

RoHS Compliant  
Directive 2002/95/EC

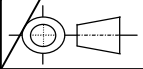
# CCD Color Camera

## KP-D5010

### Specifications

The first edition

Hitachi Kokusai Electric Inc.

-	09.12.14	(first edition)						Fukuzumi	Fukuzumi
SYMBOL	DATE	DESCRIPTION						(DRAWN)	DESIGNED
MODEL	<b>KP-D5010</b>			TOLERANCE	Prod. Code - Order No.				
DESIGNED	DATE	APPROVED	DATE	UNIT	TITLE	<b>KP-D5010 Specifications</b>		REV.	
CHECKED	DATE	STORED	DATE					SCALE	0
Hitachi Kokusai Electric					DWG. No.	<b>E400214540</b>		SHEET 1 / 10	

## 1. General

KP-D5010 is High Sensitivity and Resolution 1CCD Color camera that adopts advanced digital signal processing technologies.

EX view HAD CCD features 380,000 effective picture elements that deliver clear images even under low light conditions. New Digital Signal Processing technology enables fully exhibiting the outstanding sensitivity and resolution capabilities.

Integration sensitivity boost, Color-B/W Mode Switching, Tone Correction, Auto-Iris, Adaptive Back Light Control, Auto-White Balance and many more functions are provided.

## 2. Principal features

### (1) High resolution

Realize High Horizontal Resolution (Color mode:560 TV lines, B/W mode: 580TV lines) by adopting new digital signal process technology.

### (2) High sensitivity and S/N ratio

New Adaptive Noise Reduction can improve the S/N ratio without losing motion resolution.

### (3) Adaptive Image Enhancer

It is possible to observe it even if there is a luminance difference in the effect of Adaptive Image Enhancer of the Back Light Control.

### (4) Adaptive Fog Reduction

The removal effect of the fog is obtained by the Adaptive Fog Reduction function.

### (5) Dial type back focus adjustment

An adjustable flange back mechanism is provided for optimum back focus of the lens.

### 3. Specifications

#### (1) Pickup element

: Interline transfer type CCD (with on-chip microlenses)

Total pixels : 811(H) × 508(V)

Effective pixels : 768(H) × 494(V)

Scanning area : 6.45(H) × 4.84(V) mm

Unit cell size : 8.4(H) × 9.8(V) μm

#### (2) Scanning system

: 2:1 interlace

Frequency : Horizontal : 15.734kHz

Vertical : 59.94Hz

#### (3) Sync system

: Internal / External (HD/VD)

#### (4) Video signal output

: Composite video : 1.0 Vp-p/75Ω unbalanced

Video : 0.7 Vp-p positive or negative  
(negative picture)

Sync : 0.3 Vp-p negative

Burst : 0.3 Vp-p more than 8 cycles

Subcarrier frequency : 3.579545 MHz±100Hz

Connector : BNC type

#### (5) S/N ratio : More than 53 dB

(AGC off (-6dB), enhancer and gamma off, DNR: High)

#### (6) Resolution

: Horizontal 560 TV lines (Color)

580 TV lines (Monochrome)

: Vertical 350 TV lines

\* High Resolution mode

#### (7) Scene illumination range

: 0.0002 to 100,000 lx (F1.2, Auto-iris lens)

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## (8) Minimum illumination

Color : 0.03 lx (F1.2, 3200K, AGC:maximum)  
 Monochrome : 0.004 lx (F1.2, 3200K,  
 AGC:maximum, Tungsten lamp)

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## (9) AGC : On/Off selectable

Off (Manual : -6dB ~ 49dB)  
 On (Max gain : -6dB ~ 49dB)

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## (10) Electronic shutter speed

: Selectable in 11 steps  
 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/5000, 1/10000,  
 1/20000, 1/50000, 1/100000 second,  
 and Auto

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## (11) Integration multiple setting

: Automatic or Manual (fixed)  
 Automatic : 2, 4, 6, 8, 10, 12, 16, 32, 64, 128 times  
 Manual : 2, 4, 6, 8, 10, 12, 16, 32, 64, 128, 192, 256, 320,  
 384, 448, 512 times

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## (12) Back Light Control

: On/Off switchable  
 Sensing areas : selectable from 9 areas  
 Adaptive Image Enhancer  
 OFF : mode Off  
 ON : automatic Back Light Control

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## (13) Auto-iris lens outputs

: Video signal input type lens  
 (a) Luminance signal : 1.0 Vp-p/high impedance  
 Power supply : 12 VDC 60 mA  
 (b) Iris control voltage input (galvanometer) type lens  
 Coupling coil impedance  
 Damper : 1150  $\Omega$   $\pm$  10%  
 Drive : 190  $\Omega$   $\pm$  10%

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## (14) White balance

: Selectable auto-tracking (ATW), preset (AWC),  
 manual (MANUAL) ( R/B gain adjustment )

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**(15) Text display**

: One line of up to 24 alphanumeric characters  
Selectable display position

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**(16) Noise reduction**

: Selectable On/Off/High/Low/FIX  
High : Adaptive noise reduction (S/N ratio priority mode)  
Low : Adaptive noise reduction (motion resolution priority mode)  
FIX : normal noise reduction mode

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**(17) Digital zoom**

: Up to 4×, selectable enlarge position  
Resolution loss with magnification (approx. 50 % at 2× zoom)

**(18) Color-Monochrome (B/W MODE)**

Off : Color always mode  
On : Monochrome always mode  
Auto : Mode selected in response to brightness.  
(Can be set for high, medium or low)

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**(19) Adaptive Fog Reduction**

: Off : Fog Rejection mode OFF  
On : Adjust foggy picture automatically  
Manual : Adjust foggy picture manually

**(20) Scene file function**

: It is possible to memorize Five camera settings.  
(changeable by remote control)

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**(21) Picture adjust menus**

: Modes and settings can be selected and adjusted from on-screen menus

- |                             |   |
|-----------------------------|---|
| (1) Text display            | On/Off, text edit, display position         |
| (2) Backlight compensation  | Selectable on/off                           |
| (3) Level detect            | area Selectable                             |
| (4) Video level             | Adjustable                                  |
| (5) Adaptive Image Enhancer | Selectable on/off                           |
| (6) AGC                     | Selectable on/off, gain selectable          |
| (7) Shutter speed           | Selectable                                  |
| (8) Sensitivity             | Selectable auto/manual, times selectable    |
| (9) Color-Monochrome        | Selectable mode                             |
| (10) White balance          | Selectable mode                             |
| (11) Digital zoom           | Adjustable Wide (standard) to Tele (max.4×) |
| (12) Gamma correction       | Selectable on/off                           |
| (13) Chroma level           | Adjustable                                  |
| (14) Black level            | Adjustable                                  |
| (15) Enhancer               | Adjustable                                  |
| (16) Video signal polarity  | Selectable negative/positive                |
| (17) Noise reduction        | Selectable off/High/Low/FIX                 |
| (18) Burst signal           | Selectable on/off                           |
| (19) Adaptive Fog Rejection | Selectable off/Auto/Manual                  |
| (20) Internal/External      | Selectable (HD/VD)                          |
| (21) External H-PHASE       | Adjustable                                  |
| (22) Lens                   | Selectable DC/VIDEO                         |
| (23) CAMERA RESET           | Return to default setting                   |
| (24) Scene file             | Selectable                                  |

**(22) Power supply**

: DC12V±10%

**(23) Power consumption**

: Approx 190mA

**(24) Ambient temperature**

: -10 to +50 , 30 to 80 % RH

**(25) Storage ambient**

: -20 to +60 , 20 to 90 % RH

**(26) Vibration endurance**

: Less than 24.5 m/s<sup>2</sup>, 10 to 55 Hz, 30 minutes each on XYZ axes  
(Do not subject to strong vibration for long periods of time.)

**(27) External dimensions**

: 64 (W) × 63 (H) × 64 (D) mm  
(not including lens and protrusions)

(28) Mass : Approx. 270g (not including lens)

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(29) Supplied equipment  
: Camera (with tripod adaptor)  
Operating instructions

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(30) Optional accessories  
: Lens (see operating instructions)  
Lens plug (E4-191J-100)  
Remote plug (HR10A-10P-12P(01))

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KP-D5010 External view :

SCALE : NTS  
UNIT : mm

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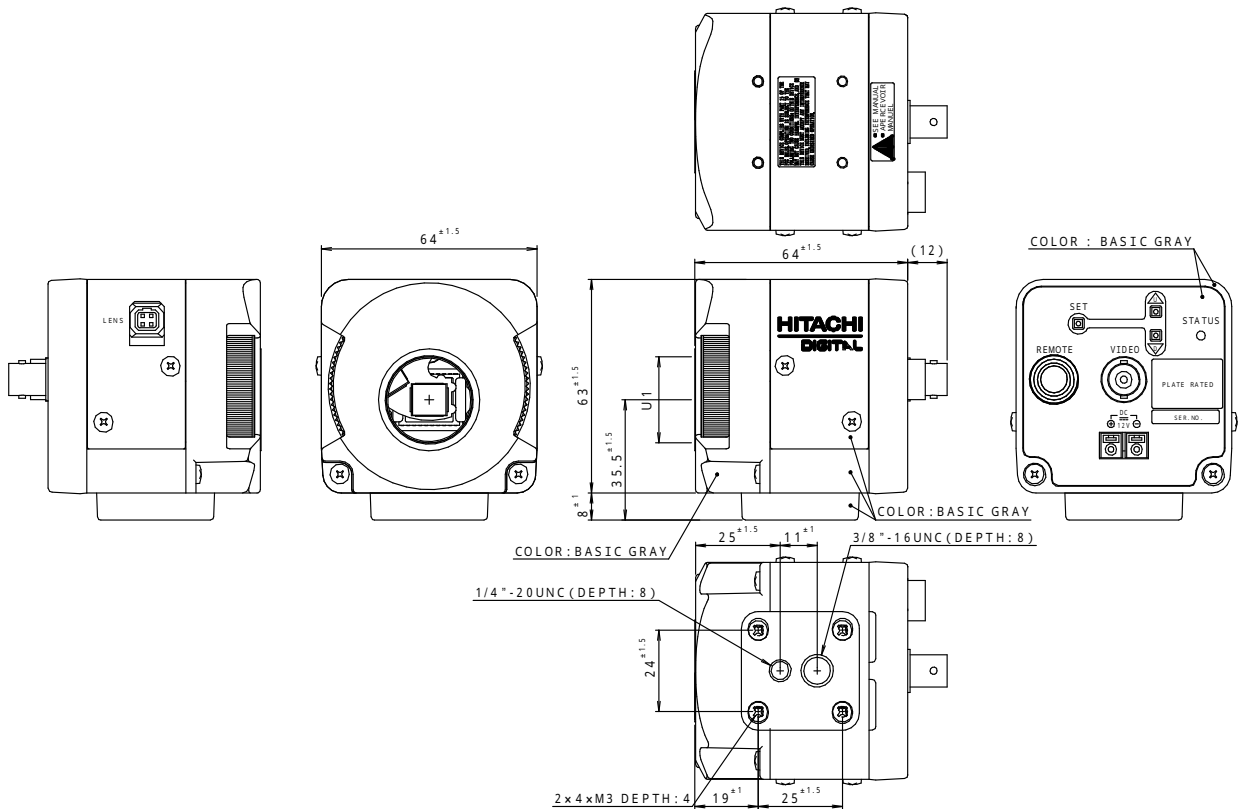
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**Notice:**

These specifications are subject to change without prior notice due to product improvement.

Confirm the most recent specifications at time of order.

Hitachi Kokusai Electric certifies this product complies with the standard warranty conditions of Hitachi Kokusai Electric , and that quality control is implemented to the extent required to comply with these conditions.

**Warranty and service:**

- (1) The guarantee period is one year after the data purchase. However, the defects due to erroneous use or intentional act are excluded.
  - (2) As the defect after expiration of the guarantee period, where product repair is possible, repair will be performed at charge.
  - (3) The present Warranty pertains only to the camera unit. Secondary malfunctions attributable to camera failure as well as expenses incurred by disassembly and reassembly of the related system, are beyond the scope of this Warranty.
  - (4) Compensation for loss of business, loss or damage to software, database and other contingent losses are beyond the scope of this Warranty.
  - (5) Hitachi Kokusai Electric Inc. is not liable for the losses caused when the equipment is used in a system, use for business trades, production process, medical fields, crime prevention applications, etc.
  - (6) The parts used in the equipment have their respective lives. The lives of such parts will be shortened under the environments of high temperature or high humidity.
- When the stable operation is required for a long time, It is recommended to perform periodical maintenance and inspection every year or every two years.

