Product Brochure

Anritsu

CMA50 Series

Optical Loss Test Set/Optical Power Meter

CMA5 Series

Light Source/Optical Power Meter

Supports Optical FTTH/CATV/Backbones/ LAN Installation and Maintenance

The CMA50 series (Optical Loss Test Set/Optical Power Meter) supports measurement of optical power and loss of all wavelengths used by MM and SM fiber installations. It is the ideal measurement solution for installing and maintaining optical LAN, Access, CATV, Core, and Metro networks.
The Optical Loss Test Set model supports an optional EZ Test function (added function B) for measuring end-to-end optical loss by auto-switching multiple wavelengths. Eliminating the need to switch the wavelength setting at the light source and power meter for every measurement greatly increases on-site work efficiency. Models with the ORL function (added function O) option can measure return loss.
The CMA50 series is designed for both simple measurement and easy understanding of measured results. Results are evaluated based on preset threshold values for speedy and efficient confirmation. The main unit can save up to 100,000 data items, which are easily moved to a back-office PC via Ethernet or USB port for easy and efficient data processing.

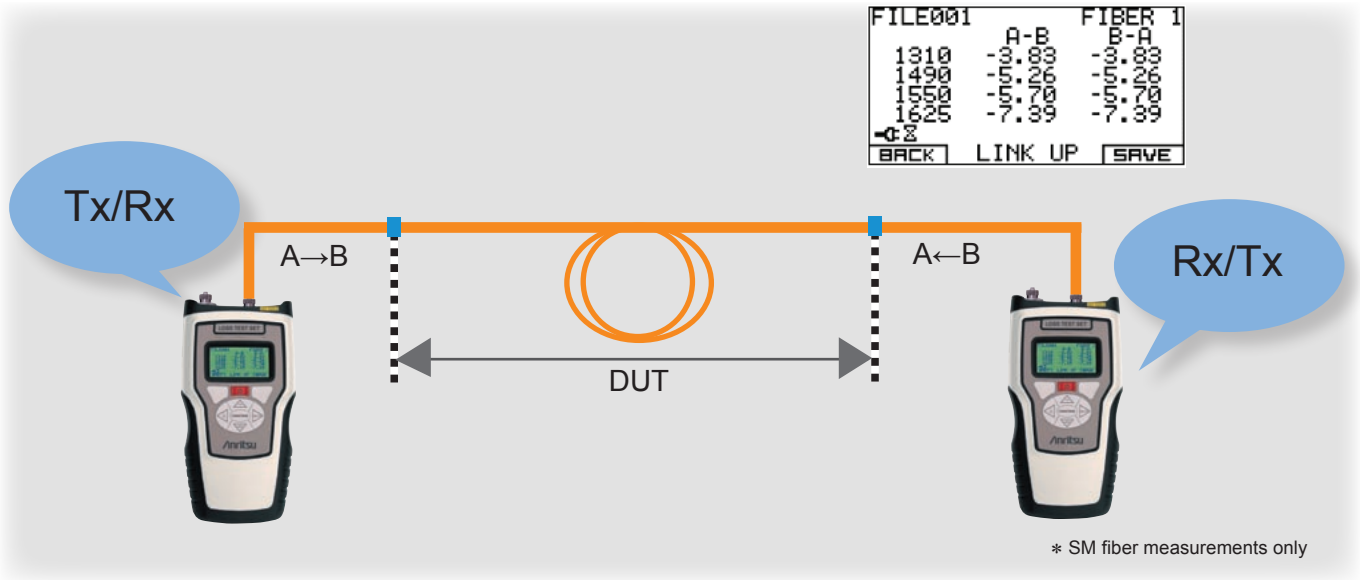
Key Functions

- All-in-one unit supports both light source and optical power meter (Optical Loss Test Set)
- All-in-one unit supports four wavelengths:
  LED light source (850 nm/1300 nm)
  LD light source (1310 nm/1550 nm)
- EZ test function option supports auto-switching of wavelengths and end-to-end measurements (added function B)
- Supports return loss measurements (added function O)
- 1490 nm light source for FTTH PON system installation and maintenance
- Pass/Fail function with set threshold value
- Saves up to 100,000 measurement items
- Easy access from PC to CMA50 internal memory via USB cable
- Built-in visible light source (Optical Loss Test Set model)
- Optional network test function

Improve On-site Work Efficiency

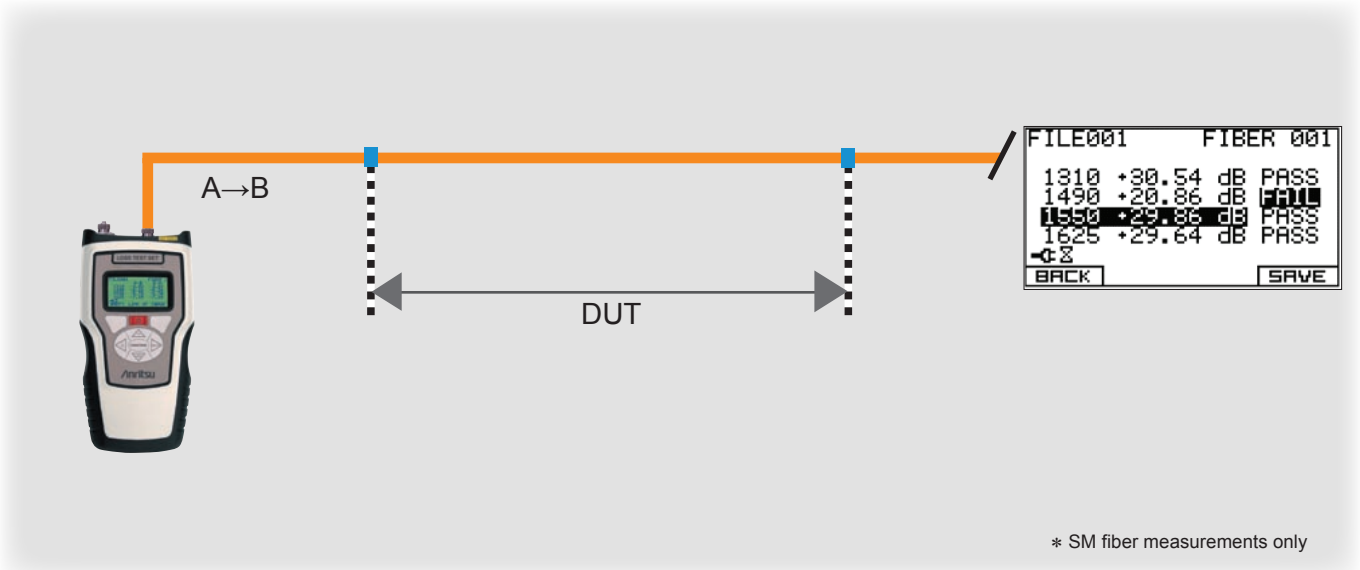
● EZ Test Function (added function B)

The Optical Loss Test Set model with optional EZ test function can measure optical loss while automatically switching wavelengths, eliminating the need for time-consuming manual wavelength switching as well as changing send and receive ports at end-to-end testing.



● ORL Function (added function O)

The Optical Loss Test Set with optional ORL (optical return loss) function and EZ test function measures return loss for multiple wavelengths simultaneously.



Specifications

Optical Loss Test Set			
	Light Source Ports (dual wavelength model)	Light Source Ports (four wavelength model)	
Model	50LTS35	50LTS3456	50LTS8335*3
Emitter Type	LD	LD	LED on MM port, LD on SM port
Wavelength*1	1310/1550 ±20 nm	1310/1490/1550/1625 ±20 nm	850 ±20 nm, 1300 +30/–20 nm (MM) 1310/1550 ±20 nm (SM)
Output Power	≥–7 dBm (ITU-T G.852 fiber)	≥–7 dBm (ITU-T G.852 fiber)	≥–7 dBm ≥–20 dBm (62.5 µm/125 µm GI fiber)
Source Line Width (FWHM)	<5 nm (1310/1490/1550/1625 nm), <50 nm (850 nm), <200 nm (1300 nm)		
Stability*2	±0.05 dB (1310 nm/1550 nm), ±0.15 dB (1490 nm/1625 nm), ±0.1 dB (850 nm/1300 nm)		
Optical Power Meter Port			
Model	Standard	CATV Model	
Wavelength	850/1300/1310/1490/1550/1625 nm CWDM wavelengths (ITU-T G694.2)	850/1300/1310/1490/1550/1625 nm CWDM wavelengths (ITU-T G694.2)	
Detector Type	InGaAs-PD	InGaAs-PD	
Measurement Range	–75 to +10 dBm	–50 to +27 dBm	
Accuracy*4, *5	±0.2 dB (±5%) (–65 to +5 dBm)	±0.2 dB (±5%) (–37 to +27 dBm)	
Linearity*1	±0.1 dB (–65 to +2 dBm)	±0.1dB (–37 to +23 dBm)	
Maximum Input Power	+10 dBm	+27 dBm	
General Specifications			
Laser Safety*6	IEC 60825-1: 2007: CLASS 1 21CFR1040.10 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007		
Modulation Output	CW, 270 Hz, 1 kHz, 2 kHz		
Modulation Detection*7	270 Hz, 1 kHz, 2 kHz		
Display Resolution	0.01 (mW, µW, nW , dBr, dBm)		
Power Supply	Rechargeable battery pack, four AA batteries or 110 V (ac)/220 V (ac) adapter		
Battery Operation Time	20 h (typ.)		
Auto Shutoff	1 to 99 minutes (On/Off switchable)		
Connector Type	FC, SC, ST, DIN, LC		
Operating Temperature Range	–10° to +5°C		
Storage Temperature Range	–25° to +60°C		
Dimensions	110 (W) × 210 (H) × 41.3 (D) mm		
Mass	<910 g (inc. batteries)		
Warranty	3 years		
EMC	EN61326-1, EN55011		
LVD	EN61010-1		

Optical Power Meter	
Standard	
Model	50PMS
Wavelength	850/1300/1310/1490/1550/1625 nm CWDM wavelengths (ITU-T G694.2)
Measurement Range	–75 to +10 dBm
Detector Type	InGaAs-PD
Accuracy*4, *5	±0.2 dB (±5%) (–65 to +5 dBm)
Linearity*1	±0.1 dB (–65 to +2 dBm)
Maximum Input Power	+10 dBm
General Specifications	
Modulation Detection*7	270 Hz, 1 kHz, 2 kHz
Display Resolution	0.01 (mW, µW, nW, dBr, dBm)
Power Supply	Rechargeable battery pack, four AA batteries or 110 V (ac)/220 V (ac) adapter
Battery Operation Time	20 h (typ.)
Auto Shutoff	1 to 99 minutes (On/Off switchable)
Connector Type	FC, SC, ST, DIN, LC
Operating Temperature Range	–10° to +50°C
Storage Temperature Range	–25° to +60°C
Dimensions	110 (W) × 210 (H) × 41.3 (D) mm
Mass	<910 g (inc. batteries)
Warranty	3 years
EMC	EN61326-1, EN55011
LVD	EN61010-1

∗1: 23°C (typ.)
∗2: After 10 minutes warm-up
∗3: The 50LTS8335 unit has one port each for SM fiber and multiport mode.
∗4: Calibrated with1310 nm at –10 dBm and 23°C
∗5: Accuracy differs at 1000-nm wavelength. 850 nm: ±0.35 dB

EZ Test	
B Option	
Wavelength	Single mode only
Link Loss Range*8	50 dB (200 km, 1550 nm) (typ.)
Link Loss Accuracy*8	±0.25 dB
VFL	
50-OPT-V	
Laser Safety*6	IEC 60825-1: 2007 CLASS 3R 21CFR 1040.10 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007
Wavelength	650 ±20 nm
Output Power	Max. 1 mW, 0.8 mW (typ.) (ITU-T G.652 fiber)
Output Modes	CW, 2 Hz modulation
Optical Return Loss (ORL)	
O Option	
Wavelength	Single mode only
ORL Range	0 to 55 dB
ORL Accuracy	±0.75 dB (0 to 50 dB) ±1.5 dB (50 to 55 dB)
ORL Stability	±0.5 dB (20 ±0.5 dB)

∗6: Safety measures for laser products
This product complies with optical safety standards in 21CFR1040.10 and IEC 60825-1; the following descriptive labels are affixed to the product.

THIS PRODUCT COMPLIES WITH 21 CFR 1040. 10 AND 1040. 11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

∗7: Input power: ≥–50 dBm
∗8: Connector pair uncertainty: ±CW accuracy (23°C)

Ordering Information

Please specify the model/order number, name and quantity when ordering.
The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

(1) Specify one main frame.

Model/Order No.	Description
	Standard accessories CMA50 Operation Manual: 1 pc NiMH Battery Pack: 1 pc AC Adapter: 1 pc USB Cable: 1 pc Software CD: 1 pc
	Optical Power Meter Model
50PMS-xx	850/1300/1310/1490/1550/1625 nm (–75 to +10 dBm)
	Optical Loss Test Set Model∗1 [Dual Wavelength Model for SM]
50LTS35XS-xxx	1310/1550 nm + S Function
50LTS35BS-xxx	1310/1550 nm + B + S Functions
	[Four Wavelength Model for SM]
50LTS3456BS-xxx	1310/1490/1550/1625 nm + B + S Functions
50LTS3456BC-xxx	1310/1490/1550/1625 nm + B + C Functions
50LTS3456OS-xxx	1310/1490/1550/1625 nm + B + O + S Functions
50LTS3456OC-xxx	1310/1490/1550/1625 nm + B + O + C Functions
	[Four Wavelength Model for SM/MM]∗2
50LTS8335XS-xxx	850/1300/1310/1550/1625 nm + S Function
50LTS8335BS-xxx	850/1300/1310/1550/1625 nm + B + S Functions
50LTS8335OC-xxx	850/1300/1310/1550/1625 nm + B + O + C Function
Symbols in model name indicate following functions installed X: Standard Function B: EZ Test Function∗3 O: Optical Return Loss (ORL) Function∗3, ∗4, ∗5 S: Optical Power Meter (Standard: –75 to +10 dBm) C: Optical Power Meter (CATV: –50 to +27 dBm)	

(2) Specify one optical connector.

Specify connector type for (1) "xx" or "xxx" from below.∗6	
Optical Power Meter Model	**Optical Loss Test Set Model**
FC (FC Connector)	UFC (FC Connector)
SC (SC Connector)	USC (SC Connector)
ST (ST Connector)	UST (ST Connector)
LC (LC Connector)	ULC (LC Connector)
DN (DIN Connector)	UDN (DIN Connector)
	AFC (FC-APC Connector)∗7
	ASC (SC-ASC Connector)∗7

(3) Select options and accessories from below.

Model/Order No.	Description
	Options
50-OPT-N	Network Test
50-OPT-V∗8	Visible Light Source (VFL)
	Accessories
CMA50-HARDCASE	Hard Carrying Case
CMA50-POUCH-A	Carrying Pouch/Shoulder Strap
CMA50-BATT	NiMH Battery Pack
CMA50-CHARGER	AC Adapter
CMA50-USB	USB Cable
GN-MANDREL∗9	Mandrel for ORL Measurement
LP-FC	FC Connector (PM port)
LP-SC	SC Connector (PM port)
LP-ST	ST Connector (PM port)
LP-LC	LC Connector (PM port)
LP-DIN	DIN Connector (PM port)
UNIV-AFC	FC-APC Connector (Light source port)
UNIV-FC	FC Connector (Light source port)
UNIV-FCSCST	FC, SC and ST Connector (Light source port)
UNIV-LC	LC Connector (Light source port)
UNIV-SC	SC-PC or SC-APC Connector (Light source port)
UNIV-ST	ST Connector (Light source port)
UNIV-DN	DIN Connector (Light source port)

∗1: Optical loss test set (LTS) model has built-in visible light source.
∗2: When different connector adapters are required for light source SM and MM ports, order either adapter as an accessory.
∗3: The automatic measurement (EZ test) and ORL functions only support SM fiber. MM fiber is not supported.
∗4: Models with the ORL function option also have the automatic measurement (EZ test) function.
∗5: When selecting a model with the ORL function, always use an AFC connector for the SM light source port. When specifying a different connector from AFC at (2), a conversion patch cord is supplied as a standard accessory.
(Example: When the 50LTS3456OC-USC is specified, the FC/APC-SC/UPC conversion patch cord is supplied.)
∗6: When different connector adapters are required for light sources and optical power meters, order either adapter as an accessory.
∗7: Not supported for MM light source. When specifying the 50LTS8335, only the SM port is supported. The UPC type connector is supplied for the MM light source port.
(Example: When the 50LTS8335BS-ASC is specified, the ASC connector for SM port and USC connector for MM port are supplied.)
∗8: Standard accessory for optical loss test set (LTS), so specification not required.
∗9: Used for reference measurement at ORL measurement. Standard accessory when selecting model with ORL function.

Compact and Lightweight for Optical Fiber Installation and Maintenance

Light Source

Supports MM model (850 nm/1300 nm), SM model (1310 nm/1550 nm)
Lightweight at only 250 g
16 hours of continuous running with 9 V alkaline battery
Light source for fiber identification (270 Hz, 1 kHz, 2 kHz and CW)

Light Source*	
SM Model	1310 nm/1550 nm
MM Model	850 nm/1300 nm

∗: One 9 V alkaline battery as standard. No AC adapter.

∗: Photographs about same size as actual instruments.

Specifications

Model/Order No.	5L83	5L35
Emitter Type	LD	
Wavelength	850/1300 ±20 nm	1310/1550 ±20 nm
Output Power*1	–7 dBm (62.5 µm/125 µm MM fiber)	–7 dBm (SM fiber)
Source Line Width (FWHM)	<5 nm	
Modulation Output	CW, 270 Hz, 1 kHz, 2 kHz	
Stability (8 hours)	±0.1 dB (25°C)	
Connector Type	FC, ST, SC (User replaceable)	
Battery Operation Time	16 h (9 V alkaline battery)	
Input Power	9 V (9 V alkaline battery)	
AC Adapter (Option)	Input: 100 to 240 V, 50 to 60 Hz, Output: 7.5 V (2 A)	
Operating Temperature Range	–10° to +50°C	
Storage Temperature Range	–25° to +60°C	
Relative Humidity	0 to 95% (no condensation)	
Dimensions	75 (W) × 145 (H) × 25 (D) mm (excl. rubber cover)	
Mass	250 g	
Warranty	3 years	
Laser Safety*2	IEC 60825-1: 2007 CLASS 1 21CFR 1040.10 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007	
EMC	EN61326-1, EN61000-3-2	

∗1: Typical (25°C)
∗2: Safety measures for laser products
This product complies with optical safety standards in 21CFR1040.10 and IEC 60825-1; the following descriptive labels are affixed to the product.

CLASS 1 LASER PRODUCT

THIS PRODUCT COMPLIES WITH 21 CFR 1040. 10 AND 1040. 11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

Ordering Information

Please specify the model/order number, name and quantity when ordering.

The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

Model/Order No.	Description
	Main frame
5L35-YY*	Light Source: 1310 nm/1550 nm (Dual wavelength for SM fiber)
5L83-YY*	Light Source: 850 nm/1300 nm (Four wavelength for MM fiber)
	Standard accessories
	CMA5 Operation Manual: 1 pc
	Rubber Protective Cover: 1 pc
	9 V Alkaline Battery: 1 pc
	Accessories
GN-3HH-CASE	Hard Case (for two CMA5 light sources or optical power meter)
CMA5-POUCH-A	Carrying Pouch/Shoulder Strap
CMA5-BAT	9 V Alkaline Battery
CMA5-AC	AC Adapter
CMA5-AD-LS-FC	FC Connector Adapter
CMA5-AD-LS-SC	SC Connector Adapter
CMA5-AD-LS-ST	ST Connector Adapter
CMA5-AD-LS-ALL3	Connector Adapter (FC, SC and ST)

∗: Specify one connector adapter for YY.
FU=FC/PC, SU=SC/PC, TU=ST/PC, FA=FC/APC, SA=SC/APC
(FA=FC/APC and SA=SC/APC cannot be selected for 5L83-YY.)

Optical Power Meter

Lightweight at only 250 g

40 hours of continuous running with 9 V alkaline battery

Measures up to +23 dBm optical power*1

*1: CATV model

Optical Power Meter* (Calibrated for 850, 1300, 1310, 1490, 1550, and 1625 nm)	
Standard Model	–60 to +10 dBm
CATV Model	–50 to +23 dBm

*: One 9 V alkaline battery as standard. No AC adapter.

Specifications

Model/Order No.	5P100	5P100C
Connector Type	FC, SC, ST (User replaceable)	
Fiber Type	MM, SM	
Detector Type	InGaAs-PD	
Calibrated Wavelength	850/1300/1310/1490/1550/1625 nm	
Measurement Range	–60 to +10 dBm (–50 to +10 dBm @ 850 nm)	–50 to +23 dBm
Accuracy*1	±0.2 dB @ 1310/1550 nm (–60 to +5 dBm) ±0.5 dB @ 850 nm (–50 to +5 dBm)	±0.2 dB @ 1310/550 nm (–40 to +23 dBm) ±0.5 dB @ 850 nm (–40 to +23 dBm)
Linearity*2	±0.2 dB @ 1310/1550 nm (–60 to +5 dBm) ±0.5 dB @ 850 nm (–50 to +5 dBm)	±0.2 dB @ 1310/1550 nm (–40 to +23 dBm) ±0.5 dB @ 850 nm (–40 to +23 dBm)
Display Resolution	0.01 dB	
Modulation Detection	2 kHz modulation	
Display	4-digit, 7-segment display LCD	
Others	Reference setting function, battery level display, automatic power OFF	
Battery Operation Time	40 hours min. (9 V alkaline battery)	
Input Power	9 V (one alkaline battery)	
AC Adapter (Option)	Input: 100 to 240 V, 50 to 60 Hz, Output: 7.5 V (2 A)	
Operating Temperature Range	–10° to +50°C	
Storage Temperature Range	–25° to +60°C	
Relative Humidity	0 to 95% (no condensation)	
Dimensions	75 (W) × 145 (H) × 25 (D) mm (excl. rubber cover)	
Mass	250 g	
Warranty	3 years	
EMC	EN61326-1, EN61000-3-2	

*1: –10 dBm, 25°C (typ.)
*2: 25°C

*: Photographs about same size as actual instruments.

Ordering Information

Please specify the model/order number, name and quantity when ordering.

The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

Model/Order No.	Description
	Main frame
5P100-YY*	Optical Power Meter (Standard): –60 to +10 dBm
5P100C-YY*	Optical Power Meter (CATV): –50 to +23 dBm
	Standard accessories
	CMA5 Operation Manual: 1 pc
	Rubber Protective Cover: 1 pc
	9 V Alkaline Battery: 1 pc
	Accessories
GN-3HH-CASE	Hard Case (for two CMA5 light sources or optical power meter)
CMA5-POUCH-A	Carrying Pouch/Shoulder Strap
CMA5-BAT	9 V Alkaline Battery
CMA5-AC	AC Adapter
CMA5-AD-PM-FC	FC Connector Adapter
CMA5-AD-PM-SC	SC Connector Adapter
CMA5-AD-PM-ST	ST Connector Adapter
CMA5-AD-PM-ALL3	Connector Adapter (FC, SC and ST)

*: Specify one of FC, SC or ST connector adaptor for YY.

CMA50

SPECIFICATIONS

Loss Test Sets, Light Sources, Power Meters

KEY FEATURES

- One button automated multi-wavelength bi-directional measurement option
- Calibrated CWDM wavelengths
- Interchangeable connectors for easy testing in different situations
- Wizard driven for simplified set- ups and use
- Selectable modes to meet any testing requirement
- Ethernet testing option
- Rugged, lightweight, cost-effective to own and use

Fast, accurate, and easy-to-use, Anritsu's CMA50 Family helps assure your loss budgets are met without burdening your operating budget. Available as light sources, power meters, and the all-in-one loss test set, the entire family is designed for simplicity, efficiency, and reliability. Based on real-life field experiences and backed by Anritsu's standard three year warranty, the CMA50 will provide years of use in a variety of applications including FTTx networks, campus LANs, long-haul telephony, and CATV distribution.

The CMA50 Family makes your measuring experience simple and error free, and includes pass or fail threshold analysis, large capacity for test results storage, and an Ethernet network testing option. In addition, when equipped with the EZ-Test option, CMA50 Loss Test Sets will automatically perform bi-directional end-to-end loss measurements at each selected wavelength, process the results, and present them on both units in just a few seconds.

Delivering the right performance, features and options, the CMA50 is the ideal tool for installation, test, and maintenance of fiber networks without the increased cost of extra features that don't provide extra benefits. Designed with your needs in mind, this lightweight, rugged family is built for the most demanding cable installation environments and will provide years of valuable service.

Key Benefits

- Allows testing of end-to-end PON links with a single operator.
- Up to 4 high power sources per unit out of a single port.
- EZTest one button auto bi-directional measurement option.
- Pass or fail indicators for in-field compliance.
- Rugged design provides years of use in the most challenging environments.
- Stores up to 100,000 data sets (4 MB of user data).
- Optional Visual Fault Locator (Standard on all Loss Test Set models)
- LAN Access and network testing option via RJ45 port.
- File Transfer via USB port.
- Three year standard warranty.

General Family Specifications	
Power	4 x AA Alkaline Batteries or Rechargeable NiMH battery pack, 110/220Vac Adapter
Battery Life	20 hours, typical
Auto Shut-Off	Programmable (1 to 99 minutes) or disabled
Connector Ports - Sources	Universal Latching connector with choice of adapter
Connector Ports - Meters	Universal Screw-type connector with choice of adapter
Dimensions	210 x 110 x 41 mm (8.3 x 4.3 x 1.6 in)
Weight	<910g (including batteries) depending on configuration
Operating Temperature	-10°C to +50°C (+14°F to 122°F)
Storage Temperature	-25°C to +60°C (-13°F to 140°F)
Warranty	3 years

Light Sources				
Multimode				
Center Wavelength[1]	**850nm**		**1300nm**	
Wavelength Accuracy	+/- 20nm		+30/-20nm	
Emitter Type	LED		LED	
Output Power (62.5/125 µm fiber)	-20dBm		-20dBm	
Source Linewidth (FWHM)	<50nm		<200nm	
Stability (1 hour)[2]	+/-0.1dB		+/-0.1dB	
Output Modes	CW (Continuous Wave), 270Hz, 1KHz, 2KHz Modulation			
Singlemode				
Center Wavelength[1]	**1310nm**	**1490nm**	**1550nm**	**1625nm**
Wavelength Accuracy	+/- 20nm	+/- 20nm	+/- 20nm	+/- 20nm
Emitter Type	Laser Diode	Laser Diode	Laser Diode	Laser Diode
Output Power (G.652 fiber)	-7dBm	-7dBm	-7dBm	-7dBm
Source Linewidth (FWHM)	<5nm	<5nm	<5nm	<5nm
Stability (1 hour)[2]	+/- 0.05dB	+/- 0.05dB	+/- 0.05dB	+/- 0.05dB
Output Modes	CW (Continuous Wave), 270Hz, 1KHz, 2KHz Modulation			
Visual Fault Locator (Standard on Loss Test Set Models, Option V for Light Source and Power Meter Models)				
Center Wavelength[1]	**650nm +/- 20nm**			
Emitter Type	Laser Diode			
Output Power	1mW (0dBm) Max, 0.8mW (-1.0dBm) Typ			
Output Modes	CW (Continuous Wave), 2Hz Modulation			

Power Meters		
Model	**Standard**	**CATV (Option C)**
Wavelengths of Operation	850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm plus CWDM wavelengths from 1270nm to 1610nm in 20nm increments	
Detector Type	InGaAs	
Measurement Range	-75dBm to +10dBm	-50dBm to +27dBm
Measurement Accuracy[3,4,7]	+/-0.2dB with Pin = -65dBm to +5dBm	+/-0.2dB with Pin = -37dBm to +27dBm
Linearity[5]	+/-0.1dB	+/-0.1dB
Maximum Input Power[6,7]	+10dBm	+27dBm
Modulation Detection[8]	270Hz, 1KHz, and 2KHz	
Wavelength Detection	Automatic recognition of calibrated wavelengths (when used in conjunction with a CMA50 light source)	
Display Resolution	0.01 (mW, µW, nW, dBr, dBm)	

Auto Bi-Direction Test Mode (Available as Option B on Loss Test Set Models only)	
Wavelengths	**All Equipped Singlemode Wavelengths**
Link Loss Range[1]	50dB (approximately 200km at 1550nm)
Link Loss Accuracy[1]	+/-0.25dB excluding connector pair uncertainty
Testing Time	2.5 seconds per wavelength

Optical Return Loss (ORL) Measurements (Option O)	
Wavelengths	**All Equipped Singlemode Wavelengths**
ORL Range[1]	0 to 55dB
ORL Accuracy[1]	+/-0.75dB with P_{in} = 0dB to +50dB Derates above P_{in} =+50dB to +/-1.5dB at +55dB
ORL Stability[1]	+/-0.5dB at 20dB +/- 0.5dB

Options	
V Option[9] Visual Fault Locator	Visible light source at 650 nm allowing to visually detect a fiber fault up to 5 km.
N Option Network Test	LAN access and network level continuity and frame time delay through TCP/IP protocol over its built-in 10/100 Mbps Network Interface Card.
B Option EZTest	Avalable on Loss Test Set configurations, provides one button multiple wavelength automatic bi-directional measurement. When readings are taken between two EZ Test equipped units, this feature automatically takes loss measurements at all wavelengths in each direction, and presents the combined results on both units.
O Option ORL with EZ Test	Optical Return Loss (ORL) option allows the measurement of optical return loss readings required for high speed transmission systems. This option automatically includes EZ Test Option B as described above.

Notes:

1. Typical at +23°C.
2. After 10 minute warm-up period.
3. At time of calibration. Calibration conditions: 1310nm, -10dBm, +23°C.
4. Accuracy derates below 1000nm. At 850nm, Measurement Accuracy is +/-0.35dBm with P_{in}= -60dBm to +5dBm (or P_{in} = -32dBm to +27dBm for CATV Option C units).
5. At +23°C, from -65dBm to +2dBm (or -37dBm to +23dBm for CATV Option C units).
6. Do not exceed maximum input power.
7. If the power meter is routinely used to measure optical signals in excess of 0dBm (+20dBm for Option C), more frequent calibration is recommended to insure measurement accuracy.
8. $P_{in} \geq$ -50dBm
9. Visual Fault Locator is Standard on all Loss Test Set Models

Available Configurations										
Model Number	**Multimode Sources**		**Singlemode Sources**				**Power Meter**	**Available Options**		
	850nm	**1300nm**	**1310nm**	**1490nm**	**1550nm**	**1625nm**		**VFL**	**Network**	**EZ Test & ORL**
CMA50 Light Sources										
50LS35			X		X		no	yes	yes	no
50LS83	X	X					no	yes	yes	no
50LS345			X	X	X		no	yes	yes	no
50LS356			X		X	X	no	yes	yes	no
50LS3456			X	X	X	X	no	yes	yes	no
50LS8335	X	X	X		X		no	yes	yes	no
CMA50 Loss Test Sets (Combined Light Source & Power Meter, and includes Visual Fault Locator)										
50LTS35			X		X		yes[a]	Std	yes	yes, B or O
50LTS83	X	X					yes[a]	Std	yes	yes, B or O
50LTS345			X	X	X		yes[a]	Std	yes	yes, B or O
50LTS356			X		X	X	yes[a]	Std	yes	yes, B or O
50LTS3456			X	X	X	X	yes[a]	Std	yes	yes, B or O
50LTS8335	X	X	X		X		yes[a]	Std	yes	yes, B or O
CMA50 Power Meters										
50PMS	no	no	no	no	no	no	Standard	yes	yes	no
50PMC	no	no	no	no	no	no	CATV	yes	yes	no

[a] CMA50 Loss Test Sets can be ordered with Standard or CATV (Option C) Power Meter

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