MEASURING INSTRUMENTS

10

Shortening the subscriber loop, associated with broad-band services provided to the end users in Fibre To The Home (FTTH) networks is the fact. Increasingly the entities involved in telecommunication and data transmission have to become familiar with fibre optic technology. Companies intending to operate effectively in the fibre optic market, need to have proper knowledge on optical fibre handling and possess the necessary equipment and tools including fibre optic measuring devices.

Regardless of whether we want to check attenuation of the cable section, locate the fault in the fibre optic route or perform the hand-over report, the specialized measuring instruments are necessary.

Optomer offer includes measuring equipment dedicated for outdoor applications as well as devices for quality control, scientific and laboratory applications. OPTOMER with years of experience in the use and distribution of modern measuring devices is a reliable partner ensuring customer training courses and after-sales support.

This chapter presents only a part of a very wide range of Optomer offer covering the fibre optic measuring equipment.

YOKOGAWA AQ7280 OPTICAL REFLECTOMETER

NEW

YOKOGAWA AQ7280 Optical Reflectometer

Modules for AQ7280

FEATURES:

- 0.8 m dead zone
- up to 50 dB dynamics
- large touch screen Multi Touch
- smart Mapper feature
- ready to work within 10sec from swiching on
- wireless communication
- 15 hours battery life
- a wide range of modules and possible further extensions
- optical connector's verification
- PDF reporting from the device level
- macrobend detection
- fibre optic link monitoring (optional)
- fault locator (optional)
- PON, FTTH optimised
- measuring wavelength range from 850 nm (for MM fibres), up to 1650 nm (for SM fibres), depending on used module
- build-in ports: USB 2.0 mini; 2 x USB, SD card slot, OTDR; optional: Ethernet, VLS; OPM, OLS

TECHNICAL SPECIFICATIONS:

measurement module	number of wavelenghts	dynamics [dB]						
		SM 1310 nm	SM 1490 nm	SM 1550 nm	SM 1625 nm	SM 1650 nm	MM 850 nm	MM 1300 nm
AQ7282A	2	38	-	36	-	-	-	-
AQ7283A	2	42	-	40	-	-	-	-
AQ7284A	2	46	-	45	-	-	-	-
AQ7285A	2	50	-	50	-	-	-	-
AQ7283F	3	42	-	40	-	40	-	-
AQ7283H	3	42	-	40	39	-	-	-
AQ7284H	3	36	-	45	44	-	-	-
AQ7283K	4	42	38	40		-	-	-
AQ7282M	2	-	-	-	-	-	25	27

YOKOGAWA AQ1200 OPTICAL REFLECTOMETER

FEATURES:

- new model of YOKOGAWA reflectometer
- smaller and lighter alternative for popular AQ 7280
- ideal for measuring broad metropolitan and FTTH/PON networks
- measures also through splitters and splitter cascades
- 0,75 m dead zone
- dynamics up to 42 dB
- over 120 km real measurement range
- built in USB ports
- available connection with computer or printer
- ability to expand available memory
- ability to connect video microscope probe
- single device may serve as:
  - optical reflectometer
  - light source
  - power meter (optional PON power meter)
  - OLTS – automatic bidirectional transmissive measurments
  - VFL – visual fault locator (red light source)
  - ETHERNET connection and PING tests
  - video microscope
- handy and convenient handheld device
- small size and mass (1kg)
- clear, colour display
- ability to perform OLTS measurments in cooperation with another AQ1200 unit
- includes changeable SC/PC adapter at the output port and changeable universal adapter for 2.5 mm ferule, at the output of the red light source

YOKOGAWA AQ1200 Optical Reflectometer

TECHNICAL SPECIFICATIONS:

model	dynamics [dB]				functions				dead zones	
	1310	1550	1625	1650	Filtr	OPM	OLS	VFI	event	attenuation
AQ1200A	34	32	-	-	P	0	0	0	0,75	4/5
AQ1200B	-	-	33	-	+	0	0	0	0,75	7
AQ1200C	-	-	-	34	+	0	0	0	0,75	7
AQ1200E	38	36	36	-	+	0	0	0	0,75	4/5/7
AQ1205A	42	40	-	-	P	0	0	0	0,75	4/5
AQ1205E	42	40	38	-	+	0	0	0	0,75	4/5/7
AQ1205F	42	40	-	37	+	0	0	0	0,75	4/5/7

\+ included in the price
P possibility of buying the patchcord with filter
0 optional

ORDERING:

AQ1200A/PM – AQ1200 Optical Reflectometer, operating at 1300 nm and 1500 nm, with optional power meter

TELECOM ACCESS CATV MAN WAN LAN FTTx PON

FLX, OFL, CS OPTICAL REFLECTOMETER

OFL280 Optical Reflectometer

FEATURES:

- simple menu, easy to use, high tolerance for user errors
- designed for installers with little experience in fibre optics
- OFL280 and FLX380 incorporate:
  - optical reflectometer
  - Light Source
  - power meter
  - possibility of performing half-automatic transmission measurements with Wave-ID function
  - red light source
  - „103" versions are equipped with PON power meter
- CS260-10 reflectometers are designed typically for PON testing and are equipped with:
  - optical reflectometer with 1625nm service wavelength and filter
  - PON power meter for active line measurements
  - source of red light for visual fault location

TECHNICAL SPECIFICATIONS:

model	dynamics [dB]				functions				dead zones	
	1310	1550	1625	1490	Filtr	OPM	OLS	VFI	event	attenuation
FLX380-103	41	40	39	-	+	+	+	+	0,8	3,5
FLX380-102	41	40	-	-	P	+	+	+	0,8	3,5
FLX380-101	41	40	-	40	P	+	+	+	0,8	3,5
OFL280-103	34	32	30	-	+	+	+	+	0,8	3,5
OFL280-102	34	32	-	32	P	+	+	+	0,8	3,5
OFL280-101	34	32	30	-	P	+	+	+	0,8	3,5
OFL280-100	34	32	-	-	P	+	+	+	0,8	3,5
CS260-10	-	-	35	-	+	+	+	+	0,8	3,5

\+ included in the price
P possibility of buying the patchcord with filter

ORDERING:

OFL280-101 – OFL280 Optical Reflectometer, operating at 1310 nm, 1550 nm and 1625 nm wavelengths, with power meter

TELECOM ACCESS CATV MAN WAN LAN FTTx PON

NOYES M310 OPTICAL REFLECTOMETER

FEATURES:

- dynamics 38 dB
- system LinkMapTM
- ultra-short dead zones: 0,8m for event, 3m for attenutaion
- power meter and fault locator as standard features
- display with anti-reflective coating well visible even in direct sunlight
- automatic detection of active lines
- possibility of connecting DFS1video microscope probe
- 16 hours operation on a single battery charge
- light and robust construction
- up to 50 km measuring range
- 3.5 inch high contrast colour touch display with good visibility
- available in SM,MM and Quad (SM, MM) versions

TECHNICAL SPECIFICATIONS:

model	number of measuring wavelengths	dynamics [dB]			
		MM 850 nm	MM 1300 nm	SM 1310 nm	SM 1550 nm
M310-25	4	30		38	37
M310-22	2	30		-	-
M310-20	2	-	-	38	37

NEW

Noyes M310 Optical Reflectometer

DFS-1 video-microscope probe

AFL THE ROGUE™ MODULAR MEASURING PLATFORM

Platforma ROGUE™

FEATURES:

- flexible, open modular platform with possibility of further extension
- clear measurements on different mobile devices
- castomisation of the measuring applications
- automatic measurements and settings synchronisation
- light and easy to carry
- autonomous operation or integration with Android or iOS software
- wireless Bluetooth and Wi-Fi communication
- 8 hours operation on a single battery charge
- simultaneous bidirectional measurements of two lines
- integrated OPM, OLS and VFL (650nm)
- compliant with Encircled Flux
- Available in SM, MM and Quad (SM, MM) varsions

OLTS5 INSERTION LOSS METER

OLTS5 Insertion Loss Meter

FEATURES:

- singlemode fibre insertion loss measurment on 2 wavelengths (1310/1550 lub 1550/1625 nm)
- Pass/Fail thresholds, according to ISO/TIA/EN standards
- easy and intuitive Touch and Test(TM) interface
- TRMTM reporting software
- bidirectional measurment may be performed manually or automatically
- FC/PC adapters included

TECHNICAL SPECIFICATIONS:

model	wavelength [nm]			measurement range [dBm]	units of measure
	1310	1550	1625		
OLTS5-3	+	+		+ 10 to -70	dB, dBm, W
OLTS5-5		+	+	+10 to -70	dB, dBm, W
OLTS5-6	+	+		+16 to -60	dB, dBm, W

ORDERING:

OLTS5-3 - OLTS5 Insertion Loss Meter, operating at 1310 and 1550 nm, with measurement range from 10 dB to 70 dB

TELECOM ACCESS CATV MAN WAN LAN FTTx PON

CSM SERIES POWER METER

FEATURES:

- easy and reliable measurement equipment
- ability to set reference power level
- modulation recogniction (tone detection)
- clear display with backlight
- compact, durable case
- ideal for installers
- includes changeable universal 2,5 mm ferrule adapter

CSM Series Power Meter

TECHNICAL SPECIFICATIONS:

model	calibrated wavelengths [nm]									measurement range [dBm]	units of measure	functions			
	660	780	850	980	1300	1310	1490	1550	1625			tone detection	„Wave ID" detection	reference power setting	save/copy function
CSM1-1	+	+	+							+6 to -70	dB, dBm, W	+		+	
CSM1-2			+		+	+		+		+6 to -60	dB, dBm, W	+		+	
CSM1-3			+		+	+	+	+	+	+6 to -70	dB, dBm, W	+		+	
CSM1-4			+	+		+	+	+	+	+26 to -50	dB, dBm, W	+		+	

OPM SERIES POWER METER

FEATURES:

- profesional equipment with full set of options
- automatic wave identification „Wave-ID"
- modulation recognision (tone detection)
- ability to set reference power level
- ability to store up to 1000 measurements in 10 folders (OPM5 series)
- ability to copy the measurements via USB (OPM5 series)
- FTTx PON series enables simultaneous measurements on two wavelengths: 1490 nm and 1550 nm (contains built-in filter), compatible with BPON, GPON, EPON. In addition to the power meter it features a built-in VFI - visual faults locator
- includes changeable universal 2,5 mm ferrule adapter

OPM4 Series Power Meter

TECHNICAL SPECIFICATIONS:

model	calibrated wavelengths [nm]									measurement range [dBm]	units of measure	functions			
	660	780	850	980	1300	1310	1490	1550	1625			tone detection	„Wave ID" detection	reference power setting	save/copy function
OPM4-1D	+	+	+							+6 to -70	dB, dBm, W	+	+	+	
OPM4-2D			+		+	+	+	+		+6 to -60	dB, dBm, W	+	+	+	
OPM4-3D			+		+	+	+	+	+	+10 to -75	dB, dBm, W	+	+	+	
OPM4-4D			+	+		+	+	+	+	+25 to -50	dB, dBm, W	+	+	+	
OPM5-2D			+		+	+	+	+		+6 to -60	dB, dBm, W	+	+	+	USB
OPM5-3D			+		+	+	+	+	+	+10 to -75	dB, dBm, W	+	+	+	USB
OPM5-4D			+	+		+	+	+	+	+26 to -50	dB, dBm, W	+	+	+	USB
OPM4-FTTx PON		+		+			+	+		+10 to -50 (1490) +20 to -50 (1550)	dB, dBm, W				

ORDERING:

OPM4-2D – OPM4 Series Power Meter, calibrated for 850 nm, 1310 nm, 1490 nm, 1550 nm wavelengths, with 6 dBm to 60 dBm measurement range, Wave ID technology, no saving data function

TELECOM ACCESS CATV MAN WAN LAN FTTx PON

CSS1 LIGHT SOURCE

CSS1 SM Light Source

FEATURES:

- easy and reliable device
- constant or modulated signal (270 Hz, 300 Hz, 1 kHz, 2 kHz)
- all wavelengths available from one port
- clear display with backlight
- compact and durable case
- ideal for installers
- includes changeable SC/PC adapter

TECHNICAL SPECIFICATIONS:

model	Light Source [nm]									moc wyjściowa [dBm]	stabilność	funkcje		liczba portów
	660	780	850	980	1300	1310	1490	1550	1625			generacja tonów	generacja „Wave ID"	
CSS1-MM			+		+					-20	±0,1dB/ 1 godz.	+		1
CSS1-SM						+		+		0	±0,05dB/ 1 godz.	+		1

LIGHT SOURCE OLS

Light Source OLS2-Dual

Light Source OLS4

Light Source OLS7

FEATURES:

- zaawansowane Light Source
- identyfikacja fali Wave-ID
- możliwość modulacji sygnału
- czytelny wyświetlacz
- szeroka gama modeli do różnych zastosowań
- w zestawie wymienny adapter SC/PC

TECHNICAL SPECIFICATIONS:

model	Light Source [nm]									moc wyjściowa [dBm]	stabilność	funkcje		liczba portów
	660	780	850	980	1300	1310	1490	1550	1625			generacja tonów	generacja „Wave ID"	
OLS1-1C	+		+							-10 dla 660 -20 dla 850	±0,1dB/ 8 godz.			2
OLS1-2C			+		+					-20	±0,1dB/ 8 godz.			2
OLS1-Dual			+		+					-20	±0,1dB/ 8 godz.	+	+	1
OLS2-Dual						+		+		0	±0,05dB/ 1 godz.	+	+	1
OLS4			+		+	+		+		-20 dla 850 -20 dla 1300 0 dla 1310 0 dla 1550	±0,05dB/ 1 godz.	+	+	2
OLS7-3						+		+	+	-5	±0,05dB/ 1 godz.	+	+	1
OLS7-FTTH						+	+	+		-5	±0,05dB/ 1 godz.	+	+	1

ORDERING:

OLS2-Dual – Light Source serii OLS dla fal o długościach 1310 i 1550, obie fale w jednym porcie, technologia Wave ID, z możliwością generacji tonów

TELECOM ACCESS CATV MAN WAN LAN FTTx PON

FITEL ID-H/R OPTICAL FIBRE SIGNAL IDENTIFIER

FEATURES:

- high dynamics
- no need to change measuring heads
- built-in LCD display
- signal detection with no transmission disruption
- low insertion loss
- tone detection
- low weight and handy construction

TECHNICAL SPECIFICATIONS:

model	wavelenght	insertion loss			tone detection	weight
		1310 nm	1550 nm	1650 nm		
FITEL ID-H/R	900-1700 nm	0,1 dB	1,0 dB	2,5 dB	270-2000 Hz	160 g

Fitel ID-H/R Optical Fibre Signal Identifier

FID-30R/31R FIBRE OPTIC SIGNAL DETECTOR

FEATURES:

- robust construction dedicated for harsh environments
- no need to replace measuring heads
- 2.4 inch colour touch display with backlight
- fibre grip lock
- replaceable power metre connector
- Internet software upgrades

TECHNICAL SPECIFICATIONS:

model	wavelength	loss insertion			tone detection	weight
		1310 nm	1550 nm	1650 nm		
FID-30R/31R	900-1700nm	0,2 dB	1,0 dB	2,5 dB	270-2000 Hz	230 g

FID-30R/31R Fibre Optic Signal Detector

VOA6-SM TUNABLE ATTENUATOR

VOA6-SM Tunable Attenuator

FEATURES:

- used for bit error rate (BER) estimation and systems' tollerance for optical link attenuation
- fast and easy tuning via thumb operated knob
- saves last attenuation setting after the device was turned off
- splash resistant, mechanically durable case
- used as laboratory attenuator, attenuation range 2 dB to 60 dB
- return loss over 45 dB for DFB laser
- wavelength range 1260 nm to 1650 nm
- calibrated wavelengths: 1310 nm, 1490 nm, 1550 nm, 1625 nm
- dedicated for single mode fibres
- changeable FC/PC adapters included

ORDERING:

VOA6-SM - Tunable Attenuator for single mode fibres

VOA5-MM TUNABLE ATTENUATOR

VOA5-MM Tunable Attenuator

FEATURES:

- used for bit error rate (BER) estiamation and systems' tollerance for optical link attenuation
- fast attenuation tuning (from 0 dB to 60 dB in less than 3 seconds)
- handy and machanically durable construction
- saves last attenuation setting after the device was turned off
- used as laboratory attenuator, attenuation range 0 dB to 60 dB
- wavelength range 850 nm to 1300 nm
- calibrated wavelengths: 850 nm, 1300 nm
- dedicated for multimode fibres
- changeable FC/PC adapters included

ORDERING:

VOA5-MM - Tunable Attenuator for multimode fibres

SVA1 TUNABLE ATTENUATOR

SVA1 Tunable Attenuator

FEATURES:

- used for bit error rate (BER) estimation, systems' tollerance for optical link attenuation and as a lab attenuator
- budget solution for single mode fibre attenuator
- attenuation up to 60 dB
- coarse and precise tuning
- light and durable
- ideal for field use
- changeable FC/PC adapters included

ORDERING:

SVA1 – Tunable attenuator for singlemode optical fibres

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OP815 INSERTION LOSS METRE

FEATURES:

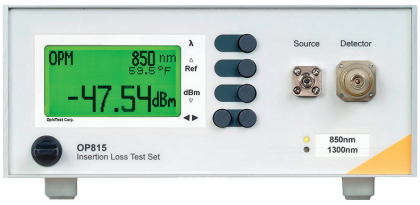
- high measurement precision
- high speed USB computer interface
- OPL-Pro Excell sheet measurement saving software
- interface for non-standard applications with OPL-SDK
- fully automatic insertion loss measurement for one or two wavelengths
- different detector options for one or two fibres

TECHNICAL SPECIFICATIONS:

optical power metre	measurement range	wavelength range	total accuracy	±0,05 dB deviation	±0,01 dB deviation
1 mm InGaAs	+6 dBm to -72 dBm at 1490 nm	850 nm 980 nm 1300 nm 1310 nm 1490 nm 1550 nm 1625 nm	±0,25 dB at calibration conditions for all NIST traceable wavelengths	+3 dBm to -65 dBm at 1490 nm	power change <10 dB
3 mm InGaAs	+3 dBm to -72 dBm at 1490 nm			0 dBm to -65 dBm at 1490 nm	
5 mm InGaAs	0 dBm to -65 dBm at 1490 nm			0 dBm to -55 dBm at 1490 nm	
10 mm InGaAs	0 dBm to -55 dBm at 1490 nm			0 dBm to -45 dBm at 1490 nm	
3 mm Silicon	0 dBm to -65 dBm at 980 nm	650 nm 850 nm 980 nm		0 dBm to -55 dBm at 980 nm	

insertion loss	source bandwidth	internal fibre	output power	source stability
1310/1550 nm Laser	<10 nm	9/125 (SMF28)	typical – 1,5 dBm	±0,02 dB
1310/1490/1550/1625 nm Laser			typical – 2,5 dBm	
850/1300 nm LED	<140 nm (850 nm) <200 nm (1300 nm)	50/125 62.5/126 105/125	18 dbM: 62,5/125 um	

NEW



OP815 Metre