

Cooled VGA Extended Wavelength SWIR InGaAs Camera



Quantitative Extended SWIR imaging and spectroscopy

The camera uses selected extended wavelength InGaAs focal plane arrays with sensitivity in the 1100 to 2200 nm wavebands.

Thanks to efficient cooling and stable offset, the InGaAs camera allows reproducible acquisition for precise metrology measurements in the extended SWIR spectrum.

Camera Link and Gigabit Ethernet Vision compliant interface enables easy integration into existing systems.

OEM versions with special form factors / cooling options are available for integration into specific instruments / systems.

Applications

Available with passive cooling

Semiconductor inspection
SWIR handheld vision enhancement
SWIR airborne payload
Photoluminescence for solar cells

Key Features

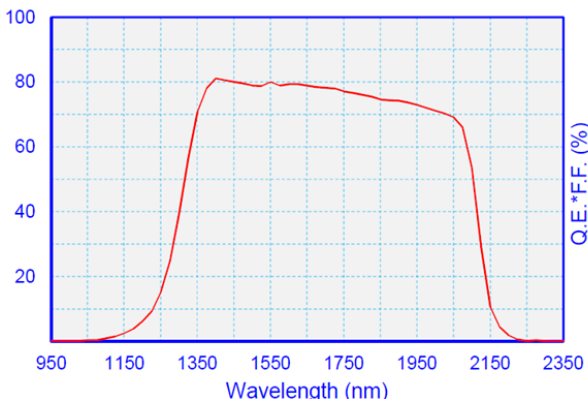
- | Spectral response from 1100 to 2200 nm
- | 14-bit digitization / 16-bit image processing
- | Read out noise
down to typically 30 electrons
- | >200 fps
with region of interest ROI
- | Excellent linearity
response to varying intensities and / or exposures
- | Gigabit Ethernet & Camera Link interface
- | Software option:
SDK kit, Labview VI's

Air cooling or water cooling for long exposure

Astronomy
Hyperspectral imaging
Laser beam profiling
Spectroscopy

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Characteristics	PSEL VGA Extended Wavelength SWIR 15µm
Spectral Range	1100 - 2200 nm
Resolution	640 x 512
Sensor Size	9.6 mm x 7.68 mm
Frame Rate	174 fps at full VGA resolution 570 fps at ¼ VGA resolution 7,200 fps at 640x4 resolution (spectroscopy or line mode)
Pitch	15µm x 15µm
Full Well Capacity	20k - 23k electrons (high gain mode) 80k - 105k electrons (mid gain mode) 1.0M - 1.5M electrons (low gain mode)
Read Out Noise	28 - 38 electrons (high gain mode) 50 - 77 electrons (mid gain mode) 500 - 800 electrons (low gain mode)
Reading Mode	Integrate Then Read, Integrate While Read
Dark Current	<300fA with air cooling & <20fA with water cooling (with corrections)
Sensor Temperature (°C)	-25°C with air cooling, -50°C with water cooling (lower dark current)
Corrections	Non uniformity, bright pixel, gain, offset, flatfield
ADC	14-bit with 16-bit digital processing
Exposure	30 microseconds up to 20 milliseconds
QE at 1400 nm	80%, QE at 2050 nm 70%



Quantum efficiency response of Cooled SWIR InGaAs camera