HORIBA Scientific

ELEMENTAL ANALYSIS
FLUORESCENCE
GRATINGS & OEM SPECTROMETERS
OPTICAL COMPONENTS
PARTICLE CHARACTERIZATION
RAMAN
SPECTROSCOPIC ELLIPSOMETRY
SPR IMAGING

The enhanced QE, high-resolution, large-format camera for low spectroscopic signals

Symphony® II 2048 × 512 Cryogenic Back-Illuminated CCD Detector

The HORIBA Scientific Back-Illuminated 2048 × 512 CCD is ideal for low-noise acquisitions required in spectroscopic applications. Its 13.5 µm × 13.5 µm pixels offer very high spectral resolution. The detector has been designed with a low-noise amplifier for extremely low readout noise. This detector is better suited for emission spectroscopy where peaks are narrow.

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
Auxiliary Signal Input	Unique ability to add measurements from single-channel detectors without additional electronics
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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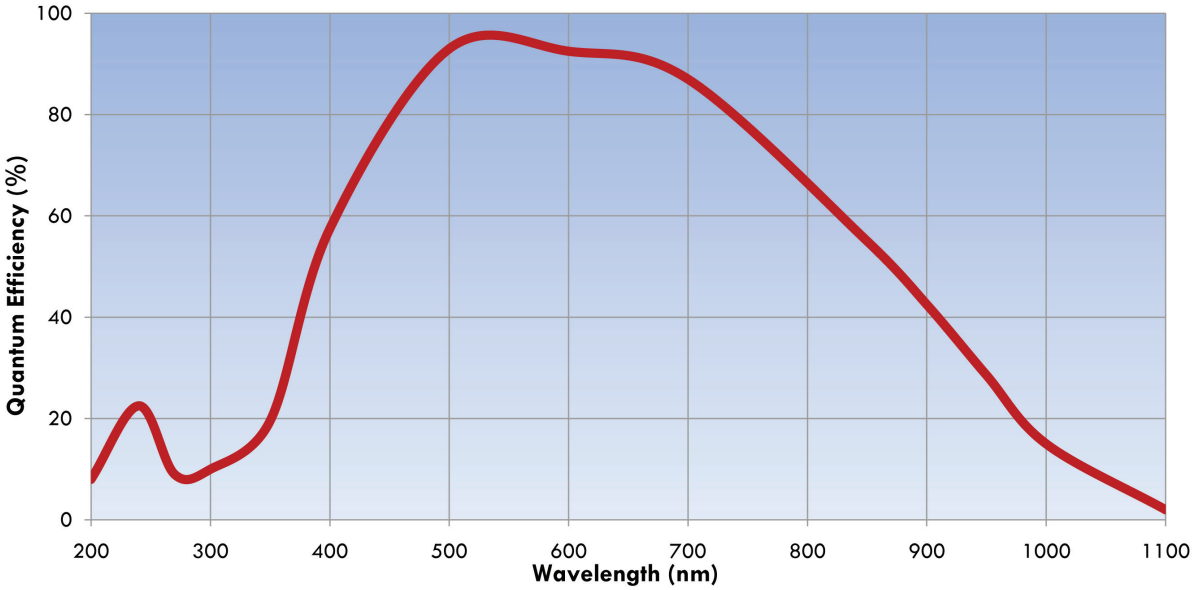
Specifications*

CCD Format			2048 × 512, back-illuminated, Scientific Grade 1		
Pixel Size			13.5 µm × 13.5 µm		
Image Area			27.6 mm × 6.9 mm, 100% fill factor		
Cooling System			Liquid nitrogen		
Hold Time		1LS Model	24 hours with 1 L Dewar		
		3LS Model	72 hours with 3 L Dewar		
			Minimum	Typical	Maximum
Readout Noise	20 kHz			3 e^- rms	4 e^- rms
	1 MHz			13 e^- rms	15 e^- rms
Pixel Well Capacity			150 ke^-	250 ke^-	
Register Well Capacity				1000 ke^-	
Dark Current				0.5 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			3 software-selectable gains		
Dynamic Range			16 bits		
Vertical Shift Rates			36 µs, 9 µs		
Maximum Spectral Rate	20 kHz		6 Hz		
	1 MHz		140 Hz		

*Specifications subject to change without notice.

Typical Spectral Response



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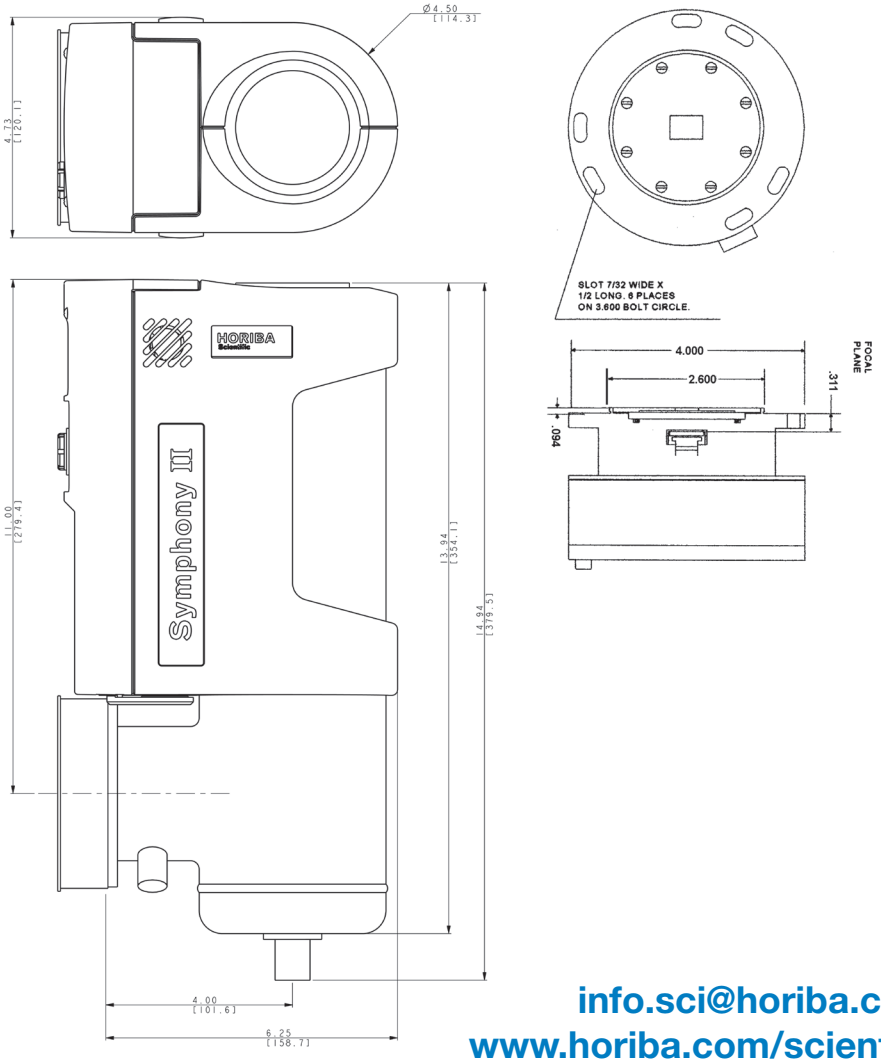
Ordering Information:

SII-1LS-512-BV Liquid Nitrogen Cooled CCD System with 1 Liter Side-Looking Dewar

SII-3LS-512-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. To transfer liquid nitrogen to the CCD Dewar, we recommend our appropriately-sized funnel, part # G3200111328.

Mechanical Dimensions



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