



# Owl 640 A

Low noise, VIS-SWIR camera  
640x512 • 15µm x 15µm Pixel Pitch • CCIR/EIA •



Analogue

## Key Features and Benefits

Cooled VGA Surveillance Analogue InGaAs Camera

- **VIS-SWIR technology**  
Compatible with VIS-SWIR illuminators, markers & pointers
- **15µm x 15µm pixel pitch**  
Enables highest resolution VIS-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       | 640 x 512    |
| Analogue output  | CCIR / EIA   |
| Readout noise    | 36 electrons |
| Wavelength Range | VIS-SWIR     |

Specification for Owl 640 A

|                                                                  |                                                              |
|------------------------------------------------------------------|--------------------------------------------------------------|
| Sensor Type                                                      | InGaAs PIN-Photodiode                                        |
| Active Pixel                                                     | 640 x 480 (EIA) / 640 x 512 (CCIR)                           |
| Pixel Pitch                                                      | 15µm x 15µm                                                  |
| Active Area                                                      | 9.6mm x 7.68mm                                               |
| Spectral response <sup>1</sup>                                   | 0.6µm to 1.7µm                                               |
| Readout Noise (RMS) <sup>2</sup><br>LG = Low Gain HG = High Gain | LG: <190e- (174e- typical)<br>HG: <50e- (36e- typical)       |
| Peak Quantum Efficiency                                          | >90% @ 1.3µm                                                 |
| Full Well Capacity                                               | LG: 650ke-<br>HG: 10ke-                                      |
| Pixel Operability                                                | >99.5%                                                       |
| Analogue Output Format                                           | CCIR / EIA                                                   |
| Exposure time                                                    | 10µs to (Frame Period -Readout Time)                         |
| Shutter mode                                                     | Global shutter                                               |
| Frame Rate                                                       | 25Hz (CCIR) / 30Hz (EIA)                                     |
| Optical Interface <sup>3</sup>                                   | C mount                                                      |
| Dynamic Range (typical)                                          | LG: 71dB<br>HG: 49dB                                         |
| Camera Setup / Control                                           | RS 485                                                       |
| 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, NUC, Gamma, Pk/Av, TEC,           |
| Camera Power Consumption <sup>4</sup>                            | <6W with 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>                                  | 76.23mm x 50.00mm x 50.00mm                                  |
| Weight                                                           | 282g                                                         |

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Ordering Information

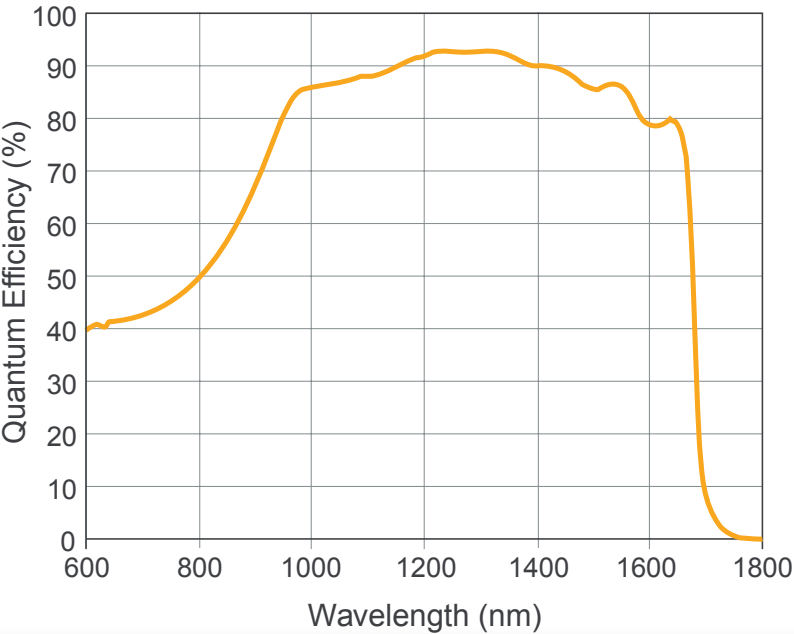
|                                        |                 |
|----------------------------------------|-----------------|
| Camera                                 |                 |
| Owl 640 A analogue-CCIR                | OW1.7-VS-AC-640 |
| Owl VIS-SWIR analogue-EIA              | OW1.7-VS-AE-640 |
| Power Supply Cable                     | RPL-MDM-CBL-B   |
| Optional Accessories                   |                 |
| EPIX® Analogue video card              | RPL-EPIX-SV5    |
| Owl/Hawk PSU cable MDM to Jack + brick | RPL-MDM-CBL-J   |
| Owl/Hawk PSU cable MDM to flying leads | RPL-MDM-CBL-F   |
| Optical Lenses <sup>7</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: Other mounts on request.  
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 on request.  
Note 6: Dimensions include all connector parts on the camera interface.  
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](http://www.raptorphotonics.com)

Quantum Efficiency



\*Data supplied by sensor manufacturer

Applications

- Surveillance
- 860, 1064 & 1550nm laser line detection
  - Active Imaging
  - Airborne Payload
  - Hand Held Systems
  - Imaging through Fog
  - Range Finding
  - Vision enhancement
  - Maritime / Coastal surveillance
  - UAV