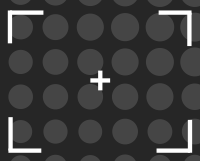
ATMO.LAB

WE SEE WHAT OTHERS DON'T

CATALOGUE

STABILIZED MULTISENSOR CAMERA SYSTEMS



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ABOUT THE COMPANY

At Atmolab, we specialize in developing and manufacturing **ISR gimbal camera systems** designed for a variety of **manned and unmanned platforms**, such as:

- VTOL, Fixed-Wing, Multi-Copter Drones and Ultralight Aircrafts
- UGV and Manned Vehicles, both Armed and Civil

For more than 15 years, the founders of Atmolab have been on a mission to create the best **'eyes and brains'** for remotely operated aerial and ground platforms.

Embedded high-performance **sensors – the 'eyes'** of your platform – deliver precise situational awareness ideal for real-time **surveillance, area control, and search-and-rescue missions.**

Using high-performance mini supercomputers and its in-house built software, Atmolab gives your platform a **'brain' – a scalable and customizable software solution** that supports the integration of **AI plugins** for complex mission tasks.

Atmolab's mission is encapsulated in our motto: **"We see what others don't."**

We aim to leverage this unique capability to help clients enhance the competitive edge of their platforms.

With deep expertise in proprietary hardware and software engineering, we develop integrated systems that ensure seamless operation.

A strong focus on **quality** and a commitment to **continuous improvement** guarantee that our products consistently meet high standards while adapting to the evolving needs of the industry.

At Atmolab, we also take pride in the ability to customize. Our experienced team works closely with clients to tailor solutions to specific requirements. By offering bespoke innovations, we help clients achieve optimal results and maximize the effectiveness of their projects.

STABILIZED MULTISENSOR CAMERA SYSTEMS

Our stabilized camera systems are designed to deliver high-performance imaging and data collection across various applications. Engineered for flexibility and adaptability, these systems combine multiple sensor technologies into a single, robust ISR system.

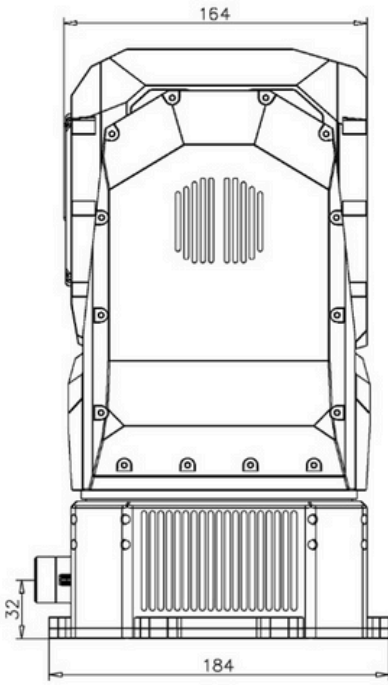
KEY FEATURES:

01 Robust Housing and Environmental Protection

Designed in compliance with the MIL-STD 810H standard, our systems offer robust protection against environmental factors.

Ability to withstand forces in all directions to up to 30G.

Rainproof construction ensures reliable performance of camera systems in various weather conditions, making them suitable for extended outdoor use.



02 Advanced Triple Layered Stabilization Technology

Our camera systems, equipped with a comprehensive set of **mechanical, electronic and software stabilization** options, deliver unparalleled image quality even in the most dynamic environmental conditions. Employing a multi-layered approach to stabilization, we ensure that the captured image remains steady and clear, which is crucial for accurate long-distance analysis and reporting.

03 Modularity

The modular design of our camera systems allows for easy upgrades and customizations. Both hardware and software elements can be modified or replaced to adapt to evolving mission needs, ensuring the longevity and relevance of the system.

04 In-House Software Development

Thanks to the fact that the **EagleEye** software is developed in-house, it can be fully adapted to the hardware it controls. Furthermore, we are able to provide tailored solutions that enhance the functionality and performance of the clients' ISR camera systems and, ultimately, their entire platforms.

The software is further supported by **digital maps** and **geolock** features, which are particularly beneficial in dynamic environments such as navigated by high-speed VTOLs and fixed-wing drones.

05 AI Solutions and Real-Time Operations

Our systems feature onboard supercomputers that facilitate the integration of custom algorithms. This capability enables advanced AI solutions, enhancing data analysis and operational efficiency.
Additionally, the system supports real-time surveillance, response, and area control, ensuring seamless monitoring and rapid decision-making in critical environments.

APPLICATIONS

Civil Applications:

- Disaster Response
- Environmental Monitoring
- Critical Infrastructure Inspection
- Agricultural Monitoring
- Public Safety

Dual-Use Applications:

- Maritime Surveillance
- Urban Security
- Firefighting Support

Military Applications:

- Surveillance and Reconnaissance
- Target Acquisition
- Border Security
- Combat Situational Awareness
- Weapon Station Support

REX 80 Micro

EO 25x I IR 13 mm

With continuous 360-degree rotation, **Rex 80 Micro** is ideal for reconnaissance missions. Its lightweight design makes it compatible with even the smallest drones, extending endurance and ensuring success when payload weight is critical.

Revolutionizing ISR technology, **Rex 80 Micro** packs exceptional capabilities into a system weighing less than 450 g:

- **Embedded IR night sensor**
- **Two EO day sensors** with up to 25x optical zoom
- Embedded AI supercomputer **available on request**

Our lightest and smallest smart ISR system

SYSTEM SPECIFICATIONS	
TOTAL HEIGHT	115 mm (4.53 in)
DOME DIAMETER	80 mm (3.15 in)
WEIGHT	< 450 g (< 1 lb)
EO SENSOR SPECIFICATIONS	
RESOLUTION / FPS	1280 x 720 px at 25 fps
ZOOM	Optical: 25x / Digital: 8x
FOV	Wide: 26.0° Tele: 2.0°
IR SENSOR SPECIFICATIONS	
SPECTRAL RANGE	LWIR: 8 µm – 14 µm
RESOLUTION	640 x 512 px, 12 µm px pitch
FOV	24.2° (H) x 19.5° (V)
LENS	13 mm

Detection, Recognition, Identification		Human 1.8 m x 0.6 m			Vehicle 2.3 m x 2.3 m		
CAMERA	**DESCRIPTION**	**D**	**R**	**I**	**D**	**R**	**I**
EO DAY CAMERA*	Optical zoom: 25x	24400	6100	3050	54650	13600	6800
IR NIGHT CAMERA**	Lens: 13 mm	560	140	90	1200	300	200

* Calculated using the Johnson criteria at 50% probability (human size: 1 m^2, vehicle size: 5 m^2).

** Please note that atmospheric attenuation is NOT included. You should plan for at least a 10% reduction for normal atmospheric conditions, although far larger attenuation effects will be seen in bad weather.

REX 100 Mini MkII

EO 10x I IR 35 mm

Meet the most compact and lightweight block camera system in our range.
At just under 950 g, this system enhances drone endurance without compromising on professional-grade performance. Perfect for smaller sized drones, **Rex 100 Mini MkII** is ideally suited for reconnaissance, surveillance, and inspection missions.

Rex 100 Mini MkII delivers:

- **Powerful block camera** with advanced optical zoom and stabilization
- **Day and night imaging** with cutting-edge IR and EO sensors
- **360-degree continuous rotation** for maximum versatility

High performance in a compact gimbal

SYSTEM SPECIFICATIONS	
TOTAL HEIGHT	172 mm (6.77 in)
DOME DIAMETER	100 mm (3.94 in)
WEIGHT	915 g (2.02 lb)
EO SENSOR SPECIFICATIONS	
RESOLUTION / FPS	1920 x 1080 px at 25 fps
ZOOM	Optical: 10x / Digital: 16x
FOV	Wide: 59.2° Tele: 6.7°
IR SENSOR SPECIFICATIONS	
SPECTRAL RANGE	LWIR: 8 µm – 14 µm
RESOLUTION	640 x 512 px
FOV	18° (H) x 15° (V)
LENS	35 mm

Detection, Recognition, Identification		Human 1.8 m x 0.6 m			Vehicle 2.3 m x 2.3 m		
CAMERA	**DESCRIPTION**	**D**	**R**	**I**	**D**	**R**	**I**
EO DAY CAMERA*	Optical zoom: 10x	10900	2700	1350	24450	6100	3050
IR NIGHT CAMERA**	Lens: 35 mm	1200	300	160	3000	770	380

* Calculated using the Johnson criteria at 50% probability (human size: 1 m^2, vehicle size: 5 m^2).
** Please note that atmospheric attenuation is NOT included. You should plan for at least a 10% reduction for normal atmospheric conditions, although far larger attenuation effects will be seen in bad weather.

REX 120 EO

EO 55x

Optimized for Long-Distance Daytime Operations

Rex 120 EO excels in daytime surveillance, enabling precise observations even at distances exceeding 3,000 meters. It's the perfect solution for extended-range missions requiring reliable and detailed performance.

SYSTEM SPECIFICATIONS	
TOTAL HEIGHT	222 mm (8.74 in)
DOME DIAMETER	120 mm (4.72 in)
WEIGHT	1020 g (2.25 lb)
EO SENSOR SPECIFICATIONS	
RESOLUTION / FPS	1920 x 1080 px at 25 fps
ZOOM	Optical: 55x / Digital: 32x
FOV	Wide: 62.1° Tele: 1.3°

Detection, Recognition, Identification		Human 1.8 m x 0.6 m			Vehicle 2.3 m x 2.3 m		
CAMERA	**DESCRIPTION**	**D**	**R**	**I**	**D**	**R**	**I**
EO DAY CAMERA*	Optical zoom: 55x	56800	14200	7100	127100	31780	15890

* Calculated using the Johnson criteria at 50% probability (human size: 1 m^2, vehicle size: 5 m^2).

REX 120 IR

IR 50 mm

Optimized for Long-Distance Nighttime Operations

Specialized for **low-light** and **night missions, Rex 120 IR** delivers dependable imaging performance at longer ranges. It's engineered to ensure clear and consistent observation in challenging low-light or no-light conditions.

SYSTEM SPECIFICATIONS	
TOTAL HEIGHT	222 mm (8.74 in)
DOME DIAMETER	120 mm (4.72 in)
WEIGHT	Approx. 1000 g (2.20 lb)
IR SENSOR SPECIFICATIONS	
SPECTRAL RANGE	LWIR: 8 µm – 14 µm
RESOLUTION / FPS	640 x 512 px at 25 fps
FOV	10° (H) x 8° (V), lens 50 mm
ZOOM	Digital: 4x

Detection, Recognition, Identification		Human 1.8 m x 0.6 m			Vehicle 2.3 m x 2.3 m		
CAMERA	**DESCRIPTION**	**D**	**R**	**I**	**D**	**R**	**I**
IR NIGHT CAMERA**	Lens: 50 mm	3050	1000	500	3800	1250	600

** Please note that atmospheric attenuation is NOT included. You should plan for at least a 10% reduction for normal atmospheric conditions, although far larger attenuation effects will be seen in bad weather.

REX 151E Spatium

EO 30x I IR 35 mm I LRF

Built for Extreme Performance

REX 151E Spatium redefines durability and capability in demanding environments. Key features include:

- **30G impact resistance**, withstanding forces from all directions
- **Operational speeds up to 250 km/h** for high-performance missions
- **Wide temperature range,** functioning from -40˚C to +50˚C
- **MIL-STD 810H rainproof protection**, ensuring reliability in wet conditions

When **durability** and **resilience** matter most, **REX 151E Spatium** delivers unparalleled performance and reliability, making it the ultimate choice for any mission.

Detection, Recognition, Identification		Human 1.8 m x 0.6 m			Vehicle 2.3 m x 2.3 m		
CAMERA	**DESCRIPTION**	**D**	**R**	**I**	**D**	**R**	**I**
EO DAY CAMERA*	Optical zoom: 30x	29300	7300	3600	65500	16400	8200
IR NIGHT CAMERA**	Lens: 35 mm	1800	610	300	2300	770	380

* Calculated using the Johnson criteria at 50% probability (human size: 1 m^2, vehicle size: 5 m^2).

** Please note that atmospheric attenuation is NOT included. You should plan for at least a 10% reduction for normal atmospheric conditions, although far larger attenuation effects will be seen in bad weather.

SYSTEM SPECIFICATIONS	
TOTAL HEIGHT	219 mm (8.62 in)
DOME DIAMETER	147 mm (5.79 in)
WEIGHT	2150 g (4.74 lb)
LASER RANGE FINDER	
RANGE	up to 12 km
MEASURE RATE	1 – 200 Hz
PRECISION	< 1m
EYE SAFE	Laser Class 1

EO SENSOR SPECIFICATIONS	
RESOLUTION / FPS	1920 x 1080 px at 25 fps
ZOOM	Optical: 30x / Digital: 16x
FOV	Wide: 55.0° Tele: 2.0°
IR SENSOR SPECIFICATIONS	
SPECTRAL RANGE	LWIR: 7.5 µm – 14 µm
RESOLUTION / FPS	640 x 512 px at 25 fps
ZOOM	Digital: 4x
FOV	8.4° (V) x 11.2° (H)
LENS	35 mm

PREDATOR 150 MkIII

EO 30x I IR 35 mm I LRF

3-axis mechanical Stabilization

PREDATOR 150 MkIII is equipped with advanced 3-axis stabilization, ensuring exceptional stability and precision when observing objects directly beneath the drone. This feature is particularly valuable for tasks requiring **a steady, vibration-free view across all sensor positions and angles,** such as **aerial surveillance, inspections, mapping, and search-and-rescue missions.**

3-axis system for full stabilization of yaw, pitch and roll axis, reducing unwanted side-to-side movement

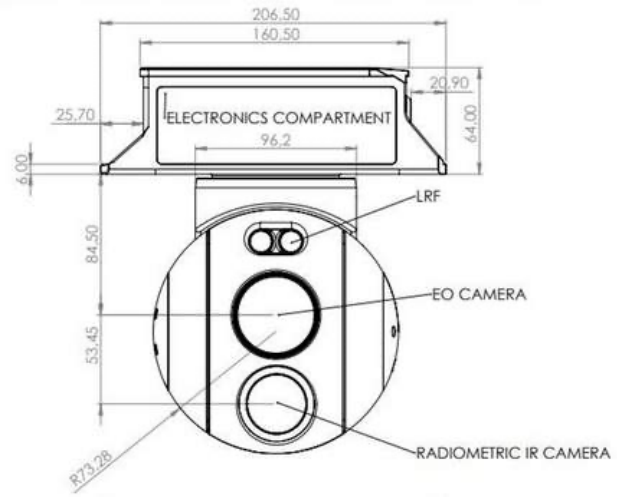
Detection, Recognition, Identification		Human 1.8 m x 0.6 m			Vehicle 2.3 m x 2.3 m		
CAMERA	**DESCRIPTION**	**D**	**R**	**I**	**D**	**R**	**I**
EO DAY CAMERA*	Optical zoom: 30x	29300	7300	3600	65500	16400	8200
IR NIGHT CAMERA**	Lens: 35 mm	1800	610	300	2300	770	380

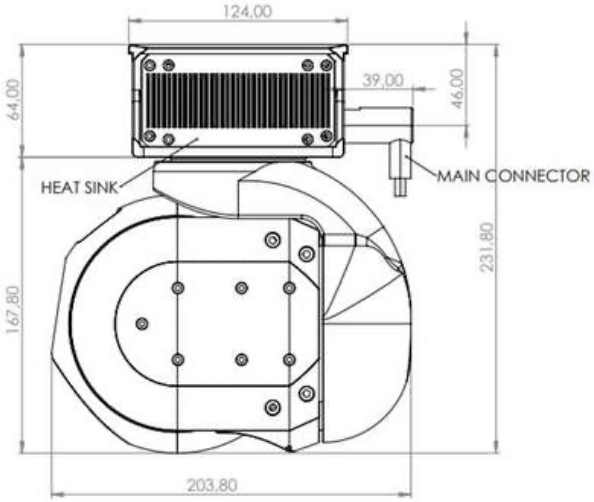
* Calculated using the Johnson criteria at 50% probability (human size: 1 m^2, vehicle size: 5 m^2).

** Please note that atmospheric attenuation is NOT included. You should plan for at least a 10% reduction for normal atmospheric conditions, although far larger attenuation effects will be seen in bad weather.

SYSTEM SPECIFICATIONS	
TOTAL HEIGHT	231.8 mm (9.13 in)
DOME DIAMETER	147 mm (5.79 in)
WEIGHT	2860 g / (6.3 lb)
LASER RANGE FINDER	
RANGE	up to 4.5 km
MEASURE RATE	1 – 200 Hz
PRECISION	< 1m
EYE SAFE	Laser Class 1

EO SENSOR SPECIFICATIONS	
RESOLUTION / FPS	1920 x 1080 px at 25 fps
ZOOM	Optical: 30x / Digital: 16x
FOV	Wide: 55.0° Tele: 2.0°
IR SENSOR SPECIFICATIONS	
SPECTRAL RANGE	LWIR: 7.5 µm – 14 µm
RESOLUTION / FPS	640 x 512 px at 30 fps
ZOOM	Digital: 4x
FOV	8.4° (V) x 11.2° (H)
LENS	35 mm





THORIN

EO 55x I IR1 35 mm I IR2 19 – 275 mm I LRF

Powerful Ground Gimbal Camera System for Turrets and UGVs

Manufactured to military standards (MIL-STD), **Thorin** offers exceptional situational awareness on moving or stationary ground platforms. Its durable, shock-resistant housing ensures longevity, even in the harshest conditions.

Thorin is engineered for superior ground operations. Key features:

- **Three camera sensors**: an LWIR Full HD sensor (35 mm lens), a cooled MWIR sensor (19-275mm), and a long-range FHD EO sensor (55x zoom)
- **Laser-range finder (LRF)** with a range of up to 32 km
- **Software supports EO and thermal camera fusion** to maintain target visibility
- **Internal cooling and heating system**
- **0.001 degree angular precision**
- **Automatic lens cleaning system**
- **Nitrogen filled system**

SYSTEM SPECIFICATIONS	
TOTAL HEIGHT	≤ 350 mm (13.78 in)
DOME DIAMETER	≤ 250 mm (9.84 in)
WEIGHT	< 15 kg (33.07 lb)
LASER RANGE FINDER	
RANGE	32 km
MEASURE RATE	Up to 500 Hz
PRECISION	0.01 – 0.5 m
EYE SAFE	Laser Class 1

EO SENSOR SPECIFICATIONS	
RESOLUTION / FPS	1920 x 1080 px at 25 fps
ZOOM	Optical: 55x / Digital: 32x
FOV	Wide: 62.1° Tele: 1.3°
IR 1 SENSOR SPECIFICATIONS	
SPECTRAL RANGE	LWIR: 8 µm – 14 µm
RESOLUTION / FPS	1280 x 1024 px at 25 fps
ZOOM	Digital: 4x
FOV	24.6˚ (H) x 19.8˚(V)
LENS	35 mm
IR 2 SENSOR SPECIFICATIONS	
SPECTRAL RANGE	MWIR: 3.4 µm ~ 5.1 µm
RESOLUTION / FPS	640 x 512 px at 25 fps
ZOOM	Optical: 14x / Digital: 4x
FOV	(Horizontal angle of observation 28.4˚- 2.0˚)
LENS	19 - 275 mm

Detection, Recognition, Identification		Human 1.8 m x 0.6 m			Vehicle 2.3 m x 2.3 m		
CAMERA	**DESCRIPTION**	**D**	**R**	**I**	**D**	**R**	**I**
EO DAY CAMERA*	Optical zoom: 55x	56800	14200	7100	127100	31780	15890
IR NIGHT CAMERA**	Lens: 19 – 275 mm	8430	1910	1180	15500	7130	4920

* Calculated using the Johnson criteria at 50% probability (human size: 1 m^2, vehicle size: 5 m^2).

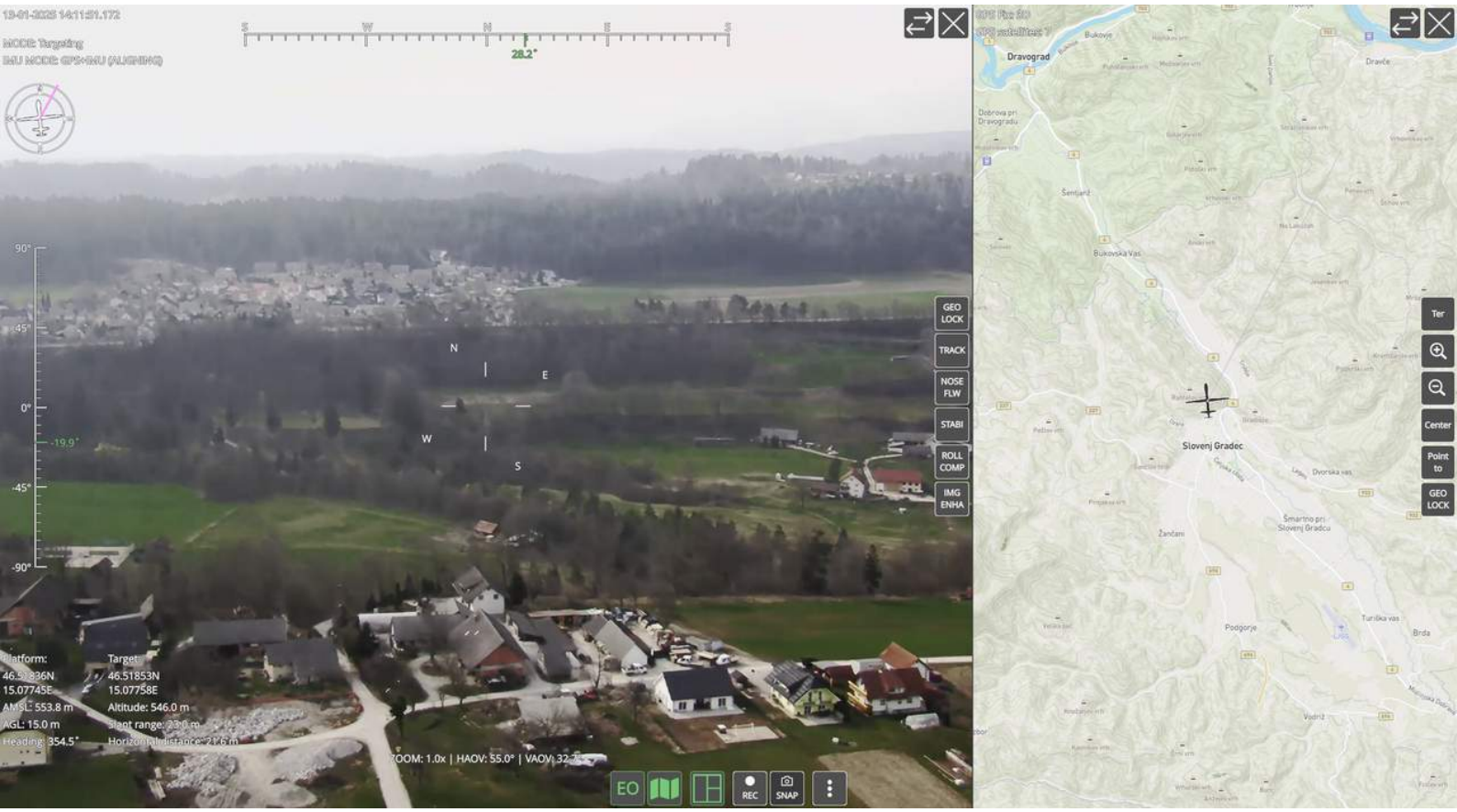
** Please note that atmospheric attenuation is NOT included. You should plan for at least a 10% reduction for normal atmospheric conditions, although far larger attenuation effects will be seen in bad weather.

EagleEye

Advanced Software for Gimbal Control

EagleEye is a proprietary graphical software that seamlessly integrates with Atmolab gimbals for gimbal control and video streaming. Tailored for search and rescue, surveillance, and security operations, it is supported on Windows and Linux operating systems.

The software features a connection setup window, a video stream display that supports viewing all cameras simultaneously in a side-by-side or picture-in-picture composition, a map display that supports geolocking and visualizes real-time geographical properties, and a gimbal control toolbar. It can be customized for optimal mission performance.



Software features

- Object tracking
- Autonomous target tracking
- Two-phase image stabilization
- Defog feature
- Video fusion feature*
- Picture-in-picture mode
- Geolock feature
- Digital maps feature
- Support for KLV metadata
- H.264 and H.265 video codecs
- Compatibility with Linux and Windows 7 or later
- Connectivity via Ethernet WAN/LAN with standard IP protocols
- Optional integration of custom AI algorithms

* only featured in Thorin

EagleEye enhances mission efficiency and usability, providing reliable control and analytics for your ISR operations.

RESEARCH AND DEVELOPMENT

At Atmolab, research and development are at the core of our innovation process. We've engineered several high-end payload setups based on more than 15 years of experience in building gimbal camera systems. We are constantly improving our systems to meet evolving mission needs. If none of our existing configurations fit your mission or platform, we will carry out customized hardware and software development to provide you with a solution designed and manufactured to your specific requirements.

TESTING AND CERTIFICATES

Testing

Testing is an essential part of our workflow as it supports our focus on **quality assurance, system reliability and durability, performance optimization, and innovation validation.**

Each component is validated and tested individually and as part of the complete system through VAT and SAT tests.

We carry out the following environmental tests in compliance with the MIL-STD standard:

- Temperature testing
- Humidity testing
- Vibration testing
- Shock and Impact testing
- Water and moisture testing
- Solar radiation (sunshine) testing
- Combined environments testing

Certificates

Since 2021, we have been committed to raising the bar in product excellence by ensuring our products meet the most stringent standards of quality and reliability.

Our **SIQ EMC Certificate** is a testament to this commitment, demonstrating that each of our products has passed a comprehensive suite of tests conducted by an independent accreditation body. These tests confirm compliance with the critical **electromagnetic compatibility (EMC) standards**, ensuring the seamless operation of our systems in complex environments.

This certification not only reinforces the durability and innovation behind our advanced unmanned systems technology but also puts our clients at ease knowing that they are investing in highly reliable top-tier solutions.

Our products also comply with stringent Korean EMC standards KN32 and KN35, which solidifies our commitment to global quality standards. By adhering to these international benchmarks, we further validate our mission to deliver exceptional, future-proof technology that ensures consistent performance worldwide.

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