

SU320MS-1.7RT

Snapshot InGaAs SWIR

MiniCamera

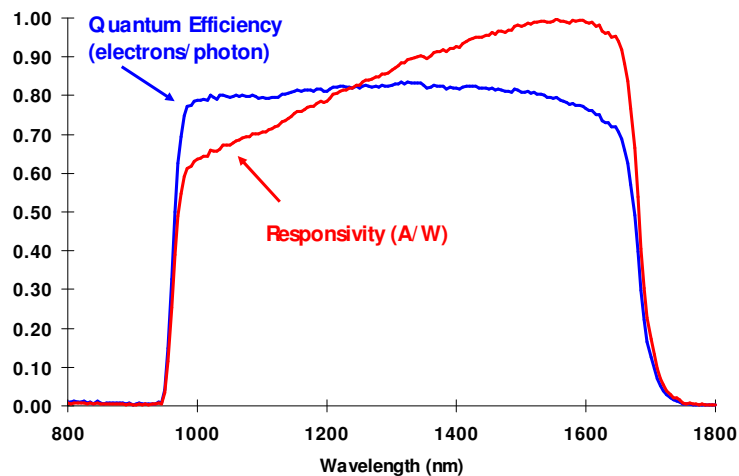


With snapshot exposure readout, the compact SU320MS-1.7RT InGaAs high-resolution, room-temperature video camera captures images from pulsed events or moving objects with tight temporal control and high sensitivity. This camera also features Automatic Gain Control (AGC), gamma, and built-in nonuniformity corrections. These and other operational modes are programmable via serial interface.



APPLICATIONS

- Pulsed laser beam profiling
- Machine vision of moving objects
- Thermal imaging > 150°C
- Hyperspectral NIR imaging



FEATURES

- 320 x 256 pixels of 25 x 25 μm w/100% fill
- High Sensitivity from 0.9 μm to 1.7 μm
- Antiblooming protection
- Programmable exposure, AGC & Gamma
- All solid-state InGaAs imager
- Digital & 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 > 65% quantum efficiency from 1 to 1.6 μm while operating at room temperature. The camera features user selectable real-time non-uniformity and gamma correction modes, Automatic Gain Control and four trigger modes. 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 most commercially available 1422 digital frame-grabber boards.

SUI knows IR™

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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	-10°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	0.9 μm to 1.7 μm
Quantum Efficiency	> 65% from 1 μm to 1.6 μm
Mean Detectivity, $D^* \text{ }^1$	> $3 \times 10^{12} \text{ cm } \sqrt{\text{Hz/W}}$
Noise Equivalent Irradiance 1	< $5 \times 10^9 \text{ photons/cm}^2 \cdot \text{s}$
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 with preset or variable exposure

$^1 \lambda = 1.55 \mu\text{m}$, exposure time = 16.27 ms (no lens), corrections off, digital gain at 1X

2 The fraction of pixels with responsivity deviation within +/-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	