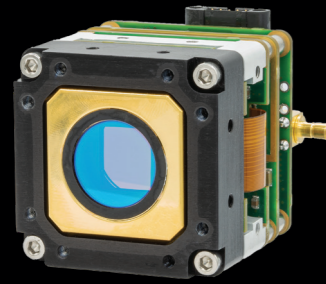


## Quality Compliance and Sourcing

All components used in Raptor cameras are reputedly sourced from approved ISO9001:2015 suppliers offering full traceability. We appreciate that our cameras end up in mission critical equipment, in medical, industrial and surveillance applications where reliability and quality are paramount. We are 100% committed to preventing the use of any grey / counterfeit goods as components within our products. All suppliers are continuously monitored for compliance with RoHS, REACH and the Conflict Minerals rule, section 1502 of the Dodd-Frank Act (2010) using our Raptor Certified Supply Chain.



## High Performance and Quality

Raptor cameras are well designed and expertly designed. We carry the latest quality accreditation BS EN ISO 9001:2015 and IPC Class 3. All our cameras are built to MIL-STD-810F and MIL-STD-704F standards. This means our cameras are rugged and reliable.

They are designed for EMC & Environmental stress, shock & vibration. Our cameras are designed to work in harsh climates, with electronics operating from -40°C to +75°C. Our electronics are also conformally coated enabling them to work in high humidity or condensation environments in mission-orientated applications.

Raptor undertakes monthly audits of RMAs (returns). On a rolling 12 month basis RMAs have been <2% for the last 3 years. Our high quality manufacturing and QC testing means we rarely see cameras returned.

## Raptor Manufacturing

We design and manufacture all of our camera solutions from our state-of-the-art headquarters in Larne, United Kingdom. Our 6,000 sq ft facility holds all our enhanced processes including our cleanroom and vacuum capabilities. Our manufacturing regime operates Kanban processes which enables short lead times and effective stock management. We welcome visits from OEM customers to see our facilities and meet our engineers.

## Project Process

Every OEM project has a dedicated project manager, a lead engineer and an account manager to look after the technical, commercial and support aspects of each project. A typical project can take from a few weeks to several months depending on the complexity of the work involved. Customers sit in on regular update calls and sign off at every stage of the project.



## Customer Support

We pride ourselves on our levels of customer support, knowing our customers and their needs very well.

All our products have a standard one-year warranty. We also offer a range of extended warranty packages which enable additional levels of service and support, both on-site and remote.

For further information, datasheets or to schedule a demo of any of our cameras, please refer to our website, or reach out to us directly.

## OEM Options

Our camera platforms provide our customers with flexible/modular solutions that meet their exact requirements. We build what you need and we also offer high quality, reliability, a very competitive price performance metric and fast delivery, making Raptor a very attractive solution for OEMs.

### Sensor options:

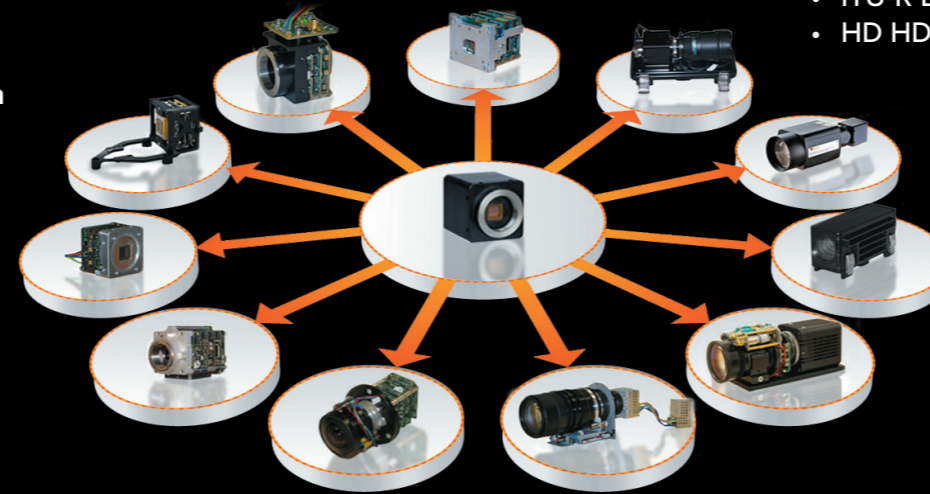
- CCD, EMCCD, InGaAs, CMOS & Intensifier Tubes
- Monochrome, Colour
- Global shutter, Progressive scan, Mega Pixel, Full HD

### Video output options:

- PAL
- NTSC,
- ITU-R BT.656-4
- HD HDMI

### Communication options:

- RS232
- RS485



### Digital output options:

- CameraLink
- GigE
- LVDS (RS644)
- USB 2.0/3.0
- HD-SDI
- Custom

### Camera options:

- With or without camera housing (Mechanical re-design to customer specification)
- Remote heads
- Electronic re-design to customer specifications
- Flexible voltage supply
- Increased resistance to shock, vibrations and temperature (according to the housing specification)

## Customer Support

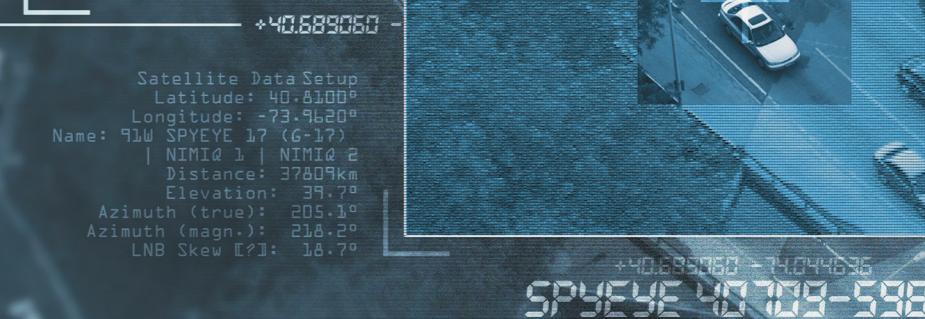
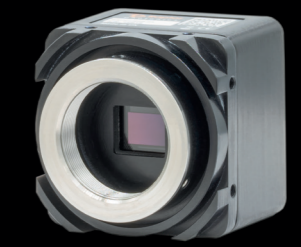
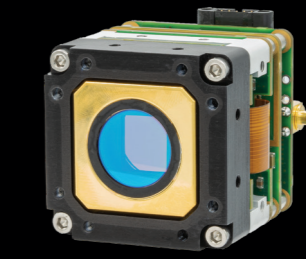
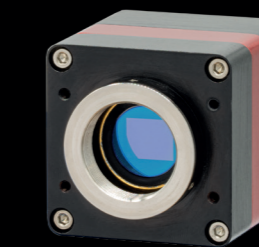
Understanding your instrumentation solutions, your product roadmap and your business model will enable us to offer you the best camera solution. We would be delighted to hear from you.

For further information, datasheets or to schedule a demo of any of our cameras please refer to our website, contact your local distributor or reach out to us directly.



## Leaders in digital camera solutions

UV VIS NIR SWIR



## SURVEILLANCE 2022



Raptor Photonics Ltd. (UK)  
T: +44 (0) 2828 270 141  
E: sales@raptorphotonics.com  
www.raptorphotonics.com

Raptor Photonics Inc. (USA)  
T: +1 (877) 230-4836  
E: sales@raptorphotonics.com  
www.raptorphotonics.com

	SWIR	VIS-SWIR							UV, VIS, NIR				
	Owl 640S	Owl 320 HS	Owl 640 M	Owl 640 II	Owl 640 Analogue	Owl 640 N	Owl 640 T	Owl 1280	Hawk 252 Blue	Hawk 216 Analogue	Hawk 800	Hawk 1920	Hawk 252
													
Sensor	InGaAs	InGaAs	InGaAs	InGaAs	InGaAs	InGaAs	InGaAs	InGaAs	CCD-252	CCD-216	Next gen CMOS	Next gen CMOS	CCD-252
Sensor Type	2/3" InGaAs	2/3" InGaAs	2/3" InGaAs	2/3" InGaAs	2/3" InGaAs	2/3" InGaAs	1/2" InGaAs	1" InGaAs	1" EMCCD	2/3" EMCCD	1/1.7" CMOS	2/3" CMOS	1" EMCCD
Active Pixels	640 x 512	320 x 256	640 x 512	640 x 512	640 x 480 (EIA) 640 x 512 (CCIR)	640 x 512	640 x 512	1280 x 1024	1280 x 1024	769 x 288 (CCIR) 769 x 244 (EIA)	816 x 624	1920 x 1080	1280 x 1024
Pixel Pitch (µm)	15 x 15	30 x 30	15 x 15	15 x 15	15 x 15	15 x 15	10 x 10	10 x 10	8 x 8	11.5 x 23 (CCIR) 11.5 x 27 (EIA)	9 x 9	4.5 x 4.5	8 x 8
Active Area (mm)	9.6 x 7.68	9.6 x 7.68	9.6 x 7.68	9.6 x 7.68	9.6 x 7.68	9.6 x 7.68	6.4 x 5.12	12.8 x 10.24	10.24 x 8.19	8.83 x 6.62 (CCIR) 8.83 x 6.59 (EIA)	7.34 x 5.62	8.64 x 4.86	10.24 x 8.19
Digitization (bit)	12	14	14	14	N/A	14	12	12	12	N/A	12	12 Mono 8 Colour	12
Readout Noise (Typical Value) LG = Low Gain HG = High Gain	LG: <85e- HG: <50e-	HG: 202e-	LG: 174e- HG: 38e-	LG: 174e- HG: 36e-	LG: 174e- HG: 36e-	LG: 150e- HG: 18e-	LG: 160e- HG: 47e-	LG: 160e- HG: 28e-	EM Gain ON: <0.01e- EM Gain OFF: <60e-	<1e-	LG: 5.8e- HG: 1.5e-	LG: 5.8e- HG: 1.5e-	EM Gain ON: <0.01e- EM Gain OFF: <60e-
Max. Full Resolution Frame Rate (Hz)	300	349	120	120	25 (CCIR) 30 (EIA)	120	60	60	25	25 (CCIR) 30 (EIA)	60	60 Mono 30 Colour	25
Peak Quantum Efficiency	>80% @ 1.5µm	>90% @ 1.3µm	>90% @ 1.3µm	>90% @ 1.3µm	>90% @ 1.3µm	>90% @ 1.3µm	>90% @ 1.3µm	>90% @ 1.3µm	95% @ 600nm	>90% @ 550nm	77% @ 510nm 28 @ 800nm	77% @ 510nm 28 @ 800nm	95% @ 600nm
Spectral Response (nm)	900 - 1700	600 - 1700	600 - 1700	600 - 1700	600 - 1700	600 - 1700	600 - 1700	600 - 1700	250 - 1050	180 - 1100	300 - 1100	300 - 1100	300 - 1100
Cooling	Active	Active	None	Active	Active	Active	Active	Active	Active, with fan	Active, no fan	Uncooled	Uncooled	Active, with fan
Output	Camera Link	Camera Link	Camera Link	Camera Link	Analogue	Camera Link	Camera Link	Camera Link	Camera Link	Analogue	Camera Link	Camera Link	Camera Link
Lens Mount	C mount	C mount	C mount	C mount	C mount	C mount	C mount	C mount	C mount	C mount	CS mount	CS mount	C mount
Camera Power Consumption (With TEC)	<8W	<6W	<2.5W	<8W	<6W	<4W	<8W	<8W	<20W	<8W	<4W	<4W	<20W
Operating Case Temperature* (°C)	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55	-20 to 55
Dimensions (mm)	75 x 50 x 50	75 x 50 x 50	62 x 42 x 42	70 x 50 x 50	76 x 50 x 50	70 x 50 x 50	68 x 50 x 50	68 x 50 x 50	73 x 62 x 62	75 x 45 x 50	43 x 43 x 37	43 x 43 x 37	73 x 62 x 62
Weight (g)	260	250	170	282	282	282	247	247	350	<230	95	95	350

All specifications correct at time of print. Other options available on request. More detailed and most recent specifications can be found in datasheets for each product on [www.raptorphotronics.com](http://www.raptorphotronics.com).

## High performance imaging from UV to SWIR

Raptor has been designing and manufacturing compact, SWaP optimised cameras for a range of surveillance applications since 2006. Our cameras are used from the sea-bed to space and everything in-between. They are ultra-sensitive, suitable for day, night and low-light vision and they are ruggedised to work in extreme conditions such as airborne gimbals and turrets. The company offers both commercial off the shelf (COTS) cameras as well as custom OEM solutions.

## Working with OEMs

Raptor's business model is based on volume demand from OEM customers. Understanding our customers' needs is vital when putting together a solution that matches their needs. The ability to be flexible and being able to offer a range of custom fittings means we can deliver unrivalled price performance solutions, with a pricing structure scalable with volume requirements. Our expertise includes:

- Sensors: CCD, EMCCD, InGaAs, CMOS & Intensifier Tubes
- Analogue and digital signal processing
- Digital design including PCI, USB, LVDS, CameraLink, GigE and HD-SDI
- FPGA (VHDL) development for imaging processing
- High speed analogue and digital design
- Low noise pre-amp circuit development
- High voltage and ultra fast pulse circuit design
- Embedded firmware development
- Application development in C++, C# and VB.

\* Extended operating temperatures available on request.

- Mechanical and Optical design.
- Heat removal interfaces, e.g. heatsink-less conductive configurations
- Chassis mounting options
- Specific QC / testing to meet customer requirements



OEM options from board level camera to custom designs available in a range of sensors, interfaces and layouts

## OEM Accreditations

Raptor's core business is targeted at the OEM market. Since our inception in 2006 we have focused on building our credentials / capabilities to meet our OEM customer needs. These include:

- Operating a quality management system, the company fully complies with the requirements of BS EN ISO 9001:2015
- Accustomed to designing to MilSpec standards including MIL-STD-810F and MIL-STD-704F
- RMAs of less than 2% – we deliver quality product
- Workmanship to class IPCa610
- ESD Compliant
- RoHS Compliant

We have also introduced our Raptor Certified Supply Chain to ensure that our suppliers conform to best practice guidelines e.g. Counterfeit goods inspections.

## Interface

Most of Raptor's off the shelf products use Camera Link to communicate with the processor. However, we appreciate that OEMs need a range of options so we can also deliver in HD-SDI, GigE, USB2/3 as well as custom digital output options, including Raptor's direct bus, enabling direct data from our camera to your system. CCIR and EIA are different forms of analog input.



### Key Facts

- Established 2006.
- Made in the UK.
- Onshore US sales and technical support.
- Complete Turnkey manufacturing
- Strong Financial Performance - Financially Stable, strong growth Year on Year.
- Rapidly Expanding User Base. Includes DoD, MoD and other NATO customers.