DC-D6831WRA

Architectural and Engineering Specifications

Version 1.0

(May. 30, 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**

## Manufacturer

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## General

### Product Description

The DC-D6831WRA is a high-performance 8MP Edge AI Plus dome camera designed for professional surveillance applications. This model is fully NDAA-compliant, making it suitable for use in U.S. government and federally funded projects.

The camera supports H.264, H.265, and Motion JPEG (MJPEG) compression formats, combined with IDIS Intelligent Codec, ensuring efficient bandwidth and storage usage. It features remote motorized focus and zoom, enabling easy installation and flexible field-of-view adjustments.

The DC-D6831WRA is rated IK10 vandal-resistant and IP67 weatherproof, ensuring reliable performance in both indoor and outdoor settings. It includes IR LED illumination up to 60m (196.9ft) for clear night-time imaging, and True WDR for enhanced visibility under varying lighting conditions.

Integrated IDIS Deep Learning Analytics (IDLA and IDLA Pro) deliver advanced object detection and classification, enhancing overall situational awareness.

The camera supports Smart Failover, allowing local recording of up to 512GB during network outages to ensure continuous video capture.

With full ONVIF compatibility and seamless integration with IDIS DirectIP NVRs, the camera provides effortless setup and interoperability. Additional features include Alarm In/Out and power via 12V DC or PoE (IEEE 802.3af Class 3).

### General Specification

1. The IP camera shall be equipped with 8 Megapixel 1/1.8" CMOS Sensor(3840 x 2160).
2. The IP camera shall be equipped with 4.3 ~ 9.8mm motorized vari-focal lens, F1.6 ~ F2.6.
3. The IP camera shall be a true day/night camera with a mechanical filter (ICR) for enhanced low light performance. The filter can be switched remotely or automatically via a light level sensor or contact input.
4. The IP camera shall support True Wide Dynamic Range (WDR) for improved image clarity in high-contrast scenes (120 dB).
5. The IP camera shall be equipped with 6 Infrared LEDs with a range up to 60m (196.9ft).
6. The camera shall support P-Iris for better image clarity under varying lighting conditions.
7. The IP camera shall support 2DNR and 3DNR (Dynamic Noise Reduction) to reduce image noise and optimize storage and bandwidth usage.
8. The camera shall be enclosed in a dome housing with vandal resistance (IK10) and IP67-rated weatherproof protection.
9. The camera shall have a 10/100Base-T RJ-45 Ethernet port with auto-sensing and full/half-duplex mode.
10. The camera shall support Power over Ethernet (PoE) IEEE 802.3af Class 3, and 12VDC power input.
11. The camera shall include a CVBS video output (NTSC/PAL) 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 IDIS NLTSrec (Non-Linear Time Shifting recording) technology with 60MB buffer memory, to prevent data loss during short network interruptions or recorder overload.
14. The camera shall support a maximum resolution of 3840 x 2160 at rates up to 30ips (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 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: FIPS 140-3 Level 3, Digest authentication, Password Protection, Brute force delay protection, User access log, IP Filtering, IEEE802.1x(EAP-TLS), Chained Fingerprint, SSL Encryption, HTTPS Encryption for greater security.
20. The IP camera shall support bandwidth limitation and MAT (Multi-streaming Adaptive Transmission) 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:
* A-cut Support
* Object Metadata: Human, Vehicle, Face
* Object Attribute: Human[Gender, Age, Bag, Hat, Colors], Vehicle[Car, Truck, Bus, Bike(Bicycle, Motorcycle), ETC, Colors], Face[Gender, Age, Glasses, Hat, Mask]
* IDLA: Object Detection, Intrusion, Loitering, Line Crossing, Face Detection
* IDLA Pro: Crowd Detection, Abandoned Object Detection, Removed Object Detection, Fall Detection, Violence Detection
* ETC: Video Motion Detection, Active Tampering Alarm

### Protocol Specification: DirectIP 2.0

1. The IP camera shall have DirectIP 2.0 mode.
2. DirectIP 2.0 protocol shall provide easy connection to DirectIP NVR for automatic discovery and video streaming configuration.
3. DirectIP 2.0 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.

※ The integration between this model and the NVR will be supported in the next version of the NVR firmware, scheduled for the second half of 2025.

## Technical Specification

### Video Specification

1. Image Sensor: 1/1.8" CMOS
2. Maximum Resolution: 3840 x 2160
3. Scanning Mode: Progressive Scan
4. Lens Type: Motorized Vari-focal (f=4.3 ~ 9.8mm, F1.6 ~ F2.6)
5. Iris Control: P-Iris
6. Angular Field of View (H: Horizontal, V: Vertical, D: Diagonal):
	1. Wide : 110.4º(H) 57.8º(V) 133.8º(D)
	2. Tele : 45.0º(H) 25.2º(V) 51.8(D)
7. Pan/Tilt/Rotate Range : Pan: -180° ~ 180°, Tilt: -45° ~ 80°, Rotate: -143° ~ 203°
8. Minimum Illumination:
	1. COLOR : 0.13 lux @ F1.6
	2. B/W : 0 lux (IR LED ON)
9. S/N Ratio: More than 45 dB
10. Maximum Frame Rate: 30ips : 3840 x 2160(WDR)
11. Video Resolution: 3840 x 2160, 1920 x 1080, 1280 x 720, 640 x 360
12. Video Compression : H.265, H.264, MJPEG
13. Video Compression Level: 4 levels: Basic, Standard, High, Very High
14. Intelligent Codec is supported.
15. Multi-Video Streaming: Quadruple streams
16. Dynamic Range: 120dB
17. True Day & Night: Yes (ICR)
18. IR Distance (The number of LEDs, IR wavelength): 60m / 196.9ft (6ea)
19. Image Stabilizer: Yes(EIS)
20. Privacy Masking: 8 Zones
21. Intelligent Video Analytic:
* A-cut Support
* Object Metadata: Human, Vehicle, Face
* Object Attribute: Human[Gender, Age, Bag, Hat, Colors], Vehicle[Car, Truck, Bus, Bike(Bicycle, Motorcycle), ETC, Colors], Face[Gender, Age, Glasses, Hat, Mask]
* IDLA: Object Detection, Intrusion, Loitering, Line Crossing, Face Detection
* IDLA Pro: Crowd Detection, Abandoned Object Detection, Removed Object Detection, Fall Detection, Violence Detection
* ETC: Video Motion Detection, Active Tampering Alarm
1. Video Out : 1 CVBS

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

### 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

1. Streaming Mode: Quadruple Streaming

### Security Specification

1. FIPS 140-3 Level 3, Digest authentication, Password Protection, Brute force delay 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)

### Alarm and Event Specification

1. Alarm Input / Output: 1 / 1
	1. Alarm Input: 1 TTL, NC/NO Programmable, 4.3V(NC) or 0.3V(NO) threshold, 5V DC
	2. Mechanical or electrical switches can be wired to the Alarm-In and GND connectors. The maximum voltage should not exceed 5V.
	3. 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, Crowd detection, Abandoned object detection, Removed object detection, Fall detection, Violence detection
3. Event Notification: Remote S/W, Email (with Image)
	1. Encryption Type: SSL

## Environmental Specification

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

\*Starting up at above -20°C (-4°F)

1. Operating Humidity: 0% to 90% non-condensing
2. Vandal-proof Enclosure: IK10
3. Outdoor Ready: IP67, NEMA4X

## Electrical Specification

1. Power Source: 12VDC, PoE, IEEE 802.3af(Class 3)
2. Power Consumption: 12VDC, 1.1A, 13.2W / PoE, IEEE 802.3af(Class3), 57VDC, 12W
3. Regulatory Approvals: UL, FCC, CE, KC

## Mechanical Specification

1. Dimensions (Ø x H): Ø160 x 120mm(Ø6.3” x 4.72”)
2. Unit Weight: 1.1kg (2.4lb)

Version History

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| --- | --- | --- | --- |
| **Version** | **Writer** | **Revision Date** | **Remarks** |
| 1.0 | TS Team | May. 30. 2025 | Initial Release |