SENSORS UNLIMITED

320KTS-1.7RT / 320KTSVis-1.7RT

InGaAs SWIR Cameras

The compact InGaAs snapshot video cameras feature capture of images from pulsed events or moving objects within one frame. The SU320KTS-1.7RT provides high response from 0.9 µm to 1.7 µm. The SU320KTSVis-1.7RT extends the response into the visible wavelengths, running from 0.4 µm to 1.7 µm. The cameras are easy to use due to Automatic Gain Control (AGC), image enhancement, and built-in non-uniformity corrections (NUCs). Camera configurations include eight corrected modes with variable integration time and constant gain for pulsed work over a range of ambient light levels; and eight corrected modes with variable gain at 16 ms integration time to provide the user with accurate steps of 2 over a wide dynamic range.

APPLICATIONS

- Pulsed laser beam profiling
- Machine vision of moving objects
- Thermal imaging > 150ºC through glass optics
- Hyperspectral imaging

FEATURES

- Standard InGaAs: 0.9 µm to 1.7 µm
- Visible-InGaAsTM: 0.4 µm to 1.7 µm
- All solid state InGaAs or Visible-InGaAs FPA with snapshot exposure ROIC
- 320 x 256 pixel format, 25 µm pitch
- Enclosed body < 11.3 in^3
- OEM version < 3.94 in^3
- Low power, < 2.5 W at 20ºC
- On-board non-uniformity corrections
- Simultaneous Camera Link® digital and EIA-170 analog outputs
- Room temperature FPA operation
- Improved AGC algorithms with adjustable thresholds
- Adjustable automatic contrast enhancement
- User programmable startup configuration
- Includes a C-mount lens adaptor
- Enclosed model includes 25 mm F/1.4 lens

UTC Aerospace Systems

MECHANICAL SPECIFICATIONS

Model:	Enclosed	OEM
Module dimensions (no lens) Width x Height x Depth [1]	2.1 x 2.1 x 2.55 inches 53 x 53 x 65 mm	1.64 x 1.5 x 1.60 inches 42 x 38 x 41 mm
Weight (no lens)	< 270 g	< 90 g
Lens Mount	C-mount adapter in M42x1 mount	C-mount bracket
Included Lens	f/1.4, 25mm, 18° FOV width, C-mount	None
Camera Link Connector	3M SDR26 Connector	None
I/O Connector	3M SDR14 Connector	None
Interface Connector	NA	Samtec QSH-030-01-L-D-A
Pixel Pitch	25 µm	
Focal Plane Array Format	320 x 256 pixels	
Active Area	8 mm x 6.4 mm x 10.2 mm diagonal	

[1] Depth Includes Cable Mount Hardware for Enclosed Version

ELECTRICAL SPECIFICATIONS

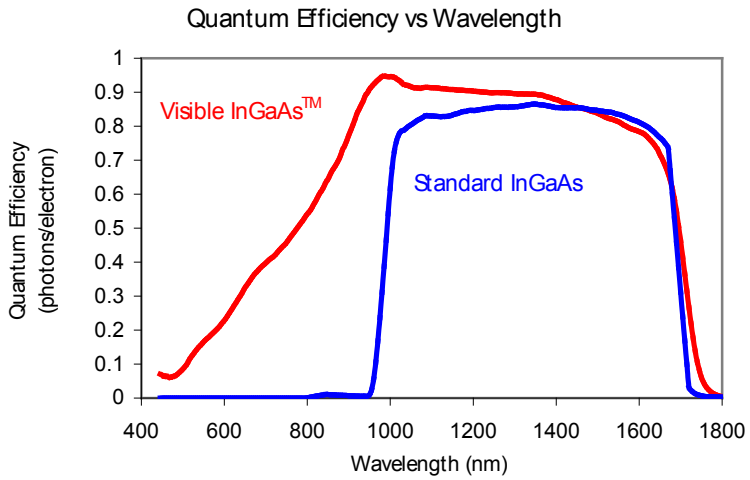
	Variable integration time modes	Variable gain, fixed integration time
Exposure Times	120 µs to 14.93 ms in 8 steps	16.57 ms
Gain (typical)	180 é/count	180 to 16000 é/count in 8 steps
Full Well (typical)	700k é	700k to 45 M é in 8 steps
Mean Detectivity, D*[1]	> 5 x 10^{12} cm√Hz/W	
Noise (RMS)[1]	< 300 é	
Noise Equivalent Irradiance[1]	< 3.5 x 10^{9} photons/cm^2·s	
True Dynamic Range	> 2500:1	
Spectral Response: InGaAs	0.9 to 1.7 µm	
Quantum Efficiency: InGaAs	> 65 % from 1 µm to 1.6 µm	
Spectral Response: Visible InGaA™	0.4 µm to 1.7 µm	
Quantum Efficiency: Visible InGaAs	> 5% QE at 0.4 µm > 45% QE at 0.8 µm > 70% QE from 1 to 1.6 µm	
Optical Fill Factor	> 100%	
Operability[2]	> 99%	
Image Correction	2-point (offset and gain) pixel by pixel, user selectable	
Digital Output Format	12 bit Camera Link® (SDR connector on enclosed version, Samtec QSH series connector on OEM)	
Analog Output Format	Buffered EIA170 compatible video, 60 fields/s, independent 320 x 256 frame readout per field	
Digital Output Frame Rate	60 fps	
Scan Mode	Continuous or 3 externally triggered modes	

[1] λ = 1.55 µm, exposure time = 16.57 ms, no lens, digital gain x1 with AGC and corrections off, measured in operational setting of the camera with the smallest FPA gain.

[2] The fraction of pixels with responsivity deviation between ±35 % from the mean.

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	+9-16 V
Typical Power	2.2 W at 20°C ambient, <4.5 W @ 40°C



For additional information:
Sensors Unlimited, Inc.
330 Carter Road, Suite 100
Princeton, New Jersey 08540 USA
Ph: +1.609.333.8200
sui_sales@utas.utc.com
www.sensorsinc.com

UTC Aerospace Systems

Model No: 320KTS-1.7RT / 320KTSVis-1.7RT Doc. 4110-0145 Rev C April 2017