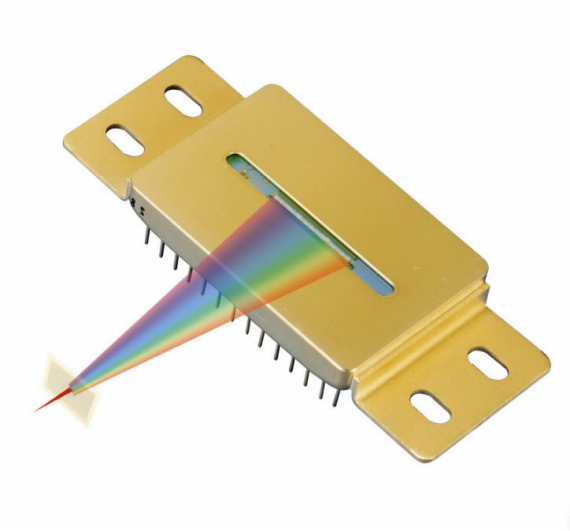
SU1024LE
InGaAs Linear Photodiode Array

The LE-series linear InGaAs photodiode arrays have set the standard for high performance near-infrared spectroscopy and imaging applications. These arrays are widely used for optical performance monitoring of S, C & L band channels in DWDM networks. Other applications include agricultural sorting, biomedical analysis, thermal imaging and industrial process control.



BENEFITS

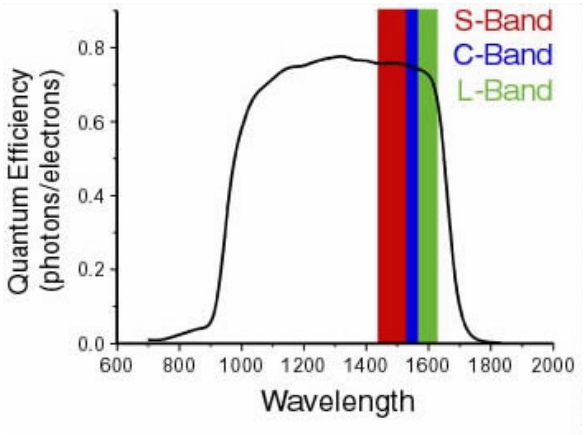
- Optional pixel size
- Room temperature stabilized
- Reduced fixed pattern noise
- ESD resistant!
- Easy to use

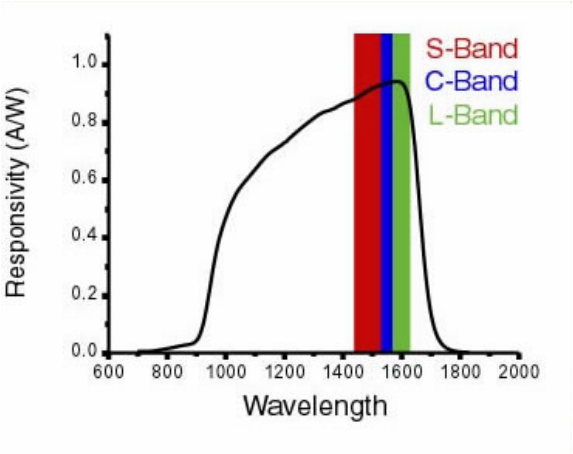
FEATURES

- Operating wavelength range 0.8 µm – 1.7 µm
- Up to 10^7 pixels per second read-out
- 1.3 x 10^8 electrons full-well capacity

SUI™ produces LE InGaAs array products with 1024 elements on 25 µm channel spacing and a pixel height of 500 µm. These channels are 100% operable and have unmatched uniformity. The photodetector arrays are hybridized with CMOS readout integrated circuits (ROIC) of Sensors' exclusive design to offer maximum noise immunity and sensitivity. Operating circuit designs need only provide for one analog supply and two digital control lines for optimum ROIC performance. Signal gain is user-selectable from the supply input. Arrays are available with thermoelectric coolers for temperature stabilization and monitoring. SUI™'s LE-Series photodiode arrays are telecommunication system reliable and available in volume.

3490 U.S. Route 1 • Princeton, New Jersey 08540
Phone: (609) 520-0610 • Fax: (609) 520-0638
www.sensorsinc.com • info@sensorsinc.com





ELECTRICAL INPUTS

Parameter/Description	Unit	Min.	Typ.	Max.
V_{DD} / Analog supply voltage	V	4.90	5.00	5.25
V_{SS} / Analog supply ground	V		0	
V_{DP} / Amplifier dead potential	V		3.25	
V_{CLK} / Digital pixel clock	V		Hi: V_{DD} Low: V_{SS}	
V_{LSYNC} / Digital exposure control	V		Hi: V_{DD} Low: V_{SS}	
V_{CAP} / Digital gain control	V		Hi: V_{DD} Low: V_{SS}	

PERFORMANCE CHARACTERISTICS

Parameter	Unit	Min.	Typ.	Max.
Peak wavelength sensitivity (λ_{pk})	µm		1.5	
Responsivity (at λ_{pk})	nV/photon	10.5		
Photoresponse nonuniformity (PRNU)	%		5	10
Quantum efficiency (QE)	%	70		
Gain	nV/electron		400^{1}, 15.4^{2}	
Saturation charge	pC		0.8^{1}, 20.8^{2}	
Readout noise	electron/√scan		800^{1}, $10{,}000^{2}$	
Dark rate	V/s			1.9
Readout rate	MHz			5
Inoperable pixels				0

[1]High-sensitivity mode: high gain capacitor
[2]High dynamic range mode: low gain capacitor

ABSOLUTE MAXIMUM RATINGS

Parameter	Unit	Min.	Typ.	Max.
Power consumption (VDD=5.00V)	mW			150
Operating temperature range	°C	-20		+70
Storage temperature range	°C	-40		+85