SURVEYORVFT SVFT-M

Maximum-Security Camera Domes

- **Metal housing and polycarbonate lower dome protect camera from impact and vandalism**
- **RS-422/485 or coaxial PTZ control; available with TCP/IP, fiber and UTP transmission card options**
- **ViconNet (Version 5) (TCP/IP) converts to digital video for viewing and control on Kollector Elite and Pro Digital Video Recorders and ViconNet workstations**
- **Fiber-optic option transmits video and control data to fiber optic receivers over long distances**
- **UTP option transmits video up to 3000 ft over unshielded twisted pair**
- **Lowest current draw in its class**
- **DIP-switch selectable competitive camera dome protocols eliminate the need for external translators**
- **On-board memory retained in housing; designed for easy installation and servicing**
- **360° continuous rotation pan-and-tilt drive with a variety of color domes available**
- **Color 22X, 22X with ExView, day/night 23X and 35X camera options, maximum 420X optical/digital zoom**
- **High-resolution in 23X and 35X models (540 TVL)**
- **EIS (image stabilizer) on 35X model**
- **Indoor or outdoor pendant configurations**
- **Digital Slow Shutter feature for enhanced low-light applications**
- **Wide Dynamic Range (23X and 35X) provides best contrast for high quality images**
- **Convenient integration into any existing CCTV matrix system**
- **GUI provides configuration of all features**
- **23X provides Digital Noise Reduction and enhanced sensitivity**
- **Enhanced autofocus**

SVFT-M Series of Impact-Resistant Maximum Security Camera Domes is a compact, lightweight and intelligent security device comprised of a camera, pan/tilt drive, receiver and CPU-based electronics all in an attractive and covert rugged enclosure. The SVFT-M offers a rugged, tamperproof, IP66-rated housing for the Camera Dome consisting of an all metal housing and an impact-resistant polycarbonate lower dome. The SVFT-M can be programmed and operated using any Pilot or NOVA™ control systems and enhanced Vicoax®II protocol. It is available for outdoor use and can be configured with a variety of camera types. Refer to Table 1.

The basic SVFT-M provides video transmission over coaxial cable. Options are available that provide TCP/IP (ViconNet), fiber-optic and twisted-pair (UTP) video transmission. Each of these options includes an interface board that allows the specific type of video transmission. An appropriate receiver is required.

The ViconNet® (version 5) option provides support for network connection to Kollector® Elite Digital Video Recorders and ViconNet Workstations via ViconNet software. A pre-installed Network interface board allows direct plug-in to a system network switch. Video from the camera is available to all network recorders and workstations for live view and recording.

The SVFT-M camera dome can be used in conjunction with competitive PTZ drivers through DIP-switch selection.

The SVFT-M is designed for easy snap-in installation. The drive simply snaps into the housing. When removed, the housing retains all programmed functions in its on-board memory. The customer interface board snaps down for easy access and the PCB provides removable terminal blocks for simple wiring connections. The SVFT-M has one of the lowest current draws compared to other domes in its class.

There are four camera types available, each with NTSC and PAL versions. The basic model is a 22X high-resolution camera/lens. Another 22X model is available with ExView™ CCD technology (22XEX). The third version is a 23X day/night camera/lens and the fourth is a 35X day/night camera/lens. The day/night models feature wide dynamic range (WDR); the 35X has image stabilization (EIS). See Technical Information and Table 3 for camera features. Several mounting accessories are available to fit almost any installation need. Refer to Table 1 for specific and mounting options.

There are 79 programmable preset positions, each having a variable preset solve accuracy of 0.1º. Programmable azimuth and compass is displayed on screen. There are 8 compass headings (N, NE, E, SE, S, SW, W, NW) (22XEX/23X/35X only) and pan and tilt degrees displayed with a 1º resolution. 16 individual programmable privacy masks are available. Motion detection capability is available on day/night models. For each preset, there are 6 programmable zones for motion detection, each having 3 sensitivity levels.

Alarm inputs can be individually programmed. Programmable titling is provided for the camera and every preset position, alarm, relay and sector and titles can be enabled or disabled individually or globally.

Eight tours (4 on 22X) are available with 32 steps per tour. Pan and tilt functions are externally controlled, continuously variable and programmable to be enabled or disabled. There is a programmable autopan function.

Vicon part number 8009-7157-03-02

Model Number	Product Code	Environment/Cable Type	Camera Type/Format	Mount Type	Optical Zoom/ Total Zoom	Lower Dome Type
SVFT-M22	8747-00	Outdoor/Coax	Color/NTSC	Pendant	22x/264x	Clear
SVFT-M22C	8747-01	Outdoor/Coax	Color/PAL	Pendant	22x/264x	Clear
SVFT-M22E	8748-00	Outdoor/Coax	Color/NTSC	Pendant	ExView 22x/264x	Clear
SVFT-M22EC	8748-01	Outdoor/Coax	Color/PAL	Pendant	ExView 22x/264x	Clear
SVFT-M23	8749-00	Outdoor/Coax	Color/NTSC (day/night; WDR; DNR)	Pendant	23x/276x	Clear
SVFT-M23C	8749-01	Outdoor/Coax	Color/PAL (day/night; WDR; DNR)	Pendant	23x/276x	Clear
SVFT-M35	9104-00	Outdoor/Coax	Color/PAL (day/night; WDR; image stabilizer)	Pendant	35x/420x	Clear
SVFT-M35C	9104-01	Outdoor/Coax	Color/NTSC (day/night; WDR; image stabilizer)	Pendant	35x/420x	Clear

For the ViconNet (V5) option, add -75 (-76 PAL) to the product code; for Fiber Optic (F) option, add -30 (-31 PAL) to the product code; for the UTP (T) option, add -40 (-41 PAL) to the product code.

Table 1: SurveyorVFT Models and Options

Model Number	Product Code	Description
V-VID-BAL	6518-20	Transceiver, converts UTP video to composite, transmits or receives video and Vicoax data up to 1000 ft over twisted pair cable
V652R-NVT	7453	Receiver, converts UTP video to composite up to 3000 ft from transmitter (does not support Vicoax systems)
V1613-NVT	7648	16-Channel Hub Receiver, converts UTP video to composite up to 1000 ft from each transmitter
V1662-NVT	6519	16-Channel Hub Receiver, converts UTP video to composite up to 3000 ft from each transmitter (does not support Vicoax systems)

Table 1 (cont'd): UTP Receiver Options

Model Number	Product Code	Description
VF-1400R	8421-00	Receiver, for SurveyorVFT transmission, simplex video and duplex RS-422 data
VF-1400RR	8421-02	Receiver, for SurveyorVFT transmission, simplex video and duplex RS-422 data
VF-SR-20/2	8423-00	Card cage with power supply

Table 1 (cont'd): Fiber Optic Receiver Options

Model Number	Product Code	Description
SVFT-UWM	8352	Wall mount, indoor/outdoor
SVFT-UCM	8351	Ceiling mount, indoor/outdoor
SVFT-UPM-1	8348-10	Parapet mount, outdoor
SVFT-URM-1	8349-10	Roof mount, outdoor
SVFT-UCP	8373	Ceiling panel, indoor
SVFT-WM	8350	Wall mount, short, indoor/outdoor
SVFT-IC-MKT	8374	In-ceiling mount kit, indoor
SVFT-SOF	8724	Soffit mount, indoor/outdoor

Table 1 (cont'd): SurveyorVFT Mounting Options

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.*

Model Number	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-230	7027-01	Single-channel, 230 VAC input, 24 VAC output, 2.5 amps. for indoor SurveyorVFT Camera Domes
S28PS-1	7029-10	Single-channel, 120 VAC input, 28 VAC output, 2.15 amps, for indoor SurveyorVFT Camera Domes
S28WPS-1/ S28WPS-230	7030-10/ 7030-01	Single-channel, 120/230 VAC input, 28 VAC output, 3 amps, for outdoor SurveyorVFT Camera Domes
V2448-175PS	6410-20	Four-channel, indoor, 120 VAC input, 24/28 VAC output (jumper selectable), 7/6.25 amps (total)
V248-600PS	8438	Eight channel, 120 VAC input, 24 VAC output, 25 amps (total), for indoor SurveyorVFT Camera Domes
V248-300PS	6422-10	Eight channel, 120 VAC input, 24/28 VAC output, 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

Table 1 (cont'd): SurveyorVFT Power Supplies

Note on Competitive Protocols: All companies make changes and improvements in their products. Because this product can interface with equipment not manufactured by Vicon, there is a possibility that the interface protocols may have changed since Vicon tested this product with the interfacing equipment. Vicon recommends purchasing a single unit for bench testing prior to purchasing and installing this product in quantity.

The Vicon SurveyorVFT ™ is designed to store PTZ preset locations on the internal memory. Certain manufacturers' controllers are designed to store PTZ preset locations in the controller. Therefore preset functionality in the Vicon dome will not work correctly with these types of controllers.

ELECTRICAL

Drive Type:	Electrical motorized pan and tilt with electronic control.
Camera Types:	Units available in color and day/night (NTSC/PAL) formats and a variety of zoom and feature capabilities.
Input Voltage:	18-30 VAC. (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.)
Maximum Power Cable Distance:	See Table 2.
Maximum Current (@24 VAC):	Coax, Fiber, UTP: 1.8 A. ViconNet (TCP/IP): 2.3 A.
Power Consumption (@24 VAC):	Coax, Fiber, UTP: 44 W. ViconNet (TCP/IP): 54 W.
Heat Equivalent:	Coax, Fiber, UTP: 2.5 btu/min (0.6 kg-cal/min). ViconNet (TCP/IP): 3.1 btu/min (0.77 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.
Standard Connector Types:	Video Out: See version type. Power: 2-position removable screw terminal block. Control Input/Output: See version type. Relay Output: See version type. Alarm Input: 8-position removable screw terminal block.
Video Output Impedance:	75 ohms.
Fuse:	F1: 5x20 mm, 1.6 A 250 VAC slo-blo. F2: 5x20 mm, 2.5 A 250 VAC slo-blo.
Radio Emission Rating:	FCC Class A.

OPERATIONAL

Video Pan View:	360°.
Video Tilt View:	-2.5° (-2.5° above horizon) to 92.5° (-2.5° past vertical).
Pan Speed:	Variable, 0.1 to 360°/sec (120°/sec in 22X).
Autopan Speed:	Variable, 0.1 to 42°/sec; enable/disable.
Tilt Speed:	Variable, 0.1 to 150°/sec (90°/sec in 22X).
Zoom and Focus Speed:	Less than 1.8 sec from end to end.
Sectoring:	16 max, programmable for size and titling; capability to be blanked out (22XEX, 23X and 35X only).
Preset Capabilities:	79 individual programmable preset positions. Auto home function allows dome to go to a preset location after programmed time duration of no activity.
Preset Solving Speed:	1 sec nominal.
Preset Accuracy (Pan & Tilt):	0.1° maximum.
Tour Capabilities:	22X: 4 tours available. 22XEX/23X/35X: 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 anothertour, save/recall camera status.
Autotour Capabilities:	22XEX/23X/35X: 2 autotours available with 256 pan, tilt and zoom functions per autotour. Programming is done in real time with joystick and push buttons. Autotours can be linked and are not limited by time duration. Autotours not available on 22X model.
Alarm Capabilities:	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.
Relay Output Capabilities:	1 relay output. Power-on state definition (on/off). Output type definition (momentary or latching). Relay function status titling. Resistive Load: 0.3A @125 VAC; 1.5A @30 VDC. Inductive Load: 0.15A @ 125 VAC; 0.75A @ 30 VDC.
Control Display:	On-screen, menu-driven system allowing full configuration of the dome.
Privacy Masks:	22XEX/23X/35X: 16 individual, programmable, zoom-scalable.

Screen Titling Capabilities: Programmable for camera, preset, sector, relay and alarms.
Camera: 1 for each.
Preset: 79 maximum.
Sector: 16 maximum (22XEX/23X/35X only).
Alarm: 4 maximum.
Individual type date and time enable/disable; 20 characters maximum.
Selectable position.
Three text sizes for top 2 lines.
Fade capability.
Compass/azimuth, 8 compass headings (N, NE, E, SE, S, SW, W, NW). Not available on 22X.

Scheduling: Real-time clock allows scheduling of up to 64 events, including presets, relays, alarms, tours or autotours (not on 22X).

Multilanguage Menu: English, Spanish, French, Italian and German.

Day/Night (23X/35X) Features: 6 programmable motion detection zones with 3 sensitivity levels; image freeze during preset solve; flip (invert) video image.

Auto Baud: Auto baud detection in RS-422/ RS-485 mode; 4800, 9600, 19,200 bps baud rates supported.

Absolute Position Control: Available in RS-422/RS-485 mode.
Pan/tilt: 0.125°; zoom: 0.125X.

Competitive Protocols: DIP switch selectable.

COAXIAL/UTP VERSIONS

Control Protocol Hardware: Vicon: Vicon's Pilot or NOVA control systems and V1300X-DVC desk-top keypad or V1300X-RVC rack-mounted keypad; NTCIP 1103 compatible hardware.

Control Protocol Software: Vicon's Surveyor Direct Control program run on a standard PC type computer with an RS-422/485 half duplex protocol interface.

Control Protocol Format: Vicon: RS-422 or RS-485 protocol. Communication is simplex or half duplex operation at 4800, 9600 or 19,200 baud or Vicon's enhanced VicoaxII protocol (superimposed data on composite video signal) automatically detected upon power up. RS-485 protocol utilizes full tri-state outputs for daisy chain capability.

Pelco: Pelco D Protocol (3/2/99); RS-485 N.8.1, simplex 2400 bps, duplex 4800 bps.
Sensormatic/AD: RS-422/RS-485 communication protocols user's guide Rev. A (csd 05/00); RS-422/RS-485 duplex N.8.1 4800 bps. May require RS-422 converter, RCSN422.
Ultrak: KD6, KD6-Z control protocols; RS-485 simplex E.8.1, 9600 bps.
Philips: Receiver/Driver/Auto Dome control code protocol; RS-232 simplex N.8.1, 2400 or 9600 bps.
Kalatel: Non-repeating transmit commands; RS-422 simplex N.8.1, 9600 bps.
Cohu: MPC System RS-422 interface; RS-422 duplex N.8.1, 9600 bps.
Panasonic: Panasonic conventional and new camera protocol.
NTCIP: 1103 protocol compatible.
Note: All companies make changes and improvements in their products. Because this product can interface with equipment not manufactured by Vicon, there is a possibility that the interface protocols may have changed since Vicon tested this product with the interfacing equipment. Vicon recommends purchasing a single unit for bench testing prior to purchasing and installing this product in quantity.

Connector Types: Video Out:
Coax: BNC-F (1 V p-p).
UTP: 3-position removable screw terminal block.
Control Input/Output:
8-position removable screw terminal block.
Relay Output: 8-position removable screw terminal block.

FIBER-OPTIC VERSION

Receiver Specs: Video:
I/O Level: 1 V p-p.
I/O Impedance: 75 ohms.
Bandwidth: 8 MHz.
Differential Gain: 5%.
Differential Phase: 5°.
SNR: 60dB.
Data:
Data Rate: Up to 19.2 Kbps.
Optical:
Wavelength: 850/1300 nm.
Loss Budget (62.5/125u): 12 dB.
Connector: ST.

Connector Types: Video Out: ST type.
Control Input/Output: ST type.
Relay Output: 8-position removable screw terminal block.

VICONNET VERSION (NETWORK/TCP/IP)

Communication Protocol Hardware: Vicon's Kollector Elite Digital Recorders and ViconNet Workstations.

Network Interface: 100 Mbps, TCP/IP Unicast.

Connector Types: Video Out: RJ-45 jack.
Network: Ethernet 100Base-T RJ-45 jack. 10/100 Mbps required for network connection.
Relay Output: 3-position removable screw terminal block.
Audio: 2 1/8-in. phono jacks.

SOFTWARE OPERATION (ViconNet)

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

Site Authorization: Setup using remote recorder or workstation GUI. Permissions for macro, alarm, Authentication, Reports & System Status. Supports up to 20 Groups and 100 Users.

Macro Create & Edit: Configured to use the camera's video.

Alarm Setup: Triggered on video motion detection and loss.

Authentication: Set to view the Authentication status symbol (A)

Picture Quality and FPS Priority: Setup to prioritize recorded picture quality and video FPS.

CAMERA/LENS

Specifications: Refer to Table 3.

VIDEO TRANSMISSION

Maximum Distances: Coax: 1100 ft (350 m), cable dependant.
Vicoax: 1500 ft up to 140° F (60° C); 1000 ft up to 165° F (74° C).
UTP: up to 3000 ft (915 m), model dependant.
Fiber: 1 mile min.; longer distances available dependant on cable quality.
ViconNet: 100 meters without repeater.

MECHANICAL

Application: Outdoor.

Mounting: Outdoor pendant. See Table 1 for compatible Vicon mounts.

Housing Types: Outdoor pendant housing with sunshield.

Pendant Mount Size/Thread: Standard 1-1/2 inch male NPT pipe thread or metric equivalent.

Lower Dome Types: Clear polycarbonate..

Dimensions: See Figure 1.
Diameter (D1): 9.1 in. (231 mm).
Height (H): 10.3 in. (262 mm).
Lower Dome
Diameter (D2): 6.0 in. (152 mm).

Weight: 9.3 lb (4.3 kg).

Construction: Die-cast aluminum with molded plastic sunshield.

Color: Off-white housing and sunshield.

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

Shipping Weight: 12.9 lb (5.9 kg).

Shipping Volume: 2.2 ft^3 (0.06 m^3).

ENVIRONMENTAL

Operating Temperature Range: -29 to 165° F (-34 to 74° C) in accordance with NEMA 2.1.5.1 STD 2; -40 to 132° F (-40 to 55° C) continuous rotation.

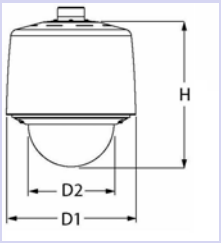
Operating Humidity Range: 100% relative, noncondensing.

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

Storage Humidity Range: 0 to 90% relative, non-condensing.

IP Rating: IP66.

Rain/Wind: Heavy rain up to 4 in./hr at winds up to 90 mph, when mounted on standard Vicon wall mount.



Wire Size (AWG) Annealed Copper Wire	Distance ft (m)							
	Indoor				Outdoor			
	24 VAC		28 VAC		24 VAC		28 VAC	
	Coax, Fiber, UTP	ViconNet	Coax, Fiber, UTP	ViconNet	Coax, Fiber, UTP	ViconNet	Coax, Fiber, UTP	ViconNet
20	300 (91)	215 (66)	500 (152)	350 (107)	165 (65)	130 (40)	280 (85)	217 (66)
18	469 (143)	336 (102)	781 (238)	547 (167)	258 (102)	203 (62)	438 (134)	340 (104)
16	750 (229)	538 (164)	1250 (381)	875 (267)	413 (126)	325 (99)	700 (213)	544 (169)
14	1200 (366)	860 (262)	2000 (610)	1400 (427)	660 (262)	520 (159)	1120 (341)	870 (265)
12	1875 (572)	1344 (410)	3125 (953)	2188 (667)	1031 (314)	812 (248)	1750 (533)	1359 (414)

Table 2: Maximum Power Cable Distance

Specifications	Model Numbers			
	SVFT-M22E	SVFT-M22EC	SVFT-M23	SVFT-M23C
	Product Codes			
	8748-00	8748-01	8749-00	8749-01
	Formats			
	NTSC	**PAL**	**NTSC**	**PAL**
Type	Color	Color	Color	Color
Optical Zoom	ExView 22X	ExView 22X	23X	23X
Digital Zoom	12X	12X	12X	12X
Total Zoom	264X	264X	276X	276X
Image Device	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD
Picture Elements	768(H) x 494 (V), 380,000 pixels	752(H) x 582 (V), 438,000 pixels	768(H) x 494 (V), 380,000 pixels	847(H) x 532 (V), 490,000 pixels
Scanning System	2:1 interlace, 525 lines 60 fields/sec	2:1 interlace, 625 lines 50 fields/sec	2:1 interlace, 525 lines 60 fields/sec	2:1 interlace, 625 lines 50 fields/sec
Sensitivity* (22EX/23X: at 40 IRE, f/1.6)	0.006 fc (0.06 lux), auto 1/4s 0.09 fc (1 lux), auto 1/60s	0.006 fc (0.06 lux)auto 1/3s 0.09 fc (1 lux),auto 1/50s	0.0009 fc (0.01 lux) auto 1/4s, IR OFF 0.009 fc (0.1 lux) auto 1/4s, IR ON 0.09 fc (1 lux) auto 1/60s, IR ON	0.0009 fc (0.01 lux) auto 1/3s, IR OFF 0.009 fc (0.1 lux) auto 1/3s, IR ON 0.09 fc (1 lux) auto 1/50s, IR ON
Horizontal Resolution	470 TV lines (color)	470 TV lines (color)	540 TV lines (color)	540 TV lines (color)
S/N Ratio	More than 50 dB	More than 50 dB	More than 50 dB	More than 50 dB
Synchronization	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)
Automatic Gain Control (AGC)	Adjustable to 30 dB	Adjustable to 30 dB	Adjustable to 30 dB	Adjustable to 30 dB
Backlight Compensation	Software adjustable background video level	Software adjustable background video level	Software adjustable background video level	Software adjustable background video level
Iris Control	Automatic/Manual	Automatic/Manual	Automatic/Manual	Automatic/Manual
Wide Dynamic Range	NA	NA	OFF/ON (Auto or Manual)	OFF/ON (Auto or Manual)
Digital Noise Reduction	NA	NA	Yes	Yes
Video Focus	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)
White Balance	Automatic/Manual Red/Blue Gain Level	Automatic/Manual Red/Blue Gain Level	Automatic/Manual Red/Blue Gain Level	Automatic/Manual Red/Blue Gain Level
Shutter Speed	Auto (DSS): 1/2-1/4000 Man:1/2-1/30K sec	Auto (DSS): 1/1.5-1/4000 Man:1/1.5-1/30K sec	Auto (DSS): 1/2-1/60 Man:1/2-1/30K sec	Auto (DSS): 1/1.5-1/50 Man:1/1.5-1/30K sec
Lenses				
Focal Length	4 - 88 mm	4 - 88 mm	3.6 - 82.8 mm	3.6 - 82.8 mm
Aperture max	f/1.6	f/1.6	f/1.6	f/1.6
Horizontal Angle of View	47° wide, 2.2° tele	47° wide, 2.2° tele	54° wide, 2.5° tele	54° wide, 2.5° tele

** For day/night cameras, IR ON is color mode; IR OFF is B&W mode*

Table 3: Camera/Lens Specifications

Specifications	Model Numbers		
	SVFT-M22	SVFT-M22C	SVFT-M35, SVFT-M35C
	Product Codes		
	8747-00	8747-01	9104-00, 9104-01
	Formats		
	NTSC	**PAL**	**NTSC/PAL**
Type	Color	Color	Color
Optical Zoom	22X	22X	35X
Digital Zoom	12X	12X	12X
Total Zoom	264X	264X	420X
Image Device	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD
Picture Elements	768(H) x 494 (V), 380,000 pixels	752(H) x 582 (V), 438,000 pixels	768(H) x 494 (V), 380,000 pixels/ 752(H) x 582 (V), 438,000 pixels
Scanning System	2:1 interlace, 525 lines 60 fields/sec	2:1 interlace, 625 lines 50 fields/sec	Progressive scan or 2:1 interlace, 525 lines 60 fields/sec/ 2:1 interlace, 625 lines 50 fields/sec
Sensitivity* (22X: at 40 IRE, f/1.6; 35X: at 50 IRE, f/1.4)	0.2 fc (2 lux), 1/60 s	0.2 fc (2 lux), 1/50 s	0.0009 fc (0.01 lux) auto 1/4s, IR OFF 0.014 fc (0.15 lux) auto 1/60s, IR OFF 0.003 fc (0.033 lux) auto 1/4s, IR ON 0.05 fc (0.5 lux) auto 1/60s, IR ON (NTSC; 1/3s, 1/50s - PAL)
Horizontal Resolution	470 TV lines	470 TV lines	540 TV lines
S/N Ratio	More than 50 dB	More than 50 dB	50 dB
Synchronization	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)
Automatic Gain Control (AGC)	N/A	N/A	Adjustable to 30 dB
Backlight Compensation	ON/OFF	ON/OFF	ON/OFF
Iris Control	Automatic/Manual	Automatic/Manual	Automatic/Manual
Wide Dynamic Range	N/A	N/A	OFF/ON (Auto or Manual
EIS (Image Stabilizer)	N/A	N/A	Yes (with digital zoom)
Video Focus	Automatic/Manual	Automatic/Manual	Automatic/Manual
White Balance	Automatic/Manual; Red/Blue Gain Level	Automatic/Manual; Red/Blue Gain Level	Automatic/Manual; Red/Blue Gain Level
Shutter Speed	1/60 - 1/4000 sec	1/50 - 1/4000 sec	1/60 - 1/4000 sec/ 1/50 - 1/4000 sec
Lenses			
Focal Length	4 - 88 mm	4 - 88 mm	3.4 – 119 mm
Aperture max	f/1.6	f/1.6	f/1.4
Horizontal Angle of View	47.3° wide, 2.2° tele	47.3° wide, 2.2° tele	55.8° wide, 1.7° tele

** For day/night cameras, IR ON is color mode; IR OFF is B&W mode*

Table 3 (cont'd): Camera/Lens Specifications