



# **USTER® STATISTICS 2013**

Application Report

Easy User Guide

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# 1 General information about USTER® STATISTICS

## 1.1 What are USTER® STATISTICS? What benefits do they offer?

USTER® STATISTICS are the only established benchmark for the worldwide textile industry. Cotton fibers, as well as yarns made from various other raw materials, are measured and compared against each other. USTER® STATISTICS offer reference values for specialists and managers along the textile value chain, from fiber producers and spinners to weavers, knitters, garment makers, retailers and traders as well as helping manufacturers to improve production processes. USTER® STATISTICS are also often used as the basis for yarn specifications in textile trading contracts.

## 1.2 What do USTER® STATISTICS levels mean?

USTER® STATISTICS levels, also known as USTER® STATISTICS Percentiles, express how many spinning mills worldwide are able to produce a yarn at the specified level or better. For example, if a spinning mill reaches the 5% value, it means that only 5% of spinning mills worldwide are able to produce a yarn at this quality level or better. At the other extreme, if a measured value corresponds, for example, to the 95% level in the USTER® STATISTICS, it means that 95% of the spinning mills worldwide are able to produce a yarn which is better than this value. Thus, in the case of yarns and slivers, it can be seen that the lower the USTER® STATISTICS level, the better the yarn or sliver quality. With raw fibers, however, a high or low USTER® STATISTICS level does not provide a quality assessment, since fiber parameters are inherent to the material at this stage.

## 1.3 How are the USTER® STATISTICS generated?

Samples for the USTER® STATISTICS are collected from textile regions all over the world over a time period of 5 to 6 years. They are tested constantly in the laboratories of Uster Technologies, Switzerland, as well as in Suzhou, China (Chinese samples only), at standard conditions and under strict testing guidelines. Data analysis and the generation of the graphs are done in the headquarters in Switzerland by experienced textile technologists. It is of utmost importance to check the data for its consistency with former releases of the USTER® STATISTICS as well as for the significance of the data. All values for the USTER® STATISTICS are obtained by using the laboratory instruments of Uster Technologies. Thus, the USTER® STATISTICS values are only valid for parameters tested with laboratory instruments made by Uster Technologies.

## 1.4 In which formats are USTER® STATISTICS available?

The reference values of USTER® STATISTICS are displayed in different formats:

- Incorporated into the reports from USTER® instruments
- In an interactive version on the USTER website ([www.uster.com](http://www.uster.com)) after registry for a password which is free of charge
- In an interactive version on a CD-ROM, which can be ordered free of charge from the USTER website.

## 1.5 How can USTER® STATISTICS data be used?

The data in the USTER® STATISTICS can be presented either as charts or as tables. There are separate charts for the different process stages, such as fiber, sliver, and yarn, as well as a separate chapter for the correlation between fiber and yarn parameters.

## 1.6 What other information can be found in the USTER® STATISTICS?

On the landing page of the USTER® STATISTICS, various downloads are offered:

- Application handbook USTER® STATISTICS
- Application report USTER® STATISTICS
- USTER® STATISTICS Easy User Guide

**USTER®**  
Think quality

About USTER - Instruments - Service - Knowledge -

**Service**

Home > Service > USTER STATISTICS

**USTER STATISTICS**

- Working with the USTER STATISTICS
- Help & Support
- Testumgebung Gruppe

After Sales Services  
Laboratory Testing Services  
Textile Training and Consulting  
USTERIZED  
Intelligent Sourcing  
Download Center

**USTER STATISTICS**

WPI 100 mg/g yarn, standard count, testing USTER® 3070®

The textile industry benefits from the USTER® STATISTICS since 1957. The worldwide established yarn quality reference values serve yarn producers, yarn users and machine manufacturers. They can compare their measured results with global benchmarks and benefit in many ways.

**Yarn producers:**

- Set spinning process Key Performance Indicators
- Achieve operational excellence
- Specify and communicate quality objectively
- Guarantee the quality of yarn being produced and sold

**Yarn users:**

- Specify the quality needed (quality profile)
- Select yarns with the appropriate quality
- Optimize the portfolio of the yarn producers
- Pay the right price for the right quality

**Machine manufacturers:**

- Develop spinning machinery achieving both production and quality targets
- Develop the right spinning components
- Develop appropriate maintenance plans
- Link productivity with quality

Over the past 55 years, USTER® STATISTICS has earned legendary status throughout textiles – and its value is more significant than ever in the globalized trading environment today and in the future.

When spinners from different countries talk about 'good' yarn, they sometimes mean very different things. The only way to find agreement is to define objective characteristics, supported by measurement parameters, methods and instruments capable of measuring these repetitively and accurately. This is precisely what USTER achieves with the USTER® STATISTICS which became the common quality language for the global textile industry.

**Order**

Order the 2013 CD-ROM for free

The USTER® STATISTICS 2013 CD-ROM will be available in February 2013. Your order will be recorded and the CD sent as soon as it is available.

**Contact us**

[textile.technology@uster.com](mailto:textile.technology@uster.com)  
Phone: +41 43 366 37 50

**Downloads**

- 50 Years of USTER STATISTICS video
- USTER STATISTICS Application Report
- USTER STATISTICS Application Handbook

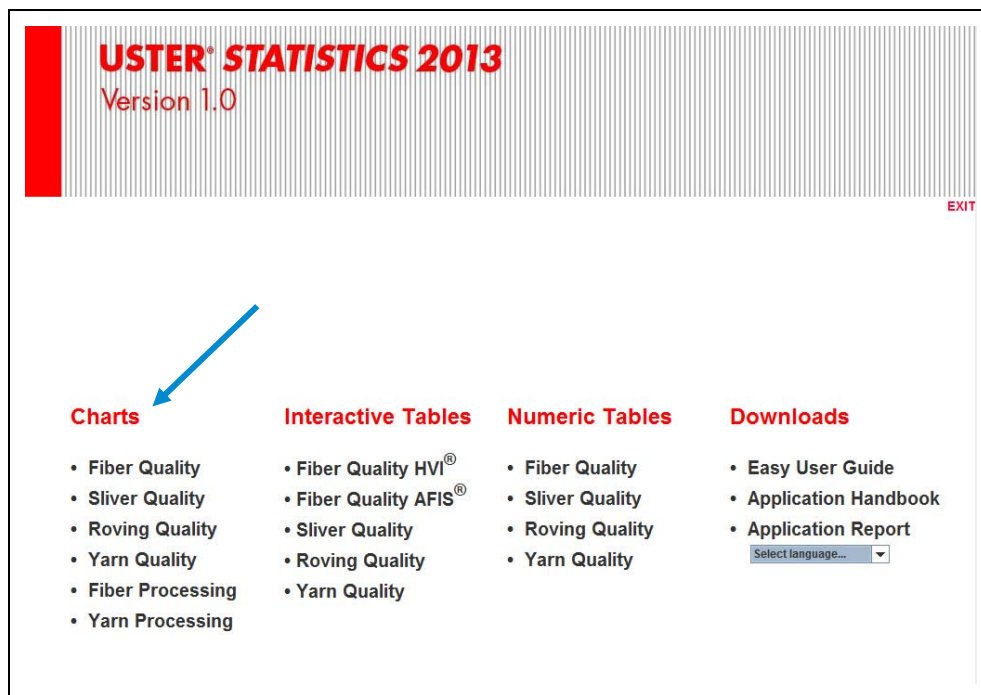
Landing page of the  
USTER® STATISTICS

## 2 Using the USTER® STATISTICS charts

In this section the following choice of charts is available:

- Fiber Quality
- Sliver Quality
- Roving Quality
- Yarn Quality
- Fiber Processing
- Yarn Processing

In order to be able to look at the USTER® STATISTICS charts, Java needs to be installed on the computer. If Java (Version 7, Update 11 and higher) is not already installed on the computer, a download link can be found on the site 'Working with USTER® STATISTICS'.



Starting page of the USTER® STATISTICS tool

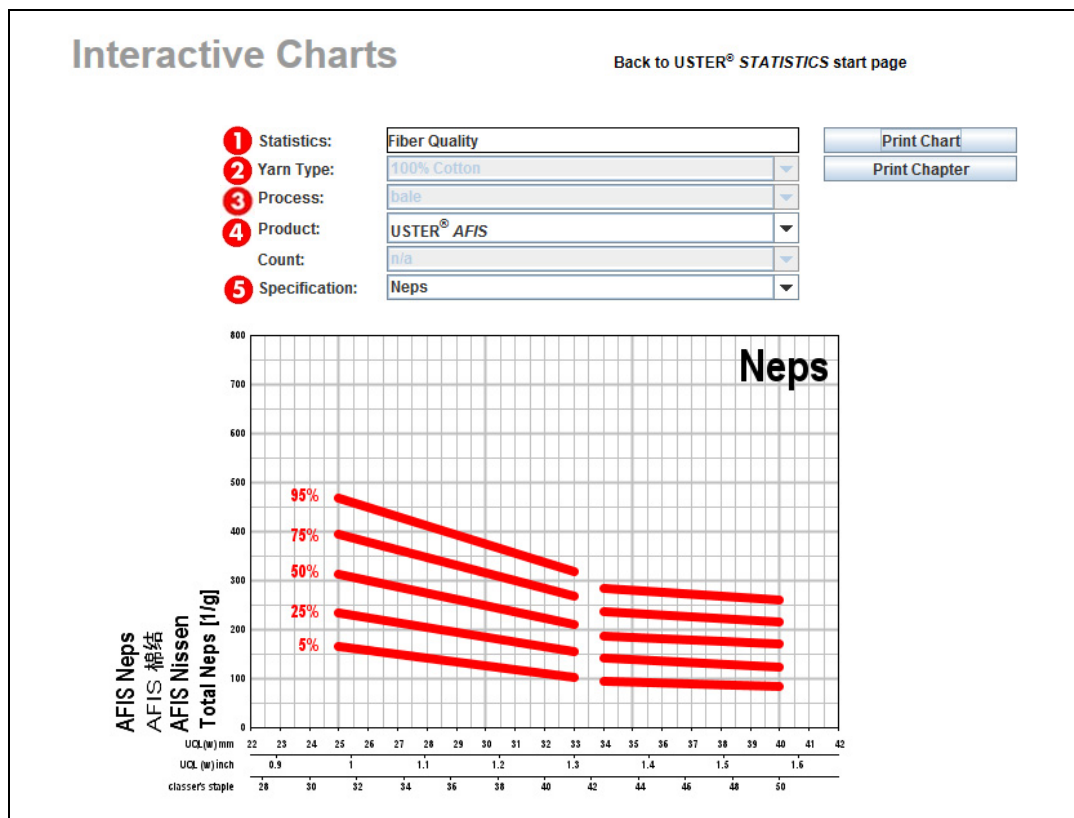
## 2.1 Definition of specifications

### 2.1.1 Definition of fiber specification

After selecting one of the six chart options (see arrow in figure above), you can continue with the definition of specifications.

- 1 Statistics: Selected option is shown.
- 2 Yarn type and 3 Process are greyed out as they don't apply to this graph type of fiber quality.
- 4 Product: Select the USTER® instrument on which the sample was tested. In this case, it's either USTER® HVI or USTER® AFIS.
- 5 Specification: Select the requested parameter.

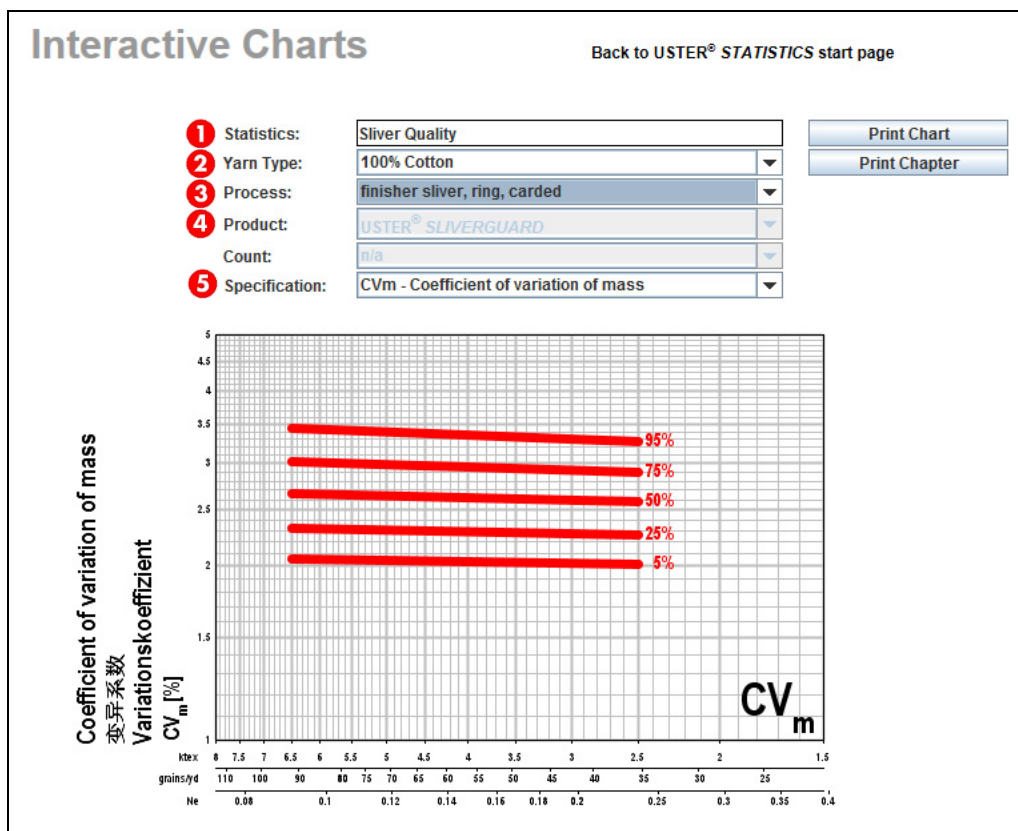
Please note, that these charts are based on the corresponding fiber length.



## 2.1.2 Definition of the sliver specification

- 1 Statistics: Selected option is shown.
- 2 Yarn type: Select either from cotton or a cotton/polyester blend.
- 3 Process: Select the spinning technology (ring, OE rotor).
- 4 Product and Count are greyed out as they don't apply to this graph type of sliver quality.
- 5 Specification: Select the requested parameter.

Please note, that these charts are based on the sliver count.



*Definition of sliver specifications*

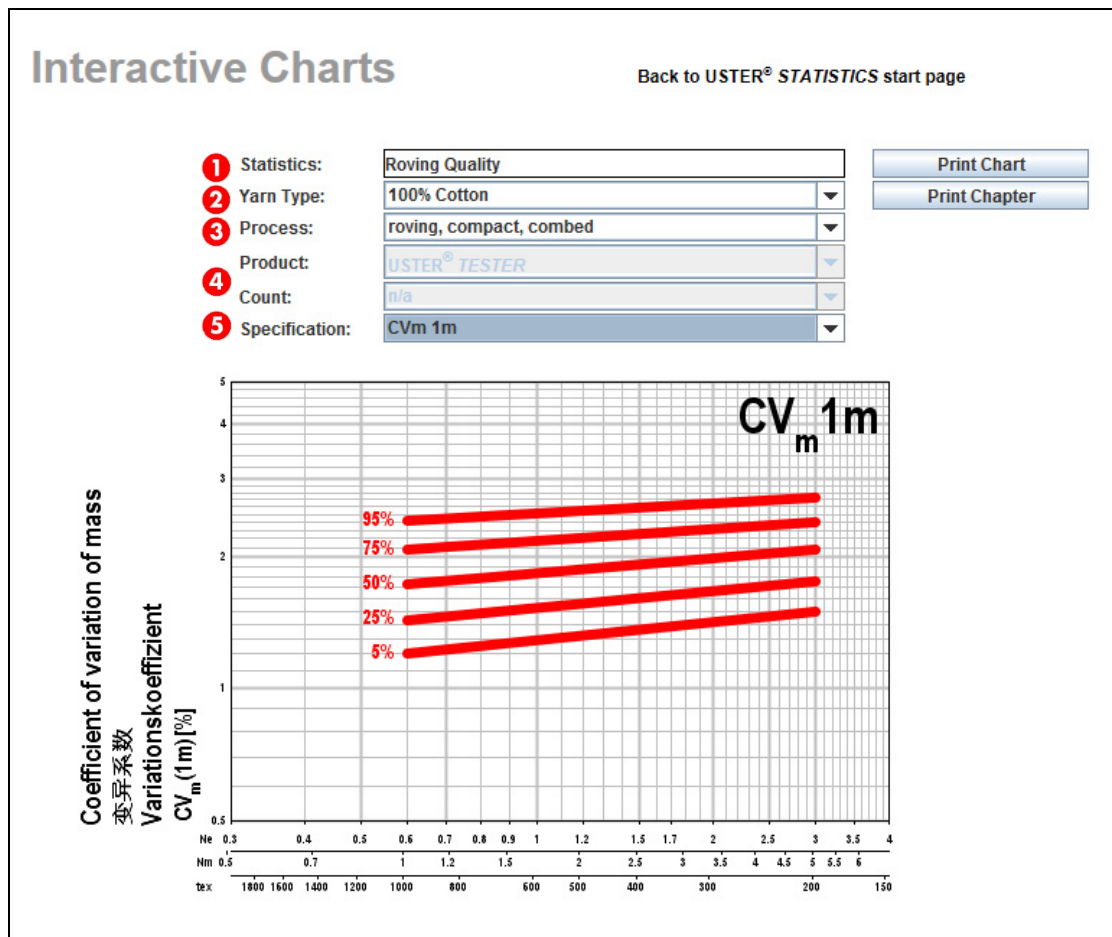


# THE STANDARD FROM FIBER TO FABRIC

## 2.1.3 Definition of the roving specification

- 1 Statistics: Selected option is shown.
- 2 Yarn Type: Select from different raw materials and blends.
- 3 Process: Select the spinning technology (ring, compact).
- 4 Product and Count are greyed out as they don't apply to this graph type of roving quality.
- 5 Specification: Select the requested parameter.

Please note, that these charts are based on the roving count.

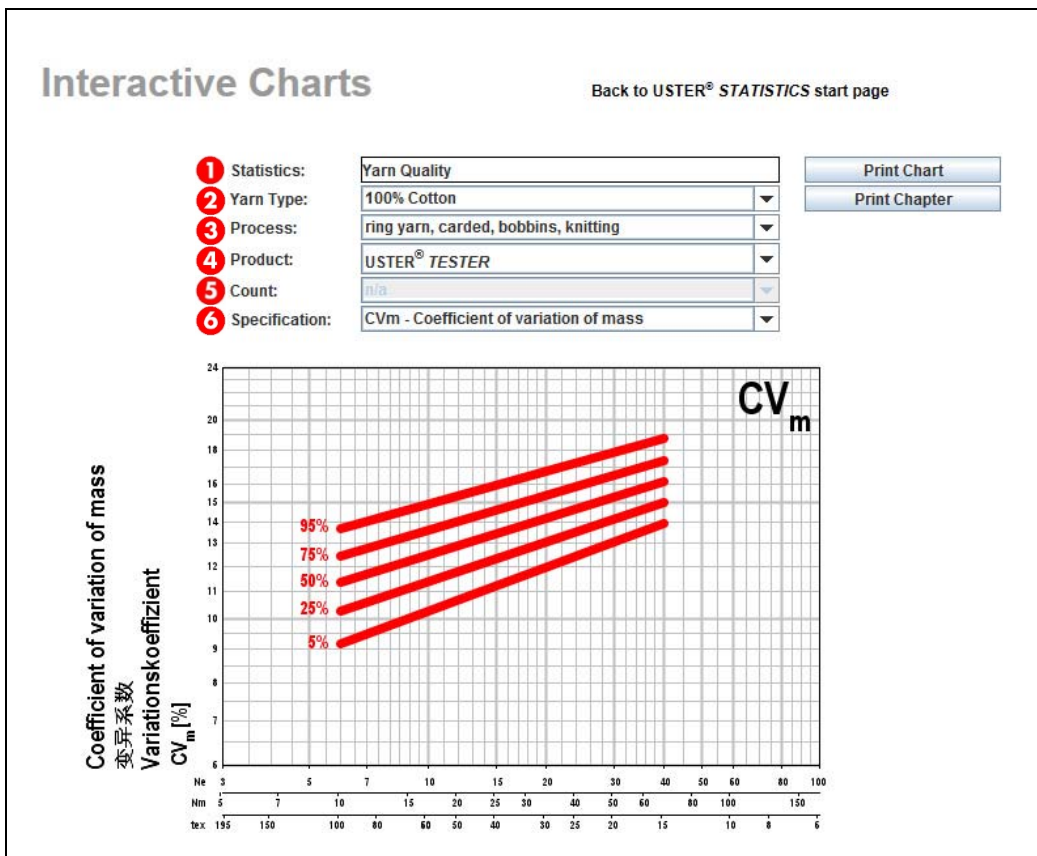


## 2.1.4 Definition of the yarn specification

- 1 Statistics: Selected option is shown.
- 2 Yarn type: Select from different raw materials and blends.
- 3 Process: Select the spinning technology (ring yarn, compact yarn, OE rotor yarn, airjet yarn, plied yarn\*), format (bobbins, cones) and application process of the yarn (weaving, knitting).
- 4 Product: Select the USTER® instrument on which the sample was tested.
- 5 Count is greyed out as it doesn't apply to this graph type of yarn quality.
- 6 Specification: Select the requested parameter.

Please note, that these charts are based on the yarn count.

\* Please note also, that for plied yarns the yarn count is taken as if it were a single yarn count.



# THE STANDARD FROM FIBER TO FABRIC

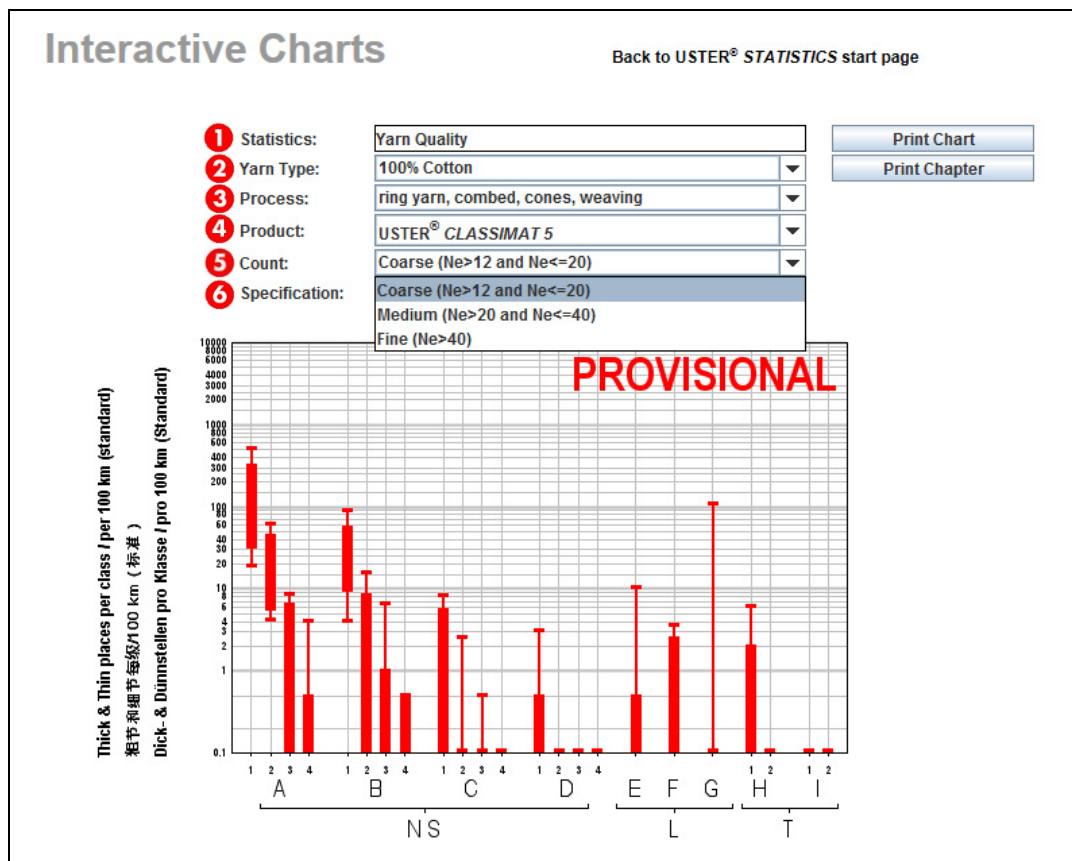
## 2.1.5 Definition of the yarn specification for USTER® CLASSIMAT

The following description is valid for USTER® CLASSIMAT QUANTUM as well as for USTER® CLASSIMAT 5.

- 1 Statistics: Selected option is shown.
- 2 Yarn type: Select from different raw materials and blends.
- 3 Process: Select the spinning technology (ring yarn, compact yarn, OE rotor yarn, airjet yarn, plied yarn\*), format (cones) and application process of the yarn (weaving, knitting).
- 4 Product: Select the USTER® instrument on which the sample was tested.
- 5 Count: Select between
  - coarse: > Ne 12 and <= Ne 20
  - medium: > Ne 20 and <= Ne 40
  - fine: > Ne 40
- 6 Specification: Select the requested parameter.

Please note that not all count ranges are available for all materials.

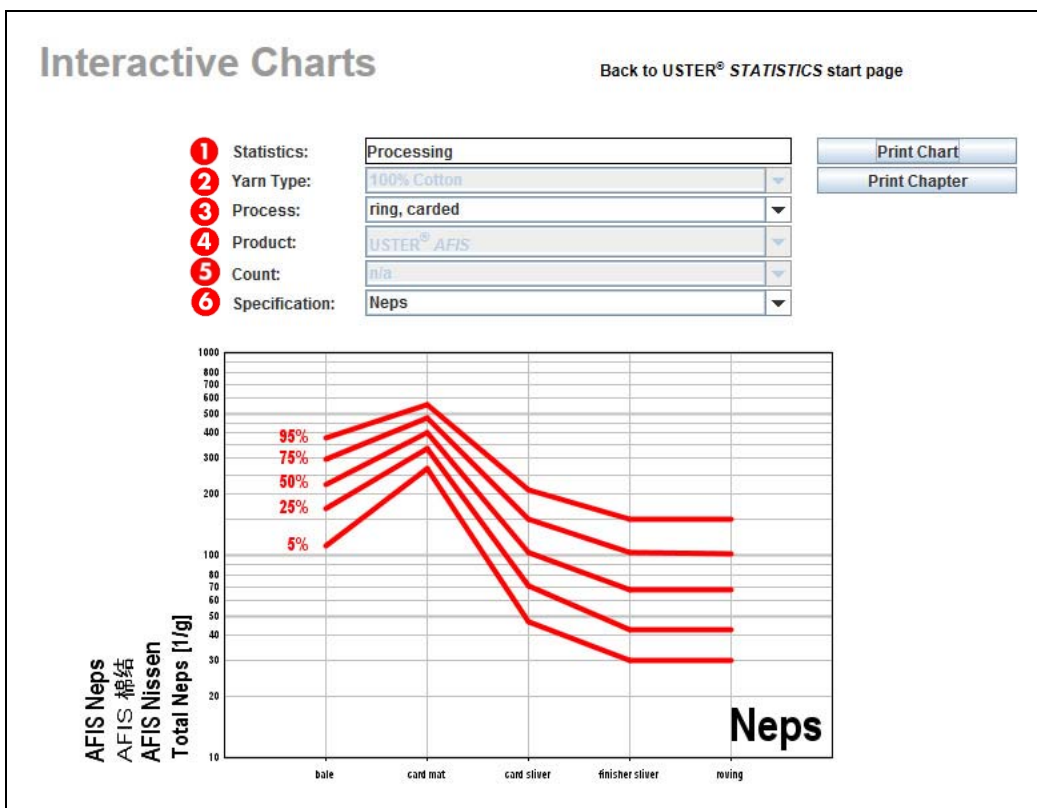
\* Please note also, that for plied yarns the yarn count is taken as if it were a single yarn count.



# THE STANDARD FROM FIBER TO FABRIC

## 2.1.6 Definition of the fiber processing specification

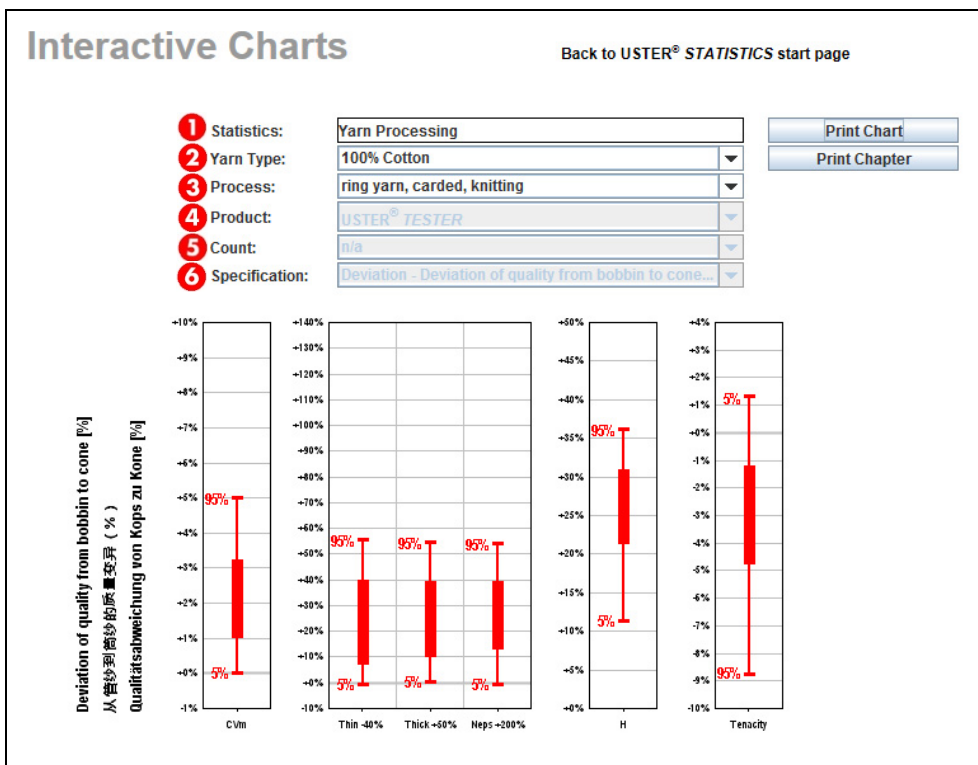
- 1 Statistics: Selected option is shown.
- 2 Yarn type: Greyed out as it doesn't apply to fiber processing quality. Only processes for 100% cotton are available.
- 3 Process: Select the spinning technology (ring, compact, OE rotor).
- 4 Product and 5 Count are greyed out as they don't apply to these types of fiber processing quality charts.
- 6 Specification: Select the requested parameter.



# THE STANDARD FROM FIBER TO FABRIC

## 2.1.7 Definition of the yarn processing specification

- 1 Selected option is shown.
- 2 Yarn type: Select from different raw materials and blends.
- 3 Process: Select the spinning technology (ring yarn or compact yarn) and application of the yarn (weaving, knitting).
- 4 Product and 5 Count and 6 Specification: These lines are greyed out as they don't apply to yarn processing quality. The deviation is only provided for the parameters in the chart.



*Defining yarn processing specifications*

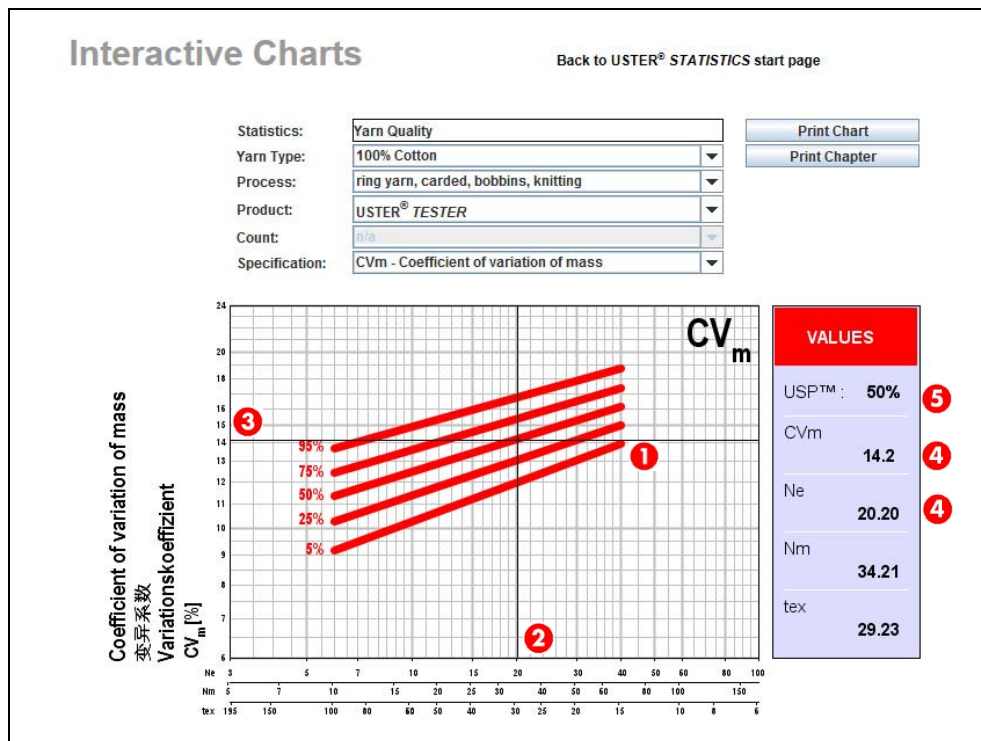
# THE STANDARD FROM FIBER TO FABRIC

## 2.2 Determination of USTER® STATISTICS Percentile level

### 2.2.1 Determination of the USTER® STATISTICS Percentile level based on a measured value

The principle for determining the USTER® STATISTICS Percentile value described below applies also to the charts for fiber quality, sliver quality as well as roving quality.

- 1 By moving the cursor over the chart the cross lines will appear.
- 2 First, the count of the measured yarn must be found on the x-axis by pointing the cursor on the correct yarn count.
- 3 Then the measured value needs to be selected by pointing the cursor on the value (y-axis).
- 4 On the right-hand side of the graph, a text field with the selected data (count or length of the selected material in different units and the measured value of the selected parameter) will appear. In this example, the yarn count is Ne 20.20 and the evenness  $CV_m = 14.2\%$ .
- 5 The resulting USTER® STATISTICS level is displayed in the same text field. In the example below, it is USTER® STATISTICS Percentile (USP™) 50%.



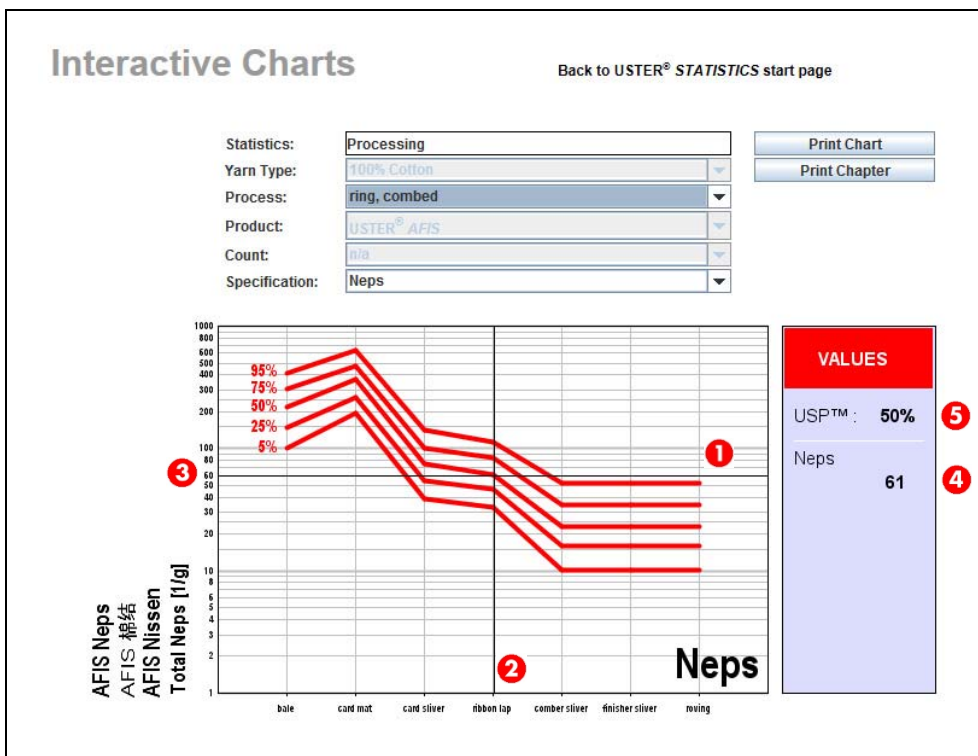
*Determining the USTER® STATISTICS Percentile level of a measured value*



# THE STANDARD FROM FIBER TO FABRIC

## 2.2.3 Determination of the USTER® STATISTICS Percentile level based on a measured fiber value for fiber processing charts

- 1 By moving the cursor over the chart cross lines will appear.
- 2 On the x-axis, the process steps from bale to roving (for ring and compact spinning) or up to finisher sliver (for OE-rotor spinning) is displayed.
- 3 The measured USTER® AFIS value needs to be selected by pointing the cursor on the value (y-axis).
- 4 On the right-hand side of the chart, a text field will appear showing the selected data and the USTER® STATISTICS Percentile value.
- 5 The resulting USTER® STATISTICS Percentile (USP™) level in this example is 50% for a value of 61 neps per gram in the ribbon lap.



*Determining the USTER® STATISTICS Percentile level based on a measured intermediate product in preparation*



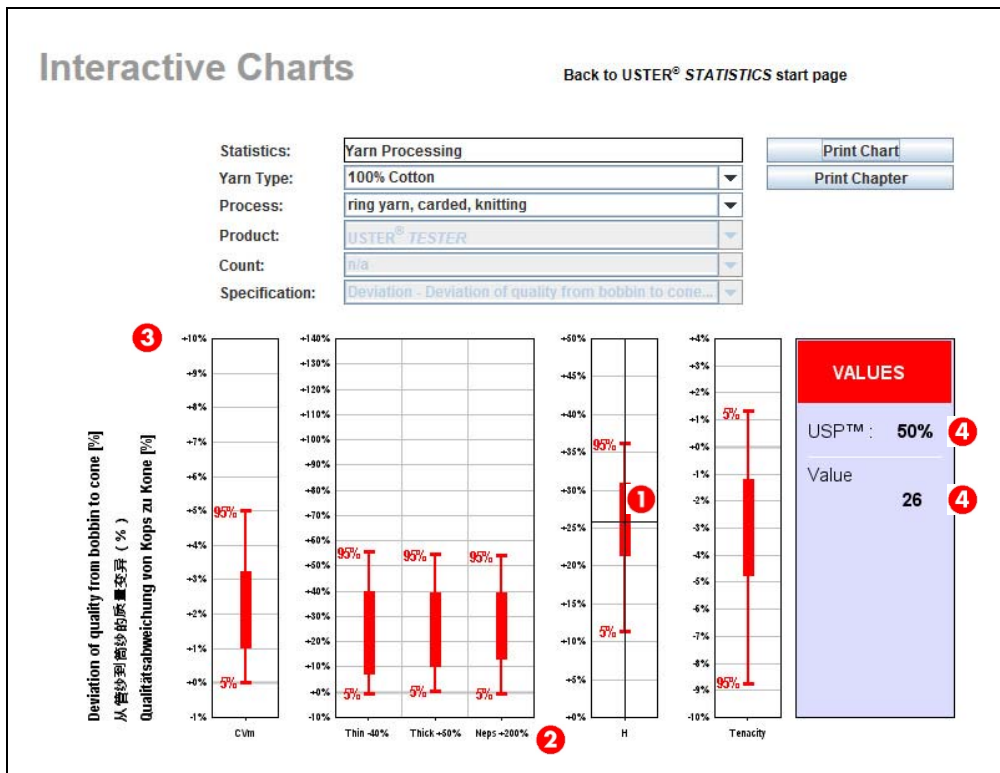
# THE STANDARD FROM FIBER TO FABRIC

## 2.2.4 Determination of the USTER® STATISTICS Percentile level for yarn processing charts

- 1 By moving the cursor over the chart cross lines will appear.
- 2 On the x-axis, some of the most important yarn parameters are given:
  - Yarn evenness  $CV_m$
  - Imperfections: Thin -40%, Thick +50%, Neps +200%
  - Hairiness
  - Tenacity

Due to the low number of events for thin places of -50%, the level of -40% was selected here. Percentage-wise, the increase from 2 to 4 thin places of thin -50% is 100%. But looking at the absolute numbers the difference is not significant.

- 3 The y-axis indicates the deviation for the chosen parameter from bobbin to cone. The following two examples should clarify how the chart must be understood.
  - Hairiness: for 50% of the yarns in spinning mills, the hairiness increases from bobbin to cone by 26% (see picture below).
  - Tenacity: for 95% of the yarns in spinning mills, the tenacity drops from bobbin to cone by 9%.
- 4 On the right-hand side of the chart, a text field will appear showing the selected data and the USTER® STATISTICS Percentile value. In this example (for hairiness) the 50% value is at 26% deviation.



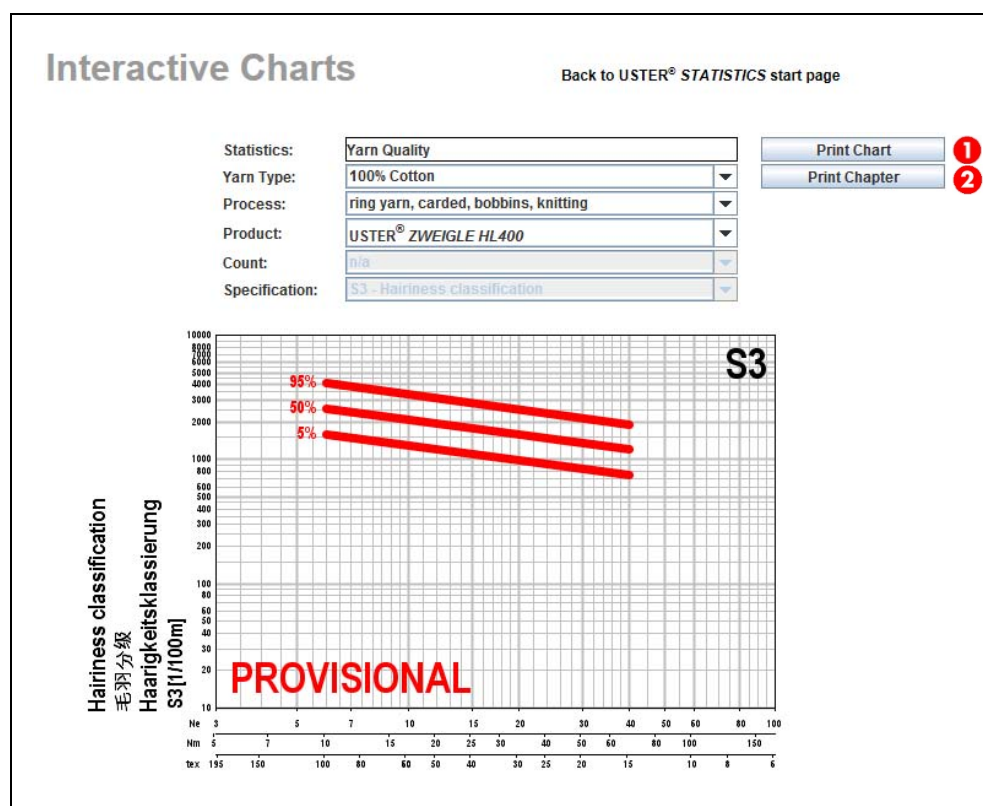
Determining the USTER® STATISTICS Percentile level for yarn processing

## 2.3 Printing graphs or a whole chapter

There are two possibilities for printing:

- 1 Printing only the shown chart
- 2 Printing the whole chapter (PDF file)

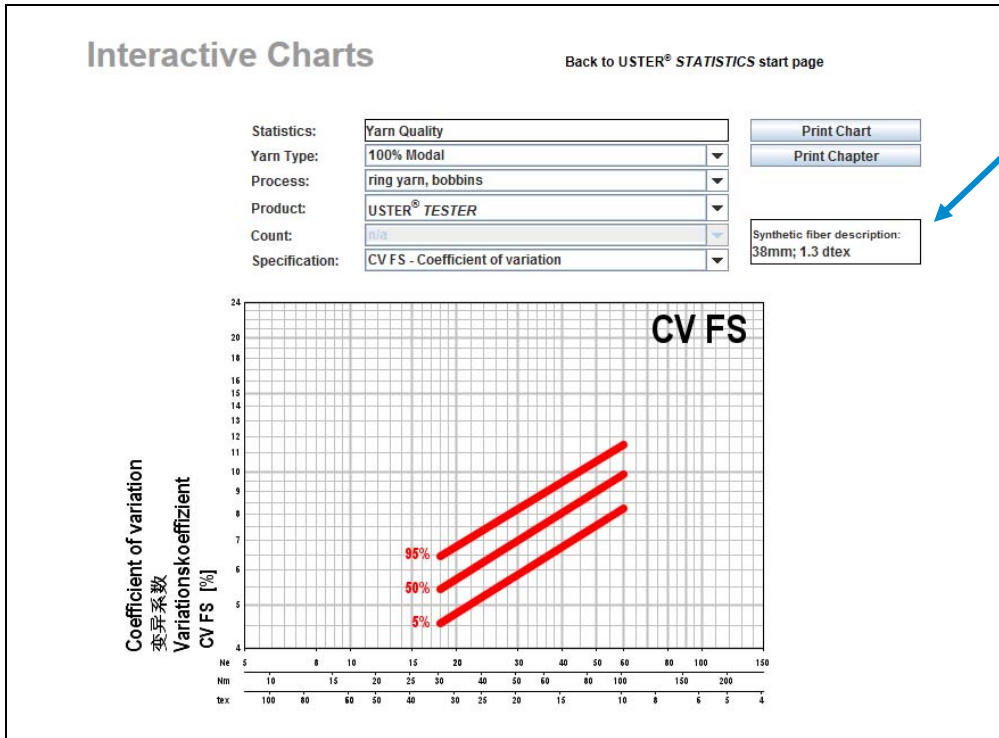
When selecting 'Print Chapter' a PDF will open including all available parameters of the selected material. Please note before printing that the number of pages might be high depending on the amount of parameters in a chapter.



*Printing options for single charts and chapters*

## 2.4 Information about synthetic fibers

For yarns made out of synthetic fibers (100% or in a blend with natural fibers) a text field is displayed which gives additional information regarding the fiber length and fiber fineness used for yarns shown in this chart.



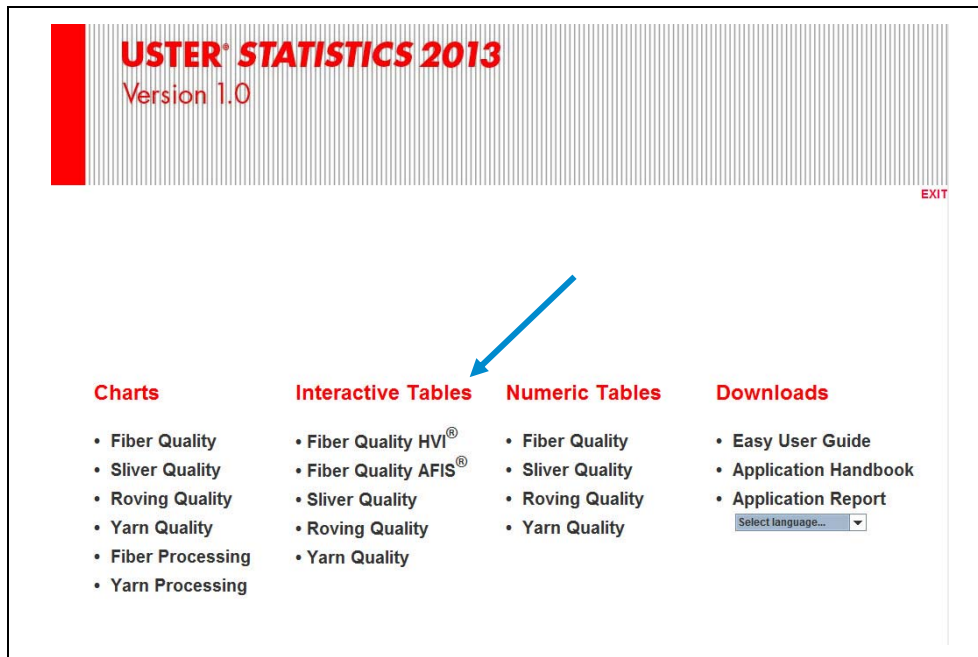
## 3 Using the USTER® STATISTICS interactive tables

These tables are very useful for quick information about:

- the absolute values corresponding to a specific USTER® STATISTICS Percentile level
- the USTER® STATISTICS Percentile level in case absolute measurement values are available

These interactive tables are available for:

- Fiber Quality HVI®
- Fiber Quality AFIS®
- Sliver Quality
- Roving Quality
- Yarn Quality



*Selecting the USTER® STATISTICS interactive tables*

The USTER® STATISTICS tables can be used in two ways:

- Determining the USTER® STATISTICS level for a measured value
- Determining the absolute value for a given USTER® STATISTICS level

# THE STANDARD FROM FIBER TO FABRIC

## 3.1 Determining the USTER® STATISTICS level for measured values

If absolute measurement values are known or given, the corresponding USTER® STATISTICS level can be obtained with the USTER® STATISTICS interactive tables.

The following description is based on yarn values. However, it works the same for fiber quality (USTER® HVI and USTER® AFIS), sliver, or roving quality. The only difference is that for the fiber parameters, the fiber length (either UHML for HVI® or UQL (w) for AFIS®) must be selected instead of the count.

- 1 The specification of the measured yarn must be selected in the fields 'Material' and 'Process'.
- 2 The yarn count must be entered and the count unit must be selected. Please note that the available count range is displayed below the entry field.
- 3 It is important to select the field 'I have measurement values and I am looking for corresponding USP™'.
- 4 Next, the known test results must be typed into the empty fields in the table. An example is given in the figure below.

[Back to USTER® STATISTICS start page](#)

### Yarn Quality Tables

- 1 Please select your raw material and spinning process.
- 2 Then enter the yarn count either in Ne, Nm or in tex.
- 3 Depending on the what information you already have, please select the Uster Statistics Percentile value in order to calculate the corresponding values or enter the measured values in order to get the corresponding Uster Statistics Percentiles.
- 4 By clicking "Calculate" the desired values will be calculated and displayed in the table as well as in charts, if this feature is selected.
- 5 Finally, the results can be downloaded as PDF.
- 6 By clicking "Reset" new calculations can be started.

Material:

Process:

Count:   Ne  Nm  tex  
>15 - <50

I have an USP™ and I am looking for the corresponding measurement values.  
 I have measurement values and I am looking for corresponding USP™.  
(USP™ = USTER® STATISTICS Percentile)

Calculations done.

Download Results:  
 Tables:   
 Charts:

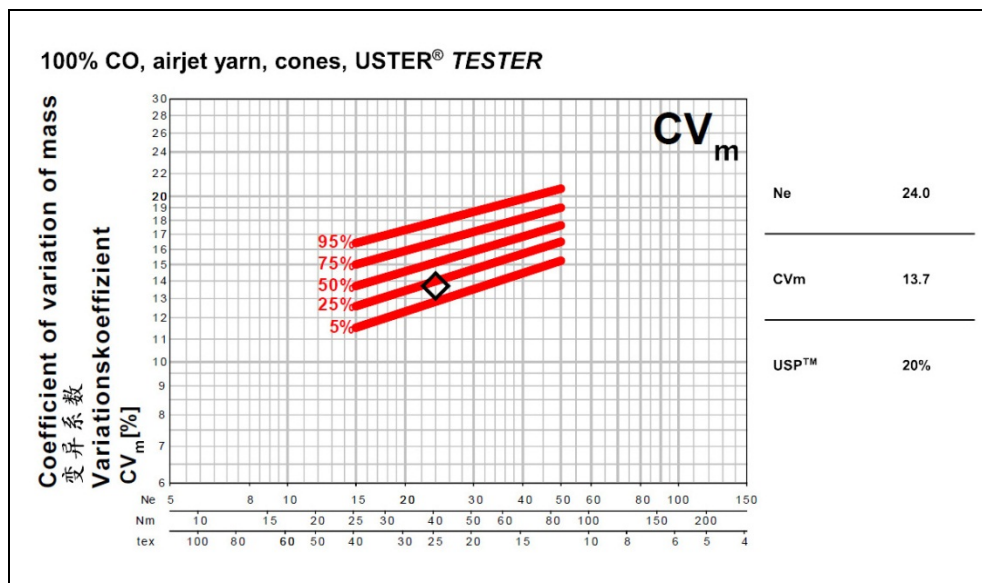
Legend for quality colors:  
5% and less 6 to 25% 26 to 50% 51 to 75% 76 to 95% Above 95%

Parameter	Description	USP™	Value	Unit	Chart Download
<b>Count Variation - USTER® TESTER</b>					
<input checked="" type="checkbox"/>	CVcb	Coefficient of variation of count between	80	1.5 %	<input type="checkbox"/>
<b>Mass Variation - USTER® TESTER</b>					
<input checked="" type="checkbox"/>	CVm	Coefficient of variation of mass	20	13.7 %	<input checked="" type="checkbox"/>
<input type="checkbox"/>	CVm 1m	Coefficient of variation of mass	42	4.5 %	<input type="checkbox"/>
<input type="checkbox"/>	CVm 3m	Coefficient of variation of mass	74	3.5 %	<input type="checkbox"/>
<input type="checkbox"/>	CVm 10m	Coefficient of variation	86	2.6 %	<input type="checkbox"/>
<input type="checkbox"/>	CVmb	Coefficient of variation of mass between	94	2.8 %	<input type="checkbox"/>

Determining the USTER® STATISTICS level for measured values

## THE STANDARD FROM FIBER TO FABRIC

- 5 To determine the USTER® *STATISTICS* level, the 'Calculate' button needs to be clicked. The system will calculate the corresponding USTER® *STATISTICS* levels and mark them in different colors.
- 6 By marking a box in the furthest column ('Chart Download') corresponding charts can be selected for download as a PDF. In this download, the shown chart includes an indication of the value given in the table (see figure below).



*Chart download from the interactive table*

- 7 For printing it is recommended to download the table first as a PDF file.
- 8 The 'Reset' button clears all fields and a new calculation can be started.

### 3.2 Determining the absolute values for a given USTER® *STATISTICS* level

Conversely, it is also possible to calculate the absolute values for a given USTER® *STATISTICS* level. To obtain this information, the following steps need to be followed:

- 1 The specification of the particular yarn must be selected in the fields 'Material' and 'Process'.
- 2 The material count or fiber length (for fiber quality measured with USTER® *HVI* or USTER® *AFIS*) must be entered and the unit must be selected.
- 3 The requested USTER® *STATISTICS* level must be typed into the empty field 'USP™'.
- 4 This value can be pasted into all fields by clicking on the button 'Paste USP into all Fields'. If required, it is also possible to enter different USTER® *STATISTICS* levels for each parameter in the table below directly.

Back to USTER® STATISTICS start page

## Yarn Quality Tables

- Please select your raw material and spinning process.
- Then enter the yarn count either in Ne, Nm or in tex.
- Depending on the what information you already have, please select the Uster Statistics Percentile value in order to calculate the corresponding values or enter the measured values in order to get the corresponding Uster Statistics Percentiles.
- By clicking "Calculate" the desired values will be calculated and displayed in the table as well as in charts, if this feature is selected.
- Finally, the results can be downloaded as PDF.
- By clicking "Reset" new calculations can be started.

Material:   
 Process:   
  Ne  Nm  tex Count:   
>6 - <40

I have an USP™ and I am looking for the corresponding measurement values.   
 I have measurement values and I am looking for corresponding USP™.   
(USP™ = USTER® STATISTICS Percentile)

USP™   Calculations done.

Download Results:   
 Tables: PDF    
 Charts: PDF

Parameter	Description	USP™	Value	Unit	Chart Download
<input checked="" type="checkbox"/>	<b>Count Variation - USTER® TESTER</b>				
CV cb	Coefficient of variation of count between	50	1.5	%	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<b>Mass Variation - USTER® TESTER</b>				
CVm	Coefficient of variation of mass	50	15.2	%	<input checked="" type="checkbox"/>
CVm 1m	Coefficient of variation of mass	50	4.28		<input type="checkbox"/>
CVm 3m	Coefficient of variation of mass	50	3.64	%	<input checked="" type="checkbox"/>
CVm 10m	Coefficient of variation	50	2.7		<input type="checkbox"/>
CVmb	Coefficient of variation of mass between	50	2.2	%	<input type="checkbox"/>

*Determining the parameter values for a given USTER® STATISTICS level*

5 To determine the absolute values for the specific USTER® STATISTICS levels, the 'Calculate' button needs to be clicked. After calculation, the corresponding values will be indicated in the table in the column below 'Value'.

6 It is recommended to download the table as a PDF before printing.

7 By selecting a field in the column on the furthest right ('Chart Download') the corresponding charts can be selected for download as a PDF

### 3.3 USTER® CLASSIMAT Matrix

Different levels of CLASSIMAT matrices are given (USTER® CLASSIMAT QUANTUM and USTER® CLASSIMAT 5 (Provisional)). They are displayed in the interactive yarn tables [ ? ].

Thick and Thin places per classes (NSLT):

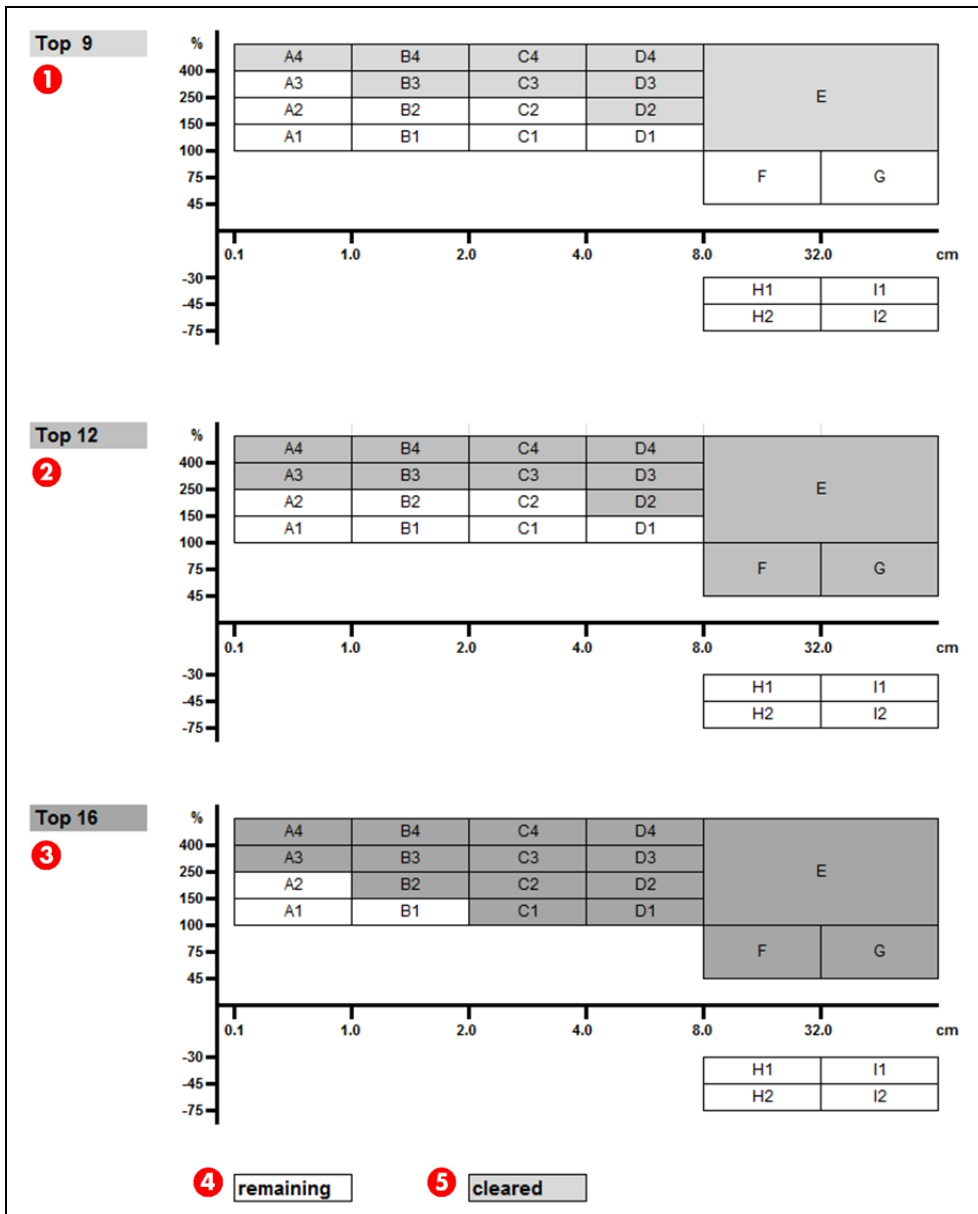
1 Top 9: The sum of the NSL events at the related 9 classes per 100 km: A4+B3+B4+C3+C4+D2+D3+D4+E. The related classes are shown in the related matrix and highlighted with grey color. In this example, there are no events.

# THE STANDARD FROM FIBER TO FABRIC

NSLT - USTER® CLASSIMAT QUANTUM					
NSL - Top 9	Thick and Thin places per class / per 100 km	50	0	1/100km	1
NSL - Top 12	Thick and Thin places per class / per 100 km	50	3	1/100km	
NSL - Top 16	Thick and Thin places per class / per 100 km	50	18	1/100km	

Defined USTER®  
CLASSIMAT  
Matrix- NSL

- 2 Top 12: The sum of the NSL events at the related 12 classes per 100 km: A3+A4+B3+B4+C3+C4+D2+D3+D4+E+F+G. In this example, the value is equal to 3 events per 100km.
- 3 Top 16: The sum of the NSL events at the related 16 classes per 100 km: A3+A4+B2+B3+B4+C1+C2+C3+C4+D1+D2+D3+D4+E+F+G. In this example, the value is equal to 18 events per 100 km.
- 4 Shows the remaining events in the yarn (white).
- 5 Shows the cleared events (grey).

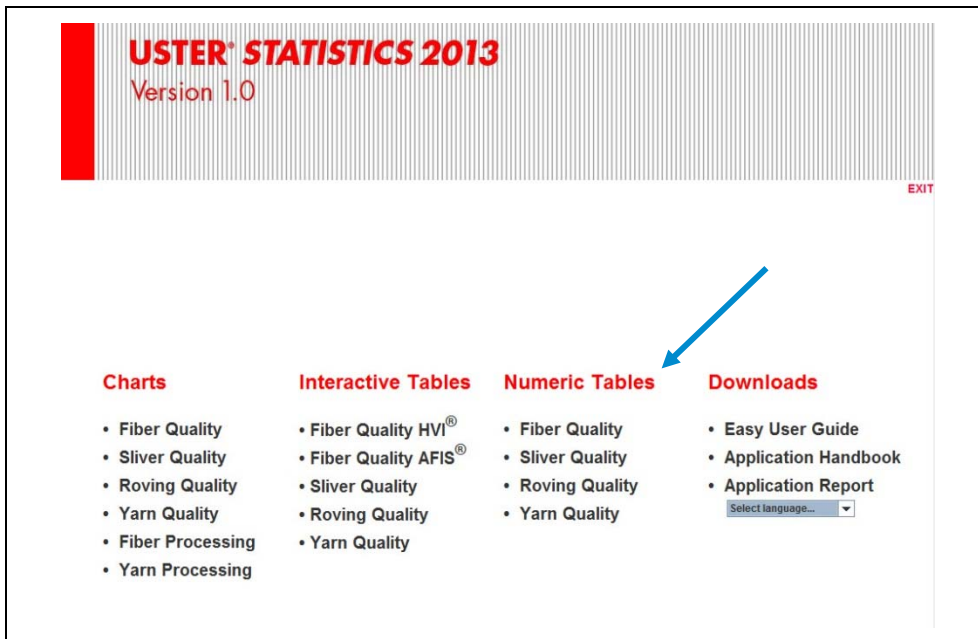


USTER® CLASSIMAT 5  
Matrix for NSLT



## 4 Using the USTER® STATISTICS numeric tables

The numeric tables of the USTER® STATISTICS were created for those customers who prefer to check the five main USTER® STATISTICS Percentile levels in a table instead of a graphic format.



Start screen of the USTER® STATISTICS tool

### 4.1 Definition of the yarn specification

- 1 Select the Material.
- 2 Select the Process.
- 3 Select the Instrument.
- 4 Select the Parameter. Each numeric table will give the absolute values for only one single parameter.
- 5 Click on Calculate.

[Back to USTER® STATISTICS start page](#)

## Yarn Quality Numeric table

1. Please select your raw material, spinning process, instrument and parameter.  
 2. By clicking "Calculate" the desired values will be calculated and displayed in the table.  
 3. Finally, the results can be downloaded as PDF and printed.  
 4. By clicking "Reset" new calculations can be started.

Material: 1

Process: 2

Instrument: 3

Parameter: 4

5

Selection screen for Yarn Quality Numeric Tables

## THE STANDARD FROM FIBER TO FABRIC

The following table will be shown as the output. It shows the USTER® *STATISTICS* Percentile levels for the whole count range for the selected parameter. This table can be downloaded as a PDF for printing or further processing.

Download Results:  
Tables: PDF

Ne	Nm	tex	5%	25%	50%	75%	95%
5.0	8.5	118.1	0	1	2	4	8
6.0	10.2	98.4	1	1	3	5	10
7.0	11.9	84.4	1	2	3	7	14
8.0	13.5	73.8	1	2	4	9	18
9.0	15.2	65.6	1	3	6	11	22
10.0	16.9	59.1	2	3	7	13	27
11.0	18.6	53.7	2	4	8	16	32
12.0	20.3	49.2	2	5	10	19	37
13.0	22.0	45.4	3	6	11	22	43
14.0	23.7	42.2	3	6	13	25	49
15.0	25.4	39.4	4	7	15	29	56
16.0	27.1	36.9	4	8	17	33	62
17.0	28.8	34.7	5	10	19	37	70
18.0	30.5	32.8	6	11	21	41	77
19.0	32.2	31.1	6	12	23	45	85
20.0	33.9	29.5	7	13	26	50	94
21.0	35.6	28.1	8	15	28	55	102
22.0	37.3	26.8	9	16	31	60	111
23.0	39.0	25.7	9	17	34	65	121
24.0	40.6	24.6	10	19	37	71	131
25.0	42.3	23.6	11	21	40	77	141
26.0	44.0	22.7	12	22	43	83	151
27.0	45.7	21.9	13	24	46	89	162
28.0	47.4	21.1	14	26	50	95	173
29.0	49.1	20.4	15	28	53	102	184
30.0	50.8	19.7	16	30	57	108	196
31.0	52.5	19.0	17	32	60	115	208
32.0	54.2	18.5	18	34	64	123	221
33.0	55.9	17.9	19	36	68	130	233
34.0	57.6	17.4	21	38	72	138	246
35.0	59.3	16.9	22	40	76	146	260
36.0	61.0	16.4	23	43	81	154	273
37.0	62.7	16.0	25	45	85	162	287
38.0	64.4	15.5	26	47	90	170	302
39.0	66.0	15.1	27	50	94	179	316
40.0	67.7	14.8	29	53	99	188	331

*Numeric tables of the  
USTER® STATISTICS*

## 5 Further help using USTER® *STATISTICS*

For further assistance with the use and application of USTER® *STATISTICS* please contact [textile.technology@uster.com](mailto:textile.technology@uster.com).

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