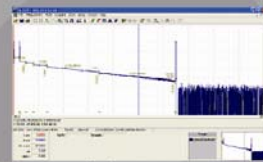


# ADVANCED FIBER SOLUTIONS

## Complete Fiber Optic Testing Solutions



[www.afs-i.com](http://www.afs-i.com)

1-800-556-9313

[info@afs-i.com](mailto:info@afs-i.com)

19 Norfolk Ave, Easton, Ma, 02375, USA

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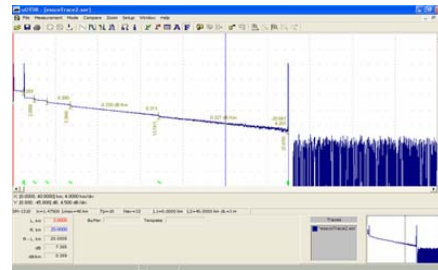
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Advanced Fiber Solutions concentrates on the development of complete fiber optic test equipment solutions. Our goal is to create innovative products that will equip our customers to be as efficient as possible. At Advanced Fiber Solutions, our products reflect our experience developing and supporting fiber optic test equipment for thousands of users. We are dedicated to providing the highest quality products, the most complete service and responsive support for our customers. For more information on any of our products or on fiber optic testing visit our website at [www.afs-i.com](http://www.afs-i.com)

# Micro OTDR

## uOR-100, uOR-200 & uOR-300 Series

We are pleased to announce the release of a new quad wavelength micro OTDR. We offer five models. Three single mode versions with different dynamic ranges, one multimode version and our newly introduced quad Multimode/Single mode model. Each unit is powered via the PC USB port and requires no batteries or external power supply.



<b>TECHNICAL SPECIFICATIONS</b>			
<b>Optical Fiber Type</b>	<b>Multimode/Single Mode</b>	<b>Multimode</b>	<b>Single Mode</b>
Wavelength, nm	850nm/1300nm/1310nm/1550nm +/- 30nm	850nm/1300nm +/- 20nm	1310nm/1550nm +/- 30nm
Dynamic range	25/26 dB (MM)/ 28/29 dB (SM)	26/25 dB	<b>** 3 Versions available</b>
Attenuation Dead Zone	12 Meters / 6 Meters	12 Meters	6 Meters
Event Dead Zone	3 Meters / 1.5 Meters	3 Meters	1.5 Meters
Pulsewidth	10...1000 nS / 10 ... 20000 ns	10...1000 nS	10...20000 ns
Distance Range	2, 5, 10, 20, 40, 80, 120, 160, 240 km		
Loss Resolution	0.001 dB		
Distance accuracy	$\pm(0.5+5 \cdot 10^{-5} L+(\delta n/n) \cdot L)$		
Refractive Index Range Setting	1.0000...2.0000		
Optical Connector Type	Call for availability		
Supply Current From USB Port	<200mA		
Size	6.25inches x 3inches x 1.25inches		
Weight	1.5 lbs		
<b>Temperature Specifications</b>			
Operation Temperature	0°.. +40°C		
Relative Humidity	95% without condensation		
<b>** Single mode Versions Available</b>			
Versions (Dynamic Range)	32/31 dB	40/38 dB	43/42 dB
Language	English, Spanish, Korean + Russian		

The uOR-100, uOR-200 & uOR-300 series Micro PC-Based OTDR measures the attenuation in optical fibers and splices, as well as the length and the distance to any event, such as a break in fiber link. The Micro OTDR is the perfect tool for the construction, maintenance and restoration of cable plants and also as an educational tool. The Micro OTDR is accurate enough for laboratory use but portable and rugged enough for field applications.

The Micro OTDR consists of the single, small rugged case; it is lightweight and has a low power consumption. The Micro OTDR is used in conjunction with a PC or Laptop with a USB interface, eliminating the need for batteries completely! The USB connection allows the Micro OTDR to be controlled from a laptop or PC and runs off of Windows operating system. The Micro OTDR software allows the user to determine all the necessary characteristics of the Optical Fiber and is capable of displaying, storing, reading, printing and analyzing several traces at the same time.



uOR series OTDR's:

OTDR Part Number	Mode	Dynamic Range
AF-uOR-101	Multimode	850nm/1300nm 25/26dB
AF-uOR-201	Single Mode	1310nm/1550nm 32/31dB
AF-uOR-203	Single Mode	1310nm/1550nm 38/40dB
AF-uOR-204	Single Mode	1310nm/1550nm 42/43dB
AF-uOR-301	Multimode / Single Mode	850nm/1300nm/1310nm/1550nm 25/26/28/29dB

## TOOLBOXES



This new toolbox from Advanced Fiber Solutions has everything needed to Strip, Prep, Terminate, Crimp, Polish, Inspect, Test and Document\* Fiber Connectors.

This toolbox was designed to be a complete package for the installer or the technician. This kit contains the tools to terminate and polish SC, ST or FC connectors, a 200x microscope for inspecting fibers, an

OM100 or OM200 series power meter and an OS400 series source for testing loss through multimode or single-mode cables. Any style adapter can be used on the meter, making it possible to adapt to any job. A fiber continuity tester allows for a quick check of fiber cables. With the optional 6-port oven the connector curing time is greatly reduced. For consumables or customization call Advanced Fiber Solutions at 1-800-556-9313.

### Termination Tools:

- Safety Glasses
- Scribe
- Armored Tubing Cutters
- Kevlar Scissors
- Needle Nose Pliers
- Rotary Cable Stripper
- Fiber Optic Stripper
- Buffer Tube Stripper
- Crimp Tool
- Tweezers
- Polishing Puck
- Polishing Plate
- Oven\*\*

TBX5 series kits without data storage:

<b>Toolbox</b>	<b>Meter</b>	<b>Source</b>
AF-TBX51-MM	OM120	OS420
AF-TBX51-SM-ST	OM120	OS430
AF-TBX51-SM-FC	OM120	OS430
AF-TBX51-SM-SC	OM120	OS430
AF-TBX52-D-ST	OM120	OS420, OS430
AF-TBX52-D-FC	OM120	OS420, OS430
AF-TBX52-D-SC	OM120	OS420, OS430
AF-TBX51-P	OM110	OS417

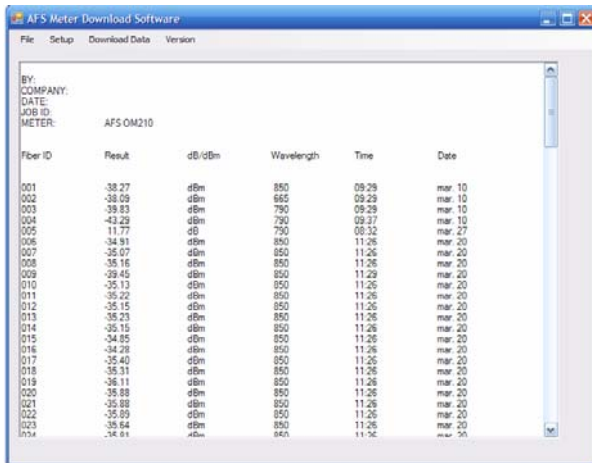
TBX6 series kits with data storage:

<b>Toolbox</b>	<b>Meter</b>	<b>Source</b>
AF-TBX61-MM	OM220	OS420
AF-TBX61-SM-ST	OM220	OS430
AF-TBX61-SM-FC	OM220	OS430
AF-TBX61-SM-SC	OM220	OS430
AF-TBX62-D-ST	OM220	OS420, OS430
AF-TBX62-D-FC	OM220	OS420, OS430
AF-TBX62-D-SC	OM220	OS420, OS430
AF-TBX61-P	OM210	OS417

\*Documentation possible with the TBX6 series kit that contains an OM200 series meter and AFS's database download software.

\*\*The toolbox can be ordered with or without the oven.

## AFS Meter Database Software



The screenshot shows a window titled "AFS Meter Database Software" with a menu bar (File, Setup, Download Data, Version). Below the menu bar, there are fields for "BY:", "COMPANY:", "DATE:", "JOB ID:", and "METER:" with the value "AFS OM210" entered. The main area contains a table with the following columns: Fiber ID, Result, dB/dBm, Wavelength, Time, and Date.

Fiber ID	Result	dB/dBm	Wavelength	Time	Date
001	-38.27	dBm	850	09:29	mar 10
002	-38.09	dBm	855	09:29	mar 10
003	-39.83	dBm	790	09:29	mar 10
004	-43.29	dBm	790	09:27	mar 10
005	-11.77	dB	790	08:32	mar 27
006	-34.91	dBm	850	11:26	mar 20
007	-35.07	dBm	850	11:26	mar 20
008	-35.16	dBm	850	11:26	mar 20
009	-39.45	dBm	850	11:29	mar 20
010	-35.13	dBm	850	11:26	mar 20
011	-35.22	dBm	850	11:26	mar 20
012	-35.15	dBm	850	11:26	mar 20
013	-35.23	dBm	850	11:26	mar 20
014	-35.15	dBm	850	11:26	mar 20
015	-34.85	dBm	850	11:26	mar 20
016	-34.28	dBm	850	11:26	mar 20
017	-35.40	dBm	850	11:26	mar 20
018	-35.31	dBm	850	11:26	mar 20
019	-36.11	dBm	850	11:26	mar 20
020	-35.88	dBm	850	11:26	mar 20
021	-35.89	dBm	850	11:26	mar 20
022	-35.89	dBm	850	11:26	mar 20
023	-35.84	dBm	850	11:26	mar 20
024	-34.81	dBm	850	11:26	mar 20

Advanced Fiber Solutions has developed this software package to accompany any OM200 series meter. This windows based software package is an easy way to download and document the results that are stored in the memory of the OM200 Series meter. The results can be printed directly from the software, or can be saved in a spreadsheet file format. The software also allows

the user to edit the time on the OM200 series meter. The software functionality couldn't be any easier, just turn the meter on, connect it to the computer using the serial cable provided in the kit and follow the easy instructions.

## OPTICAL POWER METERS

Advanced Fiber Solutions is pleased to announce that we have recently enhanced all of our power meters (both 100 and 200 series units) by adding a built in testing guide field that details zero referencing, single ended testing and double ended testing on screen. We have also further enhanced our product line by adding a protective rubber boots to both the power meter and light source products.



## OM100 SERIES:



All of the Advanced Fiber Solutions power meters are the perfect tools for measuring optical power, loss (attenuation) and optical return loss in any system, it is just a matter of picking the right instrument for the application. All meters are calibrated at industry standard wavelengths (NIST traceable) for both single-mode and multimode transmitters. All detectors are potted in a threaded housing for versatility and allows the user to interchange adapters for numerous connector types. The OM100 series meters are a low cost series of power meters for the technician who wants a high performance meter. All power meters now come with protective rubber boot.

**OM120 (general purpose power meter)**

### OM100 series specifications:

	AF-OM110	AF-OM120	AF-OM130
<b>Applications</b>	Multimode, Premise and Plastic	Single-mode, Multimode, Outside plant and Premise	Single-mode, Long wavelengths, CATV
<b>Detector</b>	3mm. Silicon	1mm. Germanium	Hi Power Germanium
<b>Calibrated wavelengths</b>	665/790/850	850/1300/1310/1550	1310/1550
<b>Dynamic range</b>	+3.0/-55.0 dBm		+20.0/-35.0 dBm
<b>Accuracy</b>	+/- 0.2 dB (NIST Traceable)		
<b>Measurement Units</b>	dBm (absolute) - dB (relative)		
<b>Resolution</b>	0.1 dB		
<b>Controls</b>	5 Soft Buttons		
<b>Buttons</b>	On/Off, Backlight, $\lambda$ , dB-dBm, Zero Reference		
<b>Power</b>	2AA Batteries or AC Power Converter		
<b>Low Battery Indicator</b>	Yes		
<b>Display</b>	Graphical LCD with Backlight		
<b>Adaptor Options</b>	ST, SC, FC, 2.5mm Universal, LC standard*		
<b>Auto-Shutdown</b>	Yes		
<b>Protective Rubber Boot</b>	Yes		
<b>Enclosure Size</b>	Compact Handheld (L-4.94"/W-2.75"/H-1.2")		
<b>Operation Temperature</b>	-10°C to +50°C (45% Hum, non condensing)		
<b>Storage Temperature</b>	-20°C to +60°C (75% Hum, non condensing)		

\*We offer a wide range of adapters call for availability.



## OM200 SERIES:



The OM200 series Fiber Optic Power Meter has the same high performance as the OM100 series with the added advantage of a user selectable choice of 0.1 or 0.01 resolution, on board memory and a serial port connection for communication with a PC. PC software accompanies the meter for easy documentation of testing results. The OM200 series is calibrated to +/-0.2dB of the NIST standard for each wavelength through the dynamic range of the meter. The OM200 series is designed to measure loss (attenuation) and output power of both multimode and single-mode systems. The OM200 series detectors are potted in a threaded housing for versatility and allows the user to interchange adapters for numerous connector types.

**OM220 (optical power meter with memory)**

### OM200 series specifications:

	AF-OM210	AF-OM220	AF-OM230
<b>Applications</b>	Multimode, Premise and Plastic	Single-mode, Multimode, Outside plant and Premise	Single-mode, Long wavelengths, CATV
<b>Detector</b>	3mm. Silicon	2mm. Germanium	Hi Power Germanium
<b>Calibrated wavelengths</b>	665/790/850	850/1300/1310/1550	1310/1550
<b>Dynamic range</b>	+3.0/-55.0 dBm		+20.0/-35.0 dBm
<b>Accuracy</b>	+/- 0.2 dB (NIST Traceable)		
<b>Measurement Units</b>	dBm (absolute) - dB (relative)		
<b>Resolution</b>	0.1 dB or 0.01 User Selectable		
<b>Storage</b>	500 Readings with Time and Date Stamp		
<b>**USB and Serial Interface</b>	Yes		
<b>PC Software</b>	Advanced Fiber Solutions Database Documentation Software		
<b>Controls</b>	7 Soft Buttons		
<b>Buttons</b>	On/Off, Backlight, $\lambda$ ↑, dB-dBm/↓, Zero Reference/Select, Save/Delete, Test/Results		
<b>Power</b>	2AA Batteries or AC Power Converter		
<b>Low Battery Indicator</b>	Yes		
<b>Display</b>	Graphical LCD with Backlight		
<b>Adaptor Options</b>	ST, SC, FC, 2.5mm Universal, LC*		
<b>Auto-Shutdown</b>	Yes		
<b>Protective Rubber Boot</b>	Yes		
<b>Enclosure Size</b>	Compact Handheld (L-4.94"/W-2.75"/H-1.2")		
<b>Operation Temperature</b>	-10°C to +50°C (45% Hum, non condensing)		
<b>Storage Temperature</b>	-20°C to +60°C (75% Hum, non condensing)		

\*We offer a wide range of adapters call for availability.

\*\*USB compatible.

## OPTICAL SOURCES

### OS400 SERIES:



The OS400 series sources offer a complete line of sources for any testing application. Whether testing outside plant or premise an OS400 series optical source will be perfect when combined with an OM100 or OM200 series optical power meter. On each source all wavelengths are individually adjustable, with the exception of the OS405, allowing the user to use less battery power when high optical output power is not necessary, or to turn up the power to test long runs. This also makes it possible for the OS420 LED source to test single-mode cables up to 5km at 1300nm.

OS420 Optical power source

OS400 series specifications:

	AF-OS405	AF-OS417-MD	AF-OS420	AF-OS420-VSCEL	AF-OS430
<b>Applications</b>	Visual Fault locator	Plastic, large core multi-mode fibers	Premises, campus cabling networks with multimode fiber, or single-mode fibers under 5km	Gigabit Ethernet, Fiber Channel.	Single-mode fibers, outside plant environment, long wavelengths applications
<b>Wavelength (λ)</b>	635	665/850	850/1300	850/1300	1310/1550
<b>Output Type</b>	LASER	LED	LED	LASER/LED	LASER
<b>Wavelength Range</b>	N/A	850nm ± 30nm	850nm ± 30nm 1300nm ± 30nm	850nm ± 5nm 1300nm ± 30nm	1310nm ± 5nm 1550nm ± 5nm
<b>Couple Power Ratio 1300nm</b>	N/A	N/A	Category 1 according to the standard EIA-526-14B	Category 1 according to the standard EIA-526-14B	N/A
<b>Couple Power Ratio 850nm</b>	N/A	N/A	Category 1 according to the standard EIA-526-14B	N/A	N/A
<b>Modulated Frequencies</b>	1 Hz	N/A	N/A	N/A	2 kHz
<b>Stability per hour</b>	Less than 0.5dB	Less than 0.5dB	Less than 0.05dB	Less than 0.1dB	Less than 0.05dB
<b>Power Output</b>	1mW max	>-17dBm@850	>-17dBm	>-5dBm@850 >-17dBm@1300	>-8dBm
<b>Connector</b>	ST/SC/FC	Modular 665 ST 850	ST	ST/SC/FC 850 ST 1300	ST/SC/FC
<b>Power</b>	2 AA, AC adapter				
<b>Rubber Boot</b>	Yes				
<b>Enclosure Size</b>	Compact Handheld (L-4.94"/W-2.75"/H-1.2")				
<b>Operating Temp.</b>	-10°C to +50°C (45% Hum, non condensing)				
<b>Storage Temp.</b>	-20°C to +60°C (75% Hum, non condensing)				

## TEST KITS



The OLK51 and OLK61 series test kits are the complete solution necessary for the installer to test, terminate, trouble shoot and document fiber optic systems. These test kits are designed to allow testing of all parameters of fiber optic networks, including output power levels from the fiber, coupled source power and attenuation loss in a cable. Plastic Optical Fiber and VSCSEL test kits are also available.

The POF kits have modular adapters on both the meter and the 665nm output of the source. Advanced Fiber Solutions can make virtually any type of adapter, this enables the user to test any style of connector required.

The OLK51-MM and OLK61-MM are test kits designed for multimode applications. The OLK51-SM and OLK61-SM test kits are designed to test single-mode fiber optic cable. The OLK test kits come with the OM100 series meter for the OLK5 series and the OM200 series for the OLK6 series. The meter is accompanied with the OS420 for multimode applications and OS430 for single-mode applications. A custom test kit can be made for any application. All kits include a carrying case, one connector adapter, cleaning wipes, power adjustment tool and instructional manual.



### Test kit specifications\*:

Test Kit	Meter (λ)	Source (λ)
AF-OLK51-MM	AF-OM120 (850,1300,1310,1550)	AF-OS420 (850,1300)
AF-OLK51-SM	AF-OM120 (850,1300,1310,1550)	AF-OS430 (1310,1550)
AF-OLK51-D	AF-OM120 (850,1300,1310,1550)	AF-OS420 (850,1300), OS430 (1310,1550)
AF-OLK51-P	AF-OM110 (665,790,850)	AF-OS417 (665,850)
AF-OLK51-V	AF-OM120 (850,1300,1310,1550)	AF-OS420-VSCSEL (850,1300)
AF-OLK61-MM	AF-OM220 (850,1300,1310,1550)	AF-OS420 (850,1300)
AF-OLK61-SM	AF-OM220 (850,1300,1310,1550)	AF-OS430 (1310,1550)

\*These represent a small sample of the test kits available please visit [www.afs-i.com](http://www.afs-i.com) or call 1-800-556-9313 for more options.

## ACCESSORIES

### Fiber Optic Attenuators

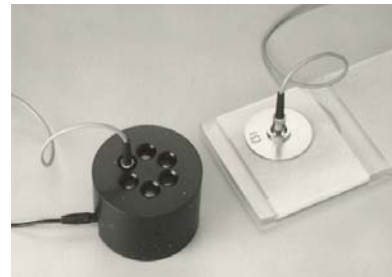
Advanced Fiber Solutions offers variable attenuators for the three most common 2.5mm connector types: ST, FC and SC. All attenuators produce attenuation by creating an air gap loss between the ferrules of each connector.



AF-ATT110	ST to ST Air Gap Attenuator
AF-ATT120	FC to FC Air Gap Attenuator
AF-ATT130	SC to SC Air Gap Attenuator

### Fiber Optic Curing Oven

Advanced Fiber Solutions offers a portable curing oven that terminates 6 low cost epoxy/polish connectors in a matter of minutes.



AF-OVN100	6 Port Curing Oven
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### Fiber Optic Microscope

Advanced Fiber Solutions offers a high-resolution glass optics scope with 200X magnification for both single-mode and multimode fibers. Portable and low cost this an ideal field tool for inspecting fiber terminations.



AF-MSP-200XP	200 Power Microscope with 2.5mm connector <i>Note: 1.5mm connector optional</i>
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## Continuity Tester

FCT-100 is a bright visible light source for checking continuity or quickly tracing multimode fibers in networks to insure proper connections, a difficult task in large fiber count systems. In addition, it can be used as a continuity checker to determine if jumper cables or a fiber on a reel that already has connectors is in good condition, or if installed fiber has been damaged. With a range of 4 km (2.5 mi.), it is perfect for testing and troubleshooting every multimode fiber network. And it's so inexpensive every installer in the crew can afford one!



AF-FCT100	Continuity Tester
-----------	-------------------

## Connector Adapters

Advanced Fiber Solutions offers a wide range of connectors for our power meters. Below is a sampling of the standard connectors readily available.



AF-AD100	Universal 2.5 mm adapter (ST, FC & SC)
AF-AD110	ST Adapter
AF-AD120	FC Adapter
AF-AD130	SC Adapter
AF-AD150	SMA Adapter
AF-AD160	HFBR 4501
AF-AD168	HFBR 4531/4506/4516
AF-AD210	LC Adapter
AF-AD310	MTRJ Adapter

Advanced Fiber Solutions manufactures other standard and custom connectors for most applications.

*If the connector for your application is not listed above please contact AFS for other options available.*

## TRAINING AND EDUCATIONAL MATERIALS

Advanced Fiber Solutions in association with VDV Academy (the folks that created Fiber U) offers a comprehensive selection of training programs. They are based on the experience of instructors who have been in fiber optics since the beginning and are constantly being updated to the latest technology and practices.



### Online Training – FREE!

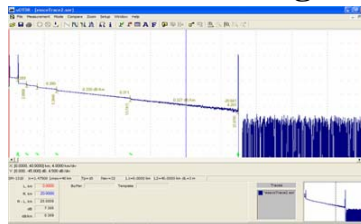
Get started with VDV Academy's free online guide "Lennie Lightwave's Guide To Fiber Optics," ([www.LennieLightwave.com](http://www.LennieLightwave.com)) which includes an overview of fiber optics and their unique "virtual hands-on" training covering the basics of fiber optics in simple, step-by-step visuals. These are the same techniques used in the VDV Academy self-study programs, and they have proven to be most effective for students. Virtual hands-on topics include fiber optic termination and testing (using Advanced Fiber Solutions test equipment). These courses were developed by **Jim Hayes**, author of the textbooks *The Fiber Optic Technicians Manual* and *Data, Voice and Video Cabling* and the founder of Fiber U.

**VDV Academy** provides a full line of training material for everyone from beginners to the fiber optic industry to established training organizations that need additional material for advanced courses or train the trainer guides.

### Self Study Programs



### OTDR Training



### FOA approved



# *AFS*

## **Advanced Fiber Solutions, Inc**

19 Norfolk Ave,  
Easton, Ma, 02375  
USA

Phone: 1-800-556-9313  
1-508-238-7100  
Fax: 1-617-507-0784  
[www.afs-i.com](http://www.afs-i.com)  
email: [info@afs-i.com](mailto:info@afs-i.com)

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