

Wide-Dynamic Range High-Sensitivity Color Zoom Camera

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# VK-S454 (NTSC) VK-S454E (PAL)

Wide Dynamic Range (WDR)

Removable IR Cut Filter

Progressive-Scan CCD

Digital Slow Shutter

High-Durability x23 Optical Power Zoom Lens

Digital Image Flip

Privacy Zone Masking

Internal/External Sync. (AC-Line Pulse Signal)



Made in JAPAN

**WIDE**  
DYNAMIC RANGE  
PROGRESSIVE SCAN

**DIGITAL**  
SLOW  
SHUTTER

**x23**  
OPTICAL  
ZOOM

**IR**  
FILTER ON/OFF

**D.S.P.**  
Digital Signal Processor



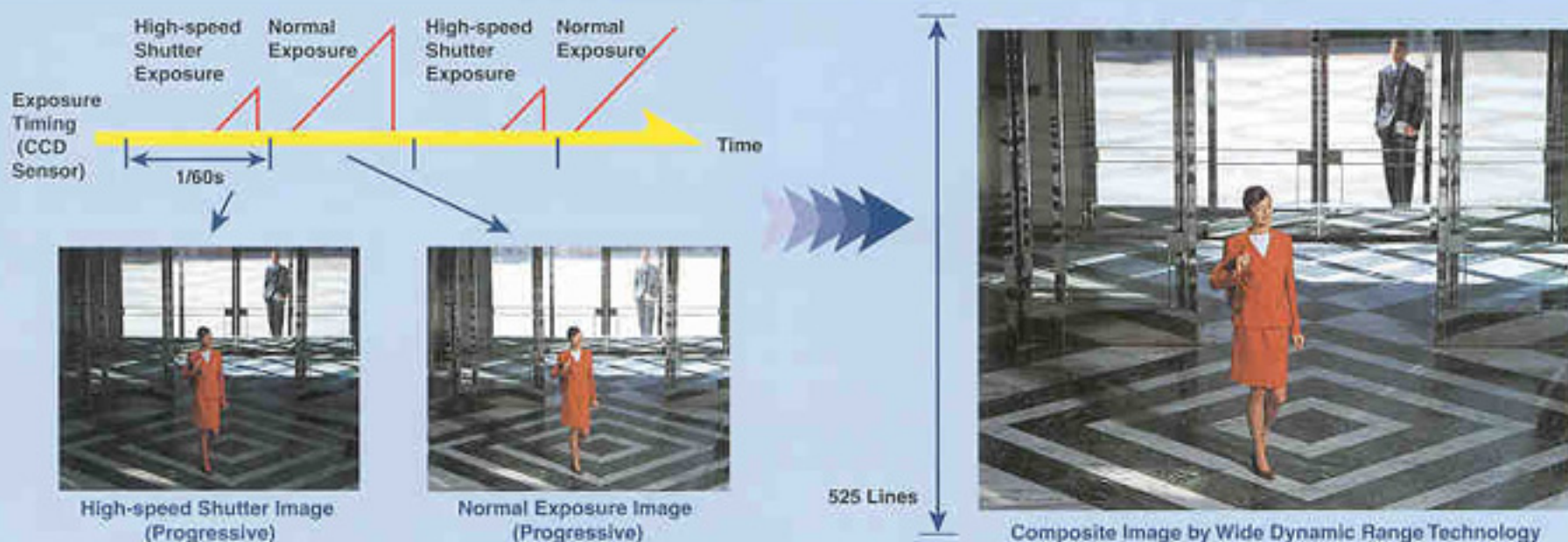
# VK-S454/S454E: Wide Dynamic Range Color Zoom Digital Slow Shutter, Digital Image Flip, Privacy

The Hitachi VK-S454/S454E is a compact chassis-type camera designed for surveillance of various sites under a wide range of light conditions. Even high-contrast scenes can be captured without glare or loss of detail thanks to the Wide Dynamic Range design. The Digital Slow Shutter and Removable IR Cut Filter function make the camera particularly suitable for monitoring sites at nighttime or dark locations.

## Wide Dynamic Range (WDR)

Hitachi's Wide Dynamic Range Technology uses two shutter speeds in alternative video fields—high and normal—every 60th (or 50th) of a second and combines two fields into one progressive scan frame. It allows every detail to be captured accurately even if one portion of an image is brilliantly bright while other portions are dark. Whether at the high shutter speed or normal shutter speed, the progressive scan CCD provides a horizontal resolution of 470 lines. As a result, combined fields yield a frame of high-quality images.

### Operation of Hitachi Dynamic Range Technology



## Removable IR Cut Filter

Ordinary color cameras feature a fixed IR cut filter for clear color images under the daylight condition. The VK-S454/S454E, however, is equipped with a removable IR cut filter. Under the very low light condition, the IR cut filter is automatically turned off to deliver brighter images than other color video cameras do.



	Bright Scene	Dark Scene
VK-S454/S454E		
	Images are captured in full color.	IR Cut Filter off.
Conventional Color Camera		
		Captured images look dark.
The degree of the Removable IR Cut Filter's effectiveness varies with the type and intensity of a light source.		



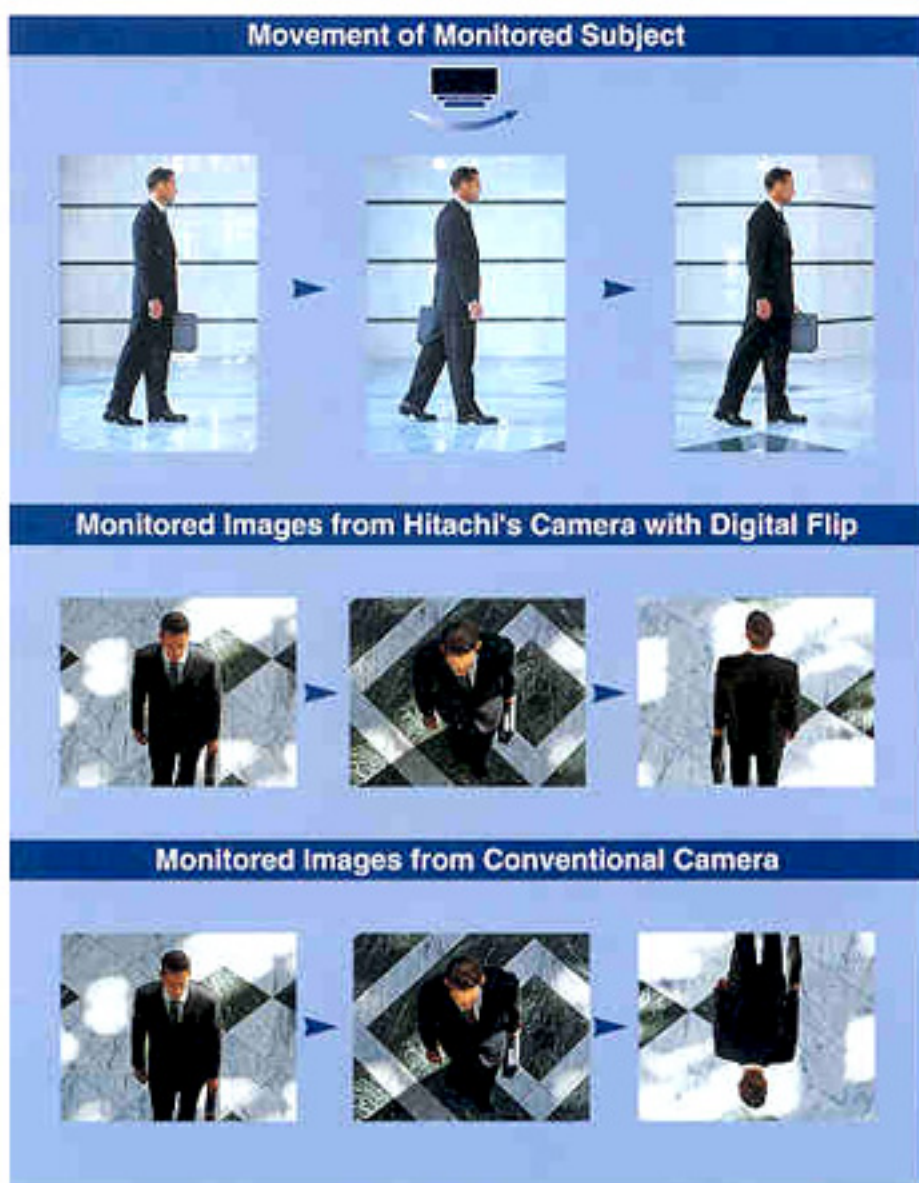
# om Camera with Progressive Scan, Zone Masking, and Removable IR Cut Filter

## Digital Slow Shutter (D.S.S.)

The Digital Slow Shutter allows the camera a long exposure time of 1/2 (1/1.5) second. This translates into a higher sensitivity and minimum illumination of only 0.1 lux (IR cut filter on), 0.01 lux (IR cut filter off) or 0 lux with IR illuminator.

## Digital Image Flip

When the camera scans more than a certain amount of degrees while tracking a moving object, it digitally flips the object's image upside down on the monitor. This means you can track an object moving underneath the camera in a continuous shot.



## Internal/External Sync

The camera may operate by its own internal sync or under control of an external source like a sync generator. Internal/external sync capability expands the range of the camera's applications.

## Privacy Zone Masking Function

When there are windows, entrances and other objects within the camera's vision that are not subject to surveillance, they can be masked on the monitor for protection of privacy. This makes the VK-S454/VK-S454E particularly suitable for outdoor surveillance.



Image from Conventional Camera



Partially Masked Image from Hitachi's Camera

## Built-In Optical Power Zoom Lens

A reliable built-in X23 optical zoom lens allows the user to monitor a scene from any angle. Combined with X10 digital zoom, the total zoom ratio is X230.



## Remote Control through RS-232C

The camera's focus, iris, zoom, and other settings can be remotely controlled.

## D.S.P. for Intelligent Control

A.I. Auto Iris keeps video output constant, compensating for variations in illumination. A.I. Auto White Balance allows natural color reproduction under any ambient lighting.

# VK-S454 / VK-S454E

## SPECIFICATIONS

	VK-S454 (NTSC)	VK-S454E (PAL)
CCD Image Sensor		
Image Size	4.5mm Dia. (1/4- inch)	
Total Pixels	380k (758 x 504)	450k (758 x 592)
Effective Pixels	360k (724 x 494)	420k (724 x 582)
Practical Pixels	360k (724 x 494)	420k (724 x 582)
Progressive Scan	Yes	
Lens Optical		
Zoom Magnification	23 x (f=3.6 - 82.8mm)	
Practical f-value	f=3.6 - 82.8mm	
Practical Horiz. Angle	54° (w) - 2.5° (t)	
F-value	F1.6 (w)* - F3.7 (t)	
Zoom Speed (Manual)	4.2s*/5.8s (soft)	
(In Preset : Trace / No-)	2.9s/4.6s (soft)	
Focus		
Auto	VAF	
Manual (Far/Near)	Provided (soft)	
Focal Range	infinity - 1m (t) - 0.01m (w)* (soft)	
IR Cut Filter Removable		
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	50 cycles	
DSP Functions		
	DSP - 6	
Digital Slow Shutter	Yes (SDRAM I/) w/o WDR	
Progressive Scan	Yes	
Wide Dynamic Range	Off*/On (Auto * [offset]/Manual) (Soft)	
Image Reverse	Off*/On (Soft) w/o WDR	
Scene Memory (Freeze)	Off*/On (Soft)	
Privacy Zone Masking	Off*/On* (2 positions/ movement cont) (soft)	
Digital Zoom (Zoom Mag)	Off*/On (2x* [soft: max. 10x])	
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 w/o WDR 1/2 - 1/30ks:soft	Shutter Priority w/o WDR 1/1.5 - 1/30ks:soft
	Exposure Priority w/o WDR F1.6 - F34:soft	Exposure Priority w/o WDR F1.6 - F34:soft
	AGC Priority w/o WDR 0 - 30dB:soft	AGC Priority w/o WDR 0 - 30dB:soft
Manual (Sensitivity)	32x, 16x, 8x, 4x, 2x (soft)	
Iris	Auto*/[Offset:soft] w/o WDR	
White Balance	Auto*/(Manual:soft)	
Horizontal Resolution		
Normal (1/60s, 1/50s)	470/(400) TVL	470/(550) TVL
DSS (1/4s, 1/3s)	470/(400) TVL	470/(550) TVL
Luminance S/N Ratio	More than 50dB	
Min. Sensitivity		
IR-Cut ON (1/60s, 1/50s)	3 lx (Color) (Typical)	
IR-Cut ON (1/4s, 1/3s)	0.2 lx (Color)	
(1/2s, 1/1.5s)	0.1 lx (Color)	
IR-Cut OFF (1/4s, 1/3s)	0.02* lx (B/W*)	
w/ IR Illuminator (option)	(0 lx [B/W*])	
In 3m Condition	(F1.6(w), 300mV)	
Sync System	Internal/Line-Lock (60Hz)	Internal/Line-Lock (50Hz)
Power		
Supplied Voltage	9V DC	
Supplied Current	340mA w/ WDR	
Max.	540mA w/ WDR	
Consumption	3.1W (4.6W) w/ WDR	
Dimensions (W x H x D)	50 x 60 x 89.5mm (w/ M-case)	
Weight	230g (w/ M-case)	
No. of Connectors	1 (9-pin) (Flat Cable)	
Operating Temp (Recommended)	0° - 60° (0° - 40°C)	

\* Default Mode (Design and Specifications are subject to change without notice)

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