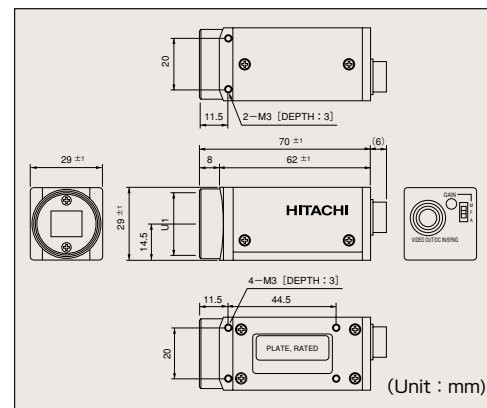


Specifications

Model	KP-F3
Imaging device	Progressive scan inter-line CCD
No. of pixels	699(H)x503(V)
Pixel size	7.4μm(H)x7.4μm(V)
No. of effective pixels	647(H)x485(V)
Sensing area	4.79mm(H)x3.59mm(V)
Signal format	EIA/Progressive scan system
Lens mount	C-mount
Flange focal distance	17.526mm
Hor. scanning frequency	15.734kHz
Vert. scanning frequency	59.94Hz/29.97Hz
Sync system	Internal/external (Automatic switching)
Int. sync scanning system	2:1 interlace (1/60s.) Non-interlace (1/30s.)
External sync input	HD/VD: 2 to 6Vp-p, negative, Input impedance: 1kΩ, Frequency deviation: ±1%
Video output	1.0Vp-p/75Ω, unbalanced, Video: 0.7Vp-p, sync: 0.3Vp-p, negative
Resolution	500TVL (H), 485TVL (V)
Sensitivity	400Lx, f/5.6, 3200K
Minimum illuminaton	0.2Lx, f/1.4, AGC=ON, Gamma=ON w/o IR cut filter
Signal-to-noise ratio	56dB
Electronic shutter speed	1/8000, 1/4000, 1/2000, 1/1000, 1/500, 1/250, 1/100s., OFF (normal exposure) Settable to any of the above modes by internal switches. Set to OFF at factory.
Gamma correction	Settable to 1 or correction by internal switches. Set to OFF at factory.
Frame/Field-On-Demand function	Settable to ON/OFF by internal switches. Settable to ONE trigger mode or fixed shutter mode. Set to OFF at factory.
Supply voltage	12VDC±1V
Power consumption	1.4W approx.
Ambient conditions	Operating: 10 to 50°C, 90%RH or less Storage: -20 to 60°C, 70%RH or less
Anti-vibration	10G (10 to 60Hz/ amplitude: 0.98mm const., 60 to 200Hz/acceleration const., amplitude: variable, 10 to 200Hz/XYZ, one sweep each, duration: 30 min. each)
Anti-shock	70G(Once each, top/bottom/left side/right side)
Dimensions	29(W)x29(H)x62(D)mm
Mass	100g approx.
Standard composition	Camera unit (w/IR cut filter)···1 Operation manual···1

Note: When the camera is used continuously, ambient temperature should be at 40°C or less to ensure stable performance.

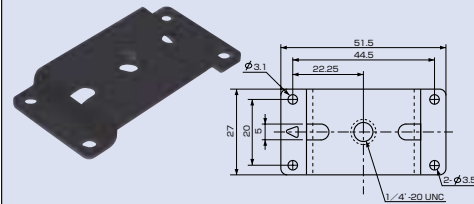
Dimensions



Optional Accessories

■ Tripod Adaptor, TA-F3

Use the tripod adaptor when fixing a camera with the screws for a tripod. Fix the tripod adaptor to the camera with the supplied screws (M3x6, 4pcs).

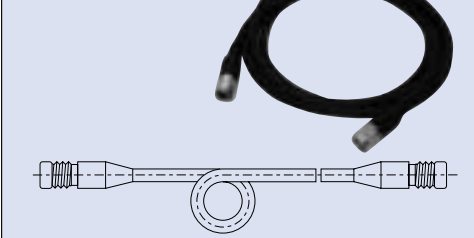


■ 12-pin Plug

HA10A-10P-12S(01)



■ Camera Cable

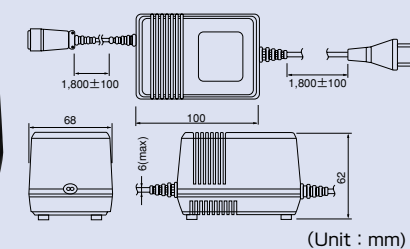
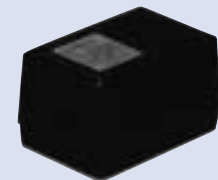


	Mould Type	Assembly Type	Shield Type
2m	C-201KSM	C-201KS	C-201KSS
5m	C-501KSM	C-501KS	C-501KSS
10m	C-102KSM	C-102KS	C-102KSS

※ Assembly type and shield type are manufactured upon receipt of order.

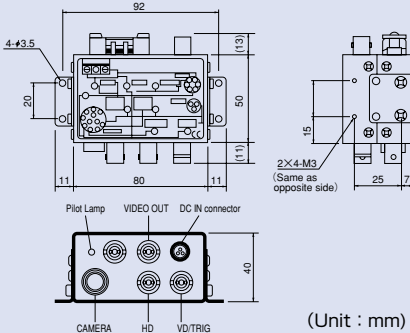
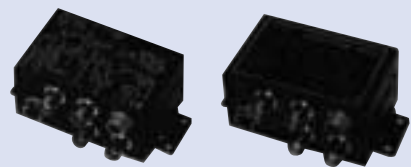
■ AC Adaptor, AP-130/UD-240A

The AP-130 or UD-240A is used to supply 12VDC power to the camera via the JU-F1 Junction Box. (3-pin power output connector)



■ Junction Box, JU-F1 or JU-M1A

Connect to a camera, using a camera cable.



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Specification are subject to change without notice.

HITACHI

Progressive Scan B/W Camera

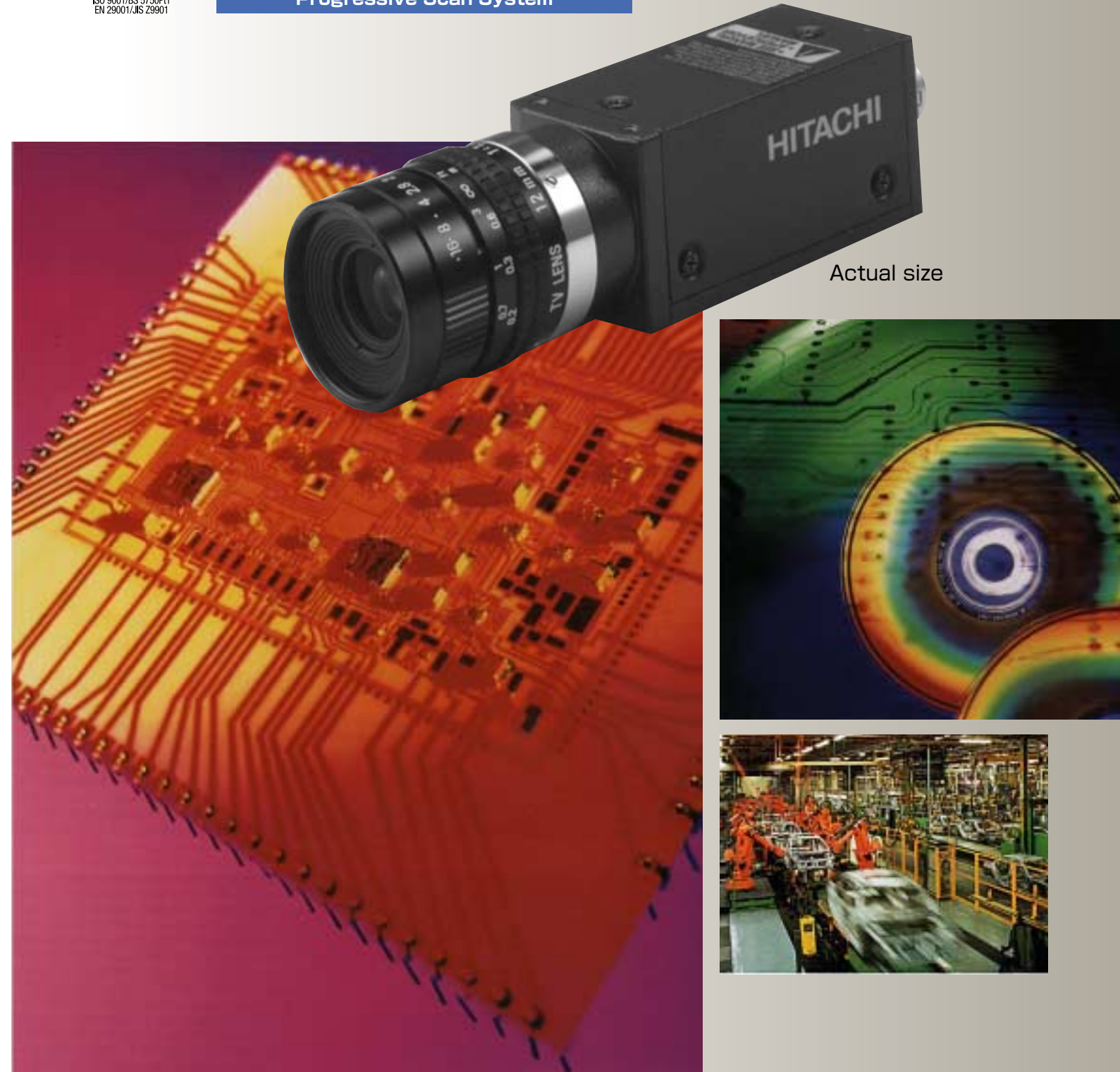
KP-F3

Progressive Scan System

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

CERTIFIED
JQA
MANAGEMENT SYSTEM
QUALITY SYSTEM

CERTIFICATE No.
JMI-0062
ISO 9001/BS 5750P11
EN 29001/JS 29901



The Hitachi KP-3 is a progressive scan type black-and-white camera using a 1/3-inch CCD sensor. The KP-3 features high performance, high sensitivity and high resolution. The KP-3 is provided with various functions including a multi-step electronic shutter, external sync (HD/VD), and Frame/Field-On-Demand function. A picture most suitable for image processing systems is ensured thanks to the use of CCD having square pixel.

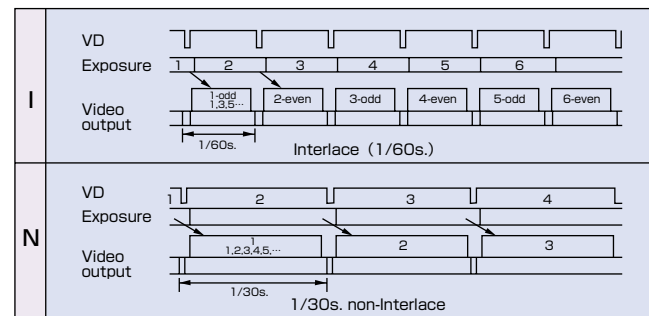
Major features

Frame shutter function

With the frame shutter function, higher resolution in the vertical direction is ensured for moving objects, compared with the conventional shutter function.

Frame output

The signals in all pixels can be delivered only in 1/30 seconds. (N: Non-interlace)

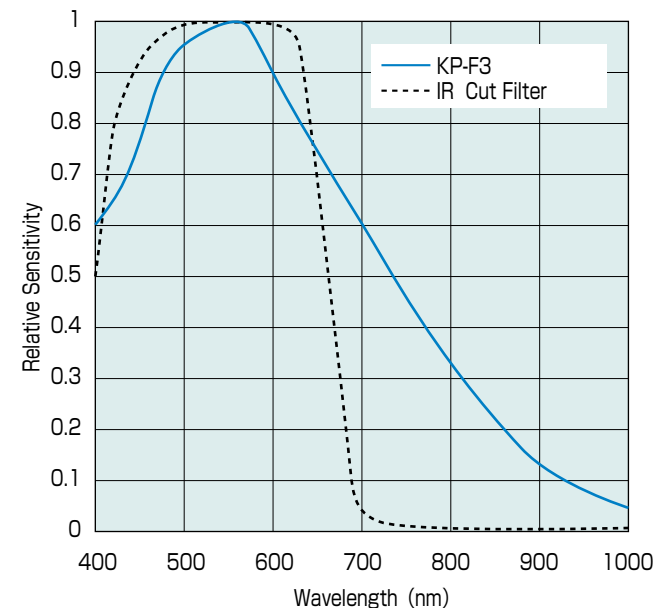


High resolution

The horizontal resolution of 500TV lines is ensured by using a high density CCD.

Spectral sensitivity characteristics

With the built-in IR cut filter, the KP-3 offers the spectral characteristic shown by the dotted lines. When the IR cut filter is removed, the spectral characteristic of up to infrared region is obtained.



Multi-step electronic shutter function

Eight shutter speeds can be selected from 1/100 to 1/80,000 seconds.

Internal or external sync mode/Interlace or non-interlace mode available

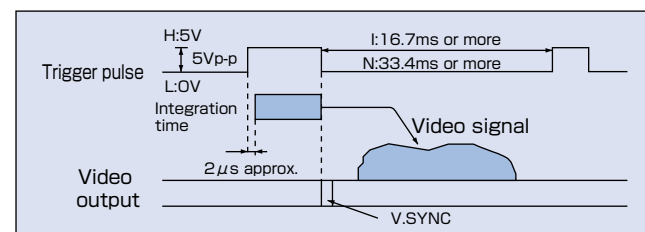
The sync mode and the scanning mode are automatically switched according to the supplied sync signal.

Frame/Field-On-Demand function

With the Frame/Field-On-Demand function, moving objects can be captured at an optional timing. Capture time can be adjusted by the external trigger signal and the shutter function.

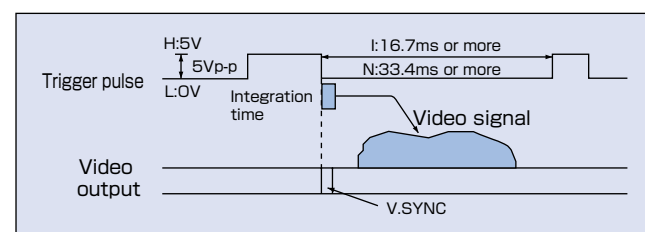
●ONE trigger mode

When one trigger pulse (TRIG) is supplied, exposure starts at the rising edge of the input pulse, and ends at the falling edge of the pulse. Then, the V-SYNC pulse is reset and pictures are delivered immediately. Pulse width is exposure time.



●Fixed shutter mode

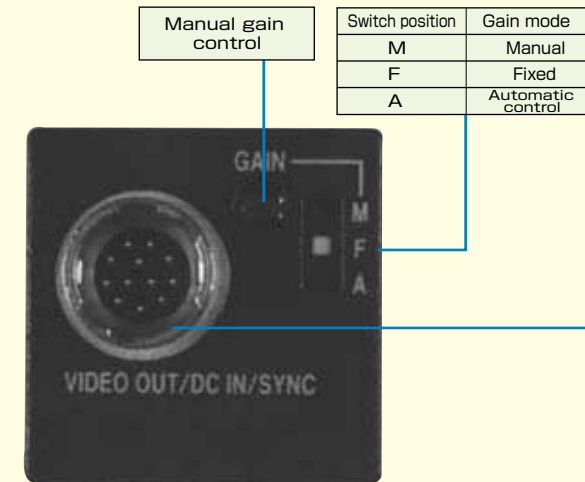
When one trigger pulse (TRIG) is supplied, exposure starts at the rising edge of the input pulse. Exposure time is fixed, and set by the electronic shutter switches on the camera. Video signals are delivered immediately after exposure time ends.



Speed	ONE trigger	1/2000	1/4000	1/8000	1/16,000
Switch setting					

Rear Panel

Switches and Input/Output Connector



Switch position	Gain mode
M	Manual
F	Fixed
A	Automatic control

Pin Arrangement of VIDEO OUT/DC IN/SYNC Connector (12-pin)

PIN No.	Internal sync	External sync		
		HD/VD	Frame/Field-On-Demand ONE trigger	Fixed shutter
1	GND	GND	GND	GND
2	+12V	+12V	+12V	+12V
3	VIDEO GND	VIDEO GND	VIDEO GND	VIDEO GND
4	VIDEO output (signal)	VIDEO output (signal)	VIDEO output (signal)	VIDEO output (signal)
5	-	HD GND	-	-
6	-	HD input (signal)	-	-
7	-	VD input (signal)	TRIG input (signal)	TRIG input (signal)
8	GND	GND	GND	GND
9	NC	NC	NC	NC
10	GND	GND	GND	GND
11	+12V	+12V	+12V	+12V
12	-	VD GND	VD GND	VD GND

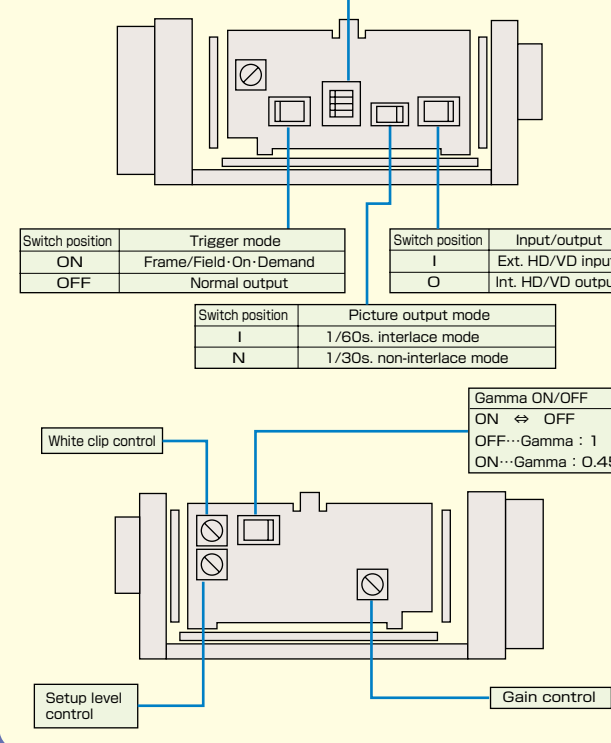
Note: Supply 12VDC in the range between 11 and 13V.

Internal Switch Setting

Electronic shutter speed setting

Speed	OFF	1/100	1/250	1/500
Switch position				
Speed	1/1000	1/2000	1/4000	1/8000
Switch position				

The faster the shutter speed, the more the effect. However, sensitivity is lowered. In this case, it is needed to adjust the lens iris or to increase the illumination. When the shutter is used, the flicker of the objects can be enhanced. In this case, use flickerless illumination like DC lamp.



Timing Chart

