



SURVEYORVFT

IP Fixed Camera Dome Series

- **State-of-the-art IP Camera Dome transmits high quality video across the network for remote viewing and recording**
- **Powered by ViconNet Version 5 software; supports the Virtual Matrix Controller**
- **Maximum video transmission rate of 30 fps (25 fps PAL) at 720 x 488 pixels (864 x 586 PAL)**
- **Uses optimized proprietary compression based on MPEG-4 that maximizes data size and picture quality**
- **Simultaneous transmission of multiple channel video across the LAN and WAN (Internet) to connected Kollector Elite recorders and ViconNet workstations**
- **Can be remotely configured from Kollector Elite recorders and ViconNet workstations**
- **Single channel audio for communications and recording**
- **Up to 10 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**
- **Password protection for configuration**
- **On-board memory retained in housing; designed for easy installation and servicing**
- **Indoor in-ceiling/pendant and outdoor pendant versions**
- **Housing matches SurveyorVFT camera dome**
- **24 VAC input**
- **Preassembled camera/lens module**
- **High-resolution color and day/night cameras**
- **Varifocal lenses**
- **Easy installation**

The SurveyorVFT™ IP Fixed Camera Dome is a powerful IP video source for a complete digital video management system based on ViconNet. It is fully compatible all ViconNet® systems and is remotely managed and controlled from ViconNet workstations and Kollector® Elite recorders. It can deliver up to 30 fps at a nominal bandwidth of 1.7 Mbps at Q5 (360 x 244 pixels).

A pre-installed 100 Mbps Network interface board allows direct plug-in to a system network switch. Images received from the IP dome can be displayed, recorded or archived like any other ViconNet video and audio component using the ViconNet management platform.

The SurveyorVFT IP Fixed Dome has 4 levels of video resolution; 4 CIF or D1, 2 CIF, CIF and HCIF with 2 levels of compression. These comprise 8 selectable quality levels. User can select either Normal (optimized MPEG-4) or Full (JPEG) compression method.

The SurveyorVFT IP Fixed Dome utilizes an MD5 type 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 fixed dome supports control, alarm reporting, macros, audio and alarm configuration.

The SurveyorVFT Series of IP Fixed Camera Domes offers a compact domed housing incorporating a fixed camera and lens combination. The camera domes are available for indoor in-ceiling and pendant mounting configurations and outdoor pendant mounting configurations. There is a choice of high-resolution color or day/night cameras with a 3.3-12 mm or 5-50 mm varifocal lens; some models offer autoiris lenses. A smoked lower dome is included on indoor models; a clear dome is used on outdoor versions. Refer to Table 1 for model numbers and descriptions.

The camera position has a unique 3-axis adjustment, allowing for adjustment of pan, tilt and rotation about the lens axis (roll), for any angle of view required. The lens iris and focus can be adjusted, as well as selecting a wide or telephoto angle of view. Cameras accept 24 VAC and also feature line lock capability.

SurveyorVFT IP Fixed Camera Dome series meets FCC requirements for a Class A device.

Product Specification

Model	Product Code	Description
SVFT-C3312-V5/ SVFT-C3312-V5-C	8753-75/8753-76	In-ceiling; 1/3-in. ExView high-resolution color camera with isolated power input and 3.3-12 mm autoiris varifocal lens; 24 VAC; smoked lower dome; ViconNet video transmission; NTSC/PAL
SVFT-P3312-V5/ SVFT-P3312-V5-C	8754-75/8754-76	Indoor Pendant; 1/3-in. ExView high-resolution color camera and 3.3-12 mm manual varifocal lens; 24 VAC; smoked lower dome; ViconNet video/data transmission; NTSC/PAL
SVFT-W3312-V5/ SVFT-W3312-V5-C	8755-75/8755-76	Outdoor Pendant; 1/4-in. high-resolution day/night color camera with isolated power input and 3.3-12 mm autoiris varifocal lens; 24 VAC; clear lower dome; ViconNet video/data transmission; NTSC/PAL
SVFT-W3312DN-V5/ SVFT-W3312DN-V5-C	8756-75/8756-76	Outdoor Pendant; 1/3-in. ExView high-resolution color camera with isolated power input and 3.3-12 mm autoiris varifocal lens; 24 VAC; clear lower dome; ViconNet video/data transmission; NTSC/PAL
SVFT-W550-V5/ SVFT-W550-V5-C	8737-75/8737-76	Outdoor Pendant; 1/3-in. high-resolution color camera and 5-50 mm autoiris varifocal lens; 24 VAC; clear lower dome; ViconNet video/data transmission; NTSC/PAL
SVFT-W550DN-V5/ SVFT-W550DN-V5-C	8770-75/8770-76	Outdoor Pendant; 1/3-in. high-resolution day/night camera and 5-50 mm CS autoiris varifocal lens; 24 VAC; clear lower dome; ViconNet video/data transmission; NTSC/PAL

Table 1: Models and Descriptions

Model	Product Code	Description
S24WPS-1	7028-10	Single-channel, 120 VAC input, 24 VAC output, 2 amps. for indoor and outdoor SurveyorVFT Camera Domes
S24PS/S24PS-230	7027-00/7027-01	Single-channel, 120/230 VAC input, 24 VAC output, 2.5 amps. for indoor SurveyorVFT Camera Domes
V248-3.5PS	7668	Eight-channel, 120 VAC input, 24 VAC output, 0.4 A/channel, for indoor SurveyorVFT Camera Domes
V2416-8PS	7669	Sixteen-channel, indoor, 120 VAC input, 24 VAC output, 0.5 A/channel, for indoor SurveyorVFT Camera Domes
V2448-175PS	6410-20	Four-channel, indoor, 120 VAC input, 24/28 VAC output (jumper selectable), 7/6.25 amps (total), for indoor SurveyorVFT Camera Domes
V248-300PS	6422-10	Eight channel, 120 VAC input, 24/28 VAC output (jumper selectable), 12.5/10 amps (total), for indoor SurveyorVFT Camera Domes
V2416-600PS	8437	Sixteen channel, 120 VAC input, 28 VAC output, 26 amps (total), for indoor SurveyorVFT Camera Domes

Caution: Be aware that some of these power supplies are for indoor use only. Also note that on multi-channel units, the amperage stated is the total for all channels. To assure sufficient current to individual cameras, connect only the number of cameras that use less than the maximum supply current.

Table 2: Recommended Power Supplies

ASSOCIATED EQUIPMENT AND ACCESSORIES

ViconNet VN-WS Workstations/VN-NVR Network Video Recorders: PCs preloaded with VN1000V5 Master Control Software for use with Kollector Elite and Pro series recorders and ViconNet IP video cameras/encoders; registration required for use. VN-NVR has recording capability. 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 encoders and ViconNet VN-NVR systems. Product Specification V112.

NETSWITCH-16: Product Code 8495-00: 16-port network switch, includes 10/100Mbps ports, desktop/wall mount, 120 VAC. Product Specification 161.

NETSWITCH-24: Product Code 8495-10: 24-port network switch, includes 10/100/1000Mbps ports, rack mount, 120 VAC. Product Specification 162.

NETSWITCH-24POE Network Switch, Product Code 8495-20: 16-port, 10/100/1000 autosensing network switch with a choice of 24 VAC or PoE power source, stackable. Product Specification V162-20.

Uninterruptible Power Supply: 725 VA unit with DB9 (RS-232) and USB ports; 120 VAC input/output. Product Specification V147.

Network Considerations

The SurveyorVFT IP Fixed Camera Dome can be connected to any ViconNet network. Existing Kollektor Elite Recorders and ViconNet Workstations can be used to live view and record its network-streamed video. A network can be as simple as a single SurveyorVFT Camera Dome connected to a ViconNet Workstation or can be complex with the addition of several networks interconnected via WAN.

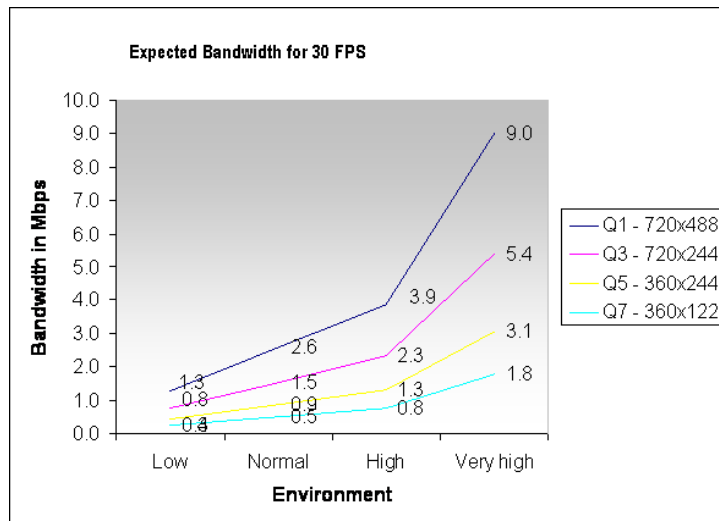
When adding a SurveyorVFT IP Camera Dome to the ViconNet network, the following items must be considered:

- 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 SurveyorVFT at 30 FPS with varied quality settings and video motion environments. 30 FPS is the maximum video frame speed from the SurveyorVFT. Lower frame speeds can be attained down to 1 FPS. Bandwidth calculations can be scaled down from the chart data. For example:

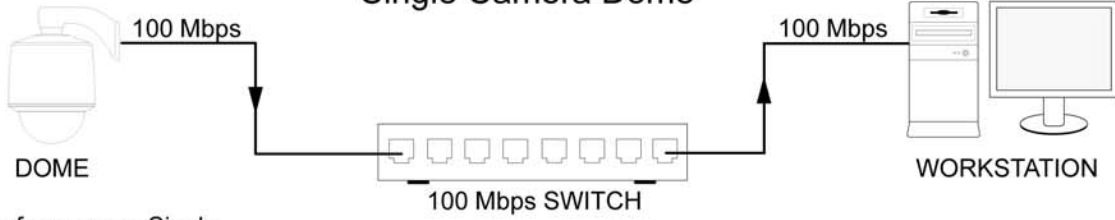
A SurveyorVFT set at 10 FPS would be expected to have a bandwidth of 0.5 Mbps at Q5 and in a High video motion environment.



Bandwidth Chart

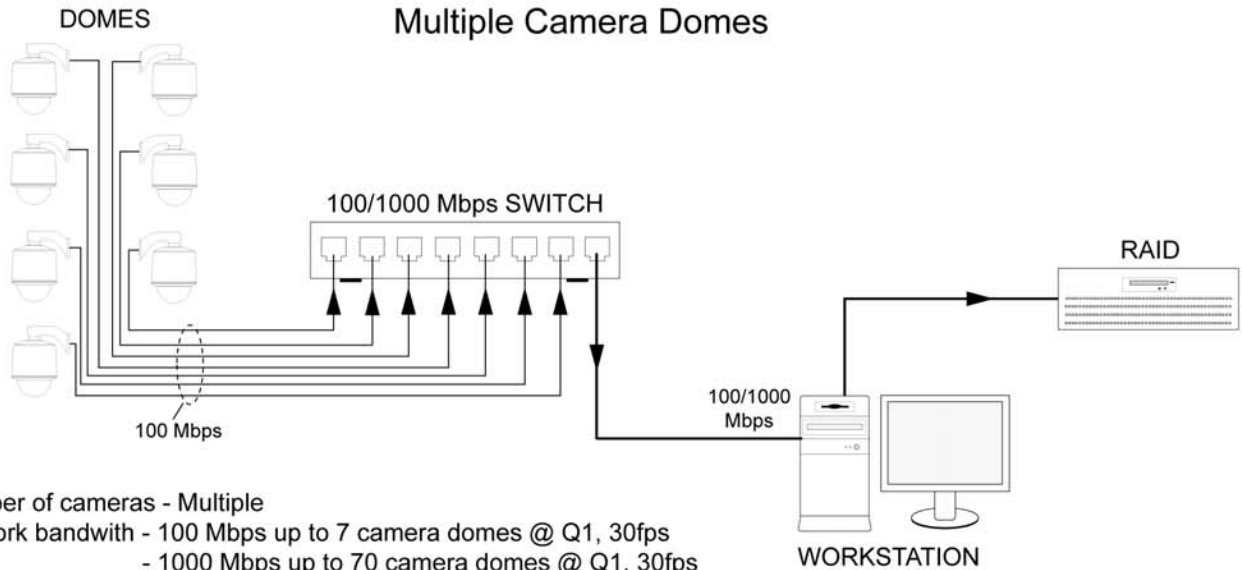
Product Specification

Single Camera Dome



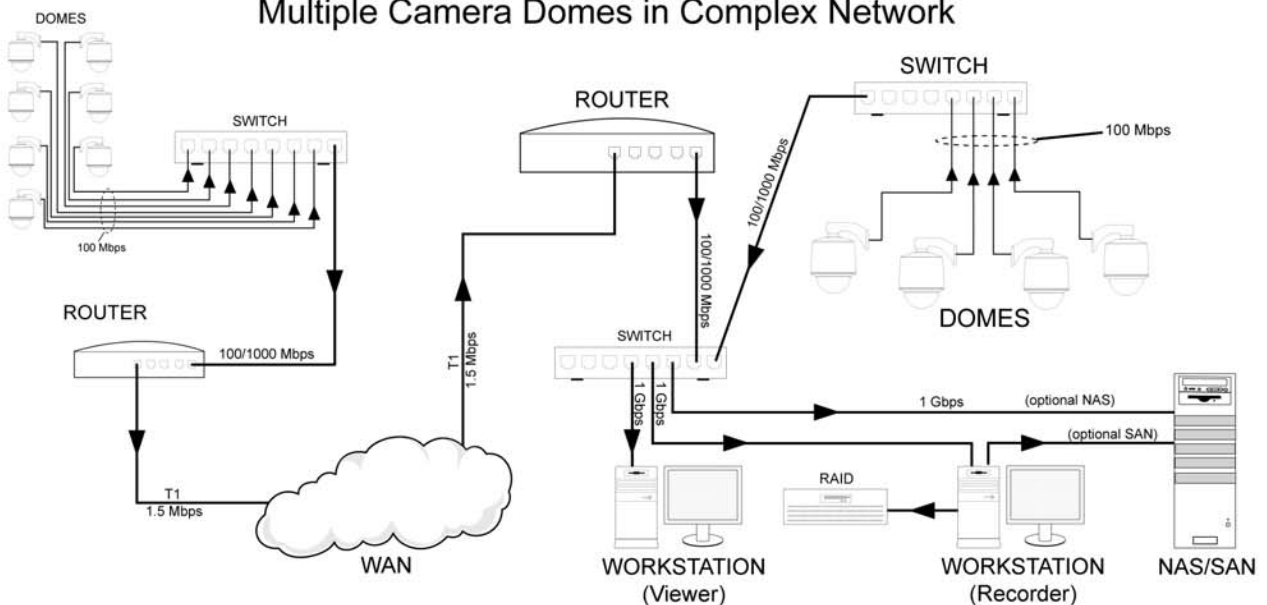
- Number of cameras - Single
- Network bandwidth - 100 Mbps
- Storage method - Local workstation hard drive

Multiple Camera Domes



- Number of cameras - Multiple
- Network bandwidth - 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 bandwidth - 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

Technical Information

ELECTRICAL

Input Voltage: 24 VAC \pm 20%.

Current: Indoor: 0.6 A.
Outdoor: 1.4 A.

Power Consumption: Indoor: 15 W.
Outdoor: 41 W.

Heat Equivalent: Indoor: 0.8 btu/min (0.2 kg-cal/min).
Outdoor: 2.3 btu/min (0.6 kg-cal/min).
Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of 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.

Maximum Power Cable Distance: See Table 2.

Connectors: Power: 2-pin connector.
Heater (outdoor): 2-pin connector.
Video/Data: RJ-45.
Alarms: 8-pin screw terminal.
Audio: 2 1/8-in. phono jacks.
Relay: 3-pin screw terminal.

Fuse: Indoor: 0.5 A, 250 V, 5x20 mm slo blo.
Outdoor: 1.6 A, 250 V, 5x20 mm slo blo, additional.

Radio Frequency Emission Rating: FCC Class A.

CAMERA/LENS Specifications: Refer to Table 3.

OPERATIONAL

Tilt and Horizontal Adjustment: 3-axis adjustment, pan (360°), tilt (95°) and roll (lens may be rotated on its axis 360°).

VICONNET (IP)

Communication Platform: ViconNet Digital Video Management System.

Network 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 10 viewing/recording streams per camera.

Video Transmission Resolution: 480 horizontal TV lines maximum at 720 x 488 pixel pallet (864 x 586, PAL).

Video Quality: ViconNet software quality 1-8, selectable on an 8-position bar with 2 compression level settings in resolutions 720 x 488 (864 x 586 PAL), 720 x 244 (864 x 293, PAL), 360 x 244 (432 x 293, PAL), 360 x 122 (432 x 146, PAL).

Audio: 1 line-level microphone input; 0 dbm, 32 KHz bandwidth, 600 ohm impedance, 2 V RMS (1 V p-p) output.

Video Bandwidth: 1.7 Mbps (per video stream), nom. See Bandwidth chart.

SOFTWARE OPERATION

Network Setup: Standard network protocol type using IP addressing scheme and separate PC application software. Allows setting of Daylight Saving Time and synchronous time across the network.

Table 2: Maximum Power Cable Distance

Wire Size (AWG) (Annealed Copper Wire)	Maximum Distance ft (m)	
	Indoor	Outdoor
20	400 (122)	170 (52)
18	625 (191)	266 (81)
16	1000 (305)	425 (130)
14	1600 (488)	680 (207)
12	2500 (762)	1063 (324)

Technical Information

Site Authorization: Camera dome can be set up using remote recorder or workstation GUI. Permissions can be assigned for macro create & edit, alarm setup, Authentication, Reports and System Status. Supports up to 20 Groups and 100 Users.

Macro Create & Edit: System macros can be configured to use the dome'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 dome can be set to view the Authentication status symbol (A) on the displayed video.

Picture Quality and FPS Priority: Camera Dome 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.

MECHANICAL

Application: Indoor and outdoor models.

Mounting: In-ceiling and pendant models.

Dimensions: In-Ceiling
 Height: 9.7 in. (246 mm)
 Total Diam: 7.1 in. (180 mm).
 Dome Diam: 5.9 in. (150 mm).
 Indoor Pendant
 Height: 10.0 in. (254 mm)
 Total Diam: 8.0 in. (203 mm).
 Dome Diam: 5.9 in. (150 mm).
 Outdoor Pendant
 Height: 10.3 in. (261 mm)
 Total Diam: 9.0 in. (262 mm).
 Dome Diam: 5.9 in. (150 mm).

Weight: Approximately 2.5 lb (1.1 kg).

Construction: Housing: Plastic, aluminum and steel.
 Dome: Acrylic.

Finish Painted black enclosure (in-ceiling), off-white housing/sunshield (pendant), smoked gray (indoor) or clear (outdoor) lower dome.

Shipping Dimensions: Height: 11.6 in. (294 mm).
 Width: 16.1 in. (409 mm).
 Depth: 19.9 in. (505 mm).

Shipping Weight: Approximately 6.3 lb (2.9 kg).

Shipping Volume: 2.2 ft³ (0.06 m³).

ENVIRONMENTAL

Operating

Temperature: Indoor: 35 to 122° F (2 to 50° C).
 Outdoor: -22 to 122° F (-30 to 50° C).

Operating Humidity: Indoor: Up to 90% relative, noncondensing.
 Outdoor: Up to 100% relative, noncondensing.

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

Storage Humidity: Up to 90% relative, noncondensing.

IP Rating: Outdoor unit: IP66.
 Indoor Pendant: IP52.
 In-Ceiling: IP51.

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

Technical Information

Model	Image Device	Color/ Mono	Resolution (TV lines)	Sensitivity fc (lux)	Synchronization	Electronic Iris (sec)	Signal-to-Noise Ratio
SVFT-C3312-V5/ SVFT-C3312-V5-C	1/3" ExView CCD, 2:1 interlace, NTSC/PAL	Color	550	0.07 (0.8) at 40 IRE, f/1.6	Internal/Line lock DIP switch selectable	1/60 – 1/100,000 (1/50 PAL)	>48 dB (AGC off)
SVFT-P3312-V5/ SVFT-P33126-V5-V	1/3" ExView CCD, 2:1 interlace, NTSC/PAL	Color	550	0.07 (0.8) at 40 IRE, f/1.6	Internal/Line lock DIP switch selectable	1/60 – 1/100,000 (1/50 PAL)	>48 dB (AGC off)
SVFT-W3312DN-V5/ SVFT-W3312 DN-V5-C	1/4" CCD, 2:1 interlace, NTSC/PAL	Color	Color: 550 Mono: 580	Day: 0.07 (0.8) Night: 0.009 (0.1) at 40 IRE, f/1.5	Internal/Line lock DIP switch selectable	1/60–1/100,000 (1/50 PAL)	>48 dB (AGC off)
SVFT-W3312-V5/ SVFT-W3312-V5-C	1/3" ExView CCD, 2:1 interlace, NTSC/PAL	Color	550	0.07 (0.8) at 40 IRE, f/1.6	Internal/Line lock DIP switch selectable	1/60–1/100,000 (1/50 PAL)	>48 dB (AGC off)
SVFT-W550-V5/ SVFT-W550-V5-C	1/3" CCD, 2:1 interlace, NTSC/PAL	Color	550	0.07 (0.8) at 40 IRE, f/1.6	Internal/Line lock DIP switch selectable	1/60 – 1/100,000 (1/50 PAL)	>48 dB (AGC off)
SVFT-W550DN-V5/ SVFT-W550DN-V5-C	1/3" CCD, 2:1 interlace, NTSC/PAL	Color	550	(BW) 0.04 (0.4) scene with f/1.2 lens	Internal/line Lock	1/60 – 1/100,000 (1/50 PAL)	>48 dB (AGC off)

Model	Focal Length (mm)	Field-of-View	
		Horizontal	Vertical
SVFT-C3312-V5/ SVFT-C3312-V5-C	3.3-12 varifocal with autoiris	83.9° - 23.1°	61.9° - 17.93°
SVFT-P3312-V5/ SVFT-P33126-V5-C	3.3-12 varifocal with autoiris	83.9° - 23.1°	61.9° - 17.93°
SVFT-W3312DN-V4/ SVFT-W3312DN-V5-C	3.3-12 varifocal with autoiris	61.9° - 17.93°	44.5° - 13.6°
SVFT-W3312-V5/ SVFT-W3312-V5-C	3.3-12 varifocal with autoiris	83.9° - 23.1°	61.9° - 17.93°
SVFT-W550-V5/ SVFT-W550-V5-C	5-50 varifocal with autoiris	51.8° - 5.6°	39.2° - 4.3°
SVFT-W550DN-V5/ SVFT-W550DN-V5-C	5-50 varifocal with autoiris	51.8° - 5.6°	39.2° - 4.3°

Table 2: Camera/Lens Specifications