COOL-1300Q / QC

Cooled High Resolution Low-Noise CCD Camera with 12-bit Digital-Output

Features

- 1280 (H) x 1024 (V) square pixels
- Peltier-cooled (- 20 °C)
- Progressive scan
- Interline-transfer sensor (IT)
- Exposure from 1/10000 sec. to 1000 sec.
- Camera dynamics: ≥ 1:1800 (≥ 65 dB) COOL-1300Q / QC
- Readout noise: ≤ 13 e
- Dark current: ≈ 0.1 e / pixel / sec.
- Digital RS-644 output with 12-bit
- C-mount compatible sensor size (2/3")

VDS Vosskühler

With a resolution of 1280 x 1024 effective pixels, the **COOL-1300** is a further member of the VDS high resolution CCD camera family. The **COOL-1300** is based on our CCD-1300 Low-Noise camera which has been extended by a peltier cooling in order to attain exposure times up to 1000 sec.

Due to the readout noise lower than 13 e and due to the very low dark current of approx. 0.1e/pixel/sec., the **COOL-1300** also achieves excellent signal to noise values at long exposure times.

The hermetic sealing of the vacuum section ensures an operation free of maintenance for many years.

Apart from long-time exposure the camera can also be operated at short exposures up to 1/10000 sec. By means of the progressive IT sensor the full resolution is always available.

With the switchable 2 x 2 binning function the light sensitivity can be increased four times.

The 2/3" sensor offers the possibility of using all C-mount lenses and optics customary in commerce. The camera is available with a b/w or color sensor (Bayer filter).

A further outstanding feature of the **COOL-1300** is the extremely compact construction which does not need a further control unit. Only a power supply customary in commerce with 12 V / 2.5 A for the supply of the camera is needed.

Technical Data

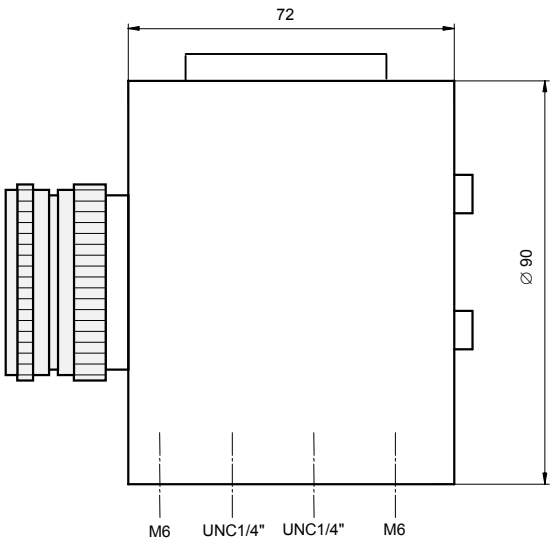
- Resolution: 1280 (H) x 1024 (V) pixels or
  640 (H) x 512 (V) with 2 x 2 binning
- Progressive scan
- Pixel size: 6.45 µm x 6.45 µm
- Active sensor size: 8.26 (H) mm x 6.60 (V) mm
- Interline transfer sensor (no mech. shutter required)
- Optional: color sensor (Bayer filter)
- Long-time exposure up to approx. 1000 sec.
- Electronic shutter up to 1/10000 sec.;
  adjustable in 76 µs steps
- Image rate: up to 12.5 or 25 images/sec. with binning
- Dynamics: ≥ 1:1800 (≥ 65 dB)
- Quantum efficiency: up to 70% at green
- Sensor saturation: ≥ 25000 e
- Readout noise: ≤ 13 e
- Dark current: 0.1 e / pixel / sec.
- Cooling: - 20 °C regulated
  (up to 25 °C environmental temperature)
- Forced air cooling
- Digital output: 12-bit, RS-644
- Pixel clock: 21 MHz
- Video gain: 1 or 2 (+ 6 dB)
- Power supply: + 12 V, max. 2.5 A
- Ambient air temperature: 0° to 35° 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	/BIN		

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	-] Trigger Input (Opto-Coupler)
11	+
12	-] Exposure Output (Opto-Coupler)
13	+
14	Line Sync Output (active low)
15	Frame Sync Output (active low)



VDS Vosskühler GmbH · Weisse Breite 7 · 49084 Osnabrück · Germany
Tel.: +49 (0)541 / 800 84-0 · Fax: +49 (0)541 / 800 84-10 · www.vdsvossk.de · E-mail: vds@vdsvossk.de