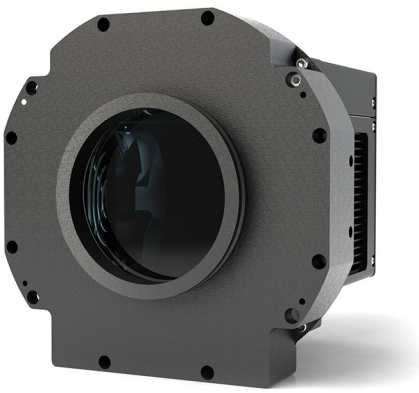
Melotte 15 courtesy Tolga Gumusayak
FLI Kepler KL4040 camera

Kepler KL6060 sCMOS Camera

Large Format
Low Noise
High Frame Rate



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Maximize Your Field of View with our New Large Format Kepler KL6060 sCMOS Camera

Extremely Large Area | High Frame Rate | High Sensitivity | High Dynamic Range | Back-Illuminated (BI) & Front-Illuminated (FI) | High Performance & Reliability

The New Low-Noise Cooled sCMOS Camera from Finger Lakes Instrumentation (FLI) Provides High Speed Imaging with an Exceptional Field of View

Available with a front-illuminated sensor or high-QE back-illuminated sensor, the Kepler KL6060 camera is capable of taking up to 19 frames per second, using the optional QSFP fiber interface. This affordable camera is a game-changing solution for Space Debris Detection and Space Situational Awareness applications and is ideal for universities or dedicated amateurs who want to capture every possible photon.

SPECIFICATIONS

	Back-Illuminated (BI)	Front-Illuminated (FI)
Array Size	37.7 Megapixels	
Resolution	6144 x 6144 with 10 micron pixels	
Array Diagonal	86.8 mm	
Full Well Capacity (e-)	95k	128k
Read Noise	3e-	4.6e-
Frame Rate (QSFP)	11 fps	19 fps
Dynamic Range (HDR)	90 dB	89 dB
Electronic Shutter Type	Rolling	
Options	QSFP Fiber Interface 90 mm Shutter Liquid Cooling	

High Frame Rates

The back-illuminated camera reads out at 14.288 microseconds per row (11 fps for full array). The front-illuminated camera reads at 8.533 microseconds per row (19 fps for full array). Faster imaging speed can be achieved by selecting a smaller region of interest. For example, by selecting a sub-array of 1,000 rows, frame rate increases by 6x.

High Dynamic Range (HDR)

The KL6060 is able to capture bright and dim objects in a single image. It achieves a remarkable 90 dB dynamic range by reading a single exposure twice – once in high gain and once in low gain. FLI's proprietary algorithms guarantee the merged 16-bit HDR image is exceptionally linear, enabling high-precision quantitative analysis. FLI's Pilot software allows you to preserve the original 12-bit images for future scrutiny, ensuring that your original data remains unchanged.

Optional QSFP Fiber Interface

When combined with the optional QSFP Fiber Interface, the KL6060 allows for long distance operation and isolation from electrical interferences. It also provides the highest data rates possible on the Kepler platform. Our PCIE interface supports customizable on-the-fly correction for Dark Signal Non-Uniformity and Photo Response Non-Uniformity at full data rates, including the ability for you to add the algorithms of your choice. Please contact FLI for details.

Reliable, Long-Life Performance

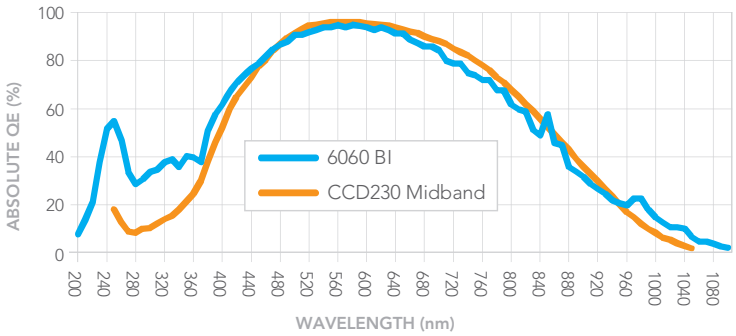
The Kepler KL6060 is designed for use in the most remote locations and eliminates the need to periodically pump down the chamber or service desiccant cartridges. Our proprietary chamber design, coupled with decades of manufacturing experience, ensure that your camera will have a long lifespan, regardless of location.

Support & Service

Each of our Kepler cameras are built for long-lasting sustainability and come standard with unrivaled service and support. They are field-programmable with the capacity to easily upgrade firmware and re-program from anywhere in the world. In addition, our shutters, power boards, and fans are simple field replacements, with no need for expensive, time-consuming transport back and forth from the factory. Our cameras are installed in observatories worldwide — many in remote mountaintop locations — from Antarctica to Fairbanks and Finland. See the back page of this brochure for a sampling of our satisfied customers.

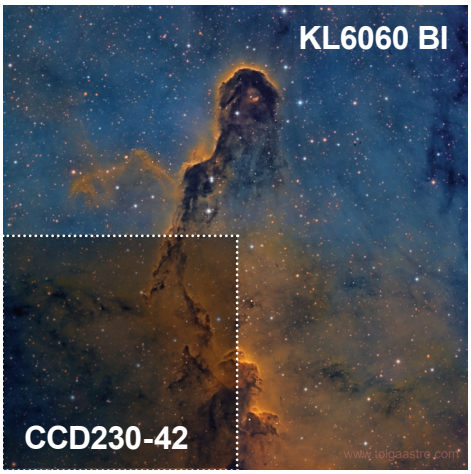
Back-Illuminated sCMOS vs. Back-Illuminated CCD

QUANTUM EFFICIENCY: KL6060 BI VS. CCD230 BI MIDBAND



DARK CURRENT: At operating temperature, the KL6060 has ~1/3 the dark current of the popular CCD230-42 or CCD42-40 back-illuminated sensors.

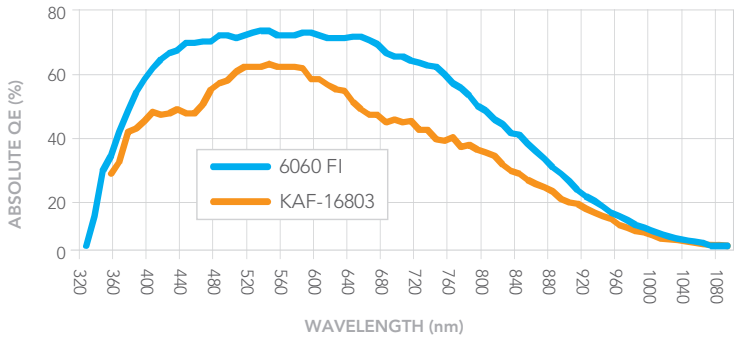
READ NOISE: The KL6060 BI has ~1/4 of the noise of the CCD230-42 running at 500 kHz (about 11 seconds readout time), but the KL6060 BI delivers 11 frames per second.



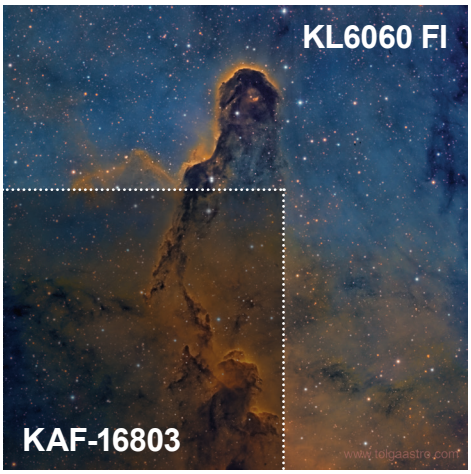
FIELD OF VIEW: With a diagonal of 86.8 mm, the KL6060 BI is comparable to the massive CCD230-84. The KL6060 sensor has 4X the FOV of the CCD230-42 and 5X the FOV of the CCD42-40.

Front-Illuminated sCMOS vs. Front-Illuminated CCD

QUANTUM EFFICIENCY: KL6060 FI VS. ON SEMI KAF-16803



READ NOISE: The read noise of the KL6060 FI is 1/3 the noise of the KAF-16803 running at 8 MHz (about 3 second readout time), but the KL6060 FI delivers 19 frames per



FIELD OF VIEW: The KL6060 FI sensor has 3X the area of the KAF-16803 and 50% more FOV than a KAF-4320.

Customers

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