July 2018

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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 DOME 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 Dome 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 Dome camera shall support the IEEE802.11ac specification.
        3. The 4 MP WiFi Mini Dome 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 Dome camera shall be a high performance 1/3-in. progressive-scan CMOS sensor with 4 MP resolution.
        5. The 4 MP WiFi Mini Dome camera shall offer Digital Wide Dynamic Range for clear images in extreme high-contrast environments.
        6. The 4 MP WiFi Mini Dome camera shall provide direct network connection using H.264 and MJPEG compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
        7. The 4 MP WiFi Mini Dome camera shall conform to the ONVIF PSI, and CGI standards to provide interoperability with other conformant systems.
        8. The 4 MP WiFi Mini Dome 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 Dome camera shall have a fixed focal length of 2.8 mm.
        10. The 4 MP WiFi Mini Dome 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 Dome camera shall offer:
            1. IP67 environmental protection
            2. IK10 vandal resistance
            3. 2 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. 4 MP WIFI MINI DOME NETWORK CAMERA N41BL12-W
     1. General Characteristics:
        1. The 4 MP WiFi Mini Dome 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 Dome camera shall support the IEEE802.11ac specification.
        3. The 4 MP WiFi Mini Dome 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 Dome camera shall be a high performance 1/3-in. progressive-scan CMOS sensor with 4 MP resolution.
        5. The 4 MP WiFi Mini Dome camera shall offer Digital Wide Dynamic Range for clear images in extreme high-contrast environments.
        6. The 4 MP WiFi Mini Dome camera shall provide direct network connection using H.264 and MJPEG compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
        7. The 4 MP WiFi Mini Dome camera shall conform to the ONVIF PSI, and CGI standards to provide interoperability with other conformant systems.
        8. The 4 MP WiFi Mini Dome 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 Dome camera shall have a fixed focal length of 2.8 mm.
        10. The 4 MP WiFi Mini Dome 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 Dome camera shall offer:
            1. IP67 environmental protection
            2. IK10 vandal resistance
            3. 2 KV lightning rating
     2. Imaging
        1. The 4 MP WiFi Mini Dome camera shall offer a 1/3-inch type CMOS progressive-scan CMOS imager.
        2. The 4 MP WiFi Mini Dome camera shall offer an effective number of pixels of   
           2688 x 1520 effective picture elements.
        3. The 4 MP WiFi Mini Dome camera shall offer a 16:9 aspect ratio.
        4. The 4 MP WiFi Mini Dome camera shall offer a fixed focal length of 2.8 mm.
        5. The 4 MP WiFi Mini Dome camera shall have a 106° horizontal field of view.
        6. The 4 MP WiFi Mini Dome camera shall offer a maximum aperture of F2.0.
        7. The 4 MP WiFi Mini Dome camera shall produce a color image with a minimum scene illumination of 0.53 lux at F2.0.
        8. The 4 MP WiFi Mini Dome camera shall produce an image at 0 lux when in IR mode.
     3. Video Characteristics
        1. The 4 MP WiFi Mini Dome shall broadcast a video data signal via a 2.4 GHz WiFi (IEEE802.11a/b/g/n/ac).
        2. The 4 MP WiFi Mini Dome camera shall offer CBR/VBR bit rate control.
        3. The 4 MP WiFi Mini Dome camera shall offer H.265 (9 K to 8448 Kbps) video compression.
        4. The 4 MP WiFi Mini Dome camera shall offer the Smart H.265+ and the Smart H.264+ video compression standards.
        5. The 4 MP WiFi Mini Dome camera shall offer BLC, HLC, and Digital WDR modes of backlight compensation.
        6. The 4 MP WiFi Mini Dome camera shall offer Auto, Natural, Street Lamp, Outdoor, and Manual white balance modes.
        7. The 4 MP WiFi Mini Dome camera shall offer 3D DNR noise reduction.
        8. The 4 MP WiFi Mini Dome camera shall offer 4 privacy masking areas.
        9. The 4 MP WiFi Mini Dome camera shall offer motion detection (four zones) and region of interest (four zones) controls.
        10. The 4 MP WiFi Mini Dome camera shall offer 16x digital zoom.
     4. Streaming Capability
        1. The 4 MP WiFi Mini Dome camera shall generate 4 MP resolution using Smart H.265+ video compression.
        2. The 4 MP WiFi Mini Dome camera shall offer Unicast and Multicast streaming methods.
        3. The 4 MP WiFi Mini Dome camera shall offer the following resolution streams:
           1. 4 MP (2560 x 1440)
           2. 3 MP (2304 x 1296 pixels)
           3. 1080p (1920 x 1080 pixels)
           4. SXGA (1280 x 1024)
           5. 1.3 MP (1280 x 960)
           6. 720 (1280 x 720 pixels)
           7. VGA (640 x 480 pixels)
           8. QVGA (320 x 240 pixels)
        4. The 4 MP WiFi Mini Dome camera shall generate two (2) streams at the following maximum resolutions:
           1. Main Stream: 4 MP at 20 fps or 3 MP, 1080p at 30 fps.
           2. Sub Stream: VGA/QVGA at 30 fps
     5. IP Connectivity
        1. The 4 MP WiFi Mini Dome camera shall allow full camera control and configuration capabilities via a TCP/IP network.
        2. The 4 MP WiFi Mini Dome camera shall allow full camera control and configuration capabilities via a Wi-Fi (IEEE802.11b/g/n/ac) network.
        3. The 4 MP WiFi Mini Dome camera shall deliver 3 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/ac) network.
        4. The 4 MP WiFi Mini Dome camera shall conform to the ONVIF, PSIA, and the CGI standard.
        5. The 4 MP WiFi Mini Dome camera shall offer Quality of Service (QoS) configuration options.
        6. The 4 MP WiFi Mini Dome camera shall support the IPv6 internet-layer protocol for packet switched internetworking across multiple IP networks.
        7. The 4 MP WiFi Mini Dome 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 Dome camera shall support the Smart PSS and DSS management software.
        9. The 4 MP WiFi Mini Dome camera shall support the Android and the IOS mobile operating systems.
        10. The 4 MP WiFi Mini Dome 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 Dome camera shall be capable of operating in an outdoor environment within a temperature range of –10° C to +50° C (14° F to 122° F).
        2. The 4 MP WiFi Mini Dome camera shall accept power, transmit video, and accept control via a TCP/IP connection.
        3. The 4 MP WiFi Mini Dome camera shall require a 12 VDC power supply.
     7. Housing Options
        1. The 4 MP WiFi Mini Dome camera shall be offered in a metal housing.
        2. The 4 MP WiFi Mini Dome camera housing shall conform to the IP67 standard for a weather-resistant package.
        3. The 4 MP WiFi Mini Dome camera housing shall conform to the IK10 standard for vandal resistance.
  2. ACCESSORIES
     1. The 4 MP WiFi Mini Dome camera shall offer the following accessories:
        1. Optional mounting hardware:
           1. [Junction box]
           2. [Wall mount bracket]
           3. [Pole mount bracket]
           4. [12 VDC, 1 A Power Supply]

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