CCD-1300QLN

Progressive Very-High-Resolution Low-Noise 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 images/sec.
- Readout noise ≤ 12 e
- Quantum efficiency: up to 70 % at green
- Camera dynamics: ≥ 1:2000 (≥ 66 dB)
- Digital RS-644 output with 12-bit
- C-mount compatible sensor size (2/3")

With a resolution of 1280 x 1024 effective pixels, the **CCD-1300QLN** is a further member of the VDS high resolution CCD camera family. It is the low- noise version of the standard CCD-1300B camera.

The effective dynamics of the complete camera

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

is more than 2000 and therefore offers reserves even for difficult lighting conditions or very short exposure times. The readout noise of this camera version is only 12 e.
The RS-644 digital output supplies image data with 12-bit precision.

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-impulse.

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

Due to the switchable binning function two lines are added. As a result of this the readout rate is doubled to 25 images/sec.
The 2/3" sensor offers the possibility of using all C-mount lenses and optics customary in commerce.

Technical Data

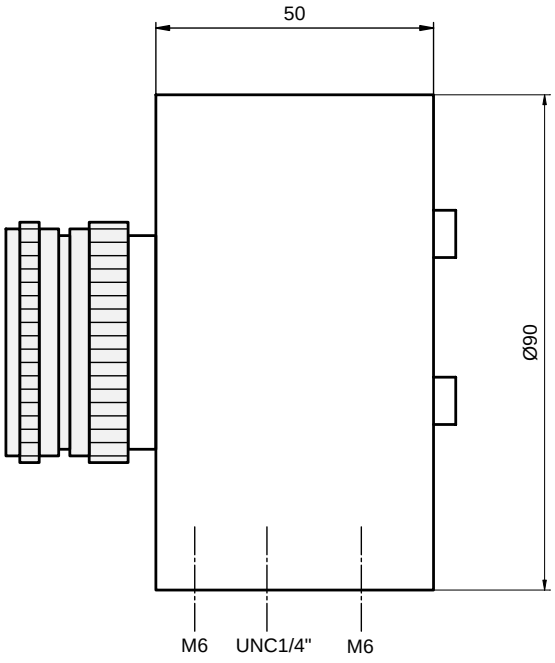
- Resolution: 1280 (H) x 1024 (V) pixels
  or 1280 (H) x 512 (V) pixels with binning
- Progressive scan
- Pixel size: 6.45 µm x 6.45 µm
- Active sensor size: 8.26 (H) mm x 6.60 (V) mm
- Interline transfer sensor (no mech. shutter required)
- Electronic shutter up to 1/10000 sec.;
  adjustable in 76 µs steps
- Image on demand
- Image rate: up to 12.5 or 25 images/sec. with binning
- Effective dynamics: up to 1:2000 (≥ 66 dB)
- Quantum efficiency: up to 70 % at green
- Sensor saturation: ≥ 25000 e
- Readout noise: ≤ 12 e
- Anti-Blooming
- Exposure time up to approx. 10 sec.
- Digital output: 12-bit, RS-644
- 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

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	/TREX	36	TREX
18	/SV2	37	Mode
19	Binning Mode		

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

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



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