



1.25 x 1.25 x 1.20 inches
31.8 x 31.8 x 30.6 mm

Micro-SWIR™ 320CSX Camera

Mil-Rugged, High Sensitivity, Small SWaP,+C InGaAs SWIR Camera

The compact 320CSX is the next generation SWIR video camera, designed for applications requiring small Size, Weight, and Power (SWaP) applications and available without ITAR restriction.

The Sensors Unlimited Micro-SWIR 320CSX camera features a 320x256 pixel, high-sensitivity, stabilized InGaAs snapshot imager and utilize Sensors Unlimited's image enhancement algorithms to produce highest quality imagery in all lighting conditions.

The camera provides real-time daylight to low-light imaging in the Short Wave Infrared (SWIR) wavelength spectrum for a range of applications that include industrial process monitoring, enhanced vision, and persistent surveillance. On-board Automatic Gain Control (AGC) optimizes the camera's imagery throughout day and night imaging scenarios. Camera Link® digital output provides for plug-and-play video with 12-bit images for digital image processing or transmission.

A modular output allows for additional industry standard interfaces. The light weight, compact size, and low power is ideally suited for integration into industrial process monitoring applications. Optional NIR/SWIR technology is available to extend the sensitivity of Sensors Unlimited cameras below 0.9 μm , offering the advantage of both Near Infrared (NIR) and Short Wave Infrared wavelength response.

FEATURES

- Non ITAR
- Disruptive price
- 320 x 256 pixel format, 12.5 μm pitch
- Low cost
- 30 Hz full frame rate
- 1.7 W power consumption (@ 20° C)
- High sensitivity 0.9 to 1.7 μm spectrum response imager; NIR/SWIR, from 0.7 to 1.7 μm
- Low light to day time imaging
- Compact size
- All solid-state InGaAs imager
- Snapshot exposure
- On-board, real time non-uniformity corrections
- Digital 12-bit base Camera Link® output
- Automatic Gain Control (AGC)



MECHANICAL SPECIFICATIONS

Model	SU320CSX-12.5B-ENC housed series SU320CSX-12.5B-OEM
Dimensions (width x height x depth) (includes connectors, excludes lens)	ENC Series: 1.25"W x 1.25"H x 1.20"D 31.8 x 31.8 x 30.6 mm OEM Series: 1.25"W x 1.20"H x 1.19"D 31.8 x 30.6 x 30.2 mm includes connectors, excludes lens mm
Weight	<60 grams enclosed, <55 grams OEM
Lens mount	C-mount
Camera Link Connector	26 Pin SDR standard connector
Power Input Connector	14 Pin SDR standard connector
Pixel Pitch	12.5 μ m
Focal Plane Array Format	320 x 256 pixels
Active Area	4.0 mm x 3.2 mm (5.1 mm diagonal)

ENVIRONMENTAL & POWER SPECIFICATIONS

Operating Case Temperature	-5°C to 60°C
Storage Temperature	-54°C to 85°C
Humidity	95% RH non-condensing
Power Requirements:	
DC Voltage	DC Voltage: +4-16 V
Steady State Power	Power: 1.7 W at 20°C case temperature, max <4 W
Max Power	
Functional Shock, Random Vibration, Thermal Shock	MIL-STD-810G compliant design

ELECTRICAL SPECIFICATIONS

Optical Fill Factor	100 %
Spectral Response	Standard, 0.9 μ m to 1.7 μ m NIR/SWIR, 0.7 μ m to 1.7 μ m
Quantum Efficiency	Standard, > 65% from 1 μ m to 1.6 μ m NIR/SWIR, > 65% from 0.9 μ m to 1.6 μ m
Mean Detectivity, D^* ¹	2.86×10^{13} cm $\sqrt{\text{Hz}}/\text{W}$ (typical)
Noise Equivalent Irradiance ¹	8.48×10^6 photons/cm 2 /s (typical)
Noise (RMS) ¹	35 electrons (typical)
Dynamic Range ¹	1700:1 at low gain, 800:1 at high gain
Operability ²	> 99 %
Exposure Times, preconfigured	200 μ s to 32 ms
Image Correction	2-point (offset and gain) pixel by pixel, user selectable
Output Format	12 bit base Camera Link [®]
Digital Output Frame Rate	30 fps
Scan Mode	Continuous

¹ λ = 1.55 μ m, exposure time = 32 ms, case temperature = 20°C, highest sensitivity gain setting, no lens, x1 digital gain with enhancement, AGC, and correction off

² The fraction of pixels with responsivity deviation between +/- 35% from the mean.

