SEPTEMBER 2022

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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**

**8MP E-Vu Network Eyeball 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 21 21: Video Surveillance – Surveillance Cameras – Illuminators
			4. 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
		1. Federal Communications Commission (FCC) ([www.fcc.gov](http://www.fcc.gov))
			1. FCC Part 15 Subpart B
		2. European Standards
			1. EN62368-1
		3. HD standards
			1. Complies with the SMPTE 274M-2008 Standard in:
				1. Resolution: 1920x1080
				2. Scan: Progressive
				3. Color representation: complies with ITU-R BT.709
				4. Aspect ratio: 16:9
				5. Frame rate: 25 and 30 frames/s
			2. Complies with the 296M-2001 Standard in:
				1. Resolution: 1280x720
				2. Scan: Progressive
				3. Color representation: complies with ITU-R BT.709
				4. Aspect ratio: 16:9
				5. Frame rate: 25, 30, 50 and 60 frames/s
				6. Interference-Causing Equipment Standards
	2. SYSTEM DESCRIPTION
		1. Section Includes
			1. Video Surveillance – Surveillance Cameras – IP Cameras
		2. Performance Requirements
			1. The 8MP E-Vu Network Eyeball Camera shall be a full-featured network eyeball camera designed for discrete video surveillance applications in indoor and outdoor environments.
			2. The 8MP E-Vu Network Eyeball Camera shall use a high performance 1/2.7-in. 8 MP Progressive-scan CMOS sensor.
			3. The 8MP E-Vu Network Eyeball Camera shall offer IR LEDs to produce detailed images in dark environments.
			4. The 8MP E-Vu Network Eyeball Camera shall include a built-in microphone.
			5. The 8MP E-Vu Network Eyeball Camera shall provide direct network connection using Smart H.265+, H.265, Smart H.264+, H.264, H.264B, or MJPEG compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
			6. The 8MP E-Vu Network Eyeball Camera shall support the following dual, redundant power options:
				1. 12 VDC
				2. PoE (802.3af)
				3. The 8MP E-Vu Network Eyeball Camera shall default to use power from the PoE power supply, if connected.
				4. The 8MP E-Vu Network Eyeball Camera shall reboot and switch to the 12 VDC power supply if power from the PoE power supply is lost.
			7. The 8MP E-Vu Network Eyeball Camera shall offer Digital Wide Dynamic Range for clear images in extreme high-contrast environments.
			8. The 8MP E-Vu Network Eyeball Camera shall offer two (2) separate and configurable streams with individually configurable 3840 × 2160 at 1 to 15 fps/ 2688 x 1520 at 1 to 30 fps or 704 × 480 at 1 to 15 fps.
			9. The 8MP E-Vu Network Eyeball Camera shall have a 2.8 mm fixed lens.
			10. The 8MP E-Vu Network Eyeball Camera shall combine temperature-tolerant components with a waterproof enclosure to ensure flawless operation in temperatures as low as –40° C (–40° F).
			11. The 8MP E-Vu Network Eyeball Camera housing shall conform to the IP67 Ingress Protection standard.
	3. SUBMITTALS

 Submit under provisions of Section [01 33 00.]

* + 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 (UL, CSA, 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 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.
	3. WARRANTY
		1. Provide manufacturer’s warranty covering [5] 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:

Dahua Technology USA Inc.

15245 Alton Pkwy, #100, Irvine, CA, 92618

Tel: (949) 679-7777

Fax: (949) 679-5760

Email: sales.usa@global.dahuatech.com]

* + 1. Substitutions: [Not permitted.] [Under provisions of Division 1.]
			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. 8MP E-Vu Network Eyeball Camera (2.8 mm) – N81CJ02

		1. General Characteristics:
			1. The 8MP E-Vu Network Eyeball Camera shall be a full-featured network eyeball camera designed for discrete video surveillance applications in indoor and outdoor environments.
			2. The 8MP E-Vu Network Eyeball Camera shall use a high performance 1/2.7-in. 8 MP Progressive-scan CMOS sensor. .
			3. The 8MP E-Vu Network Eyeball Camera shall offer one (1) IR LEDs to produce detailed images in dark environments.
			4. The 8MP E-Vu Network Eyeball Camera shall include a built-in microphone.
			5. The 8MP E-Vu Network Eyeball Camera shall provide direct network connection using Smart H.265+, H.265, Smart H.264+, H.264, H.264B, or MJPEG compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
			6. The 8MP E-Vu Network Eyeball Camera shall support the following dual, redundant power options:
				1. 12 VDC
				2. PoE (802.3af)
				3. The 8MP E-Vu Network Eyeball Camera shall default to use power from the PoE power supply, if connected.
				4. The 8MP E-Vu Network Eyeball Camera shall reboot and switch to the 12 VDC power supply if power from the PoE power supply is lost.
			7. The 8MP E-Vu Network Eyeball Camera shall offer Digital Wide Dynamic Range for clear images in extreme high-contrast environments.
			8. The 8MP E-Vu Network Eyeball Camera shall offer two (2) separate and configurable streams with individually configurable 3840 × 2160 at 1 to 15 fps/ 2688 x 1520 at 1 to 30 fps or 704 × 480 at 1 to 15 fps.
			9. The 8MP E-Vu Network Eyeball Camera shall have a 2.8 mm fixed lens.
			10. The 8MP E-Vu Network Eyeball Camera shall combine temperature-tolerant components with a waterproof enclosure to ensure flawless operation in temperatures as low as –40° C (–40° F).
			11. The 8MP E-Vu Network Eyeball Camera housing shall conform to the IP67 Ingress Protection standard.
		2. Imaging
			1. The 8MP E-Vu Network Eyeball Camera shall offer a 1/2.7-in. 8 MP Progressive-scan CMOS imager.
			2. The 8MP E-Vu Network Eyeball Camera shall offer an effective number of pixels of 3840 (H) x 2160 (V) effective picture elements.
			3. The 8MP E-Vu Network Eyeball Camera shall offer a 2.8 mm fixed lens.
			4. The 8MP E-Vu Network Eyeball Camera shall have a horizontal angle of 105° and a vertical angle of 56°.
			5. The 8MP E-Vu Network Eyeball Camera shall offer a maximum aperture of F2.0.
			6. The 8MP E-Vu Network Eyeball Camera shall produce a color image with a minimum scene illumination of 0.04 lux at F2.0.
		3. Illumination
			1. The 8MP E-Vu Network Eyeball Camera shall have one (1) integrated IR LEDs.
			2. The 8MP E-Vu Network Eyeball Camera shall offer an LED distance of up to 30.0 m (98.43 ft).
		4. Video Characteristics
			1. The 8MP E-Vu Network Eyeball Camera shall offer CBR/VBR bit rate control.
			2. The 8MP E-Vu Network Eyeball Camera shall offer the following video compression protocols
				1. H.265 (12 to 8192 Kbps)
				2. H.264 (32 to 8192 Kbps)
			3. The 8MP E-Vu Network Eyeball Camera shall offer Smart H.265+, H.265, Smart H.264+, H.264, H.264B, and MJPEG video compression protocols.
			4. The 8MP E-Vu Network Eyeball Camera shall offer BLC, HLC, and Digital WDR modes of backlight compensation.
			5. The 8MP E-Vu Network Eyeball Camera shall offer Auto, Natural, Street Lamp, Outdoor, Manual, and Regional Custom White Balance modes.
			6. The 8MP E-Vu Network Eyeball Camera shall offer 3D DNR noise reduction.
			7. The 8MP E-Vu Network Eyeball Camera shall offer four (4) motion detection zones and four (4) region of interest zones.
			8. The 8MP E-Vu Network Eyeball Camera shall offer four (4) privacy masking areas.
			9. The 8MP E-Vu Network Eyeball Camera shall offer a Flip mode at 0°, 90°, 180°, and 270° and supports 90°, 270° with 2688 x 1520 resolution or lower.
		5. Streaming Capability
			1. The 8MP E-Vu Network Eyeball Camera shall generate full 8 MP
			(3840 x 2160 pixels) at 30 fps resolution using Smart H.265+ compression.
			2. The 8MP E-Vu Network Eyeball Camera shall offer the following resolutions:
				1. 3840 × 2160
				2. 3072 × 2048
				3. 3072 ×1728
				4. 2592 × 1944
				5. 2688 × 1520
				6. 3MP (2048 × 1536)
				7. 2304 × 1296
				8. 1080p (1920 × 1080)
				9. 1.3MP (1280 × 960)
				10. 720p (1280 x 720)
				11. D1 (704 x 480)
				12. VGA (640 x 480)
				13. CIF (352 x 240)
		6. The 8MP E-Vu Network Eyeball Camera shall generate two (2) streams at the following maximum resolutions:
			+ 1. Main Stream: 3840 × 2160 at 1 to 15 fps or 2688 x 1520 at 1 to 30 fps
				2. Sub Stream: 704 × 480 at 1 to 15 fps
		7. IP Connectivity
			1. The 8MP E-Vu Network Eyeball Camera shall allow full camera control and configuration capabilities via a TCP/IP network.
			2. The 8MP E-Vu Network Eyeball Camera shall deliver 8 MP video, at rates up to 30 frames per second via TCP/IP over an RJ-45 (10/100 Base-T) connection.
			3. The 8MP E-Vu Network Eyeball Camera shall conform to the ONVIF (Profile S, T), CGI, P2P, Milestone, Genetec, SDK, and API.
			4. The 8MP E-Vu Network Eyeball Camera shall support the IPv6 internet-layer protocol for packet switched internetworking across multiple IP networks.
			5. The 8MP E-Vu Network Eyeball Camera shall offer local and network storage options that include FTP and recording to a local PC for instant recording.
			6. The 8MP E-Vu Network Eyeball Camera shall support the following protocols: IPv4, IPv6, HTTP, TCP, UDP, ARP, RTIP, RTSP, SMTIP, FTIP, DHCP, DNS, DDNS, NTP, and Multicast.
			7. The 8MP E-Vu Network Eyeball Camera shall support the DMSS mobile application.
			8. The 8MP E-Vu Network Eyeball Camera shall support the Android and the iOS mobile operating systems.
		8. Installation Requirements
			1. The 8MP E-Vu Network Eyeball Camera shall be capable of operating in an outdoor environment within a temperature range of –40°C to +55°C (–40°F to +131°F).
			2. The 8MP E-Vu Network Eyeball Camera shall accept power, transmit video, and accept control via an Ethernet connection.
			3. The 8MP E-Vu Network Eyeball Camera shall support the following dual, redundant power options:
				1. 12 VDC
				2. PoE (802.3af)
				3. The 8MP E-Vu Network Eyeball Camera shall default to use power from the PoE power supply, if connected.
				4. The 8MP E-Vu Network Eyeball Camera shall reboot and switch to the 12 VDC power supply if power from the PoE power supply is lost.
		9. Housing Options
			1. The 8MP E-Vu Network Eyeball Camera shall be offered in a metal housing.
			2. The 8MP E-Vu Network Eyeball Camera housing shall conform to the IP67 Ingress Protection standard.
	2. ACCESSORIES
		1. The 8MP E-Vu Network Eyeball Camera shall offer the following optional accessories:
			1. [Junction box.]
			2. [Waterproof junction box.]
			3. [Wall mount.]
			4. [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