

## OLS-8, -10 (LED), -15, -16, -17 (LD), OLA-15



### Optical LED and Laser Sources, Optical Attenuator

**Precision for the field** WG offers a number of handheld optical sources and an attenuator for use in installing, maintaining and repairing fiber optical networks in datacom/LAN and telecom/FITL applications. Each of these devices is rugged yet accurate and designed for use in the field. WG's universal adapter system allows easy access to all fiber optical systems.

- Stabilized light sources for multimode and single-mode applications
- Modulated output signal for fiber identification
- TWINtest mode (OLS-15) for quasi-simultaneous attenuation measurements at two wavelengths
- Continuously variable attenuator for single-mode applications
- Powered from dry batteries, rechargeable cells or a.c. line, built-in charger (laser sources and attenuator)
- Universal adapter system
- Easy cleaning of optical connectors

**LED sources** The OLS-8 and OLS-10 Optical LED Sources provide a single wavelength of 850 nm or 1300 nm. They are inexpensive sources intended primarily for measuring attenuation on multimode fibers in optical LANs. Due to the short fiber runs, a low yet stable output level is sufficient. 100% excitation of the fiber under test is provided.

**Laser sources** The OLS-15, OLS-16 and OLS-17 Laser Sources are designed for use on long-range telecommunications systems or fiber in the loop (FITL) systems with single-mode fibers. OLS-15 is a dual-wavelength source for 1310 nm and 1550 nm with a single optical output; OLS-16 and OLS-17 are single-wavelength sources for 1310 nm or 1550 nm.

In Auto- $\lambda$  mode, all of the laser sources provide a code for the wavelength. The power meters (OLP-15A/16A/18A) automatically detect the wavelength to prevent measurements at the wrong wavelength. In its TWINtest mode, the OLS-15 transmits signals at 1310 nm and 1550 nm alternately. As before, the power meters (OLP-15A/16A/18A) detect the wavelength of the signal and evaluate it properly. This is a fast, effective way of testing devices under test in a single work procedure.

**Optical attenuator** The OLA-15 Optical Attenuator is designed for single-mode applications at 1310 nm and 1550 nm. It allows variable attenuation settings in a range up to 60 dB with a display resolution of 0.05 dB. It is thus possible to measure the system reserve/receiver sensitivity on high-bit-rate fiber optical systems. In such applications, the return loss on the optical connectors is also important. The optical signal path remains uninterrupted when changing the attenuation. The attenuator allows bidirectional operation.

**Long battery life plus internal battery charging and a.c. line operation** These optical handhelds are powered either from dry batteries or NiCd cells. With their current-saving design, they can run for several days on the same batteries. In conjunction with a separate a.c. adapter/charger, the laser sources and attenuator can be powered from the a.c. line, or the NiCd cells can be recharged directly in the device.

**Rugged housing** The optical handhelds have an impact-resistant housing (slip-proof, scratch-proof) to achieve the mechanical ruggedness needed for operation under tough, real-world conditions. The membrane keypad protects them against water damage.

**Universal adapter system** WG's universal adapter system connects to all commonly used fiber optical connectors. It also provides easy access to internal connectors for inspection and cleaning. A dust-cap helps keep the optical connector clean.



	OLS-8	OLS-10
<b>Source type</b>	Infrared LED	
<b>Wavelength range</b>	850 nm $\pm$ 30 nm	1310 nm $\pm$ 50 nm
<b>Spectral bandwidth (FWHM)</b>	typ. 50 nm	typ. 150 nm
<b>Output power</b> 50/125 $\mu$ m fiber 62.5/125 $\mu$ m fiber 85/125 $\mu$ m fiber 100/140 $\mu$ m fiber 9/125 $\mu$ m fiber	-20 dBm -15 dBm -13 dBm -11 dBm -38 dBm	
<b>Output power accuracy<sup>1)</sup></b> incl. connector uncertainty	$\pm$ 2 dB	
<b>Power stability<sup>1)</sup></b> Short-term (15 min, +20 °C to +26 °C, $\pm$ 0.5 °C) Long-term (6 h, -10 °C to +55 °C, $\pm$ 3 °C)	$\pm$ 0.003 dB $\pm$ 0.1 dB	
<b>Output signal modulation</b> Rectangular modulation, selectable Level reduction at activated modulation	270 Hz, 1 kHz, 2 kHz 3 dB	
<b>Optical connection</b> Exchangeable adapters	Adapter BN 2014/00.xx e.g. ST, SMA, DIN, FC	
<b>General specifications</b> Power supply Dry/NiCd batteries Operating time, dry/NiCd batteries Discharge protecting for batteries EMI/RFI susceptibility Ambient temperature Nominal operating range Storage and transport range Dimensions (w x h x d) in mm Weight (including batteries)	2 x Mignon (AA-size) 1.5 V cells / 2 x Mignon (AA-size) 1.2 V cells typ. 36 h / typ. 12 h Auto-off after approx 20 mins (can be disabled) Conforms to EN standards 50 081-1 and 50 082-1 (CE mark) -10 °C to +55 °C -40 °C to +70 °C approx. 95 x 49 x 185 approx. 500 g	
1) Valid for 50/125 $\mu$ m fibers.		

## Ordering information

<b>OLS-8 Optical LED Source<sup>1)</sup></b>	<b>BN 2228/08</b>	MK-1 Case	BN 2090/13
<b>OLS-10 Optical LED Source<sup>1)</sup></b>	<b>BN 2228/01</b>	(Hard-shell case for 2 instruments plus accessories)	
<b>Options</b>		MT-2 Instrument Bag	BN 2126/01
Calibration report	BN 2228/90.01	(Soft carrying bag for 2 instruments plus accessories)	
<b>Accessories</b>		ABK-30 Storage Box	BN 2126/30
Additional adapters	BN 2014/00.xx	(for storing adapters, cables and other accessories)	
NiCd battery, Mignon (AA) <sup>2)</sup>	BN 2229/90.02	Detailed information on adapters and cables and fiber optics couplers is found in the "Optical adapters and adapter cables" data sheet.	
Battery charger for NiCd batteries, 220 V, Euro plug	BN 2229/90.03		
110 V, US-style plug	BN 2229/90.09		
Carrying strap	BN 820/00.52		
Cleaning tape for optical connectors	BN 2229/90.07		

1) One BN 2014/00.xx adapter is included with each instrument (except for the bare fiber adapter BN 2014/00.08). Please specify type required when ordering.

2) 2 required.

Specifications for the Optical Laser Sources

OLS-15/OLS-16/OLS-17

	OLS-15	OLS-16	OLS-17
<b>Optical source type</b>	Dual FP laser	FP laser	FP laser
<b>Wavelength</b>	1310 ± 20 nm / 1550 ± 20 nm	1310 ± 20 nm	1550 ± 20 nm
<b>FWHM spectral width</b>	< 5 nm / < 5 nm	< 5 nm	< 5 nm
<b>Output power (CW)</b> into 9/125 μm fiber	-7 dBm (class 1 laser as per IEC 825)		
<b>Total output power uncertainty</b> in range -10 to +50 °C, incl. connector error	± 1 dB		
<b>Output signal stability</b> (valid for CW and modulated signals) Short-term (15 min, -10 to +50 °C, Δt = ± 0.3 K) Long-term (8 h, -10 to +50 °C, Δt = ± 3 K)	± 0.02 dB typ. ± 0.2 dB		
<b>Modes</b> CW TWINtest  AUTO λ FMOD Output level reduction in TWINtest mode, AUTO λ and FMOD	continuous wave output signal alternating output signal with 1310 and 1550 nm identifiers (OLS-15 only) output signal has 1310 or 1550 nm identifier square-wave modulation (270 Hz, 1 kHz or 2 kHz, selectable)  3 dB		
<b>Optical connector</b> Interchangeable test adapters	BN 2060/00.xx adapter e.g. DIN, FC, SC		
<b>General specifications</b> Power supply Dry batteries/NiCds Operating time, dry batteries / NiCds Battery/NiCd power saving  A.C. line operation Battery charging  Electromagnetic compatibility Ambient temperature Nominal range of use Storage and transport Dimensions (w × h × d) in mm Weight (including batteries/NiCds)	2 × Mignon (AA size), 1.5 V / 2 × Mignon (AA size), 1.2 V typ. 28 h / typ. 9 h The instrument switches off automatically after approx. 20 min. to avoid discharging the batteries (function can be disabled) separate a.c. adapter unit NT-20 externally with charger unit, internally using NT-20 as per EN 50 081-1, 50 082-1 (CE conformance)  -10 to +55 °C -40 to +70 °C approx. 95 × 49 × 195 approx. 500 g		

Ordering information

<b>OLS-15 Optical Laser Source</b> <sup>1)</sup>	<b>BN 2238/01</b>	US version	BN 2238/90.04
<b>OLS-16 Optical Laser Source</b> <sup>1)</sup>	<b>BN 2238/02</b>	Australian version	BN 2238/90.05
<b>OLS-17 Optical Laser Source</b> <sup>1)</sup>	<b>BN 2238/03</b>	Carrying Strap	BN 820/00.52
Options		Cleaning tape for optical connectors	BN 2229/90.07
Calibration report for OLS-15/OLS-16/OLS-17	BN 2238/90.01	ABK-30 Storage Case (for optical accessories)	BN 2126/30
Accessories		MK-1 Equipment Case (for two instruments OLS-1x/OPL-15 and accessories)	BN 2090/13
Test adapters	BN 2060/00.xx	For more information on test adapters, cables and fiber optics couplers, see the separate data sheet: "Fiber Optics Test Adapters and Cables".	
NiCd batteries (Mignon AA size) <sup>2)</sup>	BN 2229/90.02		
Battery Charger (for external charging)			
220 V, Euro-style plug	BN 2229/90.03		
110 V, US-style plug	BN 2229/90.09		
NT-20 A.C. Adapter			
EURO version	BN 2238/90.02	1) One adapter in the series BN 2060/00.xx is included with each instrument (bare fiber adapter BN 2060/00.39 excluded). Please specify the type you require when ordering.	
UK version	BN 2238/90.03	2) Two required	

<b>Wavelength</b>		<b>General specifications</b>	
Range of use	1260 to 1600 nm	Power supply	
Calibrated at	1310 and 1550 nm	Dry batteries	2 × Mignon (AA) 1.5 V
		NiCd rechargeable batteries	2 × Mignon (AA) 1.2 V
		Operating time (typical)	45 h (dry batteries) / 15 h (NiCd cells)
<b>Attenuation setting</b>		Battery / NiCd power saving	automatic cutoff after approx. 20 min (can be disabled)
Attenuation range	3 to 60 dB	AC line operation	with separate AC adapter unit NT-20
Minimum insertion loss <sup>1)</sup>	≤ 3 dB	Battery charging	Batteries charged externally with charger unit, internally using NT-20
Linearity	± 0.2 dB		
Repeatability of attenuation setting <sup>2)</sup>	± 0.1 dB	<b>Electromagnetic compatibility</b>	conforms to EN standards 50 081-1 and 50 082-1 (CE conformance)
Total attenuation uncertainty <sup>1)</sup>	± 0.8 dB		
Setting type	continuous over the entire attenuation range	<b>Ambient temperature</b>	
Function	bidirectional	Nominal range of use	-5 to +55 °C
		Storage and transport	-40 to +70 °C
<b>Attenuation display</b>		Dimensions (w × h × d) in mm	approx. 95 × 49 × 195
Displayed value	4-digit liquid-crystal display	Weight (including batteries)	approx. 500 g
Resolution	absolute attenuation including connector		
	0.05 dB		
<b>Optical input/output</b>			
Interchangeable adapter			
BN 2060/00.xx	e.g. DIN, FC, SC, ST		
Fiber type	single-mode 9/125 μm		
Return loss at input / output <sup>3)</sup>	> 40 dB		
Maximum input level	+20 dBm		

1) Including connectors (to IEC 874-1, Method 6)  
 2) Excluding remating  
 3) Typical value: depends on the characteristics of the external plug

Ordering information

<b>OLA-15 Optical Attenuator<sup>1)</sup></b>	<b>BN 2239/01</b>	Carrying Strap	BN 820/00.52
Options		Cleaning tape for optical connectors	BN 2229/90.07
Calibration report for OLA-15	BN 2239/90.01	MK-1 Equipment Case	BN 2090/13
		(Hard-shell case for 2 instruments plus accessories)	
<b>Accessories</b>		MT-2 Instrument Bag	BN 2126/01
Test adapters	BN 2060/00.xx	(Soft-carrying bag for 2 instruments plus accessories)	
NiCd cell, Mignon (AA) type <sup>2)</sup>	BN 2229/90.02	ABK-30 Storage Case	BN 2126/30
Battery Charger (for external charging)		(for storing adapters, cables and other accessories)	
220 V, Euro-style plug	BN 2229/90.03		
110 V, US-style plug	BN 2229/90.09		
NT-20 AC Adapter			
EURO Version	BN 2238/90.02		
UK Version	BN 2238/90.03		
US Version	BN 2238/90.04		
Australian Version	BN 2238/90.05		

Detailed information on adapters, cables and fiber optics couplers is found in the separate data sheet "Fiber Optics Test Adapters and Cables".

1) Two adapters BN 2060/00.xx are included with each instrument (except for bare fiber adapter BN 2060/00.39). Specify type required when ordering.  
 2) Two required.