VOYIS

DATA SHEETS & PRODUCT INFORMATION

Discovery Vision System

4K Piloting Videostream with 3D Inspection Capability

Voyis' Discovery Cameras, with tightly integrated Nova Mini Lights, capture low latency 4K video for vehicle piloting while simultaneously recording crisp, high-resolution stills images & IMU data for 3D modelling. For smart ROV piloting and vertical inspection applications.

Benefits & Features

Real-Time Image Processing

Onboard image enhancement & feature detection to deliver real-time actionable data. Active light levelling in the live videostream

Designed for 3D Modelling

Crisp stills images & integrated navigation data for effective 3D modelling in tandem with general video inspection (GVI)

Smart ROV Piloting

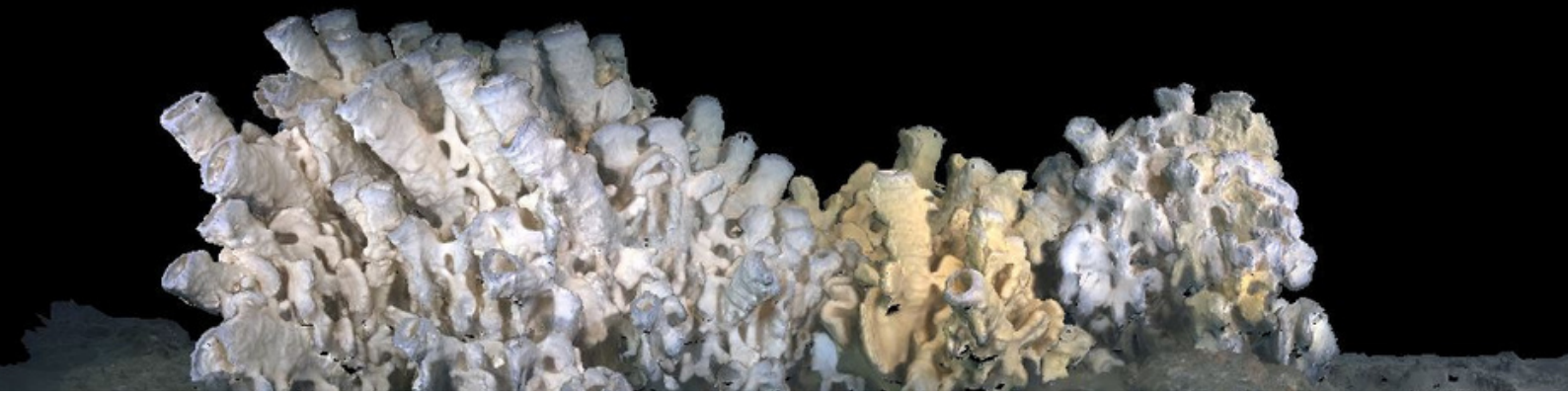
Low latency 4K videostream derived from crisp stills images for effective piloting. Ultra wide FOV and lossless sensor zoom (LSZ)

Simplified Integration

Tightly coupled ultra-bright Nova Mini LEDs, DDS architecture, and ROS support drastically simplify ROV integrations with a complete solution

Customer Support

Our team partners with you to optimize your vehicle integration and deliver the best possible data



Find the Right Product For Your Project

Both Discovery cameras capture high resolution stills images and 4K videostream.
We can recommend the best option to suit your project and application.

Discovery & Nova Mini

Ultra compact ROV piloting camera designed for both low latency vehicle piloting and 3D inspections.

View All Details

Discovery Stereo & Nova Mini

Compact stereo camera for real-time 3D modelling in tandum with video and stills images. Generate 3D models for general survey and vertical inspections.

View All Details

ROV PILOTING CAMERA

Discovery

The first smart ROV piloting camera for low latency vehicle piloting and 3D inspection with powerful edge-computing. A high-sensitivity 4K resolution sensor provides detailed video, while recording stills images that can be processed into 3D models with the onboard IMU data. Delivers an ultra-wide field of view for maximum situational awareness.

Designed with integrated ultra-high power Nova Mini lights, it captures crisp images at long range and high speed - delivering a sharp videostream for vehicle piloting, feature detection, and 3D modelling. The camera can operate with constrained data bandwidth, and the Software API and DDS framework simplifies integration.

At A Glance

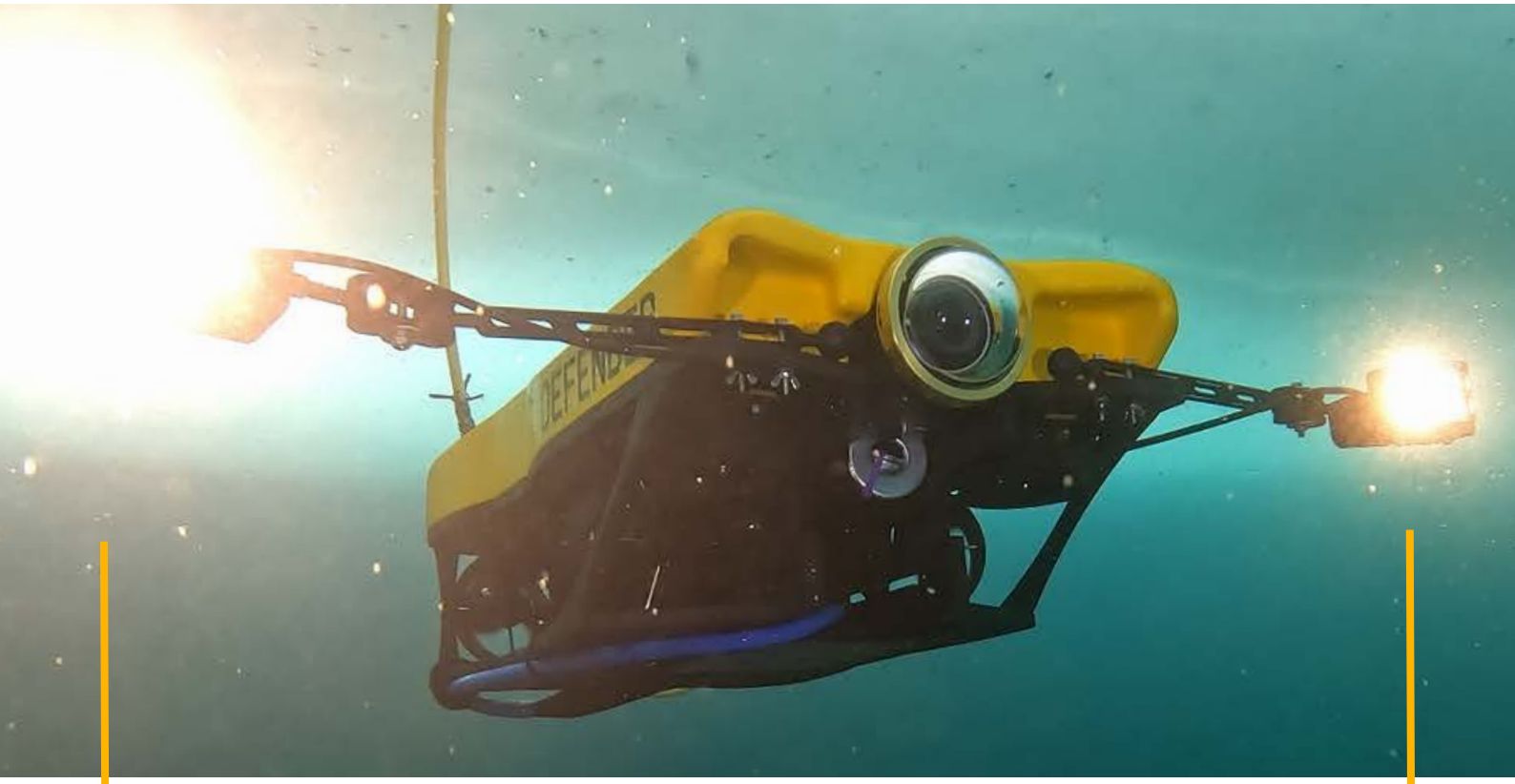
An overview of the main benefits to using the Discovery for your project.

- Crisp Stills Images Ready for 3D modelling
- Integration with 3D Software - EIVA VSLAM & Reality Capture
- 4K Low Latency Video Stream with Real-time Image Correction
- Ultra-wide Field of View for Complete Situational Awareness

Specifications

Feature	Discovery
Camera	8.1MP (2816x2816) Colour sensor | 20 FPS (1:1), 30 FPS (16:9)
Lens	130°x130° - Fixed Focus, Digital Zoom
Latency	1080p: 140ms | 4K: 190ms (glass-to-glass)
Operating Range	0.1m to 5.0m
Lighting	125,000 lumens with 2x Nova Mini Lights Control: On, Strobe (3.5ms max), Off
Depth Rating	300m
Calibration	Camera (undistortion), IMU-Camera Offset
Onboard Processing	Image undistortion, colour & lighting correction
Data Outputs	Raw Images (12-bit .TIFF), Processed Images (8-bit .JPG), Video (H.264, MP4), IMU Data (CSV)
3rd Party Integrations	3D Software: EIVA VSLAM, Reality Capture, Agisoft, 3D Zephyr, CloudCompare

Feature	Discovery
Power	Input: 24 VDC (21-28V) Power Draw: Idle: 16W | Operating: 22W to 100W
Interface	Gbit or 10/100 ethernet Bandwidth Control - 5mbps minimum Windows & Linux GUI DDS Support, Software Control API
Time Synchronization	PPS, PTP, NTP
Data Storage	1 TB SSD



Voyis Discovery Camera

Standard Vehicle Camera

STEREO CAMERA

Discovery Stereo

A compact stereo camera solution for real-time 3D modelling in general survey and vertical inspection applications.

Designed with synchronized high power LED strobes to deliver crisp high resolution stereo images for accurate 3D pointcloud generation. The system captures both high-dynamic range raw data for post-processing, and streams a 4K video stream and 3D depth maps for vehicle piloting and quality control. Software API and DDS standardization for simplified vehicle integrations.

At A Glance

An overview of the main benefits to using the Discovery Stereo for your project.

- High Resolution Crisp Images for Robust 3D Modelling
- Integration with 3D Software - EIVA VSLAM & Reality Capture
- 4K Low Latency Video Stream
- Real-time 3D Pointclouds and Image Enhancement

Specifications

Feature	Discovery Stereo
Camera	8.1MP (2816x2816) Colour sensor 20 FPS (1:1), 30 FPS (16:9)
Lens	5.0mm: 75°x75° - Fixed Focus, Digital Zoom
Latency	1080p: 140ms | 4K: 190ms (glass-to-glass)
Accuracy	Validated on Controlled Target 5 meter length - 1 meter range ○ X-Y-Z Point Resolution: 1mm ○ Linear Accuracy: 0.3mm/meter ○ Depth Accuracy, Plane-to-Plane 2% | ± 0.01° | ± 0.5mm 3σ plane-fit
Operating Range	0.1m to 5.0m
Lighting	250,000 lumens with 4x Nova Mini Lights Control: On, Strobe (3.5ms max), Off
Depth Rating	300m or 4000m
Calibration	Camera (undistortion), IMU-Camera Offset, Stereo-Pair

Feature	Discovery Stereo
Onboard Processing	Image undistortion, colour & lighting correction Point Cloud: Real-time (1024x1024), Topside (2816x2816)
Data Outputs	Raw Images (12-bit .TIFF), Processed Images (8-bit .JPG), Video (H.264, MP4), IMU Data (CSV), Depth Map (.EXR), PointCloud (.E57)
3rd Party Integrations	3D Software: EIVA VSLAM, Reality Capture, Agisoft, 3D Zephyr, CloudCompare
Power	Input: 24 VDC (21-28V) Power Draw: Idle: 16W | Operating: 22W to 170W
Interface	Gbit or 10/100 ethernet Bandwidth Control - 5mbps minimum Windows & Linux GUI DDS Support, Software Control API
Time Synchronization	PPS, PTP, NTP
Data Storage	2 TB SSD

POWERED BY EIVA NAVISUITE

Voyis VSLAM

VSLAM is a visual acquisition software for the Voyis' Discovery Stereo camera that provides the operator with in-process data quality feedback on the survey operation collection process. Leveraging the EIVA NaviSuite platform, 3D data is generated in real-time and seamlessly integrated with client's wider survey and inspection operations.

Empowering Survey Visualization with Real-time 3D Modeling

Enabling Autonomy

Empowering safe asset inspection by providing real-time localization & 3D data for obstacle avoidance and dynamic path planning.

Complete Survey Data QC

Data is processed in real-time, directly validating coverage and image quality for photogrammetry prior to survey completion.

Expedited Data Delivery

Initial 3D model generated with VSLAM in real-time without the need of 3rd party software.

Situational Awareness

Visualization of the ROV relative to the 3D environment to enable augmented piloting and consistent vehicle trajectory.

Inspection Decision Making

Defects can be detected in the real-time 3D model, enabling the operator to collect more detail on areas of interest.

www.voyis.com