

❖ CM-141 MCL / CB-141 MCL Progressive Scan

C3 Camera Suite
Unlimited
Digital
Switchability



- C3 Compact series 2/3" progressive scan camera
- Monochrome and Bayer mosaic color versions
- 1392 (h) x 1040 (v) active pixels
- 6.45 μm square pixels
- 30 frames/second triggered and continuous operation with full resolution
- Up to 141 frames/second with variable partial scan
- 50 frames/second with vertical binning (CM-141 MCL only)
- Shutter speed from 63 μs to 2 sec. using Pulse Width Control
- Preset shutter from OFF (1/30) to 1/10,000
- Programmable exposure from 63 μs to 33ms
- Pre-select, Pulse width and reset continuous trigger modes
- Smearless EPS mode available
- LVAL-synchronous/-asynchronous operation (auto-detect)
- Auto iris lens video output allows a wider range of light
- 8, 10 or 12-bit output
- Setup by Windows NT/2000/XP via serial communication
- Camera link interface (available with Power over Camera Link)
- Right angle option available

**CAMERA
Link**
(Mini Camera Link)



Specifications for CM-141 MCL / CB-141 MCL

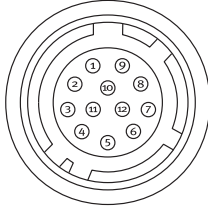
Specifications	CM-141 MCL / CB-141 MCL
Sensor	Sony ICX-285AL 2/3" progressive scan CCD (CM-141 MCL) Sony ICX-285AQ 2/3" progressive scan CCD (CB-141 MCL)
Pixel Clock	58 MHz
Frame rate full frame	30.12 frames/second (1052 lines per frame)
Active area	8.98 (h) x 6.7 (v) mm 2/3" diagonal
Cell size	6.45 (h) x 6.45 (v) μm
Active pixels	1392 (h) x 1040 (v)
Color (CB-141 MCL)	Selectable Raw Bayer 8, 10 or 12 bit
Read-out modes	Full scan 1392 (h) x 1040 (v) 30.12 fps 2/3 partial scan 1392 (h) x 694 (v) 41.05 fps 1/2 partial scan 1392 (h) x 520 (v) 50.06 fps 1/4 partial scan 1392 (h) x 260 (v) 74.57 fps 1/8 partial scan 1392 (h) x 130 (v) 98.73 fps Vertical binning 1392 (h) x 520 (v) 50.18 fps* (Note) Variable Partical scan Start line from 1 to 1033, high (Lines) from 8 to 1040 *NOTE: CM-141 MCL only
Sensitivity (CM-141 MCL)	0.03 Lux (On sensor, Max. gain, shutter off, 50% video)
Sensitivity (CB-141 MCL)	0.2 Lux (On sensor, Max. gain, shutter off, 50% video)
S/N ratio	>58dB (0 dB gain)
Video output	8, 10 or 12 bit in Mini-CL
Auto-iris lens video	0.7V p-p
Gain	-3dB to 24dB
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	Edge pre-select, Pulse Width, RCT, Smearless EPS
Electronic shutter	Pre-set shutter speed 1/30 to 1/10,000 in 10 steps Programmable exposure 2L (63 μs) to 1052L (33.19ms) in 1L steps Pulse Width Control 63 μs 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 +50°C
Humidity (operation)	20% - 90% non-condensing
Storage temp./humidity	-25°C to +60°C / 20% - 90% non-condensing
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% 3.6 W
Lens mount	C-mount
Dimensions (H x W x L)	29 x 44 x 75 mm (CM/CB-141 MCL) 29 x 44 x 93.5 mm (CM/CB-141 MCL-RA with Right Angle)
Weight	130 g (CM/CB-141 MCL) 160 g (CM/CB-141 MCL-RA with Right Angle)

Ordering Information

CM-141 MCL 2/3" Monochrome Progressive Scan
 CB-141 MCL 2/3" Bayer Mosaic Color Progressive Scan
 CM-141 MCL-RA 2/3" Monochrome Progressive Scan (with Right Angle)
 CB-141 MCL-RA 2/3" Bayer Mosaic Color progressive Scan (with Right Angle)
 All versions available with Power over Camera Link (PMCL)

Connector pin-out


DC In / Trigger



HIROSE HR10A-10R-12PB-01

Pin 1	Ground
Pin 2	+12V DC
Pin 3	Ground
Pin 4	Auto Iris lens video output
Pin 5	Ground
Pin 6	N/C
Pin 7	N/C
Pin 8	Ground
Pin 9	XEEN out
Pin 10	Trigger in*
Pin 11	+12V DC
Pin 12	Ground

Mini-CL interface

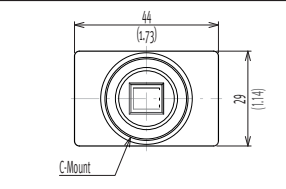


Pin	Signal	Function
1 14	GND	-
2 15	-/+ Tx0	CL Data
3 16	-/+ Tx1	CL Data
4 17	-/+ Tx2	CL Data
5 18	-/+ Txclk	CL clk
6 19	-/+ Tx3	CL Data
7 20	SerTC+/SerTC-	Serial in
8 21	SerTFG+/SerTFG-	Serial out
9 22	CC1-/CC1+	Ext. trig*
10 23	CC2-/CC2+	Not used
11 24	CC3-/CC3+	Not used
12 25	CC4-/CC4+	Not used
13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

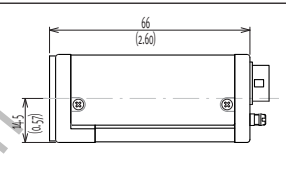
*) in Mini-CL or 12-pin Hirose

Dimensions

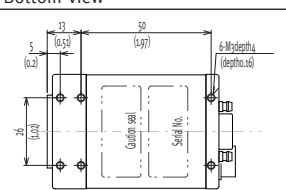
Front view



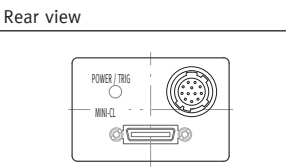
Side view



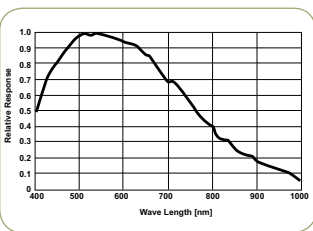
Bottom view



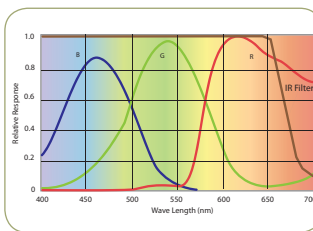
Rear view



Spectral Response CM-141 MCL



Spectral Response CB-141 MCL



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

Ext. trigger (1) (2) (3)

FVAL (1) (2) (3)

(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" (+/- 1 LVAL)
 (3) Within this period camera starts accumulation immediately (no delay)

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