Dhyana 9KTDI

The Dhyana 9KTDI back-illuminated TDI camera combines advanced sCMOS back-thinning technology with TDI (time delay integration), effectively enhancing low-light scanning performance. It is designed to provide scientific instruments and industrial vision systems with comprehensive performance in spectral response, precision, and throughput.

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.
510 kHz@9K	Data throughput is nearly 46× higher than TDI-CCD technology. [1]
High-Reliability Cooling	Reduces dark current noise and data fluctuations, ensuring stable system operation.

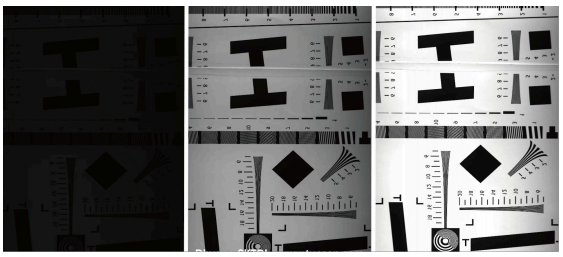
Typical Applications

- Semiconductor / Wafer Inspection
- FPD Inspection
- Fluorescence Detection
- Spectral Analysis

Noted Examples

[1] Higher TDI stages provide improved signal-to-noise ratio (SNR).

16-TDI 128-TDI 256-TDI

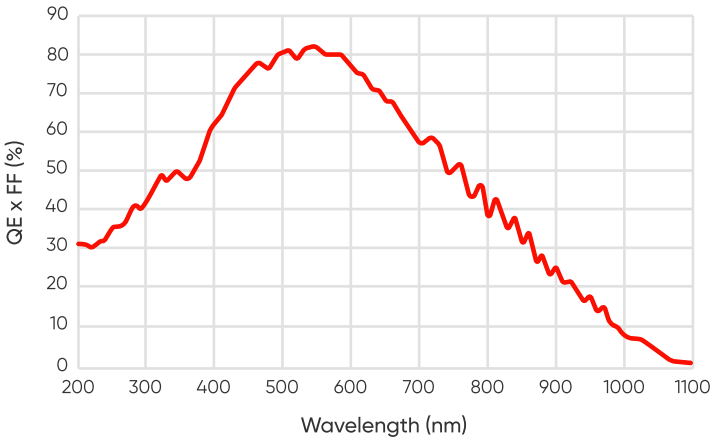


[2] The Dhyana 9KTDI achieves data throughput nearly 46× higher than back-illuminated TDI-CCD cameras.

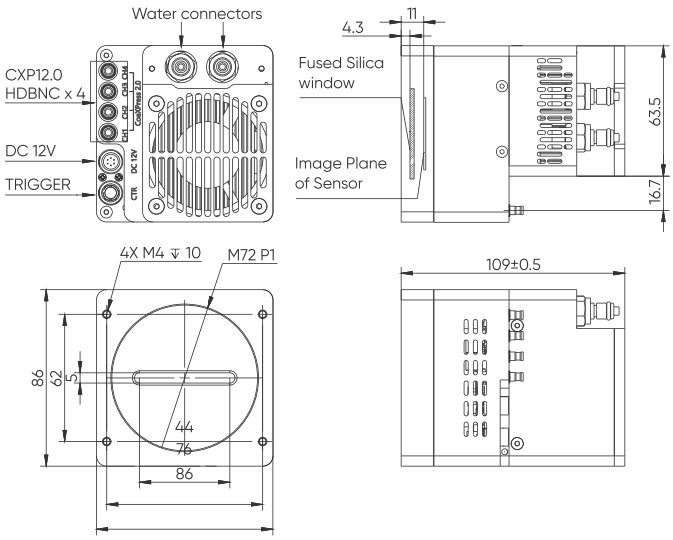
Dhyana 9KTDI
9 K@510 kHz — 4590 Mpixel/s

BSI TDI-CCD
2 K@50 kHz — 100 Mpixel/s

Quantum Efficiency



Dimensions (Unit: mm)



Specifications

Model	Dhyana 9KTDI
Sensor Type	BSI sCMOS TDI
Sensor Model	Gpixel GLT5009BSI
Peak QE	38%@266 nm, 51%@355 nm; 82%@550 nm, 38%@800 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	12 bit, 10 bit, 8 bit
Full-Well Capacity	Typical: 15.5 ke-@12 bit, 14 ke-@10 bit
Dynamic Range	Typical: 68.7 dB@12 bit, 63.6 dB@10 bit
Max. Line Rate	299 kHz@12 bit, 345 kHz@10 bit, 510 kHz@8 bit
Readout Noise	Typical: 7.2 e-@12 bit, 11.4 e-@10 bit
DSNU	Typical: 1.5 e-@12 bit, 3.5 e-@10 bit
PRNU	Typical: 0.3%
Cooling Method	Air, Liquid
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	CoaxPress 2.0
Optical Interface	M72, User Customization
Power Supply	12 V / 8 A
Power Cons.	< 60 W
Dimensions	86 mm x 86 mm x 109 mm
Weight	1100 g
Software	SamplePro
SDK	C++ (Supports the GenICam standard)
Operating System	Windows, Linux
Operating Environment	Working: Temp. 0°C~40°C, HUM 0%~85%, Storage: Temp. 0°C~60°C, HUM 0%~90%

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