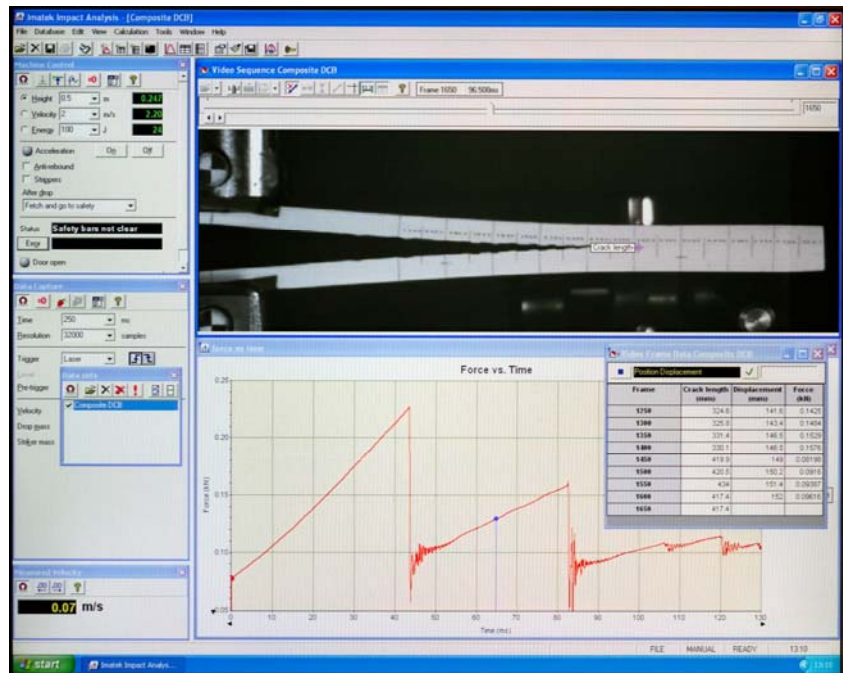


High Speed Video

The high-speed option is available for any of the Imatek range of impact testers, to greatly enhance understanding of the behaviour of a specimen as it undergoes an impact.

Imatek offer a fully integrated system under the control of the ImpAcqt software. This is used to both control the camera and analyse the resulting video sequence.

Since the camera and the data acquisition share the same trigger, data points and images can be precisely correlated. A video sequence provides a great deal of qualitative information about the impact event, and the software also allows quantitative information to be extracted.



High-speed video offers an advantage in many application areas, but is particularly useful when complex structures are being tested, and for high-rate tensile testing.

Either of Imateks two video systems can be operated in stand-alone mode, independently of the impact tester and ImpAcqt software. This makes them general purpose tools that can be utilised by other parts of a customers operation, helping to justify the capital outlay.

Imatek offer colour or monochrome systems. In general, Imatek recommends the use of monochrome cameras as these provide higher sensitivity and have a lower processing overhead.

As standard the HSV option provides a complete package including software, camera, choice of lenses, lighting controller, lights and tripods/stands.

Two different systems are available. These are identical except for the performance of the camera.

	V7000	V4000
Resolution	800 x 600 pixels	512 x 512 pixels
Full frame rate	6,600 per second	2,100 per second
Frame rate at 512 x 512	11,500 per second	2,100 per second
Frame rate at 256 x 256	36,600 per second	7,400 per second
Frame rate at 32 x 32	190,000 per second	90,000 per second
Minimum shutter speed	2µs	10µs
Sensitivity (monochrome)	4800 ASA	4800 ASA
Sensitivity (colour)	1200 ASA	1200 ASA

Imatek Impact Test Systems – High Speed Video Option

Lighting

Imatek can supply a range of different lighting systems to suit customers applications. Alternatively customers can provide their own lights.

Imatek supply lights in conjunction with a lighting controller. This enables the lights to be activated immediately before the impact test, and off immediately after. This helps prevent damage to thermally-sensitive specimens.

Full manual control of the lights is also available.

Software Integration

Full integration with the ImpAcqt software turns the high-speed video option into a very powerful analysis tool. It also makes the complete system easier to operate, since parameters such as capture time, pre-trigger and trigger source only need to be set once, and these then apply to both impact data acquisition and the video capture.

Software features include:

- Selection from the software of camera frame rate and camera capture area.
- 'Live' video window for camera set-up.
- Automatic selection of the camera capture time based on the sweep time of data acquisition.
- Automatic triggering of the camera at the same time as data acquisition.
- Automatic control of lighting to switch lights on during the impact event (with user-defined warm-up time). Manual override possible for setting up the camera.
- Automatic saving of captured video within the same file as test data.
- Removal of video sequence from test data (delete or save to separate .AVI file).
- Add existing video (.AVI file) to test data.
- Correlation between video frames and acquired impact data.
- On-screen display of video frame linked to graph cursor, or manual frame selection.
- Multiple on-screen video displays possible, showing images from multiple data sets or multiple graph cursors.
- On screen display of video sequence, selectable play-back speed.
- Manual co-ordinate extraction from video frames, using cross-hair or graticule.
- Procedure for calibrating distances (x, y) in video frames.
- Extraction of measurements (vertical, horizontal, arbitrary angles) from video frames; automatic insertion into results table.

The HSV option provides a powerful visual analysis tool for studying high-rate impact events, either as an integrated system, combined with an Imatek impact test system, or as a standalone video capture and analysis system.