

# UNRESTRAINED LINEAR THERMAL FILM SHRINKAGE LIQUID IMMERSION METHOD

Designed and manufactured by Ray-Ran, the **Unrestrained Linear Thermal Film Shrinkage** apparatus or more commonly referred to as the liquid immersion method, is used to determine the thermal shrinkage of plastic film & sheeting.

As a result of manufacturing processes, internal stresses may be locked into a film or sheet which can be released by heating which causes shrinkage of the material. The amount of shrinkage which takes place is dependent on the temperature during the test. The results are plotted on a graph showing percentage shrinkage against temperature.

Manufactured to a high standard, the apparatus is supplied with electronic digital temperature control, temperature bath and all tooling accessories.

The integrated temperature bath fitted with digital temperature controller, heater and a PT100 platinum resistance



thermometer accurately maintains the test temperature to within  $\pm 0.5$  °C. To ensure temperature stability within the bath, a stirrer motor system is fitted and the built in electronic timer monitors the duration of the test.

The apparatus comes as standard with stainless steel specimen holders which hold the film samples of 100mm x 100mm square. A sample cutting template of the same size is also supplied to ensure that the test samples are accurately cut to the required test dimensions.

To conduct a simple test, the apparatus is heated to test temperature and the test samples immersed in the temperature bath medium. After 10 seconds they are removed and allowed to cool back to room temperature. A measurement of the sample is taken longitudinal and transverse directions and the percentage shrinkage calculated.

## TECHNICAL SPECIFICATION

- Simple determination of Unrestrained Film Shrinkage
- Liquid immersion method
- Simple to operate
- PID electronic temperature control
- Resolution 0.1°C
- PT100 PRT sensor accurate to 0.1°C
- Integrated stirrer motor
- Electronic timer HR:MIN:SEC
- Stainless Steel liquid bath
- Sample cutting template 100mm x 100mm
- 6 off Sample specimen holders (Stainless Steel)
- Product user manual
- CE declaration certificate
- 1 year return to base warranty
- Conforms to ASTM D2732

## OPTIONAL ANCILLARIES

- Sample specimen holders (Stainless Steel)

### WEIGHTS & DIMENSIONS: RR/FSL

Net Weight (kg)	25
Width (cm)	50
Depth (cm)	40
Height (cm)	50

