

## ❖ CM-030 GE / CB-030 GE

Progressive Scan



- 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

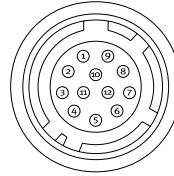
**GigE**<sup>TM</sup>  
VISION

# 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)	0,004 Lux Lux (On sensor, max. gain, shutter off, 50% video)
Sensitivity (CB-030GE)	1,21 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/Automatic Range -3 to +12 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 (GenICam compliant)
Functions controlled via GigE Vision interface	Shutter, Gain, Black level, Trigger mode, Readout mode, GPIO setup, ROI (GenICam 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	12V DC +/-10%. 3.6 W
Lens mount	C-mount
Dimensions (H x W x L)	29 x 44 x 75 mm
Weight	125 g

## Connector pin-out

### DC In / GPIO



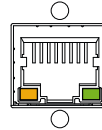
HIROSE HR10A-10R-12PB-01

### 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

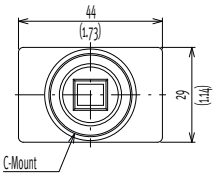
### GigE Vision interface Accepts RJ-45 with thumbscrews



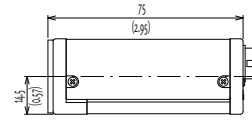
Pin	1	TRD+(0)	5	TRD-(2)
	2	TRD-(0)	6	TRD-(1)
	3	TRD+(1)	7	TRD+(3)
	4	TRD+(2)	8	TRD-(3)

## Dimensions

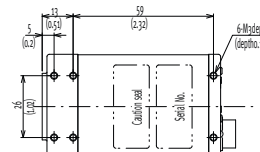
### Front view



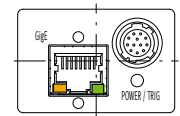
### Side view



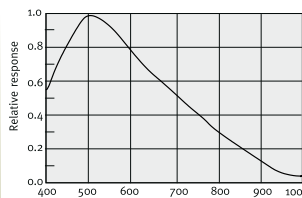
### Bottom view



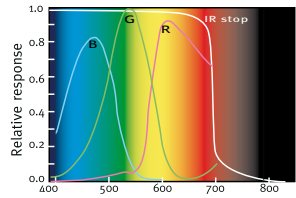
### Rear view



## Spectral Response CM-030GE



## 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

## C3 Camera Suite Unlimited Digital Switchability

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