

## ❖ BM-500 GE / BB-500 GE

Progressive Scan

**C<sub>3</sub> Camera Suite**  
 Unlimited  
 Digital  
 Switchability



- *Member of C<sub>3</sub> Basic series*
- *2456 (h) x 2058 (v) 3.45 μm square pixels*
- *2/3" progressive scan – Monochrome and Bayer mosaic color versions*
- *15 frames/second with full resolution in continuous operation*
- *15 frames/second with external trigger and full resolution*
- *Increased frame rate with vertical binning (BM-500 GE) and partial scan*
- *Sequencer trigger mode for on-the-fly change of gain, exposure and ROI*
- *Edge Pre-Select and Pulse Width trigger modes*
- *Exposure time from 64μs to 2 sec. using Pulse Width Control trigger mode*
- *Programmable exposure from 64μs to 66 ms in Full Frame scan*
- *Several pre-processing functions for offloading host PC*
- *LVAL-synchronous/-asynchronous operation (auto-detect)*
- *Auto iris lens video output allows a wider range of light*
- *GigE Vision interface with 12, 10 or 8-bit output*
- *Programmable GPIO with opto-isolated inputs and outputs*
- *Comprehensive software tools and SDK for Windows XP/Vista*

**GIG<sup>TM</sup>**  
 VISION

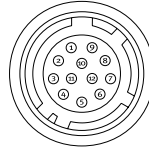


# Specifications for BM-500 GE / BB-500 GE

Specifications	BM-500 GE / BB-500 GE
Sensor	2/3" progressive scan CCD
Pixel Clock	60 MHz
Frame rate full frame	15 frames/second
Active area	8.45 (h) x 7.10 (v)
Cell size	3.45 (h) x 3.45 (v)
Active pixels	2456 (h) x 2058 (v)
Color (BB-500 GE)	Raw Bayer output, host based interpolation
Read-out modes	Full 2456 (h) x 2058 (v) 15 fps 1/2 partial scan 2456 (h) x 1028 (v) 24 fps 1/4 partial scan 2456 (h) x 514 (v) 34 fps 1/8 partial scan 2456 (h) x 258 (v) 43 fps 2/3 partial scan 2456 (h) x 1372 (v) 20 fps Vertical binning 2456 (h) x 1029 (v) 23 fps* Region-of-interest (ROI) User definable. Memory read-out *Note: BM-500 GE only
Sensitivity (BM-500 GE)	0.34 Lux (On sensor, max. gain, shutter off, 50% video)
Sensitivity (BB-500 GE)	1.0 Lux (On sensor, max. gain, shutter off, 50% video)
S/N ratio	>50 dB (0 dB gain)
Video output	GigE Vision, 8-bit, 10-bit or 12-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 16-in / 12-out switch Clock generator (one) 12-bit counter based on Pixel clock Pulse generators (four) 20-bit counter programmable for length, start point, stop point, repeat
Trigger modes	Pre-Select, Pulse Width, Frame Delay and Sequence
Electronic shutter	Pre-set shutter 1/15 and 1/30 to 1/10,000 in 10 steps Programmable exposure (PE) 2L(64µs) to 2072 L (66.44ms) in 1L steps Exposure Time (Abs) µsec – user definable. Same range as PE Pulse Width 64µs to 2 sec.
Pre-processing functions	Output transfer functions (Gamma, multiple-point knee), Bayer white balance, L/R channel balancing, Blemish compensation
Control interface	Register based. GigE Vision / GenICam compliant
Functions controlled via GigE Vision interface	Shutter, Gain, Black Level, Trigger mode, Read-out mode, GPIO setup, ROI (GenICam mandatory functions)
GigE Vision streaming control	Packet size (1428 to 4036 bytes) Delayed (Frame) read-out, 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 DC +/-10%. 5.8W
Lens mount	C-mount
Dimensions (H x W x L)	55 x 55 x 55
Weight	210 g

## Connector pin-out

### DC In / GPIO



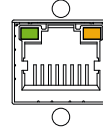
HIROSE HR10A-10R-12PB-01

#### Connector Pin-out

Pin 1	GND
2	+12 VDC 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

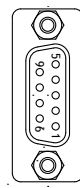
### GigE Vision interface Accepts RJ-45 with thumbscrews



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)

### D-sub 9 pin connector for GPIO (Auxiliary)

Type: DD-09SSG

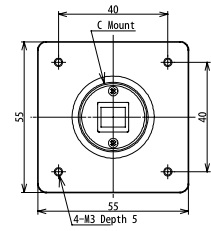


No.	I/O	Name
1	I	LVDS IN1-
2	I	LVDS IN1+
3	I	TTL IN 1*
4	O	TTL OUT 1
5		GND
6		NC
7		NC
8	O	TTL OUT 2
9		GND

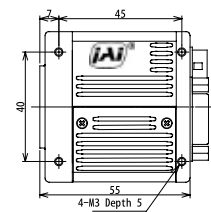
\*Can be set to 75 Ω terminator via internal switches

## Dimensions

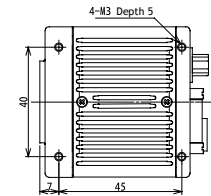
### Front view



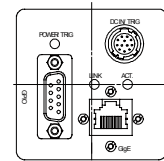
### Side view



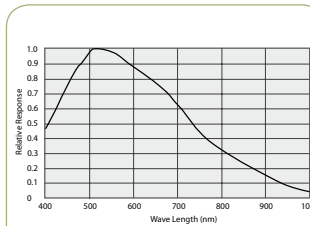
### Bottom view



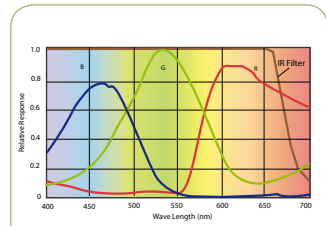
### Rear view



## Spectral Response BM-500 GE



## Spectral Response BB-500 GE



## Ordering Information

BM-500 GE	2/3" Monochrome Progressive Scan Camera
BB-500 GE	2/3" Bayer Mosaic Color Progressive Scan Camera

## C3 Camera Suite Unlimited Digital Switchability

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