

## CM-140 GE-UV

Progressive Scan

**C3** Camera Suite  
Unlimited  
Digital  
Switchability



- Member of C3 Compact series
- 1392 (h) x 1040 (v) 4.65  $\mu\text{m}$  square pixels
- 1/2" progressive scan - Monochrome
- 16 frames/second with full resolution in continuous operation
- Increased frame rate with vertical binning and partial scan
- Exposure time from 31  $\mu\text{s}$  to 2 sec. using Pulse Width trigger mode
- Programmable exposure from 61.2  $\mu\text{s}$  to 32.2 ms
- Sequencer trigger mode for on-the-fly change of gain, exposure and ROI
- LVAL-synchronous/-asynchronous operation (auto-detect)
- Auto iris lens video output allows a wider range of light
- GigE Vision interface with 10 or 8-bit output
- Programmable GPIO with opto-isolated inputs and outputs
- Comprehensive software tools and SDK for Windows XP/Vista

**GigE**™  
VISION

# Specifications for CM-140 GE-UV

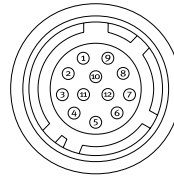
Specifications	CM-140 GE-UV														
Sensor	1/2" progressive scan														
Pixel Clock	33.75 MHz														
Frame rate full frame	16.14 frames/second (1052 lines per frame)														
Active area	6.4 (h) x 4.8 (v) mm														
Cell size	4.65 x 4.65 pixels														
Active pixels	1392 x 1040														
Read-out modes	<table border="0"> <tr> <td>Full</td> <td>1392 (h) x 1040 (v) 16 fps</td> </tr> <tr> <td>1/2 partial scan</td> <td>1392 (h) x 520(v) 24.16 fps</td> </tr> <tr> <td>1/4 partial scan</td> <td>1392 (h) x 260 (v) 32.16 fps</td> </tr> <tr> <td>1/8 partial scan</td> <td>1392 (h) x 130 (v) 38.41 fps</td> </tr> <tr> <td>2/3 partial scan</td> <td>1392 (h) x 694 (v) 20.76 fps</td> </tr> <tr> <td>Vertical binning</td> <td>1392 (h) x 520 (v) 25.37 fps*</td> </tr> <tr> <td>Region-of-interest (ROI)</td> <td>User definable. Memory read-out</td> </tr> </table>	Full	1392 (h) x 1040 (v) 16 fps	1/2 partial scan	1392 (h) x 520(v) 24.16 fps	1/4 partial scan	1392 (h) x 260 (v) 32.16 fps	1/8 partial scan	1392 (h) x 130 (v) 38.41 fps	2/3 partial scan	1392 (h) x 694 (v) 20.76 fps	Vertical binning	1392 (h) x 520 (v) 25.37 fps*	Region-of-interest (ROI)	User definable. Memory read-out
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Region-of-interest (ROI)	User definable. Memory read-out														
S/N ratio	>50dB (odB gain)														
Video output	GigE Vision, 8-bit or 10-bit														
Auto-iris lens video output	0.7 Vp-p, enabled by internal switch														
Gain	Manual, -3 to +12 dB														
Synchronization	External hardware trigger via GPIO Software trigger via GigE Vision														
GPIO Module	<table border="0"> <tr> <td>Input/output switch</td> <td>Configurable 14-in/9-out switch (LUT)</td> </tr> <tr> <td>Clock generator (one)</td> <td>12-bit counter based on 25MHz clock or Pixel Clock</td> </tr> <tr> <td>Pulse generators (four)</td> <td>20-bit counters programmable for length, start point, stop point, repeat</td> </tr> </table>	Input/output switch	Configurable 14-in/9-out switch (LUT)	Clock generator (one)	12-bit counter based on 25MHz clock or Pixel Clock	Pulse generators (four)	20-bit counters programmable for length, start point, stop point, repeat								
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Hardware trigger modes	Continuous, Pre-Select, Pulse Width, Sequence (Gain, Shutter, ROI) Reset-continous trigger, Delay Readout														
Electronic shutter	<table border="0"> <tr> <td>Pre-set shutter</td> <td>1/16 to 1/10,000 in 10 steps</td> </tr> <tr> <td>Programmable exposure</td> <td>2L (117.8µs) to 1052L (61.97ms) in 1L steps</td> </tr> <tr> <td>Exposure Time (Abs)</td> <td>µsec - user definable. Same range as PE</td> </tr> <tr> <td>Pulse Width</td> <td>31µs to 2 sec.</td> </tr> </table>	Pre-set shutter	1/16 to 1/10,000 in 10 steps	Programmable exposure	2L (117.8µs) to 1052L (61.97ms) in 1L steps	Exposure Time (Abs)	µsec - user definable. Same range as PE	Pulse Width	31µs to 2 sec.						
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Control interface	Register based. GigE Vision/GenCam compliant														
Functions controlled via GigE Vision interface	Shutter, Gain, Black level, Trigger mode, Readout mode, GPIO setup, ROI (GenCam mandatory functions)														
GigE Vision streaming control	Packet size (1428 to 4040 bytes), Delayed (frame) Readout, Inter-packet delay														
Indicators on rear panel	Power / Hardware trigger, GigE link, GigE activity														
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 - 24V DC +/- 10%. 4.1W (full frame @ 12V)														
Lens mount	C-mount														
Dimensions (H x W x L)	29 x 44 x 75 mm														
Weight	125 g														

## Ordering Information

CM-140 GE-UV 1/2" Monochrome Progressive Scan Camera

## Connector pin-out

### DC In / GPIO



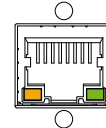
HIROSE HR10A-10R-12PB-01

### Connector Pin-out

- Pin 1 GND
- 2 +12 V DC input
- 3 Opto in 2(-)\* / GND
- 4 Opto in 2(+)\* / Auto iris lens
- 5 Opto in 1(-)
- 6 Opto in 1(+)
- 7 Opto out 1(-)
- 8 Opto out 1(+)
- 9 Opto out 2(-)
- 10 Opto out 2(+)
- 11 +12V DC input
- 12 GND

\* Pins 3 and 4 can be configured by internal switch selection

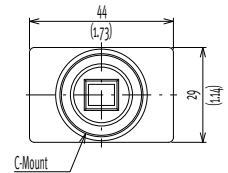
### GigE Vision interface Accepts RJ-45 with thumbscrews



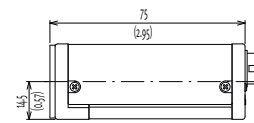
- Pin 1 TRD+(0)      5 TRD-(2)
- 2 TRD-(0)      6 TRD-(1)
- 3 TRD+(1)      7 TRD+(3)
- 4 TRD+(2)      8 TRD-(3)

## Dimensions

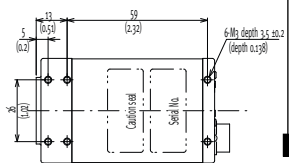
### Front view



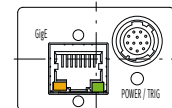
### Side view



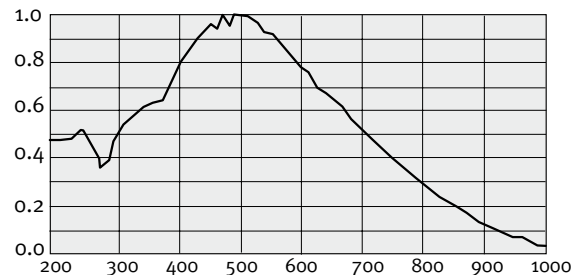
### Bottom view



### Rear view



## Spectral Response CM-140 GE-UV



## C3 Camera Suite Unlimited Digital Switchability

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