

## Surveyor HD PTZ Network Dome Series



Outdoor/Impact-Resistant Version



Pressurized Version

*Shown with mount for illustration purposes only; mount sold separately*



- HD 1080p or 720p resolution at 30 images per second
- Optical zoom: 20x (1080p)/18x (720p)
- WDR day/night camera
- Dual encoding generates simultaneous H.264 or M-JPEG video streams
- ONVIF interface provides interoperability with open platform solutions
- High-speed 360° continuous pan
- Advanced titling features
- Scheduling of tours and presets

### System Overview

Vicon has enhanced the proven high-performance design of the Surveyor series of dome cameras with high definition (HD) video. The camera's superb HDTV quality video, low light capabilities and durability deliver a superior pan, tilt and zoom solution to customers. The new design conforms to the ONVIF (Open Network Video Interface Forum) specification, providing interoperability between network video products from different manufacturers. The camera can deliver custom resolutions up to 1080P (1920 x 1080).

The Surveyor HD supports high-profile H.264 and M-JPEG compression as well as multi-stream format capabilities to deliver bandwidth efficient high quality video. The camera's optical zoom and HDTV resolution deliver the same (18X, 720p) or better (20X, 1080p) level of detail as that provided by a standard definition camera with 35x optical zoom, but with a wider field of view.

The Surveyor HD can be programmed directly thru the ViconNet Video Management Systems interface as well as a standard Web Browser. The advanced scheduling capabilities allow users to automate camera positioning based on schedules and alarm inputs. Programmable privacy masks are used to conceal user-defined areas. Limits to the pan and tilt of the unit can also prevent operators from viewing restricted areas. Titles can be programmed in the unit to provide the operator with additional graphical information when controlling the camera (examples: sector titles and compass headings). Motion Detection regions can be programmed based on preset locations and the camera provides video analytics intelligent data to ViconNet Video Management System, which enables users to quickly find activity using a "Museum Search" feature.

### Construction and Installation

Vicon has a variety of hardware available to install the Surveyor HD in almost any environment. For indoor applications, an in-ceiling and pendant style camera is offered; for outdoor installations, a pendant configuration is available with a standard, pressurized, or high-impact housing. The pressurized and impact resistant versions of the lower dome are constructed of impact-resistant, polycarbonate; the impact-resistant version lower domes are secured by tamperproof screws.

The indoor model can be installed with a single Cat5 cable with PoE+. The standard outdoor units are IP66 rated and have built-in heater/blower units that ensure operation in a temperature range of -40° to 132° F (-40° to 55° C). The pressurized version of the camera provides IP67 protection.

The Surveyor HD can be ordered with optional media converters that transmit the camera's IP signal over fiber or coaxial cable. The fiber version can transmit the data over multimode or single mode\* optical fiber, up to 2 miles (3 km) in multimode or 12 miles (20 km) in single mode. The Ethernet over coax versions can transmit the data over coaxial cable up to 1000 ft (305 m). An appropriate receiver is required to convert the signal back to Ethernet for integration into the VMS system.

\*Single mode fiber is special order. Speak to your Vicon representative.

## Network Video Transmission

<b>Compression:</b>	H.264, M-JPEG.
<b>Video Streams:</b>	10 concurrent sessions maximum.
<b>Video Output:</b>	720p: 1280 x 720 @ 30 fps. 1080p: 1920 x 1080 @ 30 fps
<b>Audio:</b>	Audio input support (future feature).
<b>Programming Interface:</b>	ONVIF, NTCIP or Vicon API.
<b>Protocols:</b>	IP, HTTP, RTSP/RTP, DNS client, FTP, SMTP, PPPoE, TCP/IP, DHCP, UDP, Multicast, NTP, DDNS, IGMP, ARP, SOAP, WSDL, WS-Discovery.

## Electrical

<b>Input Voltage:</b>	18-30 VAC; PoE+ on indoor unit only. Will operate within spec on voltages up to 32 VAC. For voltages between 30-32 VAC, use a Class 3 indoor/dry or outdoor/wet power supply.
<b>Current:</b>	Indoor: 1.0 A maximum. Outdoor: 2.2 A maximum.
<b>Maximum Operating Distances:</b>	Refer to Table.
<b>Power Consumption (includes heater):</b>	Indoor: 20 W maximum. Outdoor: 70 W maximum.
<b>Fuse:</b>	Two Resettable 1.35 A, 72 V.
<b>Certifications:</b>	UL; CE; FCC Class A.

## Camera and Optics

Feature	720p (1.3 megapixel) versions	1080p (2.0 megapixel) versions
<b>Image Device:</b>	1/3-in. solid state progressive scan CCD	1/2.8-in. solid state progressive scan CMOS
<b>Zoom:</b>	18x optical	20x optical
<b>Picture Elements:</b>	1348 (H) x 976 (V), 1.32M total pixels	2096 (H) x 1097 (V), 3.4M total pixels
<b>Sensitivity:</b>	Color: 0.18 fc (1.8 lux). B&W: 0.002 fc (0.02 lux) at 50 IRE, f/1.6, 1/4s, IRcf Off. IR cut filter is removable	Color: 0.16 fc (1.6 lux). B&W: 0.004 fc (0.04 lux) at 50 IRE, f/1.6, 1/8s, IRcf Off. IR cut filter is removable
<b>Synchronization:</b>	Internal	
<b>Gain Control:</b>	Automatic/Manual	
<b>Backlight Compensation:</b>	On/Off, selectable	
<b>Iris Control:</b>	Automatic/Manual	
<b>Wide Dynamic Range:</b>	On/Off, selectable	
<b>Video Focus:</b>	Automatic/Manual (near-far)	
<b>White Balance:</b>	Automatic/Manual; Red/Blue gain adjustable	
<b>Shutter Speed:</b>	Automatic/Manual: 1/4 - 10,000 sec	Automatic/Manual: 1/0.75 - 30,000 sec
<b>Focal Length:</b>	4.7 - 84.6 mm	4.7 - 94 mm
<b>Aperture:</b>	f/1.6 (wide) - f/2.8 (tele)	f/1.6 (wide) - f/3.5 (tele)
<b>Angle of View:</b>	Horizontal: 55.2° (wide), 3.2° (tele)	Horizontal: 55.2° (wide), 2.9° (tele)

## Maximum Power Cable Distances

Wire Size (AWG) Annealed Copper Wire	Distance ft (m)	
	Indoor	Outdoor
	24 VAC	24 VAC
20	192 (57)	87 (27)
18	307 (93.6)	140 (43)
16	489 (149)	222 (68)
14	775 (236)	352 (107)
12	1235 (376)	561 (171)

Data Sheet Number: V214-03  
Dated: 2/2013

Vicon Data Sheet Part Number: 8009-7214-02-03  
Specifications subject to change without notice.

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## Operational

<b>Drive Type:</b>	Electrical motorized pan and tilt with electronic control.
<b>Pan View:</b>	360° continuous.
<b>Tilt View:</b>	-2 to 92°.
<b>Pan Speed:</b>	400°/sec, max.
<b>Tilt Speed:</b>	150°/sec, max.
<b>Optical Zoom/Focus Speed:</b>	1.8 sec, tele to wide.
<b>Preset Capability:</b>	79 individually programmable.
<b>Preset Solving Speed:</b>	1 second nominal.
<b>Preset Accuracy (Pan and Tilt):</b>	0.1° maximum.
<b>Tour Capabilities:</b>	8 tours available. 32 programmable events per tour. Events may be preset positions with speed control, alarm acknowledge, dwell time control, relay control, call autotours, tour repeat or another tour, save/recall camera status.
<b>Autotour Capabilities:</b>	2 autotours available with 256 pan, tilt and zoom functions per autotour. Programming is done in real time with joystick and push buttons.
<b>Sectoring:</b>	16 maximum, programmable for size and titling. Sectors have the capability to be blanked out.
<b>Alarm Capabilities:</b>	4 alarm inputs, individually programmable. Functional state enable/disable. Report state (report on/off). Active state (high/low). Mode (manual, momentary or automatic) with programmable dwell time control. Set and reset action (preset solve, relay on/off, tour, autotour). Alarm titling.
<b>Alarm Output:</b>	1 relay, momentary or latching.
<b>Control Display:</b>	Web browser.
<b>Privacy Masks:</b>	80 total; 64 rectangular, 16 irregular shape. 10 individual simultaneously on-screen. Programmable, zoom-scalable.
<b>Scheduling:</b>	Real-time clock allows scheduling of up to 32 events, including presets, relays, alarms, tours or autotours.
<b>Multi-Language Menu:</b>	English, Spanish, French, Italian and German.
<b>Camera Features:</b>	Motion detection (Analytics) and image freeze during preset solve. Programmable.
<b>Screen Titling Capabilities:</b>	Programmable On/Off for camera, time/date, preset, sector, lens, aux and alarms. Pressurized version only: pressure, humidity, and temperature. Compass/azimuth, 8 compass headings (N, NE, E, SE, S, SW, W, NW). 20 characters maximum; selectable position. Two text sizes for top 2 lines. Fade capability (except camera, time/date and alarm).

## Integrated Media Converter Options

<b>Fiber:</b>	10/100 Mbps. Distances up to 2 mi (3 km) in multimode*. Supports full or half duplex. 1 fiber ST connector.
<b>Fiber Receiver:</b>	Use a FMC-TRM-B/FMC-TRRM-B unit. Refer to datasheets V218/V216 for details.
<b>Ethernet over Coax:</b>	10/100 Mbps. Distances up to 1000 ft (305 m). BNC connector for coaxial cable interface.
<b>Ethernet over Coax Receiver:</b>	Use a CE-1COAX unit. Refer to datasheet V243 for details.

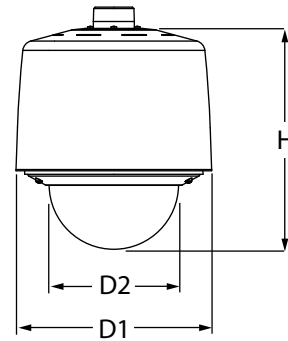
\*12 mi (20 km) in single mode - special order. Speak to your Vicon representative.

## Environmental

<b>Operating Temperature Range:</b>	Indoor units: 32 to 132° F (0 to 55° C). Outdoor units: -40 to 132° F (-40 to 55° C).
<b>Operating Humidity Range:</b>	Indoor: 0 to 90% relative, non-condensing. Outdoor: 100% relative, non-condensing.
<b>Storage Temperature Range:</b>	-40 to 150° F (-40 to 65° C).
<b>Storage Humidity Range:</b>	0 to 90% relative, non-condensing.
<b>Rain/Wind:</b>	Outdoor: Heavy rain up to 4 in./hr at winds up to 90 mph, when mounted on standard Vicon wall mount.

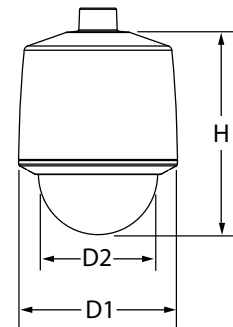
## Outdoor/High-Impact Pendant

- Die-cast aluminum enclosure, molded plastic sunshield
- Clear acrylic/vandal-proof polycarbonate dome
- Standard 1-1/2 inch male NPT fitting or metric equivalent
- Unit Diameter (D1): 9.0 inches (228 mm)
- Lower Dome Diameter (D2): 5.9 inches (150 mm)
- Height (H): 10.3 inches (262 mm)
- Weight: 7.7 lb. (3.5 kg)
- Compliance: IP66, NEMA 4X; NEMA TS2-2003 V02.06; Impact-Resistant version only: IK10++ (50 joules) tested in accordance with EN 6008-2-75 Eh Pendulum Hammer Test



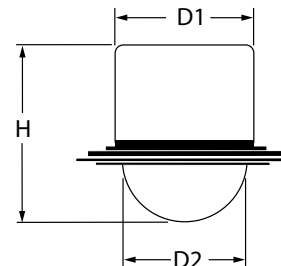
## Indoor Pendant

- Molded plastic enclosure
- Smoked acrylic dome
- Standard 1-1/2 inch male NPT fitting or metric equivalent
- Diameter (D1): 8.0 inches (203 mm)
- Lower Dome Diameter (D2): 5.9 inches (150 mm)
- Height: 10.0 inches (254 mm)
- Weight: 4.7 lb. (2.1 kg)
- Compliance: IP52



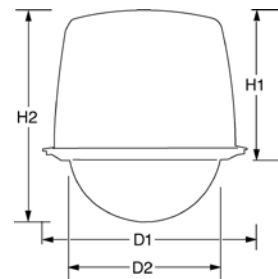
## Indoor In-Ceiling

- Black anodized aluminum
- Smoked acrylic dome
- Diameter (D1): 7.1 inches (180 mm)
- Lower Dome Diameter (D2): 5.9 inches (150 mm)
- Height: 9.7 inches (246 mm)
- Weight: 5.1 lb. (2.3 kg)
- Compliance: IP51



## Pressurized

- Die-cast aluminum enclosure; molded plastic sunshield
- Clear polycarbonate dome
- Standard 1-1/2 inch male NPT fitting or metric equivalent
- Unit Diameter (D1): 9.5 inches (241 mm)
- Lower Dome Diameter (D2): 6.0 inches (152 mm)
- Height (H2): 10.2 inches (259 mm); (H1): 7.3 in. (185 mm)
- Weight: 12.0 lb. (5.4 kg)
- Compliance: IP67; NEMA TS2-2003 V02.06; IK10++ (50 joules) tested in accordance with EN 6008-2-75 Eh Pendulum Hammer Test













## Surveyor HD Models

Resolution	Optics	Indoor Environment		Outdoor Environment		
		In-Ceiling	Pendant Mount	Outdoor Dome	High-Impact Dome	Pressurized Dome
1.3	18X	SN118C	SN118D	SN118W	SN118M	SN118P
2.0	20x	SN220C	SN220D	SN220W	SN220M	SN220P

For multimode fiber models, add a -FM to the base model; for the Ethernet over coax, add a -IPC to the base model. For example, SN118D-FM is an indoor pendant model with a multimode fiber option; SN118D-IPC is an indoor pendant model with an Ethernet over coax option.

## Accessories

### Mounts

Description	Model Number	Description	Model Number
 Indoor or outdoor wall mount	SVFT-UWM	 Wall mount for pressurized dome	SVFT-PR-WMA
 Indoor or outdoor ceiling mount	SVFT-UCM	 Pipe adapter for pressurized dome	SVFT-PR-P
 Indoor or outdoor short wall mount	SVFT-WM	 In-ceiling mounting kit	SVFT-IC-KT
 Outdoor parapet mount	SVFT-UPM-1	 Ceiling panel for added support	SVFT-UCP
 Outdoor roof mount	SVFT-URM-1	 Soffit mount for outdoor and impact-resistant dome	SVFT-SOF

## Power Supplies

Description	Model Number
24 VAC output, 120 VAC input, single-channel	S24WPS-1
24 VAC output, 230 VAC input, single-channel	S24PS-230
28 VAC output, 120 VAC input, single-channel	S28PS-1
24/28 VAC output 120/230 VAC input, single-channel	S28WPS-1/ S28WPS-230
24/28 VAC output 120 VAC input, four-channel	V2448-175PS
24 VAC output 120 VAC input, eight-channel	V248-600PS
24/28 VAC output 120 VAC input, eight-channel	V248-300PS
28 VAC output 120 VAC input, sixteen-channel	V2416-600PS