

## ❖ CM-140 PMCL-UV Progressive Scan



- Compact series 1/2" progressive scan camera
- Power over Camera Link (PoCL)
- Monochrome UV-sensitive
- 1392 (h) x 1040 (v) active pixels
- 4.65  $\mu\text{m}$  square pixels
- 16 frames/second with full resolution in continuous operation
- 16 frames/second with external trigger and full resolution
- Up to 38 frames/second with partial scan
- 25 frames/second with vertical binning
- Shutter speed from 59 $\mu\text{s}$  to 2 sec. using Pulse Width Control
- Programmable exposure from 118 $\mu\text{s}$  to 62 ms
- Pre-select and Pulse width trigger modes
- LVAL-synchronous/-asynchronous operation (auto-detect)
- Auto iris lens video output allows a wider range of light
- 10 or 8-bit output
- Setup by Windows NT/2000/XP via serial communication

**CAMERA  
Link**  
(Mini Camera Link)



# Specifications for CM-140 PMCL-UV

| Specifications                               | CM-140 PMCL-UV   |
|--|--|
| Sensor                                       | 1/2" progressive scan CCD  |
| Pixel Clock                                  | 33.75 MHz  |
| Frame rate full frame                        | 16.14 frames/sec.<br>(1052 lines per frame)                                    |
| Active area                                  | 6.4 (h) x 4.8 (v) mm   |
| Cell size                                    | 4.65 (h) x 4.65 (v) $\mu$ m  |
| Active pixels                                | 1392 (h) x 1040 (v)  |
| Read-out modes                               |  |
| Full   | 1392 (h) x 1040 (v) 16.14 fps  |
| 2/3 partial scan                             | 1392 (h) x 694 (v) 20.76 fps   |
| 1/2 partial scan                             | 1392 (h) x 520 (v) 24.16 fps   |
| 1/4 partial scan                             | 1392 (h) x 269 (v) 32.16 fps   |
| 1/8 partial scan                             | 1392 (h) x 130 (v) 38.41 fps   |
| Vertical binning                             | 1392 (h) x 520 (v) 25.37 fps   |
| Sensitivity                                  | 0.3 Lux (On sensor, Max. gain, Shutter OFF, 50% video)                         |
| S/N ratio                                    | >50dB (0 dB gain)  |
| Video output                                 | 8 or 10 bit in Mini-CL   |
| Auto-iris lens video                         | 0.7 Vpp  |
| Gain   | Manual, -3dB to +12dB  |
| Synchronization                              | Int. X-tal or ext. trigger   |
| Inputs                                       | Camera Link<br>TTL   |
| Outputs                                      | Camera Link<br>TTL   |
| Trigger modes                                | Pre-select, Pulse Width, Reset Continuous                                      |
| Electronic shutter                           |  |
| Pre-set shutter                              | 1/30 to 1/10,000 in 9 steps  |
| Programmable exposure                        | 2L (118 $\mu$ s) to 1052L (62ms) in 1L steps                                   |
| Pulse Width Control                          | 59 $\mu$ s to 2 sec.   |
| Accumulation                                 | Auto-detect LVAL-synchr. / asynchr.  |
| Control interface                            | Mini-CL serial communication   |
| Functions controlled by serial communication | Shutter, Trigger, Scanning, Readout mode, Trigger Polarity, Black level, Gain, |
| Indicators on rear panel                     | LED for power and trigger input  |
| Operating Temperature                        | -5°C to +45°C  |
| Humidity (operation)                         | 20 - 90% non-condensing  |
| Storage temp./humidity                       | -25°C to +60°C / 20 to 90% non-condensing                                      |
| Vibration                                    | 10G (20Hz to 200Hz XYZ)  |
| Shock  | 70G  |
| Regulations                                  | CE (EN 61000-6-2, EN-61000-6-3),<br>FCC part 15 class B, RoHS/WEEE             |
| Power  | 12V DC $\pm$ 10% 1.8 W (PoCL)  |
| Lens mount                                   | C-mount  |
| Dimensions (H x W x L)                       | 29 x 44 x 66 mm  |
| Weight                                       | 120 g  |

## Connector pin-out

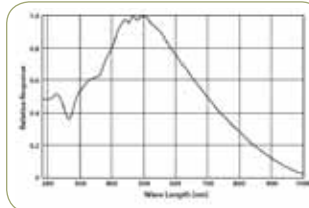
### Mini-CL interface



| Pin   | Signal    | Function   |
|-------|-----------|------------|
| 1 14  | +12V/GND  | Power      |
| 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 26 | GND/+12V  | Power      |

NOTE:  
The PoCL interface requires a compatible frame grabber for proper and safe operation.

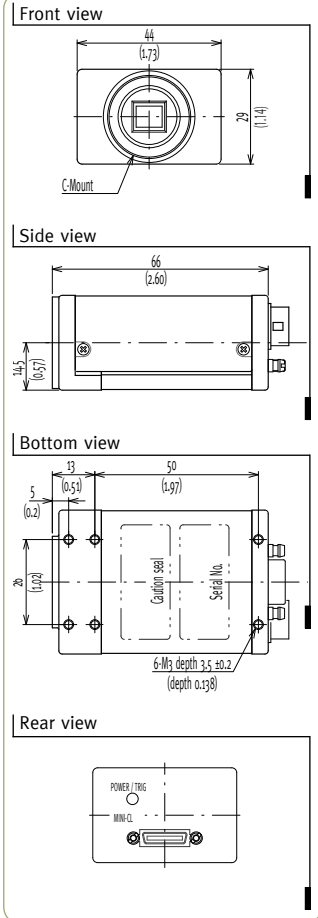
## Spectral Response CM-140 PMCL-UV



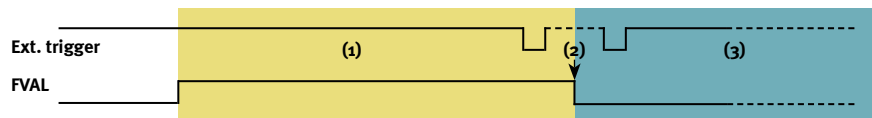
## Ordering Information

CM-140 PMCL-UV 1/2" Monochrome Progressive Scan Camera

## Dimensions



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



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

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