

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 11: Analog Cameras

2 MP 30X STARLIGHT HDCVI PTZ 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. Electromagnetic Compatibility
 - 1. FCC Part 15 Subpart B
 - 2. ANSI C63.4-2014
- B. Underwriters Laboratories, Inc. (UL) (www.ul.com)
 - 1. UL60950-1 + CAN/CSA C22.2, No.60950-1
- C. European Standards
 - 1. EN 55032
 - 2. EN 55024
 - 3. EN 50130-4
- D. 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 – Analog Cameras

B. Performance Requirements

1. The 2 MP PTZ camera shall be a full-featured camera designed for discrete video surveillance applications in indoor and outdoor environments.
2. The 2 MP PTZ camera shall offer a 1/2.8-in STARVIS™ Progressive-scan CMOS imager with an effective pixel density of 1920(H) x 1080(V), at 30 fps.
3. The 2 MP PTZ camera shall offer Starlight Technology for Ultra-low Light Sensitivity, producing a color image down to 0.005 lx at F1.6.
4. The 2 MP PTZ camera shall simultaneously transmit and receive video, audio, and control signals over a single standard coaxial cable over a distance of 600.0 m (1968.50 ft).
5. The 2 MP PTZ camera shall offer one (1) BNC video output connection to transmit an HDCVI or a CVBS signal.
6. The 2 MP PTZ camera shall incorporate a built-in heater to achieve an operational temperature down to -40°C (-40°F).
7. The 2 MP PTZ camera shall have a motorized lens with a focal length between 4.5 mm to 135.0 mm and an autofocus lens with 30x optical zoom.
8. The 2 MP PTZ camera shall offer integrated IR illumination with an effective distance of 150 m (492.13 ft).
9. The 2 MP PTZ camera shall offer True Wide Dynamic Range (120 dB) for clear images in extreme high-contrast environments.
10. The 2 MP PTZ camera shall accept two (2) incoming alarm channels and offer one (1) outgoing alarm channel.
11. The 2 MP PTZ camera housing shall conform to the IP66 Ingress Protection rating.

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, CSA, 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 [2] 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:
Dahua Technology USA Inc.
23 Hubble, Irvine, CA 92618
Tel: (949) 679-7777
Fax: (949) 679-5760
Email: sales.usa@global.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 2 MP 30X STARLIGHT HDCVI PTZ CAMERA [6C230IC]

- A. General Characteristics:
1. The 2 MP PTZ camera shall be a full-featured camera designed for discrete video surveillance applications in indoor and outdoor environments.
 2. The 2 MP PTZ camera shall offer a 1/2.8-in STARVIS™ Progressive-scan CMOS imager with an effective pixel density of 1920(H) x 1080(V), at 30 fps.
 3. The 2 MP PTZ camera shall offer Starlight Technology for Ultra-low Light Sensitivity, producing a color image down to 0.005 lx at F1.6.
 4. The 2 MP PTZ camera shall simultaneously transmit and receive video, audio, and control signals over a single standard coaxial cable over a distance of 600.0 m (1968.50 ft).
 5. The 2 MP PTZ camera shall offer one (1) BNC video output connection to transmit an HDCVI or a CVBS signal.
 6. The 2 MP PTZ camera shall incorporate a built-in heater to achieve an operational temperature down to -40 °C (-40 °F).
 7. The 2 MP PTZ camera shall have a motorized lens with a focal length between 4.5 mm to 135.0 mm and an autofocus lens with 30x optical zoom.
 8. The 2 MP PTZ camera shall offer integrated IR illumination with an effective distance of 150 m (492.13 ft).
 9. The 2 MP PTZ camera shall offer True Wide Dynamic Range (120 dB) for clear images in extreme high-contrast environments.
 10. The 2 MP PTZ camera shall accept two (2) incoming alarm channels and offer one (1) outgoing alarm channel.
 11. The 2 MP PTZ camera housing shall conform to the IP66 Ingress Protection rating.

B. Imaging

1. The 2 MP PTZ camera shall offer a 1/2.8-in STARVIS™ CMOS progressive-scan imager.
2. The 2 MP PTZ camera shall offer an effective number of pixels of 1920(H) x 1080(V) (2.0 MP) effective picture elements.
3. The 2 MP PTZ camera shall offer a 30x optical zoom lens (4.5 mm to 135.0 mm) with a further 16x digital zoom.
4. The 2 MP PTZ camera shall have a horizontal angle of view of between 2.4° to 67.8°.
5. The 2 MP PTZ camera shall offer an aperture of F1.6 to F5.0.
6. The 2 MP PTZ camera shall produce a color image with a minimum scene illumination of 0.005 lux at F1.6 and a monochrome image, when in the night mode, with a minimum illumination of 0 lux at F1.6 when in IR mode.
7. The 2 MP PTZ camera shall offer automatic focus and iris control with manual override.
8. The 2 MP PTZ camera shall offer a dynamic range of 120 dB.

C. PTZ Features

1. The 2 MP PTZ camera shall provide a pan range of 360° endless.
2. The 2 MP PTZ camera shall provide a tilt angle of -15° to 90° relative to the horizon.
3. The 2 MP PTZ camera shall provide an automatic flip feature to automatically rotate and flip the camera as it tilts through the vertical position to maintain the correct orientation of the image.
4. The 2 MP PTZ camera shall provide the following modes for variable pan/tilt speeds:
 - a. Manual Control:
 - 1) Pan: 0.1°/s to 300°/s
 - 2) Tilt: 0.1°/s to 200°/s
 - b. Preset Mode:
 - 1) Pan: 400°/s
 - 2) Tilt: 300°/s
5. The 2 MP PTZ camera shall provide a feature that automatically rotates, or pivots, the camera to simplify tracking of a person walking directly under the camera.
6. The 2 MP PTZ camera shall support 300 presets.
7. The 2 MP PTZ camera shall support the following PTZ modes:
 - a. Five (5) PTZ pattern modes.
 - b. Eight (8) PTZ tour modes.
 - c. One (1) Auto Pan mode.
 - d. One (1) Auto Scan mode.
8. The 2 MP PTZ camera shall automatically activate a preset, pan, scan, tour, or pattern mode if the camera does not receive a command during a specified period.
9. The 2 MP PTZ camera shall automatically restore the previous PTZ and lens status after the camera powers up after a power failure.
10. The 2 MP PTZ camera shall support the DH-SD, and the Pelco-P/D protocols.
11. The 2 MP PTZ camera shall automatically recognize the Pelco-P/D protocols.

- D. Illumination
 - 1. The 2 MP PTZ camera shall have four (4) integrated LEDs.
 - 2. The 2 MP PTZ camera shall offer an IR distance of up to 150.0 m (492.13 ft).

- E. DORI Distance
 - 1. The 2 MP PTZ camera shall conform to EN 62676-4, the standard that defines the criteria for the Detect, Observe, Recognize and Identify classifications.
 - 2. The 2 MP PTZ camera shall offer the following detect, observe, recognize, and identify distances:
 - a. Detect (8 ppf): 1862 m (6109 ft)
 - b. Observe (19 ppf): 744 m (2441 ft)
 - c. Recognize (38 ppf): 372 m (1220 ft)
 - d. Identify (76 ppf): 186 m (610 ft)

- F. Video Characteristics
 - 1. The 2 MP PTZ camera shall offer the following resolutions:
 - a. 1080p (1920 x 1080)
 - b. 720p (1280 x 720)
 - 2. The 2 MP PTZ camera shall generate 2 MP (1920 x 1080 pixels) resolution at 30 fps.
 - 3. The 2 MP PTZ camera shall offer BLC, HLC, and True WDR modes of backlight compensation.
 - 4. The 2 MP PTZ camera shall offer Auto, ATW, Indoor, Outdoor, and Manual modes.
 - 5. The 2 MP PTZ camera shall offer Ultra DNR (2D/3D) noise reduction.
 - 6. The 2 MP PTZ camera shall offer a feature that dynamically adjusts the camera's contrast settings to provide improved image quality in scenes affected by fog, smog, mist, smoke or other low-contrast interference.
 - 7. The 2 MP PTZ camera shall offer automatic and manual gain control settings.
 - 8. The 2 MP PTZ camera shall offer 24 privacy masking areas.

- G. Interfaces
 - 1. The 2 MP PTZ camera shall offer one (1) BNC video out connection capable of transmitting an HDCVI or a CVBS signal.
 - 2. The 2 MP PTZ camera shall offer one (1) RS485 interface.
 - 3. The 2 MP PTZ camera shall offer an audio interface with one (1) channel IN.
 - 4. The 2 MP PTZ camera shall offer an alarm interface with two (2) channels IN and one (1) channel OUT.

- H. Installation Requirements
 - 1. The 2 MP PTZ 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 2 MP PTZ camera shall require a 24 VAC, 3 A ($\pm 10\%$) power supply.

- I. Housing Options
 - 1. The 2 MP PTZ camera shall be offered in a metal housing.
 - 2. The 2 MP PTZ camera housing shall conform to the IP66 Ingress Protection standard.

2.3 ACCESSORIES

- A. The 2 MP PTZ camera shall offer the following accessories:
 - 1. Included
 - a. Power Supply.
 - b. Wall mount.
 - 2. Optional mounting hardware:
 - a. [Wall mount.]
 - b. [Mount adapter.]
 - c. [Power box.]
 - d. [Ceiling mount.]
 - e. [Junction box.]
 - f. [Pole mount.]
 - g. [Corner mount.]
 - h. [Parapet mount.]
 - 3. Optional accessories:
 - a. [UTC Controller.]

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