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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: EN62368-1;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-HF5842FP-ZE-S3

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| Camera | Image Sensor | 1/1.8" CMOS |
| Camera | Max. Resolution | 3840 (H) × 2160 (V) |
| Camera | ROM | 4 GB |
| Camera | RAM | 2 GB |
| Camera | Scanning System | Progressive |
| Camera | Electronic Shutter Speed | Auto/Manual 1/3 s–1/100,000 s |
| Camera | Min. Illumination | With 10mm–40mm lens:
0.0007 lux@F1.2 (Color, 30 IRE)
0.0003 lux@F1.2 (B/W, 30 IRE) |
| Camera | S/N Ratio | ＞56 dB |
| Lens | Lens Mount | C/CS |
| Intelligence | EPTZ | Yes |
| Intelligence | IVS (Perimeter Protection) | Intrusion, tripwire, fast moving (the three functions support the classification and accurate detection of vehicle and human); loitering detection, people gathering, and parking detection |
| Intelligence | Smart Object Detection | Smart abandoned object; smart missing object |
| Intelligence | SMD 3.0 | Less false alarm, longer detection distance |
| Intelligence | AI SSA | Yes |
| Intelligence | Face Detection | Face detection; track; snapshot; snapshot optimization; optimal face snapshot upload; face enhancement; face exposure; face attributes extraction including 6 attributes and 8 expressions; face beautifying; face snapshot set as face, one-inch photo or custom; snapshot strategies (real-time snapshot, quality priority and optimization snapshot); face angle filter; optimization time setting |
| Intelligence | People Counting | Tripwire people counting, generating and exporting report (day/week/month/year); people counting in area and queue management, generating and exporting report (day/week/month); 4 rules can be set for tripwire, people counting in area and queue management. |
| Intelligence | Heat Map | Yes |
| Intelligence | Video Metadata | Motor vehicle, non-motor vehicle, face, human body detection; track; snapshot; snapshot optimization; optimal face snapshot upload.
Motor vehicle attributes: vehicle type, vehicle color, vehicle logo and other attributes : seatbelt, smoking, calling.
Non-motor vehicle attributes: type, color, number of people, top type and color, hat.
Human body attributes: gender, top/bottom type and color, bag, hat and umbrella.
Face attributes: gender, age, expressions, glasses, face mask and beard. |
| Intelligence | Smart Search | Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos |
| Intelligence | Smart Sound Detection | Yes |
| 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@(1–25/30 fps)
Sub stream: D1@(1–25/30 fps)
Third stream: 1080p@(1–25/30 fps)
Fourth stream: 720p@(1–10 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 | 4 streams |
| Video | Resolution | 8M (3840 × 2160); 6M (3072 × 2048); 5M (3072 × 1728); 5M (2592 × 1944); 4M (2688 × 1520); 3.6M (2560 × 1440); 3M (2048 × 1536); 3M (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: 32 kbps–16384 kbps; H.265: 12 kbps–13568 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 | Image Stabilization | Electronic Image Stabilization (EIS) |
| Video | Defog | Yes |
| Video | Image Rotation | 0°/90°/180°/270° (Support 90°/270° with 4M (2688 × 1520) resolution and lower) |
| Video | Mirror | Yes |
| Video | Privacy Masking | 8 areas |
| Audio | Built-in MIC | Yes |
| Audio | Audio Compression | G.711a; G.711Mu; PCM; 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; fast moving; abandoned object; missing object; loitering detection; people gathering; parking detection; scene changing; audio detection; voltage detection; external alarm; face detection; video metadata; SMD; people counting in area; stay detection; people counting; people number error detection; queue people number alarm; queue time alarm; security exception; defocus detection |
| Network | Network Port | RJ-45 (10/100 Enhancement 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; SAMBA; PPPoE; SNMP; P2P |
| Network | Interoperability | ONVIF (Profile S/Profile G/Profile T); CGI |
| Network | User/Host | 20 (Total bandwidth: 80 M) |
| Network | Storage | FTP; SFTP; Micro SD card (support max. 512 GB); NAS |
| Network | Browser | IE: IE 9 and later; Chrome: Chrome 102 and later; Firefox: Firefox 88 and later |
| Network | Management Software | SmartPSS Lite; 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 | RS-485 | 1 (baud rate range:1200 bps–115200 bps) |
| Port | Audio Input | 2 channels (3.5mm JACK port) |
| Port | Audio Output | 1 channel (3.5mm JACK port) |
| Port | Alarm Input | 2 channels in: wet contact, 5mA 3V–5V DC |
| Port | Alarm Output | 2 channels out: dry contact, 1,000mA 30V DC/500mA 50V AC |
| Port | Analog Output | 1 channel (CVBS output: BNC) |
| Power | Power Supply | 12 VDC/24 VAC/PoE (802.3af)/ePoE |
| Power | Power Consumption | Basic: 6.3 W (12 VDC); 6.4 W (24 VAC); 6.7 W (PoE)
Max. (H.265+ WDR+ Intelligence on): 10.2 W (12 VDC); 11.8 W (24 VAC); 12.0 W (PoE) |
| Environment | Operating Temperature | –30 °C to +60 °C (–22 °F to +140 °F) |
| Environment | Operating Humidity | ≤95% |
| Environment | Storage Temperature | –40 °C to +60 °C (–40 °F to +140 °F) |
| Environment | Storage Humidity | 10%–95% (RH), non-condensing |
| Structure | Casing Material | Metal |
| Structure | Product Dimensions | 161.6 mm × 86.8 mm × 74.0 mm (6.36" × 3.42" × 2.91") (L × W × H) |
| Structure | Net Weight | 0.76 kg (1.68 lb) |
| Structure | Gross Weight | 0.98 kg (2.16 lb) |
| Structure | Installation | Ceiling Mount; wall 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