

PulseScout2 Autocorrelator

VERSATILE, EASY-TO-USE
DIAGNOSTIC TOOL FOR
MEASURING ULTRAFAST PULSES

The PulseScout2™ Autocorrelators are a versatile, easy-to-use diagnostic tool for measuring ultrafast pulses. This autocorrelator family is capable of measuring pulse widths from both high repetition rate (MHz) oscillators and low repetition rate (kHz) amplifiers from Visible to IR wavelength range. The unit can be equipped with either a photodiode detector module to detect and measure high-energy amplified pulses or a photomultiplier based detector to measure low-energy oscillator pulses. Conveniently, these detector modules use the same autocorrelator optical head and are fully interchangeable in seconds. Alignment is straight-forward and can also be done easily even for first time users, making this autocorrelator an ideal diagnostic tool for all of your ultrafast applications.



- 20 fs to 3.5 ps pulse width capability
- Broad wavelength range (420–1600 nm)
- Calibrated timescale
- Easy to align
- Compatible with both high and low repetition rate lasers
- Standardized computer interface
- SCPI interface software included
- Collinear and non-collinear configuration

THE BASE MODEL

The base model is the corner stone of the PulseScout2 Autocorrelator family:

PSCOUT2-BASE

The base model contains the Optical Head and Control Unit for the autocorrelator system. The detector module is not included.



Please note: The basic model does not come with a detector module.

THE DETECTOR MODULES

A detector module is necessary to complete the autocorrelator system. Multiple detector modules can be used with a single Base Model for additional wavelength range and sensitivity. The PD models contain a photodiode (PD) and can handle higher pulse energy from amplifiers, while the PMT models consist of high sensitive photomultiplier tube (PMT), suitable for low-energy oscillator pulses.

The detector module also includes the necessary SHG Crystal for the PulseScout2. It will need to be installed before operation. Different crystals are required for different wavelengths.

The modules are available in four wavelength ranges:

- BLUE (420 - 550 nm)
PSCOUT2-BLUE-PD
PSCOUT2-BLUE-PMT
- RED (520 - 750 nm)
PSCOUT2-RED-PD
PSCOUT2-RED-PMT
- NIR (700 - 1100 nm)
PSCOUT2-NIR-PD
PSCOUT2-NIR-PMT
- IR (1000 - 1600 nm)
PSCOUT2-IR-PD
PSCOUT2-IR-PMT



PulseScout2 Detector Modules (PD on top, PMT on bottom)

WHICH MODULE SHOULD I CHOOSE?

A rule of thumb is to select:

- PMT module for an Oscillator (such as Tsunami™) with a Repetition Rate > 1 MHz
- PD module for an Amplifier (such as Spitfire Pro™) with a Repetition Rate < 1 MHz.

SCPI INTERFACE SOFTWARE

Enabling remote control of the PulseScout2 via TCP/IP using SCPI command structure. This software package is included with the base model unit. Utilize this for integration of the PulseScout2 into automated measurement setups.

Base Model Specifications

Model	PSCOUT2-BASE
Wavelength Range (nm)	420 - 1600
Pulse Width (fs)	20 - 3500
Scan Range	150 fs - 15 ps
Scan Rate	10 Hz
Linearity	1% of Actual Scan Range
Polarization	Linear / Horizontal
Minimum Input Power	2 mW
Maximum Input Power	250 mW
Maximum Input Pulse Energy	1 μJ
Minimum Beam Diameter	2 mm
Minimum Input Rep Rate	300 Hz
Maximum Input Rep Rate	10 GHz
Computer Interface	USB 2.0
Remote Control	TCP/IP (SCPI Standard) via Control Software
CE Compliant	Yes
Input	Trigger, TTL
	Dimensions (W x D x H) [in. (mm)]
Optical Unit	6.30 X 6.34 X 5.67 - 8.23 (160 X 161 X 144 - 209)
Control Electronics	6.10 X 2.76 X 6.04 (155 X 70 X 153.5)

Detector Module Specifications

Model	Type	Wavelength Range	Repetition Rate
PSCOUT2-BLUE-PD	PD Module	420 - 550 nm	< 1 MHz
PSCOUT2-BLUE-PMT	PMT Module	420 - 550 nm	> 1 MHz
PSCOUT2-RED-PD	PD Module	520 - 750 nm	< 1 MHz
PSCOUT2-RED-PMT	PMT Module	520 - 750 nm	> 1 MHz
PSCOUT2-NIR-PD	PD Module	700 - 1100 nm	< 1 MHz
PSCOUT2-NIR-PMT	PMT Module	700 - 1100 nm	> 1 MHz
PSCOUT2-IR-PD	PD Module	1000 - 1600 nm	< 1 MHz
PSCOUT2-IR-PMT	PMT Module	1000 - 1600 nm	> 1 MHz



Autocorrelator control box



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