical Port Type		PC (default); APC (optional)	
Optical Adapter Type		FC (default); SC, ST, LC, SC/APC (optional)	

AFE1400 Auto Fiber Endface Inspector			
Field of View	425 x 360 $\mu$ m	Compatibility	Use with AE3100, AE1000, or Windows PC
Resolution	< 1.5 $\mu$ m	Magnification	400x
Fault Size Detection	0.75 $\mu$ m	Camera	1.3 million megapixel, 1/2" CMOS
Focus Range	$\pm$ 1mm (max $\pm$ 3mm), auto-focus	Live Image	800 x 800, JPEG
Light Source	Blue LED	Storage Temp.	-20 ~ +70°C
Power Source	USB 2.0 port	Measure speed	< 1s
Dimensions (HxWxL)	1.9" x 1.0" x 7.1" (47mm x 24.5mm x 181mm)	Weight	5.4oz (152g)
General Specifications			
Display		7" 800x480 dot matrix TFT LCD touchscreen	
Interface		2x USB 2.0; 1x RJ45 LAN (10M/100M); 1x SD card slot (64GB max)	
Power	Supply	100 ~ 240V, 1.5A, 50~60Hz (AC); max 12V / 2Ah (DC); total max power 24 W	
	Consumption	< 3.5W	
Battery		7.4V / 5300mAh Li-ion battery, 39.22 Wh	
Operating Time		~ 11 hrs on full charge	
Languages		Chinese, English, Spanish, Portuguese, French, Russian, Italian (German, Korean, Arabic optional)	
Operating Temperature		-10°C ~ +50°C	
Storage Temperature		-40°C ~ +70°C	
Relative Humidity		0 ~ 95%, non-condensing	
Dimensions (LxWxH)		8.1" x 6.7" x 3.0" (206mm x 171mm x 75mm)	
Weight		< 4.4 lbs (< 2kg)	





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## Ordering Information

**Included with all AE3100 Handheld OTDR Models:**

- Visual Fault Locator, 650nm (1mW)
- Optical Light Source
- Li-Ion Battery & AC/DC Adapter
- Carrying Case & Stylus
- Optical Power Meter (select either [-70 ~ +10dBm] or [-50 ~ +26dBm])
- Calibration & Quality Certificates
- Quick Reference Guide
- Cleaning Swab
- CD with Instruction Manual
- PC Management Software
- FC/PC or APC Connectors

SKU No.	Wavelengths	Dynamic Range	Event Deadzone	Attenuation Deadzone
AE3100A	1310 / 1550nm	≥ 30 / 28dB	< 1.5m	< 5.0m
AE3100B	1310 / 1550nm	≥ 34 / 32dB	< 1.0m	< 5.0m
AE3100C	1310 / 1550nm	≥ 36 / 34dB	< 0.8m	< 4.0m
AE3100D	1310 / 1550nm	≥ 40 / 38dB	< 0.8m	< 3.0m
AE3100E	1310 / 1550nm	≥ 43 / 41dB	< 0.8m	< 3.0m
AE3100F	1310 / 1550nm	≥ 45 / 43dB	< 0.8m	< 3.0m

