

# TDOEIS450LR2

## 4MP Smart Dual Illumination Fixed-focal Eyeball Network Camera



### Functions

#### Smart Dual Illuminators

TD Smart Dual Illuminators technology adopts smart algorithm to detect targets. Usually, the IR illuminator is on at night; when the target appears in the monitoring area, the white light is on, and the camera records the full-color video and information of key events. That is, the camera links snapshot and video with full-color image. When the target is out of the monitoring area, the white light is off and the IR illuminator is on, which reduces light pollution efficiently.

#### SMD Plus

With intelligent algorithm, TD Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

#### Perimeter Protection

With deep learning algorithm, TD Perimeter Protection technology can recognize human and vehicle accurately. In restricted area (such as pedestrian area and vehicle area), the false alarms of intelligent detection based on target type (such as tripwire, intrusion) are largely reduced.

- 4-MP 1/2.9" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 4 MP (2688 × 1520)@20 fps, and supports 2560 × 1440 @25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in warm light/IR LED, the max. illumination distance is 30 m and the max. warm light distance is 30 m.
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments.
- Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- Intelligent monitoring: Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human).
- Supports max. 256 G Micro SD card; built in MIC.
- 12 VDC/PoE power supply, easy for installation.
- IP67 protection.
- SMD Plus.



#### Smart H.265+ & Smart H.264+

With advanced scene-adaptive rate control algorithm, ToughDog smart encoding technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

#### Full-color

With high-performance sensor and large aperture lens, TD Full-color technology can display clear colorful image in the environment of ultra-low illuminance. With this photosensitivity technology, the camera can capture more available light, and display more colorful image details.

#### Cyber Security

ToughDog network cameras employ a series of security technologies, including security authentication and authorization, access control protocols, trusted protection, encrypted transmission and encrypted storage. These technologies improve the camera's defense against external cyber threats and prevent malicious programs from compromising the device.

#### Protection (IP67, Wide Voltage)

**IP67:** The camera passes a series of strict test on dust and soak. It has dust-proof function, and the enclosure can work normally after soaking in 1 m deep water for 30 minutes.

**Wide voltage:** The camera allows  $\pm 30\%$  (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

Technical Specification					
Camera					
Image Sensor	1/2.9" CMOS				
Max. Resolution	2688 (H) × 1520 (V)				
ROM	128 MB				
RAM	128 MB				
Scanning System	Progressive				
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s				
Min. Illumination	0.008 lux@F1.6 (Color, 30 IRE) 0.0008 lux@F1.6 (B/W, 30 IRE) 0 lux (Illuminator on)				
S/N Ratio	>56 dB				
Illumination Distance	30 m (98.43 ft) (IR), 30 m (98.43 ft) (Warm light)				
Illuminator On/Off Control	Auto; Manual				
Illuminator Number	1 (IR LED); 1 (Warm light)				
Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: 0°–78° Rotation: 0°–360°				
Lens					
Lens Type	Fixed-focal				
Lens Mount	M12				
Focal Length	2.8 mm				
Max. Aperture	F1.6				
Field of View	2.8 mm: H: 95°; V: 52°; D: 114°				
Iris Control	Fixed				
Close Focus Distance	2.8 mm: 0.9 m (2.95 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	63.6 m (208.66 ft)	25.4 m (83.33 ft)	12.7 m (41.67 ft)	6.4 m (20.99 ft)

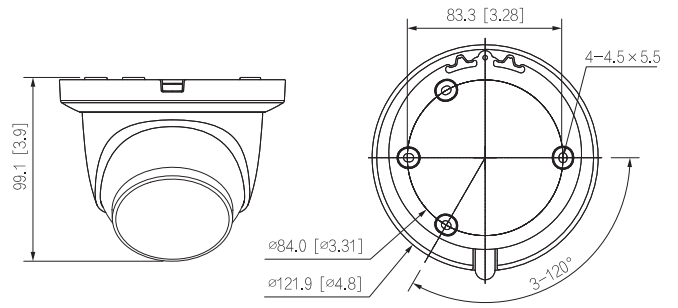
Intelligence					
IVS (Perimeter Protection)	Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human)				
Smart Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos				
Video					
Video Compression	H.264H; H.265; H.264; H.264B; MJPEG (Only supported by the sub stream)				
Smart Codec	Smart H.265+; Smart H.264+				
Video Frame Rate	Main stream: 2688 × 1520@(1–20 fps)/2560 × 1440@(1–25/30 fps) Sub stream: 704 × 576@(1–25 fps)/704 × 480@(1–30 fps) *The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.				

Stream Capability	2 streams
Resolution	4M (2688 × 1520/2560 × 1440); 3M (2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 32 kbps–6144 kbps H.265: 12 kbps–6144 kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	120 dB
White Balance	Auto; natural; street lamp; outdoor; manual; regional custom
Gain Control	Auto; Manual
Noise Reduction	3D NR
Motion Detection	OFF/ON (4 areas, rectangular)
Region of Interest (ROI)	Yes (4 areas)
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower)
Mirror	Yes
Privacy Masking	4 areas
Audio	
Built-in MIC	Yes
Audio Compression	G.711a; G.711Mu; PCM; G.726
Alarm	
Alarm Event	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; voltage detection; security exception; SMD
Network	
Network Port	RJ-45 (10/100 Base-T)
SDK and API	Yes
Network Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; NTP; Multicast; ICMP; IGMP
Interoperability	ONVIF (Profile S/Profile T); CGI; P2P; Milestone
User/Host	6 (Total bandwidth: 36 M)
Storage	FTP; SFTP; Micro SD card (support max. 256 GB)
Browser	IE Chrome Firefox
Management Software	DSS; ToughDogViewer Pro
Mobile Client	iOS; Android
Cyber Security	Configuration encryption; Trusted execution; Digest; Security logs; WSSE; Account lockout; syslog; Video encryption; 802.1x; IP/MAC filtering; HTTPS; Trusted upgrade; Trusted boot; Generation and importing of X.509 certification

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Certification	
Certifications	CE-LVD: EN 62368-1; CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU; FCC: 47 CFR FCC Part 15, Subpart B
Power	
Power Supply	12 VDC/PoE (802.3af)
Power Consumption	Basic: 2.1 W (12 VDC); 2.5 W (PoE) Max. (H.265 + intelligence on+WDR+ warm light): 4.4 W (12 VDC); 5.2 W (PoE)
Environment	
Operating Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Operating Humidity	≤95%
Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Protection	IP67
Structure	
Casing Material	Inner core: Metal; Cover: Metal; Decoration ring: Plastic
Product Dimensions	99.1 mm × Φ121.9 mm (3.90" × Φ4.80")
Net Weight	0.46 kg (1.01 lb)
Gross Weight	0.65 kg (1.43 lb)

## Dimensions (mm[inch])



## Accessories

Optional:



PFA130-E  
Junction  
Box



PFB205W-E  
Wall Mount  
Bracket



PFA152-E  
Pole Mount  
Bracket

Junction Box	Wall Mount	Pole Mount