



Synapse BIVS

Scientific CCD Camera

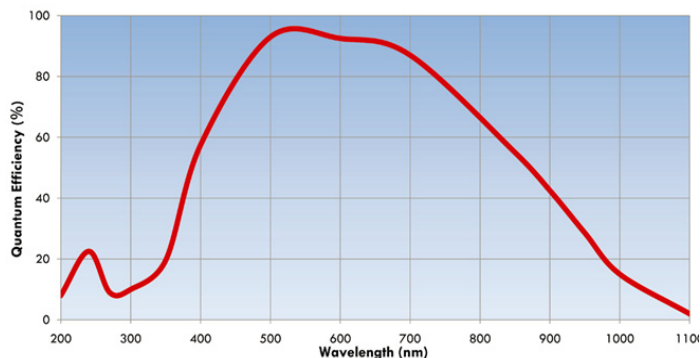
ELEMENTAL ANALYSIS
FLUORESCENCE
GRATINGS & OEM SPECTROMETERS
OPTICAL COMPONENTS
FORENSICS
PARTICLE CHARACTERIZATION
RAMAN
SPECTROSCOPIC ELLIPSOMETRY
SPR IMAGING

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



The Synapse BIVS 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 95%.

QE Curve, Synapse BIVS CCD



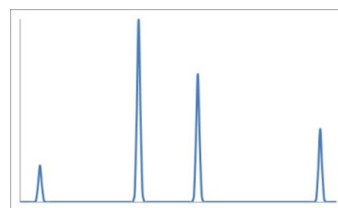
Features and Benefits

- Best QE for ultimate sensitivity
- 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 Raman and fine spectrum analysis, it is also well suited for studying weak spectral emissions.

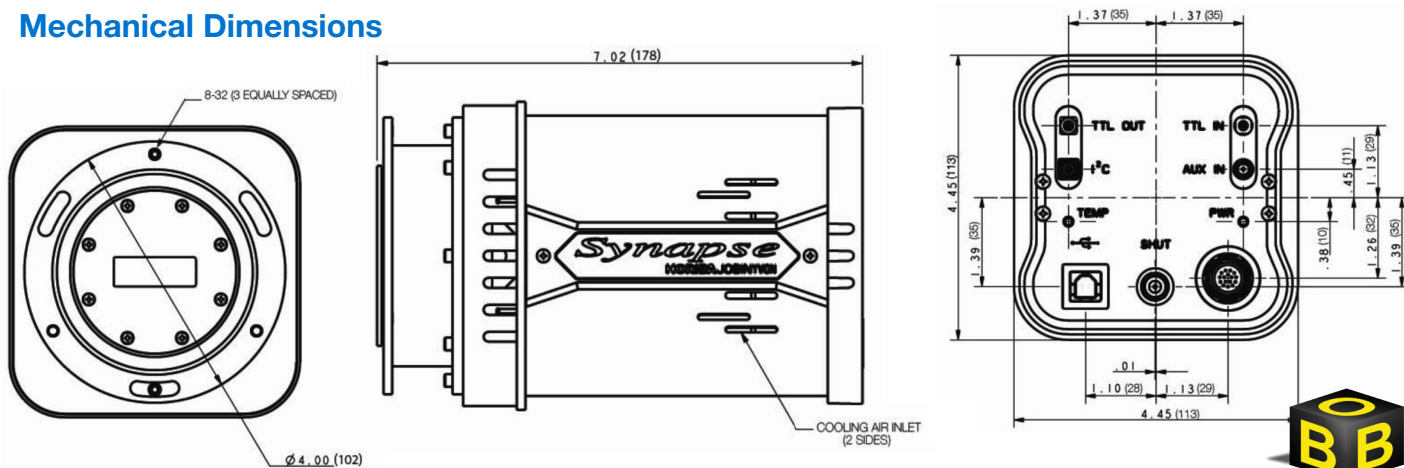
- Raman
- Photoluminescence
- Absorption
- Transmission
- Reflectance



Specifications

CCD format		512 x 512, back-illuminated, Scientific Grade 1	2048 x 512, back-illuminated, Scientific Grade 1	1024 x 256, back-illuminated, Scientific Grade 1
Pixel size		24 µm x 24 µm	13.5 µm x 13.5 µm	26 µm x 26 µm
Image area		12.3 mm x 12.3 mm, 100% fill factor	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	5 e- rms	3 e- rms	5 e- rms
	1 MHz	20 e- rms	10 e- rms	20 e- rms
Maximum readout noise	20 kHz	8 e- rms	4 e- rms	8 e- rms
	1 MHz	25 e- rms	15 e- rms	25 e- rms
Minimum pixel well capacity		300 ke-	150 ke-	350 ke-
Typical pixel well capacity		350 ke-	250 ke-	500 ke-
Typical register well capacity		1000 ke-		
Typical dark current		0.004 e-/pixel/s	0.002 e-/pixel/s	0.004 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	18 Hz	6 Hz	13 Hz
	1 MHz	49 Hz	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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