

Preliminary

KP-F120F/F120USB

High sensitivity, IEEE-1394 or USB2.0

Progressive scan with 1.45 million, full pixel independent readout in small design



High resolution

High grade CCD with 1392(H)x1040(V) effective square lattice pixels.

Infrared sensitivity

Relative spectral sensitivity in the near-infrared region is higher than earlier CCD.

Digital output

An IEEE1394 digital output is provided. USB2.0 optionally IEEE1394/USB2.0 or RS-232C remote control

The Hitachi KP-F120F/F120USB is a high resolution black and white camera utilizing a 2/3-inch size CCD with progressive scan, full frame readout, full frame shutter. The KP-F120F/F120USB outputs at 15 frames per second. High resolution is provided by the 1.45 million pixels in a square lattice configuration that is conducive to image processing applications. The host of versatile functions includes digital output, multi-step electronic shutter, HD/VD external sync, frame on demand and partial scan. The IEEE1394/USB2.0 or RS-232C remote control permits setting from a personal computer.

Full frame shutter

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

Multi-step electronic shutter:

9 step s electronic shutter from 1/15 second to 1/50000 second

Frame on demand

An external trigger signal input can be used to capture an image at a desired timing for instant view or processing.

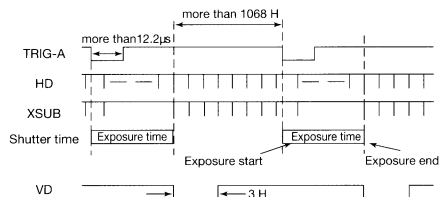
Partial scan : Read out up to 95 frames per second max.

Pickup element	2/3-inch interline CCD
Effective pixels	1392(H)x1040(V)
Pixel pitch	6.45μm(H)x6.45μm(V) (square lattice)
Imaging area	8.98mm(H)x6.71mm(V)
Scanning system	Progressive
Aspect ratio	4 : 3
Frame rate	15frames/second (full pixel readout)
Horizontal scanning frequency	16.035 kHz
Synchronization	Internal
Lens mount	C mount
Flange focal distance	17.526 mm
Video output	Digital output IEEE1394 or USB2.0
Trigger input	TTL level positive polarity
Sensitivity	400lx F5.6 3200K
Electronic shutter speed	1/50000, 1/10000, 1/2000, 1/1000, 1/250, 1/125, 1/60, 1/15 second
Gamma correction	Gamma = 1
Frame on demand	IEEE1394 / USB2.0 or RS232C setting
Power supply	12V±1V DC Approx.500 mA (KP-F120F) Approx.400 mA (KP-F120USB)
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	29.4m/s ² (30 minutes each on XYZ axes)
Shock endurance	294m/s ² (vertical, horizontal, once each face)
External dimensions	58(W)x58(H)x59(D)mm (KP-F120F) 58(W)x58(H)x48(D)mm (KP-F120USB)
Mass	Approx.240g(KP-F120F) Approx.220g(KP-F120USB)

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.

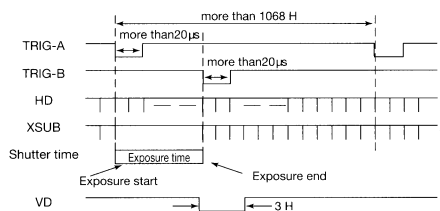
Fixed shutter mode

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.



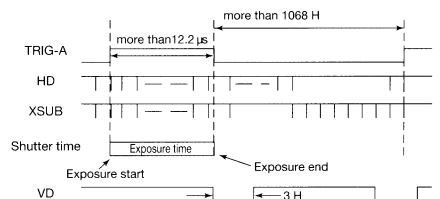
Two trigger mode

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.



DC IN/SYNC camera side socket :HR10A-10R-12PB (01)

PIN NO.	Signal name
1	GND
2	+12V
3	GND
4	VIDEO
5	GND
6	TX
7	RX
8	GND
9	TRIG
10	GND
11	+12V
12	GND

Cable side Connecting plug:HR10A-10P-12S(01)
 (REMOTE cable connects camera side DC IN/SYNC connector to Computer side serial interface connector(D-SUB9pin).
 (Note) Short No.7 pin(RTS) to No.8 pin(CTS) in Computer side serial interface connector (D-SUB9pin)

DIGITAL OUT connector

KP-F120F

Signal connections to D. OUT (6 pin) Connector: Molex 55395-0611

PIN NO.	Signal name
1	VP
2	VG
3	TPB*
4	TPB
5	TPA*
6	TPA

Cable side Connecting plug : Molex 59233b

KP-F120USB

Signal connections to D. OUT (4 pin) Connector: DDK DUSB-BRG42-T12

PIN NO.	Signal name
1	VBUS
2	D-
3	D+
4	GND

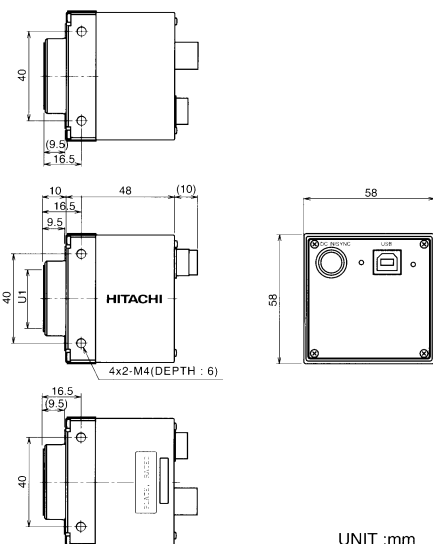
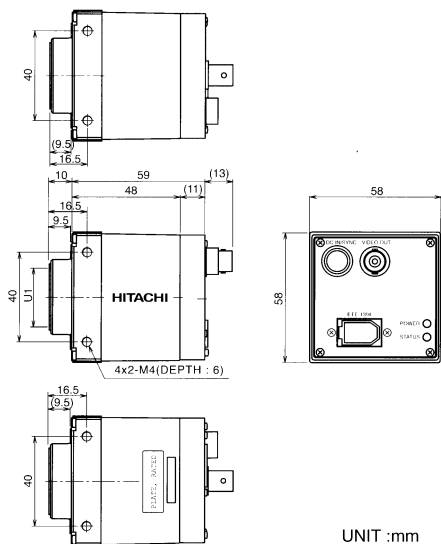
Cable side Connecting plug : DDK DUSB-HAB23-FC20

DIGITAL OUT cable has 110Ω impedance twist-pair lines with cuticle shield

Camera (with infrared blocking filter)

Operating instructions

- Junction boxJU-M1A /JU-F1
- Camera cable(Molded type)
 -2m C-201KSM
 -5m C-501KSM
 -10m C-102KSM
- Tripod adaptor TA-F120
- Dummy glass (AR coated)..... ARC1214
- 12 pin plug..... HR10A-10P-12S(01)



Hitachi Kokusai Electric Inc.

Head Office : 14-20,Higashi-Nakano 3-choume, Nakano-ku, Tokyo 164-8511, Japan
 Phone : +86 (0) 3-3668-6111, Fax : +81 (0) 3-3665-9119
 URL:http://www.h-kokusai.com

Beijing Office
 Beijing Fortune Building 5, Dong San Huan Bei-lu, Chao Yang District, Beijing, 100029 China
 Phone : +86 (0) 10-6590-8755/8756, Fax : +86 (0) 10-6590-8757

Hitachi Denshi America, Ltd. URL:http://www.hdal.com
 Headquarters and Northeast Office : 150 Crossways Park Drive, Woodbury, New York 11797, U. S. A.
 Phone : (+1) 516-921-7200, Fax : (+1) 516-496-3718

West Office : 371 Van Ness Way, Suite 120 Torrance, CA. 90501, U. S. A.
 Phone : (+1) 310-328-6116, Fax : (+1) 310-328-6252

Midwest Sales : Phone : (+1) 330-334-1115, Fax : (+1) 516-496-3718
 Service (+1) 989-345-5379

South Sales : Phone : (+1) 770-982-4724, Fax : (+1) 516-496-3718
 Service (+1) 256-774-3777

Parts Center : Phone : (+1) 516-682-4435, Fax : (+1) 516-921-0993
Latin Sales : Phone : (+1) 516-682-4420, Fax : (+1) 516-496-3718

Hitachi Denshi Canada, Ltd. URL:http://www.hitachidenshi.ca
 Head Office : 1 Select Avenue Unit#111, Scarborough, Ontario M1V 5J3, Canada.
 Phone : (+1) 416-299-5900, Fax : (+1) 416-299-0450

Eastern Office : 5795 Chemin St. Francois St. Laurent, Quebec H4S 1B6, Canada
 Phone : (+1) 514-332-6687, Fax : (+1) 514-335-1664

Hitachi Denshi (Europa) GmbH
 Head Office : Weskircher Straße 88, Jügesheim D-63110 Rodgau, Germany
 Phone : +49 (0) 6106-69920, Fax : +49 (0) 6106-16906
 URL : www.hitachi-denshi.de
 General email address : webmaster@hitachi-denshi.de

Hitachi Denshi (U. K.) Ltd.
 Head Office : 14 Garrick Industrial Centre, Irving Way, Hendon, London, NW9 6AQ, United Kingdom
 Phone : +44 (0) 208-202-4311, Fax : +44 (0) 208-202-2451
Leeds Office : Brookfield House, Selby Road, Garforth, Leeds LS25 1NB United Kingdom
 Phone : +44 (0) 113-287-4400, Fax : +44 (0) 113-287-4260
 URL : www.hitachi-denshi-uk.com
 General email address : sales@hitachi-denshi-uk.com

These products are manufactured at a factory which has received quality control system certification in accordance with the ISO international standards.



CERTIFICATE No. JMI-0062
 ISO 9001/BS 5750Pt1
 EN 29001/JIS Z9901