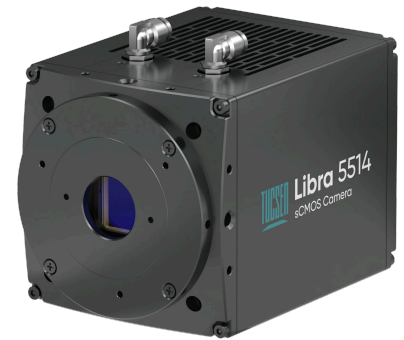


Libra 5514 Pro

The Libra 5514 Pro camera features a BSI global shutter sensor and a 100G CoF high-speed interface, enabling 670 fps@14 MP for high-throughput imaging. It offers a peak QE of 83% and 5.5 μm pixels for outstanding sensitivity. Compact and low-vibration, it ensures stable and reliable high-speed capture for scientific imaging and industrial inspection.



Key Features

Benefits

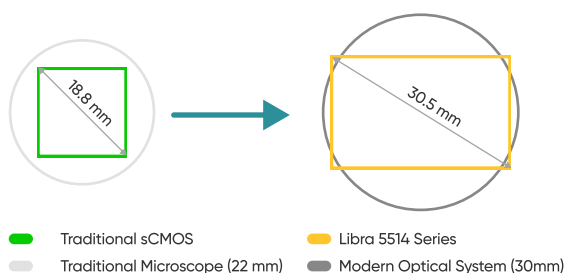
Global Shutter + BSI sCMOS	High speed, large full well, and high sensitivity deliver superior quantitative imaging performance for high-speed & low-light applications.
30.5 mm Large Format	2.5X wider FOV than typical 6.5 μm sCMOS. ^[1]
5.5 μm Pixel Size	Optimized for optical systems above 40X to achieve resolution-sensitivity balance.
670 fps@14 MP	More than 22X the throughput of conventional BSI sCMOS cameras. ^[2]
100G/40G CoF Interface	Single interface bandwidth up to 100 Gbps / 40 Gbps, faster and easy integration.

Typical Applications

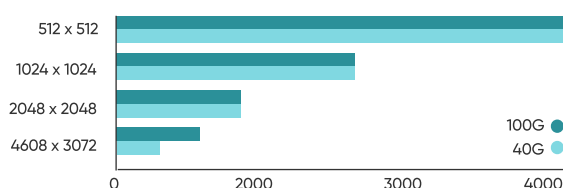
- High-throughput imaging
- Neuroscience imaging
- Spatial omics analysis
- Super-resolution imaging
- Gene sequencing
- Semiconductor inspection

Noted Examples

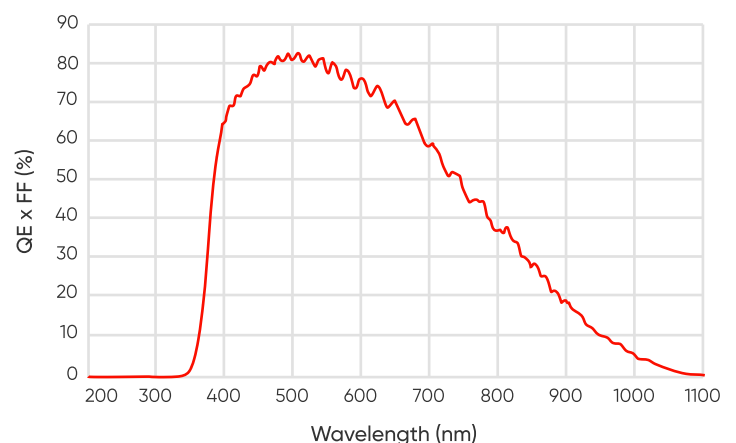
[1] Traditional sCMOS cameras use an 18.8 mm format, the Libra 5514 Pro is better aligned with modern optical design trends.



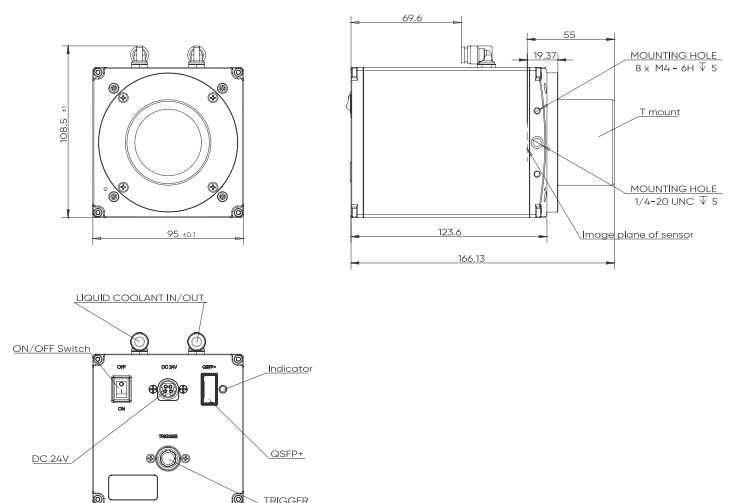
[2] The Libra 5514 Pro series includes 100G and 40G models. The 100G offers maximum throughput, while the 40G achieves similar frame rates via ROI for partial imaging.



Quantum Efficiency



Dimensions (Unit: mm)



Specifications

Product Name	Libra 5514 Pro	
Model	L5514Pro-100G	L5514Pro-40G
Sensor Type	BSI sCMOS	
Sensor Model	GSPRINT5514BSI	
Peak QE	83%	
Chrome	Mono	
Array Diagonal	30.5 mm	
Effective Area	25.34 mm x 16.90 mm	
Resolution	4608 (H) x 3072 (V)	
Pixel Size	5.5 μm x 5.5 μm	
Readout Mode	Speed 8 bit / 10bit; Standard 12 bit; HDR 16 bit	
Bit Depth	8 bit, 10 bit, 12 bit, 16 bit	
Frame Rate	670 fps@Speed 8bit / 10 bit*	330 fps@Speed 8 bit
	350 fps@Standard 12 bit	236 fps@Speed 10 bit
	80 fps@HDR 16 bit	220 fps@Standard 12 bit
		80 fps@HDR 16 bit
Readout Noise (median)	< 2 e ⁻ (HDR & Standard 12 bit Gain 4)	
Full Well Capacity	15 Ke ⁻ @HDR; 30 Ke ⁻ @After Binned	
Dynamic Range	77.5 dB	
Shutter Mode	Global	
Exposure Time	2 μs -10 s	
Cooling Method	Air Cooling, Liquid Cooling	
Cooling Temp.	Air cooling: 5°C (ambient 25°C), Liquid cooling: -5°C (Water Temp. 20°C)	
Dark Current	< 1 e ⁻ /p/s@-5°C; < 5 e ⁻ /p/s@5°C	
Image Correction	DPC, FFC	
Binning	2 x 2, 4 x 4	
ROI	Support	
Timestamp Acc.	1 μs	
Trigger Mode	Hardware, Software	
Trigger Output	High, Low, Readout End, Global Exposure, Exposure Start, Readout, Trigger Ready	
Trigger Interface	Hirose-12-pin	
Data Interface	QSFP 28 (100G CoF)	QSFP+ (40G CoF)
Optical Interface	T / F / C Mount	
Power Supply	24 V / 6.67 A	
Power Cons.	≤ 120 W	
Dimensions*	95 mm (H) x 95 mm (W) x 123.6 mm (L)	
Weight	≤ 2 kg	
Software	Mosaic V3, Sample Pro, LabVIEW, MATLAB, Micro-Manager 2.0	
SDK	C / C++ / C#	
Operating System	Windows, Linux	
Environment	Working: Temp. 0°C~40°C, HUM 0%~85%; Storage: Temp. 15°C~30°C, HUM 35%~75%	

*In Speed 10 bit mode, the compressed frame rate is 670 fps and the uncompressed rate is 485 fps. The data format is selectable in software..

* The dimensions shown refer to the bare camera body only, Please see the mechanical drawing for details

*Specifications in this manual are subject to changes without prior notice.



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