

# Dhyana 95 V2

The Dhyana 95 V2 delivers ultimate sensitivity achieving similar results to EMCCD camera technology without the concerns of signal drift, gain aging, multiplication gain noise (1.4x) and headaches of export control restrictions.<sup>[2]</sup>



## Key Features

## Benefits

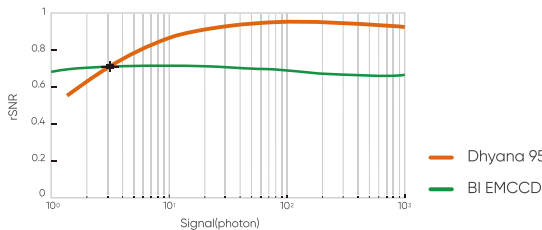
95% QE & Lowest Noise	Higher SNR than EMCCD when the signal (photon) > 3 e <sup>-</sup> . <sup>[1]</sup>
11 μm x 11 μm Pixel Size	Large pixels capture 3x the light of standard 6.5 μm pixels to maximize photon detection.
32 mm Array Diagonal	Capture maximum field of views of the large samples.
100 ke- Full-well Capacity	High dynamic range for the measurement of bright and dim signals at the same time.
CameraLink & USB 3.0	Use the flexibility of USB or if additional speed is required move to CameraLink.
Air & Liquid Cooling	Maintains low dark noise, minimizes vibration, and aids thermal stability.

## Typical Applications

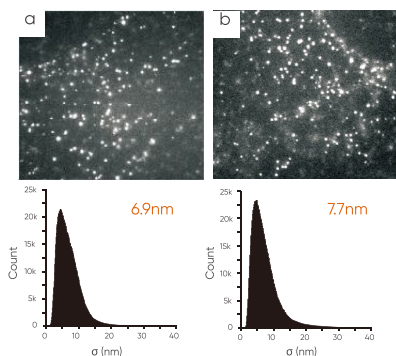
- Advanced Microscopy
- Spectral Imaging
- X-ray Imaging
- Astrophysical

## Noted Examples

[1] The Higher SNR than EMCCD when the signal (photon) > 3 e<sup>-</sup>.

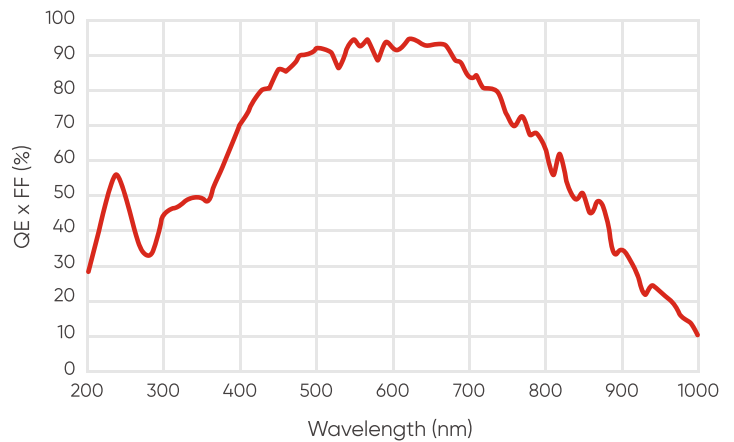


[2] Dhyana 95 V2 demonstrating higher localization accuracy than EMCCD in single-molecule localization experiments.

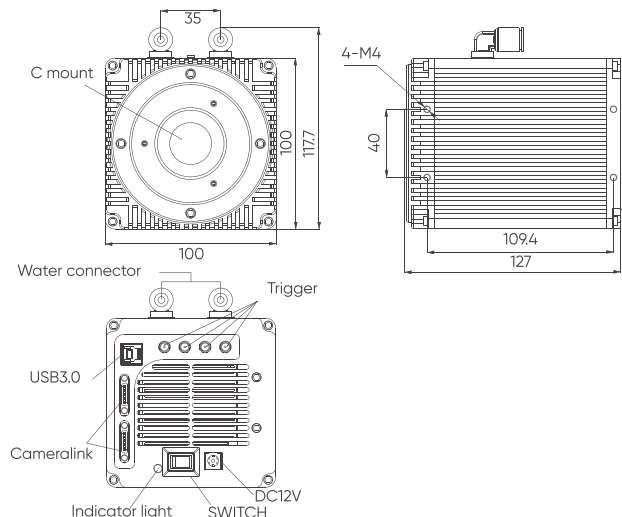


a: Dhyana 95  
 b: BI EMCCD

## Quantum Efficiency



## Dimensions (Unit: mm)



# Specifications

High Sensitivity sCMOS Camera

[www.tucsen.com](http://www.tucsen.com)

Model	Dhyana 95 V2
Sensor Type	BSI sCMOS
Sensor Model	Gpixel GSENSE400BSI
Peak QE	95 % @ 560 nm
Color/Mono	Mono
Array Diagonal	31.9 mm
Effective Area	22.5 mm x 22.5 mm
Resolution	2048 (H) x 2048 (V)
Pixel Size	11 $\mu\text{m}$ x 11 $\mu\text{m}$
Full-Well Capacity	Typ. : 80 ke <sup>-</sup> @ HDR, 100 ke <sup>-</sup> @ STD
Dynamic Range	Typ. : 90 dB
Frame Rate	24 fps @ 16 bit HDR, 48 fps @ 12 bit STD
Readout Noise	1.6 e <sup>-</sup> (Median), 1.7 e <sup>-</sup> (RMS)
Shutter Type	Rolling
Exposure Time	21 $\mu\text{s}$ ~ 10 s
DSNU	0.2 e <sup>-</sup>
PRNU	0.3%
Cooling Method	Air, Liquid
Max. Cooling	45 °C below ambient (Liquid)
Dark Current	0.6 e <sup>-</sup> /pixel/s @ -10°C
Binning	2 x 2, 4 x 4
ROI	Support
Timestamp Accuracy	1 $\mu\text{s}$
Trigger Mode	Hardware, Software
Output Trigger Signals	Exposure start, Global, Readout end, High level, Low level, Trigger Ready
Trigger Interface	SMA
Data Interface	USB 3.0, CameraLink
Data Bit Depth	12 bit, 16 bit
Optical Interface	C-mount / F-mount
Power Supply	12 V / 8 A
Power Consumption	60 W
Dimensions	C-mount : 100 mm x 118 mm x 127 mm ; F-mount : 100 mm x 118 mm x 157 mm
Weight	1613 g
Software	Mosaic, SamplePro, LabVIEW, MATLAB, Micro-Manager 2.0
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%