

## ❖ CM-141 PMCL / CB-141 PMCL Progressive Scan



- *C3 Compact series 2/3" progressive scan camera*
- *Monochrome and Bayer mosaic color versions*
- *1392 (h) x 1040 (v) active pixels*
- *6.45  $\mu\text{m}$  square pixels*
- *30 frames/second triggered and continuous operation with full resolution*
- *Up to 141 frames/second with variable partial scan*
- *50 frames/second with vertical binning (CM-141 PMCL only)*
- *Shutter speed from 63 $\mu\text{s}$  to 2 sec. using Pulse Width Control*
- *Preset shutter from OFF (1/30) to 1/10,000*
- *Fine exposure from 1/15847 to 1/85149 by 1 pixel clock unit*
- *Pre-select, Pulse width and reset continuous trigger modes*
- *Smearless EPS mode available*
- *LVAL-synchronous/-asynchronous operation (auto-detect)*
- *8, 10 or 12-bit output*
- *Setup by Windows 2000/XP via serial communication*
- *Power over Camera Link Interface (PoCL)*
- *Right angle option available*

**CAMERA  
Link**

(Power over Camera Link)



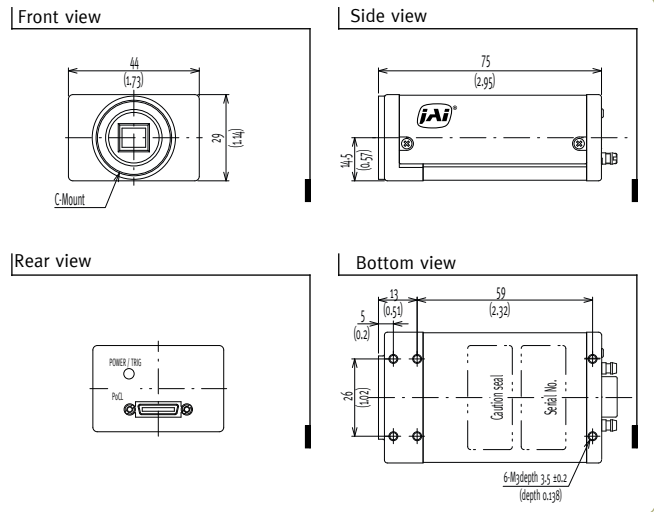
# Specifications for CM-141 PMCL / CB-141 PMCL

| Specifications                               | CM-141 PMCL / CB-141 PMCL  |  |
|--|--|--|
| Sensor                                       | CM-141 PMCL  | Sony ICX-285AL 2/3" progressive scan CCD |
|  | CB-141 PMCL  | Sony ICX-285AQ 2/3" progressive scan CCD |
| Pixel Clock                                  | 58 MHz   |  |
| Frame rate full frame                        | 30.12 frames/second (1052 lines per frame)   |  |
| Active area                                  | 8.98 (h) x 6.7 (v) mm 2/3" diagonal  |  |
| Cell size                                    | 6.45 (h) x 6.45 (v) μm   |  |
| Active pixels                                | 1392 (h) x 1040 (v)  |  |
| Color (CB-141 MCL)                           | Selectable Raw Bayer 8, 10 or 12 bit   |  |
| Read-out modes                               | Full scan 1392 (h) x 1040 (v) 30.12 fps<br>2/3 partial scan 1392 (h) x 694 (v) 41.05 fps<br>1/2 partial scan 1392 (h) x 520 (v) 50.06 fps<br>1/4 partial scan 1392 (h) x 260 (v) 74.57 fps<br>1/8 partial scan 1392 (h) x 130 (v) 98.73 fps<br>Vertical binning 1392 (h) x 520 (v) 50.18 fps* (Note)<br>Variable Partical scan Start line from 1 to 1024, high (Lines) from 8 to 1032<br>*NOTE: CM-141 PMCL only |  |
| Sensitivity (CM-141 MCL)                     | 0.03 Lux (On sensor, Max. gain, shutter off, 50% video)  |  |
| Sensitivity (CB-141 MCL)                     | 0.2 Lux (On sensor, Max. gain, shutter off, 50% video)   |  |
| S/N ratio                                    | >58dB (o dB gain)  |  |
| Video output                                 | 8, 10 or 12 bit in Mini-CL   |  |
| Gain   | -3dB to 24dB   |  |
| Synchronization                              | Int. X-tal or ext. trigger   |  |
| Inputs                                       | Camera Link  | Ext. trigger, LVDS (CC 1)                |
| Outputs                                      | Camera Link  | Clk., FVAL, LVAL, Data, EEN              |
| Trigger modes                                | Edge pre-select, Pulse Width, RCT, Smearless EPS   |  |
| Electronic shutter                           | Pre-set shutter speed 1/30 to 1/10,000 in 10 steps<br>Programmable exposure 2L (63μs) to 1052L (33.19ms) in 1L steps<br>Pulse Width Control 63μs to 2 sec.<br>Fine exposure 1/15847 to 1/85149 by 1 pixel clock  |  |
| Accumulation                                 | Auto-detect LVAL-synchr. / asynchr.  |  |
| Control interface                            | Mini-CL serial communication   |  |
| Functions controlled by serial communication | Shutter, Trigger mode, Readout mode, Trigger Polarity, Black level, Gain,  |  |
| Indicators on rear panel                     | LED for power and trigger input  |  |
| Operating Temperature                        | -5°C to +50°C  |  |
| Humidity (operation)                         | 20% - 90% non-condensing   |  |
| Storage temp./humidity                       | -25°C to +60°C / 20%-90% non-condensing  |  |
| Vibration                                    | 10G (20Hz to 200 Hz XYZ)   |  |
| Shock  | 70G  |  |
| Regulations                                  | CE (EN 61000-6-2, EN-61000-6-3), FCC part 15 class B, RoHS/WEEE  |  |
| Power  | PoCL Standard  |  |
| Lens mount                                   | C-mount  |  |
| Dimensions (H x W x L)                       | 29 x 44 x 75 mm (standard)<br>29 x 44 x 93.5 mm (with Right Angle)   |  |
| Weight                                       | 130 g (standard)<br>160 g (with Right Angle)   |  |

## Ordering Information

|                |   |
|----------------|---|
| CM-141 PMCL    | 2/3" Monochrome Progressive Scan (standard)                 |
| CB-141 PMCL    | 2/3" Bayer Mosaic Color Progressive Scan (standard)         |
| CM-141 PMCL-RA | 2/3" Monochrome Progressive Scan (with Right Angle)         |
| CB-141 PMCL-RA | 2/3" Bayer Mosaic Color progressive Scan (with Right Angle) |

## Dimensions



## Connector pin-out

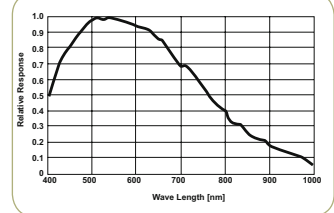
### Mini-CL interface



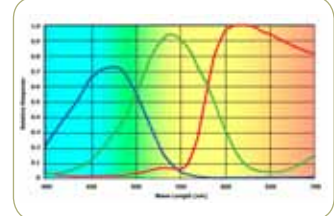
| Pin   | Signal     | Function   |
|-------|------------|------------|
| 1 26  | Power      | DC+12V     |
| 2 15  | -/+ Tx0    | CL Data    |
| 3 16  | -/+ Tx1    | CL Data    |
| 4 17  | -/+ Tx2    | CL Data    |
| 5 18  | -/+ Txclk  | CL clk     |
| 6 19  | -/+ Tx3    | CL Data    |
| 7 20  | +/- SerTC  | Serial in  |
| 8 21  | -/+ SerTFG | Serial out |
| 9 22  | CC1-/CC1+  | Ext. trig* |
| 10 23 | CC2+/CC2-  | Not used   |
| 11 24 | CC3-/CC3+  | Not used   |
| 12 25 | CC4+/CC4-  | Not used   |
| 13 14 | GND        |            |

\*) in Mini-CL or 12-pin Hirose

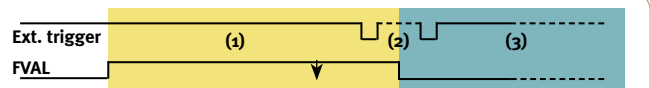
## Spectral Response CM-141 PMCL



## Spectral Response CB-141 PMCL



## FVAL auto-detect trigger function (next LVAL or immediate)



- Within this period camera starts accumulation at next LVAL (prevents feed-through noise)
- Avoid trigger at FVAL transition, as function may randomly switch between "next LVAL" and "immediate" (+/- 1 LVAL)
- Within this period camera starts accumulation immediately (no delay)

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