

WP 405 Raman Spectrometer Series

Shorter wavelength, higher signal



FEATURES AND BENEFITS

f/1.3 input to capture more light

Superior optical design based on patented transmissive VPH grating

>10x faster data sampling rates

TEC cooling option for best SNR

Fiber coupled & free space models

Compact, robust & configurable

Excellent thermal stability

We've maximized the efficiency of our spectrometers to give you more sensitivity, better SNR, and faster measurements. Collect more light with our f/1.3 input, keep more light with our high transmission VPH gratings & diffraction-limited optics, and detect more light with scientific-grade detectors. Our build-to-print options for resolution, detector cooling, and sample coupling allow you to configure a spectrometer or system with the exact performance you need.

Wasatch Photonics offers the expertise & testing to find your optimal Raman solution. Contact us to get started!

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STANDARD PRODUCT SPECIFICATIONS & OPTIONS

The configuration options for our build-to-print 405 nm Raman spectrometers include slit size (resolution), sample coupling (fiber coupled or free space), and detector cooling. We offer ambient, regulated, and TEC cooled detectors, allowing you to balance your required signal to noise (SNR) and temperature stability with cost for the best possible value.

OPTICAL				
DETECTOR COOLING OPTIONS >		Ambient	Regulated	TEC Cooled
Wavenumber Range ($\lambda_{ex} = 405 \text{ nm}$)		300 - 3700 cm^{-1}		250 - 3000 cm^{-1}
Resolution	10 μm slit	8 cm^{-1}		
	25 μm slit	12 cm^{-1}		
	50 μm slit	20 cm^{-1}		
f-number (f/#)		1.3		
Connector (fiber coupled models only)		SMA 905		

DETECTOR & ELECTRONICS				
DETECTOR COOLING OPTIONS >		Ambient	Regulated	TEC Cooled
Hamamatsu Detector		S11510-1006 CCD	S11511-1006 CCD	S10141-1007 CCD
Detector Temperature		ambient	10°C	-15°C
Detector Temperature Stability		-	$\pm 0.2^\circ\text{C}$	$\pm 0.1^\circ\text{C}$
Active Pixels		1024 x 64		1024 x 122
Pixel Size		14 x 14 μm		12 x 12 μm
Detector Quantum Efficiency: Average / Peak		40% / 53%		73% / 83%
Dynamic Range		50,000		37,500
Signal to Noise Ratio (SNR)		500:1		2400:1
Readout Noise		6 e- RMS		4 e- RMS
Integration Time		3 ms - 60 s		25 ms - 60 s
Maximum Sample Frequency		285 Hz		
Communications		USB 2.0 Type B connector		

MECHANICAL & ENVIRONMENTAL	
Fiber or Free Space Coupled	
Size	16.5 x 16.2 x 6.7 cm
Weight	1.8 kg
Power Consumption	<500 mA @ 12 V
Operating Temperature	0°C to 40°C, non-condensing

Custom options available upon request

