



VOAPXle-1002

VOAPXle

Variable Optical Attenuator

SPEC SHEET

VOAPXle's built-in power meter and power stabilization function lets you set and maintain the output power stability even when the input power fluctuates. You'll get reliable and repeatable test results, each and every time.

The VOAPXle seamlessly integrates with PXle mainframe, offering exceptional flexibility and scalability.



Features



Built in power monitoring capability

Eliminate the need for an extra power meter with the built-in power monitoring capability. Know the actual power coming out of the attenuator all from the same VOA module.



Fast attenuation speed

Fast attenuation speed minimizes the down time during changes in attenuation settings to shorten your overall test time.



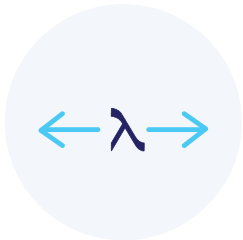
Constant power output mode

With built-in closed-loop power monitoring, VOAPXle can operate in the constant power output mode to stabilize fluctuating input power.



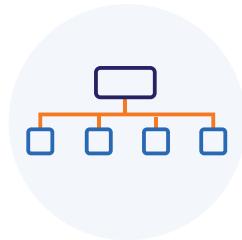
Low insertion loss

Maximise your power budget with the low insertion loss of VOAPXle.



Wide coverage of operational wavelength

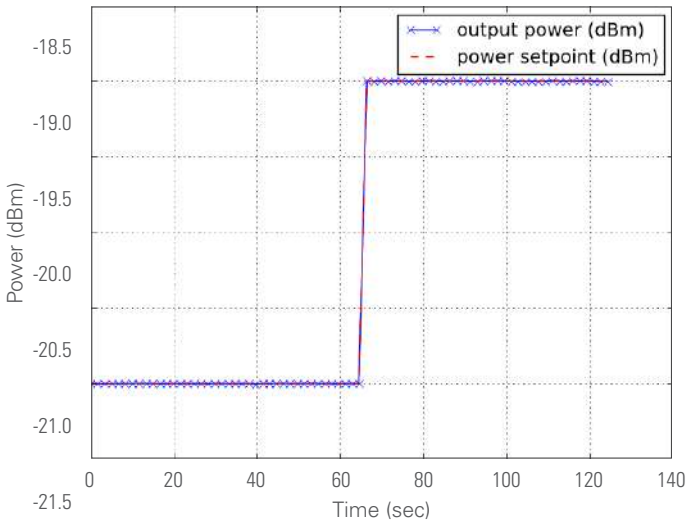
One versatile tool to cover a wide variety of applications.



Seamless PXI integration

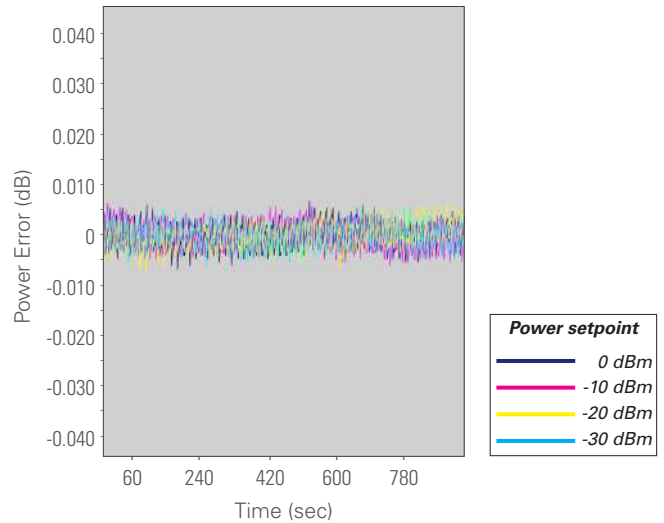
Take advantage of PXI's integrated triggering and synchronization capabilities across electrical and optical instruments.

VOAPXle Power Control



This graph illustrates how quickly Coherent Solutions' VOA moves to the desired setpoint.

VOAPXle Power Stability - Power Mode



This graph illustrates the power output stability of < 0.005 dB RMS at various power setpoints.



Target Applications

- Transceiver stress testing
- Receiver sensitivity testing
- Loss simulation
- Optical power budget analysis
- Instrument power calibration
- EDFA gain linearity test

cohesionUI™

cohesionUI graphical user interface makes it simple to control PXIe instruments from your PC or mobile device. Its cutting edge design offers a sleek modern interface, cross device compatibility, customizable views and remote network access.

The screenshot displays the cohesionUI interface for a VOAPXIE instrument in Slot 7. The interface is divided into a left sidebar and two main channel control panels. The sidebar includes navigation icons for Home, Modules, Settings, Large Format, and Info. The top right corner shows the instrument model: 1002-2-FA CSL-175103 HW0.01FW0.24.

VOAPXIE | SLOT 7

CHANNEL 1

Parameter	Value	Control
AVERAGING TIME	0.100 s	[-] [+]
WAVELENGTH	1550.000 nm	[-] [+]
ATTENUATION	0.880 dB	[-] [+]
ATTENUATION OFFSET	0.000 dB	[-] [+]
OUTPUT POWER	-77.06 dBm	[-] [+]
OUTPUT POWER OFFSET	0.00 dBm	[-] [+]
MODE	ATTENUATION >	
ATTENUATION MODE	ABSOLUTE >	

CHANNEL 2

Parameter	Value	Control
AVERAGING TIME	0.100 s	[-] [+]
WAVELENGTH	1550.000 nm	[-] [+]
ATTENUATION	1.010 dB	[-] [+]
ATTENUATION OFFSET	0.000 dB	[-] [+]
OUTPUT POWER	-76.45 dBm	[-] [+]
OUTPUT POWER OFFSET	0.00 dBm	[-] [+]
MODE	ATTENUATION >	
ATTENUATION MODE	ABSOLUTE >	

VOAPXie-1002 2 channel attenuation control in cohesionUI

The world-leader in PXI optical test & measurement

Our portfolio of PXI optical test modules is rapidly expanding to meet a wide range of customer requirements and applications.

Our experience designing and building advanced coherent optical communications instruments gives us the expertise to quickly and cost-effectively customize our products to meet your requirements. If you don't see what you need, contact us today at sales@coherent-solutions.com.



LaserPXIe **Versatile Laser Source**

Versatile range of laser sources including fully-tunable C and/or L band or fixed wavelength.



PowerPXIe **Optical Power Meter**

Large-area detector power meter available in various specifications. Options include external trigger input and analog output.



VOAPXIe **Variable Optical Attenuator**

Operates in fixed attenuation or constant output power modes. Integrated power meter for precise output power control.



OSAPXIe **Optical Spectrum Analyzer**

Fast spectral test and measurement in a compact 2-slot module. O, C and L band options.



O2EPXIe **Optical-to-Electrical Converter**

High bandwidth, broadband O-to-E converter. AC or DC coupling, various conversion gain and operating wavelength range.



SwitchPXIe **Automated Optical Switch**

Proven reliability and fast switching time. Various wavelength options including 850 nm, 980 nm, 1310 nm & 1550 nm.



PassivePXIe **Passive component integration**

Integrate passive optical components of your choice in a single or dual slot module. WDM couplers, splitters, band-pass filters, PM beamsplitters, circulators and more.



DopplerPXIe **Photonic Doppler Velocimeter**

Purpose-built module for Photonic Doppler Velocimetry. A circulator, two VOAs and a passive coupler all built into one compact module.



TrayPXIe **Passive Component Organizer**

Protect your passive fiber optic components to keep your workspace tidy & safe.



The perfect PXI chassis to suit your application

From a smaller 4-slot to the 18-slot rack mountable chassis, we can provide the perfect National Instruments PXIe chassis to suit your application.



Technical Specifications

Single Mode Fiber

General Specifications	VOAPXle				
Bus connection	PXle				
Slot count	1				
Optical connector type	FC/PC, SC/PC, FC/APC, SC/APC				
Number of channels	2				
Dimensions (HxWxD)	130 mm x 20mm x 215 mm 5.1 x 0.8 x 8.5 inches				
Weight	1 kg ~2.2 lbs				
Operating temperature range	5 °C to 45 °C 41 °F to 113 °F				
Storage temperature range	-40 °C to 70 °C -40 °F to 158 °F				
Model Number	1001	1002	1003	1004	1005
	CWDM8	Broadband	1310 nm	1490 nm	1550 nm
Wavelength range	1260 nm to 1650 nm	1260 nm to 1650 nm	1260 nm to 1360 nm	1440 nm to 1530 nm	1520 nm to 1650 nm
Fiber type	SMF-28				
Input power range	-50 to +20 dBm				
Damage level	+23 dBm				
Insertion loss ³	< 1.3 dB at 1310 nm < 2.0 dB for all others	< 2.0 dB	< 1.3 dB at 1310 nm	< 1.8 dB	< 1.3 dB at 1550 nm
WDL	< 0.02 dB/nm				
Return loss ³	> 45 dB				
Warm-up time	< 20 mins				
Attenuator	1001	1002	1003	1004	1005
Calibration wavelengths	1271 nm, 1291 nm, 1311 nm, 1331 nm, 1351 nm, 1371 nm, 1391 nm, 1411 nm, 1490 nm, 1550 nm	1310 nm, 1490 nm, 1550 nm	1310 nm	1490 nm	1550 nm
Attenuation range (Typical) ⁵	> 46 dB				
Attenuation range (Guaranteed) ⁵	> 40 dB				
Resolution	0.01 dB				
Attenuation speed	0.1 to 1000 dB/s				
Power meter	1001	1002	1003	1004	1005
Calibration wavelengths	1271 nm, 1291 nm, 1311 nm, 1331 nm, 1351 nm, 1371 nm, 1391 nm, 1411 nm, 1490 nm, 1550 nm	1310 nm, 1490 nm, 1550 nm	1310 nm	1490 nm	1550 nm
Polarization dependent responsivity ^{2,3}	< 0.2 dB				
Linearity ^{2,5}	± 0.1 dB		± 0.08 dB		± 0.06 dB
Total uncertainty ^{2,3,5}	± 0.34 dB (Typical) ± 0.55 dB (Max)				
Averaging time	100 μs to 10 s				
Resolution	0.01 dB				
Number of trace points	1 to 1024 points per channel				
Sample rate for trace	0.01 Hz to 12 kHz				



Multi Mode Fiber

General Specifications	VOAPXle
Bus connection	PXle
Slot count	1
Optical connector type	FC/PC, SC/PC, FC/APC, SC/APC
Number of channels	2
Dimensions (HxWxD)	130 mm x 20mm x 215 mm 5.1 x 0.8 x 8.5 inches
Weight	1 kg ~2.2 lbs
Operating temperature range	5 °C to 45 °C 41 °F to 113 °F
Storage temperature range	-40 °C to 70 °C -40 °F to 158 °F
Model Number	1102 ⁷
Wavelength range	800 to 900 nm
Fiber type	MM 50um core (OM3)
Input power range	-50 to +20 dBm
Damage level	+22 dBm
Insertion loss ³	<2.5 dB
WDL	TBC
Return loss ³	>20 dB
Warm-up time	<20 mins
Attenuator	1102 ⁷
Calibration wavelengths	850 nm
Attenuation range (Typical) ⁵	>30 dB
Attenuation range (Guaranteed) ⁵	>25 dB
Resolution	0.01 dB
Attenuation speed	0.1 to 1000 dB/s
Power Meter	1102 ⁷
Calibration wavelengths	850 nm
Polarization dependent responsivity ^{2,3}	NA
Modal dependence (multimode only)	<0.5 dB
Linearity ^{2,5}	± 0.25 dB
Total uncertainty ^{2,3,5}	TBD
Averaging time	100 us to 10 s
Resolution	0.01 dB
Number of trace points	1 to 1024 points per channel
Sample rate for trace	0.01 Hz to 12 kHz

Polarization Maintaining Fiber

General Specifications	VOAPXle	
Bus connection	PXle	
Slot count	1	
Optical connector type	FC/PC, SC/PC, FC/APC, SC/APC	
Number of channels	2	
Dimensions (HxWxD)	130 mm x 20mm x 215 mm 5.1 x 0.8 x 8.5 inches	
Weight	1 kg ~2.2 lbs	
Operating temperature range	5 °C to 45 °C 41 °F to 113 °F	
Storage temperature range	-40 °C to 70 °C -40 °F to 158 °F	
Model Number	1301 ⁶	1302 ⁶
Wavelength range	1520 to 1570 nm	1290 to 1330 nm
Fiber type	PM1550	PM1310
Input power range	-50 to +20 dBm	
Damage level	+23 dBm	
Insertion loss ³	<2.0 dB	
WDL	<0.02 dB/nm	
Return loss ³	> 45 dB	
Warm-up time	< 20 mins	
Attenuator	1301 ⁶	1302 ⁶
Calibration wavelengths	1550 nm	1310 nm
Attenuation range (Typical) ⁵	>40 dB	
Attenuation range (Guaranteed) ⁵	>35 dB	
Resolution	0.01 dB	
Attenuation speed	0.1 to 1000 dB/s	
Power Meter	1301 ⁶	1302 ⁶
Calibration wavelengths	1550 nm	1310 nm
Polarization dependent responsivity ^{2,3}	<0.2 dB	
Linearity ^{2,5}	± 0.1 dB	
Total uncertainty ^{2,3,5}	± 0.34 dB (Typical) ± 0.55 dB (Max)	
Averaging time	100 us to 10 s	
Resolution	0.01 dB	
Number of trace points	1 to 1024 points per channel	
Sample rate for trace	0.01 Hz to 12 kHz	

SPECS AS OF JULY 2019

- Notes:
 1 Specifications are valid at 23 °C ± 3 °C.
 2 +10 dBm to -40 dBm, 23 °C.
 3 Excluding connectors.
 4 < 10 dB attenuation.
 5 At calibration wavelengths.
 6 Preliminary specs.
 7 Advance specs.

Ordering Information

VOAPXle - XXXX - X - XX

Model number

1001 = SM, CWDM8
(1271, 1291, 1311, 1331, 1351,
1371, 1431, 1451 nm)

1002 = SM, broadband
(1310, 1490, 1550 nm)

1003 = SM, 1310 nm

1004 = SM, 1490 nm

1005 = SM, 1550 nm

1102 = MM, 850 nm

1301 = PM, 1550 nm

1302 = PM, 1310 nm

Connector type

FC = FC/PC

FA = FC/APC

SC = SC/PC

SA = SC/APC

Number of attenuators

2 = 2 attenuators

About Coherent Solutions

Coherent Solutions is the world-leader in PXI optical test and measurement. Our portfolio of PXI optical test modules is rapidly expanding to meet the needs of engineers and scientists around the globe. From enabling pioneering experiments to driving highly-efficient production testing, you'll find us working with customers to solve complex problems with simple and intuitive solutions.

To find out more, get in touch with us today.

Coherent Solutions Ltd

General enquiries: sales@coherent-solutions.com

Technical support: support@coherent-solutions.com

Telephone: +64 9 478 4849

North America: +1-800-803-8872

www.coherent-solutions.com

 www.linkedin.com/company/coherent-solutions-ltd

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