DITECT
Digital Image Technology

DIC software

DIPP-Strain

When black and white random patterns are being applied to the object, the software is able to measure the displacement and strain by using the digital image correlation method (**DIC**).

ひずみ解析ソフトウェア

DIPP-Strain

- Various materials such as metal, resin, wood, concrete, glass, rubber and others can be measured.

- Both 2D DIC and 3D DIC (stereo) are available. 2D measurements can be done with only one camera, and for 3D full-field measurement two and more cameras are required.

- We can offer thorough systems including high-speed cameras and lightings, as well as software only proposals.
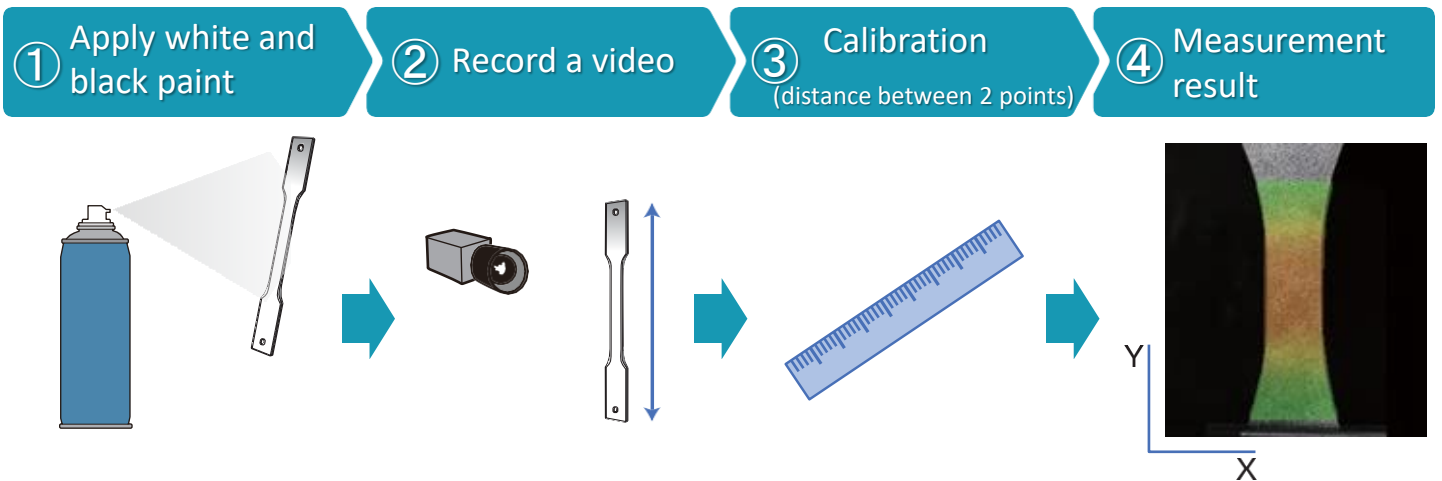
DIPP-Strain is a low-priced strain analysis software developed by DITECT corporation that has developed various analysis solutions widely accepted by end-users because of the ease of use, high processing speed and impressive accuracy.

2D strain analysis software
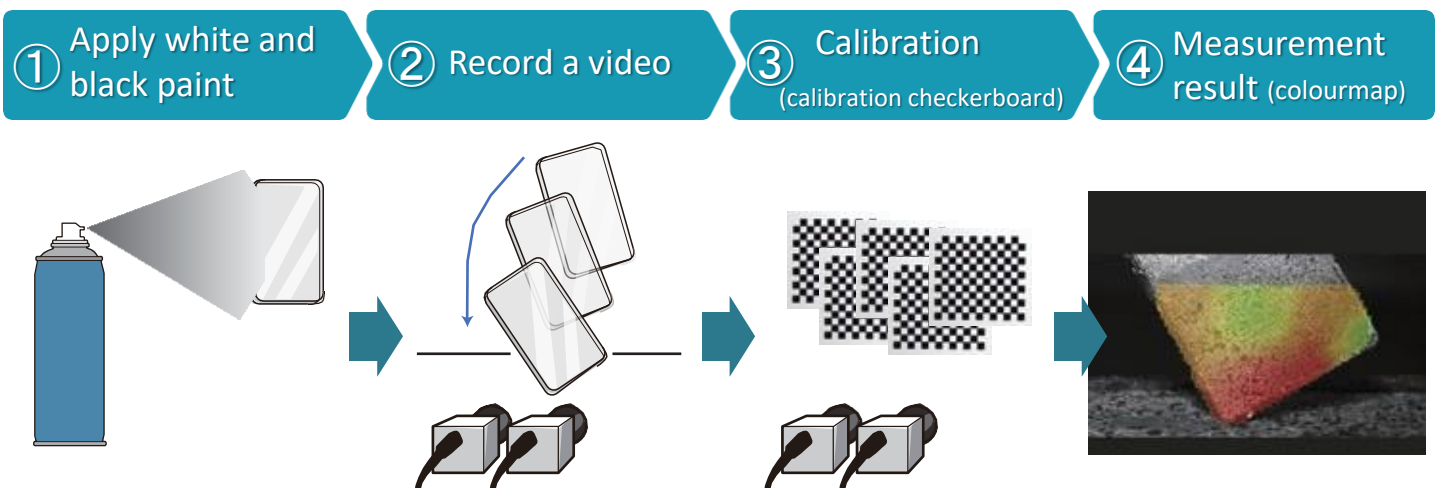
DIPP-Strain 2D (*Displacement of a plane surface)

The object is recorded with one camera and the strain can be measured from the change of the random patterns on the object's surface.

① Apply white and black paint → ② Record a video → ③ Calibration (distance between 2 points) → ④ Measurement result

3D strain analysis software

DIPP-Strain Stereo (*3D full-field measurement)

The object is recorded with two cameras and the 3D displacement can be measured, as well as 3D strain distribution.

① Apply white and black paint → ② Record a video → ③ Calibration (calibration checkerboard) → ④ Measurement result (colourmap)

A force tending to pull or stretch something to an extreme or damaging degree is called "STRAIN". Strain has no unit but ε (epsilon) and % (percent) might be used instead.

Digital Image Correlation (DIC)

The subset set at the frame 1 is searched at the frame 2 amongst the surrounding pixels. The area with the highest correlation coefficient is set as a new subset after displacement. Software repeats this process and outputs the coordinates accordingly.
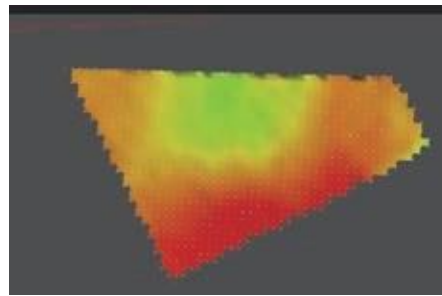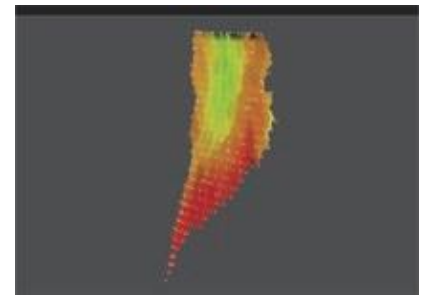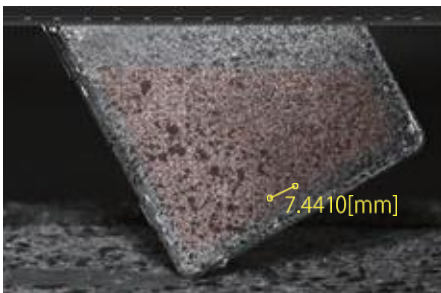

Subset

Subset after displacement

Subset before displacement

y

x

Before deformation

After deformation
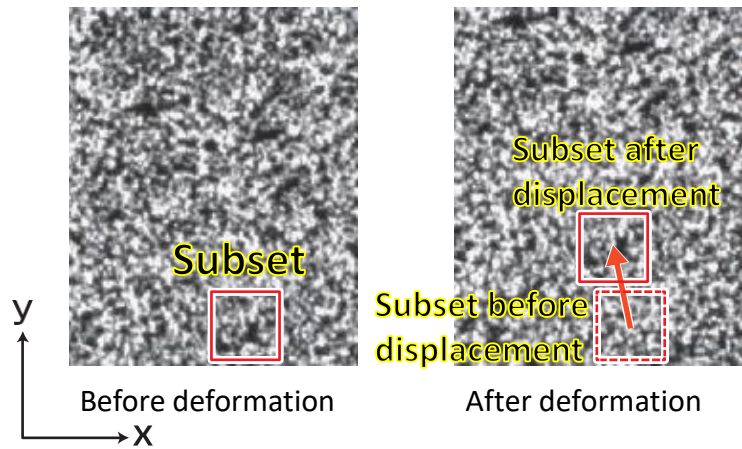
Output Data

Strain colour contour
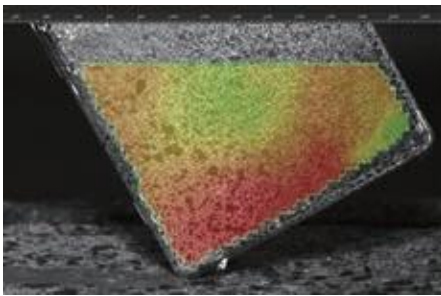
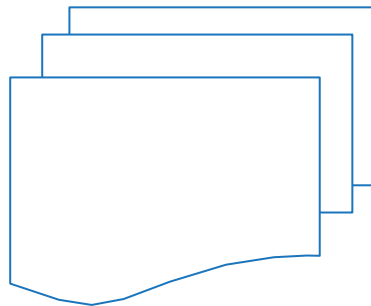### 3D animation
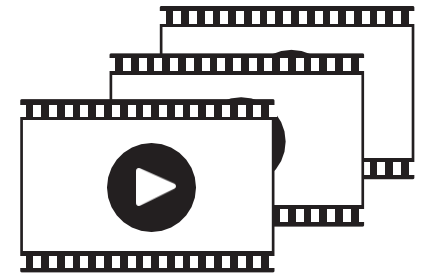

3D animation

Two point calibration

7.4410[mm]

SCV file

Movie file

Checkerboard calibration plate

Various sizes are available. We can offer you one that suits your application best.

Part No.	Grid size
DS-CAL-2. 0	2mm
DS-CAL-3. 0	3mm
DS-CAL-4. 0	4mm
DS-CAL-6. 0	6mm
DS-CAL-8. 0	8mm

※ Calibration plates samples

Configuration

Product	Features	Deliverables	Optional items
DIPP-Strain 2D	2D measurements	Set-up CD, USB licence key, Manual (PDF)	Additional USB key
DIPP-Strain 2D/Stereo	2D measurements 3D stereo analysis	Set-up CD, USB licence key, Manual (PDF)	Additional USB key Calibration plate
DIPP-Strain Stereo	3D analysis extension (for users of 2D version)	Set-up CD, USB licence key (to replace 2D version), manual (PDF)	

Related products

X-ViewerAD

High speed analogue synchronous input system - X-ViewerAD

Analogue input terminal

DITECT high-speed cameras
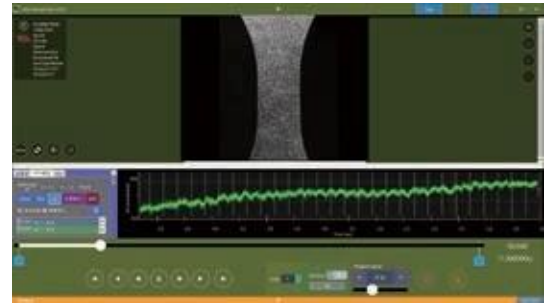
System requirements

Recommended	OS	Windows 10/11 Home/Pro (64bit)
	CPU	Intel Core i5 or higher (multicore)
	HDD	10 GB or more
	RAM	8 GB or more
	Display	Resolution 1920 x 1080 or better

Main outputs	2D	X-direction strain, Y-direction strain, shear train, major strain
	Stereo	Volumetric strain, logarithmic strain, deformation gradient tensor
Input formats		AVI, WMV, MPEG, CINE, JPEG, BMP, GIF, TIFF, PNG
Output formats		AVI, WMV, MP4, JPEG, BMP, PNG

Camera specs recommendation

Camera type	Resolution	Frame rate	Sensor size	Lens mount
Static tests	4096 x 3000	32 fps	1.1	C-mount
Dynamic tests	2560 x 2048	250 fps	1	C-mount
	1920 x 1080	2000 fps	4.3	C-mount