

# OTS-400 Series

## Optical Meters, Sources and Testers

A LANscape® Solutions Product

### Applications

- Installation, testing and troubleshooting of LAN, telco, CATV and FTTx networks

### Description

The Corning Cable Systems OTS-400 Series of intelligent and versatile optical meters, sources and testers offers simultaneous testing and storage of dual-wavelength attenuation measurements. At the press of a button, dual-wavelength measurements are made and stored for the fiber under test. These sources, meters, and testers can be used during installation, system qualification and maintenance. The combination of practical features, simple operation, field performance and rugged design makes them perfect for virtually all fiber optic testing environments.

The OTS-400 Series meters, sources and testers are offered individually or packaged in test kits which include two instruments, accessories, test jumpers and a carrying case. The most popular combination of port adapters and test jumpers has been pre-selected for each type of kit to allow for testing “right out of the box.” A wide variety of additional source and meter port adapters are available along with other optional accessories.

### Features / Benefits

- Auto testing provides automatic wavelength switching that cuts typical testing time in half
- Stores up to 1000 measurements which can be separated into individual cables, panels, or jobs. This eliminates field paperwork, saves time and improves testing productivity
- USB data ports provides convenient transfer of data to OTSView Windows®-based PC Software for storage, viewing and printing of test results
- Dual-, triple- and quad-wavelength sources provide the flexibility of testing multimode cables, single-mode cables, or hybrid cables
- Two power meter ranges available: +10 to -70 dBm (standard range) and +26 to -55 dBm (extended range) with 40 calibrated wavelengths provide both LAN testing and long-haul testing flexibility
- Dual- and triple-wavelength testers with source and meter in the same unit improve bi-directional testing productivity by eliminating the need for technicians to physically change ends of the system under test
- Generation and detection of 270 Hz, 1 kHz and 2 kHz tones provides system continuity tracing capability
- Thresholds available for pass/fail indication, which speeds the testing process
- Rugged and ergonomic design with backlit display makes the OTS-400 easy to read, easy to hold and easy to handle
- Complete selection of connector adapters available with field-interchangeable universal interface adapters on source ports and screw-on connector adapters on meter ports, which eliminates the requirement to use hybrid patch cords for testing



OTS-400 Series Light Source, Power Meter and Tester | LAN713



OTS-400 Series Test Kit | LAN714

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### Power Meter Specifications<sup>1</sup>

Model	OM-410R	OM-420R
Detector	Ge	GeX
Power Range (dBm) <sup>2</sup>	10 to -70	26 to -55
Wavelength Range (nm)	800 to 1650	800 to 1650
Number of Calibrated Wavelengths	40	40
Power Uncertainty <sup>3</sup>	±5% ±0.1 nW	±5% ±3 nW
Resolution (dB)	±0.01 (10 to -60)	0.01 (26 to -45)
Automatic Offset Nulling <sup>4</sup>	Yes	Yes
Display Units	dB/dBm/W	dB/dBm/W
Tone Detection (Hz)	270, 1 k, 2 k	270, 1 k, 2 k
Automatic Wavelength Recognition <sup>5</sup>	Yes	Yes
Automatic Testing Mode <sup>6</sup>	Yes	Yes
Warm-Up Period (min) <sup>7</sup>	0	0
Data Storage (measurements)	more than 1000	more than 1000
Battery Life (hours) (typical)	72	72
<b>General</b>		
Size (H x W x D)	19.0 x 10.0 x 6.2 cm (7.5 x 4 x 2.5 in)	
Weight	0.48 kg (1.1 lb)	
Operating Temperature	-10° to 50°C (14° to 122°F)	
Storage Temperature	-40° to 70°C (-40° to 158°F)	
Relative Humidity	0% to 95% non-condensing	
Warranty and Recommended Recalibration Interval (years)	3	

**Notes:**

<sup>1</sup> Guaranteed unless otherwise specified. All specifications valid at 1550 nm and 23°C ±1°C, with an FC connector.

<sup>2</sup> In CW mode; sensitivity defined as 6 x rms noise level.

<sup>3</sup> For calibrated wavelengths. Valid up to 20 dBm for OM-420R.

<sup>4</sup> For power > -40 dBm for OM-410R and > -25 dBm for OM-420R.

<sup>5</sup> At 850 nm, 1300 nm, 1310 nm, 1490 nm, 1550 nm and 1625 nm; for power > -50 dBm for OM-410 and > -40 dBm (typical) for OM-420R.

<sup>6</sup> When used with compatible OS-400R source or OTS-400 tester.

<sup>7</sup> For variation ≤ 0.06 dB at 23°C ± 1°C; at power levels ≥ -40 dBm for OM-410R and ≥ -25 dBm for OM-420R.

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### Light Source Specifications<sup>1</sup>

Model	OS-4RMDS(-V) OS-403RD(-V)	OS-4RMDS(-V) OS-404RXD(-V)	OS-407RT	OS-401RV
Central Wavelength (nm)	850 ± 25 1300 + 50/-10	1310 ± 20 1550 ± 20	1310 ± 20 1490 ± 20 1550 ± 20	850 + 20/-10
Spectral Width <sup>2</sup> (nm)	50/135	≤5	≤5	≤1
Output Power (dBm)	≥-18 (62.5/125 μm) ≥-18 (62.5/125 μm)	≥1 ≥1	≥1 ≥-4.5 ≥-3	≥-3 (50/125 μm)
Power Stability <sup>3</sup> (dB) 15 min. 8 hours	±0.05 ±0.1	±0.03 ±0.1	±0.03 ±0.1	±0.1 ±0.25
Automatic Wavelength Recognition (generation)	Yes	Yes	Yes	Yes
Automatic Testing Mode <sup>4</sup>	Yes	Yes	Yes	Yes
Tone Generation (Hz)	270, 1 k, 2 k	270, 1 k, 2 k	270, 1 k, 2 k	270, 1 k, 2 k
Battery Life (hours) (Typical in Auto mode)	50	50	50	60
<b>VFL<sup>5</sup> (model numbers with -V suffix)</b>				
Emitter type	Laser			
Wavelength (nm)	650			
Output power (dBm)	3			
<b>General</b>				
Size (H x W x D)	19.0 x 10.0 x 6.2 cm (7.5 x 4 x 2.5 in)			
Weight	0.48 kg (1.1 lb)			
Operating Temperature	-10° to 50° C (14° to 122° F)			
Storage Temperature	-40° to 70° C (-40° to 158° F)			
Relative Humidity	0% to 95% non-condensing			
Warranty and Recommended Calibration Interval (years)	3			

Notes:

<sup>1</sup> Guaranteed unless otherwise specified. All specifications valid at 23° ±1°C, with an FC connector.

<sup>2</sup> Values are rms for FP lasers and VCSEL; and -3 dB width for LEDs (typical values for LEDs and VCSEL).

<sup>3</sup> After a 15-minute warm-up period, and using an APC connector on the power meter (except for multimode sources, for which a PC connector is used).

<sup>4</sup> Expressed as ± half the difference between the maximum and minimum values measured during the period. Typical values for OS-407RT model.

<sup>5</sup> When used with compatible OM-400R meter or OTS-400 tester.

<sup>5</sup> Typical values in 62.5/125 μm fiber.

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### Optical Loss Tester Specifications<sup>1</sup>

Model	OTS-411D	OTS-412XD	OTS-422XD
Central Wavelength (nm)	850 ± 25 1300 + 50/-10	1310 ± 20 1550 ± 20	1310 ± 20 1550 ± 20
Spectral Width <sup>2</sup> (nm)	50/135	≤5	≤5
Output Power (dBm)	≥-18 (62.5/125 μm) ≥-18 (62.5/125 μm)	≥1 ≥1	≥1 ≥1
Power Stability <sup>3</sup> (dB) 15 min. 8 hours	±0.05 ±0.1	±0.03 ±0.1	±0.03 ±0.1
Detector type	Ge	Ge	GeX
Automatic Wavelength Recognition (generation)	Yes	Yes	Yes
Automatic Testing Mode <sup>4</sup>	Yes	Yes	Yes
Tone Generation (Hz)	270, 1k, 2k	270, 1k, 2k	270, 1k, 2k
Battery Life (hours) (Typical in Auto mode - source only)	50	50	50
<b>Detector</b>	<b>Ge</b>	<b>GeX</b>	
Power range (dBm) <sup>5</sup>	10 to -70	26 to -55	
Wavelength (nm)	800 to 1650	800 to 1650	
Number of calibrated wavelengths	40	40	
Power uncertainty <sup>6</sup>	±5% ±0.1 nW	±5% ±3 nW	
Resolution (dB)	±0.01(10 to -60)	±0.01(26 to -45)	
Automatic offset nulling <sup>7</sup>	Yes	Yes	
Display units	dB, dBm, W	dB, dBm, W	
Tone detection (Hz)	270, 1k, 2k	270, 1k, 2k	
Automatic wavelength recognition <sup>8</sup>	Yes	Yes	
Warm-up period (min) <sup>9</sup>	0	0	
Data storage (measurements)	More than 1000	More than 1000	
Battery life (hours) (Typical - meter only)	72	72	
<b>General</b>			
Size (H x W x D)	19.0 x 10.0 x 6.2 cm (7.5 x 4 x 2.5 in)		
Weight	0.48 kg (1.1 lb)		
Operating Temperature	-10° to 50° C (14° to 122° F)		
Storage Temperature	-40° to 70° C (-40° to 158° F)		
Relative Humidity	0% to 95% non-condensing		
Warranty and Recommended Calibration Interval (years)	3		

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Notes:

- <sup>1</sup> Guaranteed unless otherwise specified. All specifications valid at 23° ±1°C, with an FC connector.  
<sup>2</sup> Values are rms for FP lasers; and -3 dB width for LEDs (typical values for LEDs).  
<sup>3</sup> After a 15-minute warm-up period, and using an APC connector on the power meter (except for multimode sources, for which a PC connector is used). Expressed as ± half the difference between the maximum and minimum values measured during the period.  
<sup>4</sup> When used with compatible OS-400R source, OM-400R meter or OTS-400 tester.  
<sup>5</sup> In CW mode; sensitivity defined as 6 x rms noise level.  
<sup>6</sup> For calibrated wavelengths. Valid up to 20 dBm for GeX detectors.  
<sup>7</sup> For power >-40 dBm for Ge detectors, and > -25 dBm for GeX detectors.  
<sup>8</sup> At 850 nm, 1300 nm, 1310 nm, 1490 nm, 1550 nm and 1625 nm; for power >-50 dBm for Ge detectors and >-40 dBm (typical) for GeX detectors.  
<sup>9</sup> For variation ≤0.06 dB at 23 °C ± 1 °C; at power levels ≥-40 dBm for Ge detectors and ≥ -25 dBm for GeX detectors.

### Ordering Information

#### Power Meters

Part Number	Description
OM-410R	Optical Power Meter includes 40 calibrated wavelengths from 800-1650 nm; Ge detector with 10 to -70 dBm range; auto wavelength switching (when used with OTS-400 source); data storage for up to 1000 measurements and backlit display. Also includes USB cable for data transfer; OTSView software; Li-Ion rechargeable battery; AC charger; user's manual; SC and ST® compatible detector port adapters; other adapters can be purchased separately
OM-420R	Optical Power Meter includes 40 calibrated wavelengths from 800-1650 nm; GeX detector with 26 to -55 dBm extended range; auto wavelength switching (when used with OTS-400 source); data storage for up to 1000 measurements and backlit display. Also includes USB cable for data transfer, OTSView software; Li-Ion rechargeable battery, AC charger; user's manual, SC and ST compatible detector port adapters; other adapters can be purchased separately

#### Light Sources

OS-401RV	Optical Source includes 850 nm VCSEL; auto wavelength switching (compatible with OTS-400 meter) and backlit display. Also includes Li-Ion rechargeable battery; AC charger; user's manual and SC Source port adapter; other adapters can be purchased separately
OS-403RD	Optical Source includes multimode 850/1300 nm LED; auto wavelength switching (compatible with OTS-400 meter) and backlit display. Also includes Li-Ion rechargeable battery; AC charger, user's manual; SC and ST® compatible source port adapters; other adapters can be purchased separately
OS-403RD-V	Optical Source includes multimode 850/1300 nm LED; integral 650 nm visual fault locator; auto wavelength switching (compatible with OTS-400 meter) and backlit display. Also includes Li-Ion rechargeable battery; AC charger; user's manual; SC and ST compatible source port adapters; other adapters can be purchased separately
OS-404RXD	Optical Source includes single-mode 1310/1550 nm laser; auto wavelength switching (compatible with OTS-400 meter) and backlit display. Also includes Li-Ion rechargeable battery; AC charger; user's manual, SC and ST compatible source port adapters; other adapters can be purchased separately
OS-404RXD-V	Optical Source includes single-mode 1310/1550 nm laser; integral 650 nm visual fault locator; auto wavelength switching (compatible with OTS-400 meter) and backlit display. Also includes Li-Ion rechargeable battery; AC charger; user's manual; SC and ST compatible source port adapters; other adapters can be purchased separately
OS-407RT	Optical Source includes FTTx single-mode 1310/1490/1550 nm laser; auto wavelength switching (compatible with OTS-400 meter) and backlit display. Also includes Li-Ion rechargeable battery; AC charger; user's manual and SC source port adapter; other adapters can be purchased separately
OS-4RMDSD	Optical Source includes quad wavelength multimode 850/1300 nm LED and single-mode 1310/1550 nm laser; auto wavelength switching (compatible with OTS-400 meter) and backlit display. Also includes Li-Ion rechargeable battery; AC charger; user's manual; SC and ST compatible source port adapters; other adapters can be purchased separately
OS-4RMDSD-V	Optical Source includes quad wavelength multimode 850/1300 nm LED and single-mode 1310/1550 nm laser; integral 650 nm visual fault locator; auto wavelength switching (compatible with OTS-400 meter) and backlit display. Also includes Li-Ion rechargeable battery; AC charger; user's manual; SC and ST compatible source port adapters; other adapters can be purchased separately

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#### Optical Loss Testers

Part Number	Description
OTS-411D	Optical Tester includes multimode 850/1300 nm LED source; Ge detector power meter with 40 calibrated wavelengths from 800-1650 nm and 10 to -70 dBm range; auto wavelength switching (when used with another OTS-400 tester); data storage for up to 1000 measurements and backlit display. Also includes USB cable for data transfer; OTSView software; Li-Ion rechargeable battery; AC charger; user's manual; SC and ST® compatible source and detector port adapters; other adapters can be purchased separately
OTS-412XD	Optical Tester includes single-mode 1310/1550 nm laser source; Ge detector power meter with 40 calibrated wavelengths from 800-1650 nm and 10 to -70 dBm range, auto wavelength switching (when used with another OTS-400 tester); data storage for up to 1000 measurements and backlit display. Also includes USB cable for data transfer; OTSView software; Li-Ion rechargeable battery; AC charger, user's manual; SC and ST compatible source and detector port adapters; other adapters can be purchased separately
OTS-422XD	Optical Tester includes CATV single-mode 1310/1550 nm laser source; GeX detector power meter with 40 calibrated wavelengths from 800-1650 nm and 26 to -55 dBm extended range; auto wavelength switching (when used with another OTS-400 tester); data storage for up to 1000 measurements and backlit display. Also includes USB cable for data transfer; OTSView software; Li-Ion rechargeable battery; AC charger; user's manual; SC and FC source and detector port adapters; other adapters can be purchased separately



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### Ordering Information

#### *Test Kits with Source and Meter*

<b>OTSK-400MD</b>	Multimode Intelligent Test Kit includes one OS-403RD 850/1300 nm LED source and one OM-410R power meter with data storage; USB cable for data transfer; OTSView software; two AC chargers; SC and ST compatible test jumpers and adapters; test mandrels; padded carrying case; user's manual; cleaning supplies; SC and ST compatible source and detector port adapters included; other adapters can be purchased separately
<b>OTSK-400MD-V</b>	Multimode Intelligent Test Kit includes one OS-403RD-V 850/1300 nm LED source with integral 650 nm VFL and one OM-410R power meter with data storage; USB cable for data transfer; OTSView software; two AC chargers; SC and ST compatible test jumpers and adapters; test mandrels; padded carrying case; user's manual; cleaning supplies; SC and ST compatible source and detector port adapters included; other adapters can be purchased separately
<b>OTSK-400SD</b>	Single-mode Intelligent Test Kit includes one OS-404RXD 1310/1550 nm laser source and one OM-410R power meter with data storage; USB cable for data transfer; OTSView software; two AC chargers; SC and ST compatible test jumpers and adapters; padded carrying case; user's manual; cleaning supplies; SC and ST compatible source and detector port adapters included; other adapters can be purchased separately
<b>OTSK-400SD-V</b>	Single-mode Intelligent Test Kit includes one OS-404RXD-V 1310/1550 nm laser source with integral 650 nm VFL and one OM-410R power meter with data storage; USB cable for data transfer; OTSView software; two AC chargers; SC and ST compatible test jumpers and adapters; padded carrying case; user's manual; cleaning supplies; SC and ST compatible source and detector port adapters included; other adapters can be purchased separately
<b>OTSK-4CATV</b>	CATV Single-mode Intelligent Test Kit includes one OS-404RXD 1310/1550 nm laser source and one OM-420R extended range power meter with data storage; USB cable for data transfer; OTSView software; two AC chargers; SC and FC test jumpers and Adapters; padded carrying case; user's manual; cleaning supplies; SC and FC source and detector port adapters included; other adapters can be purchased separately
<b>OTSK-4MDS</b>	Quad Wavelength Intelligent Test Kit includes one OS-4RMDSD 850/1300 LED and 1310/1550 nm laser source and one OM-410R power meter with data storage; USB cable for data transfer; OTSView software; two AC chargers; SC and ST compatible test jumpers and adapters; test mandrels; padded carrying case; user's manual; cleaning supplies; SC and ST compatible source and detector port adapters included; other adapters can be purchased separately
<b>OTSK-4MDS-V</b>	Quad Wavelength Intelligent Test Kit includes one OS-4RMDSD-V 850/1300 LED and 1310/1550 nm laser source with integral 650 nm VFL and one OM-410R power meter with data storage; USB cable for data transfer; OTSView software; two AC chargers; SC and ST compatible test jumpers and adapters; test mandrels; padded carrying case; user's manual; cleaning supplies; SC and ST compatible source and detector port adapters included; other adapters can be purchased separately
<b>OTSK-4FTTx</b>	FTTx Single-mode Intelligent Test Kit includes one OS-407RXT 1310/1490/1550 nm laser source and one OM-410R power meter with data storage; USB cable for data transfer; OTSView software; two AC chargers; SC test jumpers and adapters; padded carrying case; user's manual; cleaning supplies; SC source and detector port adapters included; other adapters can be purchased separately

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## Ordering Information

### Test Kits with Two Testers

Part Number	Description
OTSK-411D	Multimode Two-Fiber Intelligent Test Kit includes two OTS-411D 850/1300 nm LED testers with data storage; USB cable for data transfer; OTS View software; two AC chargers; SC and ST compatible test jumpers and adapters; test mandrels; padded carrying case; user's manual; cleaning supplies; SC and ST® compatible source and detector port adapters included; other adapters can be purchased separately
OTSK-412XD	Single-mode Two-Fiber Intelligent Test Kit includes two OTS-412XD 1310/1550 nm laser testers with data storage; USB cable for Data transfer; OTS View software; two AC chargers; SC and ST compatible test jumpers and adapters; padded carrying case; user's manual; cleaning supplies; SC and ST compatible source and detector port adapters included; other adapters can be purchased separately
OTSK-422XD	CATV Single-mode Two-Fiber Intelligent Test Kit includes two OTS-422XD 1310/1550 nm laser testers with data storage; USB cable for data transfer; OTS View software; two AC chargers; SC and FC test jumpers and adapters; padded carrying case; user's manual; cleaning supplies; SC and FC source and detector port adapters included; other adapters can be purchased separately

### Accessories

UI-SC	Universal Interface Source Connector Adapter, SC
UI-ST	Universal Interface Source Connector Adapter, ST compatible
UI-FC	Universal Interface Source Connector Adapter, FC
OA-SC	Power Meter Connector Adapter, SC
OA-ST	Power Meter Connector Adapter, ST compatible
OA-FC	Power Meter Connector Adapter, FC
OA-LC	Power Meter Connector Adapter, LC
OA-MTRJ	Power Meter Connector Adapter, MT-RJ
PS-9-1	AC Power Adapter for 120 VAC
CASE-STD-400	Padded Carrying Case for two 400 Series instruments and accessories
CASE-HH-400	Hard-Shell Transit Case for two 400 Series instruments and accessories
OTS-COMBOMAN	Set of mandrels for loss testing of 50 µm and 62.5 µm multimode fiber

*Note: OTS-400 Series products are available with optional configurations such as 1625 nm light sources, integrated VFLs, and extended range power meters. Longer lead-times may apply for these non-standard configurations. Please contact a Corning Cable Systems customer service representative for more information.*

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