

# Ninox 1280

High resolution, low noise, cooled, digital VIS-SWIR camera

1280 x 1024 • 10 $\mu$ m x 10 $\mu$ m Pixel Pitch • Cooled to -15°C • <50e- readout noise •



## Key Features and Benefits

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

- **Cooled VIS-SWIR technology**

Cooled to -15°C. Enables low dark current for longer exposures

- **10 $\mu$ m x 10 $\mu$ m pixel pitch**

Enables highest resolution VIS-SWIR image

- **<50 electrons readout noise in high gain**

Enables highest VIS-SWIR detection limit

- **Ultra high intrascene dynamic range - 68dB (Typical)**

Enables simultaneous capture of bright & dark portions of a scene

---

Resolution	<b>1280 x 1024</b>
------------	--------------------

---

Frame Rate	<b>10 to 60Hz</b>
------------	-------------------

---

Camera Link	<b>12 bit</b>
-------------	---------------

---

Wavelength Range	<b>VIS-SWIR</b>
------------------	-----------------

---

Typical Dark Current	<b>&lt;2,000 e/p/s</b>
----------------------	------------------------

---

## Specification for Ninox 1280

Sensor Type	InGaAs PIN-Photodiode
Active Pixel	1280 x 1024
Pixel Pitch	10µm x 10µm
Active Area	12.8mm x 10.24mm
Spectral Response <sup>1</sup>	0.4µm to 1.7µm
Readout Noise (RMS) <sup>2</sup> LG = Low Gain HG = High Gain	LG: <190e- (160e- typical) HG: <50e- (47e- typical)
Peak Quantum Efficiency	>90% @ 1.3µm
Full Well Capacity	LG: 450ke- HG: 10ke-
Pixel Operability	>99.5%
Dark Current (e/p/s)	<4,000 @ -15°C (2,000 typical)
Digital Output Format	12bit Camera Link (Medium Configuration)
Exposure Time	LG: 20µs to 10s HG: 40µs to 80ms
Shutter Mode	Global shutter
Frame Rate	10 – 60Hz
Optical Interface	C-mount (selection of SWIR lens available)
Dynamic Range	LG: 69dB HG: 47dB
Trigger Interface	Trigger IN and OUT - TTL compatible
Power Supply	12V DC ±5%
TE Cooling	Active, ΔT = 35°C
Image Correction <sup>3</sup>	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>4</sup>	<8W (TEC ON, NUC ON)
Operating Case Temperature <sup>5</sup>	-20°C to +55°C
Storage Temperature	-30°C to +60°C
Dimensions (L*W*H) <sup>6</sup>	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 1280 Digital Camera	NX1.7-VS-CL-1280
Power Supply Cable	RPL-HR4-K

### Optional Accessories

Mini PC with XCAP Std and frame grabber	RPL-PC-EL1
EPIX® E8 frame grabber	RPL-EPIX-E8
EPIX® XCAP Std software	RPL-XCAP-STD
Camera Link Cable (2m) <sup>7</sup>	RPL-MCL-CBL-2M
Thermoelectric Water Chiller Unit <sup>8</sup>	RPL-CHILLER
Chiller Tubing <sup>9</sup>	RPL-WTUBE-NINOX
Optical Lenses <sup>10</sup>	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: The NUC is not active for exposure times after 92.5ms. For more detailed information, please refer to the user manual.

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: Two cables are required. The maximum cable length is 2m. For more information, please refer to the user manual.

Note 8: This also includes the liquid.

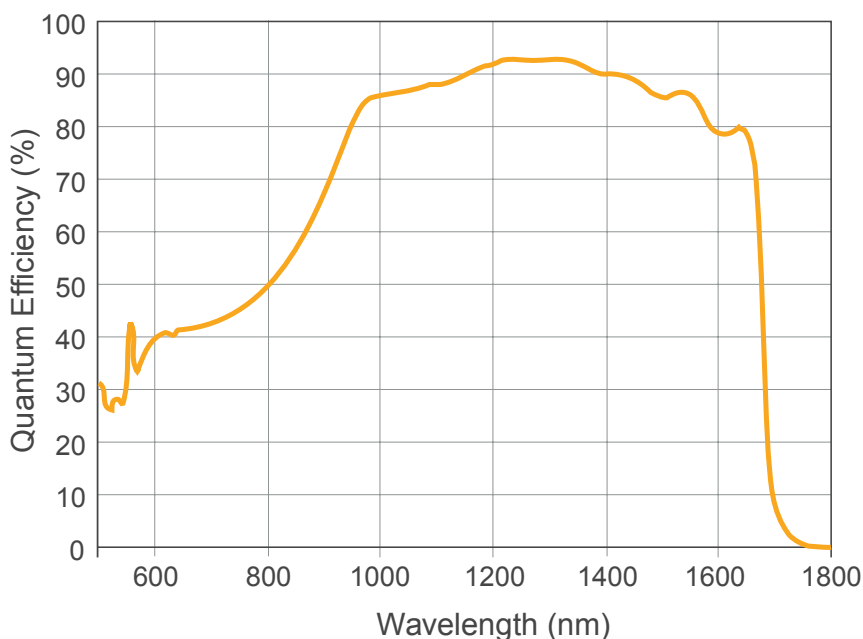
Note 9: This includes the tubing & connectors.

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

## Quantum Efficiency



\*Data supplied by sensor manufacturer

## Applications

### Scientific

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

Document #: INNINOX 1.7-VS-CL-1280 0120



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)

