HORIBA Scientific

High-efficiency VIS-NIR detector for spectroscopic applications with small slit-heights

Symphony® II 1024 × 128 Cryogenic Back-Illuminated CCD Detector

The exceptional quantum efficiency of the HORIBA Scientific Back-Illuminated 1024 × 128 CCD makes this detector ideal for extremely low level signal acquisitions in visible and near-IR spectroscopic applications. Better suited for emission spectroscopy where peaks are narrow, this detector can show etaloning effects with broad spectral bands found in Raman and fluorescence applications. The quality of this chip is comparable to the 1024 x 256 BIVS in a smaller format and lower cost. This detector is the best choice for fast acquisitions with a maximum spectral rate of 450 Hz.

Feature	Spectroscopy Benefits
Scientific Grade 1 CCD	Ideally suited for low light level detection in a variety of spectroscopic applications
Back-illuminated CCD	Highest quantum efficiency for greatest sensitivity
Liquid-nitrogen Cooling	Extremely low dark signal for extended integration times required with low signals
Excellent Linearity	Increased accuracy of data over the full dynamic range
Software-selectable Scan Rates	Optimize an experiment for the best combination of speed and sensitivity
USB 2.0 Interface	Standard connection to PC notebooks and desktops with 100% data integrity
HORIBA Scientific's SynerJY® Software	Complete control of a Symphony II CCD and HORIBA Scientific Spectrograph system with full analysis capabilities
LabVIEW™ VIs and SDK Available	Flexible software to integrate a Symphony II CCD into existing apparatus or as an OEM component

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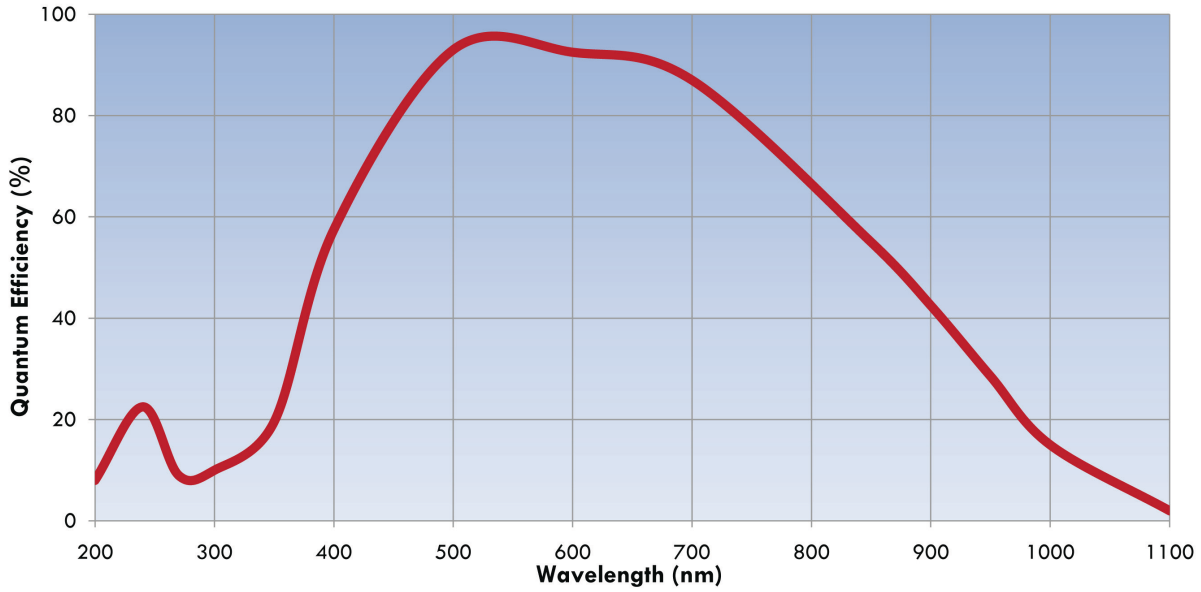
Specifications*

CCD Format		1024 × 128, back-illuminated, Scientific Grade 1		
Pixel Size		26 µm × 26 µm		
Image Area		26.6 mm × 3.3 mm, 100% fill factor		
Cooling System		Liquid nitrogen		
Hold Time	1LS Model	24 hours with 1 L Dewar		
	3LS Model	72 hours with 1 L Dewar		
		Minimum	Typical	Maximum
Readout Noise	20 kHz		5 e^- rms	8 e^- rms
	1 MHz		20 e^- rms	25 e^- rms
Pixel Well Capacity		300 ke^-	500 ke^-	
Register Well Capacity			1000 ke^-	
Dark Current			1 e^-/pixel/h	3 e^-/pixel/h
Nonlinearity		< 0.4% at 20 kHz < 1% at 1 MHz		
Scan Rates		20 kHz and 1 MHz, software-selectable		
Software-Selectable Gains		5 software-selectable gains		
Dynamic Range		16 bits		
Vertical Shift Rates		49 µs, 24 µs, 9 µs[1]		
Maximum Spectral Rate	20 kHz	17 Hz		
	1 MHz	450 Hz[1,2]		

*Specifications subject to change without notice.

Typical Spectral Response



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Ordering Information:

SII-1LS-128-BV Liquid Nitrogen Cooled CCD System with 1 Liter Side-Looking Dewar
SII-3LS-128-BV Liquid Nitrogen Cooled CCD System with 3 Liter Side-Looking Dewar

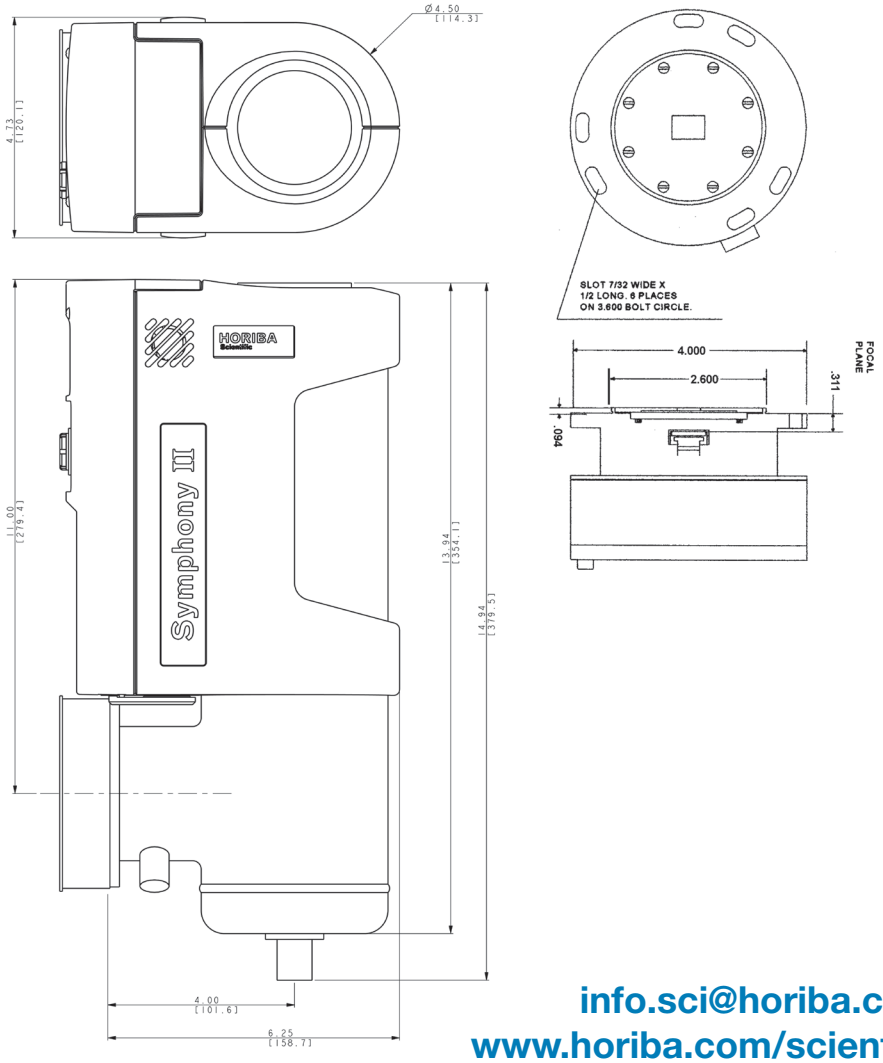
Our CCD packages include a CCD shutter for clean CCD charge transfer and background subtraction. We highly recommend that the funnel (G3200111328) be purchased with this unit.

Notes:

[1]CCDs are guaranteed to have full charge transfer efficiency (CTE) at our standard shift rate of 49 µs. At faster shift rates, a decrease in CTE may be observed.

[2]Highest spectral rates are achieved when using the 1 MHz ADC, a vertical transfer time of 9 µs, with no mechanical shutter.

Mechanical Dimensions



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