



# **CV-A50/A60**

## **Compact Industrial Monochrome CCD Camera**



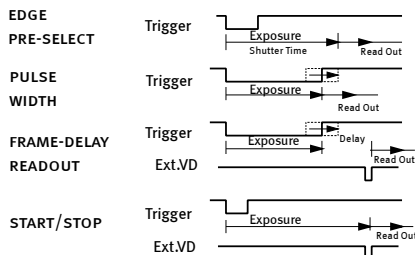
- **New compact size 1/2" and 1/3" monochrome CCD cameras**
- **CCIR: 752 (h) x 582 (v) pixels. EIA: 768 (h) x 494 (v) pixels**
- **Improved sensitivity, dynamic range and smear performance**
- **High S/N ratio up to 60 dB**
- **Extended range of functions and options compared with CV-M50**
- **Shutter speeds from Off to 1/10,000 sec.**
- **Programmable exposure**
- **Interlaced or non-interlaced scanning. Field or frame accumulation**
- **Internal, external HD/VD or random trigger synchronization**
- **Edge pre-select, pulse width control, start/stop trigger modes**
- **Long time exposure with external VD pulse interval**
- **Frame-delay read out in connection with pulse width controlled shutter**
- **Exposure enable EEN, write enable WEN and pixel clock output**
- **Short ASCII commands for fast mode setup via serial port**
- **Setup by Windows 95/98/NT software via RS 232C**

**The leading manufacturer of high performance camera solutions**

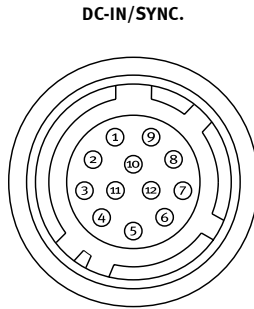
# Specifications for CV-A50/A60

Specifications	CCIR	EIA
Scanning system	625 lines 25 frames/sec.	525 lines 30 frames/sec.
CCD sensor CV-A50	Monochrome 1/2" IT CCD	
CCD sensor CV-A60	Monochrome 1/3" IT CCD	
Sensing area	CV-A50 6.4 (h) x 4.8 (v) mm CV-A60 4.9 (h) x 3.7 (v) mm	
Effective pixels	752 (h) x 582 (v)	768 (h) x 494 (v)
Pixels in video output	737 (h) x 575 (v)	758 (h) x 486 (v)
Cell size	CV-A50 8.6 (h) x 8.3 (v) $\mu$ m CV-A60 8.4 (h) x 9.8 (v) $\mu$ m	6.5 (h) x 6.25 (v) $\mu$ m 6.35 (h) x 7.4 (v) $\mu$ m
Resolution horizontal	570 TV lines	
Sensitivity on sensor CV-A50	0.03 Lux, Max gain, 50% video	
CV-A60	0.05 Lux, Max gain, 50% video	
S/N ratio	CV-A50 59 dB CV-A60 58 dB	60 dB 59 dB
Video output	Composite VS signal, 1.0 Vpp, 75 $\Omega$	
Gamma	0.45 or 1.0	
Gain	Manual - Automatic	
Gain range	0 to +15 dB	
Accumulation	Field - Frame	
Synchronization	Int. X-tal. Ext HD/VD or random trigger	
Scanning	2:1 interlaced, non-interlaced	
HD sync. input/output	4 V, 75 $\Omega$	
Trigger input	4 V, 75 $\Omega$	
WEN output (write enable)	4 V, 75 $\Omega$	
EEN out. (exposure enable)	4 V, 75 $\Omega$	
Pixel clock output	4 V, 75 $\Omega$	
Shutter	(off), 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10,000 sec.	
Pulse width control	1.5 H to 1000 H	
Start/stop	1/50 to 1/10,000 sec. 1/60 to 1/10,000 sec.	
Long time exposure	1 field to $\infty$	
Programmable exposure	2.5 H to 252.5 H	
Frame delay readout	Time from PWC trigger input to ext. VD input	
Functions controlled by RS 232C	Scanning format, Trigger mode, Shutter speed, Trigger/WEN polarity, Accumulation, Shutter mode, Programmable exposure, AGC level, White clip, Setup, Manual gain, AGC/manual gain, Internal/ potentiometer gain set, Gamma, Pixel clock, Commands and internal adjustments.	
Functions controlled by DIP switches	VD input/output, HD input/output, internal HD and VD 75 $\Omega$ termination on/off	
Operating temperature	-5°C to +45°C.	
Humidity	20 - 80% non-condensing	
Storage temp./humidity	-25°C to 60°C./20% - 90 %	
Power	12V DC $\pm$ 10%. 1.5 W	
Lens mount	C-mount	
Dimensions	29 x 44 x 66 mm (HxWxD)	
Weight	150 g	

## Trigger/Readout Modes



## Connection Description

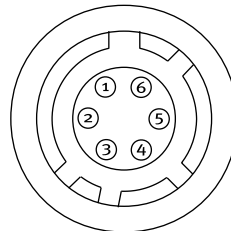


HIROSE HR10A-10R-12P

- Pin 1 Ground  
2 +12V DC  
3 Ground  
4 Video output  
5 Ground  
6 HD input/HD output  
7 VD input/VD output  
8 Ground  
9 Pixel clock output  
10 WEN output  
11 Trigger input  
12 Ground

(Pin configuration compatible with EIAJ standard)

## TRIGGER



HIROSE HR10A-7R-6P

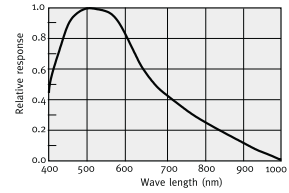
- Pin 1 TXD  
2 RXD  
3 Ground  
4 Ground  
5 Trigger input  
6 EEN output

Plugs for cable:  
12 pin: HIROSE HR10A-10P-12S  
6 pin: HIROSE HR10A-7P-6S

## Ordering Information

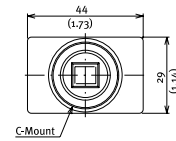
CV-A50C 1/2" Monochrome Camera. CCIR  
CV-A60C 1/3" Monochrome Camera. CCIR  
CV-A50E 1/2" Monochrome Camera. EIA  
CV-A60E 1/3" Monochrome Camera. EIA  
MP40 Tripod Adapter (must be ordered separately)

## Spectral Sensitivity

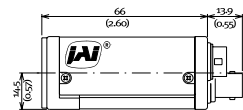


## Dimensions

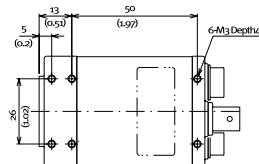
### Front view



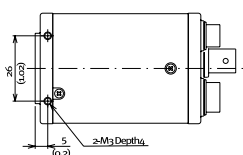
### Side view



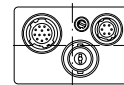
### Bottom view



### Top view



### Rear view



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