**SECTION 28 23 29**

**VIDEO SURVEILLANCE REMOTE DEVICES AND SENSORS**

**Advanced Technology Video CT2212HD Turret 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. CT2212HD: 2MP, True Day/Night, DWDR, HD Analog Turret Camera
		2. Performance Requirements
			1. Color camera using a 1/2.9” Sony CMOS sensor
			2. HD Analog over Coax Technology: TVI, AHD, CVI & CVBS
			3. Full HD, 1920 x 1080 resolution
			4. TRUE Day/Night functionality
			5. IR LED Lights
			6. IP66 rated weather resistant metal enclosure
			7. Digital Wide Dynamic Range
			8. OSD Control via Coax cable using UTC
			9. Long Distance, Real-Time, Transmission of Video over 1600ft on RG6U Coax Cable
			10. The camera shall be of manufacturer’s official product line, designed for commercial/industrial continuous 24/7 use.
			11. 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 with 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. 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. Model: CT2212HD
		3. Product Description: 2MP, True Day/Night, DWDR, HD Analog Turret Camera
		4. Camera Image Sensor: 1/2.9” Sony CMOS.
		5. Lens: 2.8-12mm vari-focal lens
		6. General Requirements:
			1. Scene Illumination: 1.0Lux @F1.6, 50IRE; BW: 0Lux w/ IR LED On
			2. Resolution: 1920 x 1080 Full HD
			3. Signal to noise: more than 50dB (AGC off)
			4. Scanning System: Progressive
			5. True Day / Night with Infrared Cut Filter (ICR) removal function
			6. Digital Wide Dynamic Range
			7. IR LED Lights
			8. Camera Control: OSD Menu via UTC control
			9. Transmission Distance: Coax Cable, RG6U (5C-2V), 1650ft (500m); RG59 (3C-2V), 990ft (300m)
		7. Video Requirements and Adjustments (minimum):
			1. HD Analog over Coax Technology: TVI, AHD, CVI & CVBS
			2. Video Mode: NTSC / PAL
			3. Video Frame Rate: 1920 x 1080 (TVI, AHD, CVI) or 700TVL (CVBS) @ 30fps
			4. Effective Pixels: 1985(H) x 1105(V)
			5. Day/Night: Auto (ICR)
			6. Digital Wide Dynamic Range
			7. White Balance
			8. Auto Gain Control (AGC)
			9. Back Light Compensation (BLC)
			10. Shutter: 1/60 ~ 1/50,000 sec
			11. Sens-UP
			12. 2DNR / 3DNR (Digital Noise Reduction
			13. Digital Effects: Freeze, Mirror, Negative Image, LSC (Shading), Defog
			14. Motion: 4 zones
			15. Privacy: 4 zones
			16. Defect
		8. Electrical:
			1. Input Power: 12VDC.
			2. Power Consumption:
				1. 390mA (4.68W)
		9. Mechanical:
			1. Pre-packaged cast-aluminum housing
			2. Complete camera housing to be IP66 rated weather resistant
			3. Power Input: 2.1mm barrel
			4. Video Output: BNC Connector
			5. IR LED Lights - 40 SMD IR LEDs; Distance: Maximum 100ft indoor, 80ft outdoor
			6. Dimensions: 5.3Ø x 5in (135.4Ø x 127.7mm)
			7. Weight: 1.76lbs (0.8kg)
			8. Operating Temperature: -4ºF ~ 122ºF (-20ºC ~ +50ºC)
			9. Operating Humidity: 0 to 96% RH (non-condensing)
		10. Conformity Certifications:
			1. Federal Communications Commission (FCC)
			2. European Conformity (CE)
			3. NEMA-4X (IP66)
		11. Accessories
			1. A-CM150: Corner Mount Adapter
			2. A-CM151: Pole Mount Adapter
		12. 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