HC6GQ

Ultra-HD High-Speed Series

A high-performance 21-megapixel high-speed camera



Ultra-HD High-Speed Series

The HC6GQ Ultra HD High-Speed Series is Brilliance Hony's flagship 21-megapixel camera designed for high-end applications in scientific research, defense, aerospace, and high-speed industrial sectors. With its robust data acquisition and processing capabilities, it delivers exceptional effective bandwidth and broadcast-grade image quality, unlocking greater potential for high-speed imaging applications.

Core Features



5K Resolution

5120×4096@1000fps

4K Resolution

4096×2048@2000fps

Radio and Television-Grade Image Quality

Automatic white balance, intelligent noise reduction

Continuously Dynamically Adjustable

Resolution frame rate

PRNU Color Correction

Factory dark field correction

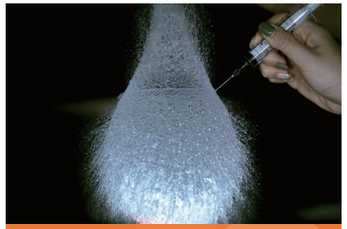
Nanosecond-Level High Precision

Time synchronisation

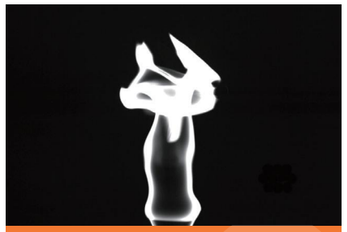
Application Cases



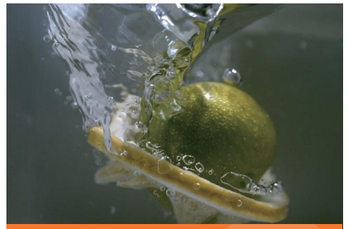
Dye enters the water



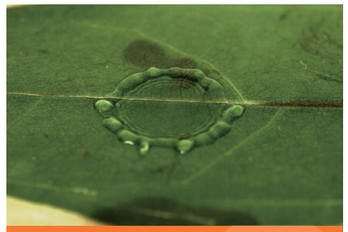
Waterball explosion



Flame Observation



Creative Video



The liquid dripped down.

Core Functions

10GigE

5K resolution

IRIG B

Military standard wide temperature range

automatic exposure

Scondary exposure

Image Trigger

3G-SDI

24T

Non-volatile memory

Performance Parameter

Model	HC6GQ-802	HC6GQ-2101
Full-frame resolution	4096×2048	5120×4096
Full-frame frame rate	2000fps	1000fps
Pixel size	4.5μm	4.5μm
Minimum exposure time	1μs	
Dynamic range	64dB	
Simulation Gain	x2、x4、x8	
Bit depth	8bit/10bit/12bit	
Colour	Monochrome (M)/Color (C)	
Input signal	Trigger signal, synchronization signal, Ready signal, IRIG-B signal	
Output signal	Trigger signal, synchronization signal, Ready signal	
Video Interface	3G-SDI	

For detailed specifications, refer to the product leaflet.

Frame Rate Table

Model	HC6GQ-802(160G)		Model	HC6GQ-2101(160G)	
Resolution	Frame rate (fps)	Recording time (s)	Resolution	Frame rate (fps)	Recording time (s)
4096x2048	2000FPS	10s	5120x4096	1000FPS	8s
4096x1536	2500FPS	10.8s	5120x3072	1300FPS	8.4s
4096x1024	3800FPS	10.77s	5120x2048	2000FPS	8s
4096x512	6900FPS	11.6s	5120x1024	3800FPS	8.6s
4096x256	11500FPS	14s	5120x640	5800FPS	9s
4096x128	17000FPS	19.2s	5120x256	11500FPS	11.2s
4096x64	20000FPS	32.4s	5120x64	20000FPS	26s

The 320GB version has twice the recording duration of the 160GB version; therefore, the recording durations for 80GB and 40GB are calculated accordingly.
The time recorded in the above table is calculated based on an 8-bit image bit depth.

Storage Configuration

Model	HC6GQ-802/2101
RAM	40GB/80GB/160GB/320GB
Real-time storage	4TB/12TB/24TB

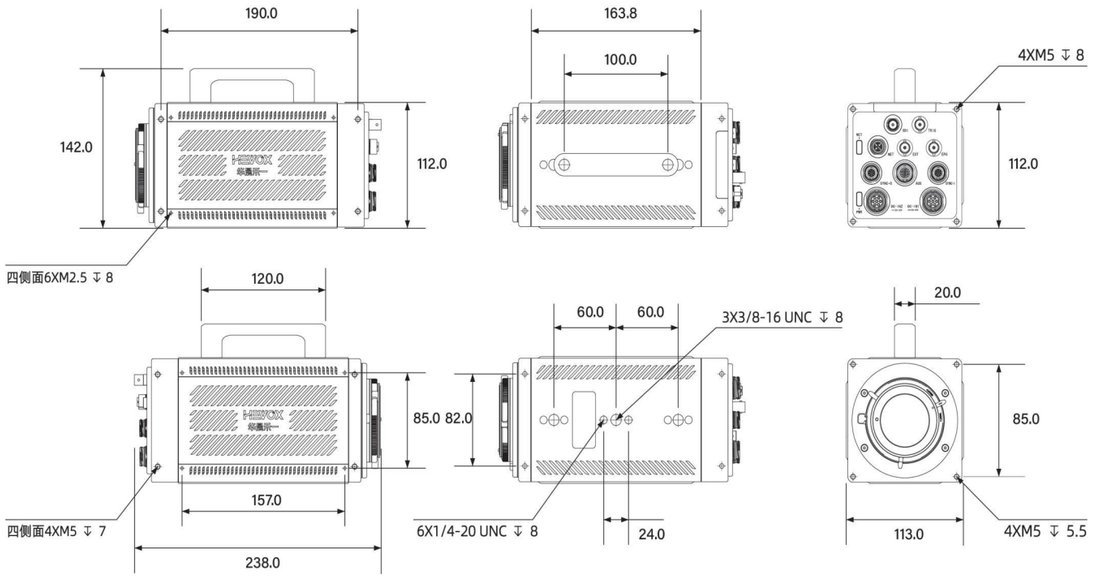
Mechanical Specifications

Camera size	217D×110W×110H	Installation hole position	Top/Bottom: 6 × 1/4 "mounting holes, 3 × 3/8" mounting holes
Camera weight	3.8kg	Power	55W
Power supply mode	DC24V, dual power supply	Lens Interface	The E-mount can be converted to F, C, or EF mount.

Environmental Suitability

Working temperature	temperature range: -10~50°C; wide-temperature version available upon customization: -40~65°C	EMC	Support
Working humidity	Less than 95% (no condensation)	Anti-vibration	Resistant to transportation vibrations
Storage Temperature	-40~70°C	Heat dissipation method	Active cooling, air cooling

Machine Drawing



HC6GQ

Ultra-HD High-Speed Series

A high-speed camera with powerful performance and comprehensive features



Ultra-HD High-Speed Series

The HC6GQ High-Resolution High-Speed Camera Series offers a maximum resolution of 5 megapixels and a maximum full-frame recording speed of 4,500 fps. Incorporating industry-leading high-speed image acquisition and processing technologies, along with high-capacity lossless data storage, the series combines HEVOX's innovative circuit design to deliver an effective bandwidth of up to 220 Gbps and outstanding image quality.

Core Features







4500fps

The maximum size for the entire series is 2560×2016.

Professional ISP Algorithm

Low-noise control

High-Definition Premium Image Quality

Powered by self-developed image algorithms

Dual-Power Supply Design

Prevent data loss due to single-power supply failure

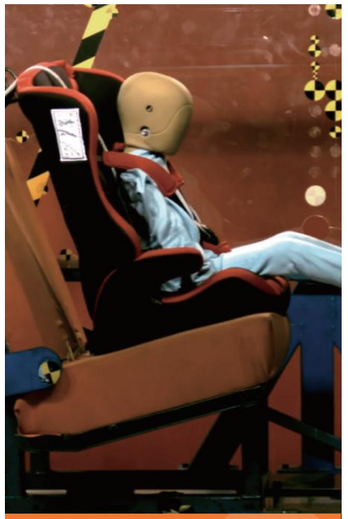
Intelligent Image Trigger

Multiple trigger modes

320GB

The high-speed RAM storage can be selected up to 320 GB.

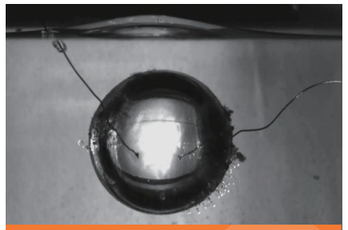
Application Cases



▶ seat safety test



▶ Crack propagation



▶ Cavitation phenomenon



▶ Sewing machine in slow motion



▶ Shadow Experiment

Core Features

- 10GigE
- PIV Double Exposure
- IRIG B
- Military standard wide temperature range
- Auto Exposure & Double Exposure
- Image Trigger
- 3G-SDI
- 24T Non-Volatile Storage

Performance Parameters

Model	HC6GQ-501	HC6GQ-502	HC6GQ-502S	HC6GQ-503S	HC6GQ-504	HC6GQ-505
Full-frame resolution	2560x2016	2560x2016	2560x1920	2560x1920	2560x2016	2560x2016
Full-frameframerate	1000fps	2000fps	2300fps	3000fps	3600fps	4500fps
Pixelsize	9μm	9μm	7.8μm	7.8μm	9μm	9μm
Minimumexposure time	1μs	1μs	100ns	100ns	1μs	1μs
Dynamicrange	64dB	64dB	60dB	60dB	64dB	64dB
Simulatedgain	x2、x4、x8					
Depth	8bit/10bit/12bit					
Colour	Monochrome (M) / Color (C)					
Incomingsignal	Trigger signal, synchronization signal, Ready signal, IRIG-B signal					
Outputsignal	Trigger signal, synchronization signal, Ready signal					
Videointerface	3G-SDI					

※ For detailed specifications, please refer to the product leaflet.

Frame rate table

Model	HC6GQ-501 (160G)		HC6GQ-502 (160G)		HC6GQ-504 (160G)		HC6GQ-505 (160G)			HC6GQ-502S (160G)		HC6GQ-503S (160G)	
Resolution ratio	Frame rate (fps)	Recording time (s)	Frame rate(fps)	Recording time (s)	Frame rate(fps)	Recording time (s)	Frame rate(fps)	Recording time (s)	Resolution ratio	Frame rate(fps)	Recording time (s)	Frame rate(fps)	Recording time (s)
2560×2016	1000	32	2000	16.4	3600	9.2	4500	7.3	2560> 1920	2300	15	3000	11.6
2560×1280	1600	32	3000	16.4	5600	9.2	6600	7.9	2560 ± 1280	3500	14	4500	11.6
2560×512	3000	42.8	5600	23.2	11000	11.6	13000	10	2560 × 1024	4300	15	5600	11.7
2560×256	4500	57.6	9000	28.8	17000	15.2	20000	13	2560 x 512	8700	15	11200	11.7
2560×128	5600	93.6	12000	43.2	23000	22	28000	18	2560 x 256	17300	15	22200	11.8
2560×32	14000	148	25000	83.8	50000	41.9	60000	34	2560 × 64	66500	15	85500	12

※The recording duration for the 320GB version is twice that of the 160GB version; accordingly,
the recording durations for 80GB and 40GB are calculated as follows: ※The recording times in the table above are based on an 8-bit image bit depth.

Storage configuration

Model	HC6GQ-501/502S/503S/504/505
RAM	40GB/80GB/160GB/320GB
Real-time storage	4TB/12TB/24TB

Mechanical Specifications

Camera size	217D×110W×110H	Installation hole positions	Top/Bottom: 1/4 "mounting holes × 6, 3/8" mounting holes × 3
Camera weight	3.8kg	Power	55W
Power supply mode	DC 24V, dual power supply	Lens interface	E-port, compatible with F-port, C-port, and EF-port

Environmental Suitability

Working temperature	-10–50 °C; wide-temperature variant available: –40–65 °C	EMC	Support
Working humidity	Below 95% (no condensation)	Vibration resistance	Anti-transport vibration
Storage temperature	-40~70°C	Heat dissipation method	Active cooling, air cooling

Machine Drawing

