

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

MEGAPIXEL Panoramic – 8x2 MP+2MP PTZ OUTDOOR NETWORK CAMERA

PART 1 – GENERAL

1.1 SUMMARY

- A. 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
- B. 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.

1.2 REFERENCES

- A. Federal Communications Commission (FCC) (www.fcc.gov)
 - 1. (SEFD1509190-B)
- B. Underwriters Laboratories, Inc. (UL) (www.ul.com)
 - 1. E234884-A60-UL
- C. CONFORMITE EUROPEENNE
 - 1. EN60950:2000
- D. Bureauveritas(www.bureauveritas.com)
 - 1. EN50155:2007
- E. E-mark(www.tuv.com)
 - 1. ECE-Regulation NO.10

- F. HD standards
 - 1. Complies with the SMPTE 274M-2008 Standard in:
 - a. Resolution: 1920x1080
 - b. Scan: Progressive
 - c. Color representation: complies with ITU-R BT.709
 - d. Aspect ratio: 16:9
 - e. Frame rate: 25 and 30 frames/s
 - 2. Complies with the 296M-2001 Standard in:
 - a. Resolution: 1280x720
 - b. Scan: Progressive
 - c. Color representation: complies with ITU-R BT.709
 - d. Aspect ratio: 16:9
 - e. Frame rate: 25, 30, 50 and 60 frames/s
 - f. Interference-Causing Equipment Standards

1.3 SYSTEM DESCRIPTION

A. Section Includes

1. Video Surveillance – Surveillance Cameras – IP Cameras

B. Performance Requirements

1. The Panoramic camera shall be a full-featured 8x2MP+2MP PTZ unit designed for discrete video surveillance applications in indoor and outdoor environments.
2. The Panoramic camera shall offer a mechanical day/night IR cut filter that delivers color images during daylight and automatically switches to a monochrome image as the scene darkens.
3. The Panoramic camera shall be a high performance 1/1.9-in. progressive-scan day/night CMOS sensor with 8x2MP+2MP PTZ resolution.
4. The Panoramic camera shall support 36V DC power supply.
5. The Panoramic camera shall provide direct network connection using H.265 and H.264 compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
6. The Panoramic camera shall conform to the ONVIF profile S&G and CGI standards to provide interoperability with other conformant systems.
7. The Panoramic camera shall offer three (3) separate channels and each channel shall offer three (3) separate and configurable streams with two (2) individually configurable 4096x1800 stream at 1 to 25 fps and one (1) individually configurable 1920x1080 stream at 1 to 60 fps .
8. The Panoramic camera shall have eight(8) fixed focal length of 5mm and a Vari focal length from 5.5mm to 206mm .
9. The Panoramic camera shall offer:
 - a. IP67 environmental protection
 - b. IK10 vandal resistance
 - c. 6KV lightning rating
10. The Panoramic camera shall offer 7ch alarm in & 2ch alarm out.
11. The Panoramic dome camera shall offer 2ch line-in audio & 1ch line-out with G.711 AAC audio codec.
12. The Panoramic camera shall offer micro SD slot maximum support 128GB storage capability.

1.4 SUBMITTALS

- A. Submit under provisions of Section [01 33 00.]
- B. 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.
- C. Dimensional Drawings; include
 - 1. Overall device dimensions.
 - 2. Dimensions specific for installation.
- D. Closeout Submittals
 - 1. User manual.
 - 2. Parts list.
 - 3. Maintenance requirements.

1.5 QUALITY ASSURANCE

- A. Manufacturer:
 - 1. Minimum of [10] years of experience in manufacture and design Video Surveillance Devices.
- B. Video Surveillance System:
 - 1. List certifying bodies (UL, etc.)
 - 2. Provide evidence of compliance upon request.
- C. Installer:
 - 1. Minimum of [5] years of experience installing Video Surveillance System.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Comply with requirements of Section 01 60 00.
- B. Deliver materials in manufacturer's original, unopened, undamaged containers; and unharmed original identification labels.
- C. Protect store materials from environmental and temperature conditions following manufacturer's instructions.
- D. Handle and operate products and systems according to manufacturer's instructions.

1.7 WARRANTY

- A. Provide manufacturer's warranty covering [3] years for replacement and repair of defective equipment. Warranty varies country to country.

1.8 MAINTENANCE

- A. Make ordering of new equipment for expansions, replacements, and spare parts available to dealers and end users.
- B. Provide factory direct technical support via phone and e-mail.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. [Acceptable Manufacturer:
Zhejiang Dahua Technology Co.,Ltd
No.1199,Bin'an Road,Binjiang District, Hangzhou
Tel: +86 571 8768-8883
Fax: +86 571 8768-8815
Email: overseas@dahuatech.com
- B. 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.]

2.2 MEGAPIXEL Panoramic - 8x2 MP+2MP PTZ OUTDOOR NETWORK CAMERA – [DH-PSD81602P-A360] [DH-PSD81602N-A360]

- A. General Characteristics:
 - 1. The Panoramic camera shall be a full-featured 8x2MP+2MP PTZ unit designed for discrete video surveillance applications in indoor and outdoor environments.
 - 2. The Panoramic camera shall offer a mechanical day/night IR cut filter that delivers color images during daylight and automatically switches to a monochrome image as the scene darkens.
 - 3. The Panoramic camera shall be a high performance 1/1.9-in. progressive-scan day/night CMOS sensor with an effective pixel rating of 2x4096x1800+1920x1080.
 - 4. The Panoramic camera shall support 36V DC power supply.
 - 5. The Panoramic camera shall provide direct network connection using H.265 and H.264 compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
 - 6. The Panoramic camera shall conform to the ONVIF Profile S&G and CGI standards to provide interoperability with other conformant systems.
 - 7. The Panoramic camera shall offer three (3) separate channels and each channel shall offer three (3) separate and configurable streams with two (2) individually configurable 4096x1800 stream at 1 to 25 fps and one (1) individually configurable 1920x1080 stream at 1 to 60 fps .
 - 8. The Panoramic camera shall have eight(8) fixed focal length of 5mm and a Vari focal length from 5.5mm to 206mm .

9. The Panoramic camera shall offer:
 - a. IP67 environmental protection
 - b. IK10 vandal resistance
 - c. 6KV lightning rating
10. The Panoramic camera shall offer 7ch alarm in & 2ch alarm out.
11. The Panoramic dome camera shall offer 2ch line-in audio & 1ch line-out with G.711 AAC audio codec.
12. The Panoramic camera shall offer micro SD slot maximum support 128GB storage capability.

B. Imaging

1. The Panoramic camera shall offer nine 1/1.9-inch type CMOS progressive-scan imager.
2. The Panoramic camera shall offer an effective number of pixels of 2x4096x1800+1920x1080 effective picture elements.
3. The Panoramic camera shall offer eight(8) fixed focal length of 5mm and a Vari focal length from 5.5mm to 206mm .
4. The Panoramic camera shall have a [360°] horizon field of view.
5. The Panoramic camera shall offer a maximum aperture of F2.2 with fixed lens and a maximum aperture of F1.5 with Vari focal lens .
6. The Panoramic camera shall produce a color image with a minimum scene illumination of 0.005 lux at F2.2/0.002 lux at F1.5 and a monochrome image, when in the night mode, with a minimum illumination of 0.003 lux at F2.2/0.001 lux at F1.5.

- C. Video Characteristics
 - 1. The Panoramic camera shall offer CBR/VBR bit rate control.
 - 2. The Panoramic camera shall offer the following video compression protocols
 - a. H.265
 - b. H.264
 - 3. The Panoramic camera shall offer BLC, HLC, and WDR modes of backlight compensation.
 - 4. The Panoramic camera shall offer Auto, Sunny, Night, Outdoor, and Customized white balance modes.
 - 5. The Panoramic camera shall offer 3D DNR noise reduction.
 - 6. The Panoramic camera shall offer 4 privacy masking areas.
 - 7. The Panoramic camera shall offer motion detection (four zones) and region of interest (four zones) controls.
 - 8. The Panoramic camera shall offer 16x digital zoom.
- D. Streaming Capability
 - 1. The Panoramic camera shall generate 2x4096x1800+1920x1080 resolution using H.265 compression.
 - 2. The Panoramic camera shall offer Unicast and Multicast streaming methods.
 - 3. The Panoramic camera shall offer the following resolution streams:
 - a. (2x4096x1800+1920x1080 pixels)
 - 4. The Panoramic camera shall generate three (3) streams at the following maximum resolutions:
 - a. Main Stream: 2x4096x1800 at 25 fps+ 1920x1080 at 60 fps
 - b. Sub Stream 1: 2x1024X452 at 30 fps+ D1 at 60 fps
 - c. Sub Stream 2: 2x1920X932 at 30 fps+ 1080P at 60 fps
- E. IP Connectivity
 - 1. The Panoramic camera shall allow full camera control and configuration capabilities via a TCP/IP network.
 - 2. The Panoramic camera shall deliver 2x4096x1800 video, at rates up to 25 frames per second and 1920x1080 video, at rates up to 60 frames per second via TCP/IP over an RJ-45 (10/100/1000 Base-T) connection.
 - 3. The Panoramic camera shall conform to the ONVIF Profile S&G and the CGI standard.
 - 4. The Panoramic camera shall offer Quality of Service (QoS) configuration options.
 - 5. The Panoramic camera shall support the IPv6 internet-layer protocol for packet switched internetworking across multiple IP networks.
 - 6. The Panoramic camera shall support the following protocols: IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, ARP, RTSP, UDP, UPnP, ICMP, IGMP, SNMP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour, and 802.1x.
 - 7. The Panoramic camera shall support the Smart PSS and DSS management software.
 - 8. The Panoramic camera shall support the Android and the IOS mobile operating systems.

- F. Installation Requirements
 - 1. The Panoramic camera shall be capable of operating in an outdoor environment within a temperature range of -40°C to $+60^{\circ}\text{C}$ (-40°F to 140°F).
 - 2. The Panoramic camera shall accept power, transmit video, and accept control via a TCP/IP connection.
 - 3. The Panoramic camera shall support 36V DC power supply.
- G. Housing Options
 - 1. The Panoramic camera shall be offered in a metal housing.
 - 2. The Panoramic camera housing shall conform to the IP67 standard for a weather-resistant package.
 - 3. The Panoramic camera housing shall conform to the IK10 standard for vandal resistance.

2.3 ACCESSORIES

- A. The Panoramic camera shall offer the following optional accessories:
 - 1. Optional mounting hardware:
 - a. [Wall mount bracket]

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive devices and notify adverse conditions affecting installation or subsequent operation.
- B. Do not begin installation until unacceptable conditions are corrected.

3.2 PREPARATION

- A. Protect devices from damage during construction.

3.3 INSTALLATION

- A. Install devices in accordance with manufacturer's instruction at locations indicated on the floor drawings plans.
- B. Perform installation with qualified service personnel.
- C. Install devices in accordance with the National Electrical Code or applicable local codes.
- D. Ensure selected location is secure and offers protection from accidental damage.
- E. Location must provide reasonable temperature and humidity conditions, free from sources of electrical and electromagnetic interference.

3.4 FIELD QUALITY CONTROL

- A. Test snugness of mounting screws of all installed equipment.
- B. Test proper operation of all video system devices.
- C. Determine and report all problems to the manufacturer's customer service department.

3.5 ADJUSTING

- A. Make proper adjustment to video system devices for correct operation in accordance with manufacturer's instructions.
- B. Make any adjustment of camera settings to comply with specific customer's need.

3.6 DEMONSTRATION

- A. Demonstrate at final inspection that video management system and devices functions properly.

END OF SECTION