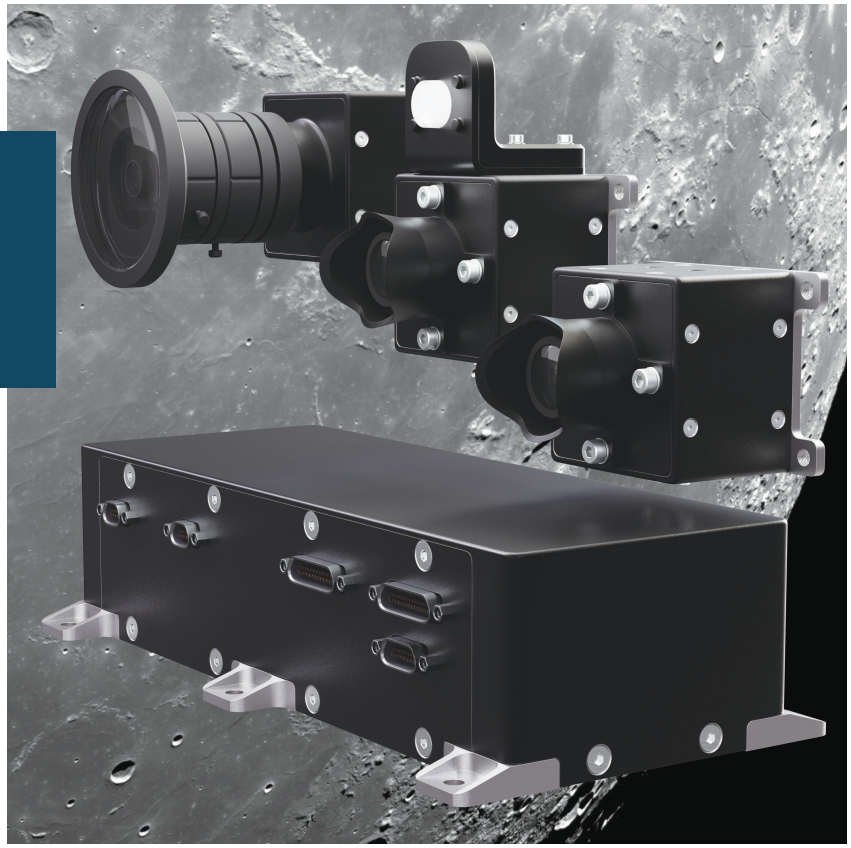
Space-ng

AstroVision

Software and Hardware Solution
Technical Specifications



Onboard Computation

Hazard Avoidance, Rendezvous, Star Tracking, Cinematic "Paparazzi Mode

Onboard Storage

128 GB Non-Volatile
(Expandable to 1 TB)

Camera Support

Up to 8 High-Resolution Cameras

Cabling

Up to 6m length with a single, twisted pair per module for power and data

Spacecraft Interface	
Power Input:	15 to 50 V
Communication:	10/100/1000BaseT
Environmental Specifications	
Thermal Operating Temperature:	-35°C to +65°C
Vibration Rating:	NASA GEVS
Shock:	2000 g
Radiation TID:	>20 krad

Product Overview

AstroVision is a computer vision solution that is redefining spacecraft navigation by combining high-resolution optical sensors, high-performance processing, vision and AI hardware acceleration, and machine learning algorithms using physics-based visual reasoning.

AstroVision provides precision autonomous navigation in GPS denied environments like the far side of the Moon.

Its lightweight, high-resolution imagers offer full sky coverage without requiring spacecraft maneuvers or attitude constraints for Sun or star tracking.

Key Attributes

Use Cases

- Attitude and rate determination
- Alt PNT position & velocity
- Rendezvous & Proximity Ops
- Space Situational Awareness
- User defined machine vision
- Engineering Verification
- H.265 Video and still imaging
- Cinematic "Paparazzi" Mode
- Manufacturing & assembly
- Science & multispectral imaging

Affordability

Our system simplifies integration, cuts costs, and reduces complexity. The system provides quaternions and state vectors from Earth orbit to the surface of the Moon absent of GPS and radio communication, supporting Alt PNT cislunar spaceflight, lunar orbit operations, and lunar landing. No separate star trackers, sun sensors, or IMUs are needed. Pay for only the software you need.

Flexibility

- Software defined
- Supports Black and Gray Box implementations
- Customer programmable, including full-stack flight software implementations
- Numbers and types of sensors and optics configured to suit your needs
- Cable lengths tailored to application

Camera Modules (Up to 8 per Central Unit)	
Dimensions:	60.5 x 40.5 x 60* mm *(Depending on optics configuration)
Mass:	0.15 - 0.3 kg *(Depending on optics configuration)
Power Consumption:	1-2 W per Module
Imaging	
Resolution:	12.4 MP
Sensor Options:	RGB or Monochrome
Shutter Type:	Rolling or Global Shutter
Bit Depth:	8 to 12-bit
Frame Rate:	>30 FPS Full ROI
Integrated IMU:	Tactical grade IMU on every camera module
Optics	
Field of View (FOV):	Range of options available to suit mission requirements
Lens Interface:	Standard and custom mount options
Connectivity	
Data Rate:	Up to 6 Gbps per camera module
Cable Length:	Up to 6 m between central unit and camera modules
Cabling	Single 28 AWG twisted pair for power and data per module

Compute and Power Distribution Central Unit	
Dimensions:	196.5 x 100 x 49.5 mm
Mass:	<0.75 kg
Power	
Idle Consumption:	3 W
Maximum Consumption:	20 W
Input Voltage:	15 to 50 V from spacecraft
Thermal Management:	Software-defined closed-loop heaters for each unit
Processing	
CPU:	8-core ARM Cortex
GPU:	>1800 GFLOPS (FP16)
DSP:	>7 TOPS
Memory and Storage	
RAM:	8 GB
Flash Storage:	128 GB Non-volatile (Expandable to 1 TB)
Additional I/O	
Ethernet:	10/100/1000BaseT
Serial Communication:	Asynchronous RS-422
Output Channels:	2x regulated 12 V
Triggers:	2x output triggers (5-15 V, 1.5 kV isolated input trigger)
Integrated Components	
IMUs:	Redundant tactical grade IMUs