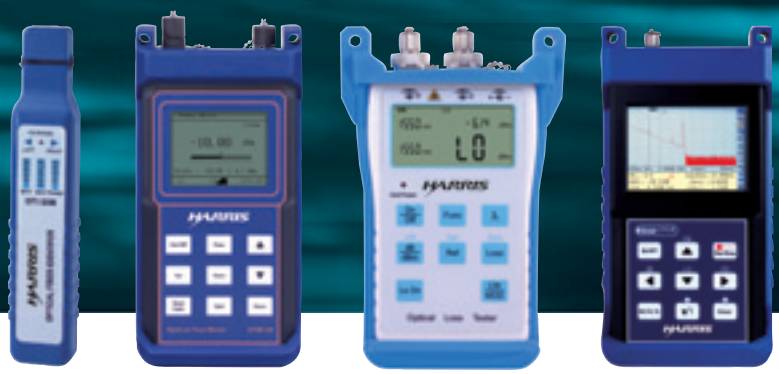
HARRIS®
assuredcommunications®

TEST AND MEASUREMENT

Fiber Optic Test and Measurement



OPTO TEST™

OFI-20 Optical Fiber Identifier

The Harris® OFI-20 is a handheld optical test instrument that identifies optical fibers by detecting the optical signals being transmitted through the fibers — without having to open the fiber. By utilizing non-destructive, macro-bend detection technology and a unique clamp mechanism, there's no need to create a splice point or interrupt service.

The OFI-20 accurately detects the optical signals, signal directions and the presence of modulated tones. It can test many types of fibers, including 250 µm, 900 µm Ribbon as well as 2mm and 3mm jacketed fibers.

With its wide dynamic range, OFI-20 can efficiently identify wide-spectrum signals, such as signals in CATV system and EDFA, making it perfect for physical layer testing of SONET/SDH and DWDM systems.

Features

- Handheld, easy to use
- Equipped with corresponding adapter for bare fiber and tail fiber
- Intensity display of optical signal
- Low-battery indication
- Buzz indication function
- Display of transmission direction of light
- Identification of various signal frequency: 270Hz, 1kHz, 2kHz
- CE, FCC certificates

Standard Accessories

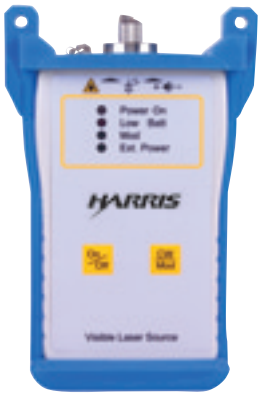
- Instrument
- Optical clamp
- Screwdriver
- Strap
- Compact carrying softbag
- Warranty card
- CE certificate
- Certificate of Calibration
- User's manual

Specifications

Wavelength Range	800-1700 nm
Type of Detector	InGaAs
Signal Type	CW, 270 Hz±10%, 1kHz±10%, 2kHz, ±10%
LED Display	Signal, direction, frequency (270Hz, 1kHz, 2kHz), intensity (5 class), low battery
Detect Sensitivity[1]	Over -55dBm
Fiber Type	250µm, 900µm, Ribbon - 2mm, 3mm jacketed fiber
Typical Loss	H 0.25~H 0.9: 0.1dB; H 2.0~H 2.5: 0.5dB; H 2.5~H3.0: 1.0dB
General Specifications	
Power Supply	9V alkaline battery
Battery Life	≥16hrs
Operating Temperature	0°C - 50°C
Storage Temperature	-20°C - 70°C
Relative Humidity	0 to 95% (non-condensing)
Weight	0.44 lbs (200g)
Dimension (H x W x T)	7.8 x 3.1 x 2.6 inch (200 x 80 x 40mm)

Note: [1]Detect sensitivity is a typical value tested at the wavelength of 1310 and 1550nm.

VLS-20A Visible Laser Source



The Harris® VLS is a visible red laser source for identifying breaks and tight bends in optical fibers. By generating a red laser that escapes from optical fibers, finding breaks in LANs, verifying continuity, checking the validity of patch cables or looking for cracked fiber in splices is made simple.

Features

- Pocket-size, easy to use
- Fast response, no warm up
- CW/1 Hz mod
- One meter drop test
- CE, FCC, FDA certificate

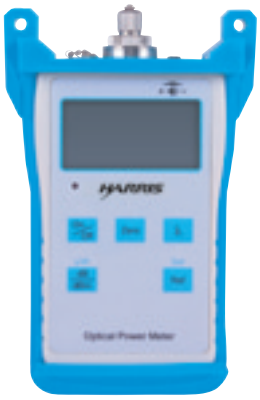
Standard Accessories

- Instrument
- Rubber boot
- Warranty card
- CE certificate
- Certificate of calibration
- User's manual

Specifications

Wavelength (±20nm)	650
Output Power (dBm)	-3
Maximum Measurement Range (km)	5
Modulation Frequencies (Hz)	1
Connector Type	FC/PC (interchangeable SC,ST)
Power Supply	9V alkaline battery (450mAh) / optional AC adapter
Battery Life	≥20hrs
Weight	0.59 lbs (270g)
Dimension (H x W x T)	5.7 x 2.9 x 1 inch (145 x 75 x 25mm)

OPM Optical Power Meter



The pocketsize Harris® Optical Power Meter series supports accurate testing of single-mode and multimode optical fiber systems, features a large LCD display and a moisture- and shock-proof design, and is powered by battery or optional AC adapter.

Whether working in a laboratory, or LANs, WANs, CATV or long-distance optical networks, the Optical Power Meters, together with Harris' Stabilized Laser Sources, can be used to identify optical fiber, measure optical attenuation, verify continuity and evaluate fiber link transmission quality.

Features

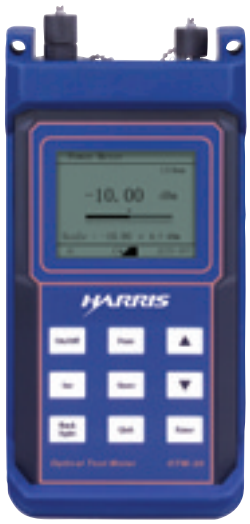
- Pocketsize, large easy-to-read LCD
- Fast response, no warm up
- Measure up to six wavelengths through a single connector
- Direct loss measurement units in dB
- Absolute power measurement units in dBm
- Interchangeable fiber-optic adapters (FC, SC or ST)
- Powered by battery or optional AC adapter
- Moisture-, dust- and shock-proof design
- Auto-off function conserves battery life
- CE, FCC certificates

Specifications

Calibrated Wavelength (nm)	850, 1300, 1310, 1490, 1550
Measurement Range[1] -70 ~ +10	Model A
Measurement Range[1] -50 ~ +27	Model B
Functions	W/µW/dBm/dB(REF)
Detector Type	InGaAs
Range of Use	Single/multiple mode fiber
Connector Type	FC/PC (interchangeable SC, ST)
Accuracy	±0.25 dB (5%) @ 25°C & -10dBm
Resolution(dB)	0.01
Auto Shut Off	5 minutes after last key has been depressed

Note: [1]For 850 nm, the lower limit of the measurement range is -60dBm.

OTM-20 Optical Test Meter



The Harris® OTM-20 series are integrated testers for fiber optic networks provides convenient, handheld, intelligent testing. Boasting a large memory capacity, the OTM-20 can transfer the testing data to a PC by associated software for analyzing, reporting and printing. Its multifunctional kitbag enables field use and laboratory testing.

The OTM-20 models combine Laser Source and Optical Power Meters, and are ideal for both single-mode and multimode fiber checkouts. Besides conducting absolute and relative power value measurements, the OTM-20 also activates a self-testing system to measure optical loss of optic fiber cable and passive devices, making it perfect for field installation, routine inspection and maintenance of Optic Telecom and CATV as well as for lab testing and research work.

Features

- Supports quick test, intelligent operation
- Graphic interface, large easy-to-read LCD display
- Measurement units in dB, dBm and W (or mW)
- Large memory capacity (4000 measurements)
- Supports auto test of optic fiber loss
- Draw changing curve of power value
- Support the optical power alarm function
- Automatical data storage
- Moisture-, dust- and shock-proof design, ideal for field operation
- Interchangeable fiber-optic adapters (choice of FC, SC, or ST)
- RS-232 data upload port PC software for data analyzing, graphic drawing and reporting
- Low-battery indicator and auto-recharging display
- Powered by battery or AC adapter
- Auto-off function conserving battery life
- CE, FCC, FDA certificate

OTM Standard Configuration

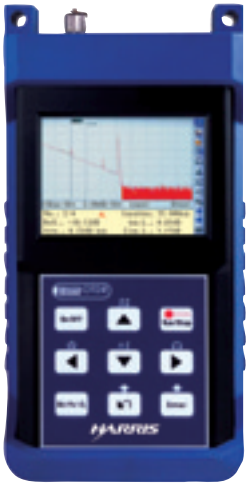
- Instrument (including rechargeable battery)
- OTM data analysis software disk
- Data transfer cable (RS232)
- AC Adapter
- Rubber Boot
- Compact carrying soft bag
- Warranty card
- CE, FCC certificate
- Certificate of calibration
- User's manual

Specifications — OTM-20A/OTM-20C

Model	OTM-20A / OTM-20C
Detector Type	InGaAs
Measurement Range (dBm)[1]	-70 ~ +10 / -50 ~ +27
Calibrated Wavelength (nm)	850, 1300, 1310, 1550 / 980, 1310, 1480, 1550
Accuracy (25°C and -10dBm)	±0.25 dB (5%)
Resolution (dB)	0.001
Laser Source Module	
Emitter Type	FP-LD
Wavelength (±20nm)	1310/1550
Output Power (dBm)	≥ -7
Spectral Width (nm)	≤ 5
Stability	± 0.05 dB/15 min
	±0.10 dB/8hr@1310/1550 nm; ±0.15 dB/8hr@850/1300nm
Modulation Frequencies (Hz)	270, 1K, 2K Optional
Connector Type	FC/PC (Interchangeable SC, ST)
General Specifications	
Data Storage	1000 measurements per wavelength totaled 4000 measurements
Data Transmission	RS232
Power Supply	NiMH rechargeable battery / AC adapter
Battery Life	Support ≥ 80 hrs for only OPM operation / ≥ 35 hrs for OPM and OLS together on one charge
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 70°C
Relative Humidity	0 to 95% (non-condensing)
Weight	1.3 lbs (0.6 kg)
Dimension	7.7 x 3.9 x 1.7 inch (196 x 100 x 44mm)

Note: [1]For 850 nm, the lower limit of the measurement range is -60dBm.

palmOTDR



Features

- Lightweight, portable and ideal for FTTx
- Full functions, optional single mode fiber application
- High precision measurement, large memory capacity (300 test curves)
- Without hard desk design, anti-dust, damp and shock proof for field test
- RS-232/USB data upload port
- PC software for measurement data analyzing and reporting
- LCD indicators for battery charging and LD lasing status
- NiMH rechargeable battery support, 4 hours continuous operations
- Low battery annunciator
- CE, FCC, FDA certificates
- Drop tested up to 1 meter

Standard Configuration

- Instrument
- Rechargeable NiHM battery
- AC adapter
- Trace Manager software disk
- Data transfer cable (RS232/USB)
- Rubber boot
- Toolkit softbag
- Fiber connector cleaner
- Connector clean stick
- Warranty card
- CE/FCC certificate
- Certificate of calibration
- User's manual

The Harris® palmOTDR series is a range of handheld optical fault-locating and analyzing tools for optical fiber networks. With its excellent performance and higher user value, it offers an innovative test method for telecommunication networks.

The palmOTDR is more economical than a traditional OTDR and features a compact, lightweight and easy-to-use design. The unique hot-key design makes it faster and more convenient to review and analyze an event. The palmOTDR includes powerful functions, such as supporting averaging and real-time test mode, and it can be used in single mode (1310/1550nm) fiber applications. With its multifunctional carrying softbag, which is convenient for both field and lab testing, the palmOTDR series has become the indispensable and ideal tool for fiber network construction, daily check and maintenance in FTTx, WAN and CATV systems.

The palmOTDR can save and transfer the measurement curves data to a PC by the software "TraceManager" for further analyzing, reporting and printing. Furthermore, the requirements of different fiber connect types can be met by simply changing adaptors.

Specifications

Model[1]	**palmOTDR-S20A / palmOTDR-S20C**
Dynamic Range (dB)[2]	24/24 / 32/32
Wavelength (±20nm)	1310, 1550
Display Type	Colorful
Range of Use	Single-mode
Optical Connection	Single Port / Dual Ports
Emitter Type	LD
Connector Type	FC/PC (interchangeable SC, ST)
Selectable Ranges (km)[3]	0.3, 1.3, 2.5, 5, 10, 20, 40, 80, 120, 160, 240
Pulse Widths (ns)[4]	5, 10, 12, 30, 100, 275, 1000, 2500, 10000, 20000
Event Deadzone	10m[5] / 5m[5]
Attenuation Deadzone	25m[5] / 20m[5]
Average Time	15s, 30s, 1min, 2min, 3min
Distance Measure Accuracy	± (1m + 5 x 10^{-5} x Distance + sampling space)
Reflection Detect Accuracy	± 4 dB
Attenuation Detect Accuracy	± 0.05 dB/dB
Data Storage	300 test curves
Data Transmission	RS-232/USB Port
Visible Laser Source	**(For palmOTDR-S20C only)**
Output Power (dBm)	≥-3
Maximum Measurement Range (km)	5
General Specifications	
Power Supply	NiMH rechargeable battery/AC adapter
Battery Life	Support over 4 hours operating on one charge or over 20 hours standby
Data Transmission	RS-232/USB port
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 70°C
Relative Humidity	0 to 95% (non-condensing)
Weight	1.9 lbs (0.87 kg)
Dimension	7.7 x 3.9 x 2.4 inch (196 x 100 x 64mm)

Notes:

[1] Specifications describe the instrument's warranted performance, measured with typical PC-type connectors. Uncertainties due to the refractive index of fiber are not considered;

[2] The dynamic range is measured at maximum pulse width within average time of 3 minutes;

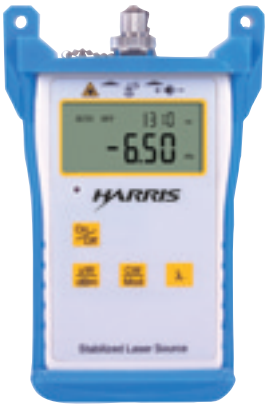
[3] Among the selectable ranges, 0.3km, 160km, and 240km only for type C;

[4] Among the pulse widths, 5ns, 10ns, 10us and 20 us only available for type C;

[5] Conditions for blind measurement: Reflection events are within a range of 4km; reflection intensity is less than -35dB; and the blind zone is measured at the minimum pulse width.

[6] Conditions for blind measurement: Reflection events are within a range of 1km; reflection intensity is less than -32dB; and the blind zone is measured at the minimum pulse width.

SLS Stabilized Laser



The Harris® SLS is a lightweight, easy-to-use stabilized laser source tool. Based on advanced precision laser control technology, the SLS models have been designed to provide a high-capability laser source for engineering, R&D and equipment manufacturers.

The SLS is an ideal tool for optical network installation, troubleshooting and maintenance, providing a very stable optical signal at multiple wavelengths.

Features

- Pocketsize, easy to use
- Fast response, no warm up
- Moisture-, dust- and shock-proof design
- Modulation in CW and modulated frequencies
- Single/dual/triplex wavelength selectable
- Interchangeable fiber-optic adapters (choice of FC, SC or ST)
- High stabilized output of optical signal
- Powered by battery or optional AC adapter
- Auto-off function conserves battery life
- CE, FCC, FDA certificates

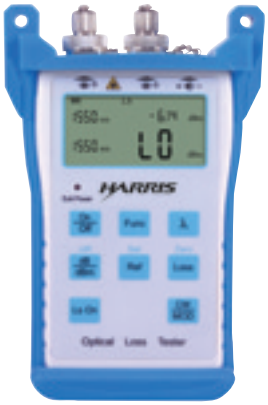
Standard Configuration For OPM, OLT and SLS models

- Instrument
- Rubber boot
- Warranty card
- CE certificate
- Certificate of calibration
- User's manual

Specifications

Model	**SLS-21A-03 / SLS-25B-03**
Wavelength (±20nm)	1310/1550 / 1310/1550/1625
Display	LCD
Optical Connector	Single Port / Dual Ports
Output Mode	CW, 270Hz, 1KHz, 2KHz
Emitter Type	FP-LD @ 1310, 1550nm; DFB-LD @ 1625nm
Connector Type	≥FC/PC (interchangeable SC, ST)
Spectrum Width	5 nm
Output Power	≥ -3dBm
Stability	±0.05 dB/15 min; ±0.10 dB/8 hrs.
Range of Use	Single Mode Fiber
Auto Shut Off	5 minutes after last key has been depressed
General Specifications	
Power Supply	9V alkaline battery (450mAh) / optional 9V AC adapter
Battery Life	≥20 hours typical operation with 9V alkaline battery
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 70°C
Relative Humidity	0 to 95% (non-condensing)
Weight	0.66 lbs (300 g)
Dimension	5.7 x 2.9 x 1 inch (145 x 75 x 25 mm)

OLT-20 Optical Loss Tester



The Harris® OLT-20 is a multifunctional testing instrument for fiber optic networks, and is designed to handle installation, routine inspection and daily maintenance of MAN, WAN and CATV systems.

The OLT-20 integrates a laser source module and power meter module in one set, conveniently offering power testing and link loss testing. By efficiently performing multiple functions, the OLT-20 helps avoid file mistakes caused by mismatched laser source and power meter.

Features

- Multi-wavelength measurement
- Direct loss measurement units in dB
- Link loss testing
- Absolute power measurement units in dBm or uW
- Modulation in CW and modulated frequencies
- Optional 270/1K/2K Hz modulated frequencies
- Dual-wavelength output in single optic
- Dual-way powering system including a 9V battery and optional AC adapter
- Low-power indicator
- Auto-off function
- CE, FCC, FDA certificates

Specifications

Wavelength (±20 nm)	1310/1550
Output Power (dBm)	≥-7
Spectral Width (nm)	≤5
Emitter Type	FP-LD
Stability	±0.05 dB/15min: ±0.10dB/8hr@1310/1550nm
Modulation Frequencies	270Hz, 1KHz, 2KHz optional
Connector Type	≥FC/PC (interchangeable SC, ST)
Optical Power Meter Module	
Detector Type	InGaAs
Measurement Range (dBm)[1]	-70 ~ +10
Accuracy (25°C and -10 dBm)	±0.25
Resolution (dB)	≥0.01
Calibrated Wavelength (nm)	850, 1300, 1310, 1490, 1550, 1625

Note: Other calibrated wavelengths can also be ordered. [1]Lower limit range for 850 nm is -60 dBm.

Ordering Options

Model Number	Description
AC-PB-10	Compact carrying softbag for VLS-20A, SLS-21A, OLT-20A and OPM-15B
AC-PB-20	Compact carrying softbag for PALMOTDR-S20 (A&C)
AC-FJC-03-FC/FC	3 meter optical patch cord for all OPTO TEST instruments
AC-ADPT-10-US	AC adapter, 100-240 volts, with US power plug for SLS-21A, VLS-21A, OLT-20A and OPM-15B
AC-ADPT-10-EU	AC adapter, 100-240 volts, with EURO power plug for SLS-21A, VLS-21A, OLT-20A and OPM-15B
AC-ADPT-10-AU	AC adapter, 100-240 volts, with Australian power plug for SLS-21A, VLS-21A, OLT-20A and OPM-15B
AC-ADPT-10-UK	AC adapter, 100-240 volts, with United Kingdom power plug for SLS-21A,VLS-21A, OLT-20A and OPM-15B
AC-ADPT-20-EU	AC adapter, 100-240 volts, with EURO power plug for PALMOTDR-S20 and OTM-20A
AC-ADPT-20-AU	AC adapter, 100-240 volts, with Australian power plug for PALMOTDR-S20 and OTM-20A
AC-ADPT-20-UK	AC adapter, 100-240 volts, with United Kingdom power plug for PALMOTDR-S20 and OTM-20A
AC-CON-SC-L	SC connector for laser source of VLS-20A, PALMOTDR-S20A, SLS-21A, OLT-20A and OTM-20A
AC-CON-ST-L	ST connector for laser source of VLS-20A, PALMOTDR-S20A, SLS-21A, OLT-20A and OTM-20A
AC-FSS-C	Ceramic core for laser source of VLS-20A, PALMOTDR-S20A, SLS-21A, OLT-20A and OTM-20A
AC-CON-SC-P-300	SC connector for power meter of OPM-15B, OLT-20A and OTM-20A
AC-CON-SC-T-300	ST connector for power meter of OPM-15B, OLT-20A and OTM-20A

Note: All specifications listed are subject to change without notice.

ONE Company for Workflow Solutions Throughout the Broadcast Chain

Harris is the ONE company delivering interoperable workflow solutions across the entire broadcast delivery chain — providing today's broadcaster with a single, integrated approach to capitalize on the benefits of IT and mobile applications. By providing unparalleled interoperability across our product portfolio, Harris is able to offer customers integrated solutions that improve workflows, save money, enable new revenue streams and provide a migration path to emerging media business models. To meet the evolving needs of broadcast, distribution and entertainment businesses, Harris is the ONE answer for change.

Service And Support

At Harris, we are committed to customer service excellence. It is our goal to provide the highest level of support by applying a simple rule: We take ownership of helping our customers succeed. Our support teams consist of innovative technical experts who support all situations regarding product performance, integration and operational processing. We are adept at providing proven solutions, making workflows better and ensuring reliability of the product and system. At Harris, our experienced and dedicated teams stand ready to help you meet your goals for premium product performance, 100% up-time and reduced maintenance investment.

Warranty

Because we want to assure you that Harris stands beside its products and system solutions, our products carry a standard set of warranty services, which are competitive with — and in some cases outperform — others in the industry.

Service Packages

We offer value-add services that allow you to customize the level of services you need in meeting mission-critical performance levels. Our service package options offer many ways to upgrade your standard warranty by choosing the All-Inclusive OnePak, or by selecting individual services from our extensive portfolio. Our service and support advisors can assist in the selection of the individual services that best suit your requirements.

Canada	+1 800 387 0233
USA East	+1 800 231 9673
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France	+33 1 42 87 09 09
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