SENSORS UNLIMITED

2.00 x 2.00 x 2.43 inches
(50.8 x 50.8 x 61.7 mm)

Sensors Unlimited 1280JSX

High Resolution, Mil-Rugged, Extended High-Sensitivity InGaAs SWIR Camera with Snapshot

The compact J-Series is Sensors Unlimited's next generation SWIR digital video camera featuring a 1.3MP high-resolution, high-sensitivity InGaAs imager. It provides real-time daylight to low-light imaging in the Short Wave Infrared (SWIR) wavelength spectrum for persistent surveillance, laser detection, and penetration through dust, and smoke. In addition, the camera employs on-board Automatic Gain Control (AGC) and built-in non-uniformity corrections (NUCs), allowing it to address the challenges of high-dynamic-range urban night imaging without blooming. Camera Link® digital output provides for plug-and-play video with 12-bit images for digital image processing or transmission. The light-weight and compact size enables easy integration into aerial, mobile and hand-held surveillance systems. Optional NIR/SWIR technology is available to extend the sensitivity of Sensors Unlimited cameras down to 0.7 µm, offering the advantage of both Near Infrared (NIR) and SWIR wavelength response.

APPLICATIONS

- Low-light level imaging
- Covert surveillance with 24 hr/7 day operation
- Multi-laser spotting and tracking
- Imaging through atmospheric obscurants
- OEM version for easy integration into Unmanned Aerial Systems, handheld, and robotic systems
- Driver Vision Enhancement (DVE)

FEATURES

- **30 frames per second full frame rate**
- 1280 x 1024 pixel format, 12.5 µm pitch
- Capability for 100% duty cycle across entire illumination intensity range
- High sensitivity in 0.9 to 1.7 µm spectrum; NIR/SWIR, from 0.7 to 1.7 µm; VIS from 0.5 to 1.7 µm (option)
- Low power, < 3.0 W at 20°C
- Partial moonlight to day time imaging
- Compact OEM module size, < 4.5 in^3
- All solid-state InGaAs imager with snapshot exposure capability
- On-board, real time non-uniformity corrections
- Digital 12-bit base CameraLink® output
- Automatic Gain Control (AGC)
- Windowing, Binning and in-Field Offset Corrections
- Operation from -40 to +70°C
- Tested to MIL-STD-810G for functional shock, vibration, thermal shock, storage temperature, altitude, humidity

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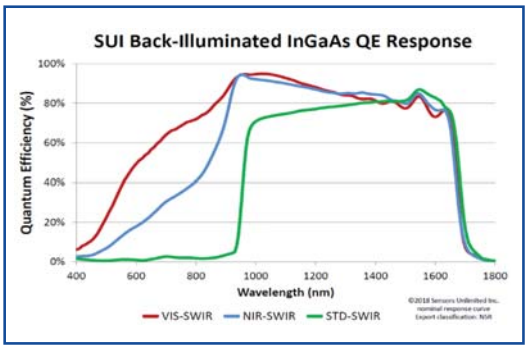
Model No: 1280JSX - 30

MECHANICAL SPECIFICATIONS		
	Enclosed	**OEM**
Module dimensions Width x Height x Depth	2.00 x 2.00 x 2.43 inches (50.8 x 50.8 x 61.7 mm) (with I/O connectors, no lens or mount)	1.65 x 1.60 x 1.60 inches (41.9 x 40.6 x 40.6 mm) (no optional output panel and lens mount)
Weight (no lens)	≤ 235 g	≤ 120 g
Lens Mount	M42x1 mount	Optional M42x1 mount bracket
Included Lens	f/1.4, 50 mm, 18° FOV width, M42x1-mount	none
Camera Link Connector	3M SDR26 Connector	none
Interface Connector	Not applicable	Samtec LSHM-130-030-L-DV-A-N
Pixel Pitch	12.5 µm	12.5 µm
Focal Plane Array Format	1280 x 1024 pixels	1280 x 1024 pixels
Active Area	16.0 mm x 12.8 mm x 20.5 mm diagonal	16.0 mm x 12.8 mm x 20.5 mm diagonal

ENVIRONMENTAL & POWER SPECIFICATIONS	
Operating Case Temperature	-40°C to 70°C
Storage Temperature	-54°C to 85°C MIL-STD-810G Method 501.5 and 502.5
Humidity	95% relative humidity MIL-STD-810G Method 507.5 Procedure II
Power Requirements: **AC Adapter Supplied** **DC Voltage** **Power**	 100-240 VAC, 47-63 Hz +8-16 V ≤ 3.0 W at 20°C (case temperature), ≤ 10.0 W maximum
Functional Shock, Random Vibration, Thermal Shock, Temperature, Altitude, Humidity	MIL-STD-810G compliant
Conducted and Radiated Emissions	FCC Part 15, Subpart B MIL-STD-461F RE102, CE102, RS103



ELECTRICAL SPECIFICATIONS	
Optical Fill Factor	100 %
Spectral Response	Standard, 0.9 µm to 1.7 µm NIR/SWIR, 0.7 µm to 1.7 µm VIS/SWIR, 0.5 µm to 1.7 µm (optional)
Quantum Efficiency	Standard, ≥ 65% from 1 µm to 1.6 µm NIR/SWIR, ≥ 65% from 0.9 µm to 1.6 µm VIS/SWIR, ≥ 65% from 0.7 µm to 1.6 µm (optional)
Mean Detectivity, D* (Typical)[1]	2.9 x 10^{13} cm√Hz/W
Noise Equivalent Irradiance (Typical)[1]	8.5 x 10^{8} photons/cm^2-s
Noise (RMS, Typical)[1]	35 electrons
Capacity	6 x 10^{6} electrons
Dynamic Range (Typical)[2]	1700:1
Non-Uniformity Corrections	23 pre-configured operational settings (OPRs)
Operability	≥ 99 %
Exposure Times[3]	30 µs to 33 ms
Image Correction	pixel by pixel, user selectable
Digital Output Format	12 bit base Camera Link®
Digital Output Frame Rate	30 fps
Scan Mode	Continuous or 3 externally triggered modes

[1] λ = 1.55 µm, exposure time = 33 ms, 17°C TEC setpoint, high gain, no lens, x1 digital gain with enhancement, AGC, and correction off.

[2] In high dynamic range OPR settings, 17°C. Able to achieve 750:1 in highest sensitivity OPR setting.

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Model No: 1280JSX - 30 Doc No: 4110-0369 Rev: 7 July 2019

Distribution in the UK & Ireland

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