

## ❖ AT-200 CL

3CCD Progressive Scan RGB Color



adept  
electronic solutions

The Machine Vision and  
Imaging Specialists

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



- 3 x 1/1.8" CCD progressive scan RGB color camera for vision applications
- 1628(h) x 1236 (v) effective pixels for each CCD (4.40  $\mu$ m square)
- Compact RGB prism for C-mount lenses
- Chromatic shading reduction makes lens choice wider
- 20.3 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(1/20) to 1/51000 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



# Specifications for AT-200 CL

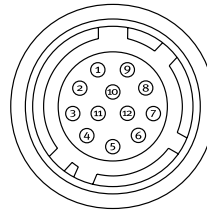
Specifications	AT-200 CL
Sensor	3 x 1/1.8" progressive scan CCD - ICX274AL
Pixel Clock	50 MHz
Frame rate full frame	20.31 frames/second (1236 lines per frame)
Active area	7.16 (h) x 5.43 (v) mm
Cell size	4.40 (h) x 4.40 (v) μm
Active pixels	1628 (h) x 1236 (v)
Read-out modes	Full 1628 (h) x 1236 (v) 20.31 fps 2/3 partial scan 1628 (h) x 825 (v) 28.42 fps 1/2 partial scan 1628 (h) x 621 (v) 35.27 fps 1/4 partial scan 1628 (h) x 311 (v) 55.896 fps 1/8 partial scan 1628 (h) x 155 (v) 79.23 fps Variable partial Programmable start line & height, 1 to 1236L Vertical binning 1628 (h) x 618 (v) 35.93 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: 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. Do - D9
TTL	Pixel clock, DVAL, LVAL, FVAL and EEN (LVDS) 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	1/20 (off) to 1/51,000 sec. in 12 steps. All or R, G, B individually
Programmable exposure	1L - 1252L in 1L (39.32 μs) steps. All or R, G, B individually
Pulse Width Control	2L (78.64 μs) to 50080L (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%. 6.8W 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-200CL 1/1.8" 3CCD Progressive Scan RGB Color Camera

## Connector pin-out

### DC In / Trigger



HIROSE HR10A-10R-12PB-01

Pin	Signal
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 10226-1A10L

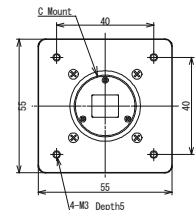


Pin	Signal	Function
1 14	GND	
2 15	X0-/X0+	CL Data out
3 16	X1-/X1+	CL Data out
4 17	X2-/X2+	CL Data out
5 18	Xclk-/Xclk+	CL Clk
6 19	X3-/X3+	CL Data out
7 20	SerTC-/SerTC+	Serial in*
8 21	SerTFG-/SerTFG+	Serial out*
9 22	CC1-/CC1+	Trigger*
10 23	CC2-/CC2+	Reserved
11 24	CC3-/CC3+	Not used
12 25	CC4-/CC4+	Not used
13 26	GND	

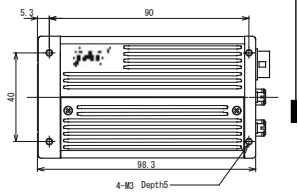
\* Via Camera Link or 12-pin Hirose Information shown is for Port 1. For Port 2, which is used when providing 30-bit or 36-bit output via Camera Link medium configuration, pinout is similar, except pins 7-12 and 20-25 are not used.

## Dimensions

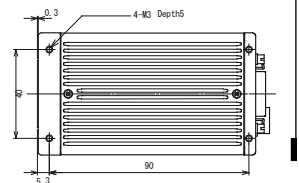
### Front view



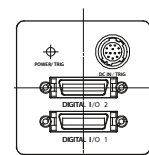
### Side view



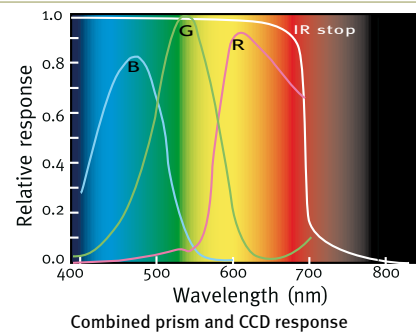
### Bottom view



### Rear view



## Spectral Response



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