

## 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

#### HIGH SPEED HDCVI PTZ DOME – 2 MP 30X STARLIGHT IR PTZ HDCVI 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](http://www.fcc.gov))
  - 1. FCC Part 15 Subpart B
  - 2. ANSI C63.4- 2014
- B. Underwriters Laboratories, Inc. (UL) ([www.ul.com](http://www.ul.com))
  - 1. UL60950-1
- C. CSA Group ([www.csagroup.org](http://www.csagroup.org))
  - 1. CAN/CSA C22.2, No. 60950-1

- D. CONFORMITE EUROPEENNE (CE)
  - 1. EN55032
  - 2. EN55024
  - 3. EN50130-4
  
- E. 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 HDCVI PTZ camera shall be a full-featured HD PTZ unit designed for discrete video surveillance applications in indoor and outdoor environments.
  - 2. The HDCVI PTZ camera shall support HD/SD dual output.
  - 3. The HDVCI PTZ camera shall transmit simultaneously an audio, video, and data signal over a single coaxial cable.
  - 4. The HDCVI PTZ camera shall deliver 1080p/720p video resolution over an existing coaxial cable.
  - 5. The HDCVI PTZ camera shall utilize an algorithm that dynamically adjusts the cameras contrast settings to provide usable image quality in scenes affected by fog, smog, mist, smoke or other low contrast scene.
  - 6. The HDCVI PTZ camera shall offer a mechanical day/night filter that delivers color images during daylight and automatically switches to a monochrome image as the scene darkens.
  - 7. The HDCVI PTZ camera shall be a high performance 1/2.8-in. progressive-scan day/night STARVIS™ CMOS sensor with 1080p resolution.
  - 8. The HDCVI PTZ camera shall offer 120dB True Wide Dynamic Range for clear images in extreme high-contrast environments.
  - 9. The HDCVI PTZ camera shall offer one (1) BNC HDCVI video output.
  - 10. The HDCVI PTZ camera shall have an autofocus lens with 30x optical zoom.
  - 11. The HDCVI PTZ camera shall have variable pan and tilt speeds, and tour capability for optimal camera control and viewing at all zoom levels.
  - 12. The HDCVI PTZ camera shall support 300 (DH-SD) user-defined presets.
  - 13. The HDCVI PTZ camera shall offer IP66 environmental protection.
  - 14. The HDCVI PTZ camera shall support the 24 VAC power.

#### 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 [3] years for replacement and repair of defective equipment (except quick-wear parts, quick-wear parts cover 1 year warranty). Warranty varies from 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 Co., Ltd.  
No.1199 Bin'an Road, Binjiang District, Hangzhou, China. 310053  
Tel: +86 571 87688883  
Fax: +86 571 87688815  
Email: [overseas@global.dahuatech.com](mailto:overseas@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 HIGH SPEED HDCVI PTZ DOME – 2 MP 30X STARLIGHT IR PTZ HDCVI CAMERA SD6C230I-HC

- A. General Characteristics:
  - 1. The HDCVI PTZ camera shall provide a 1/2.8-in. type STARVIS™ CMOS day/night progressive-scan camera with the following:
    - a. 1920x1080 effective picture elements.
    - b. Sensitivity to below 0.005 lux.
  - 2. The HDCVI PTZ camera shall offer the following resolution streams:
    - a. 1080p (1920 x 1080 pixels) at 25/30 fps
    - b. 720p (1280 x 720 pixels) at 25/30/50/60 fps
  - 3. The HDCVI PTZ camera shall offer a Smart IR distance of up to 150 m (492 ft).
  - 4. The HDCVI PTZ camera shall support the 24 VAC power.
  - 5. The HDCVI PTZ camera shall offer Starlight Technology to produce usable video with minimal ambient light.
  - 6. The HDCVI PTZ camera shall utilize an algorithm that dynamically adjusts the camera's contrast settings to provide usable image quality in scenes affected by fog, smog, mist, smoke or other low contrast scene.
  - 7. The HDCVI PTZ camera shall offer True Wide Dynamic Range (120 dB) for clear images in extreme high-contrast environments.
  - 8. The HDCVI PTZ camera shall offer 300 user-defined pre-positions.
  - 9. The HDCVI PTZ camera shall offer five (5) PTZ pattern modes, eight (8) PTZ tour modes, an Auto Pan mode and an Auto Scan mode.
  - 10. The HDCVI PTZ camera shall offer an audio interface with one (1) channel in.
  - 11. The HDCVI PTZ camera shall offer an alarm interface with two (2) alarm inputs and one (1) alarm outputs.
  - 12. The HDCVI PTZ camera shall support a RS485 connection.
  - 13. The HDCVI PTZ camera shall offer a 1-channel BNC HDCVI high definition video output or a CVBS standard definition video output (switchable) suitable for a PAL or NTSC system.
  - 14. The HDCVI PTZ camera shall be able to be mounted to a wall, mounted to a ceiling or mounted to a pole.
  - 15. The HDCVI PTZ camera shall offer IP66 environmental protection.

B. Imaging

1. The HDCVI PTZ camera shall offer a 1/2.8-inch type STARVIS™ CMOS progressive-scan imager.
2. The HDCVI PTZ camera shall offer 1920x1080 effective picture elements.
3. The HDCVI PTZ camera shall offer a 16:9 aspect ratio.
4. The HDCVI PTZ camera shall offer a 30x optical zoom lens (4.5 mm to 135.0 mm) with a further 16x digital zoom.
5. The HDCVI PTZ camera shall have a 2.40° to 67.80° field of view.
6. The HDCVI PTZ camera shall offer a maximum aperture of F1.6 to F5.0.
7. The HDCVI 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 0.0005 lux at F1.6.
8. The HDCVI PTZ camera shall produce a usable image with a scene illumination of 0 Lux when IR is enabled.
9. The HDCVI PTZ camera shall produce an effective image with IR illumination at a distance of 150 m (492 ft).
10. The HDCVI PTZ camera shall contain a minimum of six (6) IR LEDs.
11. The HDCVI PTZ camera shall offer automatic focus and iris control with manual override.
12. The HDCVI PTZ camera shall have a signal to noise ratio of more than 55 dB.

C. PTZ Features

1. The HDCVI PTZ camera shall provide a pan range of 360° continuous.
2. The HDCVI PTZ camera shall provide a tilt angle of -15° to 90° relative to the horizon.
3. The HDCVI 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 HDCVI PTZ camera shall provide the following modes for variable pan/tilt speeds:
  - a. Manual Control:
    - 1) Pan: 0.1°/s to 160°/s
    - 2) Tilt: 0.1°/s to 120°/s
  - b. Preset Mode:
    - 1) Pan: 240°/s
    - 2) Tilt: 200°/s
5. The HDCVI 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 HDCVI PTZ camera shall support 300 presets.
7. The HDCVI 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 HDCVI PTZ camera shall automatically restore the previous PTZ and lens status after the camera powers up after a power failure.
9. The HDCVI PTZ camera shall offer Time Task, a feature that automatically activates a preset, pan, scan, tour, or pattern mode at a user-defined preset time.

- D. Video Characteristics
  1. The HDCVI PTZ camera shall offer BLC, HLC, and True WDR (120 dB) modes of backlight compensation.
  2. The HDCVI PTZ camera shall offer Auto, ATW, Indoor, Outdoor, and Manual white balance modes.
  3. The HDCVI PTZ camera shall offer Ultra DNR (2D/3D) noise reduction.
  4. The HDCVI PTZ camera shall utilize an algorithm that dynamically adjusts the camera's contrast settings to provide usable image quality in scenes affected by fog, smog, mist, smoke or other low contrast scene.
  5. The HDCVI PTZ camera shall offer 24 privacy masking areas.
- E. Interfaces
  1. The HDCVI PTZ camera shall offer a 1-channel BNC HDCVI high definition video output or a CVBS standard definition video output (switchable) suitable for a PAL or NTSC system.
  2. The HDCVI PTZ camera shall offer an audio interface with one (1) channel in.
  3. The HDCVI PTZ camera shall offer an alarm interface with two (2) alarm inputs and one (1) alarm output.
  4. The HDCVI PTZ camera shall offer a RS485 interface.
- F. Installation Requirements
  1. The HDCVI PTZ camera shall be capable of operating in an outdoor environment within a temperature range of  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $140^{\circ}\text{F}$ ).
  2. The HDCVI PTZ camera shall be capable of starting up at or above  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ).
  3. The HDCVI PTZ camera shall support 24 VAC power supply.
- G. Housing Options
  1. The HDCVI PTZ camera shall be offered in a metal housing.
  2. The HDCVI PTZ camera housing shall conform to the IP66 standard for a weather-resistant package.

## 2.3 ACCESSORIES

- A. The HDCVI PTZ camera shall offer the following accessories included with the package:
  1. Wall mount bracket
  2. Power supply
- B. The HDCVI PTZ camera shall offer the following optional accessories:
  1. [Wall mount bracket]
  2. [Mount Adapter]:
  3. [Power Box]
  4. [Ceiling mount bracket]
  5. [Junction box]
  6. [Pole mount bracket]
  7. [Corner mount bracket]
  8. [Parapet 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**