

# Flownizer 2D

## 2D2C Particle Image Velocimetry

Flownizer is the fluid measurement software which Ditect Co. developed with emphasis on operativity and processing speed.

It has the two measurement methods, PIV and PTV, and the intelligible menu manipulation by a tree structure is the feature.

It corresponds also to 64-bit OS or the SSE2/SSE3 extension command as well as the multi-core CPU correspondence for realizing high-speed processing.

It is the software which can be used in various fields, such as a wind tunnel experiment, a tank experiment, an engine and an air-conditioner, a river, and a blood flow.

Physical quantity calculation like vorticity, turbulent energy, Reynolds stress, etc. is also equipped standardly as well as vector calculation, a streamline, streakline, pathline, and a uniform line display.

**Correspondence in  
64-bit OS  
and SSE**

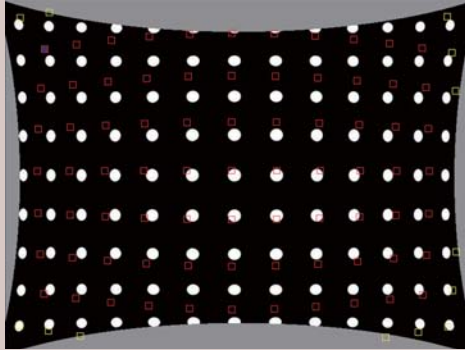
- Standard(direct cross-correlation), Image deformation, and Recursive method is supported for calculation
- Various functions, such as an ensemble correlation, CBC technic, Particle mask correlation, correlation average, Correlation Coefficient Map
- Intelligible screen operation and a tree structure



# Measurement of two-component velocity vectors in a 2D planar domain based on high image density Particle Image Velocimetry, which tracks small group of particle.

## Calibration

Flownizer2D supports the grid calibration method / projective transformation method and provides high accuracy data. These will correct the distortion and transforms XY data in 2D projection. A simple two-point projection conversion is also supported.



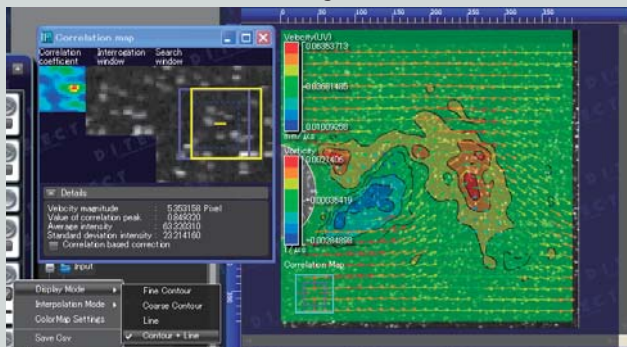
## Preprocessing function

Masking function will keep you free from unnecessary area's that will cause error vector. Preprocessing tools such as background differencing technique, filters and arithmetic will help you modify bad original images to analyzable images.



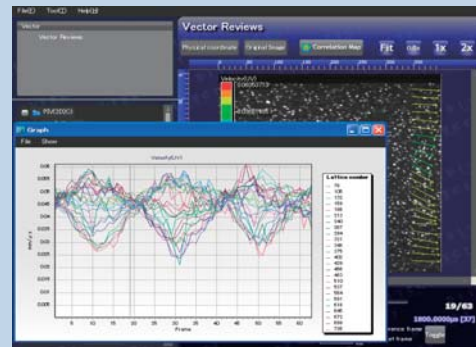
## Correlation Coefficient Map and Animation Display

Flownizer2D has an excellent animation preview function for the correlation coefficient map and other information. The dialogue displays interrogation window image, search window image and the color map of correlation coefficient in this two images



## Calculation result

Abounding result item such as Raw vectors, Average, Angles, Stream line, Streak line, Path line, Vorticity, Turbulent kinetic energy, Reynolds stress, Velocity gradient tensor, Standard deviation, Velocity gradient tensor can be visualized.



## Main spec

Measuring method	PIV 2D2C
Calculation method	Standard (direct cross-correlation), Image Deformation, Recursive
Calculation option	Correlation-based correction (CBC), Particle Mask correlation method, Correlation average
Preprocessing	Filter, Arithmetic, Brightness and contrast, H-dome filter, Inter-image, Mask
Post processing	Remove, Replacement, Smoothing
Vector output	Resultant (UV), U(x), V(y)
Analysis item	Raw vector, Invalid vector, Corrected vector, Mean vector, Instant-mean vector, Ensemble correlation, Correlation coefficient, Flow lines, Vorticity, Turbulent Kinetic Energy, Reynolds stress, Velocity gradient Tensor, Standard Deviation, Velocity gradient tensor
Graph display	Point, Line, Area (distance/velocity)
Supported image format	AVI, WMV(video), BMP, JPEG, TIFF, PNG(sequential still image)
Supported data format	binary (di5), CSV

## Operating Environment System requirements

OS	Windows7, 8, 8.1 (32 or 64bit)
CPU	Intel Pentium4 or more processor (Multi-core is recommended)
HD	2GB or more (10 GB or more recommended)
Memory	1GB RAM (3GB or more recommended)
Monitor	The display which supports the resolution of 1024 x 768 or more.
Graphic board	The graphics board corresponding to Shader Model 2.0 is required.

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