

General Specifications for Texture Analyser

Application:

An instrument performing tests in compression and stretch modes on solids, films, semi solids and gel type products for analysing their deformations / resistance under stress. The instrument should be software operated and be strong enough to perform multiple parameter analysis such as compression strength, tensile strength, resistance at break, % elongation, Young's modulus, friction parameters, fracturability, brittleness, stiffness, consistency, firmness, resilience, powder flow behaviour, caking and cohesion, bloom value, gel strength to name a few. For this to achieve the instrument must have the following minimum hardware and software features:

Hardware Features:

System should be provided with a load frame of 50 Kg with facility to attach multiple load cells on the same frame to allow flexibility in sample analysis. The instrument should have following basic product specifications:

- Load cell: Multiple capacities to choose from favouring the type of product. The options so available should cover soft product testing with low capacity load cell and stiff products with high capacity load cells. These load cells should be interchangeable with audit friendly features.
- Load cell accuracy: Minimum 0.5% of reading down to 1% of load cell capacity
- Force Resolution: Min. 0.1 g
- Distance Resolution: Min. 0.0025 mm
- Speed Range: 0.01 to 40 mm / second. This allows for slow disintegration testing as well as high speed extension testing.
- Speed accuracy: Better than 0.1%
- Software Data Acquisition Rate: 0.1 to 500 points per second to allow for flexibility of data collection. This rate should be independent of load cell being used and the speed at which the test is being performed.
- PC Interface: Preferably USB
- Calibration for force and distance should be user friendly and easy to perform.
- There should be a possibility of frame centralization to offset bends when overloaded or put up against excessive force.
- Unlimited number of possible test sequencing to allow the user a flexibility in operation during research activities.

Software Features:

- Software should provide complete database of family of probes and attachments and include comprehensive library of application reports, help guide covering a wide range of products and tests for ease of operating.
- The software should be able to perform statistical analysis by means of generating control and average curves and comparing test curves with such standard curves.
- Software should be able to provide details on the most recent version and update easily.
- Report generation should be in a non editable format.
- The software should have feature to measure area, gradient, mean, time difference, ratio, travel, count positive peak, count negative peak, dispersion, average drop of, volumic mass, force maxima and force minima. The software should have the feature to mark events like fracture, first peak, maximum force etc.

Minimum accessories required with the Instrument:

- a. Load cell of 50 kg capacity
- b. Platform for samples
- c. 75 mm Compression plate
- d. 2N needle probe for penetration test
- e. Tensile grips to perform extension tests on films
- f. Film support rig for performing burst test on films