

❖ 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



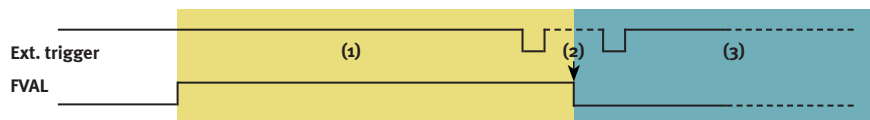
Specifications for CM-200 MCL / CB-200 MCL

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) μ m												
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 \pm 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 (64 μ s) to 1052L (40ms) in 1L steps	Pulse Width Control	32 μ s to 2 sec.						
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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, 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 \pm 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

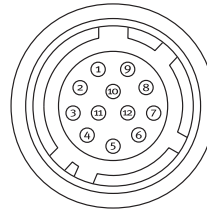
FVAL auto-detect trigger function (next LVAL or immediate)



- (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	Signal
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

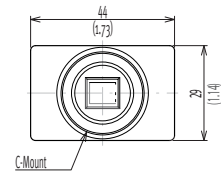


Pin	Signal	Function
1	14	GND
2	15	+/-Tx0
3	16	+/-Tx1
4	17	+/-Tx2
5	18	+/-Txclk
6	19	+/-Tx3
7	20	SerTC+/SerTC-
8	21	SerTFG+/SerTFG-
9	22	CC1-/CC1+
10	23	CC2-/CC2+
11	24	CC3-/CC3+
12	25	CC4-/CC4+
13	26	GND

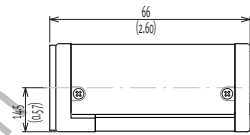
For PoCL version pins 1 and 26 are used for +12V
*) in Mini-CL or 12-pin Hirose

Dimensions

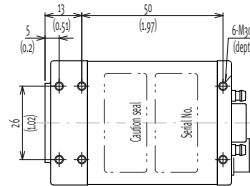
Front view



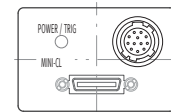
Side view



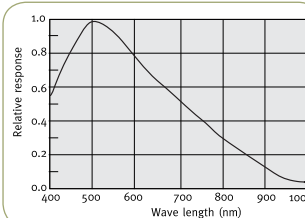
Bottom view



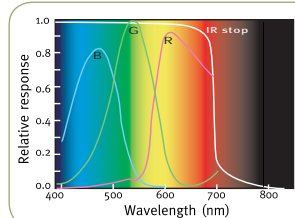
Rear view



Spectral Response CM-200 MCL



Spectral Response CB-200 MCL



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