

## Synapse BIVS

Scientific CCD Camera

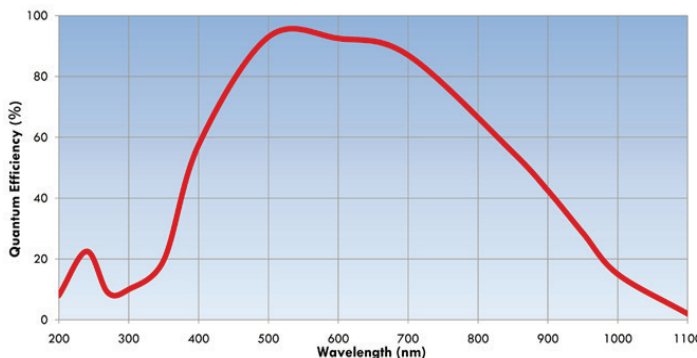
ELEMENTAL ANALYSIS
FLUORESCENCE
GRATINGS & OEM SPECTROMETERS
OPTICAL COMPONENTS
FORENSICS
PARTICLE CHARACTERIZATION
RAMAN
SPECTROSCOPIC ELLIPSOMETRY
SPR IMAGING

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



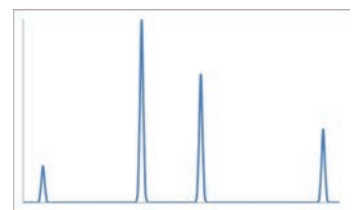
### Features and Benefits

- 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.

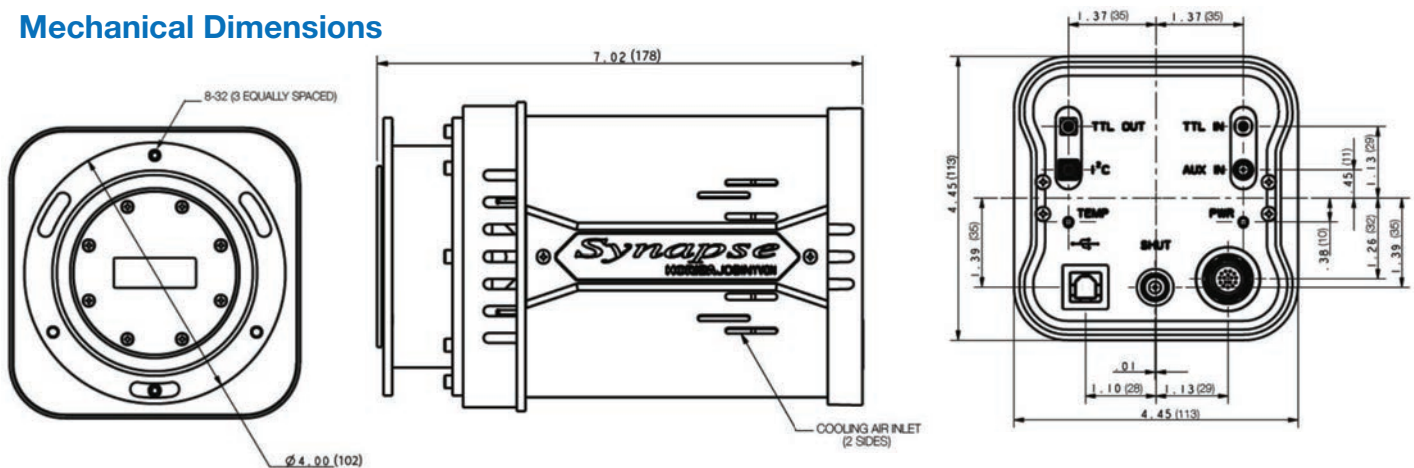
- Raman
- Photoluminescence
- Absorption
- Transmission
- Reflectance



## Specifications

<b>CCD format</b>	512 x 512, back-illuminated, Scientific Grade 1	
<b>Pixel size</b>	24 $\mu\text{m}$ x 24 $\mu\text{m}$	
<b>Image area</b>	12.3 mm x 12.3 mm, 100% fill factor	
<b>Cooling system</b>	Four-stage thermoelectric cooling. Typical operating temperature $-80^{\circ}\text{C}$ , guaranteed to $-75^{\circ}\text{C}$ . External cooling option available ( $-95^{\circ}\text{C}$ typical.)	
<b>Typical readout noise</b>	<b>20 kHz:</b> 5 $e^{-}$ rms	<b>1 MHz:</b> 20 $e^{-}$ rms
<b>Maximum readout noise</b>	<b>20 kHz:</b> 8 $e^{-}$ rms	<b>1 MHz:</b> 25 $e^{-}$ rms
<b>Minimum pixel well capacity</b>	300 $ke^{-}$	
<b>Typical pixel well capacity</b>	350 $ke^{-}$	
<b>Typical register well capacity</b>	1000 $ke^{-}$	
<b>Typical dark current</b>	0.004 $e^{-}/\text{pixel/s}$	
<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> 18 Hz	<b>1 MHz</b> 49 Hz
<b>Physical dimensions (L x W x H)</b>	7 x 4.5 x 4.5 inches	
<b>Physical weight</b>	5.8 lbs	

## Mechanical Dimensions



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