

SU320KTX-1.7RT

High Sensitivity InGaAs SWIR Camera with Advanced Dynamic Range Enhancements



The compact **SU320KTX-1.7RT** is an InGaAs video camera featuring high-sensitivity and wide dynamic range. 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 fog, dust, and smoke. In addition, the camera employs **on-board** Automatic Gain Control (AGC), proprietary dynamic-range enhancement technology, and built-in non-uniformity corrections (NUCs), allowing it to address the challenges of urban night imaging without blooming. Simultaneous RS170 analog and Camera Link® digital output provide a means for easy plug-and-play video and high quality 12-bit images for image processing or transmission. Low-power and light-weight, with compact size enables easy integration into surveillance systems, whether hand-held, mobile, or aerial. Optional **NIR/SWIR technology** is available to extend the capabilities of Goodrich cameras down to 0.7 μm , offering the advantage of both Near Infrared (NIR) and Short Wave Infrared wavelength response.

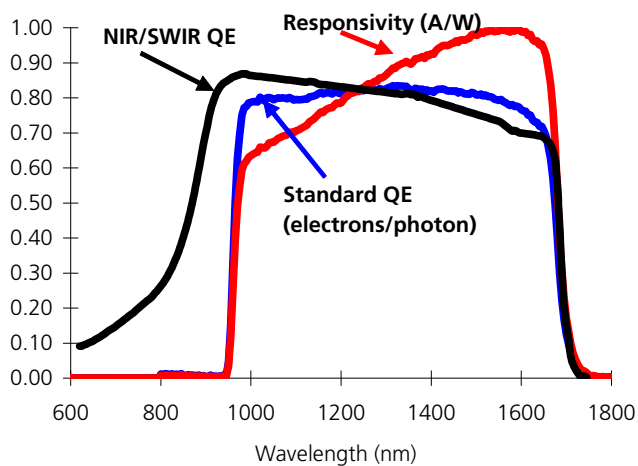


APPLICATIONS

- Low-light level imaging
- Covert surveillance with passive 24 hr/7 day operation
- Emission microscopy
- Imaging spectroscopy
- Astronomy

FEATURES

- Highest sensitivity available in 0.9 to 1.7 μm spectrum; NIR/SWIR, from 0.7 to 1.7 μm
- Images under partial starlight to direct sun illumination
- 320 x 240 pixel format, 40 μm pitch
- Compact OEM module size < 3.8 in³
- Enclosed module size < 9.5 in³
- Low power, < 1.8 W at 20 °C
- All solid state InGaAs imager
- On-board non-uniformity corrections
- Simultaneous digital & analog outputs
- Room temperature FPA operation
- Includes a C-mount lens adaptor and lens
- OEM version for easy integration into UAV, handheld or robotic systems
- Improved AGC algorithms with adjustable thresholds
- Selectable contrast enhancement modes



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MECHANICAL SPECIFICATIONS

Model:	Enclosed	OEM
Module dimensions	2.1 x 2.1 x 2.55 inches	1.64 x 1.5 x 1.6 inches
Width x Height x Depth	52.1 x 52.1 x 64.7 mm (with I/O connectors, no lens or mount)	42 x 38 x 41 mm
Weight (no lens)	< 270 g	< 90 g (analog out)
Lens Mount	C-mount adapter in M42x1 mount	C-mount bracket
Included Lens	f/1.4, 25 mm, 28° FOV width, C-mount	none
Camera Link Connector	3M SDR26 Connector	none
I/O Connector	3M SDR14 Connector	none
Interface Connector	Not applicable	Samtec QSH-030-01-L-D-A
Pixel Pitch	40 μ m	
Focal Plane Array Format	320 x 240 pixels	
Active Area	12.8 mm x 9.6 mm x 16 mm diagonal	

ENVIRONMENTAL & POWER SPECIFICATIONS

Operating Case Temperature	-10°C to 40°C
Storage Temperature	-10°C to 60°C
Humidity	Non-condensing
Power Requirements:	
AC Adapter Supplied	100-240 VAC, 47-63 Hz
DC Voltage	+8-16 V
Typical Power	<1.8 W at 20°C ambient, 4 W @ 40°C

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, $D^* \text{ }^1$	> $4 \times 10^{13} \text{ cm}^2/\text{Hz/W}$
Noise Equivalent Irradiance 1	< $3 \times 10^8 \text{ photons}/\text{cm}^2\text{-s}$
Noise (RMS) 1	< 50 electrons
Full Well (Typical) In OPR0	5×10^4 electrons
True Dynamic Range (Typical)	1000:1
Operability 2	> 99%
Exposure Times	0.11 ms to 16.24 ms in 16 steps
Image Correction	2-point (offset and gain) pixel by pixel, user selectable
Digital Output Format	12 bit Camera Link [®] (SDR connector for enclosed version, ribbon for OEM version)
Analog Output Format	Buffered EIA170 compatible video, 30 fps (both versions)
Digital Output Frame Rate	60 fps
Scan Mode	Continuous or 3 externally triggered modes

$^1 \lambda = 1.55 \mu\text{m}$, exposure time = 16.3 ms, Highest Gain OPR setting, no lens, x1 digital gain with enhancement, AGC, and correction off.

2 The fraction of pixels with responsivity deviation between -20% and +33% from the mean

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