

## High Frame Rate Cameras



Model 630076

### Features and Benefits

- Each camera comes with standard F-mount, C-mount and all interface cables
- Flexible system configuration allows set up of two cameras for Stereo PIV 3-component velocity measurements
- High temporal and spatial resolution
- Latest CMOS sensor with 12-bit dynamic range for exceptional light sensitivity, image quality and fidelity
- Operable in frame straddling and (external) triggered modes for phase locked measurements
- Frame straddling time down to 2 microseconds for high speed flow measurements
- Various frame rates available to meet temporal resolution requirements
- Customizable capture duration with memory capacity options
- Easy data transfer via Gigabit Ethernet

High frame rate cameras for superior time resolved measurements

### Models 630076, 630077, 630078

TSI offers three cameras to meet researchers' unique measurement needs. Each camera operates at multiple frame rates to ensure all measurements are taken with the temporal resolution necessary for complete analysis of flow structures. In addition, capture duration can be customized by increasing the memory capacity in the camera.

Model	Frame rate (fps)	Memory (GigaByte)
630078-8GB	5,400	8
630078-16GB	5,400	16
630078-32GB	5,400	32
630077-2GB	2,000	2
630077-4GB	2,000	4
630077-8GB	2,000	8
630076-2GB	1,000	2
630076-4GB	1,000	4
630076-8GB	1,000	8

### Applications

- Particle Image Velocimetry (PIV)
- Stereo PIV for 3D Velocity Measurements
- Planar Laser-induced Fluorescence (PLIF)
- Spray Diagnostic Studies
- Flow Visualization





## INSIGHT 3G Image Capture and Analysis Package

The renowned **INSIGHT 3G** Image Capture and Analysis Software Package can be purchased with all of TSI's time resolved systems for more detailed analysis, including time-resolved measurements of velocity, concentration, temperature, and spray. For more specific flow velocity studies, TSI's software package even provides detailed analysis of time series data for higher order statistical analysis, including correlations and spectral information.

Decomposition (POD) toolbox which offers a method for extracting different scale modes in the fluid flow and evaluating their contribution to energy and Reynolds stress.

TecPlot® software is included as part of the **INSIGHT 3G** package.

Further rounding out TSI's software package, are the various MATLAB® software based toolboxes, including: time series toolbox for detailed time and space domain analysis and display; as well as the Proper Orthogonal

## Specifications

Features	630078
Sensor	CMOS array with 20 µm pixel
Pixel Resolution	1024 x 1024 pixels
Pixel Size	20 µm (H) x 20 µm (V)
Intensity Dynamic	12-bit ADC
Shutter	Global electronic shutter from 16.7 ms to ms to 1 µs
Frame rate (partial list)	5,400 fps at 1024 x 1024 pixels 10,000 fps at 768 x 768 pixels 20,000 fps at 512 x 512 pixels 30,000 fps at 512 x 352 pixels 100,000 fps at 320 x 128 pixels 250,000 fps at 128 x 80 pixels 500,000 fps at 64 x 32 pixels 675,000 fps at 64 x 16 pixels
Memory	8 GB, 16 GB, 32 GB
Phase Lock	Enables camera to be precisely synchronized with external devices
Lens Mount	Interchangeable F-mount and C-mount
Operation Modes	Free Run, Triggered and Frame Straddling
Dimension	160 mm x 153 mm x 242 mm
Weight	5.9 kg
Power	100V to 240V AC 1.5A, 50 to 60 Hz
Data Transfer	Gigabit Ethernet

Features	630077
Sensor	CMOS array with 17 µm pixel
Pixel Resolution	1024 x 1024 pixels
Pixel Size	17 µm (H) x 17 µm (V)
Intensity Dynamic	12-bit ADC
Shutter	Global electronic shutter from 16.7 ms to 2 µs
Frame rate (partial list)	2,000 fps at 1024 x 1024 pixels 3,000 fps at 768 x 768 pixels 6,000 fps at 512 x 512 pixels 15,000 fps at 256 x 256 pixels
Memory	2 GB, 4 GB, 8 GB
Lens Mount	Interchangeable F-mount and C-mount
Operation Modes	Free Run, Triggered and Frame Straddling
Dimension	120 mm x 120 mm x 216 mm
Weight	4.3 kg
Power	100V to 240V AC 1.5A, 50 to 60 Hz
Data Transfer	Gigabit Ethernet

Features	630076
Sensor	CMOS array with 17 µm pixel
Pixel Resolution	1024 x 1024 pixels
Pixel Size	17 µm (H) x 17 µm (V)
Intensity Dynamic	12-bit ADC
Shutter	Global electronic shutter from 16.7 ms to 2 µs
Frame rate (partial list)	1,000 fps at 1024 x 1024 pixels 1,500 fps at 768 x 768 pixels 3,000 fps at 512 x 512 pixels 7,500 fps at 256 x 256 pixels
Memory	2 GB, 4 GB, 8 GB
Lens Mount	Interchangeable F-mount and C-mount
Operation Modes	Free Run, Triggered and Frame Straddling
Dimension	120 mm x 120 mm x 216 mm
Weight	4.3 kg
Power	100V to 240V AC 1.5A, 50 to 60 Hz
Data Transfer	Gigabit Ethernet

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Contact your local TSI Distributor or visit our website [www.tsi.com](http://www.tsi.com) for more detailed specifications.



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