

The enhanced QE, high-resolution, large-format camera for low UV spectroscopic signals

Synapse[®] 2048 × 512 Back-Illuminated UV- Sensitive CCD Detector

The HORIBA Scientific Back-Illuminated 2048 × 512 CCD offers several advantages for low signal level spectroscopic measurements: an exceptional quantum efficiency for efficient signal collection, a low-noise amplifier for minimized readout noise, and a 13.5 μm × 13.5 μm pixel format which offers very high spectral resolution. This detector is better-suited for emission spectroscopy where peaks are narrow.



ELEMENTAL ANALYSIS

FLUORESCENCE

GRATINGS &
OEM SPECTROMETERS

OPTICAL COMPONENTS

PARTICLE CHARACTERIZATION

RAMAN

SPECTROSCOPIC ELLIPSOMETRY

SPR IMAGING

Feature

Spectroscopy Benefits

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
Back-illuminated CCD with UV-enhanced Coating	Highest quantum efficiency for greatest sensitivity with enhanced UV response
Scientific Grade 1 CCD	Ideally suited for low light level detection in a variety of spectroscopic applications
HORIBA Scientific's SynerJY [®] Software	Complete control of a Synapse CCD and HORIBA Scientific Spectrograph system with full analysis capabilities
LabVIEW VIs and SDK Available	Flexible software to integrate a Synapse CCD into existing apparatus or as an OEM component

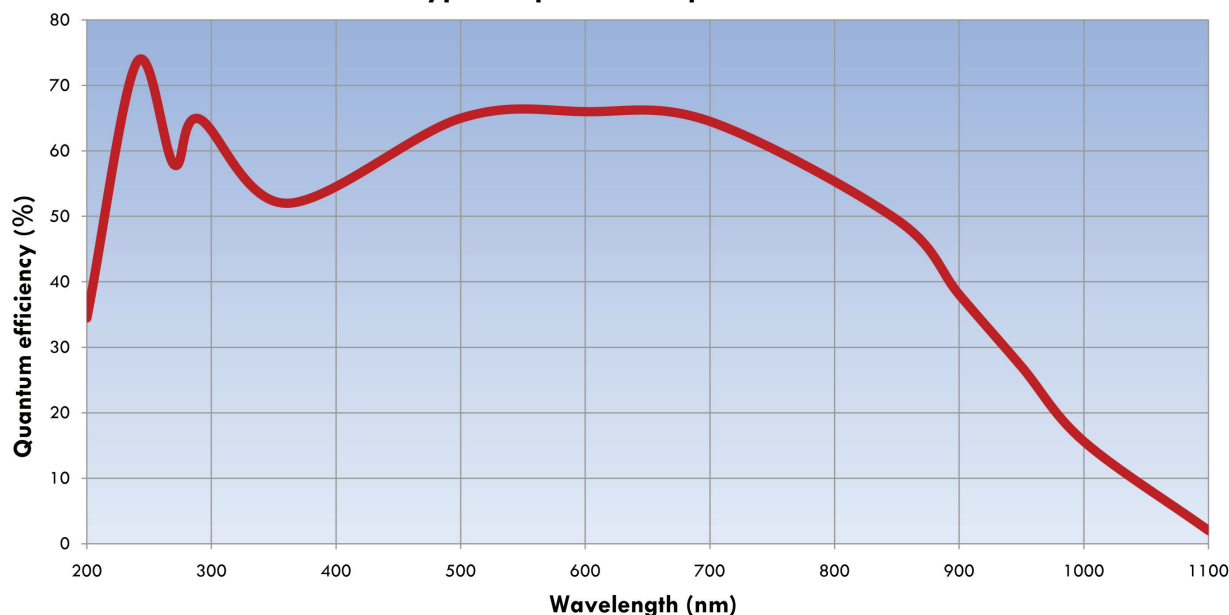


Specifications*

CCD Format		2048 × 512, back-illuminated, UV-coated, Scientific Grade 1		
Pixel Size		13.5 μm × 13.5 μm		
Image Area		27.6 mm × 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).		
		Minimum	Typical	Maximum
Readout Noise	20 kHz		3 e^{-} rms	4 e^{-} rms
	1 MHz		10 e^{-} rms	15 e^{-} rms
Pixel Well Capacity		150 ke^{-}	250 ke^{-}	
Register Well Capacity			1000 ke^{-}	
Dark Current			0.002 $\text{e}^{-}/\text{pixel/s}$	
Nonlinearity		< 0.4% at 20 kHz < 1% at 1 MHz		
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	20 kHz	6 Hz		
Spectral Rate	1 MHz	140 Hz		

*Specifications subject to change without notice.

Typical Spectral Response



HORIBA

Scientific

Ordering Information:

CCD-2048x512-BIUV-SYN Synapse Thermoelectric Cooled CCD System

Our CCD packages include a CCD shutter for clean CCD charge transfer and background subtraction.

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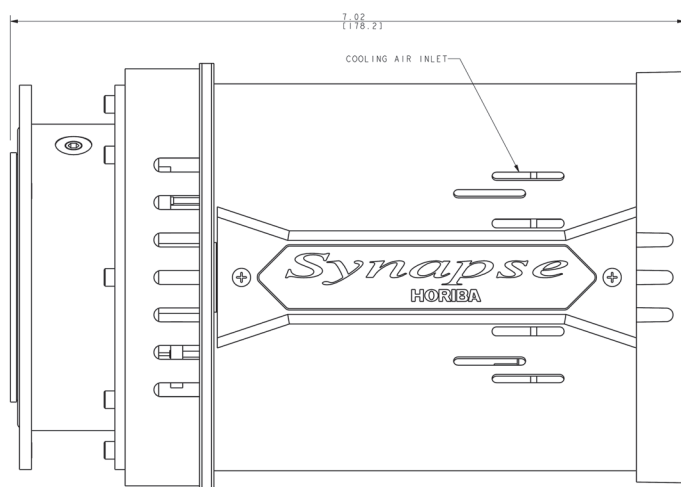
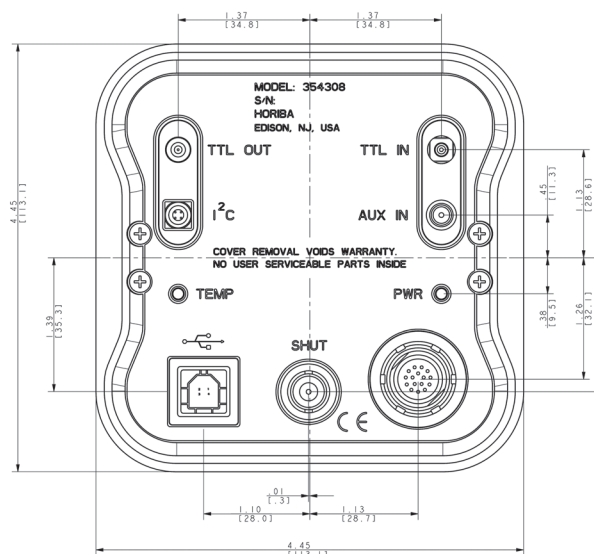
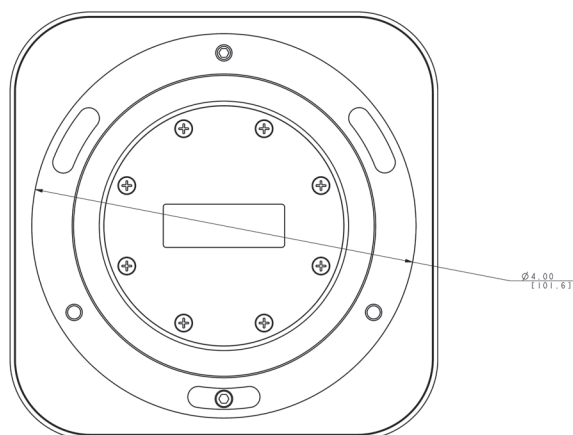
PARTICLE CHARACTERIZATION

RAMAN

SPECTROSCOPIC ELLIPSOMETRY

SPR IMAGING

Mechanical Dimensions



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