

Optroxa

GMB-2000 LTD

The Optroxa GMB-2000 LTD represents a new standard in weight, size, and performance. Designed for demanding civilian and professional applications, including surveillance, inspection, and aerial imaging. It features an integrated laser range finder and laser target designator in a lightweight form factor. With the addition of LWIR and a RGB camera, users can be confident in their ability to gain a tactical advantage.
It utilizes a built-in video processor to enable advanced image processing and several industry standard communication interfaces while keeping the weight and power consumption low. The built-in RGB camera offers up to 18x optical zoom + 10x digital zoom and recording in HD which helps to capture and record vital details, maximizing the value of your operations. The gimbal offers a high performance long-wave infrared camera integrated into the module.

Optics - EO/RGB Camera

Sensor: Vision Components Sony IMX 900C	3.2MP CMOS sensor, color, 2048 × 1536 pixels, 2.25 µm pixel pitch	
Lens	18x optical zoom + 10x digital zoom, 3.7° ~ 42° hfov, 5.85±5% ~ 93.6±5% mm focal length, Toggle-able IR-filter, Continuous Zoom, Autofocus	
DRI (Calculated - 90% Detection Probability), Full zoom)	Human: Detection: 16480 m Recognition: 4110 m Identification: 2060 m	Light vehicle: Detection: 39910 m Recognition: 9960 m Identification: 5000 m

Optics Long-Wave Infrared Camera (LWIR) CAMERA [1]

Exosens / Xenics MicroCube 640	Microbolometer sensor, 640 × 480 pixels, 12 µm pixel pitch, 60 fps	
Lens	13.6 mm focal length, EO/RGB digitally matched FOV	
DRI (Calculated)	Human: Detection: 380 m Recognition: 100 m Identification: 50 m	Light vehicle: Detection: 930 m Recognition: 230 m Identification: 120 m

Optics Long-Wave Infrared Camera (LWIR) CAMERA [2]

Exosens / Xenics MicroCube 640	Microbolometer sensor, 640 × 480 pixels, 12 µm pixel pitch, 60 fps	
Lens	35 mm focal length, EO/RGB digitally matched FOV	
DRI (Calculated)	Human: Detection: 1030 m Recognition: 260 m Identification: 130 m	Light vehicle: Detection: 2500 m Recognition: 620 m Identification: 310 m

Short-Wave Infrared (SWIR) Camera

Exosens / Xenics Compact Core Aion	Uncooled InGaAs sensor, 640 × 512 pixels, VGA 15 µm pixel pitch, Up to 178 fps	
Lens	100mm focal length	
DRI (Calculated)	Human: Detection: 2360 m Recognition: 590 m Identification: 300 m	Light vehicle: Detection: 5720 m Recognition: 1430 m Identification: 720 m

Software

Image Processing	• Electronic stabilization (Roll, Pitch, Yaw) • Moving object detection in dynamic scenery • GPU accelerated object detection/ classification with optional custom model/ class file drag and drop • Target tracking, Passive (sw only), Active (Motor actuation), various methods • Sensor fusion • Electronic boresight alignment • Digital zoom • Denoising • Dehazing • Atmospheric turbulence correction
Custom Integrations	C/C++ IPC API
Communica-tion Protocol	MAVLink - Gimbal/Camera protocol v2
Video Stream Encoding	MPEG-2/H.262, H.264, H.265, MJPG, UDP, RTSP
Interface	Locally hosted web interface



General

Weight	4.4 lbs / 2000 g
Dimension	6.5 × 5.3 × 4.8 inches / 166 × 136 × 123 mm

Computing

Board	NVIDIA Jetson Orin NX
AI Performance	100 TOPS (trillion (10^{12}) Operations Per Second
GPU	1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores
CPU	8-core Arm® Cortex®-A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3
Memory	16GB 128-bit LPDDR5 102.4GB/s
Power	10W - 25W
OS	Ubuntu 22.04

Lasers

Laser Target Designator	Aktyvus Mini LTD: STANAG 3733 NATO
Laser Range Finder	Noptel LRF-15A: Ranging capability up to 12 km

Electrical

Connector	ODU GK0WAM-P16UB00-000L
Voltage input	12-32V
Max Power Consumption	Yet to be verified
Communication	Ethernet, CANBUS, USB/UART

Mechanical

Material	Aluminum
Mounting holes	Five evenly distributed (with a 72-degree interval) M4 threaded holes situated on a Ø49.6mm circle
IP Rating	Built to IP67
Features	Gas filled head. Direct drive Continuous rotation on yaw and pitch, Absolute encoders, Active cooling

Other

Regulations	Non-ITAR, NDAA compliant



Front



Backside