

AOEXO SkyShield Quad-Spectrum Fusion Gimbal (XF Platform)

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Core Technological Innovations

[AOEXO Multi-Spectrum Fusion Platform]

- Pioneering "Optical-Thermal-Range-Illumination" 4D sensing architecture (Synergy 4.0 patented algorithm)
- Real-time calibration of visible/thermal/laser ranging tri-source data: 70% target positioning accuracy improvement
- Smart spectrum switching strategies (auto/manual/preset modes)

[AOEXO Beyond-Visual-Range Combat System]

- Tactical-grade laser rangefinder module (1,800m ultra-range detection + positioning optimization)
- Dual-mode laser illumination (8°/30° smart switching: 300% night recognition range enhancement)
- Military-grade thermal calibration (-20~550°C wide-range measurement, $\pm 1^{\circ}\text{C}$ industrial accuracy)

[AOEXO Enhanced Features]

[Smart Perception Hub]

- AOEXO HyperZoom Optical System
 - 30x optical + 4x digital zoom (120x hybrid magnification)
 - 2.07MP starlight-grade sensor (0.005Lux low-light imaging)
 - Dynamic focus compensation (60°~2.3° FOV distortion-free switching)

[Military-Grade Stabilization Platform]

- AOEXO 4th-gen three-axis stabilization ($\pm 0.01^\circ$ anti-shock accuracy)
- Intelligent power management (dual-redundant circuits + surge protection)
- MIL-STD quick-release interface (3-second module swapping)

[AOEXO Intelligent Control Ecosystem]

- Deep integration with BattleSpace Pro Command System
 - Quad-spectrum PIP/POP/fusion display modes
 - Smart threat assessment (thermal tracking + laser ranging synergy)
 - Tamper-proof datalink (military-encrypted OSD/EXIF)
- QGC Tactical Pro Suite (AOEXO Combat Edition)
 - Multi-spectrum mission preset library
 - Real-time thermal mapping module

Technical Specifications

Visible Light Camera

Parameter	Specification
Sensor Size	1/2.8" CMOS
Total Pixels	2.07MP
Video Resolution	1080P@30fps
Photo Resolution	1920×1080
Optical Zoom	f=4.7–141mm
Optical Magnification	30×
Digital Magnification	4×
Field of View (FOV)	H: 60°–2.3°, V: 36.9°–1.3°, D: 68.4°–2.6°
Detection Distance	Human: 2,128.2m; Vehicle: 2,797.1m
Recognition Distance	Human: 425.6m; Vehicle: 559.4m

Parameter	Specification
Verification Distance	Human: 212.8m; Vehicle: 279.7m
Minimum Illumination	Color: 0.05Lux/F1.6; B&W: 0.005Lux/F1.6

Thermal Imaging Camera

Parameter	Specification
Detector Type	Uncooled Vanadium Oxide (VOx) Infrared Focal Plane Detector
Pixel Pitch	12μm
NETD	<50mK (@25°C, f/1.0)
Palette Modes	White Hot, Black Hot, etc.
Resolution	640×512
Frame Rate	640×512@25fps
Focal Length	25mm
FOV	H:17.5°, V:14°, D:22.3°
Detection Distance	Human:1,041.7m; Vehicle:3,194.4m
Recognition Distance	Human:260.4m; Vehicle:798.6m
Verification Distance	Human:130.2m; Vehicle:399.3m
Spectral Range	8–14μm
Temperature Ranges	Range 1: -20~150°C; Range 2: 0~550°C
Measurement Tools	Point/Line/Area Analysis
Accuracy	±3°C or ±3% of reading (whichever is larger) @-20~60°C
Temperature OSD	Max/Min/Center/Average Display
Auto Tracking	High/Low Temp Marking (Red/Blue Frames)

Laser Rangefinder

Parameter	Specification
Wavelength	905nm
Range	5–1,800m (12m target, 20% reflectivity)
Accuracy	±0.3m (<300m)/±1m (>300m)
Beam Divergence	2.5mrad
Operation Mode	Pulsed
Power	<1mW (Eye-safe)

Laser Illuminator

Parameter	Specification
Wavelength	850±10nm
Effective Range	≤500m
Beam Angles	8° + 30°
Safety Class	FDA Class 3B / IEC-60825-1

Video Specifications

Parameter	Specification
Single IP Output	Supported
Video Switching	Supported
Compression	H.265/H.264/H.264H
Storage	TF Card (Max 256GB)
Protocols	ONVIF, GB/T28181, HTTP, RTSP, TCP, UDP, RTP

Gimbal Specifications

Parameter	Specification
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Parameter	Specification
Stabilization Accuracy	$\pm 0.01^\circ$
Max Rotation Speed	Pan/Tilt: $\pm 200^\circ/\text{s}$
Controllable Range	Pan: $\pm 360^\circ$ Continuous; Tilt: $-120^\circ \sim +60^\circ$

System Specifications

Parameter	Specification
Operating Temperature	$-20^\circ\text{C} \sim 60^\circ\text{C}$
Storage Temperature	$-20^\circ\text{C} \sim 60^\circ\text{C}$
Humidity	$\leq 85\%$ RH (Non-condensing)
Protection Rating	IP43
Dimensions	173×144×206mm
Weight	1,110g
Power Consumption	16.5W (Avg)/60W (Peak)