**alhua**
TECHNOLOGY

# DHI-ITC431-RW1F-L

## 4 MP AI Enforcement Camera

- 1/1.8" 4 MP starlight CMOS sensor.
- Video compression standards: H.265, H.264M, H.264H and MJPEG.
- Maximum resolution: 2688 × 1520@25 fps.
- Motorized vari-focal lens: 10 mm-50 mm.
- Max ANPR distance: 30 m.
- Protection: IP67, IK10 rated.
- Under recommended installation and lighting conditions:

  Capture rate > 99%

  LPR accuracy > 98%

The DHI-ITC431-RW1F-L is a powerful series that features license plate recognition, and has a recording resolution of 4 MP at 25 frames per second with a 1/1.8'' starlight CMOS sensor.

## System Overview

Highly intuitive, the 4 MP AI Enforcement Camera employs its 10 mm to 50 mm motorized vari-focal lens to perform long-range video monitoring. Coming in a rugged, IP67 rated housing, the camera offers LED illumination, which makes it suitable for most harsh environments, and for locations with poor lighting.

## Functions

### Intelligent traffic monitoring
Captures traffic violations, records passing vehicles, collects data on traffic flow, and performs event detection.

### High-level protection
Built to be reliable and durable, this camera is IP67 and IK10 rated.

### Multiple types of power supplies
Supports PoE and 12–36 VDC power supplies, meeting the various power supply needs of today's customers.

## Scene

This camera is ideal for detecting traffic violations (line crossing, speeding), recording vehicles that pass, traffic data collection, and event detection (congestion, road parking).

## Technical Specification

### Camera

| | |
|---|---|
| Image Sensor | 1/1.8'' CMOS |
| Image Resolution | 2688 (H) × 1520 (V) (OSD black background is not calculated in the pixels) |
| Shutter Mode | Single shutter |
| Electronic Shutter Speed | Auto/Manual 1/50 s–1/100,000 s |
| Noise Reduction | 3D NR |
| S/N Ratio | > 56 dB |
| WDR | 140 dB |
| Min. Illumination | 0.0001lux |

### Illuminator

| | |
|---|---|
| Illuminator Number | 4 illuminators (3500 K LED illuminator, brightness adjustable) |
| Illumination Distance | 23 m–30 m (75.46 ft–98.43 ft) (adjustable brightness) |
| Lane Coverage | 1–2 lanes |

### Lens

| | |
|---|---|
| Lens | Motorized vari-focal |
| Focal Length | 10 mm–50 mm |
| Max. Aperture | Max. F1.33 |
| Field of View | Horizontal: 9.4°–40.8° Vertical: 5.4°–22.9° Diagonal: 10.7°–46.9° |
| Exposure Mode | Auto; Manual (Select from shutter values or customize shutter range) |

# DHI-ITC431-RW1F-L

## Function

| | |
|---|---|
| Trigger Mode | Video trigger/Radar trigger |
| Speed Detection Range | 0 km/h–180 km/h |
| OSD Overlay | Time, address, device SN, lane No., plate number, plate color, vehicle logo, vehicle type, vehicle color, vehicle size, vehicle speed, country/region, event (violation name), and motorcycle attributes (type, number of people, and helmet) |
| Alarm Event | Storage full; storage error; external alarm; no storage card; license plate blocklist; illegal access; network disconnection; IP conflict |
| Automatic Network Replenishment (ANR) | Platform and FTP (TF card is required) |
| Auto Registration | Yes |

## Intelligence

| | |
|---|---|
| Target Detection | Motor vehicle; motorcycle |
| ANPR | Adopts developed algorithms to recognize license plate numbers and letters |
| Vehicle Type Recognition | Vehicle head: SUV, Large bus, sedan, light truck, pickup, heavy truck, medium truck, van, medium bus, MPV Vehicle tail: SUV, large bus, sedan, light truck, pickup, heavy truck, medium truck, van |
| Vehicle Color Recognition | White, pink, black, red, yellow, gray, blue, green, dark orange, purple, brown, and silver gray |
| Accuracy (Under recommended installation and lighting conditions) | Capture rate > 99%; LPR accuracy > 98% |
| Vehicle Brand/Logo Recognition | Acura; Alfaromeo; Ashokleyland; Astonmartin; Audi; Baic; Bently; Benz; BMW; Buick; BYD; Cadillac; Chery; Chevrolet; Chrysler; Citroen; Dacia; Daihatsu; Datsun; Dodge; DS; Ferrari; Fiat; Force; Ford; Foton; Geely; GMC; Greatwall; Hino; Honda; Hyundai; Infiniti; Isuzu; Iveco; Jac; Jaguar; Jeep; Kia; Kinglong; Land; Lexus; Lifan; Lincoln; Mahindra; MAN; Maserati; Mazda; Mercury; MG; Mini; Mitsubishi; Nissan; Opel; Peugeot; Porsche; Renault; Rollsroyce; Saab; Scania; Seat; Skoda; Smart; Subaru; Suzuki; Tata; Tesla; Toyota; UD; Volkswagen; Volvo |
| Motor Vehicle Violation Capture | Speeding; driving slow; wrong-way driving; illegal lane change |
| Motorcycle Violation Capture | Captures traffic violations including carrying passenger, not wearing helmet, and wrong-way driving |
| Traffic Flow Detection | Statistics on vehicle flow, average speed, vehicle type, lane occupancy, average time headway, average queue length, and road status |
| Traffic Event | Motor vehicle illegal stopping on the roadway; traffic congestion |

## Video

| | |
|---|---|
| Video Compression | H.265; H.264M; H.264H; MJPEG |
| Video Resolution | 4M (2688 × 1520); 1080p (1920 × 1080); UXGA (1600 × 1200); 720p (1280 × 720); D1 (704 × 576); CIF (352 × 288) |
| Video Frame Rate | Max. 25 fps; main stream (2688 × 1520@25 fps), sub stream (1600 × 1200@25 fps) |
| Video Bit Rate | H.264: 32 kbps–32767 kbps H.265: 32 kbps–32767 kbps MJPEG: 512 kbps–32767 kbps |
| Bit Rate Control | CBR; VBR |
| White Balance | Auto; Manual; Outdoor; Natural; Street Lamp; Partial white balance |
| Edge Enhancement | Yes |

| | |
|---|---|
| HLC | Yes |
| BLC | Yes |
| Bad Pixel Correction | Yes |
| Gain Range | 0–100 |

## Image

| | |
|---|---|
| Composite Image | Supports combining up to 3 source images, and 1 close-up image into a composite image |
| Image Resolution | 2688 (H) × 1520 (V) (OSD black background is not calculated in the pixels) |
| Image Encoding Format | JPEG |
| Image Tampering Prevention | Verifies watermarks in videos and images |

## Network

| | |
|---|---|
| Network Port | 1 × RJ-45 Ethernet port, 10/100/1000 M network transmission |
| SDK and API | Yes |
| Security | Authorized username and password, MAC address binding, HTTPS encryption, and network access control |
| Protocol | IPv4; IPv6; HTTP; TCP; IP; UDP; NTP; DHCP |
| Interoperability | ONVIF (Profile S/Profile G/Profile T) |
| Browser | Microsoft Edge IE: IE9–IE11 Chrome: Chrome 41 and earlier Firefox: Firefox 49 and earlier For Win 10 users, run the browser as administrator |
| Positioning | GPS |
| Time Synchronization | NTP; GPS |

## Port

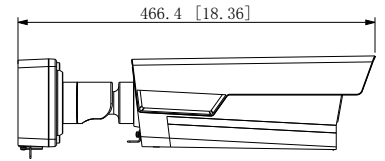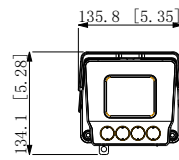| | |
|---|---|
| Storage | 1, supports maximum 256 GB TF card local storage |
| RS-485 | 2, connects to devices such as radars |
| RS-232 | 2, con is used for serial debugging and R T G is for connecting to radars |
| Audio Input | 1 channel |
| Audio output | 1 channel |
| Alarm Input | 3 channels |
| Alarm Output | 2 channels. 2 for relay |

## General

| | |
|---|---|
| Power Supply | 12–36 VDC, PoE |
| Power Consumption | ≤ 13 W |
| Operating Temperature | −40 °C to +65 °C (−40 °F to +149 °F) |
| Storage Temperature | −40 °C to +65 °C (−40 °F to +149 °F) |
| Operating Humidity | 10%-90% (RH) |
| Storage Humidity | 0%-90% (RH) |
| Protection | IP67, IK10 |
| Certifications | CE: E234884-A6183-IT-1/4789603556-1 FCC: 4789603556-2 |

| | |
|---|---|
| Product Dimensions | 466.4 mm × 135.8 mm × 134.1 mm (18.36'' × 5.35'' × 5.28'') (L × W × H) |
| Net Weight | 3.9 kg (8.59 lb) |
| Gross Weight | 4.8 kg (10.58 lb) |
| Installation | Installs with universal mounting brackets, or as a side-mount with mounting brackets. |

## Dimensions (mm[inch])



135.8 [5.35]

466.4 [18.36]

134.1 [5.28]

## Ordering Information

| Type | Model | Description |
|---|---|---|
| 4 MP Camera | DHI-ITC431-RW1F-L | 4 MP AI enforcement camera |
| Accessories (Optional) | 8018 | 3-dimensional universal mounting bracket (purchase separately) |
| | PFA150 | Mounting bracket (purchase separately) |

## Accessories

Optional:



8018
3-dimensional universal
mounting bracket
(purchase separately)



PFA150
Mounting
bracket
(purchase separately)