

## 4096 x 4096 Imaging Array

## 9 $\mu\text{m}$ 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.



### Features

### Benefits

Up to 8 MHz Download Speed

Fast Image capture with full 16-bit resolution

4096 x 4096 Array with 9  $\mu\text{m}$  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

Optional Nikon 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

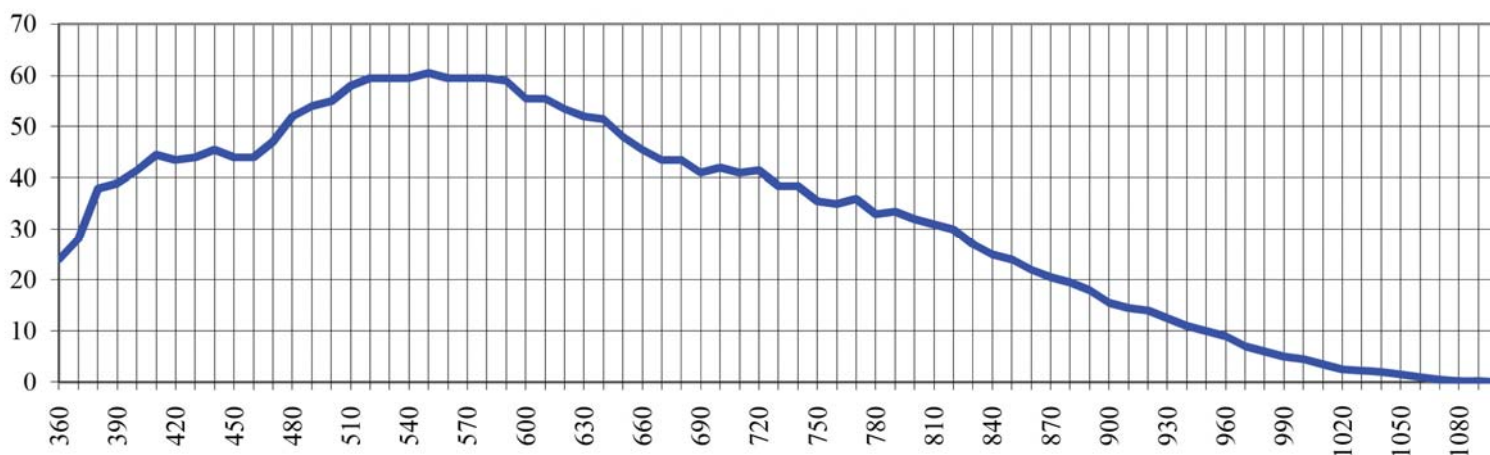
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## Sensor Specifications (from manufacturer)

|                           |                   |                        |                   |                          |      |
|---------------------------|-------------------|------------------------|-------------------|--------------------------|------|
| <b>Sensor</b>             | On Semi KAF-16803 | <b>Sensor Size</b>     | 36.8 X 36.8 mm    | <b>Megapixels</b>        | 16.8 |
| <b>Pixels</b>             | 4096 x 4096       | <b>Sensor Diagonal</b> | 52 mm             | <b>Video Size (inch)</b> | 3.3  |
| <b>Pixel Size</b>         | 9 $\mu$ m         | <b>CCD Variants</b>    |                   |                          |      |
| <b>Full Well Capacity</b> | 100000 electrons  | <b>CCD Grades</b>      | Standard          |                          |      |
| <b>Color Options</b>      | Monochrome        | <b>Anti-Blooming</b>   | > 100X saturation |                          |      |
| <b>CCD Type</b>           | Front Illuminated |                        |                   |                          |      |

## Sensor Quantum Efficiency (Absolute)



## Camera Performance

|                                  |   |                               |                                     |
|----------------------------------|---|-------------------------------|-------------------------------------|
| <b>Typical Maximum Cooling</b>   | 55°C below ambient  | <b>Dark Current (typical)</b> | <0.005 electrons/pixel/sec at -35°C |
| <b>Temperature Stability</b>     | 0.1°C   | <b>Cooling Method</b>         | Air (Optional liquid)               |
| <b>Digitization Speed</b>        | 1 MHz, 8 MHz  |                               |                                     |
| <b>Typical System Noise</b>      | 10e- @ 1 MHz; 14-e @ 8 MHz  | <b>Non-Linearity</b>          | <1%                                 |
| <b>Housing Dimensions</b>        | 6.2 X 6.2 X 3.8 inches (15.7 X 15.7 X 9.6 cm)   | <b>Weight</b>                 | 5.85 lbs (2.6 kg)                   |
| <b>Focal Plane to Face Plate</b> | 21 mm   |                               |                                     |
| <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>Shutter MTBF</b>           | 1000000                             |
| <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.<br>TEC at 100%: 4.6A. Shutter open: 4A pulse for 100msec. Shutter held open, add 0.22A. |                               |                                     |



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