

Dhyana 4040 V2 / 4040BSI

The Dhyana 4040 V2 / 4040BSI brings the speed and dynamic range to large format imaging missing from previous CCD technology.^[1] With a 52 mm diameter, high quantum efficiency and 9 μm pixels size, it is well suited to scientific applications in areas such as Astronomy and Physics.



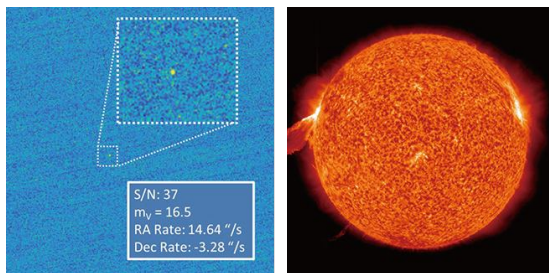
Key Features	4040 V2	4040BSI	Benefits
Field of View	36.9 mm x 36.9 mm	36.9 mm x 36.9 mm	Large field of view from 16 MP, 9 μm pixel size sensor.
Quantum Efficiency	74% QE	90% QE	High photon collection efficiency for lower illumination intensity.
Frame Rate	16.5 fps	16.5 fps	Faster data rates than the previous CCD technology.
Full-well Capacity	70 Ke-	39 Ke-	High dynamic range for the measurement of bright and dim signals at the same time.
Cooling Method	Air & Liquid	Air & Liquid	Maintains low dark noise, minimizes vibration, and aids thermal stability.

Typical Applications

- Space Debris Detection
- Solar Astronomy
- Quantum Optics

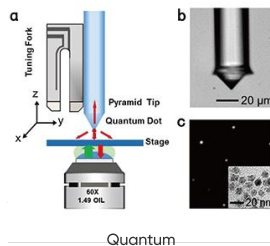
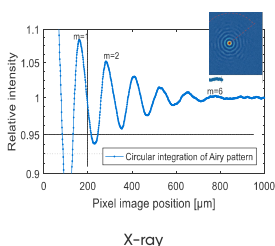
Noted Examples

[1] Large-area sCMOS technology can be used in a wide range of applications previously limited by CCD technology.

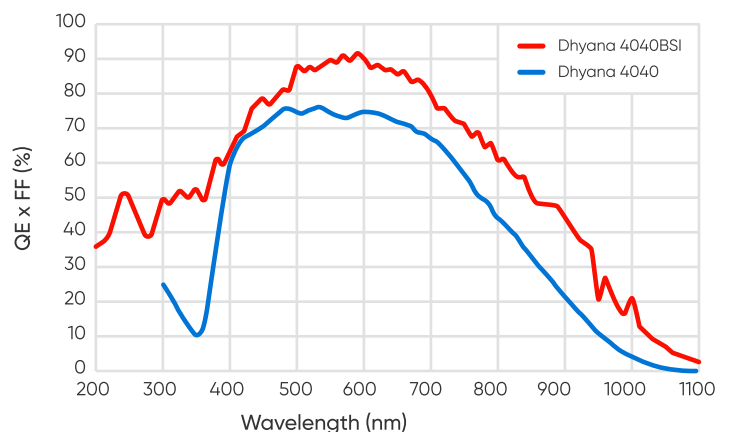


Space Debris

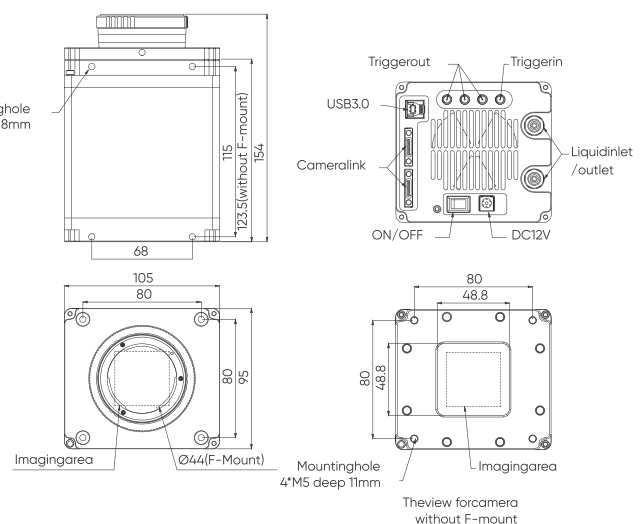
Solar



Quantum Efficiency



Dimensions (Unit: mm)



Specifications

Product Name	Dhyana 4040 V2	Dhyana 4040BSI
Sensor Type	FSI sCMOS	BSI sCMOS
Sensor Model	Gpixel GSENSE4040	Gpixel GSENSE4040BSI
Peak QE	74%@600 nm	90%@550 nm
Chrome	Mono	
Array Diagonal	52.1 mm	
Effective Area	36.9 mm x 36.9 mm	
Resolution	4096 (H) x 4096 (V)	
Pixel Size	9 μm x 9 μm	
Full Well Capacity	Typical: 70 Ke-	Typical: 39 Ke-
Dynamic Range	Typical: 86 dB	Typical: 85 dB
Frame Rate	16.5 fps@CameraLink, 9.7 fps@USB 3.0	
Readout Noise	Typical: 3.6 e-	Typical: 2.3 e-
Shutter Mode	Rolling	
Exposure Time	10 μs ~3600 s	
DSNU	0.5 e-	
PRNU	0.2%	
Cooling Method	Air Cooling, Liquid Cooling	
Cooling Temp.	45°C below ambient (Liquid cooling)	
Dark Current	Air: 0.15 e-/p/s, Liquid: 0.1 e-/p/s	1.2 e-/p/s
Binning	2 x 2, 4 x 4	
ROI	Support	
Timestamp Acc.	1 μs	
GPS	8 ns	
Trigger Mode	Hardware, Software	
Trigger Output	Exposure Start, Global Exposure, Readout End, High, Low	
Trigger Interface	SMA, CameraLink CC1	
Data Interface	USB 3.0, CameraLink	
Bit Depth	12 bit, 16 bit	
Optical Interface	F Mount / User Customization	
Power Supply	12 V / 8 A	
Power Cons.	< 45 W	
Dimensions	105 mm (H) x 95 mm (W) x 123.5 mm (L)	
Weight	2 kg	
Software	Mosaic V3, Sample Pro, MAXIMDL, LabVIEW, MATLAB	
SDK	C / C++ / C# / Python	
Operating System	Windows, Linux	
Environment	Working: Temp. -25°C~40°C, HUM 0%~95%; Storage: Temp. -35°C~60°C, HUM 0%~95%	

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



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