

Zoom chassis camera  
VK-S654N/EN

HITACHI  
Inspire the Next

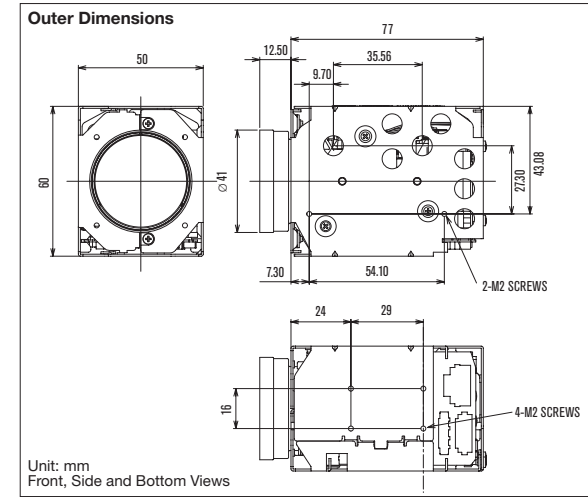
- 35x optical zoom lens with 12x digital zoom
- Outstanding color reproduction
- Minimum sensitivity: 1.0 lx
- Engineered for exceptional image quality
- 8-bit digital output



Made in Japan

Specifications

Signal Format	VK-S654N (NTSC)		VK-S654EN (PAL)
CCD Image Sensor			
Image Size	4.5mm Dia. (TYPE 1/4)		
Total Pixels	410k (811 x 508)	470k (795 x 596)	
Effective Pixels	380k (768 x 494)	440k (752 x 582)	
Progressive Scan	YES		
Lens Optical			
Zoom Magnification	35X		
Practical f-value	3.4-119mm		
Practical Horizontal Angle	58.2°(w)* - 1.8°(t)		
F-value	F1.4(w) - F4.2(t)		
Zoom Speed (Manual)	4.6s*/6.6s (soft)		
(In Preset : Trace / No-)	3.2s/2.0s (soft)		
Focus			
Auto	VAF		
Manual (Far/Near)	Provided		
Focal Range (Setting)	infinity-1.5m(t) - 0.01m(w)* (soft)		
Removable IR Cut Filter			
Auto	Pro. AER+* (OFF - ON - 1/4*-1/4k)   Pro. AER+* (OFF - ON - 1/3*-1/4k)		
Manual (ON/OFF)	Provided (soft)		
Durability			
Zoom/Focus/Iris	500k cycles		
IR Removable	50k cycles		
DSP Functions	DSP-8		
Digital Slow Shutter	YES w/o WDR		
Frame Output	OFF*/ON (soft)		
Wide Dynamic Range	OFF*/ON (Auto* [ offset ]/Manual) (soft)		
Frame Noise Reduction	OFF*/ON* (soft)		
Image Stabilizer	OFF*/ON (Digital Zoom max. 1.3X)		
Image Reverse	OFF*/ON (soft)		
Mirror	OFF*/ON (soft)		
Vertical Invert	OFF*/ON (soft)		
Image Freeze	OFF*/ON (soft)		
B&W	OFF*/ON (soft)		
Privacy Masking	OFF*/ON* [ 2zone 2-D*/ 8zone 3-D (4/1 screen) ] (soft)		
Fixed Privacy Masking	OFF*/ON [ optional:12 x 24 units ] (soft)		
Title Display	OFF*/ON [24 characters] (soft)		
Motion Detect	OFF*/ON (soft)		
Various Customizable Settings	YES [ preset store (max.111), WB tuning ]		
Dynamic Spot Cancel	YES		
Slow Response AE	1x* - 254x		
Digital Zoom			
Zoom Magnification	OFF*/ON (soft : max. 12X)		
Electrical Shutter			
Auto	Pro. AE (1/60 - 1/4ks)	Pro. AE (1/50 - 1/4ks)	
Auto (+DS Shutter)	Pro. AE+*(1/2-1/4*-1/4ks:Seamless)	Pro. AE+*(1/1.5-1/3*-1/4ks:Seamless)	
Manual	Shutter priority 1/1-1/30ks:soft	Shutter priority 1/0.75-1/30ks:soft	
Manual (Sensitivity)	Exposure priority F1.4 - F32 : soft		
	AGC priority 0 - 30 dB : soft		
	64X, 32X, 16X, 8X, 4X, 2X (soft)		
Iris	Auto*/(offset: soft)		
BLC (in WDR OFF mode)	OFF*/ON (soft)		
White Balance	Auto*/(manu: soft)		
Horizontal Resolution			
Normal (1/60s)(NTSC)/(1/50s)(PAL)	typ.540 min.520 TVL		
Luminance S/N Ratio	More than 50 dB		
Min. Sensitivity (Typical)			
IR-cut ON (1/60s)(NTSC)/(1/50s)(PAL)	1.0 lx		
IR-cut ON (1/4s)(NTSC)/(1/3s)(PAL)	0.1 lx		
IR-cut OFF (1/4s)(NTSC)/(1/3s)(PAL)	Approx. 0.01 lx (B/W)		
Condition	(F1.4(w), 50IRE)		
Sync System	Internal/Line-Lock (60Hz)	Internal/Line-Lock (50Hz)	
Power			
Supplied Voltage	9 - 12V DC		
Supplied Current @9V	290mA		
Max. @9V	380mA		
Consumption @9V	2.6W		
Max. @9V	3.4W		
Video Output (NTSC/PAL)	VBS:1.0Vp-p, Y/C Output		
Video Output (digital output)	YUV422 8bit output (REC656 type)		
Dimension (W x H x D)	50 x 60 x 89.5mm (w/ M-case)		
Weight	Approx. 250g (w/ M-case)		
No. of Connectors	4 [ (9pin/4pin : Analog Output) , (24pin/30pin : Digital Output) ]		
Operating Temp. (Recommended)	0°C - 60°C (0°C - 40°C)		



Unit: mm  
Front, Side and Bottom Views

\* Default mode.

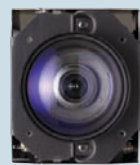
HITACHI  
Hitachi, Ltd. Tokyo Japan

Hitachi Home Electronics (America), Inc.  
900 Hitachi Way, Chula Vista, CA 91914-3556  
Tel: 800-981-2588 Fax: 800-438-7098  
Tel: +1-619-591-5200 Fax: +1-619-591-5201  
www.hitachi.com

Hitachi Home Electronics Asia (S) Pte. Ltd.  
438A Alexandra Road #01-01/02/03,  
Alexandra Technopark,  
Singapore 119967  
Tel: +65-6536-2520 Fax: +65-6536-2521  
www.hitachiconsumer.com

Hitachi Sales Corporation of Taiwan  
2nd F1., No. 65 Nanking E Rd.,  
Sec. 3 Taipei, 104 Taiwan  
Tel: +866 (02) 2516 0500 Fax: +866 (02) 2516 0512





## High-performance digital surveillance camera with 35x optical zoom

Advanced digital signal processing (DSP) technology ensures outstanding color reproduction and low light performance, capable of capturing details such as facial features, clothing, and automobile colors that can serve as vital evidence. Setting a new standard for imaging quality, night or day, the Hitachi VK-S654N/EN marks another phase in the evolution of high-quality digital surveillance systems.

### 35x optical zoom lens with 12x digital zoom



Optical zoom permits confirmation of facial features.

A newly designed 35x auto-focus optical zoom lens delivers enhanced resolution, clearly capturing subject details at a distance. Proprietary Hitachi auto-focus control makes it possible to track rapidly moving subjects, while the addition of a 12x



Enhanced peripheral resolution

digital zoom delivers a maximum zoom factor of 420x. The improved lens design produces crisp clear details, even in peripheral areas of the image.

### Outstanding color reproduction



Advanced digital signal processing ensures outstanding color reproduction. Characterized by superior ability to accumulate available light, the high-performance CCD produces sharp, clear images even in challenging lighting conditions. And accurate color reproduction enhances security performance in a variety of surveillance scenarios. This digital surveillance camera can capture details such as facial features, clothing, and automobile colors clearly and accurately, producing true-to-life surveillance images that can serve as vital evidence.

### Technology for low-light performance

High-performance CCD teams with digital signal processing to achieve outstanding low-light performance, capable of capturing images in standard mode at a minimum subject illumination of 1.0 lx.

#### Frame noise reduction



F.N.R. off.

F.N.R. on.

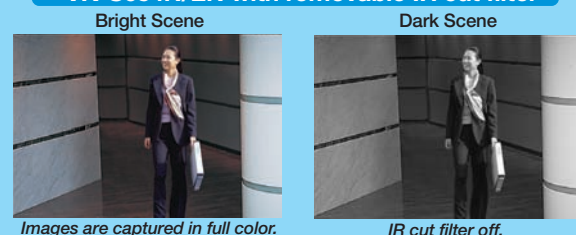
Hitachi's frame noise reduction minimizes random noise and after-images often associated with moving subjects, making this high-performance unit suited to a variety of surveillance scenarios. Producing clear, sharp images even in challenging low-light conditions, this technology also facilitates image compression in network camera systems.

#### Digital slow shutter

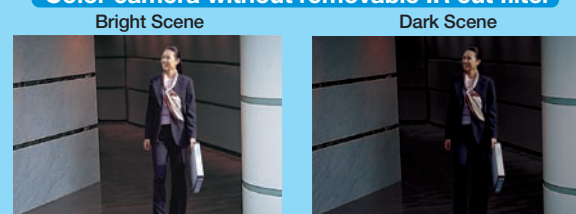
Digital processing boosts sensitivity to a maximum of 1/1 second exposure time, making it possible to capture bright, clear images in a variety of lighting situations.

#### Removable IR cut filter

##### VK-S654N/EN with removable IR cut filter



##### Color camera without removable IR cut filter

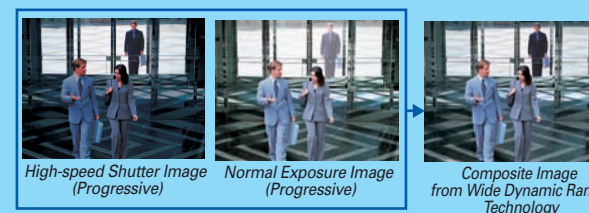


The degree of the removable IR cut filter's effectiveness varies with the type and intensity of the light source.

In daylight conditions, the IR cut filter ensures clear, high-quality color images. At night or in other very low light situations, the IR cut filter is automatically removed to allow capture of bright, high-contrast black and white images.

## Engineered for exceptional image quality

### Operation of Hitachi Dynamic Range Technology



### Wide dynamic range

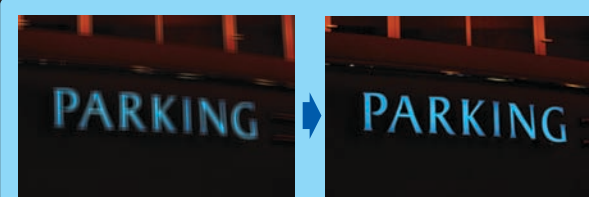
When a surveillance scene includes bright and dark areas, alternate images are captured at optimum exposure for both levels of illumination, and the resulting two fields are combined into a single frame. This produces clear, glare-free images in a variety of lighting conditions, such as entrances with varying levels of indoor/outdoor illumination and situations where backlighting can make it difficult to identify facial features.

### Progressive scanning

Conventional surveillance camera systems using interlaced scanning are not capable of producing clearly identifiable images of moving cars or people. The interlace method uses two scans to create a single image frame, producing jumpy, poorly defined images when still images are pulled from the video feed. Progressive scanning incorporated in the Hitachi VK-S654N/EN records the frame in a single sequential scan, creating sharp, high resolution still images, with clearly defined lines and contours.

### Electronic image stabilization

Based on Hitachi's track record of pioneering image stabilization technology, electronic image stabilization compensates for vibration or movement of the camera, automatically minimizing image blur.



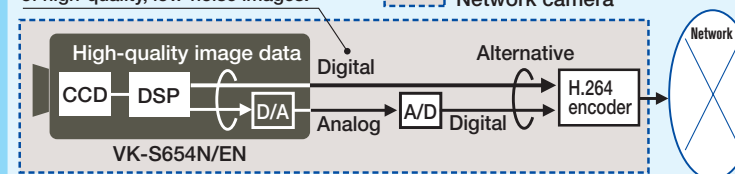
## Digital output ensures exceptional image quality

The Hitachi VK-S654N/EN relies on digital output to ensure lossless, noise-free image data, maximizing camera performance and preserving the exceptional quality of captured images.

### Zoom chassis camera incorporated in network camera

Digital output ensures transmission of high-quality, low-noise images.

Zoom chassis camera Network camera

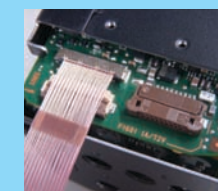


Digital output is a REC656 data stream (YUV422, synchronous embedded 8-bit signal, interlaced output), compatible with a large number of encoder ICs.

### Digital output frequency & resolution\*

	VK-S654N(NTSC)	VK-S654EN(PAL)
Clock frequency	28.6MHz	28.5MHz
Output resolution	752(H) X 480(V)	736(H) X 576(V)

\*Due to high-resolution CCD (NTSC 410K/PAL 470K), frequency and resolution differ from REC656 specifications.



Micro coaxial cable can be used for digital interface.

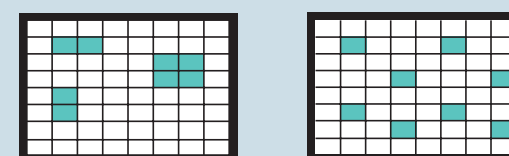
## Full range of basic visual surveillance functions

### Privacy zone masking function



This function makes it possible to mask the camera's view of areas subject to privacy concerns, such as windows and entrances. The position and size of the mask is maintained, even when the camera pans, tilts or zooms, making this unit particularly suitable for surveillance of public areas.

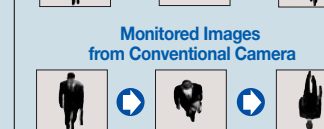
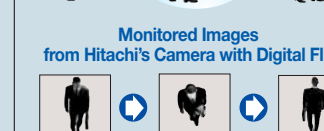
### Motion detection



This function triggers an alarm when motion is detected in designated areas of the surveillance frame. Motion detection can be activated in as many as eight frame blocks out of a total of 64.

### Digital image flip

#### Movement of Monitored Subject



Images can be flipped vertically or horizontally, enabling tracking of subjects moving underneath the camera in a single continuous shot.

### Built with the environment in mind

The RoHS-compliant VK-S654N/EN meets guidelines for permissible levels of lead, mercury, cadmium, hexavalent chrome, PBBs and PBDE, making it an eco-friendly way to implement high-tech surveillance.

### Compatibility facilitates system upgrades

The VK-S654N/EN offers effortless upward compatibility with the VK-S654R/ER, making it easy to upgrade and incorporate the latest technical advances in your surveillance systems.