Ninox 640 SU

High resolution, low noise, Deep cooled, digital SWIR camera
640 x 512 • 15µm x 15µm Pixel Pitch • Cooled to -80˚C • <40e- in high gain •

PRELIMINARY

Key Features and Benefits

The best performing SWIR camera in the World!

- **Vacuum cooled to -80°C**
  Enables ultra-long exposure times
- **Ultra-low dark current and read-noise**
  Resulting in the highest sensitivity SWIR camera on the market
- **15µm x 15µm pixel pitch**
  Enables highest spatial resolution
- **PentaVac Vacuum Technology**
  Guaranteed protection and integrity of sensor

Resolution	**640 x 512**
Frame Rate	**Up to 98Hz**
Camera Link	**16 bit**
Wavelength Range	**SWIR**
Dark Current	**<300 e/p/s**

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Specification for Ninox 640 SU

Sensor Type	InGaAs PIN-Photodiode
Active Pixel	640 x 512
Pixel Pitch	15µm x 15µm
Active Area	9.6mm x 7.68mm
Spectral response[1]	0.9µm to 1.7µm
Readout Noise (RMS) LG = Low Gain HG = High Gain	HG: <40e- (Typical <33e-) LG: <96e- (Typical <92e-)
Peak Quantum Efficiency	80% @ 1.5µm
Full Well Capacity	Low Gain: >85ke-, High Gain: >18.5ke-
Pixel Operability	>99%
Dark Current (e/p/s)	<300 @-80°C
Digital Output Format	16 bit CameraLink (Base configuration) / SDR
Exposure time	20µs - 300 secs *
Shutter mode	Global shutter
Frame Rate	98Hz
Dynamic Range (typical)	Low Gain: 59.6dB High Gain: 56dB
Optical Interface	C-mount (selection of SWIR lens available)
Camera Setup / Control	16 bit Camera Link (Base Configuration / SDR)
Trigger interface	Trigger IN and OUT - TTL compatible
Power supply	12V DC ±10%
TE Cooling	-80°C with liquid cooling
Image Correction	2 Point NUC (Offset & Gain) + pixel correction
Functions controlled by serial communication	Exposure, Non Uniformity Correction, TEC
Camera Power Consumption[2]	<120W (TEC ON, NUC ON)
Operating Case Temperature[3]	-20˚C to +55˚C
Storage Temperature	-30˚C to +60˚C
Dimensions (L*W*H)[4]	120.9mm x 140.2mm x 113.1mm
Weight	<1.9kg

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* IN HG mode exposure will be limited due to pixel well depth.

Ordering Information

Camera

Ninox 640 SU Digital Camera	NXU1.7-CL-640
Ninox Power Supply Cable	RPL-NXU-PSU

Optional Accessories

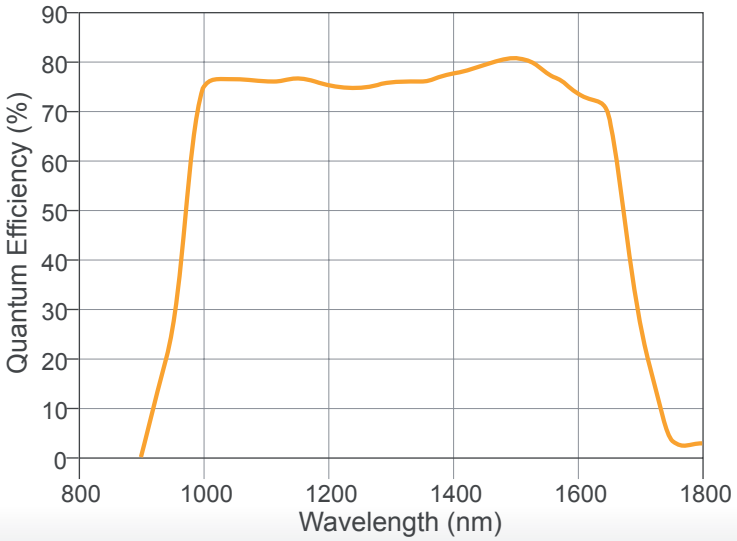
Mini PC with XCAP STD and frame grabber	RPL-PC-mf2280
Thunderbolt frame grabber	RPL-mf2280
EPIX® EB1 frame grabber	RPL-EPIX-EB1
EPIX® XCAP Std sofware	RPL-XCAP-STD
MDR-SDR CameraLink Cable (2m)[5]	RPL-MCL-CBL-2M
Chiller Tubing[6]	RPL-WTUBE-NINOX
Thermoelectric Water Chiller Unit	RPL-CHILLER
Optical SWIR lenses[7]	RPL-xx-xxxx

Note 1: Optional filters available.
Note 2: Measured in an ambient of 25°C with adequate heat sinking.
Note 3: Extended operating temperature range on request.
Note 4: Dimensions include all connector parts on camera interface.
Note 5: Longer Camera Link cable available.
Note 6: This includes the tubing & connectors.
Note 7: Please consult us to check our range of lenses.

Demo is available on request.
Pricing AOR subject to volumes.

Detailed technical drawings can be downloaded at www.raptorphotonics.com

Quantum Efficiency



* Data supplied by sensor manufacturer.

Applications

Scientific

- Art Inspection
- Astronomy
- Beam Profiling
- Hyperspectral Imaging
- In-vivo / NIR-II imaging
- Microscopy
- Semiconductor Inspection
- Solar Cell Inspection
- Thermography

Document #: USNXU1.7-CL-640 0322

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