

The standard for spectroscopic applications with small slit-heights

Synapse[®] 1024 × 128 Front-Illuminated UV-Sensitive CCD Detector

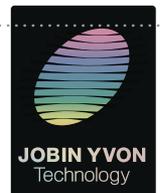
The HORIBA Scientific Front-Illuminated UV-Sensitive 1024 × 128 CCD detector is ideal for low-noise acquisitions required in spectroscopic applications that require sensitivity in the UV, such as emission, fluorescence, or Raman spectroscopy. Its 26 μm x 26 μm pixel format offers a high full well capacity, a large dynamic range, and an excellent signal-to-noise ratio. The quality of this chip is comparable to the 1024 × 256 FIUV in a smaller format and lower cost. This detector is the best choice for fast acquisitions with a maximum spectral rate of 450 Hz.



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	Provides automatic reference corrections or extends wavelength scanning ranges with near-IR detectors
UV Lumogen [®] -Coated CCD	Enhanced UV response from 200–400 nm
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

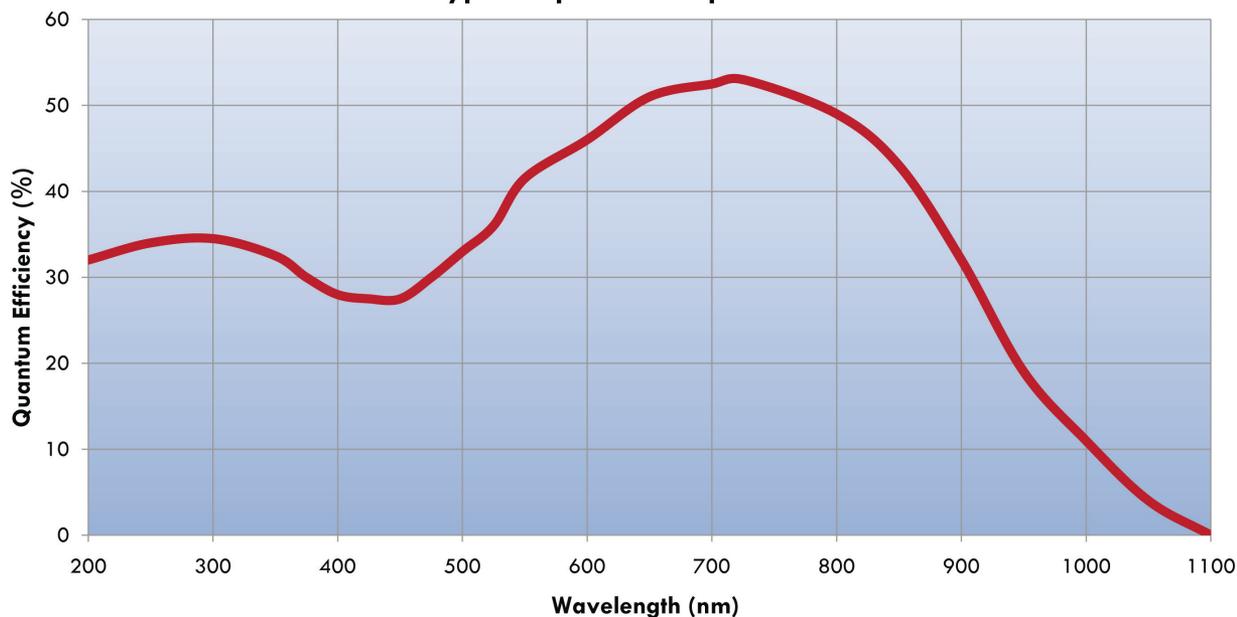


Specifications*

CCD Format	1024 × 128, front-illuminated, Scientific Grade 1			
Pixel Size	26 μm × 26 μm			
Image Area	26.6 mm × 3.3 mm, 100% fill factor			
Cooling System	Four-stage thermoelectric cooling, guaranteed to -75°C; optional -100°C (typical) external cooling available			
		Minimum	Typical	Maximum
Readout Noise	20 kHz		3.5 e ⁻ rms	6 e ⁻ rms
	1 MHz		20 e ⁻ rms	25 e ⁻ rms
Pixel Well Capacity		350 ke ⁻	650 ke ⁻	
Register Well Capacity			1000 ke ⁻	
Dark Current			0.002 e ⁻ /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 ¹			
Maximum Spectral Rate	20 kHz	17 Hz		
	1 MHz	450 Hz ^{1,2}		

*Specifications subject to change without notice.

Typical Spectral Response



HORIBA

Scientific

ELEMENTAL ANALYSIS

FLUORESCENCE

GRATINGS &
OEM SPECTROMETERS

OPTICAL COMPONENTS

PARTICLE CHARACTERIZATION

RAMAN

SPECTROSCOPIC ELLIPSOMETRY

SPR IMAGING

Ordering Information:

CCD-1024x128-FIUV-SYN Synapse Thermoelectric Cooled CCD System

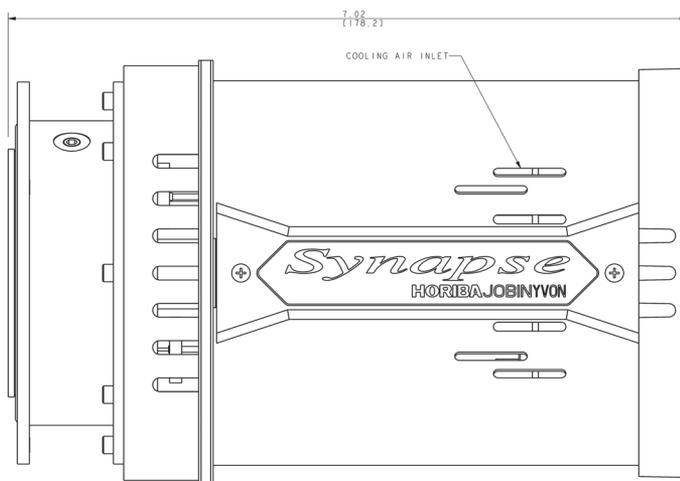
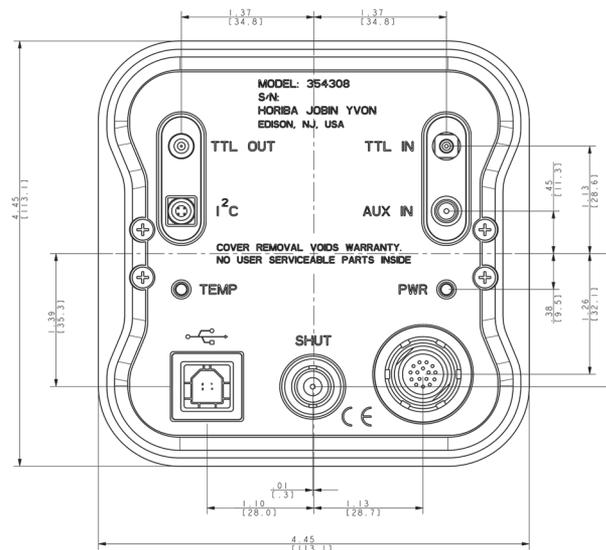
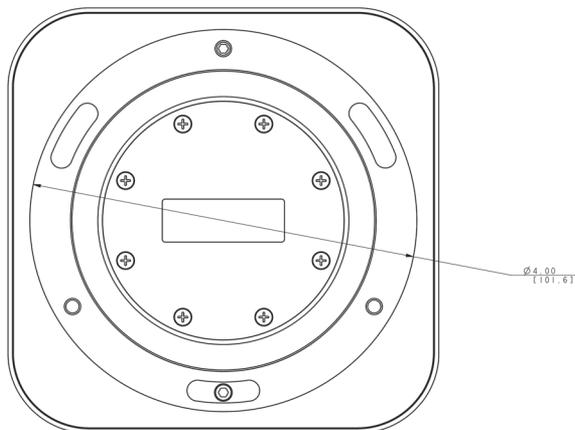
Our CCD packages include a CCD shutter for clean CCD charge transfer and background subtraction.

Notes:

¹CCDs are guaranteed to have full charge transfer efficiency (CTE) at our standard shift rate of 36 μ s. At faster shift rates, a decrease in CTE may be observed.

²Highest spectral rates are achieved when using the 1 MHz ADC, a vertical transfer time of 9 μ s, with no mechanical shutter.

Mechanical Dimensions



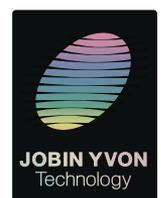
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