



THERMAL BY **FLIR**

BLUE
U A S

NDAA
COMPLIANT

ASSEMBLED
IN USA

vio

VISION UNMATCHED

THE ADVANCED EO/IR PAYLOAD FOR MAVLINK-BASED DRONE PLATFORMS



Gremsy is a trusted AI-native manufacturer of advanced camera modules, gimbals, and imaging systems for drones, UAV and robotics. Our high-quality solutions are designed to meet the demanding needs of professionals in industries such as public safety, surveying, and dual-use. Gremsy's commitment to precision, innovation, and ease of use makes them a trusted partner for UAV manufacturers, system integrators across the globe.

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[COMPANY/GREMSY](https://www.linkedin.com/company/gremsy)

[WWW.GREMSY.COM](https://www.gremsy.com)

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Vio is an advanced lightweight EO/IR payload, featuring a 4K zoom sensor, a 640x512 radiometric thermal camera, and an integrated 2400m laser rangefinder, ready for various industrial applications.



Software Stabilization
Support



Plug-and-play
Industry-leading size,
only 854g



MAVLink Drone
Support



4K Resolution
Zoom sensor



640x512 Radiometric
Thermal sensor
8x digital zoom



Laser Rangefinder
up to 2400m

VERSATILE LIGHTWEIGHT EO/IR PAYLOAD

Powerful Zoom Camera

- 30x Hybrid Optical Zoom,
Max 240x Zoom 8.51MP
1/2.5" CMOS
- Focal Length: 4.4mm to
88.4mm
- Resolution:
 - Photo: 3840 x 2160
(8.51MP)
 - Video: 3840 x 2160
(4K@30fps)

Radiometric Thermal Camera

- 1x to 8x Zoom
Fixed Focus, 32° HFOV,
14 mm EFL
- Resolution:
640x512@60fps
- Thermal Sensitivity:
≤ 50mk

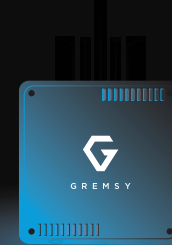
Laser Rangefinder (LRF)

- Wavelengths: 905 nm
Precision: 0.01 - 0.5 m
Laser Safety: Class 1 (IEC
60825 - 1: 2014)
- Capability: 2 - 2400 m
Performance measure
10 Hz: 700m (2- 1200m)
1 Hz: 1500m (2 - 2400m)



OPEN FOR CUSTOM APPLICATIONS

Our high-performing Vio chip equips us to create extensions for a wide range of features. For inquiries about custom projects utilizing these capabilities, please get in touch with us.



Vio
VISION UNMATCHED

Sony 4K Block Zoom Camera
Flir Boson 640R Thermal Core
2400m LRF (*)



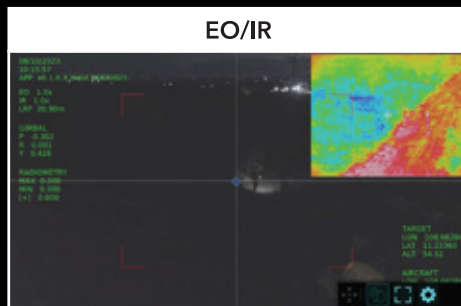
THERMAL BY **FLIR**

CAMERA VIEW MODE

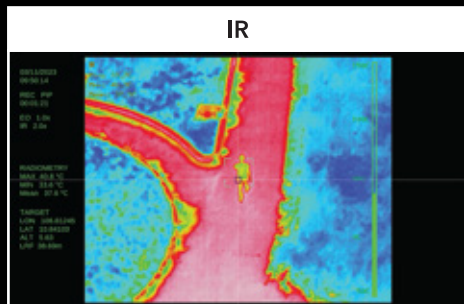
Equipped with two integrated sensors, you can seamlessly engage the advanced functionalities of the camera, facilitated by a diverse and intuitive viewing mode.



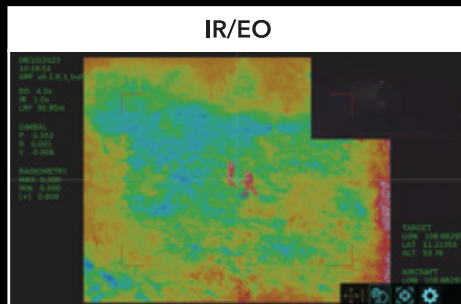
EO



EO/IR



IR



IR/EO

MORE FUNCTIONALITIES



GEOTAGGING

Enable data embedding into your images



DIRECT MEDIA RETRIEVAL

Easily access and retrieve media files from a device using Ethernet



PAYLOAD SDK

Access payload info and control it using available libraries for specific applications

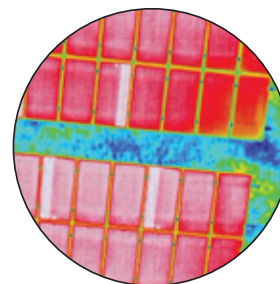


VIDEO STREAM

Support stream video via HDMI/Ethernet RTSP

POWERFUL ZOOM CAPABILITY

Vio offers the capability to zoom in both thermal and optical modes, catering to various applications such as mapping, inspection, surveying, and public safety tasks.



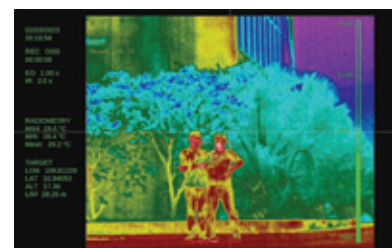
Thermal Zoom
IR 8X Zoom



Visible Optical Zoom
30X Super Resolution Zoom

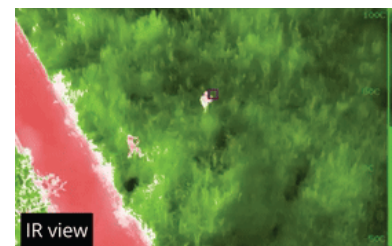
RADIOMETRIC THERMAL IMAGING

Vio with advanced 640x512 radiometric thermal sensors, featuring a remarkable sensitivity of ≤ 50 mK (default version), delivering precise temperature detection, well-suited for any demanding industrial applications.



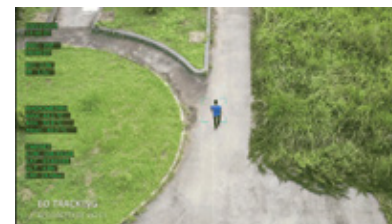
ISOTHERMS - PRECISION HIGHLIGHTING WITH CUSTOM COLORIZATION

Isotherms lets you define specific temperature or percentage ranges and apply customized color mapping for clear, intuitive visualization. This feature highlights objects within target temperature zones, ideal for identifying heat signatures and enhancing situational awareness in thermal imaging applications.



EO OBJECT TRACKING

Easily auto-tracks and auto-centers your selected object, ensuring it remains perfectly framed even while zooming or adjusting the gimbal position.



AI-DRIVEN FEATURES UNLEASHED

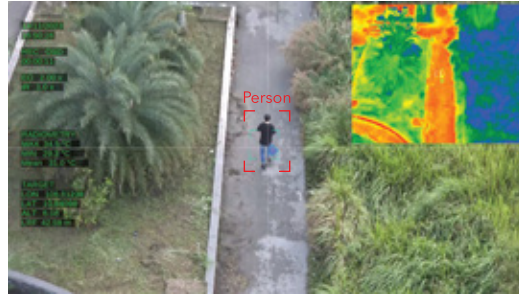
AI Detection

Identify objects such as cars, humans during tracking, ensuring accurate performances.

Auto Zoom

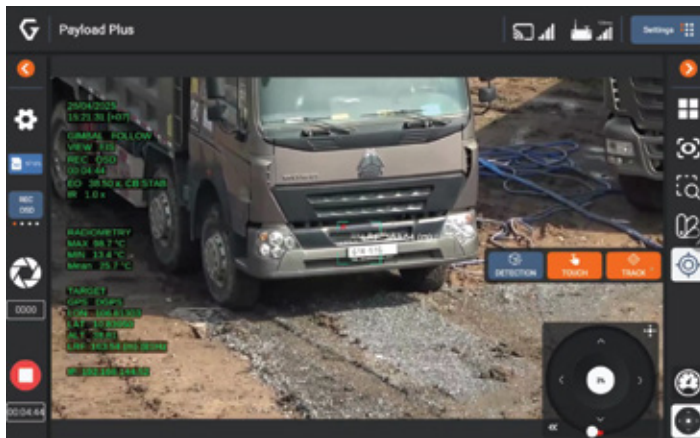
Automatically zoom in on the selected object for the best view. It adjusts the zoom level as the object moves closer farther away.

**For users who desire to further expand the range of detectable objects, please contact us for additional software updates and options.*



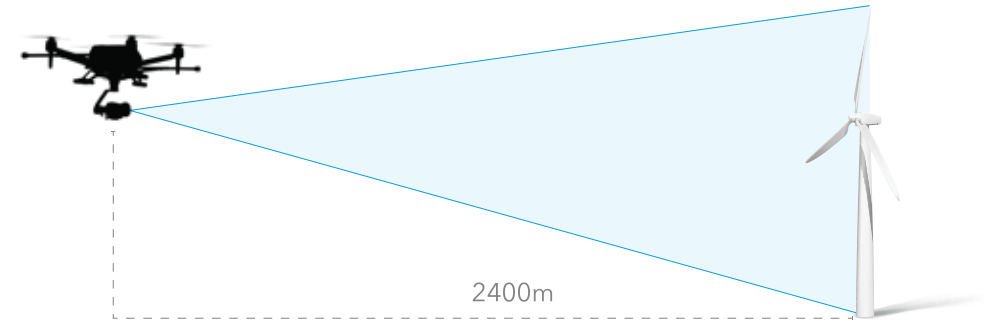
PAYLOAD PLUS

The Payload Plus App is a newly developed overlay application designed to provide a seamless and intuitive interface across a wide range of devices.



LASER RANGEFINDER & PINPOINT

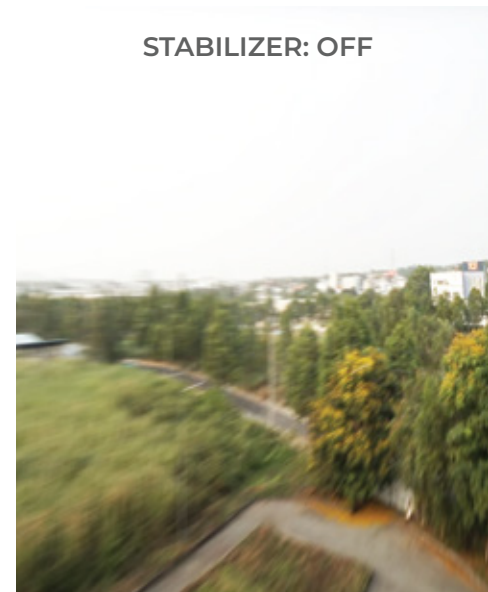
Vio is equipped with a highly accurate laser rangefinder (0.01-0.5m precision), optimized for object detection up to 1200m at 10Hz, and capable of extending to 2400m at 1Hz. Distance data is clearly displayed at the center of the user interface for quick, convenient visibility and improved situational awareness.



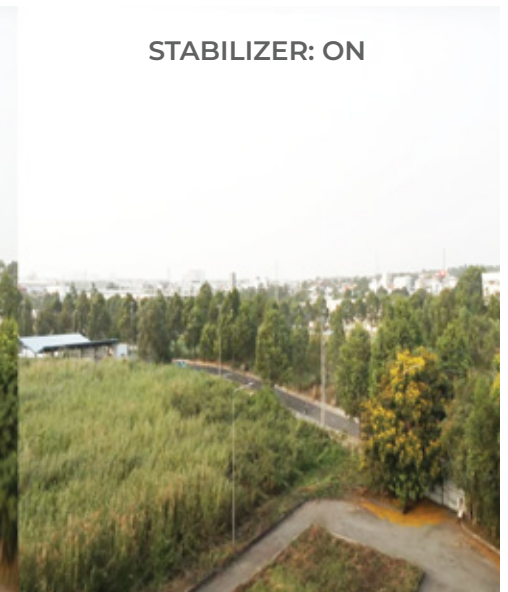
SOFTWARE STABILIZATION

This new feature delivers smooth, jitter-free imagery without mechanical hardware. It ensures clear, steady visuals even at extreme zoom levels, using advanced algorithms to correct motion in real time.

STABILIZER: OFF



STABILIZER: ON



GENERAL

Payload Weight	854g (1.88 lbs)
Payload Dimensions (DxWxH)	173mm x 148mm x 159mm
Quick release	Vio/Zio QR
Damping	Vio Damping
Input Voltage	14.5V ~ 52V
Power Consumption	Average 24 W, Summit 57 W
Working Current	Static current: 1.75A (@12V)
	Tracking current: 2A (@12V)
	Max current: Max 4.7A (@12V)
Storage Temperature	-20 ~ 50°C
Operating Temperature	-10 ~ 50°C
Payload Control Method	UART
	Ethernet
	SBUS (updating with expansion board)
Supported Drone Platforms	Pixhawk/CubePilot/Skynode
Supported Autopilot Platforms	Ardupilot/PX4
Supported Controllers	Ground Station/Remote with
	+ QGroundControl app
	+ Gremsy Payload Assistant app
SDK	Gremsy Payload SDK

FEATURES

Object Tracking (Vision/Thermal Camera)	Frame Rate: 30 frames per second (fps)
	Tracking Modes:
	+ Basic Tracking + Smart Tracking
AI Object Detection (Vision/Thermal camera)	Car, human (Default) *Software updates enable detection of more objects
Camera Sync	Single Sensor: EO IR
	Picture in picture(PiP): EO/IR IR/EO
Ethernet Media File	YES, using HTTP Server
Geotaging	Yes
Pinpoint	Detect target position
Video Stream	HDMI/RTSP

GIMBAL

Angular Vibration Range	±0.01°
Gimbal Mount	Bottom
Gimbal Mode	Off Lock Follow
Controllable Range	Tilt: ±120°
	Pan: ± 310°
	Roll: ± 45°
Mechanical Range	Tilt: ± 143°
	Pan: ±320°
	Roll: -260° to 80°
Max Controllable Speed	Tilt: 100°/s
	Pan: 100°/s
	Roll: 100°/s

EO CAMERA SENSOR (POWERED BY SONY BLOCK CAMERA)

Image Sensor	1/2.5" CMOS
Effective Pixels	8.51 MP
Lens	Focal Length: 4.4mm to 88.4mm
Zoom	Static current: 1.75A (@12V)
	Optical: 20x
	Digital: 12x
	Super Resolution: 30x
Resolution	Combine: 240x (recommend for photography only)
	Photo: 3840 x 2160 (8.51 MP) Video: 3840 x 2160 (4K@30fps)
Format	Photo: JPEG
	Video: MP4, H265
Aperture	F2.0 to F3.8
Shutter Speed	1/30 to 1/2000s
Exposure mode	Auto, Shutter speed, Iris, Bright, Manual
Defog mode	On/Off (Low, Mid, High)
Zoom mode	Combine, Super Resolution
White Balance	Auto, Indoor, Outdoor
Noise Reduction	Yes
Auto ICR	Yes

IR CAMERA

(POWERED BY FLIR BOSON 640 RADIOMETRIC)

Sensor	Uncooled VOx Microbolometer
Array Format	640x512
Frame Rate	60Hz
Pixel Size	12 µm
Thermal Spectral Range	8-14 µm
Scene Temperature Range	to 140 °C (high gain) to 500 °C (low gain)
Lens Options	Fixed Focus, 32° (HFOV) 14 mm (EFL)
Digital Zoom	1x to 8x zoom
Resolution	Photo: 640×512 Video: 640×512 @ 60Hz
Format	Photo: JPEG
Supported Drone Platforms	Video: MP4
Thermal Sensitivity (NETD)	Professional: ≤50 mK
Radiometry	Yes, overlay on the runtime video

LASER RANGEFINDER

Wavelengths	905 nm
Precision	0.01-0.5 m
Laser Safety	Class 1 (IEC 60825-1:2014)
Ranging Capability (m)	Min: 2 m Max: 2400 m
Performance Continuous measure mode 10Hz	Min: 2 m Max: 1200 m Large object, visibility 25 km, target reflectivity 50 % detection probability 90% Availability: 700 m Target size 2.3 x 2,3 m, visibility 25 km, target reflectivity 30 %, detection probability 90%
Performance Continuousmeasure mode 1Hz	Min: 2 m Max: 2400 m Large object, visibility 25 km, target reflectivity 50 % detection probability 90% Availability: 1500 m Target size 2.3 x 2,3 m, visibility 25 km, target reflectivity 30 %, detection probability 90%

STORAGE

Supported SD Card	MicroSD card (Max capacity: 128 GB, UHS-1 Speed Grade 3 required)
Supported File Systems	exFAT
Recommended Micro SD Cards	SanDisk_Extreme PRO_32GB_3_A1_micro SD V30 HC I SanDisk_Extreme PRO_64GB_3_A2_micro SD V30 XC I TOSHIBA EXCERIA PRO 64GB micro SD XC II TOSHIBA EXCERIA PRO 32GB micro SD HC II TOSHIBA EXCERIA M303E 32GB micro SD HC I TOSHIBA EXCERIA M303E 64GB micro SD XC I TOSHIBA EXCERIA M303E 64GB micro SD XC I TOSHIBA EXCERIA M303 128GB micro SD XC I SAMSUNG_EVO_128GB_micro SD 3 XC I SAMSUNG_EVO_64GB_micro SD 3 XC I



LET GREMSY
TELL YOU
OUR STORY