

CCD-1300

Progressive High-Resolution CCD Camera with 12-bit Digital-Output



Features

- 1280 (H) x 1024 (V) square pixels
- Progressive scan
- Interline-transfer sensor (IT)
- Asynchronous shutter up to 1/10000 sec. (image on demand)
- Up to 12.5 frames/sec
- Effective camera dynamics: $\geq 1:1500$ (≥ 63 dB)
- Digital RS-644 output with 12-bit
- Single Output (21 Mpixels/sec.)
- C-mount compatible sensor size (2/3")

With a resolution of 1280 x 1024 effective pixels, the **CCD-1300** is a further member of the VDS high resolution CCD camera family.

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 approx. 76 µs. Due to the asynchronous operation (image on demand), the exposure starts 15 µs after an external trigger pulse.

Therefore the camera is especially useful for recording moved objects. Moreover, the **CCD-1300** can work in a continuous operation with 12.5 frames/second and 80 ms exposure time.

The effective dynamic of the complete camera

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

is more than 1500 and therefore offers reserves even for 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 offers the possibility of using all C-mount lenses and optics customary in commerce.

Technical Data

- Resolution: 1280 (H) x 1024 (V) pixels
- Progressive scan
- Pixel size: 6.45 µm x 6.45 µm
- Active sensor size: 8.26 (H) mm x 6.60 (V) mm
- Interline transfer sensor (no mech. shutter required)
- Electronic shutter up to 1/10000 sec.; adjustable in 76 µs steps
- Image on demand
- Image rate: up to 12.5 frames/sec.
- Effective dynamics: ≥ 1:1500 (≥ 63 dB)
- Sensor saturation: ≥ 25000 e
- Anti-Blooming
- Exposure time up to approx. 10 sec.
- Digital output: 12-bit, RS-644 (LVDS)
- Frame system: 1050 lines
- Pixel clock: 21 MHz
- Video gain: 1 or 2 (+ 6 dB)
- Power supply: + 12 V, max. 0.45 A
- Ambient air temperature: 0° to 40° C
- Lens mount: C-mount
- CE standard
- Made in Germany

Further models of the CCD-1300, e. g.:

CCD-1300QB, QD: 1 x 2, 2 x 2 Binning
 CCD-1300QCB: color version
 CCD-1300QLN: low-noise
 COOL-1300Q: cooled version

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	(reserved)		

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

Pin	Function
1] + 12 V DC
2	
3] GND
4	
5	-
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)

