

# ICA Bremen Cotton Round Test 2019-3

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



**ICA Bremen**  
The Global Centre for Cotton Testing and Research

Bremen, 2020-02-15

## Evaluation of the Test Results 2019 / 3

Tested Cotton:  
Cotton Number:

**Sudan Acala**  
**RM 50**

Number of Laboratories: **102**

Argentina	1	Mauritius	1
Australia	1	Pakistan	3
Bangladesh	1	Poland	1
Brazil	3	Senegal	-
China	20	Serbia	1
Czech Republic	3	Slovenia	2
Egypt	-	South Africa	-
Germany	10	Spain	5
Greece	8	Sudan	-
India	20	Switzerland	2
Indonesia	1	Taiwan	2
Israel	1	Tanzania	-
Italy	1	Thailand	1
Japan	1	Tunisia	1
Kazakhstan	-	Turkey	5
Korea	1	Uganda	-
Mali	-	United States	5
		Uzbekistan	-
		Vietnam	1

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Managing Director: Bill Kingdon

Place of jurisdiction: Bremen

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## Explanations

2019-3

### 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: **Sudan Acala (RM 50)**

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	0.104	0.069
Strength, g/tex	0.706	0.931
Length, UHM, inch	0.019	0.018
Length, UHM, mm	0.492	0.459

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.

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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:

$$z = \frac{\text{your value} - \text{average(or median)}}{\text{Std Dev}}$$

- 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](mailto: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](mailto: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	4.68			
Median	4.625			
Stddev	0.21			
CV	4.5			
Min	3.82			
Max	5.08			
n	19			
Laboratory	Micronaire (Mic)	Instrument	Standard Test Method	Repetitions
12-1	4.8	USTER 775	GB/T 6498-2008	3
16-1	5.03	WIRA	UNE 40214	6
28-1	4.86	MICRONAIRE	ASTM-D1448	5
29-1	4.6		ISO 2403	4
32-1	4.47	WIRA		6
32-2	4.51	WIRA		6
67-1	4.4583	Fibronaire		6
76-1	4.66	Wira		4
77-1	3.82			
112-1	5.08	Fibronaire	ASTM D 1448	2
132-1	4.8	Uster 775	DIN 53941	3
142-1	4.65	80 400	ISO	3
155-1	4.4	275 Typ C		
162-1	4.95	Wira		6
169-1	4.55	Sheffield Miceonaire		3
177-1	4.81	DPM 60	DIN 53941	3
183-1	4.56	Fibronaire	ASTM 144 B	3
186-2	4.43	WIRA	ASTM	6
193-1	4.58	Y145	GB/T 6498-2008	2

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## Pressley - Strength

	PI (0)	Standard Test Method	Repetitions
Average	7.55		
Median	7.6481		6.0
Stddev			
CV			
Min	5.96		
Max	8.6		
n	5		
Laboratory	PI (0)	Standard Test Method	Repetitions
16-1	8.0	UNE 40247	6
29-1	8.6	ISO 3060:	10
46-1	7.6481	Pressleytest	10
162-1	7.54		6
177-1	5.96	DIN 53942	3

## Stelometer - Strength/Elongation

	Bundle Strength (gf/tex)	Bundle Elongation (%)	Standard Test Method	Repetitions
Average				
Median				
Stddev				
CV				
Min	19.1	5.99		
Max	22.42	6.9		
n	3	3		
Laboratory	Bundle Strength (gf/tex)	Bundle Elongation (%)	Standard Test Method	Repetitions
112-1	22.42	5.99	ASTM D 1445	3
162-1	19.1	6.0		6
193-1	19.1	6.9	GB/T13783-1992	6

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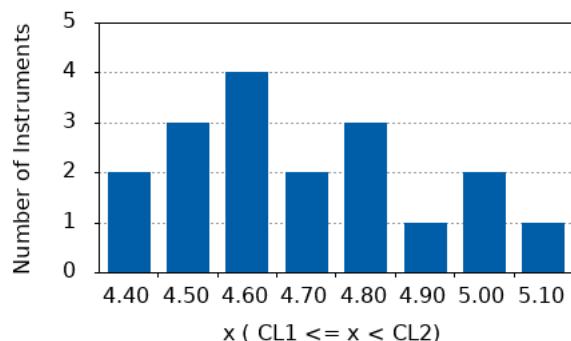
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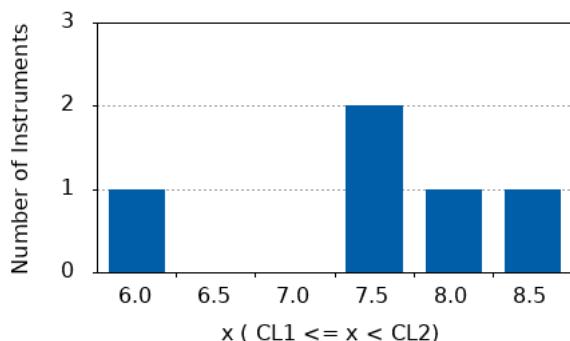


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Micronaire (Stand Alone Instruments)



Pressley (0)



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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											
Median											
Stddev											
CV											
Min											
Max											
n											
Laborator	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	0.991	25.18	0.441	11.19	45.0			12.5	FIBROGRAPH	ASTM-D1447	5
132-1	1.091	27.7	0.51	12.95	47.0				Fibrotest	ASTM D1447	10

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## Comb Sorter - Staple Length

	ML(W) (mm)	CV (%)	SFC < 12.5mm (%)	Instrument Model	Standard Test Method	Repetitions
Average	22.3	36.63	14.68			
Median	22.4	35.45	14.25			
Stddev						1.0
CV						
Min	21.6	34.3	12.5			
Max	22.8	41.3	17.7			
n	4	4	4			
Laboratory	ML(W) (mm)	CV (%)	SFC < 12.5mm (%)	Instrument Model	Standard Test Method	Repetitions
85-1	21.6	36.2	14.5	Zweigle	UNI 10170	1
85-2	22.7	34.7	14.0	Zweigle	UNI 10170	1
85-3	22.8	34.3	12.5	Keisokki	UNI 10170	1
85-4	22.1	41.3	17.7	Zweigle	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									
Max									
n									
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	18.7	38.6	24.4	21.5	33.2	12.6	AL 101	Internal	3
112-1	23.3	25.74	2.32	25.68	23.01	0.6	Almeter Peyer		4

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## Causticaire (18% NaOH) - Maturity

	Maturity (%)	Instrument Model	Standard Test Method	Repetitions
Average				
Median				
Stddev				
CV				
Min				
Max				
n				
Laboratory	Maturity (%)	Instrument Model	Standard Test Method	Repetitions
177-1	88.0	18 % NaOH	DIN 53943/4	3

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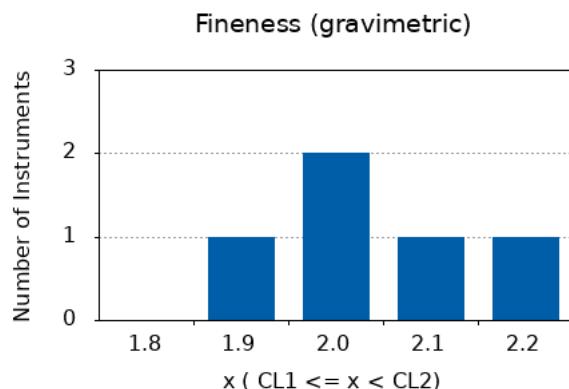
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## Gravimetric Fineness

	Grav. Fineness (dtex)	Std. Test Method	Repetitions
Average	2.02		
Median	2.04		6.5
Stddev			
CV			
Min	1.86		
Max	2.79		
n	6		
Laboratory	Grav. Fineness (dtex)	Std. Test Method	Repetitions
85-2	2.04	UNI EN ISO 1973	10
85-3	1.96	UNI EN ISO 1973	10
85-4	1.86	UNI EN ISO 1973	10
112-1	2.17		3
177-1	2.79	ASTM D 1577/90	3
193-1	2.05	GB/T 6100-2007	2



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## IIC/Shirley FMT - Fineness/Maturity

	PM (%)	MAT	FIN (mtex)	Instrument Model	Standard Test Method	Repetitions
Average						
Median						
Stddev						
CV						
Min	66.0	0.71	191.0			
Max	85.6	0.95	233.0			
n	3	3	3			
Laboratory	PM (%)	MAT	FIN (mtex)	Instrument Model	Standard Test Method	Repetitions
28-1	85.6	0.95	191.0	FMT	ISO 10306	5
32-1	66.0	0.71	233.0	WIRA		6
32-2	71.62	0.78	217.0	WIRA		6

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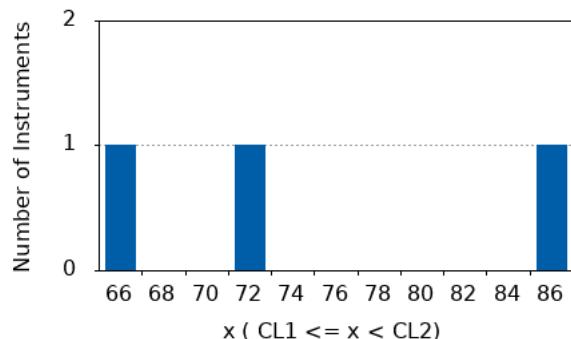
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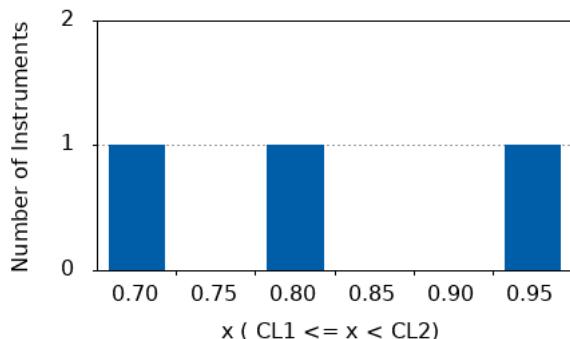


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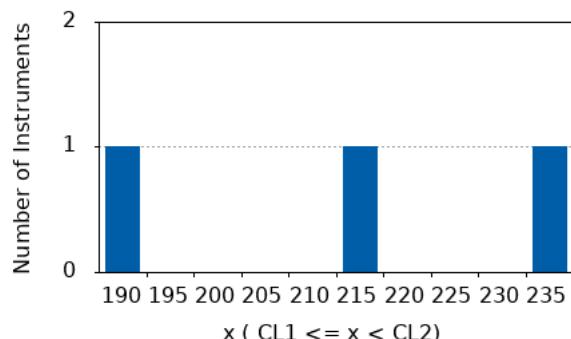
IIC/Shirley FMT - PM%



IIC/Shirley FMT - MAT



IIC/Shirley FMT - Fineness



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## HVI (HVICCS Calibration): Micronaire / Strength

	Micronaire (Mic)	Mat. Index	PM% (%)	Strength (gf/tex)	Elong. (%)	Manuf.	Model	Std. Test Method	Repetitions
Average	4.7	0.868	86.3	26.81	6.87				
Median	4.7	0.87	87.0	26.7	6.6				
Stddev	0.14	0.01	2.1	1.2	1.2				
CV	3.1	1.5	2.4	4.5	17.0				
Min	3.76	0.82	82.0	19.6	4.5				
Max	5.01	0.95	89.0	32.2	24.9				
n	101	76	11	101	78				
Laboratory	Micronaire (Mic)	Mat. Index	PM% (%)	Strength (gf/tex)	Elong. (%)	Manuf.	Model	Std. Test Method	Repetitions
3-1	4.95	0.89		19.6	6.5	Premier	ART 2	ASTM	6
5-1	4.9	0.88		28.0	6.0	USTER	1000	CCAA	12
5-2	4.83	0.88		28.2	5.9	USTER	1000	CCAA	12
5-3	4.8	0.87		28.7	6.2	USTER	1000	CCAA	12
6-1	4.7	0.88		26.4	5.8	USTER	1000	GB/T 20392-2006	4
10-1	4.68		88.0	26.2		USTER	1000	GB/T20392-2006	3
11-1	4.72			29.7	6.5	PREMIER	ART 2	USDA	10
12-1	4.76	0.89		27.2	6.5	Premier	ART 2	GB/T 20392-2006	6
18-1	4.71	0.86		29.9	7.2	USTER	1000	SYSTEM TESTING-INDIVIDUAL TESTS	20
23-1	4.9		84.0	27.0	9.0	USTER	900	D 5867	10
23-2	4.9	0.86		28.2	8.0	USTER	1000	D 5867	10
23-3	4.9		84.0	27.0	9.0	USTER	900	D 5867	10
23-4	4.9	0.86		28.2	8.0	USTER	1000	D 5867	10
24-1	4.81	0.89		27.9		USTER			
25-1	4.73	0.86		27.2	8.0	USTER	1000		10
26-1	4.73	0.86		27.7	7.6	USTER	1000		10
27-1	4.7	0.86		25.2	8.5	USTER	900	ASTM- D 5867-2012	6
28-1	4.86	0.95	86.0	27.8	7.2	Textechno	HVI	ASTM-D5867	5
32-1	4.53			25.2	5.9	USTER	900		10
32-2	4.52			24.2	6.2	USTER	900		10
33-1	4.87	0.87		27.2		USTER	1000	GB/T20392	6
34-1	4.89		88.0	25.8	5.0	USTER	1000	GB/T20392-2006	2
35-1	4.71	0.87		27.2	5.8	USTER	1000	GB/T20392-2006	2
38-1	4.94	0.87		32.2	4.5	USTER	1000	ASTM	7
39-1	4.53	0.88		26.8		Premier	ART 2		6
40-1	4.7			27.0	5.0	USTER	900	INTERNAL	10
40-3	4.63	0.87		25.9	6.6	USTER	1000	INTERNAL	10
41-1	4.75	0.89		26.1	7.6	USTER			5
43-1	4.84			27.3	9.0	USTER	1000	ASTM-D1234-2012	10
43-2	4.91			26.4	6.9	Uster	1000	ASTM-D1234-2012	10
44-1	4.63	0.86		26.4		USTER	1000		10
44-2	4.54	0.88		26.7		Premier	ART 2		10
49-1	4.61	0.87		26.1	5.9	USTER	1000	ASTM D 1776	10
58-1	4.83	0.86		25.6	8.5	USTER	1000	Internal	10
59-1	4.63	0.87		26.0		USTER	1000	USDA	10
59-2	4.61	0.87		26.0		USTER	1000	USDA	10
59-3	4.63	0.87		26.1		USTER	1000	USDA	10

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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 2019-3

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	Repetitions
59-4	4.6	0.87		26.4		USTER	1000	USDA	10
63-1	4.41	0.83		27.1	5.7	MAG	Other	ASTM-D-5867-12	
64-1	4.36	0.82		27.8	5.1	MAG	Other	ASTM-D1234-2012	
71-1	4.77	0.87		25.6	6.7	USTER	1000	GB/T 20392-2006	6
72-1	4.62	0.87		29.2		USTER	1000	ASTM-D1776	10
78-1	4.77		87.0	26.0	6.6	USTER	1000		6
86-1	4.71	0.86		26.2	7.1	USTER	1000	GB/T 20392-2006	1
89-1	4.68	0.87		26.3		USTER	1000		6
89-2	4.68	0.86		26.6		USTER	1000		6
89-3	4.59	0.87		26.7		USTER	1000		6
89-4	4.61	0.87		26.1		USTER	1000		6
90-1	4.64	0.86		24.9	24.9	USTER	1000	ASTM-D 5867	10
91-1	4.6	0.87		26.4	6.2	USTER	1000		5
91-3	4.6					USTER	Other		10
96-1	4.7			26.5	6.0	USTER	HVI1000-143	GB/T 20392-2006	10
96-2	4.7			26.4	6.3	USTER	HVI1000-07	GB/T 20392-2006	10
96-3	4.7			25.7	6.6	Premier	HFT-2	GB/T 20392-2006	10
96-4	4.7			26.5	6.7	Premier	HFT-1	GB/T 20392-2006	10
97-1	4.61	0.87	87.0	26.4	5.2	USTER	1000	GB/T 20392-2006	4
98-1	4.83			27.6		Uster	1000	ASTM	12
101-1	4.85	0.87		26.7	7.1	USTER	1000	ASTM 5687-2012	6
103-1	4.65	0.87		27.1	6.6	USTER	1000	GB/T 20392-2006	10
104-1	4.8	0.87		26.4	6.9	USTER	1000	GB/T 20392	4
105-1	4.6	0.87		27.1	6.2	Uster	1000	ASTM D1776, ASTM D5867	10
106-1	4.7			26.0	11.1	USTER	900	ASTM D5867	10
107-1	3.86	0.86		29.2	6.2	Premier	ART 2	ASTM :D 5867-12	
108-1	4.7	0.86		26.9	7.3	USTER	1000	ASTM D5867-12	10
109-1	4.9	0.88		26.4		USTER	1000		10
110-1	4.63			22.8		Statex	Other	ASTM D 5867-12	10
111-1	4.64	0.87		24.4	6.3	USTER	1000	Internal	6
112-1	4.94	0.87		26.6	8.1	USTER	1000	ASTM D 5867	6
113-1	4.62	0.86		29.2	6.4	MAG	Other	ASTM-D-5867-12	
119-1	4.68	0.86		27.0	6.2	USTER	1000	GB/T 20392	2
123-1	4.5	0.84		25.0	7.9	Premier	ART 3	ASTM D 5867-12	10
123-3	4.52	0.86		26.6	7.0	USTER	1000	ASTM D 5867-12	10
130-1	4.55	0.86		24.3	6.4	Premier	ART 2		6
132-1				30.4	8.4	Textechno	Fibrotest	ASTM D5867	10
133-1	4.6		87.0	28.5		Uster	HVI 1000	ASTM	2
136-1	4.64	0.88		27.0	5.3	USTER	1000	ASTM D5867-95	10
138-1	4.47	0.87		25.3	7.3	USTER	Spectrum	ASTM D 5867-2012el	6
139-1	3.76			26.7	6.4	Premier	ART 2	ASTM D5867-05	12
141-1	4.88	0.88		27.8	5.6	USTER	1000	Mode 4	1
144-1	4.44	0.88		27.3		USTER	Spectrum	ASTM	6
148-1	4.64	0.86		24.5	7.3	Uster	1000	ASTM-D 5867	6
154-1	4.7		87.0	26.0	7.4	USTER	900	ASTM D 5867	10
162-1	4.9			27.5	5.1	USTER	900		6
163-1	4.8		89.0	26.9	6.6	Premier	ART 2	ASTM D 5867:2012	5

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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	Repetitions
175-1	5.01	0.88		26.0	6.6	USTER	1000	ASTM-D5867-12	10
176-1	4.76	0.87		26.8	6.9	USTER	1000	GB/T 20392-2006	5
179-1	4.82	0.87		26.7	6.9	USTER	Spectrum	ASTM	7
180-1	4.57	0.88		27.4	7.1	USTER	Spectrum	ASTM	6
181-1	4.59	0.9		26.7	7.9	USTER	1000	ASTM	6
183-1	4.56	0.87		27.3	6.5	USTER	1000	ASTM D 8867-05	2
186-2	4.43	0.92	82.0	29.2	8.6	Textechno	CCS-V5-3	ASTM	10
193-1	4.67	0.86		27.6	7.8	USTER	1000	GB/T 20392-2006	6
200-1	4.89			27.6		USTER	900	ASTM D5867	12
204-1	4.94	0.87		27.3	6.5	USTER	1000	GB/T 20392-2006	12
207-1	4.53	0.87		26.4	6.0	USTER	1000	ASTM D5867-12 e1	10
207-2	4.5	0.86		25.7	6.5	USTER	1000	ASTM D5867-12 e1	10
207-3	4.5	0.86		26.0	7.5	USTER	1000	ASTM D5867-12 e1	10
209-1	4.5	0.83		28.4	6.1	MAG	HVI	ASTM :D5867-12	6
214-1	4.85	0.83		25.4		Premier	ART		30
215-1	4.9	0.86		25.5	8.5	USTER	1000	GB/T 20392-2006	4
216-1	4.58	0.86		26.1		USTER	1000		5
218-1	4.67	0.89		27.7	9.7	USTER	Spectrum	D5867	10

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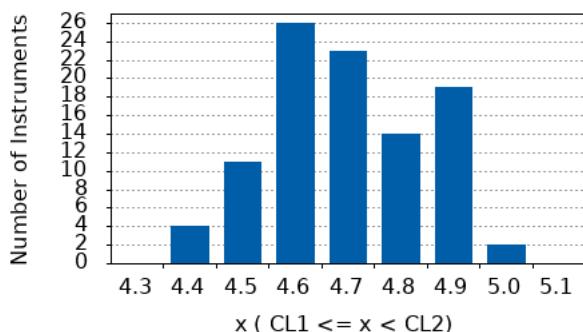
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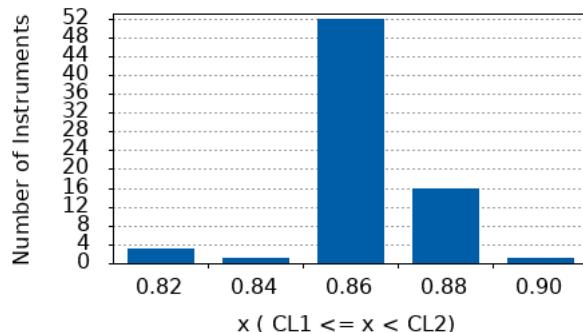


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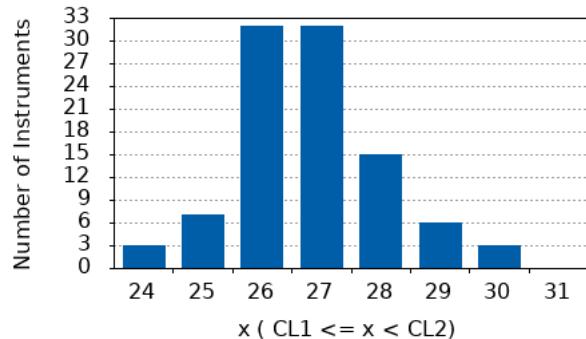
HVI (HVICCS Calibration): Micronaire



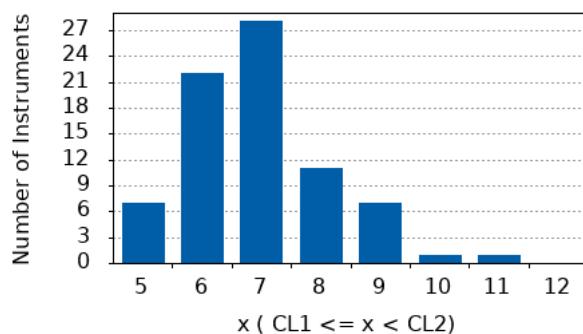
HVI (HVICCS Calibration): Mat. Ratio



HVI (HVICCS Calibration): Strength



HVI (HVICCS Calibration): Elongation



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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	1.073	27.26	80.73	10.6					
Median	1.073	27.26	80.5	10.4					
Stddev	0.016	0.41	1.0	2.4					
CV	1.5	1.5	1.2	22.6					
Min	1.009	25.63	75.3	6.3					
Max	1.125	28.58	83.1	26.4					
n	102	102	102	92					
Laboratory	UHML (inch)	UHML (mm)	Uniformity Index (%)	-SFI-	Manuf.	Model	Std. Test Method	Repetitions	SFI calibrated?
3-1	1.064	27.02	81.7		Premier	ART 2	ASTM	6	Yes
5-1	1.082	27.48	81.1	9.3	USTER	1000	CCAA	12	No
5-2	1.088	27.64	81.2	9.3	USTER	1000	CCAA	12	No
5-3	1.081	27.46	81.2	9.0	USTER	1000	CCAA	12	No
6-1	1.079	27.4	80.9	17.7	USTER	1000	GB/T 20392-2006	4	No
10-1	1.071	27.2	79.86		USTER	1000	GB/T20392-2006	3	No
11-1	1.108	28.14	82.3		PREMIER	ART 2	USDA	10	
12-1	1.089	27.66	81.0	10.3	Premier	ART 2	GB/T 20392-2006	6	No
18-1	1.088	27.64	82.4	8.1	USTER	1000	SYSTEM TESTING-INDIVIDUAL TESTS	20	Yes
23-1	1.06	26.92	81.7	10.4	USTER	900	D 5867	10	Yes
23-2	1.079	27.4	81.9	8.9	USTER	1000	D 5867	10	Yes
23-3	1.06	26.92	81.7	10.4	USTER	900	D 5867	10	Yes
23-4	1.079	27.4	81.9	8.9	USTER	1000	D 5867	10	Yes
24-1	1.098	27.88	81.7	8.6	USTER	Spectrum			
25-1	1.08	27.42	81.5	9.9	USTER	1000		10	no
26-1	1.083	27.52	82.2	8.5	USTER	1000		10	No
27-1	1.075	27.3	79.5	11.8	USTER	900	ASTM-D 5867-2012	6	no
28-1	1.05	26.67	80.5	13.6	Textechno	HVI	ASTM-D5867	5	No
32-1	1.063	27.0	79.5	18.5	USTER	900		10	
32-2	1.071	27.2	79.3	17.8	USTER	900		10	
33-1	1.077	27.36	81.1		USTER	1000	GB/T20392	6	
34-1	1.074	27.29	79.9	21.7	USTER	1000	GB/T20392-2006	2	Yes
35-1	1.074	27.28	79.6	9.6	USTER	1000	GB/T20392-2006	2	No
38-1	1.107	28.11	83.1	8.4	USTER	1000	ASTM	7	No
39-1	1.068	27.12	80.1	11.6	Premier	ART 2		6	Yes
40-1	1.08	27.43	80.5		USTER	900	INTERNAL	10	
40-3	1.066	27.08	80.3	12.0	USTER	1000	INTERNAL	10	
41-1	1.022	25.96	76.6	7.5	USTER	Spectrum		5	Yes
43-1	1.06	26.92	80.85	9.6	USTER	1000	ASTM-D1234-2012	10	No
43-2	1.05	26.67	80.9	8.73	Uster	1000	ASTM-D1234-2012	10	No
44-1	1.09	27.68	79.1	11.5	USTER	1000		10	Yes
44-2	1.104	28.04	80.0	11.1	Premier	ART 2		10	yes
49-1	1.077	27.36	79.6	10.3	USTER	1000	ASTM D 1776	10	No
58-1	1.056	26.82	81.1	10.0	USTER	1000	Internal	10	
59-1	1.071	27.2	80.1	10.8	USTER	1000	USDA	10	
59-2	1.068	27.12	79.9	10.4	USTER	1000	USDA	10	

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	UHML (inch)	UHML (mm)	Uniformity Index (%)	SFI	Manuf.	Model	Std. Test Method	Repeti-tions	SFI calibrated?
59-3	1.061	26.94	79.8	10.1	USTER	1000	USDA	10	
59-4	1.072	27.24	80.4	10.6	USTER	1000	USDA	10	
63-1	1.083	27.52	82.6	9.38	MAG	Other	ASTM-D-5867-12		No
64-1	1.107	28.12	82.54	8.96	MAG	Other	ASTM-D1234-2012		
71-1	1.072	27.23	80.0	9.8	USTER	1000	GB/T 20392-2006	6	No
72-1	1.125	28.58	82.7	8.8	USTER	1000	ASTM-D1776	10	No
78-1	1.067	27.09	79.9	11.6	USTER	1000		6	
86-1	1.067	27.1	81.0	19.4 3	USTER	1000	GB/T 20392-2006	1	No
89-1	1.058	26.87	80.2	11.1	USTER	1000		6	Yes
89-2	1.049	26.65	79.8	10.8	USTER	1000		6	Yes
89-3	1.066	27.08	80.3	11.0	USTER	1000		6	Yes
89-4	1.062	26.98	79.9	10.9	USTER	1000		6	Yes
90-1	1.063	27.0	79.2	10.2 9	USTER	1000	ASTM-D 5867	10	
91-1	1.096	27.83	80.6	26.4	USTER	1000		5	Yes
91-2	1.11	28.2	80.2	11.9	USTER	Other		10	Yes
96-1	1.059	26.9	79.9		USTER	HVI1000-143	GB/T 20392-2006	10	
96-2	1.063	27.0	80.8		USTER	HVI1000-07	GB/T 20392-2006	10	No
96-3	1.039	26.4	79.4		Premier	HFT-2	GB/T 20392-2006	10	No
96-4	1.067	27.1	80.4	11.2	Premier	HFT-1	GB/T 20392-2006	10	No
97-1	1.078	27.38	80.0	13.8 5	USTER	1000	GB/T 20392-2006	4	No
98-1	1.077	27.36	81.0		Uster	1000	ASTM	12	No
101-1	1.075	27.3	81.8	9.8	USTER	1000	ASTM 5687-2012	6	no
103-1	1.088	27.64	80.1	8.8	USTER	1000	GB/T 20392-2006	10	No
104-1	1.06	26.93	80.4	19.2	USTER	1000	GB/T 20392	4	No
105-1	1.065	27.06	80.0	11.7	Uster	1000	ASTM D1776, ASTM D5867	10	No
106-1	1.094	27.78	80.3	10.6	USTER	900	ASTM D5867	10	No
107-1	1.081	27.45	81.1	11.0	Premier	ART 2	ASTM D 5867-12	10	No
108-1	1.088	27.64	79.6	9.6	USTER	1000	ASTM D5867-12	10	Yes
109-1	1.059	26.91	80.0	10.0	USTER	1000		10	No
110-1	1.055	26.8	78.3	17.8	Statex	Other	ASTM D 5867-12	10	No
111-1	1.057	26.84	79.37	6.3	USTER	1000	Internal	6	Yes
112-1	1.05	26.67	80.8	11.2	USTER	1000	ASTM D 5867	6	Yes
113-1	1.074	27.27	80.65	10.7 4	MAG	Other	ASTM-D-5867-12		
119-1	1.076	27.32	80.1	10.1	USTER	1000	GB/T 20392	2	No
123-1	1.064	27.03	80.6	11.7	Premier	ART 3	ASTM D 5867-12	10	
123-3	1.071	27.2	79.6	13.1	USTER	1000	ASTM D 5867-12	10	
130-1	1.038	26.36	79.6	12.3	Premier	ART 2		6	
132-1	1.085	27.57	82.6	10.2	Textechno	Fibrotest	ASTM D5867	10	Yes
133-1	1.116	28.35	83.0	8.4	Uster	HVI 1000	ASTM	2	Yes
136-1	1.082	27.48	80.3	9.1	USTER	1000	ASTM D5867-95	10	Yes
138-1	1.055	26.79	79.8	12.7	USTER	Spectrum	ASTM D 5867-2012el	6	No
139-1	1.071	27.2	80.1	11.6	Premier	ART 2	ASTM D5867-05	12	
141-1	1.074	27.28	80.8	8.9	USTER	1000	Mode 4	1	No
144-1	1.067	27.1	79.5	11.6	USTER	Spectrum	ASTM	6	Yes

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	UHML (inch)	UHML (mm)	Uniformity Index (%)	SFI	Manuf.	Model	Std. Test Method	Repeti-tions	SFI calibrated?
148-1	1.073	27.26	80.2	11.3	Uster	1000	ASTM-D 5867	6	Yes
154-1	1.093	27.77	81.7	10.0	USTER	900	ASTM D 5867	10	Yes
162-1	1.075	27.3	81.8	8.6	USTER	900		6	
163-1	1.044	26.53	80.5	11.4	Premier	ART 2	ASTM D 5867:2012	5	No
175-1	1.018	25.78	80.7	12.6	USTER	1000	ASTM-D 5867-12	10	
176-1	1.099	27.92	81.9	7.58				5	
179-1	1.069	27.15	80.9	8.8	USTER	1000	GB/T 20392-2006	7	No
180-1	1.076	27.32	81.5	7.1	USTER	Spectrum	ASTM	6	Yes
181-1	1.081	27.46	82.0	6.8	USTER	Spectrum	ASTM	6	Yes
183-1	1.081	27.46	81.3	8.8	USTER	1000	ASTM D 8867-05	2	Yes
186-2	1.084	27.54	82.87	10.5	Textechno	CCS-V5-3	ASTM	10	Yes
193-1	1.072	27.23	82.0	9.3	USTER	1000	GB/T 20392-2006	6	No
200-1	1.065	27.06	81.19		USTER	900	ASTM D 5867	12	
204-1	1.058	26.87	80.6	10.7	USTER	1000	GB/T 20392-2006	12	No
207-1	1.078	27.38	79.4	11.7	USTER	1000	ASTM D 5867-12 e1	10	No
207-2	1.063	27.01	79.3	10.4	USTER	1000	ASTM D 5867-12 e1	10	No
207-3	1.081	27.46	80.4	11.1	USTER	1000	ASTM D 5867-12 e1	10	No
209-1	1.091	27.7	81.5	9.5	MAG	HVI	ASTM :D5867-12	6	
214-1	1.011	25.68	80.5	11.1	Premier	ART		30	No
215-1	1.009	25.64	79.7	20.6	USTER	1000	GB/T 20392-2006	4	No
216-1	1.009	25.63	80.3	11.6	USTER	1000		5	Yes
218-1	1.072	27.23	82.5	6.6	USTER	Spectrum	D5867	10	Yes

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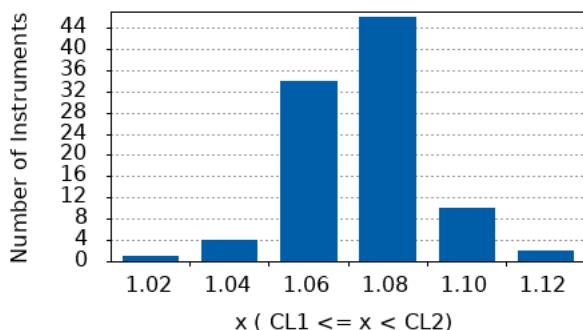
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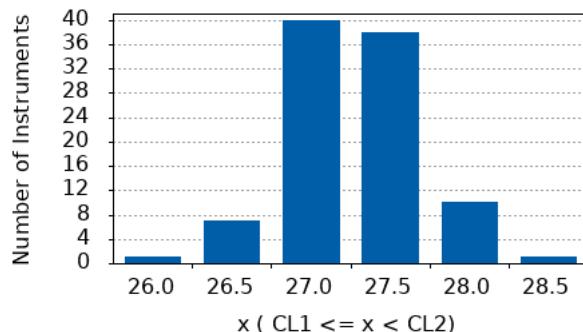


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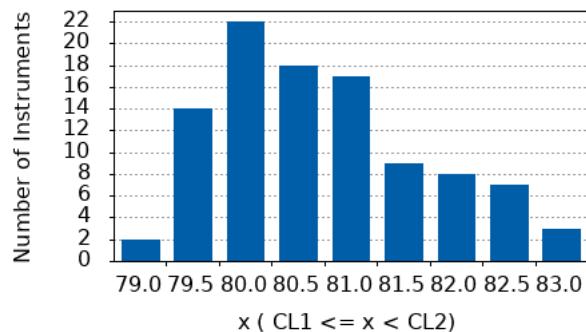
HVI (HVICCS Calibration): UHML (inch)



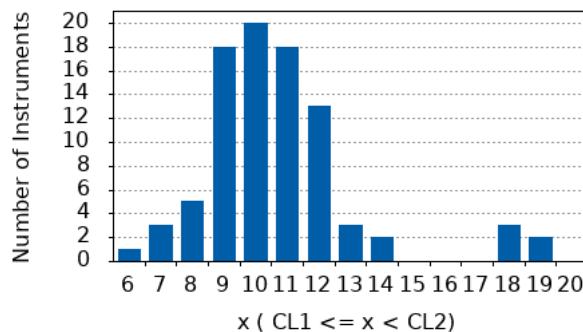
HVI (HVICCS Calibration): UHML (mm)



HVI (HVICCS Calibration): Unif. Index



HVI (HVICCS Calibration): Short Fiber Index



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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	Repetitions
Average	77.23	10.25		19.7	0.235					
Median	77.3	10.2		20.5	0.23	2.0				10.0
Stddev	0.82	0.43		6.6	0.089					
CV	1.1	4.2		33.7	38.1					
Min	72.1	6.2		6	0.1					
Max	79.7	11.6		73	1.68					
n	97	97		77	76					
Laboratory	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repetitions
3-1	79.3	10.3	11.3				Premier	ART 2	ASTM	6
5-1	77.3	10.5	22-1	20	0.21	2	USTER	1000	CCAA	12
5-2	77.4	10.5	22-1	21	0.19	2	USTER	1000	CCAA	12
5-3	77.1	10.4	22-1	25	0.19	3	USTER	1000	CCAA	12
6-1	77.5	10.3	12	16	0.21	2	USTER	1000	GB/T 20392-2006	4
10-1	77.21	10.17	12	21	0.24	2	USTER	1000	GB/T20392-2006	3
11-1	75.68	10.5	22-1				PREMIER	ART 2	USDA	10
12-1	76.9	11.6	13-1	10	0.12	1	Premier	ART 2	GB/T 20392-2006	6
18-1	78.0	10.5	12-1	15	0.13	1	USTER	1000	SYSTEM TESTING-INDIVIDUAL TESTS	20
23-1	77.5	11.4	12-1				USTER	900	D 5867	10
23-2	78.0	10.5	12-2	22	0.27	2	USTER	1000	D 5867	10
23-3	77.5	11.4	12-1				USTER	900	D 5867	10
23-4	78.0	10.5	12-2	22	0.27	2	USTER	1000	D 5867	10
24-1	76.4	10.3	22-1	14	0.17		USTER	1000	Spectrum	10
25-1	78.2	10.7	12-1	24	0.26	3	USTER	1000		
26-1	78.4	10.6	12-1	21	0.2	2	USTER	1000		
27-1	76.6	10.4	12-2				USTER	900	ASTM-D 5867-2012	6
28-1	76.2	9.7	22-2	23	0.5	4	Textechno	HVI	ASTM-D 5867	5
33-1	75.8	11.0	13				USTER	1000	GB/T20392	6
34-1	77.5	10.5	12	14	0.15	2	USTER	1000	GB/T20392-2006	2
35-1	76.8	10.2	12	16	0.18	2	USTER	1000	GB/T20392-2006	2
38-1	76.7	10.1	22-1	38	0.43	4	USTER	1000	ASTM	7
39-1	78.3	9.3	21-3				Premier	ART 2		6
40-1	75.0	10.3	22-2				USTER	900	INTERNAL	10
40-3	77.6	10.5	12-2	27	0.33	3	USTER	1000	INTERNAL	10
41-1	77.6	11.0	12-1	11	0.15		USTER	1000		5
43-1	76.84	10.63		13	0.14		USTER	1000	ASTM-D1234-2012	10
43-2	77.3	10.47	none	18	0.2		Uster	1000	ASTM-D1234-2012	10
44-1	77.0	10.4	22-1	25	0.29		USTER	1000		10
44-2	77.2	10.0	21-3				Premier	ART 2		10
49-1	76.9	9.8	22-1	20	0.24	2	USTER	1000	ASTM D 1776	10
58-1	78.2	10.6	12-1	20	0.23		USTER	1000	Internal	10
59-1	78.0	9.8	22-1	12	0.12	1	USTER	1000	USDA	10
59-2	77.8	10.2	12-2	15	0.12	1	USTER	1000	USDA	10
59-3	77.4	10.0	22-1	16	0.19	2	USTER	1000	USDA	10
59-4	77.5	10.1	12-2	11	0.11	1	USTER	1000	USDA	10
63-1	76.4	10.5	22-1				MAG	Other	ASTM-D-5867-12	

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	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repetitions
64-1	77.1	10.3	22--1				MAG	Other	ASTM-D1234-2012	
71-1	77.3	10.1	22-1	25	0.33	3	USTER	1000	GB/T 20392-2006	6
72-1	74.7	9.2			0.16		USTER	1000	ASTM-D1776	10
78-1	77.8	10.2	12-2	25	0.3	3	USTER	1000		6
86-1	77.6	9.9	12	22	0.27	2	USTER	1000	GB/T 20392-2006	1
89-1	76.8	10.1	22-1	23	0.2	2	USTER	1000		6
89-2	76.8	10.4	22-1	23	0.25	3	USTER	1000		6
89-3	77.0	10.2	22-1	25	0.28	3	USTER	1000		6
89-4	77.3	10.3	22-1	19	0.24	2	USTER	1000		6
90-1	76.5	10.0	22-2	20	0.19		USTER	1000	ASTM-D 5867	10
91-1	76.8	10.5	22-1	19	0.27		USTER	1000		5
91-4	76.1	10.5	22-1	13	0.19		USTER	Other		10
96-1	77.8	10.6					USTER	HVI1000-143	GB/T 20392-2006	10
96-2	77.7	10.2					USTER	HVI1000-07	GB/T 20392-2006	10
97-1	76.7	10.0	12	22	0.31	2	USTER	1000	GB/T 20392-2006	4
98-1	76.9	10.2		20	0.25		Uster	1000	ASTM	12
101-1	77.6	10.0	22-1	38	0.46	4	USTER	1000	ASTM 5687-2012	6
103-1	77.2	10.4	22-1	21	0.2	2	USTER	1000	GB/T 20392-2006	10
104-1	77.7	10.2	12	18	0.24	2	USTER	1000	GB/T 20392	4
105-1	77.4	9.9	22-1	24	0.23	3	Uster	1000	ASTM D1776, ASTM D5867	10
106-1	77.1	10.8	12-2				USTER	900	ASTM D5867	10
107-1	76.5	10.2	22-1				Premier	ART 2	ASTM D 5867-12	
108-1	78.3	10.4	12-2	25	0.27	2	USTER	1000	ASTM D5867-12	10
109-1	76.7	10.2	22-1	17	0.17		USTER	1000		10
110-1	72.1	6.2	51-1	73	0.87		Statex	Other	ASTM D 5867-12	10
111-1	77.18	9.94	22-1	26	0.306		USTER	1000	Internal	6
112-1	77.53	10.22	12-2	14	0.17	2	USTER	1000	ASTM D 5867	6
113-1	78.1	9.75	21-3				MAG	Other	ASTM-D-5867-12	
119-1	77.1	10.2	12	22	0.2	2	USTER	1000	GB/T 20392	2
123-1	76.9	10.3	12-2	33	0.51		Premier	ART 3	ASTM D 5867-12	10
123-3	77.2	9.9	22-1	22	0.23	2	USTER	1000	ASTM D 5867-12	10
130-1	77.4	10.9	12-2				Premier	ART 2		6
133-1	73.1	9.1	42-1	27	0.25	2	Uster	HVI 1000	ASTM	2
136-1	75.8	10.0	22-2	21	0.19	2	USTER	1000	ASTM D5867-95	10
138-1	72.2	9.2	42-1	11	0.12	1	USTER	Spectrum	ASTM D 5867-2012e1	6
139-1	75.8	9.7	21-4	10	0.16	2	Premier	ART 2	ASTM D5867-05	12
141-1	76.0	10.0	22-2	22	0.3		USTER	1000	Mode 4	1
144-1	77.4	10.3	22-2	12	0.12	1	USTER	Spectrum	ASTM	6
148-1	76.7	10.1	22-1	24	0.28	3	Uster	1000	ASTM-D 5867	6
154-1	76.7	10.2	22-1	11	0.2	1	USTER	900	ASTM D5867	10
162-1	76.7	10.6					USTER	900		6
163-1	79.7	10.7	11-3				Premier	ART 2	ASTM D 5867:2012	5
175-1	77.9	9.8	21-3	12	0.24	2	USTER	1000	ASTM-D5867-12	10
176-1	77.5	10.1	12-2	20	0.34	3				5
179-1	78.5	10.3	12-1	29	0.23	2	USTER	1000	GB/T 20392-2006	7
180-1	77.8	10.0	21-3	9	0.17	2	USTER	Spectrum	ASTM	6
181-1	78.7	10.1	11-4	8	1.68	3	USTER	Spectrum	ASTM	6
183-1	77.3	10.8	12-2	8	0.1	1	USTER	1000	ASTM D 8867-05	2

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	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repetitions
186-2	77.03	9.37	31-3	23	0.39	3	Textechno	CCS-V5-3	ASTM	10
193-1	78.5	10.4	12-1	21	0.28	2	USTER	1000	GB/T 20392-2006	6
200-1	76.97	9.89	"21-3"	26	0.4	3	USTER	900	ASTM D5867	12
204-1	77.3	10.2	22-1	24	0.36	3	USTER	1000	GB/T 20392-2006	12
207-1	77.4	9.9	22-1	26	0.27	3	USTER	1000	ASTM D5867-12 e1	10
207-2	77.8	9.8	21-3	19	0.2	2	USTER	1000	ASTM D5867-12 e1	10
207-3	77.9	9.7	21-3	23	0.26	2	USTER	1000	ASTM D5867-12 e1	10
209-1	76.5	10.3	22-1				MAG	HVI	ASTM :D5867-12	6
214-1	78.4	10.07	11-4	6	0.15	2	Premier	ART		30
215-1	77.2	10.6	12	15	0.18	2	USTER	1000	GB/T 20392-2006	4
216-1	76.8	10.9	12-2	34		3	USTER	1000		5
218-1	75.9	9.9	21-4	14	0.1	1	USTER	Spectrum	D5867	10

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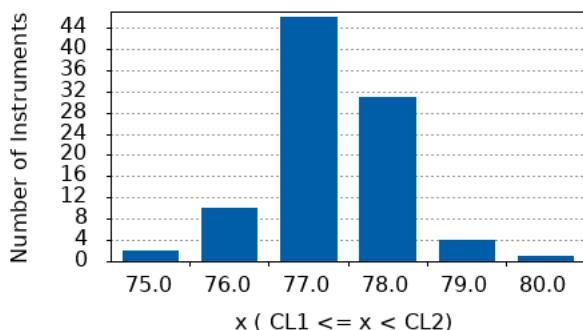
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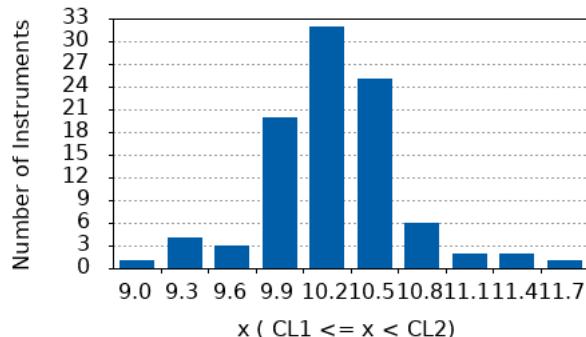


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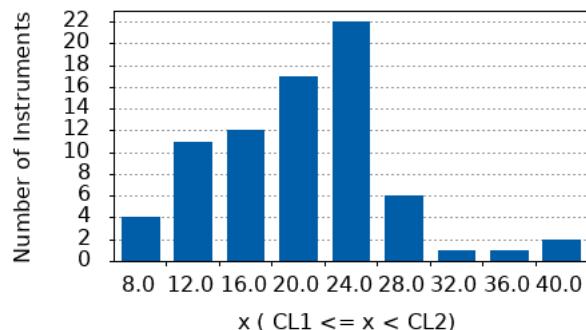
HVI (HVICCS Calibration): Color Reflectance R<sub>c</sub>



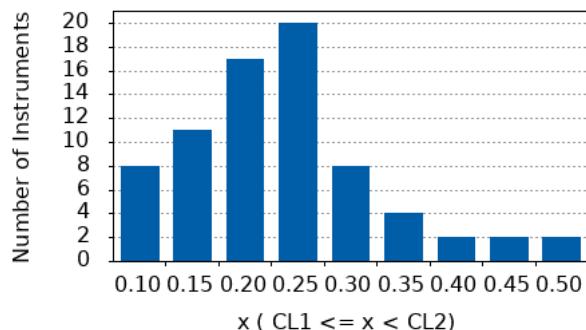
HVI (HVICCS Calibration): Color Yellowness +b



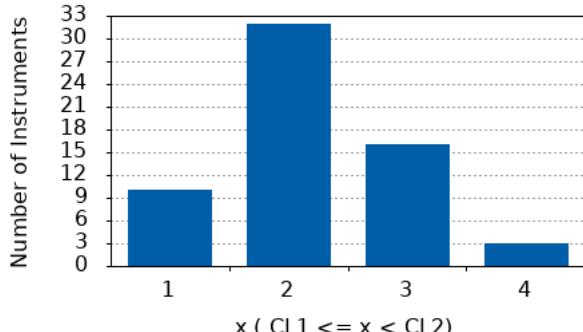
HVI (HVICCS Calibration) Trash Count



HVI (HVICCS Calibration) Trash Area



HVI (HVICCS Calibration) Trash Leaf



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## HVI (ICCS Calibration) Micronaire / Strength

	Micronaire (Mic)	MAT ()	PM% (%)	Strength (gf/tex)	Elong. (%)	Manuf.	Model	Std. Test Method	Repetitions
Average	4.64	0.863		22.66	6.14				
Median	4.65	0.86		21.2	5.9				
Stddev	0.17	0.01		4.02	0.6				
CV	3.7	1.5		17.7	10.4				
Min	3.0	0.85		18.5	5.4				
Max	4.9	0.88		29.2	8.6				
n	12	7		11	10				
Laboratory	Micronaire (Mic)	MAT ()	PM% (%)	Strength (gf/tex)	Elong. (%)	Manuf.	Model	Std. Test Method	Repetitions
11-1	4.72			21.2	6.2	PREMIER	ART 2	USDA	10
27-1	4.7	0.86		20.0	7.3	USTER	900	ASTM- D 5867-2012	6
42-1	4.62	0.88		26.4	5.4	USTER	Spectrum	HVI	
42-2	4.79	0.86		28.3	6.6	USTER		HVI	
66-1	4.48			18.8	5.6	Premier	ART		6
123-1	4.51	0.85		18.5	5.9	Premier	ART 3	SITRA IN-HOUSE	10
123-3	4.41	0.86		19.6	6.8	USTER	1000	SITRA IN-HOUSE	10
130-1	4.65	0.88		19.6	5.6	Premier	ART 2		6
163-1	4.9		91.0	21.6	5.9	Premier	ART 2	ASTM D 5867:2012	5
170-1	4.87	0.85		26.1		USTER	1000	manufactory	6
183-1	3.0					Uster	Afis Pro	ASTM_D 5866-05	2
186-2	4.43			29.2	8.6	Textechno	CCS-V5-3	ASTM	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	1.058	26.87	45.37	10.92				
Median	1.0545	26.795	45.47	10.985				
Stddev	0.033	0.83	1.94	2.17				
CV	3.1	3.1	4.3	19.9				
Min	1.007	25.58	42.4	7.6				
Max	1.112	28.25	80.1	13.6				
n	10	10	9	10				
Laboratory	2.5% SL (inch)	2.5% SL (mm)	Unif. Ratio (%)	SFI	Manuf.	Model	Std. Test Method	Repetitions
11-1	1.112	28.25	46.6		PREMIER	ART 2	USDA	10
27-1	1.007	25.58	42.8	12.5	USTER	900	ASTM- D5867-2012	6
42-1	1.051	26.7		7.8	USTER	Spectrum	HVI	
42-2	1.104	28.04		9.6	USTER		HVI	
66-1	1.026	26.06	42.4	13.6	Premier	ART		6
123-1	1.057	26.86	45.44	13.5	Premier	ART 3	SITRA IN-HOUSE	10
123-3	1.035	26.3	45.5	11.4	USTER	1000	SITRA IN-HOUSE	10
130-1	1.052	26.73	45.18	10.1	Premier	ART 2		6
163-1	1.059	26.9	47.64	7.6	Premier	ART 2	ASTM D 5867:2012	5
170-1			80.1	12.5	USTER	1000	manufactory	6
186-2	1.074	27.29	47.41	10.57	Textechno	CCS-V5-3	ASTM	10

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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 2019-3

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



**ICA Bremen**  
The Global Centre for Cotton Testing and Research

## HVI (ICCS Calibration): Color / Trash

	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repetitions
Average	77.81	10.18		22.8	0.31					
Median	77.7	10.2		21.0	0.26					
Stddev	1.35	0.42								6.0
CV	1.7	4.1								
Min	75.68	9.6		12	0.17	2				
Max	80.5	10.9		32	0.55	3				
n	9	9		5	5	3				
Laboratory	Color Rd	Color +b	Color Grade	Trash Count	Trash Area (%)	Trash Leaf	Manuf.	Model	Std. Test Method	Repetitions
11-1	75.68	10.5	22-1				PREMIER	ART 2	USDA	10
42-1	78.1	9.6		12	0.17		USTER	Spectrum	HVI	
42-2	78.9	10.1	11-4	19	0.2	2	USTER	1000	HVI	
66-1	76.8	9.6	21-4				Premier	ART		6
123-1	77.6	10.3	12-2	32	0.55		Premier	ART 3	SITRA IN-HOUSE	10
123-3	77.2	10.0	22-1	21	0.26	2	USTER	1000	SITRA IN-HOUSE	10
130-1	77.7	10.9	12-1				Premier	ART 2		6
163-1	80.5	10.4	11-3				Premier	ART 2	ASTM D 5867:2012	5
170-1	77.8	10.2	12-2	30	0.37	3	USTER	1000	manufactory	6

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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	27.41	25.76	21.66	16.7	6.6			
Max	30.17	28.63	23.16	58.1	31.2			
n	3	3	3	3	3			
Laborato- ry	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	28.93	27.81	22.97	21.5	9.9	aQura 2	ASTM	4
44-2	27.41	25.76	21.66	58.1	31.2	aQura 2		10
130-1	30.17	28.63	23.16	16.7	6.6	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	177.0	688.0	142.0	610.0	32.0	1247.0		
Max	271.0	795.0	240.0	675.0	38.0	1331.0		
n	3	3	3	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	177.0	760.0	142.0	641.0	35.0	1247.0	aQura 2	
44-2	206.0	795.0	169.0	675.0	38.0	1331.0	aQura 2	
130-1	271.0	688.0	240.0	610.0	32.0	1294.0	aQura	ASTM

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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) (%)	Mode 1	Test Method	Repetitions
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) (%)	Mode 1	Test Method	Repetitions
Average	0.705	17.91	50.49	1.359	34.51	1.252	31.79	29.03			
Median	0.705	17.9	50.5	1.363	34.62	1.252	31.8	28.3			10.0
Stddev	0.03	0.75	2.81	0.028	0.71	0.027	0.69	2.85			
CV	4.2	4.2	5.6	2.0	2.0	2.2	2.2	9.8			
Min	0.65	16.51	7.1	1.091	27.7	1.2	30.48	24.3			
Max	0.768	19.5	55.8	1.409	35.8	1.36	34.54	38.0			
n	41	41	40	11	11	40	40	40			
5-1	0.73	18.54	50.3			1.27	32.26	28.2	AFIS Pro 2	CCAA	5
21-1	0.72	18.3	45.9	1.335	33.9	1.236	31.4	26.1	Afis119-064		5
24-1	0.728	18.5	50.5			1.291	32.8	26.8	AFIS Pro		
31-1	0.768	19.5	46.3	1.366	34.7	1.283	32.6	24.8	Other		5
38-1	0.752	19.1	7.1	1.409	35.8	1.319	33.5	27.1	AFIS Pro	ASTM	5
40-1	0.65	16.51	55.8	1.37	34.8	1.26	32.0	38.0	AFIS Pro	INTERNAL	10
40-2	0.7	17.78	53.3	1.36	34.54	1.27	32.26	32.5	AFIS Pro	INTERNAL	10
40-4	0.68	17.27	55.1	1.37	34.8	1.27	32.26	35.1	AFIS Pro	INTERNAL	10
41-1	0.713	18.1	45.1	1.315	33.4	1.217	30.9	27.1	AFIS Pro		5
43-2	0.69	17.53	52.9			1.25	31.75	32.0	AFIS Pro 2	ASTM-D1234-2012	10
44-1	0.693	17.6	51.5			1.252	31.8	30.7	AFIS Pro		10
51-1	0.709	18.0	49.0	1.091	27.7	1.26	32.0	27.7	Other	ISO	5
58-1	0.72	18.3	48.4	1.327	33.7	1.244	31.6	28.3	Autojet	Internal	10
58-2	0.732	18.6	48.7			1.252	31.8	25.7	AFIS Pro 2	Internal	10
90-1	0.756	19.2	48.6	1.382	35.1	1.291	32.8	25.4	AFIS 4.22	USTER METHOD	10
91-1	0.677	17.2	51.5			1.232	31.3	31.0	AFIS Pro 2		10
91-2	0.689	17.5	50.0			1.228	31.2	29.6	AFIS Pro 2		10
96-4	0.701	17.8						29.2	AFIS Pro 2	NY/T 3272-2018	10
101-1	0.74	18.8	47.9			1.256	31.9	24.3	PRO 2	internal	5
109-1	0.673	17.1	51.4			1.213	30.8	31.1	AFIS Pro 2		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) (%)	Mode 1	Test Method	Repetitions
111-1	0.65	16.51	54.4			1.22	30.99			Internal	10
112-1	0.66	16.76	54.1			1.2	30.48	34.13	AFIS Pro 2	ASTM D 5866	3
123-1	0.677	17.2	51.8			1.236	31.4	32.1	AFIS Pro 2	ASTM D 5866-12	10
123-2	0.724	18.4	47.6			1.248	31.7	28.0	AFIS	ASTM D 5866-12	10
123-3	0.654	16.6	54.2			1.201	30.5	33.4	AFIS Pro	ASTM D 5866-12	10
136-1	0.72	18.29	48.5			1.28	32.51	28.3	AFIS Pro 2	ASTM D5848 - 95	3
139-1	0.7	17.78	51.4			1.27	32.26	32.1	AFIS Pro 2	ASTM D5866-05	12
142-1	0.709	18.0	47.4	1.354	34.4	1.252	31.8	27.1	Other		5
144-1	0.673	17.1	54.0			1.244	31.6	31.6	AFIS Pro	ASTM	5
148-1	0.728	18.5	47.2			1.276	32.4	25.9	AFIS Pro 2	ASTM-D 5866	10
148-3	0.697	17.7	51.3			1.252	31.8	30.1	AFIS Pro 2	ASTM-D 5866	10
170-1	0.705	17.9	50.8			1.252	31.8	29.0	AFIS Pro	manufactory	6
176-1	0.75	19.05	48.7			1.28	32.51	25.4			5
180-1	0.673	17.1	52.8			1.236	31.4	30.7	Autojet	ASTM	3
181-1	0.694	17.62	50.4			1.216	30.89	28.1	Autojet	ASTM	3
183-1	0.71	18.03	53.1			1.36	34.54	34.1	AFIS Pro	ASTM-D 5866-05	3
186-1	0.728	18.5	46.4			1.228	31.2	26.1	AFIS Pro 2	ASTM	10
186-2	0.685	17.4	54.0			1.217	30.9	30.0	AFIS Pro	ASTM	10
193-1	0.74	18.8	47.3			1.25	31.75	25.8	AFIS Pro	ASTM-D5866-2012	5
207-1	0.697	17.7	51.7			1.268	32.2	29.8	AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10
207-2	0.72	18.3	49.9			1.291	32.8	27.6	AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10

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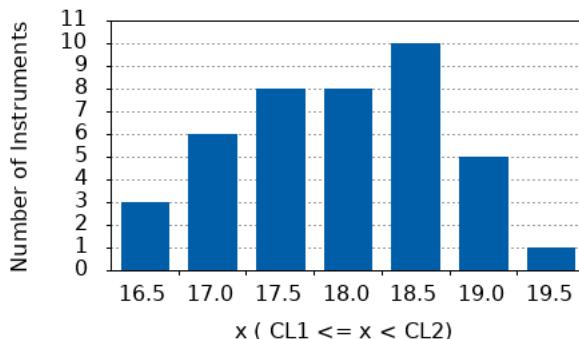
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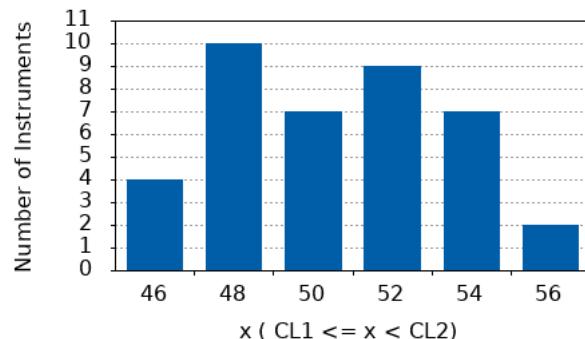


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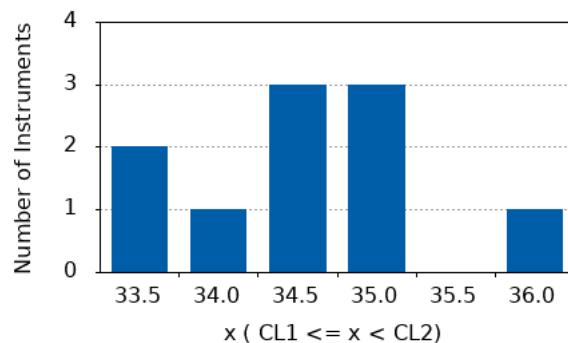
AFIS Mean Length (N), mm



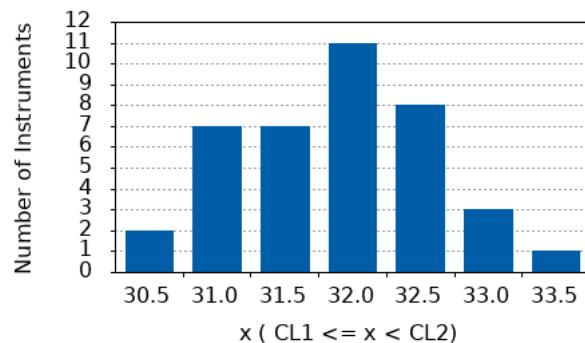
AFIS CV Length (N), %



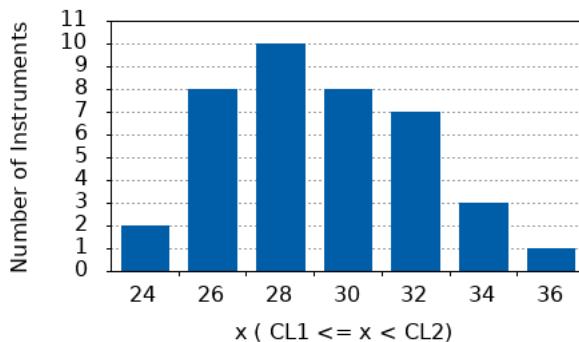
AFIS 2.5% Length (N), mm



AFIS 5% Length (N), mm



AFIS SFC (12.7mm) (N), %



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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	Repetitions
Average	0.88	22.438	36.17	1.089	27.65	11.22			
Median	0.882	22.4	36.5	1.09	27.69	11.3			
Stddev	0.02	0.587	1.92	0.025	0.63	1.66			
CV	2.6	2.6	5.3	2.3	2.3	14.8			
Min	0.8	20.33	4.1	1.039	26.4	8.2			
Max	0.957	24.3	41.2	1.18	29.97	16.4			
n	42	42	40	42	42	42			
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	Repetitions
5-1	0.91	23.11	34.5	1.11	28.19	10.1	AFIS Pro 2	CCAA	5
21-1	0.87	22.1	34.4	1.063	27.0	10.8	Afis119-064		5
24-1	0.917	23.3	34.6	1.118	28.4	9.2	AFIS Pro		
28-1	0.8	20.33		1.085	27.56	12.51	Other		5
31-1	0.933	23.7	33.5	1.13	28.7	9.3	Other		5
38-1	0.957	24.3	4.1	1.154	29.3	8.3	AFIS Pro	ASTM	5
40-1	0.86	21.84	41.1	1.09	27.69	16.4	AFIS Pro	INTERNAL	10
40-2	0.89	22.61	36.7	1.11	28.19	12.4	AFIS Pro	INTERNAL	10
40-4	0.89	22.61	37.8	1.11	28.19	13.6	AFIS Pro	INTERNAL	10
41-1	0.858	21.8	35.5	1.039	26.4	12.1	AFIS Pro		5
43-2	0.88	22.35	37.0	1.09	27.69	12.2	AFIS Pro 2	ASTM-D1234-2012	10
44-1	0.874	22.2	37.4	1.091	27.7	12.0	AFIS Pro		10
51-1	0.878	22.3	36.2	1.094	27.8	10.9	Other	ISO	5
58-1	0.89	22.6	34.7	1.087	27.6	11.0	Autojet	Internal	10
58-2	0.902	22.9	34.2	1.098	27.9	9.0	AFIS Pro 2	Internal	10
90-1	0.933	23.7	33.2	1.13	28.7	8.8	AFIS 4.22	USTER METHOD	10
91-1	0.858	21.8	37.7	1.067	27.1	12.4	AFIS Pro 2		10
91-2	0.862	21.9	36.5	1.067	27.1	11.7	AFIS Pro 2		10
96-4	0.882	22.4		1.087	27.6	10.8	AFIS Pro 2	NY/T 3272-2018	10
101-1	0.909	23.1	33.3	1.098	27.9	8.2	PRO 2	internal	5
109-1	0.85	21.6	36.7	1.055	26.8	12.3	AFIS Pro 2		10
111-1	0.85	21.59	38.5	1.06	26.92	14.9	AFIS Pro 2	Internal	10

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	Mean Length (W) (inch)	Mean Length (W) (mm)	CV Length (W) (%)	UOL (W) (inch)	UOL (W) (mm)	SFC (12.7) (W)	Model	Test Method	Repetitions
112-1	0.86	21.84	37.37	1.05	26.67	13.17	AFIS Pro	ASTM D 5866	3
123-1	0.858	21.8	38.2	1.071	27.2	13.1	AFIS Pro 2	ASTM D 5866-12	10
123-2	0.886	22.5	34.9	1.087	27.6	11.3	AFIS	ASTM D 5866-12	10
123-3	0.843	21.4	37.4	1.047	26.6	12.7	AFIS Pro	ASTM D 5866-12	10
136-1	0.89	22.61	36.1	1.11	28.19	11.6	AFIS Pro 2	ASTM D5848 - 95	3
139-1	0.88	22.35	37.9	1.1	27.94	13.3	AFIS Pro 2	ASTM D5866-05	12
142-1	0.87	22.1	34.9	1.067	27.1	11.1	Other		5
144-1	0.87	22.1	37.2	1.087	27.6	11.6	AFIS Pro	ASTM	5
148-1	0.894	22.7	35.7	1.102	28.0	10.3	AFIS Pro 2	ASTM-D 5866	10
148-3	0.878	22.3	36.8	1.091	27.7	11.7	AFIS Pro 2	ASTM-D 5866	10
170-1	0.886	22.5	37.5	1.083	27.5	11.0	AFIS Pro	manufactory	6
176-1	0.93	23.62	33.0	1.13	28.7	8.6			5
180-1	0.858	21.8	36.5	1.063	27.0	11.3	Autojet	ASTM	3
181-1	0.869	22.08	34.9	1.064	27.03	10.1	Autojet	ASTM	3
183-1	0.91	23.11	41.2	1.18	29.97	15.0	AFIS Pro	ASTM-D 5866-05	3
186-1	0.882	22.4	34.7	1.079	27.4	10.3	AFIS Pro 2	ASTM	10
186-2	0.882	22.4	35.2	1.071	27.2	9.7	AFIS Pro	ASTM	10
193-1	0.91	23.11	33.9	1.09	27.69	9.5	AFIS Pro	ASTM-D5866-2012	5
207-1	0.882	22.4	37.0	1.094	27.8	11.4	AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10
207-2	0.902	22.9	36.9	1.114	28.3	10.6	AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10

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Managing Director: Bill Kingdon

Place of jurisdiction: Bremen

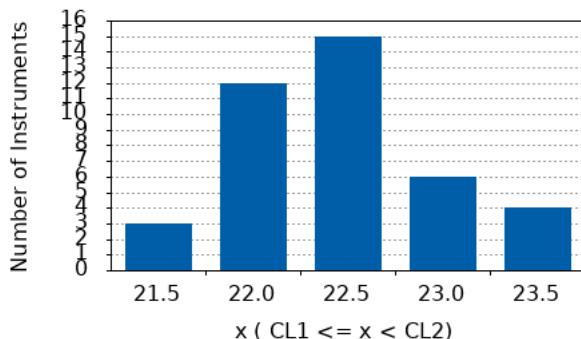
# ICA Bremen Cotton Round Test 2019-3

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

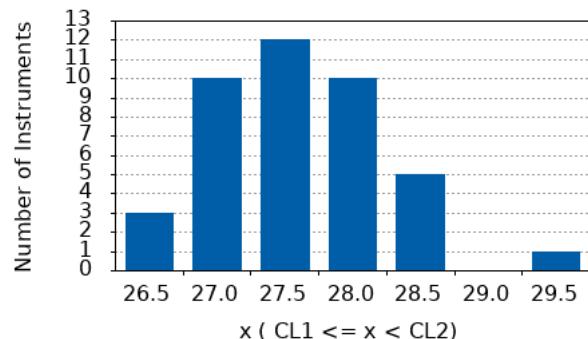


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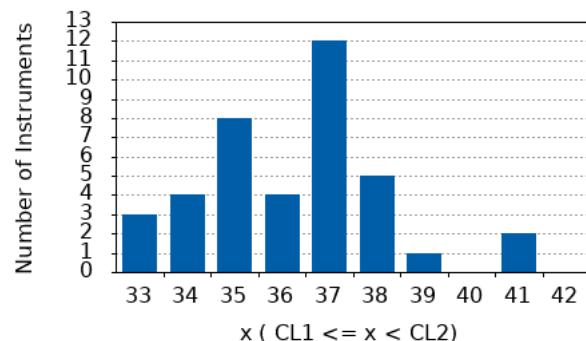
AFIS Mean Length (W), mm



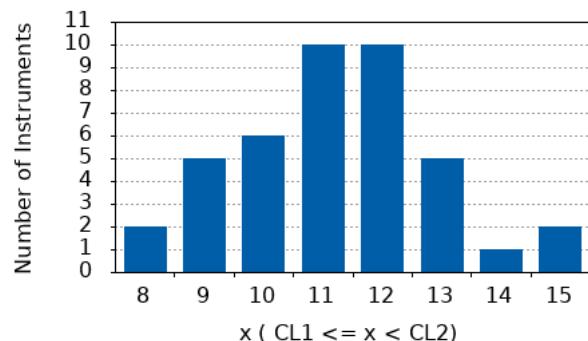
AFIS UQL (W), mm



AFIS CV Length (W), %



AFIS SFC (12.7mm) (W), %



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## AFIS Fineness/Maturity

	Fineness (m tex)	Diameter (µm)	Mat. Ratio	-IFC- (%)	Model	Test Method	Repetitions
Average	170.0		0.88	6.69			
Median	170.0		0.88	6.9			
Stddev	4.8		0.02	0.87			
CV	2.8		2.7	13.0			
Min	149.0		0.83	4.3			
Max	191.0		0.95	8.6			
n	39		39	38			
Laboratory	Fineness (m tex)	Diameter (µm)	Mat. Ratio	-IFC- (%)	Model	Test Method	Repetitions
5-1	168.0		0.83	8.1	AFIS Pro 2	CCAA	5
24-1	171.0		0.89	6.9	AFIS Pro		
28-1	191.0		0.95		Other		5
31-1	167.0		0.84	7.8	Other		5
38-1	160.0		0.85	7.2	AFIS Pro	ASTM	5
40-1	171.0		0.9	5.9	AFIS Pro	INTERNAL	10
40-2	149.0		0.91	7.1	AFIS Pro	INTERNAL	10
40-4	172.0		0.87	7.1	AFIS Pro	INTERNAL	10
43-2	171.0		0.85	7.9	AFIS Pro 2	ASTM-D1234-2012	10
44-1	167.0		0.89	7.0	AFIS Pro		10
51-1	166.0		0.91	5.3	Other	ISO	5
58-1	172.0		0.89	6.2	Autojet	Internal	10
58-2	176.0		0.9	4.3	AFIS Pro 2	Internal	10
90-1	161.0		0.86	6.0	AFIS 4.22	USTER METHOD	10
91-1	169.0		0.88	6.1	AFIS Pro 2		10
91-2	166.0		0.85	6.9	AFIS Pro 2		10
96-4	170.0		0.87	6.4	AFIS Pro 2	NY/T 3272-2018	10
101-1	173.0		0.89	7.6	PRO 2	internal	5
109-1	176.0		0.9	5.5	AFIS Pro 2		10
111-1	171.0		0.87	6.4	AFIS Pro 2	Internal	10
112-1	179.0		0.9	6.6	AFIS Pro	ASTM D 5866	3
123-1	174.0		0.92	5.1	AFIS Pro 2	ASTM D 5866-12	10
123-2	170.0		0.89	6.9	AFIS	ASTM D 5866-12	10
123-3	174.0		0.88	5.8	AFIS Pro	ASTM D 5866-12	10
136-1	167.0		0.9	5.8	AFIS Pro 2	ASTM D5848 - 95	3
139-1	166.0		0.93	4.9	AFIS Pro 2	ASTM D5866-05	12
144-1	164.0		0.89	7.6	AFIS Pro	ASTM	5
148-1	165.0		0.87	6.6	AFIS Pro 2	ASTM-D 5866	10

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	Fineness (mtex)	Diameter (µm)	Mat. Ratio	-IFC- (%)	Model	Test Method	Repeti- tions
148-3	167.0		0.86	6.9	AFIS Pro 2	ASTM-D 5866	10
170-1	178.0		0.89	7.4	AFIS Pro	manufactory	6
176-1	164.0		0.86	6.8			5
180-1	172.0		0.88	6.8	Autojet	ASTM	3
181-1	177.0		0.89	5.5	Autojet	ASTM	3
183-1	170.0		0.86	7.2	AFIS Pro	ASTM-D 5866-05	3
186-1	171.0		0.83	8.6	AFIS Pro 2	ASTM	10
186-2	171.0		0.86	7.0	AFIS Pro	ASTM	10
193-1	180.0		0.89	5.9	AFIS Pro	ASTM-D5866-2012	5
207-1	168.0		0.87	7.3	AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10
207-2	165.0		0.86	7.3	AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10

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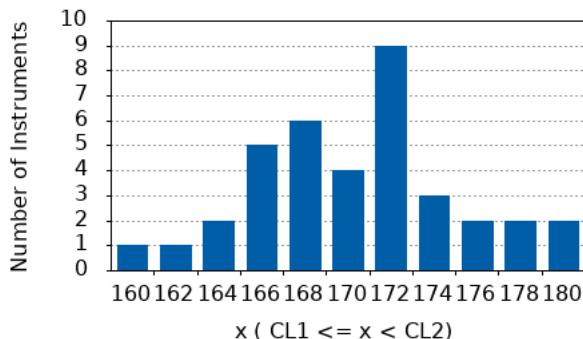
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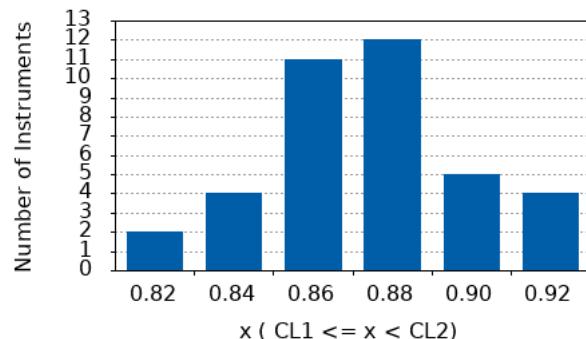


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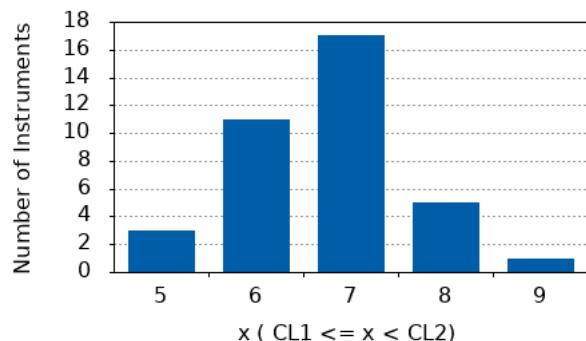
AFIS Fineness, mtex



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	Repetitions
Average	195.2	673.4	21.3	1136.3	207.4	694.4			
Median	196.0	662.0	21.0	1145.5	216.0	705.0			10.0
Stddev	26.1	26.5	9.3	151.3	42.3	61.9			
CV	13.4	3.9	43.6	13.3	20.4	8.9			
Min	51.0	641.0	5.0	1.0	51.0	252.0			
Max	237.0	752.0	51.0	1466.0	789.0	988.0			
n	30	27	41	41	42	37			
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	Repetitions
5-1	187.0	662.0	37.0	990.0	224.0	714.0	AFIS Pro 2	CCAA	5
21-1	51.0	752.0	51.0	752.0	51.0	752.0	Afis119-064		5
24-1	232.0	715.0	21.0	1137.0			AFIS Pro		
27-1	152.0								
31-1			29.0	1122.0	789.0	252.0	Other		5
38-1					165.0	441.0	AFIS Pro	ASTM	5
40-1			30.0	1277.0	197.0	814.0	AFIS Pro	INTERNAL	10
40-2			21.0	1158.0	245.0	715.0	AFIS Pro	INTERNAL	10
40-3			41.0	1151.0	266.0	724.0	AFIS Pro	INTERNAL	10
40-4			23.0	1111.0	216.0	708.0	AFIS Pro	INTERNAL	10
41-1					242.0	643.0	AFIS Pro		5
43-2			29.0	1122.0	208.0	735.0	AFIS Pro 2	ASTM-D1234-2012	10
44-1	196.0	658.0	5.0	1047.0			AFIS Pro		10
51-1	224.0	665.0	28.0	1165.0	252.0	718.0	Other	ISO	5
58-1	209.0	660.0	10.0	893.0			Autojet	Internal	10
58-2	157.0	662.0	15.0	1212.0	172.0	712.0	AFIS Pro 2	Internal	10
59-4			37.0	1114.0	237.0	740.0		USDA	5
90-1	230.0	720.0	24.0	1256.0	254.0	988.0	AFIS 4.22	USTER METHOD	10
91-1	178.0	677.0	21.0	1163.0	200.0	730.0	AFIS Pro 2		10
91-2	197.0	650.0	20.0	1207.0	217.0	701.0	AFIS Pro 2		10
91-4					242.0	665.0	Other		10
96-4	186.0	661.0	12.0	1033.0	198.0		AFIS Pro 2	NY/T 3272-2018	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	Repetitions
101-1	173.0	660.0	45.0	1279.0	218.0	787.0	PRO 2	internal	5
109-1	171.0	666.0	19.0	1221.0	190.0	722.0	AFIS Pro 2		10
111-1	221.0	660.0	13.0	1352.0	234.0	692.0	AFIS Pro 2	Internal	10
112-1	155.0	683.0	17.0	1180.0			AFIS Pro	ASTM D 5866	3
123-1	207.0	678.0	12.0	945.0	219.0	694.0	AFIS Pro 2	ASTM D 5866-12	10
123-2			11.0	1242.0	211.0	693.0	AFIS	ASTM D 5866-12	10
123-3			9.0	868.0	192.0	650.0	AFIS Pro	ASTM D 5866-12	10
132-1					194.0	624.0	AFIS		10
136-1	156.0	642.0	21.0	1130.0	177.0	700.0	AFIS Pro 2	ASTM D5848 - 95	3
139-1	194.0	679.0	13.0	1035.0	207.0	705.0	AFIS Pro 2	ASTM D5866-05	12
142-1					162.0	641.0	Other		5
144-1	230.0	688.0	14.0	1119.0			AFIS Pro	ASTM	5
148-1	190.0	653.0	22.0	1128.0	212.0	701.0	AFIS Pro 2	ASTM-D 5866	10
148-2					180.0		Neptester		
148-3	205.0	641.0	31.0	1140.0	236.0	709.0	AFIS Pro 2	ASTM-D 5866	10
170-1			23.0	1191.0	220.0	690.0	AFIS Pro	manufactory	6
176-1	152.0		17.0	1009.0	169.0	661.0			5
180-1	191.0	642.0	14.0	1173.0	205.0	677.0	Autojet	ASTM	3
181-1	191.0	662.0	29.0	1466.0	220.0	739.0	Autojet	ASTM	3
183-1			6.0	753.0	80.0	583.0	AFIS Pro	ASTM-D 5866-05	3
186-1	204.0	656.0	15.0	1.0	219.0	681.0	AFIS Pro 2	ASTM	10
186-2	200.0		23.0	1191.0	223.0	723.0	AFIS Pro	ASTM	10
193-1			18.0	1344.0	201.0	721.0	AFIS Pro	ASTM-D5866-2012	5
200-1	201.0	713.0	22.0	1137.0	223.0		Autojet		12
207-1	234.0	720.0	26.0	1286.0	260.0		AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10
207-2	237.0	735.0	27.0	1352.0	264.0		AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10

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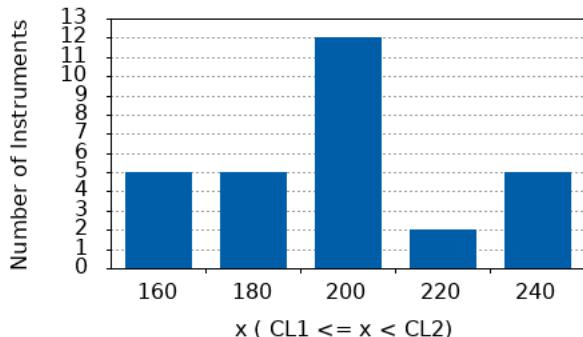
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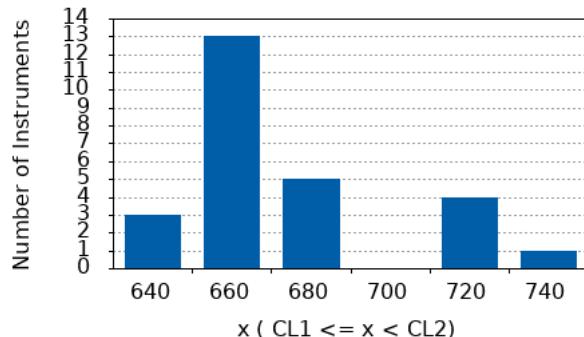


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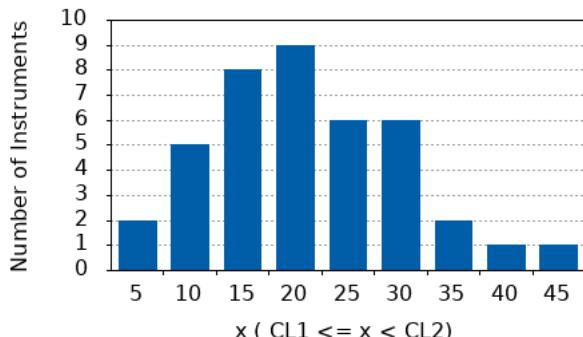
AFIS Fiber Nep Count, cnt/g



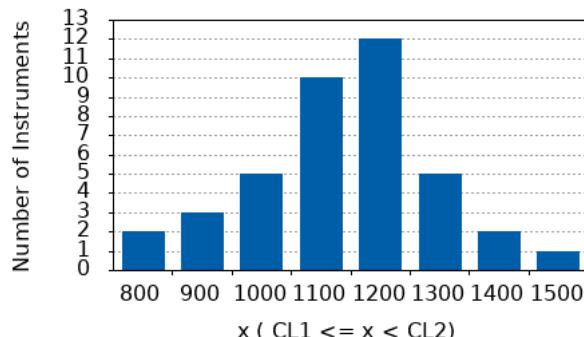
AFIS Fiber Nep Size,  $\mu\text{m}$



AFIS SC Nep Count, cnt/g



AFIS SC Nep Size,  $\mu\text{m}$



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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	Repetitions
Average	68.2	841.5	606.9	162.0	644.0	238.3	1.62			
Median	66.0	937.0	686.0	163.0	651.5	237.5	1.64			10.0
Stddev	15.0	286.6	243.6	9.3	349.8	21.7	0.43			
CV	22.0	34.1	40.1	5.7	54.3	9.1	26.6			
Min	2.0	221.0	14.0	147.0	16.0	192.0	0.03			
Max	127.0	1093.0	1366.0	173.0	1452.0	302.0	2.48			
n	23	12	24	10	24	21	24			
Laboratory	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	Repetitions
21-1	85.0		1366.0		1452.0	192.0	1.98	Afis119-064		5
31-1			702.0		87.0		2.48	Other		5
38-1	127.0	221.0	1156.0		1284.0		2.4	AFIS Pro	ASTM	5
43-2	67.0		418.0		484.0	286.0	1.58	AFIS Pro 2	ASTM-D1234-2012	10
51-1	76.0	857.0	792.0	166.0	51.0	231.0	1.6	Other	ISO	5
58-1	65.0		562.0		627.0	246.0	1.65	Autojet	Internal	10
58-2	44.0	1054.0	265.0	173.0	309.0	302.0	1.17	AFIS Pro 2	Internal	10
90-1	66.0		686.0		752.0	225.0	1.31	AFIS 4.22	USTER METHOD	10
91-1	41.0	946.0	340.0	172.0	381.0	257.0	0.96	AFIS Pro 2		10
91-2	66.0	959.0	524.0	172.0	590.0	262.0	1.64	AFIS Pro 2		10
101-1	90.0	894.0	748.0	154.0	838.0	243.0	1.92	PRO 2	internal	5
111-1	51.0	1093.0	608.0	156.0	659.0	236.0	1.69	AFIS Pro 2	Internal	10
112-1	61.0	269.0	412.0		474.0		1.42	AFIS Pro	ASTM D 5866	3
136-1	58.0	990.0	693.0	153.0	751.0	219.0	1.6	AFIS Pro 2	ASTM D5848 - 95	3
142-1	87.0		788.0		875.0	239.0	1.77	Other		5
148-1	53.0	897.0	591.0	160.0	644.0	221.0	1.26	AFIS Pro 2	ASTM-D 5866	10
148-3	78.0	990.0	716.0	167.0	794.0	253.0	2.0	AFIS Pro 2	ASTM-D 5866	10
176-1	51.0		398.0		449.0	249.0	0.51			5
183-1	2.0		14.0		16.0	215.0	0.03	AFIS Pro	ASTM-D 5866-05	3
186-1	81.0	928.0	700.0	147.0	781.0	228.0	1.86	AFIS Pro 2	ASTM	10
186-2	76.0		774.0		850.0	223.0	1.663	AFIS Pro	ASTM	10
193-1	65.0		380.0		446.0	274.0	1.33	AFIS Pro	ASTM-D5866-2012	5

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	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	Repetitions
207-1	82.0		761.0		843.0	239.0	1.59	AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10
207-2	90.0		930.0		1020.0	228.0	1.81	AFIS Pro	ASTM D5866-12 & USTER Application Handbook V2.1 May 2005 245 654-04020	10

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Place of jurisdiction: Bremen

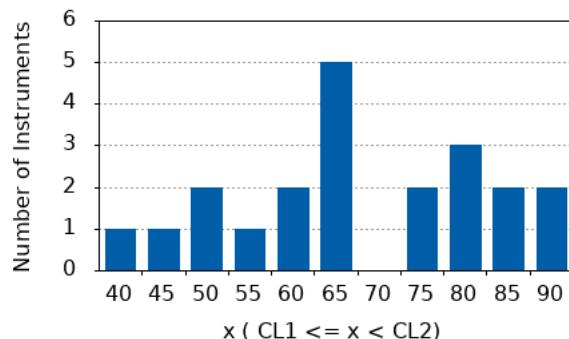
# ICA Bremen Cotton Round Test 2019-3

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

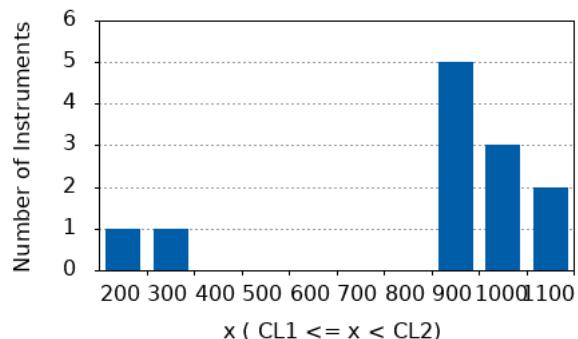


**ICA Bremen**  
The Global Centre for Cotton Testing and Research

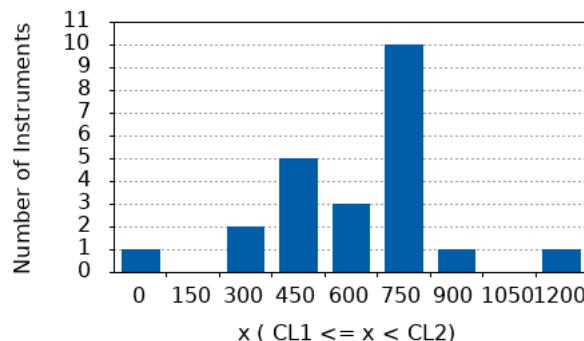
AFIS Trash Count, cnt/g



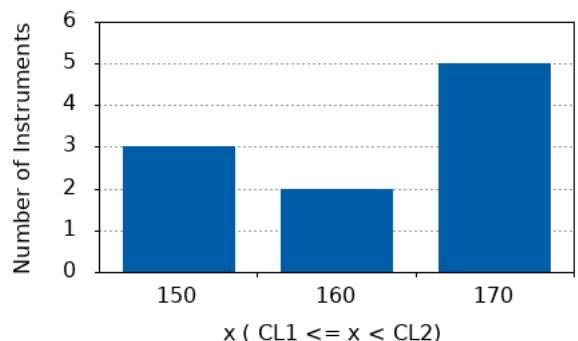
AFIS Trash Size, µm



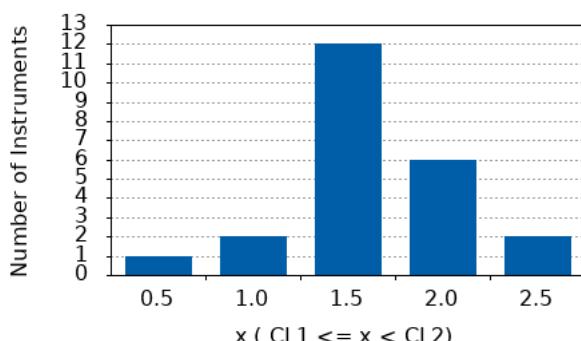
AFIS Dust Count, cnt/g



AFIS Dust Size, µm



AFIS V.F.M., %



A joint venture between



Supported by



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Place of jurisdiction: Bremen