

KP-F230SCL KP-FR230SCL KP-F31SCL KP-FR31SCL



Main Features

Mini CL (Mini Camera Link)

By adopting a Camera Link digital interface, higher speed video data transfer is possible. Furthermore, by adopting the small connector (SDR) of a Mini Camera Link standard, the size of the camera has been reduced.

PoCL (Power over Camera Link)

The PoCL version is connected by a single (PoCL) Mini Camera Link cable directly to a frame grabber supporting PoCL. Simple systems construction is possible.

High Resolution & High Speed

High resolution combined with high frame rates are possible with this series of cameras. Can be used for high-precision and high-speed image processing in many applications.

KP-F230SCL / KP-FR230SCL	2.01 Megapixel	30 fps
KP-F31SCL / KP-FR31SCL	0.33 Megapixel	120 fps

Frame shutter

Higher resolution in the vertical direction is ensured for moving object.

Multi-step Shutter

A multi-step electric shutter along with a variable speed electric shutter is standard with a minimum shutter speed of 1/100,000 second.

Frame on Demand

A one trigger and fixed shutter mode of frame-on-demand are provided allowing precise timing and exposure for image capture.

Remote Control

Through the Camera Link interface, various setting such as shutter, mode, gain, partial scan, bit depth, etc can be adjusted.

Partial Scan

The start position and height of the image can be adjusted. Higher frame rates are possible by using partial scan mode.

Raw Data Output (KP-FR230SCL / KP-FR31SCL)

The FR series of cameras use a CCD with an RGB primary color mosaic filter, outputting the image data in a RAW format with minimal processing in order to achieve higher frame rates as compared to a normal color camera. External image processing and software is required to produce a proper color picture.

Selectable bit depth

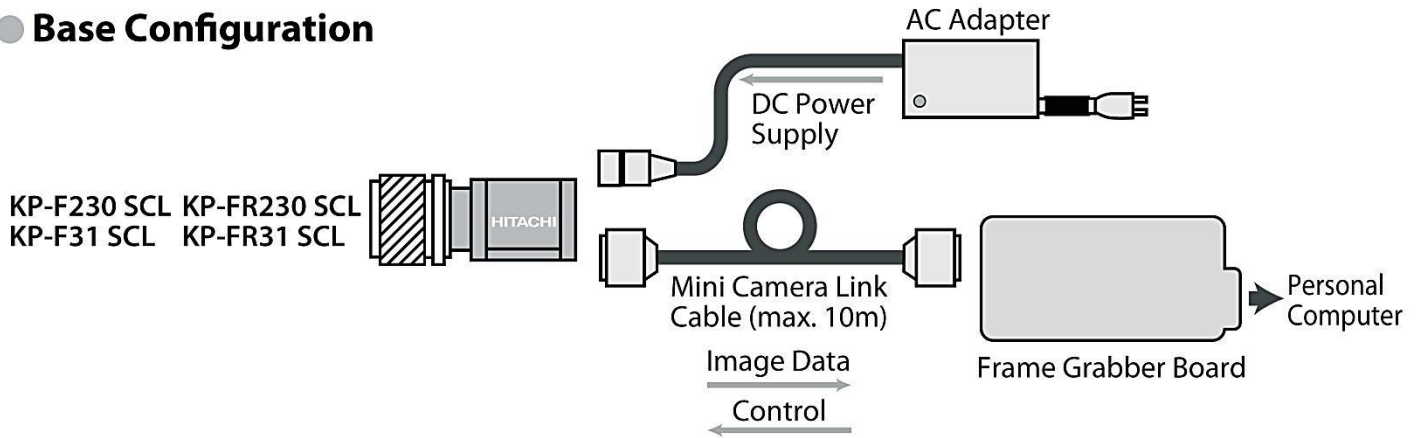
10- / 8- bit	KP-F230SCL / KP-FR230SCL / KP-F31SCL / KP-FR31SCL
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Specification

	KP-F230SCL	KP-FR230SCL	KP-F31SCL	KP-FR31SCL
Imaging device	1 / 1.8-inch interline CCD		1 / 3-inch interline CCD	
Total pixels	1688 (H) x 1248 (V) .		692 (H) x 504 (V)	
Effective pixels	1628 (H) x 1236 (V)		659 (H) x 494 (V)	
Pixel size	4.4 μm (H) x 4.4 μm (V) (square lattice)		7.4 μm (H) x 7.4 μm (V) (square lattice)	
Color filter	—	RGB primary color mosaic filter	—	RGB primary color mosaic filter
Sensing area	7.16 mm (H) x 5.44 mm (V)		4.88 mm (H) x 3.66 mm (V)	
Scanning system	Progressive			
Aspect ratio	4 : 3			
Frame rate	30 frames per second (full pixel readout) 54 frames per second (vertical 2 pixel addition)	30 frames per second (full pixel readout)	120 frames per second (full pixel readout) 219 frames per second (vertical 2 pixel addition)	120 frames per second (full pixel readout)
Horizontal drive frequency	72.0000 MHz		49.090902 MHz	
Horizontal scanning frequency	37.5 kHz . 33.898 kHz (vertical 2 pixel addition)	37.5 kHz	62.937 kHz . 57.618 kHz (vertical 2 pixel addition)	62.937 kHz
Vertical scanning frequency	29.95 Hz (full pixel readout) 54.06 Hz (vertical 2 pixel addition mode)	29.95 Hz	119.88 Hz (full pixel readout) 219.08 Hz (vertical 2 pixel addition mode)	119.88 Hz
Sync system	Internal			
Lens mount	C mount (Flange focal distance = 17.526 mm)			
Video output	Digital output (Camera Link) Base configuration : 36.0000 MHz x 2TAP (Maximum cable length : 10 m) Output image size : 1628 (H) x 1236 (V) (full pixel readout)		Digital output (Camera Link) Base configuration : 24.545451 MHz x 2TAP (Maximum cable length : 10 m) Output image size : 659 (H) x 494 (V) (full pixel readout)	
Resolution	Horizontal / Vertical : 1200TV lines		Horizontal : 500TV lines / Vertical : 490TV lines	
Sensitivity	500 lx, F5.6, 3200K	2000 lx, F5.6, 3200K	550 lx, F4, 3200K	2000 lx, F4, 3200K
Minimum illumination	3.9 lx (F1.4, MAX GAIN)	20 lx (F1.4, MAX GAIN)	8.6 lx (F1.4, MAX GAIN)	35 lx (F1.4, MAX GAIN)
Signal noise to ratio	45 dB		50 dB	
Electric shutter	OFF, 1 / 30, 1 / 60, 1 / 125, 1 / 250, 1 / 1000, 1 / 2000, 1 / 10000, 1 / 50000 second OFF is normal exposure (frame rate) or changeable by variable shutter (Minimum 1 / 00000 second)		OFF, 1 / 120, 1 / 250, 1 / 500, 1 / 1000, 1 / 2000, 1 / 4000, 1 / 10000, 1 / 50000 second OFF is normal exposure (frame rate) or changeable by variable shutter (Minimum 1 / 00000 second)	
Gamma	$\gamma = 1$			
Frame on demand				
Mode	(A) Fixed shutter mode (8 steps or variable) (B) ONE trigger mode			
Trigger input	Camera Link (CC1)			
Partial scan	Selectable start position and height of picture grabbing in 1H step.			
Power supply voltage	12 ± 1 VDC			
Current consumption	Approx. 270 mA (approx. 3.2 W) *MAX partial scan 1H : Approx. 360 mA (approx. 4.3W)		Approx. 190 mA (approx. 2.3 W) *MAX partial scan 1H : Approx. 230 mA (approx. 2.8 W)	
Ambient temperature				
Performance	0 to +40 °C (+32 to +104 °F) , less than 90 % RH			
Operation	10 to +50 °C (+14 to 122 °F) , less than 90 % RH			
Storage	-20 to +60 °C (-4 to 140 °F) , less than 70 % RH (without dew condensation)			
Vibration endurance	10 to 200Hz (98 m/s ²) , Sweep 10 minute, 30 minutes for each 3 axis			
Shock endurance	686 m / s ² (Once for each side of top, under, left and right)			
External dimensions	29 (W) x 29 (H) x 38 (D) mm (Not including protrusions)			
Mass	Approx. 50 g			

System configuration

● **Base Configuration**



Dimenson

