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

PRELIMINARY

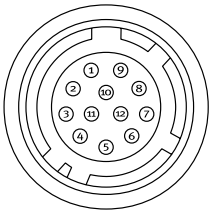
Specifications	CM-200 MCL / CB-200 CL
Sensor	1/1.8" progressive scan CCD
Pixel Clock	65 MHz
Frame rate full frame	24.98 frames/sec. (1251 lines per frame)
Active area	7.13 (h) x 5.37 (v) mm
Cell size	4.4 (h) x 4.4 (v) µm
Active pixels	1628 (h) x 1236 (v)
Color (CB-200 MCL)	Raw Bayer output for host-based interpolation
Read-out modes	
Full	1620 (h) x 1236 (v) 24.98 fps
2/3 partial scan	1620(h) x 888 (v) 35.19 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
Vertical binning	1620(h) x 627 (v) 48.87 fps* *NOTE: CB-200MCL does not support v. binning
Sensitivity (CM-200 MCL)	0.21 Lux (On sensor, Max. gain, Shutter OFF,50% video)
Sensitivity (CB-200 MCL)	0.7 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	Ext. trigger, LVDS (CC 1)
TTL	Ext. trigger 4V ±2V
Outputs Camera Link	Clk., FVAL, LVAL, Data, EEN
TTL	XEEN
Trigger modes	Pre-select, Pulse Width
Electronic shutter	
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.
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	-10°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% 3.25 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 Progresseive Scan Camera
CB-200 MCL 1/1.8" Bayer Mosaic Color Progresseive Scan Camera

Connector pin-out

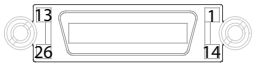
DC In / Trigger



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

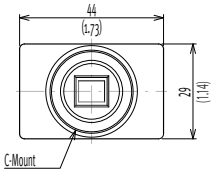


Pin		Signal	Function
1	14	GND	-
2	15	+/-Txo	CL Data
3	16	+/-Tx1	CL Data
4	17	+/-Tx2	CL Data
5	18	+/-Txclk	CL clk
6	19	+/-Tx3	CL Data
7	20	SerTC+/SerTC-	Serial in
8	21	SerTFG+/SerTFG-	Serial out
9	22	CC1-/CC1+	Ext. trig*
10	23	CC2+/CC2-	Not used
11	24	CC3-/CC3+	Not used
12	25	CC4+/CC4-	Not used
13	26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

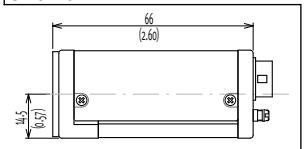
For PoCL version pins 1 and 26 are used for +12V
*) in Mini-CL or 12-pin Hirose

Dimensions

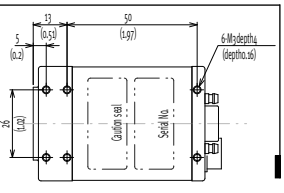
Front view



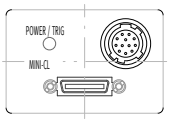
Side view



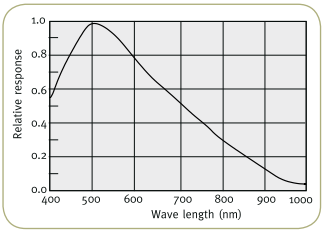
Bottom view



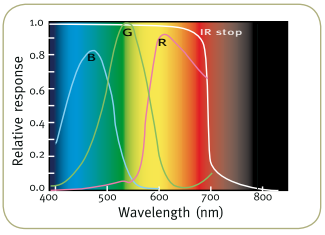
Rear view



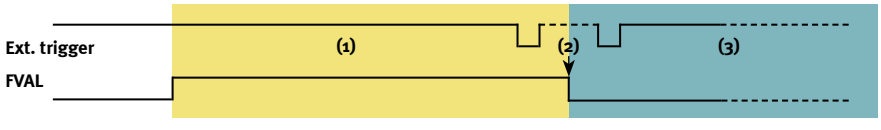
Spectral Response CM-200 MCL



Spectral Response CB-200 MCL



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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