

❖ AT-140 GE

3CCD Progressive Scan RGB Color

C3 Camera Suite
 Unlimited
 Digital
 Switchability



- 3 x 1/2" CCD progressive scan RGB color camera for vision applications
- 1392(h) x 1040 (v) effective pixels (4.65 μm square) for each CCD
- Compact RGB prism for C-mount lenses
- Chromatic shading reduction permits wider choice of lenses
- 20.8 frames per second with full resolution
- Variable partial scan also available
- Vertical and horizontal binning for higher sensitivity and frame rate
- 24-bit or 30-bit RGB output via GigE Vision Streaming Protocol
- Linear matrix circuit with manual control or sRGB or Adobe RGB pre-sets
- Look-up Table with 1024 10-bit values
- Multiple trigger modes including timed, trigger width, trigger controlled, and sequential
- Programmable exposure from 1/20 to 1/22000 (45.6 μs)
- Individually programmable shutter/exposure for R, G, and B
- Manual, continuous, and one-push auto white balance
- Programmable GPIO with opto-isolated inputs and outputs
- Comprehensive SDK and control tool for Windows XP/Vista/7

GigE™
 VISION



Specifications for AT-140 GE

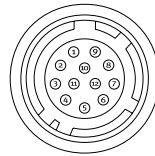
Specifications	AT-140 GE
Sensor	3 x 1/2" progressive scan CCD - ICX267AL
Pixel Clock	43 MHz
Frame rate full frame	20.81 frames/second
Active area	6.4 (h) x 4.8 (v) mm
Cell size	4.65 (h) x 4.65 (v) μm
Active pixels	1392 (h) x 1040 (v)
Read-out modes	Full 1392 (h) x 1040 (v) 20.81 fps Variable partial Programmable start line; height = 8 to 1040L Max. frame rate at 8 lines = 59.94 fps Vertical binning 1392 (h) x 520 (v) 32.92 fps Horizontal binning 696 (h) x 1040 (v) 20.81 fps
Sensitivity (on sensor)	0.83 Lux, max gain, 50% video
S/N ratio	>50 dB. (Green ch., 0 dB gain)
Video output	3 x 8 bit RGB: 24-bit output format 3 x 10 bit RGB: 32-bit output format
Auto-iris lens video	0.7 V p-p, 75 Ω NUM luminance signal w/o sync
Gain, manual	Manual for all 3 colors Analog Master -3 to +15 dB Analog R and B -6 to +6 dB Digital -3 dB to +3 dB
Gain, auto	0 to 15 dB
GPIO Module	Input/Output switch Configurable 14-in/10-out switch Counter function 16-bit counter based on pixel clock Timer function 16-bit timer and delay counter - 1MHz Event message Internal status can be output as event message
Hardware Trigger modes	Configurable per GenICam standard. Includes timed, trigger width (pulse width), start/stop signal, sequential timed, delayed readout
Electronic shutter	Programmable exposure 1L (45.58μs) - 1054L in 1L steps Timed exposure 66μs to 65535μs in 1μs steps Auto shutter 1/15 to 1/305s
White balance	Manual, one-push, continuous, Note: 7800K is Factory default setting
Range	-6 to +6 dB. (4000K to 9000K)
Gamma	1.0 (OFF), 0.45 or LUT (Look Up Table) LUT: 1024 points, 10-bit values
Knee function	Knee point and knee slope for R, G, and B channel
Linear Matrix	Manual for R,G and B / Preset (sRGB, Adobe RGB)
Control interface	Register based. GigE Vision/GenICam compliant
GigE Vision streaming control	Packet size, delayed (frame) readout, inter-packet delay Default packet size - 1476 bytes. Max - 16020 bytes
Operating Temperature	-5° C to +45° C
Humidity (operation)	20 - 80% non-condensing
Storage temp./humidity	-25° C to 60° C / 20% - 80% non-condensing
Vibration	3G (15 Hz to 200 Hz XYZ)
Shock	50 G
Regulations	CE (EN 61000-6-2, EN 61000-6-3), FCC part 15 class B, RoHS
Power	12V to 24V DC ± 10%. 7.92W typical (full frame @ 12V)
Lens mount	C-mount (Max 4.0 mm thread)
Dimensions (H x W x L)	55 mm x 55 mm x 98.3 mm
Weight	340 g

Ordering Information

AT-140GE 1/2" 3CCD Progressive Scan RGB Color Camera

Connector pin-out

DC In / Trigger



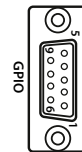
HIROSE HR10A-10R-12PB-01

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

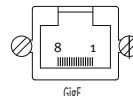
GPIO Pinout



Pin I/O

Pin 1	I	LVDS In 1-
2	I	LVDS In 1+
3	I	TTL In 1
4	O	TTL Out 1
5		GND
6		NC
7		NC
8	O	TTL Out 2
9		GND

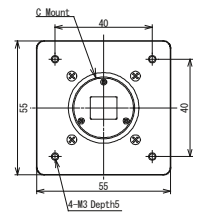
GigE Vision Interface RJ-45 with locking screws



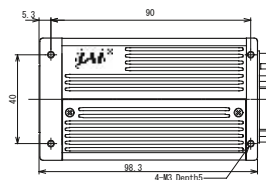
Pin	I/O	Pin	I/O
1	TRD+(0)	5	TRD-(2)
2	TRD-(0)	6	TRD-(1)
3	TRD+(1)	7	TRD+(3)
4	TRD+(2)	8	TRD-(3)

Dimensions

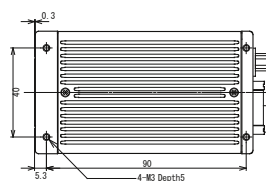
Front view



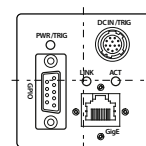
Side view



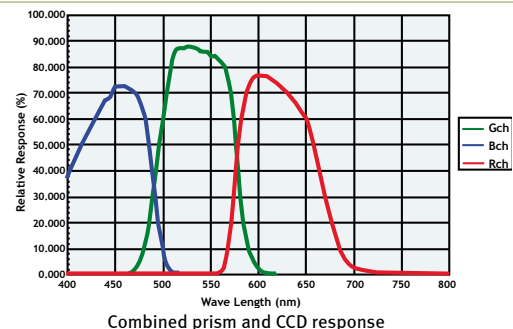
Bottom view



Rear view



Spectral Response



Company and product names mentioned in this datasheet are trademarks or registered trademarks of their respective owners. JAI-A-S cannot be held responsible for any technical or typographical errors and reserves the right to make changes to products and documentation without prior notification.

Europe, Middle East & Africa
Phone +45 4457 8888
Fax +45 4491 3252

Asia Pacific
Phone +81 45 440 0154
Fax +81 45 440 0166

Americas
Phone (Toll-Free) 1 800 445 5444
Phone +1 408 383 0300