Finger Lakes Instrumentation

PRELIMINARY

Kepler KL4040 versus ProLine PL16803

For long exposures, the low dark current of the PL16803 has a big advantage. For high frame rate or selective stacking of shorter exposures (lucky imaging), the KL4040 has a big advantage.

Overall, the KL4040 has 40% higher quantum efficiency than the PL16803.

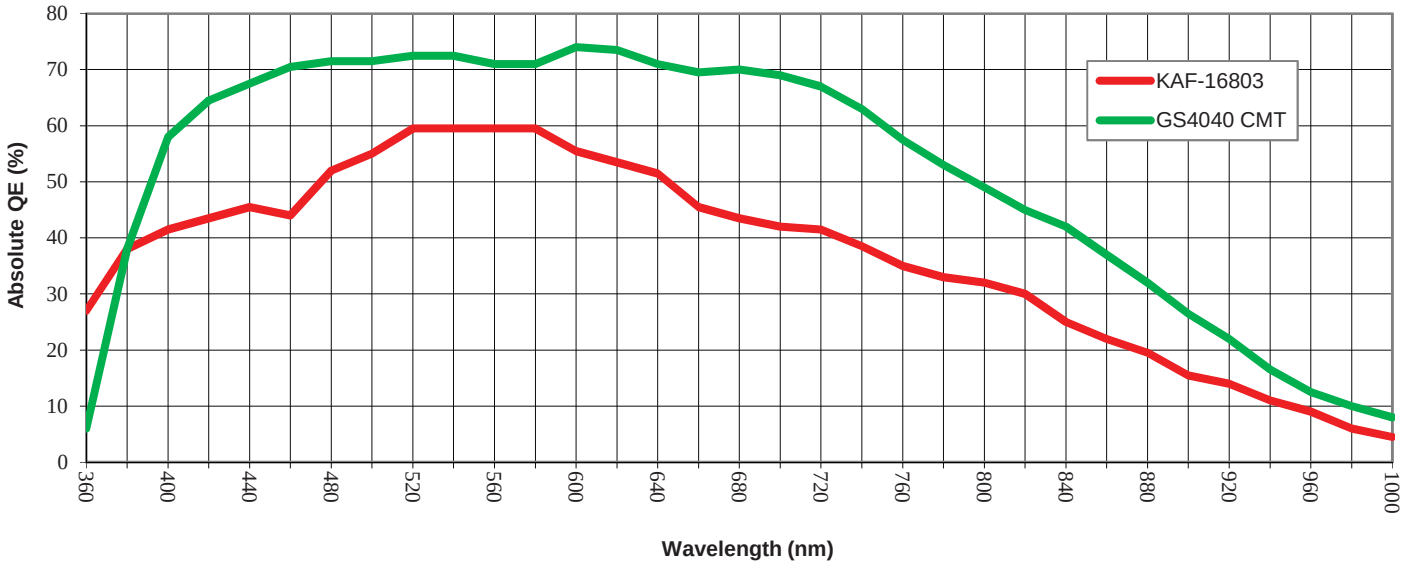
The KL4040 has a significantly lower noise floor than the PL16803 (3.7 electrons vs 10 electrons).

Whereas a full frame CCD like the PL16803 requires an electromechanical shutter to control exposure time, the KL4040 only needs a shutter for calibration (much longer shutter life; much higher precision exposure times).

	KL4040	PL16803
Sensor Type	Front illuminated CMOS	Front illuminated CCD
Active Pixels	4096 x 4096	
Pixel Size	9 x 9 microns	
Effective Area	36.9 x 36.9 mm	
Sensor Diagonal	52.1 mm	
Full Well Capacity	70000 electrons	100000 electrons
Frame rate (rolling)	24 fps HDR	11 seconds/frame
Read Noise (rolling)	3.7 e- HDR	10 e- (1 MHz)
Dynamic Range	86 dB HDR	80 dB (1 MHz)
Peak QE	74%	60%
Cooling	Air and Liquid	Air or Liquid
Dark Current	0.5 eps at -30C	0.005 eps at -33C
Interface	USB 3.0	USB 2.0
Interface (Optional)	QSFP[1]	NA
Data Bit Depth[2]	16 bit	
Optional Mount	F-mount	
Video size	3.3”	
Subarray Readout	Yes	
Electromechanical Shutter	Optional 65mm	Standard 65mm
Ex Trigger In	Yes	
Ex Trigger Out	Yes	
Software	FLI Pilot	FLIGrab**
SDK	Open Source	
List Price	$15,995	$10,995

[1] QSFP=Quad Small Form factor Pluggable: high speed fiber optic interface.

[2] 16-bit data is merged from two 12 bit converters.



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