

## ❖ CV-M71 CL

Progressive Scan RGB Color



**adept**  
**electronic solutions**

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**a.e.s**



- **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**



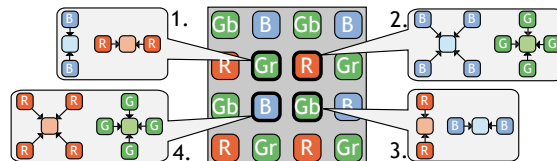
# Specifications for CV-M71 CL

Specifications	CV-M71 CL
Sensor	1/2" progressive scan Bayer mosaic CCD
Pixel clock	36.15 MHz
Frame rate full frame	60 frames/sec
Active area	6.4 (h) x 4.8 (v) mm
Cell size	8.3 (h) x 8.3 (v) μm
Active pixels	767 (h) x 576 (v)
Readout modes	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 143 (v) 250 fps Smear-less Only in conjunction with trigger
Sensitivity	1.7 Lux (On sensor, Max. gain, 50% video)
S/N ratio	>54 dB (on G)
Video output	24-bit RGB in Camera Link 8/10-bit raw Bayer video in Camera Link
Auto-iris lens video	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
Inputs	Camera Link TTL Ext. Trigger Ext. Trigger TTL 4V ±2V Ext. HD/VD 4 V ±2 V. TTL or 75 Ω terminated (Continuous mode only)
Outputs	Camera Link TTL Pixel clock, LVAL, FVAL, DVAL, EEN, XEEN
Trigger modes	Continuous, edge pre-select and pulse width control
Accumulation	Sync. to next LVAL or asynchronous (no-delay)
Electronic shutter	Pre-set shutter Programmable exposure Pulse-width control Auto shutter
White balance	One-push WB button on rear panel Manual, R and B, 2800 to 7000k Fixed 3200, 4600 and 5600K
Control interface	RS 232C or Camera Link
Functions controlled by serial communication	Shutter, Trigger, Scanning, Readout, Polarity, Black level, Gain
Indicators on rear panel	LED for power and trigger input
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)
Regulations	CE (EN 61000-6-2, EN 61000-6-3), FCC part 15 class B, RoHS /WEEE
Power	12V DC ± 10%. 5 W
Lens mount	C-mount
Dimensions (H x W x L)	40 x 50 x 80 mm
Weight	210 g

## Color interpolation

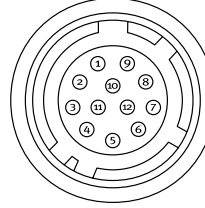
The principle of Bayer RGB mosaic color interpolation.

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



## Connector pin-out

### DC-In / Trigger

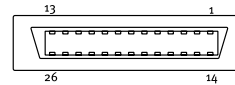


HIROSE HR10A-10R-12PB-01

- Pin
- 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

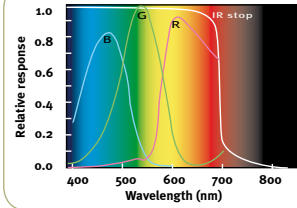
26 pin MDR connector  
3M 10226-1A10JL



- | Pin | Signal | Function        |             |
|-----|--------|-----------------|-------------|
| 1   | 14     | GND             |             |
| 2   | 15     | X0-/X0+         | 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             |             |

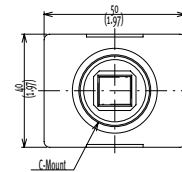
Camera Link base configuration.  
\*) In Camera Link or 12 pin Hirose

## Spectral Response

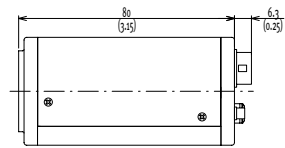


## Dimensions

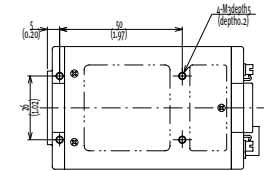
### Front view



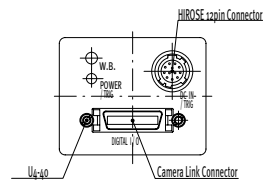
### Side view



### Bottom view



### Rear view



## Ordering Information

CV-M71CL 1/2" Progressive Scan RGB Color Camera

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