

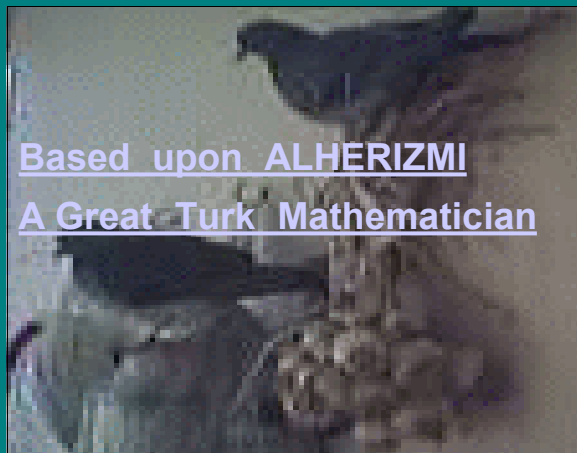


Itru Fibre Tester UAK-1S

Fibre /Sliver/Waste/Fabric Surface Information System

# *Technical Information Summary*

Based upon ALHERIZMI  
A Great Turk Mathematician



We have reserve the rights to alter and make any modification to Fibre Tester UAK-1S and its related software without given any notice.

Revised in September 2006

© 1992-2006 Itru Group Ltd.

## Introduction

ITRU FIBRE TESTER UAK-1S has been constructed on ALHERIZMI PATH (Algorithm) that belongs to the Turk Mathematician Harezmi Mehmet who lived in the 9th century.

ITRU FIBRE TESTER UAK-1S is a system of New Fibre/Sliver/Waste/Fabric Surface Information Technology.

UAK-1S measures and computes more than 40 parameters and replaces existing systems with an INNOVATIVE new Textile Technical Terms and Definitions.

**NO CALIBRATION REQUIRED**

**DIRECT MEASUREMENT**

**ONE BUTTON**

**ONE TEST**

*Fibre Surface*



**[www.itru.net](http://www.itru.net)**

**[info@itru.net](mailto:info@itru.net)**

- Micronaire Distribution  $R=0,98$  (NEW)
- Contamination (Direct measurement)(NEW)
- Color and Intensity Parameters (Direct measurement) REAL COLOR MEASUREMENTS
- Maturity (Direct measurement) (NEW)
- New Methods to control blowroom ,carding and combing (NEW)
- New Methods of measurement of Fineness/Maturity and Distribution(NEW)
- Measurement of % of Yellow Fibres and White Specks % in any stage of processing
- UV Analyses (UV %, UV Immature Fibres , UV White Specks (NEW)
- Loose Fibres ( % Yellow Fibres and Very Immature Fibres )(NEW)
- Cleaning and Dirtiness (NEW)

## ONE BUTTON & ONE TEST

### Operation Principle:

A sample is place in reserve box . Push button is pressed on then Cover Plate is driven by pneumatic system moves down and covers the sample tested the image of the sample is transferred to computer and analysed by the software. It is simple fast and accurate.Push button is pressed again cover plate moves up and the sample is taken and new sample is placed for new testing .

**Testing and Computing Time : 8 Secs per sample**

**Dimension : 800x600x900 mm**

**Weighing :40 kg**

**Requirement : Air-Supply (5 Bar) + A single 220 Volt Ac Power**

**why one ends up with "good" quality measured fibres with insufficient quality of yarn and defects in the fabrics?**

**YOU CAN SEE THE SUPERIORITY OF UAK-1S OVER OTHER EXISTING SYSTEMS AFTER COMPARING AND ANALYSING THE FIRST AND UNIQUE IN THE WORLD**

### 1.1 Itru Fibre Tester UAK-1S Fibre/Sliver/Fabric Surface Information Systems

Itru Fibre Tester UAK-1S developed by Turk Engineers is an innovative state of an art technology **Fibre/Sliver/Fabric Surface Information System** : that measures the importance parameters of all types of fibres and fabrics reporting comprehensive and detailed analyses ,bringing new conception to textile technology with new terms and definitions .

The System comprises following items:

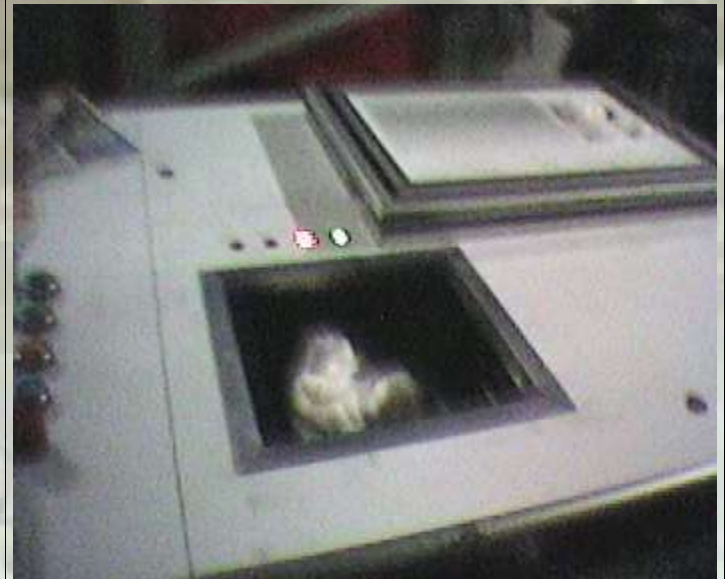
- Fibre Tester (Fibre Tester ver 4.1.2 ) Software
- Simple Measurement system
- Pentium 4 computer and MS-Windows operating system
- TFT slight monitor screen and a printer

The table summarises the functional works of UAK-1 S system.

<i>Instrument</i>	<i>Descriptions</i>	<i>Basic Units</i>
Itru Fibre Tester UAK-1 S	Fibre/Sliver/Fanric Surface Information System	-Fineness/Maturity/Micronaire Distribution

**1 TESTS MORE THAN 40 PARAMETERS AND MORE THAN 5 CHARTS**

## Itru Fibre Tester UAK-1 S Fibre /Sliver/Fabric Surface Information System 5



Itru Fibre Tester UAK-1 S

Also available Itru Fibre Tester UAK-1 +

The measurement system is based upon the image processing and analyses There is only one tests is conducted by the operator to determine fibre parameters.

- Fibres/Fabric surface image test (Surface Test)

### 1.2 Optional Modules for integration to Basic Unit of UAK-1S

Reference#	Model #	Optional Modules for integration to Basic Unit
+S	M+S1	Yarn X-section Analyser (% blends from Yarn x-section)
+S	M+S2	White Specks Fabric to Fibre at Fibre Level Analyses and Visual Cleaning
+S	M+S3	Actual Distribution of Micronaire Histogram
+S	M+S4	UV Analyses(White Specks, Immature Fibres and Color)
+S	M+S5	Cleanness and Dirtiness
+S	M+S6	Visual Dyeing and Color Analyses
S	MS1	Color and Neps Surface
S	MS2	Contamination Analyses (NLC% and Foreign Matter %),-Looses Fibres % ( Yellow Fibres and White Specks Fibres )

1.3 Comparison with other systems

<i>Fibre Properties</i>	<i>UAK-1 S</i>	<i>The Others</i>
Color and Distribution	<p>UAK-1 + plots the Color Histogram and computes all the statistical color values such as</p> <ul style="list-style-type: none"> <li>-Mean</li> <li>-Mode</li> <li>-Median</li> <li>-Skewness</li> <li>-Kurtosis,</li> <li>-Standard Deviation</li> <li>- Total number of shades</li> <li>- CV %</li> </ul> <p>Color Intensity Parameters</p> <ul style="list-style-type: none"> <li>-Whiteness Index %</li> <li>-Darkness Index %</li> <li>-Lightness Index %</li> <li>-Yellowness Index %</li> </ul>	<p>There are only Rd and +b. How can you find the differences between samples having similar Rd and + b values ? Is there only one color in cotton sample .</p> <p>-There are more than 200 unique colors in any cotton sample tested How can color measurement be restricted to only two values?</p> <p>-Add some trash and measure the color again.</p> <p>-Does +b really predict the yellowness of fibres?</p>
Waste and Noil	<ul style="list-style-type: none"> <li>-Non-Lint Content %(Trash , Seed Coat Fragments ,Dust)</li> <li>-Foreign Matter %</li> <li>-Loose Fibres (% Yellow Fibre + White Specks Fibres)</li> <li>-Usable Fibres %</li> </ul>	<p>Can you test card under case and blow room waste and find % of usable fibres in other systems ?</p>
Non Fibres and Non-Usable Fibres Analyses	<ul style="list-style-type: none"> <li>-Non-Lint Content %(Trash , Seed Coat Fragments ,Dust)</li> <li>-Foreign Matter %</li> <li>-Loose Fibres (% Yellow Fibre + White Specks Fibres)</li> <li>-Usable Fibres %</li> </ul>	<ul style="list-style-type: none"> <li>-What's the differences of Trash Count , Area % of blend and Card entry ?</li> <li>-Can you measure seed coat fragments and dust ?</li> <li>- Is total blowroom and Card Waste only affected by trash % ?</li> <li>-What are the influences of Yellow and Immature Fibres on total blowroom+ Card and Comber Noil percentages ?</li> </ul>

**Itru Fibre Tester UAK-1 S Fibre /Sliver/Fabric Surface Information System 7**

<i>Fibre Properties</i>	<i>UAK-1 S</i>	<i>The Others</i>
Micronaire Distribution	<ul style="list-style-type: none"> <li>-Effect of non-lint material upon micronaire readings is not significant from bale to ring frame</li> <li>-Effect of moisture upon micronaire readings is not significant from bale to ring frame</li> <li>-No weighing of sample is required</li> <li>-Dyed cotton fibres/slivers could also be tested with special technique.</li> <li>-Distribution and statistical analyses of fineness and maturity values</li> <li>-Contamination and color measurement takes place at the same time</li> <li>-Thanks to real micronaire histogram of UAK-1 + system to identify the different origins in cotton mix and optimization of blending to avoid dye take up problems in cotton fabrics.</li> </ul>	<ul style="list-style-type: none"> <li>-Are all cotton fibres at same diameter and surface area?</li> <li>-Isn't there any deviation in x-section of cotton fibres ?</li> <li>-Why exists a difference between micronaire value of Comber Noil and Blend ?</li> <li>-Add some trash to sample and test the micronaire again</li> <li>-Dry the samples and test it again</li> <li>-Moisture the sample and test it again</li> <li>-Calibrate with low micronaire and test it with high micronaire</li> <li>-Calibrate with high micronaire and test it with low micronaire</li> <li>-Test the calibrated cotton sample 100 times</li> </ul>
Fineness/Maturity Distribution	<ul style="list-style-type: none"> <li>Direct Measurement of Maturity with two new systems</li> <li>image Processing UV system</li> <li>Image Processing Surface System</li> <li>Distribution of fineness and maturity parameters</li> </ul>	<ul style="list-style-type: none"> <li>-What's the correlation of Estimated and Measured Maturity on any other system?</li> <li>-What's the correlation of Maturity on air-flow systems that measures x sections of each single fibre and x-Section Image Analyses ?</li> <li>-Are the existing x-section Image Analyses system for determining the Fineness/Maturity reliable enough to determine the perimeter?</li> </ul>
Number of Tests and Number of Parameters	<ul style="list-style-type: none"> <li>Total number of tests is and total number of parameters more than 40 and number of charts are more than 5</li> <li>-8 secs per sample testing Time</li> </ul>	<ul style="list-style-type: none"> <li>- How many tests and how many parameters ?</li> </ul>
<b><i>UAK-1S adds on (Innovations)</i></b>		
UV Analyses and Color Analyses	<ul style="list-style-type: none"> <li>UV%, UV Immaturity and UV White Specks</li> <li>-High micronaire and high maturity cotton fibres can exhibit dye take up variation and white specks and this can only be determined by UV Immature Fibres % developed for the 1<sup>st</sup> time in the world.</li> <li>-Color Histogram for comparison of cotton samples</li> </ul>	
Dirtiness and Cleanness	<ul style="list-style-type: none"> <li>Raw materials could get dirtied in processing and this may cause severe problems in subsequent processing especially dyeing</li> </ul>	

## Itru Fibre Tester UAK-1 S Fibre /Sliver/Fabric Surface Information System 8

<i>Fibre Properties</i>	<i>UAK-1 S</i>	<i>The Others</i>
Micronaire Histogram	To identify different origins in one mix	
Fabric Fibre Level Analyses	% of White Specks in Dyed Cotton Fabric Samples at Fibre Level Analyses	
Application Range	-Not only for raw cotton but also slivers and waste and also Fabrics .	



Made in Türkiye-Turk Engineering Product