ICA Bremen Cotton Round Test 2019-1

in Cooperation with Bremer Baumwollboerse
carried out by Bremen Fibre Institute (FIBRE)

ICA Bremen
The Global Centre for Cotton Testing and Research

Bremen, 2019-08-30

Evaluation of the Test Results 2019 / 1

Tested Cotton: **US-Upland**
Cotton Number: **RM 51**
Number of Laboratories: **112**

Argentina	1	Mauritius	1
Australia	1	Pakistan	3
Bangladesh	-	Poland	-
Brazil	6	Senegal	-
China	23	Serbia	1
Czech Republic	3	Slovenia	2
Egypt	2	South Africa	1
France	-	Spain	5
Germany	9	Sudan	-
Greece	5	Switzerland	2
India	25	Taiwan	2
Indonesia	1	Tanzania	-
Iran	-	Thailand	-
Israel	1	Tunisia	1
Italy	1	Turkey	4
Japan	2	Uganda	1
Kazakhstan	-	United States	5
Korea	1	Uzbekistan	1
Mali	1	Vietnam	1

A joint venture between
International Cotton Association · Est. 1841 · Bremer Baumwollbörse · Seit 1872

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Faserinstitut Bremen FIBRE

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Registered in Germany no: HRB 27431 HB VAT-ID: DE280079445

Managing Director: Bill Kingdon Place of jurisdiction: Bremen

Explanations 2019-1

test material

The sample material is generally unprocessed cotton lint without additional homogenisation from varying origins with a wide spectrum of properties. The Bremen Fibre Institute (FIBRE) usually avoids origins with high result variations.

In this Round Test the cotton is: **US- Upland (RM 51)**

The variation of the utilized cotton was measured at the Bremen Fibre Institute (FIBRE) with an Uster HVI 1000 with 10 tests on samples from 10 different layers with the following results:

HVI HVICCS	SD between bale layers (based on 10 tests per layer)	SD between single tests (based on 10 times 10 tests)
Mic	0.024	0.034
Strength, g/tex	0.310	0.730
Length, UHM, inch	0.004	0.011
Length, UHM, mm	0.101	0.285

The test material is not suitable as a reference for calibration.

result evaluation

The results of the participating laboratories for one test method and one parameter are grouped in one table implying that the used instruments yield comparable results despite different instrument types or different national standard test methods. The results are partitioned in different tables as soon as significant differences appear.
Based on the compilation of the results, an identification of outliers is carried out, which is according to Grubbs' Test for Outliers described in ISO 5725 with one slight modification: the algorithm is applied repeatedly to ensure that all outliers are excluded. All outliers are marked by putting the result in brackets. The statistical parameters for all tables and characteristics are calculated after the exclusion of outliers. For the usage of the statistical data, the different numbers of repetitions in each lab have to be considered.

graphs

In all graphs, any values on the border between two classes are sorted to the lower class [Class Limit <= x < Class Limit].

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assessment of the laboratory performance

From the results, the bias of each laboratory can be calculated. Stability and repeatability cannot be assessed.

The ICA Bremen Cotton Round Test does not include any benchmarking or rating of the laboratories and their results. Rather the results can be used by each laboratory to evaluate its own performance.

- For estimating a bias to results of other laboratories, please calculate the difference between your result and either the average or the median of all laboratories (after exclusion of outliers).
- For evaluating the bias, the z-score calculation may be applied:

$$z = \frac{your\ value - average\ (or\ median)}{StdDev}$$

- If the z-score is between -1 and 1 your lab belongs to the better 68% of all labs and no measures are necessary. In the z-score range of -2 to 2 are 95 % of all values. The closer your z-score is to 2 (-2) the more urgently it is to take measures to improve performance. If your z-score is above 2 (below -2) a basic revision of all conditions will be necessary.
- For assessing permanent deviations, please monitor all deviations in subsequent ICA Bremen Round Tests or in comparison to other round trial programmes like the CSITC Round Trials or the USDA HVI Checktest.

laboratory numbers

The laboratory numbers for each laboratory are confident. The numbers are usually kept constant for subsequent Round Tests. In case that any laboratory has doubts in the anonymity of its number, a new laboratory number should be requested.

In case of more than one instruments of the same type, an adjunct number or character is given (e.g. 123-1 and 123-2). In order to distinguish between your instruments, please provide specific adjunct characters for each of your instruments with your data sheet.

registration and participation

To register a new laboratory to the ICA Bremen Round Test, please send the laboratory's contact details to Mrs Hannelore Gerardi – contact details provided below.

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In the case that a laboratory does not send any results back for a whole year's period, we have to exclude it from the participants.

choice of test methods included in the round test

The ICA Bremen Round Test strives to include every commonly used test method.

- Test methods will remain included as long as sufficient participant numbers are given, although the Bremen Fibre Institute (FIBRE) maintains the right to exclude methods.
- Proposals for the inclusion of new methods/instruments/parameters are appreciated. For this, an adequate number of long term participants should be given.
- Test methods for stickiness are excluded due to difficulties in sample provision.

improvement of the ica bremen cotton round test

Any proposals for improving the Round Test are highly appreciated. For this, please contact Mr Axel Drieling – contact details provided below.

important notes

Please take care to fill in all the necessary information on the test forms (e.g. the test methods, the instrument types and the number of repetitions for each test). Please provide one or two reliable e-mail addresses to Mrs Gerardi - contact details are provided in the last section.

Contact

For any questions regarding the ICA Bremen Cotton Round Test, please contact:

- Mr Axel Drieling for general questions relating to the Round Test and cotton testing, Tel. +49 421 218 58650, e-mail: axel@ica-bremen.org
- Mrs Hannelore Gerardi for questions relating to the realization of the current tests, Tel. +49 421 218 58671, e-mail: gerardi@faserinstitut.de

With kind regards,

Axel Drieling
Hannelore Gerardi

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Micronaire (Stand Alone Instruments)

	Micronaire (Mic)	Instrument	Standard Test Method	Repetitions
Average	4.3			
Median	4.3			3.5
Stddev	0.11			
CV	2.6			
Min	4.1			
Max	4.5			
n	26			
Laboratory	**Micronaire (Mic)**	**Instrument**	**Standard Test Method**	**Repetitions**
12-1	4.5	USTER 775	GB/T 6498-2008	3
16-1	4.32	N/S GW208/08	UNE 40214	6
17-1	4.1			
22-1	4.15	Fibronaire		3
28-1	4.16	Mic-Tester	ASTM D 1448	5
29-1	4.4		ISO 2403	
32-1	4.21	WIRA		6
32-2	4.2	WIRA		6
56-1	4.4	Fibronaire	JIS	2
67-1	4.2	Fibronaire		6
76-1	4.27	Wira		4
77-1	4.2			
93-1	4.3	Micronaire	ASTM 1448	2
96-1	4.5	GJC-01	GB/T 6498-2008	10
112-1	4.45	Fibronaire	ASTM D 1448	2
128-1	4.2	Fibronair	ASTM	2
129-1	4.3	SHEFFIELD	ASTM 5867	10
131-2	4.25	mic	D1448-05	6
132-1	4.4	Uster 775	DIN 53941	3
142-1	4.48	80 400	ISO	3
155-1	4.3			
162-1	4.3	Wira Fineness Meter		6
169-1	4.35	Sheffield Micronaire		3
177-1	4.22	DPM 60	DIN 53941	3
186-1	4.26	WIRA	ASTM	6
193-1	4.32	Y145	GB/T 6498-2008	2

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Pressley - Strength

	PI (0)	Standard Test Method	Repetitions
Average	6.94		
Median	7.5		6.0
Stddev	2.14		
CV	30.8		
Min	3.13		
Max	9.1		
n	8		
Laboratory	**PI (0)**	**Standard Test Method**	**Repetitions**
16-1	8.86	UNE 40247	10
29-1	8.1	ISO 3060	10
56-1	9.1	JIS	5
93-1	6.9	ASTM 1445	6
128-1	4.5	ASTM	3
131-2	3.13	1445-05	6
162-1	8.26		6
177-1	6.67	DIN 53942	3

Stelometer - Strength/Elongation

	Bundle Strength (gf/tex)	Bundle Elongation (%)	Standard Test Method	Repetitions
Average	24.11	6.38		
Median	23.87	6.5		6.0
Stddev	1.33			
CV	5.5			
Min	22.7	6.0		
Max	26.1	8.5		
n	6	6		
Laboratory	**Bundle Strength (gf/tex)**	**Bundle Elongation (%)**	**Standard Test Method**	**Repetitions**
93-1	24.4	8.5	ASTM 1445	6
112-1	23.34	6.62	ASTM D 1445	3
128-1	25.1	6.0	ASTM	3
131-2	23.0	6.5	1445-05	6
162-1	26.1	6.8		6
193-1	22.7	6.0	GB/T 13783-1992	6

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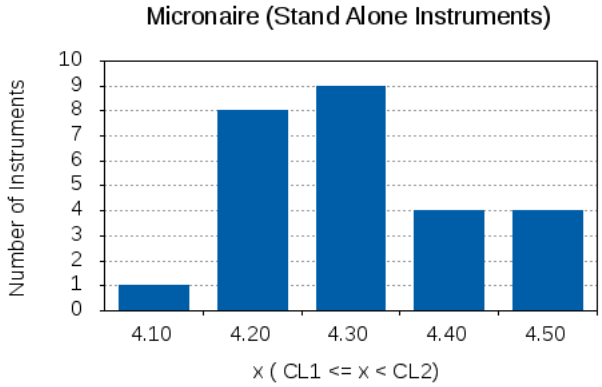

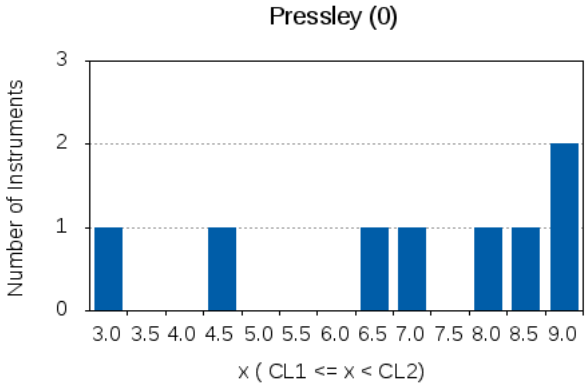

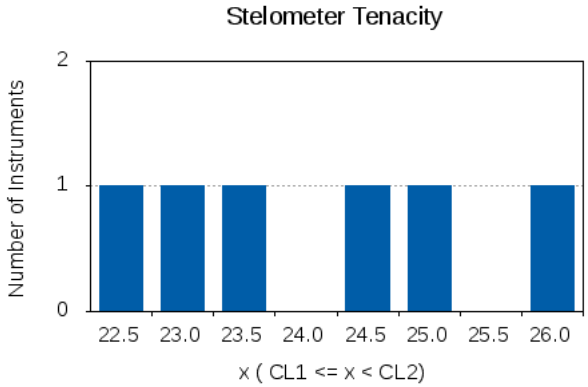

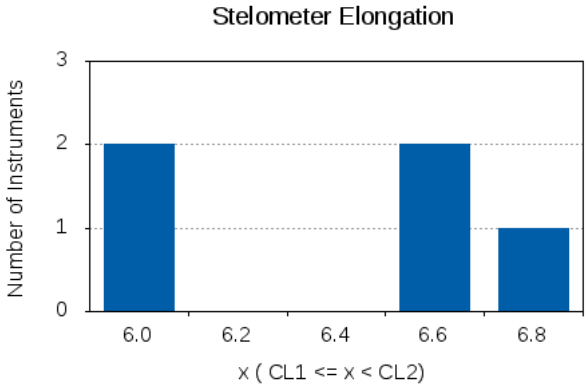

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Fibrograph - Span Length

	2.5% SL (inch)	2.5% SL (mm)	50% SL (inch)	50%SL (mm)	UR (%)	SFC(N) (%)	SFC(W) (%)	SFI	Instrument Model	Standard Test Method	Repeti-tions
Average	1.158	29.4	0.547	13.9	46.4						
Median	1.1465	29.115	0.542	13.77	47.0						5.5
Stddev	0.025	0.64									
CV	2.2	2.2									
Min	1.136	28.85	0.514	13.05	42.0						
Max	1.202	30.52	0.587	14.9	51.0						
n	6	6	5	5	5						
Laboratory	**2.5% SL (inch)**	**2.5% SL (mm)**	**50% SL (inch)**	**50%SL (mm)**	**UR (%)**	**SFC(N) (%)**	**SFC(W) (%)**	**SFI**	**Instrument Model**	**Standard Test Method**	**Repeti-tions**
28-1	1.147	29.13	0.514	13.05	42.0		11.5		Fibrograph	ASTM D 1447	5
93-1	1.142	29.0	0.587	14.9	51.0				Digital Fibrograph	ASTM 1447	4
131-1	1.146	29.1							730	1447-00	6
131-2	1.136	28.85	0.535	13.59	47.0				530	1447-00	6
132-1	1.202	30.52	0.542	13.77	45.0				Fibrotest	ASTM D1447	10
143-1	1.173	29.8	0.559	14.2	47.0				SPINLAB 330	ABNT NBR 13154/94	2

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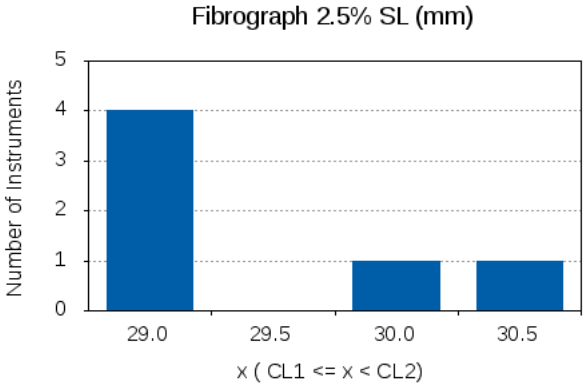

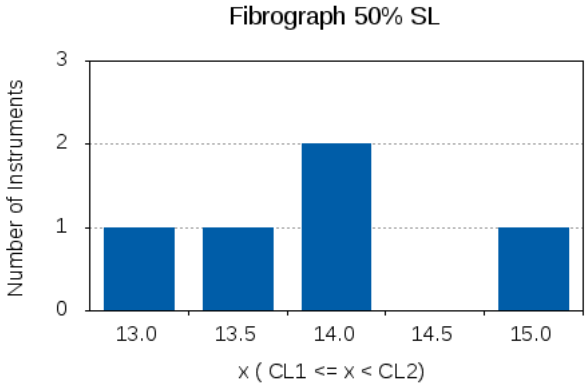

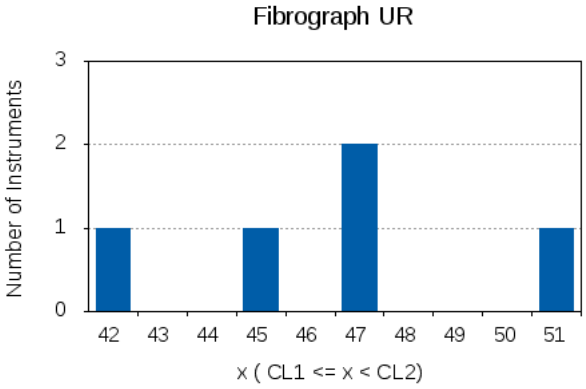

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Comb Sorter - Staple Length

	ML(W) (mm)	CV (%)	SFC < 12.5mm (%)	Instrument Model	Standard Test Method	Repetitions
Average	23.33	40.2	13.7			
Median	23.3	41.0	13.5			1.0
Stddev						
CV						
Min	22.5	35.9	13.0			
Max	24.2	42.9	14.8			
n	4	4	4			
Laboratory	**ML(W) (mm)**	**CV (%)**	**SFC < 12.5mm (%)**	**Instrument Model**	**Standard Test Method**	**Repetitions**
85-1	24.2	41.2	14.8	Zweigle	UNI 10170	1
85-2	23.4	35.9	13.0	Zweigle	UNI 10170	1
85-3	22.5	42.9	13.0	Keisokki	UNI 10170	1
85-4	23.2	40.8	14.0	Keisokki	UNI 10170	1

Almeter - Staple Length

	ML(N) (mm)	CV(N) (%)	SFC(N) <12.5mm (%)	ML(W) (mm)	CV(W) (%)	SFC(W) <12.5mm (%)	Instrument Model	Standard Test Method	Repetitions
Average									
Median									
Stddev									
CV									
Min	19.1	27.76	2.81	22.8	23.9	0.9			
Max	25.99	44.1	28.3	29.02	36.9	14.1			
n	3	3	3	3	3	3			
Laboratory	**ML(N) (mm)**	**CV(N) (%)**	**SFC(N) <12.5mm (%)**	**ML(W) (mm)**	**CV(W) (%)**	**SFC(W) <12.5mm (%)**	**Instrument Model**	**Standard Test Method**	**Repetitions**
58-1	19.1	44.1	28.3	22.8	36.9	14.1	AL 101	Internal	3
112-1	25.99	27.76	2.81	29.02	23.9	0.9	Almeter		3
132-1	19.3	41.5	24.4	24.0	31.8	10.2	Uster AL100	DIN 53806	5

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Causticaire (18% NaOH) - Maturity

	Maturity (%)	Instrument Model	Standard Test Method	Repetitions
Average				
Median				
Stddev				
CV				
Min	72.0			
Max	85.0			
n	3			
Laboratory	**Maturity (%)**	**Instrument Model**	**Standard Test Method**	**Repetitions**
56-1	85.0	Micronaire	JIS	2
129-1	72.0	PROJECTION MICROSCOPE	IS-236	4
177-1	82.0			

Microscopic Test - Maturity

	Maturity (ASTM) (%)	Maturity (BS) (%)	Instrument	Standard Test Method	Repetitions
Average					
Median					
Stddev					
CV					
Min					
Max					
n					
Laboratory	**Maturity (ASTM) (%)**	**Maturity (BS) (%)**	**Instrument**	**Standard Test Method**	**Repetitions**
131-2	70.0		leica queen	2130-82	6

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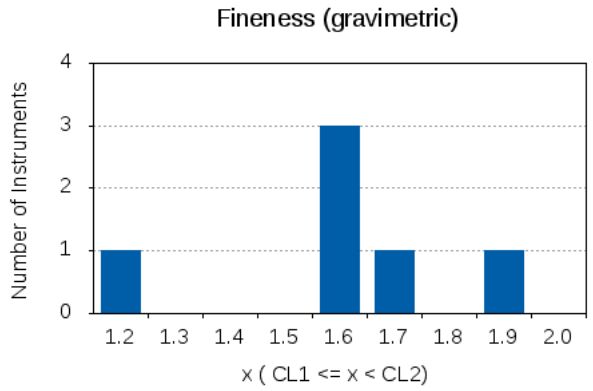
Gravimetric Fineness

	Grav. Fineness (dtex)	Std. Test Method	Repetitions
Average	1.6		
Median	1.615		7.0
Stddev	0.25		
CV	15.7		
Min	1.16		
Max	1.94		
n	6		
Laboratory	**Grav. Fineness (dtex)**	**Std. Test Method**	**Repetitions**
85-1	1.61	UNI EN ISO 1973	10
85-3	1.6	UNI EN ISO 1973	10
85-4	1.62	UNI EN ISO 1973	10
112-1	1.94		3
177-1	1.16	ASTM D 1577/90	4
193-1	1.67	GB/T 6100-2007	3



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IIC/Shirley FMT - Fineness/Maturity

	PM (%)	MAT	FIN (mtex)	Instrument Model	Standard Test Method	Repetitions
Average	82.9	0.9	183			
Median	83.3	0.875	179.0			5.0
Stddev	7.1	0.08	16			
CV	8.5	8.6	8.6			
Min	74.0	0.82	163.0			
Max	91.0	0.99	204.0			
n	6	6	6			
Laboratory	**PM (%)**	**MAT**	**FIN (mtex)**	**Instrument Model**	**Standard Test Method**	**Repetitions**
28-1	86.7	0.99	163.0	FIBROFLOW	ISO 10306	5
32-1	79.9	0.9	175.0	WIRA		6
32-2	76.5	0.85	183.0	WIRA		6
93-1	91.0	0.82	174.0	WIRA	ISO 10306	2
96-1	89.3	0.99	199.0	WIRA		5
128-1	74.0	0.83	204.0	Micromat	ASTM	3

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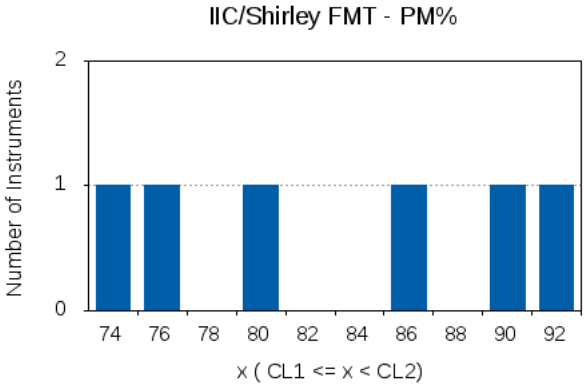

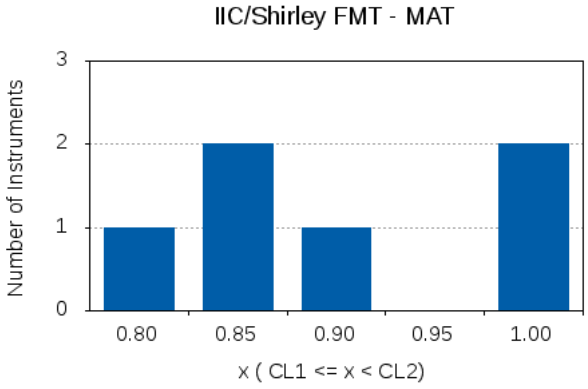

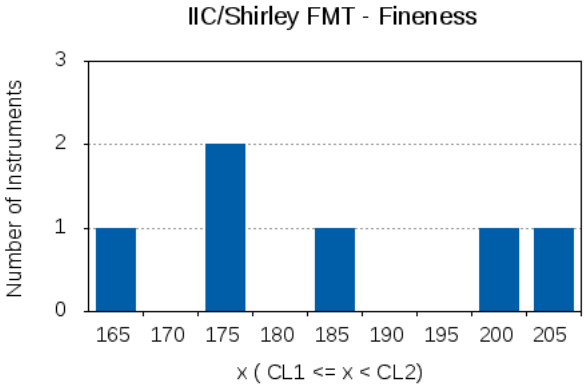

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HVI (HVICCS Calibration): Micronaire / Strength

	Micronaire (Mic)	Mat. Index	PM% (%)	Strength (gf/tex)	Elong. (%)	Manuf.	Model	Std. Test Method	Repeti-tions
Average	4.42	0.867	86.4	31.44	6.56				
Median	4.41	0.87	87.0	31.45	6.5				10.0
Stddev	0.07	0.02	1.7	0.73	0.9				
CV	1.6	2.0	1.9	2.3	13.7				
Min	4.0	0.78	78.0	27.8	2.9				
Max	4.62	1.0	88.0	35.2	10.1				
n	117	87	17	117	90				
Laboratory	**Micronaire (Mic)**	**Mat. Index**	**PM% (%)**	**Strength (gf/tex)**	**Elong. (%)**	**Manuf.**	**Model**	**Std. Test Method**	**Repeti-tions**
3-1	4.4	0.89		30.9	6.6	Premier	ART 2	ASTM	6
5-1	4.44	0.87		31.5	5.4	USTER	1000	CCAA	12
5-2	4.51	0.87		31.3	5.3	USTER	1000	CCAA	12
5-3	4.51	0.87		31.3	5.3	USTER	1000	CCAA	12
6-1	4.36	0.88		31.9	3.9	USTER	1000	GB/T 20392-2006	4
10-1	4.38		88.0	32.4		USTER	1000	GB20392-2006	5
11-1	4.3			28.4	6.9	PREMIER	ART2	USDA	10
12-1	4.49	0.9		32.0	6.5	Premier	ART 2	GB/T 20392-2006	12
18-1	4.53	0.87		31.8	6.0	USTER	1000	INDIVIDUAL TESTS	20
19-1	4.38	0.86		31.3	6.9	USTER	1000	GB/T 20392-2006	
23-1	4.3		83.0	31.8	5.8	USTER	900		10
24-1	4.46	0.89		31.4		USTER	Spectrum		
25-1	4.4	0.86		31.8	6.6	USTER	1000		10
26-1	4.42	0.87		31.8	5.8	USTER	1000		10
27-1	4.5	0.87		32.1	6.3	USTER	900	ASTM- D5867-2012	6
28-1	4.16	1.0	86.0	31.2	8.7	Textechno	Other	ASTMD5867	5
32-1	4.38			32.3	6.2	USTER	900A		10
32-2	4.34			31.7	6.0	USTER	900 A		10
33-1	4.4			32.1		USTER	1000	GB/T20392	6
34-1	4.49		88.0	31.0	4.8	USTER	1000	GB/T 20392-2006	2
35-1	4.41	0.86		30.9	5.6	USTER	1000	GB20392	2
36-1	4.29			32.8	6.7	USTER	1000		10
39-1	4.39	0.89		31.7		Premier	ART 2	HVI	6
41-1	4.59	0.91		30.8	7.9	USTER	Spectrum		5
43-1	4.5			32.8	6.3	USTER	1000	ASTM-D1234-2012	10
43-2	4.4			32.2	8.3	USTER	1000	ASTM-D1234-2012	10
44-2	4.26	0.89		31.9		Premier	ART 2		10
49-1	4.4	0.86		31.1	7.6	USTER	1000	ASTM D 1776	10
54-1	4.01		88.0	33.1	7.7	Uster	Spectrum	HVI Mode	4
56-1	4.31			31.6	6.6	USTER	Spectrum	HVI Test Method	5
57-1	4.4			31.3	6.0	MAG	Other	ASTM-D5867-12	6
58-1	4.38	0.86		33.0	7.0	USTER	1000	Internal	10
59-1	4.3	0.86		31.5		USTER	900		10
59-2	4.35	0.87		31.6		USTER	1000		10
59-3	4.45	0.87		32.0		USTER	1000		10
59-4	4.46	0.87		31.8		USTER	1000		10
60-1	4.5	0.87		31.2	6.1	USTER	700	ASTM-D1234-2012	6
60-2	4.38	0.86		31.4	6.3	USTER	1000	ASTM-D1234-2012	6

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Registered in Germany no: HRB 27431 HB VAT-ID: DE280079445

Managing Director: Bill Kingdon Place of jurisdiction: Bremen

ICA Bremen Cotton Round Test 2019-1

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

ICA Bremen
The Global Centre for Cotton Testing and Research

	Micronaire (Mic)	Mat. Index	PM% (%)	Strength (gf/tex)	Elong. (%)	Manuf.	Model	Std. Test Method	Repeti-tions
61-1	4.4			28.6	5.2	MAG	HVT Expert 1201	ASTM-5867-2005	4
63-1	4.23	0.81		32.2	6.6	MAG	Other	ASTM-D-5867-12	
65-1	4.4	0.82		31.5	6.3	Premier	ART 2	ASTM:D-5867-12	
68-1	4.37	0.86		31.8	7.5	HVI 1000	Other	Other	10
68-2	4.41	0.86		31.2	7.8	HVI 1000	Other	Other	10
69-1	4.47	0.86		30.5		MAG SOLVIS PVT LTD	Other	ASTM:D-5867-12	
71-1	4.4	0.89		31.6	2.9	USTER	1000	GB/T 20392-2006	6
72-1	4.48	0.87		32.1		USTER	1000	ASTM-D1776	6
75-1	4.37	0.89		31.8		USTER	Spectrum	GB/T20392-2006	
78-1	4.56		87.0	31.8		USTER	1000		6
83-1	4.44			31.1	6.3	USTER	Spectrum	GB/T 20392-2006	10
86-1	4.46	0.86		31.1	7.1	USTER	1000	GB/T 20392-2006	1
90-1	4.35	0.85		31.8	8.2	USTER	1000	ASTM-D 5867	10
91-1	4.49	0.86		29.1	6.5	USTER	1000	ASTM D 5867-12	5
91-3	4.49					USTER	Other		10
93-1	4.3			32.5	7.8	USTER	900	ASTM 5867	6
94-1	4.4	0.87		31.4		USTER	1000	ASTM-D5867	6
94-2	4.41	0.87		31.2		USTER	1000	ASTM-D5867	6
96-1	4.4			31.5	6.8	Premier	HFT	GB/T 20392-2006	10
96-2	4.4	0.87		30.4	5.9	USTER	93-4(HV11000-143)	GB/T 20392-2006	10
96-3	4.4			31.9	6.8	Premier	HFT	GB/T 20392-2006	10
96-4	4.5	0.87		32.4	3.7	USTER	Other	GB/T 20392-2006	10
98-1	4.47			30.0		USTER	1000	ASTM 1776-16	12
101-1	4.46	0.87		31.9	6.3	HVI		ASTM 5687-2012	6
103-1	4.42	0.87		31.6	5.9	USTER	1000.0	GB/T 20392-2006	6
104-1	4.4	0.87		31.5	6.1	USTER	1000	GB/T 20392	4
107-1	4.0	0.78		31.0	6.0	Premier	ART 2	ASTM :D 5867-12	
108-1	4.39	0.86		31.5	6.0	USTER	1000	ASTM D5867-12	10
109-1	4.43	0.87		32.2		USTER	1000		
111-1	4.43	0.86		29.5	6.3	USTER	1000	Internal	16
112-1	4.44	0.86		31.5	7.7	USTER	1000	ASTM D 5867	6
113-1	4.4	0.86		30.2	6.4	MAG	HVT Expert 1201	ASTM-D-5867-12	
116-1	4.47	0.87	87.0	31.0	6.1	USTER	1000	ASTM-D5867-2012	10
116-2	4.42	0.87	87.0	31.1	6.1	USTER	1000	ASTM-D5867-2012	10
116-3	4.52	0.87	87.0	30.5	6.4	USTER	1000	ASTM-D5867-2012	10
118-1	4.36			30.9	7.9	Uster			6
119-1	4.51	0.87		31.1	6.6	USTER	1000	GB/T 20392	2
121-1	4.47	0.86		31.3	7.4	USTER	1000.0	GB/T20392-2006	2
123-1	4.4	0.86		32.3	6.7	USTER	1000	ASTM-D 5867-12	10
123-2	4.39	0.85		29.9	5.2	Premier	Other	ASTM D 5867-12	10
124-1	4.44		86.0	31.3		USTER	1000		
128-1	4.45	0.87		31.1	5.9	USTER	1000	ASTM D5867-12	10
129-1	4.3			28.3	5.4	USTER	900	ASTM-5867	10
132-1				32.7	7.5	Textechno	Fibrotest	ASTM D5867	10
133-1	4.49		87.0	30.8		Uster	HVI 1000	ASTM	2
136-1	4.43	0.86		31.7	6.5	USTER	1000	ASTM D5867-95	10

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ICA Bremen
The Global Centre for Cotton Testing and Research

	Micronaire (Mic)	Mat. Index	PM% (%)	Strength (gf/tex)	Elong. (%)	Manuf.	Model	Std. Test Method	Repeti-tions
138-1	4.28	0.88		30.7	6.8	USTER	Spectrum	ASTM D 5867-2012e1	6
139-1	4.43			30.8	6.7	Premier	ART 2	ASTMD5867-05	12
143-1	4.36	0.89		32.1	6.2	USTER	Spectrum		6
143-2	4.47	0.85		31.1	6.0	USTER	900		6
143-3	4.3	0.84		32.2	6.8	Premier	ART		6
145-1	4.05	0.88		32.6					
148-1	4.48	0.87		30.8	6.2	Uster	USTER HVI 1000	ASTM-D 5867	6
154-1	4.4		87.0	31.2	7.5	USTER	900		10
158-1	4.5	0.86	86.0	31.9	6.4	USTER	900		6
158-2	4.4	0.87	87.0	31.4	5.3	USTER	900		6
162-1	4.3			31.6	5.6	USTER	900		6
170-1	4.48	0.84		30.4	10.1	USTER	1000	Manufacturer	6
175-1	4.48	0.86		31.5	6.9	USTER	1000	ASTM-D5867-12	10
176-1	4.32	0.86		31.2	7.0	USTER	1000		10
179-1	4.44	0.86		32.0	6.6	USTER	1000	GB/T 20392-2006	
180-1	4.38	0.89		31.3	7.3	USTER	Spectrum	ASTM	6
181-1	4.4	0.89		30.9	7.3	USTER	Spectrum	ASTM	6
186-1	4.32	0.92	82.0	32.2		Textechno	CCS	ASTM	10
193-1	4.41	0.86		32.2	7.4	USTER	1000	GB/T 20392-2006	6
200-1	4.4			31.0		USTER	900	ASTM D5867	8
201-1	4.34	0.86	86.0	31.1	7.1	USTER	1000	GOST 10681 UzRH 71-01:2001	10
204-1	4.55	0.85		29.5	8.6	USTER	1000	GB/T20392-2006	10
207-1	4.4	0.85		30.6	7.8	USTER	1000	ASTM D5867-12 e1	10
207-2	4.41	0.87		32.4	6.3	USTER	1000	ASTM D5867-12 e1	10
207-3	4.45	0.86		31.7	7.4	USTER	1000	ASTM D5867-12 e1	10
207-4	4.42	0.85		30.7	8.3	USTER	1000	ASTM D5867-12 e1	10
209-1	4.4	0.82		31.4	6.2	MAG	HVI	ASTM : D5867-12	6
210-1	4.47	0.91		31.2		USTER	1000	ASTMD 5867-2012	30
211-1	4.52	0.86		31.0		USTER	1000		10
212-1	4.22			31.3		USTER	1000	ASTM-D5867-2012	9
213-1	4.41	0.87		29.9	5.6	USTER	1000	ASTM-D1445,-47,-48,D5867	10
214-1	4.47	0.84		31.2		Premier	ART		30
216-1	4.4	0.87		35.2	5.2	USTER	1000		3
217-1	4.62	0.88	78.0	27.8		Statex	Other	ASTM D-5867-12e1	

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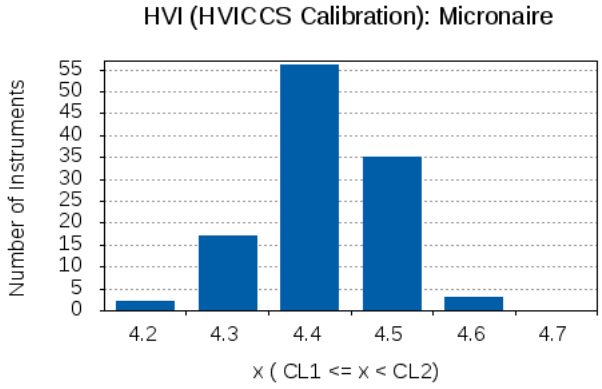

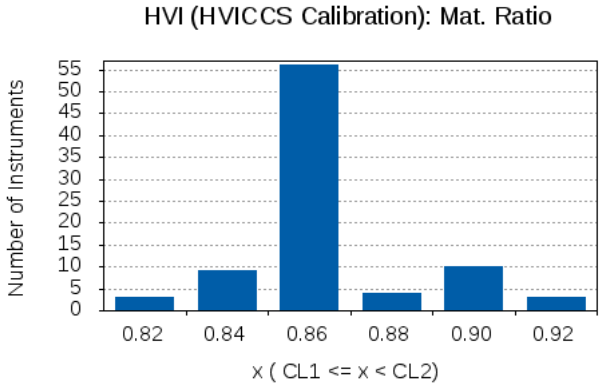

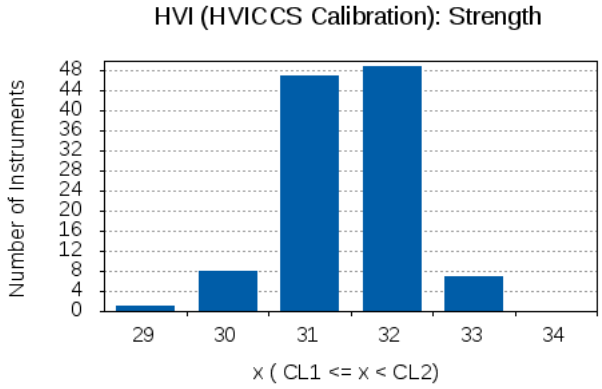

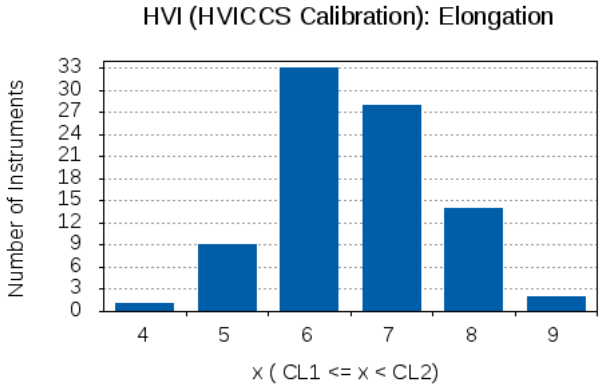

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HVI (HVICCS Calibration): Length Results

	UHML (inch)	UHML (mm)	Uniformity Index (%)	SFI	Manuf.	Model	Std. Test Method	Repetitions	SFI calibrated?
Average	1.187	30.16	82.77	8.07					
Median	1.187	30.15	82.7	8.1				10.0	
Stddev	0.015	0.39	0.66	0.94					
CV	1.3	1.3	0.8	11.7					
Min	1.128	28.65	74.0	4.0					
Max	48.78	1239.0	85.0	23.4					
n	116	116	117	111					
Laboratory	**UHML (inch)**	**UHML (mm)**	**Uniformity Index (%)**	**SFI**	**Manuf.**	**Model**	**Std. Test Method**	**Repetitions**	**SFI calibrated?**
3-1	1.177	29.9	81.9	8.52	Premier	ART 2	ASTM	6	Yes
5-1	1.183	30.05	82.3	7.1	USTER	1000	CCAA	12	Yes
5-2	1.195	30.35	82.4	6.9	USTER	1000	CCAA	12	Yes
5-3	1.195	30.35	82.4	6.9	USTER	1000	CCAA	12	Yes
6-1	1.205	30.6	83.5	12.33	USTER	1000	GB/T 20392-2006	4	No
10-1	1.176	29.86	82.8		USTER	1000	GB20392-2006	5	No
11-1	1.16	29.46	84.6		PREMIER	ART2	USDA	10	
12-1	1.202	30.53	83.2	7.6	Premier	ART 2	GB/T 20392-2006	12	No
18-1	1.187	30.15	82.9	7.8	USTER	1000	INDIVIDUAL TESTS	20	Yes
19-1	1.198	30.43	83.1	8.5	USTER	1000	GB/T 20392-2006		
23-1	1.18	29.97	82.4	8.4	USTER	900		10	Yes
24-1	1.205	30.6	81.8	8.2	USTER	Spectrum			
25-1	1.18	29.96	82.5	8.6	USTER	1000		10	No
26-1	1.195	30.35	83.1	7.9	USTER	1000		10	No
27-1	1.213	30.8	82.3	8.5	USTER	900	ASTM- D5867-2012	6	
28-1	1.189	30.2	82.34	10.58	Textechno	Other	ASTMD5867	5	no
32-1	1.169	29.7	81.9	10.5	USTER	900A		10	Yes
32-2	1.193	30.3	82.9	9.0	USTER	900 A		10	Yes
33-1	1.197	30.4	82.8		USTER	1000	GB/T20392	6	
34-1	1.187	30.16	83.6	19.1	USTER	1000	GB/T 20392-2006	2	Yes
35-1	1.176	29.86	82.53	8.2	USTER	1000	GB20392	2	Yes
36-1	1.177	29.89	82.7	17.2	USTER	1000		10	
39-1	1.222	31.05	84.3	7.1	Premier	ART 2	HVI	6	
41-1	1.162	29.52	80.9	6.6	USTER	Spectrum		5	Yes
43-1	1.19	30.23	82.37	8.08	USTER	1000	ASTM-D1234-2012	10	no
43-2	1.19	30.23	83.11	8.62	USTER	1000	ASTM-D1234-2012	10	No
44-2	1.193	30.3	83.1	7.7	Premier	ART 2		10	Yes
49-1	1.197	30.4	82.6	7.8	USTER	1000	ASTM D 1776	10	NO
54-1	1.228	31.2	74.0	8.0	Uster	Spectrum	HVI Mode	4	
56-1	1.181	30.0	83.5	8.6	USTER	Spectrum	HVI Test Method	5	
57-1	1.189	30.2	85.0	7.2	MAG	Other	ASTM-D5867-12	6	No
58-1	1.188	30.17	83.9	7.9	USTER	1000	Internal	10	
59-1	1.194	30.34	83.9	8.5	USTER	900		10	
59-2	1.193	30.29	82.5	8.3	USTER	1000		10	
59-3	1.188	30.17	83.0	7.3	USTER	1000		10	
59-4	1.18	29.96	82.7	7.7	USTER	1000		10	
60-1	1.17	29.71	82.0	7.8	USTER	700	ASTM-D1234-2012	6	

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	UHML (inch)	UHML (mm)	Uniformity Index (%)	SFI	Manuf.	Model	Std. Test Method	Repetitions	SFI calibrated?
60-2	1.19	30.22	83.0	8.2	USTER	1000	ASTM-D1234-2012	6	
61-1	1.197	30.4	83.0		MAG	HVT Expert 1201	ASTM-5867-2005	4	Yes
63-1	1.19	30.23	84.4	7.5	MAG	Other	ASTM-D-5867-12		
65-1	1.193	30.3	83.1	8.2	Premier	ART 2	ASTM:D-5867-12		
68-1	1.192	30.27	82.4	8.2	HVI 1000	Other	Other	10	YES
68-2	1.196	30.39	82.6	8.5	HVI 1000	Other	Other	10	YES
69-1	1.15	29.2	83.3	8.25	MAG SOLVIS PVT LTD	Other	ASTM:D-5867-12		No
71-1	1.184	30.07	82.6	7.1	USTER	1000	GB/T 20392-2006	6	No
72-1	1.198	30.43	82.8	8.2	USTER	1000	ASTM-D1776	6	No
75-1	1.17	29.71	82.3	10.3	USTER	Spectrum	GB/T20392-2006		Yes
78-1	1.187	30.15	81.9	8.4	USTER	1000		6	No
83-1	1.202	30.53	82.1		USTER	Spectrum	GB/T 20392-2006	10	
86-1	1.185	30.1	82.9	23.4	USTER	1000	GB/T 20392-2006	1	No
90-1	1.203	30.56	83.1	8.3	USTER	1000	ASTM-D 5867	10	
91-1	1.176	29.88	82.1	8.1	USTER	1000	ASTM D 5867-12	5	Yes
91-2	1.252	31.79	83.8	7.1	USTER	Other		10	No
93-1	1.181	30.0	82.5	4.0	USTER	900	ASTM 5867	6	
94-1	1.197	30.4	82.9	8.1	USTER	1000	ASTM-D5867	6	Yes
94-2	1.172	29.77	82.5	8.0	USTER	1000	ASTM-D5867	6	Yes
96-1	1.185	30.1	83.2	9.2	Premier	HFT	GB/T 20392-2006	10	Yes
96-2	1.181	30.0	82.5	7.4	USTER	93-4(HV11000-143)	GB/T 20392-2006	10	Yes
96-3	1.185	30.1	83.2	8.1	Premier	HFT	GB/T 20392-2006	10	Yes
96-4	1.205	30.6	83.1	7.4	USTER	Other	GB/T 20392-2006	10	Yes
98-1	1.128	28.65	81.2		USTER	1000	ASTM 1776-16	12	
101-1	1.184	30.07	82.1	9.3	HVI		ASTM 5687-2012	6	no
103-1	1.182	30.02	82.2	7.4	USTER	1000.0	GB/T 20392-2006	6	No
104-1	1.187	30.15	82.7	16.0	USTER	1000	GB/T 20392	4	
107-1	1.165	29.6	82.0	8.6	Premier	ART 2	ASTM :D 5867-12		
108-1	1.188	30.18	82.4	8.6	USTER	1000	ASTM D5867-12	10	No
109-1	1.19	30.22	83.15	8.58	USTER	1000			NO
111-1	1.192	30.28	82.7	8.0	USTER	1000	Internal	16	Yes
112-1	1.185	30.1	83.0	7.9	USTER	1000	ASTM D 5867	6	Yes
113-1	1.203	30.57	83.2	8.0	MAG	HVT Expert 1201	ASTM-D-5867-12		No
116-1	1.18	29.97	83.0	8.3	USTER	1000	ASTM-D5867-2012	10	No
116-2	1.184	30.07	82.3	8.1	USTER	1000	ASTM-D5867-2012	10	No
116-3	1.181	30.0	82.7	8.3	USTER	1000	ASTM-D5867-2012	10	No
118-1	1.184	30.08	82.5	7.7	Uster			6	
119-1			83.0	8.3	USTER	1000	GB/T 20392	2	No
121-1	1.194	30.33	83.0	8.5	USTER	1000.0	GB/T20392-2006	2	Yes
123-1	1.203	30.55	82.6	8.7	USTER	1000	ASTM-D 5867-12	10	
123-2	1.208	30.68	83.4	7.4	Premier	Other	ASTM D 5867-12	10	
124-1	1.209	30.72	82.5	8.2	USTER	1000			
128-1	1.183	30.04	82.6	8.1	USTER	1000	ASTM D5867-12	10	Yes
129-1	1.189	30.2	84.0	9.2	USTER	900	ASTM-5867	10	NO
132-1	1.199	30.45	83.2	7.29	Textechno	Fibrotest	ASTM D5867	10	Yes
133-1	1.173	29.79	81.5	9.1	Uster	HVI 1000	ASTM	2	Yes

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International Cotton Association Quality and Research Centre Bremen GmbH
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Registered in Germany no: HRB 27431 HB VAT-ID: DE280079445

Managing Director: Bill Kingdon Place of jurisdiction: Bremen

ICA Bremen Cotton Round Test 2019-1

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

ICA Bremen
The Global Centre for Cotton Testing and Research

	UHML (inch)	UHML (mm)	Uniformity Index (%)	SFI	Manuf.	Model	Std. Test Method	Repetitions	SFI calibrated?
136-1	1.225	31.12	83.9	6.4	USTER	1000	ASTM D5867-95	10	Yes
138-1	1.172	29.78	82.6	8.5	USTER	Spectrum	ASTM D 5867-2012e1	6	No
139-1	1.166	29.62		8.7	Premier	ART 2	ASTMD5867-05	12	
143-1	1.165	29.6	82.7	8.0	USTER	Spectrum		6	No
143-2	1.181	30.0	82.4	7.9	USTER	900		6	No
143-3	1.173	29.8	82.5	8.2	Premier	ART		6	No
145-1	48.78	1239.0	81.8	7.8					
148-1	1.17	29.72	82.4	8.9	Uster	USTER HVI 1000	ASTM-D 5867	6	yes
154-1	1.185	30.09	82.3	8.1	USTER	900		10	Yes
158-1	1.19	30.23	82.7	7.4	USTER	900		6	Yes
158-2	1.19	30.23	82.8	7.9	USTER	900		6	Yes
162-1	1.201	30.5	83.6	6.5	USTER	900		6	
170-1			82.1	9.2	USTER	1000	Manufacturer	6	
175-1	1.182	30.02	83.5	8.1	USTER	1000	ASTM-D5867-12	10	
176-1	1.199	30.46	83.2	7.28	USTER	1000		10	Yes
179-1	1.183	30.05	82.3	7.3	USTER	1000	GB/T 20392-2006		No
180-1	1.184	30.07	83.0	8.0	USTER	Spectrum	ASTM	6	Yes
181-1	1.183	30.04	83.2	6.5	USTER	Spectrum	ASTM	6	Yes
186-1	1.171	29.74	83.74	8.06	Textechno	CCS	ASTM	10	
193-1	1.192	30.28	82.7	8.6	USTER	1000	GB/T 20392-2006	6	No
200-1	1.182	30.03	82.27		USTER	900	ASTM D5867	8	
201-1	1.181	30.0	82.2	8.3	USTER	1000	GOST 10681 UzRH 71-01:2001	10	Yes
204-1	1.178	29.91	83.3	8.1	USTER	1000	GB/T20392-2006	10	Yes
207-1	1.192	30.28	81.9	8.9	USTER	1000	ASTM D5867-12 e1	10	No
207-2	1.193	30.31	82.9	8.1	USTER	1000	ASTM D5867-12 e1	10	No
207-3	1.178	29.91	82.3	8.3	USTER	1000	ASTM D5867-12 e1	10	No
207-4	1.184	30.07	82.5	8.8	USTER	1000	ASTM D5867-12 e1	10	No
209-1	1.189	30.2	83.4	8.0	MAG	HVI	ASTM : D5867-12	6	No
210-1	1.188	30.17	82.7	7.3	USTER	1000	ASTMD 5867-2012	30	Yes
211-1	1.199	30.45	82.4	6.8	USTER	1000		10	No
212-1	1.179	29.95	81.9	8.0	USTER	1000	ASTM-D5867-2012	9	yes
213-1	1.184	30.08	82.4	7.1	USTER	1000	ASTM-D1445,-47,-48,D5867	10	
214-1	1.179	29.94	82.5	7.9	Premier	ART		30	No
216-1	1.199	30.45	82.2	8.6	USTER	1000		3	Yes
217-1	1.157	29.4	83.5	6.7	Statex	Other	ASTM D-5867-12e1		NO

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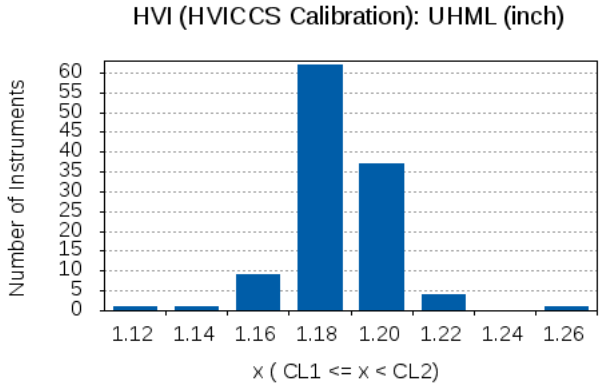

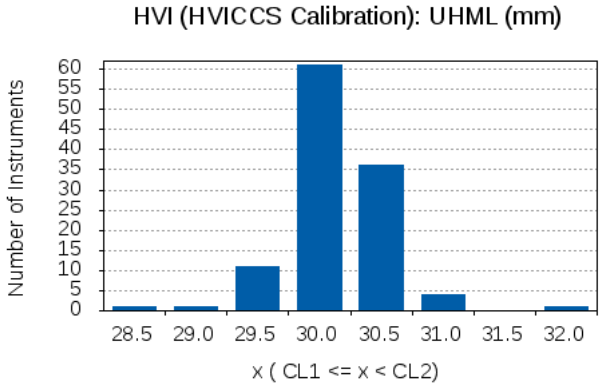

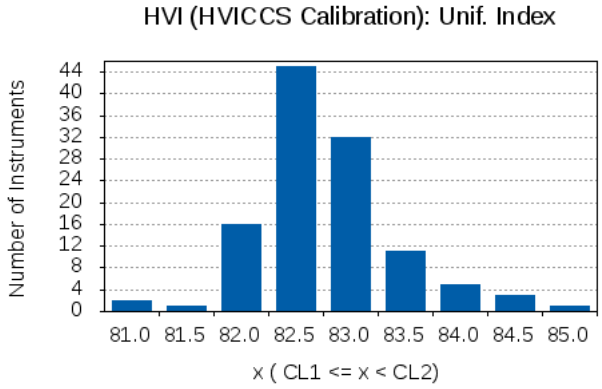

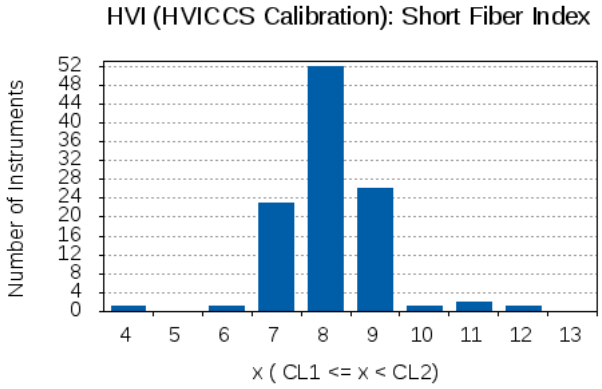

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HVI (HVICCS Calibration): Color / Trash

	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repeti-tions
Average	81.45	9.19		17.3	0.174					
Median	81.5	9.2		18.0	0.17	2.0				10.0
Stddev	1.0	0.43		5.8	0.051					
CV	1.2	4.7		33.7	29.6					
Min	73.0	7.6		4	0.05					
Max	85.7	13.2		173	2.65					
n	113	113		93	95					
Laboratory	**Color Rd**	**Color +b**	**Color Grade**	**Trash Count**	**Trash Area (%)**	**Trash Leaf**	**Manuf.**	**Model**	**Std. Test Method**	**Repeti-tions**
3-1	81.9	9.9	11-3				Premier	ART 2	ASTM	6
5-1	81.5	8.9	11-1	17	0.21	2	USTER	1000	CCAA	12
5-2	81.5	8.9	11-1	17	0.22	2	USTER	1000	CCAA	12
5-3	81.5	8.9	11-1	17	0.22	2	USTER	1000	CCAA	12
6-1	81.7	8.9	21	21	0.235	2	USTER	1000	GB/T 20392-2006	4
10-1	81.5	9.3	21	19	0.17	2	USTER	1000	GB20392-2006	5
11-1	80.19	9.2	11-2				PREMIER	ART2	USDA	10
12-1	81.3	10.1	11-3	9	0.08	1	Premier	ART 2	GB/T 20392-2006	12
18-1	81.56	9.2	11-1	26	0.25	3	USTER	1000	INDIVIDUAL TESTS	20
19-1	81.5	9.1	11-1	18	0.21	2	USTER	1000	GB/T 20392-2006	
23-1	81.8	9.9	11-3				USTER	900		10
24-1	81.8	9.1	11-1	10	0.11		USTER	Spectrum		
25-1	81.8	9.4	11-1	19	0.16	2	USTER	1000		10
26-1	81.6	9.2	11-1	19	0.16	2	USTER	1000		10
27-1	81.0	9.5	11-1				USTER	900	ASTM- D5867-2012	6
28-1	81.47	9.07	11-3	17	0.28	3	Textechno	Other	ASTMD5867	5
33-1	81.0	9.2					USTER	1000	GB/T20392	6
34-1	81.5	9.5	11	32	0.21	2	USTER	1000	GB/T 20392-2006	2
35-1	80.7	9.4	21	11	0.11	2	USTER	1000	GB20392	2
36-1	80.4	9.1	21	19	0.18	2	USTER	1000		10
39-1	85.7	8.5	11-1				Premier	ART 2	HVI	6
41-1	80.8	9.9	11-3	10	0.11		USTER	Spectrum		5
43-1	81.15	9.22		15	0.18		USTER	1000	ASTM-D1234-2012	10
43-2	81.34	9.22		15	0.125		USTER	1000	ASTM-D1234-2012	10
44-2	78.3	8.7	21-2				Premier	ART 2		10
49-1	81.8	9.0	11-1	18	0.18	2	USTER	1000	ASTM D 1776	10
54-1	80.7	7.9	21-2		1.0	1	Uster	Spectrum	HVI Mode	4
56-1	79.7	8.7	21-2	10	0.12	1	USTER	Spectrum	HVI Test Method	5
57-1	81.1	9.4	11-1				MAG	Other	ASTM-D5867-12	6
58-1	82.1	9.5	11-1	21	0.21		USTER	1000	Internal	10
59-1	83.7	7.9	11-1	18	0.2	2	USTER	900		10
59-2	83.6	8.9	11-1	15	0.22	2	USTER	1000		10
59-3	82.3	9.0	11-1	18	0.24	2	USTER	1000		10
59-4	82.8	8.8	11-1	17	0.2	2	USTER	1000		10
60-1	82.2	9.4	11-1	19	0.16	1	USTER	700	ASTM-D1234-2012	6
60-2	82.1	9.8	11-1	19	0.15	1	USTER	1000	ASTM-D1234-2012	6
61-1	81.5	8.3	21-1				MAG	HVT Expert 1201	ASTM-5867-2005	4

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	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repetitions
63-1	81.0	9.1	11-2				MAG	Other	ASTM-D-5867-12	
65-1	81.6	9.2	11-1				Premier	ART 2	ASTM:D-5867-12	
68-1	81.6	9.1	11-1	19	0.21	2	HVI 1000	Other	Other	10
68-2	82.3	8.9	11-1	16	0.15	1	HVI 1000	Other	Other	10
69-1	79.5	7.6	31-1				MAG SOLVIS PVT LTD	Other	ASTM:D-5867-12	
71-1	81.8	9.3	11-1	15	0.15	2	USTER	1000	GB/T 20392-2006	6
72-1	81.9	9.3		16	0.17		USTER	1000	ASTM-D1776	6
75-1	82.3	9.0	11-1	9	0.09	1	USTER	Spectrum	GB/T20392-2006	
78-1	78.1	9.2	21-4	18	0.19	2	USTER	1000		6
83-1	81.0	9.2	11-1	19	0.19		USTER	Spectrum	GB/T 20392-2006	10
86-1	81.4	9.4	21	18	0.15	2	USTER	1000	GB/T 20392-2006	1
90-1	80.2	9.1	21-1	12	0.13		USTER	1000	ASTM-D 5867	10
91-1	81.4	9.8	11-1	15	0.13		USTER	1000	ASTM D 5867-12	5
91-4	78.7	9.5	21-3	13	0.14	2	USTER	Other		10
93-1	73.0	10.5	21-3	28	0.3	3	USTER	900	ASTM 5867	6
94-1	81.9	9.4	11-1	14	0.14	1	USTER	1000	ASTM-D5867	6
94-2	81.9	9.3	11-1	17	0.17	1	USTER	1000	ASTM-D5867	6
96-2	81.5	9.0	11-1	18	0.15	1	USTER	93-4(HV11000-143)	GB/T 20392-2006	10
96-4	81.2	9.3	11-1	34	0.23	2	USTER	Other	GB/T 20392-2006	10
98-1	81.3	9.1		15	0.15		USTER	1000	ASTM 1776-16	12
101-1	81.8	9.1	11-1	26	0.23	2	HVI		ASTM 5687-2012	6
103-1	80.4	9.4	11-3	14	0.14	1	USTER	1000.0	GB/T 20392-2006	6
104-1	81.8	9.5	11	18	0.17	2	USTER	1000	GB/T 20392	4
107-1	80.2	9.6	11-3				Premier	ART 2	ASTM :D 5867-12	
108-1	81.7	9.2	11-1	23	0.19	2	USTER	1000	ASTM D5867-12	10
109-1	80.98	8.65	21-1	20	0.19		USTER	1000		
111-1	82.0	9.2	11-1	19	0.18		USTER	1000	Internal	16
112-1	80.2	8.5	21-1	23	0.19	3	USTER	1000	ASTM D 5867	6
113-1	80.9	9.5	11-1				MAG	HVT Expert 1201	ASTM-D-5867-12	
116-1	81.6	8.7	11-1	16	0.13	1	USTER	1000	ASTM-D5867-2012	10
116-2	82.1	9.1	11-1	18	0.2	2	USTER	1000	ASTM-D5867-2012	10
116-3	82.1	8.8	11-1	23	0.23	2	USTER	1000	ASTM-D5867-2012	10
118-1	82.2	10.6	11-3	17	0.14	1	Uster			6
119-1	81.0	9.0	21	20	0.24	2	USTER	1000	GB/T 20392	2
121-1	81.4	9.5	11-1	24	0.19		USTER	1000.0	GB/T20392-2006	2
123-1	81.6	9.3	11-1	17	0.15	1	USTER	1000	ASTM-D 5867-12	10
123-2	82.3	9.2	11-1	15	0.11	1	Premier	Other	ASTM D 5867-12	10
124-1	82.2	10.1	11-3	18	0.13		USTER	1000		
128-1	80.6	9.4	21-1	25	0.23	2	USTER	1000	ASTM D5867-12	10
129-1	84.2	9.3	11-1				USTER	900	ASTM-5867	10
133-1	81.5	9.6	11-1	23	0.27	3	Uster	HVI 1000	ASTM	2
136-1	80.7	9.6	11-1	18	0.15	1	USTER	1000	ASTM D5867-95	10
138-1	82.2	8.7	11-1	12	0.11	1	USTER	Spectrum	ASTM D 5867-2012e1	6
139-1	80.0	9.6	11-3	18	0.06	1	Premier	ART 2	ASTMD5867-05	12
143-1	81.9	9.9	11-1	9	0.15	1	USTER	Spectrum		6
143-2	81.2	9.5	11-1	9	0.15	1	USTER	900		6
143-3	82.5	9.1	11-1	4	0.05	1	Premier	ART		6

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carried out by Bremen Fibre Institute (FIBRE)

ICA Bremen
The Global Centre for Cotton Testing and Research

	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repeti-tions
145-1	84.1	9.2	11-1		0.98					
148-1	81.5	8.9	11-1	22	0.18	2	Uster	USTER HVI 1000	ASTM-D 5867	6
154-1	80.9	9.0	11-2	11	0.2	1	USTER	900		10
158-1	81.5	8.4	11-2	5	0.1	1	USTER	900		6
158-2	82.0	8.5	11-2	10	0.2	2	USTER	900		6
162-1	78.7	9.4					USTER	900		6
170-1	82.0	9.5	11-1	27	0.17	2	USTER	1000	Manufacturer	6
175-1	81.7	8.8	11-1	16	0.22	2	USTER	1000	ASTM-D5867-12	10
176-1	81.7	8.7	11-1	21	0.14	1	USTER	1000		10
179-1	81.5	9.1	11-2	31	0.21	2	USTER	1000	GB/T 20392-2006	
180-1	81.2	9.2	11-2	6	0.17	2	USTER	Spectrum	ASTM	6
181-1	81.7	9.9	11-3	4	1.22		USTER	Spectrum	ASTM	6
186-1	81.8	8.7	11-2	17	0.29		Textechno	CCS	ASTM	10
193-1	81.9	9.1	11-1	25	0.27	2	USTER	1000	GB/T 20392-2006	6
200-1	81.89	9.08	11-1				USTER	900	ASTM D5867	8
201-1	81.6	9.0	11-1	23	0.19	2	USTER	1000	GOST 10681 UzRH 71-01:2001	10
204-1	80.8	8.8	11-2	16	0.16		USTER	1000	GB/T20392-2006	10
207-1	82.8	9.1	11-1	19	0.18	2	USTER	1000	ASTM D5867-12 e1	10
207-2	81.5	8.9	11-1	17	0.16	1	USTER	1000	ASTM D5867-12 e1	10
207-3	81.6	9.2	11-1	18	0.15	1	USTER	1000	ASTM D5867-12 e1	10
207-4	81.4	9.1	11-2	19	0.17	2	USTER	1000	ASTM D5867-12 e1	10
209-1	81.6	9.0	11-1				MAG	HVI	ASTM : D5867-12	6
210-1	80.7	9.4	11-1	20	0.19	2	USTER	1000	ASTMD 5867-2012	30
211-1	80.6	9.2	11-1	20	0.19	2	USTER	1000		10
212-1	79.8	9.2	21-1	12	0.11		USTER	1000	ASTM-D5867-2012	9
213-1	81.9	9.4	11-1	15	0.13	1	USTER	1000	ASTM-D1445,-47,-48,D5867	10
214-1	82.7	9.3	11-1	4	0.06	1	Premier	ART		30
216-1	81.7	9.3	11-1	24	0.28	3	USTER	1000		3
217-1	83.7	13.2	12-1	173	2.65		Statex	Other	ASTM D-5867-12e1	

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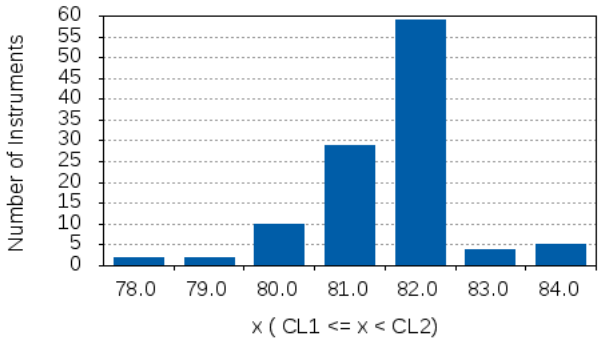
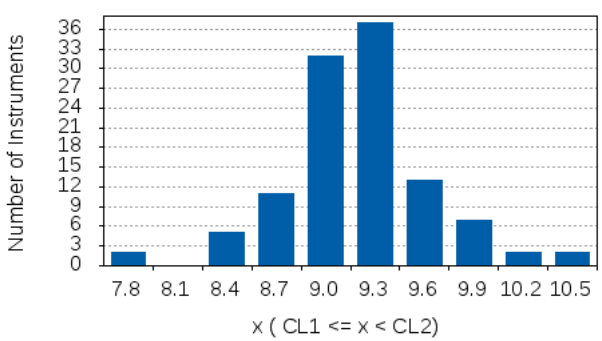
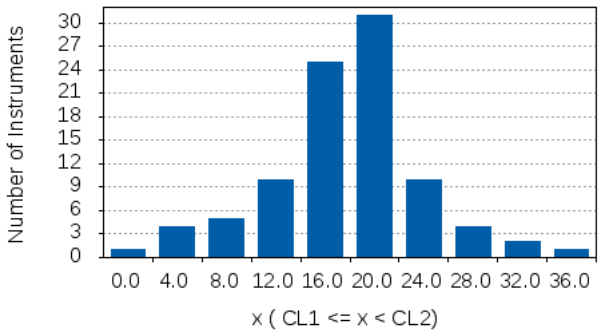
HVI (HVICCS Calibration): Color Reflectance Rd



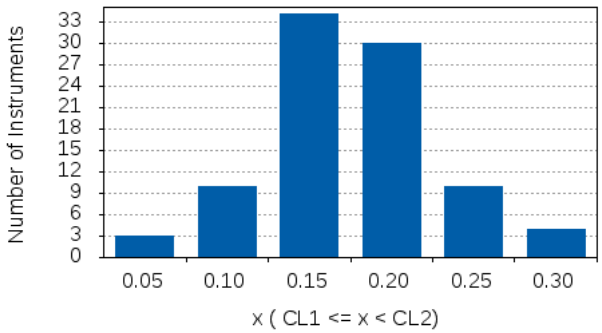
HVI (HVICCS Calibration): Color Yellowness +b



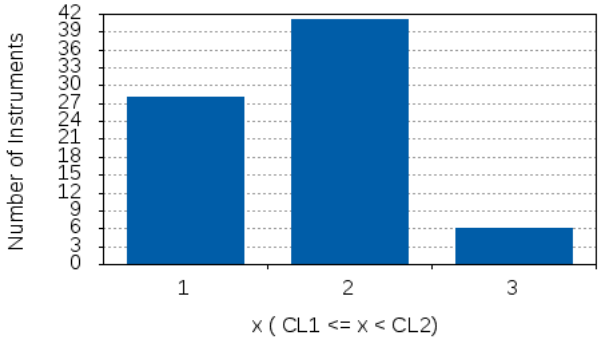
HVI (HVICCS Calibration) Trash Count



HVI (HVICCS Calibration) Trash Area



HVI (HVICCS Calibration) Trash Leaf



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Registered in Germany no: HRB 27431 HB VAT-ID: DE280079445

Managing Director: Bill Kingdon Place of jurisdiction: Bremen

HVI (ICCS Calibration) Micronaire / Strength

	Micronaire (Mic)	MAT ()	PM% (%)	Strength (gf/tex)	Elong. (%)	Manuf.	Model	Std. Test Method	Repetitions
Average	4.38	0.863		24.87	6.23				
Median	4.38	0.86		23.3	6.1				10.0
Stddev	0.07			3.6	0.5				
CV	1.7			14.5	8.8				
Min	4.3	0.86		21.9	5.5				
Max	4.5	0.89		31.2	7.0				
n	8	5		9	9				
Laboratory	**Micronaire (Mic)**	**MAT ()**	**PM% (%)**	**Strength (gf/tex)**	**Elong. (%)**	**Manuf.**	**Model**	**Std. Test Method**	**Repetitions**
11-1	4.3			23.4	6.1	PREMIER	ART 2	USDA	10
27-1	4.5	0.87		25.5	5.5	USTER	900	ASTM-D5867-2012	6
42-1	4.44	0.86		30.7	6.7	USTER	1000	HVI	
42-2		0.89		31.2	6.6	USTER	Spectrum	HVI	
61-1	4.4			23.2	5.8	MAG	HVT Expert 1201	ASTM-5867-2005	4
66-1	4.31			22.2	6.8	Premier	ART		6
123-1	4.41	0.86		23.3	7.0	USTER	1000	ASTM-D 5867-12	10
123-2	4.36	0.86		22.4	5.9	Premier	Other	ASTM D 5867-12	10
129-1	4.3			21.9	5.7	USTER	900	ASTM-5867	10

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HVI (ICCS Calibration): Length Results

	2.5% SL (inch)	2.5% SL (mm)	Unif. Ratio (%)	SFI	Manuf.	Model	Std. Test Method	Repetitions
Average	1.185	30.1	45.69	7.98				
Median	1.184	30.07	45.9	8.45				10.0
Stddev	0.021	0.54	1.62	1.02				
CV	1.8	1.8	3.5	12.8				
Min	1.149	29.18	43.4	6.1				
Max	1.225	31.12	48.0	8.95				
n	9	9	7	8				
Laboratory	**2.5% SL (inch)**	**2.5% SL (mm)**	**Unif. Ratio (%)**	**SFI**	**Manuf.**	**Model**	**Std. Test Method**	**Repetitions**
11-1	1.184	30.07	46.1		PREMIER	ART 2	USDA	10
27-1	1.149	29.18	43.4	8.4	USTER	900	ASTM-D5867-2012	6
42-1	1.204	30.58		8.8	USTER	1000	HVI	
42-2	1.179	29.95		6.1	USTER	Spectrum	HVI	
61-1	1.185	30.1	48.0		MAG	HVT Expert 1201	ASTM-5867-2005	4
66-1	1.171	29.74	43.9	6.8	Premier	ART		6
123-1	1.193	30.3	45.9	8.5	USTER	1000	ASTM-D 5867-12	10
123-2	1.225	31.12	45.52	8.5	Premier	Other	ASTM D 5867-12	10
129-1	1.177	29.9	47.0	8.95	USTER	900	ASTM-5867	10
145-1				7.8				

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HVI (ICCS Calibration): Color / Trash

	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repetitions
Average	82.37	8.97			0.38					
Median	82.3	9.2			0.195					10.0
Stddev	1.26	0.4								
CV	1.5	4.4								
Min	80.19	8.3		12	0.15					
Max	84.2	9.4		21	0.98					
n	9	9		3	4					
Laboratory	**Color Rd**	**Color +b**	**Color Grade**	**Trash Count**	**Trash Area (%)**	**Trash Leaf**	**Manuf.**	**Model**	**Std. Test Method**	**Repetitions**
11-1	80.19	9.2	11-2				PREMIER	ART 2	USDA	10
42-1	82.7	8.9	11-1	21	0.23	2	USTER	1000	HVI	
42-2	82.7	8.4		12	0.15		USTER	Spectrum	HVI	
61-1	81.5	8.3	21-1				MAG	HVT Expert 1201	ASTM-5867-2005	4
66-1	81.9	8.8	11-1				Premier	ART		6
123-1	81.7	9.4	11-1	17	0.16	1	USTER	1000	ASTM-D 5867-12	10
123-2	82.3	9.2	11-1				Premier	Other	ASTM D 5867-12	10
129-1	84.2	9.3	11-1				USTER	900	ASTM-5867	10
145-1	84.1	9.2	11-1		0.98					

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aQura - Length

	aQura-Length (mm)	5% Length (mm)	Effective Length (mm)	SFC 12.7mm (N) (%)	SFC 12.7mm (W) (%)	Instrument Model	Standard Test Method	Repeti-tions
Average								
Median								
Stddev								
CV								
Min	31.71	30.32	25.16	22.2	9.7			
Max	32.7	31.4	26.7	41.6	19.2			
n	3	3	3	3	3			
Laboratory	**aQura-Length (mm)**	**5% Length (mm)**	**Effective Length (mm)**	**SFC 12.7mm (N) (%)**	**SFC 12.7mm (W) (%)**	**Instrument Model**	**Standard Test Method**	**Repeti-tions**
3-1	32.58	31.13	26.62	22.2	9.7	aQura 2	ASTM	4
44-2	31.71	30.32	25.16	41.6	19.2	aQura 2		10
127-1	32.7	31.4	26.7	27.5	12.9	aQura		4

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aQura - Neps

	Total Nep Count (Cnt/g)	Total Nep Size (µm)	Fibre Nep Count (Cnt/g)	Fibre Nep Size (µm)	Seed Coat Nep Count (Cnt/g)	Seed Coat Nep Size (µm)	Instrument Model	Standard Test Method
Average								
Median								
Stddev								
CV								
Min	272.0	640.0	226.0					
Max	732.0	798.0	1294.0					
n	3	3	3					
Laboratory	**Total Nep Count (Cnt/g)**	**Total Nep Size (µm)**	**Fibre Nep Count (Cnt/g)**	**Fibre Nep Size (µm)**	**Seed Coat Nep Count (Cnt/g)**	**Seed Coat Nep Size (µm)**	**Instrument Model**	**Standard Test Method**
3-1	285.0	767.0	241.0	672.0	44.0	1288.0	aQura 2	ASTM
44-2	272.0	798.0	226.0	682.0	47.0	1360.0	aQura 2	
127-1	732.0	640.0	1294.0				aQura	

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ICA Bremen Cotton Round Test 2019-1

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

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AFIS Length by Number

	Mean Length (N) (inch)	Mean Length (N) (mm)	CV Length (N) (%)	2.5% Length (N) (inch)	2.5% Length (N) (mm)	5% Length (N) (inch)	5% Length (N) (mm)	SFC (12.7) (N) (%)	Model	Test Method	Repetitions
Average	0.798	20.28	50.83	1.484	37.68	1.405	35.69	25.28			
Median	0.795	20.2	49.65	1.484	37.7	1.409	35.8	24.7			10.0
Stddev	0.032	0.8	4.86	0.035	0.89	0.027	0.68	3.43			
CV	4.0	4.0	9.6	2.4	2.4	1.9	1.9	13.6			
Min	0.62	15.75	2.4	1.417	36.0	0.744	18.9	10.2			
Max	0.97	24.64	72.2	1.528	38.8	1.49	37.85	52.1			
n	44	44	44	9	9	43	43	43			
Laboratory	**Mean Length (N) (inch)**	**Mean Length (N) (mm)**	**CV Length (N) (%)**	**2.5% Length (N) (inch)**	**2.5% Length (N) (mm)**	**5% Length (N) (inch)**	**5% Length (N) (mm)**	**SFC (12.7) (N) (%)**	**Model**	**Test Method**	**Repetitions**
5-1	0.76	19.3	52.1			1.36	34.54	28.5	Afis Pro 2	CCAA	5
21-1	0.795	20.2	44.2	1.417	36.0	1.335	33.9	21.6	Afis 119-064		5
22-1	0.78	19.81	53.2	1.49	37.85	1.4	35.56	29.2	Autojet		10
24-1	0.823	20.9	48.6			1.417	36.0	22.4	AFIS Pro		
32-1	0.795	20.2	48.7			1.39	35.3	25.3	AFIS Pro 2		10
32-2	0.795	20.2	48.0			1.39	35.3	24.4	AFIS Pro 2		10
41-1	0.795	20.2	46.6	1.469	37.3	1.37	34.8	23.8	AFIS Pro		5
43-1	0.75	19.05	57.1			1.42	36.07	32.6		ASTM-D1234-2012	10
44-1	0.791	20.1	49.7			1.386	35.2	24.7	AFIS Pro		10
51-1	0.803	20.4	50.0			1.409	35.8	24.2		ISO	5
58-1	0.795	20.2	49.6	1.484	37.7	1.39	35.3	25.9	Autojet	Internal	10
58-2	0.791	20.1	51.2			1.413	35.9	25.6	AFIS Pro 2	Internal	10
75-1	0.76	19.3	58.4			1.413	35.9	30.1	AFIS Pro	ASTMD 5866-12	
90-1	0.858	21.8	47.3	1.528	38.8	1.433	36.4	20.7	AFIS 4.22	USTER Method	10
91-1	0.839	21.3	46.6			1.421	36.1		AFIS Pro 2		10
91-2	0.811	20.6	48.2			1.394	35.4	22.9	AFIS Pro 2		10
96-1	0.744	18.9	56.5			0.744	18.9	30.9	AFIS Pro 2	NY/T 3272-2018	10
101-1	0.866	22.0	46.7			1.441	36.6	19.4	Pro 2	internal	5
109-1	0.809	20.55	49.43			1.413	35.9	23.6	AFIS Pro 2		
111-1	0.799	20.3	48.5			1.398	35.5	23.9	AFIS Pro 2	Internal	10
112-1	0.62	15.75	72.2			1.49	37.85	52.1	AFIS Pro	ASTM D5866	3
123-1	0.795	20.2	49.9			1.402	35.6	24.2	AFIS Pro 2	ASTM D 5866-12	10
123-2	0.802	20.37	49.5			1.38	35.05	23.5	AFIS Pro	ASTM D 5866-12	10
123-3	0.807	20.5	48.2			1.386	35.2	24.6	Other	ASTM D 5866-12	10
129-1	0.817	20.75	50.5			1.441	36.6	25.55	OTHER	ASTM-D-5866-12	6
136-1	0.84	21.34	47.6			1.44	36.58	22.5	AFIS Pro 2	ASTM D5848 - 95	3
139-1	0.8	20.32	50.5			1.41	35.81	26.7	AFIS PRO2	ASTMD5866-05	12
142-1	0.803	20.4	48.0	1.508	38.3	1.409	35.8	23.4	Other		5
143-1	0.744	18.9	59.0	1.524	38.7	1.409	35.8	32.8	AFIS	ASTM D-5866	5
145-1	0.97	24.64	54.2			1.38	35.05	10.2			
148-1	0.815	20.7	46.7			1.39	35.3	22.3	USTER AFIS PRO 2	ASTM-D 5866	10
148-2	0.811	20.6	49.5			1.413	35.9	24.1	USTER AFIS PRO 2.2	ASTM-D 5866	10

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	Mean Length (N) (inch)	Mean Length (N) (mm)	CV Length (N) (%)	2.5% Length (N) (inch)	2.5% Length (N) (mm)	5% Length (N) (inch)	5% Length (N) (mm)	SFC (12.7) (N) (%)	Model	Test Method	Repeti-tions
158-1	0.732	18.6	56.7	1.453	36.9	1.362	34.6	32.2	AFIS Pro		6
170-1	0.787	20.0	51.6			1.409	35.8	25.9	AFIS Pro	Manufacturer	6
176-1	0.791	20.1	3.0			1.41	35.81	26.7	AFIS Pro		5
180-1	0.78	19.8	52.5			1.406	35.7	26.3	Autojet	ASTM	3
181-1	0.777	19.74	51.0			1.39	35.3	25.5	Autojet	ASTM	3
186-1	0.787	20.0	53.3					25.2	AFIS Pro	ASTM	10
186-2	0.819	20.8	48.8			1.431	36.34	24.1	AFIS Pro 2	ASTM	10
193-1	0.8	20.32	51.0			1.41	35.81	26.9	AFIS Pro	ASTM-D5866-2012	5
207-2	0.87	22.1	45.5			1.437	36.5	18.3	AFIS Pro	ASTM D5866-12 & USTER Handbook	10
210-1	0.768	19.5	2.4	1.48	37.6	1.394	35.4	29.9	Neptester	ASTMD5866-2012	5
211-1	0.854	21.7	45.8			1.433	36.4	19.7	AFIS Pro 2		10
213-1	0.768	19.5	52.4			1.386	35.2	26.5	AFIS Pro 2	ASTM D5866	

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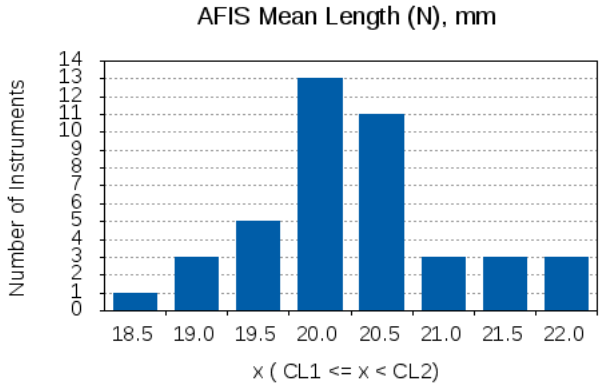

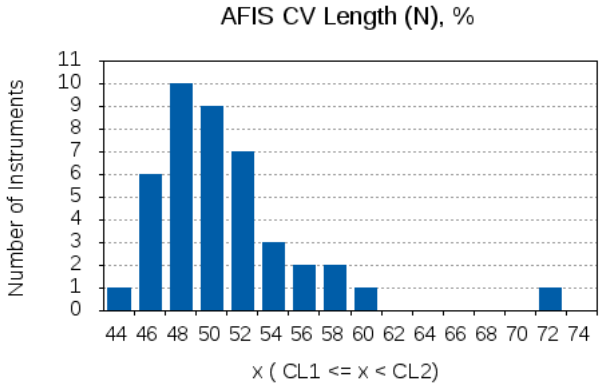

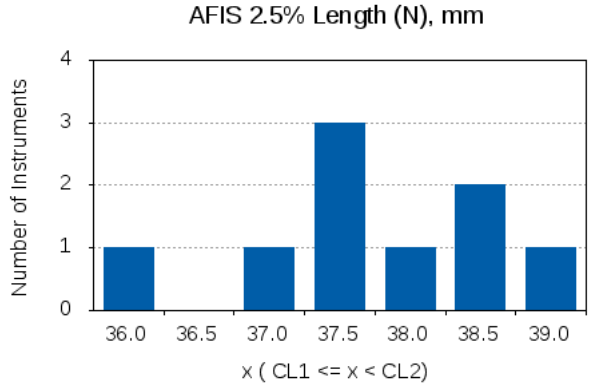

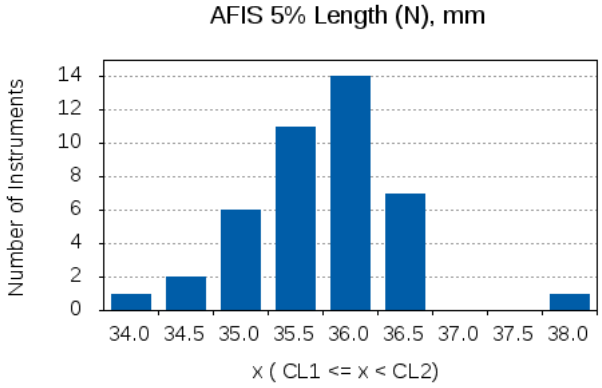

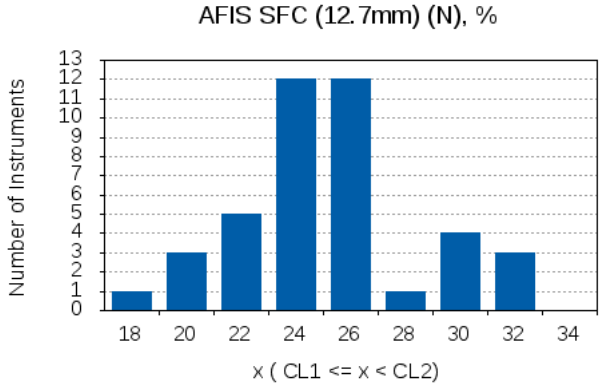

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AFIS Length by Weight

	Mean Length (W) (inch)	Mean Length (W) (mm)	CV Length (W) (%)	UQL (W) (inch)	UQL (W) (mm)	SFC (12.7) (W)	Model	Test Method	Repeti-tions
Average	1.0	25.347	35.32	1.235	31.37	8.47			
Median	0.996	25.3	35.1	1.236	31.4	8.4			10.0
Stddev	0.02	0.615	2.88	0.019	0.49	1.31			
CV	2.4	2.4	8.1	1.6	1.5	15.4			
Min	0.949	24.1	1.2	1.161	29.5	5.5			
Max	1.055	26.8	50.3	1.31	33.27	30.1			
n	43	43	42	43	43	43			
Laboratory	**Mean Length (W) (inch)**	**Mean Length (W) (mm)**	**CV Length (W) (%)**	**UQL (W) (inch)**	**UQL (W) (mm)**	**SFC (12.7) (W)**	**Model**	**Test Method**	**Repeti-tions**
5-1	0.96	24.38		1.19	30.23	10.0	Afis Pro 2	CCAA	5
21-1	0.949	24.1	32.5	1.161	29.5	8.1	Afis 119-064		5
22-1	1.0	25.4	35.8	1.24	31.5	9.9	Autojet		10
24-1	1.016	25.8	34.0	1.248	31.7	7.1	AFIS Pro		
32-1	0.98	24.9	35.7	1.224	31.1	9.4	AFIS Pro 2		10
32-2	0.98	24.9	35.6	1.217	30.9	9.1	AFIS Pro 2		10
41-1	0.965	24.5	34.9	1.193	30.3	9.2	AFIS Pro		5
43-1	0.99	25.15	38.6	1.24	31.5	11.3		ASTM-D1234-2012	10
44-1	0.984	25.0	35.1	1.22	31.0	8.4	AFIS Pro		10
51-1	1.0	25.4	35.1	1.236	31.4	8.0		ISO	5
58-1	0.988	25.1	34.6	1.22	31.0	9.0	Autojet	Internal	10
58-2	0.996	25.3	35.5	1.244	31.6	8.5	AFIS Pro 2	Internal	10
75-1	1.02	25.9	36.0	1.26	32.0	8.3	AFIS Pro	ASTMD 5866-12	
90-1	1.051	26.7	31.9	1.264	32.1	6.0	AFIS 4.22	USTER Method	10
91-1	1.024	26.0	33.5	1.24	31.5		AFIS Pro 2		10
91-2	0.996	25.3	34.2	1.224	31.1	7.6	AFIS Pro 2		10
96-1	0.98	24.9	37.6	1.232	31.3	10.2	AFIS Pro 2	NY/T 3272-2018	10
101-1	1.055	26.8	31.6	1.272	32.3	5.5	Pro 2	internal	5
109-1	1.006	25.55	34.65	1.245	31.63	7.7	AFIS Pro 2		
111-1	0.984	25.0	35.4	1.224	31.1	8.5	AFIS Pro 2	Internal	10
112-1	0.95	24.13	50.3	1.31	33.27	22.4	AFIS Pro	ASTM D5866	3
123-1	0.992	25.2	35.5	1.224	31.1	8.1	AFIS Pro 2	ASTM D 5866-12	10
123-2	0.998	25.34	33.8	1.218	30.94	7.3	AFIS Pro	ASTM D 5866-12	10
123-3	0.992	25.2	34.3	1.217	30.9	8.7	Other	ASTM D 5866-12	10
129-1	1.024	26.0	36.15	1.272	32.3	8.85	OTHER	ASTM-D-5866-12	6
136-1	1.03	26.16	34.2	1.25	31.75	7.6	AFIS Pro 2	ASTM D5848 - 95	3
139-1	1.0	25.4	36.1	1.24	31.5	9.4	AFIS PRO2	ASTMD5866-05	12
142-1	0.988	25.1	34.2	1.22	31.0	8.3	Other		5
143-1	1.008	25.6	36.9	1.248	31.7	10.2	AFIS	ASTM D-5866	5
145-1						30.1			
148-1	0.992	25.2	34.3	1.224	31.1	7.9	USTER AFIS PRO 2	ASTM-D 5866	10
148-2	1.008	25.6	34.8	1.248	31.7	8.0	USTER AFIS PRO 2.2	ASTM-D 5866	10
158-1	0.969	24.6	36.6	1.209	30.7	10.7	AFIS Pro		6
170-1	0.996	25.3	36.7	1.236	31.4	8.7	AFIS Pro	Manufacturer	6
176-1	1.01	25.65	1.6	1.24	31.5	8.4	AFIS Pro		5
180-1	0.992	25.2	1.4	1.228	31.2	8.4	Autojet	ASTM	3
181-1	0.979	24.87	35.2	1.222	31.03	8.5	Autojet	ASTM	3

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Managing Director: Bill Kingdon Place of jurisdiction: Bremen

ICA Bremen Cotton Round Test 2019-1

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

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	Mean Length (W) (inch)	Mean Length (W) (mm)	CV Length (W) (%)	UQL (W) (inch)	UQL (W) (mm)	SFC (12.7) (W)	Model	Test Method	Repeti-tions
186-1	1.0	25.4	34.7	1.228	31.2	7.7	AFIS Pro	ASTM	10
186-2	1.016	25.8	35.3	1.256	31.9	8.4	AFIS Pro 2	ASTM	10
193-1	1.0	25.4	35.7	1.24	31.5	9.3	AFIS Pro	ASTM-D5866-2012	5
207-2	1.047	26.6	32.1	1.268	32.2	5.5	AFIS Pro	ASTM D5866-12 & USTER Handbook	10
210-1	0.98	24.9	1.2	1.228	31.2	10.7	Neptester	ASTMD5866-2012	5
211-1	1.035	26.3	32.8	1.26	32.0	6.2	AFIS Pro 2		10
213-1	0.98	24.9	35.6	1.217	30.9	8.6	AFIS Pro 2	ASTM D5866	

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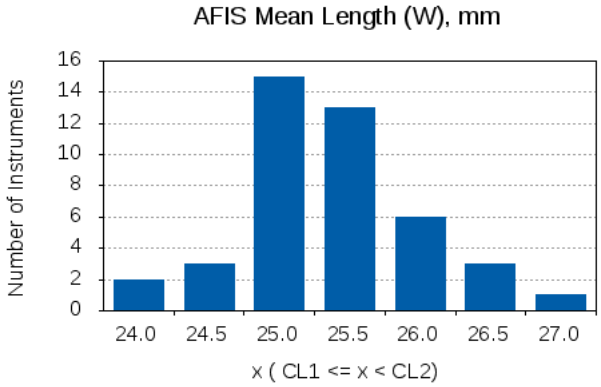

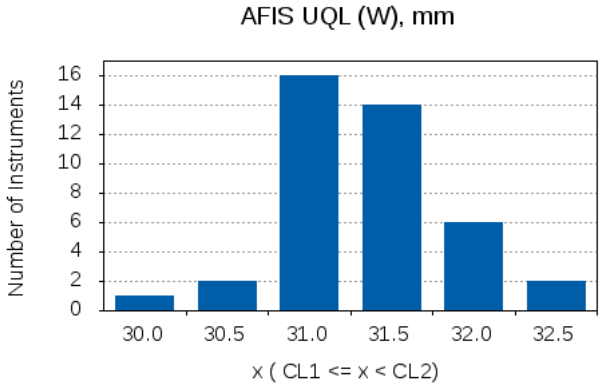

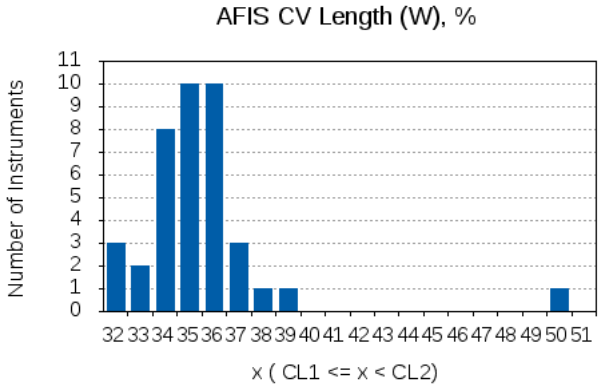

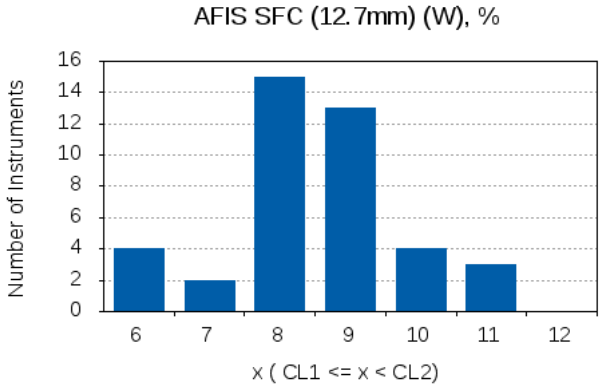

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AFIS Fineness/Maturity

	Fineness (mtex)	Diameter (µm)	Mat. Ratio	-IFC- (%)	Model	Test Method	Repeti-tions
Average	159.5		0.88	6.63			
Median	158.0		0.88	6.4			10.0
Stddev	5.2		0.03	1.1			
CV	3.3		2.9	16.5			
Min	147.0		0.82	5.0			
Max	188.0		0.93	9.8			
n	40		40	40			
Laboratory	**Fineness (mtex)**	**Diameter (µm)**	**Mat. Ratio**	**-IFC- (%)**	**Model**	**Test Method**	**Repeti-tions**
5-1	158.0		0.86	7.7	Afis Pro 2	CCAA	5
22-1	157.0		0.84	8.0	Autojet		10
24-1	166.0		0.92	5.9	AFIS Pro		
32-1	164.0		0.9	5.5	AFIS Pro 2		10
32-2	166.0		0.9	5.1	AFIS Pro 2		10
41-1		13.2			AFIS Pro		5
43-1	163.0		0.82	9.8		ASTM-D1234-2012	10
44-1	148.0		0.84	8.6	AFIS Pro		10
51-1	158.0		0.89	6.2		ISO	5
58-1	161.0		0.89	6.4	Autojet	Internal	10
58-2	156.0		0.86	7.1	AFIS Pro 2	Internal	10
75-1	168.0		0.91	6.4	AFIS Pro	ASTMD 5866-12	
90-1	155.0		0.87	6.1	AFIS 4.22	USTER Method	10
91-1	155.0		0.88	5.4	AFIS Pro 2		10
91-2	159.0		0.89	6.2	AFIS Pro 2		10
96-1	156.0		0.86	6.8	AFIS Pro 2	NY/T 3272-2018	10
101-1	157.0		0.87	7.2	Pro 2	internal	5
109-1	167.0		0.92	5.05	AFIS Pro 2		
111-1	166.0		0.9	5.8	AFIS Pro 2	Internal	10
112-1	188.0		0.89	9.4	AFIS Pro	ASTM D5866	3
123-1	158.0		0.88	5.9	AFIS Pro 2	ASTM D 5866-12	10
123-2	158.0		0.88	6.0	AFIS Pro	ASTM D 5866-12	10
123-3	166.0		0.91	6.9	Other	ASTM D 5866-12	10
136-1	160.0		0.91	5.0	AFIS Pro 2	ASTM D5848 - 95	3
139-1	155.0		0.91	5.5	AFIS PRO2	ASTMD5866-05	12
143-1	160.0		0.88	7.0	AFIS	ASTM D-5866	5
145-1	161.0		0.89	6.7			
148-1	160.0		0.88	7.0	USTER AFIS PRO 2	ASTM-D 5866	10
148-2	158.0		0.86	6.6	USTER AFIS PRO 2.2	ASTM-D 5866	10
158-1	161.0		0.88	6.9	AFIS Pro		6
170-1	165.0		0.85	8.4	AFIS Pro	Manufacturer	6
176-1	152.0		0.85	7.5	AFIS Pro		5
180-1	156.0		0.89	6.0	Autojet	ASTM	3
181-1	169.0		0.93	5.0	Autojet	ASTM	3
186-1	158.0		0.88	6.0	AFIS Pro	ASTM	10
186-2	157.0		0.86	7.9	AFIS Pro 2	ASTM	10
193-1	167.0		0.91	6.1	AFIS Pro	ASTM-D5866-2012	5
207-2	163.0		0.9	6.6	AFIS Pro	ASTM D5866-12 & USTER Handbook	10
210-1	147.0		0.84	6.3	Neptester	ASTMD5866-2012	5
211-1	154.0		0.85	9.0	AFIS Pro 2		10

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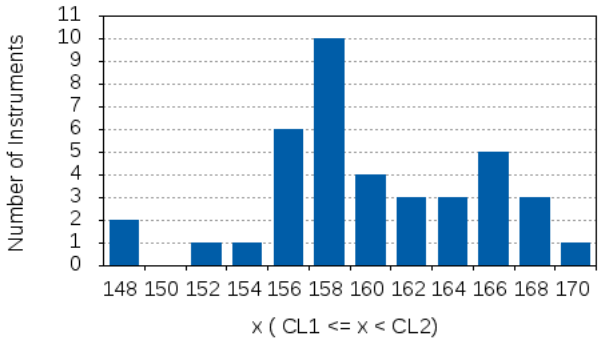
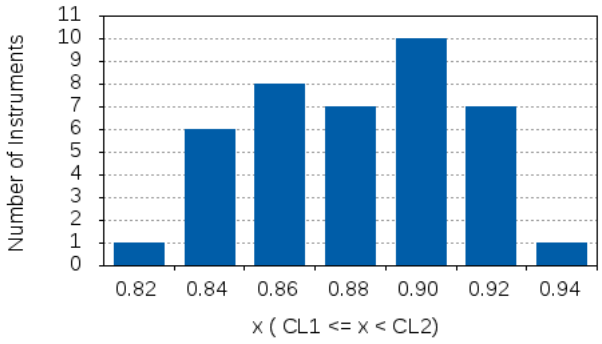
	Fineness (mtex)	Diameter (µm)	Mat. Ratio	-IFC- (%)	Model	Test Method	Repeti-tions
213-1	157.0		0.87	7.4	AFIS Pro 2	ASTM D5866	

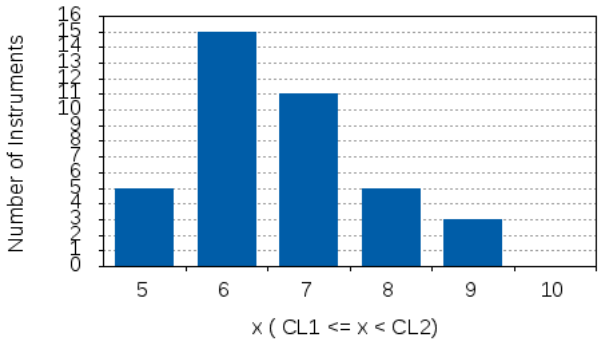
AFIS Fineness, mtex



AFIS Maturity Ratio



AFIS I.F.C., %



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AFIS Neps

	Fiber Nep Count (cnt/g)	Fiber Nep Size (µm)	SC Nep Count (cnt/g)	SC Nep Size (µm)	Total Nep Count (cnt/g)	Total Nep Size (µm)	Model	Test Method	Repeti-tions
Average	248.3	673.3	12.4	1091.4	261.9	683.0			
Median	246.5	666.5	11.0	1129.0	261.5	681.0			10.0
Stddev	38.4	23.5	3.9	160.2	28.1	22.5			
CV	15.5	3.5	31.3	14.7	10.7	3.3			
Min	14.0	635.0	6.0	1.0	100.0	299.0			
Max	641.0	1163.0	100.0	1429.0	329.0	963.0			
n	32	31	40	40	45	39			
Laboratory	**Fiber Nep Count (cnt/g)**	**Fiber Nep Size (µm)**	**SC Nep Count (cnt/g)**	**SC Nep Size (µm)**	**Total Nep Count (cnt/g)**	**Total Nep Size (µm)**	**Model**	**Test Method**	**Repeti-tions**
5-1	255.0	669.0	15.0	876.0	270.0	681.0	Afis Pro 2	CCAA	5
21-1	100.0	744.0	100.0	744.0	100.0	744.0	Afis 119-064		5
22-1	230.0	703.0	12.0	1152.0	242.0	725.0	Autojet		10
24-1	242.0	689.0	12.0	1138.0			AFIS Pro		
27-1					211.0		Neptester	ASTM D5866-12	5
32-1	313.0	661.0	16.0	939.0	329.0	675.0	AFIS Pro 2		10
32-2	287.0	665.0	16.0	959.0	303.0	680.0	AFIS Pro 2		10
41-1					281.0	665.0	AFIS Pro		5
43-1			21.0	8.0	303.0	671.0		ASTM-D1234-2012	10
44-1			9.0	1132.0	302.0	690.0	AFIS Pro		10
51-1	242.0	679.0	14.0	1.0	255.0	698.0		ISO	5
58-1	257.0	669.0	8.0	796.0			Autojet	Internal	10
58-2	224.0	660.0	20.0	1123.0	244.0	699.0	AFIS Pro 2	Internal	10
75-1	14.0	1163.0			287.0	693.0	AFIS Pro	ASTMD 5866-12	
90-1	277.0	688.0	9.0	1237.0	286.0	963.0	AFIS 4.22	USTER Method	10
91-1	234.0	664.0	8.0	1023.0	242.0	677.0	AFIS Pro 2		10
91-2	258.0	653.0	15.0	1089.0	273.0	677.0	AFIS Pro 2		10
91-4					261.0	666.0	Neptester		10
96-1	235.0	667.0	10.0	1012.0	245.0	682.0	AFIS Pro 2	NY/T 3272-2018	10
101-1	241.0	662.0	15.0	1126.0	255.0	688.0	Pro 2	internal	5
109-1	237.0	677.0	11.0	1164.0	248.0	698.0	AFIS Pro 2		
111-1	256.0	653.0	11.0	1079.0	267.0	671.0	AFIS Pro 2	Internal	10
112-1	321.0	728.0	20.0	1299.0			AFIS Pro	ASTM D5866	3
123-1	263.0	692.0	15.0	1108.0	278.0	714.0	AFIS Pro 2	ASTM D 5866-12	10
123-2			9.0	1004.0	290.0	653.0	AFIS Pro	ASTM D 5866-12	10
123-3			14.0	1198.0	276.0	688.0	Other	ASTM D 5866-12	10
128-1					266.0		Neptester	ASTM D5866-12	5
129-1			11.0	1148.0	245.0	299.0	OTHER	ASTM-D-5866-12	6
136-1	237.0	660.0	11.0	1245.0	247.0	680.0	AFIS Pro 2	ASTM D5848 - 95	3
139-1	245.0	677.0	7.0	956.0	252.0	684.0	AFIS PRO2	ASTMD5866-05	12
142-1					185.0	645.0	Other		5
143-1			17.0	1140.0	273.0	682.0	AFIS	ASTM D-5866	5
145-1	248.0	688.0	19.0	1429.0	267.0	743.0			
148-1	243.0	656.0	11.0	1150.0	255.0	676.0	USTER AFIS PRO 2	ASTM-D 5866	10
148-2	229.0	662.0	10.0	1238.0	239.0	684.0	USTER AFIS PRO 2.2	ASTM-D 5866	10

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	Fiber Nep Count (cnt/g)	Fiber Nep Size (µm)	SC Nep Count (cnt/g)	SC Nep Size (µm)	Total Nep Count (cnt/g)	Total Nep Size (µm)	Model	Test Method	Repeti-tions
148-3					258.0		USTER NEPTESTER 720		10
158-1			6.0	681.0	251.0	655.0	AFIS Pro		6
170-1			11.0	1373.0	250.0	698.0	AFIS Pro	Manufacturer	6
176-1	641.0		10.0	1136.0	232.0	651.0	AFIS Pro		5
180-1	197.0	648.0	9.0	939.0	205.0	661.0	Autojet	ASTM	3
181-1	231.0	635.0	14.0	1235.0	245.0	668.0	Autojet	ASTM	3
186-1	272.0	676.0	14.0	988.0	286.0		AFIS Pro	ASTM	10
186-2	252.0	644.0	10.0	996.0	262.0		AFIS Pro 2	ASTM	10
193-1			6.0	1142.0	220.0	690.0	AFIS Pro	ASTM-D5866-2012	5
207-2	269.0	701.0	17.0	1249.0	286.0		AFIS Pro	ASTM D5866-12 & USTER Handbook	10
210-1					275.0	655.0	Neptester	ASTMD5866-2012	5
211-1	258.0	666.0	12.0	1205.0	271.0	691.0	AFIS Pro 2		10
213-1	296.0	662.0	10.0	1026.0	306.0	673.0	AFIS Pro 2	ASTM D5866	

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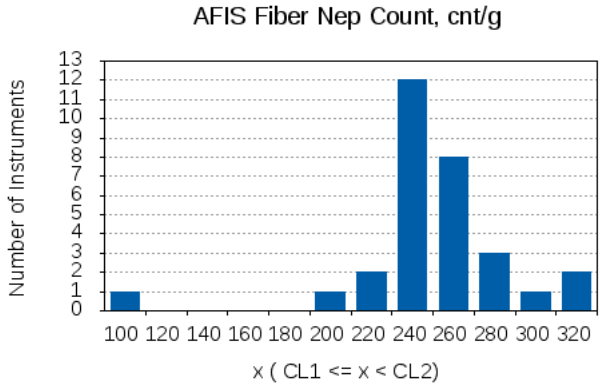

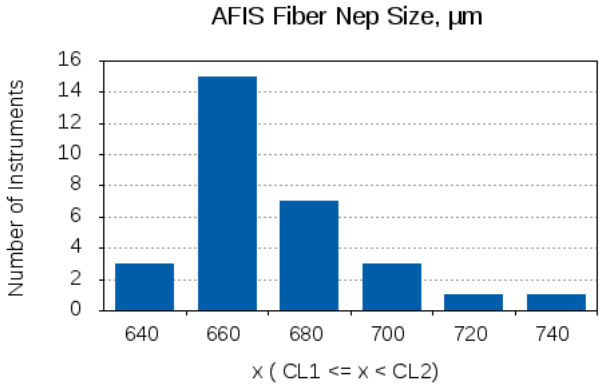

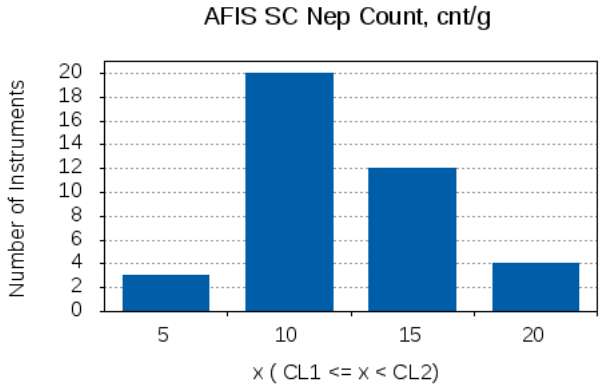

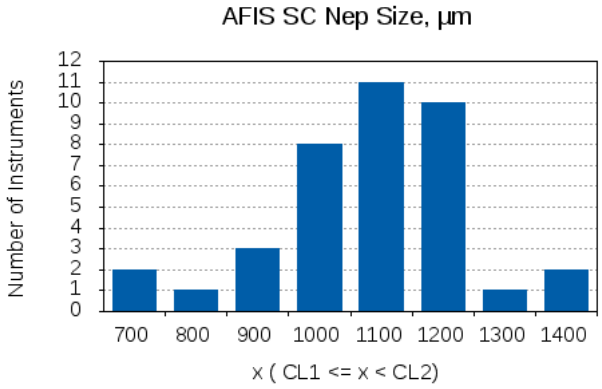

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AFIS Trash

	Trash Count (cnt/g)	Trash Size (µm)	Dust Count (cnt/g)	Dust Size (µm)	Total Trash Cnt (cnt/g)	Total Trash Size (µm)	V.F.M. (%)	Model	Test Method	Repeti-tions
Average	38.6	785.4	255.2	211.0	296.9	301.3	0.83			
Median	39.0	896.0	246.0	210.0	284.0	298.0	0.775			10.0
Stddev	5.0	260.7	50.8	5.5	55.5	19.1	0.19			
CV	13.1	33.2	19.9	2.6	18.7	6.3	22.7			
Min	29.0	286.0	169.0	203.0	30.0	214.0	0.43			
Max	57.0	1048.0	582.0	220.0	621.0	339.0	1.27			
n	26	14	26	11	25	20	26			
Laborat ory	**Trash Count (cnt/g)**	**Trash Size (µm)**	**Dust Count (cnt/g)**	**Dust Size (µm)**	**Total Trash Cnt (cnt/g)**	**Total Trash Size (µm)**	**V.F.M. (%)**	**Model**	**Test Method**	**Repeti-tions**
21-1	40.0		582.0		621.0	214.0	0.97	Afis 119-064		5
22-1	48.0		269.0				0.98	Autojet		10
32-1	33.0	874.0	246.0	213.0	279.0	290.0	0.73	AFIS Pro 2		10
32-2	38.0	897.0	246.0	209.0	284.0	304.0	0.83	AFIS Pro 2		10
43-1	30.0		198.0		30.0	307.0	0.64		ASTM-D1234-2012	10
51-1	42.0	926.0	307.0	208.0	349.0	294.0	1.0		ISO	5
58-1	41.0		242.0		283.0	298.0	0.73	Autojet	Internal	10
58-2	42.0	823.0	246.0	220.0	288.0	311.0	0.75	AFIS Pro 2	Internal	10
90-1	39.0		275.0		315.0	279.0	0.72	AFIS 4.22	USTER Method	10
91-1	39.0	922.0	206.0	219.0	245.0	332.0	0.85	AFIS Pro 2		10
91-2	57.0	953.0	322.0	204.0	380.0	320.0	1.27	AFIS Pro 2		10
101-1	38.0	931.0	234.0	213.0	272.0	313.0	0.9	Pro 2	internal	5
111-1	41.0	1048.0	230.0	210.0	271.0	339.0	1.21	AFIS Pro 2	Internal	10
112-1	38.0	334.0	169.0		208.0		0.43	AFIS Pro	ASTM D5866	3
129-1	37.0		221.0		258.0		0.71	OTHER	ASTM-D-5866-12	6
136-1	29.0	895.0	213.0	208.0	242.0	293.0	0.61	AFIS Pro 2	ASTM D5848 - 95	3
142-1	50.0		412.0		462.0	256.0	1.08	Other		5
143-1	40.0	286.0	287.0		328.0		0.77	AFIS	ASTM D-5866	5
148-1	41.0	925.0	277.0	203.0	318.0	295.0	0.94	USTER AFIS PRO 2	ASTM-D 5866	10
148-2	33.0	859.0	239.0	214.0	272.0	292.0	0.68	USTER AFIS PRO 2.2	ASTM-D 5866	10
158-1	37.0		300.0		337.0		0.78	AFIS Pro		6
176-1	39.0		269.0		309.0	318.0	0.92	AFIS Pro		5
186-1	39.0		218.0		257.0	305.0	0.72	AFIS Pro	ASTM	10
186-2	40.0		276.0		316.0	284.0	0.72	AFIS Pro 2	ASTM	10
193-1	43.0		292.0		336.0	295.0	0.87	AFIS Pro	ASTM-D5866-2012	5
207-2	29.0	322.0	185.0		219.0		0.66	AFIS Pro	ASTM D5866-12 & USTER Handbook	10

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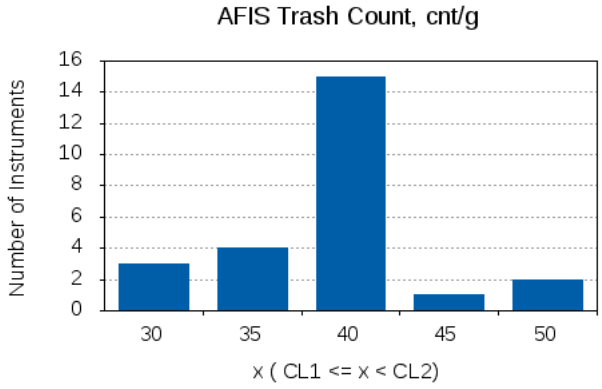

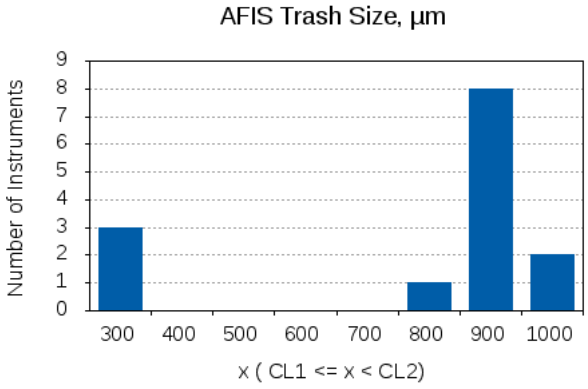

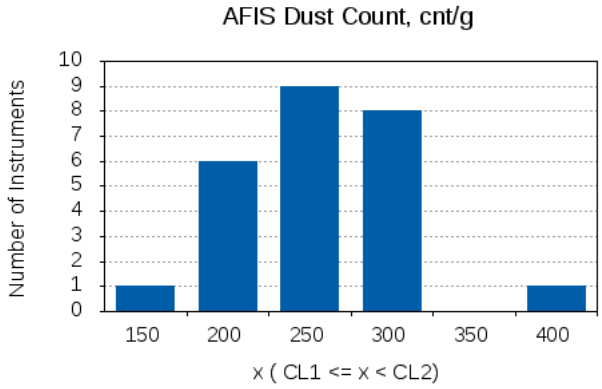

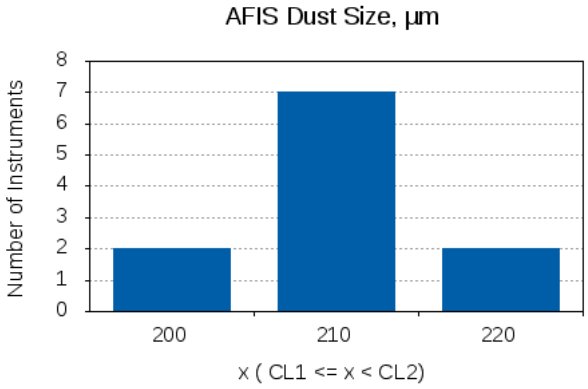

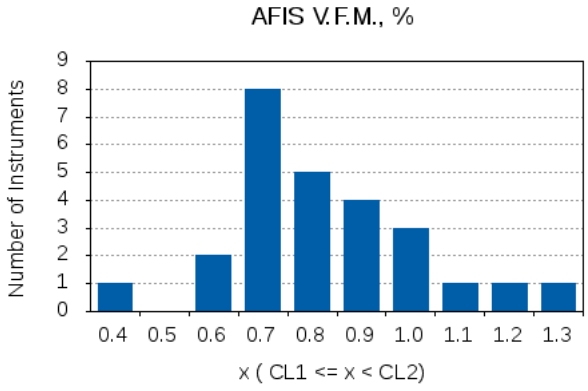

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