CMA 4500 Series

Optical Time Domain Reflectometer

The CMA 4500 continues NetTest's tradition as the industry's premier OTDR solution designed with the high performance and scalability necessary to meet the stringent demands of telecommunications professionals, while simultaneously accelerating the deployment of new services and reducing the total cost of measurement.

Specifications [1]		
	Standard	**Desktop**
Operating System [2]	Windows® XPe	Windows® XP Pro with desktop option
Data I/O (modular)	CD-R/W (optional) 3.5" 1.44 MB floppy drive (optional)	CD-R/W (standard) 3.5" 1.44 MB floppy drive (optional)
Data I/O (fixed)	20 GB hard drive minimum (standard)	
Processor	Ultra-low power 300 MHz	
System Memory	256 MB	
Display	Touch screen, 26.4 cm (10.4") XGA LCD (1024 x 768 pixel resolution)	
Control Interface	Touch screen, cursor control, dedicated hardkeys and status LEDs	
Standard I/O Ports	USB (2), Ethernet 10/100(1), IrDA (1), PS/2 Mouse (1), PS/2 Keyboard (1)	
Dimensions (H x W x D)	24.1 x 34.3 x 9.5 cm (9.5 x 13.5 x 3.75 inches)	
Weight	5.4 kg (12 lbs) includes 1 battery	

Power Specifications	
AC	Auto switching 92-132 VAC 47-63 Hz, 184-264 VAC 47-63 Hz
Battery	Li-Ion - 1 battery standard
Battery Life	>3 hours
Recharge Time	<3 hours

Environmental Specifications		
	Operation	**Storage**
Temperature	0° to 45° C (32° to 122° F)	-25° to 60° C (-13° to 140° F)
Humidity	95% max, non-condensing	95% max, non-condensing
Altitude	15,240 m (50,000 ft)	15,240 m (50,000 ft)

NOTES:

[1] All specifications subject to change

[2] Although Windows® is the platform operating system, it is not accessible unless the desktop model is ordered

CMA 4500 Series OTDR Specifications - (Single Wavelength Available upon request)				
Optics	**25**	**35**	**45**	**54**
Fiber Type	Single-mode	Single-mode	Single-mode	Single-mode
Center Wavelength	1310 nm ±20 nm 1550 nm ±20 nm	1310 nm ±20 nm 1550 nm ±20 nm	1310 nm ±20 nm 1550 nm ±20 nm	1550 nm ±20 nm
Spectral Width (RMS)	1310 nm: <15 nm 1550 nm: <15 nm	1310 nm: <15 nm 1550 nm: <15 nm	1310 nm: <15 nm 1550 nm: <15 nm	1550 nm: <15 nm
Dynamic Range [1]	1310 nm: 37 dB 1550 nm: 36 dB	1310 nm: 40 dB 1550 nm: 40 dB	1310 nm: 43 dB 1550 nm: 45 dB	1550 nm: 50 dB
Initial Reflective Deadzone [2]	1310 nm: 4 m 1550 nm: 3.5 m	1310 nm: 4 m 1550 nm: 3 m	1310 nm: 5 m 1550 nm: 5 m	1550 nm: 5 m
Initial Non-Reflective Deadzone [3]	1310 nm: 9 m 1550 nm: 9 m	1310 nm: 8 m 1550 nm: 6 m	1310 nm: 10 m 1550 nm: 10 m	1550 nm: 10 m
Linearity	0.04 dB/dB	0.04 dB/dB	0.04 dB/dB	0.04 dB/dB
Pulsewidth	5 ns to 20 µs	5 ns to 20 µs	5 ns to 30 µs	5 ns to 30 µs
Optics	**36**	**46**	**66**	**69**
Fiber Type	Single-mode	Single-mode	Multimode (62.5 µm)	Multimode (50 µm)
Center Wavelength	1310 nm ±20 nm 1550 nm ±20 nm 1625 nm ±15 nm	1310 nm ±20 nm 1550 nm ±20 nm 1625 nm ±15 nm	850 nm ±30 nm 1300 nm ±30 nm	850 nm ±30 nm 1300 nm ±30 nm
Spectral Width (RMS)	1310 nm: <15 nm 1550 nm: <15 nm 1625 nm: <15 nm	1310 nm: <15 nm 1550 nm: <15 nm 1625 nm: <15 nm	850 nm: <15 nm 1300 nm: <15 nm	850 nm: <15 nm 1300 nm: <15 nm
Dynamic Range [1]	1310 nm: 40 dB 1550 nm: 40 dB 1625 nm: 40 dB	1310 nm: 43 dB 1550 nm: 45 dB 1625 nm: 43 dB	850 nm: 24 dB 1300 nm: 26 dB	850 nm: 24 dB 1300 nm: 26 dB
Initial Reflective Deadzone [2]	1310 nm: 4 m 1550 nm: 3 m 1625 nm: 3 m	1310 nm: 6 m 1550 nm: 5 m 1625 nm: 5 m	850 nm: 2.5 m 1300 nm: 2.5 m	850 nm: 3 m 1300 nm: 3 m
Initial Non-Reflective Deadzone [3]	1310 nm: 8 m 1550 nm: 6 m 1625 nm: 6 m	1310 nm: 10 m 1550 nm: 10 m 1625 nm: 10 m	850 nm: 5 m 1300 nm: 7 m	850 nm: 5 m 1300 nm: 7 m
Linearity	0.04 dB/dB	0.04 dB/dB	0.04 dB/dB	0.04 dB/dB
Pulsewidth[4]	5 ns to 20 µs	5 ns to 30 µs	5 ns to 1 µs	5 ns to 1 µs
Distance Resolution	0.0001 km, 0.1 m, 1 ft, 0.0001 mi			
Distance Range Setting [4, 5]	5, 20, 50, 125, 250, 300 km			
Loss Resolution	0.001 dB			
Distance Sampling [4, 6] **(Range Dependent)**	0.125, 0.25, 0.5, 1, 2, 4, 8, 16 m			
Data Points	Up to 256,000			
Distance Accuracy	0.0025% of distance measurement ± distance resolution ± index uncertainty			
Laser Safety	Meets IEC60825-1 Class I and CDRH Class 1 Requirements (Eye Safe) 21 CFR 1040			
Optical Connector	Universal (Uses UC-130-XX adapters)			

Notes:

Specifications are subject to change without notice

[1] SNR=1 with up to 256k averages (typical, subtract approximately 2 dB of range to 98% peak noise. Bellcore TR-TSY-000196 Issue 2)

[2] Using Bellcore TR-TSY-000196 Issue 2 (typical)

[3] Deadzones measured on -45 dB reflections (typical)

[4] Wavelength dependent

[5] 66 and 69 Optics Distance Range is 5, 20, 50, 125 km

[6] 66 and 69 Optics Distance Sampling is 0.125, 0.25, 0.5, 1, 2, 4, 8 m

Light Source (optional - factory installed)		
	Single-mode	**Multimode**
Type	Laser	LED
Wavelengths	Same as corresponding OTDR module	850/1300 nm ± 20 nm
Output	-8 dBm (min.)	-25 dBm (min.)
Output Fiber	9/125 µm single-mode fiber	62.5 or 50 µm multimode
Optical Connector	Universal (uses UC-130-XX adapters)	Universal (uses UC-130-XX adapters)
Modes of Operation	CW, 1 KHz and 2 KHz	CW, 1 KHz and 2 KHz
Stability [1]	±0.2 dB (8 hours)	±0.1 dB (8 hours)
Spectral Width (RMS)	<15 nm	<50/<125 FWHM
Safety	Meets IEC60825-1 Class I and CDRH Class 1 Requirements (Eye Safe) 21 CFR 1040	

Notes:

[1] At 23° C

Specifications are subject to change without notice

Power Meter (optional - factory installed)	
Detector Type	InGaAs
Wavelength Range	780 - 1800 nm
Range	+20 to -45 dBm
Calibrated Wavelengths	850, 1300, 1310, 1550, 1625 nm
Optical Connector	Universal (uses LP-XX adapter caps)
Resolution	0.01 dB, 0.01% Watts
Store Reference Mode	Yes
Accuracy	±4% @ +5 dBm to -50 dBm ±8% @ +10 dBm to -5 dBm, -50 dBm to -55 dBm
Linearity	±0.10 dB, +5 dBm to -55 dBm

Visual Fault Locator (optional - factory installed)	
Wavelength	650 nm ±20 nm
Output (max)	0 dBm into 9/125 µm
Transmission Mode	CW or 2 Hz
Output Fiber	9/125 µm, SM fiber
Optical Connector	2.5 mm Universal
Safety	IEC 60825-1 Class II, FDA (21 CFR 1040. 10 Class 2)

Standard Accessories

Color display with touch screen, operator's manual, support CD, Li-Ion battery (1), AC charger/adapter, 10/100 MB Ethernet Port, and choice of AC line cord.

Optical Accessories [1]

Option-501CD-RW	CMA 4500 internal CD/read/write module
Option-502FLOPPY	CMA 4500 internal floppy drive module
Option-507KEYUS	CMA 4500 US keyboard
4500-BATT	Replacement Li-Ion battery
Option-511AC	Replacement AC charger/adapter
Option-515PRINT	CMA 4500 portable external printer with cable and case
4500-MANUAL	Replacement operator's manual
4500-HCASE	CMA 4500 hard transit case
4500-SCASE	CMA 4500 soft transit case
4500-USBKEY	USB keyboard with trackball
4500-USBFLOPPY	USB external floppy drive
4500-USBCDRW	USB external CD-R/W
4500-EXT1	CMA 4500 1 Year extended warranty
4500-EXT2	CMA 4500 2 Year extended warranty

NOTES:

[1] Must be added as a separate line item

AC Power Cord Options

OPTION-570LINEUS	US/Japan AC line cord	OPTION-570LINESW	Switzerland AC line cord
OPTION-570LINEEU	Europe AC line cord	OPTION-570LINEIT	Italy AC line cord
OPTION-570LINEUK	United Kingdom AC line cord	OPTION-570LINEAU	Australia AC line cord

Option for use with CMA 4500 Desktop only

Option-580DATA	USB data transfer kit, includes software and cable for Windows® 98/2000/XP

USB Video Inspection Probe (see VIP Application datasheet for additional information)

The CMA 4500 video inspection probe features a 200X/400X user selectable probe that allows fiber optic connectors to be viewed, stored and analyzed (with option 546) through the CMA 4500 USB port.

Option-545VIP	USB probe with basic viewing/image capture software, FC, SC, ST, 1.25 mm and 2.5 mm tips
Option-546VIPA	USB probe with basic viewing/image capture/advanced analysis software, hard case, FC, SC, ST, 1.25 mm and 2.5 mm tips (USB feature key)

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