

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

## Synapse Linear IGA

HORIBA Scientific's Synapse InGaAs arrays are the ideal choice for demanding, low-light-level measurements in the near infrared (NIR) spectral region out to 1.7  $\mu\text{m}$ . Available in  $512 \times 1$  ( $25 \times 250 \mu\text{m}$ ),  $512 \times 1$  ( $50 \times 500 \mu\text{m}$ ), and  $1024 \times 1$  ( $25 \times 500 \mu\text{m}$ ) pixel formats, these InGaAs detectors provide high resolution while maintaining full well capacity. Synapse IGAs feature a 16-bit dynamic range, are deep-thermoelectrically-cooled, and use a mechanical shutter for dark-background subtraction. Detectors with sensitivity from 1  $\mu\text{m}$  to 2.2  $\mu\text{m}$  are also available.



Feature	Spectroscopy Benefits
Cryogenic Cooling	Cools the array to $-60^{\circ}\text{C}$ to minimize dark noise
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	Provides automatic reference corrections or extends wavelength scanning ranges with NIR detectors
HORIBA Scientific's SynerJY <sup>®</sup> 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

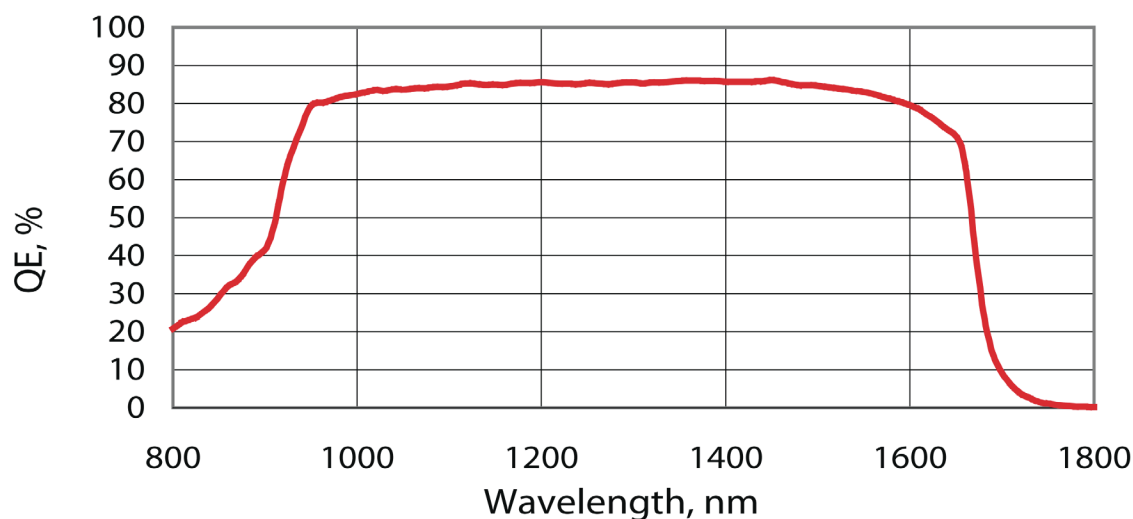


## Specifications\*

Format		512 × 1 (25 × 250)	512 × 1 (50 × 500)	1024 × 1 (25 × 500)
Wavelength Range	Ambient Temp. (25°C)	800–1700 nm		
	Operating Temp. (–103°C)	800–1650 nm		
Operating Temperature (Typical)		–60°C		
		Typical		
Readout	HiS Mode (High Gain)	0.5–0.7 ke <sup>-</sup> rms		
Noise	HiD Mode (Low Gain)	5–7 ke <sup>-</sup> rms		
Full Well Capacity	HiS Mode (High Gain)	5 Me <sup>-</sup>		
	HiD Mode (Low Gain)	130 Me <sup>-</sup>		
Dark Current at –60°C		35 ke <sup>-</sup> /p/s		
Response Nonuniformity		± 10%	± 5%	± 10%
Response Nonlinearity		< ± 1%		
Gain (Nominal)	HiS Mode (High Gain)	58 e <sup>-</sup> /count		
	HiD Mode (Low Gain)	1545 e <sup>-</sup> /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



[info.sci@horiba.com](mailto:info.sci@horiba.com)  
[www.horiba.com/scientific](http://www.horiba.com/scientific)

**HORIBA**  
Scientific

USA: +1 732 494 8660      France: +33 (0)1 64 54 13 00      Germany: +49 (0)89 4623 17-0  
 UK: +44 (0)20 8204 8142      Italy: +39 0 2 5760 3050      Japan: +81 (0)3 38618231  
 Spain: +34 91 490 23 34      China: +86 (0)10 8567 9966      Brazil: +55 11 5545 1540  
 Other Countries: +33 (0)1 64 54 13 00



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