



JVC Professional Products Company  
Division of JVC AMERICAS CORP.  
1700 Valley Road  
Wayne, New Jersey 07470  
(800) 582-5825  
www.jvc.com/pro

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 VN-C215V4U/VP4U 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 full frame rate, 30 frames per second, Motion–JPEG Internet Protocol (IP) Mini-Dome Camera capable of automatically increasing sensitivity during low light conditions by switching between color and black and white modes. The IP camera shall provide both analog and network video and shall feature Power over Ethernet (POE) with built in software viewer and web server.
- B. Related 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 integrity. Closed circuit television systems often interface or integrate with other building systems. Within certain projects communication and electrical cabling may often be related to requirements found in the overall building wiring requirements. Edit or revise those sections as required for specific project or are specification practices. It is important these sections be reviewed and addressed if the project warrants or are specification practices. Contact a JVC Representative for further assistance.*

- |    |          |  |
|----|----------|--|
| 1. | 26 05 19 | Low-Voltage Electrical Power Conductors and Cables   |
| 2. | 26 41 23 | Lighting Protection, Surge Arrestors and Suppressors |
| 3. | 26 55 53 | Security Lighting                                    |
| 4. | 26 56 00 | Exterior Lighting                                    |

*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 specific project or are specification practices*

- 5. 27 11 16 Communication Cabinets, Racks, Frames and Enclosures
- 6. 27 21 00 Data Communication Network Equipment
- 7. 27 22 00 Data Communication Hardware

C. Multi-Section Requirements:

*Specifier Note: Product(s) in this section require interface to or integration with other closed circuit television components to operate as a complete system. As projects vary in scope and complexity; it is important to identify those sections which may require product integration, have an impact on system operation or infrastructure integrity. Edit or revise those sections which may apply to a specific project. Contact a JVC Representative for further assistance.*

- 1. 01 61 13 Software Licensing Requirements
- 2. 01 86 33 Electronic Safety and Security Performance Requirements
- 3. 28 01 20 Operation and Maintenance of Electronic Surveillance
- 4. 28 05 00 Common Work Results for Electronic Safety and Security
- 5. 28 06 20 Schedules for Electronics Surveillance
- 6. 28 08 00 Commissioning of Electronic Safety and Security Systems
- 7. 28 13 33.33 Access Control Interfaces to Video Surveillance
- 8. 28 16 33.33 Intrusion Detection Interfaces to Video Surveillance
- 9. 28 23 13 Video Surveillance Control and Management Systems
- 10. 28 23 16 Video Surveillance Monitoring and Supervisory Devices
- 11. 28 23 19 Digital Video Recorders and Analog Recording Devices
- 12. 28 23 26 Video Surveillance Remote Positioning Equipment
- 13. 28 23 23 Video Surveillance Infrastructure
- 14. 28 31 33.33 Fire Detection and Alarm Interfaces to Video Surveillance

1.02 REFERENCE STANDARDS

- A. National Television System Committee - NTSC (North America)
- B. Underwriters Laboratory – UL
- C. Federal Communications Commission – FCC
- D. Interference Causing Equipment Standard – ICES (Canada)
- E. Institute of Electronic and Electrical Engineers - IEEE
- F. International Electrotechnical Commission -IEC
- G. Restriction of Hazardous Substances Directive (RoHS)

### 1.03 ADMINISTRATIVE REQUIREMENTS

*Specifier Note: Closed Circuit Television systems are often installed in multiple phases, similar to certain electrical components. It is important to schedule these phases in conjunction with construction phases. Improperly run wires or undesirable mounting locations may degrade system performance, and, may void the manufacturer's warranty.*

- A. Coordination: Ensure Closed Circuit Television System installation is fully coordinated with provisions of Division 1, section 01 31 00 – Project Management and Coordination
- B. Scheduling: Ensure pre-installation of cabling, mounting hardware and equipment installation is fully coordinated with Division 1, Section 01 32 00 – Construction Progress Documentation
  - 1. Building envelop must be substantially completed and HVAC systems installed and operationally prior to final equipment installation

### 1.04 SUBMITTALS

- A. General: In compliance with Conditions of the Contract and Division 1, Section 01 33 00 Submittal Procedures
- B. Product and technical data:
  - 1. Manufacturers technical data sheets and bulletins
  - 2. Manufacturers installation and operation manuals
  - 3. Manufacturer Maintenance data
  - 4. Spare parts list and recommended hardware
    - a. Recommended maintenance contract
- C. Shop Drawings:
  - 1. Wiring diagrams
  - 2. Equipment placement locations
  - 3. Schedules and tables: Product quantity and placement

*Specifier Note: When comparing/choosing digital video security equipment, many products may be derivatives of consumer electronics. The following language ensures the Owner 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:
  - 1. 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
  - 2. Manufacturer capable of providing field representation during design, installation and commissioning of systems

*Specifier Note: Regulations specific to this section vary by geographic location and Owner requirements. Coordinate article below with Local Authority Having Jurisdiction and/or Owner for requirements. Edit or revise article below as required for a specific project or specifiers practice.*

- C. Regulatory Requirements:
  - 1. Emission / Immunity:
    - a. FCC Part 15, Subpart B, Class A Digital Device
    - b. EN55022/1994+A1+A2 Class A, EN50224/1998+A1+A2
  - 2. Transmission - Ethernet: IEEE 802.3 / 802.3u / 802.3af
  - 3. Safety:
    - a. UL Listed 60950/EN 60950
  - 4. Ingress Protection:
    - a. IEC IP66
  - 5. Sustainability:
    - a. RoHS Directive Compliant

#### 1.06 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with Division 1, Section 01 61 00 Common Product Requirements 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. Deliver individual components in the manufacturers original packaging and labeling
  - 2. Prevent physical damage, soiling or wetting
  - 3. Provide secure storage prior to and during installation

#### 1.07 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

#### 1.08 WARRANTY

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

*Specifier Note: Coordinate sub-paragraph below with manufacturers warranty policies and procedures if different from General Conditions, specifically Division 01, Section 01 78 36 - Warranties*

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

**PART 2 PRODUCTS****2.01 COLOR CLOSED CIRCUIT TELEVISION CAMERA**

*Specifier Note: The following specification is for a common camera with two different housing options. Differences will be noted by part numbers and enclosed with [brackets]. Select the appropriate camera/housing combinations and delete the specifications for the remaining camera/lens combination.*

**A. Manufacturer:**

1. JVC Professional Products Company  
Division of JVC AMERICAS CORP.  
1700 Valley Road, Wayne, NJ; (800) 582-5825  
www.JVC.com/pro

**B. General:**

1. Provide full frame rate, 30 frames per second, Motion-JPEG Internet Protocol (IP) Mini-Dome Camera capable of automatically increasing sensitivity during low light conditions by switching between color and black and white modes. The IP camera shall provide both analog and network video and shall feature Power over Ethernet (POE) with built in software viewer and web server.
  - a. [VN-C215VP4U] – Provide IP66 rated vandal proof dome housing
  - b. One quarter inch Interline Transfer CCD Chip measuring 3.6mm horizontal by 2.7mm vertical with 380,000 (768H x 494V) effective pixels producing 540 lines horizontal resolution (typical)
  - c. Signal system: NTSC

*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.*

- d. Scene illumination: with optional clear cover
  1. 0.8 lx F 1.3, AGC ON, 25 IRE (25% video) in color mode
  2. 0.4 lx, F 1.3, AGC ON, 25 IRE (25% video) in black and white mode
- e. Back Light Compensation: On/Off (switchable)
- f. White Balance: Continuous Auto Tracking White (ATW) or Manual
  1. 2,300 to 10,000 degrees Kelvin
2. Provide Integrated Manually Variable Focal Length Lens with Auto Iris:
  - a. Focal Length: 2.8 mm to 10.0 mm
  - b. Aperture: F1.3 to f3.0
  - c. View Angle:
    1. 2.8mm: 73 degrees horizontal x 54 degrees vertical
    2. 10.0mm: 20 degrees horizontal x 15 degrees vertical
  - d. Iris: DC
3. Provide manually adjustable lens angle adjustment range of:
  - a. Horizontal: plus or minus 350 degrees
  - b. [VN-C215V4U] Vertical: plus or minus 80 degrees
  - c. [VN-C215VP4U] Vertical: plus or minus 70 degrees
  - d. Rotation: plus or minus 175 degrees

- C. Alarm Management:
1. Provide IP camera with two (2) hardwired alarm inputs. Alarm outputs shall be provided through two (2) hardwire alarm outputs and network communication via viewer software.
  2. Provide IP camera with digital motion detection using a programmable 8x6 grid, with user definable sensitivity levels
  3. Provide 8MB for pre and post alarm image recording buffer, programmable up to 30 seconds for each.
- D. Event Management:
1. Provide timer option for periodic FTP transmission
  2. Provide Pre/Post alarm FTP transmission over TCP or UDP, email, external output
- E. Hardware
1. Provide IP camera with built in Web Server and FTP Client capability for storage of alarm images
  2. Minimum Personal Computer requirements:
    - a. Operating system: Windows XP (Professional or Home Edition) Service Pack 2
    - b. Processor: Pentium III 500 MHz or higher
    - c. Memory: 128 MB or higher
    - d. Hard Disk space: 20 MB or more
    - e. Video Card: 1024 x 768 pixels or higher, True Color, 24 or 32 bit
    - f. Web Browser: Internet Explorer V6.0 or higher
- F. Software
1. Provide three (3) password protected User Access levels
  2. Provide IP camera which sends 9 Mbps at maximum bit rate:
    - a. JPEG: 640x480 or 320x240 pixels
    - b. Maximum Frame Transfer rate: 30 frames per second
  3. Camera setup menu via Web Browser:
    - a. DC Iris level
    - b. Backlight Compensation
    - c. Video Compression level
    - d. Chroma
    - e. Auto/Manual White Balance
    - f. AGC
    - g. Camera ID
    - h. Time/Date
    - i. Adjust JPEG size from 3 Kb to 100 Kb per image
    - j. Snapshot function
  4. Provide built in ActiveX Viewer:
    - a. Monitor from personal computer
    - b. Snapshot function
    - c. Viewer shall be customizable
- G. Networking
1. Provide IP Camera with TCP/IP, UDP/IP, HTTP, FTP, ICMP, ARP, RTP, DHCP, NTP, SMTP, IGMP and DSCP communication protocol
  2. LAN compliance shall be IEEE802.3, 802.3u and 802.3af
  3. Provide IP filter to deny or allow access from a specific IP address

4. Provide programmable IP address to allow multiple units on the same network
5. Provide multicast capability allowing multiple, simultaneous viewing instances without lowering frame rate

#### H. Electrical

1. Input voltage:
  - a. DC 12V
  - b. Power Over Ethernet (PoE class 0 max 7 Watt)
2. Power consumption: 6 Watt
3. Scanning system: 2-1 interlaced, 525 lines
4. Synchronization System: Internal and Line Lock with vertical phase adjustment
5. Automatic Gain Control, maximum 26 dB
6. Video output: Composite video, 1V peak to peak, 75 Ohms impedance
7. Signal to Noise Ratio: 50dB (AGC off)

#### I. Mechanical

1. Dimensions:
  - a. [VN-C215V4U] 5 3/4 inches (145mm) diameter by 5 1/4 inches (133mm) high
  - b. [VN-C215VP4U] 5 3/4 inches (145mm) diameter by 3 1/8 inches (125mm) high
2. Weight:
  - a. [VN-C215V4U] 1.7 pounds (750g)
  - b. [VN-C215VP4U] 2.9 pounds (1.3 kg)
3. Interior Housing - Controls/Connectors/Indicators:
  - a. Screw x 3: Mounting bracket attachment screws
  - b. RCA Pin x 1: Monitor Out connection
  - c. Locking Screw x 1: Tilt Lock
  - d. Screw x 1: Pan fastening screw
  - e. Adjustment Screw: Iris Level +/-
  - f. Reset push button.
  - g. [VN-C215V4U] LED indicators
    1. Status indicator
    2. Link indicator
    3. Activity indicator
4. Base controls, connectors or indicators:
  - a. Flying leads: Power input cables x2
  - b. Flying leads x2 IN/OUT
  - c. Flying leads x1 Ground
  - d. Flying lead 10/100BASE-TX(PoE) LAN connector (CAT 5 jack for RJ 45)
5. Mounting: Standard electrical box or optional mounting accessories

#### J. Environmental

*Specifier Note: JVC provides environmental specifications for optimal operation while achieving maximum in service life of its products. JVC will not mislead owners with the maximum thresholds products will operate to if they reduce the product life cycle. JVC products may operate to more extreme (higher/lower) ratings if required, however the product lifecycle may be shortened. Should you require different environmental conditions please contact your JVC Representative for assistance in specifying the proper products and/or optional accessories.*

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: up to 85%, non-condensing
  - b. Operating: up to 85%, non-condensing.
3. The unit is suitable for indoor operation and outdoor operation with optional heater unit

## 2.02 MANUFACTURED UNITS

- A. JVC Model Number: VN-C215V4U 1/4 inch high resolution color CCD Camera with a 3.6 X variable focal length lens in unitized dome housing
- B. JVC Model Number: VN-C215VP4U 1/4 inch high resolution color CCD Camera with a 3.6 X variable focal length lens in IP66 rated unitized dome housing
- C. Included Accessories:
  1. Installation Manual
  2. API Guide
  3. Active X Viewer
  4. Mounting template
- D. Optional accessories:
  1. KA-ZH215U – Outdoor heater unit

## PART 3 EXECUTION

### 3.01 INSTALLATION

*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. Coordinate article with Section 28 08 00 Commissioning of Electronic Safety and Security. Edit or revise articles below as required for a specific project or specification practices.*

- A. Installer Qualifications:
  1. Engage Installer with [license] [certification] [*specify type*] as required by the [State of] [City of] with demonstrated successful experience designing, installing, commissioning, training and servicing closed circuit television systems
  2. Installer shall have completed factory approved training and be certified by the manufacturer as qualified to install, operate and maintain product(s) specified
- B. Install the system in accordance with the equipment manufacturers recommended procedures
- C. Install system using generally acceptable industry practices for closed circuit television systems
- D. Ensure electrical and communication wiring is coordinated with Section 28 05 13.13 CCTV Communication Conductors and Cables



*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 a system performance specification specific to a particular project.*

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

### 3.02 EXAMINATION

*Specifier Note: There are often changes to building interior structures during the course of construction. It is imperative as built mounting locations be assessed to ensure the desired field of view can be achieved. Owners often require very specific views of their facility and physical changes to the structure may prevent ideal mounting locations. Coordinate and/or revise Division 1, Section 01 86 33 Electronic Safety and Security Performance Requirements*

- A. Verification of Conditions:
  - 1. Ensure wiring cable chase requirements are available
  - 2. Ensure substrate for physical mounting locations meet manufacturer recommendations
- B. Examination and Assessment:
  - 1. Review mounting location of each device to ensure required field of view is achievable

### 3.03 FIELD QUALITY ASSURANCE

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

### 3.04 COMMISSIONING

*Specifier Note: Edit and revise paragraphs below 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 for 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 Division 1, Section 01.86.33 Electronic Safety and Security Performance Requirements, and Division 28, section 28.01.20 Operation and Maintenance of Electronic Surveillance
- C. User/Owner Training:
  - 1. Provide original manufacturers [approved] [certified] training for system administrators and operators designated by the Owner
- D. Documentation: Provide [x] set(s) of manufacturers hardware installation and/or software user guides for each level of authorized users

3.05 INSPECTION/MAINTANENCE

- 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**