

❖ CM-200 MCL / CB-200 MCL

Progressive Scan



- *Compact series 1/1.8" progressive scan camera*
- *Monochrome and Bayer mosaic color versions*
- *1620 (h) x 1236 (v) pixels active area*
- *4.4µm square pixels*
- *25 frames/second with full resolution in continuous operation*
- *Up to 24 frames/second with external trigger and full resolution*
- *Up to 89 frames/second with partial scan*
- *48 frames/second with vertical binning (CM-200 MCL only)*
- *Shutter speed from 32 µs to 2 sec. using Pulse Width Control*
- *Programmable exposure from 64 µs to 40 ms*
- *Pre-select and Pulse width trigger modes*
- *LVAL-synchronous/-asynchronous operation (auto-detect)*
- *Power over CL (PoCL) version available*
- *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*



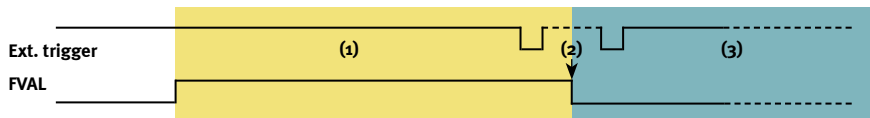
Specifications for CM-200 MCL / CB-200 MCL

Specifications	CM-200 MCL / CB-200 MCL												
Sensor	1/1.8" progressive scan CCD												
Pixel Clock	65 MHz												
Frame rate full frame	24.98 frames/sec. (1251 lines per frame)												
Active area	7.13 (h) x 5.44 (v) mm												
Cell size	4.4 (h) x 4.4 (v) μm												
Active pixels	1620 (h) x 1236 (v)												
Color (CB-200 MCL)	Raw Bayer output for host-based interpolation												
Read-out modes	<table border="0"> <tr> <td>Full</td> <td>1620 (h) x 1236 (v) 24.98 fps</td> </tr> <tr> <td>1/2 partial scan</td> <td>1620 (h) x 712(v) 43.89 fps</td> </tr> <tr> <td>1/4 partial scan</td> <td>1620 (h) x 448 (v) 69.75 fps</td> </tr> <tr> <td>1/8 partial scan</td> <td>1620 (h) x 316 (v) 98.89 fps</td> </tr> <tr> <td>2/3 partial scan</td> <td>1620 (h) x 888 (v) 35.19 fps</td> </tr> <tr> <td>Vertical binning</td> <td>1620 (h) x 627 (v) 48.87 fps*</td> </tr> </table> <p>*NOTE: CM-200MCL only</p>	Full	1620 (h) x 1236 (v) 24.98 fps	1/2 partial scan	1620 (h) x 712(v) 43.89 fps	1/4 partial scan	1620 (h) x 448 (v) 69.75 fps	1/8 partial scan	1620 (h) x 316 (v) 98.89 fps	2/3 partial scan	1620 (h) x 888 (v) 35.19 fps	Vertical binning	1620 (h) x 627 (v) 48.87 fps*
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Sensitivity (CM-200 MCL)	0.25 Lux (On sensor, Max. gain, Shutter OFF, 50% video)												
Sensitivity (CB-200 MCL)	0.8 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 ±2V												
Outputs	Camera Link TTL Clk., FVAL, LVAL, Data, EEN XEEN												
Trigger modes	Pre-select, Pulse Width												
Electronic shutter	<table border="0"> <tr> <td>Pre-set shutter</td> <td>1/24 to 1/10,000 in 10 steps</td> </tr> <tr> <td>Programmable exposure</td> <td>2L (64μs) to 1052L (40ms) in 1L steps</td> </tr> <tr> <td>Pulse Width Control</td> <td>32μs to 2 sec.</td> </tr> </table>	Pre-set shutter	1/24 to 1/10,000 in 10 steps	Programmable exposure	2L (64μs) to 1052L (40ms) in 1L steps	Pulse Width Control	32μs to 2 sec.						
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Pulse Width Control	32μs 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, 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%												
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	12V DC ±10% 3 W												
Lens mount	C-mount												
Dimensions (H x W x L)	29 x 44 x 66 mm												
Weight	120 g												

Ordering Information

CM-200 MCL 1/1.8" Monochrome Progressive Scan Camera
CB-200 MCL 1/1.8" Bayer Mosaic Color Progressive Scan Camera

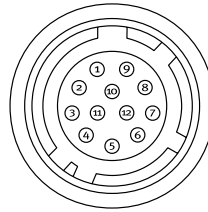
FVAL auto-detect trigger function (next LVAL or immediate)



- (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)

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	N/C
7	N/C
8	Ground
9	XEEN out
10	Trigger in*
11	+12V DC
12	Ground

Mini-CL interface

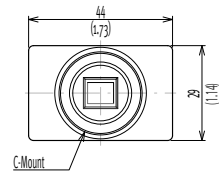


Pin	Signal	Function
1	14	GND
2	15	+/-Tx0
3	16	+/-Tx1
4	17	+/-Tx2
5	18	+/-Txclk
6	19	+/-Tx3
7	20	SerTC+/SerTC-
8	21	SerTFG+/SerTFG-
9	22	CC1-/CC1+
10	23	CC2-/CC2+
11	24	CC3-/CC3+
12	25	CC4-/CC4+
13	26	GND

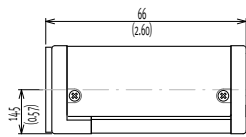
For PoCL version pins 1 and 26 are used for +12V
*) in Mini-CL or 12-pin Hirose

Dimensions

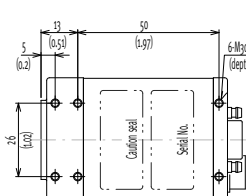
Front view



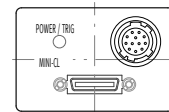
Side view



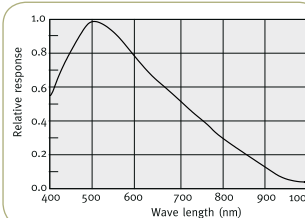
Bottom view



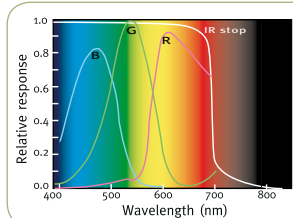
Rear view



Spectral Response CM-200 MCL



Spectral Response CB-200 MCL



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