



# **CV-M8 CL**

## **2 Megapixel Progressive Scan Color Camera**



- *Digital 1" color progressive scan CCD camera*
- *RGB primary color mosaic filter (Bayer) for host based RGB decoding*
- *1600 (h) x 1200 (v) 7.4  $\mu$ m square pixels*
- *10 bit video output as Camera Link*
- *17 full frames per second for single channel video readout*
- *30 frames per second with dual channel video readout*
- *Higher frame rates with partial scanning*
- *Edge pre-select and pulse width external trigger modes*
- *Burst trigger for 5 different edge pre-selected exposures in sequence*
- *Shutter speeds OFF to 1/14,000 in 10 steps or programmable in 1H steps*
- *Restart continuous trigger mode makes it ideal for traffic control (ITS)*
- *Analogue auto iris lens video output for automatic lens iris control*
- *Analogue composite video output for CCIR/EIA monitor*
- *PIV mode for 2 short exposures with very short interval*
- *Short ASCII commands for fast mode setup via serial port*
- *Setup by Windows NT/2000/XP software via RS 232C or Camera Link*

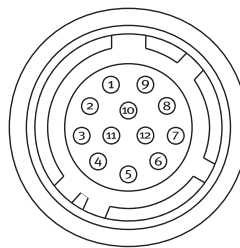
***The leading manufacturer of high performance camera solutions***

# Specifications for CV-M8 CL

Specifications	CV-M8 CL
Scanning system	Progressive scan
Pixel clock	40 MHz
Line frequency	single output 20.88 kHz (1916 pixel clock/line) dual output 36.63 kHz (1092 pixel clock/line)
Frame rate	single output 17.17 frames/sec. (1216 lines/frame) dual output 30.12 frames/sec. (1216 lines/frame)
CCD sensor	1" progressive scan IT CCD with primary RGB color mosaic filter (Bayer)
Sensing area	11.8 (h) x 8.9 (v) mm
Cell size	7.4 (h) x 7.4 (v) $\mu$ m
Effective pixels	1608 (h) x 1208 (v)
Pixels in video output	1 channel 2 channel
Full	1600 (h) x 1200 (v) 17 fps 30 fps
1/2 partial	1600 (h) x 600 (v) 32 fps 54 fps
1/4 partial	1600 (h) x 300 (v) 57 fps 91 fps
1/8 partial	1600 (h) x 150 (v) 95 fps 138 fps
Variable partial scan	1600 (h) x 50-1200 (v) 167 fps 208 fps
Sensitivity on sensor	1 Lux (Max gain, 50% video)
S/N ratio	>50 dB
Digital video	single output 10/8 bits in Camera Link dual output 2 x 10/8 bits in Camera Link
Monitor video output (Standard resolution)	Analogue composite video 1.0 Vpp, 75 $\Omega$ 50/60 fps. 15.734 kHz
Auto iris lens video output	0.7 Vpp, 75 $\Omega$
Gamma	1.0
Knee function	Slope from 100% to 20% Knee point adjustable
Gain	Remote
Gain range	-3 to +12 dB
Synchronization	Int. X-tal. Ext. random trigger
Inputs	TTL Ext. trigger TTL 4 V $\pm$ 2 V Camera Link Ext. trigger
Outputs	Camera Link Pixel clock, FVAL, LVAL, DVAL, EEN TTL EEN
Control interface	TXD and RXD via RS 232C TXD and RXD via Camera Link
Trigger modes	Continuous, Edge pre-select, Restart Continuous Trigger, Pulse width control, EPS Burst and PIV
Readout modes	Single or dual channel in Camera Link, Partial scanning and Monitor video output
Shutter speed (fixed)	1/17 through 1/14,000 second (single) 1/30 through 1/14,000 second (dual)
Pulse width control	1.5 H to $\infty$ (72 $\mu$ sec.) (2sec. recommended)
Programmable exposure	1 L to 1216 L (72 $\mu$ sec. to 58 msec.) (single) 1 L to 1216 L (41 $\mu$ sec. to 33 msec.) (dual)
Partial scan	50 to 1200 lines
Functions controlled by RS 232C or CL Serial	Shutter, Trigger, Scanning, Readout, Trigger input, Set-up level and Gain
Operating temperature	-5°C to +45°C
Storage temp./humidity	-25°C to 60°C/ 20% to 90%
Vibration	10G (20Hz to 200Hz XYZ)
Shock	70G
Regulations	CE (EN50081-1 and EN50082-1), FCC part 15
Power	12V DC $\pm$ 10%. 6.6 W
Lens mount	C-mount
Dimensions	40 x 50 x 120 mm (HxWxD)
Weight	310g

## Connection Description

### DC-IN/TRIGGER

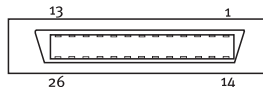


HIROSE HR10A-10R-12PB-01

Pin	Signal
1	Ground
2	+12V DC
3	Ground
4	Auto iris lens video output
5	Ground
6	RXD RS 232C *
7	TXD RS 232C *
8	Ground
9	EEN output
10	Trigger input (TTL)*
11	+ Factory use
12	Ground

### Camera Link interface

26 pin MDR connector  
3M 10226-1A10JL

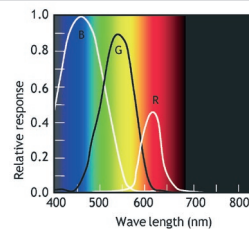


Pin	Signal	Function
1 14	GND	
2 15	Xo-/Xo+	CL Data
3 16	Xo-/Xo+	CL Data
4 17	Xo-/Xo+	CL Data
5 18	Xclk-/Xclk+	CL Clk
6 19	Xo-/Xo+	CL Data
7 20	SerTC+/SerTC-	Serial in*
8 21	SerTFG-/SerTFG+	Serial out*
9 22	CC1-/CC2+	Trigger*
10 23	CC2-/CC2-	Not used
11 24	CC3-/CC3+	Not used
12 25	CC4-/CC4-	Not used
13 26	GND	Not used

Camera Link base configuration.

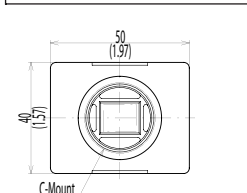
\*) In Camera Link or 12 pin Hirose

## Spectral Sensitivity

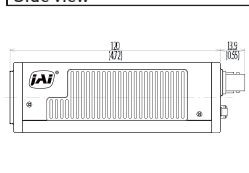


## Dimensions

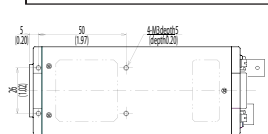
### Front view



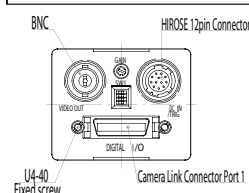
### Side view



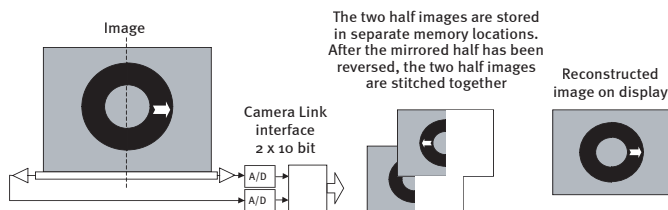
### Bottom view



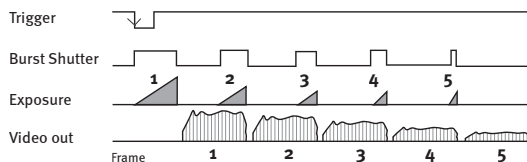
### Rear view



## Dual Readout Principle



## Burst Trigger



## Ordering Information

CV-M8 CL 1" 2 Megapixel Progressive Scan Color Camera

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

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



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