

## ❖ CM-140 MCL-UV Progressive Scan



- *Compact series 1/2" progressive scan camera*
- *Monochrome UV-sensitive*
- *1392 (h) x 1040 (v) active pixels*
- *4.65  $\mu\text{m}$  square pixels*
- *16 frames/second with full resolution in continuous operation*
- *16 frames/second with external trigger and full resolution*
- *Up to 38 frames/second with partial scan*
- *25 frames/second with vertical binning*
- *Shutter speed from 59 $\mu\text{s}$  to 2 sec. using Pulse Width Control*
- *Programmable exposure from 118 $\mu\text{s}$  to 62 ms*
- *Pre-select and Pulse width trigger modes*
- *LVAL-synchronous/-asynchronous operation (auto-detect)*
- *Power over CL (PoCL) version available (CM-140 PMCL-UV)*
- *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*

**CAMERA  
Link**  
(Mini Camera Link)

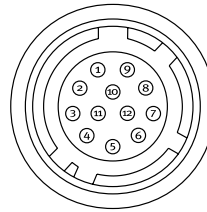


# Specifications for CM-140 MCL-UV

Specifications	CM-140 MCL-UV
Sensor	1/2" progressive scan CCD
Pixel Clock	33.75 MHz
Frame rate full frame	16.14 frames/second (1052 lines per frame)
Active area	6.4 (h) x 4.8 (v) mm
Cell size	4.65 x 4.65 μm
Active pixels	1392 (h) x 1040 (v)
Read-out modes	
Full	1392 (h) x 1040 (v) 16.14 fps
2/3 partial scan	1392 (h) x 694 (v) 20.76 fps
1/2 partial scan	1392 (h) x 520 (v) 24.16 fps
1/4 partial scan	1392 (h) x 269 (v) 32.16 fps
1/8 partial scan	1392 (h) x 130 (v) 38.41 fps
Vertical binning	1392 (h) x 527 (v) 25.37 fps
Sensitivity (CM-140 MCL)	0.3 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 Vpp
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, Reset Continuous
Electronic shutter	
Pre-set shutter	1/30 to 1/10,000 in 9 steps
Programmable exposure	2L (118μs) to 1052L (62ms) in 1L steps
Pulse Width Control	59μs to 2 sec.
Accumulation	Auto-detect LVAL-synchr. / asynchr.
Control interface	Mini-CL serial communication
Functions controlled by serial communication	Shutter, Trigger, Screening, 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% 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% 1.8 W
Lens mount	C-mount
Dimensions (H x W x L)	29 x 44 x 66 mm
Weight	120 g

## Connector pin-out

### DC In / Trigger



HIROSE HR10A-10R-12PB-01

Pin	Signal	Function
1	Ground	-
2	+12V DC	CL Data
3	Ground	CL Data
4	Auto Iris lens video output	CL Data
5	Ground	CL clk
6	N/C	CL Data
7	N/C	Serial in
8	Ground	Serial out
9	XEEN out	Ext. trig*
10	Trigger in*	Not used
11	+12V DC	Not used
12	Ground	Not used

### Mini-CL interface

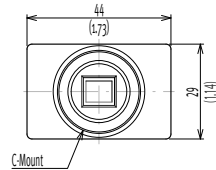


Pin	Signal	Function
1	14	GND
2	15	-/+ Tx0
3	16	-/+ Tx1
4	17	-/+ Tx2
5	18	-/+ Txclk
6	19	-/+ Tx3
7	20	+/- SerTC
8	21	-/+ SerTFG
9	22	CC1-/CC1+
10	23	CC2-/CC2+
11	24	CC3-/CC3+
12	25	CC4-/CC4+
13	26	GND

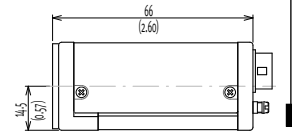
For PoCL version pins 1 and 26 are used for +12V  
\*) in Mini-CL or 12-pin Hirose

## Dimensions

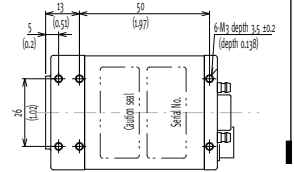
### Front view



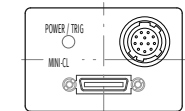
### Side view



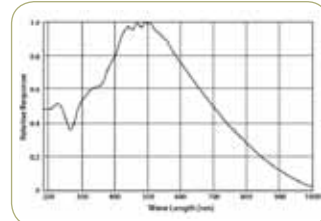
### Bottom view



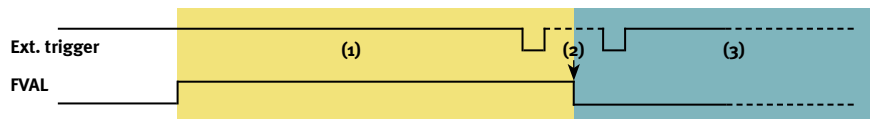
### Rear view



## Spectral Response CM-140 MCL-UV



## 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)

## Ordering Information

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