

❖ CM-040 GE / CB-040 GE

Progressive Scan



PRELIMINARY

- Member of C3 Compact series, covering VGA to UXGA resolution
- 776 (h) x 582 (v) 8.37µm square pixels
- 1/2" progressive scan - Monochrome and Bayer mosaic color versions
- 60 frames/second with full resolution in continuous operation
- Increased frame rate with vertical binning (CM-040 GE) and partial scan
- Exposure time from 54.874µs to 2 sec. using Pulse Width trigger mode
- Programmable exposure from 54.874µs to 16.353ms in Full Frame scan
- Sequence 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

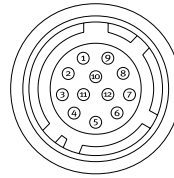
GigE™
VISION

Specifications for CM-040 GE / CB-040 GE

Specifications	CM-040 GE / CB-040 GE
Sensor	1/2" progressive scan CCD
Pixel Clock	33.75 MHz
Frame rate full frame	60 frames/second
Active area	6.49 (h) x 4.83 (v) mm
Cell size	8.37 (h) x 8.37 (v) μm
Active pixels	776 (h) x 582 (v)
Color (CB-040 GE)	Raw Bayer output, host-based interpolation
Read-out modes	Raw Bayer output, host-based interpolation
Full	776 (h) x 582 (v) 60 fps
1/2 partial scan	776 (h) x 294 (v) 110 fps
1/4 partial scan	776 (h) x 146 (v) 186 fps
1/8 partial scan	776 (h) x 74 (v) 280 fps
2/3 partial scan	776 (h) x 390 (v) 87 fps
Vertical binning	776 (h) x 291 (v) 111 fps*
Region-of-interest (ROI)	User Definable. Memory read-out *Note: CM-040 GE only
Sensitivity (CM-040 GE)	0.2 Lux (on sensor, max. gain, shutter off, 50% video)
Sensitivity (CB-040 GE)	1.3 Lux (on sensor, max. gain, shutter off, 50% video)
S/N ratio	250 dB (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 -3dB to +12 dB
Synchronization	Internal X-tal, External hardware trigger via GPIO Software trigger via GigE Vision
GPIO Module	Configurable 14-in/9-out switch (LUT) 12-bit counter based on 25MHz clock or Pixel Clock
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 1/60 to 1/10,000 in 9 steps Programmable exposure 2L(54.874μs) to 596L(16.353ms) in 1L steps Exposure Time (Abs) μsec – user definable. Same range as PE Pulse Width max. 2 sec. (can be set by 100μs unit or Pixel Clock unit)
Control interface	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 (1428 to 4040bytes), 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 - 85% non-condensing
Storage temp./humidity	-25°C to +60°C / 20 to 80%
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%. 3.6W
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



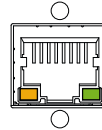
HIROSE HR10A-10R-12PB-01

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

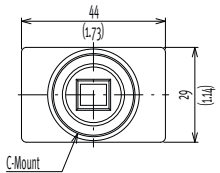
GigE Vision interface Accepts RJ-45 with thumbscrews



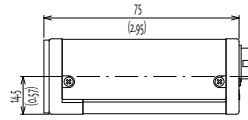
- Pin 1 TRD+(0) 5 TRD-(2)
- 2 TRD-(0) 6 TRD-(1)
- 3 TRD+(1) 7 TRD+(3)
- 4 TRD+(2) 8 TRD-(3)

Dimensions

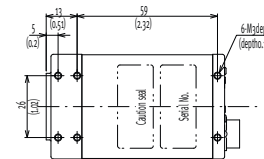
Front view



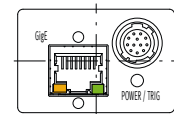
Side view



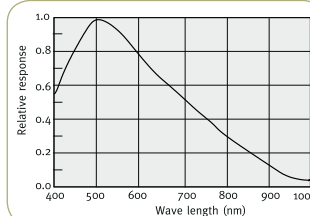
Bottom view



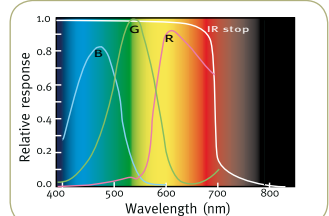
Rear view



Spectral Response CM-040 GE



Spectral Response CB-040 GE



Ordering Information

CM-040 GE 1/2" Monochrome Progressive Scan Camera
CB-040 GE 1/2" Bayer Mosaic Color Progressive Scan Camera

C3 Camera Suite Unlimited Digital Switchability

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