

POWERVIEW™ HS-2000 Camera Model 630058

...the POWERVIEW HS family of cameras for time-resolved image capture in global imaging measurements from TSI.

Features

- Image capture rates up to 120,000 fps for time-resolved measurements
- Frame straddling mode for high speed flow measurements
- Integrated protective mask for the CMOS array
- High sensitivity for low light applications
- Memory expandable to 8 GB for long imagecapture sequence
- Phase-locked measurements with external trigger signal
- Designed for PIV, PLIF and spray diagnostics

TSI's POWERVIEW HS-2000 camera offers full 1024 × 1024 pixel resolution and 10-bit dynamic range, high image capture rate, short frame straddling times and variable exposure times for time-resolved PIV, PLIF and spray diagnostics applications.

Latest Generation Cameras

TSI initiated the use of cameras designed specifically for PIV applications with the introduction of its POWERVIEW PIV cameras. POWERVIEW HS cameras, developed for time-resolved global imaging measurements, are the newest members of the POWERVIEW family. The HS-2000 camera offers 2000 fps at full pixel resolution of 1024 × 1024 pixels and up to 120,000 fps at reduced pixel resolution. Such image capture speeds allow detailed temporal information to be taken.



Time-Resolved Measurements

For time-resolved PIV, the camera can be operated in the frame straddling mode to allow small laser pulse separation in two consecutive frames for cross-correlation analysis for high speed flow measurements. The laser pulse separation can be as small as a few microseconds so flow velocities up to a few hundred meters per second can be measured. For PLIF and spray diagnostics, the camera can be operated with variable shutter exposure to provide image integration from multiple laser pulses, thereby enhancing signal quality. The camera can be triggered externally so that phase locked measurements can be carried out.

Protective Mask

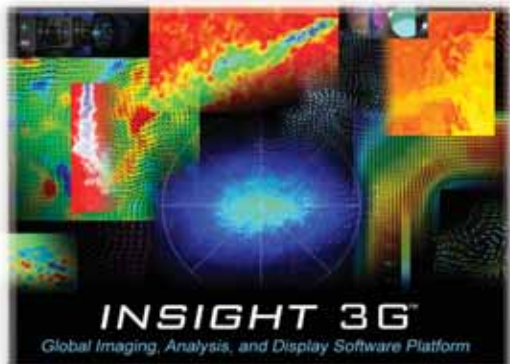
The detector array, the sensitive and expensive part of the camera, has an integrated protective mask to protect the CMOS output circuitry from potential laser light reflections. This prevents fatal damage to the array, thus improving camera reliability and extending camera life.

System Configuration

The HS2000 camera system includes the tethered camera head and controller connected by a 5-meter cable. This arrangement allows the camera head to be placed in hazardous or hard-to-reach locations. The on-board memory in the controller can be increased from the standard 2.6 GB to 8 GB for long image capture requirements. A standard Nikon 28 mm lens and all related interface cables are provided with the system. Two HS2000 cameras can be configured in a stereo PIV configuration for 3-D velocity measurements, or for simultaneous PIV and PLIF applications.

INSIGHT 3G™ Global Imaging, Analysis, and Display Software Platform

The *INSIGHT 3G* package features all of the tools needed for even the most advanced global imaging measurements, from our patented processing algorithms to the most elaborate data analysis features available. And now, equipped with the *HyperStreaming* Module, the power of the *INSIGHT 3G* Platform can be unleashed on enormous amounts of data, using features such as the POD Analysis Toolbox and distributed processing capability over a network of computers to quantify the flow properties of interest with the desired detail.



Specifications

Model 630058 Camera

Imaging Device	CMOS array with 17 μ m pixel size
Pixel Resolution	1024 \times 1024
Pixel Size (H \times V)	17 μ m \times 17 μ m
Imager Size (H \times V)	17.4 mm \times 17.4 mm
Intensity Range	10-bit digitization
Frame Rate	
1024 \times 1024 pixels	2,000 fps
1024 \times 512 pixels	4,000 fps
512 \times 512 pixels	6,000 fps
1024 \times 256 pixels	8,000 fps
1024 \times 128 pixels	15,000 fps
128 \times 16 pixels	Up to 120,000 fps
Phase Lock	Enables camera to be synchronized with external device
Protective Mask	Integrated protective mask for the CMOS output array
Lens Mount	F-mount
Operating Modes	Free Run, Triggered and Frame Straddling
Head Dimensions	120 mm \times 110 mm \times 93 mm
Head Weight	1.0 kg
Controller Dimensions	214 mm \times 140 mm \times 307 mm
Controller Weight	5.5 kg
Camera Interface Output	Firewire®
Tether Cable	5 m
Power	120/220 volt
Shock	100G @ 10 ms any axis
Camera Lens	Nikon 28 mm F-mount lens standard

Specifications subject to change without notice.

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Firewire is a trademark of Apple Computer, Inc.



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