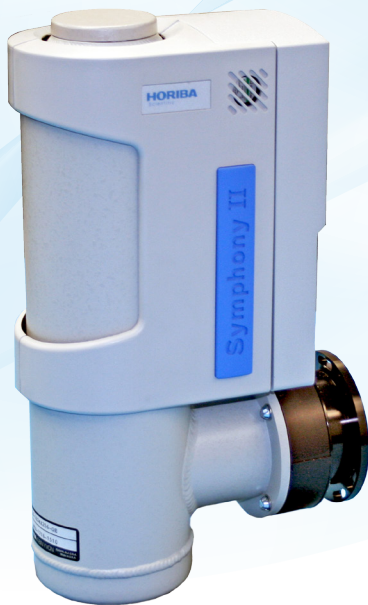
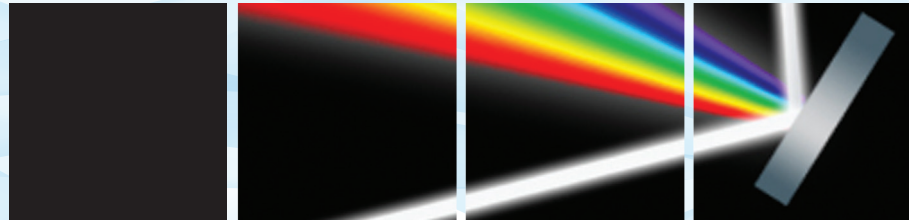




## Symphony II FIUV Scientific CCD Camera Scientific CCD Camera

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

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



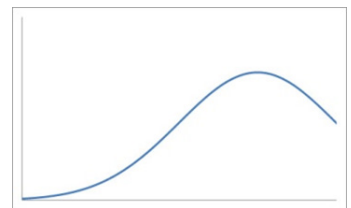
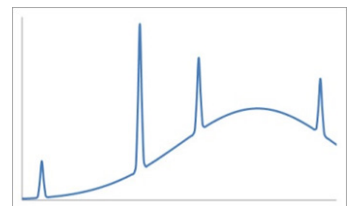
### Features and Benefits

- 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

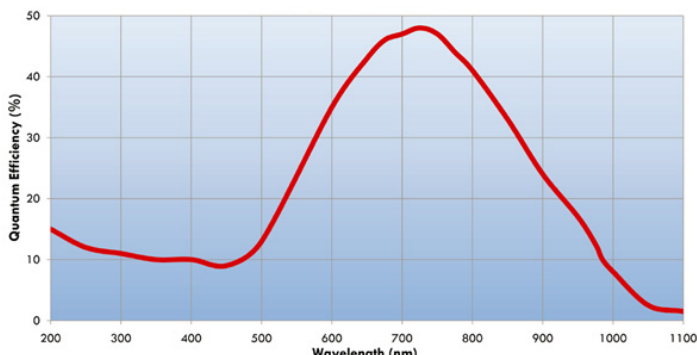
Primarily chosen for broad spectrum analysis such as photoluminescence, it is also well suited for studying fine spectral features on a broad spectral background.

- Fluorescence
- Photoluminescence
- Absorption
- Transmission
- Reflectance
- Raman



The Symphony II FIOE scientific CCD camera is the ideal camera for limited budgets. It has a peak quantum efficiency of 58%, boasts very good resolution and sensitivity and can be used for a variety of spectroscopy.

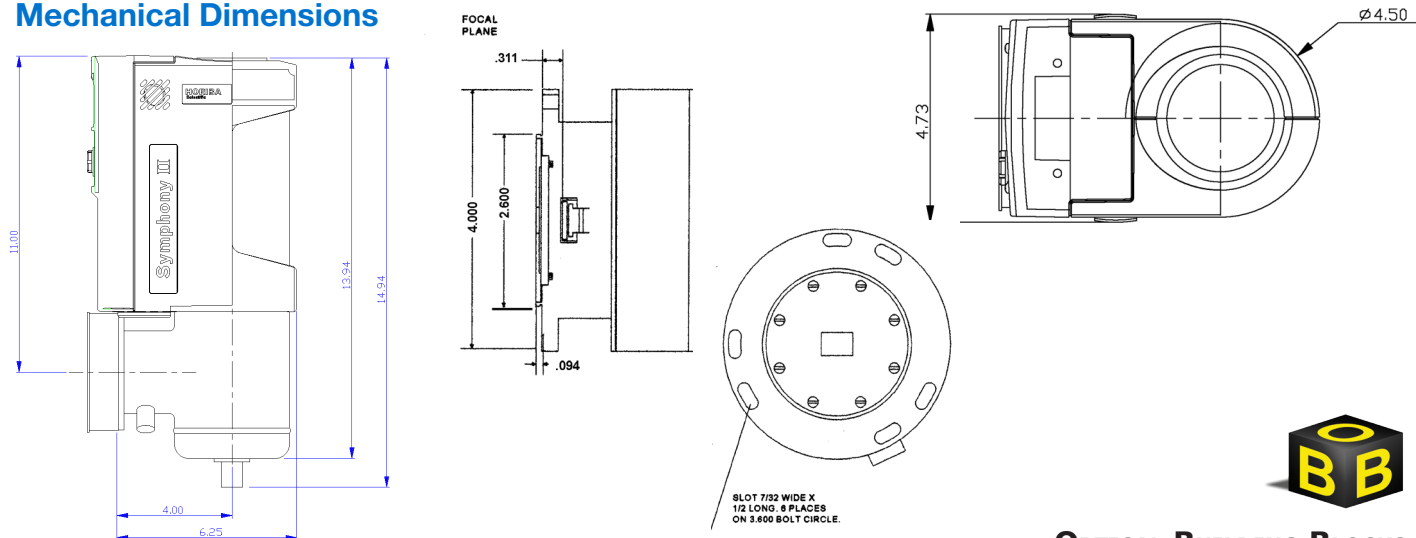
### QE Curve, Symphony II FIUV CCD



## Specifications

<b>CCD format</b>		2048 x 512, front-illuminated, UV-coated, Scientific Grade 1	1024 x 256, front-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>	2 e- rms	3.4 e- rms
	<b>1 MHz</b>	13 e- rms	15 e- rms
<b>Maximum readout noise</b>	<b>20 kHz</b>	4 e- rms	5 e- rms
	<b>1 MHz</b>	15 e- rms	20 e- rms
<b>Minimum pixel well capacity</b>		150 ke-	350 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	0.3 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