

AF-DR-500 SERIES

HANDHELD OTDR



Description

Introducing the new DR-500 series handheld full color display Optical Time Domain Reflectometer from Advanced Fiber Solutions.

The unit is one of the most compact OTDR's on the market today, ideal for handheld use and pocket transportation. The unit is light weight weighing less than 1.6 Lbs. It is extremely rugged with a thick protective rubber boot surrounding the outer case. It also offers a long battery life enabling the technician to continuing test up to eight hours.

It is a full featured OTDR offering four different performance classes to choose from, with a dynamic range starting at 23dB going up to 43dB. Class A is optimized for private and premise networks. Class B is optimized for FTTx and CATV networks. Class C is optimized for close event detection and large attenuation measurements like PONS networks. Class D is optimized for long haul applications.

Along with a wide dynamic range to choose from, the unit offers a number of wavelength options for both single mode and multimode applications with single, dual, tri and quad models available. Wavelength options include 850nm, 1300nm, 1310nm, 1550nm and 1625nm.

The unit is simple to operate and is the perfect installation, maintenance and link trouble shooting tool. It is the ideal OTDR for either the inexperienced or the experienced technician. The unit supports both a manual mode for the expert user which enables parameter setup and an automatic mode for the less experienced user which allows one touch auto run testing. The unit utilizes active sync for seamless USB connectivity with desktop software for advanced data analysis and storage capabilities.

It is fully compliant and compatible with the .sor file format outlined in the belcore GR-196 OTDR data standardization document. Other optional features offered by this industry leading OTDR include a built in power meter, light source and Visual Fault Locator.

Each unit comes with a DR-500 series product manual, USB data transfer cable, the DR-500 series PC software, report certificate and a soft carrying case.



Product Highlights and Key Features

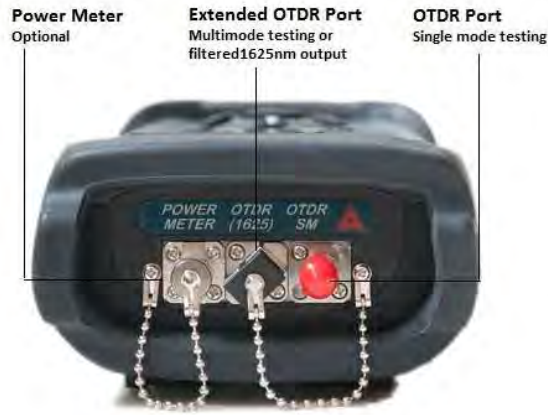
◦ Compact and rugged case	◦ Bellcore .sor format compatible
◦ Single, dual, tri and quad λ models available	◦ USB jump drive compatible for extra storage
◦ Events table and auto test function	◦ 9 hours of operation, fast charging Li-Ion battery
◦ Up to 42dB Dynamic Range	◦ High contrast full color display
◦ Weight less than 1.6 lbs	◦ User friendly and easy too operate
◦ Four performance classes to choose from	◦ Optional features: Power Meter and Light Source

Class Definitions**							
Class Definitions	Ax	A	A+	B	C	D	D+
Dynamic Range Single mode 1310/1550/1625nm	25/27dB	31/29/28dB	34/32/31dB	39/37/36dB	37/35/34dB	42/40/39dB	44/42/41dB
Dynamic Range Multimode 850/1300nm	N/A	23/24dB	N/A	N/A	26/28dB	N/A	N/A
Event Dead Zone Both MM & SM	2.5 M	2.5 M	1.8 M	1.8 M	1.0 M	1.4 M	1.4 M
Attenuation Dead Zone Both MM & SM	12 M	9.5 M	6.5 M	6.5 M	4.5 M	9.0 M	9.0 M

All Units	
Distance Range	2,5,10,20,40,80,120,160,240 Km
Data Points	Up to 64,000
Loss Resolution	0.001dB
Distance Accuracy	$\pm(0.5+5 \cdot 10^{-5} L+(\delta n/n) \cdot L)$
Refractive Index Range	1.0000.....2.0000
Language	English
OTDR Modes	Full Auto, Expert and Real Time
Attenuation Measurement Accuracy	0.05dB
Sampling Resolution	0.16m.....7.6m
Storage Capability	~ 500 traces
Unit Measurement	Meter

Temperature Specifications	
Operation Temperature	0°.. +40°C
Relative Humidity	95% Without Condensation

Unit Specifications	
Display	3.5" TFT 16 bit full color
Connection with PC	USB and ActiveSync
Power Supply	Li-Ion battery (9 hours) / External supply 12V @ 1.5amps
Optical Connector Style	ST, FC & SC
Dimensions (without boot)	6.5 inches X 3.65 inches X 2 inches
Weight	1.6 lbs



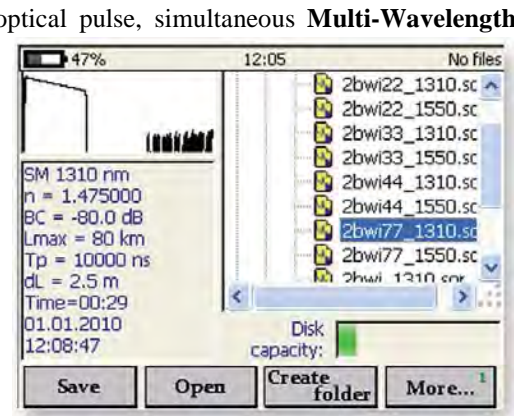
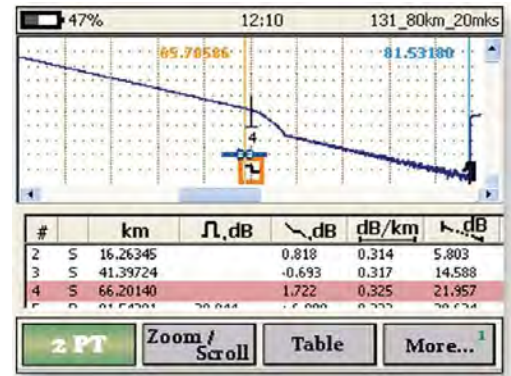
Firmware Software

Reliable and powerful firmware offers a host of features such as **Auto Trace Analysis**, **Batch Processing** and **Macro Bend Detection**.

Once a measurement is complete the software will perform auto trace analysis of the line (if the option is selected by the technician). The software will create a table of events enabling the end user to auto-zoom in on highlighted events for further analysis.

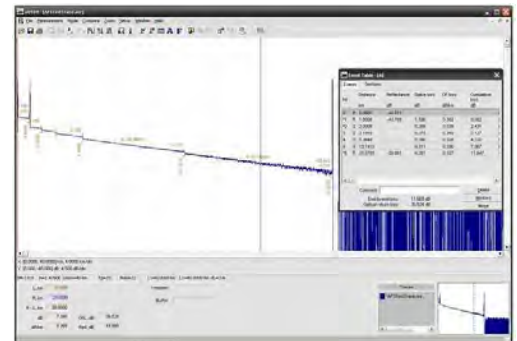
Other features include a **Live Mode** where the trace is continuously being updated and adjusted according to the feedback from the back reflection of the inserted optical pulse, simultaneous **Multi-Wavelength**

An intuitive GUI makes running, saving and opening traces a breeze. There is also an option of an extended external storage capability by simply adding a standard USB jump drive to the side of the unit. The unit has internal storage capability to store up to 1000 traces.



Desktop Software

Utilizing the same powerful OTDR PC software package developed for the uOR-100 series USB powered OTDR the technician can transfer the .sor file from the handheld unit to the PC software for advanced data analysis and review enabling the end user to determine all the necessary characteristics of the optical fiber. The PC software is capable of displaying, storing, reading, printing and analyzing several traces simultaneously.



Ordering Information for AF-DR515

(Multimode 850/1300nm)

Model Number	Performance Class	Connector Style			No Port	No Connector
<u>AF-DRXXX</u>	<u>XX</u>	<u>XX</u> 3 Available Types (UPC → ST, FC or SC)			<u>Extended Port</u>	<u>Extended Port Connector</u>
515 $\lambda = 850/1300\text{nm}$ App: Multimode	A1 Class A DR = 23/24dB EDZ = 2.5m ADZ = 9.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	----
	C0 Class C DR = 26/28dB EDZ = 1.0m ADZ = 4.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	----
<i>Part Number Example AF-DR515-A1-U2 (class A with UPC-FC connector)</i>						

Definitions:

DR = Dynamic Range

EDZ = Event Dead Zone

ADZ = Attenuation Dead Zone

Ordering Information for AF-DR525

(Single Mode 1310/1550nm)

Model Number	Performance Class	Connector Style				Connector Style	
<u>AF-DRXXX</u>	<u>XX</u>	<u>XX</u> <u>6 Available Types</u> <u>(UPC → ST, FC or SC)</u> <u>(APC → ST, FC or SC)</u>			<u>Extended</u> <u>Port</u>	<u>Extended</u> <u>Port</u> <u>Connector</u>	
525 $\lambda = 1310/1550\text{nm}$ App: Single Mode	A0 Class Ax DR = 27/25dB EDZ = 2.5m ADZ = 12m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	-----	
		T1 APC-ST	T2 APC-FC	T3 APC-SC			
	A1 Class A DR = 29/28dB EDZ = 2.5m ADZ = 9.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	-----	
		T1 APC-ST	T2 APC-FC	T3 APC-SC			
	A2 Class A+ DR = 34/32dB EDZ = 1.8m ADZ = 6.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	-----	
		T1 APC-ST	T2 APC-FC	T3 APC-SC			
	B0 Class B DR = 37/35dB EDZ = 1.8m ADZ = 6.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	-----	
		T1 APC-ST	T2 APC-FC	T3 APC-SC			
	C0 Class C DR = 35/34dB EDZ = 1.0m ADZ = 4.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	-----	
		T1 APC-ST	T2 APC-FC	T3 APC-SC			
	D0 Class D DR = 42/40dB EDZ = 2.0m ADZ = 9.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	-----	
		T1 APC-ST	T2 APC-FC	T3 APC-SC			
	D1 Class D+ DR = 42/42dB EDZ = 2.0m ADZ = 9.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	----	-----	
		T1 APC-ST	T2 APC-FC	T3 APC-SC			
	Part Number Example AF-DR525-A1-U2 (class A with UPC-FC connector)						

(Single Mode 1310/1550/1625nm)

Model Number	Performance Class	Connector Style			1625nm	Extended Port Connector Style			
<u>AF-DRXXX</u>	<u>XX</u>	<u>XX</u> 6 Available Types (UPC → ST, FC or SC) (APC → ST, FC or SC)			<u>X</u> Extended Port	<u>XX</u> 6 Available Types (UPC → ST, FC or SC) (APC → ST, FC or SC)			
529 $\lambda = 1310/1550\text{nm}$ 1625nm App: Single Mode (PON)	A1 Class A DR = 31/29/28dB EDZ = 2.5m ADZ = 9.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	E	Y1 UPC-ST	Y2 UPC-FC	Y3 UPC-SC	
		T1 APC-ST	T2 APC-FC	T3 APC-SC		Z1 APC-ST	Z2 APC-FC	Z3 APC-SC	
	A2 Class A+ DR = 34/32/31dB EDZ = 1.8m ADZ = 6.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	E	Y1 UPC-ST	Y2 UPC-FC	Y3 UPC-SC	
		T1 APC-ST	T2 APC-FC	T3 APC-SC		Z1 APC-ST	Z2 APC-FC	Z3 APC-SC	
	B0 Class B DR = 39/35/35dB EDZ = 1.8m ADZ = 6.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	E	Y1 UPC-ST	Y2 UPC-FC	Y3 UPC-SC	
		T1 APC-ST	T2 APC-FC	T3 APC-SC		Z1 APC-ST	Z2 APC-FC	Z3 APC-SC	
	C0 Class C DR = 37/35/34dB EDZ = 1.0m ADZ = 4.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	E	Y1 UPC-ST	Y2 UPC-FC	Y3 UPC-SC	
		T1 APC-ST	T2 APC-FC	T3 APC-SC		Z1 APC-ST	Z2 APC-FC	Z3 APC-SC	
	D0 Class D DR = 42/40/39dB EDZ = 2.0m ADZ = 9.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	E	Y1 UPC-ST	Y2 UPC-FC	Y3 UPC-SC	
		T1 APC-ST	T2 APC-FC	T3 APC-SC		Z1 APC-ST	Z2 APC-FC	Z3 APC-SC	
	Part Number Example AF-DR529-C0-T3-E-Z3 (class C with 1310/1550 APC-SC connector & 1625 APC-SC)								

Information for AF-DR535

(Single Mode 1310/1550nm & Multimode 850/1300nm) Quad Unit

Model Number	Performance Class	Connector Style For SM Port			MM Port	Connector Style For MM Port		
<u>AF-DRXXX</u>	<u>XX</u>	<u>XX</u> 6 Available Types (UPC → ST, FC or SC) (APC → ST, FC or SC)			<u>Extended Port</u> <u>MM</u>	<u>Extended Port</u> <u>Connector</u>		
535 $\lambda = 1310/1550\text{nm}$ $850/1300\text{nm}$ App: Single Mode & Multimode	A1 Class A SM DR = 29/28dB MM DR = 25/26dB EDZ = 2.5m ADZ = 9.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	M	X1 UPC-ST	X2 UPC-FC	X3 UPC-SC
		T1 APC-ST	T2 APC-FC	T3 APC-SC				
	C0 Class C SM DR = 34/32dB MM DR = 26/28dB EDZ = 1.0m ADZ = 4.5m	U1 UPC-ST	U2 UPC-FC	U3 UPC-SC	M	X1 UPC-ST	X2 UPC-FC	X3 UPC-SC
		T1 APC-ST	T2 APC-FC	T3 APC-SC				
<i>Part Number Example AF-DR535-C0-U3-E-U1 (class C with 1310/1550 UPC-SC connector & 850/1300 UPC-ST)</i>								

PL = General Purpose Power Meter / PH = High Power Power Meter

Power Meter		
Parameters	Single Mode	Multimode
Calibrated Wavelengths- PH/PL	1310/1490/1550/1625nm	650/850nm
Power Range in dBm- PL	+7... -65dBm	+3...-30dBm / +3.....-60dBm
Power Range in dBm- PH	+27... -45dBm	+23...-10dBm / +23.....-40dBm
Measurement Accuracy/dB- PH/PL	+/- 5%	+/-12% / +/- 8%
Linearity/dB- PH/PL	+/- 2.5%	+/-6% / +/-4%
Resolution/dB- PH/PL	0.01	0.01

Light Source (only available with Power Meter on SM models)		
Parameters	Single Mode	Multimode
Wavelength	1310/1550nm	N/A
Output Power in dBm	> -4	N/A
Power Level Instability in dB	+/- 0.05dB (after 15 min)	N/A
Operating Mode	CW&2KHz	N/A
Optical Connector	Shared with OTDR port	N/A

Note:

1. Power Meter comes with interchangeable connector.
2. VFL is an available option for quantity orders

Ordering Information for Optional Features

Add to end of standard Part Number			
General Purpose Power Meter	High Power Power Meter	General Purpose Power Meter with Laser Source	High Power Power Meter with laser Source
-PL	-PH	-PLS	-PHS