

# HITACHI

Progressive scan, near infrared  
Monochrome CCD camera

# KP-F2 A/B



The Hitachi KP-F2A/B is a full frame shutter black and white camera using a 1/3-inch CCD with sensitivity in the near infrared spectrum. The high performance camera boasts high resolution together with a broad array of functions, including multi-step electronic shutter, external horizontal and vertical drive (HD & VD) synchronization, field on demand and non-interlace scanning. Suitability for image processing is provided by the square lattice picture element (pixel) type CCD. The camera is available with a choice of two video output types (specify on order).

#### KP-F2 A

- Type A: Full pixel frame output at 1/30 second. (Frame output : 1N)
- Type B: Simultaneous output of separate signals from odd and even horizontal lines in 1/60 second. (Horizontal 2 lines simultaneous output : 2N)

#### Outstanding Features

- **Near infrared pickup** : CCD peak sensitivity in 800 nanometer (nm) region is ideal for image processing under near infrared illumination.
- **High resolution** : The square lattice type CCD has 658 (H) × 496 (V) effective pixels.
- **Frame shutter** : The frame shutter function improves vertical resolution of moving objects.
- **Frame output (1N)** : Independent full pixel signal at 1/30 second (from Video Out 1)
- **Simultaneous horizontal 2 lines output (2N)** : The non-interlaced signals of odd and even horizontal lines are obtained independently and simultaneously in 1/60 second. The video signals can be obtained from either the rear panel multipin connector or 2 BNC lines (the multipin connector and BNC outputs cannot be used simultaneously).
- **Multi-step electronic shutter** : The shutter speed can be selected in 8 steps from 1/60 to 1/8000 second.
- **Frame/Field on demand** : By providing an external trigger input, an image input at a desired timing can be obtained instantly at the output. The input time can also be adjusted by the trigger and shutter.



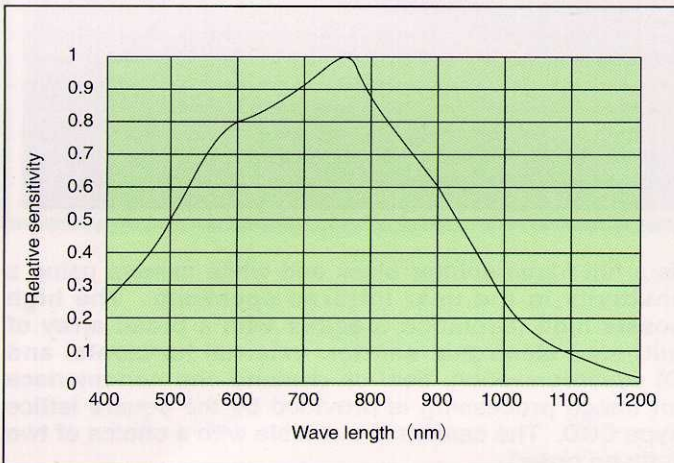
## Specifications

Imaging device	1/3 inch frame transfer CCD	Gamma correction	Internal switch settable for 1 or correction. Fixed $\gamma$ settable for 2 video lines. Factory setting is 1.
Total pixels	680(H)×500(V)	Automatic gain control	Video Out 1 only settable for fixed gain or AGC. External switch settable. Factory setting is fixed gain.
Effective pixels	658(H)×496(V)	Frame/Field-on-Demand function	ON/OFF Externally switchable ONE trigger and Fixed shutter mode selectable by external switch (Factory setting: OFF)
Pixel size	7.4(H)×7.4(V) $\mu$ m(square pixel arrangement)	Sensitivity selection	Video Out 1 : External switch settable for fixed gain or external control. Video Out 2 : Fixed gain Both lines fine adjustable by internal controls. Factory setting is fixed gain.
Sensing area	4.87(H)×3.67(V) mm	Power supply voltage	12 $\pm$ 1 VDC
Scanning system	Type A : Progressive (1/30 second) Type B : Non-interlace (1/60 second)	Power consumption	Approx. 200 mA
Horizontal scanning frequency	15.734kHz	Ambient temperature and relative humidity	Operating : 0 to 40°C, 90%RH Storage : -10 to 50°C, less than 70% RH <b>Notice</b> : If used continuously, be sure that the ambient temperature is below 40 °C for long term reliability.
Vertical scanning frequency	Type A : 29.97Hz Type B : 59.94Hz	Vibration endurance test	7G 10 to 60Hz amplitude: 0.98mm constant 60 to 200 Hz: fixed acceleration, variable amplitude 10 to 200 Hz: 1 minute sweep, 30 minutes each in 3 axes
Synchronization	Internal or external (automatic switching)	Shock endurance test	70 G (once each: up, down, left, right)
Lens fitting	C-mount	Dimensions	44(W)×44(H)×87(D)mm
Flangeback	17.526mm	Mass	Approx. 170g
Internal sync operation	Type A : 525 horizontal lines Type B : 262 horizontal lines (1 output line)		
External sync operation	Horizontal and vertical drive 4 to 6 Vp-p,negative Input impedance: 1 k $\Omega$ , frequency accuracy: $\pm$ 1 %		
Video output	1.0Vp-p 75 $\Omega$ unbalanced Video component : 0.7Vp-p Sync component : 0.3Vp-p, negative		
Sensitivity	30 lux, F4, 3200K		
Minimum illumination	0.3 lux, F4, AGC and $\gamma$ on, w/o infrared cut filter		
Signal to noise ratio	50dB		
Electronic shutter	Selectable off (normal), 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000 or 1/8000 second Factory setting is off.		

## Composition

1. Camera (With dummy glass, AR coated)
2. Operation manual

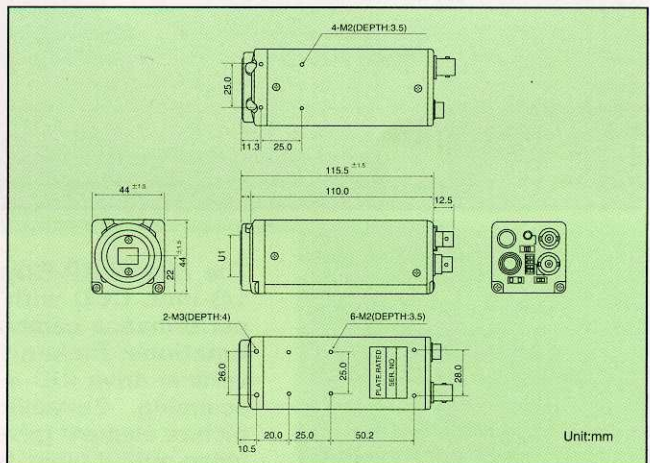
## Spectral sensitivity response



## Optional accessories

1. Tripod adapter.....TA-M1
2. 12-pin plug.....HR10A-10P-12S(01)
3. 6-pin plug .....HR10A-7P-6P(01) **JMH0092**
4. AC adapter.....AP-130
5. Junction box.....JU-F1
6. Camera cable.....2m:C-201KSM
- 5m: C-501KSM
- 10m: C-102KSM

## Dimensions



**CAUTION** :To ensure safe operation, please read the instruction manual before using this product.

*These Specifications are subject to change without notice.*

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