sCMOS cameras

Product Catalogue

2025~2026
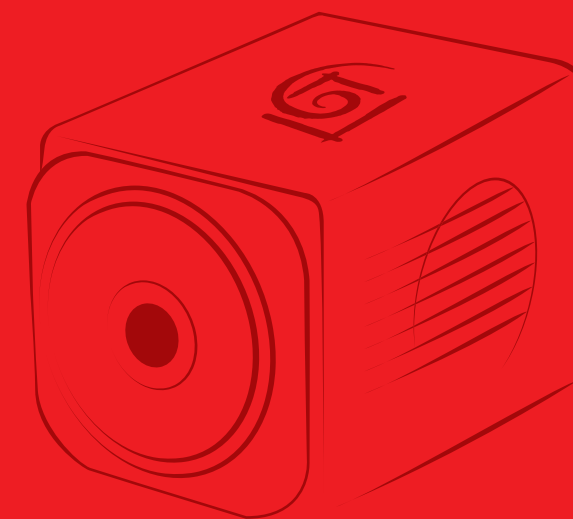
HF Agile Device Co., Ltd

📍 ADDR：Fuhuang New Version Mansion,Hefei,China

🌐 www.revealerhighspeed.com

千眼狼
Revealer
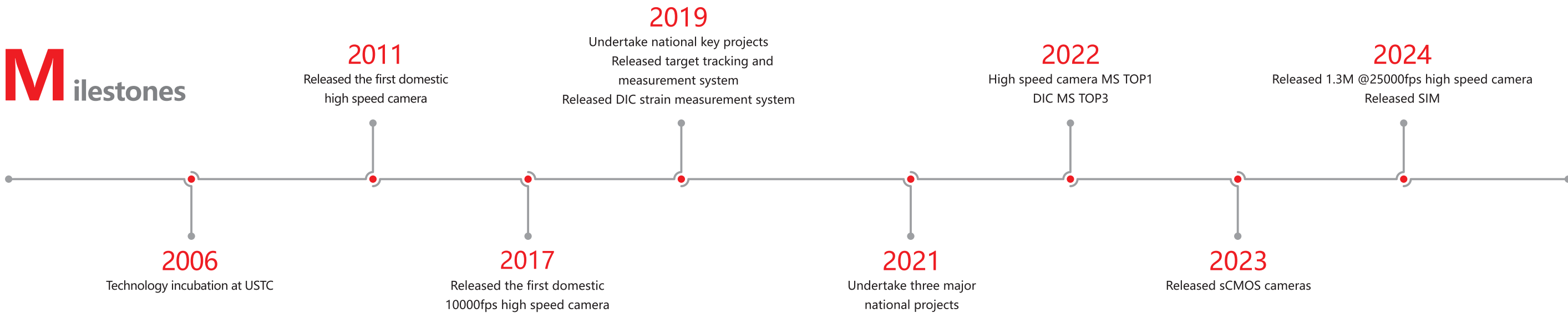
Company Profile

HF Agile Device Co., Ltd is a scientific instrument company specializing in the innovation of high speed visual perception and measurement technology.

The company's photoelectric measuring instruments and measuring systems developed based on independent innovative core technologies have accumulated rich application practices in transient process analysis, strain field measurement, flow field measurement, motion trajectory measurement, target tracking and identification, product performance test, real-time fault analysis, online quality inspection and other scenarios, which are widely used in scientific research, aerospace, industrial intellectual property, biomedical and other fields.

Milestones

2019
Undertake national key projects
Released target tracking and measurement system
Released DIC strain measurement system

2011
Released the first domestic high speed camera

2022
High speed camera MS TOP1
DIC MS TOP3

2024
Released 1.3M @25000fps high speed camera
Released SIM

2006
Technology incubation at USTC

2017
Released the first domestic 10000fps high speed camera

2021
Undertake three major national projects

2023
Released sCMOS cameras

Product Brief

sCMOS camera Gloria series

Revealer Gloria series sCMOS cameras are designed with Gpixel's leading CMOS image sensor, combined with backside illumination technology and deep cooling sealing process for QE of up to 95% and extreme low noise, suitable for life sciences, quantum physics, astronomical observation and semiconductor inspection and others. It's compact design is suitable for integration into the SIM and other optical inspection systems.

| Gloria 4.2 | 2048×2048 @135 fps @11 bit |
| | 2048×2048 @74 fps @16 bit |

| Gloria 16 | 800×600 @60 fps @16 bit |
| | 800×600 @25 fps @12 bit |

| Gloria 95 | 2048×2048 @24 fps @16 bit |
| | 2048×2048 @48 fps @12 bit |
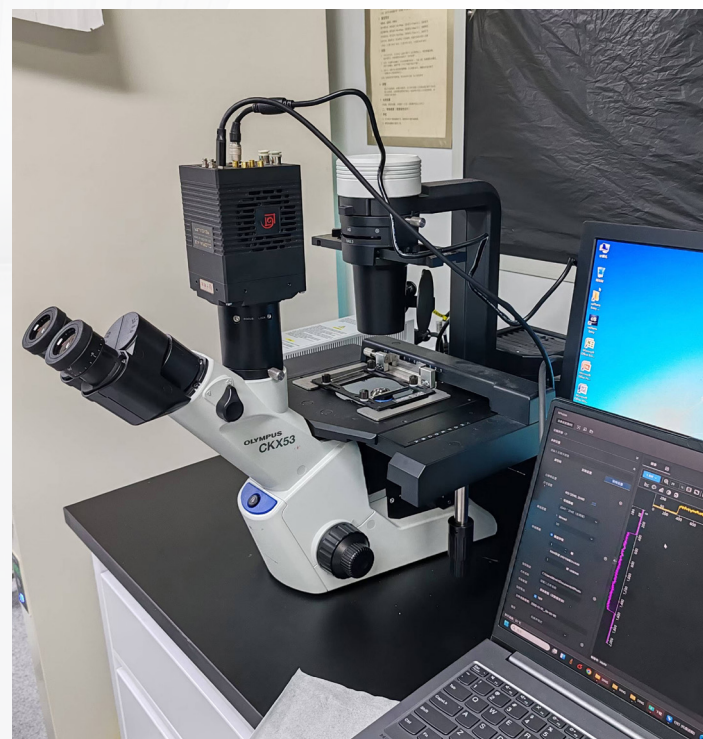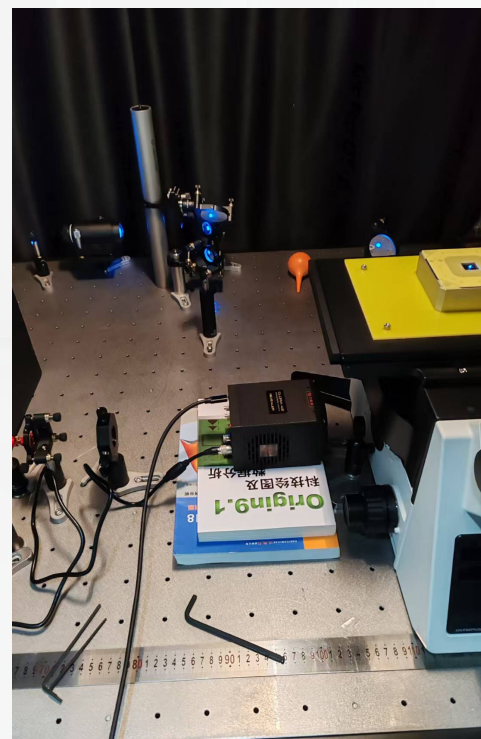
Key Features

High QE	Low Readout noise	High Dynamic range (EMVA1288 standard) EMVA1288
95% @560 nm	0.9 e-	90 dB

Single photon level detection

Flexible IO

Software easy to use

45° C below ambient temperature

Data interface
USB 3.1 Gen1/CXP12
(only for Gloria 4.2)

1080 MB/s
Real time image data transmission

16/12/11 Bit
Digital output
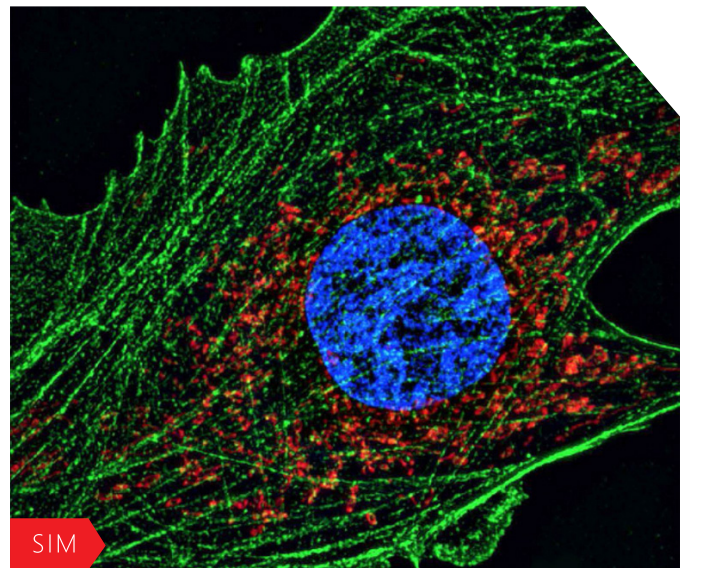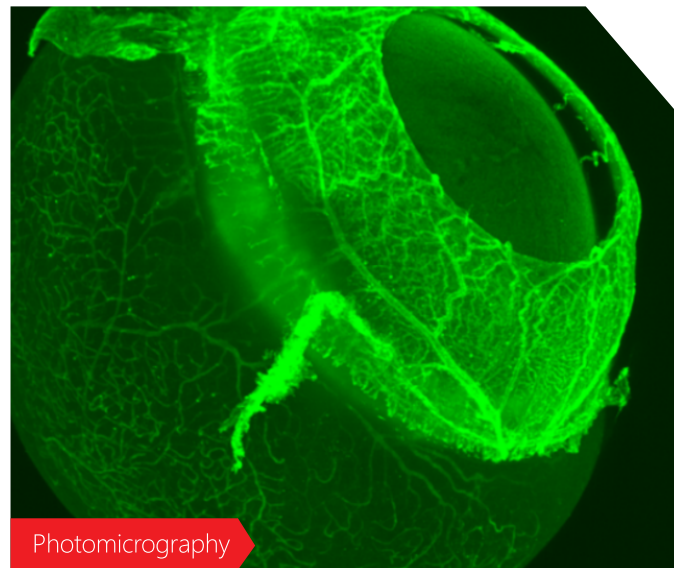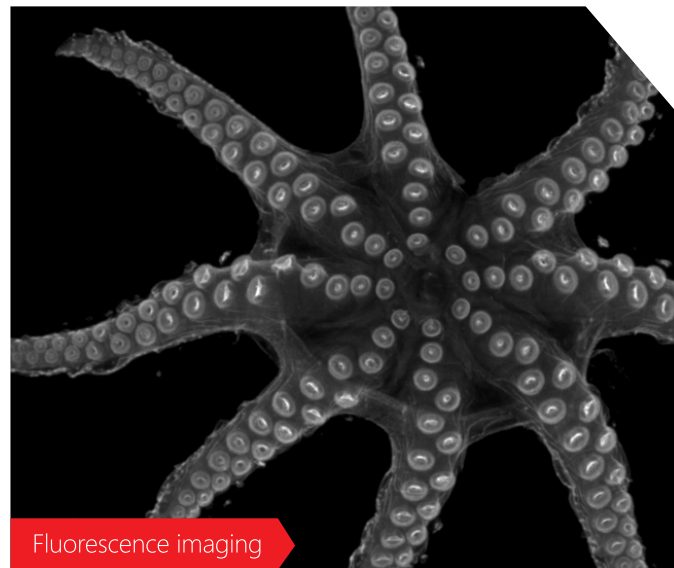
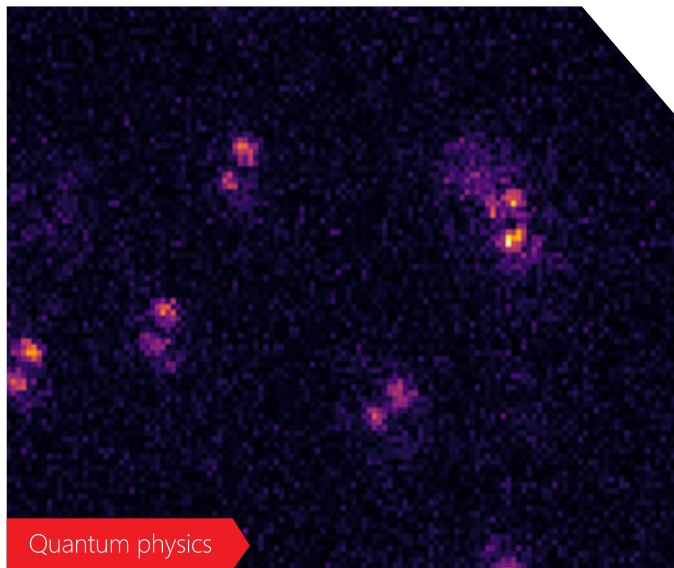**190~1100 nm**
UV-NIR high sensitivity response

0.2 e-/p/s
Dark current

84×84×125 mm
Compact size

sCMOS CAMERA GLORIA SERIES

Typical Cases

Cell biology

Neurobiology

Intracellular transport

Quantum physics

Fluorescence imaging

Photomicrography

SIM

sCMOS CAMERA GLORIA SERIES
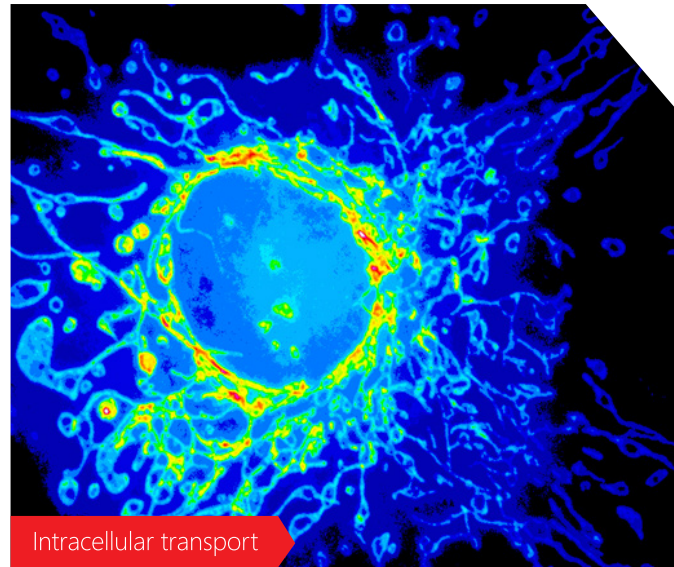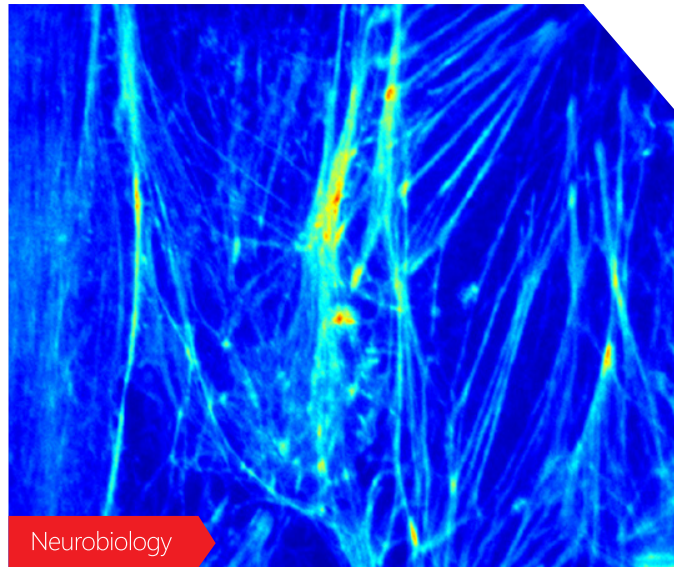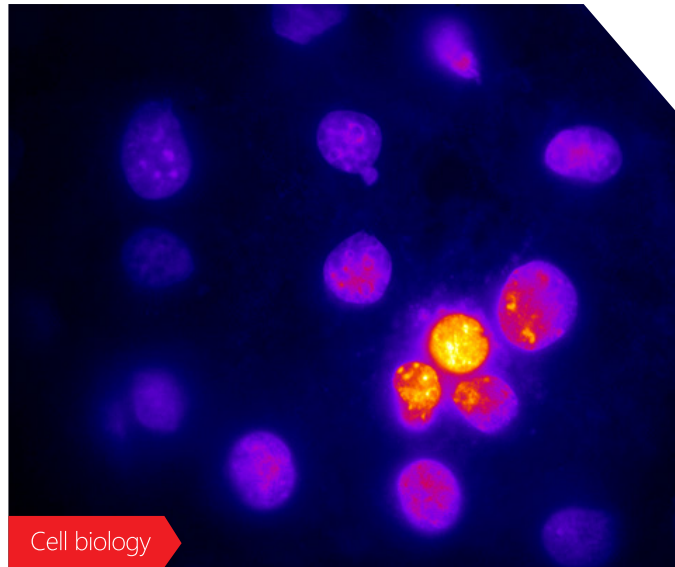
Product Parameters

SKUs	Gloria 4.2	Gloria 16	Gloria 95
Sensor type and model	sCMOS Gpixel GSENSE2020BSI	sCMOS Gpixel GLUX1605 BSI	sCMOS Gpixel GSENSE400BSI
Resolution	2048 (H) x 2048 (V)	800 (H) x 600 (V)	2048 (H) x 2048 (V)
Pixel size	6.5 μm x 6.5 μm	16 μm x 16 μm	11 μm x 11 μm
Effective area	13.3 mm x 13.3 mm	12.8 mm x 9.6 mm	22.5 mm x 22.5 mm
Full well capacity	45 000 e-	73 000 e-	80 000 e-
Readout noise	1.2 e- @ Low Noise Mode	1.6 e- @ HDR Mode 0.9 e- @ Low Noise Mode	1.6 e-
Peak QE	95 % @ 560 nm	90.7 % @ 550 nm	95 % @ 560 nm
Dynamic range	90 dB	93 dB	90 dB
DSNU	0.2 e-	0.3 e-	0.2 e-
PRNU	<0.5%	<0.5%	<0.5%
Cooling	TEC, Air, Liquid, 45 ° C below ambient temperature	Air, Liquid, 45 ° C below ambient temperature	TEC, Air, Liquid, 45 ° C below ambient temperature
Dark Current	Air: 0.5 e-/p/s @-10 ℃ (typical) Liquid: 0.3 e-/p/s @-20 ℃ (typical)	Liquid: 0.2 e-/p/s (typical)	Air: 0.5 e-/p/s @ -10 ℃ (typical) Liquid: 0.3 e-/p/s @ -20 ℃ (typical)
Shutter	Rolling, Global reset	Rolling, Global reset	Rolling
Bit depth	11 bit & 12 bit & 16 bit	12 bit & 16 bit	12 bit & 16 bit
Frame rate	USB : 61 fps @ 11 bit, 43 fps @ 12 bit 46 fps @ 16 bit CXP : 135 fps @ 11 bit, 43 fps @ 12 bit, 74 fps @ 16 bit	25 fps @ 12 bit, 60 fps @ 16 bit	48 fps @ 12 bit, 24 fps @ 16 bit
Readout modes	Full format/Binning(2×2,4×4)/ROI	Full format/Binning(2×2,4×4)/ROI	Full format/Binning(2×2,4×4)/ROI
Exposure times	5 μs ~ 10 s	26 μs ~ 60 s	21 μs ~ 10 s
Data interface	USB 3.1 Gen1, CoaXPress 2.0 (CXP-12)	USB 3.1 Gen1	USB 3.1 Gen1
Timestamp accuracy	1 μs	1 μs	1 μs
Trigger interface	SMA, TTL/ 3.3 V level signal	SMA, TTL/ 3.3 V level signal	SMA, TTL/ 3.3 V level signal
Optical interface	C-mount	C-mount	C-mount / F-mount
Power supply	AC 100 ~ 240 V , 50 Hz / 60 Hz , 1 A	AC 100 ~ 240 V , 50 Hz / 60 Hz , 1 A	AC 100 ~ 240 V, 50 Hz / 60 Hz, 1 A
Power consumption	50 W	80 W	80 W
Size	84×84×125 mm	94×94×142 mm	100×100×140 mm
Weight	1300 g	1500 g	1600 g
Operating environment	Temp 0 ~ 40 ° C, RH 10 ~ 80 %	Temp 0 ~ 40 ° C, RH 10 ~ 80 %	Temp 0 ~ 40 ° C, RH 10 ~ 80 %
Storage environment	Temp 0 ~ 40 ° C, RH ≤ 90 %	Temp 0 ~ 40 ° C, RH ≤ 90 %	Temp 0 ~ 40 ° C, RH ≤ 90 %
SDK	C, C#, C++, Python	C, C#, C++, Python	C, C#, C++, Python
Software	RPC, Micro-manger, Labview Matlab, Epics , ASCOM	RPC, Micro-manger, Labview Matlab, Epics , ASCOM	RPC, Micro-manger, Labview Matlab, Epics , ASCOM

# Dimension Drawing

Gloria 4.2
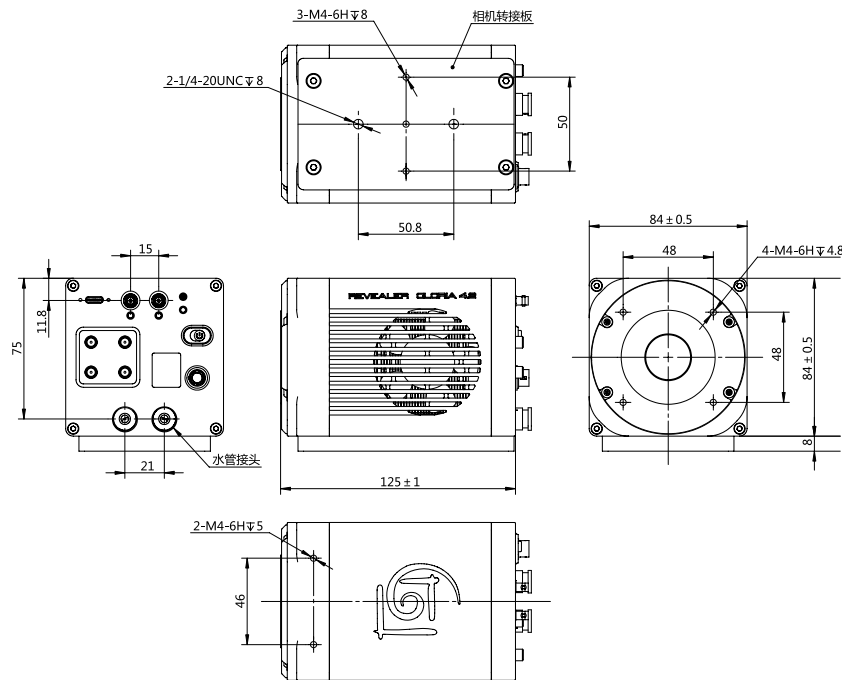
Gloria 16
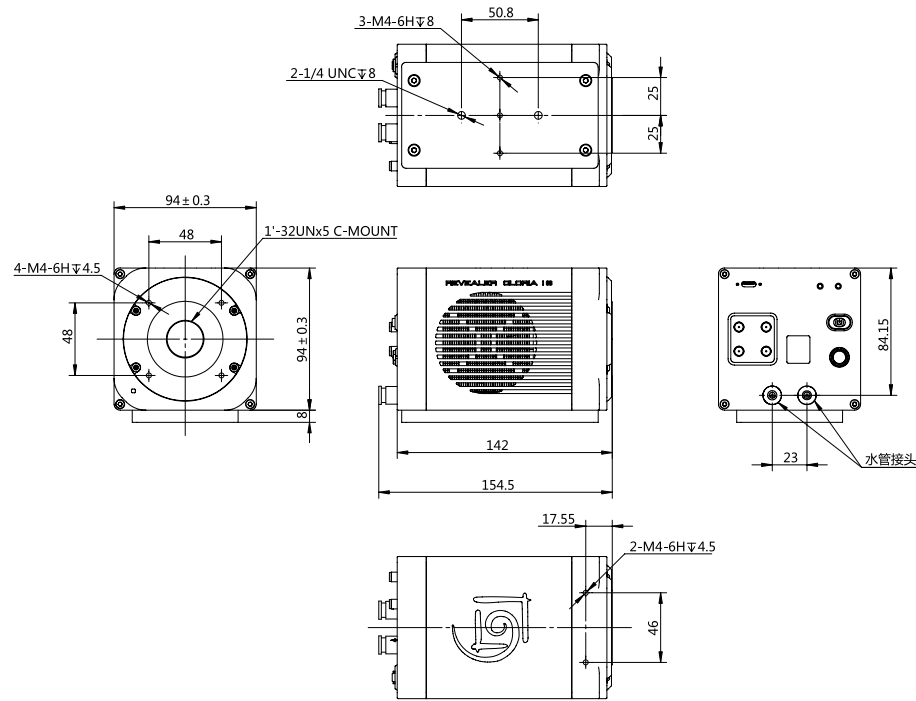
Product Brief

Structured Illumination Microscopy

Based on the principle of structured light illumination, Revealer SIM modulates the illumination light into a regularly varying pattern projected on the sample by implanting a structured light generating device spatial light modulator. In the illumination light path, capturing the fluorescence signal generated by the modulated light using Revealer sCMOS scientific camera, and at the same time covering the sample with the pattern through the moving rotating platform, and utilizing a high-level image processing algorithm to reconstruct the captured High-order image processing algorithms are used to reconstruct the captured images and generate high-resolution images in real time to analyze the internal fine structure of the target samples.
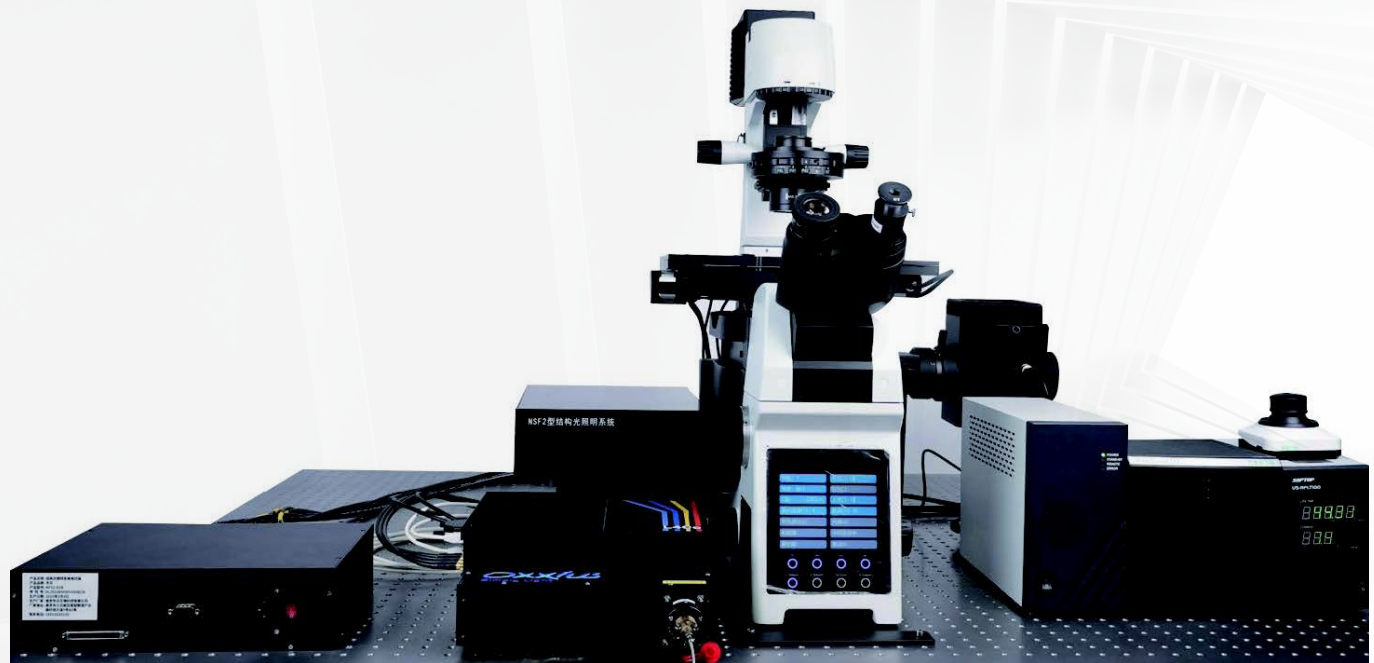
Key Features

High speed real-time imaging	High resolution imaging	3D reconstruction frame rate Product Parameters
74 fps @16 bit	Vertical **≤ 100 nm** Axis **≤ 150 nm**	**> 100 fps**

Product Parameters

Module	Details
Imaging Modes	Widefield: brightfield, fluorescent widefield, oblique (multi-angle) TIRF: TIRF (multi-angle), TIRF-SIM (multi-angle) 2D SIM: 2D-SIM (multi-angle), 2D-SIM Stack (multi-angle) 3D SIM: 3D-SIM (multi-angle), 3D-SIM Slice (multi-angle)
Resolution	XY: < 100nm Z: < 150nm
Imaging speed	Max. 49 fps @16 bit 2048×2048 Max. 1000 fps @16 bit 128×2048
Field of view	Max. 150×150 μm @100× magnification Max. 250×250 μm @60× magnification
Peak QE	> 95 % @ 600 nm
Readout noise	1.1 e- (Median) 1.2 e- (RMS) @ CMS 1.6 e- (Median) 1.8 e- (RMS) @ HDR
Lasers	Standard: 405 nm、488 nm、561 nm、640 nm Optional: 445 nm、473 nm、515 nm、532 nm、594 nm、607 nm、647 nm
Objectives	Apo 100× /1.5 Oil Optional: Apo 60× /1.5 Oil Suitable for 20 ~ 100 × with immersion of oil, silicone oil, water and air
Multi-channel imaging	High-speed sequence imaging with multi-color wheel Multi-FOV, multi-channel with multi-camera imaging
Reconstruction frame rate	> 100 fps
Post-processing	Computational SR reconstruction, deep learning, denoise, background removal