



Synapse FIUV

Scientific CCD Camera

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

Front illuminated UV enhanced sensor,
80°C (-95°C) Chip formats to choose from:
1024 x 256 pixels, 2048 x 512 pixels



The Synapse FIUV scientific CCD camera is the ideal camera for a variety of spectroscopy applications with enhanced UV detection. This series of cameras offers three different chip array formats to choose from with a peak quantum efficiency of 58%.

Features and Benefits

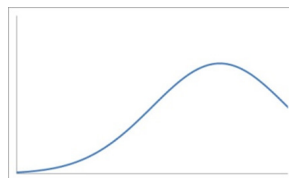
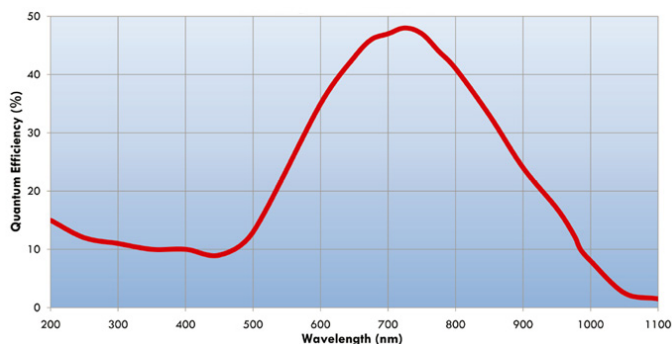
- Deep thermoelectric cooling
- Ideal for low light level detection without etaloning
- Excellent linearity
- Single channel detector port extends wavelength range
- E2V Scientific Grade 1 CCD
- Lifetime vacuum warranty
- USB 2.0 Interface
- HORIBA SynerJY acquisition and analysis software
- LabVIEW 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

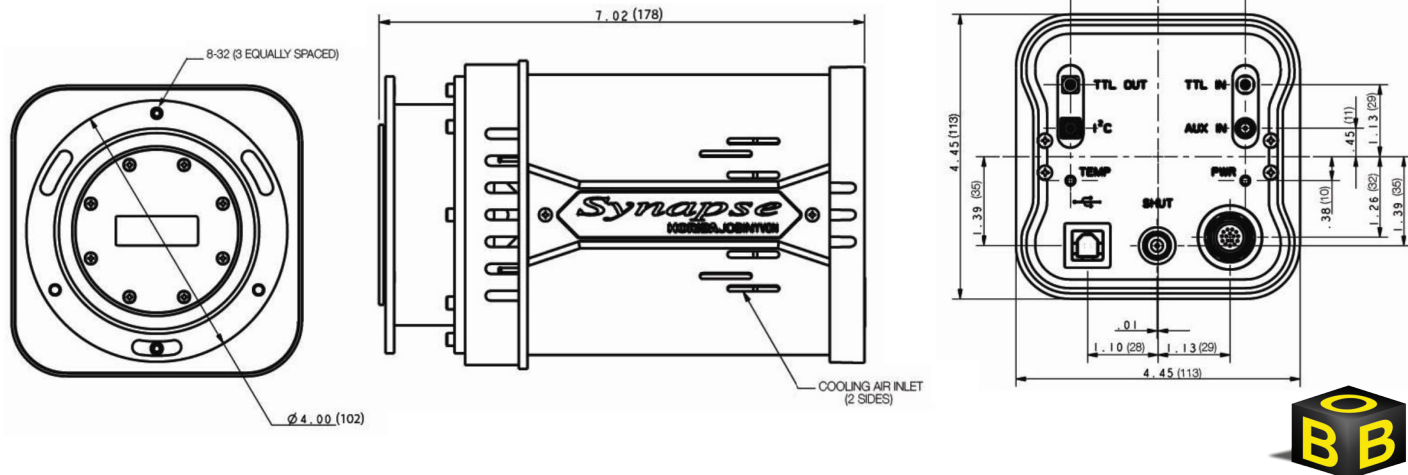
QE Curve, Synapse FIUV CCD



Specifications

CCD format		2048 x 512, front-illuminated, UV-coated, Scientific Grade 1	1024 x 256, front-illuminated, UV-coated, Scientific Grade 1
Pixel size		13.5 μm x 13.5 μm	26 μm x 26 μm
Image area		27.6 mm x 6.9 mm, 100% fill factor	26.6 mm x 6.7 mm, 100% fill factor
Cooling system		Four-stage thermoelectric cooling. Typical operating temperature -80°C, guaranteed to -75°C. External cooling option available (-95°C typical.)	
Typical readout noise	20 kHz	3 e- rms	3.4 e- rms
	1 MHz	9 e- rms	15 e- rms
Maximum readout noise	20 kHz	4 e- rms	5 e- rms
	1 MHz	15 e- rms	20 e- rms
Minimum pixel well capacity		150 ke-	350 ke-
Typical pixel well capacity		250 ke-	500 ke-
Typical register well capacity		1000 ke-	
Typical dark current		0.001 e-/pixel/s	0.002 e-/pixel/s
Nonlinearity	20 kHz	<0.4%	
	1 MHz	<1%	
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	13 Hz
	1 MHz	140 Hz	278 Hz
Physical dimensions (L x W x H)		7 x 4.5 x 4.5 inches	
Physical weight		5.8 lbs	

Mechanical Dimensions



OPTICAL BUILDING BLOCKS



HORIBA
Scientific

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