**SECTION 28 23 29**

**VIDEO SURVEILLANCE REMOTE DEVICES AND SENSORS**

**Advanced Technology Video IPSD30X2WI PTZ Speed Dome IP Camera**

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*This guide specification is intended for use by the design/construction professional and any user of Advanced Technology Video (ATV) products to assist in developing project specifications for security and video surveillance systems.*

*Notes in Italics, such as this one, are explanatory and intended to guide the design professional/specifier and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions.*

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1. **GENERAL**
	1. SUMMARY
		1. Section includes Video Surveillance Remote Devices and Sensors.
		2. Related Sections:
			1. Section 28 23 13 – Video Surveillance Control and Management Systems
			2. Section 28 23 16 – Video Surveillance Monitoring and Supervisory Interfaces
			3. Section 28 23 19 – Digital Video Recorders and Analog Recording Devices
			4. Section 28 23 23 – Video Surveillance Systems Infrastructure
	2. SYSTEM DESCRIPTION
		1. Description: Video surveillance and monitoring at points as indicated on Drawings.
			1. IPSD30X2WI, Triple Stream, 2MP Resolution, IR LED, TRUE Day/Night, WDR, 30x PTZ Speed Dome, IP Camera
		2. Performance Requirements
			1. 1/2.8” Sony Exmor CMOS sensor
			2. 2MP, 1920 x 1080 resolution
			3. Triple Video Streams Simultaneously, up to 60-ips, at 1080p Resolution using H.264 and MJPEG Compression
			4. Two built-in IR LED’s, one synchronized IR LED and one fixed IR LED
			5. TRUE Day/Night functionality
			6. Wide dynamic range (WDR) functionality
			7. High speed PTZ dome with privacy masking, two-way audio and built-in RS-485 receiver/driver
			8. 30x, 4.3 – 129mm, auto-focus, optical zoom lens with 16x digital zoom function
			9. ONVIF Profile S compliant.
			10. Supports a Micro-SD Memory Card Slot for Local, Event Detection Recording
			11. IP66 Weather Resistant and impact resistant dome housing.
			12. The camera shall be of manufacturer’s official product line, designed for commercial/industrial continuous 24/7 use.
			13. The camera shall be based upon standard components and proven technology.
	3. DEFINITIONS
		1. TRUE Day/Night (infrared sensitive): A camera that has normal color operation in situations where there is sufficient illumination (day conditions), but where the sensitivity can be increased when there is little light available (night conditions). This is achieved by removing the infrared cut filter required for good color rendition. The sensitivity can be further enhanced by integrating a number of fields to improve the signal-to-noise ratio of the camera (this may introduce motion blur).
		2. Privacy Masking: The ability to mask out a specific area to prevent it from being viewed in order to comply with privacy laws and particular site requirements.
	4. SUBMITTALS
		1. Submit under provisions of Section 01 33 00 - Submittal procedures.
		2. Shop Drawings: Indicate electrical characteristics and connection requirements, including system wiring diagram.
		3. Product Data: Submit catalog data showing electrical characteristics and connection requirements for each component.
	5. CLOSEOUT SUBMITTALS
		1. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.
		2. Project Record Documents: Record actual locations of cameras and routing of cabling.
		3. Operation and Maintenance Data: Submit instructions for operating system and performing routine trouble shooting procedures.
	6. QUALIFICATIONS
		1. Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
		2. Supplier: Authorized distributor of specified manufacturer with minimum 5 years documented experience.
		3. Installer: Authorized installer of specified manufacturer with 5 years documented experience and service
	7. ENVIRONMENTAL REQUIREMENTS
		1. Section 01 60 00 - Product Requirements.
		2. Conform to manufacturer’s standard service conditions during and after installation of components.
	8. FIELD MEASUREMENTS
		1. Verify field measurements prior to fabrication.
	9. 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.
	10. MAINTENANCE SERVICE
		1. Section 01 70 00 - Execution and Closeout Requirements: Maintenance service.
		2. Make ordering of new equipment for expansions, replacements, and spare parts available to dealers and end users.
		3. Provide factory direct technical support via phone and e-mail.
		4. Furnish service and maintenance of video surveillance system for one year from Date of Substantial Completion.
2. PRODUCTS
	1. CAMERAS
		1. Manufacturers:
			1. Advanced Technology Video
			2. Substitutions: Section 01 60 00 - Product Requirements: Not Permitted.
		2. Model: IPSD30X2WI
		3. Product Description: Triple Stream, 2MP Resolution, IR LED, TRUE Day/Night, WDR, 30x PTZ Speed Dome, IP Camera
		4. Camera Image Sensor: 1/2.8” Sony Exmor CMOS
		5. Lens: 30x, 4.3 – 129mm, auto-focus, optical zoom lens with 16x digital zoom function
		6. General Characteristics:
			1. The IP PTZ dome shall be a high-impact, vandal-resistant, cast-aluminum housing, able to withstand the equivalent of 55 kg (120 lbs) of force; and shall provide protection against water and dust ingress up to IP 66 (NEMA 4X) standards.
			2. The IP PTZ dome shall utilize 1/2.8” Sony Exmor CMOS sensor capable of producing up to 1920 x 1080 resolution.
			3. The IP PTZ dome shall offer a 30x, 4.3 – 129mm, auto-focus, optical zoom lens with 16x digital zoom function.
			4. The IP PTZ dome 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.
			5. The IP PTZ dome shall offer Power over Ethernet (PoE) injector to supply power to the camera.
			6. The IP PTZ dome shall be ONVIF Profile S compliant.
			7. The IP PTZ dome shall offer wide dynamic range technology that allows for the capture of clear images from both light and dark areas in the same scene.
			8. The user shall be able to view video on a PC using a Web browser, with the ATVision IP Remote Management Software, or on an analog monitor with an ATV video encoder.
			9. The IP PTZ dome shall offer progressive scan technology that allows for the capture of clear images from a moving camera.
			10. The IP PTZ dome shall support the following tour modes:
				1. 256 user-defined pre-set camera views
				2. Eight (8) tours, each consisting of up to 100 presets
				3. Eight (8) patterns, consisting of pre-programmed pan, tilt and zoom movements
				4. Endless auto-pan capability
			11. The IP PTZ dome shall provide a color image with a minimum scene illumination of 0.5Lux and a monochrome image, when in the night mode, with a minimum illumination of 0Lux with IR LED lights on.
			12. The IP PTZ dome shall provide enhanced night viewing through the use of two built-in IR LED’s, one synchronized, adjustable IR LED for distant viewing and one fixed IR LED for wide, close viewing.
			13. The IP PTZ dome shall provide pan and tilt preset repeatability accurate to within ±0.1 degrees.
			14. The IP PTZ dome shall provide support for two-way audio capability.
			15. The IP PTZ dome shall provide variable speed from 0.1º/sec to 380º/sec:
			16. The IP PTZ dome shall provide a pan range of 360 degrees of continuous rotation.
			17. The IP PTZ dome shall be able to be mounted to a wall mount or to a pendant pipe mount from a ceiling or overhang.
			18. The IP PTZ dome shall offer IP66 weather resistant protection
			19. The IP PTZ dome shall provide micro-SD memory card slot for local, event recording.
			20. The IP PTZ dome shall support English, French, German, Spanish and Italian languages.
		7. Installation Requirements
			1. Shall contain a full-featured PTZ camera dome and integral, motorized varifocal lens.
			2. Shall be capable of being mounted to a surface, wall, pole and corner.
			3. Shall provide power, video, and control via an Ethernet connection.
			4. Shall provide secondary power connection on 2-pin Phoenix connector.
			5. Shall provide a multi-language on-screen display.
		8. IP Connectivity
			1. The IP PTZ dome shall allow full camera control and configuration capabilities over the network.
			2. The IP PTZ dome shall offer Power over Ethernet (PoE) injector to supply power to the camera.
			3. The IP PTZ dome shall be capable of capturing and storing images using H.264 and MJPEG encoding and compression at following resolution levels: 1920 x 1080, 704 x 480, 640 x 480 and 320 x 240.
			4. The IP PTZ dome shall deliver high-quality, 1920 x 1080 resolution video at rates up to 60 images per second, via TCP/IP over Cat5/Cat6 UTP cable. Leverages bandwidth throttling and multicasting capabilities to manage bandwidth and storage requirements efficiently while delivering the best possible image quality and resolution.
			5. The IP PTZ dome shall generate independent H.264 streams and a JPEG stream simultaneously.
			6. The IP PTZ dome shall be ONVIF Profile S compliant.
		9. Alarm Handling Features:
			1. The IP PTZ dome shall provide a TTL input / output that may be selected for normally opened or normally closed operation. The input can be activated from an external alarm to the camera, manual activation from the browser, upon video motion detection, or video loss.
		10. IP Video
			1. Video Compression: H.264 (BP/MP/HP), MJPEG
			2. Streaming: Multiple, individually configurable streams in H.264 and MJPEG, simultaneously in controllable frame rate and bandwidth VBR/CBR H.264; 2 streams H.264 and 1 stream MJPEG
			3. Frame rate:
				1. Up to 60-ips maximum at all resolutions
			4. Resolution:
				1. 1920 x 1080
		11. Video
			1. Min. Illumination: Color, 0.5Lux; B/W, 0Lux (with IR LED On)
			2. TRUE Day / Night (ICR)
			3. Backlight Compensation
			4. Image Effect:
				1. Flip: the video image is flipped horizontally
				2. Mirror: the video image is reversed like a reflection in a mirror
				3. Defog: electronically compensates for weather conditions such as fog, smoke, drizzle, etc. to provide clearer image
				4. Aisle (Corridor View): rotates the video image 90° clockwise or counter clockwise for viewing narrow hallways or aisle.
			5. Wide Dynamic Range (WDR): 80dB
			6. Motion Zones: 8
			7. Privacy (Masks) Zones: 8
		12. Video Content Analysis (VCA)
			1. Line Detector
			2. Field Detector
		13. Audio
			1. Standard G.711 ADPCM 40kbps to 16kbps
			2. Streaming: 2-way
		14. Software Control
			1. Unit Configuration: SmartManager Utility tool or ATVision IP Remote Management Software
			2. Software Update: Web browser, SmartManager Utility tool or ATVision IP Remote Management Software
		15. Network
			1. Protocols: IPv4/IPv6, Manual, TCP/IP, UDP, HTTP, RTP, RTSP, NTP, DHCP, SMTP, DDNS, HTTPS, RTCP, FTP, Zeroconf, Bonjour
			2. Security: Multi-user authority, HTTPS, IP Filtering, SSL
			3. Ethernet: 10Base-T/100 Base-TX, RJ45
		16. Electrical:
			1. Input Power: 12V DC (+/- 10%), or Power over Ethernet (PoE) Injector.
			2. Power Consumption: 12VDC: 28.0 Watts (2.3A); PoE: 28.0Watts (500mA)
		17. Mechanical:
			1. Vandal Resistant, pre-packaged, cast-aluminum housing
			2. Complete dome to be IP66 rated
			3. Pan Range: 360º continuous
			4. Tilt Angle: 0° ~ 180° (Digital Flip)
			5. Variable Speed: 0.1º/sec to 380º/sec
			6. Dimensions (Dia x H): 7.9 x 12.0in (201.8 x 305.3mm)
			7. Weight: 10.8lbs (4.9kg)
			8. Operating Temperature: -40ºF ~ 122ºF (-40ºC ~ +50ºC)
			9. Operating Humidity: 0 to 90% RH (non-condensing)
		18. Conformity Certifications:
			1. Federal Communications Commission (FCC)
			2. European Conformity (CE)
			3. Ministry of Internal Affairs and Communications (MIC)
			4. NEMA-4X (IP66)
		19. Accessories
			1. DB242: Wall Mount
			2. DB241: Pendant Ceiling Mount
			3. PM304: Parapet Roof Mount
			4. SDK162J: Keyboard Controller
			5. A-CM150: Corner Mount Adapter for DB242 Wall Mount
			6. A-CM151: Pole Mount Adapter for DB242 Wall Mount
		20. Remote Management Software
			1. ATVision IP Remote Management Software shall be provided with camera
3. EXECUTION
	1. EXISTING WORK
		1. Disconnect and remove abandoned video surveillance equipment.
		2. Extend existing video surveillance installations using materials and methods compatible with existing installations as specified.
		3. Clean and repair existing video surveillance equipment remaining or to be reinstalled.
	2. 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.
	3. PREPARATION
		1. Protect devices from damage during construction.
	4. 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.
			1. Ground and bond video surveillance equipment in accordance with Section 26 05 26.
		5. Location must provide reasonable temperature and humidity conditions, free from sources of electrical and electromagnetic interference.
	5. 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.
	6. MANUFACTURER'S FIELD SERVICES
		1. Section 01 40 00 - Quality Requirements: Manufacturer's field services.
		2. Furnish manufacturer’s field representative to supervise final wiring connections and system adjustments.
	7. ADJUSTING
		1. Section 01 70 00 - Execution and Closeout Requirements: Requirements for starting and adjusting.
		2. Make proper adjustment to video system devices for correct operation in accordance with manufacturer’s instructions.
		3. Make any adjustment of camera settings to comply with specific customer’s need.
		4. Adjust manual lens irises to meet lighting conditions.
	8. DEMONSTRATION AND TRAINING
		1. Demonstrate at final inspection that video management system and devices function properly.
		2. Demonstrate at final inspection camera’s functionality and video recording capabilities.

END OF SECTION