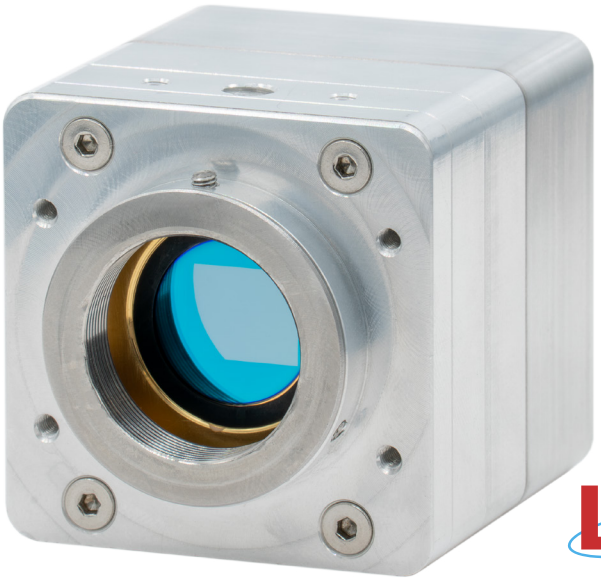
Raptor photonics

Owl 640 S Flight Ready

640 x 512, SWIR Camera



Key Features and Benefits

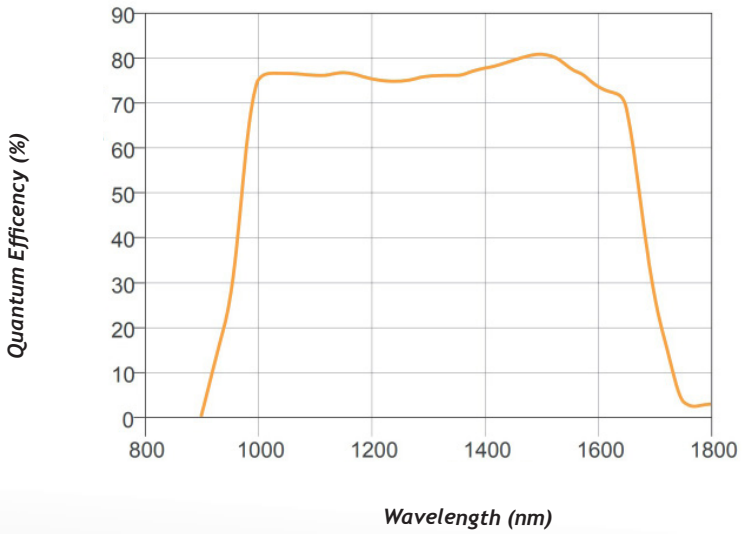
- **640 x 512 ,15µm pitch SWIR sensor**
  HD resolution imaging from 0.9µm to 1.7µm
- **Ultra compact and ruggedised for space**
  Easy integration in space optical instruments
- **Designed for LEO enviroments**
  High Shock, Vibration and Extreme Temperature Resistance
- **Global Shutter InGaAs technology**
  SWIR image without any geometric distortion
- **On-board Intelligent 3 point NUC and ALC**
  Real time, optimal video in all light conditions
- **Low Noise Electronics**
  No artificial noise added, optimising low light capability

Resolution	640 x 512
Frame Rate	up to 30.2KHz
Camera Link	12 bit medium
Wavelength Range	SWIR

Specification for Owl 640 S FR

Sensor	InGaAs PIN-Photodiode
Active Pixel	640 x 512
Pixel Pitch	15µm x 15µm
Active Area	9.60mm x 7.68mm
Spectral Response[1]	0.9µm to 1.7µm
Readout Noise (RMS)	HG: <56e- (50e- typical) LG: <98e- (85e- typical)
Peak Quantumn Efficeny	>80% @1.5µm
Full Well Capacity	HG: >35ke- LG: >110ke-
Pixel Operability	>99.5%
Dark Current (e/p/s)	300k e/p/s @ 15˚C (<130k typical)
Digital Output Format	12 bit Camera Link (Medium Configuration)/ SDR
Dynamic Range	HG: >57 (typ 52e-) LG: 65dB (typ 60e-)
Exposure Time[2]	15µs to 999ms in IWR mode
Shutter Mode	Global Shutter
Frame Rate	300Hz in full resolution 30.2kHz with 32x4 ROI
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, Pk/Av, TEC, ALC, ROI
Camera Power Consumption[3]	<8W with TEC ON, NUC ON
Operating Temperature	-40˚C to +71˚C
Storage Temperature	-55˚C to +85˚C
Dimensons (excluding standard mounting)[4]	74.2mm x 50.00mm x 50.00mm
Weight	266g

Raptor Photonics Limited reserves the right to change this document at any time without notice and disclaims liability for editorial, pictoral or typographical errors.This product is under the export control of the UK goverment and may be subject to a single individual export license before shipment. 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: Dimensions include all connector parts on the camera interface.Note 5: Two cables required.Note 6: Please consult us to check our range of lenses.Note 7: The following speeds can be achieved by using ROI.



Data Supplied by Sensor Manufacturer

Specification for Owl 640 S FR

Camera

OWL 640 S Digital Camera	OW1.7-CL-640-S
Power Supply Cable	RPL-HR4-K

Optional Accessories

Mini PC with XCAP STD and Frame Grabber	RPL-PC-mf2280
Thunderbolt Frame	RPL-mf2280
EPIX® E8 Frame Grabber	RPL-EPIX-E8
EPIX® XCAP STD Software	RPL-XCAP-STD
MDR-SDR CameraLink Cable[5](2m)	RPL-MCL-CBL-2M
Optical SWIR lenses[6]	RPL-xx-xxx

Custom Options

Custom Options available, contact us at sales@raptorphotonics.com

Firmware Features

- On-board Automated Gain Control (AGC)
- On-board intelligent 3-point NUC
- Sensor ROI

Applications

Scientific

- New Space LEO
- Free Space Optical Communication
- Hyperspectral Imaging
- Astronomoy

Resolution	Speed (Hz)[7]
640 x 512	300
320 x 256	903
32 x 32	10,489
32 x 4	30,200

For detailed tehnical drawings, volume pricing or to set up a demo, contact us at sales@raptorphotonics.com

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