AT-140 CL

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 for each CCD (4.65 µm square)*
- *Compact RGB prism for C-mount lenses*
- *Chromatic shading reduction makes lens choice wider*
- *25.2 frames per second with full resolution*
- *Pre-set or variable partial scan also available*
- *Vertical binning for higher sensitivity and frame rate*
- *24-bit RGB output via single port Camera Link base configuration*
- *30-bit or 36-bit output via dual port Camera Link medium configuration*
- *Linear matrix circuit with manual control or with 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*
- *Pre-set shutter from OFF(1/25) to 1/53000 in 12 steps*
- *Individually programmable shutter/exposure for R, G, and B*
- *Manual, continuous, one-push auto, or pre-set white balance*
- *Setup by Windows 2000/XP software via RS 232C*

CAMERA Link®

Compliments of Phase 1 Technology

Specifications for AT-140 CL

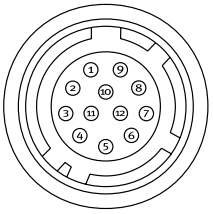
Specifications	AT-140 CL
Sensor	3 x 1/2" progressive scan CCD - ICX267AL
Pixel Clock	50 MHz
Frame rate full frame	25.21 frames/second (1040 lines per frame)
Active area	6.4 (h) x 4.8 (v) mm
Cell size	4.65 (h) x 4.65 (v) µm
Active pixels	1392 (h) x 1040 (v)
Read-out modes	
Full	1392 (h) x 1040 (v) 25.21 fps
2/3 partial scan	1392 (h) x 695 (v) 33.49 fps
1/2 partial scan	1392 (h) x 521 (v) 40.04 fps
1/4 partial scan	1392 (h) x 261 (v) 56.77 fps
1/8 partial scan	1392 (h) x 131 (v) 71.38 fps
Variable partial	Programmable start line & height, 1 to 1040L
Vertical binning	1392 (h) x 520 (v) 40.98 fps
Sensitivity (on sensor)	1.25 Lux, max gain, 50% video
S/N ratio	>50 dB. (Green ch., 0 dB gain)
Video output	3 x 8 bit RGB: single port Camera Link base 3 x 10 bit RGB: dual port Camera Link medium 3 x 12 bit RGB: dual port Camera Link medium
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
Synchronization	Int. X-tal
Inputs Camera Link	Ext. trigger, (LVDS)
TTL	Ext. trigger 4 Vpp ±2 V. (TTL or 75 Ω)
Outputs Camera Link	RGB 8/10/12 bit video output. D0 – D9 Pixel clock, DVAL, LVAL, FVAL and EEN (LVDS)
TTL	XEEN output 4 Vpp from 75 Ω source (TTL)
Trigger modes	Continuous, Edge Pre-Select, Pulse Width Control, Reset Continuous
Electronic shutter	
Pre-set shutter	1/25 (off) to 1/53,000 sec. in 12 steps. All or R, G, B individually
Programmable exposure	1L – 1056L in 1L (37.56 µs) steps. All or R, G, B individually
Pulse Width Control	2L (75.12 µs) to 53243L (2 sec.)
White balance	Manual, one-push auto, continuous auto, Preset(4000K, 4600K, 5600K) Note: 7800K is Factory default setting
Tracking range	-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
Functions controlled by Camera Link	Trigger, shutter, scanning, readout, polarity, gain, set-up, white balance, Gamma, knee point and slope, linear matrix, blemish/ shading compensation
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%. 6.1W 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 78.3 mm
Weight	290 g

Ordering Information

AT-140CL 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

Camera Link Interface

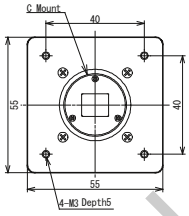
26 pin MDR connector 3M 10226-1A10JL

Pin		Signal	Function
1	14	GND	
2	15	Xo-/Xo+	CL Data out
3	16	X1-/X1+	CL Data out
4	17	X2-/X2+	CL Data out
5	18	Xclk-/Xclk+	CL Clk
6	19	X3-/X3+	CL Data out
7	20	SerTC+/SerTC-	Serial in*
8	21	SerTFG-/SerTFG+	Serial out*
9	22	CC1-/CC1+	Trigger*
10	23	CC2+/CC2-	Reserved
11	24	CC3-/CC3+	Not used
12	25	CC4+/CC4-	Not used
13	26	GND	

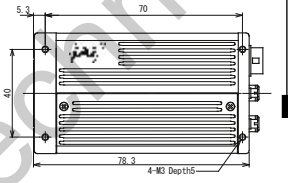
** Via Camera Link or 12-pin Hirose Information shown is for Port 1. For Port 2, which is used when providing 30-bit or 36-bit output via Camera Link medium configuration, pinout is similar, except pins 7-12 and 20-25 are not used.*

Dimensions

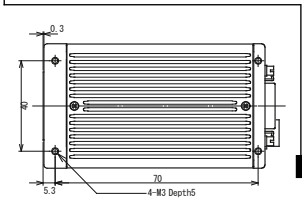
Front view



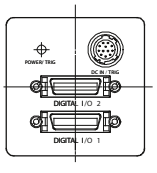
Side view



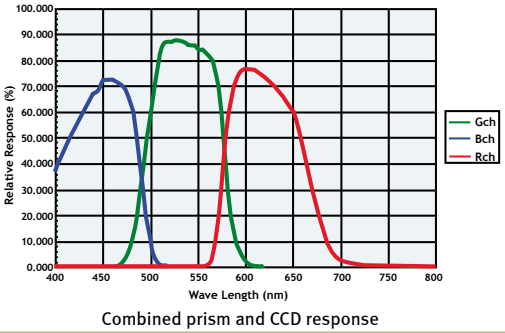
Bottom view



Rear view



Spectral Response



Combined prism and CCD response

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