

EduDIC is a complete Digital Image Correlation (DIC) measurement system, designed as a simple and convenient educational training tool for academic courses in experimental solid mechanics.

This easy-to-use system allows academic instructors to effectively present the optical measurement technique of DIC for materials testing to the engineers and scientists of tomorrow.

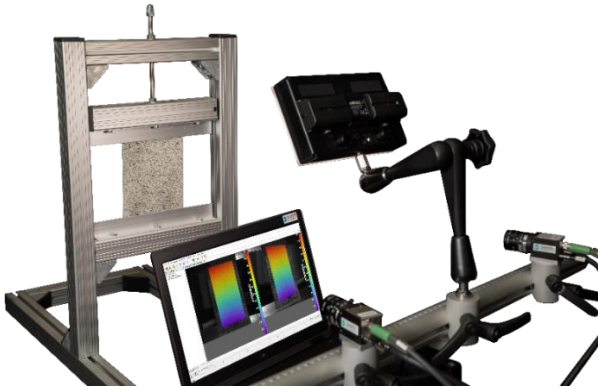


Figure 1 - EduDIC in Application #1

The EduDIC system is designed with minimal hardware components, thus making connection easier and setup quicker. USB cameras operate in master/slave camera mode, which is a special configuration that does not require connection to an external triggering box. Cameras only need to be connected to one another and to a laptop PC – and that’s all! In addition, the illumination system does not require any external hardware.

Materials testing in academia is very rarely repetitive. As such, the EduDIC system is versatile, like the technology it encompasses. Cameras can be positioned and arranged freely on a mounting bar to better capture standard testing applications, such as; tensile, compression, bending, torsion, buckling and even (quasi-static) fracture mechanic tests. Utilize the benefits of full-field measurements, with one flexible measurement system!

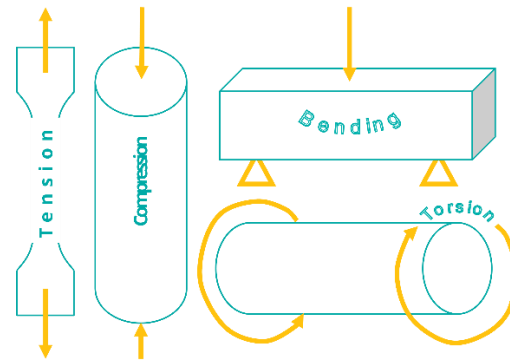


Figure 2 - Typical EduDIC testing applications

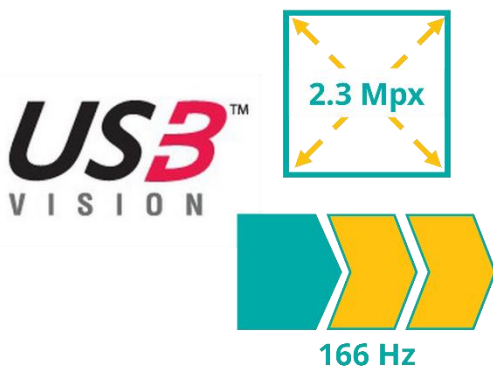


Figure 3 - Measurement performance of the EduDIC system

Measurement performance of the EduDIC system is harnessed using the technology of USB Vision. Up to two, 2.3 Mpx cameras can be used for the EduDIC system. USB3 cameras are capable of utilizing a maximum frame rate of 166 Hz. These dynamic cameras can therefore be used for a wide range of low and medium-speed materials testing applications!

EduDIC Features



Master/Slave Camera Mode
Cameras only need to be connected to one another and to a laptop PC – and that’s it!



DIC User Application Module
1-year free access to the online training course via the Dantec eLearning platform.

Istra4D – EduDIC

For quick and dynamic visualization of test measurement data, Istra4D now provides a new animation function that allows users to visualize all acquired measurement steps within one video animation format. This feature is perfect for presenting movies with combinations of; 2D-visualizations, 3D-visualizations, temporal and spatial measurement plots. All visualizations can also be exported in .avi movie format.

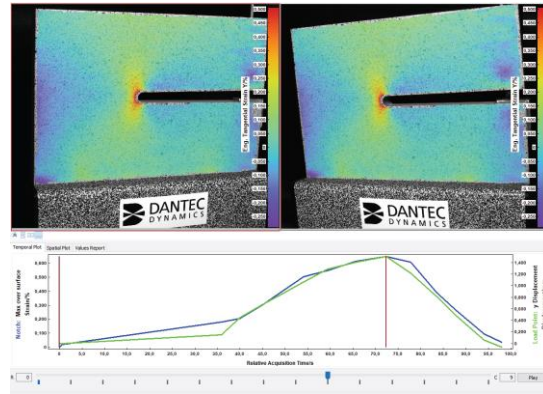


Figure 4 – Measurement step animation

There is nothing quite like visualizing a measurement process through watching an animation video! Istra4D gives users the opportunity to export and generate movie files (in .avi format) of entire measurement sequences. A movie can be generated from a selection of evaluated step images with combinations of; report results, spatial plots and temporal plots. Various codecs are also available for compression of the movie. Frame rates can also be adjusted to speed up or slow down the visualization speed. Measurements made using Istra4D are always worth watching!

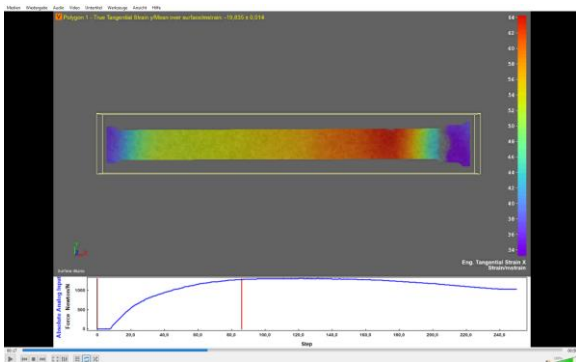
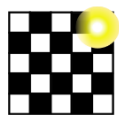


Figure 5 – Movies created via Istra4D

Istra4D Features



Automatic calibration wizard
With real-time tracking and adaptive calibration quality feedback



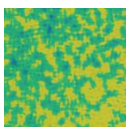
Startpoint finder
Automatic searcher for all startpoints in all images for all camera views.



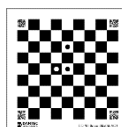
QR-coded calibration targets
Automatic identification of the presented calibration target via QR-code recognition



Shutter time finder
Automatic illumination setting tool for detecting the optimum shutter time exposure



Speckle quality evaluator
Tool for real-time qualification of the reachable correlation accuracy of the object pattern.



Create & Print Targets
User-definable calibration targets can be created and printed using Istra4D.



Export graphic files
Allows users to export graphic files as .bmp, .tiff, .png or .jpeg, formats



Export data files
Allows users to export data in in ASCII, HDF5 series or in STL (STereo Lithography) format.

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