

## C850 Compact QUAD OTDR with QUAD OLS and OPM



### Features

- OTDR dynamic range:
  - 22 dB (MM)
  - 26 dB (SM)
- 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
- 6.5-inch transfective (indoor/outdoor) touch screen display
- Tool-free, switchable test port adapters
- Rechargeable Li-Ion battery (> 8 hours) or AC power
- USB host and function ports
- Bellcore (GR-196) .SOR file format
- Internal (1000s tests) and USB storage
- Wave ID detect if used with Noyes Wave ID series light sources
- Windows® compatible software

The Noyes C850 from AFL Telecommunications is a full-featured QUAD OTDR in a compact case with a large transfective touch screen display suitable for both indoor and outdoor operation. The C850 offers built-in auto test functionality when used with another C850 or the C840 QUAD Certification Tester. The C850 features single-mode and multimode OTDR capabilities, both single-mode and multimode 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.

Two C850s or a C840 Tester and C850 can be used together to perform Tier 1 dual wavelength MM (850/1300 nm) and SM (1310/1550 nm) auto 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. 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.

### Applications

- Tier 1 and Tier 2 testing of premise networks
- Bi-directional two fibers and single fiber test capable
- Perform Pass/Fail Event and Link measurements
- Find faults using integrated Visual Fault Locator
- Save loss or power measurements
- Use as single-mode laser or multimode LED source
- Certify fibers using Pass/Fail criteria of industry standards, applications and user-defined limits
- Create professional certification reports



A Division of **AFL Telecommunications**

## C850 Compact QUAD OTDR with QUAD OLS and OPM



### Ordering Information

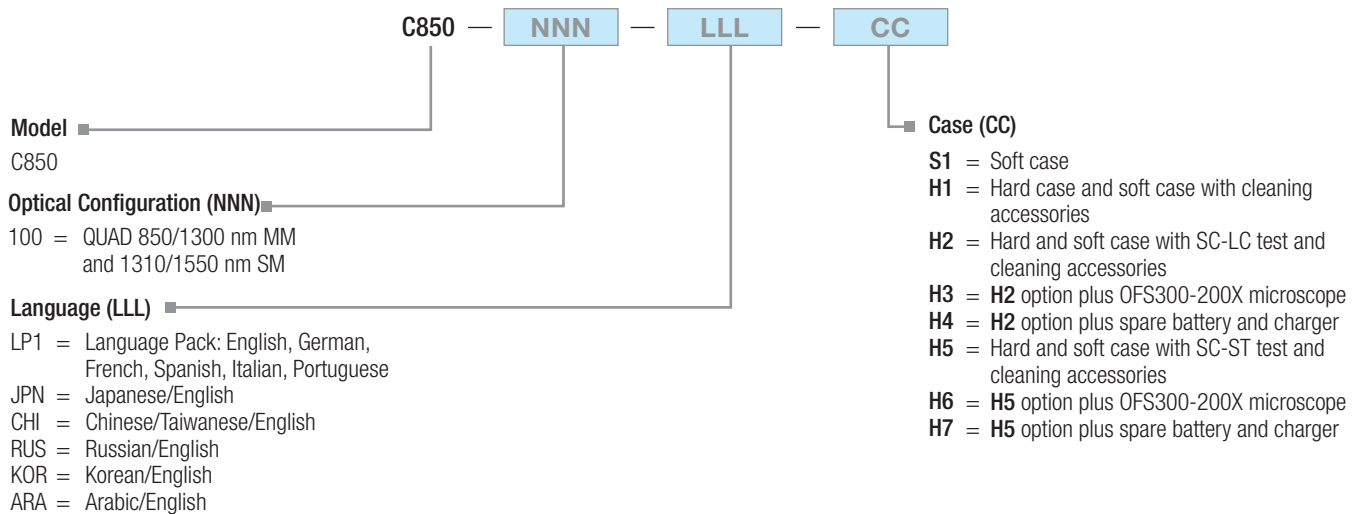
The C850 OTDR Kits and Options allow users to buy the test equipment functionality needed today and grow to meet the demands of certification testing.

The C850 combined with an OLS 4 source will allow users to test and generate detailed reports with both OTDR and Loss results shown for each fiber and in charts by cable.

Users can add a C840 or another C850 to perform Certification testing. Two C850s or a C840 Tester and C850 can be used together to perform Tier 1 dual wavelength MM (850/1300 nm) and SM (1310/1550 nm) auto 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.

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

Example: C850 — 100 — LP1 — H2



A Division of AFL Telecommunications

*Continued on the next page*

## C850 Compact QUAD OTDR with QUAD OLS and OPM

### Ordering Information (continued)

Each C850 kit includes the C850 OTDR, USB Flash drive, PC software for OTDR trace analysis and certification or OPM loss reporting, AC adapter, switchable test ports adapters and accessories (see table below).

KIT MODEL NUMBER	CARRY CASE AND ACCESSORIES	FIBER RINGS <sup>1</sup>	CLEANING PRODUCTS	ADAPTERS		
				OTDR/OLS	OPM	VFI
C850-100-LP1-S1	Soft case	—	One-Click Cleaner SC/ST/FC, 2.5mm	SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm
C850-100-LP1-H1	Soft and hard cases	—	One-Click Cleaner SC/ST/FC, 2.5mm	SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm
C850-100-LP1-H2	Soft and hard cases	SC/LC	One-Click Cleaner LC, 1.25mm	SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm
C850-100-LP1-H3	Soft and hard cases, OFS300-200C	SC/LC	Cletop - SB white tape	SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm
C850-100-LP1-H4	Soft and hard cases, charger, spare battery	SC/LC		SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm
C850-100-LP1-H5	Soft and hard cases	SC/ST	One-Click Cleaner SC/ST/FC, 2.5mm	SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm
C850-100-LP1-H6	Soft and hard cases, OFS300-200C	SC/ST	Cletop - SB white tape	SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm
C850-100-LP1-H7	Soft and hard cases, charger, spare battery	SC/ST		SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm

1 (2) each - 150m (62.5µm, 50µm, SM)

### C850 – 100 – LP1 – H2 (or H5) Kit Contents

ITEM	DESCRIPTION
C850	QUAD OTDR/Auto Test Certification Tester
Adapters	OTDR and OLS ports — SC, ST, LC OPM port — SC, 1.25 and 2.5mm Universal VFI port — 1.25 and 2.5mm Universal
Fiber Rings (6)	150 m (62.5µm, 50µm, SM)
Miscellaneous Accessories	Mandrel — 62.5µm, 3mm jacket Mandrel — 50µm, 3mm jacket Stylus pen 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 (1), specify country of use
Cleaning Accessories	One-Click Cleaner SC/ST/FC, 2.5mm (H2 and H5 kit) One-Click Cleaner LC/MU, 1.25mm (H2 kit only) Cletop SB white tape
Cases	Hard transit case — holds C850, and above accessories Soft case for C850
Documentation	User guides and quick reference guides
Report Software	PC software and user guide

### Optional OTDR and Cleaning Accessories

MODEL NUMBER	DESCRIPTION
FR1-SM-150-SC-FC	Fiber ring, single-mode, SC/FC, 150 m
FR1-SM-150-SC-LC	Fiber ring, single-mode, SC/LC, 150 m
FR1-M6-150-SC-ST	Fiber ring, multimode, 62.5µm, SC/ST, 150 m
FR1-M6-150-SC-LC	Fiber ring, multimode, 62.5µm, SC/LC, 150 m
FR1-M5-150-SC-ST	Fiber ring, multimode, 50µm, SC/ST, 150 m
FR1-M5-150-SC-LC	Fiber ring, multimode, 50µm, SC/LC, 150 m
FR1-L5-150-SC-LC	Fiber ring, laser optimized, multimode, 50µm, SC/LC, 150 m
FR1-L5-150-SC-SC	Fiber ring, laser optimized, multimode, 50µm, SC/SC, 150 m
FR1-SM-500-SC-LC	Fiber ring, single-mode, SC/LC, 500 m
FR1-SM-500-SC-SC	Fiber ring, single-mode, SC/SC, 500 m
FR1-SM-500-SC-FC	Fiber ring, single-mode, SC/FC, 500 m
8500-20-0900	Wet Cleaning Kit for SC/FC/ST/LC Connectors
8500-05-0001MZ	One-Click Cleaner SC/ST/FC
8500-05-0002MZ	One-Click Cleaner LC/MU
8500-10-0017MZ	Replacement tape for Cletop (white)

Note: 1000 m single-mode fiber rings are also available.



A Division of AFL Telecommunications

Continued on the next page

## C850 Compact QUAD OTDR with QUAD OLS and OPM

### Specifications (All specifications valid at 25°C unless otherwise specified)

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>1</sup>	1.5 m	
Attenuation Dead Zone <sup>2</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	
Min. Data Point Spacing	0.25 m	
Group Index of Refraction (GIR)	1.4000 to 1.6000	
Distance Uncertainty (m) <sup>3</sup>	± (1 + 0.005% x distance + data point spacing)	
Linearity	± 0.05 dB/dB	

- 1 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.
- 2 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.
- 3 Does not include GIR uncertainty.

LIGHT SOURCE	MULTIMODE PORT	SINGLE-MODE PORT
Available Wavelengths	850/1300 nm (nominal)	1310/1550 nm (nominal)
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, 62.5µm MM <sup>1</sup>	0 dBm, 9µm 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	

- 1 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.

VISUAL FAULT LOCATOR	
Emitter Type	Laser
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03
Wavelength	650 nm
Output Power (nominal)	0.8 mW

POWER METER	
Calibrated Wavelengths	850, 1300 1310, 1490, 1550, 1625 nm
Detector Type	InGaAs 2mm
Measurement Range	+6 to -60 dBm
Accuracy <sup>1</sup>	±0.25
Measurement Units	dB, dBm, mW
Wavelength ID <sup>2</sup>	Yes (to -47 dBm)
Set Reference	Yes
Data Storage	Yes
Tone Detection	Yes (to -47 dBm)

- 1 Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.
- 2 Automatic wavelength identification and switching when used with Noyes Wave ID Series Light Sources.

GENERAL	
Test Modes	OTDR (Full Auto, Expert, Real-Time), Auto Test, OPM, OLS, VFL
Trace File Format	SR-4731 (GR-196-CORE Appendix A, B; SR-4731)
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)
Weight	2.3 kg ( 5 lb)
Operating Temperature	-10 to +50°C, 0 to 90% RH (non-condensing)
Storage Temperature	-20 to +60°C, 0 to 90% RH (non-condensing)
Power	Rechargeable Li-Ion or AC power adapter
Battery Life <sup>1</sup>	> 8 hours continuous testing
Recharge Time <sup>2</sup>	4 hours
Display	16.51 cm (6.5 in), color, transfective

- 1 Typical, depending on display brightness.
- 2 Typical, from fully discharged to fully charged state, unit may be operating. External battery charger available.



A Division of AFL Telecommunications