SECTION 282329

PERFORMANCE SERIES INDOOR DAY/NIGHT IP CAMERA

1. GENERAL
	1. SECTION INCLUDES
		1. Provide a series of indoor Day/Night, H.264, fixed mini-dome IP cameras.
		2. Basis of design is the Honeywell Performance Series indoor Day/Night, H.264, color IP camera with two resolutions: VGA or 720p. Each camera shall have low light sensitivity of 0.25 lux, H.264 (primary stream) and MJPEG (secondary steam) compression, PSIA compliance, and a choice of PoE IEEE 802.3af Class 1 or 24 V AC power input.
	2. RELATED SECTIONS

NOTE TO SPECIFIER: Include related sections as appropriate if camera system is integrated to other systems.

* + 1. Section 260500 – Common Work Results for Electrical, for interface and coordination with building electrical systems and distribution.
		2. Section 280513 – Conductors and Cables for Electronic Safety and Security, for cabling between system servers, panels and remote devices.
		3. Section 280528 – Pathways for Electronic Safety and Security, for conduit and raceway requirements.
		4. Section 282323 – Video Surveillance Systems Infrastructure for interface to and administration of video recording devices.
		5. Section 282329 – Video Surveillance Remote Devices and Sensors for interface to and use of video surveillance devices and sensors.
	1. REFERENCES
		1. Reference Standards: Provide systems which meet or exceed the requirements of the following publications and organizations as applicable to the Work of this Section:
			1. Canadian ICES-003
			2. Canadian Standards Association (CSA)
			3. Conformity for Europe (CE)
			4. Federal Communications Commission (FCC)
			5. Joint Photographic Experts Group (JPEG)
			6. Moving Picture Experts Group (MPEG)
			7. National Television Systems Committee (NTSC)
			8. Phase Alternating by Line (PAL)
			9. Underwriters Laboratories Inc. (UL)
	2. SYSTEM DESCRIPTION
		1. The Performance series indoor Day/Night color IP camera shall have VGA or 720p resolution, H.264 (primary stream) and MJPEG (secondary stream) compression formats, PSIA compliance and a choice of PoE IEEE 802.3af Class 1 or 24V AC power input. The camera shall feature a ¼” progressive scan CMOS imager for clean, sharp images.
	3. SUBMITTALS
		1. Manufacturer’s Product Data: Submit manufacturer’s data sheets indicating systems and components proposed for use, including instruction manuals.
		2. Shop Drawings: Submit complete shop drawings including connection diagrams for interfacing equipment, list of connected equipment, and locations for major equipment components.
		3. Record Drawings: During construction maintain record drawings indicating location of equipment and wiring. Submit an electronic version of record drawings not later than Substantial Completion of the project.
		4. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, customized to the system installed. Include system and operator manuals.
		5. Field Tests: Submit results of field testing of every device including date, testing personnel, retesting date if applicable, and confirmation that every device passed field testing.
		6. Maintenance Service Agreement: Submit a sample copy of the manufacturer’s maintenance service agreement, including cost and services for a one year period for Owner’s review. Maintenance shall include, but not be limited to, labor and materials to repair the system, provide test and adjustments, and regular inspections.
	4. QUALITY ASSURANCE
		1. Manufacturer: Minimum ten years experience in manufacturing and maintaining video management systems. Manufacturer shall provide toll-free technical assistance and support available 24/7.
		2. Manufacturing Location: Provide equipment assembled in China.
		3. Installer: Minimum two years experience installing similar systems, and acceptable to the manufacturer of the video surveillance system.
		4. Environmental Conditions: IP camera shall be designed to function in the following environmental conditions:
			1. Operating Temperature: 14°F to 122°F (-10°C to 50°C) 0-85% non-condensing.
			2. Emissions: FCC part 15B, Class A, CE (EN55022).
			3. Immunity: CE (EN55024).
			4. Safety: EU: 2001/95/EC GPSD, UL 60950-1.
		5. Power Requirements: Components shall have the following electrical specifications: 24 V AC, or PoE IEEE 802.3af (class 1), 3.5 W power consumption (max), 1.5 kW transient surge suppression, and 17-28 V AC input range.
	5. DELIVERY, STORAGE, AND HANDLING
		1. Deliver materials in manufacturer’s labeled packages. Store and handle in accordance with manufacturer’s requirements, in a facility with environmental conditions within recommended limits.
	6. WARRANTY
		1. Manufacturer’s Warranty: Submit manufacturer’s standard three-year warranty.
1. PRODUCTS
	1. MANUFACTURER
		1. Performance Series IP Camera Manufacturer: Honeywell Performance Series Network Camera, [www.honeywellvideo.com](http://www.honeywellvideo.com) or [www.honeywellintegrated.com](http://www.honeywellintegrated.com).
	2. DEVICE COMPONENTS
		1. Network camera captures and transmits video images digitally over a network connection.
		2. IP Utility component discovers and configures network settings for devices, such as network cameras.
		3. Web-Client component displays network camera live video feeds and provides configuration of camera options.
	3. OPERATIONAL REQUIREMENTS
		1. Network camera shall capture and transmit high-quality video images. Captured video shall have the following major capabilities:
			1. Clean, sharp images provided by the imager: progressive scan, ¼” CMOS sensor.
			2. Choice of camera resolution with VGA resolution for camera model HD44IP/X and 720p resolution for camera model HD45IP/X. Effective pixel counts will be no less than 640 x 480 (VGA) or 1280 x 720 (720p).
			3. 3.3 to 12.0 mm Vari-focal Auto Iris Day/Night lens.
			4. Image transmission: The camera shall support dual video streams simultaneously with multiple compression formats and with frames per second rates up to 30 fps (NTSC) and 25 fps (PAL).
			5. Dual video streaming: The camera shall have dual video streaming (H.264 compression for the primary stream and MJPEG for the secondary stream). The frame rate and bandwidth on each stream shall be independently configurable. A third analog stream will be available for video backup, and for local viewing during video setup (full resolution not available).
			6. Day/Night performance with 2D edge enhancement, and Digital Noise Reduction technology.
			7. Low light performance: 0.25 lux @ 50 IRE, F1.6, or 0.11 lux @ 30 IRE, F1.6.
			8. Signal to Noise ratio: The camera shall have a signal to noise ratio of 50 dB with the AGC (Auto Gain Control) turned off.
			9. Auto white balance: The camera shall incorporate auto white balance to constantly monitor the light and adjust the color as needed. Automatic white balance ranges shall be selectable using the web browser interface.
			10. Electronic shutter and AGC: The camera shall include an electronic shutter and selectable automatic gain control (AGC) for operation in a wide range of lighting conditions.
		2. Compact housing and dome, and single piece design integrates the camera and lens into one unit for easy installation. The physical camera options, including housing and dome shall have the following major capabilities:
			1. Housing: The camera shall be available in a polycarbonate housing and dome, with a matte texture and off-white finish.
			2. Installation methods: The camera shall come ready to be surface mounted to a wall or ceiling. Wall and pendant mount kits are also available for additional installation options.
			3. 3-D axis gimbal (360° pan, 180° tilt, 360° horizontal rotation) for mechanical camera positioning and adjustment.
			4. Connectors: The cameras shall come standard with an RJ45 Ethernet connector for network connectivity and PoE (Power over Ethernet), a removable screw block power connector for a separate 24 V AC power supply, and a 2-pin molex connector (75 ohms) for local video adjustment and focus.
		3. Network camera shall offer IP Utility application to discover IP devices in your system and configure device network settings. The Honeywell IP Utility application shall have the following major capabilities:
			1. IP address identification for remote device discovery. Supports both dynamic (DHCP) and static (APIPA) IP address assignment.
			2. Continuous checking of the connected device status for non-stop recording.
			3. Network configuration of devices for remote control of all camera settings.
			4. Remote firmware upgrade over HTTP.
		4. Network camera shall offer video access from a web browser and include a web based graphical user interface (GUI), called web client, which provides complete control of the camera settings. The web client shall have the following major capabilities:
			1. Intuitive interface for quick system setup, adjusting of camera and auto iris levels, and perform remote firmware updates.
			2. Web client access: Supports 1 Administrator and 3 guests. Administrator has full control of the camera, and 3 guests can view live video from the camera. These four (4) users can log on at the same time.
			3. Security: Supports two (2) user access levels with password protection. Administrator has full access and Guest user has live view only.
		5. The cameras shall also include the following major capabilities:
			1. Camera tamper detection: The camera shall support camera sabotage or tamper detection to provide a notification or disruption to the video stream. The three (3) forms of detection are camera blurring, blinding, and change of scene.
			2. Video motion detection: The camera shall support video motion detection (VMD) to ensure video integrity and provide a real-time notification of a live motion event. This feature comes standard with five (5) different, user-selectable motion detection regions.
			3. Protocol support: HTTP, TCP, RTSP, RTP, UDP, ARP, DNS, RTCP, FTP, ICMP, DHCP, Bonjour, IGMP, Telnet.
			4. Interoperability: The camera will meet PSIA compliance specifications to guarantee interoperability between network video products.
	4. DEVICE HARDWARE
		1. Network camera shall have the following mechanical specifications:
			1. Unit Dimensions (W x H): 4.9” x 4.9” (125.1 mm x 123.7 mm)
			2. Unit Weight: 1.0 lb (0.448 kg)
			3. Auxiliary Video Output: Composite video (75 ohms)
			4. Ethernet Connector: RJ45
			5. Auto Iris Output: 4-pin molex to main camera PCB
			6. Lens Mount: Board mount barrel
			7. Housing Construction: Polycarbonate
			8. Color: Off-white finish
		2. Network camera shall have the following electrical specifications:
			1. Voltage: 24 V AC, Power over Ethernet (PoE) IEEE 802.3af, Class 1
			2. Input Range: 17 – 28 V AC
			3. Surge Suppression: 1.5 kW transient
			4. Power Consumption: 3.5 W maximum
		3. Network camera shall be designed to meet the following environmental conditions:
			1. Operating Temperature: 14°F to 122°F (-10°C to 50°C)
			2. Storage Temperature: -40°F to 158°F (-40°C to 70°C)
			3. Relative Humidity: 0-85%, non-condensing
			4. Emissions: FCC part 15B, CE (EN55022).
			5. Immunity: CE (EN55024).
			6. Safety: EU: 2001/95/EC GPSD, UL 60950-1.
	5. MANUFACTURER SUPPORT
		1. Manufacturer shall provide customer service, pre-sales applications assistance, after-sales technical assistance, access to technical online support, and online training using Web conferencing.
		2. Manufacturer shall provide 24/7 technical assistance and support via a toll-free telephone number at no extra charge.
2. EXECUTION
	1. EXAMINATION
		1. Examine site conditions prior to installation. Notify Architect and Owner in writing if unsuitable conditions are encountered. Do not start installation until site conditions are acceptable.
	2. INSTALLATION
		1. All components of the camera shall be thoroughly tested before shipping from the manufacturer’s facility.
		2. The cameras shall be installed, programmed and tested in accordance with manufacturer’s installation instructions.
			1. Coordinate interfaces with Owner’s representative where appropriate.
			2. Provide mounting supports, conduit, cable, and wire for a complete and reliable installation. Obtain Owner’s approval for exact location of all cameras, conduit, and wiring runs prior to installation.
			3. Install conduit, cable, and wire parallel and square with building lines, including raised floors areas. Do not exceed forty percent fill in conduits. Gather wires and tie to create an orderly installation.
			4. Coordinate with other trades to provide proper sequencing of installation.
	3. FIELD COMMISSIONING AND CERTIFICATION
		1. Field Commissioning: Test camera system as recommended by manufacturer, including the following:
			1. Conduct complete inspection and testing of equipment, including verification of operation with connected equipment.
			2. Test devices and demonstrate operational features for Owner’s representative and authorities having jurisdiction as applicable.
			3. Correct deficiencies until satisfactory results are obtained.
			4. Submit written copies of test results.
	4. TRAINING
		1. Conduct on-site system administrator and security/surveillance operator training, with the number of sessions and length of sessions as recommended by the video surveillance system manufacturer. Training shall include administration, provisioning, configuration, operation and diagnostics.

 END OF SECTION