

## 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

#### 4MP HDCVI WDR FISHEYE 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 21 21: Video Surveillance – Surveillance Cameras – Illuminators
4. 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. CONFORMITE EUROPEENNE (CE)
  - 1. EN55032
  - 2. EN55024
  - 3. EN50130-4
  
- B. Federal Communications Commission (FCC) ([www.fcc.gov](http://www.fcc.gov))
  - 1. CFR 47 FCC Part 15 Subpart B
  
- C. Underwriters Laboratories, Inc. (UL) ([www.ul.com](http://www.ul.com))
  - 1. UL60950-1
  
- D. CSA Group ([www.csagroup.org](http://www.csagroup.org))
  - 1. CAN/CSA C22.2 No.60950-1
  
- E. ANSI Standard
  - 1. ANSI C63.4-2014
  
- 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 and 30 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 4MP HDCVI Fisheye camera shall be a full-featured 4MP HDCVI Fisheye camera unit designed for discrete video surveillance applications in indoor environments.
2. The 4MP HDCVI Fisheye camera shall transmit simultaneously high-definition and standard-definition video over coaxial cable.
3. The 4MP HDCVI Fisheye camera shall offer an HDCVI and a CVBS output each with a BNC connector.
4. The 4MP HDCVI Fisheye camera shall offer a 360° panoramic view.
5. The 4MP HDCVI Fisheye camera shall be a high performance 1/3-in. progressive-scan CMOS sensor with 4MP resolution.
6. The 4MP HDCVI Fisheye camera shall offer True Wide Dynamic Range for clear images in extreme high-contrast environments.
7. The 4MP HDCVI Fisheye camera shall have a panoramic fixed focal length of 1.18mm.
8. The 4MP HDCVI Fisheye camera shall offer:
  - a. IK10 vandal resistance
  - b. 4KV lightning resistance.

#### 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 Co., Ltd.  
1199 Bin'an Road, Hangzhou China  
Tel: +86 (571) 8768 8883  
Fax: +86 (571) 8768 8815  
Email: [overseas@dahuatech.com](mailto: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 4MP WDR HDCVI FISHEYE CAMERA – [DH-HAC-EB2401P] [DH-HAC-EB2401N]**

- A. General Characteristics:
  - 1. The 4MP HDCVI Fisheye camera shall be a full-featured 4MP HDCVI Fisheye camera unit designed for discrete video surveillance applications in indoor environments.
  - 2. The 4MP HDCVI Fisheye camera shall transmit simultaneously high-definition and standard-definition video over coaxial cable.
  - 3. The 4MP HDCVI Fisheye camera shall offer an HDCVI and a CVBS output each with a BNC connector.
  - 4. The 4MP HDCVI Fisheye camera shall offer a 360° panoramic view.
  - 5. The 4MP HDCVI Fisheye camera shall transmit 4MP video up to 700 m (0.43 miles) via RG6 coaxial cable, and up to 300 m (0.19 miles) via CAT5e UTP cable. Actual transmission distance may vary due to the quality and deployment of the cable.
  - 6. The 4MP HDCVI Fisheye camera shall be a high performance 1/3-in. progressive-scan CMOS sensor with 4MP resolution.
  - 7. The 4MP HDCVI Fisheye camera shall offer True Wide Dynamic Range for clear images in extreme high-contrast environments.
  - 8. The 4MP HDCVI Fisheye camera shall have a panoramic fixed focal length of 1.18mm.
  - 9. The 4MP HDCVI Fisheye camera shall offer:
    - a. IK10 vandal resistance
    - b. 4KV lightning resistance

B. Imaging

1. The 4MP HDCVI Fisheye camera shall offer a 1/3-inch type CMOS progressive-scan image sensor with 4MP resolution.
2. The 4MP HDCVI Fisheye camera shall offer an effective number of pixels of  $2688 \times 1520$  (4.1MP).
3. The 4MP HDCVI Fisheye camera shall offer a 16:9 aspect ratio.
4. The 4MP HDCVI Fisheye camera shall have a panoramic fixed focal length of 1.18mm.
5. The 4MP HDCVI Fisheye camera shall have a close focus distance of 100 mm (3.94 in.).
6. The 4MP HDCVI Fisheye camera shall have a  $180^\circ$  horizontal field of view.
7. The 4MP HDCVI Fisheye camera shall offer an aperture of F2.0.
8. The 4MP HDCVI Fisheye camera shall be capable to produce a color image with a minimum scene illumination of 0.01 lux at F2.0 and a monochrome image with a minimum scene illumination of 0.001 lux at F2.0. The image can be set to Auto, which means the image automatically switches between color and black/white modes based on the scene illumination, or be set to Color or Black/White, which means the image always keep in color or black/white mode.
9. The 4MP HDCVI Fisheye camera shall offer configurable threshold and waiting time for switching between color and black/white modes.

### C. Video Characteristics

1. The 4MP HDCVI Fisheye camera shall generate:
  - a. 4MP resolution at 25 fps
  - b. 1080p resolution at 25/30 fps
  - c. 720p resolution at 25/30 fps
2. The 4MP HDCVI Fisheye camera shall offer one BNC HDCVI high-definition output and one BNC CVBS standard-definition output.
3. The 4MP HDCVI Fisheye camera shall offer a 360° panoramic view.
4. The 4MP HDCVI Fisheye camera shall offer BLC, HLC, and WDR modes of backlight compensation.
5. The 4MP HDCVI Fisheye camera shall offer 3DNR and 2DNR noise reduction.
6. The 4MP HDCVI Fisheye camera shall offer Image Adjust options including Image Mode, Sharpness, Brightness, Contrast, Saturation, Sharp Suppress, Chroma Suppress, Gamma, 2DNR and 3DNR.
7. The 4MP HDCVI Fisheye camera shall offer maximum electronic shutter up to 1/3s, minimum electronic shutter down to 1/100,000s and adjustable exposure levels.
8. The 4MP HDCVI Fisheye camera shall offer White Balance modes including Auto, Auto Tracking, Manual, Area WB (adjusting white balance of the image based on a configurable area), Sodium Lamp, Indoor and Outdoor.
9. The 4MP HDCVI Fisheye camera shall offer 11 languages for the OSD menu, including Chinese, English, Spanish, Portuguese, German, French, Italian, Polish, Russian, Korean and Japanese.
10. The 4MP HDCVI Fisheye camera shall offer at most 8 times digital zoom.
11. The 4MP HDCVI Fisheye camera shall offer electronic defog feature.
12. The 4MP HDCVI Fisheye camera shall offer 8 privacy masking areas.
13. The 4MP HDCVI Fisheye camera shall offer 4 motion detect areas.
14. The 4MP HDCVI Fisheye camera shall offer vertical and horizontal mirror feature.
15. The 4MP HDCVI Fisheye camera shall offer voltage alarm for abnormal (over-high or over-low) power supply input.

### D. Installation Requirements

1. The 4MP HDCVI Fisheye camera shall be capable of operating in an environment within a temperature range of  $-30^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $140^{\circ}\text{F}$ ) and a humidity less than 90% RH.
2. The 4MP HDCVI Fisheye camera shall transmit video and data via a coaxial cable, or via UTP using balun, and shall accept power from power adapter or via coaxial cable using external POC modules.
3. The 4MP HDCVI Fisheye camera shall accept power from a 12V DC source  $\pm 25\%$  voltage fluctuation.

### E. Housing Options

1. The 4MP HDCVI Fisheye camera shall be offered in an aluminum housing.
2. The 4MP HDCVI Dome camera housing shall conform to the IK10 standard for vandal resistance.

## 2.3 ACCESSORIES

- A. The 4MP HDCVI Fisheye camera shall offer the following accessories:
  - 1. Optional mounting hardware:
    - a. [Wall mount bracket]
    - b. [Pole 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**