Measurement Devices

QUANTIFI PHOTONICS™

LASER COMPONENTS

OSA

1000 SERIES
OPTICAL SPECTRUM ANALYZER

SPECIFICATION SHEET

AVAILABLE IN PXI

AVAILABLE IN MATRIQ

03/21 / V2 / AHIF / quantifi/matriq_osa-1000

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

FEATURES

The Quantifi Photonics OSA provides grating-based spectral test and measurement. It is an excellent fit for the testing of optical sources, amplifiers, transceivers and passive optical components.

The OSA is available in a range of wavelengths for different applications, so you pay only for the capabilities you need.

Simple, intuitive operation

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

Range of wavelengths

Choose the model that meet your requirements and pay for only the capabilities you need. OSA can also be customized to other customer specified wavelength range.

Single platform testing

Conduct all your DUT characterization on one platform and spend less time switching cables and patchcords between instruments.

Grating-based architecture

Accurate measurement of optical spectrum without artifacts: good dynamic range, high optical throughput, high spectral resolution and high wavelength accuracy.

Fast sweeping speed

OSA has been designed with a fast scanning time optimized for production and manufacturing test.

Seamless PXI integration

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

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

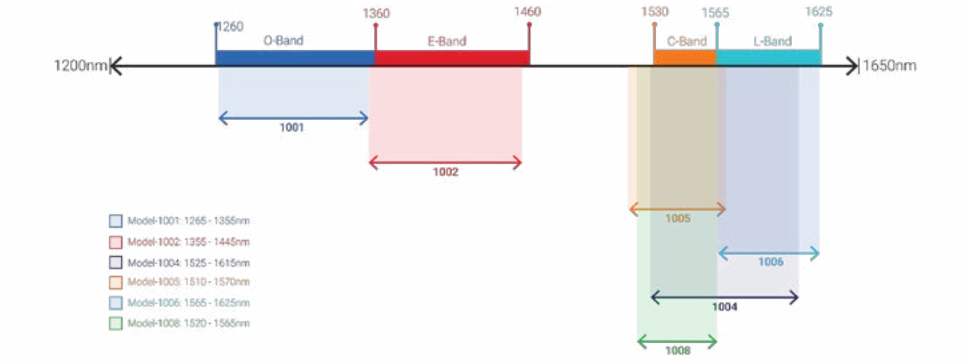
United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

TARGET APPLICATIONS

- Power and wavelength measurements
- High-resolution spectral analysis on optical components
- WDM Channel monitoring
- Optical Signal to Noise Ratio (OSNR) measurements
- Side-mode Suppression Ratio (SMSR) measurements
- Passive component spectral response characterization
- Data modulation analysis
- Modulator bias adjustments
- General purpose spectral analysis R&D labs
- Gain equalization

CONFIGURATIONS

Choose the model that suits your application and only pay for the capabilities you require.



SMALL SIZE

Space-saving form factor

Replace bulky individual optical test instruments with one small PXIe module and drastically reduce the footprint of your test setup.

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

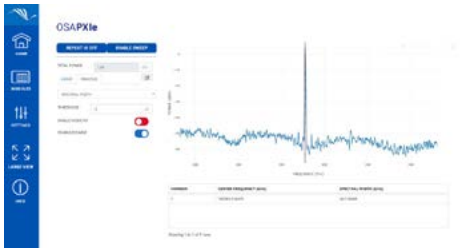
USER EXPERIENCE

OSA Measurement Functions in COHESION**UI**™

The OSA comes with a built-in web-based user interface - cohesionUI - and features a range of measurements including spectral width, OSNR, multi-SMSR and multi-peak.

Spectral width

Automatic detection of the spectral peak's centre wavelength and measurement of spectral width.

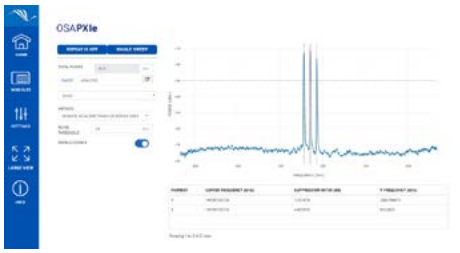


OSNR

Optical signal-to-noise ratio measurement on a multi-peak spectrum.

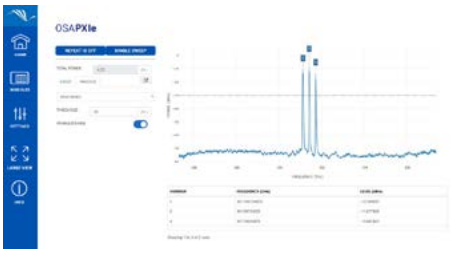
Multi-SMSR

Side-mode suppression ratio measurement with user configurable detection methods.



Multi-peak

Centre wavelength and power measurement of multiple peaks in a spectrum.

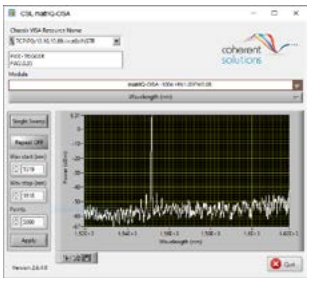


LabVIEW™ Soft Front Panels

The OSA comes with fully functional LabVIEW™ drivers for quick and easy integration into your automated control codes.

NOT A USER OF LABVIEW?

Our instruments support SCPI commands that you can send and receive from other programming languages such as MATLAB, Python and C++.



Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

PXIe – MODULAR

Our expanding range of PXIe optical test solutions are used by customers in mixed-signal test and measurement systems, reducing complexity, lowering the cost of test and accelerating time to market.

- Multi vendor, open standard with over 1500 PXI modules available
- Advanced timing and synchronization capabilities across instruments
- Low latency, high performance processing and fast data throughput
- Design and build scalable, high channel count systems
- Small footprint and lower power consumption

MATRIQ – COMPACT & PORTABLE

The MATRIQ series provides the same high-performance test capabilities of our PXIe modules in an compact benchtop design. MATRIQ instruments are simple to setup and easy to operate, making them the perfect choice for your optical lab or test bench.

- Same performance and control as our PXIe modules
- Plug and play with USB or Ethernet connectivity
- Control via the web-based GUI, COHESIONUI, LabVIEW or SCPI commands
- Compact and portable design saves benchtop space

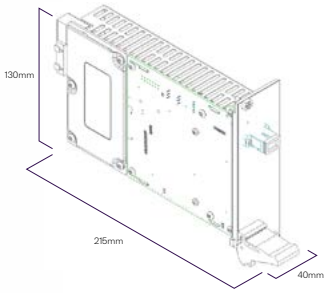
Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

OSA TECHNICAL SPECIFICATIONS

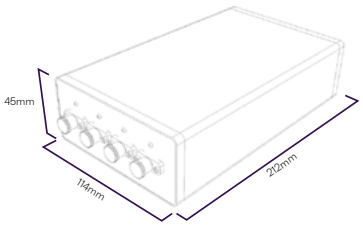
PXI – MODULAR

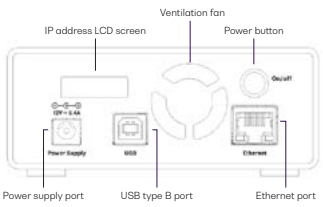
OSA-1001-1-FC-PXIE



MATRIQ – COMPACT & PORTABLE

OSA-1001-1-FC-MTRQ





Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

OSA TECHNICAL SPECIFICATIONS

General Specifications	PXI	MATRIQ
Bus connection	PXIe	USB and Ethernet
Fiber type	SMF28	SMF28
Optical connector type	FC/APC, FC/PC, SC/PC, SC/APC	FC/PC, FC/APC, SC/PC, SC/APC
Number of channels	1	1
Slot count	2	-
Dimensions (H x W x D)	130 x 40 x 215 mm | 5.1 x 1.6 x 8.5 inch	45 x 114 x 212 mm | 1.7 x 4.5 x 8.3 inch
Weight	1 kg | ~2.2 lbs	~ 1.1 kg | ~ 2.4 lbs
Operating temperature range	5 °C to 45 °C | 41 °F to 113 °F	5 °C to 45 °C | 41 °F to 113 °F
Storage temperature range	-40 °C to 70 °C | -40 °F to 158 °F	-40 °C to 70 °C | -40 °F to 158 °F

Model Number	1001	1002	1001	1002
Wavelength range	1265 to 1355 nm	1355 to 1445 nm	1265 to 1355 nm	1355 to 1445 nm
OSA type	Grating	Grating	Grating	Grating
Resolution bandwidth [FWHM]	0.20 nm	0.21 nm	0.20 nm	0.21 nm
Wavelength linearity	15 pm	15 pm	15 pm	15 pm
Wavelength repeatability [1]	± 20 pm	± 20 pm	± 20 pm	± 20 pm
Wavelength accuracy [1]	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)
Optical rejection @ 0.3 nm from peak	> 25 dB	> 21 dB	> 25 dB	> 21 dB
Damage input power	+ 30 dBm	+ 30 dBm	+ 30 dBm	+ 30 dBm
Max power	+ 10 dBm	+ 10 dBm	+ 10 dBm	+ 10 dBm
Absolute power accuracy [1,2]	± 0.6 dB	± 0.6 dB	± 0.6 dB	± 0.6 dB
Relative power accuracy [1,2]	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB
Power repeatability [2]	± 0.1 dB	± 0.1 dB	± 0.1 dB	± 0.1 dB
Polarization dependence	< 0.3 dB	< 0.3 dB	< 0.3 dB	< 0.3 dB
Dynamic range	60 dB	60 dB	60 dB	60 dB
Return loss	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Sweep time (90 nm, 2001 pts, full sweep)	< 280 ms	< 280 ms	< 280 ms	< 280 ms
Sweep time (4 nm, 101pts)	< 180 ms	< 180 ms	< 180 ms	< 180 ms

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

OSA TECHNICAL SPECIFICATIONS

Model Number	1004	1005	1004	1005
Wavelength range	1525 to 1615 nm	1510 to 1570 nm	1525 to 1615 nm	1510 to 1570 nm
OSA type	Grating	Grating	Grating	Grating
Resolution bandwidth [FWHM]	0.24 nm	0.17 nm	0.24 nm	0.17 nm
Wavelength linearity	15 pm	15 pm	15 pm	15 pm
Wavelength repeatability [1]	± 20 pm	± 20 pm	± 20 pm	± 20 pm
Wavelength accuracy [1]	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)
Optical rejection @ 0.3 nm from peak	>16.5 dB	>37 dB	>16.5 dB	>37 dB
Damage input power	+ 30 dBm	+ 30 dBm	+ 30 dBm	+ 30 dBm
Max power	+ 10 dBm	+ 10 dBm	+ 10 dBm	+ 10 dBm
Absolute power accuracy [1,2]	± 0.6 dB	± 0.6 dB	± 0.6 dB	± 0.6 dB
Relative power accuracy [1,2]	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB
Power repeatability [2]	± 0.1 dB	± 0.1 dB	± 0.1 dB	± 0.1 dB
Polarization dependence	< 0.3 dB	< 0.3 dB	< 0.3 dB	< 0.3 dB
Dynamic range	60 dB	60 dB	60 dB	60 dB
Return loss	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Sweep time (90 nm, 2001 pts, full sweep)	< 280 ms	< 280 ms	< 280 ms	< 280 ms
Sweep time (4 nm, 101pts)	< 180 ms	< 180 ms	< 180 ms	< 180 ms

Model Number	1006	1008	1006	1008
Wavelength range	1565 to 1625 nm	1520 to 1565 nm	1565 to 1625 nm	1520 to 1565 nm
OSA type	Grating	Grating	Grating	Grating
Resolution bandwidth [FWHM]	0.17 nm	0.12 nm	0.17 nm	0.12 nm
Wavelength linearity	15 pm	15 pm	15 pm	15 pm
Wavelength repeatability [1]	± 20 pm	± 20 pm	± 20 pm	± 20 pm
Wavelength accuracy [1]	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)	± 25 pm (Typical) ± 70 pm (Max)
Optical rejection @ 0.3 nm from peak	>37 dB	>37 dB	>37 dB	>37 dB
Damage input power	+ 30 dBm	+ 30 dBm	+ 30 dBm	+ 30 dBm
Max power	+ 10 dBm	+ 10 dBm	+ 10 dBm	+ 10 dBm
Absolute power accuracy [1,2]	± 0.6 dB	± 0.6 dB	± 0.6 dB	± 0.6 dB
Relative power accuracy [1,2]	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB
Power repeatability [2]	± 0.1 dB	± 0.1 dB	± 0.1 dB	± 0.1 dB
Polarization dependence	< 0.3 dB	< 0.3 dB	< 0.3 dB	< 0.3 dB
Dynamic range	60 dB	60 dB	60 dB	60 dB
Return loss	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Sweep time (90 nm, 2001 pts, full sweep)	< 280 ms	< 280 ms	< 280 ms	< 280 ms
Sweep time (4 nm, 101pts)	< 180 ms	< 180 ms	< 180 ms	< 180 ms

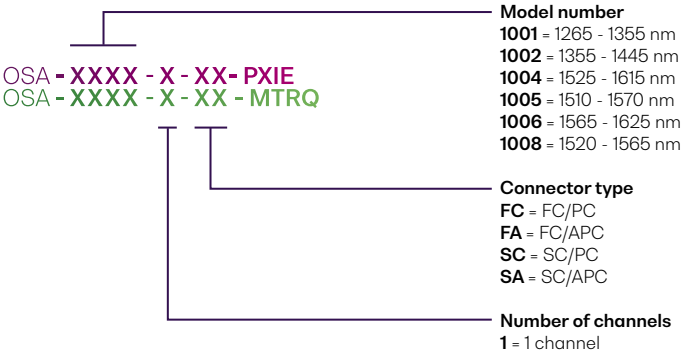
Notes

1. Input power range -40dBm to -10dBm.
2. With unpolarized source.

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

ORDERING INFORMATION



WARRANTY INFORMATION

This product comes with a standard 3 year warranty.

An optional 5 year extended warranty is also available, please discuss with your sales representative at the time of purchase.

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

CATALOGUE

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

Tunable Laser Sources
Versatile telecom laser sources with full tunability across C or L bands. Narrow 100 kHz linewidth, up to 16.5 dBm of power, optional whisper mode to disable frequency dither.

Erbium-Doped Fiber Amplifier (EDFA)
High power Erbium-Doped Fiber Amplifier for signal power amplification in C and L bands with various control modes, including automatic gain control.

Fixed Wavelength Laser Sources
Highly customizable DFB or FP laser sources available in a wide range of wavelengths and powers. Models support SMF, MMF and PMF.

Variable Optical Attenuator (VOA)
Fast attenuation speed with low insertion loss and built-in power monitoring. Operates in fixed attenuation or constant output power modes. Models support SMF, MMF and PMF.

Optical Power Meters
Fast terminating or inline monitoring of optical signal power from -60 to +10 dBm across 750 – 1700 nm wavelengths. Model with logarithmic analog output for applications such as silicon photonics fiber alignment.

Optical Spectrum Analyzer (OSA)
Low cost, fast spectral measurement in a compact module with built-in analysis including SMSR, OSNR and spectral width. Targeted wavelengths for specific applications in O band, C band and L band.

Optical-to-Electrical Converter
High bandwidth, broadband O-to-E converter. Available in a range of configurations; choose from 1 or 2 channels, AC or DC coupling and various conversion gain and operating wavelength ranges.

Bit Error Rate Tester (BERT)
2 or 4-channel Pulse Pattern Generator and Error Detector at rates up to 29 Gbps for the design, characterization and production of optical transceivers and opto-electrical components.

Pulse Pattern Generator (PPG)
4 channel Pulse Pattern Generator from 0.3 to 30 Gbps for high-density multichannel applications. With integrated clock synthesizer and programmable de-emphasis and CTLE processor.

Optical Switch
Proven reliability and fast switching time. Wide variety of switch onfigurations: 1x4, 1x16, 16x16 and more. Models support SMF, MMF and PMF.

Polarization Controller & Scrambler
High-speed automated polarization control with broad wavelength coverage from 1260nm to 1650nm, low insertion loss and back reflection. Full remote control via intuitive GUI, LabVIEW or SCPI.

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

Passive Component Integration
Integrate passive optical components of your choice such as WDM couplers, splitters, band-pass filters, PM beamsplitters and circulators. Models support SMF, MMF and PMF.

Passive Component Storage
Protect and store your own passive fiber optic components such as splitters, connector adaptor patchcords, WDM couplers, and isolators in one handy module.

PXI – TEST MODULES | MATRIQ – TEST MODULES

We provide these products as PXIe modules and compact MATRIQ benchtop instruments.

See our website for more details.

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

WHY CHOOSE QUANTIFI PHOTONICS

Test. Measure. Solve.

Quantifi Photonics is transforming the world of photonics test and measurement. Our portfolio of optical and electrical test instruments is rapidly expanding to meet the needs of engineers and scientists around the globe. From enabling ground-breaking experiments to driving highly efficient production testing, you'll find us working with customers to solve complex problems with optimal solutions.

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

Version 0.6.1

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk