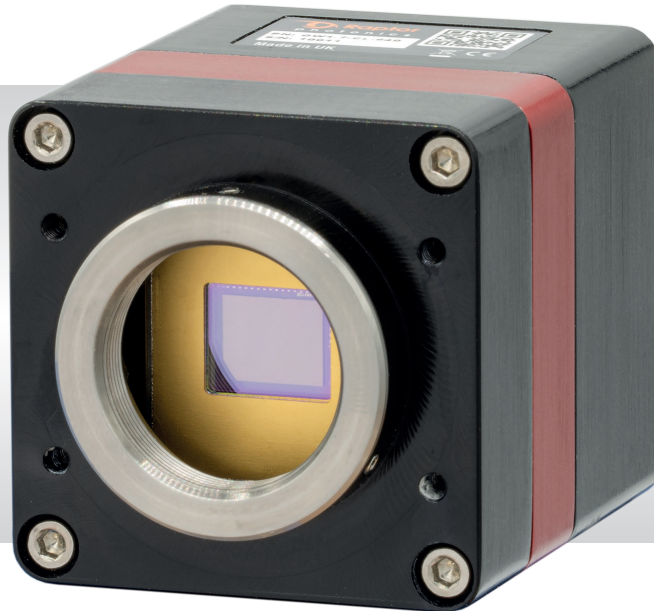


# Owl 640 S

High Speed, low noise, digital SWIR camera

640 x 512 • 15 $\mu$ m x 15 $\mu$ m Pixel Pitch • Frame rate up to 30.2kHz •



## Key Features and Benefits

*The best performing SWIR camera in the World!*

- **High Speed - up to 30.2kHz @ 32 x 4**  
Perfect for high speed imaging applications
- **SWIR technology**  
Enables imaging from 0.9 $\mu$ m to 1.7 $\mu$ m
- **15 $\mu$ m x 15 $\mu$ m pixel pitch**  
Enables highest resolution SWIR image
- **Ultra high intrascene dynamic range**  
Enables simultaneous capture of bright & dark portions of a scene
- **On-board Automated Gain Control (AGC)**  
Enables clear video in all light conditions
- **Ultra compact, Low power**  
Ideal for hand-held, mobile or airborne systems

Resolution	<b>640 x 512</b>
Frame rate	<b>Up to 30.2kHz</b>
Readout noise	<b>&lt;50e-</b>
Wavelength Range	<b>SWIR</b>

# Specification for Owl 640 S

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>	0.9µm to 1.7µm
Readout Noise (RMS) on camera LG = Low Gain HG = High Gain	HG: <56e- (Typical <50e-) LG: <98e- (Typical <85e-)
Readout Noise (RMS) on ROIC	HG: <30e-
Peak Quantum Efficiency	80% @ 1.5µm
Full Well Capacity	Low Gain: >110ke-, High Gain: >35ke-
Pixel Operability	99%
Dark Current	300k e/p/s @15°C (130k typical)
Digital Output Format	12 bit Camera Link (Medium Configuration)
Exposure time <sup>2</sup>	15µs to frame period in IWR
Shutter mode	Global shutter
Frame Rate	300Hz in full resolution. 30.2kHz with 32x4 binning
Optical Interface	C mount
Trigger interface	Trigger IN and OUT - TTL compatible
Power supply	12V DC ±0.5V
TE Cooling	Active
Image Correction	3 point NUC (offset, Gain & Dark Current) + pixel correction
Functions controlled by serial communication	Exposure, intelligent AGC, Non Uniformity Correction, TEC, frame rate
Camera Power Consumption <sup>3</sup>	8W (TEC ON, NUC ON)
Operating Case Temperature <sup>4</sup>	-20°C to +55°C
Storage Temperature	-30°C to +60°C
Dimensions (L*W*H) <sup>5</sup>	74.2mm x 50.00mm x 50.00mm
Weight	260g

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# Ordering Information

## Camera

Owl 640 S Digital Camera	OW17-CL-640
Owl 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® E8 Frame Grabber	RPL-EPIX-E8
EPIX® XCAP Std software	RPL-XCAP-STD
MDR-SDR CameraLink Cable (2m) <sup>6</sup>	RPL-MCL-CBL-2M
Optical SWIR lenses <sup>7</sup>	RPL-xx-xxxx

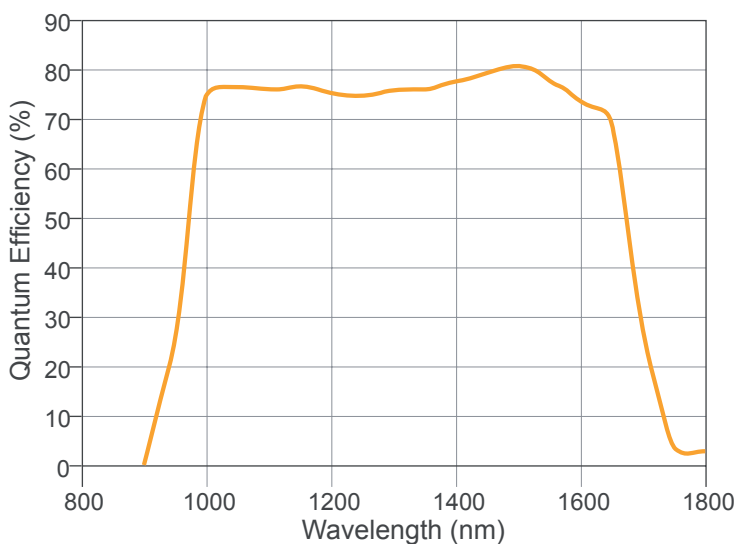
- Note 1: Optional filters available.
- Note 2: Maximum exposure time will be dark current limited.
- Note 3: Measured in an ambient of 25°C with adequate heat sinking.
- Note 4: Extended operating temperature range on request.
- Note 5: Dimensions include all connector parts on the camera interface.
- Note 6: Two cables required.
- Note 7: Please consult us to check our range of lenses.
- Note 8: The following speeds can be achieved by using ROI.

Resolution	Speed (Hz)
640 x 512	300
320 x 256	903
32 x 32	10,489
32 x 4	30,200

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

- Surveillance**
  - Active Imaging
  - Airborne Payload
  - Hand Held Systems
  - Imaging through Fog
  - Range Finding
  - Vision enhancement
- Scientific**
  - Astronomy
  - Beam Profiling
  - Hyperspectral Imaging
  - Semiconductor Inspection
  - Solar Cell Inspection
  - Thermography

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