

# HITACHI

## High resolution progressive scan monochrome CCD camera

# KP-F100A

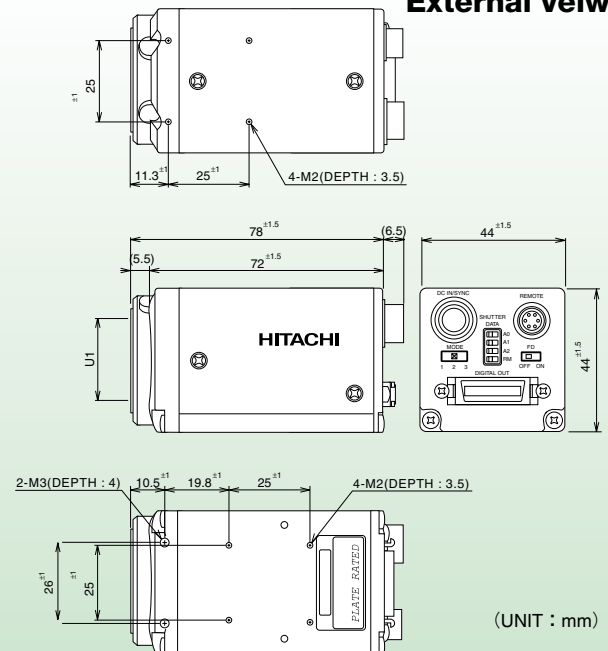


**Compact size, RS-232C control,  
Effective picture elements number 1.3 million,  
Full pixel independent readout**

### Features

- **High resolution**  
High grade CCD with 1300 (H) × 1030 (V) effective square lattice pixels.
- **Digital output and analog output**  
An EIA-644 digital output is provided.
- **Frame on demand**  
An external trigger signal input can be used to capture an image at a desired timing for instant view or processing. The capture time can be adjusted by the trigger and shutter.
- **RS-232C Control**  
The self-contained CPU permits using RS-232C control for setting each function, Frame on demand, Trigger input pulse invert, etc. The functions can also be set from rear panel switches.
- **Multi step electronic shutter**  
up to 1/50000 second

### External view



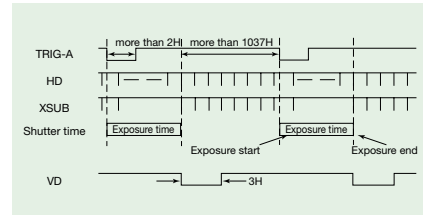
## Specifications

Pickup element	2/3-inch interline CCD
Effective pixels	1300 (H) × 1030 (V)
Pixel pitch	6.7 (H) × 6.7 (V) μm (square lattice)
Imaging area	8.71 (H) × 6.90 (V) mm
Scanning system	Progressive
Aspect ratio	5 : 4
Frame rate	12 frames/second (full pixel readout) 24 fps (2 V pixels simultaneous readout)
Horizontal scanning frequency	12.528 kHz
Synchronization	Internal/external (automatic switching)
Lens mount	C mount
Flange focal distance	17.526 mm
Video output	Digital output or analog output for image checking Digital output EIA-644 single channel 10 bits, 20.2 MHz
External sync input	HD/VD TTL level negative Input impedance: 1 kΩ Frequency deviation: ±1 %
Electronic shutter speed	Off (frame rate), 1/30, 1/125, 1/250, 1/1000, 1/2000, 1/4000, 1/10000, 1/50000 second.
Frame on demand	External switch setting off, fixed shutter, two trigger and one trigger
Power supply voltage	12 ± 1 V DC
Current consumption	290 mA Approx.
Ambient, operating	0 to + 40 °C (+32 to ; 104 F), less than 90 % RH
Ambient, storage	-10 to + 50 °C (+14 to +122 F), less than 70 % RH
Vibration endurance	29 m/s <sup>2</sup> , 10 to 55 Hz 30 minutes each on XYZ axes
Shock endurance	294 m/s <sup>2</sup> (vertical, horizontal, once each face)
External dimensions	44 (W) × 44 (H) × 78 (D) mm
Mass	180 g (6.3 oz) Approx.

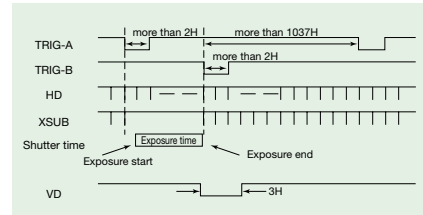
## Frame-on-demand Function

With the Frame-on-demand function, moving objects can be captured at an optional or fixed exposure time by supplying a trigger pulse at an optional timing.

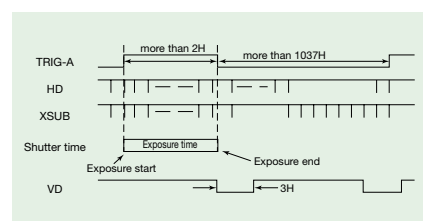
● **Fixed shutter mode**  
When one trigger pulse (TRIG A) is supplied, exposure starts at the rising edge of the inputs pulse. Exposure time is fixed, and set by the electrical shutter switches on the camera.



● **Two trigger mode**  
When two trigger pulses (TRIG A and TRIG B) are supplied, exposure starts at the rising edge of the TRIG A pulse, and ends at the falling edge of TRIG B pulse. The period between the two pulses is exposure time.



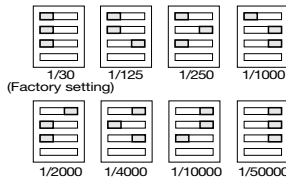
● **One trigger mode**  
When one trigger pulse (TRIG A) is supplied, exposure starts at the rising edge of the inputs pulse, and ends at the falling edge of the inputs pulse. Then, the V-SYNC pulse is reset and picture are delivered immediately. The pulses width is the exposure time.



## Rear panel switches

The rear panel includes switches for electronic shutter data, readout mode, and field on demand on/off and mode switches.

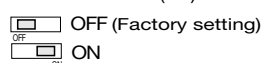
### (1) Electronic shutter switches



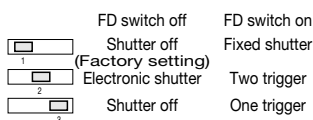
### (2) Trigger input pulse invert switch



### (3) Frame on demand (FD) on/off switch



### (4) Frame on demand mode switch



## Pin connections

### ● Connections to DC IN and SYNC (12 pin)

Pin No.	Int. sync	Ext. sync			
		Ext. HD/VD	Frame on demand		
			Fixed shutter	Two trigger	One trigger
1	GND	GND	GND	GND	GND
2	+12V	+12V	+12V	+12V	+12V
3	GND	GND	GND	GND	GND
4	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
5	—	EXTHD (GND)	—	—	—
6	—	EXTHD (SIGNAL)	—	—	—
7	—	EXTVD (SIGNAL)	TRIG-A (SIGNAL)	TRIG-A (SIGNAL)	TRIG-A (SIGNAL)
8	—	—	—	TRIG-B (GND)	—
9	—	—	—	TRIG-B (SIGNAL)	—
10	GND	GND	GND	GND	GND
11	+12V	+12V	+12V	+12V	+12V
12	—	EXTVD (GND)	TRIG-A (GND)	TRIG-A (GND)	TRIG-A (GND)

### ● Signal connections to D. OUT (26 pin)

Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	DATA0-H	10	DATA4-L	19	DATA9-H
2	DATA0-L	11	DATA5-H	20	DATA9-L
3	DATA1-H	12	DATA5-L	21	VD-H
4	DATA1-L	13	DATA6-H	22	VD-L
5	DATA2-H	14	DATA6-L	23	HD-H
6	DATA2-L	15	DATA7-H	24	HD-L
7	DATA3-H	16	DATA7-L	25	CLK-H
8	DATA3-L	17	DATA8-H	26	CLK-L
9	DATA4-H	18	DATA8-L	Shield	GND

### ● Remote (RS-232C control) cable pin connections (6pin)

Pin No.	Signal name
1	—
2	RD
3	TD
4	Manual/remote
5	Ground
6	—

## Composition

- (1) Camera (with infrared blocking filter)
- (2) Operating instructions

## Optional accessories

- (1) Tripod adaptor  
TA-M1 (23855AX)
- (2) 6 pin Remote plug  
HR10A-7P-6P
- (3) 12 pin plug  
HR10A-10P-12S (01) (23810AX)
- (4) D. OUT connector (26 pins)  
DX30AM-26P
- (5) Junction box  
JU-F1※ (23832AX)  
※Note : Assembly type made to order  
JU-M1 (23831AX)
- (6) Dummy glass (AR coated)  
ARC1214 (XMD0009)
- (7) AC adaptor  
117V:AP-130 (23805UX) /  
230V:AP-130E (23805EX)
- (8) Camera cable

	Molded type	Assembly type
2m	C-201KSM	C-201KS
5m	C-501KSM	C-501KS
10m	C-102KSM	C-102KS

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Specification are subject to change without notice.