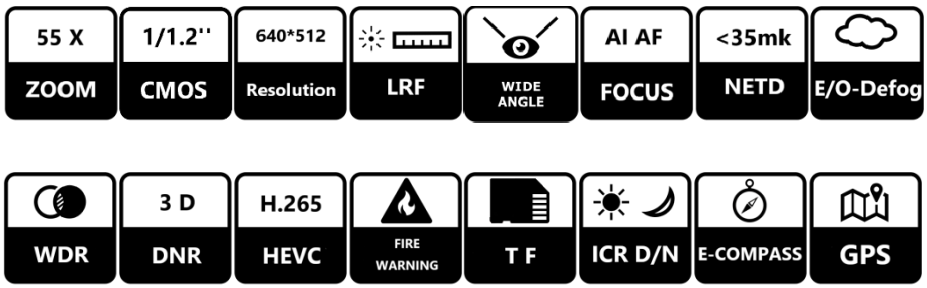
New version of the EOS-ZDF Marine Thermal

The ultimate 5-in-1 smart PTZ camera:

the EOS-ZDF series



- Visible camera, thermal camera, rangefinder, laser illuminator and wide-angle camera, 5-in-1
- Direct-drive torque motor for high precision and fast rotation
- Real-time Full HD 8 MP 3840 x 2160 images at 30 frames per second
- 10–550 mm, 55x optical zoom
- Thermal image 640 x 512, NETD sensitivity ≤ 35 mK at F1.0, 300 K
- 3 km laser rangefinder, 1535 nm wavelength
- 500 m laser illumination;
- Horizontal and vertical stabilisation, dynamic adjustment to compensate for external vibrations of the panoramic unit and ensure stable image quality.
- Deep learning-based AI-AF, focused on faster and more stable focusing
- Support for WebRTC and FLV preview
- Support for backlight compensation, automatic electronic shutter and other functions to adapt to different surveillance environments
- Support for 3D digital noise reduction, strong light suppression and heat wave elimination;
- Support for a Micro SD card with a maximum capacity of 512 GB
- Support for ONVIF access
- Supports detection algorithms for people, non-motorised vehicles, motorised vehicles, boats and birds

Product	EOS-ZDF Series				
Thermal camera					
Sensor type	Uncooled vanadium oxide infrared detector				
Effective pixels	640 x 512				
Pixel pitch	12 µm				
Spectral range	8–14 µm				
Sensitivity (NETD)	≤ 35 mK at F1.0, 300 K				
Lens type	Fixed or zoom lens				
Focal length	50 mm	75 mm	100 mm	25–75 mm	15–100 mm
Digital zoom	2X, 4X, 8X				
Aperture	F1.0			25 mm (F0.9) – 75 mm (F1.1)	15 mm (F0.85) - 100 mm (F1.25)
Field of view (H x V)	8.8° x 7.0°;	5.9° x 4.7°;	4.4° x 3.5°;	17.5° x 14.0° ~ 5.9° x 4.7°	28.7° x 23.1° ~ 4.4° x 3.5°
Focus range	3 m–∞;	5 m–∞;	10 m–∞;	5 m to infinity (25 mm) 10 m to infinity (75 mm)	5 m to infinity (15 mm) 10 m to infinity (100 mm)
Image settings	Brightness, contrast and gamma can be adjusted via the client or browser				
Pseudo-colour	10 modes available: warm white/warm black/golden autumn/rainbow/iron red, etc.				
Image enhancement	Supports level adjustment from 0 to 255				
Defective pixel correction	Support				
Image noise reduction	Support				
Image rotation	180°, mirror				
Shock-resistant	Electronic image stabiliser, 3-level adjustment				
Visible camera					
Sensor type	1/2.8 inches;		1/1.8 inches;	1/1.25 inches	
Resolution	1920 x 1080 at 25/30 frames per second, 60 frames per second optional		2688 x 1520 at 25/30 frames per second, 60 frames per second optional	3840 × 2160 at 25/30 frames per second 60 frames per second (optional)	
Min. illumination1	Colour: 0.0005 lux; Black and white: 0.0001 lux				
Shutter	1/25 s to 1/100,000 s; supports delayed shutter				
Day/night switch	ICR infrared filter; automatic, manual, timed, serial port trigger, alarm trigger				
Focal length	7 to 322 mm		6.6 to 264 mm	10 to 550 mm	
Aperture	F1.8–F6.5;		F1.61–F5.19;	F1.5–F5.5	
Field of view (H, V, D)	H: 42–1° (wide-tele)		H: 59.20–1.93° (wide-tele)	H: 58.40–1.20° (wide-tele)	
	V: 24–0.6° (wide-tele)		V: 34.82 ± 1.14° (wide-tele)	V: 34.90–0.70° (wide-tele)	
	D: 47.7–1.26° (wide-tele)		D:68.68–2.24° (wide-tele)	D:65.10–1.40° (wide-tele)	
Image settings	Saturation, brightness, contrast and sharpness can be adjusted via the client or browser				
BLC, HLC, WDR	Support				
Defogging	Electronic defogging				
Day/night switching	Automatic, manual, delay, alarm-triggered				
3DNR	Support				
Image overlay	Support for 24-bit BMP image overlay, customisable area				
Area of interest	Support for three streams and four fixed zones				
Slow electronic shutter	X2–X24				
Distortion correction	Supported, level adjustment from 0 to 100				
Shock resistance	Electronic stabiliser, adjustable from 1 to 3 levels				
Lighting					
Lighting range	≥ 500 m				
Wavelength	850 nm ± 10 nm (940 nm optional)				
Light angle	Electrically synchronised zoom, Wide angle 2°: effective range > 500 m, spot diameter < 36 m; Narrow angle 70°: effective range > 40 m;				
Switchover time	≤ 3 seconds (wide angle to narrow angle)				
Rangefinder [2]					
Wavelength	1535 nm				
Range	15 m to 3,000 m				

Accuracy	±1 m
Resolution	0.1 m
Frequency	1 Hz
Wide-angle camera [2]	
Sensor type	1/1.8-inch progressive scan CMOS
Resolution	2688 x 1520
Focal length	4 mm
Field of view	H: 93.1° V: 49.6° D: 110.8°
PTZ	
Drive type	Direct-drive torque motor
Rotation	Rotation: 360° continuous; Tilt: ±90°
Speeds	Pan: 0.09°–120°/s (extendable), Tilt: 0.09°–110°/s (extendable)
Maximum acceleration	Roll 300°/s², pitch 240°/s²
Angular resolution	0.01°
Accuracy	≤ 0.02°
Preset position	199 (standard user preset bits) + 255 (extended user preset bits) The number of preset bits can be increased to 512 according to customer requirements
Scanning mode	Scan by predefined points (adjustable predefined scan duration, adjustable predefined scan speed), horizontal scanning in pairs (Adjustable scan speed, adjustable scan duration)
Positioning function	Absolute angular positioning (adjustable positioning speed), 3D positioning (adjustable positioning speed)
Image	
Main stream	Thermal: 25 frames per second (1920 x 1080, 1280 x 1024, 640 x 512); Visible: 25 fps/30 fps (3840 x 2160, 2688 x 1520, 1920 x 1080, 1280 x 960, 1280 x 720); @8 MP 25 fps/30 fps (2688×1520, 2560x1440, 1920x1080, 1280x960, 1280x720); @4 MP 25 fps/30 fps (1920 x 1080, 1280 x 960, 1280 x 720); @2 MP
Sub-stream	Thermal: 25 frames per second (640 × 512); Visible: 25 frames/s (1280×720, 704x576, 640x480, 352x288) @8MP/4MP 25 frames/s (704x576, 640x480, 352x288) @2MP 30 frames per second (1280×720, 704x480, 640x480, 352x240) @8MP/4MP 30 frames per second (704x480, 640x480, 352x240) @2 MP
Third stream	Visible: 25 frames per second (704 x 576, 640 x 480, 352 x 288) 30 frames per second (704 x 480, 640 x 480, 352 x 240) For the EOS-ZDF35IXXXXX model only 25 frames per second (1920×1080, 1280×720, 704×576, 640×480, 352×288) 30 frames per second (1920×1080, 1280×720, 704×480, 640×480, 352×240)
Region of interest	Supports three streams and defines four fixed areas respectively
Picture-in-picture	Supports picture-in-picture overlay display
Video encoding	H.265/H.264/MJPEG
H.265 image quality	Main profile
H.264 image quality	Baseline Profile / Main Profile / High Profile
Video compression	32 Kbps–16 Mbps
Audio encoding	G.711a/G.711u/G.722.1/G.726/MP2L2/AAC/PCM
Audio bitrate	64 Kbps (G.711) / 16 Kbps (G.722.1) / 16 Kbps (G.726) / 32–192 Kbps (MP2L2) / 16–64 Kbps (AAC)
Network	
Memory function	Support for Micro SD/SDHC/SDXC cards (512 GB) for local offline storage and NAS servers (NFS, SMB/CIFS supported)
Support	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, RTP, RTSP, RTCP, NTP, SMTP, SNMP, IPv6
Interface protocols	ONVIF (PROFILE S, PROFILE G), GB28181-2016, protocols from leading manufacturers
Smart functions	
General events	Motion detection, video loopback, disk full, unauthorised access
Advanced intelligence	Zone intrusion, perimeter detection, zone exit, loitering detection, crowd gathering, fast movement, abandoned object detection, audio anomaly
Smart detection	Humanoid detection, non-motorised vehicle detection, motorised vehicle detection, boat detection, bird detection

General						
Operating temperature and humidity	-40 °C to 65 °C, humidity below 90% (non-condensing)					
Voltage	24 V DC ± 20%					
Power supply	Depending on configuration					
Electrical protection	TVS 8000 V lightning protection, surge protection, transient protection, compliant with GB/T17626.5 Level 4					
Enclosure protection rating	IP67					
Dimensions (W x H x D)	333 mm x 339 mm x 252.8 mm					
Weight	Depending on configuration, ≤ 12.5 kg					
Ordering information [2]						
Model	Description					
EOS-ZDF35IXXXXX	Thermal: 50 mm;			Visible: 6.6–264 mm, 1/1.8”		
EOS-ZDF24IXXXXX	Thermal: 75 mm;			Visible: 7 to 322 mm, 1/2.8 inches		
EOS-ZDF23IXXXXX	Thermal: 100 mm;			Visible: 7 to 322 mm, 1/2.8 inches		
EOS-ZDF22IXXXXX	Thermal: 25–75 mm;			Visible: 7 to 322 mm, 1/2.8 inches		
EOS-ZDF00IXXXXX	Thermal: 15–100 mm;			Visible: 10 to 550 mm, 1/1.25 inch		
Optional configurations	Wide-angle camera; rangefinder; gyroscope; GPS; digital compass; etc.					
DRI[3]						
Lens	Vehicle (4 m x 1.4 m)			Person (1.8 m x 0.5 m)		
	Detection	Recognition	Identification	Detection	Recognition	Identification
50 mm	6 500 m	1 700 m	850 m	2 600 m	660 m	330 m
75 mm	10 200 m	2 500 m	1 280 m	3 900 m	980 m	490 m
100 mm	13 600 m	3 400 m	1 700 m	5 200 m	1 300 m	650 m

1. At the widest aperture of the designated lens

2. Options such as the wide-angle lens, laser rangefinder, gyroscope, GPS, digital compass, etc., are configured separately. Please consult a specialist for further information. Other models may be configured. Please consult a specialist for further information.

3. This table is provided for reference only and performance may vary depending on the environment. Optimal detection, recognition and identification distances for people are calculated according to Johnson’s criteria. Detection range: to distinguish an object from the background, it must be covered by at least 1.5 pixels. Recognition range: to classify the object (animals, people, vehicles, etc.), it must be covered by at least 6 pixels. Identification range: to identify the object and describe it in detail, it must be covered by at least 12 pixels.