

❖ AD-o81 CL

2 CCD High dynamic range camera

C₃ Camera Suite
Unlimited
Digital
Switchability



- 2-monochrome prism-mounted progressive scan CCDs (1/3")
- Member of the C₃ Advanced series
- 1024 (h) x 768 (v) active pixels per channel
- 4.65 μm square pixels
- 30 frames/second with full resolution
- 60 frames/second for interleaved high frame rate operation
- Increased frame rates with partial scan or vertical binning
- Programmable exposure from 20 μs to 33ms
- 11-step preset shutter from 1/60s to 1/50000s
- Pre-select and pulse width trigger modes
- PIV (Particle Image Velocimetry) mode available
- LVAL synchronous/asynchronous operation (auto-detect)
- Analog video output for auto-iris lens control
- 10- or 8-bit Camera Link output
- Two I/O connectors configurable for separate or combined output
- Setup by Windows NT/2000/XP via serial communication

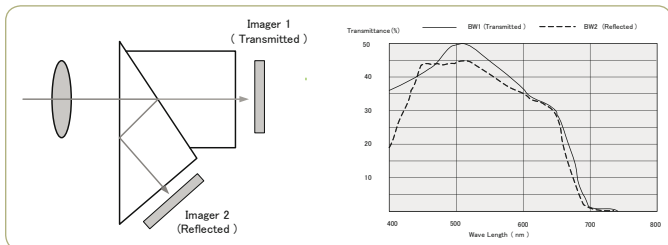
CAMERA
Link

iAi[®]

Specifications for AD-o81CL

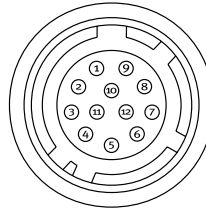
Specifications		AD-o81CL
Sensor	Sensor 1 Sensor 2	1/3" Monochrome IT CCD (ICX204AL) 1/3" Monochrome IT CCD (ICX204AL)
Pixel Clock		33.75 MHz
Frame rate (HDR mode)		30 frames/sec.
Frame rate (interleaved)		60 frames/sec.
Active area		4.76 (h) x 3.57 (v) mm
Cell size		4.65 (h) x 4.65 (v) μ m
Active pixels		1024 (h) x 768 (v)
Read-out modes	Full 1/2 partial scan 1/4 partial scan 1/8 partial scan V binning	1024 (h) x 768 (v) 30/60 fps 1024 (h) x 384 (v) 48/96 fps 1024 (h) x 192 (v) 68/136 fps 1024 (h) x 96 (v) 86/172 fps 1024 (h) x 384 (v) 49.5/99 fps
Sensitivity		1.1 Lux (On sensor, max. gain, shutter off, 50% video)
S/N ratio		>54dB (Gain 0 dB, shutter off)
Video output		Dual monochrome 8 or 10 bit, synchronized or separate timing. Output selectable to one or both CL connectors
Auto-iris lens video		0.7 Vp-p
Gain		-3dB to +12dB
Synchronization		Int. X-tal
Inputs	Camera Link TTL (Hirose 12P)	Ext. trigger, LVDS, (CC 1) Ext. Trigger 4V \pm 2V
Outputs	Camera Link TTL (Hirose 12P)	EEN, FVAL, LVAL, DVAL, PCLK XEEN (x 2)
Trigger modes		Pre Select, Pulse Width and PIV mode
Electronic shutter	Pre-set shutter Programmable exposure Pulse Width Control	1/60 to 1/50,000 sec. in 11 steps 0.5L to 792L (1LVAL unit) 1.5L to 60 frames
Auto luminance balance		Gain setting range: -3 to +6 dB (HDR mode) Detection area is selectable from 9 divisions
Knee compensation		Knee point, Knee slope (10 or 8 bit)
Control interface		Camera Link x 2
Indicators on rear panel		LED for power and trigger input
Operating Temperature		-5°C to +45°C
Humidity (operation)		20 - 80% non-condensing
Storage temp./humidity		-25°C to +60°C / 20 to 80%
Vibration		3 G (15Hz to 200 Hz XYZ)
Shock		50G
Regulations		CE (EN 61000-6-2, EN-61000-6-3), FCC part 15 class B, RoHS
Power		12V DC \pm 10% 3.8 W
Lens mount		C-mount (use 3CCD type, rear protrusion <4mm)
Dimensions (H x W x L)		55(H) x 55(W) x 80(D) mm
Weight		400 g

2CCD Prism



Connector pin-out

DC In / Trigger

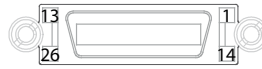


HIROSE HR10A-10R-12PB-01

Pin	Signal
1	Ground
2	+12V DC
3	Ground
4	Auto Iris lens video output
5	Ground
6	XEEN 1 out
7	XEEN 2 out
8	Ground
9	Not used
10	Trigger 1 in
11	Trigger 2 in
12	Ground

Camera Link Interface

26 pin MDR connector 3M 10226-1A10L

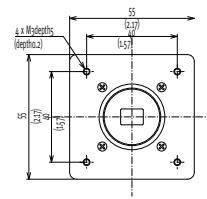


Pin	Signal	Function
1 14	GND	
2 15	-/+Tx0	CL Data
3 16	-/+Tx1	CL Data
4 17	-/+Tx2	CL Data
5 18	-/+Txclk	CL clk
6 19	-/+Tx3	CL Data
7 20	SerTC-/SerTC-	Serial in*
8 21	SerTFG-/SerTFG+	Serial out*
9 22	CC1-/CC1+	Ext. trig*
10 23	CC2-/CC2-	Not used
11 24	CC3-/CC3+	Not used
12 25	CC4-/CC4-	Not used
13 26	GND	

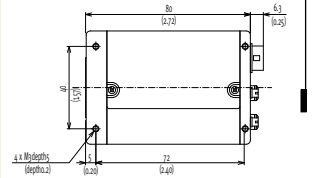
Camera Link medium configuration.
* Camera Link

Dimensions

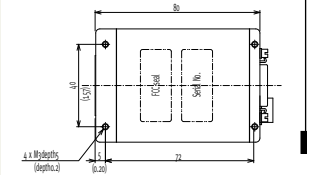
Front view



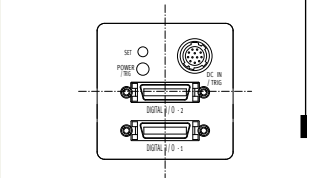
Side view



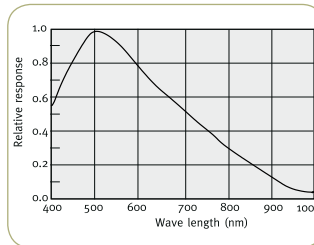
Bottom view



Rear view



AD-o81CL



High Dynamic Range Output

By altering the shutter/gain settings of the two CCDs and fusing the two synchronized video streams during post-processing, the AD-o81CL can provide more than double the dynamic range of standard CCD cameras (up to ~120 dB) but in a linear fashion that avoids the noise, shutter, and compression issues found in typical CMOS-based logarithmic or LinLog™ high dynamic range cameras. For more information, read the HDR tech note available at www.jai.com

Ordering Information

AD-o81CL 2CCD High dynamic range Camera

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



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