

❖ **AT-030 MCL**  
3CCD Progressive Scan RGB Color

**C3** Camera Suite  
Unlimited  
Digital  
Switchability



- 3 x 1/3" CCD progressive scan RGB color camera for vision applications
- 659(h) x 494 (v) active pixels for each CCD (7.4  $\mu\text{m}$  square)
- Compact RGB prism for C-mount lenses
- Chromatic shading reduction permits wider choice of lenses
- 120.5 frames per second with full resolution
- Pre-set or variable partial scan available for faster frame rates
- 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 sRGB or Adobe RGB pre-sets
- Knee function available for knee-point and knee-slope settings
- Edge pre-select, pulse width control, fast PWC, and reset continuous trigger modes
- Pre-set shutter from OFF (1/120) to 1/130,000 in 10 steps
- Individually programmable shutter/exposure for R, G, and B
- Manual, continuous, one-push auto, or pre-set white balance
- Setup by Windows XP/Vista/7 software via RS 232C



# Specifications for AT-030 MCL

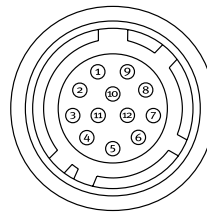
Specifications	AT-030 MCL
Sensor	3 x 1/3" progressive scan CCD - ICX424AL
Pixel Clock	58 MHz
Frame rate full frame	120.49 frames/second (511 lines per frame)
Active area	4.88 (h) x 3.66 (v) mm
Cell size	7.4 (h) x 7.4 (v) μm
Active pixels	659 (h) x 494 (v)
Read-out modes	Full 659 (h) x 494 (v) 120.49 fps 2/3 partial scan 659 (h) x 328 (v) 169.62 fps 1/2 partial scan 659 (h) x 246 (v) 208.72 fps 1/4 partial scan 659 (h) x 122 (v) 322.36 fps 1/8 partial scan 659 (h) x 60 (v) 422.96 fps Variable partial Programmable start line (1-493) & height (2-494) Vertical binning 659 (h) x 247 (v) 193.88 fps
Sensitivity (on sensor)	0.34 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 +21 dB R and B -7 to +10 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, Fast PWC, Reset Continuous
Electronic shutter Pre-set shutter	1/120 (off) to 1/130,000 sec. in 10 steps. All or R, G, B individually
Programmable exposure	1L - 511L in 1L (16.2 μs) steps. All or R, G, B individually
Pulse Width Control	2L (32.4 μs) to 122,640L (2 sec.)
White balance	Manual/one-push, continuous, 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	ON (use factory preset data) or OFF
Control interface	EIA-644 LVDS
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 A, RoHS
Power	12V to 24V DC ± 10%. 6W 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-030MCL 1/3" 3CCD Progressive Scan RGB Color Camera

## Connector pin-out

### DC In / Trigger



HIROSE HR10A-10R-12PB-01

Pin	Signal
1	Ground
2	+12V DC input
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 MCL connector HDR-EA26LFYPG+1

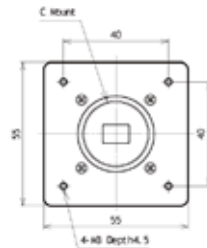


Pin	Signal	Function	
1	14	GND	
2	15	X0-/X0+	CL Data out
3	16	X1-/X1+	CL Data out
4	17	X2-/X2+	CL Data out
5	18	Xclk-/Xclk+	CL Clk
6	19	X3-/X3+	CL Data out
7	20	SerTC+/SerTC-	Serial in*
8	21	SerTFG-/SerTFG+	Serial out*
9	22	CC1-/CC1+	Trigger*
10	23	CC2+/CC2-	Reserved
11	24	CC3-/CC3+	Not used
12	25	CC4+/CC4-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

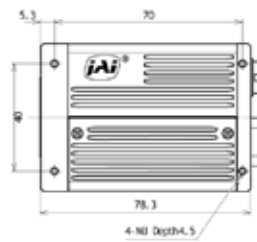
\* Via Camera Link or 12-pin Hirose Information shown is for Port 1. For Port 2, which is used when providing 30-bit or 36-bit output via Camera Link medium configuration, pinout is similar, except pins 7-12 and 20-25 are not used.

## Dimensions

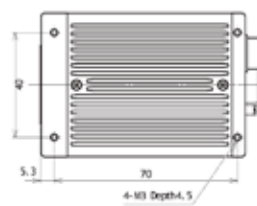
### Front view



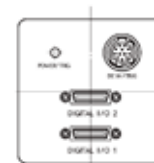
### Side view



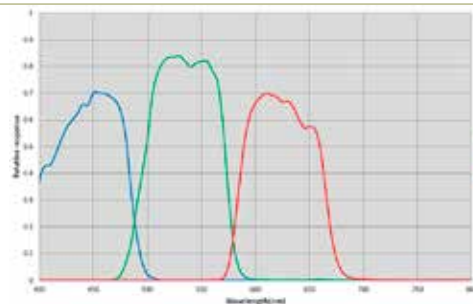
### Bottom view



### Rear view



## Spectral Response



Combined prism and CCD response