

# Kepler CMOS Camera

## KL4040 BI

### 4K x 4K at 23 fps

The KL4040 BI scientific CMOS camera has the same pixel size and imaging area as the popular KAF-16803 CCD, but with 1/4 the noise, 90% peak quantum efficiency, and excellent sensitivity in the UV. Kepler cooled sCMOS cameras provide ultra-high sensitivity, ultra-low noise, and high frame rates, all at game-changing price to performance ratio.

#### Technical Data

|                                   |                                       |
|-----------------------------------|---------------------------------------|
| <b>Sensor Type</b>                | Back Illuminated CMOS                 |
| <b>Sensor</b>                     | GPixel GSense4040BSI                  |
| <b>Shutter Type</b>               | Rolling                               |
| <b>Active Pixels</b>              | 4096 x 4096                           |
| <b>Pixel Size (microns)</b>       | 9 x 9 $\mu\text{m}$                   |
| <b>Imaging Area (Diagonal)</b>    | 36.8 X 36.8 mm (52 mm)                |
| <b>Full Well Capacity (e-)</b>    | 39000 electrons                       |
| <b>Typical Readout Noise</b>      | 2.3 e-                                |
| <b>Dynamic Range</b>              | 84.2 dB                               |
| <b>Frame Rate (fps)</b>           | 23 fps (QSFP V2)                      |
| <b>Cooling Method<sup>1</sup></b> | Air and Liquid                        |
| <b>Max. Cooling (Air)</b>         | 40°C below ambient                    |
| <b>Temperature Stability</b>      | 0.1°C                                 |
| <b>Dark Current (typical)</b>     | 0.4 eps at -10C                       |
| <b>Interface</b>                  | USB 3.0 (Optional QSFP <sup>2</sup> ) |
| <b>Data Bit Depth</b>             | 16 bit <sup>3</sup>                   |
| <b>Optional Shutter</b>           | 65mm                                  |
| <b>Optional Mounts</b>            | Medium Format Recommended (6x7)       |
| <b>Subarray Readout</b>           | Standard                              |
| <b>External Trigger In/Out</b>    | Standard                              |
| <b>SDK / Software</b>             | Kepler SDK / FLI Pilot                |
| <b>Weight</b>                     | 4 lbs (1.8 kg)                        |

<sup>1</sup> Liquid circulation connectors sold separately

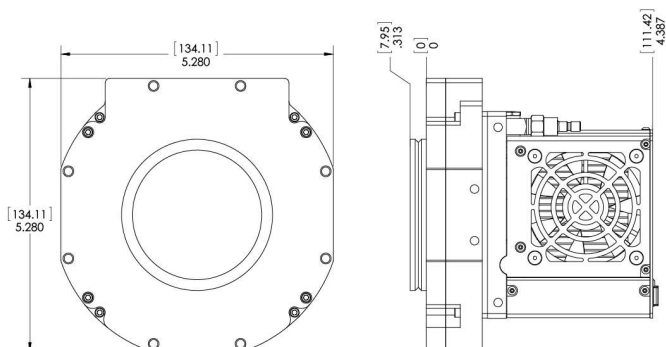
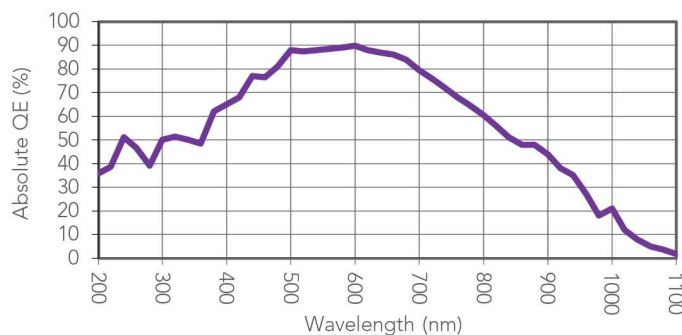
<sup>2</sup> QSFP = Quad Small Form factor Pluggable: high speed fiber optic interface

<sup>3</sup> 16-bit data merged from two 12 bit converters



Shown with optional 65mm shutter housing

#### Absolute Quantum Efficiency



See [FLIcamera.com](http://FLIcamera.com) for alternate configurations



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USA 585-624-3760