

# OLT-55 SMART Optical Loss Test Set

## A SMART, Future-Proof Optical Loss Test Set



### Key features

- Industry's first auto-zeroing function provides outstanding accuracy even for high loss measurements with no manual zeroing necessary.
- Auto-lambda function with TWINtest and new TRIPLEtest provides automatic wavelength detection to speed up testing. Up to three different wavelengths are measured and displayed simultaneously.
- Reflection trap at the power meter's input reduces multiple reflections between adapter and photo diode, allowing for increased accuracy (adapter BN 2014/00.xx).
- Laser source with output level adjustment to ensure correct power for individual applications.
- Client USB interface for easy remote control and report generation.
- Visual fault locator option at 635 nm
  - Economical option for fiber tracing, routing, and continuity checking
  - Universal push-pull adapter 2.5 mm (1.25 mm adapter optional)
- Host USB data storage option
  - Unlimited result storage capacity via USB memory sticks
  - Easy and quick data transfer of stored measurement results

**New**

**New**

### JDSU's SMART optical handhelds go beyond the basics

JDSU SMART optical handhelds help your network move to the next level of performance. JDSU's SMART optical handhelds encompass a new, intelligent, and next level product line for testing all optical signals and systems, including broadband, PONs, and Gigabit Ethernet.

All of JDSU's SMART optical handhelds provide:

- An extended number of calibration wavelengths for the highest performance range in the industry.
- The SMARTStar graphical user interface for fast, easy, and straightforward operation.
- The SMARTEnergy power supply management system.
- The SMARTBag for safe and hands-free operation and transport.
- A USB port for remote operation as well as easy Microsoft Excel™-based report generation and analysis.
- Traceable measurements to international standards for confidence in accuracy.
- A robust, shock-proof, and splash-proof design for field operation.
- Quick start operation, requiring no warm-up time and reducing testing time.

The new **OLT-55 SMART Optical Loss Test Set** is a high-performance, easy-to-use instrument with a two or three wavelength laser source in combination with a power meter. It is a universal instrument for singlemode fibers and systems for lab, manufacturing (USB interface), installation, maintenance and troubleshooting.

Loss can be measured simultaneously at up to three wavelengths (Triplettest). Quick Referencing for all built-in wavelengths can be effected independent of the current measurement mode. Just connect source and power meter with a fiber patch cord.



OCK-10 Optical Connector Cleaning Kit (accessory)



OOIM-400 Fiber Microscope



Optical adapters (BN 2014) for power meter output

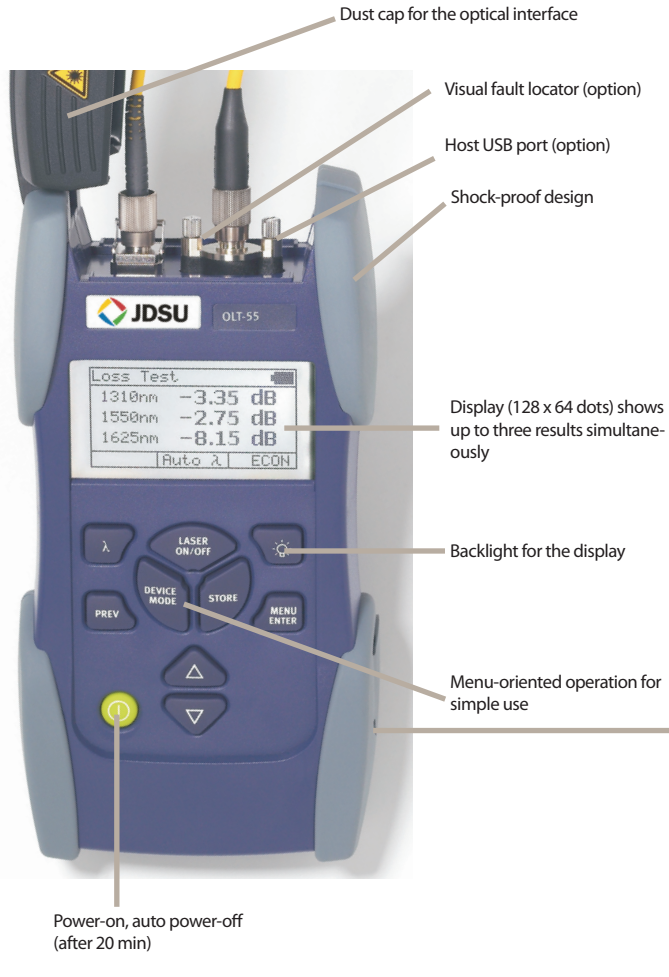


Optical adapters (BN 2150) for laser source output



Worldwide compatible AC adapter/charger (SNT-121A)

Additionally, the OLT-55 can be used as a stand-alone power meter or laser source with all features of the corresponding OLS-55 and OLP-55. It creates a new industry standard with its built-in auto-zeroing function for best accuracy even for very low power levels or high loss measurements.



JDSU		Connect		Download		Copy .. Print .. Save ..			
OFS-355 Download Manager		USB (COM 3)		Downloading 3 results. 3		Reset ..			
Return Loss Meter ORL-55/01.00		SN: FM-0006 SW: V03.00		Converting 3 results. 3		Ready Clear ..			
Group	Meas	Date	Time	A1 nm	Level @ A1	Unit	A2 nm	Level @ A2	Unit
1	1	22 Sep. 2005	10:41:49	1310	14,23	dB	1550	14,11	dB
1	2	22 Sep. 2005	10:42:56	1310	35,18	dB	1550	34,89	dB
1	3	22 Sep. 2005	10:43:16	1310	14,23	dB	1550	14,11	dB
1	4	22 Sep. 2005	10:44:00	1310	35,18	dB	1550	34,89	dB
1	5	22 Sep. 2005	10:45:09	1310	15,63	dB			
1	6	22 Sep. 2005	10:46:14	1550	18,58	dB			
1	7	22 Sep. 2005	10:47:14	1310	14,22	dB			
1	8	22 Sep. 2005	10:48:32	1550	16,32	dB			

OFS-355 Optical Fiber Assistant Software – Free PC documentation software

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Version	2286/01	2286/02	2286/04	2286/05	2286/06
<b>Loss test mode</b>					
Nominal wavelengths <sup>(1)</sup>	1310 and 1550 nm	1310, 1490 and 1550 nm	1310 and 1550 nm	1310, 1550 and 1625 nm	1310, 1550 nm
Spectral width (RMS)	5 nm	5 nm	5 nm	5 nm	5 nm
Fiber type	9/125 μm	9/125 μm	9/125 μm	9/125 μm	9/125 μm
Signal stability <sup>(2)</sup>	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours
Dynamic range	60 dB	60 dB	70 dB	70 dB	60 dB
Results displayed in	dB	dB	dB	dB	dB
Resolution	0.01 dB	0.01 dB	0.01 dB	0.01 dB	0.01 dB
Linearity <sup>(3)</sup>	± 0.06 dB ± 0.04 nW	± 0.06 dB ± 0.04 nW	± 0.06 dB ± 0.04 nW	± 0.06 dB ± 0.04 nW	± 0.06 dB ± 0.04 nW
<b>Power meter mode</b>					
Adjustable wavelength range	780 to 1650 nm in 1 nm increments	780 to 1650 nm in 1 nm increments	800 to 1700 nm in 1 nm increments	800 to 1700 nm in 1 nm increments	800 to 1700 nm in 1 nm increments
Number of calibrated wavelengths	870 nm	870 nm	900 nm	900 nm	900 nm
Photo diode	Germanium (GE)	Germanium (GE)	InGaAs	InGaAs	InGaAs
Fiber type	9/125 to 100/140 μm	9/125 to 100/140 μm	9/125 to 100/140 μm	9/125 to 100/140 μm	9/125 to 100/140 μm
<b>Display range</b>	<b>-70 to +20 dBm</b>	<b>-70 to +20 dBm</b>	<b>-80 to +15 dBm</b>	<b>-80 to +15 dBm</b>	<b>-60 to +26 dBm</b>
Results displayed in	dBm, dB, mW, μW	dBm, dB, mW, μW	dBm, dB, mW, μW	dBm, dB, mW, μW	dBm, dB, mW, μW
Resolution	0.01 dB	0.01 dB	0.01 dB	0.01 dB	0.01 dB
Max. permitted level	+20 dBm	+20 dBm	+15 dBm	+15 dBm	+26 dBm
Intrinsic uncertainty <sup>(4)</sup>	± 0.13 dB (± 3%)	± 0.13 dB (± 3%)	± 0.13 dB (± 3%)	± 0.13 dB (± 3%)	± 0.13 dB (± 3%)
Overall measurement accuracy (-60 to +18 dBm)	850 nm ± 0.25 dB ± 0.8 nW 1300, 1310 nm ± 0.2 dB ± 0.2 nW 1550 nm ± 0.4 dB ± 0.2 nW 1625 nm ± 1.5 dB typ. ± 0.6 nW	850 nm ± 0.25 dB ± 0.8 nW 1300, 1310 nm ± 0.2 dB ± 0.2 nW 1550 nm ± 0.4 dB ± 0.2 nW 1625 nm ± 1.5 dB typ. ± 0.6 nW	850 nm ± 0.3 dB ± 0.15 nW 1300, 1310 nm ± 0.2 dB ± 0.02 nW 1550 nm ± 0.2 dB ± 0.02 nW 1625 nm ± 0.4 dB ± 0.02 nW	850 nm ± 0.3 dB ± 0.15 nW 1300, 1310 nm ± 0.2 dB ± 0.02 nW 1550 nm ± 0.2 dB ± 0.02 nW 1625 nm ± 0.4 dB ± 0.02 nW	850 nm ± 0.3 dB ± 0.15 nW 1300, 1310 nm ± 0.2 dB ± 0.02 nW 1550 nm ± 0.2 dB ± 0.02 nW 1625 nm ± 0.4 dB ± 0.02 nW
<b>Source mode</b>					
Nominal wavelengths <sup>(1)</sup>	1310 and 1550 nm	1310, 1490 and 1550 nm	1310 and 1550 nm	1310, 1550 and 1625 nm	1310, 1550 nm
Spectral width (RMS)	5 nm	5 nm	5 nm	5 nm	5 nm
Number of ports	Single port	Single port	Single port	Single port	Single port
Fiber type	9/125 μm	9/125 μm	9/125 μm	9/125 μm	9/125 μm
Output power range <sup>(4)</sup>	-7 dBm to 0 dBm, separately adjustable	-7 dBm to 0 dBm, separately adjustable	-7 dBm to 0 dBm, separately adjustable	-7 dBm to 0 dBm, separately adjustable	-7 dBm to 0 dBm, separately adjustable
Resolution of power setting	0.01 dB	0.01 dB	0.01 dB	0.01 dB	0.01 dB
Signal stability <sup>(2)</sup>	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours	Short term: ± 0.02 dB, within 15 min Long term: ± 0.2 dB, within 8 hours
Output power accuracy (at nominal wavelengths) <sup>(3)</sup>	± 0.3 dB	± 0.3 dB	± 0.3 dB	± 0.3 dB	± 0.3 dB
Modes	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ <sup>(5)</sup> (signal coding for automatic power meter wavelength detection)	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ <sup>(5)</sup> (signal coding for automatic power meter wavelength detection)	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ <sup>(5)</sup> (signal coding for automatic power meter wavelength detection)	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ <sup>(5)</sup> (signal coding for automatic power meter wavelength detection)	Continuous wave (CW), modulated (270 Hz, 1 kHz, 2 kHz), Auto-λ <sup>(5)</sup> (signal coding for automatic power meter wavelength detection)

(1) ± 20 nm typically

(2) At ambient temperature range -10°C to +55°C, ΔT = ± 0.3 K

(3) At ambient temperature 23°C ± 3 K

(4) CW signal

(5) Works only with JDSU OLT-55 or an external OLP-55 power meter

### Specifications

Wavelength detection<sup>(1)</sup> with automatic switching and display of nominal wavelength  
 Fiber detection with different modulation frequencies

Data memory	1000 measurement results
Data readout/remote control	via USB interface
Modulation detection <sup>(2)</sup>	270 Hz, 1 kHz, 2 kHz
Auto-lambda ( $\lambda$ ) detection: 850 nm to 1650 nm (with any JDSU Optical Laser Source)	

#### Memory

Data memory	1000 measurement results
Data readout/remote control	via client USB interface
USB data storage (option)	via Host USB interface

#### Display

Illuminated graphical display, resolution of 128 × 64 dots, displays up to three power readings simultaneously  
 Backlight function switchable via a separate key

#### Optical connector

##### Power meter

Interchangeable adapter from BN 2014/00.xx range, suitable for measurements on flat or angled physical contact systems  
 2.5-mm plugs: FC, ST, SC, DIN, E2000, SMA  
 1.25-mm plugs: LC, MU adapter (BN 2014/00.28)

##### Laser source

Interchangeable adapter from BN 2150/00.xx range for flat physical fiber connection. One adapter type has to be selected.

##### Power supply

Four dry batteries Mignon/AA, 1.5 V or NiMH rechargeable cells Mignon/AA, 1.2 V  
 Operating time from dry batteries<sup>(3)</sup> > 100 h  
 Batteries/NiCd/NiMH power saving:  
 The instrument switches off automatically after ~20 min (function can be disabled)  
 AC line operation via separate AC adapter  
 Integrated fast battery charging function (2 hours)

##### Electromagnetic compatibility

Corresponds to IEC 61326 (CE conformance)

##### Calibration

Suggested calibration interval 3 years

##### Ambient temperature

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

##### Dimensions and weight

W × H × D approximately	95 × 60 × 195 mm (3.74 × 2.36 × 7.68 in)
Weight approximately	500 g (1.1 lb)

(1) Only together with OLS-55 Optical Laser Sources

(2) From -45 dBm (780 to 1299 nm), from -50 dBm (1300 to 1625 nm)

(3) Power meter mode

**Ordering Information**

Ordering number	Instrument
	JDSU OLT-55
BN 2286/01 (GE)	1310/1550
BN 2286/02 (GE)	1310/1490/1550
BN 2286/04 (InGaAs)	1310/1550
BN 2286/05 (InGaAs)	1310/1550/1625

Ordering number	Option
BN 2252/90.10	Visual Fault Locator
BN 2277/90.06	USB Data Storage (memory stick not in scope of delivery)

OFS-355 Optical Fiber Assistant Software  
 Free PC documentation software (available from [http://www.jdsu.com/global/customer\\_care/Software\\_Updates/index.html](http://www.jdsu.com/global/customer_care/Software_Updates/index.html))

**Included with the OLT-55**

Interchangeable adapter from BN 2014/00.xx range (power meter)  
BN 2150/00.xx range (laser source)

Four dry batteries Mignon/AA, 1.5 V

Operating manual

MT-1S Belt bag

Ordering number	Accessories
BN 2014/00.21	Optical adapter ST type
BN 2014/00.24	Optical adapter SC type
BN 2014/00.09	Optical adapter FC type
BN 2014/00.17	Optical adapter DIN type
BN 2014/00.26	Optical adapter E-2000 type
BN 2014/00.27	Universal push/pull adapter for DIN, FC, SC, ST
BN 2014/00.28	Universal push/pull adapter for LC, MU
BN 2150/00.32	Optical adapter ST type
BN 2150/00.58	Optical adapter SC type
BN 2150/00.51	Optical adapter FC type
BN 2150/00.50	Optical adapter DIN type
BN 2150/00.59	Optical adapter LC type
BN 2252/01	OVF-1 Visual Fault Locator
BN 2229/90.21	OCK-10 Optical Connector Cleaning Kit
BN 2229/90.07	Optical cleaning tape
BN 2229/90.08	Spare tape for optical cleaning tape
BN 2237/90.02	NiMH cells, Mignon/AA, 1.2 V (4 required per instrument)
BN 2277/90.01	SNT-121A Worldwide compatible AC adapter
K804	USB connection cable

**Ordering number    Accessories**

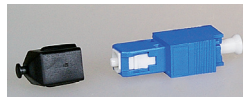
BN 2277/90.02	MT-1S belt bag for one instrument
BN 2126/03	MT-2S soft bag for two instruments
BN 2126/04	MT-3S soft bag for three instruments
BN 2093/31	MK-3S hard case for three instruments
BN 2286/90.01	Calibration Report

**Accessories for visual fault locator option**

BN 2252/02    Adapter for 1.25 mm UPP



S3122    Adapter from 2.5 mm UPP to LC (1.25 mm)



Detailed information regarding test adapters, cables, and fiber optic sleeves can be found in a separate datasheet entitled “JDSU Fiber Optic Test Adapters and Cables”.

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