

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

## Symphony<sup>®</sup> II 1024 × 128 Cryogenic Back-Illuminated UV-Sensitive CCD Detector

The exceptional quantum efficiency of the HORIBA Scientific Back-Illuminated UV-Sensitive 1024 × 128 CCD makes this detector ideal for extremely low level signal acquisitions in UV, 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 BIUV in a smaller format and lower cost. This detector is the best choice for fast acquisitions with a maximum spectral rate of 450 Hz.



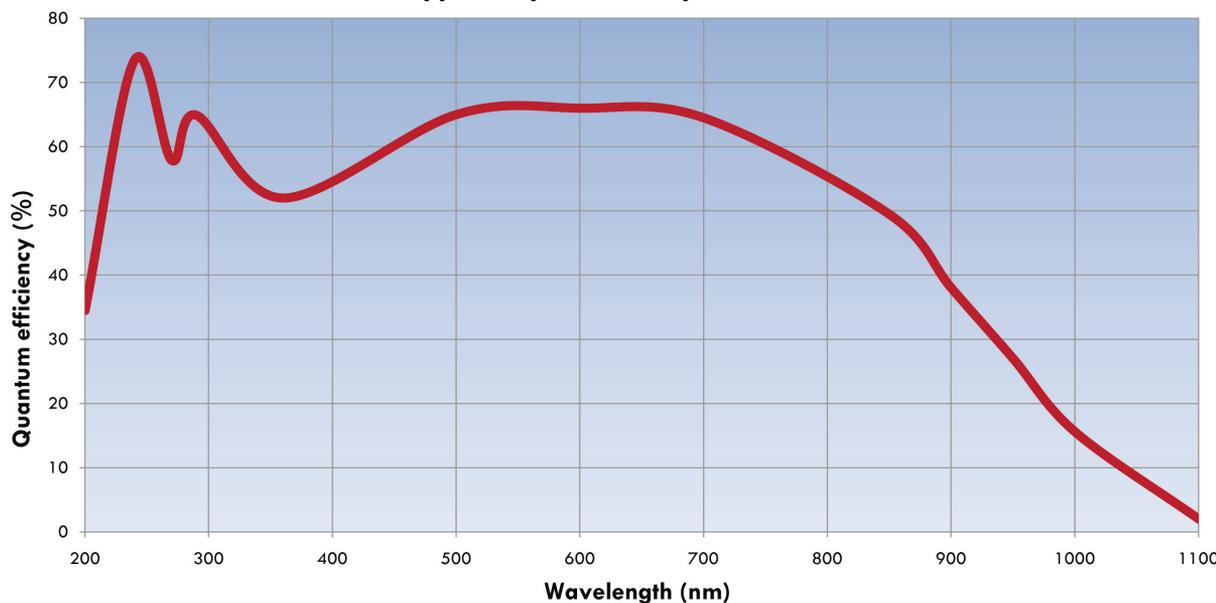
Feature	Spectroscopy Benefits
Scientific Grade 1 CCD	Ideally suited for low light level detection in a variety of spectroscopic applications
Back-illuminated CCD with UV Lumogen <sup>®</sup>	Highest quantum efficiency for greatest sensitivity with enhanced UV response
Liquid-nitrogen Cooling	Extremely 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 <sup>®</sup> Software	Complete control of a Symphony II CCD and HORIBA Scientific Spectrograph system with full analysis capabilities
LabVIEW <sup>™</sup> VIs and SDK Available	Flexible software to integrate a Symphony II CCD into existing apparatus or as an OEM component



CCD Format	1024 × 128, back-illuminated, UV-coated, 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 <sup>-</sup> rms	8 e <sup>-</sup> rms
	1 MHz		20 e <sup>-</sup> rms	25 e <sup>-</sup> rms
Pixel Well Capacity		300 ke <sup>-</sup>	500 ke <sup>-</sup>	
Register Well Capacity			1000 ke <sup>-</sup>	
Dark Current			1 e <sup>-</sup> /pixel/h	3 e <sup>-</sup> /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 <sup>1</sup>			
Maximum	20 kHz	17 Hz		
Spectral Rate	1 MHz	450 Hz <sup>1,2</sup>		

\*Specifications subject to change without notice.

Typical Spectral Response



# HORIBA

## Scientific

### Ordering Information:

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

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

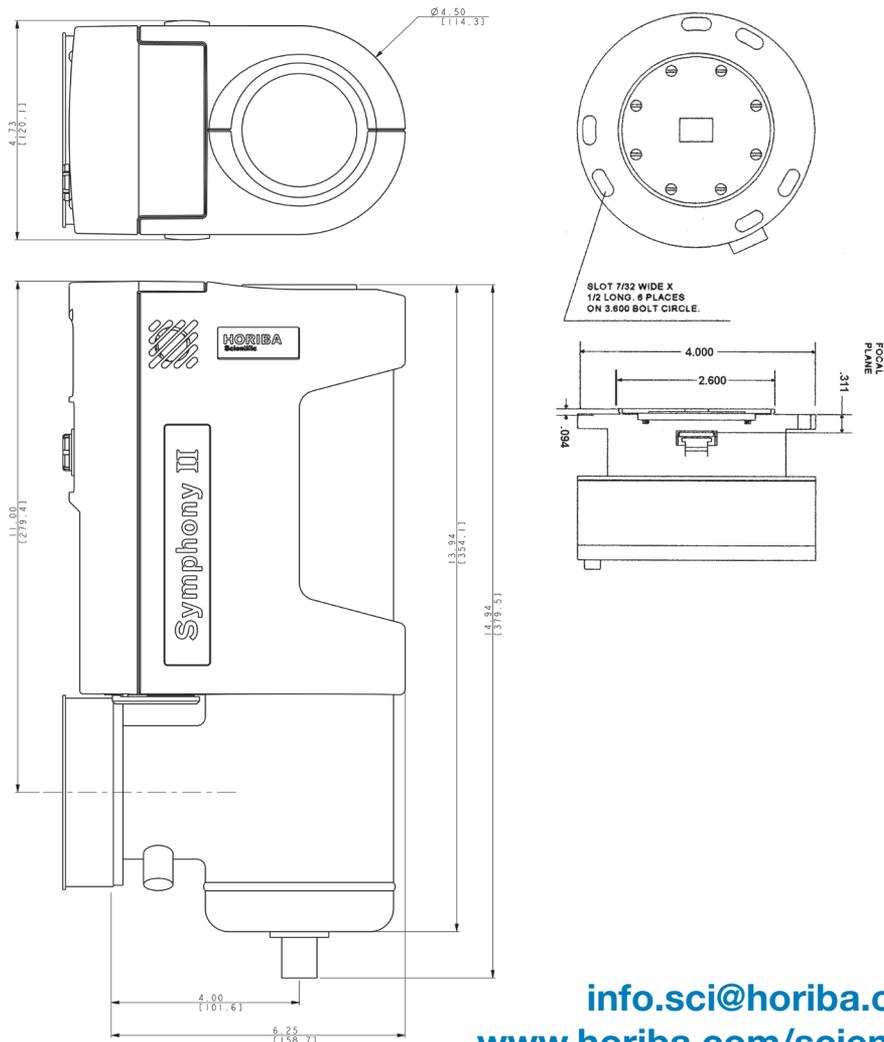
Our CCD packages include a CCD shutter for clean CCD charge transfer and background subtraction. We highly recommend that the funnel (G3200111328) be purchased with this unit.

### Notes:

<sup>1</sup>CCDs are guaranteed to have full charge transfer efficiency (CTE) at our standard shift rate of 49  $\mu$ s. At faster shift rates, a decrease in CTE may be observed.

<sup>2</sup>Highest spectral rates are achieved when using the 1 MHz ADC, a vertical transfer time of 9  $\mu$ s, with no mechanical shutter.

## Mechanical Dimensions



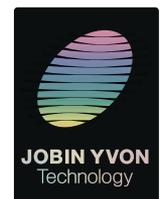
[info.sci@horiba.com](mailto:info.sci@horiba.com)  
[www.horiba.com/scientific](http://www.horiba.com/scientific)

**HORIBA**  
Scientific

**USA:** +1 732 494 8660  
**UK:** +44 (0)20 8204 8142  
**Spain:** +34 91 490 23 34  
**Other Countries:** +33 (0)1 64 54 13 00

**France:** +33 (0)1 64 54 13 00  
**Italy:** +39 0 2 5760 3050  
**China:** +86 (0)10 8567 9966

**Germany:** +49 (0)89 4623 17-0  
**Japan:** +81 (0)3 38618231  
**Brazil:** +55 11 5545 1540



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