



## ❖ CV-M9 GE

3CCD Progressive Scan RGB Color



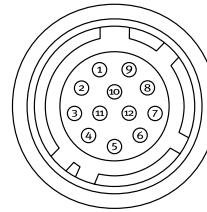
- *3 x 1/3" progressive scan RGB color camera*
- *1024 (h) x 768 (v) active pixels*
- *4.65  $\mu\text{m}$  square pixels*
- *Compact RGB prism for C-mount lenses*
- *Chromatic shading reduction for wider choice of lenses*
- *30 frames/second with full resolution*
- *86 frames/second with 1/8 partial scan*
- *Vertical binning for higher sensitivity and frame rate*
- *12-bit internal video processing*
- *24 or 30-bit RGB output via GigE Vision*
- *Edge Pre-Select and Pulse Width Control trigger modes*
- *Sequencer trigger mode for on-the-fly change of shutter, gain and ROI*
- *Manual, continuous (auto-tracking) or one-push auto white balance*
- *Color bar test image for set-up*
- *Comprehensive software suite and SDK for Windows XP*

# Specifications for CV-M9 GE

Specifications	CV-M9 GE
Sensor	3 x 1/3" progressive scan CCD
Pixel clock	33.75 MHz
Frame rate full frame	30 frames/sec. (729 lines per frame)
Active area	4.5 (H) x 3.6 (V) mm
Cell size	4.65 (h) x 4.65 (v) μm
Active pixels	1024 x 768
Readout modes	Full 1024 (h) x 768 (v) 30 fps 1/2 partial 1024 (h) x 384 (v) 48 fps 1/2 partial 1024 (h) x 192 (v) 68 fps 1/8 partial 1024 (h) x 96 (v) 86 fps V. binning 1024 (h) x 384 (v) 50 fps Smear-less Region-of-interest (ROI) 2 non-overlapping. User def. Mem. readout
Sensitivity	2 Lux (On sensor. Max. gain, 50% video)
S/N ratio	>50 dB (Green ch., 0 dB gain)
Video output	GigE Vision, 3 x 8-bit or 3 x 10-bit
Auto-iris lens video	0.7 Vp-p
Gain	Manual
Gain range, Master R and B	-3 to +12 dB -6 to +6 dB
Synchronization	External hardware trigger via GPIO Software trigger via GigE Vision
GPIO Module	Configurable 12-in / 9-out switch 12-bit counter (based on 25 MHz clock or Pixel Clock) 20-bit counters programmable for length, start point, stop point, repeat
Hardware trigger modes	Continuous Edge-Pre Select (EPS) Pulse Width Control (PWC) Sequence (Gain, Shutter, ROI)
Electronic shutter	1/30 to 1/50,000 in 12 steps
Pre-set shutter Programmable exposure	1/30 s (791L) to 1/50,000 sec. (0.5 L) in 42 μs steps. Common and R, G, B individual.
Exposure time (Abs) Pulse Width Control	μsec – user definable. Same range as PE 66.7 μs to 2 sec.
White balance	Manual, R and B, -6 to +6 dB One-push automatic, 2800 to 6500K Continuous automatic Fixed 3200, 4600 and 5600K
Knee function	Knee point and slope individually for R, G, and B
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, Delayed (frame) Readout, Inter-packet delay
Indicators on rear panel	Power/Hardware trigger, GigE link, GigE activity
Operating temperature	-10°C to +45°C
Humidity	20 - 90% non-condensing
Storage temp./humidity	-25°C to +60°C / 20 to 90%
Vibration	10G (20Hz to 200Hz XYZ)
Shock	70G
Regulations	CE (EN 61000-6-2, EN-61000-6-3), FCC part 15 class B, RoHS/WEEE
Power	12V DC ± 10%. 9.6 W
Lens mount	C-mount (Max 4.0 mm thread)
Dimensions (H x W x L)	55 x 55 x 120 mm
Weight	800 g

## Connection Pin-out

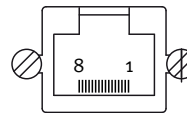
### DC In / GPIO



HIROSE HR10A-10R-12PB-01

- Pin 1 GND  
 2 +12V DC input  
 3 GND  
 4 Iris video  
 5 GND  
 6 LVDS +/TTL IN 1  
 7 LVDS -/TTL IN 2  
 8 TTL OUT 1  
 9 TTL OUT 2  
 10 TTL IN 3  
 11 +12V DC input  
 12 GND

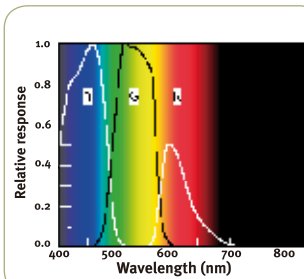
### GigE Vision Interface RJ-45 with locking screws



GigE

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

## Spectral Response

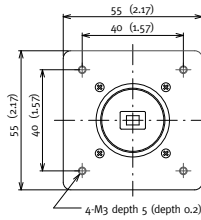


## Ordering Information

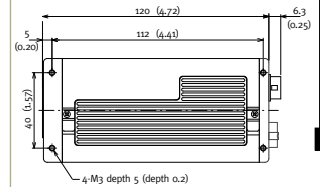
CV-M9 GE 1/3" 3 CCD Progressive Scan RGB Color Camera.

## Dimensions

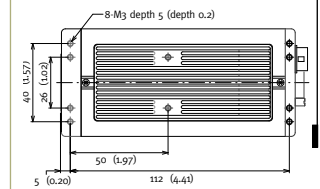
### Front view



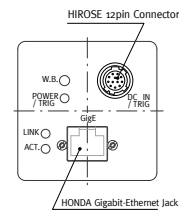
### Side view



### Bottom view



### Rear view



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