

With a resolution of 1600 x 1200 effective pixels, the **CCD-2000** is a further member of the high resolution CCD camera family of Allied Vision Technologies GmbH

Due to the pixel clock of 40 MHz 17 frames/sec. are supplied at a full resolution.

By means of the progressive interline transfer sensor very short exposure times up to 1/10000 seconds can be achieved at a full resolution. The exposure time can be regulated in steps of 47 µs. Due to the asynchronous operation (image on demand) the exposure starts 7 µs after an external trigger impulse. Therefore the camera is especially useful for recording moved objects. Moreover, the **CCD-2000** can work in a continuous operation with 17 frames/second and 58 ms exposure time.

The effective dynamic of the complete camera

$$D = \frac{Sat_{(count)} - Dark_{(count)}}{RMS\ Noise_{(count)}}$$

is more than 1000 and therefore offers reserves even at difficult lighting conditions or very short exposure times. The RS-644 digital output supplies image data with 12-bit precision of which also less can be used depending on the application. The 2/3" sensor with a pixel size of 4.4 µm x 4.4 µm offers the possibility of using all C-Mount lenses and optics customary in commerce.

Regarding mechanics the **CCD-2000** is identical to other VDS cameras as well as pin to pin compatible.

Technical Data

- Resolution: 1600 (H) x 1200 (V) pixels
- Progressive scan
- Pixel size: 4.4µm x 4.4 µm
- Active sensor size: 7.04 (H) mm x 5.28 (V) mm
- Interline transfer sensor (no mech. shutter required)
- Electronic shutter up to 1/10000 sec.; adjustable in 47 µs steps
- Image on demand
Frame rate: up to 17 fps at full resolution
- Effective dynamics: ≥ 1:1000 (≥ 60 dB)
- Sensor saturation: ≥ 12000 e
- Anti-blooming
- Exposure time up to approx. 5 sec.
- Digital output: 12-bit, RS-644
- Frame system: 1250 lines
- Pixel clock: 40 MHz
- Video gain: 1 or 2 (+ 6 dB)
- Optional: color sensor (Bayer filter)
- Power supply: + 12 V (SELV), approx. 0.5 A
- Ambient air temperature: 0° to 40° C
- Lens mount: C-mount
- CE standard
- Made in Germany

RS-644 Digital Output (37-pin D-SUB Jack)

Pin	Function	Pin	Function
1	PCLK	20	/PCLK
2	LEN	21	/LEN
3	FEN	22	/FEN
4	D0 (LSB)	23	/D0
5	D1	24	/D1
6	D2	25	/D2
7	D3	26	/D3
8	D4	27	/D4
9	D5	28	/D5
10	D6	29	/D6
11	D7	30	/D7
12	D8	31	/D8
13	D9	32	/D9
14	D10	33	/D10
15	D11 (MSB)	34	/D11
16	GND	35	GND
17	/TRES	36	TRES
18	/SV2	37	Mode
19	free		

Power and Control Input (15-pin D-SUB Jack)

Pin	Function
1] + 12 V DC
2	
3] GND
4	
5	test output (reserved)
6	-
7	-
8	-
9	Mode: (Open) ⇒ Continuous Mode (GND) ⇒ Image on Demand
10	-
11	+] Trigger Input (Opto-Coupler)
12	-
13	+] Exposure Output (Opto-Coupler)
14	Line Sync Output (active low)
15	Frame Sync Output (active low)

