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This product specification is based on recognized industry standards for project documentation found within the Construction Specification Institute (CSI) Project Resource Manual – CSI Manual of Practice [5<sup>th</sup> Edition], MasterFormat™ [2004 Edition], SectionFormat™ [1997 Edition] and PageFormat™ [1999 Edition].

This specification is based on JVC model TK-C9300U and may be used as a manufacturer based proprietary specification or edited to a performance based specification. Optional text is presented in brackets [ ]; delete optional text as required in final project documentation. Specifier Notes are intended to provide information and guidance relative to the specific product or system ensuring proper configuration, performance and operation; delete these notes in final project documentation.

## Section 28 23 29

### Video Surveillance Remote Devices and Sensors

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section includes: High resolution color CCD closed circuit television camera with integrated 12-bit Digital Signal Processing capable of automatically increasing sensitivity by switching between color and black and white modes during low light conditions and wide dynamic range and high speed, automatic dual exposure control for each pixel element

##### 1.02 RELATED SECTIONS

- A. 01.61.13 Software Licensing Requirements
- B. 01.86.33 Electronic Safety and Security Performance Requirements

*Specifier Note: Projects may vary in scope and complexity; as such it is important to identify those sections which may have an impact on system operation or infrastructure integrity. It is important these sections be reviewed and addressed if the project warrants it and/or is the practice of the Specifier. Edit or revise those sections which do not apply to a specific project. Contact a JVC Representative for further assistance.*

- C. 28.01.20 Operation and Maintenance of Electronic Surveillance
- D. 28.05.00 Common Work Results for Electronic Safety and Security
- E. 28.06.20 Schedules for Electronics Surveillance

- F. 28.08.00 Commissioning of Electronic Safety and Security Systems
- G. 28.13.33.33 Access Control Interfaces to Video Surveillance
- H. 28.16.33.33 Intrusion Detection Interfaces to Video Surveillance
- I. 28.23.13 Video Surveillance Control and Management Systems
- J. 28.23.26 Video Surveillance Remote Positioning Equipment
- K. 28.23.23 Video Surveillance Infrastructure
- L. 28.31.33.33 Fire Detection and Alarm Interfaces to Video Surveillance

*Specifier Note: The convergence of IT Infrastructures and Network Video technology may often require the integration of equipment enclosures and related hardware typically found in data center environments. Edit or revise those sections as required for a specific project or specification practices*

- M. 27.11.16 Communication Cabinets, Racks, Frames and Enclosures
- N. 27.21.00 Data Communication Network Equipment
- O. 27.22.00 Data Communication Hardware

*Specifier Note: Within large scope projects communication and cabling may often be related to requirements found in the overall building electrical requirements. Edit or revise those sections as required for a specific project or specification practices.*

- P. 26.05.19 Low-Voltage Electrical Power Conductors and Cables
- Q. 26.41.23 Lighting Protection, Surge Arrestors and Suppressors
- R. 26.55.53 Security Lighting
- S. 26.56.00 Exterior Lighting

### 1.03 REFERENCES

- A. UL 2044: Commercial Closed Circuit Television System
- B. FCC Part 15 Radio Frequency Radiators
- C. ICES-003 Emission
- D. ISO
- E. RoHS

### 1.04 SUBMITTALS

- A. General: In compliance with Conditions of the Contract and Division 1 Submittal requirements.

1. Product Data: Submit original equipment manufacturers product, installation, operation and maintenance data.

*Specifier Note: When comparing/choosing digital video security equipment, many products may be derivatives of consumer electronics. The following language ensures the Owner of the proper equipment is being used for the intended purpose*

#### 1.05 QUALITY ASSURANCE

- A. The system shall be manufactured for the intended purpose in a commercial /industrial, 24 hour day, 7 days per week, and 365 days per year operating environment
- B. Manufacturer Qualifications: Obtain [products] [systems] from a manufacturer experienced in the engineering, production and support of closed circuit television systems, and, with sufficient production capability to meet the required project schedule
  1. Specified Manufacturer to provide field engineering support services

*Specifier Note: Certification or licensing requirements for contractors, installers or integrators of safety and security systems vary from state to state in the continental United States. Verify requirements with the Authority Having Jurisdiction for the specific project. Edit or revise those sections as required for a specific project or specification practices.*

- C. Installer Qualifications:
  1. Engage Installer with [license] [certification] [type] as required by the [State of] [City of] with demonstrated successful experience designing, installing, commissioning, training and servicing closed circuit television systems for commercial and/or residential security applications
  2. Installer shall have completed factory training and be certified by the manufacturer as qualified to install, operate and maintain product(s) specified

#### 1.06 WARRANTY

- A. Provide original equipment manufacturers warranty documentation for acceptance by the Owner

*Specifier Note: Coordinate paragraph below with manufacturers warranty requirements*

1. Warranty Period: [specify term] years commencing with the Date of Substantial Completion

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with Division 1 Product Requirement Section and the manufacturers recommended procedures for receiving and protection of the equipment.
- B. Storage and Protection: Store materials protected from exposure to extreme or harmful environmental conditions and at temperature and humidity levels recommended by the manufacturer.
  1. Prevent physical damage, soiling or wetting
  2. Provide secure storage prior to and during installation
  3. Provide individual components in the manufacturers original packaging and labeling

1.08 PROJECT/SITE CONDITIONS

- A. Environmental Requirements:
  1. Site should be substantially enclosed and secure prior to installation of hardware
  2. Environmental systems should be in place and operational
  3. Deliver materials onsite at least 24 hours prior to installation to allow materials to reach temperature and humidity equilibrium

**PART 2 PRODUCTS**

2.01 COLOR CLOSED CIRCUIT TELEVISION CAMERA

- A. General
  1. Provide high resolution color CCD camera(s) with integrated 12-bit Digital Signal Processing
  2. The camera shall feature a programmable mechanical infrared cut filter witch switches between color and black and white modes during low light conditions
    - a. Automatic switching mode with level and time delay setting
    - b. Levels: Dark, Normal or Bright
    - c. Time delay : 10, 20 or 30 seconds
    - d. Manual: Fixed color or black and white mode
    - e. Externally switched: Color or black and white mode
  3. The camera shall feature wide dynamic range and high speed, automatic dual exposure control for each pixel element
  4. One third inch Interline Transfer CCD Chip measuring 4.8mm horizontal by 3.6mm vertical with 380,000 (768H x 494V) effective pixels producing 580 lines horizontal resolution
  5. Signal system: NTSC
  6. Video Processing: Built-in 12-bit Digital Signal Processing
  7. Dual edge detail correction with horizontal and vertical 2H line memory
  8. Scene illumination:
    - a. Color Mode: 0.025 lx, f1.2, AGC SUPER, 25 IRE (25% video)
    - b. B/W Mode: 0.003 lx, f1.2, AGC SUPER, 25 IRE (25% video)

*Specifier Note: There are no industry standards for testing or determining Scene Illumination, or Sensitivity. Light source, scene reflectance, lens type and aperture opening all play a critical role is determining sensitivity (LUX) of a camera. Prior to selecting and specifying cameras you are encouraged to perform a side by side comparison with all variables being equal between cameras. Contact your JVC Representative for further information.*

9. Back Light Compensation: 4 patterns
10. Shutter Speed
11. Iris control: DC Iris
12. Programmable external sensitivity control via on screen menu
13. Programmable Focus Adjustment function
14. Onscreen display via built in camera setup menu
15. Automatic Gain Control: OFF / MID / HIGH
16. Sense up (slow shutter): OFF, x2, x4, x8, x16, x32, x64, x128
17. Camera title overlay
18. Brightness

19. White Balance Area
20. Color Level
21. Black Level
22. Auto Black
23. Enhance Level
24. DNR Level
25. Digital Zoom: x1, x1.4, x2
26. Motion Detect
27. Reverse Mode
28. Privacy Mask (4 areas)
29. CCD Spot compensation

B. Electrical

1. Input voltage: AC 24V 60Hz or DC 12V
2. Power consumption: 2.5 watts
3. Scanning system: 2-1 interlaced, 580 lines
4. Synchronization System: Internal
5. White Balance: Continuous Auto Tracking White (ATW) or Manual
  - a. 2,300 to 10,000 degrees Kelvin
6. Automatic Gain Control
7. Video output: Composite video, 1 v peak to peak, 75 Ohms resistance
8. Signal to Noise Ratio: 52dB (AGC off)

C. Mechanical

1. Dimensions: 5 inches (126mm) long by 2 3/16 inches (55mm) wide by 2 7/16 inches (61mm) high.
2. Weight: 0.6 pounds (270 g)
3. Lens mount: CS
4. Front controls/connectors:
  - a. Back Focus Adjustment
  - b. Adjustment screw x 1: Back focus lock
5. Side control/connectors:
  - a. 4 pin mini connector: Auto Iris Connector
  - b. LED x 1 : Power indicator
6. Bottom controls/connectors
  - a. Mounting Plate with One Quarter / Twenty (1/4- 20) screw hole
7. Rear controls/connectors:
  - a. Screw terminal x 2: Power input
  - b. Mini terminal x 2: Auxiliary input
  - c. BNC x 1: Composite video output
  - d. Mini Dip Switch x 4:
    1. Automatic Day/Night – Auto/Off
    2. Back Light Compensation - On/Off
    3. Monitor Type – LCD/CRT
    4. Wide Dynamic Range – On/Off
  - e. Push Button x 6:
    1. On screen display menu x 1
    2. Menu navigation and selection x 4

3. Setting execute parameter x 1

D. Environmental

1. Temperature Range
  - a. Storage: 14 to 122 degrees Fahrenheit (-10 to 50 degrees Celsius)
  - b. Operating: 32 to 104 degrees Fahrenheit (0 to 40 degrees Celsius)
2. Relative Humidity Range
  - a. Storage: 15% to 85%, non-condensing
  - b. Operating: 20% to 80%, non-condensing
3. The unit is suitable for indoor operation.

E. Regulatory

1. Emission:
  - a. FCC Part 15, Subpart B, Class B
  - b. ICES-003, Class B
2. Safety:
  - a. UL 2044 - Commercial Closed Circuit Television Equipment
3. Environmental Sustainability:
  - a. RoHS Directive

2.02 MANUFACTURED UNITS

- A. JVC Model Number: TK-C9300U 1/3 inch Color Video Camera
- B. Included Items: Installation Manual, Setup Manual, Warranty Card

**PART 3 EXECUTION**

3.01 INSTALLATION

- A. Install the system in accordance with the equipment manufacturers recommended procedures
- B. Install system using generally acceptable industry practices for Closed Circuit Television systems and in compliance with building and electrical codes according to authority having jurisdiction

*Specifier Note: The following may be deleted for projects of smaller scope in which full Division 1 project documentation is not provided or required. It is recommended that performance requirements be specified within the project documentation to ensure proper configuration and operation of the system. Contact your JVC Representative for assistance in developing performance specification specific to a particular project.*

- C. Ensure system and all related components are configured to support performance requirements outlined in Division 1, 01.86.33 Electronic Safety and Security Performance Requirements

3.02 FIELD QUALITY ASSURANCE

- A. Provide Manufacturer Field Engineering Support for engineering, installation, testing and commissioning assistance as required in Division 1.

3.03 COMMISSIONING

*Specifier Note: The following may be deleted for projects of smaller scope in which full Division 1 project documentation is not provided or required. It is recommended that performance requirements be specified within the project documentation to ensure proper configuration and operation of the system. Contact your JVC Representative for assistance in developing performance specification specific to a particular project.*

- A. Testing: Ensure system operates to manufacturers specifications
- B. Ensure system and all related components are configured to and comply with performance requirements in:
  - 1. Division 1, Section 01.86.33 Electronic Safety and Security Performance Requirements
  - 2. Division 28, section 28.01.20 Operation and Maintenance of Electronic Surveillance
- C. User/Owner Training:
  - 1. Provide original manufacturers [approved] [certified] training for personnel designated by the Owner
- D. Documentation: Provide [x] set(s) of manufacturers hardware installation and operation guides

### 3.04 INSPECTION/MAINTENANCE

- A. Follow manufacturers recommended practices for preventative maintenance
- B. Comply with Division 28, section 28.01.20 Operation and Maintenance of Electronic Surveillance
- C. Ensure continuous, unrestricted airflow in environment where equipment is installed

### **END OF SECTION**

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