

CCD Color Camera

KP-D20A

Specifications

Hitachi Kokusai Electric Inc.

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1. General

The KP-D20A is a single CCD type color camera utilizing digital signal processing in addition to digital control of the various correction and adjustment functions to enable high quality images.

The high density CCD comprises 410,000 picture elements NTSC (470,000 PAL) and provides clear pictures even under low illumination, in addition to high sensitivity and resolution.

Important functions, including auto iris and auto white balance, allow use in a wide range of CCTV systems for image processing, surveillance and other applications.

2. Principal features

(1) High sensitivity and resolution

The high density interline type CCD sensor with on-chip micro lenses enables low-light pickup down to 1.5 lux (F 1.2 lens, AGC maximum) and horizontal resolution of 480 TV lines (NTSC), 470 TV lines (PAL).

(2) Digital signal processor (DSP)

Digital processing includes 2 H enhanced and contour correction to deliver clear pictures and high signal to noise ratio (S/N). Picture control parameters can also be adjusted with the aid of on-screen menus, thus enabling optimum adjustments to match the application.

(3) Electronic shutter

The electronic shutter can be set in 10 steps from standard (off setting) 1/60 second (1/50 PAL) to 1/30000 second. Auto electronic shutter (AES) operates to 1/180000 second. Even with a fixed iris lens, the shutter speed responds to the amount of light to keep the signal output at optimum level.

(4) Back light compensation

Back light compensation can operate with either a video signal or control voltage input type auto-iris lens. The sensing area can also be selected according to usage conditions.

(5) Three white balance modes

Auto-tracking white balance (ATW) functions by detecting white color in the scene at a color temperature from 2500 to 8000 Kelvin. Auto-white balance control (AWC) is a preset type function whereby white color in the scene is detected and white balance is automatically adjusted, then the setting status is stored. Manual white balance allows adjusting red and blue gain manually according to requirements.

(6) Text display

Up to 24 alphanumeric characters can be displayed at either the top or bottom of the screen.

(7) Digital zoom

The screen can be smoothly enlarged up to 4 times.

(8) Picture quality menus

A wide variety of modes and parameters can be selected from menus and adjusted by using rear panel key buttons.

3. Specifications

(1) Pickup element : Interline transfer type CCD (with on-chip micro lenses)

Total pixels	NTSC: 811 (H) × 508 (V) PAL : 795 (H) × 596 (V)
Effective pixels	NTSC: 768 (H) × 494 (V) PAL : 752 (H) × 582 (V)
Scanning area	NTSC: 4.88(H) × 3.66 (V) mm PAL : 4.89 (H) × 3.64 (V) mm (equivalent to 1/3-inch pickup tube)
Unit cell size	NTSC: 6.35 (H) × 7.4 (V) μ m PAL : 6.5 (H) × 6.25 (V) μ m

(2) Scanning system : 2:1 interlace

Frequency : Horizontal	NTSC: 15.734 kHz PAL : 15.625 kHz
Vertical	NTSC: 59.94 Hz PAL : 50 Hz

(3) Sync system : Internal

- (4) Video signal output : Composite video : 1.0 Vp-p/75 unbalanced
Video:0.7Vp-p positive or negative (negative picture)
Sync :0.3 Vp-p negative
Burst : 0.3 Vp-p more than 8 cycles
Sub carrier frequency NTSC : 3.579545 MHz
PAL : 4.433618 MHz
Connector : BNC type

Y/C outputs

- Y:1.0Vp-p
Video:0.7Vp-p positive or negative (negative picture)
Sync :0.3 Vp-p negative
C:0.3Vp-p(Burst)
Impedance : 75 ohms unbalanced
Connector : Round multi-connector,4pin

- (5) Remote control : RS-232C
Connector : Round multi-connector,4pin
- (6) S/N (luminance signal) : More than 50 dB
(standard gain, enhancement and gamma off)
- (7) Resolution : Horizontal NTSC More than 480 TV lines
PAL More than 470 TV lines
Vertical More than 350 TV lines
- (8) Scene illumination range : 1.5 to 100,000 lux (F1.2, Auto-iris lens)
- (9) Minimum illumination : 1.5 lux (F1.2, 3200 K, AGC 31dB.)
- (10) Signal processing : Digital processing (input: 10 bits)
- (11) AGC : On/off selectable
Max. gain at on setting selectable:6, 12, 21 and 31 dB
(factory setting is 21 dB)
- (12) Electronic shutter speed : Selectable in 10 steps
NTSC :1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000,
1/4000, 1/10000,1/20000,1/30000 second,
and Auto
PAL : 1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000,
1/4000, 1/10000,1/20000,1/30000 second,
and Auto
- (13) Back light compensation : On/off switch able
Sensing areas: selectable from 9 areas

- (14) 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 \pm 10 %
Drive : 190 \pm 10 %
- (15) White balance : Selectable auto-tracking (ATW), preset (AWC), manual (MANUAL) (R/B gain adjustment)
- (16) Text display : One line of up to 24 alphanumeric characters
Selectable display position
- (17) Digital zoom : Up to 4 \times , selectable enlarge position
H resolution loss with magnification (approx. 50 % at 2 \times zoom)
- (18) 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) Back light compensation : Selectable on/off
 - (3) Level detect area : Selectable
 - (4) Video level : Adjustable
 - (5) AGC : Selectable on/off, max. gain
 - (6) Shutter speed : Selectable
 - (7) White balance : Selectable mode
 - (8) Digital zoom : Adjustable Wide(standard) to Tele(max.4 \times)
 - (9) Gamma correction : Selectable on/off
 - (10) Chroma level : Adjustable
 - (11) Black level : Adjustable
 - (12) Enhancer : Adjustable
 - (13) Video signal polarity : Selectable negative/positive
- (19) Lens mount : C/CS mount (C mount adaptor option)

- (20) Power supply : 12V DC \pm 10%
- (21) Ambient temperature :-10 to +50°, 30 to 80 % RH
- (22) Storage ambient : -20 to +60° , 20 to 90 % RH
- (23) Vibration endurance :Less than 28.42 m/s², 10 to 55 Hz
30 minutes each on XYZ axes
(Do not subject to strong vibration for long periods of time.)
- (24) Power consumption : 300mA approx.
- (25) External dimensions :44 (W) \times 44 (H) \times 49(D) mm
(not including lens and protrusions)
- (26) Mass : 130g Approx.
- (27) Supplied equipment : Camera
Operating instructions
- (28) Optional accessories : Lens (see operating instructions)
Lens plug (E4-191J-100)
Tripod adaptor
C mount adaptor
Remote plug (HR10A-7P-4P(01))