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For additional information, contact:

Digital Watchdog®  
 16220 Bloomfield Avenue,

Cerritos, California 90703 USA

Phone: +1 888 446-3593

Web: www.digital-watchdog.com

E-mail: dw-tech@digital-watchdog.com

**MEGApix® INTERCAM™ 2.1MP DOOR STATION IP CAMERA**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

**28 20 00 Video Surveillance**

**28 21 00 Surveillance Cameras**

**28 21 13 IP Cameras**

**Notes to Specifier:**

1. Where several alternative parameters or specifications exist or where the specifier has the option of inserting text, such choices are presented in **<bold text>.**

2. Explanatory notes and comments are presented in **colored** text.

3. CSI MasterFormat 2016 incorporates numerous significant changes affecting electronic safety and security. This document is written to provide flexibility in using either format, although implementing MasterFormat 2016 is encouraged. The following is a guide to the MasterFormat numbers relevant to the product referenced in this specification.

4. MasterFormat 2014 Specification Category:

28 23 29 - Video Surveillance Remote Devices and Sensors

**2.1MP/1080p door station IP camera**

1. **GENERAL**
   1. **SUMMARY**
      1. The section includes a 2.1MP/1080p0 high-definition wall-mounted IP video camera with a doorbell interface and microphone and speaker built-in.
      2. Product - A high-definition IP turret camera, based on H.265, H.264, and MJPEG compression, capable of dual streaming 30fps at resolutions up to 1920(H) X 1080(V), with IR and white light LED illumination options, a 2.3mm wide-angle lens and built-in microphone and speaker in a door station, wall-mounted housing.
      3. Related Requirements
         1. 27 15 01.13 – Video Surveillance Communications Conductors and Cables
         2. 28 05 03 – Safety and Security Network Communications Equipment
         3. 28 05 19 – Storage Appliances for Electronic Safety and Security
         4. 28 06 20 – Schedules for Video Surveillance
         5. 28 23 00 – Video Management System
   2. **REFERENCES**
      1. Abbreviations
         1. AGC - Automatic Gain Control
         2. ARP – Address Resolution Protocol
         3. AWB - Automatic White Balance
         4. BLC – Backlight compression
         5. DHCP - Dynamic Host Configuration Protocol
         6. DNR – Digital Noise Reduction
         7. DNS - Domain Name Server
         8. DDNS – Dynamic Domain Name Server
         9. fps - frames per second
         10. FTP - File Transfer Protocol
         11. GUI – Graphical User Interface
         12. HLC – Highlight Compensation
         13. HTTP - Hypertext Transfer Protocol
         14. ICMP – Internet Control Message Protocol
         15. IGMP - Internet Group Management Protocol
         16. IP - Internet Protocol
         17. JPEG - Joint Photographic Experts Group
         18. MJPEG - Motion JPEG
         19. NTP - Network Time Protocol
         20. PoE - Power over Ethernet
         21. QoS – Quality of Service
         22. RARP – Reverse Address Resolution Protocol
         23. RTP - Real-Time Transport Protocol
         24. RTSP - Real-Time Streaming Protocol
         25. SMTP - Simple Mail Transfer Protocol
         26. TCP - Transmission Control Protocol
         27. UDP - User Datagram Protocol
         28. VMS - Video Management System
         29. WDR – Wide Dynamic Range
      2. Reference Standards
         1. Network
            1. IEEE - 802.3 Ethernet Standards
         2. Video
            1. ISO / IEC 14496 – MPEG-4

ISO / IEC 14496–10, MPEG-4 Part 10 (ITU H.264)

* + - * 1. ISO / IEC 10918 – JPEG
        2. ONVIF – Profile S
      1. Emissions
         1. FCC-47 CFR Part 15 Class B
      2. Environmental
         1. ANSI / IEC60529 – Degrees of Protection Provided by Enclosures
         2. International Electrotechnical Commission (IEC) – Ingress Protection Rating IP65
  1. **SUBMITTALS**
     1. Product Data
        1. Manufacturer's printed or electronic datasheets.
        2. Manufacturer's installation and operation manuals.
        3. Warranty documentation.
  2. **QUALIFICATIONS**
     1. The Manufacturer shall have at least five years of experience producing IP video equipment.
     2. Installers shall be trained and authorized by the Manufacturer to install, integrate, test, and commission the system.
  3. **DELIVERY, STORAGE, AND HANDLING**
     1. Deliver the camera in the Manufacturer's original, unopened, and undamaged container with identification labels intact.
     2. Store the camera in an environment with a temperature of -4 ° F to 122° F (-20 ° C to 50° C), protected from mechanical and environmental conditions as designated by the Manufacturer.
  4. **WARRANTY AND SUPPORT**
     1. The Manufacturer shall provide a 5-year warranty for the product to be free of defects in material and workmanship.

END OF SECTION

1. **PRODUCTS**
   1. **EQUIPMENT**
      1. Manufacturer: Digital Watchdog, Inc.

16220 Bloomfield Avenue. Cerritos,

California USA 90703 USA

Phone: (866) 446-3595

Web: www.digital-watchdog.com

E-mail: dw-tech@digital-watchdog.com

* + 1. Models: DWC-INTCAM02
    2. Alternates: None
  1. **GENERAL DESCRIPTION**
     1. The high-definition door station IP camera ("IP camera") shall provide video performance capable of delivering selectable resolutions up to 1920(H) X 1080(V) pixels at 30 frames per second (fps), IR and white light LEDs built-in, contained within an IP-65 rated housing.
     2. The camera shall include person detection and tampering detection.
     3. The IP camera shall have a microphone and speaker built-in.
     4. The IP camera shall possess the following characteristics:
        1. H.265, H.264 and MJPEG compression
        2. 2.1MP/1080p resolution
        3. Two independent IP video streams (dual streaming)
        4. Day/night operation with IR cut filter
        5. Integral IR LED illuminator providing a 10-foot distance
        6. Integral white light LED illuminator providing a 3-foot distance
        7. Integral motion detection
        8. True Wide Dynamic Range
        9. 3D digital noise reduction
        10. Microphone built-in
        11. Speaker built-in
        12. PoE capable
        13. Multicast or unicast capable
        14. Local storage via Micro SD, SDXC, or SDHC card
        15. Built-in web server
        16. Dynamic DNS (DDNS) support
        17. IP-65 rated
        18. NDAA compliant
  2. **VIDEO**
     1. Imager
        1. Sensor: 1/2.8" 2.1MP CMOS sensor
        2. Minimum illumination: 0 lux (IR or White LEDs on)
        3. Scanning - Progressive
        4. Image Control Settings shall be available for:
           1. Exposure modes: automatic or manual

In manual exposure mode, configurable settings for:

Brightness

Shutter mode: automatic or manual - 1/2 to 1/00000s

Automatic Gain Control (AGC)

Wide Dynamic Range (WDR) level, 80dB

* + - * 1. Image sharpness
        2. Image mirror or flip
        3. Digital noise reduction
      1. Lens
         1. Lens type: 2.3mm wide-angle fixed lens, F2.2
         2. Horizontal field of view (HFOV): 139°
         3. Vertical Field of view (VFOV): 74°
         4. IR distance: 1ft - 10ft (0.3 - 3m) range
         5. White Light

Distance: 1ft - 3ft ( 0.3 - 1m) range

Color temperature: Cold light, 5600K

Brightness (lumen): 34.1lm

* + - * 1. Double shutter Wide Dynamic Range, 80dB
        2. Shutter speed: 1/2 sec to 1/00000s
    1. Video Streams
       1. The IP camera shall support two configurable video streams, selectable from H.265, H.264 and MJPEG.
       2. The IP camera shall support two configurable video streams, each of which may have the following properties:
          1. Compression Type and Resolution:

H.265: 2592x1944, 2560x1440, 1920x1080, 1280x720, 800x600, 704x576, 704x480, 640x480, 640x360, 352x288, 352x240

H.264: 2592x1944, 2560x1440, 1920x1080, 1280x720, 800x600, 704x576, 704x480, 640x480, 640x360, 352x288, 352x240

MJPEG: 1920x1080, 1280x720, 800x600, 768x432, 704x576, 704x480, 640x480, 640x360, 352x288, 352x240.

* + - * 1. Frame rate: 0 – 30 fps
    1. IR distance: 1ft - 10ft (0.3 - 3m) range
    2. White Light
       1. Distance: 1ft - 3ft ( 0.3 - 1m) range
       2. Color temperature: Cold light, 5600K
       3. Brightness (lumen): 34.1lm
    3. Motion Detection – The IP camera shall be able to detect motion within user-defined areas of the video image.
       1. Configuration settings shall be available for sensitivity and dwell time.
    4. Storage and Recording
       1. The IP camera shall have onboard SD card storage.
          1. Card Type: Micro SD/SDHC/SDXC Class 10
          2. Up to 256GB micro SD / FAT32
       2. Local recording on the SD card shall commence upon loss of network connectivity, based on a pre-programmed schedule.
       3. The local SD storage shall be backed up to alternate media without removing the SD card from the camera.
    5. ONVIF – Video streams shall be capable of supporting ONVIF protocol, profile S.
    6. Other
       1. Single Images - The IP camera shall support the jpg file image screenshot and export.
       2. Discovery - The Manufacturer shall offer a discovery program to identify all devices manufactured by his Manufacturer on the network.
       3. Emergency alarm – The IP camera shall allow the sending of a video clip of configurable duration to up to five server locations.
       4. Access - The IP camera shall permit up to five users to access the camera simultaneously.
  1. **AUDIO**
     1. The IP camera shall provide one built-in microphone.
     2. The IP camera shall provide one line-out speaker.
     3. Compression and Sampling Rate: G.711A/U.
  2. **NETWORK**
     1. Connectivity: 100Base-T (1Gbps) Ethernet with RJ-45 connector
     2. Compressions supported
        1. H.265+, H.265
        2. H.264+, H.264
        3. MJPEG
     3. Resolutions supported
        1. 1080p (1920x1080)
        2. 720p (1280x720)
        3. D1
     4. Protocols supported
        1. Internet Protocol (IP) v4, v6 User Datagram Protocol (UDP)
        2. Configuration: Dynamic Host Configuration Protocol (DHCP)
        3. Web services: Hypertext Transfer Protocol (HTTP)
        4. Network Time Protocol (NTP), Simple Mail Transfer Protocol (SMTP)
        5. Media: Real-Time Streaming Protocol (RTSP)
     5. DDNS – The IP camera shall support DDNS services offered by the Manufacturer and other publicly available service offerings.
     6. Security
        1. The IP camera shall support IP address filtering whereby users can enter a list of allowed or blocked IP addresses for viewing video and configuring camera settings.
        2. The IP camera shall provide digest authentication, ID and password protection.
        3. The IP camera shall provide three user access levels with password protection.
        4. The IP camera shall support encrypted communications with Hypertext Transfer Protocol Secure (HTTPS).
  3. **EMBEDDED ANALYTICS**
     1. People detection
     2. Tampering detection
        1. Scene change
        2. Video blur
        3. Abnormal color detection
  4. **ADDITIONAL FEATURES**
     1. Auxiliary Inputs and Outputs
        1. Input: Alarm sensor (contact closure)
        2. Output: door lock output.
        3. Anti-tamper interface
        4. Doorbell button
        5. LED indicator:
           1. Blue, green, white
     2. System Information
        1. The IP camera system settings shall be exported as a separate file.
        2. The IP camera shall maintain an access log of the system and motion-triggered events.
           1. The log shall be exportable to an Excel spreadsheet file.
  5. **CAMERA SOFTWARE**
     1. The IP camera shall have a built-in web server that supports browser-based configuration using Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari.
     2. The software GUI shall allow access to camera information and all primary software functions, including:
        1. Camera network address
        2. Configuration
        3. Stream Control
        4. Screen snapshot, print and export
        5. Start and stop recording
     3. The Manufacturer shall offer a video viewer and configuration to implement the following actions:
        1. Camera discovery
        2. Configuration
           1. video parameters
           2. events and notifications

motion-related

emergency

* + - * 1. camera network parameters
        2. SD card storage recording management
        3. image capture, export, and print
      1. Viewer - view video streams through the web browser
      2. Image print and export
      3. Instant recording and playback
      4. Alerts
         1. e-mail setup
         2. define web addresses for notifications
      5. System
         1. firmware upgrade
         2. reset to factory default
         3. set date, time, and NTP server synchronization
         4. user access control
         5. View and export camera settings
         6. view system logs
  1. **ELECTRICAL**
     1. Power
        1. Sources
           1. DC12V
           2. PoE
        2. Power Consumption
           1. 12V DC: <6W
           2. PoE: <6W
     2. Connectors
        1. Ethernet: RJ-45 connector
        2. External power (DC12V): 2-conductor power to a terminal block
  2. **MECHANICAL AND ENVIRONMENTAL**
     1. Housing Material: Plastic Door Station
     2. Configuration: Wall-mounted camera
     3. Environmental Rating: IP-65
     4. Mounting options: Tilting Adapter (included)

Sun Shield Cover (included)

* + 1. Dimensions (D x H): 5.9” x 1.96” x 1.17” (150 × 50 × 29.8mm)
    2. Weight: 0.31 lb (0.145 kg)
    3. Temperature:
       1. Operating: -4° F to 122° F (-20° C to 50° C)
    4. Humidity: 0 - 95%, non-condensing

END OF SECTION

1. **EXECUTION**
   1. **INSTALLERS**
      1. Contractor personnel shall comply with all applicable state and local licensing requirements.
   2. **PREPARATION**
      1. The network design and configuration shall be verified for compatibility and performance with the camera(s).
      2. Network configuration shall be tested and qualified by the Contractor before camera installation.
   3. **INSTALLATION**
      1. The Contractor shall follow all Manufacturer published installation procedures and guidelines.
      2. Before permanent installation of the system, the system shall be factory tested in conditions simulating the final installed environment
         1. A report indicating successful test results shall be produced.
   4. **STORAGE**
      1. The IP camera hardware shall be stored in an environment where temperature and humidity are in the range specified by the Manufacturer.

END OF SECTION