**SECTION 28 23 29**

**VIDEO SURVEILLANCE REMOTE DEVICES AND SENSORS**

**Advanced Technology Video HDSDV220 HD Analog PTZ Dome**

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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 Remote Devices and monitoring at points as indicated on Drawings.
			1. HDSDV220: 2MP, TRUE Day/Night, WDR, 20x, HD Analog, PTZ Dome Camera
		2. Performance Requirements
			1. Compact, cost effective PTZ unit designed for discrete video surveillance applications in indoor and outdoor environments.
			2. 1/2.8" Sony Starvis CMOS
			3. HD Analog (AHD) over Coax Technology: TVI, AHD & CVBS
			4. Full HD, 1920 x 1080 resolution
			5. True Day / Night
			6. WDR
			7. OSD Control via Coax cable using UTC
			8. Long Distance, Real-Time, Transmission of Video over 1600ft on RG6U Coax Cable
			9. 20x, 4.7 – 94.0mm autofocus, optical zoom lens with 16x digital zoom functionality
			10. IP66 weather resistant and IK10 impact-resistant, aluminum housing with a rugged polycarbonate bubble
			11. Built-in heater
			12. Variable pan and tilt speeds, and digital flip capability for optimal camera control and viewing at all zoom levels.
			13. High Speed PTZ Dome with 380°/sec Maximum Pan/Tilt
			14. Supports 240 user-defined, preset positions, with up to 8 Tours and 8 patterns
			15. The camera shall be of manufacturer’s official product line, designed for commercial/industrial continuous 24/7 use.
			16. The camera shall be based upon standard components and proven technology.
	3. 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.
	4. 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.
	5. 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 with service
	6. ENVIRONMENTAL REQUIREMENTS
		1. Section 01 60 00 - Product Requirements.
		2. Conform to manufacturer’s standard service conditions during and after installation of components.
	7. FIELD MEASUREMENTS
		1. Verify field measurements prior to fabrication.
	8. MAINTENANCE SERVICE
		1. Section 01 70 00 - Execution and Closeout Requirements: Maintenance service.
		2. 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. HD Analog PTZ Dome Models: HDSDV220
		3. Description: 2MP, TRUE Day/Night, WDR, 20x, HD Analog, PTZ Dome Camera
		4. General Characteristics:
			1. Scene illumination: 0.1Lux, color; 0.00001 B/W
			2. Resolution:
				1. TVI & AHD: 2MP, 1920 x 1080 Full HD
				2. CVBS: 700TVL
			3. 20x Optical zoom, 16x digital zoom
			4. The PTZ dome cameras shall support the following tour modes:
				1. 240 user-defined, preset positions.
				2. 8 tours
				3. 8 patterns
			5. The PTZ dome cameras shall provide the following variable pan/tilt speed:
				1. A maximum speed of 380 degrees per second by preposition command.
			6. The PTZ dome cameras shall provide a pan/tilt range
				1. Pan range: 360 degrees endless continuous rotation
				2. Tilt range: -10 to 190 degrees (digital flip)
			7. The PTZ dome cameras shall provide pan / tilt speed that is inversely proportional to the zoom ratio.
			8. The PTZ dome cameras shall provide 16 individual privacy masks.
			9. The PTZ dome camera shall come fully pre-assembled and ready for surface mount applications, or able to be mounted to a wall mount bracket, recessed ceiling flush mount or to a pipe using the appropriate mounting hardware.
			10. Camera Control: OSD Menu via UTC control
			11. Transmission Distance: Coax Cable, RG6U (5C-2V), 1650ft (500m); RG59 (3C-2V), 990ft (300m)
		5. Camera:
			1. Imager: 1/2.8" Sony Starvis CMOS
			2. Lens:
				1. 20x Optical Zoom; 16x digital
				2. 4.7 to 94.0mm
			3. Field of View:
				1. TELE end: 3.0° (H)
				2. WIDE end: 55.5° (H)
			4. Video Output: 1.0 Vp-p, 75 Ohm
			5. HD Analog over Coax Technology: TVI, AHD, CVI & CVBS
			6. Video Mode: NTSC / PAL
			7. Resolution:
				1. TVI & AHD: 2MP, 1920 x 1080 Full HD @ 30fps
				2. CVBS: 700 TVL @ 30fps
			8. Minimum Scene Illumination Sensitivity: 0.35Lux, Color; 0.013Lux, B/W, at 50IRE
			9. Wide Dynamic Range (WDR): 120 dB
			10. White Balance: AWB / WAWB / Indoor / Outdoor / Manual
		6. Mechanical
			1. Vandal resistant, pre-packaged cast-aluminum housing
			2. Clear, polycarbonate dome bubble
			3. Complete camera housing to be IP66 rated weather resistant and IK10 rated impact resistant
			4. Power Input: 2.1mm barrel
			5. Video Output: BNC Connector
			6. Dimensions (Diameter x Height): 6.06 x 5.51in. (154.0 x 140.0 mm)
			7. Weight: 3.5lb (1.6kg)
			8. Pan Range: 0 to 360° continuous
			9. Tilt Angle: -10 to 180° (digital flip)
			10. Variable Speed: 0.1°/s to 380°/s
			11. Preset Accuracy: ± 0.1° typical
		7. Electrical
			1. Camera, Rated Voltage: 12 VDC / 24 VAC ± 10%, 50/60 Hz
				1. 24VAC should be used if heater is desired to operate
			2. Power Draw (typical):
				1. 12VDC: 1A (12W)
				2. 24VAC: 1.5A (22W), with heater on
		8. Environmental:
			1. Operating Temperature:
				1. –10°C to 50°C (14°F to 122°F), without heater
				2. –30°C to 50°C (-22°F to 122°F), with heater
			2. Storage Temperature: –20°C to 60°C (–4°F to 140°F)
			3. Operating Humidity: 0% to 90% relative, non-condensing
		9. User Connections:
			1. Power: 12 VDC / 24 VAC, 50/60 Hz
			2. Control: RS-485
			3. Video: BNC
			4. Alarm Input (4): NO/NC
			5. Alarm Output (2): 5VTTL
		10. Miscellaneous
			1. Areas/Titling: 16 independent areas with 12-character titles/area
			2. Protocol Support:
				1. Fastrax
				2. Pelco P
				3. Pelco D
		11. Conformity Certifications:
			1. Federal Communications Commission (FCC)
			2. European Conformity (CE)
			3. NEMA-4X (IP66)
			4. IEC (IK-10)
		12. Accessories
			1. A-CM150: Corner Mount Adapter for the VDMWC2
			2. A-CM151: Pole Mount Adapter for the VDMWC2
			3. DB243W2: Wall Mount
			4. A-PFM: Ceiling Flush Mount
			5. VDMWC2: Wall / Ceiling Mount
			6. A-PPDM: Pendant Mount Cap
			7. A-PEXM: Ceiling Pendant Mount
			8. KB5000N: Keyboard Controller
			9. VDSMR: Surface Mount Ring (Junction Box)
		13. Remote Management Software
			1. Supported by ATVision IP Remote Management Client Software for Windows and Mac PC’s and Mobile Applications for Apple and Android Operating Systems
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