CV-M7+CL

Digital Double Speed Color Megapixel Progressive Scan Camera

- *Digital 2/3" color progressive scan CCD camera*
- *RGB primary color mosaic filter (Bayer) for host based RGB decoding*
- *1392 (h) x 1040 (v) 6.45 µm square pixels*
- *10 bit video output as Camera Link*
- *LVDS version with 8 bit video output*
- *Full 1380 (h) x 1030 (v) frame readout in 1/24 second*
- *Partial scan to 1/2, 1/4 and 1/8 for higher frame rate*
- *Edge pre-select (EPS) and pulse width control (PWC) trigger modes*
- *Restart continuous trigger (RCT) mode*
- *Analog video output for controlling auto-iris lenses*
- *Shutter speeds from 1/24 to 1/10,000 second in 10 steps*
- *Trigger and timing signals as LVDS or via Camera Link*
- *Setup by switches or serial control (short ASCII commands)*
- *Windows 98/NT/2000 setup software*

The leading manufacturer of high performance camera solutions

Specifications for CV-M7+ CL

Specifications

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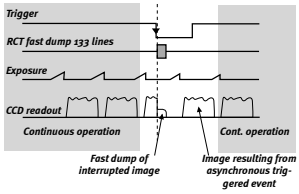
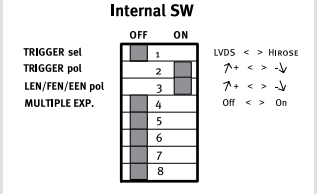
Scanning system	Progressive 1060 lines 24 frames/sec.
Pixel clock	40.49 MHz
Line frequency	25.43 kHz (1592 pixel clock/line)
Frame rate for full frame	24 frames/sec. (1060 lines/frame)
CCD sensor	2/3" progressive scan IT CCD with RGB primary color mosaic filter (Bayer)
Sensing area	8.9 (h) x 6.6 (v) mm
Cell size	6.45 (h) x 6.45 (v) µm
Effective pixels	1392 (h) x 1040 (v)
Pixels in video output	
Full	1380 (h) x 1030 (v) 24 frames /sec.
1/2 partial	1380 (h) x 512 (v) 44 frames/sec.
1/4 partial	1380 (h) x 256 (v) 70 frames/sec.
1/8 partial	1380 (h) x 128 (v) 102 frames/sec.
Sensitivity on sensor	0.4 Lux (Max. gain, 50% video)
S/N ratio	>55 dB
Video A/D conversion	10 bit
Video output digital (RGB in Bayer mosaic sequence for external RGB decoding)	8 bit LVDS (EIA 644) 10 bit in Camera Link
Iris video	0.7 Vpp, 75 Ω
Gamma	1.0
Gain Gain range	Manual - Automatic -3 to +12 dB
Synchronization	Int. X-tal. Ext. random trigger
Sync. output	Composite 4 Vpp from 75 Ω
Trigger input TTL	4 V ± 2 V
EEN output	4 Vpp from 75 Ω
Pixel clock output LEN/FEN output Trigger input LVDS Multiple exposure	LVDS or Camera Link LVDS or Camera Link LVDS or Camera Link LVDS or Camera Link
Trigger modes	Continuous, Edge pre-select, Pulse width control, Restart continuous trigger
Trigger in (Edge pre-select)	>2 H
Shutter speed (fixed)	1/24 through 1/10,000 second
Pulse width control	2 H to 3 frames. (80 µsec. to 72 msec.)
Frame-delay readout	Fixed shutter speeds. Delay ≤ 3 frames
Restart continuous trigger	Capture begins 133 lines after trigger input
Smearless readout	Edge pre-select, PWC and frame-delay
Multiple exposure Interval	≤6 fixed exposures in frame-delay readout. Fixed shutter time + 1H (80 µsec.)
Camera setup by switches on rear	Shutter, Trigger, Scanning, Smearless, RS 232C control
Functions controlled by RS 232C	Shutter, Trigger, Scanning, Readout, Trigger input, Select/polarity, LEN/FEN/EEN polarity, 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% - 90%
Power	12V DC ± 10%. 4.5 W
Lens mount	C-mount
Dimensions	40 x 50 x 90 mm (HxWxD)
Weight	250g

Restart Continuous Trigger

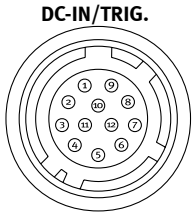


Internal Switch



Connection Description

DC-IN/TRIG.



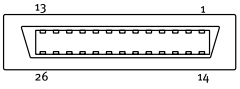
HIROSE HR10A-10R-12P

Pin		
	1	Ground
	2	+12V DC
	3	Ground
	4	Iris video
	5	Ground
	6	RXD RS 232C
	7	TXD RS 232C
	8	Ground
	9	Sync. output/EEN output*
	10	Trigger input (TTL)*
	11	+12V DC/Multiple exposure*
	12	Ground

*) Signals can be changed by internal switches and jumpers or via RS 232C.

Camera Link interface

26 pin MDR connector
3M 10226-1A10JL



Digital I/O

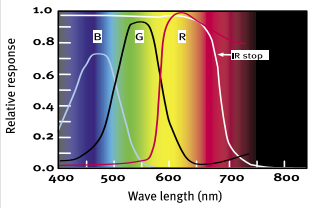
Pin		Signal	Function
1	14	GND	
2	15	Xo-/Xo+	CL Data
3	16	X1-/X1+	CL Data
4	17	X2-/X2+	CL Data
5	18	Xclk-/Xclk+	CL Clk
6	19	X3-/X3+	CL Data
7	20	SerTC+/SerTC-	Serial in*
8	21	SerTFG-/SerTFG+	Serial out*
9	22	CC1-/CC1+	Trigger*
10	23	CC2+/CC2-	Not used
11	24	CC3-/CC3+	Not used
12	25	CC4+/CC4-	Not used
13	26	GND	

Camera Link base configuration.

(for LVDS pinout, see operation manual)

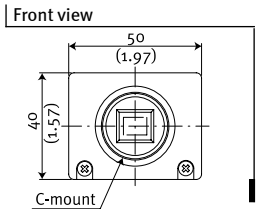
*) In CL or Hirose 12-pin connector

Spectral Sensitivity

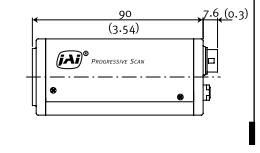


Dimensions

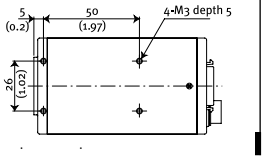
Front view



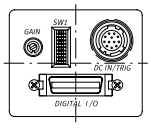
Side view



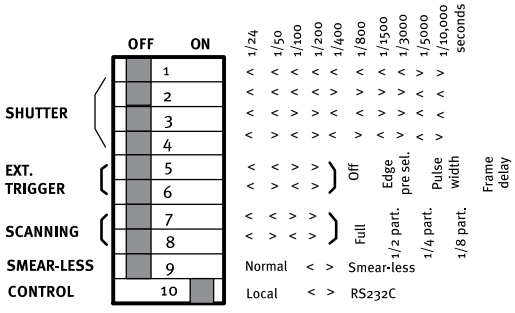
Bottom view



Rear view



Switch Setting



Ordering Information

CV-M7+CL 2/3" Digital Double Speed Color Megapixel Progressive Scan Camera. Camera Link
CV-M7+ 2/3" Digital Double Speed Color Megapixel Progressive Scan Camera. LVDS

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