

# DHI-ITC952-AU3F-IRL8ZF1640

9MP All-in-one IR Al Enforcement Camera



### **System Overview**

With its high-performance AI processor, 9MP All-in-one IR AI Enforcement Camera delivers excellent quality images even in the toughest weather conditions. For monitoring, it uses deep learning algorithms and traffic-specific, GS-CMOS image sensors with a wide dynamic range and high frame rate. The IR illuminators supplement light when the camera captures license plates without using the external flashing light or strobe, significantly reducing light pollution.

### **Functions**

#### Reduced light pollution

The IR illuminators supplement light when the camera captures license plates without using the external flashing light or strobe, significantly reducing light pollution.

#### Ultra-high frame rate

Uses traffic-specific, high-performance GS-CMOS image sensors with a wide dynamic range, high frame rate, and high signal-to-noise ratio, displaying realistic video images in the day and night.

### Video metadata

Deep learning algorithms and a high-performance AI processor allow the camera to detect and extract detailed information on motor vehicles, providing a reliable data source that can be used in making effective decisions.

#### Applicable to various road scenes

Ideal for scenarios where license plate recognition is needed, the camera is capable of capturing more than ten different types of traffic violations, and supports traffic information collection and event detection. It is suitable for road scenarios.

### Multi-dimensional data sensing

Using GPS positioning and behavior detection by electronic gyroscope, the camera realizes multi-dimensional data sensing.

- · GS-CMOS image sensor.
- 4096 × 2824@50 fps.
- · Video compression standards: H.265, H.264M, H.264H and MJPEG.
- · Integrated design, IP66 rated.
- 850 nm IR illumination.

Key feature (under recommended installation and light condition):

- · Lane coverage : 1-3 lanes
- · Capture speed range: 5~250 KM/h
- Capture rate: >99%LPR accuracy: >98%

#### Scene

The camera is ideal for use in intelligent traffic management and for smart city businesses. It is capable of detecting traffic violations, capturing license plates, generating passing vehicle records, collecting traffic data, and detecting events.

### **Technical Specification**

### Camera

| Image Sensor             | 1/1" GS-CMOS  |
|--------------------------|---|
| Shutter Mode             | Single shutter; Double shutter; Three shutters  |
| Electronic Shutter Speed | 50 Hz: 1/50 s-1/100,000 s (auto; manual)<br>60 Hz: 1/60 s-1/100,000 s (auto; manual)  |
| Noise Reduction          | 3D NR; 2D NR  |
| S/N                      | 48 dB   |
| WDR                      | 90 dB   |
| Minimum intensity        | 0.001 lux   |
| Day/Night                | Supports ICR auto switch: IR cut-off filter (IRCF) with the polarizing filter is used during the daytime, and switches to the IR transmitting filter at night |

#### Illuminator

| Illuminator Number    | 8                               |
|-----------------------|---------------------------------|
| IR                    | 850 nm                          |
| Illumination Distance | 23–30 m (brightness adjustable) |
| IR Covered lane       | 3 lanes                         |

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| Lens   |   | Video Resolution           | 4096 × 2824; QFHD (3840 × 2160); 1080p (1920 × 1080);<br>UXGA (1600 × 1200); 720p (1280 × 720)   |
|--|---|----------------------------|--|
| Lens Type  | Motorized vari-focal  |                            | 50 Hz: Maximum 50 fps; default main stream (4096 ×   |
| Focal Length   | 16 mm-40 mm   | Video Frame Rate           | 2824@25 fps), sub stream (1600 × 1200@25 fps)<br>60 Hz: Maximum 30 fps; default main stream (4096 ×<br>2824@25 fps), sub stream (1600 × 1200@25 fps) |
| Max. Aperture  | F1.5  |                            | H.264: 32 kbps—32768 kbps  |
| Aperture Type  | P iris  | Video Bit Rate             | H.265: 32 kbps–32768 kbps<br>MJPEG: 512 kbps–32768 kbps  |
| Field of View  | Horizontal: 21.2°–50.1°<br>Vertical: 14.7°–34.4°<br>Diagonal: 25.3°–60.3°   | Bit Rate Control           | CBR; VBR   |
| Function   |   | White Balance              | Auto/night/custom color temperature  |
| Trigger Mode   | Video detection; radar  | Edge Enhancement           | Yes  |
| OSD Overlay  | Time, address, lane No., plate, plate color, and more.  | HLC                        | Yes  |
| O3D Overlay  | Storage full, storage error, external alarm, no storage   | BLC                        | Yes  |
| Alarm Event  | card, license plate blocklist, illegal access, network disconnection, and IP conflict   | Bad Pixel Correction       | Yes  |
| Automatic Network<br>Replenishment (ANR)   | Platform and FTP (TF card is required)  | Gain Scope                 | 0–100  |
| Auto Registration  | Yes   | image                      |  |
| -  |   | Composite Image            | Supports composing 1, 2, 3, or 4 images  |
| Intelligence Target Detection  | Motor vehicle; motorcycle   | Image Resolution           | 4096 (H) $\times$ 2824 (V) (OSD black background is not calculated in the pixels)  |
| -  | Detects the driver and front-seat passenger of motor  | Image Encoding Format      | JPEG   |
| Face Detection   | vehicles, and motorcycle drivers; extracts face images  Adopts Dahua developed algorithms to recognize license  | Image Tampering Prevention | Watermark and verification are available for videos and images   |
| ANPR   | plate numbers and letters   | Network                    |  |
|  | ·   | Network Port               | 2 RJ-45 Ethernet ports, 10/100/1000 M network transmission   |
|  | Vehicle tail: SUV, large bus, sedan, light truck, pickup, medium truck, van, and heavy truck  | SDK and API                | Yes  |
| Vehicle Color Recognition  | White, pink, black, red, yellow, gray, blue, green, orange, purple, brown, and silver gray (color recognition is not supported during the nighttime)                      | Security                   | Authorized username and password, MAC address binding, HTTPS encryption, and network access control  |
|  | Vehicle head mode: Acura, Alfaromeo, Ashokleyland,  | Protocol                   | IPv4; IPv6; HTTP; TCP; IP; UDP; NTP; DHCP  |
|  | Astonmartin, Audi, Baic, Bently, Benz, BMW, Buick,<br>BYD, Cadillac, Chery, Chevrolet, Chrysler, Citroen, Dacia,  | Interoperability           | ONVIF (Profile S/Profile G/Profile T)  |
|  | Daihatsu, Datsun, Dodge, DS, Ferrari, Fiat, Force, Ford, Foton, Geely, GMC, Greatwall, Hino, Honda, Hyundai,  |                            | IE: IE 9-IE 11<br>Chrome: Chrome 41 and earlier  |
| Vehicle logo  Infiniti, Isuzu, Iveco, Jac, Jaguan Land, Lexus, Lifan, Lincoln, Mal Mazda, Mercury, MG, Mini, Mi Peugeot, Porsche, Renault, Rol Skoda, Smart, Subaru, Suzuki, | Infiniti, Isuzu, Iveco, Jac, Jaguar, Jeep, Kia, Kinglong,<br>Land, Lexus, Lifan, Lincoln, Mahindra, MAN, Maserati,<br>Mazda, Mercury, MG, Mini, Mitsubishi, Nissan, Opel, | Browser                    | Firefox: Firefox 49 and earlier<br>Win10 needs to open the browser with administrator<br>rights  |
|  | Skoda, Smart, Subaru, Suzuki, Tata, Tesla, Toyota, UD,<br>Volkswagen, Volvo   | Positioning                | GPS  |
|  | ANPR mode: Wrong-way driving, speeding, driving slow,   | Time Synchronization       | NTP; GPS   |
| crossing the white sol line, illegal lane chang  Motor Vehicle Violation  E-Police mode: Runnin crossing the white sol   | crossing the white solid line, crossing the yellow solid line, illegal lane change  | Port                       |  |
|  | E-Police mode: Running a red light, wrong-way driving, crossing the white solid line, crossing the yellow solid   | Storage                    | 1, supports maximum 256 GB TF card local storage   |
| Snapshot   | line, disobeying the lane direction sign, disobeying the direction arrow, illegal left turn, illegal right turn, illegal  | Iris Control               | 1, connects to DC iris or P iris   |
| U-turn (n  | -turn (not supported by side-mounted cameras), and cossing the stop line  | Focus Control              | 1, connects to motorized vari-focal lens   |
| Motorcycle vehicle<br>Violation Capture  | Captures traffic violations including carrying passenger, not wearing helmet, and wrong-way driving   | Frequency Source Sync      | 1, supports synchronizing the camera with the mains electricity  |
| Traffic Flow Detection   | Generates statistics on vehicle flow, queue length, average speed, lane occupancy, and more.  | Peripheral Light           | 7, optocoupler signal output (can be configured as flashing light or LED strobe sync output port, frequency adjustable)                              |
| Traffic Event  | Motor vehicle illegal stopping on the roadway, traffic congestion   | USB                        | 2 USB 2.0 ports  |
| Video  |   | RS-485                     | 2, connects to devices such as signal detector, strobe, continuous light, and all-in-one illuminator   |
| V. 1 . 0   |   |                            |  |

Video Compression

H.265; H.264M; H.264H; MJPEG

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| RS-232       | 4 (1 is used for serial debugging and 3 for connecting to radars) |  |
|--------------|---|--|
| 1/0          | 4,same functions as ALARM IN port                                 |  |
| Audio Input  | 1, 3.5 mm (0.14") jack  |  |
| Audio output | 1, 3.5 mm (0.14") jack  |  |
| Alarm Input  | 4,same functions as I/O port                                      |  |
| Alarm Output | 2 (AO1 is for relay output and AO2 for optocoupler output)        |  |
| Power Output | 12 VDC ±10% voltage output, ≤ 1.5 A current output                |  |



| Power Supply                       | 100–240 VAC, 50 Hz/60 Hz   |  |
|------------------------------------|--|--|
| Power Consumption                  | ≤ 20 W   |  |
| Operating Temperature              | -40 °C to +65 °C (-40 °F to +149 °F)   |  |
| Storage Temperature                | -40 °C to +70 °C (-40 °F to +154 °F)   |  |
| Operating Humidity                 | 10%–90%  |  |
| Storage Humidity                   | 10%–90%  |  |
| Protection                         | IP66   |  |
|                                    |  |  |
| Certifications                     | CE: 4789630630-1, FCC: 4789630630-2  |  |
| Certifications  Product Dimensions | CE: 4789630630-1, FCC: 4789630630-2<br>554.0 mm × 204.2 mm × 209.6 mm (21.81" × 8.04" × 8.25") (L × W × H) |  |
|                                    | 554.0 mm × 204.2 mm × 209.6 mm (21.81" × 8.04" ×   |  |
| Product Dimensions                 | 554.0 mm × 204.2 mm × 209.6 mm (21.81" × 8.04" × 8.25") (L × W × H)  |  |

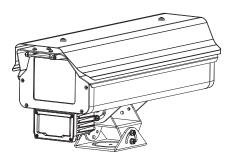
| Ordering Information        |                                |  |  |  |
|-----------------------------|--------------------------------|--|--|--|
| Туре                        | Model                          | Description  |  |  |
| AI<br>Enforcement<br>Camera | DHI-ITC952-AU3F-<br>IRL8ZF1640 | 9MP all-in-one IR AI enforcement camera                        |  |  |
| Accessories<br>(Optional)   | 8018                           | 3-dimensional universal mounting bracket (purchase separately) |  |  |

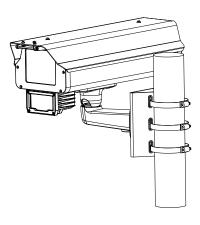
### Accessories

### Optional:



8018
3-dimensional universal mounting bracket (purchase separately)





### Dimensions (mm [inch])

