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 makes lens choice wider*
- *20.8 frames per second with full resolution*
- *Pre-set or variable partial scan also available*
- *Vertical binning for higher sensitivity and frame rate*
- *24-bit or 32-bit RGB output via GigE Vision Streaming Protocol*
- *Linear matrix circuit with manual control or sRGB or Adobe RGB pre-sets*
- *Knee function available for knee-point and knee-slope settings*
- *Edge pre-select and pulse width control trigger modes*
- *Programmable exposure from 1/20 to 1/44000 (22.8 µs)*
- *Individually programmable shutter/exposure for R, G, and B*
- *Manual, continuous, one-push auto, or pre-set 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

PRELIMINARY

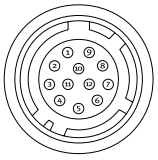
Specifications	AT-140 GE
Sensor	3 x 1/2" progressive scan CCD - ICX267AL
Pixel Clock	43 MHz
Frame rate full frame	20.77 frames/second (1040 lines per frame)
Active area	6.4 (h) x 4.8 (v) mm
Cell size	4.65 (h) x 4.65 (v) µm
Active pixels	1392 (h) x 1040 (v)
Read-out modes	
Full	1392 (h) x 1040 (v) 20.77 fps
2/3 partial scan	1392 (h) x 692 (v) 27.69 fps
1/2 partial scan	1392 (h) x 520 (v) 33.08 fps
1/4 partial scan	1392 (h) x 260 (v) 46.87 fps
1/8 partial scan	1392 (h) x 128 (v) 59.45 fps
Variable partial Vertical binning	Programmable start line & height, 1 to 1040L 1392 (h) x 520 (v) 32.92 fps
Sensitivity (on sensor)	1.0 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 Master -3 to +12 dB R and B –6 to +6 dB
GPIO Module	
Input/Output switch	Configurable 14-in/10-out switch
Clock generator (one)	12-bit counter based on pixel clock
Pulse generator (two)	20-bit counter with programmable length, start point, stop point, repeat
Hardware Trigger modes	Edge Pre-Select, Pulse Width Control, Reset Continuous, Sequential EPS, EPS/PWC delayed readout
Electronic shutter	
Programmable exposure	0.5L (22.8µs) - 1056L in 1L (45.58µs) steps.
Exposure Time Abs	25µs to 48136µs
Auto shutter	1/20 to 1/250s
White balance	Manual, one-push, continuous, Preset(4000K, 4600K, 5600K)
Tracking range	Note: 7800K is Factory default setting -6 to +6 dB. (4000K to 9000K)
Gamma	1.0 (OFF) , 0.6, 0.45 or LUT (Look Up Table)
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)
Blemish Compensation	Up to 16 pixels
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 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%. 7.32W 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	320 g

Ordering Information

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

Connector pin-out

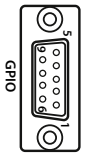
DC In / Trigger



HIROSE HR10A-10R-12PB-01

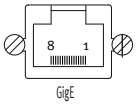
Pin		
	1	Ground
	2	+12V DC
	3	Ground
	4	Iris video
	5	Ground
	6	—
	7	—
	8	Ground
	9	XEEN out
	10	Trigger in
	11	—
	12	Ground

GPIO Pinout



Pin	I/O	
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

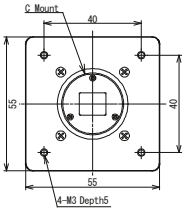
GigE Vision Interface
RJ-45 with locking screws



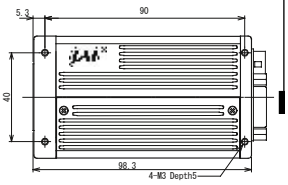
Pin		Pin	
1	TRD+(0)	5	TRD–(2)
2	TRD–(0)	6	TRD–(1)
3	TRD+(1)	7	TRD+(3)
4	TRD+(2)	8	TRD–(3)

Dimensions

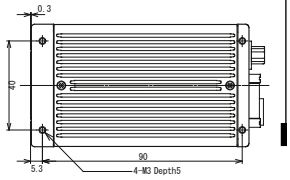
Front view



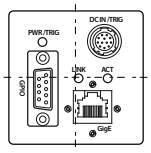
Side view



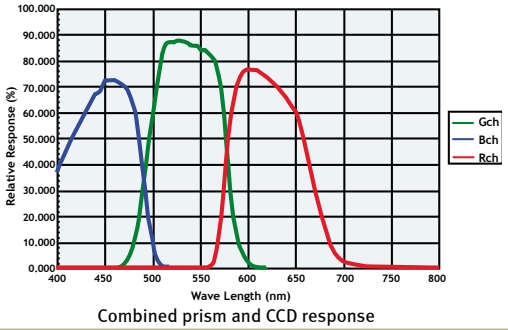
Bottom view



Rear view



Spectral Response



Combined prism and CCD response

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