License Plate Recognition | ITC237-PW6M-IRLZF1050-B

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-inSony 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.

Environmental
With a temperature range of –30 °C to +65 °C (–22 °F to +149 °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.

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.

*Warranty applies to products sold through an authorized Dahua Dealer.
### 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

**Certifications**
- **Safety**: IEC 62368-1:2014 (Second Edition)
- **Electromagnetic Compatibility (EMC)**:
  - 47 CFR FCC Part 15 SubpartB, Class B
  - EN 55032:2015, Class B
  - EN61000-3-2:2014
  - EN 61000-3-3:2013
  - EN55035:2017

**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)
- **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
License Plate Recognition  |  ITC237-PW6M-IRLF1050-B

### Performance

| Trigger Mode | Video Detection  
| I/O Coil  
| Video Detection and I/O Coil  |
| Shutter | Single  |
| Image Tampering | Video/Picture Watermark  |
| Security Mode | Authorized Username and Password  
| MAC Address Binding  
| HTTPS Encryption  
| IEEE 802.1x  
| Network Access Control  |
| Alarm Event | No Storage Card  
| Inadequate Storage Space  
| Storage Card Error  
| Network Disconnect  
| IP Address Conflict  
| Illegal Access  |
| 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

![Horizontal Direction Diagram](image)

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 ≥ 1.7 x h) for optimal license plate images.
## Ordering Information

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<th>Part Number</th>
<th>Description</th>
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</thead>
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<td>2 MP LRC Camera</td>
<td>ITC237-PW6M-IRLZF1050-B</td>
<td>2 MP IR License Plate Recognition Camera, Motorized Vari-focal Lens, with mounting bracket</td>
</tr>
</tbody>
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## Dimensions (mm/in.)

**Camera with Bracket**

![Camera with Bracket Diagram]

**Camera Only**

![Camera Only Diagram]

**Installation**

![Installation Diagram]