



VIavi

OLP-37XV2

**SmartPocket™ V2
Optical Power Meters**

User manual

BN 2335/98.11

2021.07

English

Please direct all enquiries to your local Viavi sales company.
The addresses can be found at:

www.viavisolutions.com/en-us/contact-sales-expert

The description of additional features of the device can be found at:
www.viavisolutions.com/en-us/products/network-test-and-certification

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Viavi Solutions Deutschland GmbH
Arbachtalstraße 5, D-72800 Eningen u. A.

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Changes may be made to specifications, designations and delivery information.

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1 INTRODUCTION

OLP-37XV2 Optical Power Meter

The OLP-37XV2 is a specialized optical power meter designed for use cases such as system/network qualification, subscriber activation, and troubleshooting of passive optical network (PON).

The instrument performs wavelength selective optical power measurements suitable for testing G-PON networks, as defined in ITU-T G.983/4 or IEEE 802.3ah and XGS-PON networks, as defined in ITU-T G.9807.1 respectively.

An integrated pass/fail analysis feature simplifies standard conformity and optical budget/margin testing, and provides unambiguous measurement result presentation.

With PC-based reporting, all test results can be summarized in a professional, industry-proven report.

Main features

The OLP-37XV2 offers many helpful features that are optimized to workflows of typical telecom and cable TV operators, and thus ensure that test times are kept as short as possible.

- Accurate and repeatable wavelength selective power measurements
- Unambiguous pass/fail result presentation and user definable pass/fail thresholds
- Data storage for up to 1000 measurements
- USB-C interface for measurement data transfer to a laptop or PC
- Easy operation and instantly ready to operate
- Versatile power supply options using dry or rechargeable batteries or via the USB-C interface
- Automatic power-off (can be disabled)
- Color-coded test head cover for easy distinction between APC and PC connector types
- Display of G-PON and XGS-PON signals simultaneously
- Smart-Reporter PC software for data management and report generation

User manual update

If the operating instructions about features provided by your device are missing, please visit the Viavi web site to check if additional information is available.

To download the latest operating instructions:

1. Visit the Viavi web site at www.viavisolutions.com.
2. Search for **SmartPocket V2**.
3. Open the download area and download the operating instructions if available.

Symbols used in this user manual

Various elements are used in this user manual to draw attention to special meanings or important points in the text.

Symbols and terms used in warnings

The following warnings, symbols and terms are used in this document in compliance with the American National Standard ANSI Z535.6-2011:

NOTICE

Follow the instructions carefully to avoid **damage to or destruction of the instrument**.

CAUTION

Follow the instructions carefully to avoid a low or medium risk of **injury to persons**.

WARNING

Follow the instructions carefully to avoid **potential death or severe injury** to persons.

DANGER

Follow the instructions carefully to avoid **death or severe injury** to persons.



High Voltage

Follow the instructions carefully to avoid **damage** to the instrument or **severe injury** to persons.

This safety instruction is given if the danger is due to **high voltage**.



Laser

Follow the instructions carefully to avoid **damage** to the instrument or **severe injury** to persons.

This safety instruction is given if the danger is due to **laser radiation**. Information specifying the laser class is also given.

Warning format

All warnings have the following format:

⚠ WARNING

Type and source of danger

Consequences of ignoring the warning

- ▶ Action needed to avoid danger.

The following character formats are used in this user manual:

✓	<p>Requirement</p> <p>This requirement must be met first; e.g.</p> <p>✓ The device is switched on.</p>
▶ 1. 2.	<p>Instruction</p> <p>Follow the instructions given (the numbers indicate the order in which the instructions should be followed); e.g.</p> <p>▶ Select mode.</p>
<i>Italics</i>	<p>Result</p> <p>Indicates the result of following an instruction; e.g.</p> <p><i>The page opens.</i></p>
Bold type face	<p>Pages, controls, and display elements</p> <p>Screen pages, controls, and display elements are indicated in bold type.</p>
Text in blue	<p>Cross references</p> <p>Cross references are indicated in blue type. When using the PDF version, just click on the blue text to skip to the cross reference.</p>
[MODE]	<p>Device keys</p> <p>Device keys are indicated within square brackets.</p>

2 SAFETY INFORMATION



- ▶ All safety information for your device can be found in the printed booklet “Safety, Disposal and Environmental Protection” provided with your device.
- ▶ Carefully read and follow all instructions given there.



- ▶ The booklet “Safety, Disposal and Environmental Protection” is attached to this pdf. You can open it from the attachment window or by clicking the thumbnail on the left.

3 GETTING STARTED

Unpacking the device

Packing material

We suggest that you keep the original packing material. It is designed for reuse (unless it is damaged during shipping). Using the original packing material ensures that the device is properly protected during shipping.

Checking the package contents

Your device is shipped with the following accessories:

- 2.5 mm universal adapter
- 2 dry batteries AA
- User manual
- Belt bag

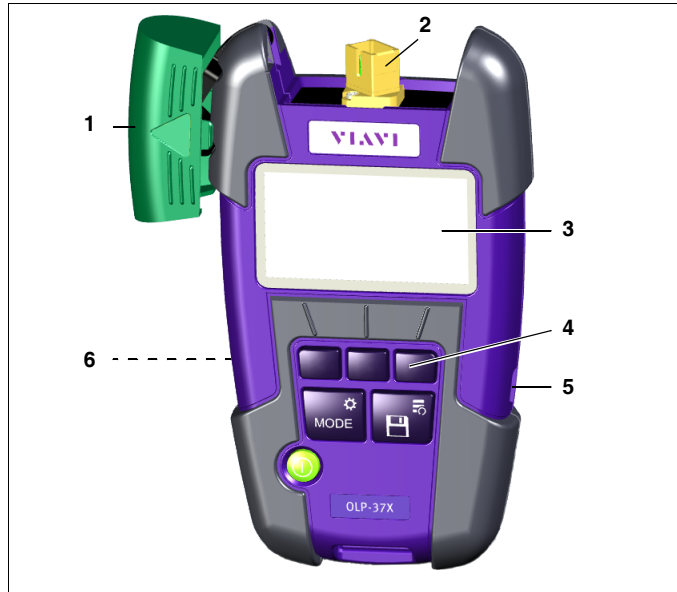
Checking for shipping damage

After you unpack the device, check to see if it has been damaged during shipping. This is particularly likely if the packaging is visibly damaged. If there is damage, do not attempt to operate the device. Doing so can cause further damage. In case of damage, please contact your local Viavi Sales Company. Addresses can be found at www.viavisolutions.com.

Recovery following storage/shipping

Condensation can occur if a device that is stored or shipped at a low temperature is brought into a warm environment. To prevent damage, wait until no more condensation is visible on the surface of the device before powering it up. Do not operate the instrument until it has reached its specified temperature range and wait until it has cooled down if the instrument was stored at a high temperature (see “[Environmental conditions](#)” on [page 28](#)).

Device overview



1 Test head cover

2 Fixed SC adapter

3 Display

4 Key pad

Representation in the user manual:

[■□□] Context sensitive keys (here left key is selected)

[MODE] Mode/Settings key

[📁] Save/Results key

[⏻] Power key

5 USB interface

For power supply and measurement data downloads and updates.

6 Battery compartment (on rear of the device)

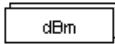
Keys

The key pad contains two types of keys:

- **Context sensitive keys:** The functions of these keys depend on the selected mode or menu and is shown in the display above the key.
- **Function keys:** The functions of these keys are always the same and shown on the key itself.

Key usage (first and second function levels)

The function keys and the context sensitive keys in certain modes have two function levels.



A second function level is indicated by two cascading frames.

- **Short press:** Select the first level function.
- **Long press:** Holding the key for at least 2 sec. opens the second level. You then have access to additional functions or a menu to change settings.

	Short press	Long press
	Press to switch the device on/off.	
Context keys 	Left key: Select mode G-PON > XGS-PON > Dual > ...	–
	Center key: Abs>Ref	–
	Right key: Select mode dBm/Watt > Loss > PF Abs > PF Loss > ...	Select dBm or Watt
MODE key 	–	Open the settings menu.
Save/Result key 	Store the current measurement.	Open the list of saved measurements.

Power Supply

NOTE: The devices are not designed for batteries based on lithium.

The following power sources can be used to operate the OLP-37XV2:

- Two 1.5 V dry batteries (Mignon AA size, alkaline type recommended)
- Two 1.2 V NiMH rechargeable batteries (Mignon AA size)
- via AC adapter over USB interface

Battery operation

▲ WARNING

Dangers in handling batteries

Handling batteries may be dangerous. Please note the following safety instructions.

- ▶ Please note the battery operation safety information in the booklet **"Safety, Disposal and Environmental Protection"** provided with your device.

Replacing the batteries

- ▶ Do not replace individual batteries. Always change both batteries at the same time.
- ▶ Always use batteries of the same type; i.e. do not mix rechargeable and non-rechargeable batteries.

Replacing the batteries

The battery compartment is on the back of the device.

1. Pull down the lid to open the battery compartment.

NOTICE: Take care to insert the batteries correctly.

The correct polarity is indicated by a diagram inside the battery compartment.

2. Insert new batteries or replace dead ones.
3. Close the battery compartment.
4. Press [Ⓞ] to switch on.

NOTE: The batteries cannot be recharged with the OLP-37XV2.

General tips on using batteries

- Never use batteries based on lithium.
- Always handle batteries with care.
- Do not drop or damage the batteries or expose them to excessively high temperatures.
- Do not store rechargeable batteries for more than one or two days at very high temperatures (e.g. in a vehicle), either separately or fitted in the device.
- Do not leave discharged batteries in the device for a long time if it is not being used.
- Do not store rechargeable batteries for more than 6 months without recharging them at intervals.
- Avoid deep discharging of the batteries as this can cause the cell polarity to reverse and make the battery useless.

Protecting the environment

Please dispose of any unwanted dry batteries and rechargeable batteries carefully. They should also be removed from the instrument if it is to be scrapped. If facilities in your country exist for collecting waste or for recycling, please make use of them rather than throwing the batteries in the normal trash. You will often be able to return used batteries to the place where you purchase new ones. Any dry or rechargeable batteries that you purchased from Viavi can be returned to one of our Service Centers for disposal.

Operation from AC power

To fit one of the mains plug adapters:

- ▶ See Fig. 1 and follow the instructions which are shown on the packaging of the mains plug adapter.

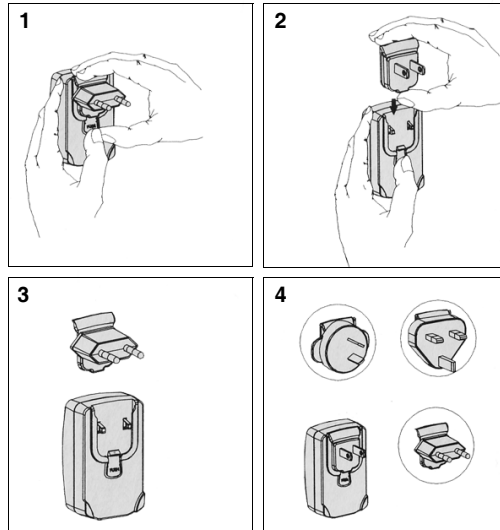


Fig. 1 Fitting the mains plug adapter



To operate the OLP-37XV2 from AC power:

1. Connect the USB-C connector power cord to the OLP-37XV2.
2. Plug the mains plug adapter into the AC receptacle.

4 OPERATION

Switching the device on/off

The OLP-37XV2 has two battery power modes:


Mode	Icon	Description
Permanent ON (PERM)		The device is switched on permanently.
Automatic OFF (ECON)		The device switches off 20 minutes after the last operation. This function is only available when the device is powered from batteries.

To switch the device on/off:

- ▶ Press [⊙] to switch the device on/off.

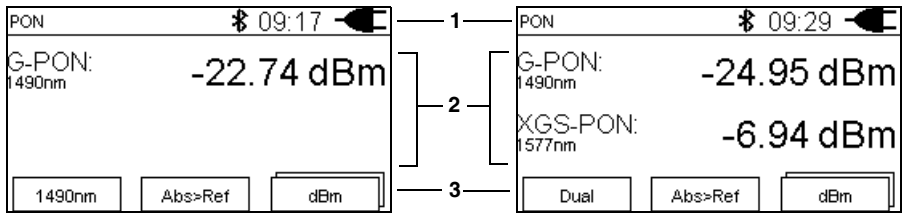
Selecting a power mode

To change the power mode:

- ✓ The device is switched on.
- 1. Long press [MODE] to open the settings menu.
- 2. Use [↑↓] to select ECON.
- 3. Press [] to select power mode:
ON = ECON
OFF = PERM
- 4. Press [MODE] to close the menu.

Display elements

The following elements can be found in the display.



Display of one value (here G-PON)

Display of both values in Dual mode

1 – Status bar

PON	Mode Further modes for future use.
	Bluetooth® is active Bluetooth connection allows for data transfer via the MobileTech app (for future use).
7:15	Real Time Clock Time can be changed via the settings menu.
	Battery status in PERM power mode: Device remains switched on.
	Battery status in ECON power mode: Device switches off 20 minutes after the last operation.
	The device is powered via USB

2 – Center of display

... db/dBm	Shows the measurement results in dBm, dB or W.
...-PON ... nm	Display of selected mode and wavelength.

3 – Context sensitive key functions

1490nm Dual	Selection of mode: 1490 nm > 1577 nm > Dual >....
	Short press: Setting current measurement value as new reference level.
	Short press: Select mode dBm/Watt > Loss > PF Abs > PF Loss > ... Long press: Toggle dBm <> Watt

Settings menu

The following settings can be changed in the settings menu.

- ▶ To open the settings menu long press [MENU].

Item	Settings	Description
Hour	1...12	▶ Press [] to change setting: – Press once to change one step at a time. – Hold down the key to increase the step change rate.
Minute	1...59	
Year	2020...2030	
Month	01...12	
Day	01...31	
About	Show device data including last calibration date	▶ Press [] to confirm setting. ▶ Press [] to return to the settings menu.
Factory Reset	Reset	
Auto Lambda	ON/OFF	Press [] (right context key to toggle ON/OFF
Bluetooth LE	ON/OFF	
ECON	ON/OFF ON = ECON OFF = PERM	

Selecting a operation mode

The OLP-37XV2 provides three operation modes with following displays:

- **G-PON:** Gigabit Passive Optical Network measurement at 1490 nm
- **XGS-PON:** 10-Gigabit-Capable Symmetric Passive Optical Network measurement at 1577 nm
- **Dual:** Display of G-PON and XGS-PON simultaneously

To select a operation mode:

- ▶ Press [**■□□**] to select a mode.

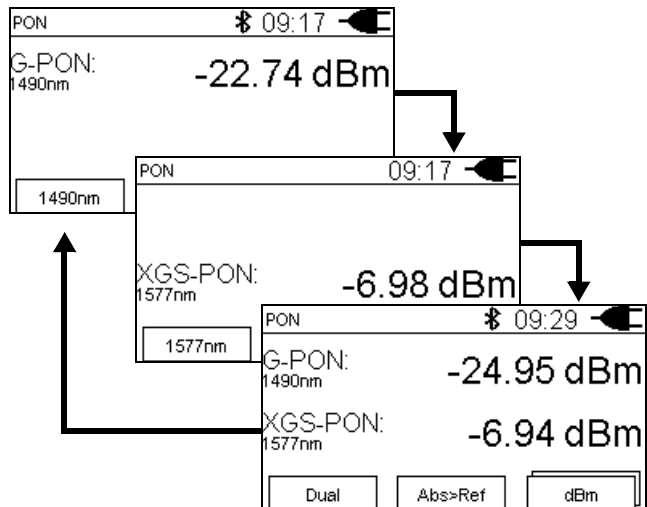


Fig. 2 Operation modes

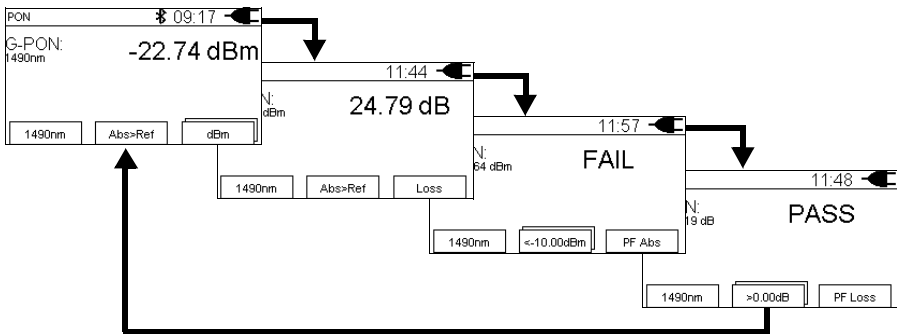
Selecting a display mode

The OLP-37XV2 provides following display modes:

- **dBm/Watt:** Display of absolute power level
- **Loss:** Display of power level relative to a reference value
- **PF Abs:** Pass/Fail indication based on an absolute power threshold
- **PF Loss:** Pass/Fail indication based on a relative power threshold

To select a display mode:

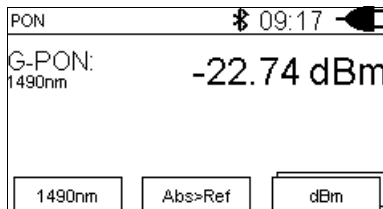
- ▶ Press [] to toggle between the displays modes.



Absolute power level mode

The power level is displayed in dBm or Watts (nW, μ W, mW).

- ▶ Long press [] to toggle dBm/Watts.



NOTE: The context sensitive field shows the selected unit.

Loss mode

In **Loss** mode the power level relative to a reference value is displayed. The reference value can be set by defining the current power level as the reference value [**Abs>Ref**].

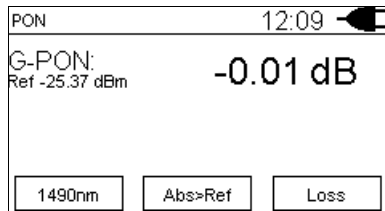
- ▶ Press [] to display relative power level.

Setting the reference level

- ✓ **Absolute power level** mode or **Loss** mode is selected.

- ▶ Press [**Abs>Ref**].

The current power level is set as the new reference level.



NOTE: The reference level can be stored for both wavelength separately.

When **Dual** is selected, the power levels of both wavelengths are set as reference level simultaneously.

Pass/Fail mode

An integrated pass/fail analysis feature simplifies standard conformity testing and provides unambiguous measurement result presentation.

The OLP-37XV2 provides two Pass/Fail modes:

- **PF Abs:** Pass/Fail indication based on a absolute power threshold
- **PF Loss:** Pass/Fail indication based on a loss threshold

To select a Pass/Fail mode:

- ▶ Press [□□■] until **PF Abs** or **PF Loss** is displayed.

NOTE: When **PF Abs** or **PF Loss** is selected the two modes can also be toggled by pressing [□■□].

Setting the fail threshold

Setting the fail threshold is identical for both Pass/Fail modes.

- ✓ **PF Abs** or **PF Loss** mode is selected. Press [□■□] to toggle between both modes.

1. Press [■□□] to select a wavelength (see also page 18).
2. Long press [□■□].

The Set Fail Threshold screen opens.



3. Use [+]/[-] to change the threshold.
4. Press [✓] to save the new threshold.

NOTE: When Dual mode is active, the fail threshold can not be set. Select G-PON or XGS-PON to set threshold individually.

5 MEMORY MANAGEMENT

General information

The OLP-37XV2 allows you to save the measured power level values in a data memory and recall them as required.

Up to 1000 results can be stored.

NOTE: See also "[Specifications](#)" on page 27 for additional data management tools.

Storing measurements

- ▶ Press **[F1]** to save the current result.

The result is saved when "Saving ..." appears on the display and below the name of the currently saved data.

The results are always stored with the current date-/ timestamp (e.g. 2021-01-13T16-05-52, corresponding to January 13th 2021 at 16h:05min:52s)

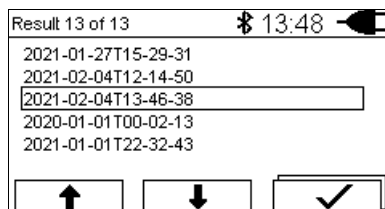


The new results are always appended successively at the last memory location, even if you clear a previously assigned memory location with a lower number.

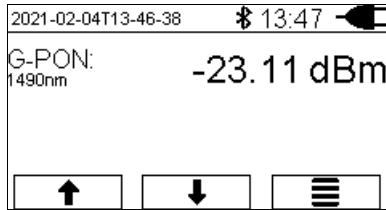
Recalling measurements

1. Long press **[F1]**.

The device shows the list of saved measurements.



2. Press [**↑**]/[**↓**] to browse through the list.
3. Press [**✓**] to open the highlighted entry.
The selected measurement data is displayed.

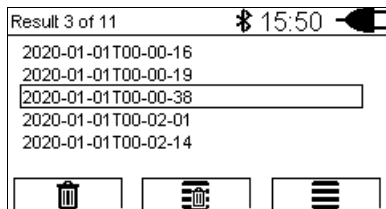


4. Press [**☰**] to return to the list or, press [**↑**]/[**↓**] to show next/previous result or press [**MODE**] to exit.

Deleting measurements

✓ The device shows the list of saved measurements.

1. If you want to delete a single entry, use [**↑**]/[**↓**] to select it.
2. Long press [**✓**] to open the sub menu.



3. Press [**🗑️**] to delete the selected entry. or press [**☰**] to delete all results.
A dialog will aks you to confirm the deletion.



4. Press [**✓**] to accept or press [**X**] to cancel.
5. Press [**☰**] to close the sub menu and to show the list of saved measurements or press [**MODE**] to exit.

NOTE: You cannot select and overwrite empty memory locations.

6 DATA EXPORT AND FIRMWARE UPDATE

The USB interface or the Bluetooth® interface can be used for data export and firmware update.

USB and SmartReporter

When using the USB interface the SmartReporter allows you to easily transfer stored measurement data to a PC and to update the firmware.

The SmartReporter reporting tool always contains the latest Firmware Revision for all your SmartPocket™ V2 devices. You can download the latest SmartReporter version for free from:

<https://updatemyunit.net/> > Application Software.

- ▶ For more information about data export and firmware update via USB and SmartReporter please refer to the SmartReporter user manual.

Bluetooth® and MobileTech app / StrataSync cloud

You have also the choice to upload the saved data and to update the firmware using Bluetooth® via Viavi's MobileTech App into the StrataSync cloud.

- ▶ Please contact your Viavi representative for more information.

7 MAINTENANCE



⚠ WARNING

Invisible laser radiation

Maintenance or cleaning of the instrument while it is connected or operating may damage the instrument or injure you.

- ▶ Make sure that the instrument is switched off and disconnected from all power sources and optical radiation sources before maintenance or cleaning.
- ▶ Do not open the instrument for maintenance or service. Service shall be performed by Viavi trained personnel only.

Cleaning the test port

It is a good idea to check that the optical connections are clean and to clean them if necessary before starting measurements. Even very small dust particles on the end surfaces of the plugs or in the test adapters can adversely affect the accuracy of the measurement.

NOTICE

Damage to the photo diode

Touching the photo diode could scratch the glass surface.

- ▶ Be careful when cleaning the photo diode and do not use any rough cleaning materials.

1. Switch off the device.
2. Blow into the test adapter with compressed and clean air to remove dust.

NOTE: Cover the optical connections with the dust cap whenever they are not in use. This prevents them from getting dirty.

Cleaning the instrument

If the device gets dirty through use, you can clean it using a soft cloth moistened with a mild solution of detergent.

NOTICE

Water and cleaning fluids

The instrument may be damaged or destroyed if water or cleaning fluids penetrate it.

- ▶ Make sure that water or cleaning fluids do not get inside the instrument.
-

8 SPECIFICATIONS

OLP-37XV2

G-PON (1490 nm downstream)

Power measurement range	-45 to +13 dBm
Maximum permitted input level	+15 dBm
Spectral pass band	1260 to 1500 nm
Power uncertainty	±0.5 dBm ¹⁾

1) At -2 dBm, at 23 °C ± 3 °C, at nominal wavelength

XGS-PON (1577 nm downstream)

Power measurement range	-45 to +13 dBm
Maximum permitted input level	+15 dBm
Spectral pass band	1540 to 1650 nm
Power uncertainty	±0.5 dBm ¹⁾

1) At -2 dBm, at 23 °C ± 3 °C, at nominal wavelength

General specifications

Calibrated wavelengths	1490 nm, 1577 nm
Optical adapter system	Fixed SC

Memory

Memory capacity	1000 measurement results
Data readout	via USB-C interface

Calibration interval

Recommended calibration interval	3 years
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Power supply

Dry batteries	2 x AA, 1.5 V (never use batteries based on lithium)
Rechargeable batteries	NiMH, 2 x AA, 1.2 V
Power consumption	2.5 W max.
Operating life with dry/ rechargeable batteries	typ. 70 h (Bluetooth® off)
AC line operation	With separate 5 V DC USB adapter. Use EMC and Safety certified low energy adapters only.
Power saving	Auto power-off after approx. 20 min (can be disabled)

EMC and safety

Electromagnetic compatibility (EMC)	EN 61326-1:2013
Device safety	EN 61010-1:2010

Environmental conditions

Operating temperature range	-10 to +55 °C (14 to 131 °F)
Storage and transport	-40 to +70 °C (-40 to 158 °F)
Altitude	2000 m max. (6500 ft. max.)
Pollution degree	2
Ingress protection	IP44
Relative humidity up to +31 °C	15 to 85 %
Absolute humidity > +31 °C	1 to 29 g/m ³

Occasional condensation is tolerable as a limit condition.

Dimensions and weight

Dimensions (H x W x D)	30 x 80 x 150 mm (1.18 x 3.15 x 5.90 in)
Weight (incl. batteries)	200 g (0.44 lb)

9 ORDERING INFORMATION

Devices

OLP-37XV2

Optical Power Meter (G-PON, XGS-PON)	OLP-37XV2
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Calibration report

OLP-37XV2	BN 2333/90.03
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Accessories

Cleaning materials, power supplies

OCK-10 Optical cleaning kit	BN 2229/90.21
Cleaning tape for optical connectors	BN 2229/90.07
Spare optical cleaning tape	BN 2229/90.08
NiMH rechargeable batteries, Mignon AA, 1.2 V (2 batteries required)	BN 2237/90.02
AC adapter	BN 2302/90.01

10 PRODUCT REGULATORY COMPLIANCE



- ▶ All information about the product regulatory compliance can be found in the printed booklet "Safety, Disposal and Environmental Protection" provided with your device.



North America
Latin America
China
Germany

+1 844-468 4284
+1 954 688 5660
+86 21 6859 5260
+49 7121 86 0

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