

Dynamic Displacement

The Imatek dynamic displacement system provides an additional channel of data acquisition that measures and records the displacement of the impact mass throughout the experiment.



DDS-10

This provides the software with directly measured displacement data to replace that which would be normally calculated from integrating the acceleration data. Dynamic displacement offers increased accuracy in test applications where the impact involves a large change in velocity.

Key features of the Imatek system:

- *Digital measurement technique.* Does not require periodic calibration.
- *High speed.* Allows displacement data to be acquired at the same rate as force and acceleration data.
- *Non-contact.* Does not interfere with the impact event.

Specifications

Type	Non-contact optical linear encoder
Range	10mm full scale to 200mm full scale
Resolution	10µm
Maximum speed	20m/s
Sample rate	3,000,000 samples per second (maximum)
Cumulative error	10µm + 20µm per metre
Temperature co-efficient	11µm/m/°C

Example Applications

- Flow stress analysis
- Energy absorption testing of polymeric foams
- Pedestrian safety applications
- Non-destructive testing of composites
- High rate tensile testing of polymers and metals
- Resilience testing of rubbers