SECTION 28 23 29

1080P 30X ZOOM EXPLOSION-PROOF IP BULLET CAMERA

1. GENERAL
	1. SECTION INCLUDES
		1. Provide a high definition 1080p 30x zoom explosion-proof IP bullet camera system for video surveillance, including design, supply, installation, and commissioning.
	2. RELATED SECTIONS

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

* + 1. Section 26 05 00: Common Work Results for Electrical, for interface and coordination with building electrical systems and distribution.
		2. Section 28 05 13: Conductors and Cables for Electronic Safety and Security, for cabling between system servers, panels, and remote devices.
		3. Section 28 05 28: Pathways for Electronic Safety and Security, for conduit and raceway requirements.
		4. Section 28 23 00: Video Surveillance Equipment, for interface with, and administration of video recording equipment.
		5. Section 28 23 23: Video Surveillance Systems Infrastructure.
		6. Section 28 23 29: Video Surveillance Remote Devices and Sensors.
	1. REFERENCES
		1. Reference Standards: Provide systems that meet or exceed the requirements of the following publications and organizations as applicable to the work of this Section.
			1. Conformity for Europe (CE).
			2. Electronic Industry Association (EIA).
			3. Institute of Electronic and Electrical Engineers (IEEE).
			4. International Electrotechnical Commission (IEC).
			5. National Television Systems Committee (NTSC).
			6. Phase Alternating Line (PAL).
	2. SYSTEM DESCRIPTION
		1. The 1080p 30x explosion-proof IP bullet camera shall provide a 1/2.8-inch Sony progressive scan CMOS imager, 1920×1080 (50/60 fps) resolution, 30x optical zoom, a 4.5–135 mm motorized focus/zoom lens, together with armoured cable (4 m or 10 m) and an IP69-rated housing. The camera shall be equipped with a built-in wiper and heater and shall accept
		12–24 VDC or 24 VAC power input.
	3. SUBMITTALS
		1. General: Submittals shall be made in accordance with the Conditions of the Contract and Submittal Procedure Section.
		2. Manufacturer’s Product Data: Submit manufacturer’s data sheets indicating systems and components proposed for use, including instruction manuals.
		3. Shop Drawings: Submit installation drawings, including connection diagrams for interfacing equipment, list of connected equipment, and locations for major equipment components. Shop drawings shall indicate surrounding construction as provided for the Project.
		4. Project Record Drawings: Indicate location of equipment and wiring on project record drawings. Submit an electronic version of the project record drawings not later than Substantial Completion of the Project.
		5. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data customized to the system installed. Include operator manuals.
		6. 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.
		7. 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, tests and adjustments, and regular inspections.
	4. QUALITY ASSURANCE
		1. Manufacturer: Minimum ten (10) years experience in manufacturing and maintaining video surveillance systems. Manufacturer shall provide toll-free technical assistance and support available 24/7.
		2. Manufacture Location: Provide equipment assembled in China.
		3. Installer: Minimum two (2) years experience installing similar systems and shall be acceptable to the manufacturer of the video surveillance system.
		4. Regulatory Requirements:
			1. ATEX: EN 60079-0, EN 60079-1, EN 60079-31.
			2. IECEx: IEC 60079-0, IEC 60079-1, IEC 60079-31.
			3. Emissions: EN 55032, EN 61000-6-4.
			4. Immunity: EN 50130-4.
			5. Safety: EN 60950-1, EN 60950-22.
			6. RoHS: EN 50581.
		5. Environmental Requirements:
			1. Operating Temperature:
				1. Cold Start: –40°C to 65°C.
				2. Certified Temp for Hazardous Area: –60°C to 65°C.
			2. Relative Humidity: 10% to 95%, non-condensing.
			3. Ingress Protection: IP67/IP68 (IP69 for metal housing only).
		6. Power Requirements:
			1. Input Voltage: 12–24 VDC, 24 VAC.
			2. Power Consumption: 42 W max.
		7. Armoured Cable Specifications:
			1. Length: 4 m or 10 m.
			2. Overall Diameter: 20.0 mm ± 0.5 mm.
			3. Minimum Bending Radius: 220 mm.
			4. Flame Retardant.
			5. Halogen Free.
			6. UV Resistant.
			7. Oil Resistant.
			8. Color: Black (RAL 9005).
	5. DELIVERY, STORAGE, AND HANDLING
		1. Packing and Shipping: Deliver products in manufacturer’s labeled packages.
		2. Storage and Protection: Store and handle products in accordance with manufacturer’s requirements, in a facility where environmental conditions are within recommended limits.
	6. WARRANTY
		1. Manufacturer’s Guarantee: Three (3) years from the manufacture date code under normal use and service for the video surveillance system.
1. PRODUCTS
	1. MANUFACTURERS
		1. Specified Manufacturer: Honeywell 1080p, 30x zoom, true day/night, explosion-proof IP bullet camera, [www.honeywell.com](http://www.honeywellvideo.com)/security.
		2. Accepted Part Numbers:
			1. HEPB302W01A04: 1080p 30x Zoom Explosion-Proof IP Fixed Camera with 4 m armoured cable.
			2. HEPB302W01A10: 1080p 30x Zoom Explosion-Proof IP Fixed Camera with 10 m armoured cable.
	2. SYSTEM COMPONENTS
		1. IP bullet camera module, camera housing, armoured cabling, and web-based remote camera viewing and configuration.
	3. OPERATIONAL REQUIREMENTS
		1. The 1080p 30x explosion-proof IP bullet camera system shall meet or exceed the following camera specifications:
			1. Image Sensor: 1/2.8" Sony Progressive CMOS.
			2. Total Effective Pixels: 1920 (H) × 1080 (W).
			3. Optical Zoom: 30x.
			4. Lens Type: 4.5–135 mm, motorized focus/zoom, F1.6–F4.4.
			5. Angle of View:
				1. Horizontal: 62.35°–2.53°.
				2. Vertical: 37.87°–1.79°.
			6. Minimum Illumination:
				1. 0.0187 lux colour, 0.012 lux B/W @ F1.6, 30 IRE, shutter speed 1/30.
				2. 0.0574 lux colour, 0.0348 lux B/W @ F1.6, 50 IRE, shutter speed 1/30.
				3. 0.005 lux colour, 0.0005 lux B/W @ F1.6, long exposure.
			7. Shutter Speed: 1/1–1/30 000 s.
			8. Signal-to-Noise Ratio: 55 dB or more (AGC off).
			9. Wide Dynamic Range: True WDR.
			10. Noise Reduction: 3DNR.
			11. Day/Night: Auto/Color/BW.
			12. Backlight Compensation: BLC/HLC/WDR.
			13. White Balance: Auto/Indoor/Outdoor/ATW/Manual.
			14. Privacy Masking: Up to 24 areas.
			15. Alarm Output: 1.
		2. The 1080p 30x explosion-proof IP bullet camera system shall provide true day/night functionality with a removable infrared cut filter for day mode.
		3. The 1080p 30x explosion-proof IP bullet camera system shall provide true wide dynamic range for higher quality images in high contrast lighting conditions.
		4. The 1080p 30x explosion-proof IP bullet camera system shall provide 3D noise reduction (3DNR) to minimize storage and bandwidth use.
		5. The 1080p 30x explosion-proof IP bullet camera system shall provide up to 24 fully configurable privacy zones to mask sensitive areas of a video image.
		6. The 1080p 30x explosion-proof IP bullet camera system shall support the ONVIF Profile S specification for interoperability between network video products.
		7. The 1080p 30x explosion-proof IP bullet camera system shall include, as standard, a password-protected web-based GUI that provides access to all camera views and settings.
		8. The 1080p 30x explosion-proof IP bullet camera system shall support IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, SSL, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, Bonjour, DNS, DDNS, IEEE 802.1X, QoS, NTP, IP Filter, ONVIF, RS-485 (internal use only for wiper), Pelco-P, and Pelco-D protocols.

NOTE TO SPECIFIER: Some development may be required in specific user cases to support some of these protocols in the field as naturally the protocols will mature over time.

* + 1. The 1080p 30x explosion-proof IP bullet camera system shall provide triple H.265, H.264 and/or H.264/MJPEG video streams simultaneously. The streams shall have the following functions:
			1. Main Stream: Support for 1080p resolution (1920×1080) at 1–50/60 frames per second (PAL/NTSC). The camera can also support 1.3 MP (1280×960) and 720p (1280×720) at 1–25/30 frames per second.
			2. Sub Stream: Support for 1080p, 1.3 MP, and 720p at 1–25/30 fps.
			3. Triple Stream: Support for D1 (704×576/704×480) and CIF (352×288/352×240) at
			1–25/30 fps.
			4. The 1080p 30x explosion-proof IP bullet camera shall transmit additional H.265, H.264 or MJPEG video streams simultaneously with the primary H.265, H.264 or MJPEG stream (up to three streams).
			5. The bit rate for the H.265, H.264 and MJPEG streams can be set to constant or variable bit rate. The resolutions and frame rates for all streams are adjustable by the administrator.
			6. The fully featured 1080p 30x explosion-proof IP bullet camera shall support three (3) H.264 profiles: High profile, Main profile, and Baseline profile.
		2. The 1080p 30x explosion-proof IP bullet camera system shall provide the option of restoring all displays, alarms, camera settings, and diagnostic settings to factory default settings from the web GUI. In addition, there shall be an option to reboot the camera automatically at set times.
		3. The 1080p 30x explosion-proof IP bullet camera system shall provide a warning message through relay output, FTP, or email; upload an image to an FTP or email server; and/or record video to a network headend recorder when motion or video tampering is detected. The administrator shall have the ability to turn the motion/video tampering detection function on or off.
		4. The 1080p 30x explosion-proof IP bullet camera system shall provide a warning message through relay output, FTP, or email, and/or record video when a network failure is detected. The detection shall be based on RTSP session count. If the count drops to zero for at least ten seconds, a network failure event is detected. The administrator shall have the ability to adjust the detecting period and turn the network failure detection function on or off.
		5. The 1080p 30x explosion-proof IP bullet camera system shall support network share recording for backup when there is an event (alarm, motion detection) or scheduling.
		6. The administrator must have the ability to turn the recording function on or off through the web GUI.
		7. The 1080p 30x explosion-proof IP bullet camera shall include one (1) on-board alarm output for normally open or normally closed dry contacts. The camera shall have the ability to perform the relay-out signal to the alarm equipment.
		8. The 1080p 30x explosion-proof IP bullet camera system shall support two (2) special presets to control the wiper and washer system:
			1. Preset number 103 operates the wiper once when the preset is called.
			2. Preset number 112 operates the washer pump once when the preset is called.
		9. The 1080p 30x explosion-proof IP bullet camera housing shall be constructed of AISI 316L stainless steel.
		10. The 1080p 30x explosion-proof IP bullet camera shall be designed for wall, parapet, and pole mount configurations.
		11. The 1080p 30x explosion-proof IP bullet camera housings shall meet the IP69 ingress protection standard and shall be equipped with an adjustable sun shade.
	1. SERIES INTEGRATIONS
		1. The following accessories are compatible with the 1080p 30x explosion-proof IP bullet camera:
			1. HEPWS: Washer system, 10 L, with ATEX-certified solenoid valve.
			2. HCPWM: AISI 316L stainless steel wall mount bracket with joint.
			3. HCPPRMJ: AISI 316L stainless steel parapet mount joint.
			4. HCPPRM: AISI 316L stainless steel parapet mount bracket.
			5. HCPPMA: AISI 316L stainless steel pole mount adapter.
			6. HCPCMA: AISI 316L stainless steel corner mount adapter.
		2. The following devices are compatible with the 1080p 30x explosion-proof IP bullet camera:
			1. MAXPRO® NVR Family: Entry to Enterprise Level Network Video Recorders (4.0 and greater).
			2. MAXPRO® VMS Family: Entry to Enterprise Level Network Video VMS (R410 and greater).
			3. Digital Video Manager: DVM R600.1 SP1.
			4. HUS: HUS 5.1.
		3. ONVIF support for interoperability between Honeywell and other manufacturer’s IP-enabled security devices.

NOTE TO SPECIFIER: Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.

* 1. SYSTEM HARDWARE
		1. The 1080p 30x explosion-proof IP bullet camera system shall have the following mechanical specifications:
			1. Unit Dimensions (L × H): 264.0 × 155.5 × 155.5 mm.
			2. Unit Weight:
				1. HEPB302W01A04: 8.5 kg.
				2. HEPB302W01A10: 12.6 kg.
			3. Construction: AISI 316L stainless steel housing.
		2. The 1080p 30x explosion-proof IP bullet camera system shall have the following electrical specifications:
			1. Input Voltage:
				1. 12–24 VDC.
				2. 24 VAC.
			2. Power Consumption: 42 W max.
		3. The 1080p 30x explosion-proof IP bullet camera system shall be designed to meet the following environmental conditions:
			1. Operating Temperature:
				1. Cold Start: –40°C to 65°C.
				2. Certified Temp for Hazardous Area: –60°C to 65°C.
			2. Relative Humidity: 10% to 95%, non-condensing.
			3. ATEX: EN 60079-0, EN 60079-1, EN 60079-31.
			4. IECEx: IEC 60079-0, IEC 60079-1, IEC 60079-31.
			5. Emissions: EN 55032, EN 61000-6-4.
			6. Immunity: EN 50130-4.
			7. Safety: EN 60950-1, EN 60950-22.
			8. RoHS: EN 50581.
			9. Ingress Protection: IP67/IP68 (IP69 for metal housing only).
	2. MANUFACTURER SUPPORT
		1. Manufacturer shall provide customer service, pre-sales applications assistance, after-sales technical assistance, access to online technical support, and online training using Web conferencing.
		2. Manufacturer shall provide 24/7 technical assistance and support by means of a toll-free telephone number at no extra charge.
1. 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 system shall be thoroughly tested before shipping to the project location.
		2. Camera system shall be installed, programmed, and tested in accordance with manufacturer’s instructions and recommendations.
			1. Coordinate interfaces with other products with Owner’s representative where appropriate.
			2. Provide conduit, cable, and wire for complete and reliable installation. Obtain Owner’s approval for exact location of cameras, boxes, conduit, cable, and wiring runs prior to installation.
			3. Install conduit, cable, and wire parallel and square with building lines, including raised floor areas. Do not exceed 40 percent fill in conduits. Gather and tie wires for 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 in accordance with the manufacturer’s instructions and recommendations. Training shall include, but not be limited to: camera administration, provisioning, configuration, operation, and diagnostics.

 END OF SECTION