



COOL-6000

Cooled 6 Mpixel Full Frame CCD Camera



Features

- 3072 (H) x 2048 (V) pixels in the full frame mode
- 1536 (H) x 1024 (V) pixels in the 2 x 2 binning mode
- Very high quantum efficiency up to 1 μm (NIR)
- Pixel size: 9 μm x 9 μm
- Readout time 1.35 sec. at 3072 (H) x 2048 (V), 0.4 sec. at 2 x 2 binning
- Temperature stabilized sensor temperature (-10 °C)
- Digitalization with 5.25 MHz, 14 bit
- Pixel rate 5.25 MHz
- Digital output with 14-bit (LVDS or GigE)

With a resolution of 3072 x 2048 effective pixels, the **COOL-6000** is a further member of the VDS cooled high resolution CCD camera family.

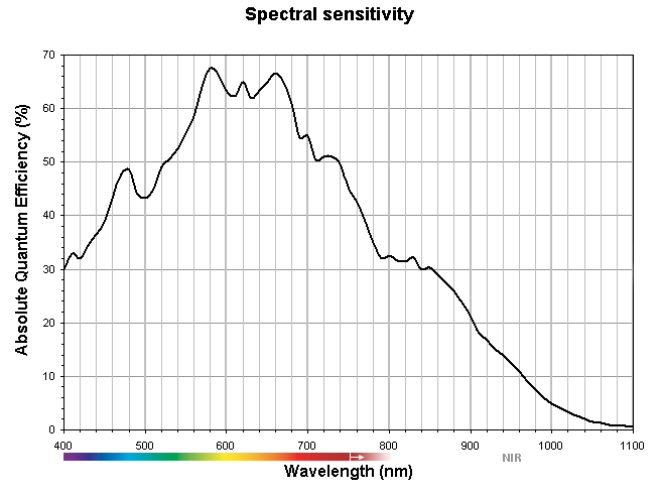
A high quantum efficiency up to the NIR range is achieved by the high fill factor of the full frame sensor.

The **COOL-6000** only requires a readout time of approx. 1.35 sec. at full resolution.

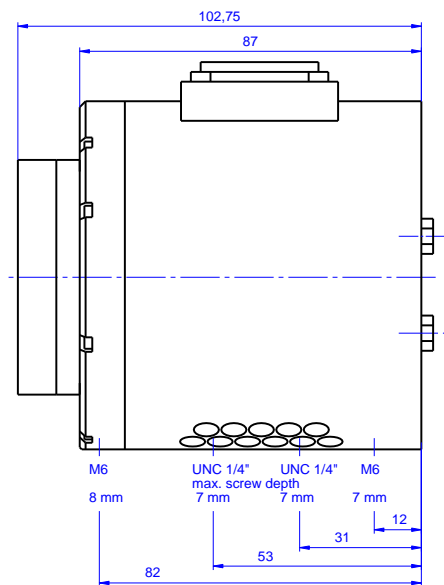
The built-in mechanical long-live shutter allows a direct application of the camera. However, it can also be operated using external impulse light sources with constantly opened shutter.

The cooling and temperature stabilization of the sensor ensure a low noise and a high stability of the dark current. Moreover, long exposure times can be achieved due to the cooling.

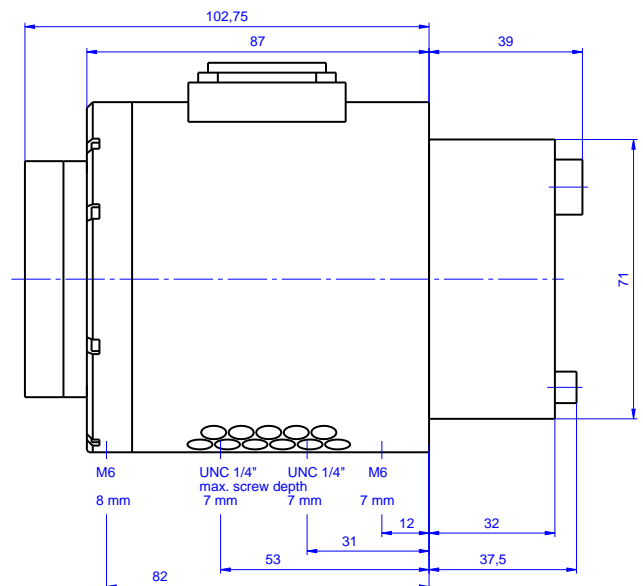
The camera is available with LVDS base interface as well as with Gigabit Ethernet interface.



Mechanical dimensions:
COOL-6000:



COOL-6000GE:



Technical Data

- Resolution: 3072 (H) x 2048 (V) pixels or 1536 (H) x 1024 (V) with 2 x 2 binning
- Pixel size: 9.00 μm x 9.00 μm
- Active sensor size: 27.65 (H) mm x 18.48 (V) mm
- Quantum efficiency up to 65%
- Readout time: 1.35 sec. at 3072 x 2048
0.40 sec. at 1536 x 1024
- Effective dynamics: ≥ 1:5000 (≥ 74 dB)
- Sensor saturation: ≥ 70,000 e
- Readout noise ≤ 14 e
- Exposure time: 50 ms ≤ t_{exp} ≤ approx. 30 min.
- Dark current: approx. 0.2 e/pixels/sec.
- Cooling: stabilized to -10°C
- Digital output: 14-bit, RS-644 or GigE
- Pixel clock: 5.25 MHz
- Power Supply: + 12 V(SELV), approx. 1A – 2.5A
- Ambient air temperature: 0° up to 35°C
- Shutter lifetime: min. 1 x 10⁶ cycles
- CE conformity
- Made in Germany

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

| Pin | Function |
|-----|---|
| 1 | +12V DC, (1A, max. 2.5A) |
| 2 | |
| 3 | GND |
| 4 | |
| 5 | Test output (reserved) |
| 6 | |
| 7 | |
| 8 | Test mode for 12 bit output (active high, 12 V) |
| 9 | Mode: (Open) → Constantly opened shutter (GND) → Standard mode |
| 10 | Trigger Input (Opto Coupler) |
| 11 | |
| 12 | Exposure Output (Opto Coupler) |
| 13 | |
| 14 | Line Sync Output (active low) |
| 15 | Frame Sync Output (active low) |