

➤ 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 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 20 μs 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

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VISION

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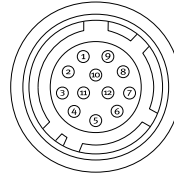
See the possibilities

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



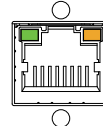
HIROSE HR10A-10R-12PB-01

Connector Pin-out

- Pin 1 GND
 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 +12 V DC input
 12 GND

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

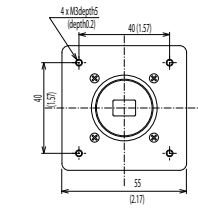
GigE Vision interface Accepts RJ-45 with thumbscrews



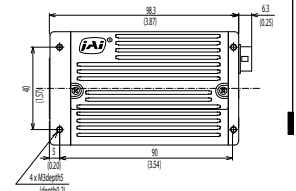
- Pin 1 TRD+(0) 5 TRD-(2)
 2 TRD-(0) 6 TRD-(1)
 3 TRD+(1) 7 TRD+(3)
 4 TRD+(2) 8 TRD-(3)

Dimensions

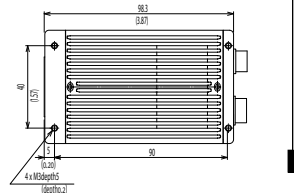
Front view



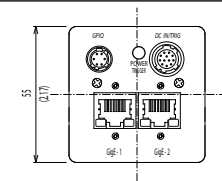
Side view



Bottom view



Rear view

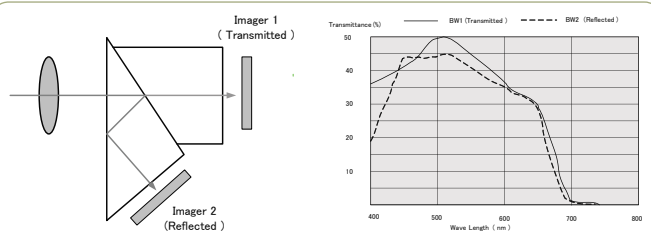


High Dynamic Range Output

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-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