AUGUST 2020

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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 13: IP Cameras**

**4 MP WIFI MINI BULLET NETWORK 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 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. FCC CFR 47 Part 15 Subpart B
     2. Underwriters Laboratories, Inc. (UL) (www.ul.com)
        1. 60950-1
     3. 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 – IP Cameras
     2. Performance Requirements
        1. The 4 MP WiFi Mini Bullet camera shall be a full-featured 4 MP WiFi-enabled fixed camera designed for discrete video surveillance applications in indoor and outdoor environments.
        2. The 4 MP WiFi Mini Bullet camera shall support the IEEE802.11b/g/n specification.
        3. The 4 MP WiFi Mini Bullet 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.
        4. The 4 MP WiFi Mini Bullet camera shall be a high performance 1/3-in. progressive-scan CMOS sensor with 4 MP resolution.
        5. The 4 MP WiFi Mini Bullet camera shall offer Digital Wide Dynamic Range for clear images in extreme high-contrast environments.
        6. The 4 MP WiFi Mini Bullet camera shall provide direct network connection using Smart H.265+ compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
        7. The 4 MP WiFi Mini Bullet camera shall conform to ONVIF (Profile T, Profile S, Profile G), CGI, SDK, and API.
        8. The 4 MP WiFi Mini Bullet camera shall offer two (2) separate and configurable streams with one (1) individually configurable 4 MP stream at 20 fps.
        9. The 4 MP WiFi Mini Bullet camera shall have a fixed focal length of 2.8 mm.
        10. The 4 MP WiFi Mini Bullet camera shall offer Smart IR that provides integrated infrared illumination to capture images in low light or total darkness at a distance of 30.0 m (98.04 ft).
        11. The 4 MP WiFi Mini Bullet camera shall offer:
            1. IP67 environmental protection
  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. 4 MP WIFI MINI BULLET NETWORK CAMERA DH-IPC-HFW1435S-W-S2
     1. General Characteristics:
        1. The 4 MP WiFi Mini Bullet camera shall be a full-featured 4 MP WiFi-enabled fixed camera designed for discrete video surveillance applications in indoor and outdoor environments.
        2. The 4 MP WiFi Mini Bullet camera shall support the IEEE802.11b/g/n specification.
        3. The 4 MP WiFi Mini Bullet 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.
        4. The 4 MP WiFi Mini Bullet camera shall be a high performance 1/3-in. progressive-scan CMOS sensor with 4 MP resolution.
        5. The 4 MP WiFi Mini Bullet camera shall offer Digital Wide Dynamic Range for clear images in extreme high-contrast environments.
        6. The 4 MP WiFi Mini Bullet camera shall provide direct network connection using Smart H.265+ compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
        7. The 4 MP WiFi Mini Bullet camera shall conform to ONVIF (Profile T, Profile S, Profile G), CGI, SDK, and API.
        8. The 4 MP WiFi Mini Bullet camera shall offer two (2) separate and configurable streams with one (1) individually configurable 4 MP stream at 20 fps.
        9. The 4 MP WiFi Mini Bullet camera shall have a fixed focal length of 2.8 mm.
        10. The 4 MP WiFi Mini Bullet camera shall offer Smart IR that provides integrated infrared illumination to capture images in low light or total darkness at a distance of 30.0 m (98.04 ft).
        11. The 4 MP WiFi Mini Bullet camera shall offer IP67 environmental protection.
     2. Imaging
        1. The 4 MP WiFi Mini Bullet camera shall offer a 1/3-inch type CMOS progressive-scan CMOS imager.
        2. The 4 MP WiFi Mini Bullet camera shall offer an effective number of pixels of   
           2560 (H) x 1440 (V) effective picture elements.
        3. The 4 MP WiFi Mini Bullet camera shall offer a fixed focal length of 2.8 mm.
        4. The 4 MP WiFi Mini Bullet camera shall have a 97° horizontal field of view.
        5. The 4 MP WiFi Mini Bullet camera shall offer a maximum aperture of F2.0.
        6. The 4 MP WiFi Mini Bullet camera shall produce a color image with a minimum scene illumination of 0.8872 lux at F2.0.
        7. The 4 MP WiFi Mini Bullet camera shall produce an image at 0 lux when in IR mode.
     3. Video Characteristics
        1. The 4 MP WiFi Mini Bullet shall broadcast a video data signal via a 2.4 GHz WiFi (IEEE802.11ab/g/n).
        2. The 4 MP WiFi Mini Bullet camera shall offer CBR/VBR bit rate control.
        3. The 4 MP WiFi Mini Bullet camera shall offer H.265 (9 kbps to 7424 Kbps) video compression.
        4. The 4 MP WiFi Mini Bullet camera shall offer the Smart H.265+ and the Smart H.264+ video compression standards.
        5. The 4 MP WiFi Mini Bullet camera shall offer BLC, HLC, and Digital WDR modes of backlight compensation.
        6. The 4 MP WiFi Mini Bullet camera shall offer Auto, Natural, Street Lamp, Outdoor, Manual, and Regional Custom white balance modes.
        7. The 4 MP WiFi Mini Bullet camera shall offer 3D DNR noise reduction.
        8. The 4 MP WiFi Mini Bullet camera shall offer 4 privacy masking areas.
        9. The 4 MP WiFi Mini Bullet camera shall offer motion detection (four zones) and region of interest (four zones) controls.
     4. Streaming Capability
        1. The 4 MP WiFi Mini Bullet camera shall generate 4 MP resolution using Smart H.265+ video compression.
        2. The 4 MP WiFi Mini Bullet camera shall offer Unicast and Multicast streaming methods.
        3. The 4 MP WiFi Mini Bullet camera shall offer the following resolution streams:
           1. 4 MP (2560 x 1440)
           2. 3 MP (2304 x 1296)
           3. 1080p (1920 x 1080)
           4. 1.3 MP (1280 x 960)
           5. 720 (1280 x 720 pixels)
           6. VGA (640 x 480 pixels)
           7. 640 x 360
           8. QVGA (320 x 240 pixels)
        4. The 4 MP WiFi Mini Bullet camera shall generate two (2) streams at the following maximum resolutions:
           1. Main Stream: 2560 x 1440 at 20 fps or 2304 x 1296 at 30 fps
           2. Sub Stream: 640 x 480 at 20 fps (Main Stream: 2560 x 1440 at 20 fps) or 640 x 480 at 30 fps (Main Stream: 2304 x 1296 at 30 fps)
     5. IP Connectivity
        1. The 4 MP WiFi Mini Bullet camera shall allow full camera control and configuration capabilities via a TCP/IP network.
        2. The 4 MP WiFi Mini Bullet camera shall allow full camera control and configuration capabilities via a Wi-Fi (IEEE802.11b/g/n) network.
        3. The 4 MP WiFi Mini Bullet camera shall deliver 4 MP video, at rates up to 20 frames per second via TCP/IP over an RJ-45 (10/100 Base-T) connection or via a Wi-Fi (IEEE802.11b/g/n) network.
        4. The 4 MP WiFi Mini Bullet camera shall conform to the ONVIF (Profile T, Profile S, Profile G) standards.
        5. The 4 MP WiFi Mini Bullet camera shall offer Quality of Service (QoS) configuration options.
        6. The 4 MP WiFi Mini Bullet camera shall support the IPv6 internet-layer protocol for packet switched internetworking across multiple IP networks.
        7. The 4 MP WiFi Mini Bullet camera shall support the following protocols: IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour, and 802.1x.
        8. The 4 MP WiFi Mini Bullet camera shall support the Smart PSS and DSS management software.
        9. The 4 MP WiFi Mini Bullet camera shall support the Android and the IOS mobile operating systems.
        10. The 4 MP WiFi Mini Bullet camera shall allow NAS (Network Attached Storage), Local PC for instant recording, and MicroSD Card, 128 GB maximum.
     6. Installation Requirements
        1. The 4 MP WiFi Mini Bullet camera shall be capable of operating in an outdoor environment within a temperature range of –30°C to +50°C (–22° F to +122° F).
        2. The 4 MP WiFi Mini Bullet camera shall accept power, transmit video, and accept control via a TCP/IP connection.
        3. The 4 MP WiFi Mini Bullet camera shall require a 12 VDC power supply.
     7. Housing Options
        1. The 4 MP WiFi Mini Bullet camera shall be offered in a metal housing.
        2. The 4 MP WiFi Mini Bullet camera housing shall conform to the IP67 standard for a weather-resistant package.
  2. ACCESSORIES
     1. The 4 MP WiFi Mini Bullet camera shall offer the following accessories:
        1. Optional mounting hardware:
           1. [Junction box.]
           2. [Pole mount bracket.]
           3. [Corner mount bracket.]

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