

## EmPower IP Camera Series

## ◆ TM-O2TDPT-IZ45F25D-B ◆

Thermal Hybrid  
Speed Dome Network Camera

## Features

- ◆ 400×300 uncooled VOx thermal sensor technology
- ◆ Athermalized lens (thermal), focus-free
- ◆ 1/2.8" 2 mega pixel progressive scan CMOS
- ◆ Support detection and alarm of fire
- ◆ Max 140°/s pan speed, 360° endless pan rotation
- ◆ Up to 300 presets, 5 auto scan, 8 tour, 5 pattern
- ◆ 7/2 alarm in/out
- ◆ Micro SD memory, IP66
- ◆ Support temperature measurement

## System Overview

Featuring a dual lens Pan and Tilt camera, this series provides an all-in-one solution that is especially beneficial for temperature measurement. Together with EmPower Thermal and Starlight technology, the camera's long range capabilities are able to be utilized even at night. The series combines one thermal camera for monitoring in total darkness and one camera with Starlight functionality and a motorized lens for confirming details up close.

## Functions

**Uncooled Vox Technology**

EmPower thermal cameras use uncooled Vox sensor technology. Because of small size and better performance, it's cost-effective solution for thermal security.

**High Sensitivity**

High thermal sensitivity(<50mK) makes cameras capture more image details and temperature difference information.

**Fire Detection & Alarm**

With built-in Fire detect function, the camera has the ability to detect fire in a long distance. because thermal camera is sensitive to temperature, so the accuracy of fire detection will be higher than visible camera.

**Temperature Measurement**

This thermal cameras provide remote temperature monitoring functionality with the ability to set temperature threshold alarms. Object temperatures can be monitored in daytime or at night, making them ideal for usage in power plant or oil extraction applications where overheating can be dangerous. When the temperature exceeds the set threshold, an alarm is triggered. The temperature range is between -20°C to 550 °C (-4°F to 1022 °F).

**Intelligent Video System (IVS)**

With built-in intelligent video analytics, the camera has the ability to detect and analyze moving objects for improved video surveillance. The camera provides optional standard intelligence at the edge allowing detection of multiple object behaviors such as abandoned or missing objects. IVS also supports Tripwire analytics, allowing the camera to detect when a pre-determined line has been crossed.

**Environmental**

With a temperature range of -40 °C to +60 °C (-40 °F to +140 °F), the camera is designed for extreme temperature environments. Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications.

**Protection**

Supporting ±15% input voltage tolerance, this camera suits even the most unstable conditions for outdoor applications. Its 6KV lightning rating provides protection against the camera and its structure from the effects of lightning.

# EmPower IP Camera Series

## ◆ TM-O2TDPT-IZ45F25D-B ◆

### Technical Specification

#### Thermal

Detector Type		Vanadium oxide uncooled focal plane detector	
Effective Pixels		400 × 300	
Pixel Pitch		17 μm	
Spectral Range		8 μm–14 μm	
Thermal Sensitivity (NETD)		≤40 mK	
Focal Length		25 mm	
Field of View		Horizontal: 15.5°, vertical: 11.6°	
Aperture		F1.0	
	Detection	Recognition	Identification
DRI Distance Based on the reference: human (1.8 m × 0.5 m) vehicle (4 m × 1.4 m)	Vehicle: 1961 m (6433.73 ft) Human: 735 m (2411.42 ft)	Vehicle: 490 m (1607.61 ft) Human: 189 m (620.08 ft)	Vehicle: 245m (803.81 ft) Human: 95 m (311.68 ft)
Digital Detail Enhancement (DDE)		Yes	
Thermal Image Stabilization		Electronic Image Stabilization	
AGC		Auto; manual	
Noise Reduction		2D NR; 3D NR	
Image Flip		180°	
Color Palettes		18 color modes selectable such as Whitehot/Blackhot/Ironrow/Icefire.	
Temperature Measurement Range		Low temperature mode: -20°C (-4°F) to +150°C (302°F) High temperature mode: 0°C (34°F) to +550°C (1022°F)	
Temperature Accuracy		Max (±2°C, ±2%) Operating temperature: -20°C (-4°F) to +60°C (140°F)	
Temperature Mode		Spot: 12 Line: 12 Area: 12 Support 12 rules simultaneously	
Visible			
Image Sensor		1/2.8 inch CMOS	

Max. Resolution	1920 × 1080
Horizontal Definition	≥1083TVL
Visible Effective Pixels	2MP
Min. Illumination	Color: 0.005 Lux@F1.6 Black & white: (IR off) 0.00051 Lux@F1.6; (IR on) 0 Lux
AGC	Auto; manual
Noise Reduction	2D NR; 3D NR
S/N Ratio	≥ 55 dB
White Balance	Auto/manual/indoor/outdoor/tracking/ sodium lamp/street lamp/natural
Visible Image Stabilization	Electronic Image Stabilization
Electronic Shutter Speed	1/30000s–1s
BLC	Yes
WDR	Yes
HLC	Yes
Digital Zoom	16×
Day/Night	Auto (ICR); color/B/W
Image Flip	180°
Exposure Compensation	Yes
Iris	Auto
Focus Mode	Auto; semi-auto; manual
Focal Length	3.95 mm–177.7 mm
Zoom Speed	About 4s
Field of View	Horizontal: 65.66°–1.88°; Vertical: 29.4°–1.09°; Diagonal: 73.1°–2.13°
DORI Distance	D: 2345 m (7694 ft); O: 938 m (3077 ft); R: 469 m (1539 ft); I: 234 m (768 ft)
Close Focus Distance	1 m (39.37 inch)–10 m (393.7 inch)
Optical Zoom	45×
Aperture	F1.6–F4.95
Fill Light Type	IR light
IR On/Off control	Auto; manual
IR Distance	≥100 m
IR Field of View	45° for 2 IR lights, 15° for 2 IR lights
Audio and Video	
Video Compression	H.265; H.264; H.264H; H.264B; MJPEG

# EmPower IP Camera Series

## ◆TM-O2TDPT-IZ45F25D-B◆

Resolution	Thermal: Main stream: SXGA (1280 × 1024)/960P (1280 × 960)/720P (1280 × 720)/400 × 300, 1280 × 960 by default Sub stream: 640 × 512/640 × 480/400 × 300, 400 × 300 by default  Visual: Main stream: 1080P (1920 × 1080)/720P (1280 × 720)/704 × 576, 1920 × 1080 by default Sub stream: 704 × 576/352 × 288, 352 × 288 by default
Audio Compression	G.711a; G.711mu; AAC; PCM
Image Encoding Format	JPEG
PTZ	
Pan/Tilt Range	Pan: 0°–360° endless;
Manual Control Speed	Pan: 0.1°–200°/s; Tilt: 0.1°–120°/s
Preset Speed	Pan: 240°/s; Tilt: 200°/s
Preset	300
Idle Motion	Activate Preset/Scan/Tour/Pattern if there is no command in the specified period
Timed Task	Preset/Scan/Tour/Pattern
Image Freeze	Yes
PTZ Mode	5 Auto Scan, 8 Tour, 5 Pattern, Auto Pan
Speed Setup	Human-oriented focal length/ speed adaptation
Power Up Action	Auto restore to previous PTZ and lens status after power failure
Idle Motion	Activate Preset/ Scan/ Tour/ Pattern if there is no command in the specified period
General Function	
Two-way Talk	Yes
Network Protocol	HTTP; TCP; ARP; RTSP; RTP; UDP; RTCP; SMTP; FTP; DHCP; DNS; DDNS; PPPOE; IPv4/v6; SNMP; QoS; UPnP; NTP
Region of Interest (ROI)	Yes
Edge Storage	FTP; Micro SD card (256G, hot plug)
Interoperability	ONVIF; CGI; Dahua SDK
Browser	IE: IE8 and the later, and explorer with IE core Google: 42 and the earlier Firefox: 42 and the earlier Safari: 10 and the earlier
User/Host	20 channels at most (the total bandwidth 64M)
Security	Authorized username and password; attached MAC address; encrypted HTTPS; IEEE 802.1x; controlled network access
User Management	Support 20 users at most and users are classified as two groups-administrator group and user group.
Malfunction Detection	Network disconnection; IP addresses conflict; SD card error (status or storage space)

### Professional and Intelligent

Advanced Intelligent Functions	Fire detection & alarm, Cold/Hot spot tracking, Human/Vehicle classification, Auto Tracking
IVS Analytics	Tripwire/intrusion
Object Filter	Yes
Object Tracking	Single-scenario; multi-scenario; panoramic; manual; alarm-linked
Analog Video Output	1 channel of CVBS output with BNC port

### Port

Network	1 10M/100M Ethernet port (RJ-45)
Alarm Input	7 channels
Alarm Output	2 channels
Alarm Linkage	SD card recording/on-off output/siren and light/email/PTZ/snapshot
Alarm Event	Motion detection/privacy mask/audio detection/SD card abnormality/network abnormality/anti-burn warning
Audio Input	1 channel
Audio Output	1 channel
RS-485	1 channel

### Power

Power Supply	24V/5A±15% AC
Power Consumption	Basic: <17W (heater off) Maximum: <38W (heater on)

### Environment

Operating Temperature	-40°C to +60°C (-40°F to 140°F)
Operating Humidity	≤95%
Storage Temperature	-50°C to +70°C (-58°F to 176°F)
Self-Adaptive	Auto heating to protect the chip under the cold environment

### Physical Characteristics

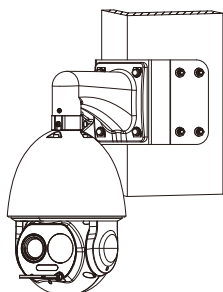
Protection Grade	IP66, anti-surge 6KV, anti-electrostatic 8KV (touched by objects), anti-electrostatic 15KV (air)
Dimensions	Φ240 mm × 357 mm (Φ9.45" × 14.06")
Packaging Dimensions	319.0 mm × 319.0 mm × 521.0 mm (12.56" × 12.56" × 20.16")
Net Weight	≤8 kg (17.64 lb)
Gross Weight	≤10 kg (22.05 lb)
Power Adaptor	Contained
Lens	Contained

### Certification

Certifications	CE; FCC
----------------	---------

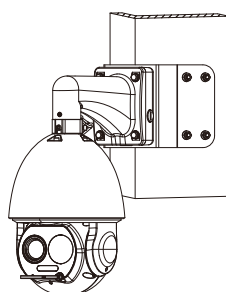
# EmPower IP Camera Series

## ◆TM-O2TDPT-IZ45F25D-B◆



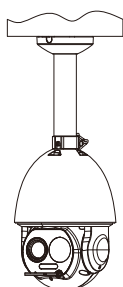
**PFB303W+PFA151**

Corner Mount



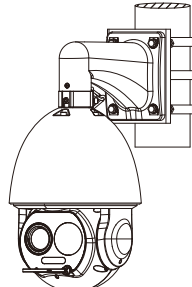
**PFA120+PFB303W+PFA151**

Corner Mount



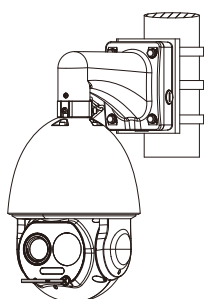
**PFB303W+PFA151**

Ceiling Mount



**PFB303W+PFA150**

Pole Mount



**PFB303W+PFA120+PFA150**

Pole Mount

## Accessories(Included)



**PFA111**  
Mount Adapter



**PFM310**  
Power Supply



**PFB303W**  
Wall Mount

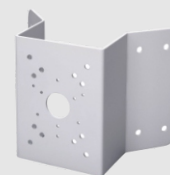
## Accessories(Optional)



**PFA120**  
Junction Box



**PFB300C**  
Ceiling Mount



**PFA151**  
Corner Mount



**PFA150**  
Pole Mount

## Dimensions(mm/inch)

