



CV-M2 CL

Digital Monochrome 2 Megapixel Progressive Scan Camera



- *Digital 1" monochrome progressive scan CCD camera*
- *1600 (h) x 1200 (v) 7.4 μ 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 iris video output for 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 98/NT/2000 software via RS 232C or Camera Link*

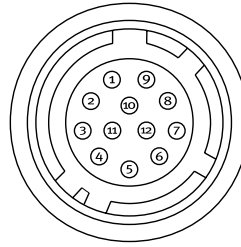
The leading manufacturer of high performance camera solutions

Specifications for CV-M2 CL

Specifications		CV-M2 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 monochrome IT CCD		
Sensing area	11.8 (h) x 8.9 (v) mm		
Cell size	7.4 (h) x 7.4 (v) μ m		
Effective pixels	1608 (h) x 1208 (v)		
Pixels in video output		1 channel	2 channel
	Full	1600 (h) x 1200 (v)	17 FPS 30FPS
	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	0.2 Lx (50% video out, max. gain)		
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 Ω (50 or 60 FPS, 15.734 kHz)		
Lens iris video output	Analogue 0.7 Vpp, 75 Ω		
Gamma	1.0 - 0.45 (single channel)		
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 LVAL, FVAL, 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, 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 ∞ (72 μ sec.) \times 2sec. recommended		
Programmable exposure	1 L to 1216 L (72 μ sec. to 58 msec.) (single) 1 L to 1216 L (41 μ sec. to 33 msec.) (dual)		
Partial scan	50 to 1200 lines		
Functions controlled by RS 232C	Shutter, Trigger, Scanning, Readout, Trigger input, Set-up level and Gain		
Operating temperature	-5°C to +45°C		
Humidity	20 - 80% non-condensing		
Storage temp./humidity	-25°C to +60°C/20% to 90%		
Power	12V DC \pm 10%. 6.6 W		
Lens mount	C-mount		
Dimensions	40 x 50 x 120 mm (HxWxD)		
Weight	310 g		

Connection Description

DC-IN/Trigger

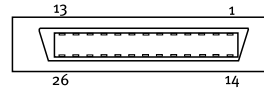


HIROSE HR10A-10R-12PB-01

Pin	Signal
1	Ground
2	+12V DC
3	Ground
4	Iris 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

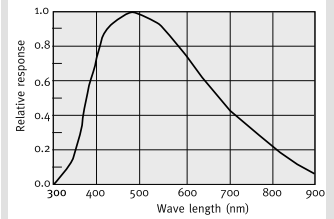


Pin	Signal	Function
1	14	GND
2	15	X0-/X0+
3	16	X1-/X1+
4	17	X2-/X2+
5	18	Xclk-/Xclk+
6	19	X3-/X3+
7	20	SerTC+/SerTC-
8	21	SerTFG+/SerTFG-
9	22	CC1-/CC1+
10	23	CC2+/CC2-
11	24	CC3-/CC3+
12	25	CC4+/CC4-
13	26	GND

Camera Link base configuration.

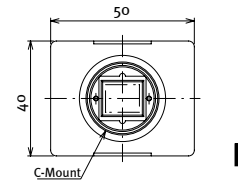
* In Camera Link or 12 pin Hirose

Spectral Sensitivity

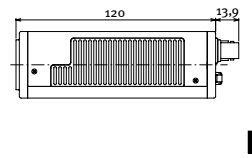


Dimensions

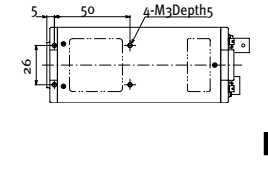
Front view



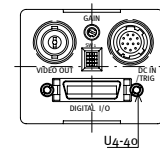
Side view



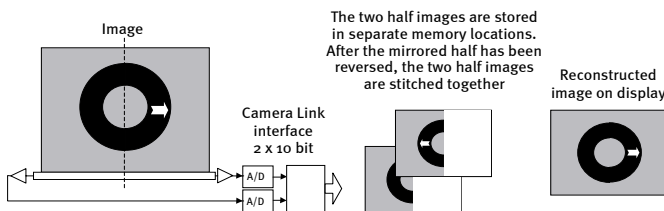
Bottom view



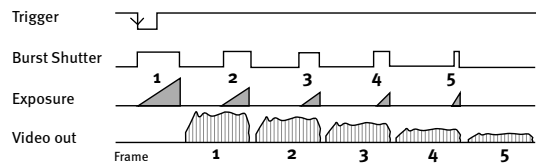
Rear view



Dual Readout Principle



Burst Trigger



Ordering Information

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THE MECHADEMIC COMPANY