

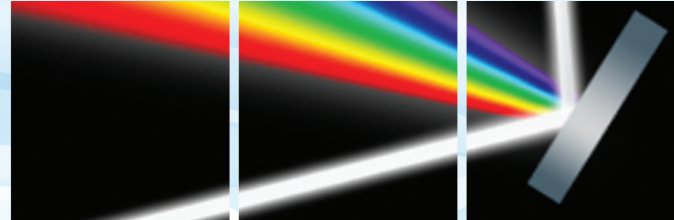


Synapse BIVS

Scientific CCD Camera

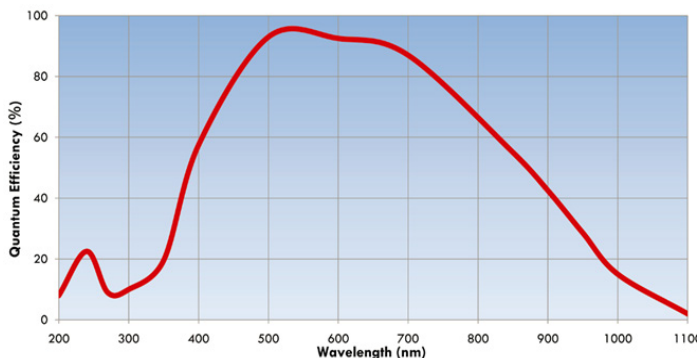
ELEMENTAL ANALYSIS
FLUORESCENCE
GRATINGS & OEM SPECTROMETERS
OPTICAL COMPONENTS
FORENSICS
PARTICLE CHARACTERIZATION
RAMAN
SPECTROSCOPIC ELLIPSOMETRY
SPR IMAGING

Back illuminated visible sensor,
-80°C (-95°C) 2048 x 512 pixels



The HORIBA Scientific back-illuminated 2048 x 512 CCD is ideal for low-noise acquisitions required in spectroscopic applications. Its 13.5 μm x 13.5 μm pixels offer very high spectral resolution, designed with a low-noise amplifier for extremely low readout noise. This detector is better suited for emission spectroscopy where peaks are narrow.

QE Curve, Synapse BIVS CCD



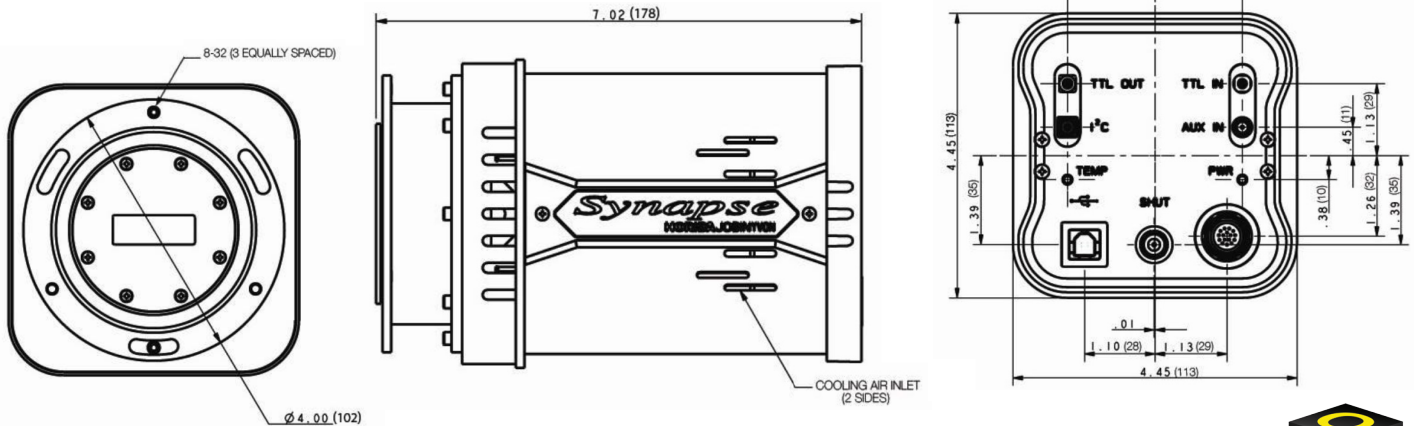
Features and Benefits

- Best QE for ultimate sensitivity—ideal for low light level detection without etaloning
- Deep thermoelectric cooling—low dark signal with no need for liquid nitrogen
- Lifetime vacuum warranty—all metal sealed technology allows a permanent vacuum, letting us offer a lifetime warranty
- Excellent linearity—increased accuracy of data over the full dynamic range
- USB 2.0 Interface—standard connection to PC notebooks and desktops with 100% data integrity
- Auxiliary signal input—unique ability to add measurements from single channel detectors without additional electronics
- High resolution 13.5 μm pixels—pixels are matched to spectrograph slits for highest resolution
- E2V scientific grade 1 CCD—ideally suited for low light level detection in a variety of spectroscopic applications
- HORIBA SynerJY® software—complete control of a Synapse CCD and HORIBA's Scientific spectrograph system with full analysis capabilities
- LabVIEW VI's and SDK available—flexible software to integrate a Synapse CCD into an existing apparatus or as an OEM component

Specifications

CCD format	2048 x 512, back-illuminated, Scientific Grade 1
Pixel size	13.5 μm x 13.5 μm
Image area	27.6 mm x 6.9 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 (typical), 4 e- rms (maximum) 1 MHz 10 e- rms (typical), 15 e- rms (maximum)
Minimum pixel well capacity	150 ke-
Typical pixel well capacity	250 ke-
Typical register well capacity	1000 ke-
Typical dark current	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 1 MHz @ 140 Hz
Physical dimensions (L x W x H)	7 x 4.5 x 4.5 inches
Physical weight	5.8 lbs

Mechanical Dimensions



HORIBA Scientific has a policy of continuous product development, and reserves the right to amend part numbers, descriptions and specifications without prior notice.



OPTICAL BUILDING BLOCKS



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