

# VIAVI

## SmartClass Fiber

### Specifications

#### Light Sources

	OLS-85 (2313/01)	OLS-85 (2313/05)	OLS-85 (2313/06 or 2313/26)	OLS-85 (2313/22)	
Type	Class 1 laser product (IEC 60825-1:2007)				
Wavelengths	1310, 1550 nm	850, 1300 nm	1310, 1550 nm	1310, 1490, 1550, 1625 nm	1310, 1550, 1625 nm
Wavelength Accuracy	± 20 nm	-20 / +40 nm	± 20 nm	± 20 nm	± 20 nm
FWHM Spectral Width	< 5 nm	< 170 nm	< 5 nm	< 5 nm	< 5 nm
Output Level	Typ. -3 dBm	Typ. -25 dBm	Typ. -3 dBm	Typ. -6 dBm	Typ. -6 dBm
Short Term Stability	± 0.02 dB within 15 min	± 0.02 dB within 15 min		± 0.02 dB within 15 min	± 0.02 dB within 15 min
Long Term Stability	± 0.2 dB within 8 hrs.	± 0.2 dB within 8 hrs.		± 0.2 dB within 8 hrs.	± 0.2 dB within 8 hrs.
Optical Connectors	1x SC/PC	1x SC/PC		2313/06: 1x SC/PC 2313/26: 1x SC/APC	1x SC/APC

## Power Meters

	OLP-82 (2315/01)	OLP-82P (2316/01)	OLP-85 (2307/03)	OLP-85P (2308/03)
Photo Diode	InGaAs		InGaAs (coated)	
Spectral Range	Broadband (780...1650 nm)		Broadband (800...1700 nm)	
Wavelength Setting	780...1650 nm, step size 1 nm		800...1700 nm, step size 1 nm	
Resolution	0.01 dB, 0.001 $\mu$ W		0.01 dB, 0.001 $\mu$ W	
Measurement Range for Power Level	-65...+10 dBm		-75...+26 dBm	
Max. Power Level	+10 dBm		+30 dBm	
Measurement Uncertainty	$\pm 0.2$ dB (intrinsic) <sup>1</sup>		$\pm 0.15$ dB (intrinsic) <sup>1</sup>	
			850, 980 nm: $\pm 0.35$ dB 1310, 1490, 1550 nm: $\pm 0.25$ dB 1625 nm: $\pm 0.35$ dB	
Linearity	$\pm 0.06$ dB <sup>2</sup>			
Number of Calibrated Wavelengths	5 (850, 1310, 1490, 1550, 1625 nm)		6 (850, 980, 1310, 1490, 1550, 1625 nm)	
Tone Detection	CW, 270 Hz, 1 kHz, 2 kHz <sup>3,4</sup>			
Auto Functions	—		Auto- $\lambda$ / Multi- $\lambda$ <sup>4</sup>	
Optical Connectors	1x UPP 2.5 mm		configurable	

<sup>1</sup> Under reference conditions: -22 dBm (CW), 1310 nm  $\pm$  1 nm / 1490 nm  $\pm$  1 nm / 1550 nm  $\pm$  1 nm, 23°C  $\pm$  3 K, 45 to 75% relative humidity, SM test fiber (Single Mode, 9  $\mu$ m core, 8° APC) – when used at 850 nm, 980 nm or 1625 nm the following applies:  $\pm 0.25$  dB (intrinsic)

<sup>2</sup> Under the following conditions: -50...+ 5 dBm, 0...+45°C

<sup>3</sup> Received optical power level  $\geq$  -50 dBm

<sup>4</sup> When used with VIAVI Light Source and received optical power level > -50 dBm

## Selective PON Power Meters

	<b>OLP-87 (2305/26)</b>	<b>OLP-87 (2305/11 or 2305/36) or OLP-87P (2306/36)</b>	<b>OLP-87 (2305/66) or OLP-87P (2306/66)<sup>5</sup></b>
Photo Diode	InGaAs	InGaAs	InGaAs
Spectral Range	Passband (1260...1625 nm)	Passband (1260...1360 nm, 1480...1500 nm, 1535...1565 nm)	Passband (1260...1280 nm, 1290...1330 nm, 1480...1500 nm, 1535...1565 nm, 1573...1583 nm)
Wavelength Setting	1310, 1490 nm	1310, 1490, 1550 nm Broadband: 1260...1625 nm, step size 1 nm <sup>6</sup>	1270, 1310, 1490, 1550, 1577 nm Broadband: 1260...1625 nm, step size 1 nm <sup>6</sup>
Resolution	0.01 dB, 0.001 μW	0.01 dB, 0.001 μW	0.01 dB, 0.001 μW
Measurement Range for Power Level	1310 nm: -40...+13 dBm <sup>6</sup> 1490 nm: -50...+13 dBm	1310 nm: -40...+13 dBm <sup>6</sup> 1490 nm: -50...+13 dBm 1550 nm: -50...+26 dBm Broadband: -50...+13 dBm <sup>7</sup>	1270 nm: -40...+13 dBm <sup>6</sup> 1310 nm: -40...+13 dBm <sup>6</sup> 1490 nm: -50...+13 dBm 1550 nm: -50...+26 dBm 1577 nm: -50...+13 dBm Broadband: -50...+13 dBm <sup>7</sup>
Maximum Power Level	1310 nm: +17 dBm 1490 nm: +15 dBm	1310 nm: +17 dBm 1490 nm: +15 dBm 1550 nm: +27 dBm Broadband: +15 dBm <sup>7</sup>	1270 nm: +17 dBm 1310 nm: +17 dBm 1490 nm: +15 dBm 1550 nm: +27 dBm 1577 nm: +15 dBm Broadband: +15 dBm <sup>7</sup>
Measurement Uncertainty	1310 nm: ± 0.5 dB 1490 nm: ± 0.5 dB <sup>8</sup>	1310 nm: ± 0.5 dB <sup>8</sup> 1490 nm: ± 0.5 dB <sup>8</sup> 1550 nm: ± 0.5 dB <sup>8</sup> Broadband: ± 0.2 dB <sup>7,8</sup>	1270 nm: ± 0.5 dB <sup>8</sup> 1310 nm: ± 0.5 dB <sup>8</sup> 1490 nm: ± 0.5 dB <sup>8</sup> 1550 nm: ± 0.5 dB <sup>8</sup> 1577 nm: ± 0.5 dB <sup>8</sup> Broadband: ± 0.2 dB <sup>7,8</sup>
ORL	> 60 dB	2305/11: > 40 dB 2305/36, 2306/36: > 60 dB	> 60 dB
Pass-through insertion loss	< 1.5 dB	< 1.5 dB	< 1.5 dB
Number of Calibrated Wavelengths	4 (1310, 1490, 1550, 1625 nm)	4 (1310, 1490, 1550, 1625 nm)	4 (1310, 1490, 1550, 1625 nm)
Tone Detection		CW, 270 Hz, 1 kHz, 2 kHz <sup>7,9</sup>	
Auto Functions		Auto-λ / Multi-λ <sup>7,9</sup>	
Optical Connectors	2x SC/APC (1x OLT, 1x ONT)	2305/11: 2x SC/PC (1x OLT, 1x ONT), 1x UPP 2.5 mm 2305/36, 2306/36: 2x SC/APC (1x OLT, 1x ONT), 1x UPP 2.5 mm	2x SC/APC (1x OLT, 1x ONT), 1x UPP 2.5 mm

<sup>5</sup> Only the present US wavelength is displayed and the other one as "LOW"

<sup>6</sup> Burst Mode: -35...+13 dBm

<sup>7</sup> in Broadband Mode when connected to Broadband Port (activated SW option required – default at variant 2305/26)

<sup>8</sup> under reference conditions: -7 dBm (CW), nominal wavelength, 23°C ± 3 K, 45 to 75% relative humidity, SM test fiber (Single Mode, 9 μm core, 8° APC), when used with SC/APC connectors

<sup>9</sup> When used with VIAVI Light Source and received optical power level > -50 dBm

## NG-PON2 Power Meters

	<b>OLP-87 (2305/40) Composite DS/US</b>	<b>OLP-87 (2305/41) Selective DS / Composite US</b>
Photo Diode	InGaAs	InGaAs
Spectral Range	Passband (1260...1360 nm, 1450...1500 nm, 1500...1620 nm, 1535...1565 nm, 1585...1625 nm)	Passband (1260...1620 nm), TWDM (1598.89, 1598.04, 1597.18, 1596.34 nm)
Wavelength Setting	1310, 1490, 1535, 1550, 1600 nm	1535, 1596.34, 1597.18, 1598.04, 1598.89 nm
Resolution	0.01 dB, 0.001 $\mu$ W	0.01 dB, 0.001 $\mu$ W
Measurement Range for Power Level	1310 nm: -40...+13 dBm <sup>10</sup> 1490 nm: -40...+13 dBm 1535 nm: -40...+13 dBm 1550 nm: -40...+26 dBm 1600 nm: -40...+26 dBm	-40...+13 dBm <sup>10</sup>
Maximum Power Level	1310 nm: +17 dBm 1490 nm: +15 dBm 1535 nm: +17 dBm 1550 nm: +27 dBm 1600 nm: +27 dBm	+17 dBm
Measurement Uncertainty	$\pm 0.5$ dB <sup>11</sup>	
ORL	> 60 dB	> 60 dB
Pass-through insertion loss	< 1.5 dB	< 1.5 dB
Number of Calibrated Wavelengths	4 (1310, 1490, 1550, 1625 nm)	5 (1535, 1596.34, 1597.18, 1598.04, 1598.89 nm)
Optical Connectors	2x SC/APC (1x OLT, 1x ONT)	2x SC/APC (1x OLT, 1x ONT)

<sup>10</sup> Burst Mode: -35...+13 dBm

<sup>11</sup> Under reference conditions: 0 dBm (CW), nominal wavelength, 23°C  $\pm$  3 K, 45 to 75% relative humidity, SM test fiber (Single Mode, 9 $\mu$ m core, 8° APC), when used with SC/APC connectors

## TruePON Tester

	<b>OLP-88 (2327/26)</b>	<b>OLP-88 (2327/36) or OLP-88P (2328/36)</b>	<b>OLP-88 (2327/37)<sup>12</sup></b>
Photo Diode	InGaAs	InGaAs	InGaAs
Spectral Range	Passband (1290...1330 nm, 1450...1495 nm)	Passband (1290...1330 nm, 1450...1495 nm, 1540...1560 nm)	Passband (1250...1330 nm, 1450...1495 nm, 1528...1610 nm)
Wavelength Setting	1310, 1490 nm	1310, 1490, 1550 nm	1270, 1310, 1490, 1577 nm
Resolution	0.01 dB, 0.001 $\mu$ W	0.01 dB, 0.001 $\mu$ W	0.01 dB, 0.001 $\mu$ W
Measurement Range for Power Level	1310 nm: -40...+13 dBm <sup>13</sup> 1490 nm: -45...+7 dBm	1310 nm: -40...+13 dBm <sup>13</sup> 1490 nm: -45...+7 dBm 1550 nm: -45...+26 dBm	1270 nm: -40...+13 dBm <sup>13</sup> 1310 nm: -40...+13 dBm <sup>13</sup> 1490 nm: -45...+7 dBm 1577 nm: -45...+13 dBm
Measurement Range for PON-ID	GPON: -30...+7 dBm <sup>14</sup>		
Maximum Power Level	1310 nm: +17 dBm 1490 nm: +9 dBm	1310 nm: +17 dBm 1490 nm: +9 dBm 1550 nm: +27 dBm	1270 nm: +17 dBm 1310 nm: +17 dBm 1490 nm: +9 dBm 1577 nm: +15 dBm
Measurement Uncertainty	$\pm 0.5$ dB <sup>15</sup>		
Number of Calibrated Wavelengths	2 (1310, 1490 nm)	3 (1310, 1490, 1550 nm)	4 (1270, 1310, 1490, 1577 nm)
Optical Connectors	2x SC/APC (1x OLT, 1x ONT)	2x SC/APC (1x OLT, 1x ONT)	2x SC/APC (1x OLT, 1x ONT)

<sup>12</sup> Depending on the view, only one US wavelength is displayed

<sup>13</sup> Burst Mode: -35...+13 dBm

<sup>14</sup> No XGS-PON data analysis

<sup>15</sup> Under reference conditions: -7 dBm (CW), nominal wavelength, 23°C  $\pm$  3 K, 45 to 75% relative humidity, SM test fiber (Single Mode, 9 $\mu$ m core, 8° APC), when used with SC/APC connectors

## Return Loss Meters

	ORL-85 (2311/21)	ORL-85 (2311/23)	ORL-85 (2311/26)
<b>Light Source</b>			
Type	Class 1 laser product (IEC 60825-1:2007)		
Wavelengths	1310, 1550 nm	1310, 1550, 1625 nm	1310, 1490, 1550, 1625 nm
Wavelength Accuracy	± 20 nm	± 20 nm	± 20 nm
FWHM Spectral Width	< 5 nm	< 5 nm	< 5 nm
Output Level	Typ. -3 dBm	Typ. -6 dBm	Typ. -6 dBm
Short Term Stability	± 0.02 dB within 15 min	± 0.02 dB within 15 min	± 0.02 dB within 15 min
Long Term Stability	± 0.2 dB within 8 hrs.	± 0.2 dB within 8 hrs.	± 0.2 dB within 8 hrs.
<b>Return Loss Meter</b>			
Wavelength Setting	1310, 1550 nm	1310, 1550, 1625 nm	1310, 1490, 1550, 1625 nm
Resolution	0.01 dB, 0.001 μW	0.01 dB, 0.001 μW	0.01 dB, 0.001 μW
Measurement Range for Return Loss	0...70 dB	0...70 dB	0...70 dB
Measurement Uncertainty	± 0.7 dB (range 0...50 dB) ± 0.9 dB (range 50...60 dB)	± 0.7 dB (range 0...50 dB) ± 0.9 dB (range 50...60 dB)	± 0.7 dB (range 0...50 dB) ± 0.9 dB (range 50...60 dB)
<b>Power Meter</b>			
Photo Diode	InGaAs	InGaAs	InGaAs
Spectral Range	Passband (1260...1650 nm)	Passband (1260...1650 nm)	Passband (1260...1650 nm)
Wavelength Setting	1310, 1550 nm	1310, 1550, 1625 nm	1310, 1490, 1550, 1625 nm
Resolution	0.01 dB, 0.001 μW	0.01 dB, 0.001 μW	0.01 dB, 0.001 μW
Measurement Range for Power Level	-85...+15 dBm	-85...+15 dBm	-85...+15 dBm
Max. Power Level	+ 15 dBm	+ 15 dBm	+ 15 dBm
Measurement Uncertainty	± 0.5 dB <sup>16</sup>		
Number of Calibrated Wavelengths	2 (1310, 1550 nm)	3 (1310, 1550, 1625 nm)	4 (1310, 1490, 1550, 1625 nm)
Optical Connectors	1x SC/APC	1x SC/APC	1x SC/APC

<sup>16</sup> Under reference conditions: -22 dBm (CW), nominal wavelength, 23°C ± 3 K, 45 to 75% relative humidity, SM test fiber (Single Mode, 9 μm core, 8° APC), when used with SC/APC connectors

## Patch Cord Microscope (PCM) – SmartClass Fiber P-variants

Typical at 25 °C	
Live Image	320 x 240 x 8 Bit Gray, 10 fps
Light Source	Blue LED, 100,000+ hour life
Lighting Technique	Coaxial
Low-Magnification Field-of-View (FOV)	Horizontal: 740 µm
	Vertical: 550 µm
High-Magnification Field-of-View (FOV)	Horizontal: 370 µm
	Vertical: 275 µm

## General Information

Typical at 25 °C	
Display	High contrast 3.5" color LCD touch screen (4:3 ration)
Fiber inspection	Via external P-5000i or via patch cord microscope (P-variants)
<b>Storage and Interface</b>	
Data Storage	10,000 results
Data download capability	Via USB interface
Remote control capability	Via USB or Ethernet
Electrical interfaces	2x USB-A, 1x micro-USB, 1x Ethernet
Wireless interfaces	WiFi or Bluetooth
<b>Power Options</b>	
Dry batteries	8x Mignon (AA) Alkaline 1.5 V
Battery pack	1x Li-ion pack 3.7 V
AC operation	Via Universal Power Adapter
Operating time	12 hrs. (OLP) with the dry batteries
<b>Environmental Conditions</b>	
EMI/ESD	CE compliant
Recommended calibration interval	3 years
Operating temperature	-10 to +55°C (14 to 122°F)
Storage temperature	-20 to +70°C (-4 to 158°F)
Dimensions (H x W x D)	Stand alone: 208 x 112 x 64 mm (8.2 x 4.4 x 2.5 in)
	P-variants: 208 x 153 x 64 mm (8.2 x 6.0 x 2.5 in)
Weight	Stand alone: 750 g (1.6 lbs.)
	P-variants: 850 g (1.85 lbs.)

## Ordering Information

Description	Catalog Number
<b>Light Sources</b>	
OLS-85 - SM Source 1310/1550 nm SC mounted FC enclosed	2313/01
OLS-85 - SM+MM Quad Source 850/1300/1310/1550 nm SC mounted FC enclosed	2313/05
OLS-85 - SM Source 1310/1490/1550/1625 nm SC mounted FC enclosed	2313/06
OLS-85 - SM Source 1310/1550/1625 nm SC/APC mounted FC enclosed	2313/22
OLS-85 - SM Source 1310/1490/1550/1625 nm SC/APC mounted FC enclosed	2313/26
Light Sources include: instrument, soft shoulder case, interchangeable adapter FC, quick start guide and safety instructions, alkaline batteries	
<b>Power Meters</b>	
OLP-82 - Broadband Power Meter with UPP 2.5 mm mounted	2315/01
OLP-82P - Broadband Power Meter with UPP 2.5 mm mounted and PCM	2316/01
OLP-85 - Broadband Power Meter 100 dB dynamic range	2307/03
OLP-85P - Broadband Power Meter 100 dB dynamic range and PCM	2308/03
Power Meters include: instrument, soft shoulder case, interchangeable adapter FC, quick start guide and safety instructions, alkaline batteries	
<b>Selective PON Power Meters</b>	
OLP-87 - Selective PON Power Meter 1310/1490/1550 nm SC mounted FC enclosed	2305/11
OLP-87 - Selective PON Power Meter 1310/1490 nm SC mounted FC enclosed	2305/26
OLP-87 - Selective PON Power Meter 1310/1490/1550 nm SC/APC mounted FC enclosed	2305/36
OLP-87P - Selective PON Power Meter 1310/1490/1550 nm SC/APC mounted FC enclosed and PCM	2306/36
OLP-87 - Selective PON Power Meter 1270/1310/1490/1550/1577 nm SC mounted FC enclosed	2305/66
OLP-87P - Selective PON Power Meter 1270/1310/1490/1550/1577 nm SC mounted FC enclosed and PCM	2306/66
Broadband SW option for OLP-87 (version 2305/11, 2305/36, 2306/36, 2305/66, 2306/66)	2305/94.01
Selective PON Power Meters include: instrument, soft shoulder case, hands-free carrier, interchangeable adapter FC, quick start guide and safety instructions, alkaline batteries	
<b>NG-PON2 Power Meters</b>	
OLP-87 - NG-PON2 Power Meter 1310/1490/1535/1550/1600 nm SC mounted	2305/40
OLP-87 - Selective NG-PON2 Power Meter SC mounted	2305/41
NG-PON2 Power Meters include: instrument, soft shoulder case, hands-free carrier, interchangeable adapter FC, quick start guide and safety instructions, alkaline batteries - version 2305/41 includes one-click cleaner, battery pack and power supply instead of alkaline batteries	



## Ordering Information continued

Description	Catalog Number
<b>TruePON Testers</b>	
OLP-88 - TruePON Tester GPON	2327/26
OLP-88 - TruePON Tester GPON + RF-Video	2327/36
OLP-88P - TruePON Tester GPON + RF-Video and PCM	2328/36
OLP-88 - TruePON Tester GPON and XGS-PON power level (requires 2327/94.04)	2327/37
Alien/Rogue ONU/ONT detection for OLP-88 (version 2327/36, 2328/36, 2327/37)	2327/94.01
PON-ID detection (OLT-ID, ODN class, ToL) for OLP-88 (version 2327/36, 2328/36, 2327/37)	2327/94.02
SW option kit (2327/94.01 and 2327/94.02) for OLP-88 (version 2327/26 only)	2327/94.03
XGS-PON power level measurement for OLP-88 (version 2327/37 only)	2327/94.04
TruePON Testers include: instrument, soft shoulder case, interchangeable adapter SC, quick start guide and safety instructions, battery pack and power supply	
<b>Return Loss Meters</b>	
ORL-85 - Return Loss Meter 1310/1550 nm SC mounted FC enclosed	2311/21
ORL-85 - Return Loss Meter 1310/1550/1625 nm SC mounted FC enclosed	2311/23
ORL-85 - Return Loss Meter 1310/1490/1550/1625 nm SC mounted FC enclosed	2311/26
Return Loss Meters include: instrument, soft shoulder case, interchangeable adapter FC, quick start guide and safety instructions, alkaline batteries	

## Optional/Configurable

Description	Catalog Number
<b>General</b>	
WiFi adapter spare	2327/90.01
Bluetooth adapter spare	2327/90.02
<b>Calibration Report</b>	
Calibration Report for OLS-85	2313/90.01
Calibration Report for OLP-85	2307/90.01
Calibration Report OLP-85P	2308/90.01
Calibration Report OLP-87/-88	2305/90.03
Calibration Report OLP-87P	2306/90.01
Calibration Report ORL-85	2311/90.01
<b>Optical Adapters</b>	
Switchable Optical Adapter SC/PC	2155/00.06
Switchable Optical Adapter SC/APC	2155/00.26
Switchable Optical Adapter FC/PC FC/APC	2155/00.05
Switchable optical adapter LC/PC LC/APC	2155/00.07
Switchable optical adapter LC/APC	2155/00.27
Switchable Optical Adapter ST/PC	2155/00.32
UPP 2.5 mm for Power Meters	VPP-UPP25
UPP 1.25 mm for Power Meters	VPP-UPP12
FC Type NTT.D3 (for OLP-85)	2014/00.09
DIN 47256 LSA -PC -APC (for OLP-85)	2014/00.17

## Optional/Configurable continued

Description	Catalog Number
ST Type (for OLP-85)	2014/00.21
SC/PC SC/APC (for OLP-85)	2014/00.24
E-2000 -PC -APC (for OLP-85)	2014/00.26
UPP for LC MU D 1.25 mm (for OLP-85)	2014/00.28
LC F-3000 -PC -APC (for OLP-85)	2014/00.29
UPP for DIN FC SC ST and MST D 2.5 mm (for OLP-85)	2014/00.31
<b>Battery and Power Supply</b>	
2x Alkaline batteries Mignon AA-Size LR6 (four of this this item is required for one SmartClass Fiber instrument i.e., a total of 8 batteries)	2229/90.01
Rechargeable Battery Pack	2305/90.02
Rechargeable Battery Pack with Power Supply	2305/90.04
Power Supply	2305/90.01
<b>Cases and Carriers</b>	
Carrier For Displays Without PCM	FITP-UC4
Carrier For Displays With PCM (for P-variant)	FITP-UC4P
Soft Shoulder Case for 1 instrument	2128/03
Soft Shoulder Case for up to 4 instruments	2128/04
<b>Inspection</b>	
P5000i digital analysis microscope with 4 tips	FBP-SD101