



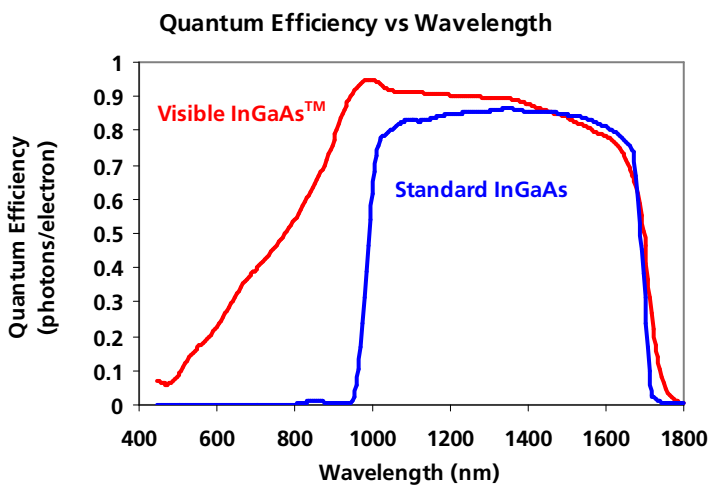
SU640SDV-1.7RT SU640SDV Vis-1.7RT High Resolution InGaAs and Vis-InGaAs™ SWIR Area Cameras

The *large format* 640 x 512 pixel **SU640SDV-1.7RT** InGaAs room temperature solid-state camera allows users to capture images in the Short Wave Infrared (SWIR) range of 0.9 to 1.7 μm and the **SU640SDV Vis-1.7RT** expands the range to the visible, from 0.4 to 1.7 μm . Both provide wide field of view, high resolution and high sensitivity. Their snapshot CMOS readout captures pulsed or continuous illumination sources at 30 frames per second with 14-bit resolution.



APPLICATIONS

- Pulsed or CW laser beam profiling
- Semiconductor inspection
- Inspection of fiber-optic components
- Assembly & monitoring of optical switches
- Hyperspectral imaging
- Machine vision



FEATURES

- High sensitivity solid-state InGaAs or Vis-InGaAs image sensor with 100% fill factor
- 640 x 512 pixel resolution on 25 μm pitch
- Anti-blooming protection
- Preset exposure times from 0.26 to 33.2 ms, externally set times > 10 μs
- Choice of wavelength range: 0.4-1.7 μm or 0.9-1.7 μm
- Room temperature FPA operation
- 14-bit digital Camera Link® compatible output, base configuration
- Buffered EIA170 compatible analog output
- Extensive interactive command set enables user customization of most parameters, and start-up states

SUI knows IR™

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ELECTRO-OPTICAL PERFORMANCE

Optical Fill Factor	100%
Spectral Response	SDV: 0.9 to 1.7 μm SDV Vis: 0.4 to 1.7 μm
Quantum Efficiency	> 65% from 1 μm to 1.6 μm
Mean Detectivity, $D^* \text{ }^1$	> $6 \times 10^{12} \text{ cm } \sqrt{\text{Hz/W}}$
Noise Equivalent Irradiance ¹	< $2.5 \times 10^9 \text{ photons/cm}^2 \cdot \text{s}$
Noise (rms)	< 300 electrons
Gain	50e/count (nominal)
Full Well	800k electrons (Typical)
True Dynamic Range ²	> 2500:1
Operability ³	> 99%
¹ $\lambda = 1.55 \mu\text{m}$, exposure time = 33.19 ms, no lens, no corrections, AGC off	
² Average pixel response in a single image at the nominal gain (50e/count)	
³ The % of pixels with responsivity deviation within 35% of the mean	

ENVIRONMENTAL & POWER

Operating Temperature ⁴	-10°C to 40°C
Storage Temperature	-10°C to 60°C
Humidity	Non-condensing
Power Requirements AC Adapter Supplied DC (Voltage/Power) ⁴	100-240 VAC, 47-63 Hz, < 1.0 A 7-28 V, < 6 W at 25°C, < 10 W at 40°C
⁴ Camera Body Temperature	

MECHANICAL

Length x Width x Height:	15.80 cm x 7.62 cm x 7.62 cm 6.22 in x 3.00 in x 3.00 in Length includes mounting flange and I/O connectors
Weight:	< 1.1 kg (no lens)
Focal Plane Array Format:	640 x 512 pixels
Pixel Pitch:	25 μm
Active Area:	16 x 12.8 mm, 20.5 mm diagonal
Lens Mount:	M42x1 thread, optional F-mount and FD-mount adaptors available
Sensor focal plane	17.3 mm +/- 1 mm behind optical mount flange

INTERFACES

Control:	MDR 26-pin connector (Camera Link [®])
Image Data:	MDR 26-pin connector (Camera Link [®])
Power	Hirose HR25-7TR-8S connector
Analog Video:	75 Ω BNC, 1 V max output
Trigger:	75 Ω BNC, 5 V TTL max input
Camera Body Mount:	¼-20 and M6 tapped holes (bottom) M42 x 1 threaded hole (front) 4 x 8-32 holes on 2 inch centers (front) 4 x M4 x 0.7 holes spaced 50 mm wide x 40 mm high (front)
Status LED:	Power indicator, imager temperature control status

SYSTEM PERFORMANCE & OPERATIONAL MODES

Frame Rate (full resolution, maximum)	30 frames/s (EIA170 frame rate)
Scan Mode	Continuous or triggered
Exposure Mode	Snapshot (all pixels exposed simultaneously) preset
Exposure Times	Factory preset with corrections from 260 μs to 33.19 ms User programmable with EXP serial command or with external trigger > 10 μs
Image Non-uniformity Corrections	2-point (offset and gain) pixel by pixel; bad pixel replacement
Digital Output Format	14-bit Camera Link [®] base compatible (corrected, uncorrected, gamma modified and test pattern data choices are user selectable)
Analog Output Format	EIA170 compatible
External Trigger Modes	Pre-set exposure (set by integration time), Variable exposure (integrates while trigger high, min. of 10 μs), Burst with pre-set exposure (standby while trigger low, free-run while high)
External Trigger Delay (typical)	with preset exposure: 550 ns, with external set exposure: 370 ns to start of exposure, 2.7 μs to end

Contact Goodrich to discuss lens and data acquisition options available for these cameras