



# OLP-87/87P

## SmartClass™ Fiber PON Power Meter and Microscope



The Viavi Solutions OLP-87 is an FTTx/PON power meter for use in qualifying, activating, and troubleshooting B-PON, E-PON, G λ-PON, and next-generation, high-speed 10 G PONs such as XG-PON and 10G-EPON networks. As part of the Viavi Solutions SmartClass Fiber family, the OLP-87 combines a high-performance λ-selective FTTx/PON meter with pass/fail fiber inspection analysis into one portable solution. These combined capabilities guarantee service providers a lifetime of system performance from their network connectivity and gives contractors an essential tool for delivering best-in-class, reliable networks to their customers.

The OLP-87 is ideal for end-of-line testing, activation, and maintenance of all FTTx/PON signals. The through-mode capability can simultaneously measure voice, data, and RF video signals on fiber at 1490/1550/1578 nm downstream and 1270/1310 nm burst mode upstream.

The OLP-87 is compatible with the P5000i digital analysis microscope so users can check fiber end-face quality and get pass/fail acceptance results with one button push. The OLP-87P features an integrated patch-cord microscope (PCM) for added value and improved workflow efficiency.

Users can easily save test results and generate certification reports to document work quality. Integrating these capabilities into one system drives technician behavior toward implementing today's best practices in a seamless workflow that optimizes efficiency and reliability so they complete the job right—the **first** time.

The handheld OLP-87 can be used anywhere today's fiber technicians go, up poles or down holes. Technicians get ultimate flexibility and performance from this powerful, easy-to-use solution that can help any technician become an instant fiber expert.

### KeyBenefits

- Complete jobs faster, correctly, and on time—the first time: Uniquely integrates fiber inspection and test for an efficient, easy-to-use solution that promotes best practices for handling fiber
- Analysis with pass/fail results on one handheld device: Automatically certifies fiber end-face condition and easily measures FTTx/PON power, making even new technicians fiber experts
- Easily generates certification reports: Prove that work quality meets industry standards and customer specifications
- Use it anywhere: Hands-free carrier for easy use inside homes or up on telephone poles
- Prepares for 10 G PON upgrades: First universal PON meter with B-PON, E-PON, G-PON, and new XG-PON/10G-EPON networks test support

### KeyFeatures

- Field-portable λ-selective PON power meter with through-mode capability
- Available in 1310/1490 nm, 1310/1490/1550 nm, and 1270/1310/1490/1550/1578 nm versions
- Burst mode measurement for 1270 nm and 1310 nm upstream signals
- High-performance broadband power-meter option with universal-adapter interface
- Automated pass/fail fiber inspection analysis with optional P5000i microscope
- Integrated patch-cord microscope version
- On-board fiber inspection and test results storage
- Data transfer and remote control via USB
- Smart-Reporter certification software to create customized reports
- Modern, smartphone-style user interface with touch screen
- Rugged, weather-proof design

## Become an Instant Fiber Expert with SmartClass Fiber

- ✓ **Integration**     Combines inspection and testing
- ✓ **Automation**    Pass/fail certification
- ✓ **Ease of use**     Intuitive smartphone-style user interface

### Intuitive Smartphone-Style User Interface

High-contrast, color touch screen with menu icons.



### Simultaneously Displays All FTTx/PON Power Levels

Shows OLT downstream signals at 1490, 1550, and 1578 nm along with ONT upstream burst mode signals at 1270 and 1310 nm.

Signal Type	Wavelength	Power [dBm]
PON ONT	1310 nm	-01.22 dBm
PON OLT	1490 nm	-10.17 dBm
XGPON ONT	1270 nm	-21.89 dBm
XGPON OLT	1578 nm	-37.12 dBm
RF Video	1550 nm	-03.39 dBm

### Store Inspection and Measurement Readings on the Device

Store up to 10,000 measurement results on the device or, for additional storage, a USB host with a pluggable memory key.

Fiber ID	λ [nm]	Power [dBm]
BAKER.STREET.10	1310	-41.23
BAKER.STREET.10	1490	-10.24
BAKER.STREET.10	1550	-03.42
FIBER44	1310	-41.21
FIBER44	1490	-10.24

### User-Definable Pass/Fail Acceptance Criteria

Whether using the IEC 61300-3-35 or customer-specific requirements, users can easily manage user-specified acceptance criteria with dedicated profiles for each requirement.

Signal Type	Wavelength	Status
PON ONT	1310 nm	PASS
PON OLT	1490 nm	PASS
XGPON ONT	1270 nm	FAIL
XGPON OLT	1578 nm	PASS
RF Video	1550 nm	FAIL

### Comprehensive Data Management and Report Generation

Easily generate certification reports that prove your quality of work meets industry standards or customer specifications using Smart Reporter™ PC software.

- Easily store measurement data at the press of a button
- Manage data and store results on the instrument
- Download measurement results to a PC via a USB interface

Group	Fiber ID	Wavelength	Power[dBm]	Power[Watt]	Power[dB]	Reference	PASS/FAIL	Threshold Set	
1	MEASUREMENT1	FIBER1.00001	1310	2.78	0.00189671	2.78	0	OVER	default
2	MEASUREMENT1	FIBER1.00002	1490	0.78	0.00119674	0.78	0	OVER	default
3	MEASUREMENT1	FIBER1.00003	1550	1.41	0.00138357	1.41	0	OVER	default
4	MEASUREMENT1	FIBER2.00001	1310	2.78	0.00189671	2.78	0	OVER	default
5	MEASUREMENT1	FIBER2.00002	1490	0.78	0.00119674	0.78	0	OVER	default
6	MEASUREMENT1	FIBER2.00003	1550	1.41	0.00138357	1.41	0	OVER	default

## Perform Broadband Power Measurements

### Combines Power Measurements in One Handheld Device

Providing selective power measurements for PON applications and broadband (BB-PM), OLP-87 3-wavelength and 5-wavelength versions provide a separate high-performance broadband power meter option with universal push/pull optical adapters (UPP) for easy and accurate power measurements.



### Benefits of a Separate Broadband Power Meter

- A highest absolute accuracy of  $\pm 0.2$  dB, due to a free-space optical interface and InGaAs photodiode, avoids fiber/fiber coupling uncertainty
- Easy adaptation of any 2.5 mm and optional 1.25 mm connector type using a universal UPP adapter
- Easy cleaning due to direct access to the photodiode surface
- Tone detection for fiber identification
- Auto lambda function, compatible with all Viavi sources

## Inspect and Test Fiber Anywhere

### Combines Inspection and Test in One Handheld Device

Use either the onboard PCM or connect a P5000i digital analysis microscope to inspect fiber end faces and eliminate poor-quality components from entering your network.

### Benefits of Using P5000i and PCM Together

Working with both the P5000i and PCM:

- Optimizes technician performance with tools designed for workflow
- Improves network activation with a reliable, repeatable processes
- Ensures test leads are safely stored when not in use
- Enables quick and easy inspection of both female (bulkhead) and male (patch cord) fiber connectors without changing tips

### Automatic Image Centering

This convenient feature centers the fiber image on the screen.

### Ultimate Portability and Organization

The hands-free carrier stores all essential tools, such as the inspection microscope, visual fault locator, and cleaning materials, in an organized, portable system that you can take with you to every job.



## Specifications

Power Meter	OLP-87 1310-1490 nm	OLP-87 1310/1490/1550 nm	OLP-87 XG-PON 1270/1310/1490/1550/1578 nm
<b>Functionality</b>			
Two-port through mode	■	■	■
B-PON (ITU-T G983.x)	■	■	■
G-PON (ITU-T G984.x)	■	■	■
E-PON (IEEE 802.3av)	■	■	■
XG PON (ITU-T G.987)			■
10G-EPON (IEEE 802.3av)			■
Downstream OLT signal (1490 nm)	■	■	■
Downstream OLT signal (1578 nm)			■
Downstream RF video signal (1550 nm)		■	■
Upstream ONT signal (1270 nm)			■
Upstream ONT signal (1310 nm)	■	■	■
Broadband power meter	Fiber coupled	Universal adapter (option)	Universal adapter (option)
Upstream OLT signal (1310 nm)	■	■	■
<b>Fiber inspection</b>			
via external probe P5000i (option)	■	■	■
via integrated patch cord microscope	OLP-87P version	OLP-87P version	OLP-87P version
<b>FTTx Mode</b>			
<b>Upstream 1270 nm, burst mode</b>			
Power measurement range			-40 to +13 dBm <sup>1</sup>
Maximum permitted input level			+17 dBm
Spectral passband			1260 to 1280 nm
<b>Upstream 1330 nm, burst mode</b>			
Power measurement range	-40 to +13 dBm <sup>1</sup>	-40 to +13 dBm <sup>1</sup>	-40 to +13 dBm <sup>1</sup>
Maximum permitted input level	+17 dBm	+17 dBm	+17 dBm
Spectral passband	1260 to 1360 nm	1260 to 1360 nm	1290 to 1330 nm
<b>Downstream 1490 nm</b>			
Power measurement range	-50 to +13 dBm	-50 to +13 dBm	-50 to +13 dBm
Maximum permitted input level	+15 dBm	+15 dBm	+15 dBm
Spectral passband	1480 to 1500 nm	1480 to 1500 nm	1480 to 1500 nm
<b>Downstream 1578 nm</b>			
Power measurement range			-50 to +13 dBm
Maximum permitted input level			+15 dBm
Spectral passband			1573 to 1583 nm
<b>RF video signals 1550nm</b>			
Power measurement range		-50 to +26 dBm	-50 to +26 dBm
Maximum permitted input level		+21 dBm	+21 dBm
Spectral passband		1535 to 1565 nm	1535 to 1565 nm
Pass-through insertion loss	<1.5 dB <sup>2</sup>	<1.5 dB <sup>2</sup>	<1.5 dB <sup>2</sup>
Power uncertainty	±0.5 dB <sup>2,3</sup>	±0.5 dB <sup>2,3</sup>	±0.5 dB <sup>2,3</sup>
Calibrated wavelengths	1310/1490 nm	1390/1490/1550 nm	1270/1310/1490/1550/1578 nm

1. Burst mode: -35 to +13 dBm

2. At 23°C ± 3°C, at 1270/1310/1490/1550/1578 nm

3. At -7 dBm

Power Meter	OLP-87 1310-1490 nm	OLP-87 1310/1490/1550 nm	OLP-87 XG-PON 1270/1310/1490/1550/1578 nm
<b>Broadband Mode</b>			
<b>Interface</b>	fiber coupled	free space (2.5 mm UPP adapter) (1.25 mm UPP optional)	free space (2.5 mm UPP adapter) (1.25 mm UPP optional)
Power measurement range	-50 to +13 dBm	-50 to +13 dBm	-50 to +13 dBm
Maximum permitted input level	+15 dBm	+15 dBm	+15 dBm
Power uncertainty	±0.5 dB <sup>1,2</sup>	±0.2 dB (±5%) <sup>1,4</sup>	±0.2 dB (±5%) <sup>1,4</sup>
Wavelength range	1260 to 1625 nm	1260 to 1625 nm	1260 to 1625 nm
Calibrated wavelengths	1310/1490/1550/1625 nm	1310/1490/1550/1625 nm	1310/1490/1550/1625 nm
Wavelength settings	1260 to 1625 nm in 1 nm steps	1260 to 1625 nm in 1 nm steps	1260 to 1625 nm in 1 nm steps
Tone detection	270 Hz 1 kHz/2 kHz	270 Hz 1 kHz/2 kHz	270 Hz 1 kHz/2 kHz
Auto lambda and TWIN test mode <sup>3</sup>	Yes	Yes	Yes

## General

### Technical

Display	High-contrast 3.5" color LCD with touch-screen functionality	
Display resolution	0.01 dBm/0.001 µW	
Measurement units	dB, dBm, W	
ORL <sup>1,5</sup>	>60 dB	
Fiber inspection	Via external probe P5000i (option) with individual naming	
Live image	320 x 240 x 8 bit grey, 10 fps	
Threshold sets	>1000 configurable threshold sets with individual naming	
Data memory	10.000 measurement results	
Data readout	Via client USB interface or Ethernet	
Remote control capability	Via USB	
Electrical interfaces	2 x USB host, 1x micro USB, Ethernet	
Power supply	Four-way powering: NiMH/dry batteries/Li-ion pack/AC power supply 12 V internal charging for Li-ion-pack	
Optical connectors	Interchangeable Fixed	SC/FC/ST/LC/DIN SC
Recommended recal. Inte	3 years	
Dimensions (H x W x D) OLP-87 OLP-87P	208 x 112 x 64 mm/750 g (8.2 x 4.4 x 2.5 in/1.6 lb) 208 x 153 x 64/850 g (8.2 x 6.0 x 2.5 in/1.85 lb)	
Operating temperature range	-10 to +55°C (14 to 122°F)	
Storage temperature range	-20 to +70 °C (-4 to 158°F)	

1. At 23° ±3 °C at all calibrated wavelengths

2. At -7 dBm

3. With Viavi light sources

4. At -20 dBm

5. Valid for APC versions only

## Ordering Information

Description	Part Number
<b>Stand-Alone Units</b>	
OLP-87 FTTx power meter 1310/1490 nm, PC	2305/01
OLP-87 FTTx power meter 1310/1490 nm, APC	2305/21
OLP-87 FTTx power meter 1310/1490 nm, SC-APC	2305/26
OLP-87 FTTx power meter 1310/1490/1550 nm, PC	2305/11
OLP-87 FTTx power meter 1310/1490/1550 nm, APC	2305/31
OLP-87 FTTx power meter 1310/1490/1550 nm, SC-APC	2305/36
OLP-87P FTTX power meter, dual-mag patch cord module, 1310/1490/1550 nm, SC-APC	2306/36
OLP-87 XG-PON power meter 1310/1270/1490/1550/1578 nm, SC-APC	2305/66
OLP-87P XG-PON power meter, dual-mag patch cord module 1310/1270/1490/1550/1578 nm, SC-APC, PCM	2306/66
<b>Kits</b>	
OLP-87 1310/1490 SC-APC basic kit	FIT-8726
OLP-87 1310/1490 SC-APC pro kit	FIT-8726-PRO
OLP-87 1310/1490/1550 SC-APC basic kit	FIT-8736
OLP-87 1310/1490/1550 SC-APC pro kit	FIT-8736-PRO
OLP-87P 1310/1490/1550 SC-APC, pro kit	FIT-8736P-PRO
OLP-87 XG-PON power meter 1310/1490/1550/1270/1578 nm SC-APC, basic kit	FIT-8766
OLP-87 XG-PON power meter 1310/1490/1550/1270/1578 nm SC-APC, pro kit	FIT-8766-PRO
OLP-87P XG-PON power meter 1310/1490/1550/1270/1578 nm SC-APC, pro kit	FIT-8766P-PRO

Description	Part Number
<b>Included Items</b>	
<b>Stand-Alone Units</b>	
SmartClass Fiber instrument	
SCASE2 soft shoulder case for SmartClass Fiber tools	
Electronic tool kit with manual, data sheet, and Smart Reporter software on USB stick	
Two optical adapters: SC type or selectable SC/FC/DIN/ST/LC in universal version	
Quick start manual and safety instructions	
Dry batteries (8x)	
<b>Additional Items in Basic Kits</b>	
P5000i Digital Inspection Microscope	
Inspection tips and adapters (bulkhead: SC, APC, and LC, Patch cord: 2.5 mm, 2.5 mm APC, and 1.25 mm)	
Power supply for SmartClass Fiber (12 V)	
FiberChekPRO software installation Disk	
USB cable USB-A to micro-USB	
<b>Additional Items in Pro Kits</b>	
P5000i Digital Inspection Microscope	
Inspection tips and adapters (bulkhead: SC, APC, and LC, patch Cord: 2.5 mm, 2.5 mm APC, and 1.25 mm)	
Cleaning materials for 2.5 and 1.25 mm (bulkhead and patch cord)	
Hands-free carrier for SmartClass Fiber	
Rechargeable battery for SmartClass Fiber (Li-ion)	
FFL-050 visual fault locator with 2.5 and 1.25 mm adapter	
Power supply for SmartClass Fiber (12 V)	
FiberChekPRO software installation disk	
USB cable USB-A to micro-USB	
<b>Accessories</b>	
PS4 power supply, for SmartClass Fiber, 12 V/2 A	2305/90.01
RBP2 rechargeable battery pack for SmartClass Fiber; Li-ion battery 3.7 V/20 W/hr	2305/90.02
UC4 hands-free carrier for SmartClass Fiber	2128/01
UC4P hands-free carrier for SmartClass Fiber with PCM	2128/02
USB cable USB-A to micro-USB	K 807
SCASE2 soft shoulder case for SmartClass Fiber tools	2128/03





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