

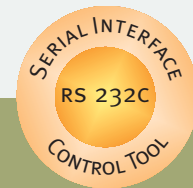
## CV-A1 / CV-A1 UV Progressive Scan



**adept  
electronic solutions**

**The Machine Vision and  
Imaging Specialists**

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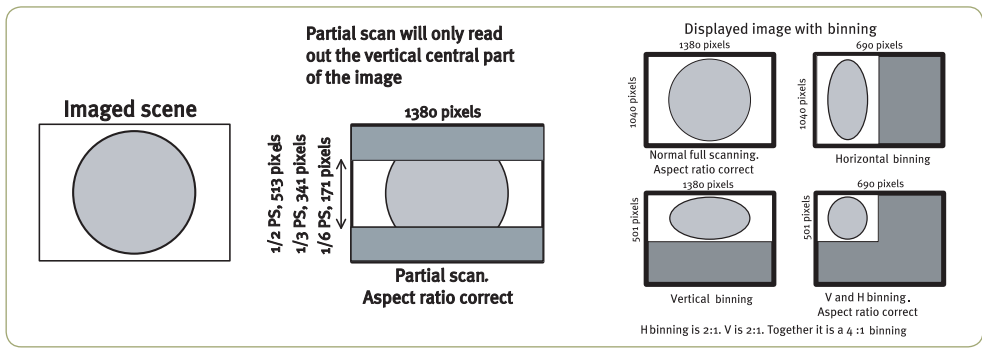
- *Compact 1/2" monochrome progressive scan camera*
- *UV version available (CV-A1 UV)*
- *1392 (h) x 1040 (v) 4.65  $\mu$ m square pixels*
- *16 frames/second with full resolution in continuous operation*
- *Increased frame rate with vertical binning and partial scan*
- *Increased sensitivity with H and V binning*
- *Exposure time from 75.9  $\mu$ s to 116 ms using Pulse Width Control mode*
- *Programmable exposure from 75.9  $\mu$ s to 59.8 ms*
- *Frame-delay readout mode for multiplexed readout of up to 3 cameras*
- *Internal, external HD/VD or random trigger synchronization*
- *Smear reduction readout mode*
- *LVAL-synchronous/-asynchronous operation (auto-detect)*
- *Exposure enable (EEN), Write enable (WEN) and Pixel Clock output*
- *Setup by Windows NT/2000/XP via serial communication*



# Specifications for CV-A1 / CV-A1-UV

Specifications	CV-A1 / CV-A1 UV																		
Sensor	1/2" progressive scan																		
Pixel Clock	28.64 MHz																		
Frame rate full frame	16.037 frames/second (1068 lines per frame)																		
Active area	6.4 (h) x 4.8 (v) mm																		
Cell size	4.65 x 4.65 pixels																		
Active pixels	1380 x 1035																		
Read-out modes	<table border="0"> <tr> <td>Full</td> <td>1380 (h) x 1035 (v) 16 fps</td> </tr> <tr> <td>1/2 partial scan</td> <td>1380 (h) x 513(v) 30 fps</td> </tr> <tr> <td>1/3 partial scan</td> <td>1380 (h) x 341 (v) 43 fps</td> </tr> <tr> <td>1/6 partial scan</td> <td>1380 (h) x 171 (v) 75 fps</td> </tr> <tr> <td>Horizontal binning</td> <td>690 (h) x 1035 (v) 16 fps</td> </tr> <tr> <td>Vertical binning</td> <td>1380 (h) x 527 (v) 32 fps</td> </tr> <tr> <td>H + V binning</td> <td>690 (h) x 527 (v) 32 fps</td> </tr> <tr> <td>Smear-less</td> <td>Smear reduction</td> </tr> <tr> <td>Frame-delay readout</td> <td>For multi-camera read-out</td> </tr> </table>	Full	1380 (h) x 1035 (v) 16 fps	1/2 partial scan	1380 (h) x 513(v) 30 fps	1/3 partial scan	1380 (h) x 341 (v) 43 fps	1/6 partial scan	1380 (h) x 171 (v) 75 fps	Horizontal binning	690 (h) x 1035 (v) 16 fps	Vertical binning	1380 (h) x 527 (v) 32 fps	H + V binning	690 (h) x 527 (v) 32 fps	Smear-less	Smear reduction	Frame-delay readout	For multi-camera read-out
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Sensitivity (CV-A1)	0.3 Lux (On sensor, max. gain, shutter off, 50% video)																		
S/N ratio	>50dB (odB gain)																		
Video output	Composite VS signal, 1Vp-p, 75Ω Video signal, 0.7Vp-p (selectable)																		
Gain	Manual, -3 to +12 dB Automatic, 0 to +12dB																		
Synchronization	Int. X-tal, Ext. HD/VD or random trigger																		
Inputs	<table border="0"> <tr> <td>Trigger</td> <td>4V, TTL</td> </tr> <tr> <td>HD/VD sync</td> <td>4V, 75Ω or High Z (switchable)</td> </tr> </table>	Trigger	4V, TTL	HD/VD sync	4V, 75Ω or High Z (switchable)														
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Pixel clock	4V, 75Ω																		
Trigger modes	Continuous, EPS (Edge Pre-Select), PWC (Pulse Width Control), Long time exposure, Smear reduction and Frame-delay readout																		
Electronic shutter	Pre-set shutter																		
Programmable exposure (PE)	1/16 to 1/200,000 in 16 steps																		
Pulse Width	1.3H to 1000H (75.9 μs to 59.8 ms)																		
Long time exposure	1.3H to 2000H (75.9μs to 116 ms) 2 frames to ∞																		
Accumulation	HD synchronous or HD asynchronous																		
Control interface	RS-232C, short ASCII commands																		
Functions controlled by RS-232C	Scanning format, Trigger modes, Readout modes, Programmable exposure, Shutter, Gain, Pixel clock output, Sync on/off, Black level, Manual gain, AGC, Gamma																		
Functions controlled by internal DIP-switches	VD input/output, HD input/output, HD/VD 75Ω termination on/off																		
Operating Temperature	-5°C to +45°C																		
Humidity (operation)	20 - 90% non-condensing																		
Storage temp./humidity	-25°C to +60°C / 20 to 90%																		
Vibration	10G (20Hz to 200 Hz XYZ)																		
Shock	70G																		
Regulations	CE (EN 61000-6-2, EN-61000-6-3), FCC part 15 class B, RoHS/WEEE																		
Power	12V DC +/-10%. 1.8W																		
Lens mount	C-mount																		
Dimensions (H x W x L)	29 x 44 x 66 mm																		
Weight	150 g																		

## Readout formats



## Connector pin-out

**DC-IN/SYNC.**

**HIROSE HR10A-10R-12PB-01**

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

(Pin configuration compatible with EIAJ standard)

**RS 232C/TRIGGER**

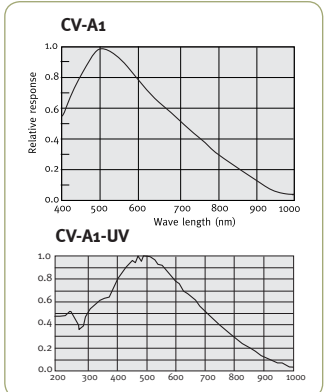
**HIROSE HR10A-7R-6PB**

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

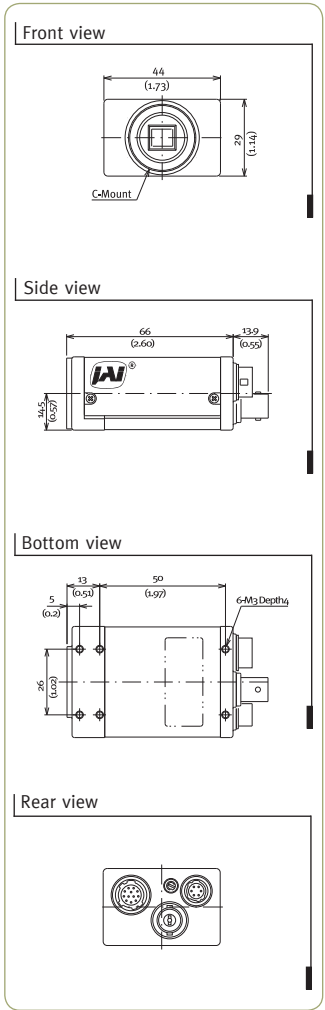
\*) Configurable

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

## Spectral Response



## Dimensions



## Ordering Information

CV-A1 1/2" Monochrome Progressive Scan Camera  
CV-A1 UV 1/2" UV-enhanced Progressive Scan Camera  
MP40 Tripod Adapter  
(must be ordered separately)

Europe, Middle East & Africa  
Phone +45 4457 8888  
Fax +45 4491 8880

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Fax +81 45 440 0166

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