

## ❖ CM-030 GE / CB-030 GE

Progressive Scan

**C3** Camera Suite  
 Unlimited  
 Digital  
 Switchability



- Member of C3 Compact series, covering VGA to UXGA resolution
- 656 (h) x 494 (v) 7.4  $\mu\text{m}$  square pixels
- 1/3" progressive scan – Monochrome and Bayer mosaic color versions
- 90 frames/second with external trigger and full resolution
- Increased frame rate with vertical binning (CM-030 GE) and partial scan
- Exposure time from 21.6  $\mu\text{s}$  to 2 sec. using Pulse Width trigger mode
- Programmable exposure from 43.2  $\mu\text{s}$  to 11.037 ms in Full Frame scan
- 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

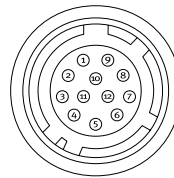
# Specifications for CM-030 GE / CB-030 GE

Specifications	CM-030 GE / CB-030 GE
Sensor	1/3" progressive scan CCD
Pixel Clock	40 MHz
Frame rate full frame	90.5 frames/second (511 lines/frame)
Active area	4.9 (h) x 3.7 (v) mm
Cell size	7.4 (h) x 7.4 (v) μm
Active pixels	656 (h) x 494 (v)
Color (CB-200 GE)	Raw Bayer output, host based interpolation
Read-out modes	Full 656 (h) x 494 (v) 90.5 fps 1/2 partial scan 656 (h) x 246 (v) 159 fps 1/4 partial scan 656 (h) x 122 (v) 255 fps 1/8 partial scan 656 (h) x 62 (v) 361 fps 2/3 partial scan 656 (h) x 326 (v) 128 Vertical binning 656 (h) x 247 (v) 166.2 fps* Region-of-interest (ROI) User definable. Memory read-out * NOTE: CM-030 GE only
Sensitivity (CM-030GE)	0,05 Lux Lux (On sensor, max. gain, shutter off, 50% video)
Sensitivity (CB-030GE)	0,4 Lux Lux (On sensor, max. gain, shutter off, 50% video)
S/N ratio	>50dB (0 dB 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 +24 dB
Synchronization	Internal X-tal, External hardware trigger via GPIO Software trigger via GigE Vision
GPIO Module	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
Hardware trigger modes	Continuous, Pre-Select, Pulse Width, Frame Delay, Sequence (Gain, Shutter, ROI)
Electronic shutter	Pre-set shutter 1/90 to 1/10,000 in 9 steps Programmable exposure 2L (43.2μs) to 511L (11.037ms) in 1L steps Exposure Time (Abs) Same range as PE Pulse Width max. 2 sec (Can be set by 100μs unit or Pixel Clock unit)
GPIO plus Pulse Width	Register based GigE Vision (GenlCam compliant)
Functions controlled via GigE Vision interface	Shutter, Gain, Black level, Trigger mode, Readout mode, GPIO setup, ROI (GenlCam mandatory functions)
GigE Vision streaming control	Packet size, 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	10 G (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	12-24V DC +/-10%. 3.6 W (@12V)**
Lens mount	C-mount
Dimensions (H x W x L)	29 x 44 x 75 mm
Weight	125 g

\*\*NOTE: voltages above 13.2V DC only supported on CM-030 models with serial numbers of 301741 or higher and on CB-030 models with serial numbers of 300516 or higher

## 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                         |

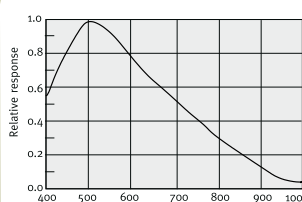
\* Pins 3 and 4 can be configured by internal switch selection

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



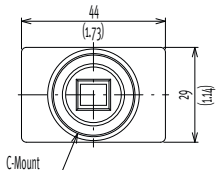
- |       |         |   |         |
|-------|---------|---|---------|
| Pin 1 | TRD+(0) | 5 | TRD-(2) |
| 2     | TRD-(0) | 6 | TRD-(1) |
| 3     | TRD+(1) | 7 | TRD+(3) |
| 4     | TRD+(2) | 8 | TRD-(3) |

## Spectral Response CM-030GE

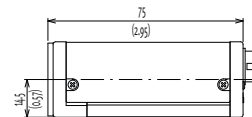


## Dimensions

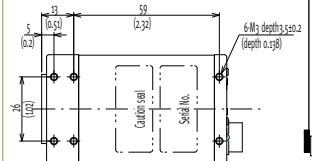
### Front view



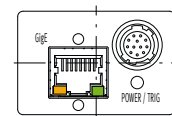
### Side view



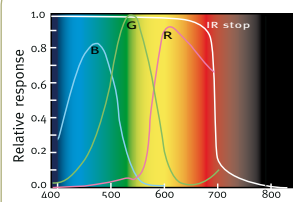
### Bottom view



### Rear view



## Spectral Response CB-030GE



## Ordering Information

- |           |   |
|-----------|---|
| CM-030 GE | 1/3" Monochrome Progressive Scan Camera         |
| CB-030 GE | 1/3" Bayer Mosaic Color Progressive Scan Camera |

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