Exemple ...

SU640-1.7RT
High Resolution InGaAs NIR Area Cameras

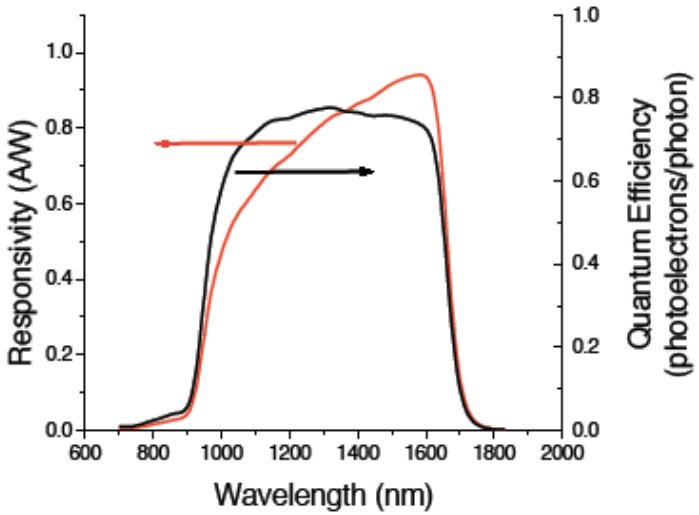
SENSORS UNLIMITED, INC.

The SU640 InGaAs room temperature solid-state camera allows users to capture images in the 900 nm to 1700 nm near infrared wavelength spectrum with unprecedented resolution and sensitivity.

APPLICATIONS

- Laser Beam Profiling
- Semiconductor Inspection
- Inspection of Fiberoptic Components
- Assembly & Monitoring of Optical Switches

http://www.sensorsinc.com/data_sheets/SU640.asp



FEATURES

- High sensitivity solid-state InGaAs image sensor
- 640 x 480 pixel resolution on 27 μm pitch
- Programmable exposure times
- Room temperature operation
- Easy interface to optics & electronics
- 12-bit output

ELECTRICAL

Scan Mode	Continuous or triggered
Optical Fill Factor	> 99.9%
Spectral Response	900 nm to 1700 nm
Quantum Efficiency	> 70% from 1000 nm to 1600 nm
Mean Detectivity, D*[1]	> 6 x 10^{12} cm-√Hz/W
Noise Equivalent Irradiance	< 4 x 10^{9} photons/cm^2/s
Read Noise	< 350 electrons
Full Well	> 650,000 electrons
Operability[2]	> 99%
Exposure Time	Internal trigger 107 μs to 27.5 ms in 9 steps External trigger > 750 ns
True Dynamic range	> 2000:1
External Trigger Jitter	64 μs
Digital Output Format	12 bit RS-422 (includes National Instruments PCI-1422 data acquisition board)
Frame Rate	19 Hz

[1] λ=1550 nm, exposure time = 16.3 ms (no lens)

[2] The percentage of pixels with responsivity deviation less than 30% from the mean.

$\eta = 0.7$

$D^* = 6\ 10^{12}\ cm.Hz^{1/2}/W$

$NEI = 4\ 10^{9}\ ph/cm2/s$

$\sigma = 350\ e-$

$@\ \lambda = 1.55\ \mu m\ (E\lambda = 1.3\ 10^{-19}\ J)$

$27\ \mu m$ pixel pitch, $\rho = 100\ \%$

$Tint = 16.3\ ms$

$\sigma = 350\ e- \rightarrow NEP = 4\ 10^{-15}\ W$

$\rightarrow D = 2.54\ 10^{14}/W$

$\rightarrow S_{pix} = 7.3\ 10^{-6}\ cm2$

$Tint = 16.3\ ms \rightarrow \rightarrow \Delta f = 61\ Hz$

$\rightarrow D^* = 5.3\ 10^{12}\ cm.Hz^{1/2}/W$

NEP = 4 10^{-15} W

S = 7.3 10^{-6} cm2

-> NEI = 5.5 10^{-10} W/cm2

Eλ = 1.3 10^{-19} J

Nph = P/Eλ -> NEI = 4.2 10^{9} ph/cm2/s

frame rate 19 Hz == 1 pose / 53 ms

-> cadence pixel = 5.8 Mpx/s

N_{STK} = 650 000 e-

σ = 350 e- -> Dyn = 1857

12 bits -> 4096 niveaux

-> 1 LSB == 160 e-