

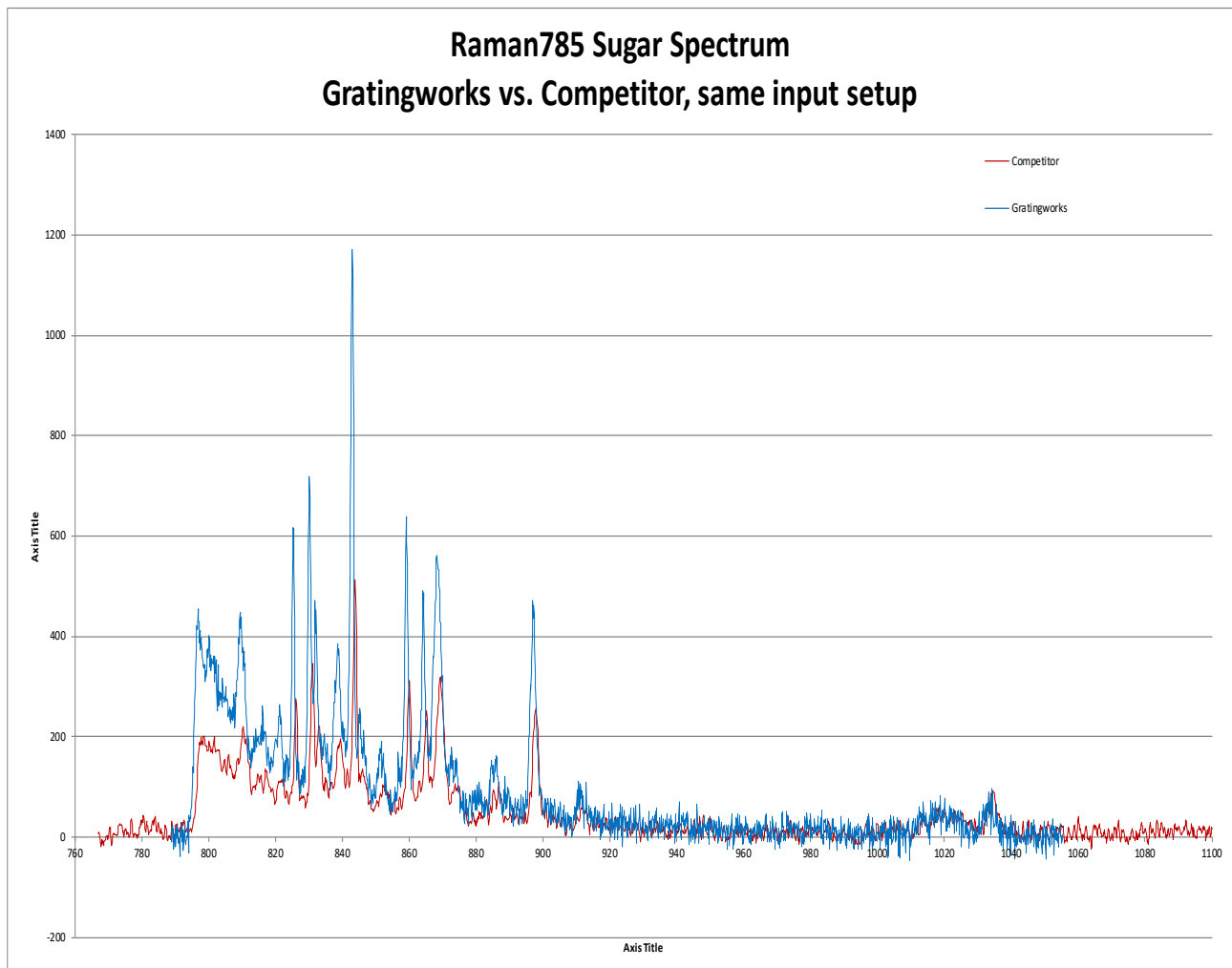
mini RAMAN Spectrometers



NA 0.22 Optical Design

SNR, Thermal and Mechanical Stability, Stray Light, Optical Throughput

- Patented passive athermal opto-mechanical design
- Optimized asymmetrical Czerny-Turner configuration
- Back thinned Hamamatsu S11510, S10420 or CMOS S13496



Optical		
Optical Design	NA 0.22 optical design	
Grating Selection	266nm, 532nm, 785nm, support customization	
Entrance Slit	25um, 50um. 1mm height	
Optical Fiber	SMA905	
CCD		
Detector	Hamamatsu S11510/S10420	Hamamatsu S13496
Pixels	2048x64, 14x14um	4096 pixels; 7x200 um
Full Well Depth	~300 Ke ⁻	---
Characteristic		
SNR	500(no avg);	300(no avg);
Readout Noise	<8 rms(no avg)	<40 rms(no avg)
Dynamic Range	>5000(no avg)	>2000(no avg)
Integration Time	9.4ms-65 s	54 us-65 s
AD Conversion	16bit, 250KHz	16bit, 1MHz
Spectrum Range	790-1055nm for 795nm system	
Resolution	0.6nm@25um, 0.8nm@50um(FWHM)	
System Stray Light	0.15% with Tungsten ⁽¹⁾	
Thermal Spectrum Drift	Wavelength Drift<0.5 pixel(10-50C) ⁽²⁾	
Electronics		
Current Consumption	250mA@5 VDC	200 mA@5 VDC
USB	USB2.0HS@480 Mbps	
GPIO	6 GPIOs	
LAMP Control	PWM, pulse, or custom output	
Trigger	Software & External	
Averaging	On-Board Averaging	
Software		
Supported Platform	Windows XP-7-8-10	
Interface	USB2.0HS@480 Mbps; RS232@115.2 Kbaud ⁽³⁾	
Physical		
Dimension	97.5x89x27mm	
Weight	422 g	

1.<http://www.gratingworks.com/products/noise.pdf>

2.<http://www.gratingworks.com/products/temp.pdf>