

# Ninox 640 VIS-SWIR

High resolution, low noise, cooled, digital VIS-SWIR camera  
640 x 512 • Air Cooled to -15°C • <50e in high gain •



## Key Features and Benefits

*The best performing VIS-SWIR camera in the World!*

- **Air Cooled VIS-SWIR technology**  
Air Cooled to -15°C. Enables low dark current and longer exposure
- **15µm x 15µm pixel pitch**  
Enables highest resolution VIS-SWIR image
- **<50e in high gain**  
Enables highest VIS-SWIR detection limit
- **Ultra high intrascene dynamic range - 70dB**  
Enables simultaneous capture of bright & dark portions of a scene
- **On-board intelligent 3 point NUC**  
Enables highest quality images

Resolution	<b>640 x 512</b>
Frame Rate	<b>Up to 120Hz</b>
Camera Link	<b>14 bit</b>
Wavelength Range	<b>VIS-SWIR</b>
Dark Current	<b>&lt;1,500 e/p/s</b>

## Specification for Ninox VIS-SWIR 640

Sensor Type	InGaAs PIN-Photodiode
Active Pixel	640 x 512
Pixel Pitch	15µm x 15µm
Active Area	9.6mm x 7.68mm
Spectral response <sup>1</sup>	0.4µm to 1.7µm
Readout Noise (RMS) LG = Low Gain HG = High Gain	LG: <190 electrons (163 electrons typical) HG: <50 electrons (37 electrons typical)
Quantum Efficiency	>80% @ 1.55µm
Full Well Capacity	LG: 650ke- HG: 10ke-
Pixel Operability	>99.5%
Dark Current (e/p/s)	<1,500 @ -15°C
Digital Output Format	14 bit Camera Link (Base Configuration)
Exposure time	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	LG: 72dB, HG: 49dB
Trigger interface	Trigger IN and OUT - TTL compatible
Power supply	12V DC ±0.5V
TE Cooling	Active, 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 <sup>2</sup>	< 5W with TEC OFF
Operating Case Temperature <sup>3</sup>	-20°C to +55°C
Storage Temperature	-30°C to +60°C
Dimensions	123.14mm x 89.48mm x 64.00mm
Weight	916g
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 VIS-SWIR digital camera	NX1.7-VS-CL-640
NINOX Power Supply Cable	RPL-HR4-K
Chiller Tubing <sup>4</sup>	RPL-WTUBE-NINOX
Liquid Re-circulator Unit	RPL-RECIRC

### Optional Accessories

EPIX(R) base CL card	RPL-EPIX-EB1
EPIX(R) base notebook CL card	RPL-EPIX-ECB1-34
EPIX(R) base notebook CL card	RPL-EPIX-ECB1-54
EPIX(R) XCAP STD software	RPL-XCAP-STD
Camera Link Cable, 2m <sup>5</sup>	RPL-CL-CBL-2M
Optical SWIR lenses <sup>6</sup>	RPL-xx-xxxx

Note 1: Optional filters available: Low, High or bandpass  
Note 2: Measured @ 30°C

Note 3: Extended Operating Temperature range on request

Note 4: This includes the tube + connectors

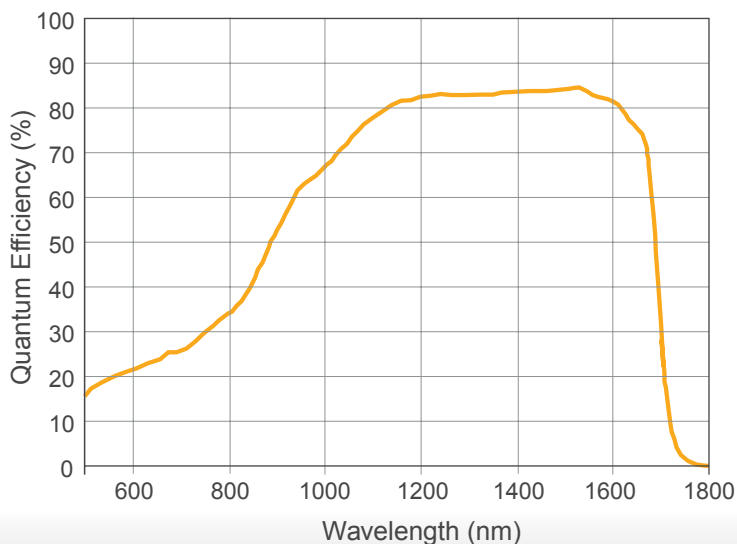
Note 5: Longer CL cable available

Note 6: 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](http://www.raptorphotonics.com)

## Quantum Efficiency



## Applications

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

Document #: USNINOX 1.7-VS-CL-640 1118



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](http://www.raptorphotonics.com)

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

