

MicroLine ML1001

Quality. Cooled. Cameras.

1024 x 1024 Imaging Array

24 μm Pixel Size

Highest Dynamic Range

The KAF-1001 sensor used in the ML1001 has two separate output amplifiers. One is designed for low noise and the other is designed for high full well capacity. The ML1001 has software-selectable high and low speed readout for the low noise amplifier, and low speed readout for the high range amplifier. In high range mode, the dynamic range (addressable full well divided by read noise) is over 20,000:1, the highest of any sensor FLI sells.

The KAF-1001 also has excellent quantum efficiency in the near infrared (34% at 900nm) without the etaloning problems characteristic of backside illuminated sensors.



Applications

- Digital Radiography
- Astronomy
- Bioluminescence
- Chemiluminescence
- Gel Documentation
- Forensic Imaging
- Satellite Imaging
- Low Light Level Imaging

Features	Benefits
Up to 3.4 MHz digitization	Fast Image capture with full 16-bit resolution
1024 x 1024 Array with 24 μm pixels	Resolves fine detail
Flexible binning and readout	Increases frame rate
Thermoelectric Cooling to 57°C Below Ambient	Excellent low-noise imaging
Excellent quantum efficiency	High sensitivity for fast image acquisition
Optional F-mount or Canon EOS mount	Wide variety of optical choices
Acquisition software included	Ease of integration with open source SDK
USB 2.0 interface	Industry standard connectivity; fast data transfer



Engineering Excellence

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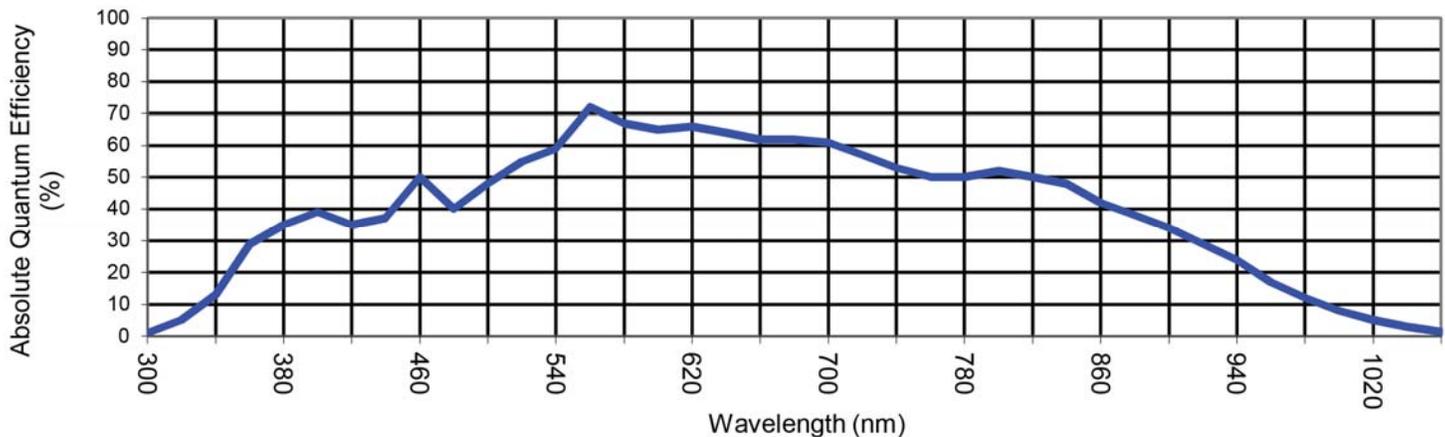
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*Due to continuous development, all specifications subject to change without notice.

Sensor Specifications (from manufacturer)

Sensor	On Semi KAF-1001E	Sensor Size	24.5 X 24.5 mm	Megapixels	1
Pixels	1024 x 1024	Sensor Diagonal	34.6 mm	Video Size (inch)	2.2
Pixel Size	24 μ m	CCD Variants			
Full Well Capacity	785000 electrons	CCD Grades	1, 2		
Color Options	Monochrome only	Anti-Blooming	NA		
CCD Type	Full frame				

Sensor Quantum Efficiency (Absolute)



Camera Performance

Typical Maximum Cooling	57°C below ambient	Dark Current (typical)	.02 electrons/pixel/sec at -35°C
Temperature Stability	0.1°C	Cooling Method	Air (Optional liquid)
Digitization Speed	1 MHz (low noise LN and high range HR modes) and 3.4 MHz (LN)		
Typical System Noise	10e- @ 1 MHz (LN); 15e- @ 3.4 MHz; 37e- (HR)	Non-Linearity	<1%
Focal Plane to Face Plate	15.8 mm (optical)	Weight	2.8 lbs (1.2 kg)
Typical Gain	2e-/count (LN); 12e-/count	Housing	3.7 X 3.7 X 4.77 inches (9.3 X 9.3 X 12.1 cm)
Lens Mounts	Optional F-mount or Canon EOS mount		
Interface	USB 2.0	Camera Channels	1
Available Shutters	45 mm		
External Triggering	Standard	Shutter MTBF	1000000
Environment	-30°C to 45°C 10% - 90% Relative Humidity		
Power	12V (100-240V AC to 12V DC power supply included). With TEC off: <1A. TEC at 100%: 4.4A. Shutter open: 4A pulse for 100msec. Shutter held open, add 0.22A.		



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