

# 2 MP IR License Plate Recognition Camera

10 mm to 50 mm Long-range Access Camera



- 1/1.8-in. 2 MP GS CMOS Sensor
- License Plate Recognition Distance up to 30 m (98.43 ft)
- Capture and Recognize License Plates from Vehicles Traveling up to 80 kph (49 mph)
- H.265 and H.264 Dual Codec
- 1080p at 30 fps Maximum Resolution
- 10 mm to 50 mm Motorized Vari-focal Lens
- Maximum IR LED Distance 25 m (82 ft)
- 12 VDC, 1 A Power Output
- IP67 Ingress Protection
- Mounting Bracket Included
- Five-year Warranty\*

## System Overview

The ITC237-PW6M-IRLZF1050-B is a license plate recognition camera with a recording resolution of 1920 x 1080 (1080p) at 30 frames per second with a 1/1.8-in Sony GS-CMOS sensor. The camera includes a 10 mm to 50 mm motorized vari-focal lens that lets the installer adjust the zoom angle of the picture, providing long-range video. The camera recognizes license plates of vehicles traveling up to 80 kph (49 mph). The camera can be mounted between 8 m and 30 m (26.25 ft and 98.43 ft) from where the vehicles will be traveling and captures and recognizes plates from a single lane. The ITC237-PW6M-IRLZF1050-B coupled with a Dahua NVR or DSS Video Management System offers a complete traffic management and parking solution.

## Functions

### License Plate Recognition

The License Plate Recognition camera automatically captures vehicle license plate images and recognizes license plate numbers and letters. During playback, an operator can perform a license plate search by Time and Date to view thumbnail images of all plates captured during the specified time period or can enter a license plate number to search for vehicles recorded with that plate. License plate recognition technology offers effective entrance/exit management, traffic surveillance, and parking lot monitoring.

### High Efficiency Video Coding (H.265)

The H.265 (ITU-T VCEG) video compression standard offers double the data compression ratio at the same level of video quality, or substantially improved video quality at the same bit rate, as compared to older video compression technologies. H.265 offers such impressive compression by expanding the pattern comparison and difference-coding, improving motion vector prediction and motion region merging, and incorporating an additional filtering step called sample-adaptive offset filtering.

### Cybersecurity

Dahua network cameras are equipped with a series of key cybersecurity technologies including: security authentication and authorization, access control, trusted protection, encrypted transmission, and encrypted storage. These technologies improve the camera's ability to prevent malicious access and to protect data.

### Environmental

With a temperature range of  $-30^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $+149^{\circ}\text{F}$ ), the camera is designed for extreme temperature environments. Subjected to rigorous dust and water immersion tests and certified to the IP67 Ingress Protection rating makes it suitable for demanding outdoor applications.

## Technical Specification

### Camera

Image Sensor	1/1.8-in. 2 MP GS CMOS
Effective Pixels	1920(H) x 1080(V)
Scanning System	Rolling Shutter
Electronic Shutter Speed	1/50 s to 1/10000 s
IR Distance	25.0 m (82.02 ft)
IR On/Off Control	Auto, On, Off
IR LEDs	Six (6), adjustable brightness

### Lens

Lens Type	Module
Focal Length	10 mm to 50 mm
Max. Aperture	F1.3
Angle of View	Horizontal: 46.60° to 10.62° Vertical: 40.60° to 9.30° Diagonal: 22.70° to 5.30°
Optical Zoom	5x
Iris	Auto Iris, F1.3 to F2.3
Focus Control	Motorized, Automatic
Focus Width Range	3.50 m (11. 48 ft), approximately one (1) lane

### Video

Video Encoding	H.265, H.264M, H.264H, H.264B, MJPEG
Image Encoding	JPEG
Streaming Capability	One (1) Stream
Resolution	1080p (1920 x 1080), 720p (1280 x 720)
Frame Rate	1080p at 30 fps
Bit Rate Control	CBR, VBR
Bit Rate	H.264B: 20 Kbps to 32768 Kbps H.264M: 20 Kbps to 32768 Kbps H.264H: 20 Kbps to 32768 Kbps H.265: 20 Kbps to 32768 Kbps MJPEG: 59 Kbps to 65536 Kbps
Day/Night	Auto (ICR), Color, B/W
Wide Dynamic Range	96 dB
White Balance	Auto, Outdoor, Manual, Part White Balance, Natural Street Lamp
Edge Enhancement	Supported
Exposure Mode	Full-Auto, Customized Auto, Customized
Gain Control	Automatic
Noise Reduction	3DNR

### Network

Ethernet	RJ-45 (100/1000 Base-T)
Protocol	IPv4/IPv6, HTTP, TCP/IP, UDP, NTP, DHCP, DNS
Interoperability	ONVIF, CGI
Streaming Method	Unicast, Multicast
Maximum User Access	20 Users
Edge Storage	Micro SD Card Slot, 64 GB maximum
Web Viewer	IE
Management Software	DSS
Cybersecurity	Video Encryption, Firmware Encryption, Configuration Encryption, Digest, WSSE, Account Lockout, Security Logs, IP/MAC Filtering, Generating and Importing X.509 Certification, Syslog, HTTPS, 802.1x, Trusted Boot, Trusted Execution, Trusted Upgrade

### Certifications

Safety	IEC 62368-1:2014 (Second Edition)
Electromagnetic Compatibility (EMC)	47 CFR FCC Part 15 Subpart B, Class B EN 55032:2015, Class B EN 61000-3-2:2014 EN 61000-3-3:2013 EN 55024:2010+A1:2015 EN 55035:2017 EN 50130-4:2011+A1:2014

### Interface

BNC	Reserved for future use	
I/O	Two Inputs, Optocoupler (switch quantity)	
RS485	One (1) Port	
Audio	Input	Reserved for future use
	Output	Reserved for future use
Alarm	Input	One (1) Channel, Optocoupler
	Output	Two (2) Relay Channels

### Electrical

Power Supply	12 VDC, 24 VAC, or PoE (IEEE802.3af Class 0)
Power Consumption	< 20 W
Power Output	12 VDC ± 10%, ≤ 1 A

### Environmental

Operating Temperature	-30° C to +65° C (-22° F to +149° F) 10% to 90% RH (non-condensing)
Storage Temperature	-30° C to +65° C (-22° F to +149° F)
Ingress Protection	IP67

### Construction

Casing	Metal and Plastic	
Dimensions	Camera	370.46 mm x 124.73 mm x 105.73 mm (14.58 in. x 4.91 in. x 4.16 in.)
	Camera with Bracket	515.21 mm x 124.73 mm x 105.73 mm (20.28 in. x 4.91 in. x 4.16 in.)
Net Weight	1.70 kg (3.75 lb)	
Gross Weight	2.50 kg (5.51 lb)	
Installation	Wall or Ceiling with Included Bracket	

Performance

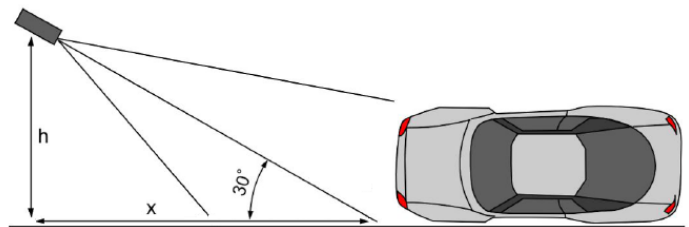
Trigger Mode	Video Detection I/O Coil Video Detection and I/O Coil
Shutter	Single
Image Tampering	Video/Picture Watermark
Alarm Event	No Storage Card Inadequate Storage Space Storage Card Error Network Disconnect IP Address Conflict Illegal Access
Security Mode	Authorized Username and Password MAC Address Binding HTTPS Encryption IEEE 802.1x Network Access Control
On-screen Display Overlay	Time Plate (number and color)
Automatic Network Replenishment (ANR)	Support
Intelligence	
Vehicle Registration	Captures license plate images and extracts the numbers and letters
Intelligent Tracking	Displays vehicle plate and vehicle path

Installation Distances

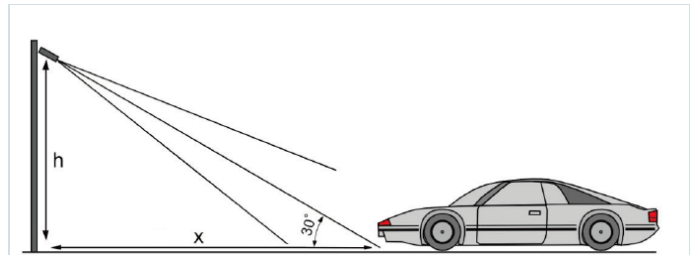
Camera Height (h)	Snapshot Distance (x)	Lane Width	Vehicle Speed, max
Side Installation			
1.2 m (6.56 ft)	4 m to 6 m (13.12 ft ± 19.69 ft)	3.5 m (11.48 ft)	80 kph (49 mph)
Distance to License Plate	Minimum/Maximum: 8 m to 30 m (26.25 ft to 98.43 ft) Optimal: 4 m to 6 m (13.12 ft to 19.69 ft)		
Horizontal/Vertical Angles	< 30°		
Inclination Angle	< 5°		

Camera Placement

Horizontal Direction



Vertical Direction



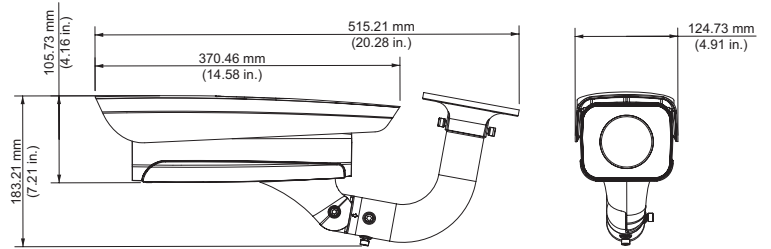
In both the vertical and the horizontal placement, the angle between the camera lens and the farther lane border must be less than 30°. Ensure the snapshot distance ( $x$ ) of the camera is greater than 1.7 times the height ( $h$ ) of the camera ( $x \geq 1.7 \times h$ ) for optimal license plate images.

**Ordering Information**

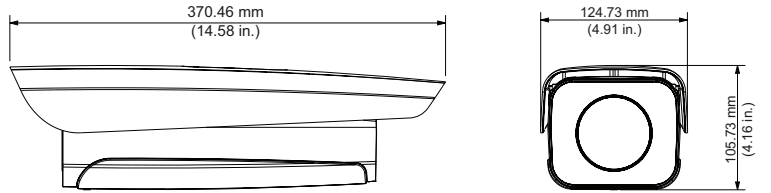
Type	Part Number	Description
2 MP LPR Camera	ITC237-PW6M-IRLZF1050-B	2 MP IR License Plate Recognition Camera, Motorized Vari-focal Lens, with mounting bracket
Accessories, Optional	DH-PFA143	Outdoor Surveillance Junction Box
	PFA150	Pole Mount

**Dimensions (mm/in.)**

Camera with Bracket



Camera Only



**Installation**

