

❖ AD-o81 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 μ m 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 20 μ s 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

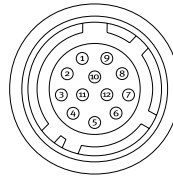


Specifications for AD-o81 GE

Specifications		AD-o81 GE
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 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, 75 Ω 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 (20 μ s) to 792L (33.3ms) in 1L steps (42.07 μ s) μ sec - user definable. Same range as PE 20 μ s 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 \pm 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



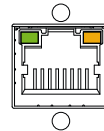
HIROSE HR10A-10R-12PB-01

Connector Pin-out

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

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

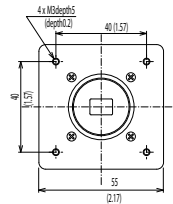
GigE Vision interface Accepts RJ-45 with thumbscrews



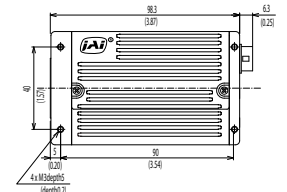
- Pin 1 TRD+(0) 5 TRD-(2)
 Pin 2 TRD-(0) 6 TRD-(1)
 Pin 3 TRD+(1) 7 TRD+(3)
 Pin 4 TRD+(2) 8 TRD-(3)

Dimensions

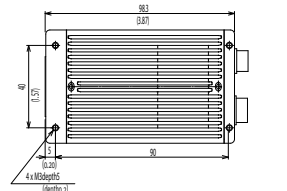
Front view



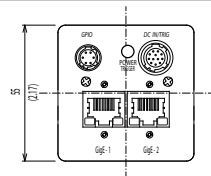
Side view



Bottom view



Rear view

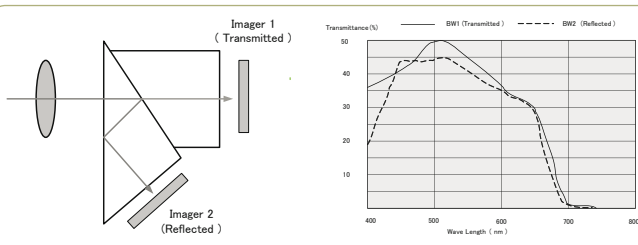


High Dynamic Range Output

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-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

2CCD Prism



Ordering Information

AD-o81GE 2CCD High dynamic range camera

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See the possibilities