

Measurement solutions for single-mode fibers



Economical test solutions for

- installation
- maintenance and
- repair of single mode networks



WG OLS-6
780/1300 nm

WG OLP-6

WG OLS-6
1310/1550 nm

WG OMK-6

WG OVF-1

WG MT-32

The experience gained over many years in the field of optical measurement has resulted in a new, economical range of high-quality, rugged and reliable instruments.

The instruments are pocket-sized and fit in a handy belt pouch so they can be used anywhere as an **everyday tool**.

The simple three-button operation, easy to read display and instrument characteristics have all been **optimized for measuring absolute level and loss** on optical fibers.

Automatic recognition by the level meter of the wavelength transmitted by the level generator means that measurement errors are eliminated. The reference level for attenuation measurements conforming to IEC-874-1 (method 6) is stored for each wavelength separately at the press of a key. The reference value remains stored even when the instrument is switched off so that

no battery power is wasted between making the reference measurement and the on-site measurement.

This storage of a reference level for each wavelength coupled with the two laser modules built in to the OLS-6 means that **dual-wavelength measurements** at 1310/1550 nm or 780/1300 nm can be made quickly and easily.

Individual fibers in a fiber optics cable can be identified rapidly and simply by transmitting modulated signals down the required fiber. The OLP-6 automatically detects the modulation frequency and indicates the correct fiber.

Economical, easy to handle and operate, yet highly reliable and robust.

Designed from start to finish with
users in mind.

Dual Laser Source WG OLS-6 WG OLS-6 1310/1550 nm WG OLS-6 780/1300 nm

- One FC/PC connector for each wavelength
- Connectors can be removed from the casing for cleaning
- Excellent short- and long-term stability thanks to level-stabilized laser source
- Reduces the need for time-consuming reference measurements
- High output level for attenuation measurements over long distances (-7 dBm)

- Optimum protection of optical connectors with built-in cover

- Simple **3-button** operation

"Intelligent" laser beam makes life easier

- Measurement errors are avoided by automatic detection of the standard wavelength

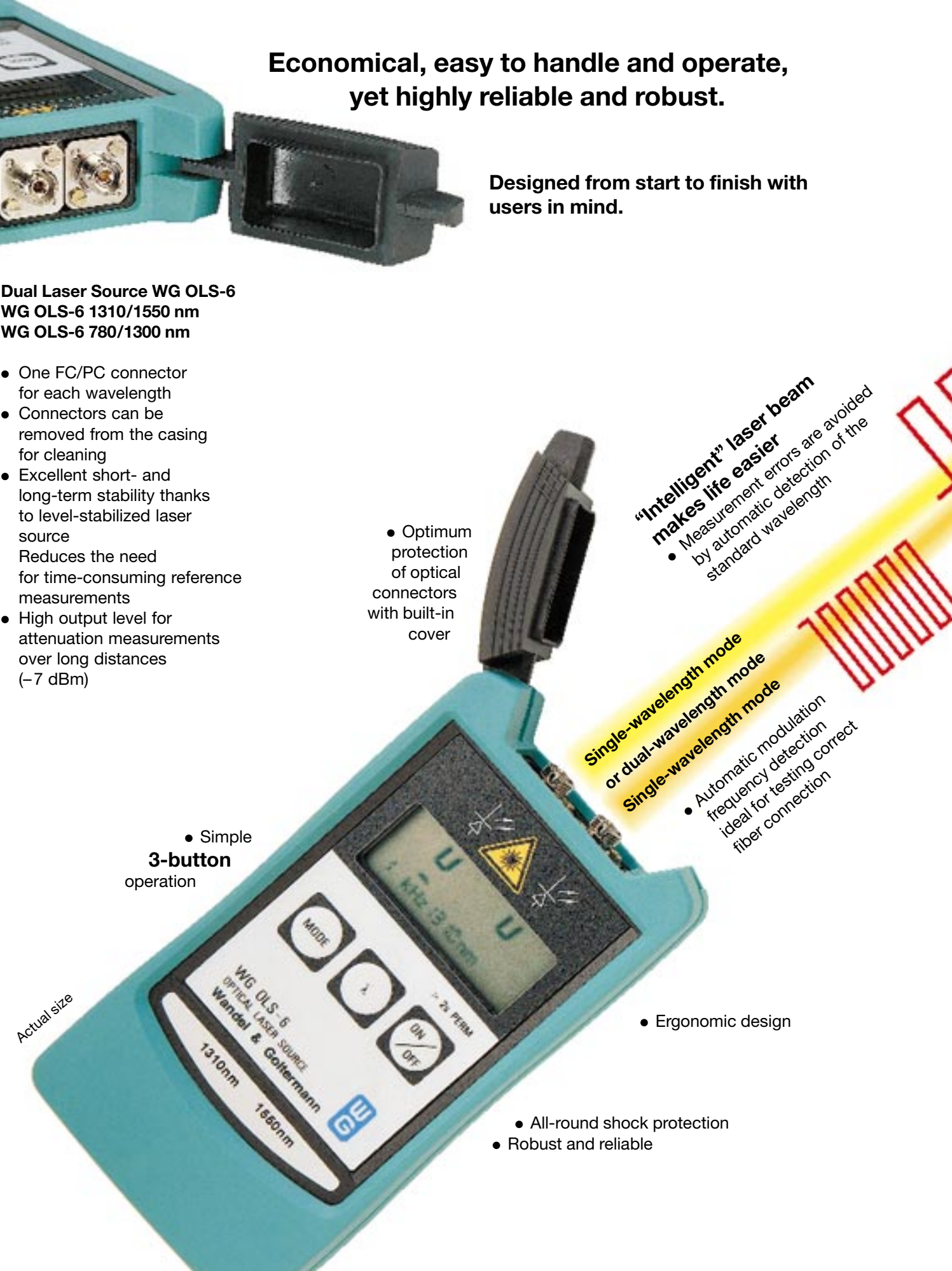
Single-wavelength mode or dual-wavelength mode

- Automatic modulation frequency detection ideal for testing correct fiber connection

- Ergonomic design

- All-round shock protection
- Robust and reliable

Actual size



**WG OLP-6
Optical
Power Meter**

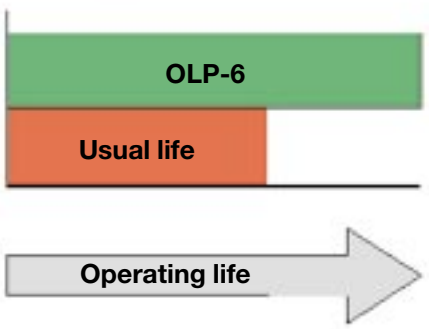


- High-contrast easy-to-read display
- For IEC 874-1 (method 6) attenuation measurements, the attenuation is shown directly in dB without further calculation after the reference measurement.

**Different connectors?
No problem!**

- No more tiresome, time-consuming adapter changes
- Simple push-pull mechanism
- All common 2.5 mm connectors can be used

- Automatic display of battery capacity in % whenever the ON/OFF key is pressed.
- BAT icon displayed during measurement to indicate the need to replace the batteries.



Long operating time (> 130 h)

- Uses low-power components
- Automatic power down activated after approx. 20 minutes
- Uses two standard AA size (Mignon) 1.5 V batteries / NiCds – available worldwide





The ideal pair for everyday measurements on single-mode fibers (1310/1550 nm) now available all in one as the WG OMK-6 Optical Test Kit

Belt pouch

- The practical solution
- One with each instrument
- Always at hand



WG OMK-6 Optical Test Kit:

- Optimized for attenuation measurements with a dynamic range of up to approx. 58 dB in CW mode, corresponding to
 - ≈ 120 km fiber at 1310 nm
 - ≈ 190 km fiber at 1550 nm
- The dynamic range in Auto-λ or Modulation mode is around 40 dB, corresponding to
 - ≈ 90 km fiber at 1310 nm
 - ≈ 130 km fiber at 1550 nm

Specifications

OLS-6 Optical Laser Source		
	OLS-6: 1310/1550 nm	OLS-6: 780/1300 nm
Optical source type	FP laser	FP laser
Wavelength range	1310 nm typ. ± 20 nm 1550 nm ± 20 nm	780 nm ± 15 nm 1300 nm typ. ± 20 nm
FWHM spectral width	<7 nm / <7 nm	<7 nm / <7 nm
Output power (9/125 μm fiber) CW	Class 1 laser -7 dBm typ. ± 1 dB	Class 3A laser (780 nm) -7 dBm ± 1.5 dB
Modulated output level	typ. -10 dBm	typ. -10 dBm
Modulation frequencies	270 Hz, 1 kHz, 2 kHz	270 Hz, 1 kHz, 2 kHz
Output signal stability		
Short-term: 15 min, -10 to +55 °C	± 0.02 dB	± 0.05 dB
Long-term: 8 h, -10 to +55 °C	± 0.2 dB	± 0.3 dB
Modes: CW AUTO- λ FMOD DUAL	Unmodulated light Output signal includes λ information for WG level meters Modulation for fiber identification Both wavelengths active	
Optical connector	2 outputs (1 for each wavelength); 2 \times FC/PC	
Power supply / operating time		
Dry batteries	2 \times Mignon (AA) 1.5 V / typ. 60 h	2 \times Mignon (AA) 1.5 V / typ. 45 h
NiCd batteries	2 \times Mignon (AA) 1.2 V / typ. 20 h	—

OLP-6 Optical Power Level Meter OLP-6

Wavelength range 780 to 1700 nm
 Photodiode Germanium
 Fiber type 9/125 to 100/140 μ m
 Standard wavelength, switchable 780¹⁾, 850,
 1300, 1310, 1550 nm

Display range -65 to +10 dBm
 Maximum permitted level +10 dBm

Intrinsic measurement error²⁾ ± 0.13 dB (± 3 %)

Linearity²⁾ -55 to +5 dBm ± 0.06 dB

Wavelength detection^{3) 4)} automatic switch-over to
 and display of nominal wavelength

Modulation detection³⁾ 270 Hz, 330 Hz, 1 kHz, 2 kHz

Display

Result display LCD, 4-digit
 Results shown in dBm, dB
 Resolution 0.01 dB
 Battery charge state in %
 shown when instrument is switched on/off

Reference level

One measured value per wavelength can be stored

Optical connector

Universal Push-Pull Adapter (UPP) for all common plug
 connectors with 2.5 mm ferrules, e.g. DIN, ST, FC, SC, E2000

Power supply / operating time

Dry batteries 2 \times AA (Mignon) 1.5 V
 or NiCd batteries 2 \times AA (Mignon) 1.2 V
 Operating time (dry batteries) typically 130 h

- 1) 780 nm wavelength available from series B onwards
- 2) Under reference conditions: -20 dBm (CW), 1310 nm ± 2 nm,
 23 °C ± 3 °C, 45 to 75% relative humidity
- 3) Level range at 1300 to 1550 nm: -50 to +10 dBm;
 at 780/850 nm: -45 to +10 dBm
- 4) Together with OLS-5, OLS-6 and OLS-15 from series E onwards

General instrument specifications

Discharge protection
 Instrument powers down automatically after about 20 minutes
 to conserve battery power (function can be disabled)

Ambient temperature
 Nominal range of use -10 to +55 °C
 Storage and transport -40 to +70 °C

Dimensions (b \times h \times t) in mm approx. 73 \times 28 \times 140

Weight (including batteries)
 OLS-6 approx. 200 g
 OLP-6 approx. 180 g

Electromagnetic compatibility

Meets EN 50081-1 and EN 50082-1 (CE conformance)

OMK-6 Optical Test Kit

OMK-6 contents:

1 \times MK-5 Instrument Case complete with inlay
 1 \times OLS-6 Optical Laser Source, 1310/1550 nm
 1 \times OLP-6 Optical Power Level Meter
 1 \times Single-mode cable, FC/PC-FC/PC (9/125 μ m), K 3112
 4 \times AA (Mignon) 1.5 V batteries
 Space is provided for OVF-1 (Optical Visible Fault Locator)

Dynamic range of Loss Test Kit:

CW mode 58 dB
 Modulation or wavelength detection modes
 for 1310 to 1550 nm 40 dB
 for 780 to 850 nm 35 dB

Dimensions (b \times h \times t) in mm approx. 265 \times 52 \times 225

Weight (including contents) approx. 900 g

Three practical solutions to the problem of measuring the physical parameters of systems and components in optical networks

By combining individual instrument types into customized sets that fit into the MT-32 Instrument Bag, it is possible to always have the right instruments and appropriate accessories for every type of measurement ready to hand. These optimized test solutions mean that the only investment costs are those that are absolutely essential to solving the measurement problem.

The combination of the new pocket-size OLS-5/-6 family with the high-performance OLX-15/-16/-18 range opens up new dimensions in customized test solutions for laboratory and field use.

Example 1: Economical "TWINtest solution" for level and loss measurements on multimode and single-mode fibers: Measurement time halved by simultaneous measurement at 850/1300 nm on MM or at 1310/1550 nm on SM fibers.

MT-32 Instrument Bag	BN 2126/32
OLS-5 LED Source 850/1300 nm for MM fibers; ST adapter	BN 2255/01
OLS-15 Laser Source 1310/1550 nm for SM fibers; universal adapter	BN 2255/02
OLP-6 Optical Power Level Meter (-65 to +10 dBm); Universal Push Pull Adapter	BN 2256/02
OVF-1 Fault Locator for locating kinks and breaks in fibers	BN 2252/01
Cleaning tape	BN 2229/90.07
2 single-mode cables, FC/PC - FC/PC (9/125 μ m)	K 3112
2 multimode cables, ST-ST (50/125 μ m)	K 3027
FC/FC coupler	S 3101
ST/ST coupler	S 3109
1 Charger Unit for external charging of NiCd batteries: 220 V, Euro-style a.c. line plug	BN 2229/90.03

Example 2: Economical "Quad-wavelength solution" for qualification of fiber optics cables by means of level and loss measurements in the optical windows of single-mode fibers

MT-32 Instrument Bag	BN 2126/32
OLS-6 Laser Source 1310/1550 nm for SM fibers; FC/PC adapter	BN 2255/02
OLS-6 Laser Source 780/1300 nm for SM fibers; FC/PC adapter	BN 2255/03
OLP-6 Optical Power Level Meter (-65 to +10 dBm)	BN 2256/02
OVF-1 Fault Locator for locating kinks and breaks in fibers	BN 2252/01
Cleaning tape	BN 2229/90.07
2 single-mode cables, FC/PC - FC/PC (9/125 μ m)	K 3112
FC/FC coupler	S 3101
1 Charger Unit for external charging of NiCd batteries: 220 V, Euro-style a.c. line plug	BN 2229/90.03

Example 3: Economical "System installation solution" for measuring absolute level and receiver sensitivity in single-mode systems.

MT-32 Instrument Bag	BN 2126/32
OLS-6 Laser Source 1310/1550 nm for SM fibers; FC/PC adapter	BN 2255/02
OLP-6 Optical Power Level Meter (-65 to +10 dBm); Universal Push Pull adapter	BN 2256/02
OLA-15 Optical Attenuator; Universal adapter	BN 2239/01
Cleaning tape	BN 2229/90.07
2 single-mode cables, FC/PC - FC/PC (9/125 μ m)	K 3112
1 Charger Unit for external charging of NiCd batteries: 220 V, Euro-style a.c. line plug	BN 2229/90.03

Ordering information

WG OLS-6 Optical Laser Source	WG OLS-6	Accessories	
1310/1550 nm	BN 2255/02	Calibration report for OLS-6	BN 2255/90.03
1310/1550 nm (pack of 10)	BN 2255/20	Calibration report for OLP-6	BN 2256/90.02
780/1300 nm	BN 2255/03	NiCd battery AA (Mignon) size (2 required for each instrument)	BN 2229/90.02
WG OLP-6 Optical Power Level Meter	BN 2256/02	Charger unit (for external charging of NiCd batteries)	
WG OMK-6 Optical Test Kit	BN 2126/06	230 V, Euro-style a.c. line plug	BN 2229/90.03
Comprising:		110 V, US-style a.c. line plug	BN 2229/90.09
1 x MK-5 Instrument Case complete with inlay		MK-5 Transport Case (for holding 2 instruments)	BN 2126/90.01
1 x OLS-6 Optical Laser Source, 1310/1550 nm		WG MT-32 Transport Case (for holding 3 instruments)	BN 2126/32
1 x OLP-6 Optical Power Level Meter			
1 x Single-mode cable, FC/PC-FC/PC (9/125 μ m), K 3112			
4 x AA (Mignon) 1.5 V batteries			
Space is provided for OVF-1 (Optical Visible Fault Locator)			
WG OMK-6 Optical Test Kit (pack of 10)	BN 2126/60		

Detailed information on adapters, cables and optical couplers is found in the separate data sheet on "Optical test adapters and adapter cables".

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