NOYES®
CS260-10 Contractor Series Live PON OTDR

The CS260-10 Contractor Series Live PON OTDR is an ideal tool for fiber optic technicians installing, activating and troubleshooting FTTx PON distribution and drop fibers from the splitter to the ONT.

The CS260-10 provides an out-of-band 1625 nm OTDR with filtered detector, enabling Live PON testing without disrupting service on an active PON. It additionally includes an integrated PON power meter to automatically detect and measure downstream 1490 and 1550 nm signal levels.

The CS260-10 is also suitable for out-of-service testing. As longer wavelengths are more sensitive to bending losses, the CS260-10 OTDR will detect excess losses induced by micro- or macro-bends.

The CS260-10 provides extremely short event and attenuation dead zones (0.8 and 3.5 m, respectively), enabling closely spaced events to be detected and measured in distribution and drop fibers. With 35 dB dynamic range, the CS260-10 is able to see through PON splitters having split ratios up to 1x32, enabling detection of poor splices or excess bending losses at the splitter.

To further aid in locating faults within access points, splice closures or indoor cabling, the CS260-10 includes an integrated Visual Fault Locator (visible red laser).

The CS260-10 is extremely easy to use. It provides fully automatic OTDR parameter selection, automatic event table generation, and end-to-end length, loss and ORL summary. For expert users, the CS260-10 also allows full control of OTDR parameters (range, pulse width, averaging time, etc.).

Over 1000 OTDR test results may be saved in industry-standard .SOR file format. Stored OTDR results may be transferred to PC via USB port for viewing, analysis, and professional report generation using included Windows® compatible TRM® 2.0 Basic Test Results Manager software.

Features

- Filtered OTDR detector enables OTDR measurements on in-service PON
- Integrated PON Power Meter measures downstream signal levels
- 35 dB dynamic range @ 1625 nm
- 0.8 m event, and 3.5 m attenuation dead zones
- Auto, Expert, PON, and Real Time OTDR modes
- Integrated Visual Fault Locator (VFL)
- Rugged, hand-held and lightweight
- High-contrast display easily viewed indoors or out
- >12-hour operation, fast charge, Li-Ion battery
- Instant On; Ready to test in <5 sec
- Easy to learn and use

Applications

- **Verify FTTx PON fiber installations:** Measure loss and reflectance of individual splices, connectors and splitters, as well as end-to-end length, loss and optical return loss.
- **Troubleshoot Live PONs:** Verify downstream PON power levels. Locate source(s) of excess loss or reflectance in distribution or drop fibers on in-service FTTx PON using out-of-band 1625 nm Live PON OTDR with filtered detector.
- **Visibly trace fibers or locate fiber bends or breaks:** Use integrated VFL visible red laser to visibly detect light emanating from fiber breaks or macrobends.

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Specifications [a]

OTDR (PON, LIVE PON, OR POINT-TO-POINT)	
Emitter Type	Laser
Safety Class	Class 1 FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Fiber Type	Single-mode
Wavelength	1625 nm ±10 nm
Dynamic Range (SNR=1) [b]	35 dB
Event Dead Zone [c]	0.8 m
Attenuation Dead Zone [d]	3.5 m
Pulse widths	5, 10, 30, 100, 300 ns; 1, 3, 10 µs
Range Settings	250 m to 120 km
Data Points	Up to 30,000
Data Point Spacing	5.0 cm (range <1.5 km); Range/30,000 (range >1.5 km)
Group Index of Refraction	1.4000 to 1.6000
Distance Uncertainty (m)	±(1 +0.005 % x distance + data point spacing)
Linearity	±0.05 dB/dB
Trace File Format	Bellcore GR-196 v1.1
Trace File Storage	Internal memory (>1000 traces)
Data Transfer to PC	USB cable
PON OTDR Modes	FTTx – In Service; FTTx PON Construction, Expert, Real Time
Standard OTDR Modes	Full Auto, Expert, Real Time
PON POWER METER	
Calibrated Wavelengths	1490, 1550 nm
Detector Type	Filtered InGaAs
Isolation	>40 dB
Measurement Range	+23 to -50 dBm
Accuracy [e]	±0.5 dB
Resolution	0.01 dB
Measurement Units	dBm or Watts (nW, µW, mW)
VISUAL FAULT LOCATOR (VFL)	
Emitter Type	Laser; 650 nm ±20 nm
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Output Power (nominal)	0.8 mW into single-mode fiber
Modes	CW, 2 Hz flashing
GENERAL	
Size (in boot)	20.1 x 13.0 x 5.3 cm (7.9 x 5.1 x 2.1 in)
Weight	0.8 kg (1.8 lb)
Operational Temperature	-10°C, to +50°C, 0 to 95 % RH (non-condensing)
Storage Temperature	-20°C, to +60°C, 0 to 95 % RH (non-condensing)
Power	Rechargeable Li-Ion or AC adapter
Battery Life	13.5 hours, Telcordia test conditions; 12.5 hours, backlight on, continuous test
Display	LCD, 320 x 240, 3.5 in (89 mm), color, high-contrast transflective with backlight and AR coating

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. Typical dynamic range measured using 10 µs pulse width with 3 minutes averaging.
c. Typical distance between the two points 1.5 dB down each side of a reflective spike caused by a -45 dB event using 5 ns pulse width.
d. Typical distance from the location of a -45 dB reflective event to point where trace falls and stays within 0.5 dB of backscatter, using a 5 ns pulse width.
e. At calibration wavelengths and power levels of approximately -5 dBm for 1550 nm and -10 dBm for 1490 nm.

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Ordering Information

The CS260-10 comes with a soft carry case, user-specified connector adapters for OTDR and VFL ports, USB cable (connects with Type A USB port on your PC), AC power adapter with a country-specific power cord, rechargeable replaceable Li-Ion battery, and TRM® 2.0 Basic Test Results Manager software for PC-based trace viewing and report generation. When placing an order, select options as follows: OTDR port ferrule type (F), connector adapter (CA), Language Pack (LLL)*, country-specific Power Cord (PC).

Example: CS260-10U-SC-ENG-01 indicates a CS260-10 1625 nm Live PON OTDR with UPC port ferrule, SC OTDR connector adapter, 2.5 mm Universal VFL adapter, English/Euro language pack, quick reference guide in English, and US power cord.

CS260 — 10 F — CA — LLL — PC

OTDR Port Ferrule (F)

A = APC
U = UPC

Connector Adapters (CA)

SC = SC OTDR adapter plus Universal 2.5 mm VFL adapter
FC = FC OTDR adapter plus Universal 2.5 mm VFL adapter
LC = LC OTDR adapter plus Universal 1.25 mm VFL adapter

Quick Reference Guide Language (LLL)*

ENG =	English	**DEU** =	German	**JPN** =	Japanese	**POR** =	Portuguese
CHS =	Chinese Simplified	**FRA** =	French	**KOR** =	Korean	**SPA** =	Spanish
CHT =	Chinese Traditional	**ITA** =	Italian	**POL** =	Polish	**TUR** =	Turkish

Power Cord (PC)

01 = USA	(IEC320, 115V, Type K)
02 = Euro	(IEC320, 250V, Type B)
03 = UK	(IEC320, 250V, Type D)
04 = Australia	(IEC320, 250V, Type C)
04 = China	(IEC320, 250V, Type C)
05 = Denmark	(IEC320, 250V, Type E)
06 = Japan	(IEC320, 125V, Type M)
07 = Swiss	(IEC320, 250V, Type L)
08 = Italy	(IEC320, 250V, Type I)
09 = Israel	(IEC320, 250V, Type H)
10 = India	(IEC320, 250V, Type G)

*** All CS260-10 models are shipped with the user-specified quick reference guide and language pack installed.**

Available Accessories

DESCRIPTION	AFL NO.
Fiber Rings (use as launch or receive/tail fibers)	
Standard, 1 single-mode fiber, 150 m (492 ft)	FR1-SM-150-y1-y2 [a, b]
Standard, 1 single-mode fiber, 500 m (1640 ft)	FR1-SM-500-y1-y2 [a, b]
Standard, 1 single-mode fiber, 1000 m (3280 ft)	FR1-SM-1000-y1-y2 [a, b]
Test Port Adapters	
FC adapter for OTDR port	2900-50-0002MR
SC adapter for OTDR port	2900-50-0003MR
ST adapter for OTDR port	2900-50-0004MR
LC adapter for OTDR port	2900-50-0006MR
2.5 mm Universal adapter for VFL port	2900-53-0001MR
1.25 mm Universal adapter for VFL port	2900-53-0002MR
Universal flip-top dust cap for UCI outputs	8800-00-0072MR
TRM® 2.0 Test Results Manager	
Upgrade TRM 2.0 Basic to TRM 2.0 Advanced	TRM-00-0920

Prepaid Calibration Plans

AFL recommends annual calibrations on NOYES Test and Inspection products. Prepaid Cal plans offer two annual calibrations at a discounted price, a convenient calibration expiration email service, express calibration services and access to the NOYES product knowledge base. Cal Plus plans offer the same services as the Cal plans with the addition of a two year extended warranty (three years total coverage).

MODEL	2 YR CAL PLAN	2 YR CAL PLUS PLAN
	AFL NO.	AFL NO
CS260-10	CAL2-00-CS260-10	CAL2-01-CS260-10

Notes:

a. y1, y2 – connectors for single-mode cables, specify type as follows: ST, SC, ASC (angled SC), FC, AFC (angled FC), LC.
b. Other connector types, fiber types, and fiber lengths quoted upon request.

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

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