QUANTIFI PHOTONICS®
A Teradyne Company

Power

1400 SERIES
OPTICAL POWER METER

SPECIFICATION SHEET

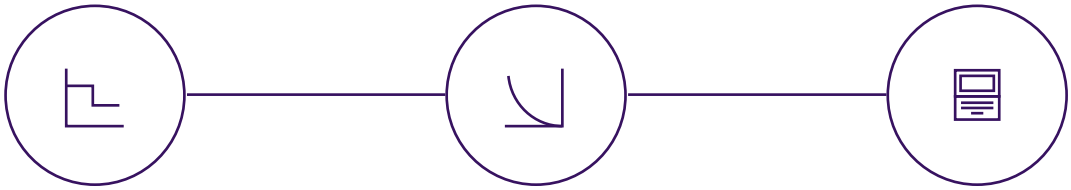
AVAILABLE IN PXI

AVAILABLE IN MATRIQ

quantifiphotonics.com

Quantifi Photonics' Power 1400 Series optical power meter provides fast monitoring of signal power from -60 to +10 dBm and broad wavelength range of 750 to 1700 nm.

With a logarithmic amplifier, it avoids gain-jumps faced by multi-stage linear amplifier power meters.



Data Logging Capability

Data logging of up to 1024 samples is available on 2 channels, so you can capture transient events with ease.

Single logarithmic amplifier

Use of a logarithmic amplifier eliminates the gain jumps exhibited by power meters with multi-stage linear amplifiers. Get consistent and reliable measurement at all power levels.

Simple, intuitive operation with COHESIONUI

Control the Power module from your PC or mobile device. Plus, large format view mode makes it easy to monitor your instrument even when working away from your desk.

Seamless PXI integration

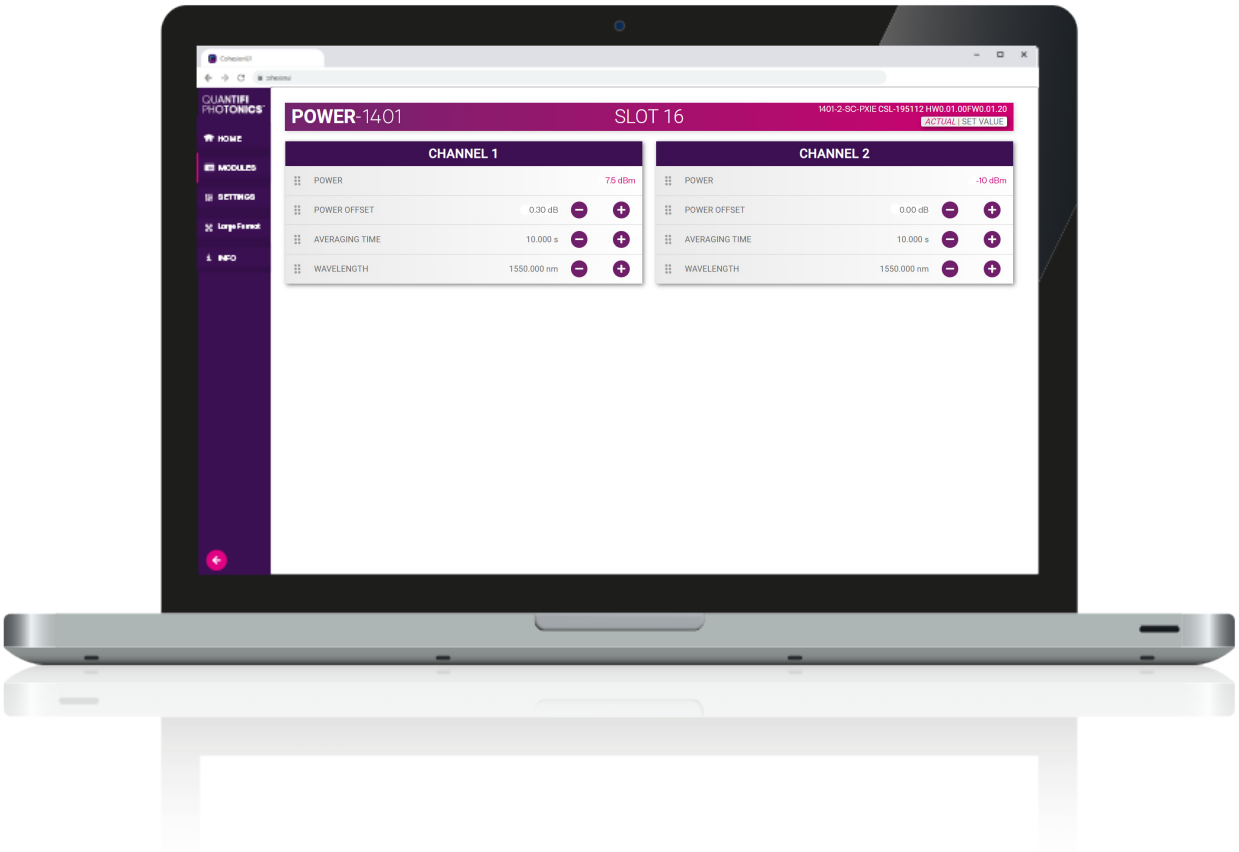
Take advantage of PXI's integrated triggering and synchronization capabilities across electrical and optical instruments.

2 or 4 power meters in a single instrument

Achieve high channel density with up to 68 channels in an 18-slot PXI chassis or 4 channels in an ultra-compact benchtop instrument.

Simple, intuitive control with COHESIONUI™

COHESIONUI makes it simple to control our PXI or MATRIQ instruments from a PC, tablet or smartphone. Its cutting-edge design offers a sleek modern interface, cross device compatibility, customizable views and remote network access.



TARGET APPLICATIONS

- Fiber optic manufacturing test.
- Power measurement integration for automated test systems.
- Fiber optic laser test and characterization.
- General and versatile R&D and production tool.

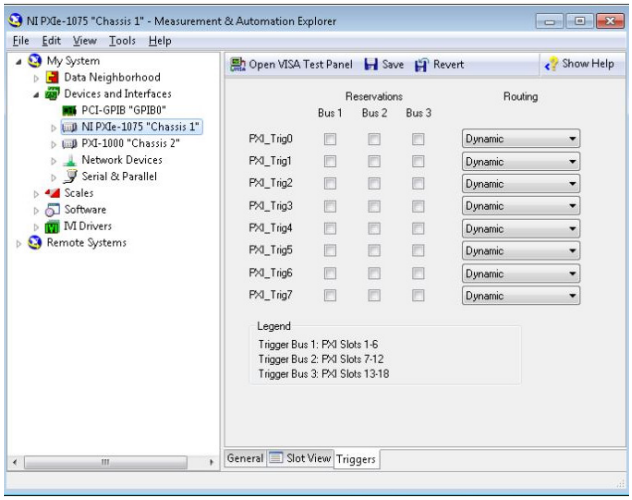
HARDWARE TRIGGERING IN PXI

Integrated hardware triggering

PXI's integrated timing and hardware triggering capabilities allow the user to synchronize a variety of instruments through the trigger bus and system reference clock features of the PXI platform. This offers a number of advantages over more traditional software-initiated measurements.

- True parallel measurements of multiple devices under test allows you to scale your manufacturing and decrease the test time per DUT.
- Extremely low latency allows you to capture fast events or measure your DUTs very quickly.
- Precise timing alignment between optical and electrical modules gives you control of trigger events to occur exactly when required.

Each slot can create a trigger and the trigger event can be transferred through each PXI Trigger line. Configuring the trigger line can be done easily through NI max software interface for the PXIe mainframe.



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.

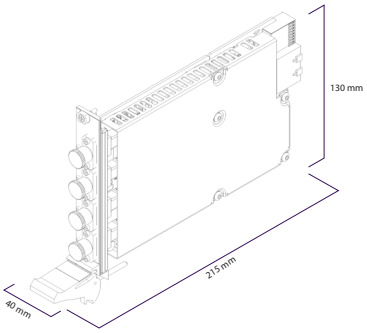
- Multi vendor, open standard with over 2500 PXI modules available
- Advanced timing and synchronization capabilities across instruments
- Low latency, high performance processing and fast data throughput
- Design and build scalable, high channel count systems
- Small footprint and lower power consumption

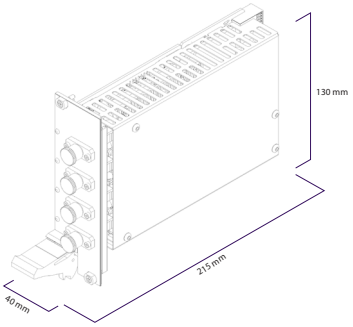
MATRIQ – COMPACT & PORTABLE

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

PXI – MODULAR



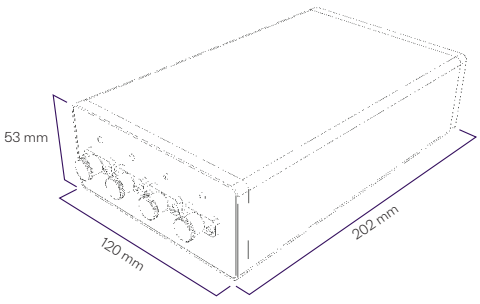


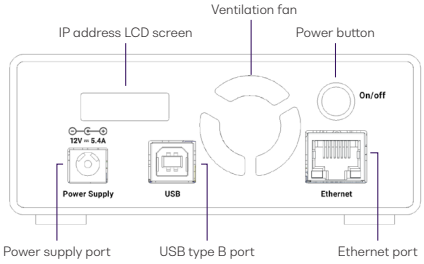
POWER-1405-2-MP-PXIE

POWER-1401-4-FC-PXIE

MATRIQ – COMPACT & PORTABLE

POWER-1401-4-FC-MTRQ





General Specifications	PXI	MATRIQ
Bus connection	PXIe	USB and Ethernet
Slot count	1 slot: 1401 | 2 slots: 1405	-
Dimensions (HxWxD)	**1 slot:** 130 x 20 x 215 mm | 5.1 x 0.8 x 8.5 inches **2 slot:** 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

	PXI	MATRIQ
AC input voltage range	Please refer to the latest PXI Express Hardware Specifications published by the PXI Systems Alliance.	100 to 240 VAC
AC input current		1.3 A (115 VAC), 0.9 A (230 VAC)
AC frequency range		47 to 63 Hz
DC output voltage		12 V
DC output current max		5.41 A
Dimensions (LxWxH)		4.58 x 2.06 x 1.23" (116.3 x 52.4 x 31.3 mm)

Model Number	1401	1401
Number of channels	2 or 4	2 or 4
Optical connectors	FC/APC, FC/PC, SC/PC, SC/APC	FC/APC, FC/PC, SC/PC, SC/APC
Sensor	InGaAs wide area detector	InGaAs wide area detector
Wavelength range	750 nm to 1700 nm	750 nm to 1700 nm
Power	- 60 dBm to + 10 dBm	-60 dBm to +10 dBm
Damage level	+ 12 dBm	+12 dBm
Uncertainty [2,3,5]	± 0.22 dB (Typical) | ± 0.35 dB (Max)	± 0.22 dB (Typical) | ± 0.35 dB (Max)
Linearity [2,5]	± 0.1 dB, - 40 dBm to 0 dBm; ± 0.2 dB, -50 dBm to - 40 dBm	± 0.1 dB, - 40 dBm to 0 dBm; ± 0.2 dB, -50 dBm to - 40 dBm
Return loss [6]	> 45 dB	> 45 dB
Averaging time	10 ms to 10 s	10 ms to 10 s
Data logging capability	1 to 1024 samples per channel on channel 1 and 2. 1 sample per channel on channels 3 and 4.	1 to 1024 samples per channel on channel 1 and 2. 1 sample per channel on channels 3 and 4.
External trigger	Yes	No

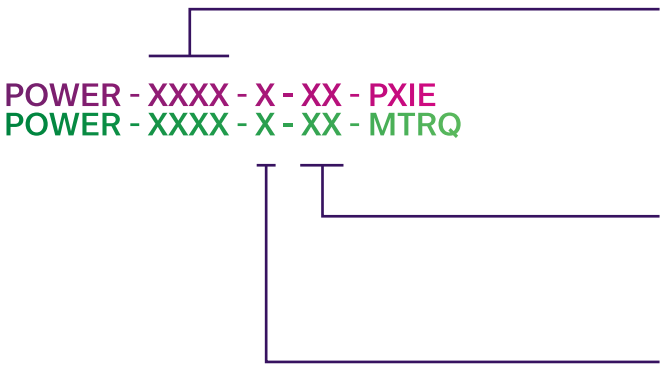
POWER 1400 SERIES TECHNICAL SPECIFICATIONS

Model Number	1405	1405
Number of channels	2	2
Optical connectors	MPO	MPO
Sensor	InGaAs wide area detector	InGaAs wide area detector
Wavelength range	800 nm to 1700 nm	800 nm to 1700 nm
Power	- 50 dBm to + 12 dBm	- 50 dBm to + 12 dBm
Damage level	+ 18 dBm	+ 18 dBm
Uncertainty [2,3,5]	± 0.22 dB (Typical) | ± 0.35 dB (Max)	± 0.22 dB (Typical) | ± 0.35 dB (Max)
Linearity [2,5]	± 0.1dB - 40 to 10 dBm; ±0.2dB - 50 to - 40 dBm	± 0.1dB - 40 to 10 dBm; ±0.2dB - 50 to - 40 dBm
Return loss [6]	TBD	TBD
Averaging time	10 ms to 10 s	10 ms to 10 s
Data logging capability	1 to 1024 samples per channel on channel 1 and 2.	1 to 1024 samples per channel on channel 1 and 2.
External trigger	Yes	No

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. Wavelength 1550 nm ± 30 nm, standard single-mode fiber, angled connector 8°, T=23 °C ± 5 °C.

ORDERING INFORMATION



Model number

1401 = FC/APC, FC/PC, SC/PC, SC/APC connector
750 nm to 1700 nm

1405 = MPO connector
800 nm to 1700 nm

Connector type[1]

FC = FC

SC = SC

MP = MPO

Number of channels

2 = 2 Power meter channels

4 = 4 Power meter channels

Notes

1. Because it is a free-space launch into a large area detector that captures all the light, the FC connector is compatible with FC/APC type inputs and the SC is compatible with SC/APC inputs.

WARRANTY INFORMATION

This product comes with a standard 1 year warranty.

EXTENDED WARRANTIES AND CALIBRATION PLANS

With an **extended warranty and calibration plan** you'll spend more time focused on your priorities and less time worrying about maintenance.

Add a **3 or 5 year extended warranty** when you purchase your Quantifi Photonics instruments.

Guarantee performance

Ensure your equipment is operating at the best it can be for reliable and accurate results.

Lower cost of ownership

Lock in savings and maximise your testing budget with a lower base 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 purchasing your Quantifi Photonics instruments and get 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.

Over time and with regular use, all optical parts and connectors require re-calibration and maintenance to guarantee accurate and reliable performance. We recommend Quantifi Photonics optical instruments are re-calibrated every 12 months. 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

How to do I **secure my extended warranty or calibration plan**?

Contact your Quantifi Photonics sales representative 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 & electro-optical test modules is rapidly expanding to meet a wide range of customer requirements and applications.

For more details visit **quantifiphotonics.com/products**

Tunable Laser Source

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.

Fixed Wavelength Laser Source

Highly-customizable DFB or FP laser sources available in a wide range of wavelengths and powers up to 24 dBm. Supports SMF, MMF and PMF.

Swept, Tunable Continuous Wave Laser

Swept, tunable continuous wave (CW) laser source with 0.01 dB power stability and 400 nm/s high-speed scan rate for R&D and production testing.

Superluminescent Diode Broadband Light Source

Super-luminescent LED light source with high output power, large bandwidth and low spectral ripple and various wavelengths.

Erbium-Doped Fibre 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.

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. 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.

Optical Power Meter

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)

Cost-effective, spectral measurement in a compact module with built-in analysis for: SMSR, OSNR & spectral width. Targeted wavelengths for specific applications in O band, C band & L band.

Optical-to-Electrical Converter

High bandwidth, broadband O-to-E converter. Choose from 1 or 2 channels, AC or DC coupling and various conversion gain and operating wavelength ranges.

Optical Switch

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

Photocurrent Amplifier

Versatile photodiode amplifier to measure photocurrent in photonic integrated circuit (PIC) applications. Digital and analog measurement.

Digital Sampling Oscilloscope (DSO)

Digital equivalent-time sampling oscilloscope (DSO) with high-quality precision timebase and low jitter mode, available in 1 or 2 channels in a compact benchtop instrument.

Clock Recovery Instrument (CDR)

Clock recovery instrument for the QCA Series. Low jitter design and precise phase-locking provide a reliable, scalable solution for high-speed communication testing.

Bit Error Rate Tester (BERT)

4 or 8-channel Pulse Pattern Generator and Error Detector at rates up to 28 Gbps for the design, characterization and production of optical transceivers and opto-electrical components.

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. SMF, MMF and PMF.

Test. Measure. Solve.™

Quantifi Photonics provides test solutions to help customers unlock scalable and cost-effective high-volume manufacturing of photonic integrated circuits (PICs), co-packaged optics and pluggable optics. The company's portfolio includes a wide range of photonic test instruments, and digital sampling oscilloscopes, available as benchtop or the industry-standard PXI format to support cost-effective, high-throughput design verification testing and high-volume manufacturing.

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

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