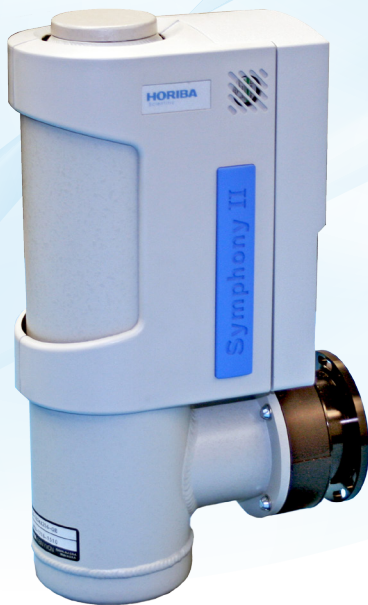
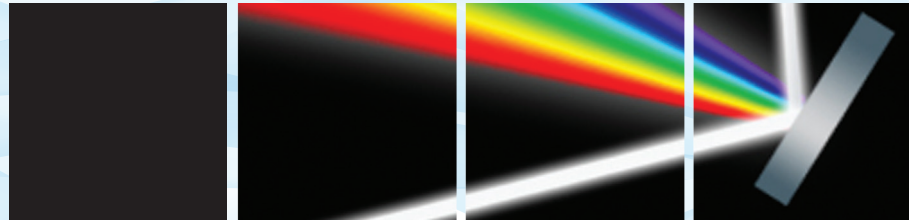




## Symphony II BIUV Scientific CCD Camera Scientific CCD Camera

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

Back Illuminated UV Sensor, -133°C  
Chip formats to choose from: 1024 x 256 pixels, Part #: SII-1LS-1024X256-BU-PS, SII-3LS-1024X256-BU-PS 2048 x 512 pixels, Part #: SII-1LS-2048X512-BU-PS, SII-3LS-2048X512-BU-PS



The Symphony II BIUV scientific CCD camera is the ideal camera low light level and fine spectra applications such as Raman spectroscopy. This series of cameras offers three different chip array formats to choose from with a peak quantum efficiency of 75%.

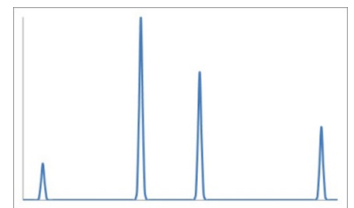
### Features and Benefits

- Best QE for UV spectroscopy
- Deep liquid nitrogen cooling
- Ideal for low light level detection without etaloning
- Excellent linearity
- Single channel detector port extends wavelength range
- E2V Scientific Grade 1 CCD
- Lifetime vacuum warranty
- USB 2.0 Interface
- HORIBA SynerJY acquisition and analysis software
- LabVIEW VI's and SDK available

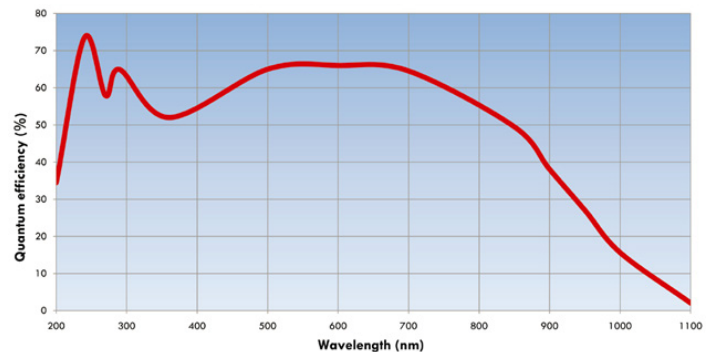
### Primary Applications

Primarily chosen for Raman and fine spectrum analysis, it is also well suited for studying weak spectral emissions.

- Raman
- Photoluminescence
- Absorption
- Transmission
- Reflectance



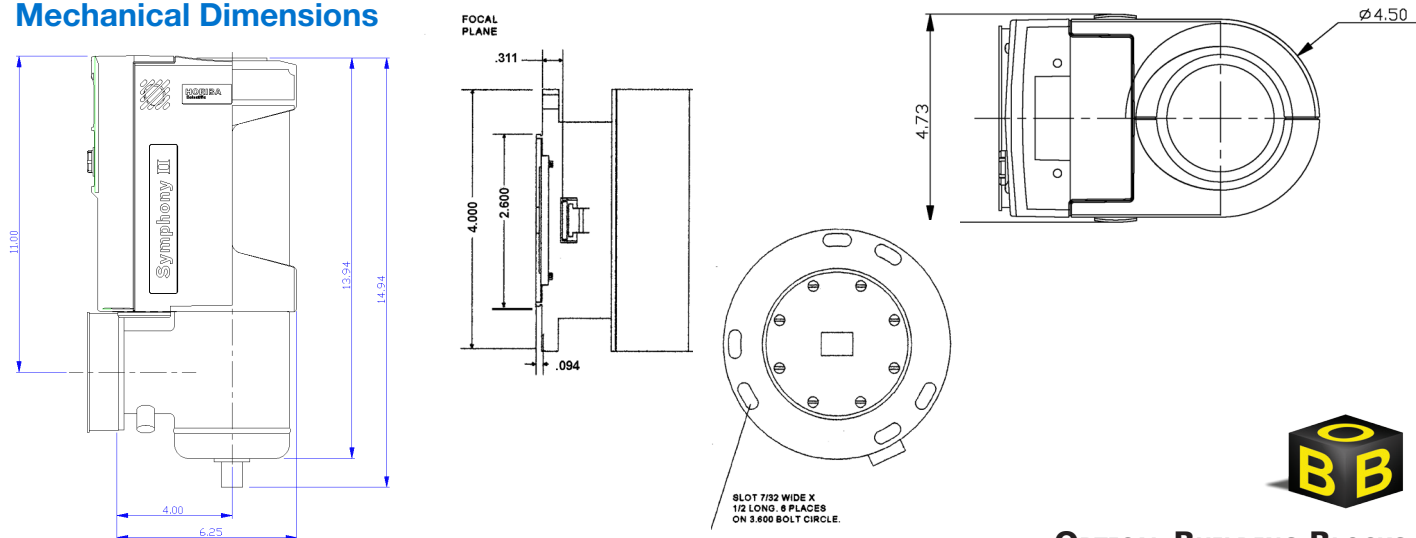
### QE Curve, Symphony II BIUV CCD



## Specifications

<b>CCD format</b>		2048 x 512, back-illuminated, UV-coated, Scientific Grade 1	1024 x 256, back-illuminated, UV-coated, Scientific Grade 1
<b>Pixel size</b>		13.5 $\mu\text{m}$ x 13.5 $\mu\text{m}$	26 $\mu\text{m}$ x 26 $\mu\text{m}$
<b>Image area</b>		27.6 mm x 6.9 mm, 100% fill factor	26.6 mm x 6.7 mm, 100% fill factor
<b>Cooling system</b>		Liquid nitrogen	
<b>Hold Time</b>	<b>1 LS Model</b>	24 hours with 1 L Dewar	
	<b>3 LS Model</b>	72 hours with 3 L Dewar	
<b>Typical readout noise</b>	<b>20 kHz</b>	3 e- rms	5 e- rms
	<b>1 MHz</b>	13 e- rms	20 e- rms
<b>Maximum readout noise</b>	<b>20 kHz</b>	4 e- rms	8 e- rms
	<b>1 MHz</b>	15 e- rms	25 e- rms
<b>Minimum pixel well capacity</b>		150 ke-	300 ke-
<b>Typical pixel well capacity</b>		250 ke-	500 ke-
<b>Typical register well capacity</b>		1000 ke-	
<b>Typical dark current</b>		0.5 e-/pixel/h	1 e-/pixel/h
<b>Nonlinearity</b>	<b>20 kHz</b>	<0.4%	
	<b>1 MHz</b>	<1%	
<b>Scan rates</b>		20 kHz and 1 MHz, software-selectable	
<b>Software-selectable gains</b>		3 software-selectable gains	
<b>Dynamic range</b>		16 bits	
<b>Vertical shift rates</b>		36 $\mu\text{s}$ , 9 $\mu\text{s}$	
<b>Maximum spectral rate</b>	<b>20 kHz</b>	6 Hz	13 Hz
	<b>1 MHz</b>	140 Hz	278 Hz

## Mechanical Dimensions



**OPTICAL BUILDING BLOCKS**



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

**USA:** +1 732 494 8660  
**UK:** +44 (0)20 8204 8142  
**China:** +86 (0)21 6289 6060

**France:** +33 (0)1 69 74 72 00  
**Italy:** +39 2 5760 3050  
**Brazil:** +55 (0)11 5545 1500

**Germany:** +49 (0)89 4623 17-0  
**Japan:** +81 (0)3 6206 4721  
**Other:** +1 732 494 8660

**HORIBA**  
Scientific