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

IR MEGAPIXEL VARIFOCAL DOME – 8 MP OUTDOOR NETWORK 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)
          1.   (SEFD1509190-B

    B.   Underwriters Laboratories, Inc. (UL) (www.ul.com)
          1.   E234884-A60-UL

    C.   CONFORMITE EUROPEENNE
          1.   EN60950:2000

    D.   Bureauveritas(www.bureauveritas.com)
          1.   EN50155:2007

    E.   E-mark(www.tuv.com)
          1.   ECE-Regulation NO.10

    F.   HD standards
          1.   Complies with the SMPTE 2036-1:2014 Standard in:
                a.   Resolution: 3840x2160
                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 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
          3.   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 – IP Cameras

B.   Performance Requirements
    1.   The IR Dome camera shall be a full-featured 8MP unit designed for discrete video surveillance applications in indoor and outdoor environments.
    2.   The IR 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.
    3.   The IR Dome camera shall be a high performance 1/2.5-in. progressive-scan day/night CMOS sensor with 8MP resolution.
    4.   The IR Dome camera shall support 12V DC,24V AC power supply.
    5.   The IR Dome camera shall offer Wide Dynamic Range for clear images in extreme high-contrast environments.
    6.   The IR Dome camera shall provide direct network connection using smart H.265, H.265, smart H.264 and H.264 compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
    7.   The IR Dome camera shall conform to the ONVIF profile S&G and CGI standards to provide interoperability with other conformant systems.
    8.   The IR Dome camera shall offer three (3) separate and configurable streams with one (1) individually configurable 8MP stream at 1 to 15 fps .
    9.   The IR Dome camera shall have a Vari focal length from 2.7mm to 12mm .
    10.   The IR Dome camera shall offer Smart IR that provides integrated infrared illumination to capture images in low light or total darkness at a distance of 50.0 m (164 ft).
    11.   The IR Dome camera shall offer:
        a.   IP67 environmental protection
        b.   4 KV lightning rating
        c.   IK10 vandal resistance
    12.   The IR Dome camera shall offer 1ch alarm in & 1ch alarm out.
    13.   The IR Dome dome camera shall offer 1ch line-in audio & 1ch line-out with G.711 AAC audio codec.
    14.   The IR Dome camera shall offer micro SD slot maximum support 128GB storage capability.

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, 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 manufacture'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. 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:
Zhejiang Dahua Technology Co.,Ltd
No.1199,Bin'an Road,Binjiang District,Hangzhou
Tel: +86 571 8768-8883
Fax: +86 571 8768-8815
Email: 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 IR MEGAPIXEL DOME - 8MP INDOOR/OUTDOOR NETWORK CAMERA – [DH-IPC-HDBW5831EP-ZE] [DH-IPC-HDBW5831EN-ZE]

A. General Characteristics:
1. The IR Dome camera shall be a full-featured 8MP unit designed for discrete video surveillance applications in indoor and outdoor environments.
2. The IR 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.
3. The IR Dome camera shall be a high performance 1/2.5-in. progressive-scan day/night CMOS sensor with an effective pixel rating of 3840 x 2160.
4. The IR Dome camera shall support 12V DC,24V AC power supply.
5. The IR Dome camera shall offer Digital Wide Dynamic Range for clear images in high-contrast environments.
6. The IR Dome camera shall provide direct network connection using smart H.265 ,H.265,smart H.264 and H.264 compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.
7. The IR Dome camera shall conform to the ONVIF Profile S&G and CGI standards to provide interoperability with other conformant systems.
8. The IR Dome camera shall offer three (3) separate and configurable streams with one (1) individually configurable 8MP stream at 1 to 15 fps.
9. The IR Dome camera shall have a vari focal length from 2.7mm to 12mm.
10. The IR Dome camera shall offer Smart IR that provides integrated infrared illumination to capture images in low light or total darkness at a distance of 50.0 m (164 ft).

11. The IR Dome camera shall offer:
    a. IP67 environmental protection
    b. 4KV lightning rating
    c. IK10 vandal resistance
12. The IR Dome camera shall offer 1ch alarm in & 1ch alarm out.
13. The IR Dome dome camera shall offer 1ch line-in audio & 1ch line-out with G.711 AAC audio codec.
14. The IR Dome camera shall offer micro SD slot maximum support 128GB storage capability.

B. Imaging
    1. The IR Dome camera shall offer a 1/2.5-inch type CMOS progressive-scan imager.
    2. The IR Dome camera shall offer an effective number of pixels of 3840 x 2160 effective picture elements.
    3. The IR Dome camera shall offer a 3:2 aspect ratio or 16:9 aspect ratio.
    4. The IR Dome camera shall offer a vari focal length from 2.7mm to 12mm.
    5. The IR Dome camera shall have a [110°] ~[40°] horizon field of view.
    6. The IR Dome camera shall offer a maximum aperture of F1.4.
    7. The IR Dome camera shall produce a color image with a minimum scene illumination of 0.05 lux at F1.4 (Color,1/3s,30IRE) , 0.2 lux at F1.4 (Color,1/30s,30IRE) and a monochrome image, when in the night mode, with a minimum illumination of 0 lux at F1.4.
    8. The IR Dome camera shall produce an image at 0 lux when in IR mode.

C. Video Characteristics
   1. The IR Dome camera shall offer CBR/VBR bit rate control.
   2. The IR Dome camera shall offer the following video compression protocols
      a. Smart H.265
      b. H.265
      c. Smart H.264
      d. H.264
   3. The IR Dome camera shall offer BLC, HLC, and WDR modes of backlight compensation.
   4. The IR Dome camera shall offer Auto, Sunny, Night, Outdoor, and Customized white balance modes.
   5. The IR Dome camera shall offer 3D DNR noise reduction.
   6. The IR Dome camera shall offer 4 privacy masking areas.
   7. The IR Dome camera shall offer motion detection (four zones) and region of interest (four zones) controls.
   8. The IR Dome camera shall offer 16x digital zoom.
D. Streaming Capability
   1. The IR Dome camera shall generate 8MP resolution using H.265 compression.
   2. The IR Dome camera shall offer Unicast and Multicast streaming methods.
   3. The IR Dome camera shall offer the following resolution streams:
      a. 4K (3840 × 2160 pixels)
      b. 6MP (3072 × 2048 pixels)
      c. 5MP (3072 x 1728 pixels)
      d. 5MP (2592 x 1944 pixels)
      e. 4MP (2688 x 1520 pixels)
      f. 3MP (2048 x 1536 pixels)
      g. 3MP (2304 x 1296 pixels)
      h. FHD (1920 x 1080 pixels)
      i. 1.3MP (1280 x 960 pixels)
      j. 720P (1280 x 720 pixels)
      k. D1 (704 x 576 pixels/704 x 480 pixels)
      l. VGA (640 x 480 pixels)
      m. CIF (352 x 288 pixels/352 x 240 pixels)
   4. The IR Dome camera shall generate three (3) streams at the following maximum resolutions:
      a. Main Stream: 8MP at 15 fps
      b. Sub Stream 1: D1/ at 25/30 fps
      c. Sub Stream 2: 720P/ at 25/30 fps
E. IP Connectivity
   1. The IR Dome camera shall allow full camera control and configuration capabilities via a TCP/IP network.
   2. The IR Dome camera shall deliver 8MP video, at rates up to 15 frames per second via TCP/IP over an RJ-45 (10/100 Base-T) connection.
   3. The IR Dome camera shall conform to the ONVIF Profile S&G and the CGI standard.
   4. The IR Dome camera shall offer Quality of Service (QoS) configuration options.
   5. The IR Dome camera shall support the IPv6 internet-layer protocol for packet switched internetworking across multiple IP networks.

6. The IR Dome camera shall support the following protocols: IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP,ARP, RTSP, UDP, UPnP, ICMP, IGMP, SNMP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour, and 802.1x.
7. The IR Dome camera shall support the Smart PSS and DSS management software.
8. The IR Dome camera shall support the Android and the IOS mobile operating systems.

F. Installation Requirements
1. The IR Dome camera shall be capable of operating in an outdoor environment within a temperature range of –30° C to +60° C (–22° F to 140° F).
2. The IR Dome camera shall accept power, transmit video, and accept control via a TCP/IP connection.
3. The IR Dome camera shall support 12V DC,24V AC power supply.

G. Housing Options
1. The IR Dome camera shall be offered in a metal housing.
2. The IR Dome camera housing shall conform to the IP67 standard for a weather-resistant package.
3. The IR Dome camera housing shall conform to the IK10 standard for vandal resistance.

2.3 ACCESSORIES

A. The IR Dome camera shall offer the following optional accessories:
1. Optional mounting hardware:
    a. [Junction box]
    b. [Wall mount bracket]
    c. [Pole mount bracket]
    d. [Ceiling mount bracket]
    e. [In-ceiling 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   DEMOSTRATION

    A.   Demonstrate at final inspection that video management system and devices functions properly.

<div align="center">END OF SECTION</div>