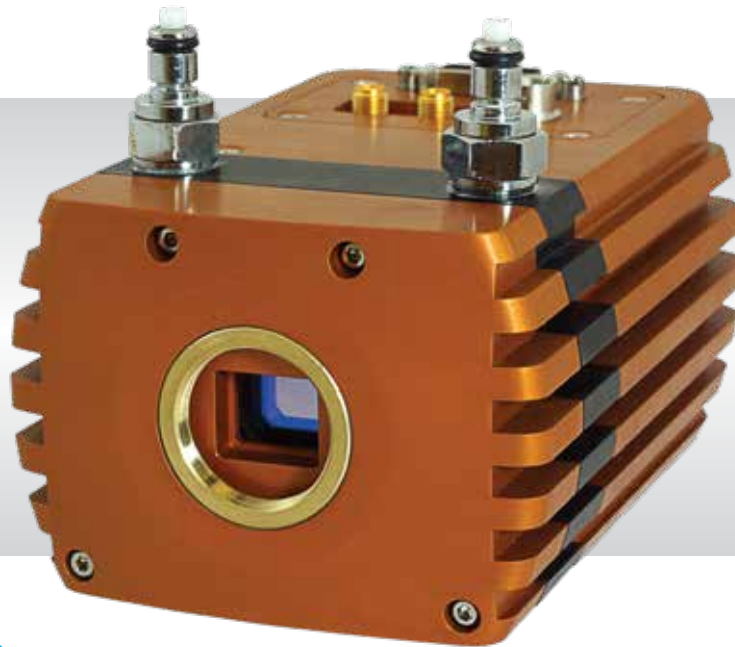


Ninox 640 VIS-SWIR

High resolution, low noise, cooled, digital VIS-SWIR camera
640 x 512 • Air Cooled to -15°C • $<50\text{e}$ 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
- **$15\mu\text{m} \times 15\mu\text{m}$ pixel pitch**
Enables highest resolution VIS-SWIR image
- **$<50\text{e}$ 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	640 x 512
Frame Rate	Up to 120Hz
Camera Link	14 bit
Wavelength Range	VIS-SWIR
Dark Current	$<1,500 \text{ e/p/s}$

Specification for Ninox 640 VIS-SWIR

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	0.4µm 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 (Typical)	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 ²	<5W with TEC OFF, NUC ON <10W with 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	123.14mm x 89.48mm x 64.00mm
Weight	916g

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Ordering Information

Camera

NINOX 640 VIS-SWIR digital camera	NX1.7-VS-CL-640
NINOX Power Supply Cable	RPL-HR4-K
Chiller Tubing ⁵	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 ⁶	RPL-CL-CBL-2M
Optical SWIR lenses ⁷	RPL-xx-xxxx

Note 1: Optional filters available: Low, High or bandpass
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: This includes the tube + connectors

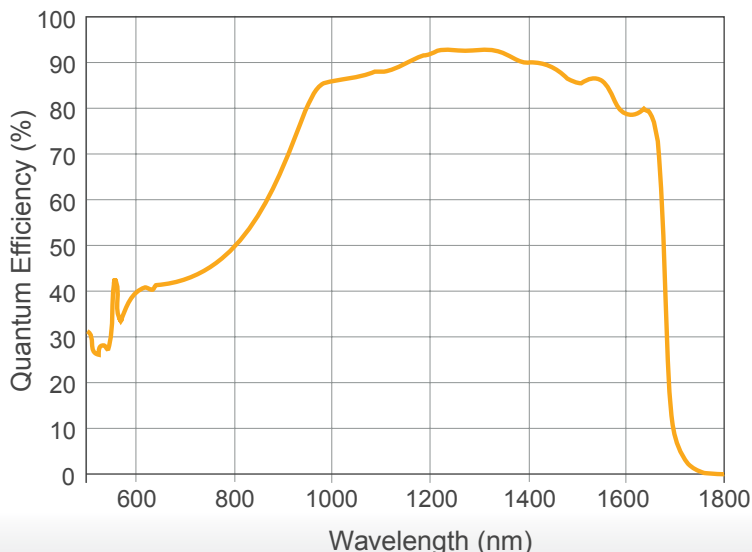
Note 6: Longer CL cable available

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

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



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