

## BaySpec Raman Spectrometer Portfolio Selection Guide

							
<b>Model</b>	Xantus-0	Xantus-1	First Guard	Xantus-2	Portability	RamSpec-1	RamSpec-x
<b>Part Number</b>	HRAM-0B-0785	HRAM-1-0785	HRAM-1G-0785	HRAM-2-1064	PRAM-1-0785	BRAM-1-0785	BRAM-X-0785
<b>Format</b>	Handheld	Handheld	Handheld	Handheld	Portable	Benchtop	Benchtop
<b>Size</b>							
Dimensions (mm <sup>3</sup> )	93 x 195 x 59	125 x 233 x 85	125 x 233 x 85*	140 x 218 x 410	240 x 260 x 135	134 x 315 x 84	Custom
Weight	1 kg (2.2lbs.)	2.4kg (4.7lbs.)	2.7kg (6.0lbs.)	< 7.3kg (15.9 lbs)	< 4.5kg (9.9 lbs)	4.6 kg (10 lbs.)	Custom
<b>Excitation Source</b>							
532nm	■	■	■	■	■	■	■
785nm	■	■	■	■	■	■	■
1064nm					■	■	■
Custom	<i>contact BaySpec</i>						
Laser FWHM Bandwidth	0.2nm typ./ 0.3nm max.						
Output power	>80mW	0~500mW	0~500mW	0~500mW	0~500mW	0~500mW	0~1500mW
<b>Spectrograph</b>							
Grating Technology	<i>Transmission Volume Phase Grating (VPG®)</i>						
Range (532nm)	300-3000 cm <sup>-1</sup>	300-3000 cm <sup>-1</sup>	300-3000 cm <sup>-1</sup>		300-3200 cm <sup>-1</sup> 300-2000 cm <sup>-1</sup>	300-3200 cm <sup>-1</sup>	300-3200 cm <sup>-1</sup>
Range (785nm)	500-1800 cm <sup>-1</sup>	500-1800 cm <sup>-1</sup>	500-1800 cm <sup>-1</sup>		300-3200 cm <sup>-1</sup> 300-2000 cm <sup>-1</sup>	300-3200 cm <sup>-1</sup>	300-3200 cm <sup>-1</sup>
Range (1064nm)				250-2100 cm <sup>-1</sup>	300-3200 cm <sup>-1</sup> 300-2000 cm <sup>-1</sup>	300-3200 cm <sup>-1</sup>	300-3200 cm <sup>-1</sup>
Spectral Resolution	15-17 cm <sup>-1</sup>	10-12 cm <sup>-1</sup>	10-12 cm <sup>-1</sup>	15-17 cm <sup>-1</sup>	5-7 cm <sup>-1</sup>	4-5 cm <sup>-1</sup>	4-5 cm <sup>-1</sup>
Stray Light Reduction	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
<b>Detector</b>							
Type	Uncooled CCD	TE cooled CCD	Uncooled and TE cooled CCD	TE cooled InGaAs Array	TE cooled CCD or InGaAs Array	TE cooled CCD or InGaAs Array	TE cooled CCD or InGaAs Array
Number of pixels	1024	1024	1024	512	512/1024/2048	512/1024/2048	512/1024/2048
Pixel size	14µm	14µm or 25µm	14µm or 25µm	25µm	14µm or 25µm	14µm or 25µm	14µm or 25µm
Cooling temperature		-20°C	-20°C	-50°C	-20°C	-20°C	-20°C
(Deep cooling option)						-55°C	-55°C
Integration time	20ms - 300sec.	20ms - 300sec.	20ms - 300sec.	20ms - 300sec.	20ms - 300sec.	20ms - 300sec.	20ms - 300sec.
Readout speed	250kHz	250kHz	250kHz	250kHz	250kHz	250kHz	250kHz
Digitalized output	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit
Dynamic range	2000:1 typ.	3000:1 typ.	3000:1 typ.	500:1 typ.	3000:1 typ.	6000:1 typ.	6000:1 typ.
Quantum Efficiency (max.)	>90%	>90%	>90%	>80%	>80%	>80%	>80%
<b>Electronics</b>							
Interface	USB2.0 / RS232 / Ethernet						
Input power	115~120VAC/+5VDC			(battery only)	+15VDC	115~220VAC	
Trigger mode				5V TTL edge or level	5V TTL edge or level	5V TTL edge or level	5V TTL edge or level
Wireless Bluetooth	■	■	■	■	■		
Wireless Ethernet 802.11b/g		optional	optional	optional	optional	optional	optional
Battery life	4 hrs	4 hrs	4 hrs	2 hrs	2 hrs	NA	NA
Battery hot swappable			■	■			
<b>Software</b>							
BaySpec "Spec 2020"	Micro 2020 , Windows CE	Micro 2020 , Windows XP/Vista				Spec 2020, Windows XP/Vista, SDK for development	
Library support	SDK support for 3rd Party Libraries available						

\*excluding handle

*BaySpec's Raman solutions begin with careful choice of optical, electrical and mechanical parts for optimal throughput and excellent long-term reliability*

### Gratings

BaySpec's spectrometers utilize transmission Volume Phase Gratings (VPG®) high efficiency and compact size, covering any wavelength range from 300-3000nm

### Spectrograph

Fast optics, typically f/1.8 or f/3 for high throughput utilizing BaySpec's VPGs and specialty optics designs for long-term repeatability and reliability

### Detectors

Uncooled, soft cooled (-20C) and deep-cooled (-55C) detector array options allow for excellent signal/noise ratio over wide operating ranges

### Probe

Flexible fiber coupling with ruggedized protective jacking delivers Rayleigh scattering rejection as high as 10 photons per billion. Available in a number of wavelength ranges: 532nm, 785nm, 1064nm. Others upon request.

*BaySpec's vision is to design, manufacture and deliver VPG-based spectral engines enabling pervasive spectral sensing into biomedical, pharmaceuticals, food safety, industrial controls, fiber sensing, and telecom markets*

