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HITACHI

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 9002/BS 5750Pt2
EN 29002/JIS Z9902

DIGITAL KP-D50

Digital Processing Color Camera

For observation, TV conference and image processing systems



The Hitachi KP-D50 color camera is a single chip CCD color camera provided with RGB outputs and employs the digital signal processing technology to control various correction functions, resulting in providing a high quality picture.
A 410,000-pixel (NTSC) / 470,000-pixel (PAL) CCD is used, and a sharp, clear picture is ensured even under low illumination level.
Further, high sensitivity as well as high resolution are ensured.
As various settings including auto iris, auto white balance and external synchronization (HD and VD inputs) can be remotely controlled, the KP-D50 can be used with an image processing system or other CCTV systems.

Features

●Most suitable for image processing system
RGB outputs are provided. color images can be processed by converting these signals to digital signals.

●High sensitivity and high resolution
The minimum illumination of 2 1x (f 1.2, AGC : 21dB) and the horizontal resolution of 470 TV lines are realized by using a high density interline CCD with micro lenses.

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Features

●Digital processor

The 2H enhancer and the contour compensation are realized by digital processing technology.
Therefore, a clear picture with high signal-to-noise ratio is obtained. Further, an optimum picture is obtained, because the picture quality control parameters can be adjusted according to the corresponding menu screens. The contents of the menus can be remotely controlled from a PC. (Optional software is needed.)

●External synchronization mode

As the external synchronization mode of HD/VD inputs system is available, the KP-D50 is most suitable for system operation.
The horizontal sync phase can be adjusted according to the adjustment menu screen. They can also be adjusted from a PC. (Optional software is needed.)

●Y/C outputs (switchable from RGB outputs)

As the luminance (Y) signal and the chrominance (C) signal are delivered separately, a sharp picture is obtained without deteriorating the response of the Y signal to fine patterns.

●Automatic electronic shutter (AES)

The AES is provided and the shutter speed from normal (1/60s NTSC, 1/50s PAL) to 1/10,000 second is available.
An optimum output signal level is ensured even when a fixed iris lens is used.

●AES and auto iris lens (AES & LENS)

When an auto iris lens is used in the AES & LENS mode, the CCD shutter speed becomes shorter until the set limit when illumination becomes brighter. Therefore, a sharp, clear picture is obtained for a moving object. The normal sensitivity is ensured at low illumination, because the CCD shutter is returned to the normal speed when illumination becomes dark.
This feature is most useful for outdoor operation.

●Backlight correction

The backlight correction function is available both for an auto iris lens to which a video signal is input and an auto iris lens to which an iris control voltage is input. This correction is made according to the conditions, because a photometric region for backlight correction can be selected.

●Auto white balance control

White balance is automatically controlled in the auto tracking white balance mode (ATW mode) by taking out white signals in a screen in the range from 2500K to 8000K. In the preset white balance mode (AWC mode), white balance is maintained by shooting a white object.
In the manual white balance mode (MANUAL mode), R gain and B gain can be controlled manually.

●Text display

One line of up to 24 characters can be displayed at the desired position on the screen. (Character is not displayed for RGB outputs.)

●Picture quality adjustment menu

The adjustment of each item and the mode selection can be made by five keys on the rear according to the menu displayed on the screen. (For adjustment items, see specification). Menu is not displayed for the RGB outputs.

●Remote control (Built-in RS-232C interface)

Each item in the picture quality adjustment menu can be remotely controlled via the RS-232C interface by using the optional picture quality adjustment software and a PC.
(A RS-232C interface cable with an optional remote plug is needed.)

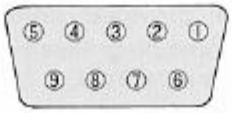
D-sub connector

●RGB or Y/C can be selected by switch.

Pin No.	RGB mode	Y/C mode	Impedance
1	GND	GND	—
2	GND	GND	—
3	R OUT	VIDEO OUT	75Ω
4	G(SYNC*) OUT	Y OUT	75Ω
5	B OUT	C OUT	75Ω
6	VIDEO OUT	VIDEO OUT	75Ω
7	SYNC OUT	SYNC OUT	75Ω
8	HD (IN)	HD (IN)	75Ω
9	VD (IN)	VD (IN)	75Ω

*The sync signal of the G signal can be turned on or off by switch.

●D-sub connector pin arrangement.



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Specifications

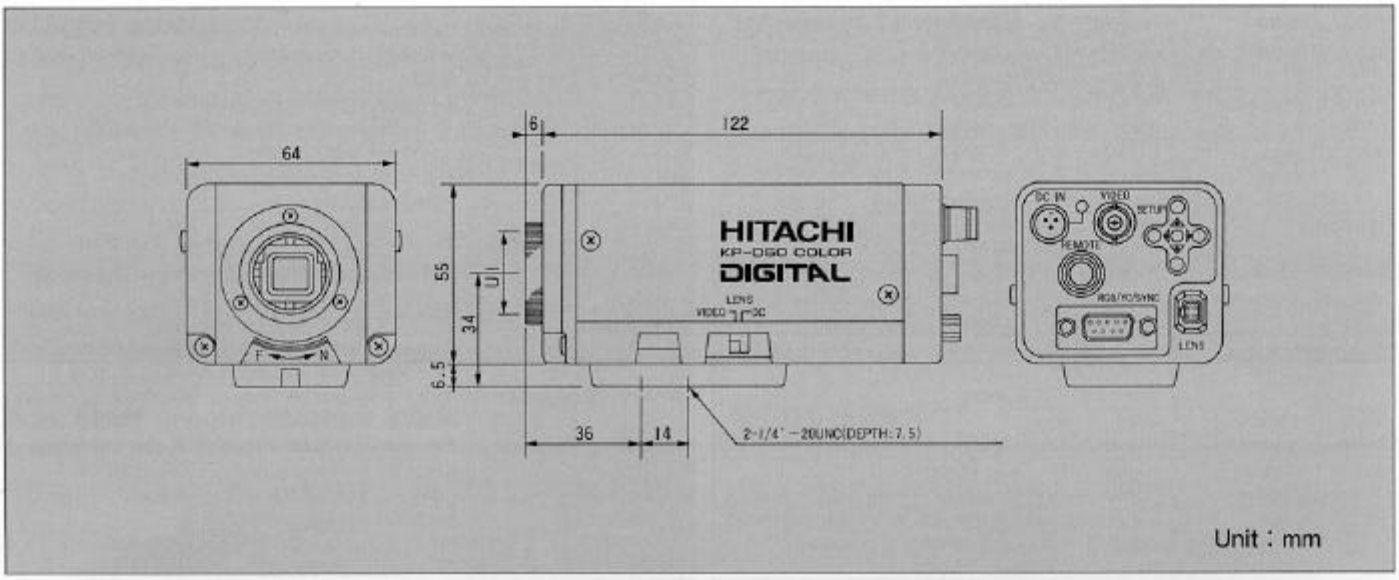
Imaging device	Interline CCD with micro lenses
No. of effective pixels	(NTSC) 768(H) × 494(V) (PAL) 752(H) × 582(V)
No. of total pixels	(NTSC) 811(H) × 508(V) (PAL) 795(H) × 596(V)
Sensing area	(NTSC) 7.55(H) × 6.45(V) (mm) (PAL) 7.95(H) × 6.45(V) (mm) Equivalent to 1/2" pickup tube
Unit cell size	(NTSC) 8.4(H) × 9.8(V) (μm) (PAL) 8.6(H) 8.3(V) (μm)
Scanning system	2:1 interlaced
Scanning frequencies	Hor. : (NTSC) 15.734kHz (PAL) 15.625kHz Vert. : (NTSC) 59.94kHz (PAL) 50Hz
Resolution	Hor. : (NTSC) 470TVL or more (PAL) 460TVL or more Vert. : 350TVL or more
Signal-to-noise ratio	48dB or better
Minimum illumination	2 lx (f1.2, AGC : 21dB)
Illumination range	2 to 100,000lx (auto iris lens)
Signal processing	Digital processing (Input : 9 bits, output : 8 bits)
Output signals	Composite video signal : 1.0Vp-p/75Ω unbalanced Video : 0.7Vp-p, positive or negative Sync : 0.3Vp-p, negative Burst : 0.3Vp-p, 8 cycles or more Subcarrier : (NTSC) fsc = 3.579545MHz (PAL) fsc = 4.433618MHz Connector : BNC, D-sub (9-pin)
RGB and Y/C outputs (switch selectable) RGB outputs Y/C outputs	 RGB : 0.7Vp-p, positive Impedance : 75Ω, unbalanced Sync signal : G output only 0.3Vp-p, negative, ON/OFF switch Y : 1.0Vp-p Video : 0.7Vp-p, positive Sync : 0.3Vp-p, negative C : 0.3Vp-p (Burst) Impedance : 75Ω, unbalanced connector : D-sub, 9-pin Factory setting : RGB output and SYNC OFF (G output)
Sync signal output	SYNC : 4Vp-p/75Ω, negative Impedance : 75Ω, unbalanced connector : D-sub, 9-pin
Sync system	Int./Ext. (Automatically switched) External sync input HD : 4Vp-p/75Ω, negative (NTSC) : f_H : 15734 ± 0.5Hz (PAL) : f_H : 15625 ± 0.5Hz VD : 4Vp-p/75Ω, negative (NTSC) : 60Hz (PAL) : 50Hz Connector : D-sub, 9-pin
AGC	ON/OFF switchable Maximum gain (ON mode) : 12, 15, 18, 21dB (factory setting) Gain setting (OFF mode) : 0, 3, 6, 12dB or continuously variable
AES (Automatic electronic shutter)	(1) (NTSC) 1/60 (normal) to 1/10,000s (PAL) 1/50 (normal) to 1/10,000s (2) Shutter speed limit in AES & LENS mode . Normal to 1/1000s, . Normal to 1/2000s or . Normal to 1/4000s
CCD shutter speed	Selectable from following speeds (NTSC) 1/60s, 1/100s, 1/250s, 1/500, 1/1,000s, 1/2,000s, 1/4,000s, 1/10,000s (PAL) 1/50s, 1/120s, 1/250s, 1/500s, 1/1,000s 1/2,000s, 1/4,000s, 1/10,000s
Backlight correction	Backlight correction can be made by the standard automatic backlight correction function or by selecting the desired photometric region from 7 regions. The contrast correction function (black stretch and white suppresion) can also be used.

Output for auto iris lens	Switchable between video signal input system and iris control voltage input system (galvanometer type) (1) Video signal input system Video signal : 1Vp-p/high impedance Power supply : 12VDC, 40mA max. (2) Iris control voltage input system Impedance Damper : 1150Ω ± 10% Driver : 190Ω ±10% For recommended lenses, see operation manual. Connector : Square-shape, 4-pin
Text display	Up to 24 alphanumerics (one line) Display position can be optionally determined. Character is not displayed for RGB outputs.
White balance control	Auto tracking white balance (ATW) mode, Preset white balance (AWC) mode, or Manual white balance (MANUAL) mode (R/B gains settable) Color temperature range : 2500K to 8000K
Picture quality adjustment menu (Menu is not displayed for the RGB outputs.)	Picture quality setting and mode selection can be made according to menu display. (1) Text display ON/OFF switching, text edit, position setting. Character is not displayed for RGB outputs. (2) Level control mode switching • Auto iris of lens • AES • AES & LENS (3) Level detection area selection (4) Iris level setting (5) AGC ON/OFF switching, gain setting (6) White balance control mode selection, manual R, B gain setting. (7) Shutter speed selection (8) External sync mode selection, horizontal sync phase adjustment (9) Gamma correction ON/OFF switching (10) Video signal polarity switching (negative or positive) (11) Contrast correction (black stretch, white suppression) ON/OFF switching (12) Chroma level setting (13) Black level setting (14) Contour compensation amount setting
Remote control	Each item in the picture quality adjustment menu can be remotely controlled via the RS-232C interface by using the optional picture quality adjustment software and a PC. Connector : Round shape, 12-pin
Lens mount	C-/CS-mount
Camera mount	Bottom, 1/4", 20UNC
Ambient conditions	−10 to 50°C, 95% RH or less *
Storage conditions	−20 to 60°C, 95% RH or less
Anti-vibration	3G or less Amplitude : 10 to 55Hz Duration : 30 min Directions : X, Y, Z (Do not apply strong vibration for a long time.)
Power supply	12VDC ± 5%
Power consumption	410mA (including 40mA for auto iris lens)
Dimensions	64(W) × 55(H) × 122(D) mm (Excluding lens and protrusions)
Mass	400g approx. (Excluding lens)
Composition	Camera 1 Operation manual 1 Lens plug (E4-191J-100) 1 DC input plug (R03-P3F) 1
Optional accessories	Lenses RGB output plug Remote plug, HR10A-10P-12P (01) Camera mount adaptor, TA-231 (For ceiling mount) Remote adjustment software

* For stable operation, be sure to use the camera at 40°C or less when the camera is to be used for a long time continuously.

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Dimensions



Unit : mm

Note

This specification is subject to change without notice for improvement, etc. When placing an order, make sure that this specification is the latest. Hitachi Denshi, Ltd. shall guarantee that these products comply with the Hitachi Denshi's standard warranty conditions for shipment, and carry out inspection and quality control within the range necessary for providing the guarantee.

Hitachi Denshi,Ltd.

Head Office : 1-Banchi Kanda-Izumi-cho, Chiyoda-ku, Tokyo, 101 Japan
Telephone:(03)6821-6391,Fax(03)6821-6394

Hitachi Denshi America,Ltd.

Head Office : 150 Crossways Park Drive, Woodbury, New York 11797, U.S.A.
Telephone:(516)921-7200, Fax:(516)-496-3718, Telex:510-221-1899
Chicago Office : 450 East Devon Ave., suite 110 Itasca, IL 60143, U.S.A.
Telephone:(708)250-8090, Fax:(708)250-8254
Los Angeles Office : 371 Van Ness Way, Suite 120 Torrance, California 90501, U.S.A.
Telephone:(213)328-6116, Fax:310-328-6252
Dallas Office : 2100 West N.W.Highway Suite 1145 Grapevine, Texas 76051, U.S.A.
Telephone:(817)488-4520, Fax:(817)488-4714
Atlanta Office : 3039 Amwiler Road, Suite 165 Atlanta, Georgia 30360, U.S.A.
Telephone:(404)242-2836, Fax:(404)263-8836
Parts Center : Telephone:(516)921-7200

Hitachi Denshi,Ltd. (Canada)

Head Office : 65 Melford Drive, Scarborough, Ontario M1B 2G6, Canada
Telephone:(416)299-0900, Fax:(416)299-0450, Telex:065-24334
Eastern Office : 6800-H Trans Canadienne St.Laurent, Quebec, H4S 1M5, Canada
Telephone:(514)332-0997, Fax:(514)335-1994, Telex:562-4768
Ottawa Office : 9 Antares Drive, Nepean, Ontario, K2E 7W5 Canada
Telephone:(613)727-0920, Fax:(613)727-3959

Hitachi Denshi (Europa) GmbH

Head Office : Weiskircher Strasse 66, Jügesheim D-6050 Rodgau, Germany
Telephone:06106-6992-0, Fax:06106-16906, Tlx:417-049

Hitachi Denshi (U.K.) Ltd.

Head Office : 13/14 Garrick Industrial Centre, Irving Way, Hendon, London, NW9 6AQ United Kingdom
Telephone:(01)202-4311, Fax:(01)-202-2403, Telex:27449
Leeds Office : Bloomfield House, Selby Road, Garforth Leeds, Ls 25, lnb, united Kingdom
Telephone:0113-2874400, Fax:0105-874360

Hitachi Denshi,Ltd.

Singapore Branch : 10 Anson Road #20-15 International Plaza Singapore 0207
Telephone:65-223-0030, Fax:65-223-0909
Beijing Office : Beijing Fortune Building 5, Dong San Huan Bei-lu, Chao Yang District, Beijing, China
Telephone:501-4932/4933, Fax:501-4934

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