

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

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

Specification for Ninox 640 VIS-SWIR

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|---|--|
| 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

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|-----------------------------------|-----------------|
| 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

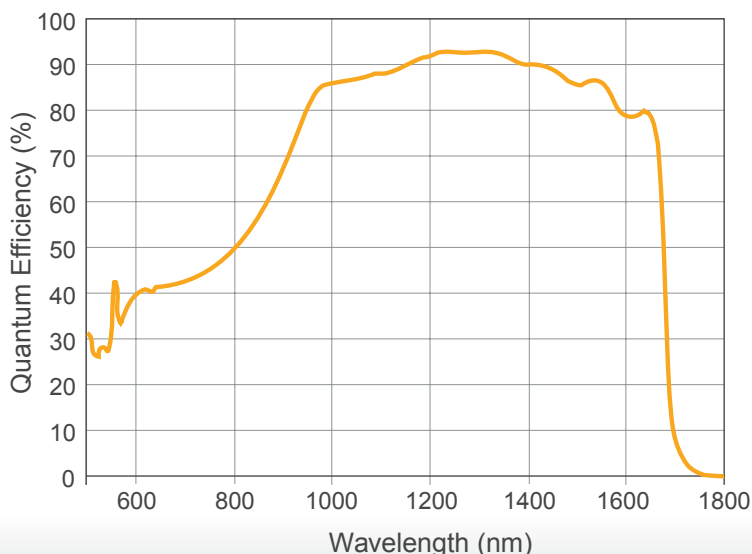
Note 6: Longer CL cable available

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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