AD-081 GE

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*
- *PIV (Particle Image Velocimetry) mode also available*
- *Programmable exposure from 20µs to 33ms*
- *Auto shutter and GenICam Exposure Time Abs modes*
- *Exposure time up to 2 sec. using Pulse Width trigger mode*
- *Sequence trigger mode for on-the-fly change of gain, exposure and ROI*
- *LVAL synchronous/asynchronous operation (auto-detect)*
- *Programmable GPIO with opto-isolated inputs and outputs*
- *Two I/O connectors configurable for separate or combined output*
- *Comprehensive control tool and SDK for Windows XP /Vista*

GiGE VISION®

Specifications for AD-081 GE

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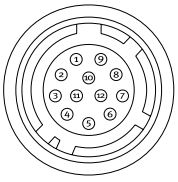
Sensor Sensor 1 Sensor 2	1/3" Monochrome IT CCD (ICX204AL) 1/3" Monochrome IT CCD (ICX204AL)
Pixel Clock	33.75 MHz
Frame rate (HDR mode)	30 frames/sec.
Frame rate (interleaved)	60 frames/sec.
Active area	4.76 (h) x 3.57 (v) mm
Cell size	4.65 (h) x 4.65 (v) µm
Active pixels	1024 (h) x 768 (v)
Read-out modes Full Variable partial Vertical binning	 1024 (h) x 768 (v) 30/60 fps Programmable start line: 1 to 760 Programmable height: 8 to 768 lines 1024 (h) x 384 (v) 49.3 fps max.
Sensitivity	0.34 Lux (On sensor, max. gain, shutter off, 50% video)
S/N ratio	>54dB (Gain 0 dB, shutter off)
Video output	Dual monochrome 8, 10, or 12 bit, GigE Vision output Synchronized or separate timing via 2 RJ-45 connectors. Output selectable to one or both channels
Auto-iris lens video	0.7 Vp-p, 75Ω NUM luminance signal w/o sync
Gain	Manual or AGC: -3dB to +21dB
Synchronization	Int. X-tal
GPIO Module Input/output switch Clock generator (one) Pulse generator (four)	 Configurable 21-in/14-out switch 12-bit counter based on pixel clock 20-bit counters with programmable length, start point, stop point, repeat
Hardware Trigger modes	Edge Pre-Select, Pulse Width Control, Reset Continuous, PIV, Frame Delay, Sequence
Electronic shutter Programmable exposure Exposure Time Abs GPIO plus Pulse Width Auto shutter	 0.5L (20µs) to 792L (33.3ms) in 1L steps (42.07µs) µsec - user definable. Same range as PE 20µs to 2 sec. 1/30 to 1/10,000 sec.
Pre-processing functions	Auto gain balancing, blemish compensation, shading correction, knee point/slope, LUT/gamma correction
Control interface	Register based, GigE Vision/GenICam compliant.
Functions controlled via GigE Vision interface	Shutter, gain, black level, trigger mode, read-out mode, GPIO setup, ROI (GenICam mandatory functions)
GigE Vision streaming protocol	Packet size (up to 16020 bytes), delayed (frame) read-out, inter-packet delay
Indicators on rear panel	Power/hardware trigger, GigE link/activity
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 - 24V DC ± 10%. 7.6 W typical (full frame @ 12V)
Lens mount	C-mount (use 3CCD type, Max. 4.0 mm thread)
Dimensions (H x W x L)	55(H) x 55(W) x 98.3(D) mm
Weight	320 g

Connector pin-out

DC In / GPIO



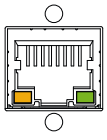
HIROSE HR10A-10R-12PB-01

Connector Pin-out

Pin		
1	GND	
2	+12 V DC input	
3	Opto in 2(-)*/GND	
4	Opto in 2(+)*/Auto iris lens	
5	Opto in 1(-)	
6	Opto in 1(+)	
7	Opto out 1(-)	
8	Opto out 1(+)	
9	Opto out 2(-)	
10	Opto out 2(+)	
11	+12V DC input	
12	GND	

* Pins 3 and 4 can be configured by internal switch selection

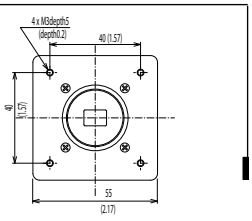
GigE Vision interface Accepts RJ-45 with thumbscrews



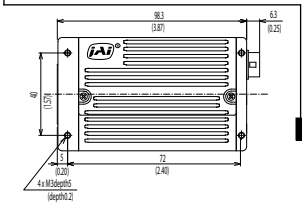
Pin				
1	TRD+(0)	5	TRD–(2)	
2	TRD–(0)	6	TRD–(1)	
3	TRD+(1)	7	TRD+(3)	
4	TRD+(2)	8	TRD–(3)	

Dimensions

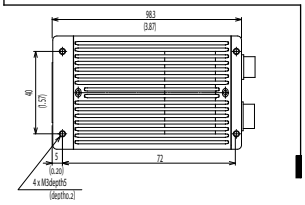
Front view



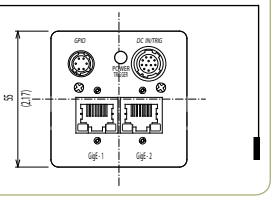
Side view



Bottom view



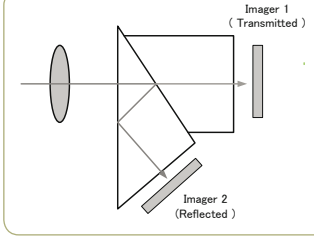
Rear view

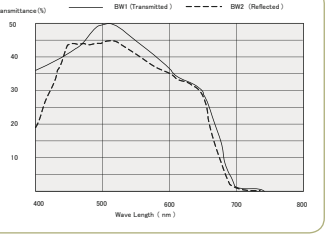


High Dynamic Range Output

By altering the shutter/gain settings of the two CCDs and fusing the two synchronized video streams either in-camera or during post-processing, the AD-081CL 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

2CCD Prism





Ordering Information

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