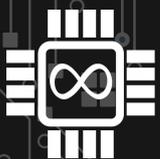# INFINITY AVIONICS

YOUR EYES IN SPACE

INFINITY
AVIONICS

Infinity Avionics is an Australian company which provides reliable and rugged optical sensor and processor solutions for the space industry and other high-reliability applications.

Our vision is to put our customers at the forefront of their missions through our reliable, robust and qualified technology solutions complemented by our know-how, specialised facilities, experience and expertise.

The team at Infinity Avionics is experienced in electronics design for space applications, project management, systems engineering, defence, and manufacturing, having contributed to the success of several Australian space missions.

Infinity Avionics provides space flight-proven and radiation-tested sensor and processor subsystems for space missions worldwide. Additionally, Infinity Avionics provides consulting services to design and deliver custom sensor payloads to meet customers' mission requirements in a timely manner.
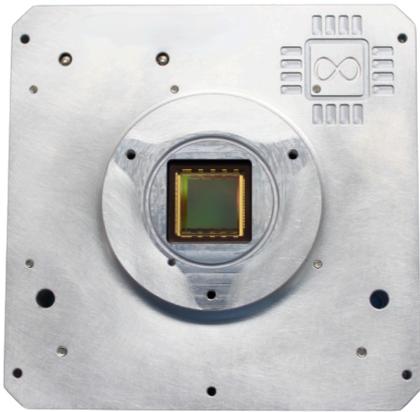
Onboard **25+** space missions

Designed **110+** electronics modules for space

5+ space qualification campaigns

Provided expertise to **20+** design studies

**40+** years collective Aerospace experience

LYNX4MP

Lynx4MP is a 4MP RGB/Monochrome camera electronics backend designed for space applications. The system has been designed based on a space proven processor, sensor, and readout and storage electronics.

Lynx4MP is mechanically compatible with standard CubeSat form factor and can support precise image capture timing requirements. The system has been qualified for thermal vacuum, vibration and shock and tested up to 40kRad TID. Lynx4MP camera backend electronics can be combined with different optical assemblies to suit a range of space applications.

Technical specifications	
Image sensor	CMOS Global Shutter
Spectral bands	RGB Bayer / Monochrome
Pixel resolution	2048 x 2048
Pixel size	5.5 um
Control interface	UART / RS485
Data interface	UART / RS485
Power supply	5V DC
Power consumption	2.75 W
Operating temperature	-10 C to 60 Celsius
On-board RAM	30 full resolution images
On-board flash memory	800 full resolution images
Dimensions	95mm x 95mm x 21mm
Weight	255 grams
Total ionizing dose	Up to 40 kRad
TRL	9
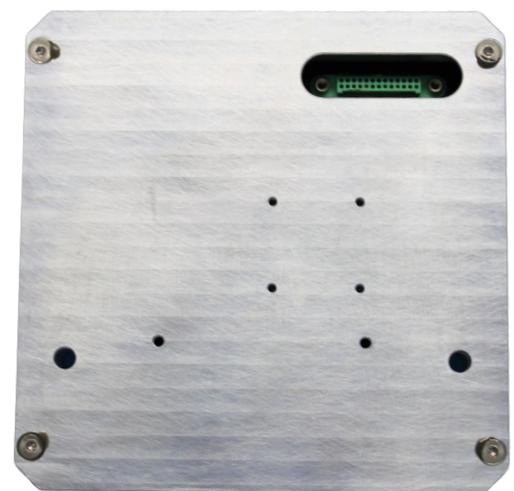
Infinity Avionics Pty Ltd
ABN | ACN
67644218182 | 644218182
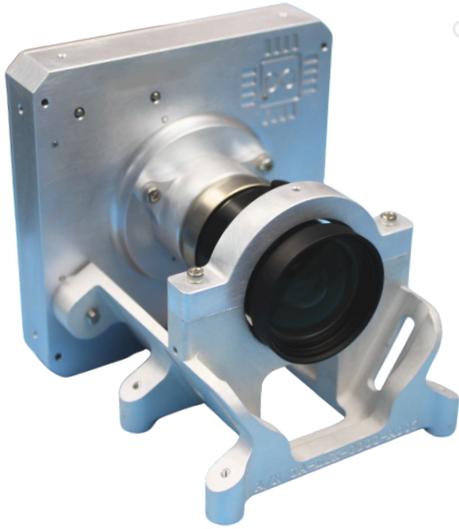**Reid, ACT, Australia**

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www.infinityavionics.com

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LYNX4MP-10

Lynx4MP-10 comes with a 10 mm focal length wide angle ruggedized optical assembly. The wide field of view is ideal for space based space asset monitoring and close proximity applications.

| Technical specifications	
Field of view	58 degrees
Focal length	10 mm
F Number	Adjustable: F/1.9 to F/16
Spectral range	VIS, NIR
Optics interface	C-mount
Dimensions	95 mm x 95 mm x 101 mm
Weight	535 grams
Total ionizing dose	Up to 40 kRad
Recommended temperature for imaging	10 - 30 Celsius

LYNX4MP-70

Lynx4MP-70 is a Lynx4MP camera variant with a 70mm ruggedized optical assembly. The camera can be used as an engineering camera, in docking/rendezvous applications as well as low spatial resolution Earth Observation.

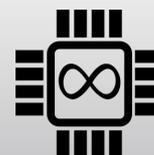| Technical specifications	
Spatial resolution (GSD)	39 m at 500 km orbit
Focal length	70 mm
F Number	4
Spectral range	VIS, NIR
Optics interface	C-mount
Dimensions	95 mm x 95 mm x 111mm
Weight	595 grams
Total ionizing dose	Up to 40 kRad
Recommended temperature for imaging	10 - 30 Celsius
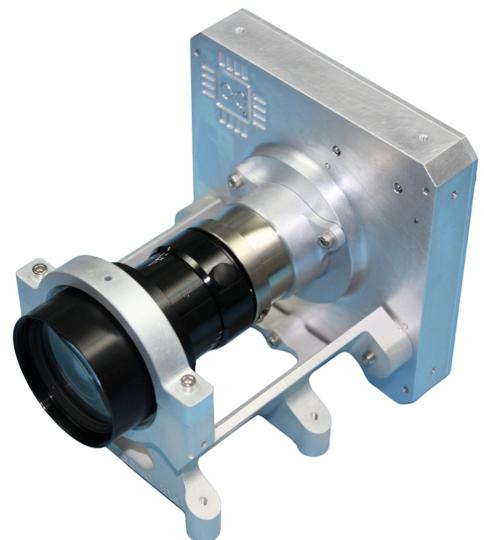
INFINITY AVIONICS
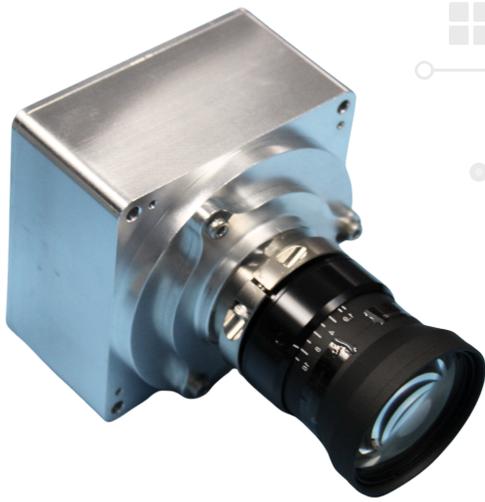
DRACO

DRACO is a camera employing an Event Based Sensor (EBS), also known as a Neuromorphic Sensor, in place of a traditional line scan or area scan focal plane. Due to its inherent sensing technology, it produces low amounts of data and requires low power making it suitable for persistent space surveillance applications.

The system will be qualified for thermal vacuum, vibration, shock and tested up to 40kRad TID. Draco backend electronics can be combined with different optical assemblies to suit a range of space applications ranging from navigation to Rendezvous & Proximity Operations (RPO) to Space Domain Awareness (SDA).

Draco camera will be provided with Infinity Avionics BRAIN processor as an integrated system including camera driver software and SDK to support easy integration.

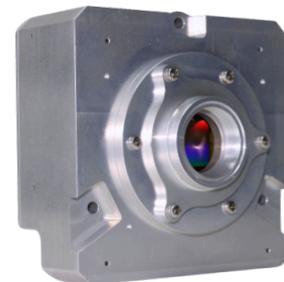| Technical specifications	
Field of view	32 degrees
Focal length	10 mm
F Number	Adjustable: F/1.9 to F/16
Spectral range	VIS
Image sensor	CMOS Event Sensor
Pixel resolution	640 x 480
Pixel size	9 um
Control/Data interface	USB
Power supply	5V DC
Power consumption	0.5 W
Operating temperature	0 C to 70 Celsius
Dimensions	65 mm x 65 mm x 95mm
Weight	325 grams
TRL	4
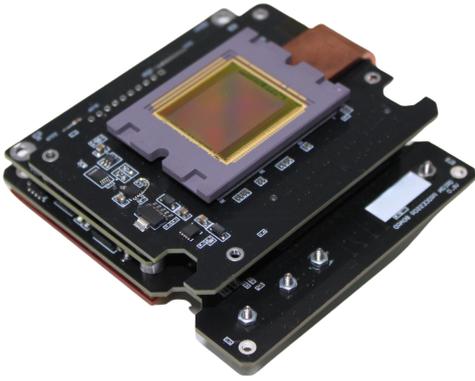
ORION12MP

Orion12MP is a 12 Megapixel RGB/ Monochrome camera back end electronics unit which can be combined with application specific optical assemblies. Orion12MP is suitable for a range of space applications such as Earth observation, hyperspectral imaging, space based space surveillance, and docking/rendezvous applications based on the selected optical assembly.

The camera provides high FPS image capture capability with on-board non-volatile data storage options. Orion12MP is designed leveraging a modular methodology providing the ability to customize the camera with different sensors and interface options with reduced engineering effort and cost. The system has been qualified for thermal vacuum, vibration and shock.

Technical specifications	
Pixel resolution	12 MP (4096x3072)
Pixel size	5.5 um
Sensor technology	CMOS Global Shutter
Frames per second	Up to 100 at full resolution
Control interface	UART / RS485 / Ethernet
Bulk data interface	UART / RS485 / Ethernet
Power supply	5V DC
Operating temperature	-10 C to 60 Celsius
On-board RAM	Up to 290 full-resolution images

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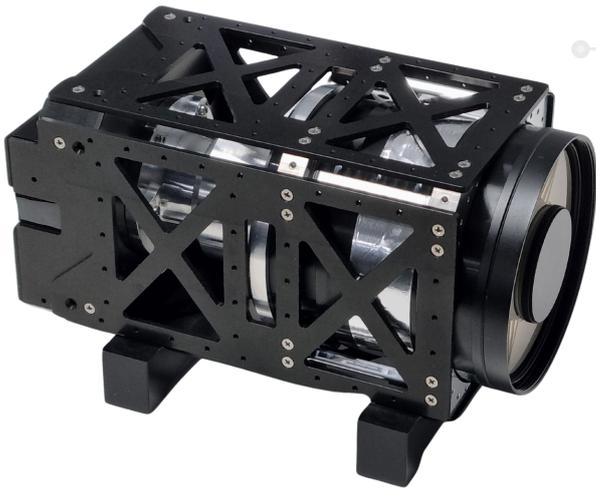
ORION12MP – 550

Technical specifications

Spatial resolution (GSD)	5 m at 500 km orbit
Focal length	550 mm
F number	6
Spectral range	400 nm - 1000 nm (customizable)
Dimensions	100 mm x 100 mm x 250 mm
Weight	1.5 kg

Orion12MP-550 camera comes with a 550mm focal length space grade optical assembly to support earth observation and space based space surveillance applications.
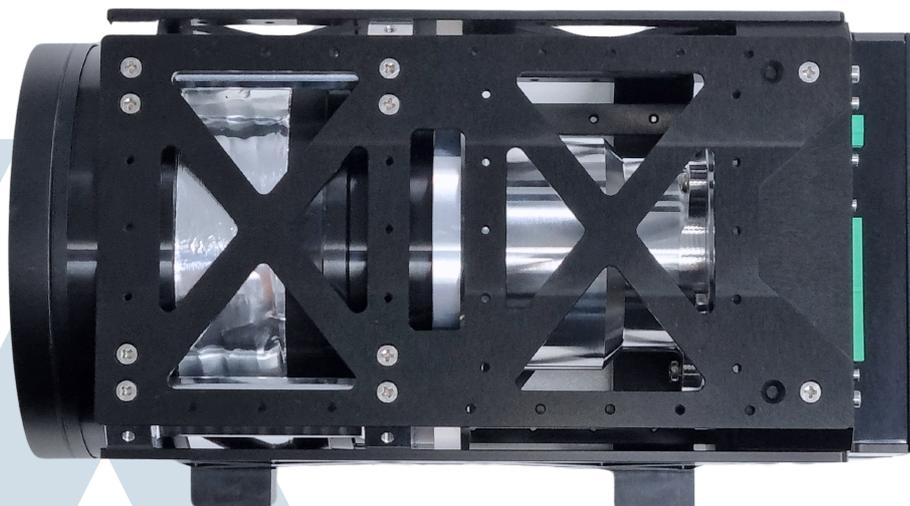
BRAIN

Technical specifications	
Processor	Nvidia Jetson Orin NX 16GB RAM
NVMe storage	PCIe Gen3 256GB
Input voltage	12V
Input power	30 W max
Interfaces	Ethernet, USB, UART, GPIOs
Form factor	100mm x 100mm x 35mm
Weight	530 grams

Infinity Avionics BRAIN is a Jetson Orin NX based edge processing solution for space applications. BRAIN brings up to 100 TOPS processing power to enable space edge processing. The edge processor comes with ruggedized enclosure and easy to integrate thermal interface.
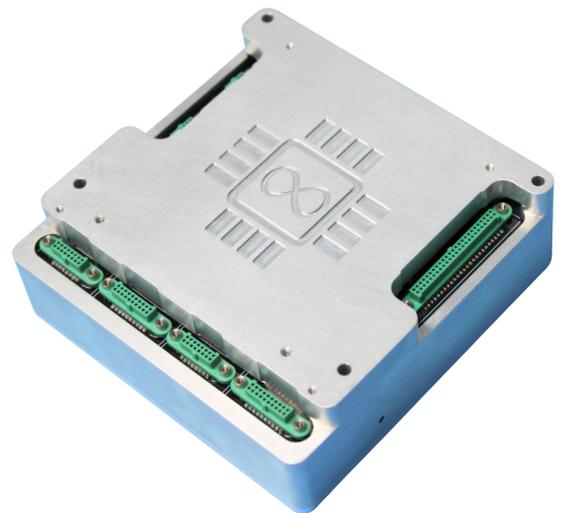
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SELFIECAM VIDEO

Technical specifications

Field of view	110 degrees
Resolution	1024 x 768 800 x 600 640 x 480
Image encoding	JPEG
On-board storage	500 images
Frames per second	Up to 12 FPS
Communication interface	UART with ASCII commands
Baud Rate	115200
Power consumption	750mW
Operating temperature	-20 C to 60 Celsius
Mass	10 grams
Size	50 mm x 30 mm
Flight heritage	Since 2018
Environmental qualification	NASA GEVS
Total ionizing dose	Up to 30 kRad
TRL	9

SelfieCam is a small form factor, TRL 9, space asset monitoring camera with demonstrated flight heritage through numerous space missions. The camera can capture and save images in non-volatile memory. It is designed with ease of integration and operation in mind, providing on-orbit imaging capability to your mission.
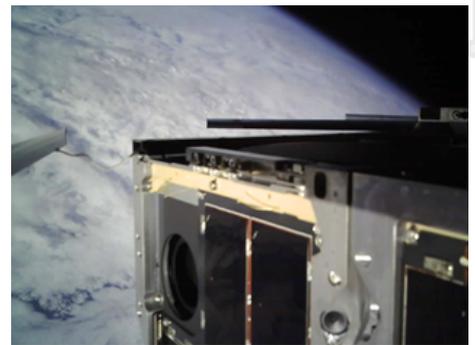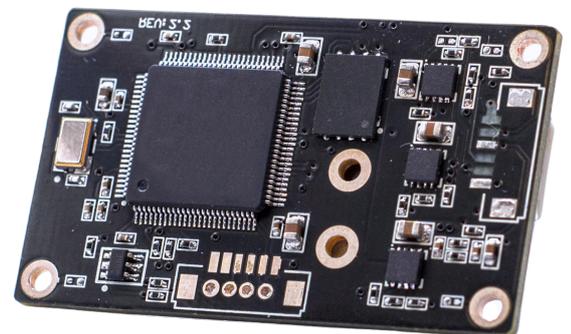

Image credit: UNSW Canberra Space

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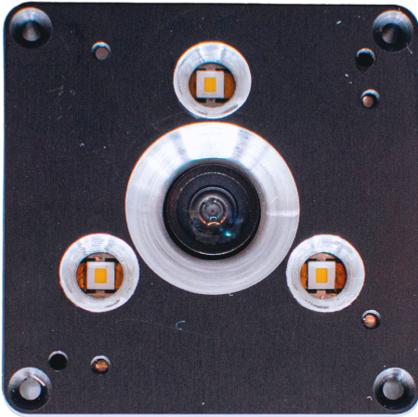www.infinityavionics.com

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LEO2MP

Leo2MP is a small form factor engineering camera designed for space applications.

Capable of both on-board image data storage and image data streaming over USB interface, the camera is ideal for monitoring spacecraft structures or deployment activities, space manufacturing and robotics as well as rover applications.

Leo2MP comes with LED illumination to support challenging space lighting conditions.

Technical specifications	
Image sensor	CMOS RGB - Rolling shutter
Field of view	110 degrees
Resolution	Selectable up to 2MP
Image encoding	JPEG
On-board storage	200 images
Frames per second	Up to 12 FPS (resolution dependent)
Command and telemetry interface	UART - ASCII commands
Image data interface	UART / RS485 / USB2 - JPEG encoded image data
LED luminous flux	150 lm
Power consumption	1 W (Without LED illumination) 3.5 W (With LED illumination)
Size	45 mm x 45 mm x 20 mm
Weight	65 grams
Operating temperature	-20 C to 60 Celsius
Total ionizing dose	Up to 30 kRad

AQUILA

Technical specifications	
Image sensor	CMOS RGB - Rolling shutter
Field of view	90 degrees
Resolution	1920 x 1080 or 1280 x 720
Pixel size	2 um
F number	F/2.4
Image encoding	RGB565
On-board storage	1000 images
Frames per second	10FPS at 1920 x 1080 resolution 20FPS at 1280 x 720 resolution
Communication interface	UART/ RS485/ Ethernet
Input voltage	5Vdc
Power consumption	0.5W Idle 2.5W Maximum
Size	50mm x 50mm x 30mm
Weight	40 grams
Operating temperature	-20 C to 80 C
TRL	4

Aquila is a small form factor camera specifically engineered for space monitor camera applications. It is capable of capturing, saving, or streaming high-definition images up to 1920 x 1080 resolution at a rate of up to 20 frames per second (FPS). The camera's M12 optical interface allows for flexible optical assembly customization tailored to specific mission requirements. Aquila is perfectly suited for key space-based roles, including asset monitoring, situational awareness, manufacturing, robotics, and rendezvous, proximity operations, and docking (RPOD).
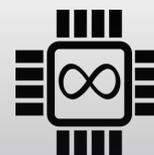
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Rev. 13.