Hitachi Kokusai Electric Inc.

HITACHI

HV-D20

HIGH-PERFORMANCE, MULTI PURPOSE
1/2" C-MOUNT 3CCD COLOR CAMERA

MAJOR FEATURE

● **C-mount**

The camera uses a C mount lens, which is the de facto standard in the industry.

● **One chip LSI**

Hitachi's leading edge processing technology (0.18 μm, internal core 1.8V drive, and 3 million gates) is contained on a single newly developed ultra LSI chip. The system is compact and consumes very little power.

● **High picture quality**

High resolution and sensitivity are achieved through the use of advanced CCD technology and three 1/2 inch 470,000-pixel CCD's. Together with the 12-bit A/D converter and 14-bit internal processor, a horizontal resolution of 800 TV lines and 62dB signal to noise (S/N) are obtained with the use of the new digital noise reduction system (DNR). Clear low noise images area obtained even in high gain mode.

● **6 color independent masking**

The user can adjust hue and saturation of the three primary color (R, G, B) and complementary color (Mg, Ye, Cy) independently.

● **Auto Shading Compensation (ASC)**

The ASC function can automatically compensate for color shading errors caused by interaction between the lens and prism assembly in C-Mount optical systems. Three modes of shading are provided and can be selected according to the cameras application, a color shading mode, a two-dimensional luminance-shading mode, or a flat shading mode.

● **Intelligent ALC (Auto Level Control)**

Unattended operation under a wide range of illumination levels is possible with the selection of the auto mode from the main menu. The built-in microprocessor controls the gain (AGC) function, the auto electronic shutter (AES), and auto iris function so the proper video level is maintained over a wide range of light levels.

● **RS-232C Interface**

Control of camera functions and storage of setup data can be performed with the use of a personal computer through the use of the RS-232C interface.

3CCD DIGITAL
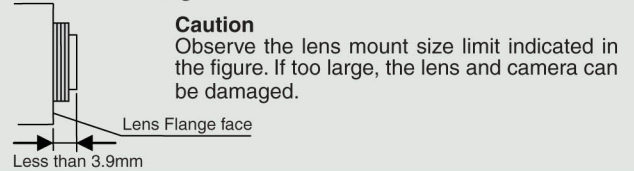
Specifications

Color system	PAL
Optical system	1/2" f1.6 prism
Imaging system	RGB system, 3CCDs
Imaging device	1/2" CCD
Total number of pixels	795(H)×596(V)
Effective number of pixels	752(H)×582(V)
Sensing area	6.35(H)×4.78(V)
Scanning system	2:1 interlace
Sync system	Internal/external (VBS, BBS or HD/VD)
Horizontal resolution	800 TV lines, luminance signal center
	(Y out and DTL off)
S/N	62dB type (DNR on), 59dB type (DNR off)
	(Y OUT, γ=1, DTL off, Gain 0 dB)
Standard sensitivity	2000 lx, F11
Minimum illumination	0.4 lx (50IRE, F1.6, GAIN+24dB, DIGITAL GAIN +12dB)
Vertical contour correction	2H
Lens mount	C mount (flangeback: 17.526mm in air)
Sensitivity selection	AGC (0 to + 24dB) or GAIN (0 to +24dB step 1dB or
	step 3dB on remote control menu)
CCD drive function	
Preset	1/60, 1/250, 1/500. 1/1,000, 1/2,000, 1/4,000
	1/10,000, 1/20,000, 1/40,000, 1/100,000 second
Lockscan	1/50.31 to 1/2024 second (step 1H),
	to 1/100,000 second (step approx. 10% video level)
AES	Off to 1/100,000 second
Long integration	1/25 to approx. 8 seconds (1 frame steps)
	(External image memory needed for continuous image)
Power supply voltage	12 V DC rated (Stable operation at 10.5 to 15V DC)
Power consumption	Approx. 5.0 W
Dimensions	65(W)×65(H)×130(D)
Mass	Approx. 450g (not including lens)
Operating ambient temperature	-10 to 45 ℃
Storage ambient temperature	-20 to 60 ℃

Input and output signals

Input signal conditions	
Genlock input (MULTI connector)	VBS 1.0 Vp-p±3 dB or black burst/75 Ω (sync 0.3±0.1Vp-p, burst 0.3±0.1Vp-p) HD/VD 2 to 5 Vp-p, negative
External trigger input (MULTI connector)	Low 0 VDC, High 2 to 5 VDC
Serial data input (REMOTE connector) *1	1.5 Vp-p±3dB/High (when connected to RC-Z3, JU-C20, JU-Z2) RS-232C level (when connected to personal computer)
Output signal ratings	
Component video output (BNC, MULTI connector)	VBS 1.0 Vp-p/75Ω
Y/C output (MULTI connector)	Y : 1.0 Vp-p/75Ω C : 0.3 Vp-p (burst)/75Ω
Component output (MULTI connector)	Y : 1.0 Vp-p/75Ω R-Y : 0.7 Vp-p/75Ω B-Y : 0.7 Vp-p/75Ω
RGB output (MULTI connector)	R : 0.7 Vp-p/75Ω G : 0.7 Vp-p/75Ω B : 0.7 Vp-p/75Ω
Sync outputs (MULTI connector)	HD/VD : 2 Vp-p/75Ω Sync : 2 Vp-p/75Ω
Serial data output (REMOTE, MULTI connector) *1	1.5 Vp-p/Low (when connected to RC-Z3, JU-C20, JU-Z2) RS-232C level (when connected to personal computer)
Lens iris control output (Lens connector, manual override)	1.5V (closed) to 5.5V (open) or 2.5V (closed) to 7.5V (open) Selectable

*1 Set internal switches according to connected equipment.

When lens using

Caution
Observe the lens mount size limit indicated in the figure. If too large, the lens and camera can be damaged.

Lens Flange face
Less than 3.9mm

Pin arrangement

LENS connector
(plug : E4-191J-100)

Pin.No.	Signal
1	UNREG + 12V OUT
2	NC
3	IRIS CONT/VIDEO
4	GND

REMOTE connector
(plug : HR 10A-7P-4P)

Pin.No.	Signal
1	UNREG + 12V OUT
2	RXD/SD IN
3	TXD/SD OUT
4	GND

12V IN connector
(plug : R03-P3F)

Pin.No.	Signal
A	GND
B	UNREG + 12V
C	NC

Hi-Density 15-pin connector
(Plug : KEC-15P (Housing))
(Plug : JK-SP2140 (Pin contact))
(Plug : JK-C151C (Cover, inch))
(Plug : JK-C152C (Cover, miri))
(Screw : No.4-40UNC (inch))
(Screw : M2.6x0.45 (miri))

Pin.No.	Signal	Pin.No.	Signal	Pin.No.	Signal
1	R/R-Y/C OUT	6	VIDEO GND	11	GND
2	G/Y/Y OUT	7	VIDEO GND	12	RXD
3	B/B-Y/VBS2	8	VIDEO GND	13	HD IN/HD OUT/SYNC OUT
4	WE OUT	9	UNREG + 12V IN	14	VD IN/VD OUT/GL IN
5	GND	10	TRIG IN	15	TXD

Dimension

HITACHI HV-D20

(Top)

(Bottom)

2-1/4" UNC (DEPTH:7)

2-1/4" UNC (DEPTH:7)

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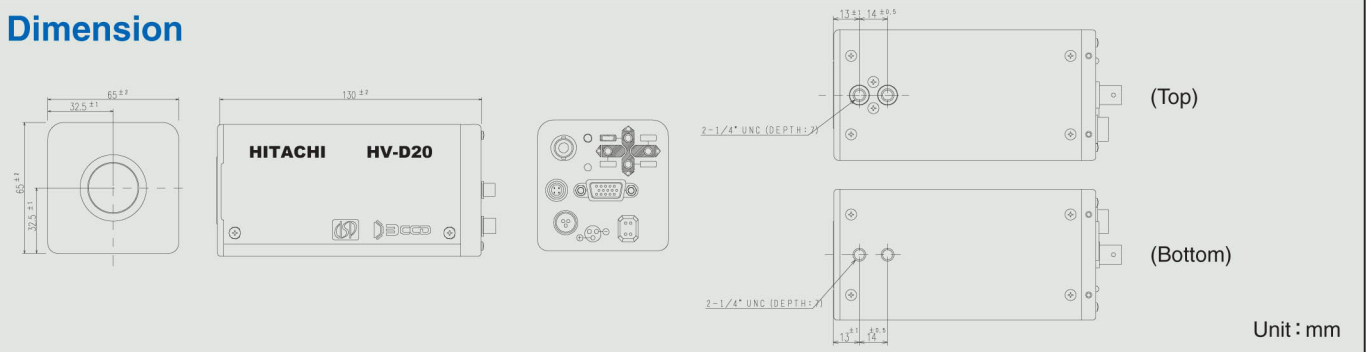
⚠ **CAUTION :** To ensure safe operation, please read the instruction manual before using this product.

These Specifications are subject to change without notice.

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

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