ROUGHNECK™

V910 Series Impact-Resistant IP Camera Domes

- **State-of-the-art IP Camera Dome transmits high quality video across the network for remote viewing and recording**
- **Powered by ViconNet software**
- **Maximum video transmission rate of 30 fps (25 fps PAL) at 640 x 480 pixels (768 x 576 PAL)**
- **Uses optimized proprietary compression based on MPEG4 that maximizes data size and picture quality**
- **Simultaneous transmission and remote configuration of multiple channel video across the LAN and WAN to connected Kollector Elite recorders and ViconNet workstations recorders and ViconNet workstations**
- **Up to 5 simultaneous viewing/recording streams per camera dome**
- **Museum Search (Smart Search) feature scans hours of video in minutes**
- **MD5 algorithm video authentication ensures data integrity**
- **Indoor/Outdoor**
- **High-resolution color or day/night camera**
- **24 VAC**
- **Line lock and BLC features**
- **Varifocal or fixed autoiris lens**
- **Easy installation**

The Roughneck V910 IP Camera Dome is a powerful IP video source for a complete digital video management system based on ViconNet software platform. It is fully compatible with all ViconNet systems and is remotely managed and controlled from ViconNet workstations and Kollector Elite recorders. It can deliver up to 30 fps divided across the local camera input at a total nominal bandwidth of 1.5 Mbps at Q5 (320 x 240 pixels).

Equipped with a 100 Mbps LAN interface board, the camera allows direct plug-in to a network switch. Images received from the IP camera and the other external cameras connected to its external inputs can be displayed, recorded or archived like any other ViconNet video component using the ViconNet management platform.

The V910 Camera Dome has 4 levels of video resolution; Frame, Field, CIF and HCIF with 2 levels of compression. These comprise 8 selectable quality levels. User can select from either Normal (optimized) MPEG4 or Full (JPEG) compression methods.

The V910 Camera Dome utilizes an MD5 video authentication algorithm which is based on a 128-bit message used to identify data integrity. Viewing authenticated video can be configured from the software. In addition, the IP camera dome supports alarm reporting, macros and alarm configuration through the ViconNet software interface.

The Roughneck V910 IP Series of Impact-Resistant Cameras offers high-security cameras in a compact domed housing. They are available for outdoor applications. The units are of die-cast aluminum construction and have high-impact polycarbonate plastic domes. These camera packages are designed to withstand the harshest conditions and destructive environments of correctional facilities, warehouses and loading docks. The units include O-ring seals and a heater to allow operation in low temperature and in all weather conditions.

Tamper-resistant screws make the unit resistant to vandalism. The Roughneck V910 series has an integral camera with an isolated power input, high-resolution color or day/night, with a choice of lenses. The camera accepts 24 VAC, provides BLC ON/OFF (DIP switch selectable) and features line lock capability.

The camera mount offers adjustment to any view required. The camera position is adjustable horizontally and vertically (there is full 170° camera mounting adjustment). Roughneck's mounting base screws directly to walls and ceilings, reducing installation time and cost. The unit features a standard threaded conduit fitting for cable protection.

The Roughneck series complies with the requirements for an FCC Class A rating.

Vicon recommends the use of uninterruptible power supply systems (UPS) to prevent voltage fluctuations that can affect operation, cause video loss and damage to the equipment.

Vicon Product Facts | FC CE | **Model No: V910 Roughneck IP Series** | **Product Code: Refer to Table 1** | **SEC: 3** | **SPEC: V137-20** | **REV: 605** | **1**

Vicon part number 8009-7137-20-00 | *Product specifications subject to change without notice.*

Table 1: Models, Products Codes and Descriptions

Model	Product Code	Description
V910AV-CA/ V910AV-CA-C	8387-34/8387-33	Indoor/Outdoor; 1/3-in. high-resolution ExView™ color camera and 2.6-6 mm autoiris varifocal lens; 24 VAC; isolated power input; heater; ViconNet/LAN video/data connection. NTSC/PAL.
V910AV-DN/ V910AV-DN-C	8389-24/8389-23	Indoor/Outdoor; 1/4-in. high-resolution day/night camera and 2.6-6 mm autoiris varifocal lens; 24 VAC; isolated power input; heater; ViconNet/LAN video/data connection. NTSC/PAL.
V910VVF1-CA/ V910VVF1-CA-C	8454-24/8454-23	Indoor/Outdoor; 1/3-in. high-resolution ExView color camera and 3.8-9.5 mm autoiris varifocal lens; 24 VAC; isolated power input; heater; ViconNet/LAN video/data connection. NTSC/PAL.
V910VFF-CA/ V910VFF-CA-C	8456-24/8456-23	Indoor/Outdoor; 1/3-in. high-resolution ExView color camera and 2.8 mm autoiris fixed lens; 24 VAC; isolated power input; heater; ViconNet/LAN video/data connection. NTSC/PAL.

ASSOCIATED EQUIPMENT AND ACCESSORIES

ViconNet VN1000 Master Workstation Software, Product Code 8220: Software CD for a PC for use with Kollector Elite and Pro series recorders and ViconNet IP video cameras and servers; registration required for use. Product Specification V113.

ViconNet VN5000 Master Workstation, Product Code 8221: PC preloaded with VN1000 Master Control Software for use with Kollector Elite and Pro series recorders and ViconNet IP video cameras and servers; registration required for use. Product Specification V113.

Kollector Elite Digital Video Recorder, Product Code varies by model: 16-channel networked digital video recorder for use with Kollector Pro Series recorders, ViconNet IP video cameras and servers and ViconNet VN5000 systems. Product Specification V112.

NETSWITCH-16: Product Code 8495: 16-port network switch, includes 10/100Mbps ports, desktop/wall mount, 120 VAC.
NETSWITCH-24: Product Code 8495: 24-port network switch, includes 10/100/1000Mbps ports, rack mount, 120 VAC.
Model V650-UPS Uninterruptible Power Supply, Product Code 8298: 650 VA/400 W unit with DB-9 port (RS-232) and 120 VAC input/output.
Power Supplies: Vicon offers a variety for indoor use, model S24PS single-channel and a number of 4-, 8- and 16-channel units. Refer to Products Specification 738-12.
Model V910-PH Pendant Housing, Product Code 8476: Used to allow the V910 Camera Dome to be installed in a pendant configuration. Requires an appropriate mount that can support the weight of the V910 and the V910-PH (approximately 5 lb, 2.3 kg) and adapts to a 1-inch NPT pipe thread. Can be used outdoors.

Network Considerations

The V910 IP Camera Dome can be connected to any ViconNet network. Kollector Elite Recorders and ViconNet Workstations can be used for live viewing and recording of network-streamed video. A network can be as simple as a single V910 Camera connected to a ViconNet Workstation or can be complex with the addition of several networks interconnected via WAN.
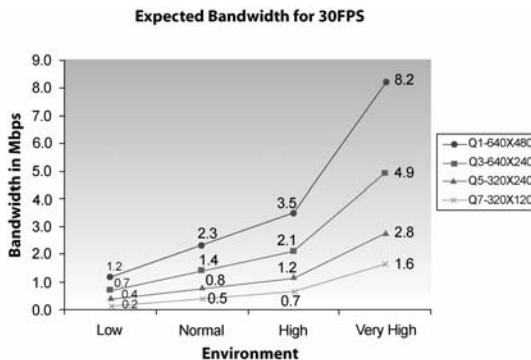
When adding a V910 IP Camera Dome to the ViconNet network, the following items must be considered:

- The number of cameras on a switch with respect to switch capabilities and system bandwidth mapping.
- Bandwidth limitations on ports connected to workstations (using 100 or 1000 Mbps).
- Workstation capabilities such as processing speed and disk write speed.
- Storage size and location types including local Workstation recording, attached SCSI RAID and integrated NAS/SAN devices.

Refer to the network diagrams on the next page for sample configurations.
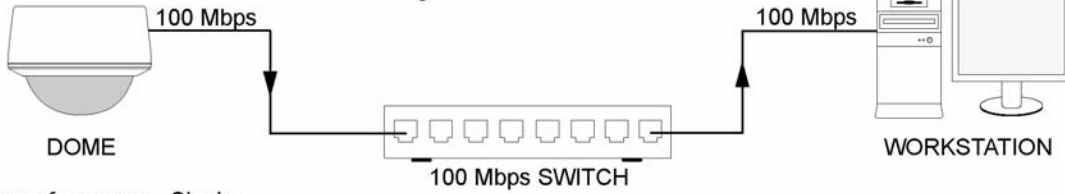
Basic video bandwidth performance can be seen below. This chart shows a V910 at 30 FPS with varied quality settings and video motion environments. 30 FPS is the maximum video frame speed from the V910. Lower frame speeds can be attained down to 1 FPS. Bandwidth calculations can be scaled down from the chart data. For example:

A V910 set at 10 FPS would be expected to have a bandwidth of 0.4 Mbps at Q5 and in a High video motion environment.
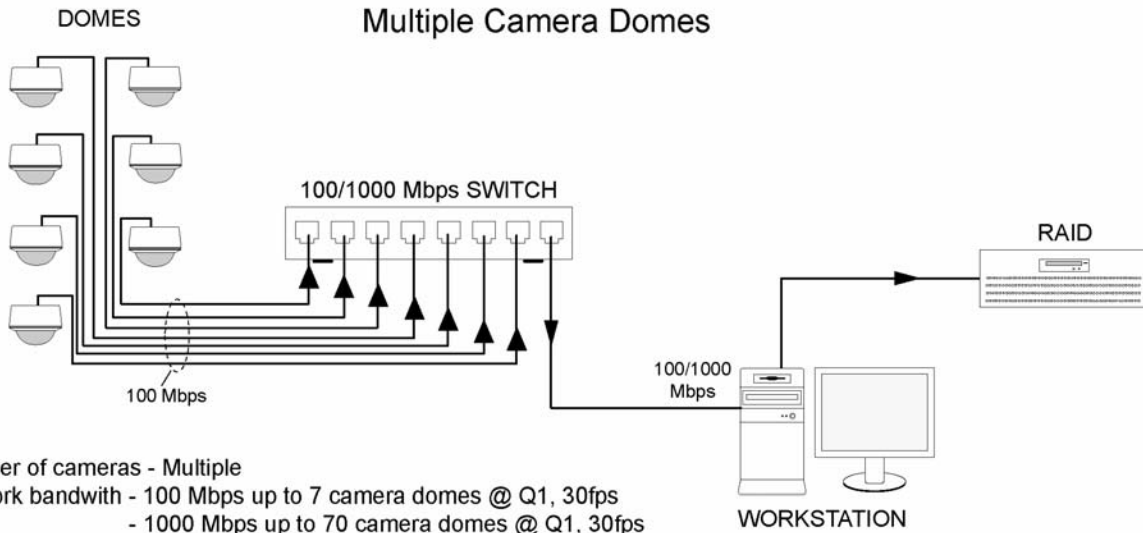

Expected Bandwidth for 30FPS

2

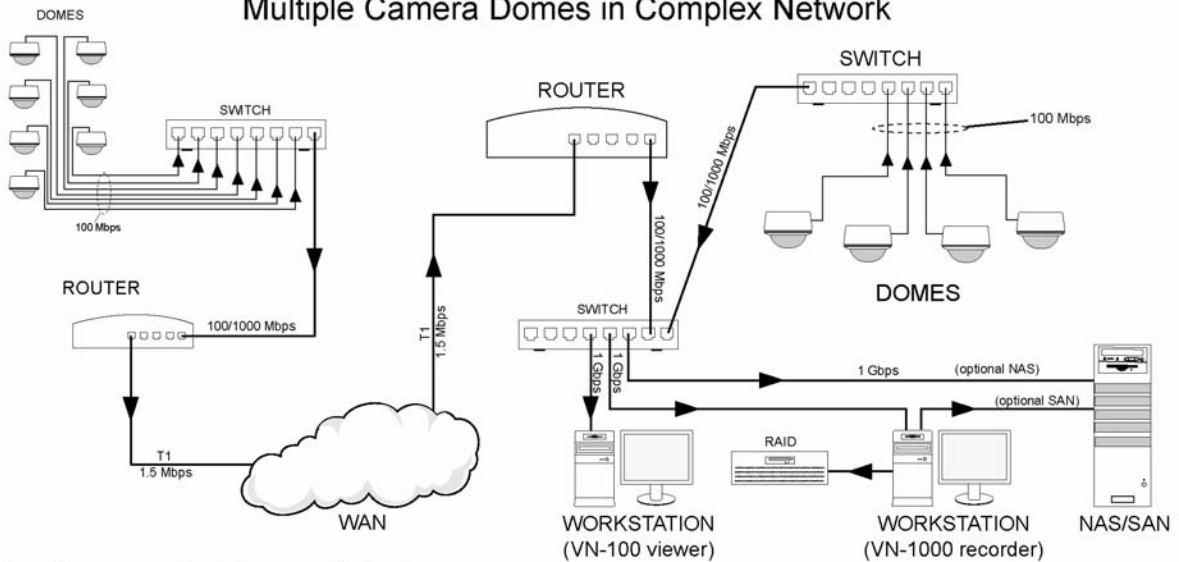| Vicon Product Facts	FC CE	Model No: V910 Roughneck IP Series	Product Code: Refer to Table 1	SEC: 3	SPEC: V137-20	REV: 605

Single Camera Dome

- Number of cameras - Single
- Network bandwith - 100 Mbps
- Storage method - Local workstation hard drive

Multiple Camera Domes

- Number of cameras - Multiple
- Network bandwith - 100 Mbps up to 7 camera domes @ Q1, 30fps
  - 1000 Mbps up to 70 camera domes @ Q1, 30fps
- Storage method - Local workstation hard drive or SCSI attached RAID

Multiple Camera Domes in Complex Network

- Number of cameras - Multiple on multiple sites
- Network bandwith - Each switch to its limit (as shown above), constrained only by the WAN (T1 @ 1.5 Mbps)
- Storage method - Local workstation hard drive, SCSI attached RAID or NAS/SAN storage
- In the basic configuration, workstation recording capability is approximately 25 cameras

ELECTRICAL

Input Voltage: 24 VAC ±20%, isolated. Use only UL Listed Class 2 indoor/dry or Class 3 outdoor/wet rated power supply.

Current (including heater): 0.8 A nom.; 0.9 A max.

Power Consumption (including heater): 19.2 W nom; 26.1 max.

Maximum Power Distance:

Voltage	20	18	16	14	12
24 VAC	300 (91)	469 (143)	750 (228)	1200 (366)	1875 (572)

Heat Equivalent (including heater): 1.1 btu/min (0.275 kg-cal/min) nom; 1.5 btu/min (0.37 kg-cal/min) max. Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of the heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.

Connectors: Power: 2-pin connector. Heater: 2-pin connector. Video/Data: RJ-45. Alarms: 8-pin screw terminal. Relay: 3-pin screw terminal.

Video Output Impedance: 75 ohms.

Scanning System: NTSC: 525 lines, 60 fields/sec. PAL: 625 lines, 50 fields/sec.

Radio Frequency Emission Rating: FCC Class A.

Camera/Lens Specification: Refer to Table 2.

*Note:
Nominal power and current levels are calculated @ 24.0 VAC input line voltage.
Maximum power and current levels are calculated @ 29.0 VAC input line voltage.*

VICONNET (IP)

Communication Platform: ViconNet Digital Video Management System.

LAN Interface: 100 Mbps, TCP/IP Unicast.

Number of Video Channels: 1, over LAN connection

Video Formats Supported: NTSC and PAL, model dependant.

Video Transmission Rate: 1 channel @30 frames per second (25 fps, PAL), maximum.

Number of Simultaneous Video Streams: Maximum of 5 viewing/recording streams per camera.

Video Transmission Resolution: 480 horizontal TV lines maximum at 640 x 480 pixel pallet (768 x 576, PAL).

Video Quality: ViconNet software quality 1-8, selectable on an 8-position bar with 2 compression level settings in resolutions 640 x 480 (768 x 576 PAL), 640 x 240 (768 x 288, PAL), 320 x 240 (384 x 288, PAL), 240 x 120 (288 x 144, PAL).

Video Bandwidth: 1.5 Mbps (per video stream), nom. See Bandwidth chart.

SOFTWARE OPERATION (ViconNet)

Network Setup: Standard network protocol type using IP addressing scheme and separate PC application software.

Site Authorization: Camera can be setup using remote recorder or workstation GUI. Permissions can be assigned for macro create & edit, alarm setup, Authentication, Reports and System Status.

Macro Create & Edit: System macros can be configured to use the camera's video. In addition, within macros, alarms can be sent and remote macros run.

Alarm Setup: An alarm can be triggered on video motion detection and loss. The alarm can be sent to remote units.

Authentication: The video from the camera can be set to view the Authentication status symbol (A) on the displayed video.

Picture Quality and FPS Priority: Camera video can be setup to prioritize recorded picture quality and video FPS. Priority can be assigned to user/macro recording for highest requested video quality or Master user control.

OPERATIONAL

Tilt and Horizontal Adjustment: 3-axis adjustment: pan, tilt and roll.

MECHANICAL

Application: Indoor/Outdoor.

Mounting: Wall or ceiling. Pendant option.

Dimensions: Height (H): 5.1 in. (130 mm). Total Diameter (D1): 6.1 in. (155 mm). Dome Diameter (D2): 4.7 in. (119 mm).

Weight: Approximately 4 lb (1.8 kg).

Construction: Base/Cover: die-cast aluminum. Dome: polycarbonate plastic.

Finish: Base/Cover: painted light beige. Dome: smoked.

Shipping Dimensions: Height: 9.25 in. (235 mm). Width: 9.25 in. (235 mm). Depth: 10.375 in. (264 mm).

Shipping Weight: Approximately 5 lb (2.3 kg).

Shipping Volume: 0.5 ft^3 (0.014 m^3).

ENVIRONMENTAL

Operating Temperature Range: With Heater: -10 to 140° F (-23 to 60° C).

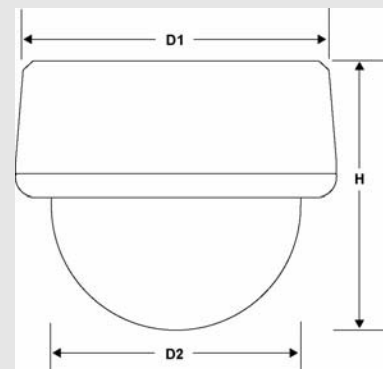**Operating Humidity Range:** Up to 95% relative, noncondensing.

Storage Temperature Range: -40 to 150° F (-40 to 65° C) maximum.

Storage Humidity Range: Up to 90% relative, noncondensing

Wind Load: Heavy rain or snow driven by winds up to 80 mph.

Model	V910AV-CA/ V910AV-CA-C	V910AV-DN/ V910AV-DN-C	V910VVF1-CA/ V910VVF1-CA-C	V910VFF-CA/ V910VFF-CA-C
Camera				
Image Device	1/3-inch ExView CCD 2:1 interface, NTSC/PAL	1/4-inch CCD 2:1 interface, NTSC/PAL	1/3-inch ExView CCD 2:1 interface, NTSC/PAL	1/3-inch ExView CCD 2:1 interface, NTSC/PAL
Color/Monochrome	Color	Color	Color	Color
Resolution (TV lines)	480	Mono: 580 Color: 480	480	480
Sensitivity fc (lux)	0.07 (0.8) at 40 IRE, f/1.6	Day: 0.07 (0.8) Night: 0.009 (0.1) at 40 IRE, f/1.4	0.046 (0.5) at 40 IRE, f/1.3	0.056 (0.6) at 40 IRE, f/1.4
Synchronization	Internal/Line lock DIP switch selectable	Internal/Line lock DIP switch selectable	Internal/Line lock DIP switch selectable	Internal/Line lock DIP switch selectable
Electronic Iris (sec)	NTSC: 1/60-1/100,000 PAL: 1/50-1/100,000	NTSC: 1/60-1/100,000 PAL: 1/50-1/100,000	NTSC: 1/60-1/100,000 PAL: 1/50-1/100,000	NTSC: 1/60-1/100,000 PAL: 1/50-1/100,000
BLC	ON/OFF DIP switch selectable	ON/OFF DIP switch selectable	ON/OFF DIP switch selectable	ON/OFF DIP switch selectable
AGC	ON/OFF DIP switch selectable	ON/OFF DIP switch selectable	ON/OFF DIP switch selectable	ON/OFF DIP switch selectable
Signal-to-Noise Ratio	>48 dB (AGC off)	>48 dB (AGC off)	>48 dB (AGC off)	>48 dB (AGC off)
Lens				
Focal Length (mm)	2.6-6 varifocal with autoiris	2.6-6 varifocal with autoiris	3.8-9.5 varifocal with autoiris	2.8 with autoiris
Field-of View	Horiz: 106°-47.6° Vert: 78.2°-35.8°	H: 82.05°-38.26° V: 60.32°-28.66°	Horiz: 74.2°-30.0° Vert: 54.0°-22.4°	Horizontal: 72.4° Vertical: 96.8°

Table 2: Camera/Lens Specifications

VICON INDUSTRIES

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