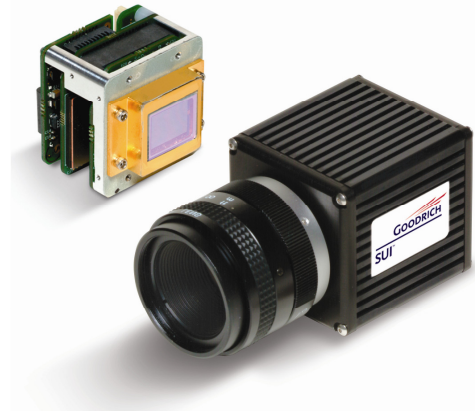


# SU640KTSX-1.7RT

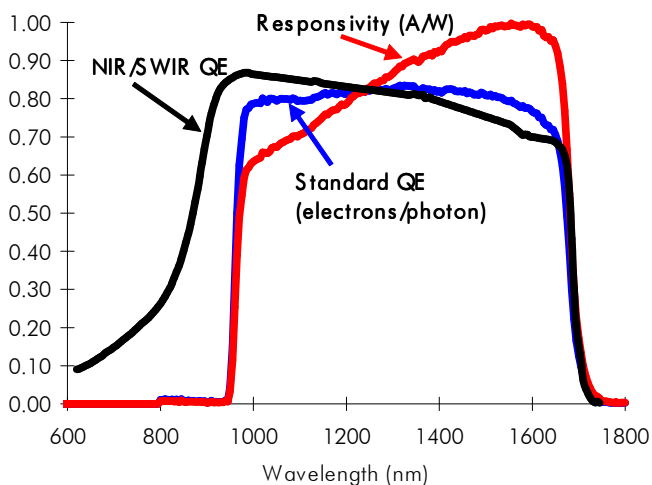
## High Sensitivity InGaAs SWIR Camera



The compact **SU640KTSX-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  $\mu\text{m}$ , 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  $\mu\text{m}$  spectrum; NIR/SWIR, from 0.7 to 1.7  $\mu\text{m}$
- Images under partial starlight to direct sun illumination
- 640 x 512 pixel format, 25  $\mu\text{m}$  pitch
- Compact OEM module size < 3.94 in<sup>3</sup>
- Enclosed module size < 9.5 in<sup>3</sup>
- Low power < 2.7 W at 20°C
- All solid state InGaAs imager
- On-board non-uniformity corrections
- Simultaneous digital & analog outputs
- Room temperature FPA operation
- Includes a threaded 42 mm lens mount
- Easy integration into UAV, handheld or robotic systems
- Adjustable contrast enhancement mode and AGC thresholds
- Optional OEM startup kit includes full I/O connectors, ¼-20 tripod mount, AC power supply, BNC cables, 50 mm M42-mount SWIR optimized lens

*seeing beyond™*

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## MECHANICAL SPECIFICATIONS

Model:	Enclosed	OEM
Module (no lens)	53 x 53 x 65 mm	42 mm x 38 mm x 41 mm
Width x Height x Depth <sup>1</sup>	2.1 x 2.1 x 2.55 inches	1.64 in. x 1.5 in. x 1.60 in.
Weight (no lens)	< 270 g	< 90 g
Lens Mount	M42x1 mount C-mount adaptor included	M42x1 mount C-mount adaptor included
Included Lens	f/1.4, 50mm, 18° 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	25 µm	
Focal Plane Array Format	640 x 512 pixels	
Active Area	16 mm x 12.8 mm x 20.5 mm diagonal	

<sup>1</sup> Depth Includes Cable Mount Hardware for Enclosed Version

## ENVIRONMENTAL & POWER SPECIFICATIONS

Operating Body 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	+9-16 V
Typical Power @ body temp.	<2.7 W at 20°C, <4 W @ 40°C

## ELECTRICAL SPECIFICATIONS

Optical Fill Factor	100%
Spectral Response	Standard, 0.9 to 1.7 µm NIR/SWIR, 0.7 to 1.7 µm
Quantum Efficiency	Standard, > 65 % from 1 to 1.6 µm NIR/SWIR, > 65 % from 0.9 to 1.6 µm
Mean Detectivity, D* <sup>1</sup>	2.5 x 10 <sup>13</sup> cm√Hz/W (typical)
Noise Equivalent Irradiance <sup>1</sup>	4.8 x 10 <sup>8</sup> photons/cm <sup>2</sup> ·s (typical)
Noise (rms) <sup>1</sup>	75 electrons (typical)
Full Well (in OPR 0 setting)	12.0E+6 electrons (typical)
True Dynamic Range	> 1000:1
Operability <sup>2</sup>	> 99%
Exposure Times	60 µs to 33.2 ms in 12 steps
Image Correction	2-point (offset and gain) pixel by pixel, user selectable
Digital Output Format	12 bit Camera Link® (optional)
Analog Output Format	Buffered EIA170 compatible video, 30 fps
Digital Output Frame Rate	30 fps
Scan Mode	Continuous or 3 externally triggered modes

<sup>1</sup> λ = 1.55 µm, exposure time = 33.2 ms, Highest Gain OPR setting, (no lens) with gain and offset corrections off.

<sup>2</sup> The fraction of pixels with responsivity deviation less than +/-35% from the mean.

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