

Ninox 640 II

Ultra low noise, cooled, digital VIS-SWIR camera

640 x 512 • 15 μ m x 15 μ m Pixel Pitch • 18 electrons • Air Cooled to -15°C •



Key Features and Benefits

The best performing VIS-SWIR camera in the World!

- **Ultra Low Noise Sensor: 18e-**
Enables ultimate low light Vis-SWIR image
- **Air Cooled VIS-SWIR technology**
Air Cooled to -15°C. Enables low dark current for longer exposures
- **15 μ m x 15 μ m Pixel Pitch**
Enables highest resolution VIS-SWIR image
- **Ultra High Intra-scene Dynamic range - 62dB (Typical)**
Enables simultaneous capture of bright & dark portions of a scene

Resolution	640 x 512
------------	------------------

Readout Noise	18e- (typical)
---------------	-----------------------

Spectral Response	0.6μm - 1.7μm
-------------------	--

Typical Dark Current	<1500e/p/s
----------------------	----------------------

Specification for Ninox 640 II

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	0.6µm to 1.7µm
Readout Noise (RMS) ² LG = Low Gain HG = High Gain	LG: <175e- (150e- typical) HG: <22e- (18e- typical)
Peak Quantum Efficiency	>90% @ 1.3µm
Pixel Well Depth	LG: >250ke-, HG: 10ke-
Pixel Operability	>99.5%
Dark Current (e/p/s)	<3,000 @-15°C (1,500 typical)
Digital Output Format	14bit Camera Link (Base Configuration) /SDR
Exposure Time ³	LG: 10µs to 26.8s HG: 100µs to 26.8s
Shutter Mode	Global shutter
Frame Rate	Up to 120Hz
Optical Interface	C-mount (selection of SWIR lens available)
Dynamic Range (Typical)	LG: 62dB HG: 55dB
Trigger Interface	Trigger IN and OUT - TTL compatible
Power Supply	12V DC +/- 0.5V
TE Cooling	Cooled to -15°C, ΔT = 35°C
Image Correction	3 point NUC (offset, Gain & Dark Current) + pixel correction
Functions controlled by serial communication	Exposure, intelligent AGC, Non Uniformity Correction, Gamma, Pk/Av, TEC, ROI
Camera Power Consumption ⁴	<10W with TEC ON, NUC ON)
Operating Case Temperature ⁵	-20°C to +55°C
Storage Temperature	-30°C to +60°C
Dimensions (L*W*H) ⁶	87.30mm x 78.86mm x 79.30mm
Weight	550g

Raptor Photonics Limited reserves the right to change this document at any time without notice and disclaims liability for editorial, pictorial or typographical errors.

Ordering Information

Camera

Ninox 640 II Digital Camera	NN1.7-VS-CL-640
Power Supply Cable	RPL-HR4-K

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 software	RPL-XCAP-STD
MDR-SDR Camera Link Cable (2m) ⁷	RPL-MCL-CBL
Thermoelectric Water Chiller Unit ⁸	RPL-CHILLER
Chiller Tubing ⁹	RPL-WTUBE-NINOX
Optical Lenses ¹⁰	RPL-xx-xxxx

Note 1: Optional filters available: low, high or bandpass.

Note 2: Typical readout noise is calculated from an average of the last 20 cameras shipped..

Note 3: In practice, the maximum exposure time will be dark current limited.

Note 4: Measured in an ambient of 25°C with adequate heat sinking. For more detailed power consumption values, please refer to the user manual.

Note 5: Extended Operating Temperature range available on request.

Note 6: Dimensions include all connector parts on the camera interface.

Note 7: Longer Camera Link cable available.

Note 8: This includes the chiller and the liquid. Recommended coolant flow rate >0.5l/min & cooling capacity >100W @ 20°C.

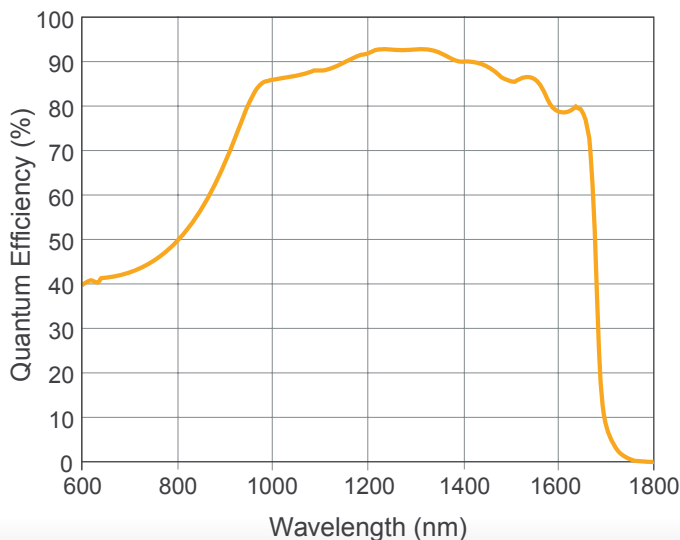
Note 9: This includes the tubing & connectors.

Note 10: 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

- Astronomy
- Beam Profiling
- Hyperspectral Imaging
- Semiconductor Inspection
- Solar Cell Inspection
- Thermography
- Microscopy
- Art Inspection



Willowbank Business Park
Larne, Co Antrim
BT40 2SF,
Northern Ireland

Raptor Photonics Ltd. (UK)
T: +44(0)2828 270 141
E: sales@raptorphotonics.com
www.raptorphotonics.com

Raptor Photonics Inc. (USA)
T: +1 (877) 230-4836
E: sales@raptorphotonics.com
www.raptorphotonics.com

Document #: USNN1.7-VS-CL-640 0322

