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

SENSORS UNLIMITED 1280JSX SWIR DIGITAL VIDEO CAMERA

HIGH RESOLUTION, HIGH SENSITIVITY AND MIL RUGGED

The compact Sensors Unlimited J-Series 1280JSX is our 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.

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 24/7 operation
- Multi-laser spotting and tracking
- Imaging through atmospheric obscurants
- OEM version for easy integration into unmanned aircraft systems, hand-held and robotic systems
- Driver Vision Enhancement (DVE)

KEY FEATURES AND BENEFITS

- 60 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 daytime 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 Camera Link output
- Automatic Gain Control (AGC)
- Windowing, binning and in-field offset corrections
- Operation from -40° C to 70° C
- Tested to MIL-STD-810G for functional shock, vibration, thermal shock, storage temperature, altitude, humidity

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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 AND 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 combine, acceleration	MIL-STD-810G compliant

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
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
Mean detectivity, D* (typical) [1]	2.8 x 10^{13} cm√Hz/W
Noise equivalent irradiance (typical) [1]	1.2 x 10^{9} photons/cm²×s
Noise (RMS, typical) [1]	25 electrons
Capacity	6 x 10^{6} electrons
Dynamic range (typical) [2]	1850:1
Non-uniformity corrections	23 pre-configured operational settings (OPRs)
Operability	≥99%
Exposure times [3]	30 µs to 16.5 ms
Image correction	Pixel by pixel, user selectable
Digital output format	12-bit base Camera Link
Digital output frame rate	60 fps
Scan mode	Continuous or three externally triggered modes

[1] λ = 1.55 µm, exposure time = 16.5 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.
[3] Standard configuration exposure time = 200 µs in lowest sensitivity OPR setting.

Specifications subject to change without notice.
Front photo courtesy of www.marines.mil and Cpl. Victoria Decker.

Collins Aerospace

Sensors Unlimited, Inc.
+1.609.333.8000
sui_info@collins.com
sensorsinc.com
collinsaerospace.com

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