中科视界 AGILEDEVICE

NEO--High-Sensitivity & Ultra-High-Speed Camera

NEO 25

1280×1024 @25000fps

1280×720 @36000fps

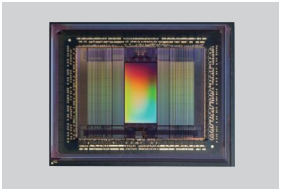
1280×256 @100000fps

1280×16 @1000000fps

Introduction

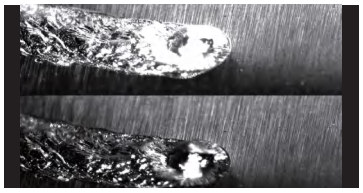
High-sensitivity & ultra-high-speed camera utilizes a new generation of backside illumination sensors to enhance the capture efficiency of incident photons, enabling transient image capture within extremely short exposure times. This is suitable for ultra-high-speed applications.

Key Features



■ High-sensitivity

The sensor, utilizing advanced backside illumination stack technology and transmitting data through 32 pairs of LVDS channels, is paired with a high-bandwidth real-time write storage circuit. This configuration endows the NEO 25 with a peak quantum efficiency exceeding 70%, enabling real-time acquisition and storage of image data at 25,000fps for 1.3 million pixels.



■ EDR Secondary Exposure

To avoid the issue of local overe-xposure due to improper exposure parameter settings, NEO 25 is equipped with an EDR function that supports detecting high-lights in a single frame and immediately switches to a shorter exposure time for the next frame, ensuring effective capture of the subject by the camera even under brightness transitions.

■ Intelligent Image Triggering

NEO 25 is equipped with intelligent image triggering function. Based on the image brightness, the software automatically triggers image acquisition by detecting whether the grayscale value of the region of interest exceeds the set brightness threshold, suitable for scenarios where there is a sudden change in image brightness in the ROI area during high-speed monitoring.

IRIG-B Synchronization

NEO 25 can be connected via the IRIG-B under the internal synchronization mode, with the exposure starting moment of the rising edge aligned with the arrival moment of the IRIG-B second, thereby achieving precise long-distance synchronization of multiple camera setups. It can replace external synchronization cables and is suitable for synchronous observation of transient images by cameras deployed at multiple observation sites, ensuring alignment to the exact second.

Flexible Lens Mount

NEO 25's optical interface adopts a flange adapter ring, which is more reliable in structure. It comes standard with an F-mount, offering higher compatibility, and can also be customized with C-mount and EF-mount options. Among these, the EF-mount supports electronic focusing, catering to a variety of experimental scenarios for users.

Dual Power Supply

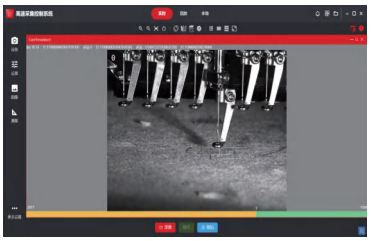
High-speed RAM storage objectively exists unstable power supply due to power supply crosstalk, which will cause the loss of valuable experimental data. Two 20~32V DC power supply interfaces are designed as backups for each other. The dedicated power supply chip supports μs-level switching and also supports overvoltage and undervoltage protection.

EMC Protection

In a strong magnetic field experimental environment, cameras are prone to current and voltage instability, NEO 25 is designed in accordance with EMC standards, providing protection for the entire machine's shell, interfaces, and structure, and it includes a built-in dedicated filtering circuit to eliminate interference, meeting the needs of plasma, discharge, nuclear, and other experimental scenarios.

Flexible for High & Low Temperature Working Environment

The components selection of NEO 25 is strictly based on high and low temperature standards, implementing quality control measures throughout the entire process from materials, semi-finished products, finished products, to outgoing goods. It comes with a built-in heating module, effortlessly meeting the outdoor shooting needs in low-temperature environments.



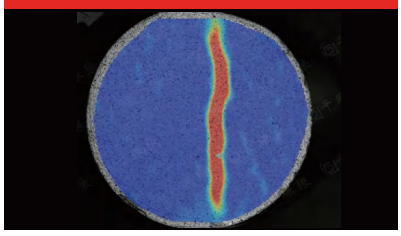
Efficient & Easy-to-use Acquisition Software -- RCC

The RCC acquisition software, which has been refined through decades of iterations, integrates device control functions, precise image measurement, and powerful image processing capabilities. It supports the automatic capture of key frames during high-speed acquisition, auto-locates key frames in playback mode, and allows for the export of videos before and after the key frame selection.

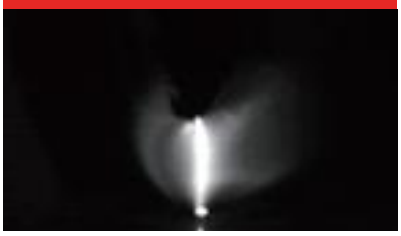
Typical Applications

High Speed Wind Tunnel Test

Rock Crack Propagation Test



Discharge Phenomenon Research



Specifications

Model	NEO 25M/C
Sensor	BSI CMOS
Max Resolution	1280×1024
Full Frame Rate	25000fps
Shutter	Global Shutter
Min Exposure Time	150ns
PIV Cross Frame	250ns
Auto Exposure	Support
EDR	Support

Interface & Signal

Interface	NEO 25M/C
Record Button	Support
Data Interface	GigE/10GigE
Video Interface	SDI
Input	3.3/5V TTL
Output	5V TTL
Time Input Interface	DC IRIG_B
Control Interface	RS422 Reserved
Trigger Input	Pulse trigger signal
I/O	1 Output Interface Reserved, Customizable

Mechanical Parameters

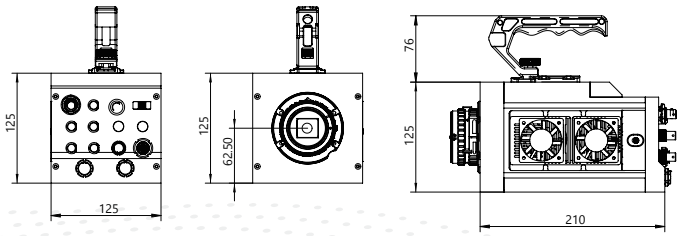
Model	NEO 25M/C
Mount	F Port, C/EF Port Options
W×H×D	⩽125×125×210mm
Net Weight	⩽4200g
Thread	1/4 NPT
Cooling	Fan

Memory

Model	NEO 25M/C
RAM	320GB
SSD	-

Drawing

NEO 25M/C



Resolution-FPS

Model	NEO 25 (320GB、8bit)	
Resolution	fps	Duration(s)
1280×1024	25000	9.8
1280×896	29000	9.8
1280×720	36000	9.8
1280×640	40000	9.9
1280×512	47000	11
1280×256	100000	10.4
1280×16	1000000	16
1280×8	-	-

Electrical Parameters

Model	NEO 25M/C
Power	24VDC
consumption	⩽150W

Others

Model	NEO 25M/C
Operating Temperature	-10 ~ 50°C
Temperature Customization	-40~ 60°C
Operating Humidity	0~95%
Protection Grade	IP64
Impact Resistance	30Grms @11ms, 3-axis 6-direction, 60 pulses
Anti Vibration	Transportation
EMC	Support

Services

- Direct Sales
- Professional Technical Support
- Customizing
- Fast Shipping
- 24/7 After-sales Service
- One Month Fast Repair(In-Warranty Period), substitute device provide if unable to finishing repairing on time