Scientific Cameras
VenusLab Astra UltraSpeed Series

"Transient Vision Engine": A domestic benchmark for highly sensitive, ultra-high-speed, and low-light ultra-high-speed analysis.

- Ultra-high-speed imaging capability
- High-sensitivity low-light adaptation
- Microsecond-level precise control

One Platform Many Possibilities

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Get a Quote

Get Expert Advice
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Overview

Product introduction of VenusLab Astra UltraSpeed Series

It adopts a high-end customized BSI CMOS chip and reconstructs the photosensitive structure through back-illuminated technology, increasing the incident photon capture efficiency to a peak quantum efficiency of 85%, achieving "no loss of transient details in low-light environments" in ultra-high-speed imaging scenarios. Equipped with a built-in mechanical shutter, the minimum exposure time is as low as 150ns, and the PIV double-frame cross-frame time is only 250ns, providing " microsecond-level time precision" dynamic visual support for fields such as hypersonic aerodynamics and high-speed impact vibration.

Features of the VenusLab Astra UltraSpeed Series:

• Ultra-high sensitivity imaging

• Ultra-high frame rate breakthrough

• Industrial-grade reliable protection

• Intelligent and efficient triggering

Dimensions of VenusLab Astra UltraSpeed Series:
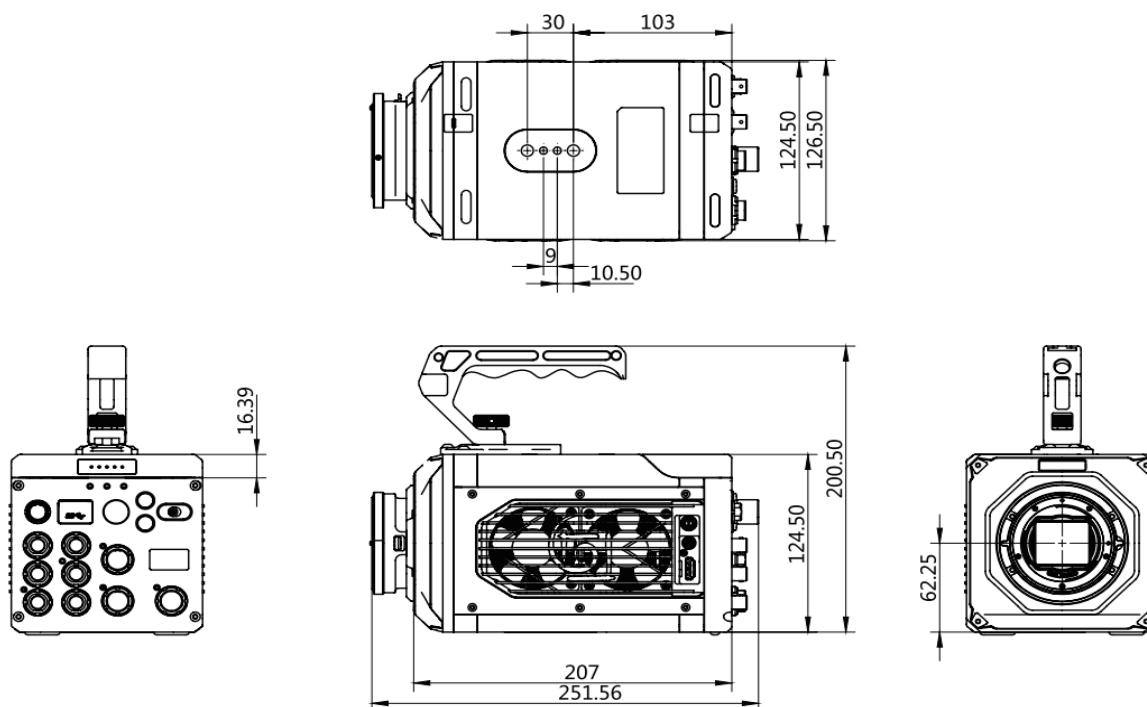
Specifications

VL-Apex 25G, VL-Surge 20G, VL-Peak 16G have the same parameters

Parameter Category	Parameter Content
Sensor Type	BSI CMOS
Maximum Resolution	1280×1024
Electronic Shutter	Global Shutter
Minimum Exposure Time	150ns
PIV Frame Interval	250ns
Auto Exposure	Supported
Extreme Dynamic Range	Supported
Data Interface	Gigabit Ethernet Port/10 Gigabit Ethernet Port
Video Interface	SDI/HDMI
Sync Input Interface	Compatible with 3.3/5V TTL
Sync Output Interface	5V TTL

Timing Input Interface	Supports DC IRIG-B Input
Control Interface	Reserved RS422 Control Interface
Trigger Input	Camera Receives External Trigger Signal
I/O	1 Reserved Output, Customizable
Power Supply	24VDC
Power Consumption	200W
Operating Temperature	-10 ~ 50
High and Low Temperature Control	-40 ~ 60
Operating Humidity	0 ~ 95%
Protection Class	IP64
Shock Resistance	30Grms @11ms, 3 Axes 6 Directions, 60 Pulses
Vibration Resistance	Anti-Transport Vibration
EMC	Supported
Lens Interface	Standard EF Mount, Optional F and C Mounts
Dimension (Without Lens)	125×125×210mm
Weight (Without Accessories)	4500g

Resolution-Frame Rate-Recording Schedule

| Model	VL-Apex 25G(Calculated by 320GB, 10bit)		VL-Surge 20G(Calculated by 320GB, 10bit)		VL-Peak 16G(Calculated by 320GB, 10bit)	
Resolution	Frame Rate fps	Record Time S	Frame Rate fps	Record Time S	Frame Rate fps	Record Time S
1280×1024	25000	6.39	20000	8.49	16000	11.11
1280×896	29000	6.26	23000	8.42	18000	11.32
1280×720	35000	6.31	28000	8.32	22000	11.56
1280×640	40000	6.39	32000	8.36	25000	11.42
1280×512	47000	6.92	40000	8.49	32000	11.11
1280×256	96000	6.74	78000	8.75	62000	11.53
1280×16	1000000	11.42	645000	18.81	570000	21.55

Applications

Discharge

2D flow field of aero-engine structure
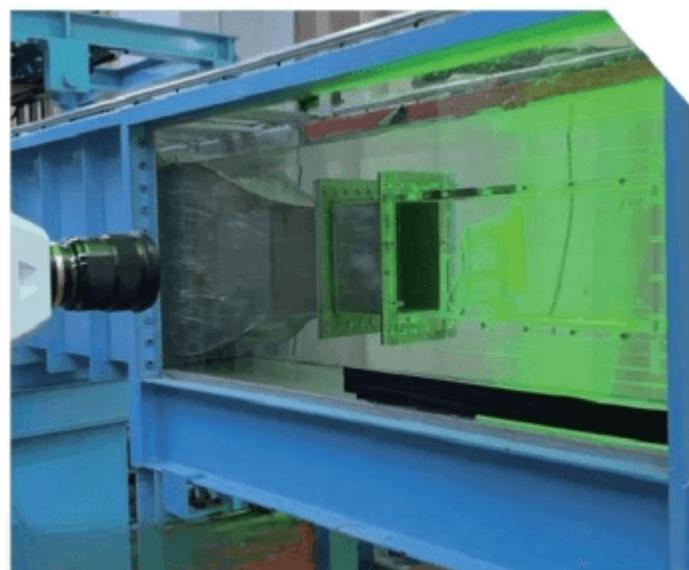
Mechanical Motion
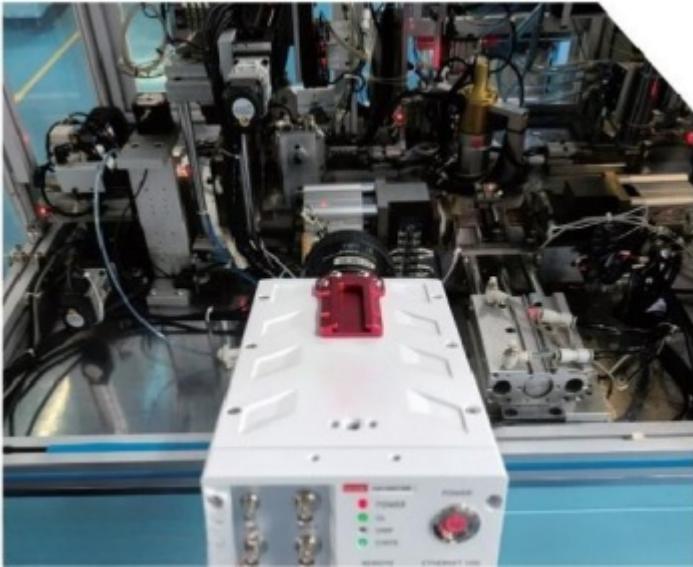
Explore Series

Model	Cooling Method	Recording Duration at Full Frame (1280×1024, 320GB/10bit)	Frame Rate at 1280×256 Resolution	ROI Maximum Frame Rate (1280×16 Resolution)
VL-Apex 25G	Fan, Switchable	6.39s	96000fps	1000000fps
VL-Surge 20G	Fan	8.49s	78000fps	645000fps
VL-Peak 16G	Fan	11.11s	62000fps	570000fps

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

Let us help you moves cience forward—faster ands marter.

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