

Dhyana 9KTDI Pro Series

The Dhyana 9KTDI Pro is a back-illuminated TDI camera built with advanced sCMOS thinning and TDI integration technology. Covering the range from 180 nm to 1100 nm, it enhances UV line scanning and low-light detection. With reliable cooling and noise reduction, it provides stable, high-efficiency detection for semiconductor wafer inspection and genomic sequencing.



Key Features

Benefits

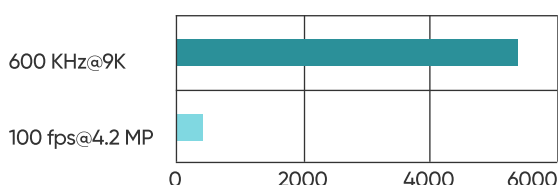
180 nm-1100 nm	Wide Spectral Response, supports UV, visible, and near-infrared imaging applications.
82% Quantum Efficiency	Provides excellent low-light and weak-signal detection.
256-Stage TDI	Enhances SNR in low-light imaging, improving inspection accuracy.
600 KHz@9K	Delivers data throughput over 10X higher than typical sCMOS cameras. ^[1]
High-Reliability Cooling	Reduces dark current noise and data fluctuations, ensuring stable system operation. ^[2]

Typical Applications

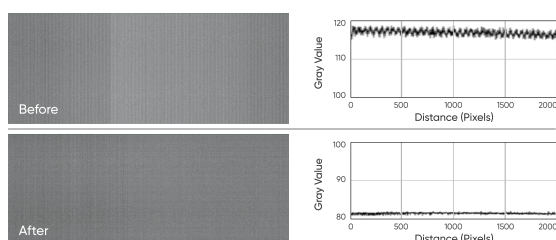
- High-Throughput Imaging
- Neuroscience Imaging
- Spatial Omics Analysis
- Super-Resolution Imaging
- Genomic Sequencing
- Semiconductor Inspection

Noted Examples

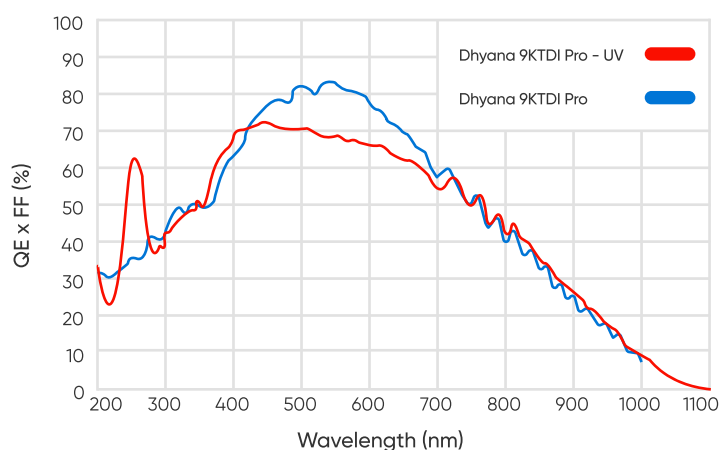
[1] The Dhyana 9KTDI Pro series achieves a data throughput of 5,400 Mpixels/s, over 10X higher than typical sCMOS cameras.



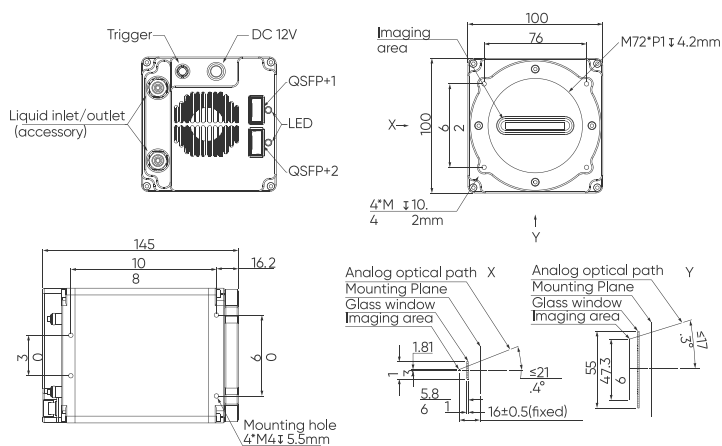
[2] The Dhyana 9KTDI Pro features stable cooling, offering excellent noise control and uniform imaging background, providing precise and reliable data for high-accuracy inspections.



Quantum Efficiency



Dimensions (Unit: mm)



Specifications

Product Name	Dhyana 9KTDI Pro	Dhyana 9KTDI Pro-UV
Sensor Type	BSI sCMOS TDI	
Sensor Model	Gpixel GLT5009BSI	Gpixel GLT5009BSI-DUV
Peak QE	82%@550 nm, 50%@350 nm, 38%@800 nm	50%@266 nm
Chrome	Mono	
Array Diagonal	45.4 mm	
Effective Area	45.36 mm x 1.28 mm	
Resolution	9072 (H) x 256 (V)	
Pixel Size	5 μm x 5 μm	
Operation Mode	TDI, Area	
TDI Stage	4, 8, 16, 32, 64, 96, 128, 160, 192, 224, 240, 248, 252, 256	
Scan Direction	Forward, Reverse, Trigger Control	
CTE	≥ 0.99993	
Bit Depth	8 bit, 10 bit, 12 bit	
Full Well Capacity	Typical: 14 Ke-@10 bit, 14 Ke-@12 bit	
Dynamic Range	Typical: 63.6 dB@10 bit, 68 dB@12 bit	
Max. Line Rate	600 KHz@8 bit, 600 KHz@10 bit, 299 KHz@12 bit	
Readout Noise	Typical: 10.5 e-@10 bit, 6.2 e-@12 bit	
DSNU	Typical: 4 e-@10 bit, 1.6 e-@12 bit	
PRNU	Typical: 0.3%	
Cooling Method	Air Cooling, Liquid Cooling	
Cooling Temp.	20°C below ambient (20°C); 35°C below water (20°C)	
Binning	1 x 2 (Sensor Bin), 2 x 2, 4 x 4, 8 x 8 (FPGA Bin)	
ROI	Support	
Trigger Mode	Trigger Input. Scan Direction Input	
Trigger Output	Strobe out	
Trigger Interface	Hirose, HR10A-7R-4S	
Gain	Analog Gain: x 2~x 8; Digital Gain: x 0.5~x 10	
Data Interface	QSFP+	
Optical Interface	M72, User Customization	
Power Supply	12 V / 8 A	
Power Cons.	< 75 W	
Dimensions	100 mm (H) x 100 mm (W) x 145 mm (L)	
Weight	1800 g	
Software	Sample Pro	
SDK	C++ (Supports the GenICam standard)	
Operating System	Windows, Linux	
Environment	Working: Temp. 0°C~40°C, HUM 0%~85%; Storage: Temp. 0°C~60°C, HUM 0%~90%	

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



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