# iDS-2CD7A46G0/P-IZHS(Y)
# 4 MP ANPR IR Varifocal Bullet Network Camera

**DarkFighter**

**DeepinView** series

Hikvision has been dedicated to develop products with security since established. Hikvision always follows security by design principle and has adopted many methods of security technologies into our product development lifecycle, including terminal security, data security, application security, network security, and privacy protection. In the meantime, the security technologies used by Hikvision are all in compliance with local applicable laws and safety regulations. These security measures could enhance product's cyber security protection capability and protect your devices as well as your data from malicious cyber attacks.

- High quality imaging with 4 MP resolution

- Excellent low-light performance via DarkFighter technology

- Clear imaging against strong back light due to 140 dB WDR technology

- License Plate Recognition

- Efficient H.265+ compression technology to save bandwidth and storage

- 5 streams to meet a wide variety of applications

- Water and dust resistant (IP67) and vandal proof (IK10)

## ▪ **Function**

Perimeter Protection
With embedded deep learning based target detection and classification algorithms, the camera carries out the duty of perimeter protection, monitoring the actions of line crossing, intrusion, region entrance, and region exiting. The algorithms greatly filter out the mistaken alarm caused by the interference of leafs, lights, animal, flag, etc.

Road Traffic and Vehicle Detection
With embedded deep learning based license plate capture and recognition algorithms, the camera alone can achieve plate capture and recognition. The algorithm enjoys the high recognition accuracy of common plates and complex-structured plates, which is a great step forward comparing to traditional algorithms. Blocklist and allowlist are available for plate categorization and separate alarm triggering.

Parking Management
With embedded deep learning algorithms, the camera can achieve parking space status detection and vacant parking space alarm for parking management. Both distant view mode and close view mode are supported. For the close view mode, the camera can also achieve license plate recognition. Blocklist and allowlist are available for plate categorization and separate alarm triggering.

## ▪ Specification

| Camera | |
|---|---|
| Image Sensor | 1/1.8" Progressive Scan CMOS |
| Max. Resolution | 2688 × 1520 |
| Min. Illumination | Color: 0.0005 Lux @ (F1.2, AGC ON);<br>B/W: 0.0001 Lux @ (F1.2, AGC ON), 0 Lux with IR |
| Shutter Time | 1 s to 1/100,000 s |
| Day ＆ Night | IR cut filter<br>Blue glass module to reduce ghost phenomenon |
| **Lens** | |
| Focal Length ＆ FOV | 2.8 to 12 mm, horizontal FOV: 114.5° to 41.8°, vertical FOV: 59.3° to 23.6°, diagonal FOV: 141.1° to 48°<br>8 to 32 mm, horizontal FOV: 42.5° to 15.1°, vertical FOV: 23.3° to 8.64°, diagonal FOV: 49.6° to 17.3° |
| Focus | Auto,Semi-auto,Manual |
| Iris Type | P-iris |
| Aperture | 2.8 to 12 mm: F1.2 to F2.5<br>8 to 32 mm: F1.7 to F1.73 |
| **DORI** | |
| DORI | Wide:<br>2.8 to 12 mm: D (Detect): 60 m, O (Observe): 23.8 m, R (Recognize): 12 m, I (Identify): 6 m<br>8 to 32 mm: D (Detect): 150.3 m, O (Observe): 59.7 m, R (Recognize): 30.1 m, I (Identify): 15 m<br>Tele:<br>2.8 to 12 mm: D (Detect): 149 m, O (Observe): 59.1 m, R (Recognize): 29.8 m, I (Identify): 14.9 m<br>8 to 32 mm: D (Detect): 400 m, O (Observe): 158.7 m, R (Recognize): 80 m, I (Identify): 40 m |
| **Illuminator** | |
| Supplement Light Type | IR |
| Supplement Light Range | 2.8 to 12 mm: 50 m<br>8 to 32 mm: 100 m |
| Smart Supplement Light | Yes |
| IR Wavelength | 850 nm |
| **Video** | |
| Main Stream | 50 Hz:<br>25 fps (2688 × 1520, 2560 × 1440, 1920 × 1080, 1280 × 720)<br>50 fps (2560 × 1440, 1920 × 1080, 1280 × 720)<br>60 Hz:<br>30 fps (2688 × 1520, 2560 × 1440, 1920 × 1080, 1280 × 720)<br>60 fps (2560 × 1440, 1920 × 1080, 1280 × 720) |
| Sub-Stream | 50 Hz: 25 fps (704 × 576, 640 × 480)<br>60 Hz: 30 fps (704 × 480, 640 × 480) |
| Third Stream | 50 Hz: 25 fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480)<br>60 Hz: 30 fps (1920 × 1080, 1280 × 720, 704 × 480, 640 × 480) |

| Fourth Stream | 50 Hz: 25 fps (704 × 576, 640 × 480) |
| | 60 Hz: 30 fps (704 × 480, 640 × 480) |
| Fifth Stream | 50 Hz: 25 fps (704 × 576, 640 × 480) |
| | 60 Hz: 30 fps (704 × 480, 640 × 480) |
| Video Compression | Main stream: H.265+/H.265/H.264+/H.264, |
| | Sub-stream: H.265/H.264/MJPEG, |
| | Third stream: H.265/H.264, |
| | Fourth stream: H.265/H.264/MJPEG, |
| | Fifth stream: H.265/H.264/MJPEG |
| Video Bit Rate | 32 Kbps to 8 Mbps |
| H.264 Type | Baseline Profile,Main Profile,High Profile |
| H.265 Type | Main Profile |
| Bit Rate Control | CBR,VBR |
| Scalable Video Coding (SVC) | H.264 and H.265 encoding |
| Region of Interest (ROI) | 4 fixed regions for each stream |
| Target Cropping | Yes |
| e-PTZ | Support Patrol and Auto Tracking settings |
| **Audio** | |
| Audio Type | Mono sound |
| Audio Compression | G.711/G.722.1/G.726/MP2L2/PCM/MP3/AAC-LC |
| Audio Bit Rate | 64 Kbps (G.711ulaw/G.711alaw)/16 Kbps (G.722.1)/16 Kbps (G.726)/32 to 192 Kbps (MP2L2)/8 to 320 Kbps (MP3)/16 to 64 Kbps (AAC-LC) |
| Audio Sampling Rate | 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz |
| Environment Noise Filtering | Yes |
| **Network** | |
| Protocols | TCP/IP, ICMP, HTTP, HTTPS, FTP, SFTP, SRTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP,UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP, Bonjour, SSL/TLS, WebSocket, WebSockets |
| Simultaneous Live View | Up to 20 channels |
| API | Open Network Video Interface (Profile S, Profile G, Profile T, Profile M),ISAPI,SDK,ISUP |
| User/Host | Up to 32 users |
| | 3 user levels: administrator, operator, and user |
| Security | Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for Open Network Video Interface, RTP/RTSP OVER HTTPS, Control Timeout Settings, Security Audit Log, TLS 1.2, TLS 1.3, TPM 2.0 (FIPS 140-2 level 2), AES128/256 |
| Network Storage | NAS (NFS, SMB/CIFS),Auto Network Replenishment (ANR), |
| | Together with high-end Hikvision memory card, memory card encryption and health detection are supported. |
| Client | iVMS-4200,Hik-Connect,Hik-Central |
| Web Browser | Plug-in required live view: IE 10, IE 11, |
| | Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Edge 89+, Safari 11+, |
| | Local service: Chrome 57.0+, Firefox 52.0+, Edge 89+ |
| **Image** | |
| Image Parameters Switch | Yes |

| Image Settings | Rotate mode,saturation,brightness,contrast,sharpness,gain,white balance,adjustable by client software or web browser |
|---|---|
| Day/Night Switch | Day,Night,Auto,Schedule,Alarm Trigger,Video Trigger |
| Wide Dynamic Range (WDR) | 140 dB |
| SNR | ≥ 52 dB |
| Image Enhancement | BLC,HLC,3D DNR,Distortion Correction,Defog |
| Picture Overlay | LOGO picture can be overlaid on video with 128 × 128 24 bit bmp format. |
| Image Stabilization | EIS |
| Privacy Mask | 8 programmable polygon privacy masks |
| **Interface** | |
| Video Output | 1 Vp-p Composite Output (75 Ω/CVBS) (Only for debugging) |
| Ethernet Interface | 1 RJ45 10 M/100 M/1000 M self-adaptive Ethernet port |
| On-Board Storage | Built-in memory card slot, support microSD/microSDHC/microSDXC card, up to 1 TB |
| Audio | With -Y: 1 input (line in), 1 output (line out), 3.5 mm connector |
| Alarm | 2 inputs, 2 outputs (max. 24 VDC, 1 A) |
| RS-485 | With -Y: 1 RS-485 (half duplex, HIKVISION, Pelco-P, Pelco-D, self-adaptive) |
| Reset Key | Yes |
| Power Output | With -Y: 12 VDC, max. 100 mA |
| Wiegand | -Y: 1 Wiegand (CardID 26bit, SHA-1 26bit, Hik 34bit, NEWG 72bit) |
| **Event** | |
| Basic Event | Motion detection (support alarm triggering by specified target types (human and vehicle)),video tampering alarm,exception (network disconnected, IP address conflict, illegal login, abnormal restart, HDD full, HDD error),video quality diagnosis,vibration detection |
| Smart Event | scene change detection,audio exception detection,defocus detection |
| Linkage | Upload to FTP/NAS/memory card,notify surveillance center,send email,trigger alarm output,trigger recording,trigger capture,audible warning |
| **Deep Learning Function** | |
| Perimeter Protection | Line crossing, intrusion, region entrance, region exiting<br>Support alarm triggering by specified target types (human and vehicle)<br>Support combined event alarm triggering |

| | |
|---|---|
| Road Traffic and Vehicle Detection | Smart Function:<br>Support license plate recognition of vehicles and motorcycles (only in checkpoint scenario)<br>Support vehicle attribute detection, including vehicle type, color, brand, driving direction, etc.<br>Support vehicle and non-vehicle counting<br>Blocklist and allowlist: up to 10,000 records<br>LPR Countries/Regions:<br>4 areas (Europe, Middle East, Asia-Pacific, Africa) and more than 124 countries/regions<br>Accuracy (Under recommended installation and lighting conditions):<br>License plate recognition rate ≥98%<br>Capture rate ≥99%<br>Driving direction accuracy rate ≥98%<br>Vehicle Capture Speed:<br>Front installation in checkpoint scenario: up to 120 km/h<br>Side installation: up to 80 km/h<br>Capture Mode: License Plate and Vehicle Mode, Vehicle Priority Mode |
| Metadata | Intrusion detection,line crossing detection,region entrance detection,region exiting detection,road traffic |
| Parking Management | Support distant view mode and close view mode<br>Distant view mode: support status detection on up to 40 parking spaces, parking duration detection, and vacant parking space alarm<br>Close view mode: support status detection on up to 4 parking spaces, license plate recognition, parking timeout alarm, and vacant parking space alarm |
| **General** | |
| Power | 12 VDC ± 20%, 1.19 A, max. 14.28 W, three-core terminal block<br>PoE: IEEE 802.3at, Type 2, Class 4, 42.5 V to 57 V, 0.396 A to 0. 295 A, max. 16.8 W |
| Material | Aluminum alloy body |
| Dimension | Without -Y: Ø144 mm × 347 mm (Ø5.7" × 13.7")<br>With -Y: Ø140 mm × 351 mm (Ø5.5" × 13.8") |
| Package Dimension | 405 mm × 190 mm × 180 mm (15.9" × 7.5" × 7.1") |
| Weight | Approx. 1950 g (4.2 lb.) |
| With Package Weight | Approx. 3070 g (6.7 lb.) |
| Storage Conditions | -30 °C to 60 °C (-22 °F to 140 °F). Humidity 95% or less (non-condensing) |
| Startup and Operating Conditions | -40 °C to 60 °C (-40 °F to 140 °F). Humidity 95% or less (non-condensing) |
| Language | 33 languages: English, Russian, Estonian, Bulgarian, Hungarian, Greek, German, Italian, Czech, Slovak, French, Polish, Dutch, Portuguese, Spanish, Romanian, Danish, Swedish, Norwegian, Finnish, Croatian, Slovenian, Serbian, Turkish, Korean, Traditional Chinese, Thai, Vietnamese, Japanese, Latvian, Lithuanian, Portuguese (Brazil), Ukrainian |
| General Function | Anti-banding, heartbeat, mirror, flash log, password reset via email, pixel counter |
| Heater | Yes |
| Device Management | Supports adding alarm box (DS-FM2466) in the LAN to expand 6 additional input and 6 output alarm interfaces |

| Approval | |
|---|---|
| EMC | FCC: 47 CFR Part 15, Subpart B, <br> CE-EMC: EN 55032: 2015, EN 61000-3-2:2019, EN 61000-3-3: 2013+A1:2019, EN 50130-4: 2011 +A1: 2014, <br> RCM: AS/NZS CISPR 32: 2015, <br> IC: ICES-003: Issue 7, <br> KC: KN32: 2015, KN35: 2015 |
| Safety | UL: UL 62368-1, <br> CB: IEC 62368-1: 2014+A11, <br> CE-LVD: EN 62368-1: 2014/A11: 2017, <br> BIS: IS 13252 (Part 1): 2010/IEC 60950-1: 2005, <br> LOA: IEC/EN 60950-1 |
| Environment | CE-RoHS: 2011/65/EU, <br> WEEE: 2012/19/EU, <br> Reach: Regulation (EC) No 1907/2006 |
| Protection | IP67: IEC 60529-2013,IK10: IEC 62262:2002 |
| Anti-Corrosion Protection | -Y: NEMA 4X (NEMA 250-2018) |
| Automotive and Railway | EN50121-4 |
| Other | PVC FREE |

## ▪ Typical Application

Hikvision products are classified into three levels according to their anti-corrosion performance. Refer to the following description to choose for your using environment.

With -Y model: This model has MODERATE PROTECTION.
Without -Y model: This model has NO SPECIFIC PROTECTION.

| Level | Description |
|---|---|
| Top-level protection | Hikvision products at this level are equipped for use in areas where professional anti-corrosion protection is a must. Typical application scenarios include coastlines, docks, chemical plants, and more. |
| Moderate protection | Hikvision products at this level are equipped for use in areas with moderate anti-corrosion demands. Typical application scenarios include coastal areas about 2 kilometers (1.24 miles) away from coastlines, as well as areas affected by acid rain. |
| No specific protection | Hikvision products at this level are equipped for use in areas where no specific anti-corrosion protection is needed. |

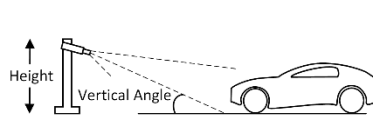## ▪ Installation Recommendation

**Entrance/Exit**

**Horizontal Angle**
The view angle of the camera should be within 30° to the path of movement.
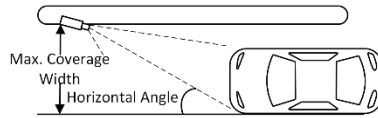
**Vertical Angle**
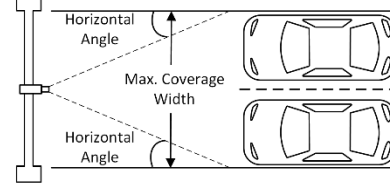The angle between the lens direction and the horizontal should be less than 30°.

Max. Coverage Width
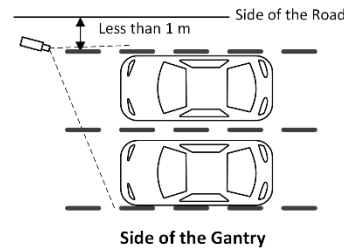Horizontal Angle
Height
Vertical Angle
**Side of the Lane**

**Recommended:**
Lane Width: < 3.5 m
Camera Installation Height: 1.6 to 2 m

**City Street**

**Horizontal Angle**
The horizontal angle should not exceed 30°.

Horizontal Angle
Max. Coverage Width
Horizontal Angle
**Middle of the Road**

Side of the Road
Less than 1 m
**Side of the Gantry**

**Vertical Angle**
The angle between the lens direction and the horizontal should be less than 30°.

Height
Vertical Angle
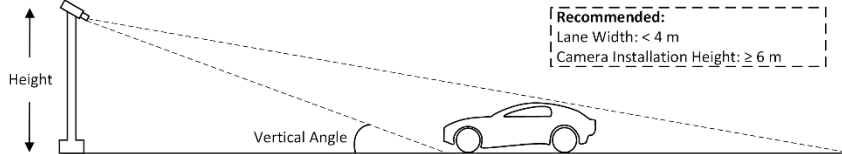
**Recommended:**
Lane Width: < 4 m
Camera Installation Height: ≥ 6 m

| Camera Position | Lens | Height (m) | Suggested Vertical Angle | Suggested Trigger Distance (m) | Max. Coverage Width | Max. Horizontal Angle | Vertical Angle Range | Capture Range (m) |
|---|---|---|---|---|---|---|---|---|
| Side of the Lane | 2.8 to 12 mm | 1.5 | 20° | 4 | 4.5 | 30° | 15° to 30° | 2.5 to 5.5 |
| Side of the Lane | 2.8 to 12 mm | 2 | 20° | 5.5 | 4.5 | 30° | 15° to 30° | 3.5 to 7.5 |
| Side of the Lane | 2.8 to 12 mm | 2.5 | 20° | 6.5 | 4.5 | 30° | 15° to 30° | 4.5 to 9 |
| Side of the Lane | 8 to 32 mm | 3 | 20° | 8 | 6 | 30° | 15° to 30° | 5 to 11 |
| Side of the Lane | 8 to 32 mm | 4 | 20° | 11 | 6 | 30° | 15° to 30° | 6 to 14 |
| Side of the Lane | 8 to 32 mm | 5 | 20° | 13.5 | 6 | 30° | 15° to 30° | 8.5 to 18 |
| Side of the Lane | 8 to 32 mm | 6 | 20° | 16.5 | 6 | 30° | 15° to 30° | 10 to 22 |
| Middle of the Road | 8 to 32 mm | 3 | 20° | 8 | 12 | 30° | 15° to 30° | 5 to 11 |
| Middle of the Road | 8 to 32 mm | 4 | 20° | 11 | 12 | 30° | 15° to 30° | 6 to 14 |
| Middle of the Road | 8 to 32 mm | 5 | 20° | 13.5 | 12 | 30° | 15° to 30° | 8.5 to 18 |
| Middle of the Road | 8 to 32 mm | 6 | 20° | 16.5 | 12 | 30° | 15° to 30° | 10 to 22 |

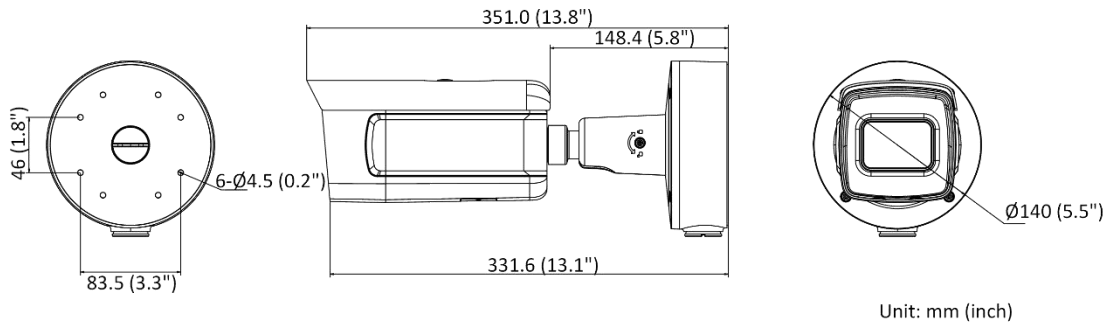*Note: The installation diagram is for reference only. The actual scenario and appearance may vary.*
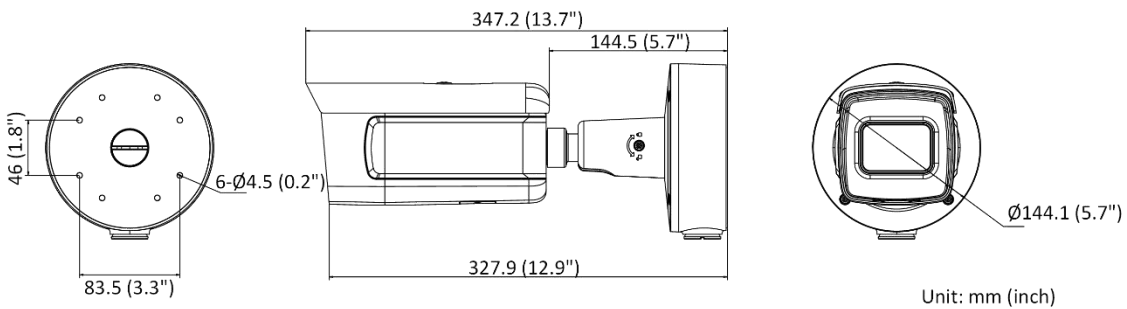
## ▪ **Available Model**

iDS-2CD7A46G0/P-IZHSY(2.8-12mm)(C)
iDS-2CD7A46G0/P-IZHSY(8-32mm)(C)
iDS-2CD7A46G0/P-IZHS(2.8-12mm)(C)
iDS-2CD7A46G0/P-IZHS(8-32mm)(C)

## ▪**Dimension**

With -Y model:



351.0 (13.8")
148.4 (5.8")
46 (1.8")
6-Ø4.5 (0.2")
331.6 (13.1")
83.5 (3.3")
Ø140 (5.5")
Unit: mm (inch)

Without -Y model:



347.2 (13.7")
144.5 (5.7")
46 (1.8")
6-Ø4.5 (0.2")
327.9 (12.9")
83.5 (3.3")
Ø144.1 (5.7")
Unit: mm (inch)

## ▪ **Accessory**

## ▪**Optional**

| DS-1475ZJ-SUS Vertical pole mount | DS-1476ZJ-SUS Corner mount | DS-1475ZJ-Y Vertical pole mount | DS-1476ZJ-Y Corner mount | DS-2251ZJ Others |
|---|---|---|---|---|
|  |  |  |  |  |

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