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**Product Guide Specification**

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, based on *MasterFormat 2016* and *The Project Resource Manual—CSI Manual of Practice. The Manufacturer is responsible for technical accuracy.*

The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. Words and sentences within brackets [ ] are choices to include or exclude a particular item or statement. Coordinate this section with other specification sections and the Drawings. Delete all “Specifier Notes” after editing this section.

**Section 28 21 00: Video Surveillance**

**Section 28 21 13: IP Cameras**

**IP CAMERA**

1. **– GENERAL** 
   1. SUMMARY
      1. Section Includes
         1. Section 28 21 17: Video Surveillance – Surveillance Cameras – Camera Housings
         2. Section 28 21 19: Video Surveillance – Surveillance Cameras – Camera Mounts
         3. Section 28 27 00: Video Surveillance – Video Surveillance Sensors
      2. Related Sections
         1. [Section 28 33 15: Security Detection, Alarm and Monitoring – Security Monitoring and Control – Security Monitoring and Control Software].

\*\*\*\*\*\*\*\*\*\* Specifier’s note: Include those standards referenced elsewhere in this SECTION.

* 1. REFERENCES

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| STANDARD | CE-LVD: EN 62368-1; CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU; FCC: 47 CFR FCC Part 15, Subpart B; UL/CUL:UL62368-1 & CAN/CSA C22.2 No. 62368-1-14; |

* 1. SYSTEM DESCRIPTION
     1. Section Includes
        1. Video Surveillance – Surveillance Cameras –IP CAMERA
  2. SUBMITTALS
     1. Product Data:
        1. Manufacturer’s data, user and installation manuals for all equipment and software programs including computer equipment and other equipment required for complete video management system.
     2. Dimensional Drawings; include
        1. Overall device dimensions.
        2. Dimensions specific for installation.
     3. Closeout Submittals
        1. User manual.
        2. Parts list.
        3. Maintenance requirements.
  3. QUALITY ASSURANCE
     1. Manufacturer:
        1. Minimum of [10] years of experience in manufacture and design Video Surveillance Devices.
     2. Video Surveillance System:
        1. List certifying bodies (UL, etc.)
        2. Provide evidence of compliance upon request.
     3. Installer:
        1. Minimum of [5] years of experience installing Video Surveillance System.
  4. DELIVERY, STORAGE AND HANDLING
     1. Comply with requirements of Section 01 60 00.
     2. Deliver materials in manufacture’s original, unopened, undamaged containers; and unharmed original identification labels.
     3. Protect store materials from environmental and temperature conditions following manufacturer’s instructions.
     4. Handle and operate products and systems according to manufacturer’s instructions.
  5. WARRANTY
     1. Provide manufacturer’s warranty covering [3] years for replacement and repair of defective equipment. Warranty varies country to country.
  6. MAINTENANCE
     1. Make ordering of new equipment for expansions, replacements, and spare parts available to dealers and end users.
     2. Provide factory direct technical support via phone and e-mail.

1. **– PRODUCTS**
   1. MANUFACTURERS
      1. Acceptable Manufacturer:

Zhejiang Dahua Vision Technology Co., Ltd.

Address: No.1199 Bin’an Road, Binjiang District, Hangzhou, China

Tel: +86-571-87688883

Fax: +86-571-87688815

Email:overseas@dahuasecurity.com

* + 1. Substitutions:
       1. [All proposed substitutions must be approved by the Architect or Engineer professional.]
       2. [Proposed substitutions must provide a line-by-line compliance documentation.]
  1. IP CAMERA | DH-IPC-HFW3849T1P-AS-PV-0280B-S4

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| Camera | Image Sensor | 1/2.8" CMOS |
| Camera | Max. Resolution | 3840 (H) × 2160 (V) |
| Camera | ROM | 128 MB |
| Camera | RAM | 512 MB |
| Camera | Scanning System | Progressive |
| Camera | Electronic Shutter Speed | Auto/Manual 1/3 s–1/100,000 s |
| Camera | Min. Illumination | 0.004 lux@F1.0 (Color, 30 IRE) 0.0004 lux@F1.0 (B/W, 30 IRE) 0 lux (Illuminator on) |
| Camera | S/N Ratio | ＞56 dB |
| Camera | Illumination Distance | 30 m (98.43 ft) (IR) 30 m (98.43 ft) (Warm light) |
| Camera | Illuminator On/Off Control | Auto;Manual |
| Camera | Illuminator Number | 2 (IR LED) 2 (Warm light) |
| Camera | Pan/Tilt/Rotation Range | Pan: 0°–360° Tilt: 0°–90° Rotation: 0°–360° |
| Lens | Lens Type | Fixed-focal |
| Lens | Lens Mount | M12 |
| Lens | Focal Length | 2.8 mm |
| Lens | Max. Aperture | F1.0 |
| Lens | Field of View | H: 106°; V: 55°; D: 125° |
| Lens | Iris Control | Fixed |
| Lens | Close Focus Distance | 2.0 m (6.56 ft) |
| Lens | DORI Distance | D: 91.0 m; O: 36.4 m; R: 18.2 m; I: 9.1 m (D: 298.56 ft; O: 119.42 ft; R: 59.71 ft; I: 29.86 ft) |
| Intelligence | IVS (Perimeter Protection) | Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human) |
| Intelligence | SMD 3.0 | Less false alarm, longer detection distance |
| Intelligence | Smart Search | Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos |
| Video | Video Compression | H.265; H.264; H.264H; H.264B; MJPEG (only supported by the sub stream) |
| Video | Smart Codec | Smart H.265+; Smart H.264+ |
| Video | AI Coding | AI H.265; AI H.264 |
| Video | Video Frame Rate | Main stream: 3840 × 2160@(1–30 fps) Sub stream: 704 × 576@(1–25 fps)/704 × 480@(1–30 fps) Third stream: 1920 × 1080@(1–30 fps) \*The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity. |
| Video | Stream Capability | 3 streams |
| Video | Resolution | 8M (3840 × 2160); 6M (3072 × 2048); 5M (3072 × 1728/2592 × 1944); 4M (2688 × 1520/2560 × 1440); 3M (2048 × 1536/2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240) |
| Video | Bit Rate Control | CBR/VBR |
| Video | Video Bit Rate | H.264: 32kbps–8192 kbps H.265:12kbps–8192 kbps |
| Video | Day/Night | Auto(ICR)/Color/B/W |
| Video | BLC | Yes |
| Video | HLC | Yes |
| Video | WDR | 120 dB |
| Video | Scene Self-adaptation (SSA) | Yes |
| Video | White Balance | Auto; natural; street lamp; outdoor; manual; regional custom |
| Video | Gain Control | Auto |
| Video | Noise Reduction | 3D NR |
| Video | Motion Detection | OFF/ON (4 areas, rectangular) |
| Video | Region of Interest (RoI) | Yes (4 areas) |
| Video | Smart Illumination | Yes |
| Video | Defog | Yes |
| Video | Image Rotation | 0°/90°/180°/270° (Support 90°/270° with 2688×1520 resolution and lower) |
| Video | Mirror | Yes |
| Video | Privacy Masking | 4 areas |
| Audio | Built-in MIC | Yes |
| Audio | Audio Compression | PCM; G.711a; G.711Mu; G.726; G.723 |
| Alarm | Alarm Event | No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; scene changing; audio detection; intensity change; voltage detection; external alarm; SMD; security exception |
| Network | Network Port | RJ-45 (10/100 Base-T) |
| Network | SDK and API | Yes |
| Network | Network Protocol | IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP ; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; PPPoE; SNMP |
| Network | Interoperability | ONVIF (Profile S/Profile G/Profile T); CGI; Milestone; P2P；RTMP |
| Network | User/Host | 20 (Total bandwidth: 64 M) |
| Network | Storage | FTP;SFTP; Micro SD card (support max. 256 GB); NAS |
| Network | Browser | IE: IE9/11 Chrome Firefox |
| Network | Management Software | Smart PSS; DSS; DMSS |
| Network | Mobile Client | iOS;Android |
| Network | Cyber Security | Video encryption;Firmware encryption;Configuration encryption;Digest;WSSE;Account lockout;Security logs;IP/MAC filtering;Generation and importing of X.509 certification;syslog;HTTPS;802.1x;Trusted boot;Trusted execution;Trusted upgrade |
| Port | Audio Input | 1 channel (RCA port) |
| Port | Audio Output | 1 channel (RCA port) |
| Port | Alarm Input | 1 channel in: 5mA 3V–5V DC |
| Port | Alarm Output | 1 channel out: 300mA 12V DC |
| Power | Power Supply | 12 VDC; PoE |
| Power | Power Consumption | Basic: 4.5 W (12 VDC); 5.5 W (PoE) Max. (pulling stream+warning light+speaker+warm light on): 7.6 W (12 VDC); 9.1 W (PoE) |
| Environment | Operating Temperature | –40 °C to +60 ℃ (–40 °F to +140 °F) |
| Environment | Operating Humidity | ≤ 95% |
| Environment | Protection | IP67 |
| Structure | Casing Material | Metal + plastic |
| Structure | Product Dimensions | 288.4 mm × 94.4 mm × 84.7 mm (11.35" × 3.72" × 3.33") (L × W × H) |
| Structure | Net Weight | 1.0 kg (2.20 lb) |
| Structure | Gross Weight | 1.231 kg (2.71 lb) |
| Structure | Installation | Wall mount; Ceiling mount; Pole mount |

1. **– EXECUTION**
   1. EXAMINATION
      1. Examine areas to receive devices and notify adverse conditions affecting installation or subsequent operation.
      2. Do not begin installation until unacceptable conditions are corrected.
   2. PREPARATION
      1. Protect devices from damage during construction.
   3. INSTALLATION
      1. Install devices in accordance with manufacturer’s instruction at locations indicated on the floor drawings plans.
      2. Perform installation with qualified service personnel.
      3. Install devices in accordance with the National Electrical Code or applicable local codes.
      4. Ensure selected location is secure and offers protection from accidental damage.
      5. Location must provide reasonable temperature and humidity conditions, free from sources of electrical and electromagnetic interference.
   4. FIELD QUALITY CONTROL
      1. Test snugness of mounting screws of all installed equipment.
      2. Test proper operation of all video system devices.
      3. Determine and report all problems to the manufacturer’s customer service department.
   5. ADJUSTING
      1. Make proper adjustment to video system devices for correct operation in accordance with manufacturer’s instructions.
      2. Make any adjustment of camera settings to comply with specific customer’s need.
   6. DEMOSTRATION
      1. Demonstrate at final inspection that video management system and devices functions properly.

END OF SECTION