DC-U6K31WRA

Architectural and Engineering Specifications

Version 1.0.0

(Aug.25, 2025)

PART 1: PLEASE REFER TO ATTACHED DOCUMENTS - OVERVIEW & FORMAT SAMPLES

PART 2: PRODUCTS

Division 28 – Electric Safety and Security

Level 1 - 28.20.00 – Video Surveillance

Level 2 - 28.21.00 – Surveillance Cameras

Level 3 - 28.21.13 – IP Cameras

2.1.0 Manufacturer

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2.2.0 General

2.2.1 Product Description

The DC-U6K31WRA is a 5MP AI multi-directional(4ch) camera. It uses a 1/2.8" CMOS sensor and supports H.265, H.264, and MJPEG compression with IDIS Intelligent Codec. It features a motorized vari-focal lens (3.3–7.02mm, F1.8–F2.74) with remote focus and zoom control. The camera provides True WDR 120dB and IR LED support up to 15m. The housing is rated IK10 vandal-resistant and IP67/NEMA4X weatherproof.AI functions include object detection, intrusion, loitering, line crossing, face detection, and metadata for human, vehicle, and face. The camera supports Smart Failover, using microSD/SDHC/SDXC cards up to 512GB for edge recording during network loss. It is ONVIF compatible (Profile S/T/M [TBD]) and integrates with IDIS DirectIP NVRs. Additional features include alarm I/O (1 in / 1 out), two-way audio, quadruple streaming, and PoE (IEEE 802.3at Class 4, 25W).

2.2.2 General Specification(Multi-directional 4CH)

1. The IP camera shall be equipped with a 5 Megapixel 1/2.8” CMOS sensor (IMX675).
2. The IP camera shall be equipped with a 3.3 ~ 7.02 mm motorized vari-focal lens, F1.4~F2.74.
3. The IP camera shall be a true day/night camera with a mechanical filter for low light performance. The filter can be switched remotely, or automatically via a light level sensor or contact input (ICR).
4. The IP camera shall have wide dynamic range compensation (True WDR) for improved video quality in high-contrast situations (120 dB).
5. The IP camera shall be equipped with 6ea Infrared LED with range up to 15m.
6. The IP camera shall support fixed-Iris.
7. The IP camera shall utilize 2DNR/3DNR (Dynamic Noise Reduction) technology to reduce the bitrate and storage requirements by removing noise artifacts.
8. The camera shall be enclosed in a dome housing with vandal resistance (IK10) and IP66/NEMA4X weatherproof protection.

9. The camera shall have a 10/100/1000Base-T RJ-45 Ethernet port with auto-sensing and full/half-duplex mode.
10. The camera shall support Power over Ethernet (PoE) IEEE 802.3at Class 4 and 25W [TBD] power consumption..
11. The camera shall include a CVBS video output for local setup and testing.
12. The IP camera shall be equipped with an on-board microSD/SDHC/SDXC card slot, supporting up to 512GB for edge recording.
13. The camera shall support Smart Failover to prevent data loss during short network interruptions or recorder overload.
14. The camera shall support a maximum resolution of 2592x1944 at up to 30 ips (images per second).
15. The IP camera shall provide network connection using H.265, H.264, and MJPEG compression.
16. The IP camera shall support quadruple streams in DirectIP 2.0 protocol mode.
17. The IP camera shall conform to the ONVIF Profile S/T/M.
18. The IP camera shall be equipped with an embedded web server (IDIS Web) which works independently using a web browser with ActiveX plug-in.
19. The IP camera shall include security features such as: Digest authentication, Password protection, Brute force delay protection, User access log, IP filtering, IEEE802.1x(EAP-TLS), SSL Encryption, HTTPS Encryption.
20. The IP camera shall support bandwidth limitation and MAT for optimized network usage.
21. The IP camera shall have easy network access via UPnP (Universal Plug and Play) function and embedded mDNS (Multicast DNS) protocol.
22. The IP camera shall have Intelligent Video Analytics, including:

- Object Metadata: Human, Vehicle, Face
- IDLA: Object Detection, Intrusion, Loitering, Line Crossing, Face Detection
- ETC: Video Motion Detection, Active Tampering Alarm

2.2.3 Protocol Specification: DirectIP 2.0

1. The IP camera shall have DirectIP 2.0 mode.
2. DirectIP2.0 protocol shall provide easy connection to DirectIP NVR for automatic discovery and video streaming configuration.
3. DirectIP2.0 shall provide the compatibility with IDIS Solution Suite VMS or ONVIF for third-party software solutions.
4. DirectIP 2.0 shall support camera can be linked to IDIS software solution such as IDIS Center and IDIS Solution Suite, or 3rd party solution while it is being connected to a DirectIP NVR.
5. DirectIP 2.0 camera shall be compatible with DirectIP 1.0 NVR as well as DirectIP 2.0 NVR.
6. DirectIP 2.0 camera shall be unavailable for No-password login when connecting to DirectIP 2.0 NVR and IDIS Software Solutions.
7. DirectIP 2.0 protocol shall provide Quadruple streams.
8. DirectIP 2.0 protocol shall support H.264 and H.265 and MJPEG compression.

2.3.0 Technical Specification

2.3.1 Video Specification

1. Image Sensor: 1/2.8” CMOS
2. Maximum Resolution: 2592x1944
3. Scanning Mode: Progressive Scan
4. Lens Type: Motorized Vari-focal (f=3.3 ~ 7.02mm, F1.8 ~ F2.74)
5. Iris Control: Fixed Iris
6. Angular Field of View (H: Horizontal, V: Vertical, D:Diagonal):

- Wide: 96º(H), 69.8º(V), 127.8º(D)
- Tele: 42.4º(H), 31.8º(V), 53.2º(D)

7. Minimum Illumination:

- COLOR: 0.1 lux @ F1.8
- B/W: 0 lux (IR LED ON)

8. S/N Ratio: More than 45 dB
9. Maximum Frame Rate:

   4:3 mode : 30ips : 2592 x 1944(WDR)

   16:9 mode : 30ips : 2592 x 1456(WDR)

10. Video Resolution:

    4:3 : 2592x1944, 1920x1440, 1280x960, 640x480

    16:9 : 2592x1456, 1920x1080, 1280x720, 640x360

11. Video Compression: H.265, H.264, MJPEG
12. Video Compression Level: 4 levels: Basic, Standard, High, Very High
13. Intelligent Codec is supported.
14. Multi-Video Streaming:Quadruple streams
15. Dynamic Range: 120dB(True WDR)
16. True Day & Night: Yes (ICR)
17. IR Distance (The number of LEDs, IR wavelength): 15m (3ea)
18. Intelligent Video Analytic:

    Object Metadata: Human, Vehicle, Face

    IDLA: Object Detection, Intrusion, Loitering, Line Crossing, Face Detection

    ETC: Video Motion Detection, Active Tampering Alarm

2.3.2 Audio Specification

1. Audio Compression Algorithm: OPUS, ADPCM 16K, G.726, G.711 u-Law, G.711 a-Law
2. Audio Input / Output: Line-in 1ea / Line-out 1ea

- Audio Impedance:
    A. Max output level : 1Vrms
    B. Input Impedance : 3.6k Ohm
    C. Output Impedance : 174.25 Ohm

3. Two-way Audio Communication: Yes
4. Pre-recorded Voice Alert(Audio Alarm): Yes

2.3.3 Network Specification

1. Port: RJ-45 10/100 Base-T 1 port
2. Network Protocols:DirectIP 2.0 Protocol, IPv4, IPv6, RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP, RTP/UDP RTSP/TCP, HTTP, HTTPS, FTP, SNTP, SMTP, FEN, mDNS, uPNP, SNMPv2
3. Streaming Mode:Quadruple Streaming

2.3.4 Security Specification

1. Digest authentication, Password Protection, User access log, IP Filtering, IEEE802.1x(EAP-TLS), Chained Fingerprint, SSL Encryption, HTTPS Encryption
2. Maximum User Access: 10 (Live), 1 (Recording), 1 (Search), 2 (Admin)

2.3.5 Alarm and Event Specification

1. Alarm Input / Output: 1 / 1
    A. Alarm Input: TTL, NC/NO Programmable, 4.3V(NC) or 0.3V(NO) threshold, 5V DC
    B. Mechanical or electrical switches can be wired to the Alarm-In and GND connectors. The maximum voltage should not exceed 5V.
    C. Alarm Output: 1 TTL open collector, 30mA @ 5 VDC
2. Trigger Events: Motion Detection, Alarm in, Audio detection, Tampering, Object Detection, Intrusion, Loitering, Line Crossing, Face Detection
3. Event Notification: Remote S/W, Email (with Image)

2.4.0 Environmental Specification

1. Operating Temperature: -40°C ~ +55°C (-40°F ~ +131°F)

    *Starting up at above -20°C (-4°F)

2. Operating Humidity: 0% to 90% non-condensing

3. Vandal-proof Enclosure: IK10
4. Outdoor Ready: IP67, NEMA4X

2.5.0 Electrical Specification

1. Power Source: PoE, IEEE 802.3at(Class 4)
2. Power Consumption:
    - PoE, IEEE 802.3af Class 3,25W [TBD]
3. Regulatory Approvals: FCC, CE, KC

2.6.0 Mechanical Specification

1. Dimensions (Ø x H): Ø258 x 112mm(Ø10.2” x 4.4”)
2. Unit Weight: 2.8kg (6.2lb)

Version History

Version	Writer	Revision Date	Remarks
1.0.0	TS Team	Aug. 25. 2025	Initial Release