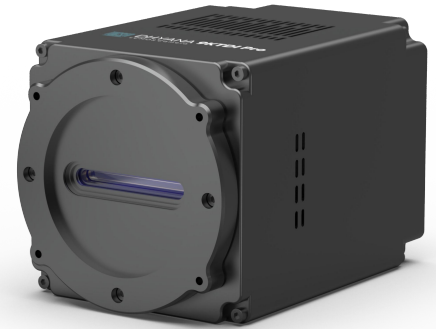


Dhyana 9KTDI Pro

The Dhyana 9KTDI Pro is a BSI TDI camera that utilizes advanced sCMOS back-illuminated thinning and TDI technology. This enhances its ultraviolet TDI line scanning abilities, providing efficient and stable detection for semiconductor and gene sequencing applications.



Key Features

Benefits

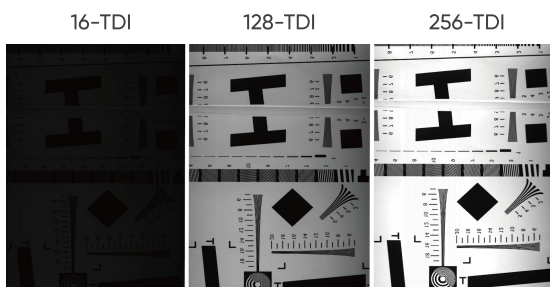
180-1100 nm	Wide spectral response across UV / Visible / NIR.
82 % Peak QE	High photon collection efficiency for lower illumination intensity.
256 stages TDI	More TDI stages deliver higher SNR. ^[1]
600 kHz @ 9K	> 54X faster than the back-illuminated TDI-CCD cameras. ^[2]
Air & Liquid Cooling	Maintains low dark noise, minimizes vibration, and aids thermal stability.

Typical Applications

- Wafer Inspection
- FPD Inspection
- Fluorescence Detection

Noted Examples

[1] More TDI stages deliver higher SNR.



[2] > 54X faster than CCD technology.

Mpixel / s

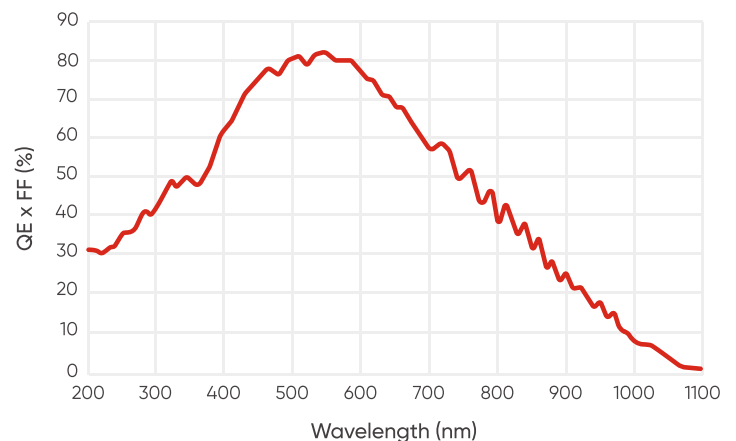
Dhyana 9KTDI Pro
9K @ 600 kHz

5400

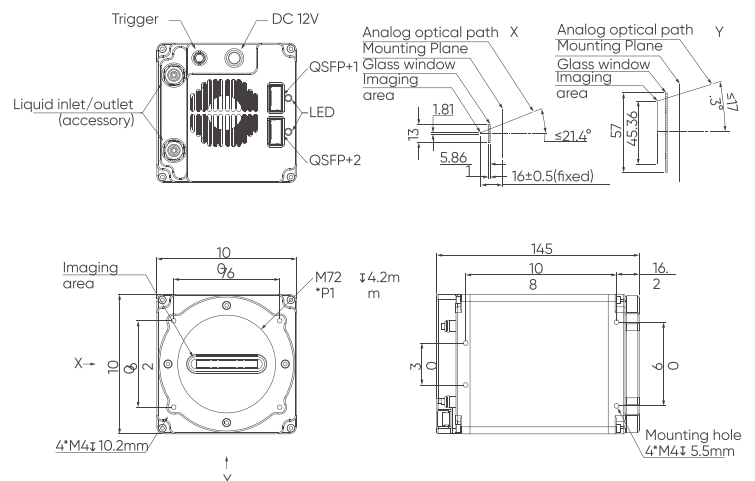
BSI TDI-CCD
2K @ 50 kHz

100

Quantum Efficiency



Dimensions (Unit: mm)



Specifications

High Speed TDI sCMOS Camera

www.tucsen.com

Model	Dhyana 9KTDI Pro
Sensor Type	BSI sCMOS TDI
Sensor Model	Gpixel GLT5009BSI
QE	82 % @ 550 nm, 50 % @ 350 nm, 38 % @ 800 nm
Color/Mono	Mono
Array Diagonal	45.4 mm
Effective Area	45.36 mm x 1.28 mm
Resolution	9072 (H) x 256 (V)
Pixel Size	5 μ m x 5 μ m
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
Data Bit Depth	12 bit, 10 bit, 8 bit
Full-Well Capacity	Typ. : 15.5 ke ⁻ @ 12 bit, 14 ke ⁻ @ 10 bit
Dynamic Range	Typ. : 68.7 dB @ 12 bit, 63.6 dB @ 10 bit
Max. Line Rate	300 kHz @ 12 bit, 600 kHz @ 10 bit, 600 kHz @ 8 bit
Readout Noise	Typ. : 7.2 e ⁻ @ 12 bit, 11.4 e ⁻ @ 10 bit
DSNU	Typ. : 1.5 e ⁻ @ 12 bit, 3.5 e ⁻ @ 10 bit
PRNU	Typ. : 0.30 %
Cooling Method	Air, Liquid, Cooling speed 5 °C / min
Max. Cooling	35 °C below ambient (Liquid)
Binning	1 x 1, 2 x 1, 4 x 1, 8 x 1
ROI	Support
Trigger Mode	Trigger Input, Scan Direction Input
Output Trigger Signals	Strobe out
Trigger Interface	Hirose, HR10A-7R-4S
Timestamp Accuracy	8 ns
Analog Gain	x2 ~ x8, Step 0.5
Digital Gain	x0.5 ~ x10, Step 1
Optical Interface	M72 / / User Customization
Data Interface	CoaxPress-Over-Fiber 2 x QSFP+
Power Supply	12 V / 8 A
Power Consumption	< 75 W
Dimensions	100 mm x 100 mm x 145 mm
Weight	1800 g
Software	SamplePro
SDK	C, C++, C#, Python
Operating System	Windows, Linux
Operating Environment	Working: Temp. 0~40 °C , HUM 0~85%, Storage: Temp. 0~60 °C , HUM 0~90%