

Ideal for low-light-level measurements in the near infrared (NIR) spectral region from 800–1700 nm

Synapse Linear InGaAs Array

SYN-512X1-25-1700
SYN-512X1-50-1700
SYN-1024X1-25-1700

HORIBA Scientific's Synapse InGaAs arrays are the ideal choice for demanding, low-light-level measurements in the near infrared (NIR) spectral region from 800–1700 nm. Available in 512 × 1 (25 × 500 μm), 512 × 1 (50 × 500 μm), and 1024 × 1 (25 × 500 μm) pixel formats, these InGaAs detectors provide high resolution while maintaining full well capacity. Synapse InGaAs arrays feature a 16-bit dynamic range, are deep thermoelectrically cooled, and use a mechanical shutter for subtraction of the dark background. Metal seals provide a permanent vacuum seal. A plug-and-play USB 2.0 interface allows portability and easy setup on PC notebooks and desktop computers with 100% data integrity. Applications include near-IR Raman, photoluminescence measurements of semiconductors, SWCNTs, and nanowires. Detectors with sensitivity from 1 μm to 2.2 μm are also available.



Feature	Spectroscopy Benefits
Deep Thermoelectric Cooling	Cools the array to –60°C to minimize dark noise (–75°C with external water-cooling option)
Excellent Linearity	High accuracy of data over the full dynamic range
USB 2.0 Interface	Easy to use; connects to PC notebooks and desktops with 100% data integrity
High Sensitivity (HiS) and High Dynamic Range (HiD) modes	Software selection of acquisition mode to optimize detector for best signal-to-noise ratio
Auxiliary Signal Input	Unique ability to add measurements from single-channel detectors without additional electronics
HORIBA Scientific's SynerJY® Software	Complete control of a Synapse CCD and HORIBA Scientific Spectrographsystem with full analysis capabilities
LabVIEW VIs and SDK Available	Flexible software to integrate a Synapse CCD into existing apparatus or as an OEM component

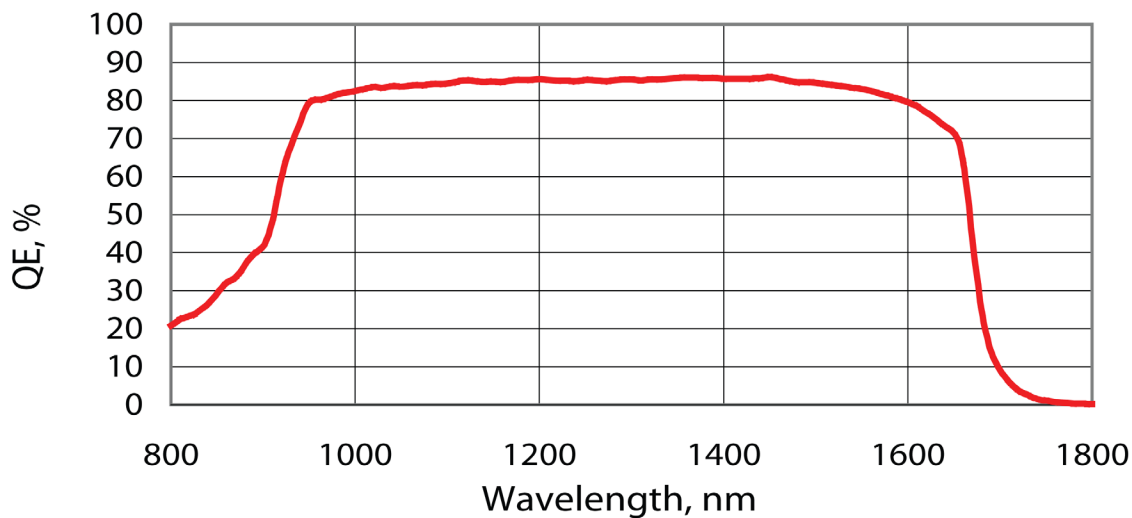


Specifications*

Format		512 × 1 (25 × 500)	512 × 1 (50 × 500)	1024 × 1 (25 × 500)
Wavelength Range	Ambient Temp. (25°C)	800–1700 nm		
	Operating Temp. (–60°C)	800–1650 nm		
Operating Temperature (Typical)		–60°C		
		Typical		
Readout	HiS Mode (High Gain)	0.5–0.7 ke ⁻ rms		
Noise	HiD Mode (Low Gain)	5–7 ke ⁻ rms		
Full Well Capacity	HiS Mode (High Gain)	5 Me ⁻		
	HiD Mode (Low Gain)	130 Me ⁻		
Dark Current at –60°C		19 ke ⁻ /p/s	56 ke ⁻ /p/s	35 ke ⁻ /p/s
Dark Current at –75°C		7 ke ⁻ /p/s	21 ke ⁻ /p/s	12 ke ⁻ /p/s
Response Nonuniformity		± 10%	± 5%	± 10%
Response Nonlinearity		< ± 1%		
Gain (Nominal)	HiS Mode (High Gain)	58 e ⁻ /count		
	HiD Mode (Low Gain)	1545 e ⁻ /count		
Dynamic Range		16 bit		
Pixel Defects		Max of 5 dark or hot pixels	Max of 5 dark or hot pixels	Max of 10 dark or hot pixels

*Specifications subject to change without notice.

Quantum Efficiency at 25 °C



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