



# **CV-M1**

## **Mega Pixel Progressive Scan Camera**



- *2/3" Hyper HAD IT CCD sensor*
- *1300 (h) x 1030 (v) x 6.7  $\mu$ m square pixels*
- *5:4 aspect ratio, non-interlaced*
- *Full 1030 lines frame readout in 1/12 second*
- *515 lines frame readout in 1/24 second*
- *S/N ratio >56dB*
- *Shutter 1/12 to 1/10,000 second in 11 steps*
- *Asynchronous reset*
- *Long time exposure 1/6 to 2 seconds in 5 steps*
- *External continuous variable shutter 1/10,000 to 2 seconds*
- *HD and VD in/out, WEN and pixel clock possible*
- *Pixel synchronized image transfer possible*
- *Switches on rear for easy mode settings*
- *Windows 95/98/NT setup software*
- *Compact housing with C-mount lens*

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

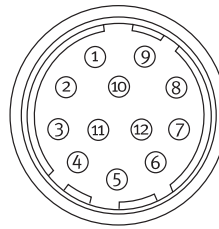
# Specifications for CV-M1

Specifications	CV-M1
Scanning system	Progressive Scan
Pixel clock	20.25 MHz
Line frequency	12.53 kHz (1616 pixel clock/line)
<b>Frame rate</b>	
Normal	12 frames/sec. (1044 lines/frame)
Double speed	24 frames/sec. (522 lines/frame) (Vertical pixel binning)
CCD sensor	Monochrome 2/3" Hyper HAD Interline Transfer CCD
Sensing area	8.7 mm (h) x 6.9 mm (v)
Picture elements	1300 (h) x 1030 (v) effective pixels
Cell size	6.7 (h) x 6.7 (v) $\mu$ m
<b>Resolution</b>	
Horizontal	1300 TV lines
Normal (vertical)	1030 TV lines
Double speed (vertical)	515 TV lines
Spectral sensitivity	380-900 nm
Sensitivity on sensor	0.1 Lux, Max gain, 50% video
S/N ratio	>56 dB
Video output	Composite signal 1.0 Vpp, 75 Ohm
Gain	Auto/Manual
Gain range	-3 dB to +15 dB
Gamma	0.45-1.0
Synchronization	Internal X-tal. or external HD/VD
HD/VD in *	3-5 Vpp, 75 Ohm terminated or TTL
Trigger in	TTL 2-5V
SG in	TTL 2-5V
HD/VD out *	TTL 3.5-4.5V
WEN out *	TTL 3.5-4.5V
Pixel clock out	TTL 3.5-4.5 Vpp
Shutter	1/12, 1/24, 1/50, 1/100, 1/200, 1/400, 1/800, 1/1500, 1/3000, 1/6000, 1/10,000 sec.
Long time exposure	1/6, 1/3, 1/2, 1, 2 sec.
Double trigger mode	Variable shutter 1/10,000 to 2 sec.
Camera setup switches on rear	Shutter, Readout system, Gain, Control
Serial control	RS 232C
Functions	Trigger, Shutter, Readout mode, Gain, White clip, Black level, Gamma
Operating temperature	-5°C to +45°C
Humidity	20-80% non-condensing
Power	12V DC $\pm$ 10%. 4.0W
Lens mount	C-mount
Dimensions	40 x 50 x 80 mm (HxWxD)
Weight	250 g

\* option by internal setting

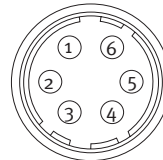
## Connections

### DC-IN/SYNC.



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

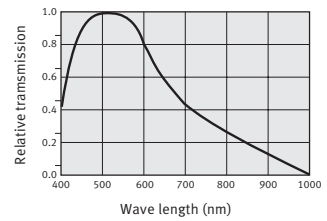
### RS 232C/TRIG.



- Pin 1 TXD
- 2 RXD
- 3 Ground
- 4 Ext. SG input
- 5 Trigger input
- 6 WEN output

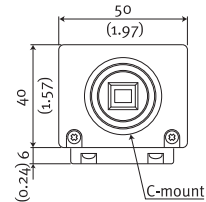
\* option by internal setting

## Spectral Sensitivity

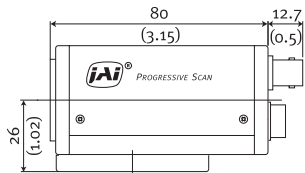


## Dimensions

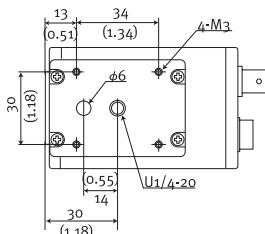
### Front view



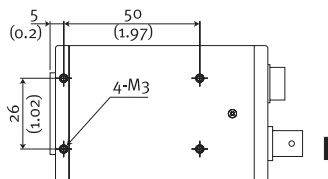
### Side view



### Bottom view



### Top view

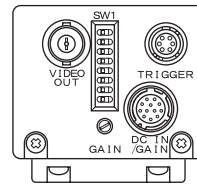


## Switch Setting

SHUTTER	OFF	ON
1	1/12	1/2
2	1/24	1/2
3	1/50	1/2
4	1/100	1/2
5	1/200	1/2
6	1/400	1/2
7	1/800	1/2
8	1/1500	1/2
	1/3000	1/2
	1/6000	1/2
	1/10,000	1/2
	1/6	1/2
	1/3	1/2
	1/2	1/2
	1	1/2
	2	1/2

Seconds

### Rear view



## Ordering Information

CV-M1 2/3" Mega Pixel Progressive Scan Monochrome Camera  
6s Hirose Plug (must be ordered separately)  
12s Hirose Plug (must be ordered separately)

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