

ADVANCED FALLING DART IMPACT TESTER (RR/FDT-A2)

SPECIFICATIONS

(SUPPLIED AS STANDARD)

- Conforms to ASTM D4272
- Built in Microprocessor
- Floor Mounted
- Pneumatically operated
- Simple set up and operation
- Low maintenance.
- Unique constant tension sample clamping
- 2 hand safety operation for clamp and dart release
- Fixed height assembly 0.66mtrs
- Method A 1.5" Stainless Steel Tip and weight set.
- Set of 4 x 227g weights

WEIGHTS & DIMENSIONS: RR/FDT-A2

Net Weight (kg)	75
Width (cm)	53
Depth (cm)	72
Height (cm)	260
Voltage: 240V 60 Hz / 110v 50Kz	

Ray-Ran

SAMPLE & COMPONENT TESTING

ADVANCED FALLING DART IMPACT TESTER A2

Utilizing on-board microprocessor technology, the Ray-Ran Microprocessor Controlled Falling Dart Impact Tester has taken falling dart testing machines to an advanced level at an affordable price. Built with operator simplicity in mind, its ease of operation and high accuracy makes it ideal for product development and quality control within production, research and development labs and teaching institutions.

The break energy that causes thin flexible materials such as plastic film, paper and composite sheets to fail under specified conditions of impact from a free-falling dart has never been easier to establish. Complying with the ASTM D1709 A&B and equivalent ISO standard and ASTM D4272 and quick pass/fail test. The apparatus uses photocells to measure the energy (joules) to break or cause failure to the sample being tested. Usually manual testing requires at least sixty drops for each sample to gain a good result. For the Ray-Ran Microprocessor Controlled Apparatus this is greatly reduced. For perfect energy readings on new samples, a quantity of film will be required to firstly establish the working range of the drop weight required as the dart must completely fall through the sample to give an energy reading during a test. This test is very simple to conduct using the Break Mass test. Once the weight to pass through the sample has been established a working

range of 50% of the dart weight should be good enough to produce repeatable results. If the break mass is already known, then the Break Energy test will give you your energy reading in Joules

The methods of holding the test specimen and releasing the dart are designed so that they may be accurately repeated for each test performed. Test specimens are simply clamped in the unique two-piece pneumatic clamp system which gives a constant tension across the surface area of the specimen ensuring test repeatability. A dart of a known weight is then allowed to free fall and hit the sample. To comply with the relevant test standards, a telescopic shaft for 660mm and 1.5mtr drop heights is used. The dart release mechanism is solenoid actuated for easy release and requires the use of both hands to release the dart to ensure optimum operator safety. A fully electrical interlocked guard is also supplied to ensure the operators safety from falling and rebounding darts and for ruptured samples a dart return shoot is supplied for easy dart retrieval after the test.



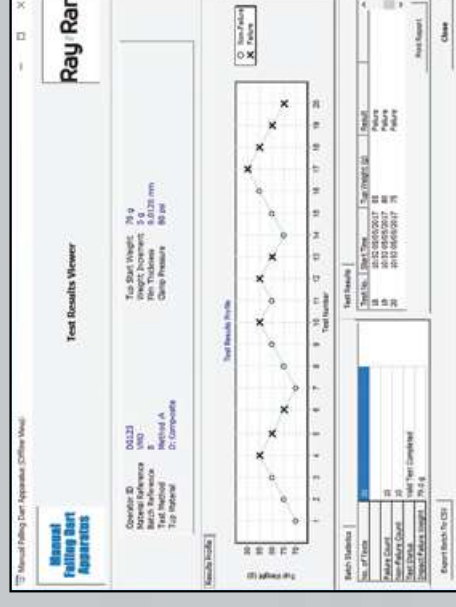
TECHNI-TEST MAKES A STRONG IMPACT

Techni-Test is the easy to use software package supplied as standard with the **Advanced Falling Dart Impact Tester** which allows user defined test data and test results to automatically download from the apparatus for results presentation and data reporting.

Test data downloaded to **Techni-Test** includes operator, material reference, batch reference, test type, impact velocity, hammer weight and impact energy.

From the results graph each impact test value is clearly identified giving accurate data analysis of the material under test. The graphical impact results can be displayed in KJ/M or KJ/M² by simply selecting the appropriate results profile tab at the top of the graph. By placing the cursor over each plotted point the impact value can also be read on the screen. For internal Quality Control procedures at a glance high and low limits are clearly displayed on the graph in red showing instantly if the material is a pass or fail. High and low limits are set on the main screen within the **Techni-Test** software so they can be altered easily without having to re-enter test data and re-test material samples. Tabular results are also displayed under the test results tab for quick results processing and comparison analysis between test samples. **Batch** statistics such as **Mean** and **Co-efficient of Variation** (COV) are also displayed and are updated after each test result is downloaded.

Test results can be printed directly from the **Techni-Test** software in a report format or can be saved and exported as .CSV files which can be opened with Microsoft Excel in



tabular form which can be manipulated to your specific requirements such as preparing a graphical presentation or copying the results to a Word document for a report presentation if required

In Test Results Viewer mode, users have the ability to upload saved results from previous test for Material Comparison, Data Manipulation or File Export. Abnormal results that could be caused by air voids are clearly identified and can be removed from the test data bringing the batch statistics into a normal range ensuring that the test procedure does not have to be repeated saving time and material. Test results displayed in viewer mode can also be exported as .CSV files easily.

The large on-board liquid crystal display (LCD) provides simple on-screen instruction and using the alpha/numeric membrane keypad test parameters such as usernames, material reference numbers, batch numbers and dart types are entered and stored in operator lists for future recall and results presentation. Selecting the type of test is done at the press of a button and the testing parameters such as drop height; dart weight and sample size are entered to give the required testing conditions. At start of each batch of tests a simple calibration of the apparatus is conducted. Batch statistics of mean, standard deviation and co-efficient of variation are automatically updated after each test and results are shown in graphical and tabular format for analysis when downloaded to the supplied Techni-Test PC software. For quality control purposes High and Low limits can be defined when test results are downloaded showing the user instantly if the material is a pass or fail.

The apparatus is supplied as standard with Ray-Ran's Techni-Test Windows based PC software for connection to the apparatus via a mini USB or ethernet connection. Test results can be printed directly from the Techni-Test software or can be saved and exported as .CSV files which can be opened with Microsoft Excel in tabular form which can be manipulated to your specific requirements such as preparing a graphical presentation or copying the results to a Word document for a report presentation if required.

Floor mounted only.