

### NOYES® C860 QUAD OTDR and Certification Test Kit



C860 with DFS1 Digital FiberScope

#### Features

- OTDR dynamic range: 22 dB (MM); 26 dB (SM)
- Inspection capable with the DFS1 Digital FiberScope
- Integrated OPM, OLS, and VFL (650 nm)
- OLS sources: LED - 850/1300 nm; Laser - 1310/1550 nm
- Full Auto, Expert, Real-Time OTDR test modes
- >8 hours battery life or AC power
- Touch and Test™ user interface
- TRM™ reporting software
- Automatic Pass/Fail analysis (TIA/ISO/EN)
- Bellcore (GR-196) .SOR file format
- Internal (1000s tests) and USB storage
- Wave ID detect if used with NOYES Wave ID series light sources
- USB host and function ports

The NOYES C860 QUAD Certification and OTDR Test Kit from AFL includes one hand-held C840 QUAD OLTS Tester and one C850 QUAD OTDR/OLTS with built-in auto test functionality. With this kit, technicians can troubleshoot and perform both Tier 1 and Tier 2 certification tests of MM and SM fiber networks, store results and create professional test reports.

The C850 is both a QUAD Certification Tester and full-featured QUAD OTDR in a compact case with a large transfective touch screen display suitable for both indoor and outdoor operation. The C850 features single-mode and multimode OTDR, Optical Light Sources (OLS), Visual Fault Locator (VFL, 650 nm), and an Optical Power Meter (OPM). As an OTDR, the C850 supports Full Auto, Expert (manual) and Real-Time test modes, simultaneous dual and single wavelength testing, and Event and Pass/Fail analysis based on default or user-defined thresholds. The C840 QUAD Certification Tester includes VFL, OPM, and both single-mode (1310/1550 nm) and multimode (850/1300 nm) OLS. The C840 may be used alone as a traditional power meter or light source to measure fiber loss or as a visual fault locator to find fiber breaks.

The C860 kit combines ease of use (Touch and Test™) with multiple functionality and supports visual inspection per IEC 61300-3-35 using the DFS1 Digital FiberScope allowing users the ability to view and document connector end-face images with their OTDR traces and loss results.

Thousands of test results may be stored internally or on the supplied USB drive. Test results are transferable via a USB cable or USB drive to a computer for viewing, printing, and analyzing with the supplied Windows® compatible software - TRM™ (Test Results Manager). Acceptance reports generated using TRM can include OTDR traces with summary and event information with or without pass/fail indication, Event maps, and end-face images.

#### Applications

- Tier 1 and Tier 2 testing of premise networks
- Bi-directionally measure loss and length of fiber links
- Perform Pass/Fail Event and Link measurements using OTDR
- Measure loss and length of fiber links
- Certify SM and MM fibers using Pass/Fail criteria of industry standards, applications and user-defined thresholds
- Create professional certification reports



# NOYES® C860 QUAD OTDR and Certification Test Kit

## Specifications <sup>a</sup>

OTDR	MULTIMODE	SINGLE-MODE
Emitter Type	Laser	
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Center Wavelengths	850/1300 nm	1310/1550 nm
Wavelength Tolerance	±20/30 nm	±20/30 nm
Dynamic Range (SNR = 1)	22 dB	26 dB
Event Dead Zone <sup>b</sup>	1.5 m	
Attenuation Dead Zone <sup>c</sup>	9 m	
Pulse Widths	10, 30, 100, 300 ns; 1, 3, 10 µs	
Range Settings	250 m to 64 km	250 m to 208 km
Sampling Points	Up to 16,000	
Minimum Data Point Spacing	0.25 m	
Group Index of Refraction (GIR)	1.4000 to 1.6000	
Distance Uncertainty (m) <sup>d</sup>	±(1 + 0.005 % x distance + data point spacing)	
Linearity <sup>e</sup>	±0.05 dB/dB	
Loss Threshold	0.05 dB	
Loss Resolution	0.01 dB	
Reflectance Accuracy <sup>f</sup>	±2 dB	
<b>VISUAL FAULT LOCATOR</b>		
Emitter Type	Laser	
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Wavelength	650 ±20 nm	
Output Power (nominal)	0.8 mW	
<b>LIGHT SOURCE</b>		
	<b>MM PORT</b>	<b>SM PORT</b>
Available Wavelengths (nom.)	850/1300 nm	1310/1550 nm
Emitter Type	LED	Laser
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03	
Output Power	>-20 dBm, 62.5 µm MM <sup>g</sup>	0 dBm, 9 µm SM
Stability (after 15 minutes warm up)	±0.1 dB over 1 hour	±0.07 dB over 1 hour ±0.15 dB over 8 hours
Wave ID Transmit	Yes	
Tone Generation	270 Hz, 330 Hz, 1 KHz, 2 kHz	

### Notes:

- All specifications valid at 25 °C unless otherwise specified.
- Typical distance between the two points 1.5 dB down each side of a reflective spike caused by a -45 dB event using 10 ns pulse width.
- Typical distance from event location to point where trace is within 0.5 dB of backscatter caused by a -45 dB event using 10 ns pulse width.
- Does not include GIR uncertainty.
- Typical.
- For a non-saturated event.

POWER METER	
Calibrated Wavelengths	850, 1300 1310, 1490, 1550, 1625 nm
Detector Type	InGaAs 2 mm
Measurement Range	+6 to -60 dBm
Accuracy <sup>h</sup>	±0.25
Measurement Units	dB, dBm, mW
Wavelength ID <sup>i</sup>	Yes (to -47 dBm)
Set Reference	Yes
Data Storage	Yes
Tone Detection	Yes (to -47 dBm)

GENERAL	C850 OTDR	C840 TESTER
Test Modes	OTDR (Full Auto, Expert, Real-Time), Auto Test, OPM, OLS, VFL, DFS	Auto Test, OPM, OLS, VFL, DFS
Trace File Format	SR-4731 (GR-196-CORE Appendix A, B; SR-4731)	N/A
Length Measurement Range	5 km (MM); 200 km (SM)	
Data Storage	Internal flash memory USB flash drive (2.0) Downloadable from unit directly to PC	
Data Storage Capacity	Internal >1000 fibers	
Data Transfer to PC	USB	
Tool Free Adapters	Modular cleanable SC/ST/LC	
Size	27.4 x 19.3 x 7.1 cm (10.8 x 7.6 x 2.8 in)	23 x 11 x 7 cm (8.8 x 4.3 x 2.8 in)
Weight	2.3 kg (5 lb)	0.9 kg (2 lb)
Operating Temperature	-10 °C to +50 °C, 0 to 90 % RH (non-condensing)	
Storage Temperature	-20 °C to +60 °C, 0 to 90 % RH (non-condensing)	
Power	Rechargeable Li-Ion or AC power adapter	
Battery Life <sup>k, m</sup>	>8 hours continuous testing	
Recharge Time <sup>l, m</sup>	4 hours	
Display	16.51 cm (6.5 in), color, transfective	9.65 cm (3.8 in), color, transfective

- Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.
- Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.
- Automatic wavelength identification and switching when used with NOYES Wave ID Series Light Sources.
- Typical, depending on display brightness.
- Typical, from fully discharged to fully charged state, unit may be operating.
- External battery charger available.

### NOYES® C860 QUAD OTDR and Certification Test Kit



The C840 and C850 can be used together to perform Tier 1 dual wavelength MM (850/1300 nm) and SM (1310/1550 nm) auto loss tests of one or two fibers in one or both directions as well as measure both loss and length of the fibers and compare to industry standards (TIA/ISO/EN), applications and user-defined thresholds values to certify the fibers. Either unit can be identified as the Main or Remote.

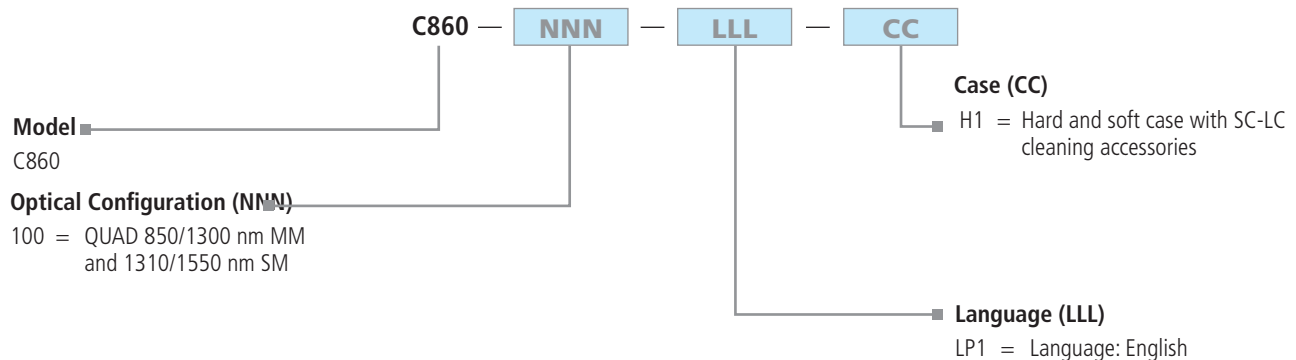
The user may test two fibers at two wavelengths bi-directionally and store the results into the main unit. Featuring rich file naming, the Job setup wizard allows the user to define both the cable and fiber end locations, creating easily identifiable trace files, which are managed into Job and Cable folders.

The C850 OTDR and C840 Certification tester work with the DFS1 Digital FiberScope.

#### Ordering Information

When placing an order, select options as follows: Model, Optical Configuration, Language, and Case.

Example: C860 — 100 — LP1 — H1



## C860 QUAD OTDR and Certification Test Kit

### Ordering Information (continued)

Each kit includes one compact C850 QUAD OTDR/OLTS, one hand-held C840 QUAD Certification Tester, USB Flash drive, PC software for OTDR trace analysis and certification or OPM loss reporting, (2) AC adapters, switchable test ports adapters, and accessories (see below). The C860 hard carry case kit has room for up to 6 Fiber Rings, jumpers in a jumper carry case, and the DFS1 Digital FiberScope kit (accessory items must be ordered separately).

CARRY CASE	ADAPTERS			CLEANING PRODUCTS	AFL NO.
	OTDR/OLS	OPM	VFI		
Soft and hard cases	SC, ST, LC	SC, 2.5, 1.25 mm	2.5, 1.25 mm	One-Click Cleaner SC/ST/FC, 2.5mm One-Click Cleaner LC, 1.25 mm Cletop - SB white tape	C860-100-LP1-H1

### C860—100—LP1—H1

ITEM	DESCRIPTION
C850	QUAD OTDR/Auto Test Certification Tester
C840	QUAD Auto Test Certification Tester
Adapters	OTDR and OLS ports — SC, ST, LC OPM ports — SC, 1.25 and 2.5 mm Universal VFI ports — 1.25 and 2.5 mm Universal
Miscellaneous Accessories	Mandrels (2) 62.5 µm, 3 mm jacket and (2) 50 µm, 3 mm jacket Stylus pens for touch screen. USB thumb drive, 1G. USB to mini-USB cable Small plastic parts box (2) to store adapter caps and mandrels AC adapter (2), specify country of use
Cleaning Accessories	(2) One-Click Cleaner SC/ST/FC, 2.5 mm; One-Click Cleaner LC/MU, 1.25 mm (H2 kit only); Cletop SB white tape
Cases	Hard transit case — holds C850, C840, and above accessories Soft case for C850
Report Software	PC software and user guide

### OTDR, Inspection, and Cleaning Accessories

DESCRIPTION	AFL NO.
DFS1 Digital FiberScope PC/UPC Inspection Kit	DFS1-00-04XU
DFS1 Digital FiberScope APC Inspection Kit	DFS1-00-04XA
DFS1 USB Digital Fiber Inspection Kit without Adapters	DFS1-00-04XN
Fiber Ring, 1 fiber, 50/125 µm multimode, 150 m	FR1-M5-150-x1-x2 <sup>a</sup>
Fiber Ring, 1 fiber, Laser Optimized, 50 µm multimode, 150 m	FR1-L5-150-x1-x2 <sup>a</sup>
Fiber Ring, 1 fiber, 62.5/125 mm multimode, 150 m	FR1-M6-150-x1-x2 <sup>a</sup>
Fiber Ring, 1 fiber, single-mode, 150 m	FR1-SM-150-y1-y2 <sup>a</sup>
Wet Cleaning Kit (shown) for SC/FC/ST/LC connectors.	8500-20-0900
Dry Cleaning Kit	8500-20-0901
One-Click Cleaner SC, ST, FC (500+ cleans)	8500-05-0001MZ
One-Click Cleaner LC/MU (500+ cleans)	8500-05-0002MZ
One-Click Mini-100 SC, ST, FC (100+ cleans)	8500-05-0005MZ
One-Click Mini-100 LC/MU (100+ cleans)	8500-05-0006MZ
One-Click Cleaner Ultra 2.5 SC, ST, FC (enlarged cleaning)	8500-05-0007MZ
Zippered Jumper Carry Case	1400-01-0086PZ

#### Notes:

a. When ordering Fiber Rings, specify connector types (x1, x2, y1,y2).

### Authorized Channel Partner



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