

Dhyana 4040BSI

The Dhyana 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-micron pixels size, it is well suited to scientific applications in areas such as Astronomy and Physics.



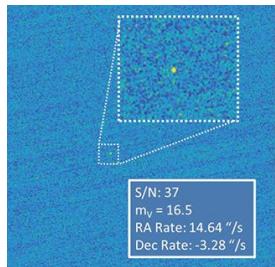
Key Features	4040BSI	Benefits
Field of View	36.9 mm x 36.9 mm	Large field of view from 16 MP, 9 μm pixel size sensor.
Quantum Efficiency	90% QE	High photon collection efficiency for lower illumination intensity.
Frame Rate	16.5 fps	Faster data rates than the previous CCD technology.
Full-well Capacity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

Typical Applications

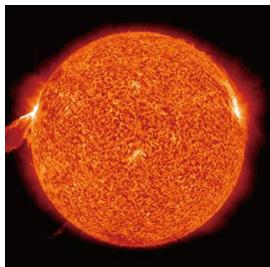
- Space Debris Detection
- Solar Astronomy
- X-ray Detection
- Quantum Optics

Noted Examples

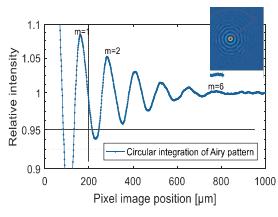
[1] Large sCMOS technology can be used in a wide range of applications previously limited by CCD technology.



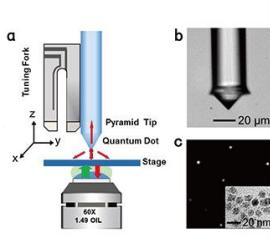
Space Debris



Solar

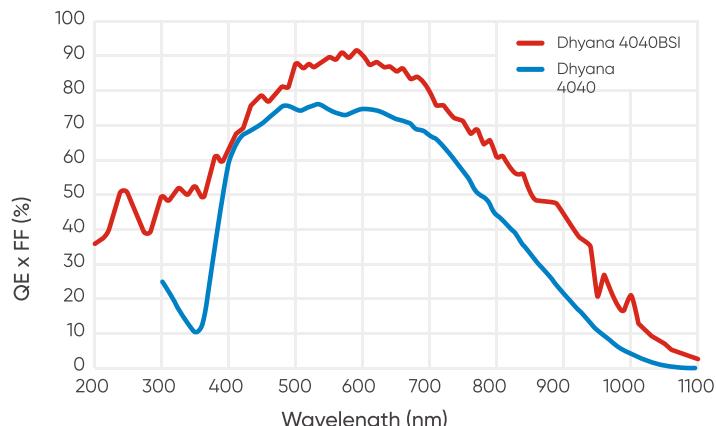


X-ray

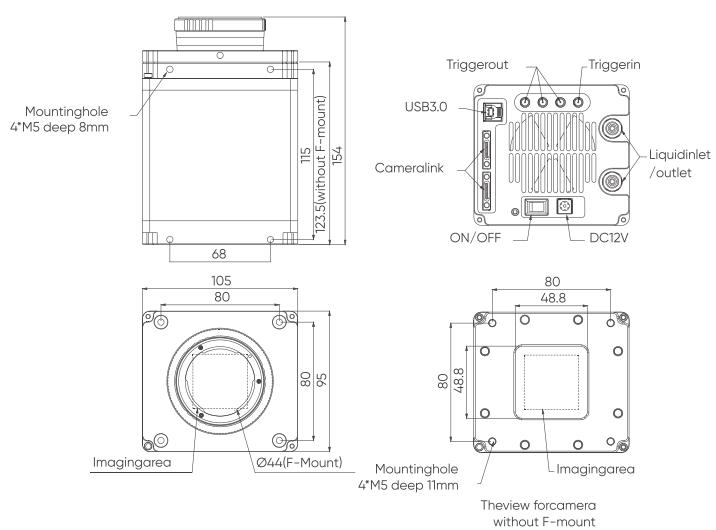


Quantum

Quantum Efficiency



Dimensions (Unit: mm)



Specifications

Large Format sCMOS Camera

www.tucsen.com

型号	Dhyana 4040BSI
芯片类型	BSI sCMOS
芯片型号	Gpixel GSENSE4040BSI
峰值量子效率	90 % @ 550 nm
彩色 / 黑白	黑白
对角线尺寸	52.1 mm
有效面积	36.9 mm x 36.9 mm
分辨率	4096 (H) x 4096 (V)
像素大小	9 μm x 9 μm
满阱容量	典型值: 39 ke-
动态范围	典型值: 85 dB
帧率	16.5 fps @ CameraLink, 9.7 fps @ USB 3.0
读出噪声	典型值: 2.3 e-
快门类型	卷帘
曝光时间	10 μs ~ 3600 s
暗信号不均匀性	0.5 e-
光响应不均匀性	0.2%
制冷方式	风冷, 水冷
最大制冷温度	低于环境温度 45 °C (水冷)
暗电流	风冷: 0.2 e-/pixel/s, 水冷: 0.1 e-/pixel/s
Binning	2 x 2, 4 x 4
ROI	支持
时间戳精度	1 μs
GPS时间戳	8 ns
触发模式	硬件, 软件
触发输出	曝光开始, 全局, 读出结束, 高电平, 低电平
触发接口	SMA, CameraLink CC1接口触发
数据接口	USB 3.0, CameraLink
位深	12 bit, 16 bit
光学接口	F-Mount / 用户可定制
电源	12 V / 8 A
功耗	< 45 W
相机尺寸	105 mm x 95 mm x 123.5 mm
重量	2 kg
软件	Mosaic 3.0, SamplePro, MAXIMDL, LabVIEW, MATLAB
SDK	C, C++, C#, Python
操作系统	Windows, Linux
操作环境	工作: 温度 -25~45 °C, 湿度 0~95% 储存: 温度 -35~60 °C, 湿度 0~95%