

OSA

1000 SERIES OPTICAL SPECTRUM ANALYZER

SPECIFICATION SHEET

AVAILABLE IN PXI

AVAILABLE IN MatriQ

[quantif Photonics.com](https://www.quantif Photonics.com)

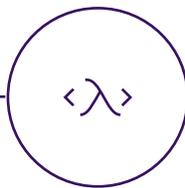
The Quantifi Photonics OSA provides grating-based spectral test and measurement. It is an excellent fit for the testing of optical sources, amplifiers, transceivers and passive optical components.

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



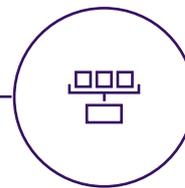
Simple, intuitive operation

COHESIONUI makes it simple to control the 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.



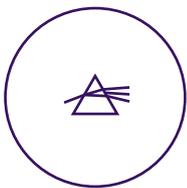
Range of wavelengths

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.



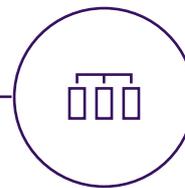
Grating-based architecture

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



Fast sweeping speed

Designed with a fast scanning time optimized for production and manufacturing test.



Seamless PXI integration

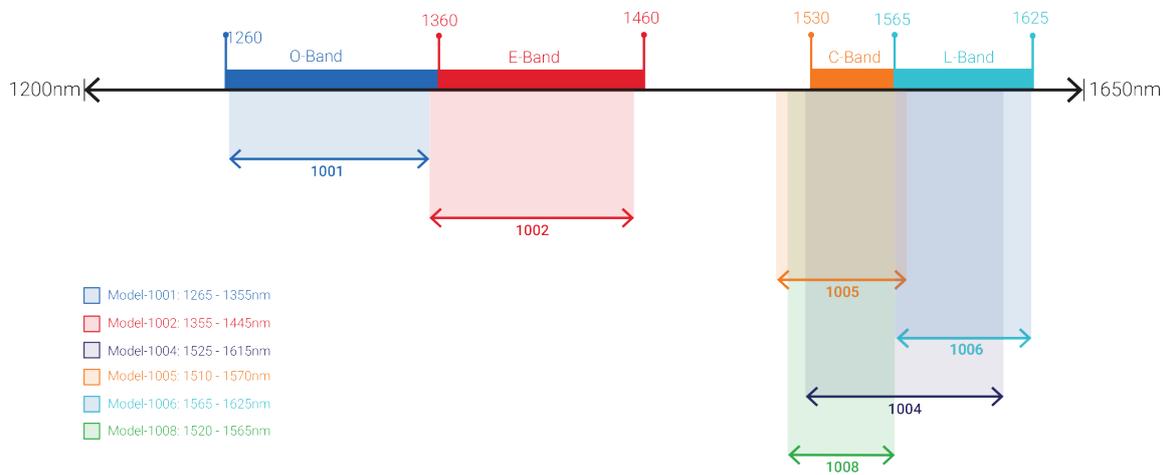
Take advantage of PXI's integrated triggering and synchronization capabilities across electrical and optical instruments.

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.



OSA measurement functions in COHESIONUI™

The OSA comes with a built-in web-based user interface 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.



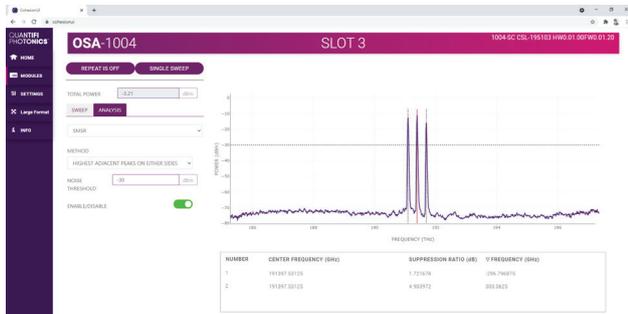
OSNR

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



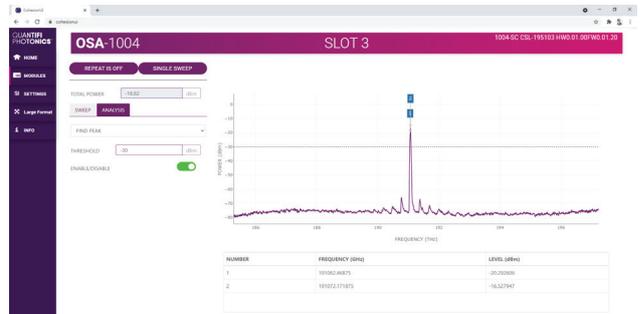
Multi-SMSR

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



Multi-peak

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



CHOOSE YOUR FORM FACTOR

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 2500 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

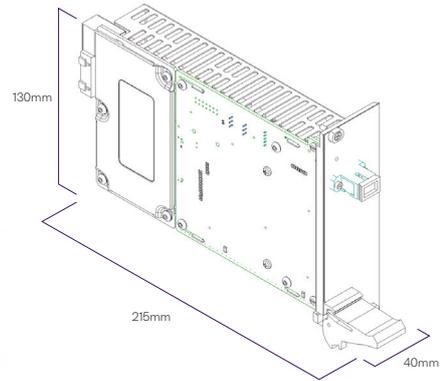
The MATRIQ series provides the same high-performance test capabilities of our PXIe modules in an compact benchtop design. MATRIQ instruments are simple to setup and easy to operate, making them the perfect choice for your optical lab or test bench.

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

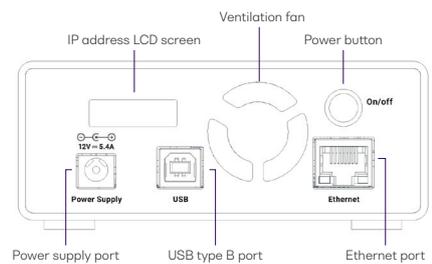
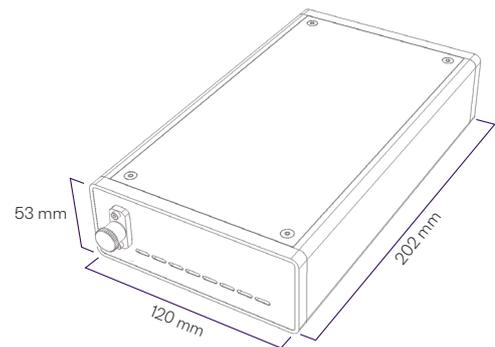


OSA TECHNICAL SPECIFICATIONS

PXI - MODULAR



MATRIQ - COMPACT & PORTABLE



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 inches | 53 x 120 x 202 mm 2.1 x 4.7 x 8.0 inches |
| 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 |

| Power Specifications | PXI | MATRIQ |
|------------------------|---|--|
| AC input voltage range | Please refer to the latest PXI Express Hardware Specifications published by the PXI Systems Alliance. | 90 to 264 VAC |
| AC input current | | 1.3A (115Vac), 0.9A (230Vac) |
| AC frequency range | | 47 to 63 Hz |
| DC output voltage | | 12V |
| DC output current max | | 5.41A |
| Dimensions (LxWxH) | | 4.58 x 2.06 x 1.23" (116.3 x 52.4 x 31.3 mm) |

| 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) |
| 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 |

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) |
| 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 |

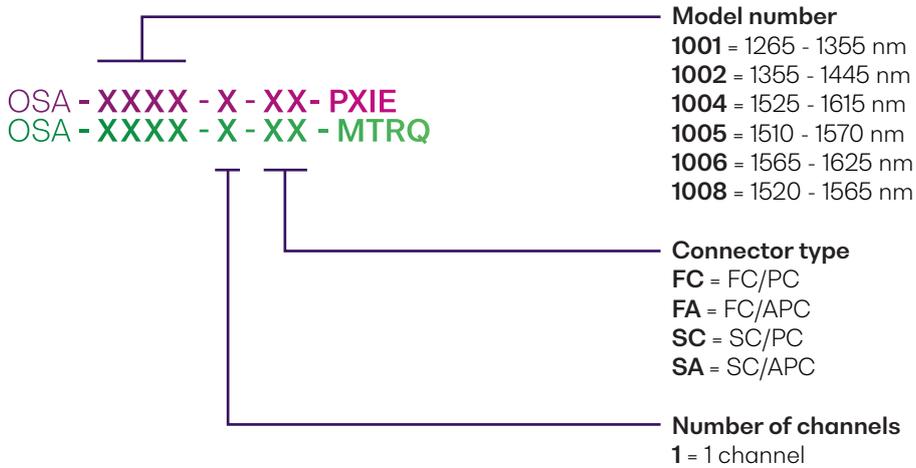
| Model Number | 1006 | 1008 | 1006 | 1008 |
|--|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Wavelength range | 1565 to 1625 nm | 1520 to 1565 nm | 1565 to 1625 nm | 1520 to 1565 nm |
| OSA type | 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) |
| 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.

ORDERING INFORMATION



WARRANTY INFORMATION

This product comes with a standard 1 year warranty.

EXTENDED WARRANTIES AND CALIBRATION PLANS

With an Extended Warranty and Calibration Plan you can spend more time focused on your priorities and less time worrying about maintenance.

Over time and with regular use, all optical parts and connectors require re-calibration and maintenance to guarantee accurate and reliable performance.

Add a 3 or 5 year Extended Warranty at the time of purchase.

Guarantee peak performance

Ensure your equipment is operating at its best for reliable and accurate results.

Lower cost of ownership

Lock in savings and maximise your budget with a lower cost of ownership.

Peace of mind

Spend less time worrying about maintenance and more on generating results.

CALIBRATION PLANS FOR ADDITIONAL DISCOUNTS

Order a Calibration Plan when you purchase your Quantifi Photonics' test instruments and qualify for additional discounts.

10% Discount

On calibrations ordered at the time of purchase.

25% Discount

Add on an extended warranty and receive a 25% discount on calibrations.

With an instrument calibration performed by Quantifi Photonics technicians you receive.

- Comprehensive calibration to factory specifications.
- End-to-end inspection to ensure all instrument functions are working and connectors are clean.
- Firmware, software and documentation updates.
- Certificate of Calibration which includes detailed test results.

We recommend Quantifi Photonics optical instruments are re-calibrated every 12 months.

How to purchase

Contact your Quantifi Photonics sales representative about our Extended Warranty or Calibration Plans or email sales@quantifiphotonics.com.

Extended Warranties and Calibration Plans must be ordered at the time of purchase and are available only for Quantifi Photonics' products. The 25% calibration discount only applies to calibrations while the product is covered by the Extended Warranty period.

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 configurations: 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
[quantifiphotonics.com/products](https://www.quantifiphotonics.com/products)

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 experience and innovation.

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

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|--------------------------|--|
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