



# CV-A2

## Compact 2 Megapixel Progressive Scan Camera



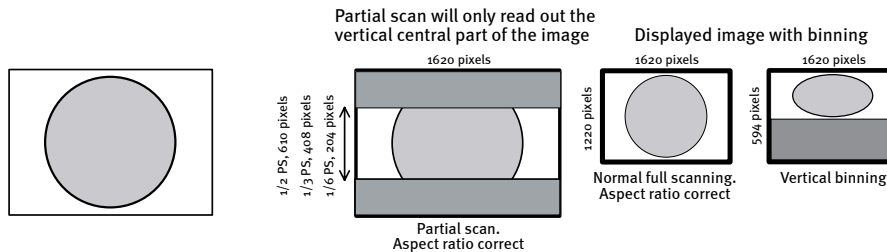
- Compact size 1/1.8" progressive scan monochrome CCD camera
- New 2 megapixel camera in the popular CV-A1 family
- 15 frames per second with full resolution. 1620 (h) x 1220 (v)
- 1628 (h) x 1236 (v) 4.4  $\mu\text{m}$  square pixels
- Up to 70 fps with 1/6 partial scan 1620 (h) x 204 (v)
- 30 fps with vertical binning
- Internal, external HD/VD or random trigger synchronization
- Edge pre-select, pulse width control and start/stop trigger modes
- Shutter speeds from 1/15 to 1/200,000 second in 16 steps
- Programmable exposure and auto shutter
- Frame-delay and smearless readout modes
- Auto iris lens video output
- Exposure enable EEN, write enable WEN and pixel clock output
- Short ASCII commands for fast mode setup via serial port
- Setup by Windows NT/2000/XP software via RS 232C

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

# Specifications for CV-A2

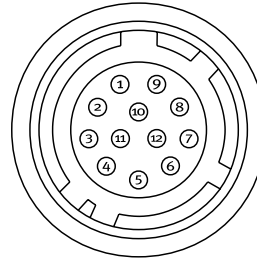
Specifications	CV-A2
Scanning system	Progressive scan
Pixel clock	36.15 MHz
Line frequency	18.828 kHz (1920 pixel clock/line)
Frame rate for full frame	15 frames/sec. (1252 lines/frame)
CCD sensor	Monochrome 1/1.8" IT CCD
Sensing area	7.12 (h) x 5.36 (v) mm
Effective pixels	1628 (h) x 1236 (v)
Pixels in video output.	
Full:	1620 (h) x 1220 (v) 15 frames/sec.
Vertical binning:	1620 (h) x 594 (v) 30 frames/sec.
1/2 partial:	1620 (h) x 610 (v) 28 frames/sec.
1/3 partial:	1620 (h) x 408 (v) 40 frames/sec.
1/6 partial:	1620 (h) x 204 (v) 70 frames/sec.
Cell size	4.40 (h) x 4.40 (v) $\mu$ m
Sensitivity on sensor	0.3 Lux (Max gain, 50% video)
S/N ratio	>50 dB
Video output	Composite VS signal, 1 Vpp, 75 $\Omega$ Video signal 0.7 Vpp (selectable)
Auto iris lens video output	0.7 Vpp
Gain	Manual - Automatic
Gain range	Man.: -3 to +12 dB - Auto.: -3 to +12 dB
Synchronization	Int. X-tal. Ext HD/VD or random trigger
HD sync. input/output	4 V $\pm$ 2, 75 $\Omega$
Trigger input	4 V $\pm$ 2, TTL
WEN output (write enable)	4 V, 75 $\Omega$
EEN out. (exposure enable)	4 V, 75 $\Omega$
Pixel clock output	4 V, 75 $\Omega$
Trigger modes	Continuous, edge pre-select, Pulse width control, frame delay readout, long time exposure, start-stop and smearless readout
Readout modes	Frame-delay readout, smearless, V-binning
Accumulation	HD synchronous or HD a-synchronous
Shutter speed, EPS	1/15 to 1/200,000 second
Programmable exposure	1 H to 1252 H in 1 H steps
Pulse width control	1 H to 2047 H
Long time exposure	<2 sec. (Interval between ext. VD)
Frame-delay readout PWC	1 H to 2047 H
Smearless readout	For edge pre-select mode only
Functions controlled by RS 232C	Shutter speed, Trigger mode, Readout mode, Programmable exposure, Gain levels, timing signals and polarity
Functions controlled by internal DIP switches	VD input/output, HD input/output HD, 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% - 80 %
Vibration	10G (20Hz to 200Hz XYZ)
Shock	70G
Regulations	CE (EN50081-1 and EN50082-1), FCC part 15
Power	12V DC $\pm$ 10%. 2.3 W
Lens mount	C-mount
Dimensions	29 x 44 x 66 mm (HxWxD)
Weight	150 g

## Readout Formats



## Connection Description

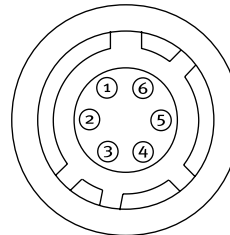
### DC-IN/SYNC.



HIROSE HR10A-10R-12PB-01

- Pin 1 Ground  
2 +12V DC  
3 Ground  
4 Video/Iris 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

### RS 232C/TRIGGER



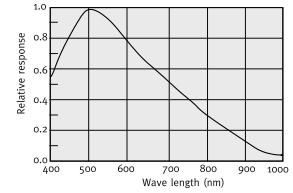
HIROSE HR10A-7R-6PB

- Pin 1 TXD  
2 RXD  
3 Ground  
4 Ground  
5 Trigger input  
6 EEN/WEN output \*)

\*) Can be changed

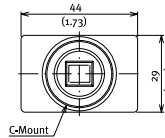
Plugs for cable:  
12 pin: HIROSE HR10A-10P-12S  
6 pin: HIROSE HR10A-7P-6S

## Spectral Sensitivity

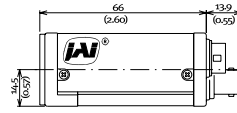


## Dimensions

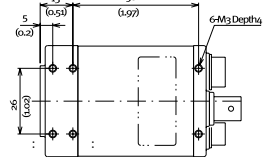
### Front view



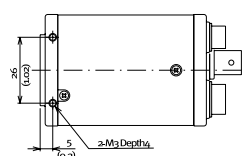
### Side view



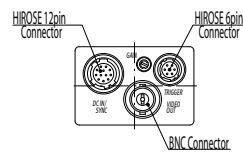
### Bottom view



### Top view



### Rear view



## Ordering Information

CV-A2 1/1.8" Compact 2 Mega Pixel Progressive Scan Camera

MP40 Tripod Adapter (must be ordered separately)

JAI A-S, Denmark  
Phone +45 4457 8888  
Fax +45 4491 8880  
www.jai.com

JAI Corporation, Japan  
Phone +81 45 440 0154  
Fax +81 45 440 0166  
www.jai-corp.co.jp

JAI PULNiX, Germany  
Phone +49 (0) 6055 9379 10  
Fax +49 (0) 6055 9379 11  
www.jai.com

JAI PULNiX Inc., USA  
Phone (Toll-Free) +1 800 445 5444  
Phone +1 408 747 0300  
www.jai.com



THE MECHAEMIC COMPANY

Visit our web site on [www.jai.com](http://www.jai.com)