

SU320MSVis-1.7RT

Snapshot Visible and SWIR

Response InGaAs MiniCamera



With snapshot exposure mode, the compact SU320MSVis-1.7RT InGaAs high-resolution, room-temperature video camera captures images from pulsed events or moving objects with unparalleled temporal control and sensitivity. This camera also features Automatic Gain Control (AGC), gamma, offset, and uniformity corrections. These and other operational modes are programmable via the serial interface.

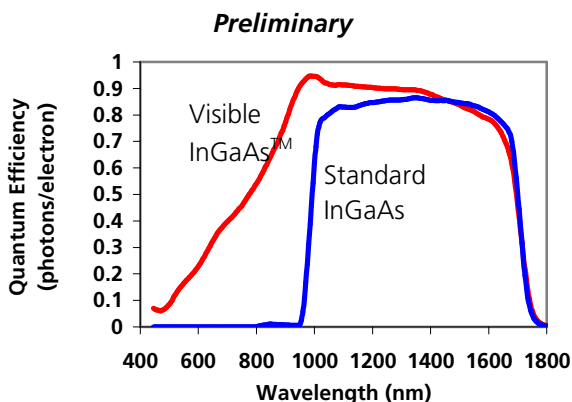


APPLICATIONS

- Pulsed laser beam profiling of scientific, datacom and telecom lasers with one camera
- Machine vision of moving objects in visible and SWIR
- Free space communications
- Hyperspectral imaging

FEATURES

- Sensitivity across the visible and near infrared spectrum (0.4 μm to 1.7 μm)
- Simultaneous exposure of whole array
- 320 x 256 pixels of 25 x 25 μm w/100% fill
- Anti-blooming protection
- Programmable exposure, AGC, and Gamma
- All solid-state InGaAs imager
- Digital and analog outputs
- Compact size < 290 cm^3
- Stable operation over ambient temperature range of 0°C to 40°C
- Low power, < 1.6 W
- Accepts standard C-mount lenses



Designed for near-infrared pulsed-laser characterization, the SU320MS-1.7RT Indium Gallium Arsenide camera provides triggered frame capture and simultaneous exposure of all pixels w/minimum integration time of 128 μs . The proprietary focal plane array, organized as a 320 x 256 pixel matrix of 25 μm square pixels, delivers 100% fill factor and spectral response down to 0.4 μm as well as >65% quantum efficiency from 1 to 1.6 μm . The camera features anti-bloom design, and programmable real-time non-uniformity and gamma correction modes, Automatic Gain Control and other operational settings. Like all SUITM high performance InGaAs cameras, the SU320MSVis operates at room temperature. Video images can be displayed on any EIA170 or CCIR compatible monitor using progressive or interlace scanning and/or output as 12-bit digital data to commercially available digital frame-grabber boards.

SUI knows IRTM

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MECHANICAL

Length x Width x Height:	5 cm x 6 cm x 9.5 cm 1.96 in x 2.36 in x 3.74 in
Weight:	< 300 g (no lens)
Focal Plane Array Format:	320 x 256 pixels
Pixel Pitch:	25 μm
Active Area:	8 x 6.4 mm
Lens Mount:	C-mount (1-32 thread)
Focal Plane location	17.5 mm behind panel

ENVIRONMENTAL & POWER

Operating Temperature:	0°C to 40°C
Storage Temperature:	0°C to 60°C
Humidity:	Non-condensing
Power Requirements:	
AC Adapter Supplied:	100-240 VAC, 47-63 Hz
DC (Voltage/Current):	3.6-5 V/<0.6 A at 25°C ambient

ELECTRICAL SPECIFICATIONS

Optical Fill Factor:	100%
Spectral Response:	0.4 μm to 1.7 μm
Quantum Efficiency:	> 5% QE at 0.4 μm > 45% QE at 0.8 μm > 70% QE from 1 to 1.6 μm
Mean Detectivity, D^*^1 :	> 3×10^{12} cm $\sqrt{\text{Hz/W}}$
Noise Equivalent Irradiance 1 :	< 5×10^9 photons/cm 2 ·s
Noise (RMS):	< 400 electrons
Full Well: (Typical)	> 8×10^5 electrons
True Dynamic Range:	> 2000:1
Operability 2 :	> 99%
Exposure Times:	User selectable with trigger control from 129/128 μs to 16.3/16.38 ms (EIA170/CCIR)
Image Correction:	2-point (offset and gain) pixel by pixel user selectable at 8 integration settings
Digital Output Format:	12 bit EIA422 format (corrected and uncorrected data is available)
Analog Output Format:	Interlaced or progressive scan for video monitors
Frame Rate:	30 Hz (EIA170 interlaced) or 60 Hz (EIA170 progressive scan) 25 Hz (CCIR interlaced) or 50 Hz (CCIR progressive scan)
Scan Mode:	Continuous or triggered

¹ $\lambda = 1.55 \mu\text{m}$, exposure time = 16.27 ms, no lens, digital gain x1, with both corrections and gain off.

² The fraction of pixels with responsivity deviation less than 35% from the mean.

INCLUDED WITH CAMERA

1) Camera	2) 25 mm, f/1.4 C-mount lens
3) Frame grabber interface box	4) AC adapter
5) Camera to FG interface box cable	6) 2 x SMA to BNC cables
7) Manual	8) Carrying case
9) Sample Lab View VI. & camera config. files for National Inst. frame-grabber cards	