

SPECIFICATIONS

Measurement Principle	Dynamic yarn testing
Test Speed	Adjustable, 20-500m/min
Yarn Input Tension	1~300g kept constant via Tension Arms (Max available Input Tension depends on the Tension Head installed.)
Output Tension Measurement	100g tension head (standard) 5g, 10g and 250g tension head options are available
Draw Ratio / Elongation %	25x draw / 2400% Elongation
Application Range	Elastomeric (spandex), Spun and Filament yarns
Available Test Types	Yarn tension measurement at 20 selectable draw ratios up to 50x Elongation % measurement under constant tension. Pin Friction measurement (complies with ASTM 3108) Unwinding tension measurement
System Computer	Windows based, printer, monitor, keyboard and mouse
Statistical Results	Average Tension / Coefficient of Friction / Elongation % Min and max values Standard Deviation and CV% High and Low limits Ability to export the results to Excel
Options	Elastomeric Yarn Feeder (EYF / LH 455) option for Unwinding test Non-contact heater for Hot Air Shrinkage option Hot Pin Friction test option

MODEL

LH-450 Constant Tension Tester Electronic Drive

Electrical	115-220 Vac 50-60 Hz, 1.2Kw
Air	70 psi, clean air required 100 CFH (3 SCMH)
Dimensions	700 x 1050 x 700mm (28 x 41x 28 inches)
Weight	90kg (200 lbs)
Shipping Dimensions	1600 x 1200 x 1530mm) (63" x 47" x 60" inches)
Shipping Weight	320 kg (700 lbs)

**Constant Tension Tester
for Elastomeric Yarn, Redesigned !**



Elastomeric yarn has high stretch and recovery properties, which are affected by tension on the yarn during fabric production and yarn covering.

Lawson Hemphill Constant Tension Transport for Elastomeric Yarns, CTT-E is a dynamic quality control test instrument, specifically designed for the elastomeric yarn market in mind.

Conventional static tensile testers can only measure small test lengths at slower test speeds. This does not reflect the process conditions that the elastomeric yarns will be facing. The CTT-E provides a dynamic test platform to measure the yarn properties and performance factors such as Draw Ratio, Elongation %, Unwinding Tension, Hot Air Shrinkage as the yarn is moving at test speeds from 20m/min up to 500m/min.

This speed range along with the sensitive tension heads provides true information regarding yarn behavior during fabric formation, air or mechanical covering and comfort level of the end product.

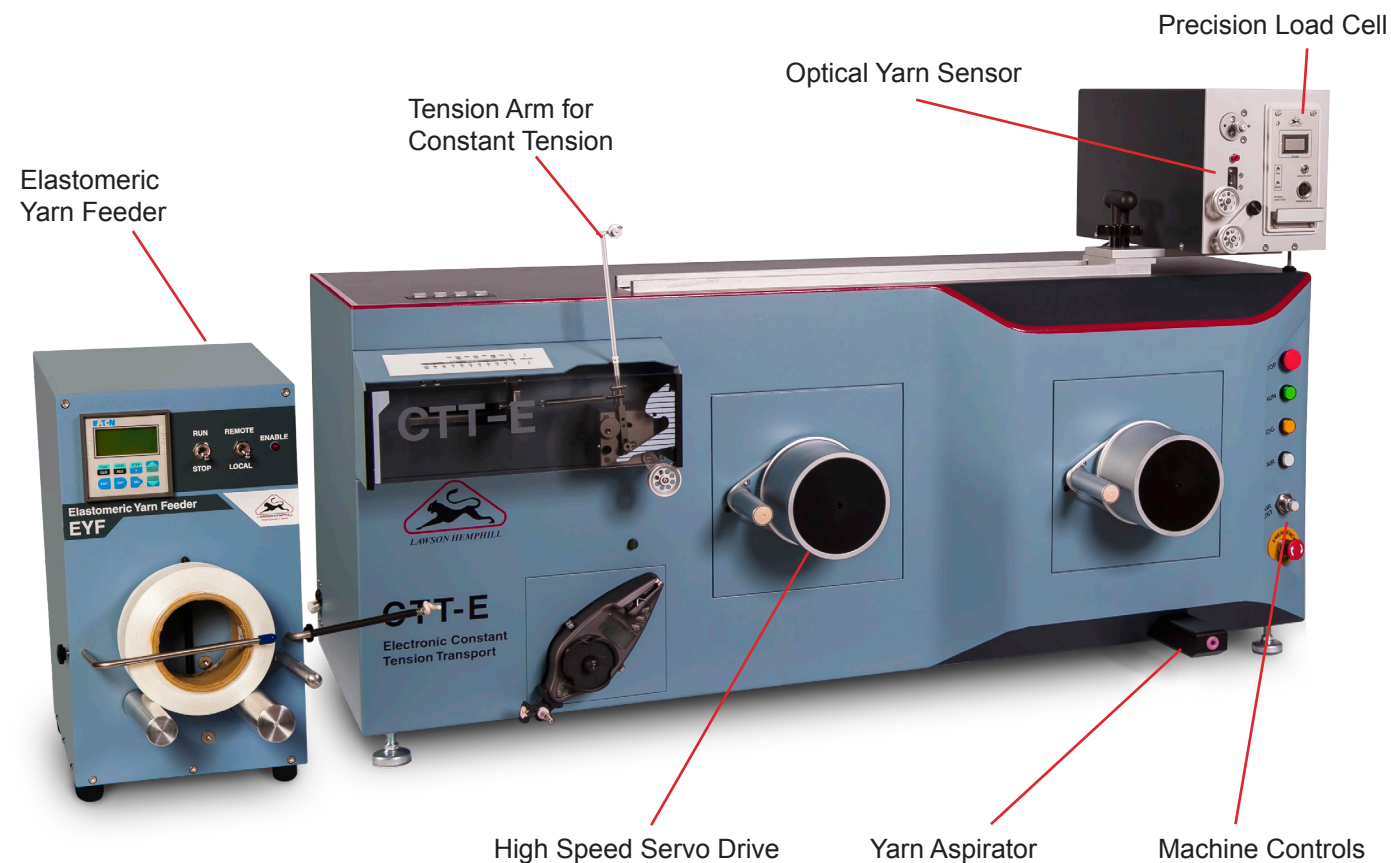
The CTT-E can be equipped with optional Elastomeric Yarn Feeder to measure the Unwinding Tension under conditions that are very close to zero draft.

CTT-E APPLICATIONS

The CTT-E is easy to operate and it comes with all three software programs installed and ready to use. Simple changing of the test module allows measurement of:

- Draw Ratio
- Elongation %
- Pin Friction (metal and ceramic pins)
- Unwinding Tension
- Shrinkage %

CTT-E FEATURES



DRAW RATIO TEST

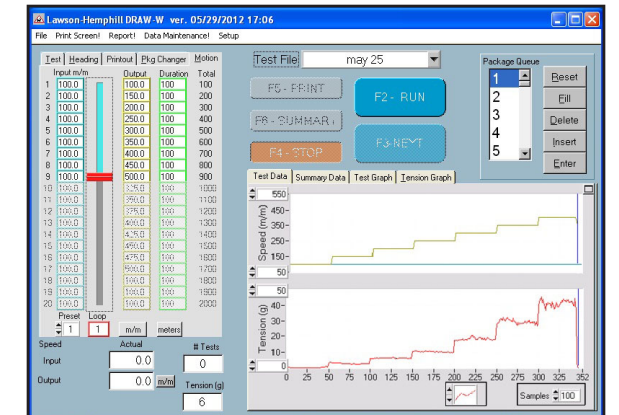
This test measures the tension on the yarn when it is drawn up to 25x (2400% elongation). The drawing is achieved by the speed difference between the CTT-E input and output rolls.

Up to 20 consecutive draw ratio levels can be entered to measure the tension on the yarn as it is being stretched. The CTT-E draw rolls will follow the programmed draw levels.

Different tension heads such as 5g, 10g, 100g or 250g are available to measure the yarn tension within the desired sensitivity range.

The Draw Ratio test applications include:

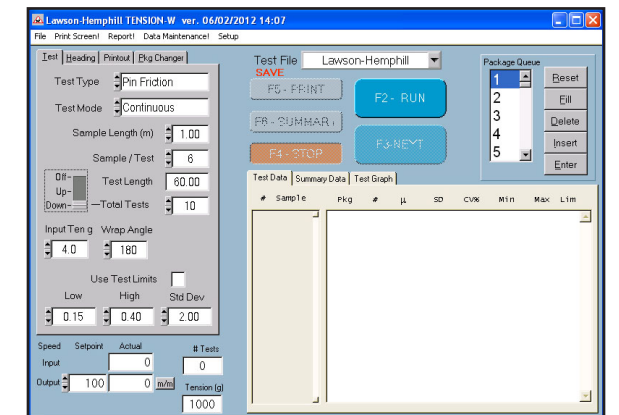
- Measuring the yarn draftability
- Performance check before air or mechanical covering process
- Wear comfort prediction



ELONGATION TEST

This test measures the Elongation % of the yarn under constant tension at test speeds up to 500m/min.

The CTT-E Tension Arms maintains the tension levels constant throughout the test while the yarn is moving.



PIN FRICTION TEST

This test measures the Coefficient of Friction of yarn to ceramic pins or yarn to metal pins. This test complies with ASTM D 3108.

The results of this test are used to study the effect of different spin finish types on the yarn as well as how much finish is needed.

Higher coefficient of friction usually indicates that the tension on the yarn might increase during the processes such as covering, knitting, weaving, causing yarn to break.

