

TECHNICAL SPECIFICATION

- Advanced dedicated microprocessor control,
- Touch membrane Alpha / Numeric keypad
- Easy to read liquid crystal display,
- Sequence logic menu auto prompt selection
- RS232 interface connector
- Ethernet Interface connector for LAN Networking
- Self-calibration procedure for wind and bearing resistance.
- High resolution positional encoder
- Variable pendulum velocity up to 3.8 m/s
- Hammer energies up to 50 Joules
- Results in KJ/M and KJ/M²
- Izod, Charpy, Tension, Component, Pipe and Puncture testing.
- Electronic levelling device
- Safety guard
- Solenoid pendulum release with audible pre-warning
- Tabular and graphical statistical analysis
- **Techni-Test** PC software
- Product User Manual
- CE declaration certificate
- Traceable Calibration Certificate
- 1 year return to base warranty

OPTIONAL ANCILLARIES

- Izod Vice
- Charpy Rest
- Tension Impact Rest (Specimen in bed method)
- Puncture Impact Fixture
- Pipe Rest
- Component fixture to customer requirements
- Variable weight impact hammers up to 50 Joules
- Thermal printer
- Full safety enclosure
- Low Temperature Chamber

WEIGHTS & DIMENSIONS: RR/IMT

Net Weight (kg)	110
Width (cm)	63
Depth (cm)	50
Height (cm)	76

ADVANCED UNIVERSAL PENDULUM IMPACT TESTER WITH PUNCTURE IMPACT

Determining the most cost effective packaging material specification for a particular application can be a daunting proposition. The impact strength can be crucial if the handling of the package cannot be controlled, especially if objects with sharp profiles are to be packaged and reliable information is not available on the material behaviour under different load conditions. The Ray-Ran **Advanced Universal Pendulum Impact Tester** has been designed to overcome these problems using the optional **Puncture Impact** fixture which makes it ideal for research and development within the packaging industry.

The Puncture Impact Tester can examine the material behaviour of thin brittle or ductile materials in a combination of different ways. By using different Tup Strikers, the mode of failure can be analysed to represent direct comparisons with other materials and produce in-house quality control standards, or to simulate actual service conditions. For instance, if impact elongation properties are required for ductile materials, then a large spherical radius Tup Striker is used to induce a high degree of lateral elongation of the material before the Tup Striker can penetrate through the material to the point of failure. If however, a more brittle failure (minimum elongation of the material) is required, a more pointed Tup Striker is attached to the hammer to impact on the sample. If required, the Tup Striker can simulate the actual



object to be packaged to see how the packaging material would stand up to poor handling in service.

It is possible that the direction of material flow of the specimen

SAMPLE & COMPONENT TESTING

could influence the test result therefore the test sample takes the form of a circular specimen, up to 500 microns thick which is clamped in a sample holder. To ensure repeatability, a rubber "O" ring is used to exert the same tension across the test sample and to prevent the sample moving when under test. The unique design of the variable weight pendulum hammer enables sheet material samples to be tested and punctured for ductile and brittle failure analysis. An impact hammer energy range of up to up to 25 Joules and testing velocities up to 3.8 m/s can be achieved ensuring the toughest of materials can be tested. To calculate the impact energy, the apparatus records the lost angle of the hammer after impacting a test sample against the angle recorded after calibrating the hammer. The resulting lost angle is calculated as the test sample's impact energy by the advanced microprocessor system.

The large on board liquid crystal display (LCD) provides simple on screen instruction and using the alpha/numeric membrane keypad test parameters such as user names, material reference numbers and batch numbers 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 impact hammer weight, impact velocity 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 for bearing resistance and windage and after each test sample has been tested, the results are displayed on the LCD giving the impact energy in Joules. 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.

RAY-RAN

