

❖ CM-141 MCL / CB-141 MCL

Progressive Scan



- 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
- Fine Exposure from 1/15847s to 1/85149s by 1 pixel clock unit
- Pre-select, Pulse width and reset continuous trigger modes
- Smearless EPS mode available
- LVAL-synchronous/-asynchronous operation (auto-detect)
- 8, 10 or 12-bit output
- Setup by Windows 2000/XP via serial communication
- Mini Camera Link interface (Power over Camera Link also available)
- Right angle option available

CAMERA
Link
(Mini Camera Link)



Specifications for CM-141 MCL / CB-141 MCL

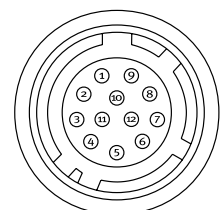
Specifications	CM-141 MCL / CB-141 MCL												
Sensor	CM-141 MCL Sony ICX-285AL 2/3" progressive scan CCD CB-141 MCL Sony ICX-285AQ 2/3" progressive scan CCD												
Pixel Clock	58 MHz												
Frame rate full frame	30.12 frames/second												
Active area	8.98 (h) x 6.7 (v) mm 2/3" diagonal												
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	<table border="0"> <tr> <td>Full scan</td> <td>1392 (h) x 1040 (v) 30.12 fps</td> </tr> <tr> <td>2/3 partial scan</td> <td>1392 (h) x 694 (v) 41.05 fps</td> </tr> <tr> <td>1/2 partial scan</td> <td>1392 (h) x 520 (v) 50.06 fps</td> </tr> <tr> <td>1/4 partial scan</td> <td>1392 (h) x 260 (v) 74.57 fps</td> </tr> <tr> <td>1/8 partial scan</td> <td>1392 (h) x 130 (v) 98.73 fps</td> </tr> <tr> <td>Vertical binning</td> <td>1392 (h) x 520 (v) 50.18 fps* (Note)</td> </tr> </table> Variable Partical scan - Start line from 1 to 1024 Variable Partical scan - High from 8 to 1032 (Lines) *NOTE: CM-141 MCL only	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)
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)												
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 (o dB gain)												
Video output	8, 10 or 12 bit in Mini-CL												
Auto-iris lens video	0.7V p-p												
Gain	-6dB to 24dB												
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	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 (63μs) to 1052L (33.19ms) in 1L steps Pulse Width Control 63μs to 2 sec. Fine Exposure 1/158475 to 1/851495 (in 1 pixel clock unit)												
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 ±10% 5.1 W												
Lens mount	C-mount												
Dimensions (H x W x L)	29 x 44 x 75 mm (standard Mono/Color) 29 x 44 x 93.5 mm (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)

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	N/C
	12	Ground

Mini-CL interface

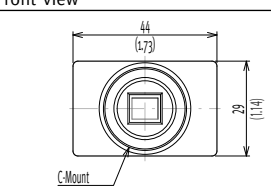


Pin	Signal	Function	
1	14	GND	
2	15	-/+ Tx0	CL Data
3	16	-/+ Tx1	CL Data
4	17	-/+ Tx2	CL Data
5	18	-/+ Txclk	CL clk
6	19	-/+ Tx3	CL Data
7	20	+/- SerTC	Serial in
8	21	-/+ SerFTG	Serial out
9	22	CC1-/CC1+	Ext. trig*
10	23	CC2+/CC2-	Not used
11	24	CC3+/CC3+	Not used
12	25	CC4+/CC4-	Not used
13	26	GND	

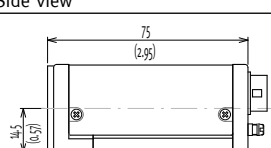
* in Mini-CL or 12-pin Hirose

Dimensions

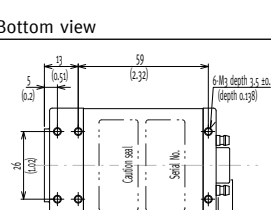
Front view



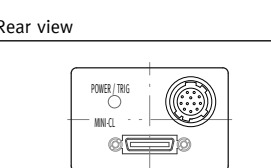
Side view



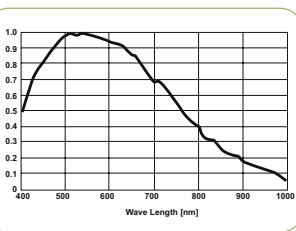
Bottom view



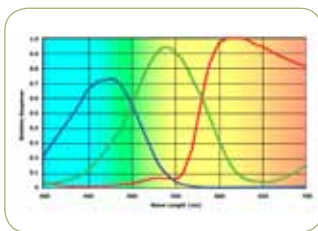
Rear view



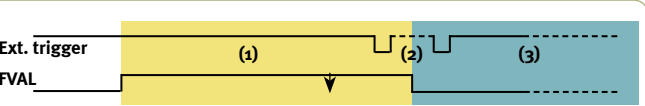
Spectral Response CM-141 MCL



Spectral Response CB-141 MCL



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



- (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)

Europe, Middle East & Africa Phone +45 4457 8888 Fax +45 4491 3252	Asia Pacific Phone +81 45 440 0154 Fax +81 45 440 0166	Americas Phone (Toll-Free) 1 800 445 5444 Phone +1 408 383 0300
---	---	--



Company and product names mentioned in this datasheet are trademarks or registered trademarks of their respective owners. JAI AS cannot be held responsible for any technical or typographical errors and reserves the right to make changes to products and documentation without prior notification. October 2011