

Dhyana 2100

The Dhyana 2100 is designed to deliver an unprecedented combination of maximum speed and resolution with an sCMOS sensor. It achieves an impressive 450 fps at a full resolution of 5120 x 4096, providing high-speed data even under low-light conditions.



Key Features

Benefits

450 fps@21 MP	To allow the observation of fine details at high speed. ^[1]
Fast Binning Mode	Up to 975 fps@5 MP with high sensitivity and high dynamic range. ^[2]
Global Shutter	High image quality standard with no artifacts and no distortion.
Air & Liquid Cooling	Maintains low dark current, minimizes vibration, and aids thermal stability.

Typical Applications

- Wafer Inspection
- FPD Inspection
- Aerial Photography
- Voltage Sensitive Imaging
- Cardiac Imaging

Noted Examples

[1] High-Speed using global shutter provides clear images from objects moving at speed.



[2] Speed Comparison in Fast Binning Mode.

1 x 1 Binning
(5120 x 4096)



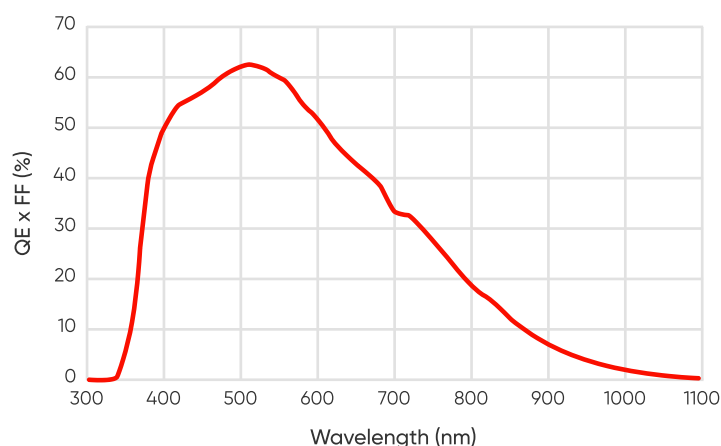
250 fps

2 x 2 Binning
(2560 x 2048)

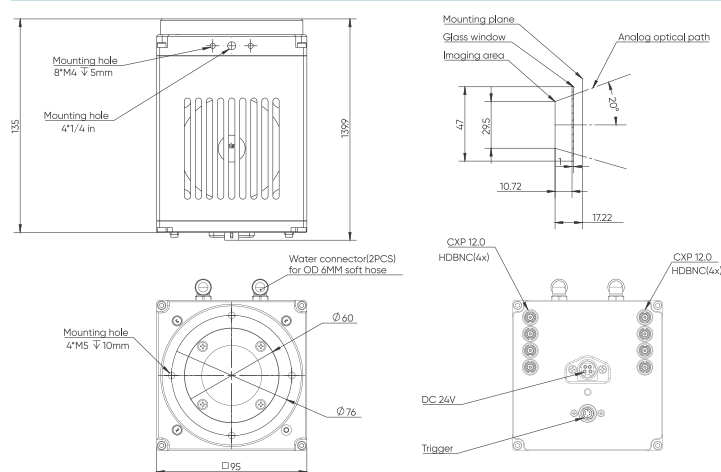


975 fps

Quantum Efficiency



Dimensions (Unit: mm)



Specifications

Model	Dhyana 2100
Sensor Type	FSI CMOS
Sensor Model	Gpixel GSPRINT4521
Peak QE	63%@520 nm
Chrome	Mono
Array Diagonal	29.5 mm
Effective Area	23.04 mm x 18.43 mm
Resolution	5120 (H) x 4096 (V)
Pixel Size	4.5 μm x 4.5 μm
Full Well Capacity	Typical: 28 Ke- (12 bit Gain 0), 120 Ke- (binned)
Dynamic Range	Typical: 68.8 dB (12 bit Gain 2)
Frame Rate	Full Mode: 450 fps@8 bit, 300 fps@10 bit, 250 fps@12 bit Base Mode: 225 fps@8 bit, 150 fps@10 bit, 150 fps@12 bit Fast Binning: 975 fps@12 bit
Readout Noise	Typical: 3.5 e-@12 bit
Shutter Mode	Global
Exposure Time	4 μs~10 s
DSNU	2.0 e-@12 bit Gain3
PRNU	Typical: 0.15%@12 bit Gain 0; Typical: 0.45%@12 bit Gain 3
Cooling Method	Air Cooling, Liquid Cooling
Cooling Temp.	Air: 25°C below ambient; Liquid: 30°C below Water Temp.
Binning	2 x 2, 4 x 4, 8 x 8
ROI	Support
Trigger Mode	Hardware, Software
Trigger Output	Exposure Start, Readout End
Trigger Interface	Hirose
Data Interface	Full Mode: CXP12 x 8; Base Mode: CXP12 x 4
Bit Depth	8 bit, 10 bit, 12 bit
Optical Interface	M58 / F-Mount / User Customization
Power Supply	24 V / 6.67 A
Power Cons.	≤ 120 W
Dimensions	95 mm (H) x 95 mm (W) x 140 mm (L) (Without water-cooling connectors)
Weight	< 1850 g
Software	Sample Pro
SDK	C / C++
Operating System	Windows, Linux
Environment	Working: Temp. 0°C~40°C, HUM 10%~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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