

# ProLine PL23042

Quality. Cooled. Cameras.

## 2048 x 2048 Imaging Array

## 15 $\mu\text{m}$ Pixel Size

ProLine sets the standards in key performance areas that include: download speeds, cooling, low noise operation, anti-ghosting technology, image quality, and linearity. ProLine download speeds are fast while maintaining low noise frame quality. ProLine achieves outstanding cooling without water assist. simply set the ProLine cooling where you want it and the camera will do the rest -- quickly and without worries. ProLine frame quality is second to none thanks to careful design, implementation, and setup. All cameras are assembled in our clean room under exacting conditions and must pass a battery of tests before being shipped.



### Applications

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

### Features

### Benefits

500 kHz and 3 MHz download	Fast Image capture with full 16-bit resolution
2048 x 2048 Array with 15 $\mu\text{m}$ pixels	Resolves fine detail
Flexible binning and readout	Increases frame rate
Thermoelectric Cooling to 50°C Below Ambient	Excellent low-noise imaging
Excellent quantum efficiency	High sensitivity for fast image acquisition
Optional Nikon F-mount and 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

*Because Your Image Depends On It.*

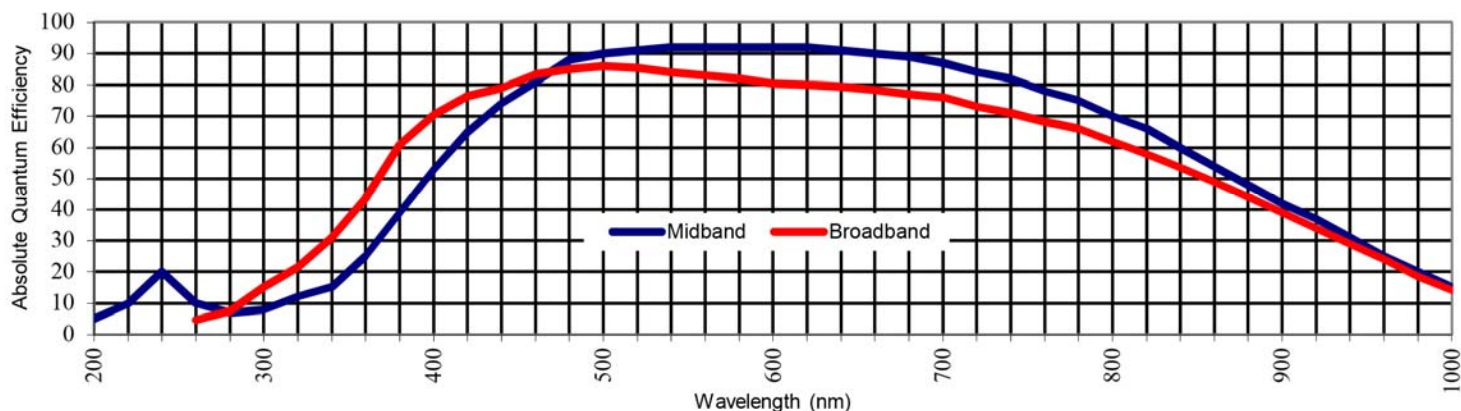
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\*Due to continuous development, all specifications subject to change without notice.

## Sensor Specifications (from manufacturer)

<b>Sensor</b>	e2v CCD230-42-1-143 (MB); CCD230-42-1-E10 (BB)		
<b>Pixels</b>	2048 x 2048	<b>Sensor Size</b>	30.7 X 30.7 mm
<b>Pixel Size</b>	15 $\mu$ m	<b>Sensor Diagonal</b>	43.4 mm
<b>Full Well Capacity</b>	150000 electrons	<b>CCD Variants</b>	Midband
<b>Color Options</b>	Monochrome only	<b>CCD Grades</b>	1
<b>CCD Type</b>	Full frame	<b>Anti-Blooming</b>	NA
		<b>Megapixels</b>	4.2
		<b>Video Size (inch)</b>	2.7

## Sensor Quantum Efficiency (Absolute)



## Camera Performance

<b>Typical Maximum Cooling</b>	50°C below ambient	<b>Dark Current (typical)</b>	0.4 electrons/pixel/sec at -30°C
<b>Temperature Stability</b>	0.1°C	<b>Cooling Method</b>	Air (Optional liquid)
<b>Digitization Speed</b>	500 kHz & 3 MHz		
<b>Typical System Noise</b>	13e- @ 500 kHz; 22e- @ 3 MHz	<b>Non-Linearity</b>	<1%
<b>Focal Plane to Face Plate</b>	21 mm	<b>Weight</b>	5.6 lbs (2.5 kg)
<b>Typical Gain</b>	1.9 e-/ADU	<b>Housing</b>	6.2 X 6.2 X 3.8 inches (15.7 X 15.7 X 9.6 cm)
<b>Lens Mounts</b>	Optional Nikon F-mount or Canon EOS mount		
<b>Interface</b>	USB 2.0	<b>Camera Channels</b>	1
<b>Available Shutters</b>	65 mm		
<b>External Triggering</b>	Standard		1000000
<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%: 4.6A. Shutter open: 4A pulse for 100msec. Shutter held open, add 0.22A.		



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