



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

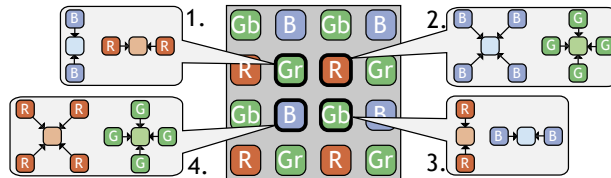
Specifications for CV-M71 CL

| 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) μ m |
| 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 \pm 2 V. TTL or 75 Ω terminated |
| Inputs | Camera Link TTL Ext. trigger Ext. trigger TTL 4V \pm 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 μ s to 16.7 ms) |
| Pulse width control | 2 lines to 120 frames. (33 μ s 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 \pm 10%. 5 W |
| Lens mount | C-mount |
| Dimensions | 40 x 50 x 8 mm (HxWxD) |
| Weight | 210g |

Color Interpolation

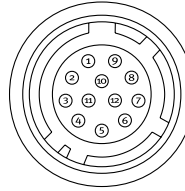
The principle of Bayer RGB mosaic color interpolation.

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

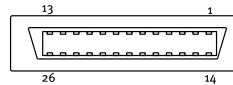


HIROSE HR10A-10R-12PB-01

| 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

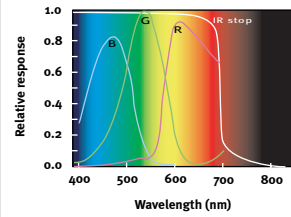


| Pin | Signal | Function |
|-----|-------------|-----------------|
| 1 | GND | |
| 2 | X0-/X0+ | CL Data |
| 3 | X1-/X1+ | CL Data |
| 4 | X2-/X2+ | CL Data |
| 5 | Xclk-/Xclk+ | CL Clk |
| 6 | X3-/X3+ | CL Data |
| 7 | 20 | SerTC-/SerTC+ |
| 8 | 21 | SerTFG-/SerTFG+ |
| 9 | 22 | CC1-/CC1+ |
| 10 | 23 | CC2-/CC2+ |
| 11 | 24 | CC3-/CC3+ |
| 12 | 25 | CC4-/CC4+ |
| 13 | 26 | GND |

Camera Link base configuration.

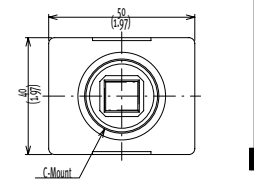
*) In Camera Link or 12 pin Hirose

Spectral Sensitivity

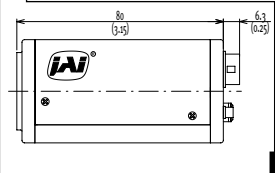


Dimensions

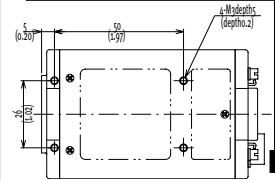
Front view



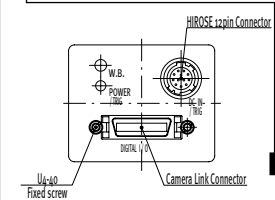
Side view



Bottom view



Rear view



Ordering Information

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

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



THE MECHADEMIC COMPANY