SEPTEMBER 2019

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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 11: Analog Cameras**

**2 MP HDCVI VARI-FOCAL STARLIGHT BULLET 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. CFR 47 FCC Part 15 Subpart B
     2. Underwriters Laboratories, Inc. (UL) (www.ul.com)
        1. UL60950-1
     3. CSA Group ([www.csagroup.org](http://www.csagroup.org))
        1. CAN/CSA C22.2 No.60950-1
     4. ANSI Standard
        1. ANSI C63.4-2014
     5. 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 – Analog Cameras
     2. Performance Requirements
        1. The 2 MP HDCVI Vari-focal Bullet camera shall be a full-featured analog HD Vari-focal bullet camera unit designed for discrete video surveillance applications in indoor and outdoor environments.
        2. The 2 MP HDCVI Vari-focal Bullet camera shall transmit high-definition or standard-definition video over a coaxial cable.
        3. The 2 MP HDCVI Vari-focal Bullet camera shall support the HDCVI, CVBS, AHD, or the TVI video output formats via a BNC connector.
        4. The 2 MP HDCVI Vari-focal Bullet camera shall offer a built-in microphone plus a separate RCA audio input.
        5. The 2 MP HDCVI Vari-focal Bullet camera shall offer starlight technology for ultra low-light sensitivity.
        6. The 2 MP HDCVI Vari-focal Bullet camera shall be a high performance   
           1/2.8 in. progressive-scan CMOS sensor with a 2 MP resolution.
        7. The 2 MP HDCVI Vari-focal Bullet camera shall transmit 2 MP video up to   
           800 m (2624.67 ft) via an RG-6/U coaxial cable, and up to 300 m (984.25 ft) via a CAT 6 UTP cable (balun required).
        8. The 2 MP HDCVI Vari-focal Bullet camera shall offer True Wide Dynamic Range for clear images in extreme high-contrast environments.
        9. The 2 MP HDCVI Vari-focal Bullet camera shall have a focal length of 2.7 mm to 13.5 mm with a motorized zoom lens.
        10. The 2 MP HDCVI Vari-focal Bullet camera shall offer Smart IR that provides integrated infrared illumination to capture images in low light or total darkness at a distance of 80.0 m (262.47 ft).
        11. The 2 MP HDCVI Vari-focal Bullet camera shall come with a built-in heater to allow the camera to operate in temperatures down to -40 °C (-40 °F).
        12. The 2 MP HDCVI Vari-focal Bullet camera shall conform to the following ratings:
            1. IP67 Ingress Protection
            2. 4 KV lightning rating
  3. SUBMITTALS

* + 1. Submit under provisions of Section [01 33 00.]
    2. 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.
    3. Dimensional Drawings; include
       1. Overall device dimensions.
       2. Dimensions specific for installation.
    4. 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 [2] 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.

23 Hubble, Irvine, CA 92618

Tel: (949) 679-7777

Fax: (949) 679-5760

Email: [sales.usa@global.dahuatech.com](mailto: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. 2 MP HDCVI VARI-FOCAL STARLIGHT BULLET CAMERA – A22CFAZ
     1. General Characteristics:
        1. The 2 MP HDCVI Vari-focal Bullet camera shall be a full-featured analog HD Vari-focal bullet camera unit designed for discrete video surveillance applications in indoor and outdoor environments.
        2. The 2 MP HDCVI Vari-focal Bullet camera shall transmit high-definition or standard-definition video over a coaxial cable.
        3. The 2 MP HDCVI Vari-focal Bullet camera shall offer a built-in microphone plus a separate RCA audio input.
        4. The 2 MP HDCVI Vari-focal Bullet camera shall offer starlight technology for ultra low-light sensitivity.
        5. The 2 MP HDCVI Vari-focal Bullet camera shall be a high performance   
           1/2.8 in. progressive-scan CMOS sensor with a 2 MP resolution.
        6. The 2 MP HDCVI Vari-focal Bullet camera shall transmit 2 MP video up to   
           800 m (2624.67 ft) via an RG-6/U coaxial cable, and up to 300 m (984.25 ft) via a CAT 6 UTP cable (balun required).
        7. The 2 MP HDCVI Vari-focal Bullet camera shall offer True Wide Dynamic Range for clear images in extreme high-contrast environments.
        8. The 2 MP HDCVI Vari-focal Bullet camera shall have a focal length of 2.7 mm to 13.5 mm with a motorized zoom lens.
        9. The 2 MP HDCVI Vari-focal Bullet camera shall offer Smart IR that provides integrated infrared illumination to capture images in low light or total darkness at a distance of 80.0 m (262.47 ft).
        10. The 2 MP HDCVI Vari-focal Bullet camera shall come with a built-in heater to allow the camera to operate in temperatures down to -40 °C (-40 °F).
        11. The 2 MP HDCVI Vari-focal Bullet camera shall conform to the following ratings:
            1. IP67 Ingress Protection
            2. 4 KV lightning rating
     2. Imaging
        1. The 2 MP HDCVI Vari-focal Bullet camera shall offer a 1/2.8-inch type CMOS progressive-scan imager.
        2. The 2 MP HDCVI Vari-focal Bullet camera shall offer an effective number of pixels of 1920(H) x 1080(V), 2 MP, effective picture elements.
        3. The 2 MP HDCVI Vari-focal Bullet camera shall offer a 16:9 aspect ratio.
        4. The 2 MP HDCVI Vari-focal Bullet camera shall offer a variable focal length of 2.7 mm to 13.5 mm.
        5. The 2 MP HDCVI Vari-focal Bullet camera shall offer a motorized zoom lens.
        6. The 2 MP HDCVI Vari-focal Bullet camera shall have a close focus distance of 200.0 mm (7.87 in.).
        7. The 2 MP HDCVI Vari-focal Bullet camera shall have a 28.7° to 108.7° horizontal field of view.
        8. The 2 MP HDCVI Vari-focal Bullet camera shall offer a maximum aperture of F1.6.
        9. The 2 MP HDCVI Vari-focal Bullet camera shall produce a color image with a minimum scene illumination of 0.004 lux at F1.3 (30 IRE).
        10. The 2 MP HDCVI Vari-focal Bullet camera shall produce an image at 0 lux when in IR mode.
     3. Video Characteristics
        1. The 2 MP HDCVI Vari-focal Bullet camera shall generate:
           1. 1080p resolution at 30 fps
           2. 720p resolution at 60 fps
        2. The 2 MP HDCVI Vari-focal Bullet camera shall support the HDCVI, CVBS, AHD, or the TVI video output formats via a BNC connector.
        3. The 2 MP HDCVI Vari-focal Bullet camera shall offer BLC, HLC, and True WDR modes of backlight compensation.
        4. The 2 MP HDCVI Vari-focal Bullet camera shall offer 2D/3D noise reduction.
     4. Installation Requirements
        1. The 2 MP HDCVI Vari-focal Bullet camera shall be capable of operating in an outdoor environment within a temperature range of –40 °C to +60 °C   
           (–40 °F to 140 °F).
        2. The 2 MP HDCVI Vari-focal Bullet camera shall accept power, transmit video, and accept control via a coaxial cable.
        3. The 2 MP HDCVI Vari-focal Bullet camera shall accept power from a 12 VDC or a from a 24 VAC source within a ±30% voltage fluctuation range.
     5. Housing Options
        1. The 2 MP HDCVI Vari-focal Bullet camera shall be offered in an aluminum housing.
        2. The 2 MP HDCVI Vari-focal Bullet camera housing shall conform to the IP67 Ingress Protection standard.
  2. ACCESSORIES
     1. The 2 MP HDCVI Vari-focal Bullet camera shall offer the following accessories:
        1. Optional mounting hardware:
           1. [Junction box]
           2. [Corner mount]
           3. [Pole mount bracket]
           4. [12 VDC, 1A power adapter]
           5. [12 VDC, 2A power adapter]
           6. [Passive HDCVI Balun]
           7. [Audio Pickup]

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