JVC

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 VN-H157WPU 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: One third inch 2.2MP CMOS Internet Protocol (IP) surveillance camera capable of dual encoding triple streaming output with automatic color to black and white switching, and wide dynamic range by image adaptation technology.

   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.

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     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

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     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.   Joint Photographic Experts Group – JPEG

   C.   Motion Joint Photographic Experts Group - MJPEG

   D.   Moving Picture Experts Group - MPEG

   E.   Underwriters Laboratory – UL

   F.   Federal Communications Commission – FCC

   G.   Interference Causing Equipment Standard – ICES (Canada)

   H.   Institute of Electronic and Electrical Engineers - IEEE

   I.   International Standards Organization – ISO

J.   International Electrotechnical Commission -IEC

K.   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. Video Compression:
      a. MPEG-4: Part 10 Advanced Video Coding (High & Baseline Profile) – ISO/IEC 14496-10
      b. MPEG-4: Part 2 - ISO/IEC 14496-2
      c. MJPEG
   2. Emission / Immunity:
      a. FCC Part 15, Subpart B, Class A Digital Device
   3. Transmission:
      a. Ethernet: IEEE 802.3 / 802.3u / 802.3af
   4. Safety:
      a. UL Listed 60950-1
   5. Ingress Protection:
      a. IEC IP66
   6. Environmental 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   INTERNET PROTOCOL 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 Internet Protocol (IP) camera with single encode (Single Stream) distribution of Motion-JPEG, H.264/AVC High Profile, or H.264/AVC Baseline Profile at 30 frames per second.
      2.   Provide Internet Protocol (IP) camera with simultaneous (Dual Stream) distribution of Motion-JPEG and H.264/AVC High Profile, or Motion–JPEG and MPEG-4 at 15 frames per second for each video stream
      3.   Provide Internet Protocol (IP) camera with multi-resolution (Triple Stream) distribution of Motion-JPEG or H.264/AVC High Profile, or H.264/AVC Baseline Profile at 15 frames per second for each video stream
      4.   One third inch 2.2 mega pixel CMOS
      5.   Resolution:
         a.   MJPEG:
            1.   1920 x 1080
            2.   1280 x 960
            3.   1280 x 720
            4.   640 x 480
            5.   640 x 360
            6.   320 x 240
         b.   H.264/AVC High Profile
            1.   1920 x 1080
            2.   1280 x 960
            3.   1280 x 720
            4.   640 x 480
            5.   640 x 360
            6.   320 x 240
         c.   MPEG-4:
            1.   640 x 480
            2.   320 x 240

      6.   Provide Color to Black and White Switching (Day/Night) Automatic switching IR cut filter mechanism, increases or decreases sensitivity (color mode) based on ambient light conditions
      7.   Provide Power over Ethernet (PoE)
      8.   Provide IP66 rated dust and water proof housing

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. Scene illumination:
   a. Color Mode:
      1. 0.3 lx, f1.2, AGC High, 1/30s , 50% video
   b. B/W Mode:
      1. 0.03 lx, f1.2, AGC High, 1/30s, 50% video
10. Clear Logic Video Intelligence- Including Advanced Wide Dynamic Range, Anti-Fog, and Edge Enhancement by image adaptation technology.
11. Sensitivity Adjustment (Sense Up):
    a. Off
    b. x2 ~ x60
12. Back Light Compensation: On/Off (Switchable 4 separate image areas)
13. White Balance:
    a. Continuous Auto Tracking White Wide (ATW-Wide)
    b. Continuous Auto Tracking White Narrow (ATW-Narrow)
    c. Auto White Control (AWC)
14. Electronic Shutter:
    a. Automatic – 1/30 sec to 1/10000 sec
    b. Flicker less control
15. Provide Integrated Manually Variable Focal Length Lens with Auto Iris:
    a. Focal Length: 3.0 mm to 9.0 mm, x3.0
    b. Aperture: F1.2 to F2.1
    c. View Angle:
       1. 3.0 mm: 104 degrees horizontal x 56 degrees vertical
       2. 9.0 mm: 35 degrees horizontal x 19 degrees vertical
    d. Iris: DC
16. Provide manually adjustable camera/housing angle adjustment range of:
    a. Horizontal : Housing angle plus or minus 50 degrees
    b. Vertical: Housing angle 90 degrees
    c. Rotation: Camera angle plus or minus 110 degrees
17. Alarm Management:
    a. Provide IP camera with two (2) hardwired alarm inputs.
    b. Alarm outputs:
       1. Two (2) hardwire alarm outputs
       2. Image upload over FTP
       3. Network notification via TCP, UDP or email
    c. Digital motion detection
    d. Provide 16MB for pre and post alarm image recording buffer
18. Viewing adjustments:
    a. Free Scaling image clipping
    b. Digital Pan, Tilt and Zoom functions
    c. Focus Assistance

        d.   Privacy mask
19. 3D digital noise reduction
20. Scene file memory
21. Motion detection
22. Tampering detection
23. Provide Bi-directional Audio:
        a.   Two Way
            1.   Full or Half Duplex
        b.   One Way
        c.   Microphone Input
        d.   Monaural line level audio output
24. Provide Remote Focus / Auto Focus function

C.   Hardware
   1. Provide IP camera with built in FTP Client capability for storage of alarm images
   2. Minimum Personal Computer requirements:
        a.   Operating system:
            1.   Windows XP (Professional or Home Edition) Service Pack 3
            2.   Windows VISTA Business
            3.   Windows 7 Professional
        b.   Processor: Core 2 Duo 3 GHz or higher
        c.   Memory: 2 GB or higher
        d.   Hard Disk Drive: 1 GB or more
        e.   Video Card: 1024 x 768 pixels
        f.   Web Browser: Internet Explorer 8.0 (Windows 7) or 7.0 (Windows Vista) or 6.0 (Windows XP)
   3. Provide firmware update via HTTP
   4. Provide SD card slot for internal pre-post recording on events.

D.   Software
   1. Access security:
        a.   Provide three (3) password protected User Access levels
   2. Video Compression:
        a.   Motion JPEG - Selectable Compression Levels:
            1.   VFS: Seven (7) steps
            2.   AFS: 53KB ~ 320KB
        b.   MPEG-4, H.264/AVC High Profile/Baseline Profile:
            1.   Adjustable bit rate
   3. Audio Compression:
        a. μ- law 64 kbps
        b.   AD/DA 16 bits, Fs=8kHz
   4. Provide built in ActiveX Viewer
        a.   Monitor from personal computer
        b.   Snapshot function
        c.   Viewer shall be customizable via camera setup menu
   5. Provide dual Application Program Interface (API):
        a.   Compatibility:

            1.   JVC
            2.   ONVIF
            3.   PSIA

E. Networking
1. Provide IP Camera with TCP/IP, UDP/IP, FTP, ICMP, ARP, DHCP, SNTP, HTTP, SMTP, RTP, RTSP, IPv4, and IPv6 communication protocol(s)
2. LAN compliance shall be IEEE802.3, 802.3u and 802.3af
3. Data transmission:
   a. Unicast
   b. Multicast: IGMP Version 2
4. Maximum Clients:
   a. 20 simultaneous users
   b. Unlimited users by Multicast
5. Network functions:
   a. Mail notice
   b. Web server
   c. FTP client
   d. DHCP client
   e. SNTP client
   f. SNMP agent
   g. RTSP server

F. Electrical
1. Input voltage:
   a. Power over Ethernet (PoE) IEEE802.3af compliant
   b. AC 24V, 50/60 hertz.
2. Power consumption:
   a. DC 48V (PoE): 150mA (7.2W)
   b. AC 24V: 0.5A
3. Alarm input: NPN open collector, low level, latch or momentary, (500 ms and above). 1 mA current during low level. 3.3 VDC applied voltage during high level
4. Alarm output: NPN Open collector. 12 VDC, 50mA maximum inflow current.
5. White Balance: Continuous Auto Tracking White (ATW) or Auto White Control (AWC)
6. Gamma Level: Adjustable
7. Automatic Gain Control:
   a. 0 dB to 24 dB (Mid)
   b. 0 dB to 33 dB (High)
8. Monitor output: NTSC composite video, 1.0 volt peak to peak, 75 ohms resistance
9. Signal to Noise Ratio: 50dB, AGC Off

G. Mechanical
1. Dimensions: 10 1/8 inches (257mm) long by 5 9/16 inches (140mm) wide by 6 5/8 inches (167mm) high.
2. Weight: 4.0 pounds (1.8kg)
3. Lens mount: CS
4. Front and side controls (inside), connectors or indicators:
   a. Back focus lock screw

         b.   Camera reset button

         c.   Power On lamp

         d.   SD card slot

         e.   RCA jack for monitor output

   5.   Base controls, connectors or indicators:

         a.   Flying leads: Alternative power connection

         b.   Flying leads: 2 alarm input and 2 alarm output

         c.   Flying leads: Audio input/Audio output

         d.   RJ-45 (Category 5): 10BASE-T/100BASE-TX Network connection (auto negotiation)

H.   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.

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   1.   Temperature Range

         a.   14 to 122 degrees Fahrenheit (-10 to 50 degrees Celsius)

         b.   Recommended: 32 to 104 degrees Fahrenheit (0 to 40 degrees Celsius)

   2.   Relative Humidity Range

         a.   Operating: 20% to 80%, non-condensing.

   3.   The unit is suitable for outdoor operation.

2.02   MANUFACTURED UNITS

A.   JVC Model VN-H157WPU : IP Camera with IR cut off filter and IP66 rated housing

B.   Included Accessories:

   1.   Safety precautions

   2.   Read me First

   3.   CD-ROM including installation manual, setting manual and API guide

   4.   Service information card

   5.   Warranty card

   6.   Silica gel

   7.   Mounting base

C.   Optional Accessories:

   1.   JVC V. Networks Products

         a.   VN-X1600U/3200U VN-N900U/1600U Network video recorders

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.   Install system using generally acceptable industry practices for network appliances

    E.   Ensure system and network configuration is fully coordinated with the Owner's Information Technology Department.

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.

    F.   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 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:

3.03 FIELD QUALITY ASSURANCE

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

3.04 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 system administrators and operators designated by the Owner.

    D.   Documentation: Provide [x] set(s) of manufacturers hardware installation and software user guides for each level of authorized users.

3.05 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