



Introduction to the EOS 810 Series Forest Fire

Key Details Corner

A multi-sensor architecture combining thermal imaging, visible imaging with 92x optical zoom, laser ranging and precision PTZ positioning for long-range drone detection and tracking.

The high-sensitivity 640x512 thermal sensor enables the early detection of small aerial targets in low-visibility conditions, including darkness, mist, smoke and inclement weather.

AI-assisted smoke and fire detection, intelligent target classification and automatic tracking enable early identification and continuous monitoring of potential wildfire incidents, whilst minimizing false alarms and the need for operator intervention.

The integrated 6 km laser rangefinder provides accurate information on target distances to support threat assessment, interception planning and system coordination.

High-precision positioning mechanism with continuous 360° rotation. The panoramic coverage ensures rapid detection, automatic verification and precise tracking of smoke plumes and fire hotspots across vast forested and mountainous areas.

An open architecture supporting ONVIF, the Web API, alarm outputs and third-party command and control platforms enable seamless integration with forest fire monitoring, emergency response and smart forest management systems.

Robust, IP67-certified construction designed for reliable operation in harsh outdoor environments, including border regions, coastal areas, industrial facilities and critical infrastructure sites.





Specifications

Thermal Sensor

Image sensor	Vanadium oxide uncooled focal plane detector
Resolution	640 × 512
Pixel Pitch	12μm
Spectral Range	8μm to 14μm
Sensitivity (NETD)	≤ 35mK at 25°C, F1.0
Focal Length	100mm F1.2
Lens Type	Athermalized Lens
Field of View (H × V)	4.38° × 3.51°
Frequency	50Hz
Image Processing	Non-Uniform Correction (NUC), noise filtering, polarity control, Digital Detail Enhancement (DDE)
Color Palettes	20 (White Hot/Black Hot/Rainbow/High Contrast Rainbow/Iron Red/Lava/Sky/Gray/Gray Red/Purple Orange/Special One/Warning Red/Fire and Ice/Blue Red/Special Two/Gradual Red/Gradual Green/Gradual Blue/Warning Green/Warning Blue)

Visible Light Sensor

Image Sensor	1/1.8-inch 4MP progressive scanning CMOS
Focal Length	6.1 to 561mm
Aperture Range	F1.4(W) to F4.7(T)
Field of View (H × V)	HFOV: 65.50°(W) to 0.75°(T) VFOV: 38.60°(W) to 0.45°(T)
Optical Zoom	92x
Digital Zoom	16x
Focus Control	Manual; Auto
Min. Illumination	Color: 0.0005 Lux @F1.4; B/W: 0.0001 Lux @F1.4
Other Features	De-fog, digital noise reduction, WDR, image stabilization

Wide Angle Sensor (optional)

Thermal Channel	LWIR 640 × 512, 102° HFOV, 4.1mm lens
Visible Light Channel	2688 × 1520 1/1.8-inch CMOS, 93.10° HFOV, 3.5mm lens

Laser Rangefinder



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Laser Wavelength	1535 ± 5nm
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Measurement Distance	6 km
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Measuring Accuracy	±1m
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PTZ

Pan Range / Speed	Continuous 360° (auto-flip); 0.01° to 180°/sec
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Tilt Range / Speed	-90° to +90° (auto-flip); 0.01° to 120°/sec
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Max. Acceleration	500°/s ²
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Accuracy	0.005°
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Presets	255
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Tour	16 (up to 32 presets per tour)
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Video

Video compression	H.265, H.264
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Main Stream	Thermal:
	50Hz: 25fps (640×512)
	Visible Light:
	50Hz: 25fps (2688 × 1520, 1920 × 1080)

Sub Stream	Visible Light:
	50Hz: 25fps (1280 × 720)

Video bit rate	1Mbps to 16Mbps
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Audio

Audio compression	G711A/G711U/AAC/PCM
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Audio bit rate	8KHZ
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Network

Network protocol	IGMP, ICMP, ARP, TCP, UDP, HTTP, RTSP, WEBRTC, WEBSOCKET
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Compatible protocol	ONVIF, Web API
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Intelligence

Heat Detection	Yes
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Perimeter Protection	Yes. Support tripwire and intrusion.
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Target Distinction	Human/Vehicle Classification
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Target Tracking	Yes
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Smoke Detection	Yes
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Boat Detection	Yes
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Aircraft Detection Yes

Interface

Ethernet	1 RJ45 10M/100M self-adaptive Ethernet port
Alarm Input	1
Alarm Output	1
Audio Input	1
Audio Output	1
Control Interface	RS-422 / RS-485 / Ethernet

General

Power	DC24V $\pm$ 15%, 5 A
Operating Temperature/Humidity	-40°C to +70°C / 90% or less
Protection Level	IP67 Standard; TVS 6000V lightning protection, surge protection, reverse connection protection
Dimension	496.2 mm $\times$ 249.9 mm $\times$ 379.1 mm
Weight	Approx. 25 kg

Thermal DRI

Human DRI (1.8m x 0.5m)

Focal Length	Detection	Recognition	Identification
100 mm	4167 m	1042 m	521 m

Vehicle DRI (2.3m²)

Focal Length	Detection	Recognition	Identification
100 mm	12778 m	3194 m	1597 m

*Johnsons Criteria, (Human at 1.8m x 0.5m, vehicle at 2.3m², Detection at 1.5 pixels, Recognition at 6 pixels and Identification at 12 pixels. 50% probability subject to environmental conditions).

Visible Light Camera DORI

Focal Length	Detect 25ppm	Observe 63ppm	Recognize 125ppm	Identify 250ppm
6.1 to 561mm	7738 m	3071 m	1548 m	774 m



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Dimension (mm)

