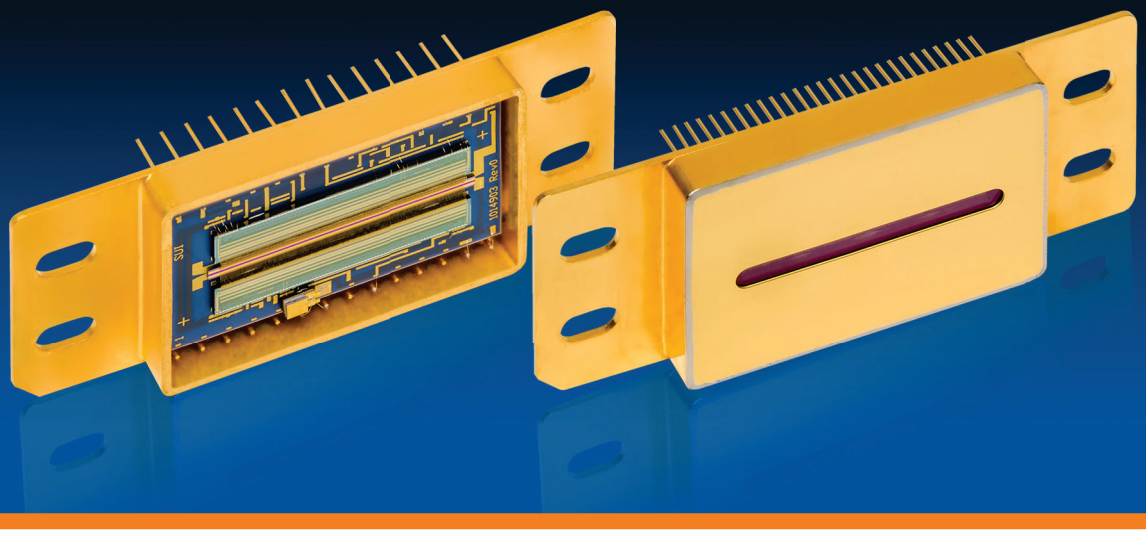
SENSORS UNLIMITED

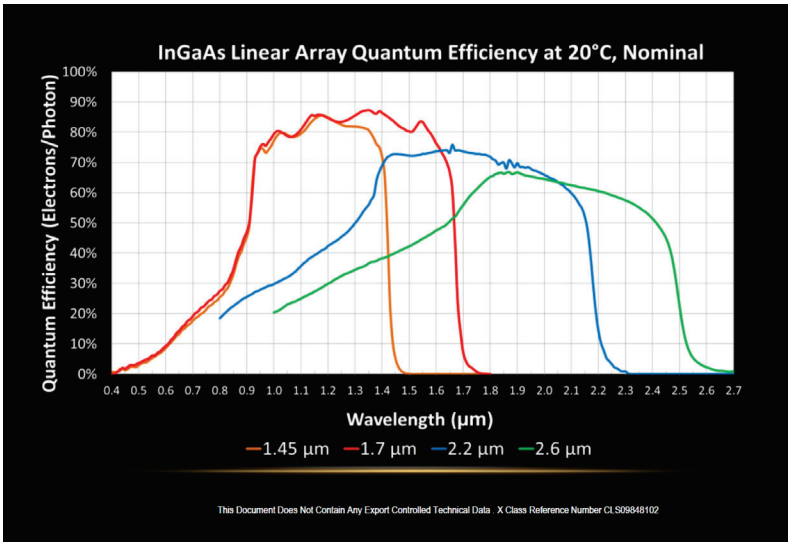


InGaAs Linear Photodiode Array Product Family

The Standard in Performance NIR Spectroscopy

Designers of spectroscopy systems have new options to improve their system performance.

InGaAs Linear Array products with cut-off wavelengths of 1.45, 1.7, 2.2 or 2.6 microns are now available in quantity from Sensors Unlimited. All versions exhibit reduced dark current and improved uniformity. Designers have the choice between two families of readout devices; Easy to use analog design - LE/LSE/LDB/LSB Series or the LC/LSC for the fast line times, while also offering 4 programmable gain options. One of the gains provides the largest available full-well for absorbance spectroscopy. Array lengths of 256, 512, or 1024 pixels, with widths of 1/4, 1/2, or 1 inch are available with antiblooming to prevent charge overflow from saturated pixels.



FEATURES

- Choice of wavelength ranges for reduced dark current (1.45 µm), standard (1.7 µm), extended (2.2 µm) and full range (2.6 µm – LC only)
- Array lengths of 256, 512, or 1024 pixels, with widths of 1/4, 1/2 or 1 inch (6.4, 12.8 or 25.6 mm)
- Large full well capacities, 130 or 250 Me-
- Pitch of 25 or 50 microns
- Apertures (heights) of 250 or 500 (µm) for spectroscopy, or square for machine vision
- Hermetic Kovar™ package
- Internal 1 or 2-stages of temperature control, or TEC-less for low-power or external deep cooling

APPLICATIONS

- Raman: 1.45 µm for low-power handhelds, T2-1.7 µm for full Raman spectrum
- NIR Molecular Spectroscopy
- 1.7 µm for high performance capture of 1st overtone O-H, N-H, C-H combinations
- 2.2 µm for 1st overtone C-H, S-H, 2nd H2O and C-O, O-H combinations
- 2.6 µm for combinations of N-H, C-H, and O-H

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LINEAR ARRAY COMPARISON TABLE (Representative Values)				
Material type	**Dark Current**	**50% QE Cut-on λ (µm)**	**50% QE Cut-off λ (µm)**	**Peak λ (µm)**
1.45 µm	1.3 pA	0.91	1.415	1.17
1.7 µm	2.3 pA	0.91	1.650	1.36
2.2 µm	10 nA	1.30	2.155	1.67
2.6 µm	100 nA	1.64	2.410	1.84

CURRENT PACKAGING OPTIONS FOR EACH READOUT IC OPTION

Not all combinations of format, cooling, readout, pixel height and wavelength material are produced, but may be possible; Please contact SUI to discuss your needs.

LC/LSC ROIC

Features: High Speed, Digital Serial Input for Mode Control, Antibloom, Snapshot, IWR* and ITR*, 4 Gain/Full-Well Settings, Slow to Very Fast Readout, Selectable Bandwidth, Autozero and Power Options One inch or one-half inch array

			Wavelength and Pixel Height			
Pixels	**Pitch**	**Max lps**	**1.45**	**1.7**	**2.2**	**2.6**
256	50	15.7 k			T2, 250 µm	T2, 250 µm
512	25	91 k	T2, 500 µm	T1, 500 µm RT, 500 µm T2, 500 µm LT, 500 µm		
1024	25	91 k	T2, 500 µm	T1, 500 µm T1, 025 µm LT, 500 µm	T2, 250 µm	

LE/LSE ROIC

Features: Easy to Use Analog Design, Antibloom, Snapshot, ITR*, 1 output per side, Slow to Medium Readout, One inch Array, 2 Gain/Full-Well Settings

			Wavelength and Pixel Height			
Pixels	**Pitch**	**Max lps**	**1.45**	**1.7**	**2.2**	**2.6**
512	50	1.25 k		LT, 500 µm RT, 500 µm	T2, 250 µm	
1024	25	1.25 k	T2, 500 µm	T1, 500 µm LT, 500 µm	T2, 250 µm LT, 250 µm	

LDB/LSB ROIC

Features: Easy to Use Analog Design, Antibloom, Snapshot, ITR*, 1 Output Per Side, Slow to Medium Readout, One-half inch and One-quarter inch array, 2 Gain/Full-Well Settings

			Wavelength and Pixel Height			
Pixels	**Pitch**	**Max lps**	**1.45**	**1.7**	**2.2**	**2.6**
256	50	5 k		T1, 500 µm LT, 500 µm RT, 500 µm	T2, 250 µm	
256	25	5 k		T1, 500 µm RT, 500 µm		
512	25	5 k	T2, 500 µm	T1, 500 µm LT, 500 µm T2, 500 µm	T2, 500 µm	

*ITR: Integrate-Then-Read *IWR: Integrate-While-Read

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Distribution in the UK & Ireland

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