

Preliminary

VGA Progressive Scan CCD Color Camera

KP-FD30/KP-FD30CL

1 / 2-inch RGB primary color filter progressive scan CCD image sensor RGB color camera
High frame rate 60 frame per second

The KP-FD30 is equipped with the progressive full frame RGB output of high frame rate(approx. 60 frame per second). Optionally The KP-FD30CL outputs Camera-Link. Both camera is equipped the external synchronization(HD/VD), the external trigger function, etc., it is suitable for the image-processing equipment input.

Major feature

- **Suitable for the image-processing equipment input.**
Small lightweight size, since adoption of multi-connector with one cable.
- **High resolution and high color fidelity**
By adoption of the progressive scan CCD image sensor and RGB primary color mosaic filters, the picture of high vertical resolution and high color fidelity can be acquired.
- **A new digital signal processor (DSP)**
The clear picture of a high signal to noise ratio (S/N) is obtained by the new digital signal processor (DSP) adoption which has improved luminance signal processing, such as 5H enhancer processing.
- **CCD drive functions**
 - .Preset electronic shutter (settable 11 steps from 1/60 second to 1/50,000 second and 27 steps from 1/30 second to 8 second.)
 - .Variable electric shutter (1H steps from 1/60 second to Approx. 1/10,000 second)
 - .Auto electronic shutter[AES] (from 1/60 second to approx. 1/50,000 second)
 - .Frame/field on demand (one trigger and fixed shutter modes)

● **Output of NTSC system (2:1 interlace scan) (KP-FD30 only)**

It can be set as the image output of NTSC system (2:1 interlace scan) by switch change

	Standard	Optionally	For OEM	
Model	KP-FD30	KP-FD30CL	KP-FD30F	KP-FD30USB
Output format	Analog RGB	Camera Link	IEEE1394	USB2.0
Frame rate	60 frame per sec.	60 frame per sec.	30 frame per sec.	30 frame per sec.

Main specifications

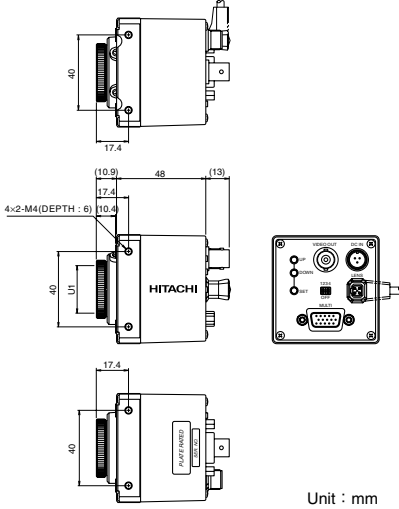
Imaging device	1/2-inch progressive scan interline CCD
No. of effective pixels	659(H) × 494(V)
Unit cell size	9.9(H) × 9.9(V) μm (Square pixel)
Scanning area	7.48(H) × 6.15(V) mm
Color filter	R, G, B primary color mosaic filters on chip
Scanning system (Selectable by switch)	Progressive scan (VGA mode) 2:1 interlace scan (NTSC mode)
Frequency	Horizontal: 31.468 kHz Vertical: 59.94 Hz
Sync system	Internal / external (HD/VD auto selection)
Internal sync output	:HD/VD/SYNC 2 Vp-p/75Ω, Negative polarity WE: 5 Vp-p, Negative
External sync input	HD/VD 2 to 5 Vp-p, Negative polarity EXT. Trigger input: Low 0 VDC, High 2 to 5 VDC
Video signal output	RGB output (G on SYNC) Y/C output (Only at the NTSC mode) VBS output (Only at the NTSC mode)
S/N (Y signal)	More than 50dB (AGC, enhancer and gamma off)
Resolution (Y signal at center)	Horizontal: 440 TV lines Vertical: 480 TV lines (VGA mode) 350 TV lines (NTSC mode)
Standard sensitivity	2,000 lx (F5.6, 100IRE)
Minimum illumination	10 lx (F1.4, AGC ON, 50IRE)
Sensitivity selection	Gain Adjustable at AGC OFF and AGC Limit Gain
Electric shutter speed PRESET	Selectable in 11 steps high speed shutter OFF(1/60), 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000 1/10000, 1/20000, 1/30000, 1/50000 second : Approx. 1H steps from 1/60 second to 1/10,000 second
AES	Selectable in 27 steps low speed shutter OFF(1/60), 1/30, 1/15, 1/10, 1/7.5, 1/6, 1/5, 1/3.75, 1/3, 1/2.5, 1/2, 1/1.5, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8 second
VARIABLE	From 1/60 second to approx. 1/50,000 second (Response : SLOW, NORMAL, FAST) Approx. 1H steps from 1/60 second to 1/10,000 second

Auto level control [ALC]	(The auto level control system of AES, lens iris and AGC.) AVERAGE / PEAK&AVERAGE / AREA (Scanning area is selectable from 9 area.)
Auto-iris lens outputs [DC/VIDEO*]	DC (Iris control voltage input type lens, cable length over 150mm) : Coupling coil impedance Damper : 1.150 Ω ±10% , Drive : 190 Ω ±10% Power supply : 12 VDC, 60 mA Note : "VIDEO" is optionally.
White balance	Selectable in 3 modes Auto-tracking[ATW]:2,500K~6,000K preset [AWC] : (2,500K~10,000K) R/B gain manual control [MANUAL] (2,500K~10,000K)
Text display	24 alpha-numeric characters in one line (only KP-FD30)
Picture adjustment	Modes and settings can be selected and adjusted from on-screen menu (only KP-FD30)
Remote control	Modes and settings can be selected and adjusted from PC by RS-232C level.
Power supply	12 VDC ± 10 % Approx.360 mA(KP-FD30) pprox.370mA(KP-FD30CL) (Including 60mA for auto-iris lens)
Lens mount	C/CS mount (Frange-back adjustment)
Ambient temperature	Operating : -10 to +50 °C, (+14 to +122°F) 30 to 80 %RH Storage : -20 to +60 °C(-4 to +144°F), 20 to 90 %RH
Vibration endurance	68.6 m/s ² (10 to 200Hz, 30 minutes each on XYZ axes)
Shock endurance	490 m/s ² (vertical, horizontal, once each face)
External dimensions	58(W) × 58(H) × 48(D) (not including lens and protrusions)
Mass	Approx.220g (without lens)

Note : If operated continuously, be sure to use at less than +40°C(104°F) for long term stable performance.

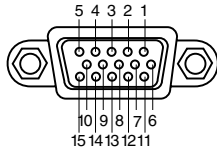
Please inquire detailed specifications of KP-FD30CL.

Dimensions KP-FD30



Unit : mm

Pin arrangement KP-FD30



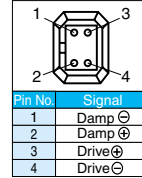
Unit : mm

High-Density 15pin connector plug:KEC-15p(Housing)

Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	R/C OUT	6	VIDEO GND	11	GND
2	G/Y OUT	7	VIDEO GND	12	RXD
3	B/VBS OUT	8	VIDEO GND	13	HD IN/HD OUT/SYNC OUT
4	WE OUT	9	UNREG +12 V IN	14	VD IN/VD OUT
5	GND	10	TRIG IN	15	TXD

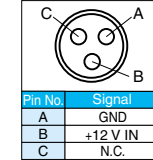
(Pin contact JK-SP2140)(Cover JK-C151C)

Lens connector (Plug:E4-191J-100)



VIDEO optionally

12V IN connector (Plug:R03-P3F)



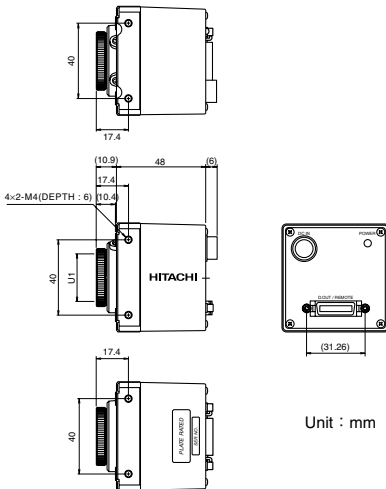
Pin No. Signal

A GND

B +12 V IN

C N.C.

Dimensions KP-FD30CL



Unit : mm

Pin arrangement KP-FD30CL

DIGITAL OUT(Camera Link): 10226-5202JL(3M)

Pin no.	Symbol	Pin no.	Symbol
1	GND	14	GND
2	TXOUT 0 (-)	15	TXOUT 0 (+)
3	TXOUT 1 (-)	16	TXOUT 1 (+)
4	TXOUT 2 (-)	17	TXOUT 2 (+)
5	TXCLKOUT (-)	18	TXCLKOUT (+)
6	TXOUT 3 (-)	19	TXOUT 3 (+)
7	RX (+)	20	RX (-)
8	TX (-)	21	TX (+)
9	EXT-VD (-) [CC1 (-)]	22	EXT-VD (+) [CC1 (+)]
10	TRIG (+) [CC2 (+)]	23	TRIG (-) [CC2 (-)]
11	EXT-HD (-) [CC1 (-)]	24	EXT-HD (+) [CC1 (+)]
12	NC [CC4 (+)]	25	NC [CC4 (-)]
13	GND	26	GND

RX: Serial to Camera, TX: Serial to Frame Grabber

DC IN HR10A-10P-12S(01)

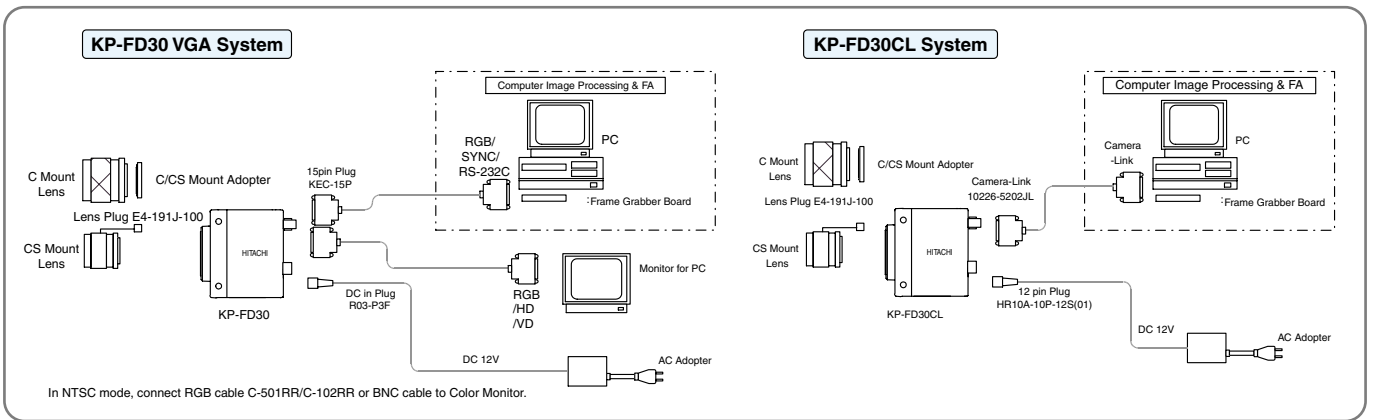
Pin no.	Symbol
1	GND(+12V)
2	+12V
3	GND(Y)
4	MONITOR OUT
5	GND
6	---
7	---
8	GND(TRIG)
9	(TRIG IN)
10	GND(+12V)
11	+12V
12	GND

Standard Composition

- Camera.....1
- Operating manual.....1
- C/CS mount adaptor.....1

Optional accessories

- (1) Lens (see operating manual)
- (2) DC input plug.....R03-P3F
- (3) Lens plug.....E4-191J-100
- (4) RGB cable(5m).....C501RR
- (5) RGB cable(5m).....C501RR



Hitachi Kokusai Electric Inc.

Head Office : 14-20,Higashi-Nakano 3-choume, Nakano-ku, Tokyo 164-8511, Japan
Phone : +81 (0) 10-6590-8755/8756, Fax : +86 (0) 10-6590-8757
URL: <http://www.hk-kokusai.com>

Beijing Office
Beijing Fortune Building 5, Dong San Huan Bei-U, 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) 330-334-4115, 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#11 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 : Wesikircher 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 5750P1
EN 29001/JIS Z9901