

# MicroLine ML4720 UV

Quality. Cooled. Cameras.

## 1024 x 1024 Imaging Array

## 13 $\mu\text{m}$ Pixel Size

The ML4720 UV uses a back-illuminated frame transfer sensor from e2v technologies. Half of the sensor is covered with a metal mask; half is exposed to light. The exposed side of the sensor is centered in the camera aperture. The image is moved from the exposed side to the masked side in about 10 milliseconds, then read out from the masked side while a new exposure is integrating on the exposed side. (Therefore, frame-to-frame timing depends in great part on the digitization speed.) The default configuration for the camera is two channel readout with software-selectable digitization speeds of 500 kHz and 4 MHz per channel. (Single channel readout is available on request, as are different digitization speeds.)

The UV version of this sensor cannot operate in MPP mode; dark current is much higher than the midband and broadband versions (see separate data sheet).



### Applications

Digital Radiography

Astronomy

Bioluminescence

Chemiluminescence

Gel Documentation

Forensic Imaging

Satellite Imaging

Low Light Level Imaging

Features	Benefits
500 kHz and 4 MHz per channel digitization	Fast Image capture with full 16-bit resolution
1024 x 1024 Array with 13 $\mu\text{m}$ pixels	Resolves fine detail
Flexible binning and readout	Increases frame rate
Thermoelectric Cooling to 55°C Below Ambient	Excellent low-noise imaging
Excellent quantum efficiency	High sensitivity for fast image acquisition
C-mount, F-mount, and Canon EOS mount available	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



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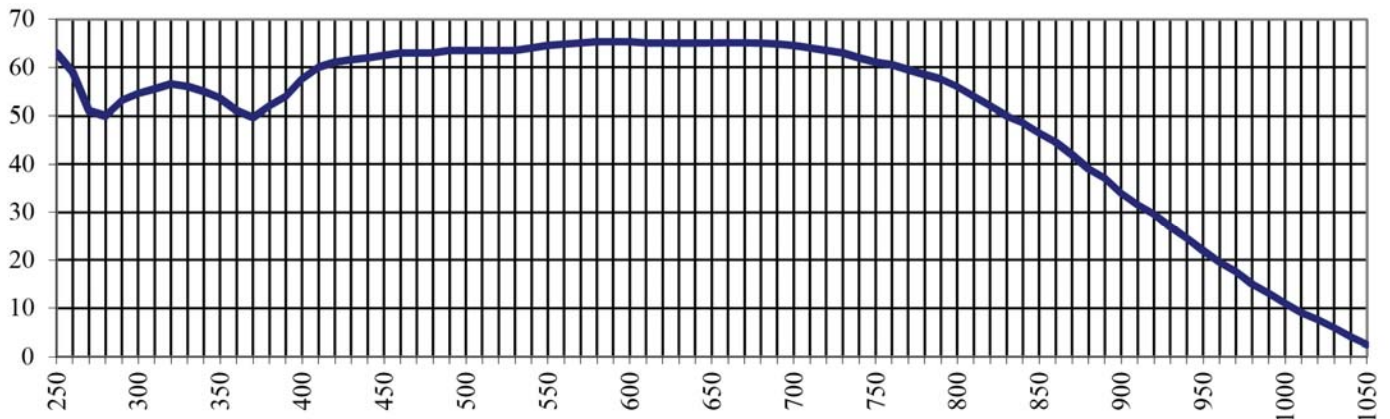
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\*Due to continuous development, all specifications subject to change without notice.

## Sensor Specifications (from manufacturer)

<b>Sensor</b>	e2v CCD47-20-1-170 (UV)	<b>Sensor Size</b>	13.3 X 13.3 mm	<b>Megapixels</b>	1.0
<b>Pixels</b>	1024 x 1024	<b>Sensor Diagonal</b>	18.8 mm	<b>Video Size (inch)</b>	1.2
<b>Pixel Size</b>	13 $\mu$ m	<b>CCD Variants</b>	UV (MB and BB on separate datasheet)		
<b>Full Well Capacity</b>	100000 electrons	<b>CCD Grades</b>	1		
<b>Color Options</b>	Monochrome only	<b>Anti-Blooming</b>	NA		
<b>CCD Type</b>	Frame transfer				

## Sensor Quantum Efficiency (Absolute)



## Camera Performance

<b>Typical Maximum Cooling</b>	55°C below ambient	<b>Dark Current (typical)</b>	20 electrons/pixel/sec at -35°C
<b>Temperature Stability</b>	0.1°C	<b>Cooling Method</b>	Air (Optional liquid)
<b>Digitization Speed</b>	500 kHz and 4 MHz per channel digitization (optional single channel)		
<b>Typical System Noise</b>	10e- at 500 kHz; 16e- at 4 MHz	<b>Non-Linearity</b>	<1%
<b>Housing Dimensions</b>	3.7 X 3.7 X 4.77 inches (9.3 X 9.3 X 12.1 cm)	<b>Weight</b>	2.8 lbs (1.2 kg)
<b>Focal Plane to Face Plate</b>	15.7 mm (17.5 with C-mount faceplate)		
<b>Lens Mounts</b>	Optional C-mount; F-mount; Canon EOS mount		
<b>Interface</b>	USB 2.0	<b>Camera Channels</b>	2 (optional 1)
<b>Available Shutters</b>	Optional 25 mm		
<b>External Triggering</b>	Standard		
<b>Environment</b>	-30°C to 45°C   10% - 90% Relative Humidity		
<b>Power</b>	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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