**SECTION 28 23 29**

**VIDEO SURVEILLANCE REMOTE DEVICES AND SENSORS**

**Advanced Technology Video BHR7 Series Bullet Cameras**

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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. BHR7 Series Bullets: 700TVL, True Day/Night, WDR, IR, Bullet Camera
		2. Performance Requirements
			1. Color, bullet camera using a 1/3” Sony EXview HAD CCD II
			2. Produces a minimum of 700TVL of horizontal resolution
			3. TRUE Day/Night functionality
			4. Digital Wide Dynamic Range
			5. Smart IR Technology
			6. Weather resistant, metal enclosure with built-in heater
			7. The camera shall be of manufacturer’s official product line, designed for commercial/industrial continuous 24/7 use.
			8. 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.
		3. Smart IR Technology: automatically adjusts the sensitivity of IR LED intensity based on distance from lens to object.
	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. BHR7 Series Bullet Camera Models: BHR7550LR and BHR7212MR
		3. Product Description: 700TVL, True Day/Night, WDR, IR, Bullet Camera
		4. Camera Image Sensor: 1/3” Sony EXview HAD CCD II.
		5. Lens:
			1. BHR7550LR: 5 – 50mm Vari-focal, DC Auto-Iris.
			2. BHR7212MR: 2.8 – 12mm Vari-focal, DC Auto-Iris.
		6. General Requirements:
			1. Scene Illumination: 0.15Lux, Color; 0Lux, B/W, with IR LED’s On, at F1.2 IRE
			2. Resolution: 700 TV lines, minimum color; 750TVL B/W
			3. Signal to noise: 50dB
			4. Synchronization: Internal
			5. Scanning System: 2:1 Interlace
			6. Video Output: 1.0Vp-p @ 75ohms
			7. True Day / Night with Infrared Cut Filter (ICR) removal function
			8. Smart IR Technology
			9. Digital Wide Dynamic Range
			10. On Screen Display (OSD) functionality
		7. Video Requirements and Adjustments (minimum):
			1. Effective Pixels: 976(H) x 494(V)
			2. Scanning Frequency: 15.73KHz(H) x 59.94Hz(V)
			3. Day/Night: Auto
			4. White Balance: ATW / Push / User 1 / User 2 / Anti CR / Manual / Push Lock
			5. Auto Gain Control (AGC): On / Off
			6. Back Light Compensation (BLC): Off / BLC / HLC
			7. Privacy Masking: 0 ~ 4 Zones
			8. Digital Wide Dynamic Range (Adaptive Tone Reproduction): Luminance (L/M/H), Contrast (L/LM/M/MH/H)
			9. Motion Detection: On / Off, 4 zones
			10. Digital Noise Reduction (2D-DNR): OFF / Y / C / Y, C
			11. Mirror: On / Off
			12. Exposure: Auto Iris / Auto Iris + Electronic Shutter
			13. Brightness: 0 ~ 255 steps
			14. Contrast: 0 ~ 255 steps
			15. Sharpness: 0 ~ 255 steps
			16. HUE: 0 ~ 255 steps
			17. Gain: 0 ~ 255 steps
			18. Smart IR: On / Off / Level
		8. Electrical:
			1. Input Power: 12V DC / 24V AC (+/- 15%), 60Hz.
			2. Power Consumption:
				1. 12VDC:

150mA (1.9W): IR & Heater Off

350mA (4.2W): IR On and Heater Off

880mA (10.5W): IR & Heater On

* + - * 1. 24VAC:

220mA (2.6W): IR & Heater Off

390mA (5W): IR On and Heater Off

1.56A (33.4W): IR & Heater On

* + 1. Mechanical:
			1. Pre-packaged, cast-aluminum housing
			2. Complete bullet housing to be IP67 rated
			3. Power Input: 3-Pin Screw Terminal Block
			4. Video Output: BNC Connector
			5. IR LED: 45 lights, 160ft (50M) maximum range
			6. Dimensions (Dia x H): 3.9 x 8 x 10.4in (98.4 x 177.5 x 263.5mm)
			7. Weight: 2.0lbs (.95kg)
			8. Operating Temperature:
				1. 12VDC Power: -22ºF ~ 122ºF (-30ºC ~ +50ºC)
				2. 24VAC Power: -40ºF ~ 122ºF (-40ºC ~ +50ºC)
			9. Operating Humidity: 0 to 96% RH (non-condensing)
		2. Conformity Certifications:
			1. Federal Communications Commission (FCC)
			2. Underwriters Laboratories (UL)
			3. European Conformity (CE)
			4. NEMA-4X (IP67)
		3. Accessories
			1. A-CM150: Corner Mount
			2. A-CM151: Pole Mount
1. 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