

Lab**TEX**
Dynamic Yarn Testing Equipment

LabTEX

The LabTEX range of dynamic yarn testing instruments is designed to provide accurate high volume QC testing and product characterisation.

All LabTEX instruments provide state of the art analysis of running yarn, with detailed quality data produced in a database format that can be exported in to a plant QC system.

A wide range of characteristics can be tested on LabTEX instruments with up to 4 different tests available on a single LabTEX unit. This provides extensive data on key quality characteristics that is not available on any other testing equipment.



LabTEX IR System

LabTEX Tests

The following tests are available on Labtex Instruments.

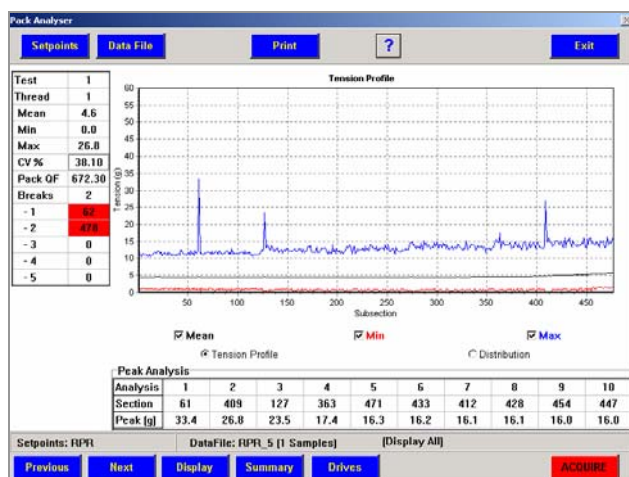
Interlace Analysis – Accurate high speed statistical analysis of the interlace level of any type of continuous filament yarn. Full statistical data is provided including node distribution and maximum distance between nodes.

Interlace Retention – In addition to the Interlace analysis this automatic test provides an accurate assessment of node strength by stretching the yarn at a range of underfeeds, either with a full 10 point characterisation or a quick 2 point QC test.

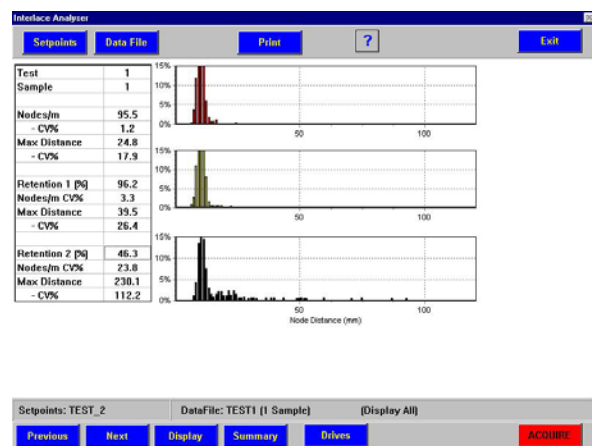
Package Unwinding – Full characterisation of the unwinding performance of any type of yarn / package by detailed analysis of the unwinding tension profile. The Package Quality Factor provides an excellent indication of package unwinding performance in subsequent processes.

Broken Filaments – Direct measurement of the Broken Filaments and loops in a package.

Broken Filaments Sensitivity – In addition to the Broken Filament measurement this test provides a measurement of the sensitivity to broken filament generation in subsequent processes by measuring the broken filament after the yarn has been stressed at a selected underfeed.



Package Unwinding Screen Display



Interlace Retention QC Display

ATY Quality – Full characterisation of the quality of ATY yarn allowing even small differences in yarn characteristics to be identified

ATY Stability – In addition to the ATY Quality measurement this tests provides a measurement of the stability of the bulk in ATY yarns allowing an assessment to be made of the effect of subsequent processing on yarns with different characteristics

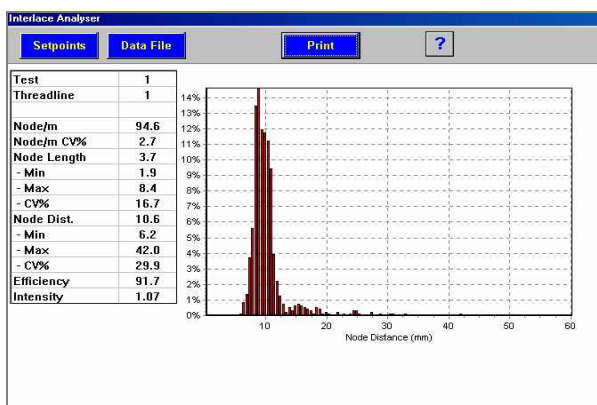
LabTEX TECHNOLOGY

The LabTEX instruments are made up of a range of advanced technology components including:

Optical Sensors are used to measure Interlace, Broken Filaments and ATY quality. Measurement accuracy is assured by patented signal processing technology as well as ISO calibrated sensors.

Tension Sensors are used for Package Unwinding analysis. These ultra high frequency response sensors are sampled at 1000 times per second allowing the shortest-term variation to be identified.

Yarn Transport Yarn feeds transport the yarn accurately at speeds between 200 and 2,000 m/min and allow very accurate dynamic control of yarn stretching, allowing a wide range of sophisticated test techniques.

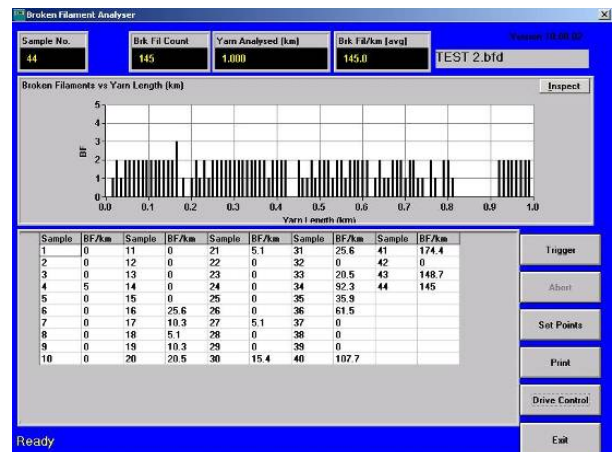


Interlace Analysis Display – Showing Node Distribution

Processing Hardware A dedicated processing and communication card handles the signal processing, allowing a standard Windows 2000 or XP Professional PC to be used.

Processing Software LabTEX instruments incorporate state of the art data analysis routines to provide extremely accurate measurements as well as a wide range of statistical data that can be exported to plant QC management systems

Calibration - LabTEX sensors are supplied pre calibrated with calibration files and certificates. The operational software zeros sensors before each test series and monitors for calibration drift. Within permitted limits the software automatically compensates for any calibration drift; if sensors drift beyond these limits the software warns that recalibration is required.



Broken Filament Distribution Display

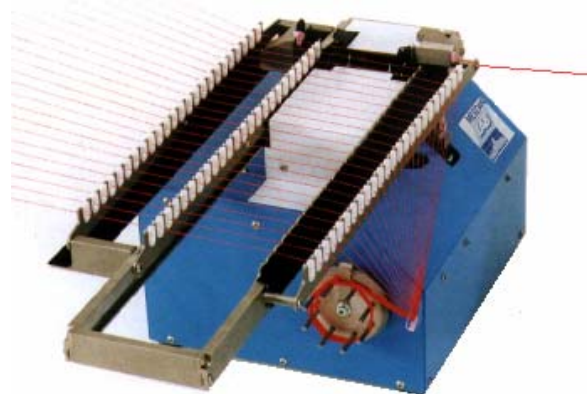
LabTEX BENEFITS

The LabTEX instruments provide substantial benefits to the users in respect of both Quality and Costs by providing:

- Full Product Characterisation Ensures products are fully optimised for application
- Extensive Data Analysis On all Key Quality parameters
- High Volume Dynamic Testing Fully automatic operation
- Reduced Process Costs Process optimisation by full product characterisation
- Multi Function Testing Up to 4 parameters tested on one unit

LabTEX AUTOMATION

The LabTEX is also designed to operate with the MESDAN 'Automatic Pack Changer' [ACC] allowing fully automatic operation, making it the ideal instrument for high volume QC testing of all types of continuous filament yarns.



Mesdan ACC Automatic Package Changer

LabTEX APPLICATIONS

Labtex Type	Analysis	Main Components	
		Drives	Sensors
LabTEX P	Package Unwinding	1	Tension
LabTEX PI	Package Unwinding Interlace Analysis Broken Filaments ATY Characteristics	1	Tension & Optical
LabTEX I	Interlace Analysis Broken Filaments ATY Characteristics	1	Optical
LabTEX IR	Interlace Analysis and Retention Broken Filament and Broken Filament Sensitivity ATY Characteristics and Stability	2	Optical
LabTEX PIR	Package Unwinding Interlace Analysis and Retention Broken Filament and Broken Filament Sensitivity ATY Characteristics and Stability	2	Tension & Optical

LabTEX SENSORS

Interlace Sensor	Measurement Options	Interlace, Broken Filaments, ATY
	Range	20 to 1,500 denier
	Measurement	Data acquisition at up to 50kHz
	Calibration	ISO Calibration, including automatic contamination compensation with automatic condition monitoring and warning when recalibration is required
Tension Sensor	Measurement Options	Package Unwinding
	Range	0 to 200g with 0.1g resolution
	Frequency Response	450hz with Data acquisition at 1kHz
	Calibration	The sensor is automatically zeroed prior to each test and facilities for software checking and calibration of gain are provided

LabTEX YARN DRIVES

Yarn Transport	Godets with capstan wrap. The two godets are driven by a 0.37kW inverter controlled synchronous motor.
Speed Range	200 to 2,000 m/min (normal test speed 400 m/min), Digital set-points down loaded to inverter from PC
Waste Disposal	A high efficiency compressed air suction system delivers the waste yarn to the rear of the unit for collection.
Wrap Protection	A non-contact end break detector is located between the godet and the suction system. When a yarn break is detected the drive motor is stopped
Dimensions	780mm wide (including Creel) + Suction (about 250mm), 530mm deep x 500 high (excluding Creel). Weight 28kg
Creel	400mm diameter x 300mm long, different tube diameters are accommodated with an adjustable balloon eyelet
Auto Changer	Compatible with Mesdan ACC Automatic Package Changer

LabTEX SERVICES REQUIRED

Computer	A PC running Windows 2000 or XP Professional is required to run the application software, the Minimum PC spec is Pentium 1Ghz with 256Mb RAM, SVGA Graphics and 500Mb of Free disk space. A free PCI slot is also required
Power	110 or 240 volt AC 50-60 Hz, Connected Load = 1000W, Typical Running Load 200W
Compressed Air	Clean dry compressed air should be supplied at a minimum of 5 bar. The volume of air used will be approximately 40m ³ /hr. .