

OLS-34V2 OLS-35V2 OLS-36V2 OLS-38V2

SmartPocket™ V2 Optical Laser Sources

User Manual

BN 2334/98.11 2021.07 English Please direct all inquiries to your local Viavi sales company. The addresses can be found at: www.viavisolutions.com/en-us/contact-sales-expert

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

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Order number: BN 2334/98.11 Issue: 2021.07 Previous issue: 2021.04

Notes:

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



CONTENTS

INTRODUCTION	5 5 6
SAFETY INFORMATION	8
GETTING STARTED Unpacking the device Device overview	9 10
OPERATION 1 Switching the device on/off 1 Switching the laser on/off 1 Display elements 1 The Settings menu 1 Selecting Single-/Multimode (OLS-36V2 only) 1 Selecting a wavelength 1 Enabling signal modulation 1 Selecting Auto-Lambda mode 1 Selecting Multi-Lambda mode 1	4 14 15 16 16 17 17
DATA EXPORT AND FIRMWARE UPDATE 1 USB and SmartReporter	8 18 18
MAINTENANCE 1 Cleaning the test port 1 Cleaning the instrument 2	9 19 20
SPECIFICATIONS 2 OLS-34V2 2 OLS-35V2 2 OLS-36V2 2 OLS-38V2 2 General specifications 2	21 22 22 23 24

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ORDERING INFORMATION	25
Devices	25
Accessories	25
PRODUCT REGULATORY COMPLIANCE	26

1 INTRODUCTION

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OLS-3xV2 Optical Light Sources

The Test Sets are specially designed for high performance testing of all systems, i.e. broadband, PONs, and Gigabit Ethernet. Battery operation from two AA batteries and the robust, shockproof design provide long operating time in the field even under tough conditions. AC line operation via a separate AC adapter and the USB interface ensure ease of use in the laboratory or production environment.

Differences between the devices

The OLS-3xV2 family covers all the modes, wavelengths and fiber types needed. The table below lists the differences between the devices:

Model	BN	Fiber type	Wavelengths	Mount type
OLS-34V2	2334/01	MM 9/125	850/1300 nm	SC
OLS-35V2	2334/11	SM 9/125	1310/1550 nm	SC
OLS-36V2	2334/21	MM 50/125 SM 9/125	850/1300 nm 1310/1550 nm	SC
OLS-38V2	2334/51	SM 9/125	1310/1550/1625 nm	SC

Test adapters

The OLS-3xV2 are delivered with SC adapters. Test adapters for all common connector systems (e.g. FC, ST) can be ordered from Viavi.

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.**

A CAUTION

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

A WARNING

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

A 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:

A 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:

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



2 SAFETY INFORMATION



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



The booklett "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

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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 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 room. To prevent damage, wait until no more condensation is visible on the surface of the device before powering it up. Do not operate the device until it has reached its specified temperature range and wait until it has cooled down if the device was stored at a high temperature (see "Environmental conditions" on page 24).



Device overview



- 1 Test head cover
- 2 SC adapter. OLS-36V2: Port A (SM, left), Port B (MM, right)
- 3 Display
- 4 Key pad

Representation in the user manual:

- [Context sensitive keys (here left key is selected)
- [MODE] Mode/Settings key
- [ON/OFF] Laser on/off
- [①] 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.

	Press to switch the device on/off.
Context keys	Left key: Select a wavelength Center key: Select SM/MM (OLS-36V2 only) Right key: Select modulation frequency
MODE key & MODE	Short press: Select mode and return from Settings menu. Long press: Open Settings menu.
Laser ON/OFF key	Switch laser on/off.

Power supply

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

The following power sources can be used to operate the OLS-3xV2:

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



Battery operation

A WARNING

Dangers when handling batteries

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

 Please note the battery operation safety information in the booklett "Safety, Disposal end 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 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 OLS-3xV2.

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 instrument 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 store 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 figure below 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 OLS-3xV2 from AC power:

- 1. Connect the USB-C connector power cord to the OLS-3xV2.
- 2. Plug the mains plug adapter into the AC receptacle.



4 OPERATION

Switching the device on/off

The OLS-3xV2 has two	battery power modes:
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Mode	lcon	Description
Permanent ON (PERM)		The device is switched on permanently.
Automatic OFF (ECON)	Ø	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 [①] to switch the device on/off.

Selecting a power mode

To change the power mode:

- \checkmark 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.

Switching the laser on/off

Press [ON/OFF] to switch the laser on/off.



Display elements

The following elements can be found in the display.



Display of one power level in Single- λ mode.

Display of two power levels in Multi- λ mode.

1 – Status bar			
Auto-λ Multi-λ Single-λ	Selected/active mode The mode can be changed via the [MODE] key.		
7:15	Real Time Clock Time can be changed via the settings menu.		
	Battery status in PERM power mode: The device remains switched on.		
	Battery status in ECON power mode: The device switches off 20 minutes after the last operation.		
-	The device is powered via USB		
2 - Center	nf display		

er of display

nm	Display of selected wavelength (displayed wavelength depends on settings and model).
db/dBm	Shows the power level in dBm.
270 Hz	Shows selected modulation frequency or CW
A	Laser is switched on

3 - Context sensitive key functions

1550 nm	Press to select the wavelength.
SM	Press to select the fiber mode: SM, MM.
270 Hz	Press to select the modulation frequency,

The Settings menu

The following settings can be changed in the settings menu.

To open the settings menu long press [MENU].

Item	Settings	Description
Hour	112	Press []] to change setting:
Minute	159	 Press once to change one stop at a time
Year	20202030	 Hold down the key to increase the step change
Month	0112	rate.
Day	0131	
About Show device data including last calibration date		 Press [] to confirm setting. Press [] to return to the settings menu.
Factory Reset	Reset	
ECON ON/OFF ON = ECON OFF = PERM		Press [] (right context key to toggle ON/OFF

Selecting Single-/Multimode (OLS-36V2 only)

Press [] to toggle between SM and MM. According to the selected mode port 1 or port 2 is active.

Selecting a wavelength

Selectable wavelengths:

- OLS-34V2: 850/1300 nm
- OLS-35V2: 1310/1550 nm
- OLS-36V2: 850/1310 nm (SM), 1310/1550 nm (MM)
- OLS-38V2: 1310/1550/1625 nm

To select a wavelength:

- ✓ OLS-36V2: SM or MM is selected
- 1. Press [MODE] to skip through the modes and select Single- λ .
- 2. Press [



Enabling signal modulation

Modulation frequencies provided by the OLS-3xV2: CW (continuous wave), 270 Hz, 330 Hz, 1 kHz, 2 kHz

NOTE: Signal modulation is available in Single- λ (all models) and Singlemode (OLS-36V2) only.

To select a modulation frequency:

- \checkmark Single- λ is selected.
- ▶ Press [□□■] to skip through the list: $CW \rightarrow 270 \text{ Hz} \rightarrow 330 \text{ Hz} \rightarrow 1000 \text{ Hz} \rightarrow 2000 \text{ Hz} \rightarrow CW \rightarrow ...$

Selecting Auto-Lambda mode

Auto- λ is a special feature developed by Viavi that allows you to identify wavelengths automatically. To do this, the signal is modulated at a certain frequency, which can be detected by an Auto- λ equipped power meter (such as the Viavi OLP-3xV2 series).

To activate Auto- λ :

- Press [MODE] to skip through the modes and select Auto-λ. The status bar shows Auto-λ.
- **NOTE:** Signal modulation cannot be selected when Auto- λ is enabled.

Selecting Multi-Lambda mode

When Multi- λ mode is activated, the signal of the available wavelengths are sent in parallel.

Multi-X	13:52 🗨
1310 nm	-6 dBm
1550 nm	-6 dBm
SM	

Fig. 2 Example of Multi- λ at OLS-36V2 with SM selected.

To activate Multi- λ :

- Press [MODE] to skip through the modes and select Multi-λ. The display shows Multi-λ.
- **NOTE:** Signal modulation cannot be selected when Multi- λ is enabled.

5 Data Export and Firmware Update

The USB interface or the Bluetooth[®] interface (OLP-3xV2 only) 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 the SmartReporter please refer to the SmartReporter user manual.

Bluetooth® and MobileTech app / StrataSync cloud (OLP-3xV2 only)

Using the OLP-3xV2 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 representive for more information.

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6 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.

For daily use, clean the optical interface of the instrument using Viavi IBC cleaning tool 2.5 mm (see "Cleaning materials, power supplies" on page 25).

To clean the test port in case of severe contamination:

- 1. Switch off the device.
- 2. Remove the test adapter from the optical connection. The connection surface is now accessible.
- Wipe off the connection surface using a cotton bud soaked in isopropanol. This cleaning method is very effective and leaves no residues.
- 4. Blow out the test adapter with clean compressed air (also available in spray cans, e.g. Anti Dust Spray).
- **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 device.

7 SPECIFICATIONS

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OLS-34V2

Source type	LED
Fiber type	Multimode (MM) 50/125
Optical interface	SC adapter
Auto-λ mode	yes
Modulation frequencies	CW, 270 Hz, 330Hz, 1 kHz, 2 kHz
Multi-λ mode	yes
Wavelength(s)	850 nm (±20 nm) 1300 nm (-20/+40 nm)
Spectral width (FWHM)	< 170 nm
Output power (CW, typical)	-20 dBm
Stability ¹⁾	
Short term (15 min)	±0.02 dB
• Long term (8 h)	±0.05 dB

1) after 20 min. warm-up, at ambient temperature -10 °C to +55 °C, Δ T = ±0.3 K

OLS-35V2

Source type	LASER
Fiber type	Singlemode (SM) 9/125
Optical interface	SC adapter
Auto-λ mode	yes
Modulation frequencies	CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz
Multi-λ mode	yes
Wavelength(s)	1310 nm (±20 nm), 1550 nm (±20 nm)
Spectral width (FWHM)	< 5 nm
Output power (CW, typical)	-3 dBm
Stability ¹⁾	
 Short term (15 min) 	±0.02 dB
• Long term (8 h)	±0.05 dB

1) after 20 min. warm-up, at ambient temperature -10 °C to +55 °C, $\Delta T = \pm 0.3$ K



OLS-36V2

Source type	
• Port A	LASER
• Port B	
Fiber ture	
Fiber type	
• Port A	Singlemode (SM) 9/125
Port B	Multimode (MM) 50/125
Optical interface	2 SC adapters
Auto-λ mode	yes
Modulation frequencies	CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz
Multi-λ mode	yes
Wavelength(s)	
Port A	1310 nm (±20 nm)
	1550 nm (±20 nm)
• Port B	850 nm (±20 nm)
	1300 nm (-20/+40 nm)
Spectral width (FWHM)	
Port A	< 5 nm
• Port B	<170 nm
Output power (CW, typical)	
Port A	-3 dBm
• Port B	-20 dBm
Stability ¹⁾	
Short term (15 min)	±0.02 dB
Long term (8 h)	±0.05 dB

1) after 20 min. warm-up, at ambient temperature -10 °C to +55 °C, ΔT = ±0.3 K

OLS-38V2

Source type	LASER
Fiber type	Singlemode (SM) 9/125
Optical interface	SC adapter
Auto-λ mode	yes
Modulation frequencies	CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz
Multi-λ mode	yes
Wavelength(s)	1310 nm (±20 nm), 1550 nm (±20 nm), 1625 nm (±5 nm)
Spectral width (FWHM)	< 5 nm
Output power (CW, typical)	-6 dBm
Stability ¹⁾	
Short term (15 min)	±0.02 dB
 Long term (8 h) 	±0.05 dB

1) after 20 min. warm-up, at ambient temperature -10 °C to +55 °C, $\Delta T = \pm 0.3$ K



General specifications

Calibration interval	Recommended recalibration interval	3 years
Power Supply	Dry hatteries	2 × ΔΔ 15 V
	Dry batteries	(never use batteries based on lithium)
	Rechargeable batteries	NiMH, 2 x AA, 1.2 V
	Power consumption	2.5 W max.
	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)
	Maximum battery run time ¹⁾	
	• OLS-34V2:	35 h
	• OLS-35V2:	45 h
	• OLS-36V2:	MIM: 35 h, SM: 45 h
		43 11
	 CW, Bluetooth [®] off, Auto-λ or Mi 	Jiti-X mode
EMC and safety	Electromagnetic compatibility (E	MC) EN 61226 1-2012
	Electromagnetic compatibility (E	INIC) EIN 61320-1.2013
	Lesor safety	DIN EN 60825 1:2014
	Laser safety	EN 60825-1:2014 EN 60825-1:2007
conditions	Operating temperature range	-10 to +55 °C (14 to 131 °F)
	Storage and shipping	-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 p	ermissible.
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)

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8

OLS-34V2

Devices

ORDERING INFORMATION

LED Source, 850/1300 nm, MM 50/125

SC adapter

OLS-35V2

Laser Source, 1310/1550 nm, SM 9/125

SC adapter

OLS-36V2

LED Source, 850/1300 nm, MM 50/125 Laser Source, 1310/1550 nm, SM 9/125

SC adapter

OLS-38V2

Laser Source, 1310/1550/1625 nm, SM 9/125

SC adapter

Calibration report

OLS-34V2, OLS-35V2, OLS-36V2, OLS-38V2 BN 2303/90.01

Accessories

Cleaning materials, power supplies

OCK-10 Optical cleaning kit	BN 2229/90.21
IBC cleaning tool 2.5 mm	ZP-FCL-0275
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
Interchangeable adapter	BN 2155/00.xx

OLS-34V2

OLS-35V2

OLS-36V2

OLS-38V2



9 PRODUCT REGULATORY COMPLIANCE



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



OLS-34V2/-35V2/-36V2/-38V2





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