# CV-A1 / CV-A1 UV

## Progressive Scan

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SERIAL INTERFACE RS 232C CONTROL TOOL

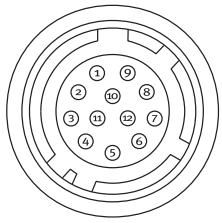
- *Compact 1/2" monochrome progressive scan camera*
- *UV version available (CV-A1 UV)*
- *1392 (h) x 1040 (v) 4.65 µm square pixels*
- *16 frames/second with full resolution in continuous operation*
- *Increased frame rate with vertical binning and partial scan*
- *Increased sensitivity with H and V binning*
- *Exposure time from 75.9µs µs to 116 ms using Pulse Width Control mode*
- *Programmable exposure from 75.9 µs to 59.8 ms*
- *Frame-delay readout mode for multiplexed readout of up to 3 cameras*
- *Internal, external HD/VD or random trigger synchronization*
- *Smear reduction readout mode*
- *LVAL-synchronous/-asynchronous operation (auto-detect)*
- *Exposure enable (EEN), Write enable (WEN) and Pixel Clock output*
- *Setup by Windows NT/2000/XP via serial communication*

# Specifications for CV-A1 / CV-A1-UV

| Specifications | CV-A1 / CV-A1 UV |
|---|---|
| Sensor | 1/2" progressive scan |
| Pixel Clock | 28.64 MHz |
| Frame rate full frame | 16.037 frames/second |
| | (1068 lines per frame) |
| Active area | 6.4 (h) x 4.8 (v) mm |
| Cell size | 4.65 x 4.65 pixels |
| Active pixels | 1380 x 1035 |
| Read-out modes | |
| Full | 1380 (h) x 1035 (v) 16 fps |
| 1/2 partial scan | 1380 (h) x 513(v) 30 fps |
| 1/3 partial scan | 1380 (h) x 341 (v) 43 fps |
| 1/6 partial scan | 1380 (h) x 171 (v) 75 fps |
| Horizontal binning | 690 (h) x 1035 (v) 16 fps |
| Vertical binning | 1380 (h) x 527 (v) 32 fps |
| H + V binning | 690 (h) x 527 (v) 32 fps |
| Smear-less | Smear reduction |
| Frame-delay readout | For multi-camera read-out |
| Sensitivity (CV-A1) | 0.3 Lux (On sensor, max. gain, shutter off, 50% video) |
| S/N ratio | >50dB (odB gain) |
| Video output | Composite VS signal, 1Vp-p, 75Ω<br>Video signal, 0,7Vp-p (selectable) |
| Gain | Manual, -3 to +12 dB<br>Automatic, 0 to +12dB |
| Synchronization | Int. X-tal, Ext. HD/VD or random trigger |
| Inputs | |
| Trigger | 4V, TTL |
| HD/VD sync | 4V, 75Ω or High Z (switchable) |
| Outputs | |
| HD / VD sync. | 4V, 75Ω |
| WEN (Write Enable) | 4V, 75Ω |
| EEN (Exposure Enable) | 4V, 75Ω |
| Pixel clock | 4V, 75Ω |
| Trigger modes | Continuous, EPS (Edge Pre-Select), PWC (Pulse Width Control), Long time exposure, Smear reduction and Frame-delay readout |
| Electronic shutter | |
| Pre-set shutter | 1/16 to 1/200,000 in 16 steps |
| Programmable exposure (PE) | 1.3H to 1000H (75.9 µs to 59.8 ms) |
| Pulse Width | 1.3H to 2000H (75.9µs µs to 116 ms) |
| Long time exposure | 2 frames to ∞ |
| Accumulation | HD synchronous or HD asynchronous |
| Control interface | RS-232C, short ASCII commands |
| Functions controlled by RS-232C | Scanning format, Trigger modes, Readout modes, Programmable exposure, Shutter, Gain, Pixel clock output, Sync on/off, Black level, Manual gain, AGC, Gamma |
| Functions controlled by internal DIP-switches | VD input/output, HD input/output, HD/VD 75Ω termination on/off |
| Operating Temperature | -5°C to +45°C |
| Humidity (operation) | 20 - 90% non-condensing |
| Storage temp./humidity | -25°C to +60°C / 20 to 90% |
| Vibration | 10G (20Hz to 200 Hz XYZ) |
| Shock | 70G |
| Regulations | CE (EN 61000-6-2, EN-61000-6-3), FCC part 15 class B, RoHS/WEEE |
| Power | 12V DC +/-10%. 1.8W |
| Lens mount | C-mount |
| Dimensions (H x W x L) | 29 x 44 x 66 mm |
| Weight | 150 g |

## Connector pin-out

**DC-IN/SYNC.**

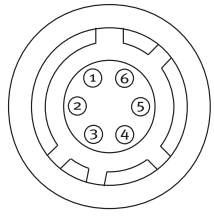



HIROSE HR10A-10R-12PB-01

| Pin | | |
|---|---|---|
| | 1 | GND |
| | 2 | +12 V DC input |
| | 3 | Ground |
| | 4 | Video output |
| | 5 | Ground |
| | 6 | HD input/output* |
| | 7 | VD input/output* |
| | 8 | Ground |
| | 9 | Pixel clock output* |
| | 10 | WEN output* |
| | 11 | Trigger input* |
| | 12 | GND |

(Pin configuration compatible with EIAJ standard)

**RS 232C/TRIGGER**



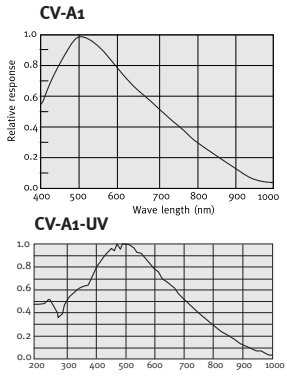

HIROSE HR10A-7R-6PB

| Pin | | |
|---|---|---|
| | 1 | TXD |
| | 2 | RXD |
| | 3 | Ground |
| | 4 | Ground |
| | 5 | Trigger input |
| | 6 | EEN/WEN output |

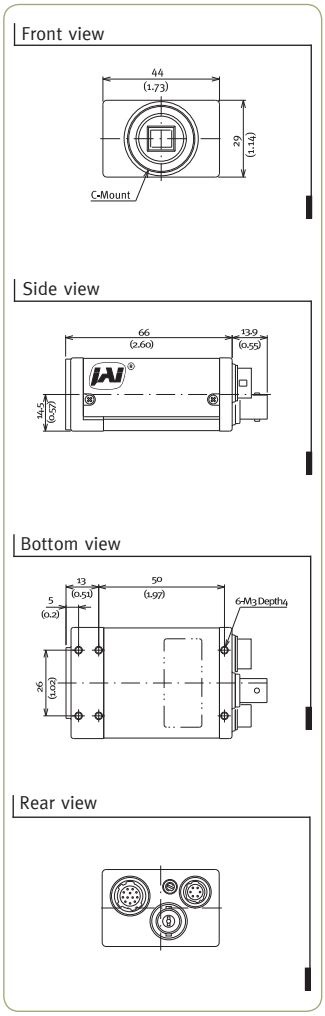
*) Configurable

HIROSE Plugs for cable:
12 pin: HIROSE HR10A-10P-12S
6 pin: HIROSE HR10A-7P-6S

## Spectral Response



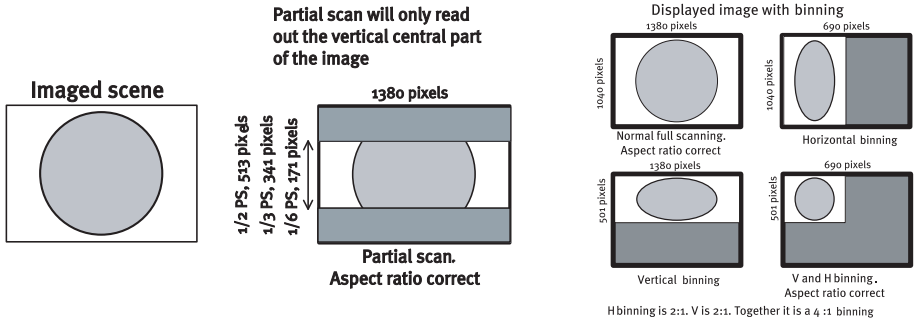

## Dimensions




## Ordering Information

CV-A1 1/2" Monochrome Progressive Scan Camera
CV-A1 UV 1/2" UV-enhanced Progressive Scan Camera
MP40 Tripod Adapter
(must be ordered separately)

## Readout formats





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