



# **CV-M71 CL**

## **Progressive Scan RGB Color Camera**



- *Compact 1/2" digital progressive scan RGB color camera*
- *RGB primary color mosaic CCD (Bayer) with internal RGB interpolation*
- *782 (h) x 582 (v) 8.3µm square pixels*
- *60 fps with full resolution*
- *250 fps with 1/8 partial scan*
- *24 bit RGB output via Camera Link base configuration*
- *8 or 10 bit raw output via Camera Link for host based RGB interpolation*
- *High speed shutter from 1/60 to 1/300,000 second*
- *Edge pre-select and pulse width control trigger modes*
- *Programmable exposure, auto shutter and smearless readout*
- *LVAL synchronous or asynchronous accumulation*
- *Fixed, manual or one push white balance*
- *Auto iris lens video output, auto shutter and AGC allow a wider light range*
- *Setup by Windows NT/2000/XP software via RS 232C or Camera Link*

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

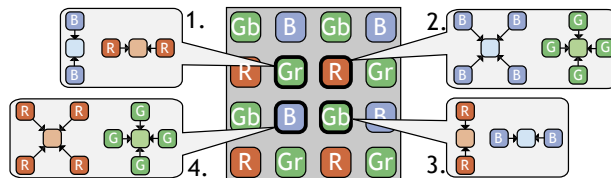
# Specifications for CV-M71 CL

Specifications	CV-M71 CL
Scanning system	Progressive 625 lines, 60 frames/sec.
Pixel clock	36.15 MHz
Line frequency	37.5 kHz (964 pixel clock/line)
CCD sensor	1/2" progressive scan color
Sensing area	6.4 (h) x 4.8 (v) mm
Cell size	8.3 (h) x 8.3 (v) μm
Effective pixels	782 (h) x 582 (v)
Pixels in video output	Full 767 (h) x 576 (v) 60 fps 1/2 partial 767 (h) x 287 (v) 112 fps 1/4 partial 767 (h) x 143 (v) 177 fps 1/8 partial 767 (h) x 71 (v) 250 fps
Sensitivity on sensor	1.7 Lux (Max. gain, 50% video)
S/N ratio	>54 dB (on G)
Digital video outputs	24 bit RGB in Camera Link 8/10 bit raw Bayer video in Camera Link
Auto iris lens video output	0.7 Vpp
Gain	Manual -3 to +12 dB Automatic -3 to +9 dB
Gamma	1.0
Synchronization	Int. X-tal. Ext. HD/VD or random trigger
Ext HD/VD input (Continuous mode only)	4 V ± 2 V. TTL or 75 Ω terminated
Inputs	Camera Link TTL Ext. trigger Ext. trigger TTL 4V ± 2 V
Outputs	Camera Link TTL Pixel clock, LVAL, FVAL, DVAL, EEN XEEN
Trigger modes	Continuous, edge pre-select and pulse width control
Accumulation	LVAL synchronous or asynchronous
Shutter speed EPS	1/60 to 1/300,000 second in 15 steps
Programmable exposure	1/8 line to 625 lines. (3.3 μs to 16.7 ms)
Pulse width control	2 lines to 120 frames. (33 μs to 2 s)
Auto shutter range	1/60 to 1/25,000
Readout modes	Partial scan. Full, 1/2, 1/4, 1/8 Smearless
Control interface	RS 232C or Camera Link
Functions controlled by CL serial or RS 232C	Shutter, Trigger, Scanning, Readout, Polarity, Black level, Gain
Operating temperature	-5°C to +45°C
Humidity	20 - 80% non-condensing
Storage temp./humidity	-25°C to +60°C / 20% to 80%
Vibration	10G (20Hz to 200Hz XYZ)
Shock	70G
Regulations	CE (EN50081-1 and EN50082-2), FCC part 15 class B
Power	12V DC ± 10%. 5 W
Lens mount	C-mount
Dimensions	40 x 50 x 8 mm (HxWxD)
Weight	210g

## Color Interpolation

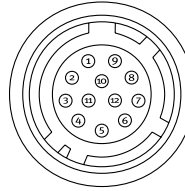
The principle of Bayer RGB mosaic color interpolation.

1. Red and blue interpolation in Gr
2. Blue and green interpolation in R
3. Red and blue interpolation in Gb
4. Green and red interpolation in B



## Connection Description

### DC-IN/TRIGGER

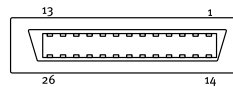


HIROSE HR10A-10R-12PB-01

Pin	Signal	Function
1	Ground	
2	+12V DC	
3	Ground	
4	Auto iris lens video output	
5	Ground	
6	HD input/RXD RS 232C *	
7	VD input/TXD RS 232C *	
8	Ground	
9	XEEN output	
10	Trigger 1 input (TTL)*	
11	N/C	
12	Ground	

### Camera Link interface

26 pin MDR connector  
3M 10226-1A10JL

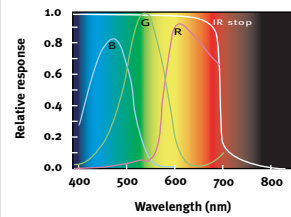


Pin	Signal	Function
1	14	GND
2	15	X0-/X0+
3	16	X1-/X1+
4	17	X2-/X2+
5	18	Xclk-/Xclk+
6	19	X3-/X3+
7	20	SerTC-/SerTC+
8	21	SerTFG-/SerTFG+
9	22	CC1-/CC1+
10	23	CC2-/CC2+
11	24	CC3-/CC3+
12	25	CC4-/CC4+
13	26	GND

### Camera Link base configuration.

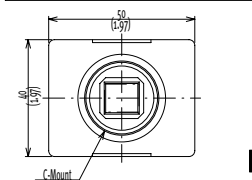
\*) In Camera Link or 12 pin Hirose

## Spectral Sensitivity

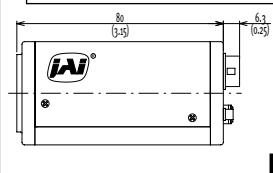


## Dimensions

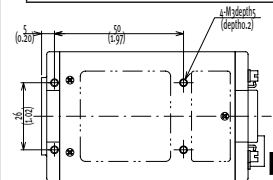
### Front view



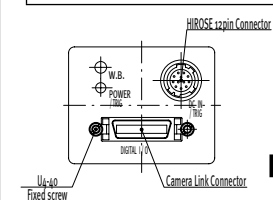
### Side view



### Bottom view



### Rear view



## Ordering Information

CV-M71 CL 1/2"  
Progressive Scan RGB Color Camera

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