VENUSLAB
OPTOELECTRONICS

Precision
Meets
Simplicity

Scientific Cameras

VenusLab Scientific sCMOS Camera

High-end imaging equipment specially designed for cutting-edge scientific research scenarios

- Ultra-weak light detection capability
- High-speed dynamic imaging
- Stable low-noise output
- Flexible integration and adaptation

One Platform Many Possibilities

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Overview

Product introduction of VenusLab Scientific sCMOS Camera：

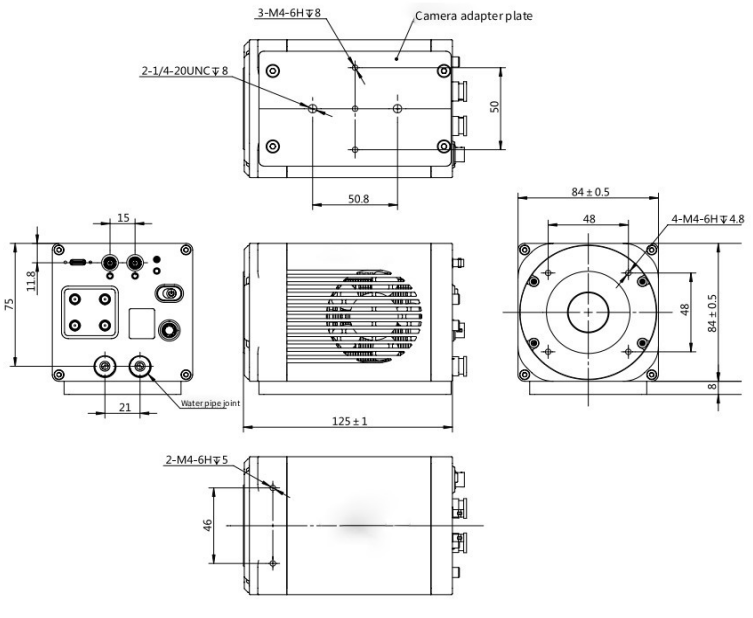
The VenusLab Scientific sCMOS Camera are high-end imaging devices specially designed for cutting -edge scientific research scenarios. They are equipped with a scientific-grade back-illuminated (BSI) CMOS image sensor at their core, integrating deep refrigeration sealing technology and high-speed data transmission technology to achieve a synergistic performance of high sensitivity, high frame rate, high dynamic range, and high signal-to-noise ratio. Their response wavelength range covers 190~1100nm, enabling accurate capture of light signals from ultraviolet to near-infrared. They not only meet the basic research needs in life sciences, quantum physics, astronomical observation, semiconductor testing, etc., but also can be seamlessly integrated into optical detection systems such as structured light microscopes and scanning electron microscopes with their flexible and compact structure, providing reliable solutions for various demanding imaging scenarios.

Features of the VenusLab Scientific sCMOS Camera：

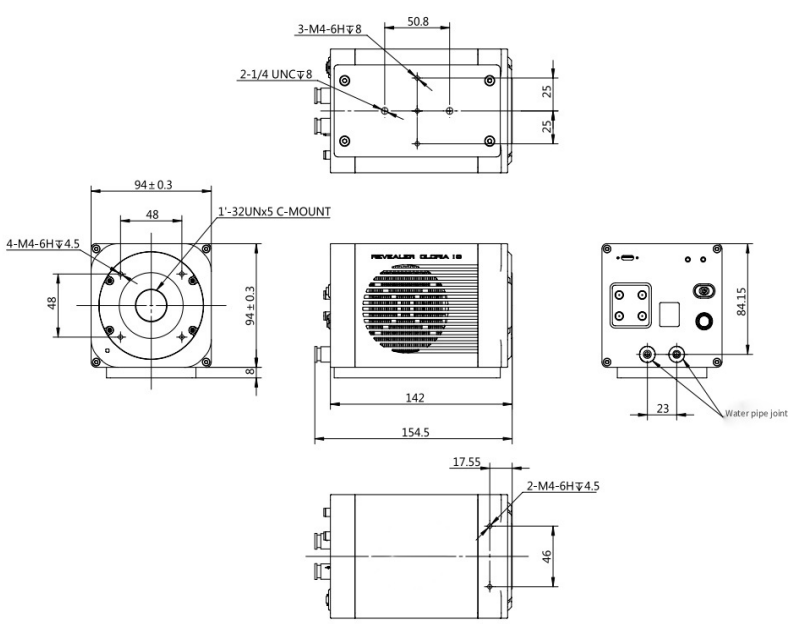
- Multiple interfaces and transmission flexibility
- Lightweight and compact structure
- Wide exposure time range
- Multi-mode readout adaptation
- Standardized compatibility

Dimensions of VenusLab Scientific sCMOS Camera:

VL-4.2 Dimension Drawing



VL-16 Dimension Drawing



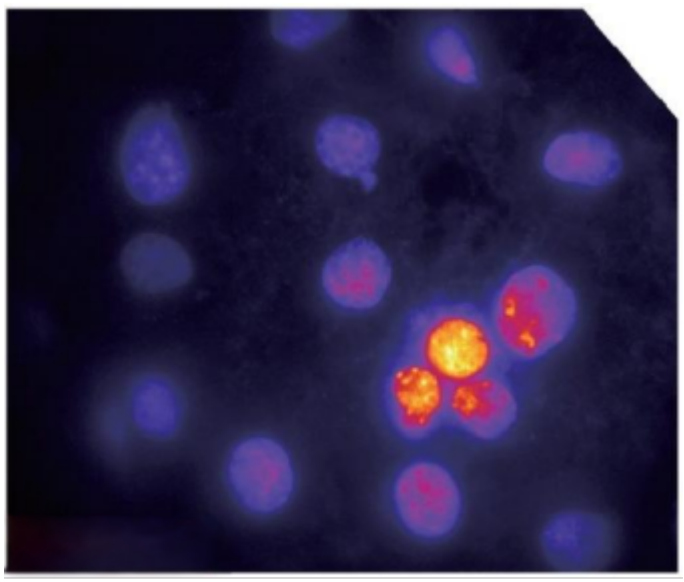
Specifications

VL-4.2, VL-16, VL-95 have the same parameters：

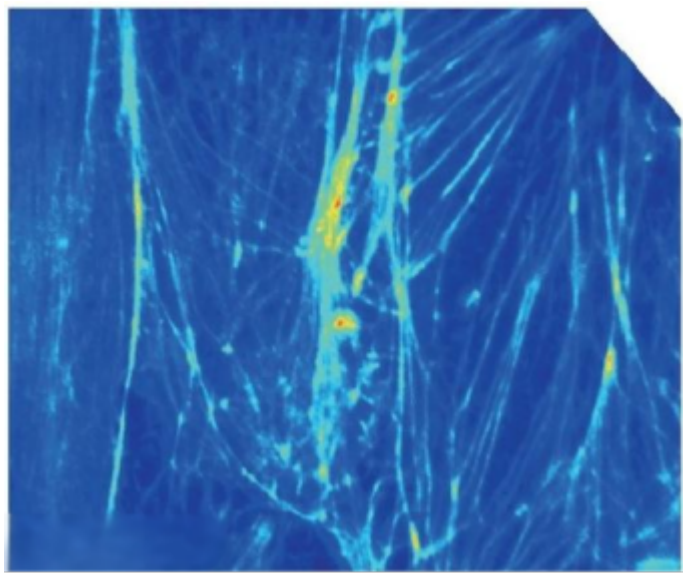
Parameter Name	Parameter Details
Sensor Type	Scientific Backside Illuminated CMOS
Dynamic Range	90 dB
Dark Signal Non-Uniformity	0.2 e-
Photo Response Non-Uniformity	＜0.5% Half Saturation and Step Response
Shutter Type	Rolling
Bit Depth	Multi-mode supported (Gloria 4.2: 11 bit & 12 bit & 16 bit; Gloria 16/95: 12 bit & 16 bit)
Readout Mode	Full Frame / Binning (2×2,4×4) / Region of Interest (ROI)
Data Interface	USB 3.1 Gen1 (Gloria 4.2 additionally supports CoaXPress 2.0 (CXP-12))
Timestamp Precision	1 μs
External Trigger Interface	SMA, TTL/3.3V Level
Power Supply	AC 100-240V, 50 Hz / 60 Hz, 1A
Operating Environment	0~40°C, Humidity: 10~80 %
Storage Environment	0~40°C, Humidity: ≤90%
SDK	C, C#, C++, Python
Software	RPC, Micro-manager, Labview, Matlab, Spim, ASCOM

Application

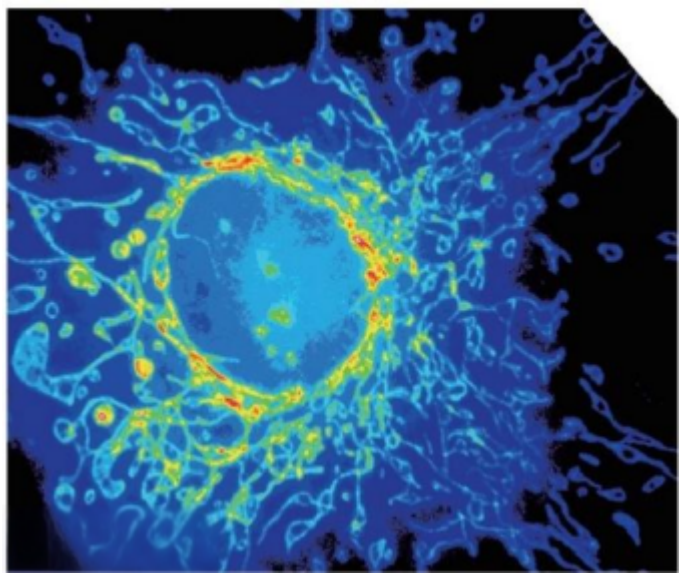
Cell Biology



Neurobiology



Intracellular Transport



Explore Series

Model	Sensitive Area	Dimension	Cooling Function	Weight
VL-4.2	13.3 mm×13.3 mm	84×84×125 mm	Maximum Cooling Delta Below Ambient 45°C	1300 g
VL-16	12.8 mm×9.6 mm	94×94×142 mm	Maximum Cooling Delta Below Ambient 60°C	1500 g
VL-95	22.5mm×22.5mm	100×100×140 mm	Maximum Cooling Delta Below Ambient 45°C	1600 g

📩 Get in touch with our team to explore configurations,request a quote,or learn more about customized solutions tailored to your needs.

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