

SU320KTX-1.7RT

High Sensitivity InGaAs SWIR Camera



The compact **SU320KTX-1.7RT** is an InGaAs video camera featuring high-sensitivity and wide dynamic range. It provides real-time night-glow to daylight imaging in the Short Wave Infrared (SWIR) wavelength spectrum for passive surveillance and use with lasers. The camera delivers clear video at every lighting level from partial starlight to direct sunlight due to **on-board** Automatic Gain Control (AGC), image enhancement and built-in non-uniformity corrections (NUCs). Simultaneous Camera Link® digital output provides 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. Now

available with **NIR/SWIR technology** (optional), the camera has an extended lower wavelength cutoff of 0.7 μm , allowing the camera to capture photons previously only possible with silicon-based imagers.

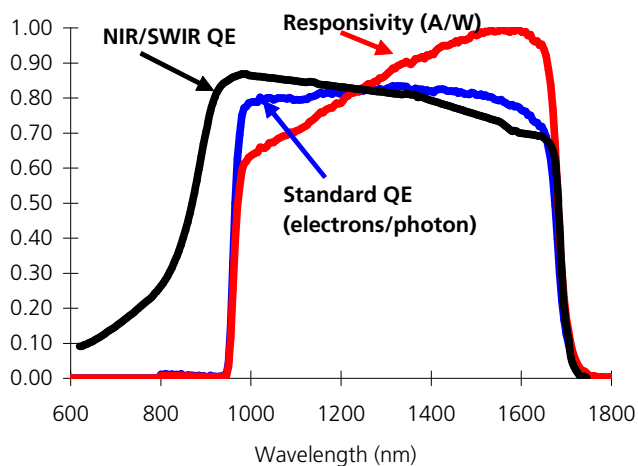


APPLICATIONS

- 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 Width x Height x Depth	2.1 x 2.1 x 2.55 inches 52.1 x 52.1 x 64.7 mm (with I/O connectors, no lens or mount)	1.64 x 1.5 x 1.6 inches 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, $D^* \text{ }^1$	> 4×10^{13} cm $\sqrt{\text{Hz/W}}$
Noise Equivalent Irradiance 1	< 3×10^8 photons/cm $^2 \cdot \text{s}$
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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