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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.

**Electronic Safety and Security**

**Common Work Results for Electronic Safety and Security**

**Network Video Recorders**

**NETWORK VIDEO RECORDER**

1. **– GENERAL**
	1. SUMMARY
		1. Section Includes
			1. Storage Area Network Electronic Safety and Security
			2. Cloud Based Storage for Electronic Safety and Security
			3. Storage Management Software for Electronic Safety and Security
			4. Communications Equipment for Electronic Safety and Security
		2. Related Sections
			1. [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

|  |  |
| --- | --- |
| STANDARD | FCC: 47 CFR FCC Part15, SubpartB, Class ACE-EMC: EN 55032:2015+A1:2020; EN IEC 61000-3-2:2019+A1:2021; EN 61000-3-3:2013+A1:2019+A2:2021; EN 55035:2017+A11:2020; EN 50130-4:2011+A1:2014CE-LVD: EN 62368-1:2014 |

* 1. SYSTEM DESCRIPTION
		1. Section Includes
			1. NETWORK VIDEO RECORDER
	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.
	1. 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 (FCC,CE, etc.)
			2. Provide evidence of compliance upon request.
		3. Installer:
			1. Minimum of [5] years of experience installing Video Surveillance System.
	2. DELIVERY, STORAGE AND HANDLING
		1. Comply with requirements.
		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.
	3. WARRANTY
		1. Provide manufacturer’s warranty covering [3] years for replacement and repair of defective equipment. Warranty varies country to country.
	4. 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.1399, Binxing Road, Binjiang District, Hangzhou, P.R. China

Postcode: 310053

Tel: +86-571-87688888 28933188

Email: dhoverseas@dhvisiontech.com

Website: www.dahuasecurity.com

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. NETWORK VIDEO RECORDER | DHI-NVR4116HS-EI

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| --- | --- | --- |
| System | Main Processor | Industrial-grade processor |
| System | Operating System | Embedded Linux |
| System | Operating Interface | Web, Local GUI |
| AI | AI by Recorder | Face detection, face recognition, perimeter protection, and SMD Plus; |
| AI | AI by Camera | Face detection; face recognition; perimeter protection; SMD Plus; ANPR; people counting; stereo analysis; heat map |
| Perimeter Protection | Perimeter Performance AI by Recorder (Number of Channels) | 2 channels, 10 IVS rules for each channel |
| Perimeter Protection | Perimeter Performance of AI by Camera (Number of Channels) | 8 channels |
| Face Detection | Face Attributes | Gender; age group; glasses; expressions; face mask; beard |
| Face Detection | Face Detection Performance of AI by Recorder (Number of Channels) | 1 channel (up to 12 face images/s each channel) |
| Face Detection | Face Detection Performance of AI by Camera (Number of Channels) | 8 channels |
| Face Recognition | Face Database Capacity | Up to 10 face databases with 20,000 images, with a total capacity of 2.5 G. Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image. |
| Face Recognition | Face Recognition Performance of AI by Recorder (Number of Channels) | 8-channel FD (by camera) + FR (by recorder),image stream: 12 face images/s
1-channel FD (by recorder) + FR (by recorder), video stream: 12 face images/s |
| Face Recognition | Face Recognition Performance of AI by Camera (Number of Channels) | 8 channels |
| SMD Plus | SMD Plus by Recorder | 4 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change |
| SMD Plus | SMD Plus by Camera | 8 channels |
| Audio and Video | Access Channel | 16 channels |
| Audio and Video | Network Bandwidth | AI disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing
AI enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing |
| Audio and Video | Resolution | 16 MP; 12 MP; 8 MP; 6 MP; 5 MP; 4 MP; 3 MP; 1080p; 960p; 720p; D1; CIF |
| Audio and Video | Decoding Capability | AI disabled: 2-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 4-channel 8 MP@30 fps; 6-channel 5 MP@30 fps; 8-channel 4 MP@30 fps; 16-channel 1080p@30 fps
AI enabled: 1-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 3-channel 8 MP@30 fps; 4-channel 5 MP@30 fps; 6-channel 4 MP@30 fps; 12-channel 1080p@30 fps |
| Audio and Video | Video Output | 1 HDMI, 1 VGA
HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720
VGA: 1920 × 1080, 1280 × 1024, 1280 × 720
\*Simultaneous/heterogeneous video sources output for VGA and HDMI is configurable. |
| Audio and Video | Multi-screen Display | 1st Screen: 1/4/8/9/16
2nd Screen: 1/4/8/9/16 |
| Audio and Video | Third-party Camera Access | Panasonic, Sony, Samsung, Axis, Pelco, Arecont, ONVIF, Canon |
| Compression Standard | Video Compression | Smart H.265+; H.265; Smart H.264+; H.264; MJPEG |
| Compression Standard | Audio Compression | G.711a; G.711u; PCM; G726 |
| Network | Network Protocol | HTTP; HTTPS; TCP/IP; IPv4/IPv6; UPnP; SNMP; UDP; SMTP; NTP; DHCP; DNS; IP Filter; PPPoE; DDNS; FTP; Alarm Server; IP Search (Support Dahua IP camera; DVR; NVS; etc.); P2P; auto register |
| Network | Mobile Phone Access | iOS; Android |
| Network | Interoperability | ONVIF 22.06(Profile T; Profile S; Profile G); CGI; SDK |
| Network | Browser | Chrome; IE9 and later; Firefox |
| Recording Playback | Multi-channel Playback | Up to 16 channels |
| Recording Playback | Record Mode | General, motion detection; intelligent; alarm |
| Recording Playback | Backup Method | USB device and network |
| Recording Playback | Playback Mode | Instant playback, general playback, event playback, tag playback, smart playback |
| Alarm | General Alarm | Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm |
| Alarm | Anomaly Alarm | Camera disconnection; storage error; disk full; IP conflict; MAC conflict; login locked; and cybersecurity exception |
| Alarm | Intelligent Alarm | Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map |
| Alarm | Alarm Linkage | Record; snapshot; IPC external alarm output; audio; buzzer; log; preset; email |
| Port | Audio Input | 1-channel RCA |
| Port | Audio Output | 1-channel RCA |
| Port | Disk Interface | 1 SATA port, up to 16 TB.The maximum HDD capacity varies with environment temperature. |
| Port | USB | 2 (1 front USB 2.0 port, 1 rear USB 2.0 port) |
| Port | HDMI | 1 |
| Port | VGA | 1 |
| Port | Network Port | 1 (10/100/1000 Mbps Ethernet port, RJ-45) |
| General | Power Supply | 12 VDC, 2 A |
| General | Power Consumption | <10 W(without HDD) |
| General | Net Weight | 0.81 kg (1.79 lb) |
| General | Gross Weight | 1.41 kg (3.11 lb) |
| General | Product Dimensions | 260 mm × 232.7 mm × 47.6 mm (10.24" × 9.16" × 1.87") (W × L × H) |
| General | Packaging Dimensions | 333 mm × 89 mm × 315 mm (13.11" × 3.50" × 12.40") (W × L × H) |
| General | Operating Temperature | –10 °C to +55 °C (14 °F to +131 °F) |
| General | Storage Temperature | –20 °C to +60 °C (–4 °F to +140 °F) |
| General | Operating Humidity | 10%–93% (RH), non-condensing |
| General | Installation | Rack or desktop |

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