

➤ CM-140 PMCL / CB-140 PMCL Progressive Scan



- Compact series 1/2" progressive scan camera
- Power over Camera Link (PoCL)
- Monochrome and Bayer mosaic color versions
- 1392 (h) x 1040 (v) active pixels
- 4.65 μm square pixels
- 31 frames/second with full resolution in continuous operation
- 30 frames/second with external trigger and full resolution
- Up to 74 frames/second with partial scan
- 48 frames/second with vertical binning (CM-140 MCL only)
- Shutter speed from 30.5 μs to 2 sec. using Pulse Width Control
- Programmable exposure from 61 μs to 32 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 2000/XP via serial communication

**CAMERA
Link**
(Mini Camera Link)



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Specifications for CM-140 PMCL / CB-140 PMCL

Specifications	CM-140 PMCL / CB-140 PMCL
Sensor	1/2" progressive scan CCD
Pixel Clock	65 MHz
Frame rate full frame	31 frames/sec.
Active area	6.4 (h) x 4.8 (v) mm
Cell size	4.65 (h) x 4.65 (v) μ m
Active pixels	1392 (h) x 1040 (v)
Color (CB-140 PMCL)	Raw Bayer output for host-based interpolation
Read-out modes	Full 1392 (h) x 1040 (v) 31.08 fps 2/3 partial scan 1392 (h) x 694 (v) 39.97 fps 1/2 partial scan 1392 (h) x 520 (v) 46.57 fps 1/4 partial scan 1392 (h) x 269 (v) 61.92 fps 1/8 partial scan 1392 (h) x 130 (v) 73.97 fps Vertical binning 1392 (h) x 527 (v) 48.87 fps* *NOTE: CM-140PMCL only
Sensitivity (CM-140 PMCL)	0.3 Lux (On sensor, Max. gain, Shutter OFF, 50% video)
Sensitivity (CB-140 PMCL)	1.4 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 Vp-p
Gain	Manual, -3dB to +12dB
Synchronization	Int. X-tal or ext. trigger
Inputs	Camera Link TTL Ext. trigger, LVDS (CC 1) Ext. trigger 4V \pm 2V
Outputs	Camera Link TTL Clk., FVAL, LVAL, Data, EEN XEEN
Trigger modes	Pre-select, Pulse Width, Reset Continuous
Electronic shutter	Pre-set shutter 1/31 to 1/10,000 in 9 fixed steps Programmable exposure 2L (64 μ s) to 1052L (40ms) in 1L steps Pulse Width Control 32 μ s to 2 sec.
Accumulation	Auto-detect LVAL-synchr. / asynchr.
Control interface	Mini-CL serial communication
Functions controlled by serial communication	Shutter, Trigger mode, Readout mode, Scanning, 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), FCC part 15 class B, RoHS/WEEE
Power	12V DC \pm 10% 3 W (PoCL)
Lens mount	C-mount
Dimensions (H x W x L)	29 x 44 x 66 mm
Weight	115 g

Connector pin-out

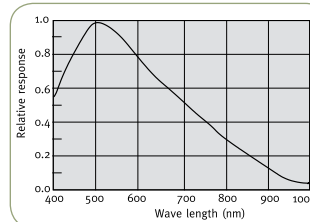
Mini-CL interface



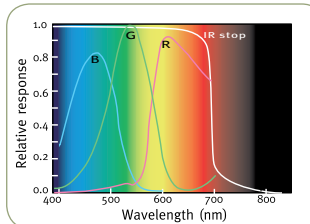
Pin	Signal	Function
1 14	+12V/GND	Power
2 15	-/+ Tx0	CL Data
3 16	-/+ Tx1	CL Data
4 17	-/+ Tx2	CL Data
5 18	-/+ Txclk	CL clk
6 19	-/+ Tx3	CL Data
7 20	+/- SerTC	Serial in
8 21	-/+ SerFTG	Serial out
9 22	CC1-/CC1+	Ext. trig*
10 23	CC2-/CC2+	Not used
11 24	CC3-/CC3+	Not used
12 25	CC4-/CC4+	Not used
13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

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

Spectral Response CM-140 PMCL



Spectral Response CB-140 PMCL

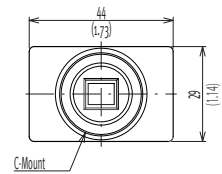


Ordering Information

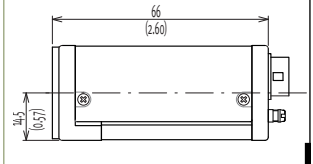
CM-140 PMCL	1/2" Monochrome Progressive Scan Camera
CB-140 PMCL	1/2" Bayer Mosaic Color Progressive Scan Camera

Dimensions

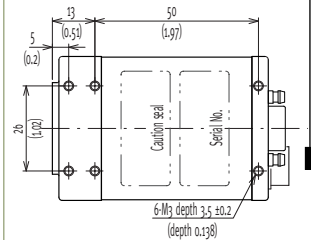
Front view



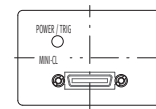
Side view



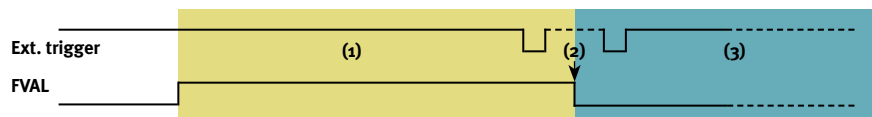
Bottom view



Rear view



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)



See the possibilities

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