

# i.CAM-vM

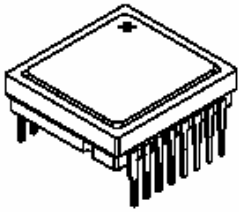


- FIREWIRE-INTERFACE** ◀
- 30HZ FRAME RATE** ◀
- 0.3 MEGAPIXEL, 1/3"** ◀
- B/W CCD IMAGE SENSOR** ◀
- >10-BIT DYNAMIC** ◀
- EXTERNAL TIMING** ◀
- MULTI CAM OPERATION** ◀
- NOTEBOOK COMPATIBLE** ◀
- PELTIER COOLING** ◀



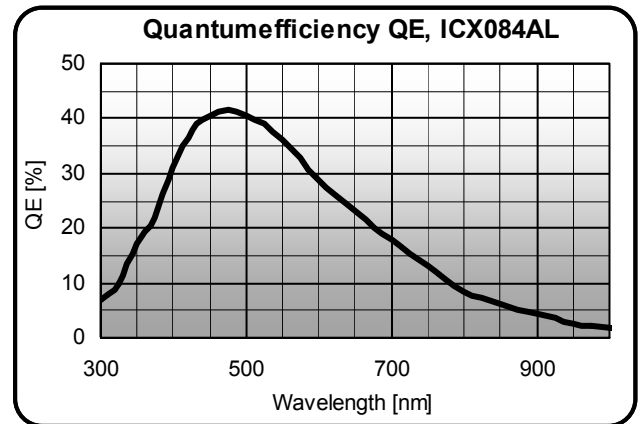
The i.Cam-vM is a high speed camera system with >10-bit dynamic, designed for various industrial and scientific applications with frame rates up to 30Hz. Because of the hot-plug compatible FireWire HighSpeed Interface, it is very simple to connect the i.Cam-vM to any computer which provides a standard OHCI IEEE1394 compatible interface (single-cable-connection). In particular, this offers the possibility of using a notebook as a very flexible and transportable image processing system. Multiple camera systems can operate completely asynchronously with only one PC. All camera functions, e.g. amplification, exposure timing and automatic functions can be adjusted through the software.

Features	
<b>High Sensitivity</b> ▶	High signal to noise ratio with a noise of $18e^-/\text{pixel/s}$ , for images with low lighting from the UV-range (<300nm) up to the near IR-range (>1000nm).
<b>&gt;10-bit Dynamic</b> ▶	10-bit digitalization with a S/N of 0.9 counts rms, actually provides a >10-bit dynamic, easily leaving some 12-bit cameras behind.
<b>Optional Peltier Cooling</b> ▶	The thermoelectric peltier cooling device stabilizes the temperature of the image sensor at 15°C. The Dark current is cut down to 1/5, therefore 5 times longer integration times are possible.
<b>Photometric Linearity</b> ▶	Proportionality of measured counts to incoming light intensity better than 2%, can be optimized to linearities <0.5% with correction tables.
<b>Anti-Blooming Function</b> ▶	Blooming from one overexposed pixel to adjacent pixels will be avoided by an efficiency of an overexposure factor of > 200 relative to the full well capacity. (typ. 1000x)
<b>External Timing</b> ▶	Asynchronous electronic integration time control by an external gate input. Shutter times down to 66 $\mu\text{s}$ and long time integration up to 40s.
<b>30Hz Frame Rate</b> ▶	For optimal adjustment opportunities there is the possibility of live high res. image series (software supported) due to the frame rate of 30Hz.
<b>Multi Camera Operation</b> ▶	Use up to 4 completely asynchronously working cameras (each with a frame rate of 30Hz) at one dual-OHCI IEEE 1394 Interface board in one single PC.
<b>FireWire Interface</b> ▶	Single-Cable-Connection with 400-Mbits/s due to FireWire-HighSpeed Interface. Compatible with every standard OHCI IEEE 1394 interface. Works easily with notebooks.
<b>WinSIS-Software</b> ▶	WinSISlight for standard, WinSIS6 with WinXP/2000/NT/9x for complex measurement-applications controls all camera functions and integration timing. The very user-friendly and intuitive handling, the unique opportunity of macro-recording (WinSIS6 only) and of course the very simple project creation, offer a fast realization of complex applications without long training periods. SDK for personal programming.

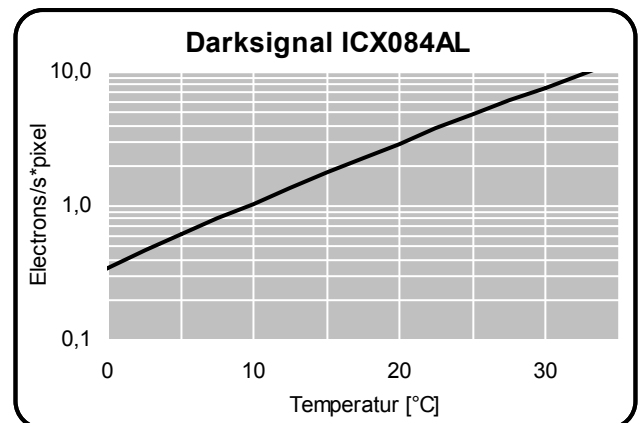


Monochrome CCD  
Image Sensor  
Sony ICX084AL

Specifications	
CCD Image Sensor	Sony ICX084AL
Sensor Type	Progressive Scan, inter-line transfer, Lens on chip
Sensor Format	4 : 3; 1/3"- Image Sensor
Image Size	4.736mm x 3.552mm, 5.92mm diagonal
Pixel Size	7.4µm x 7.4µm
Pixel	640 (H) x 480 (V)
Electron Capacity	22,000e <sup>-</sup>
Readout Noise, rms	18e <sup>-</sup>
Dynamic	1,200 : 1
Dark Current @ 20°	< 3e <sup>-</sup> / pixel / s
Quantum Efficiency	> 40% @ 500nm
Anti-Blooming	1000 x e <sup>-</sup> capacity
Digitalization	10-bit, 1024 grayscales, 12e <sup>-</sup> / grayscale
Frame Rate	30 Hz, full high resolution
Integration Time	66µs to 40s
Amplification	1 – 32 (software)
Optical Mount	c-mount, cs-mount
Mech. Dim. (WxHxD)	72mm x 64mm x 26mm
Weight	220g
Operational Temperature	+5 ... +40°C



The quantum efficiency QE is defined as the percentage of the incoming photons, which generate an electronic charge.



The dark current of a CCD image sensor results from the thermal generation of electrons. With stabilized peltier cooling the sensor-temperature is cut down from approx. 33°C to 15°C.

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### Please call for accessories, e.g.:

- ⇒ Lenses – Cosmimar, Schneider, etc.
- ⇒ Filters, Adapters, Microscope accessories
- ⇒ LED-lighting – DC, pulsed (up from 50ns)
- ⇒ Falsh-lighting – up from 3 µs, <1% stability
- ⇒ Imageintensifiers, gateable >3ns
- ⇒ SPI Single-photon-detectors

### Colour-version ⇒ i.Cam-vC

Our product range covers more than 15 different types of camera systems, especially Scientific Imaging Systemes (SIS) with up to 6 Megapixels and 16-bit Dynamic.