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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 [5th Edition], MasterFormat™ [2004 Edition], SectionFormat™ [1997 Edition] and PageFormat™ [1999 Edition].

This specification is based on JVC model TK-C1480U 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 camera with integrated 10-bit Digital Signal Processing and dual shutter Extended Dynamic Range

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. 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 Competition

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) featuring integrated 10-bit Digital Signal Processing with dual shutter Extended Dynamic Range
 - a. One third inch Interline Transfer CCD Chip measuring 4.8mm horizontal by 3.6mm vertical with 380,000 (768H x 494V) effective pixels producing 480 lines horizontal resolution (typical)
 - b. Signal system: NTSC
 - c. Video Processing: 10-bit Digital Signal Processing
 - d. Dual edge detail correction with horizontal and vertical 2H line memory
 - e. Scene illumination:
 1. 0.4 lx, f1.2, AGC 20dB, 25 IRE (25% video)
 2. 0.25 lx, f1.2, Super AGC, 25 IRE (25% video)
 3. 0.0125lx, f1.2, AGC 20dB, 32x Slow Shutter, 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 in 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.

- f. Back Light Compensation: On/Off (switchable) with programmable zones in four fixed modes and two editable modes
 - g. Automatic Electronic Shutter: Automatic or Manual, switchable - 1/60 to 1/10000 second
 - h. Iris control: Video or DC Iris
- B. Alarm Management
 1. Provide integrated video motion detection with programmable grid
 - a. Provide on screen alarm indication and alarm output signal terminals for connection to auxiliary devices
- C. Communication and Programming
 1. Provide camera with remote control/communication capability via RS-422A or RS485 (switchable), 9600 bits per second
 2. Provide camera programming capability with on screen menu
 3. Provide camera with programmable Camera ID number system

D. Electrical

1. Input voltage: AC 24V 60 Hz , DC 12V
2. Power consumption: 5.2 watts
3. Scanning system: 2-1 interlaced, 525 lines
4. Synchronization System: External, Internal and Line Lock with vertical phase adjustment
5. White Balance: Continuous Auto Tracking White (ATW), AWC (One Push White) or Manual
 - a. 2,500 to 8,000 degrees Kelvin
6. Automatic Gain Control, maximum 23 dB
7. Video output: Composite video, 1V peak to peak, 75 Ohms resistance
8. Y/C output:
 - a. Y: 0.714V peak to peak, 75 Ohms resistance
 - b. C: 0.286V peak to peak, 75 Ohms resistance
9. Signal to Noise Ratio: 50dB (AGC off)

E. Mechanical

1. Dimensions: 5 7/8 inches (149mm) long by 2 7/8 inches (70mm) wide by 2 1/2 inches (63mm) high.
2. Weight: 1.4 pounds (600 g)
3. Lens mount: C or CS
4. Front controls/connectors:
 - a. Adjustment Thumb Screw - Back Focus Adjustment and C/CS mount selector ring
5. Side control/connectors:
 - a. Locking Screw: Back Focus Adjustment
 - b. Sliding Cover Plate: Access to selectable camera options
 - c. 4 pin mini connector: Auto Iris Connector
 - d. Mini slide switch: Video or DC iris selector
 - e. Push Buttons x 2:
 1. Menu
 2. Auto Whiter Control Set
 - f. Multi-position toggle with arrow indicators:
 1. Up, down, left, right menu navigation controls

- g. Mini Dip Switches x 4:
 - 1. External synchronization On/Off
 - 2. Internal/GenLock or Line Lock selector
 - 3. Duplex / Simplex Communication Selector
 - 4. RX plus and minus 110 Ohm termination switch
- 6. Bottom controls/connecters
 - a. Mounting Plate with One Quarter / Twenty (1/4- 20) screw hole
- 7. Rear controls/connectors:
 - a. Clamping Screw terminal x 2: Input Power
 - b. Indicator lamp x 1: Power indicator
 - c. BNC x 2:
 - 1. Composite video output
 - 2. Sync Input
 - d. 4 Pin x 1: Y/C luminance and chrominance output

 - e. Mini push terminals x 6: (1-4 – RS422A or RS485 communication)
 - 1. TX + (A)
 - 2. TX – (B)
 - 3. RX + (C)
 - 4. RX – (D)
 - 5. Auxiliary Relay output
 - 6. Relay ground

F. 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
- G. Regulatory
1. Emission:
 - a. FCC Part 15, Subpart B, Class B Device
 - b. ICES-003, Class B Device
 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-C1480U 1/3 inch high resolution color CCD Camera
- B. Included Accessories:
 1. Four pin connector
 2. Ferrite core
- C. Optional Accessories
 1. Camera Control Software

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