SENTINEL MLRF

Multi-Functional LONG RANGE THERMAL BINOCULAR

Display

The SENTINEL MLRF is a long-range thermal imaging binocular system designed for military, border security, law enforcement, and special operations. It combines a 640 × 512 uncooled LWIR thermal sensor, precision eye-safe laser rangefinder, digital magnetic compass, and GPS receiver to deliver accurate detection, ranging, and geolocation in all conditions. The thermal sensor enables reliable long-range detection, recognition, and identification of targets in darkness, smoke, fog, and harsh weather. An AI-enabled processing engine analyzes live video to automatically detect predefined objects such as vehicles and personnel, helping operators identify threats quickly. Built with a MIL-STD ruggedized design, the SENTINEL MLRF supports reliable 24/7 field deployment in demanding operational environments.

Thermal Channel	
Detector type	Vox
Resolution (pixels)	640 x 512
Spectrum (µm)	8-14
Pitch size (µm)	12
NETD (mK) @F1.0	<40
Frequency (Hz)	50
Objective Focal Length (mm)	50 @F1.0
Field of View (°)	8.8 x 7.0
Non-uniformity correction	Auto
Detection/Recognition of tank target (km)	6.3/1.6
Detection/ Recognition of human target (km)	2.3/0.6
Digital Noise Reduction (DNR)	Yes
Wide dynamic range WDR	Yes
Video	PAL/NTSC
Digital Zoom	1-8x (1-36x optional)
Day Channel	
Objective Focal Length (mm)	35
Eyepiece Focal Length (mm)	13.9
Resolution (pixels)	1280x1024
Frequency (Hz)	30
Field of View (°)	12.4 x 7.0
Digital Zoom	1-8x (1-36x optional)
Laser Rangefinder	
Laser type	Semiconductor laser, Class I
Laser wavelength (µm)	1,550
Detection range (m)	20 - 7,000, (20 - 10,000 Optional)
Ranging accuracy (m)	±2
Fire correction	Optional
GNSS & Target Location	
GNSS Constellations	GPS + Galileo + GLONASS + BeiDou (Quad-constellation)
GNSS Position Accuracy	< 3 m CEP
Target locating error	±5 m (target < 1 km) – ranged-target coordinate accuracy
Target Location Output	Own-position and target coordinates
Coordinate Formats	Latitude / Longitude + MGRS

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Laser Pointer / Marker Detection	
Detection Wavelength (nm)	850 (IR)
Fusion	
Combing day and thermal image	Yes
Fusion modes	Multi-sensor fusion (thermal, day, low-light)
Magnetic Magnetic Compass	
Azimuth resolution/accuracy	1°/ 1°
Elevation resolution/accuracy	1°/ 1°
Elevation range	+/- 80°
Mechanics and Environmental	
Interpupillary distance (mm)	64
Eyepiece diopter adjustment (dpt)	±5
Recording, Storage & Connectivity	
Internal Storage	64 GB built-in (BMP & AVI)
Image Capacity	≥ 10,000 images
Video Capacity	≥ 4 hours
Wired Interfaces	Power input, RS232 (remote control), USB (output videos and images)
Wireless	Wi-Fi (Optional)
Power	
Battery	Rechargeable Li-ion 4x18650
External / Auxiliary Power	DC (12-50V) and AC (120/240V), External power kit
Vehicle Power Compatibility	12V External power
Continuous Operating Time	Up to 6 hours when LRF measurements are disabled Up to 5 hours during full operation (all functions active)
Physical & Environmental	
Dimensions with eyepiece (mm)	190 x 160 x 85
Weight without battery (kg)	1.45
Temperature range (°C)	-30 to +60
Storage temperature range (°C)	-35 to +65
Waterproof	MIL STD 810 (1m for 30 min)
Mechanical interface/mounts	1/4' tripod mount

DELIVERY SET

Supplied with the following standard accessories:

- Soft carrying case
- 4x 18650 batteries
- Li-ion battery USB charger
- Hard carrying case
- Operation manual
- Multi-use cable

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