



**International Cotton Advisory Committee**



# CSITC

## Global - Round Trial 2015 - 1

### General Evaluation

#### **Section One: Result Distribution**

Section Two: Instrument Evaluation

Section Three: Within Limits Evaluation

#### Section One: Result Distribution

Content:

Mandatory Parameters

- Summary Table
- Distribution Graphs

Optional Parameters

- Summary Table
- Distribution Graphs

Executed By:

Faserinstitut Bremen e.V., Bremen, Germany\*  
USDA-AMS, Memphis, TN, USA

System Provided by:

Generation 10 Limited



This report is an outcome of the Project CFC/ICAC/33 – CSITC, which benefitted from support from the Common Fund for Commodities and the European Union, partners in Commodity Development.



\* Faserinstitut Bremen are a Cooperation Partner with ICA Bremen

Global - Round Trial 2015 - 1

Inter-Instrument Averages, Inter-Instrument Variations, Typical within-instrument Variations

Micronaire							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			3.641	5.053	4.643	4.509	
Reference Values for Evaluation			3.641	5.053	4.643	4.509	
Number Of Instruments			106	106	106	106	<b>106</b>
Inter-Instrument Variation	based on 30 tests	SD	0.063	0.041	0.057	0.048	<b>0.052</b>
		CV %	1.7	0.8	1.2	1.1	<b>1.2</b>
		SD	0.068	0.050	0.062	0.053	<b>0.058</b>
	based on 6 tests	CV %	1.9	1.0	1.3	1.2	<b>1.3</b>
		SD	0.077	0.064	0.073	0.068	<b>0.071</b>
		CV %	2.1	1.3	1.6	1.5	<b>1.6</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.025	0.025	0.023	0.023	<b>0.024</b>
		CV %	0.7	0.5	0.5	0.5	<b>0.5</b>
	between single tests on one day	SD	0.040	0.040	0.036	0.036	<b>0.038</b>
		CV %	1.1	0.8	0.8	0.8	<b>0.9</b>
	between all tests on different days	SD	0.047	0.050	0.046	0.044	<b>0.047</b>
		CV %	1.3	1.0	1.0	1.0	<b>1.1</b>

Strength							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			22.262	28.481	30.942	28.573	
Reference Values for Evaluation			22.262	28.481	30.942	28.573	
Number Of Instruments			107	107	107	107	<b>107</b>
Inter-Instrument Variation	based on 30 tests	SD	1.157	0.525	0.510	0.644	<b>0.709</b>
		CV %	5.2	1.8	1.6	2.3	<b>2.7</b>
		SD	1.219	0.720	0.657	0.716	<b>0.828</b>
	based on 6 tests	CV %	5.5	2.5	2.1	2.5	<b>3.2</b>
		SD	1.312	0.916	0.867	0.879	<b>0.994</b>
		CV %	5.9	3.2	2.8	3.1	<b>3.7</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.340	0.323	0.348	0.365	<b>0.344</b>
		CV %	1.5	1.1	1.1	1.3	<b>1.3</b>
	between single tests on one day	SD	0.505	0.574	0.519	0.522	<b>0.530</b>
		CV %	2.3	2.0	1.7	1.8	<b>1.9</b>
	between all tests on different days	SD	0.611	0.639	0.603	0.623	<b>0.619</b>
		CV %	2.7	2.2	1.9	2.2	<b>2.3</b>

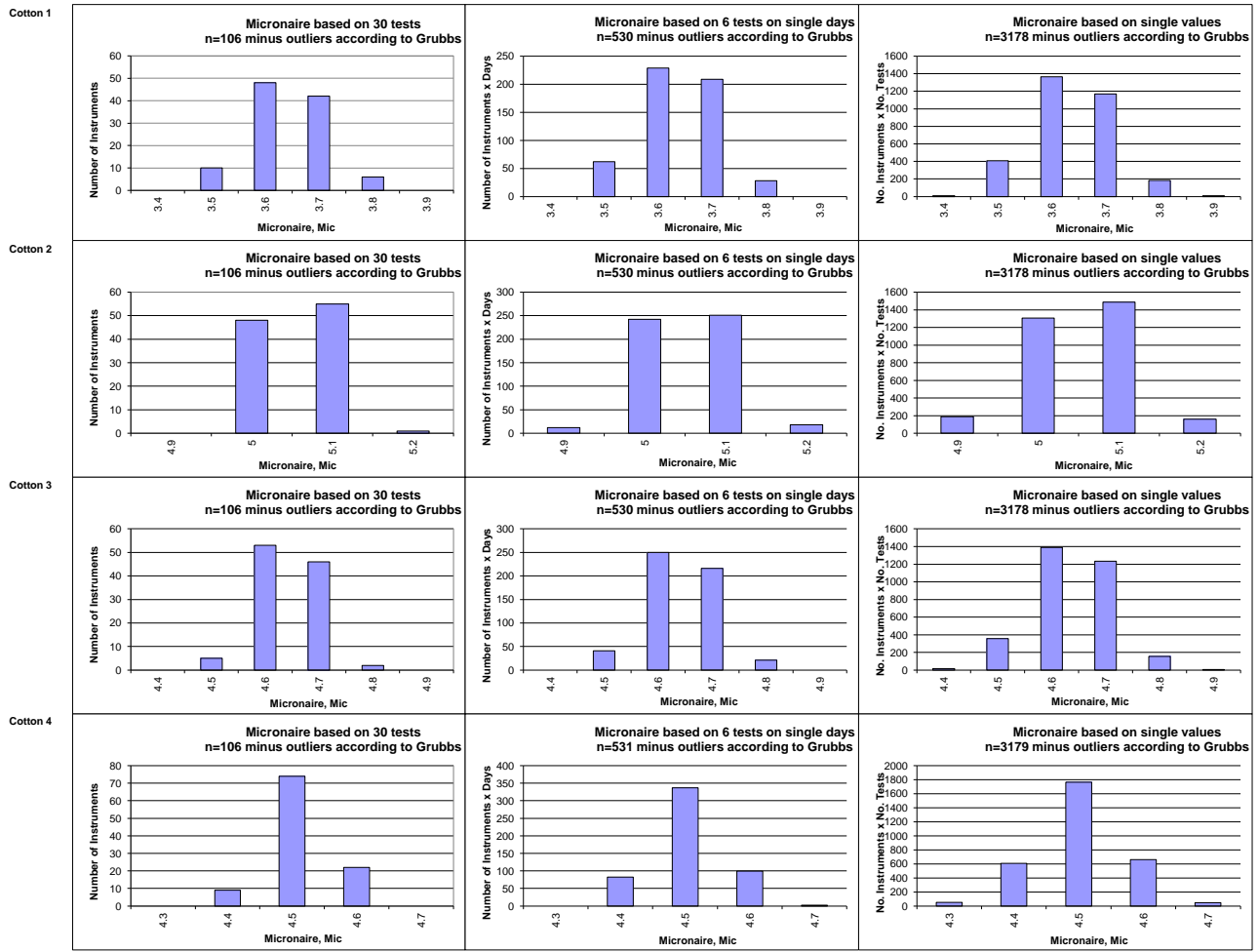
Length							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			0.9803	1.0502	1.1620	1.1377	
Reference Values for Evaluation			0.9803	1.0502	1.1620	1.1377	
Number Of Instruments			107	107	107	107	<b>107</b>
Inter-Instrument Variation	based on 30 tests	SD	0.0093	0.0095	0.0099	0.0100	<b>0.0097</b>
		CV %	0.9	0.9	0.9	0.9	<b>0.9</b>
		SD	0.0108	0.0107	0.0113	0.0112	<b>0.0110</b>
	based on 6 tests	CV %	1.1	1.0	1.0	1.0	<b>1.0</b>
		SD	0.0148	0.0147	0.0145	0.0147	<b>0.0147</b>
		CV %	1.5	1.4	1.2	1.3	<b>1.4</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.0052	0.0047	0.0047	0.0050	<b>0.0049</b>
		CV %	0.5	0.4	0.4	0.4	<b>0.5</b>
	between single tests on one day	SD	0.0109	0.0106	0.0089	0.0100	<b>0.0101</b>
		CV %	1.1	1.0	0.8	0.9	<b>0.9</b>
	between all tests on different days	SD	0.0119	0.0116	0.0105	0.0111	<b>0.0113</b>
		CV %	1.2	1.1	0.9	1.0	<b>1.1</b>

Uniformity							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			77.956	81.141	82.690	81.259	
Reference Values for Evaluation			77.956	81.141	82.690	81.259	
Number Of Instruments			107	107	107	107	<b>107</b>
Inter-Instrument Variation	based on 30 tests	SD	0.647	0.370	0.398	0.500	<b>0.479</b>
		CV %	0.8	0.5	0.5	0.6	<b>0.6</b>
	based on 6 tests	SD	0.731	0.469	0.471	0.551	<b>0.556</b>
		CV %	0.9	0.6	0.6	0.7	<b>0.7</b>
	based on single tests	SD	0.931	0.685	0.635	0.721	<b>0.743</b>
		CV %	1.2	0.8	0.8	0.9	<b>0.9</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.239	0.244	0.238	0.238	<b>0.240</b>
		CV %	0.3	0.3	0.3	0.3	<b>0.3</b>
	between single tests on one day	SD	0.562	0.486	0.454	0.488	<b>0.497</b>
		CV %	0.7	0.6	0.5	0.6	<b>0.6</b>
	between all tests on different days	SD	0.596	0.548	0.501	0.530	<b>0.544</b>
		CV %	0.8	0.7	0.6	0.7	<b>0.7</b>

Color Rd							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			76.356	78.263	79.646	67.639	
Reference Values for Evaluation			76.356	78.263	79.646	67.639	
Number Of Instruments			105	105	105	105	<b>105</b>
Inter-Instrument Variation	based on 30 tests	SD	0.497	0.554	0.544	0.389	<b>0.496</b>
		CV %	0.7	0.7	0.7	0.6	<b>0.7</b>
	based on 6 tests	SD	0.508	0.575	0.550	0.415	<b>0.512</b>
		CV %	0.7	0.7	0.7	0.6	<b>0.7</b>
	based on single tests	SD	0.585	0.625	0.596	0.538	<b>0.586</b>
		CV %	0.8	0.8	0.7	0.8	<b>0.8</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.208	0.152	0.172	0.187	<b>0.180</b>
		CV %	0.3	0.2	0.2	0.3	<b>0.2</b>
	between single tests on one day	SD	0.270	0.212	0.193	0.205	<b>0.220</b>
		CV %	0.4	0.3	0.2	0.3	<b>0.3</b>
	between all tests on different days	SD	0.342	0.262	0.267	0.285	<b>0.289</b>
		CV %	0.4	0.3	0.3	0.4	<b>0.4</b>

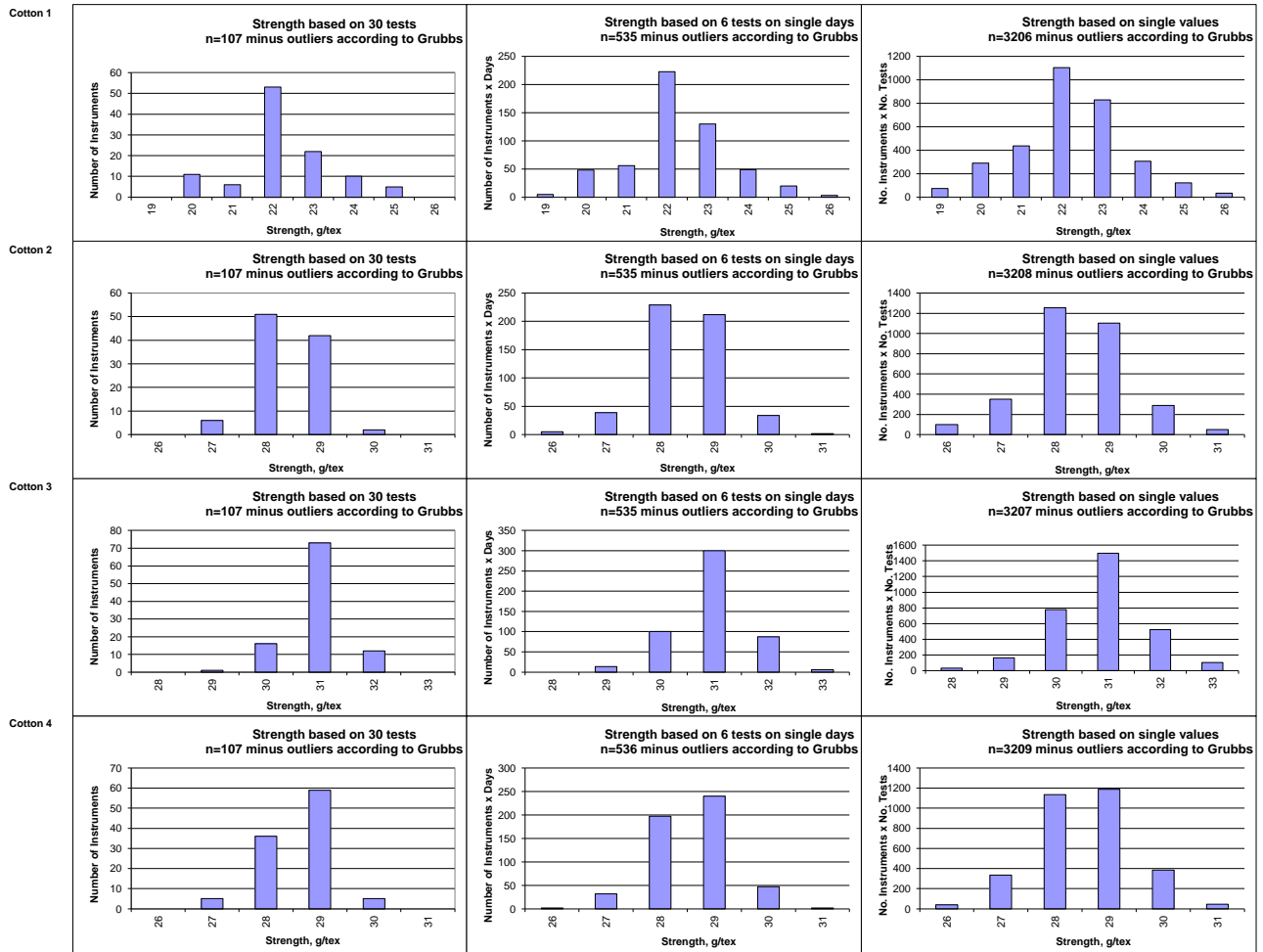
Color +b							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			9.068	8.436	9.409	7.768	
Reference Values for Evaluation			9.068	8.436	9.409	7.768	
Number Of Instruments			105	105	105	105	<b>105</b>
Inter-Instrument Variation	based on 30 tests	SD	0.243	0.240	0.183	0.277	<b>0.236</b>
		CV %	2.7	2.8	1.9	3.6	<b>2.8</b>
	based on 6 tests	SD	0.251	0.244	0.211	0.287	<b>0.248</b>
		CV %	2.8	2.9	2.2	3.7	<b>2.9</b>
	based on single tests	SD	0.264	0.269	0.248	0.311	<b>0.273</b>
		CV %	2.9	3.2	2.6	4.0	<b>3.2</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.085	0.088	0.077	0.080	<b>0.083</b>
		CV %	0.9	1.0	0.8	1.0	<b>1.0</b>
	between single tests on one day	SD	0.104	0.097	0.097	0.091	<b>0.097</b>
		CV %	1.1	1.2	1.0	1.2	<b>1.1</b>
	between all tests on different days	SD	0.142	0.127	0.142	0.121	<b>0.133</b>
		CV %	1.6	1.5	1.5	1.6	<b>1.5</b>

Test Result Distributions  
Micronaire



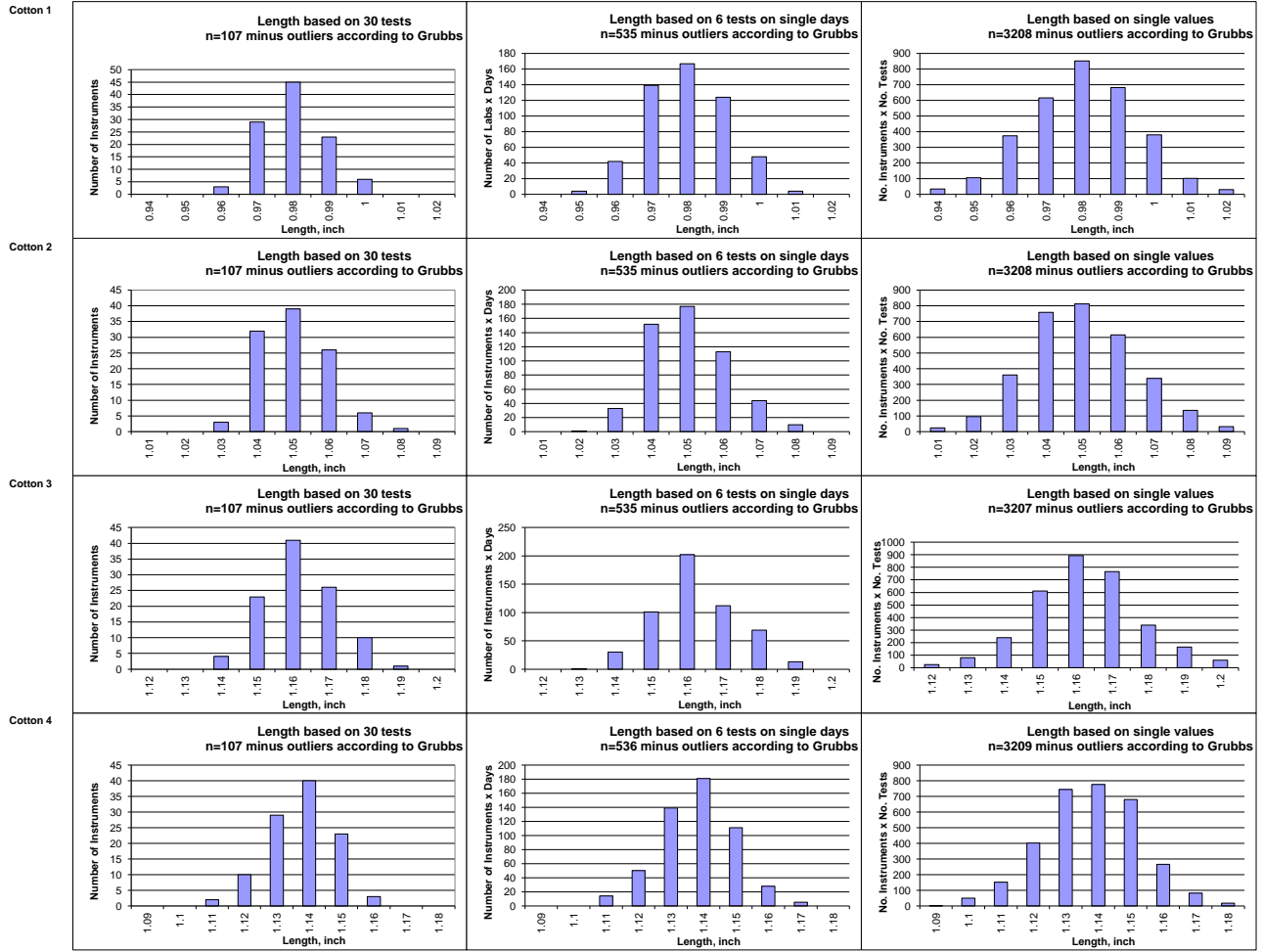
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)  
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Strength



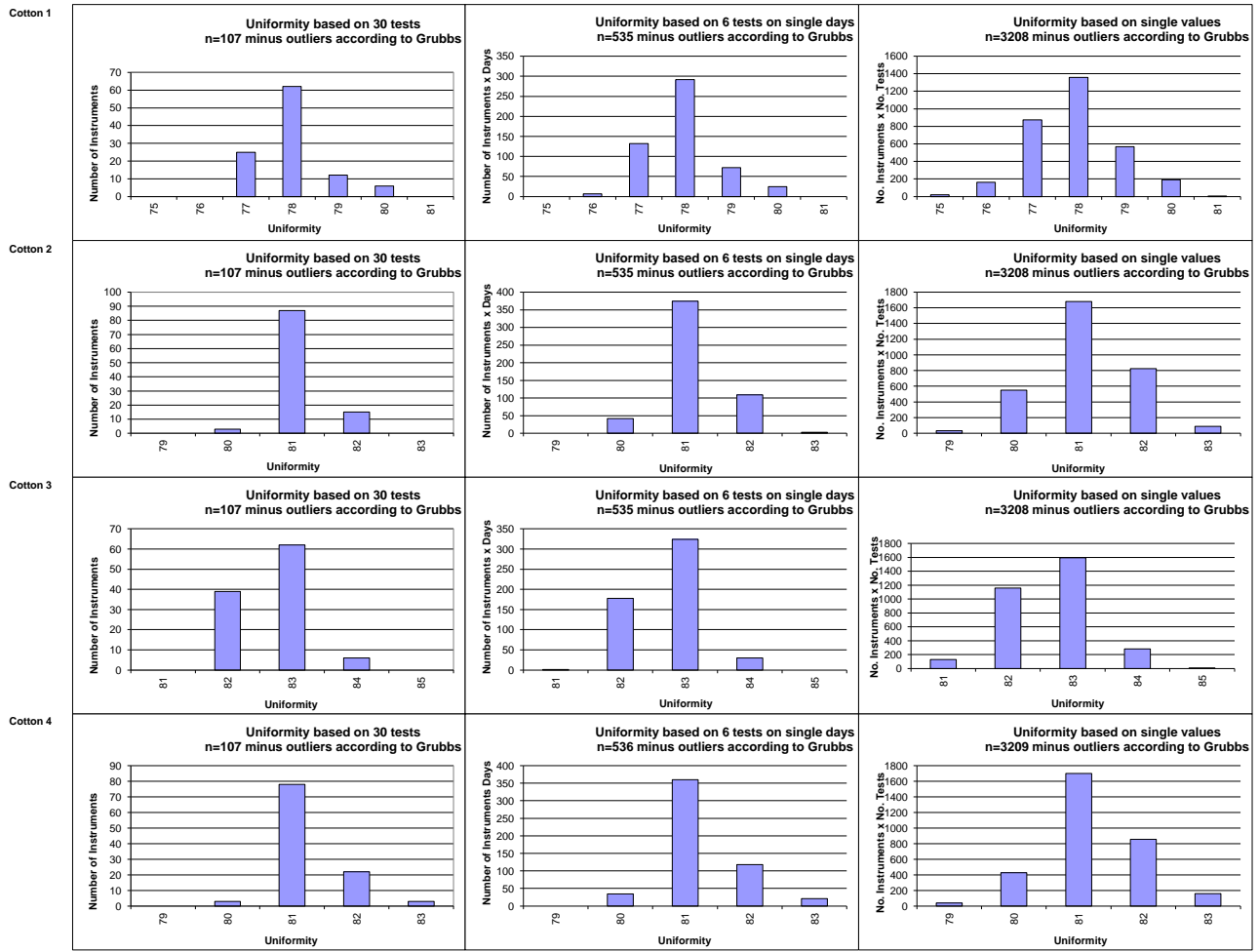
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method) (classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Length



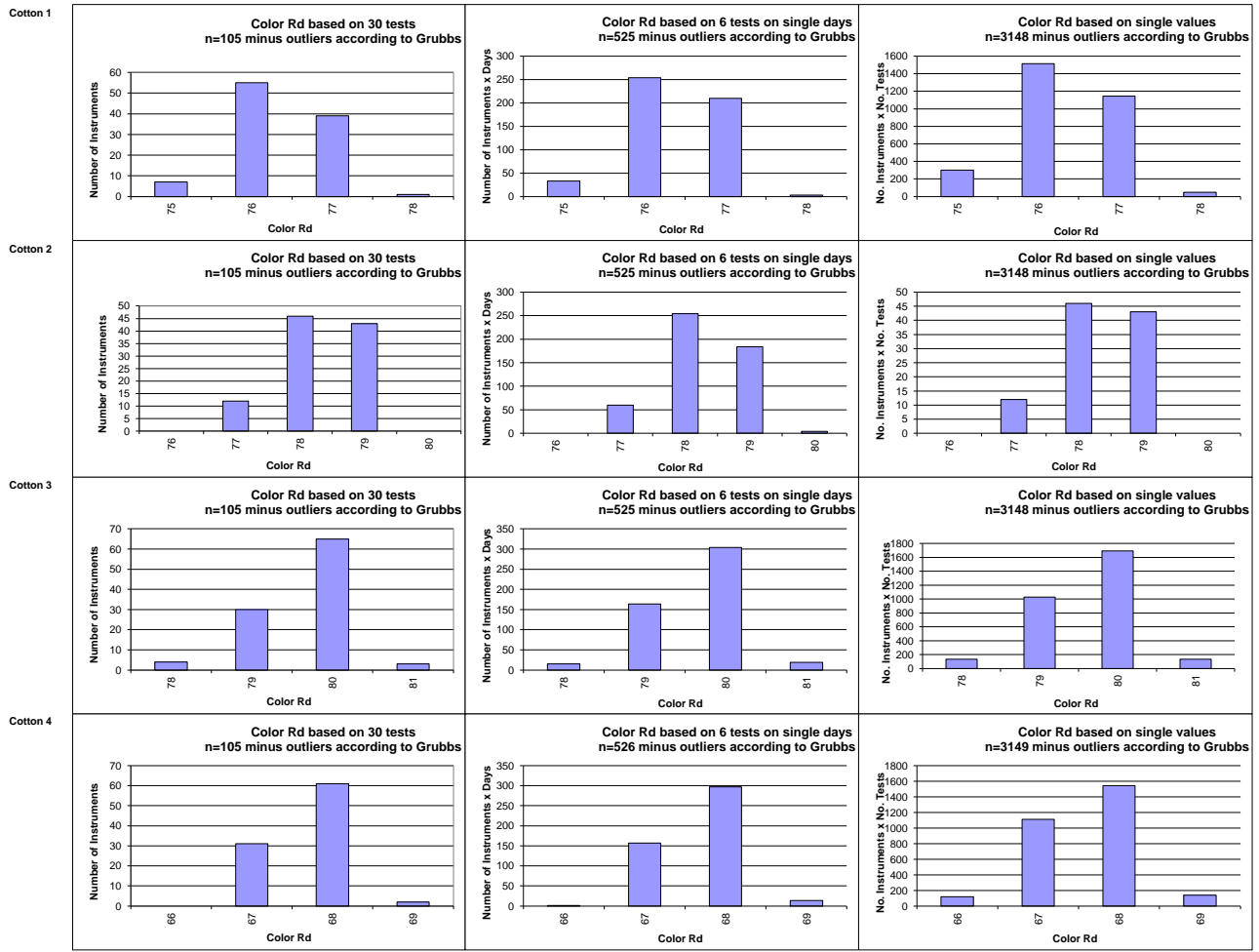
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method) (classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Uniformity



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)

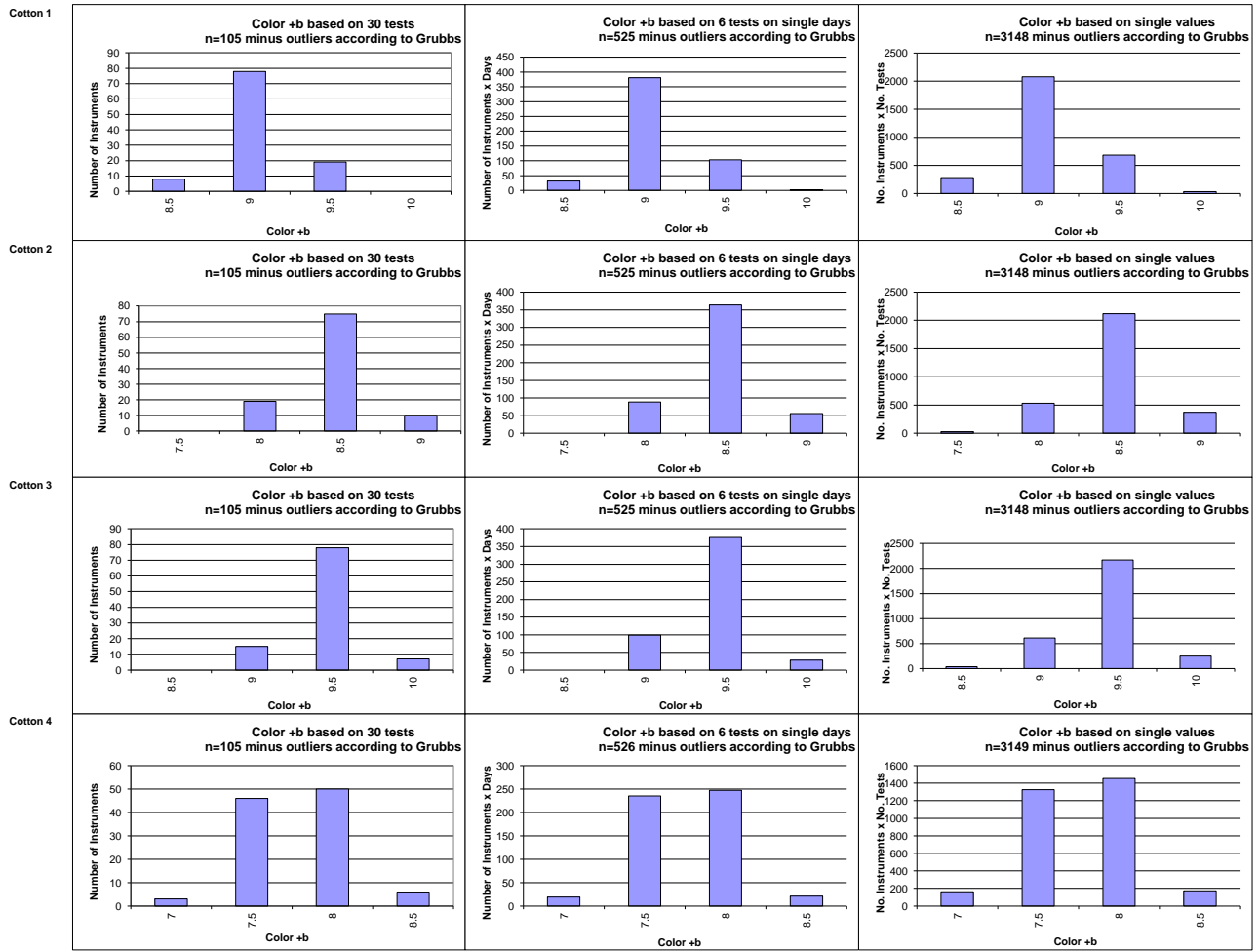
Test Result Distributions  
Color Rd



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method) (classes are defined as > lower limit and <= upper limit)



Test Result Distributions  
Color +b



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)

Optional Parameters

Inter-Instrument Averages, Inter-Instrument Variations, Typical within-instrument Variations

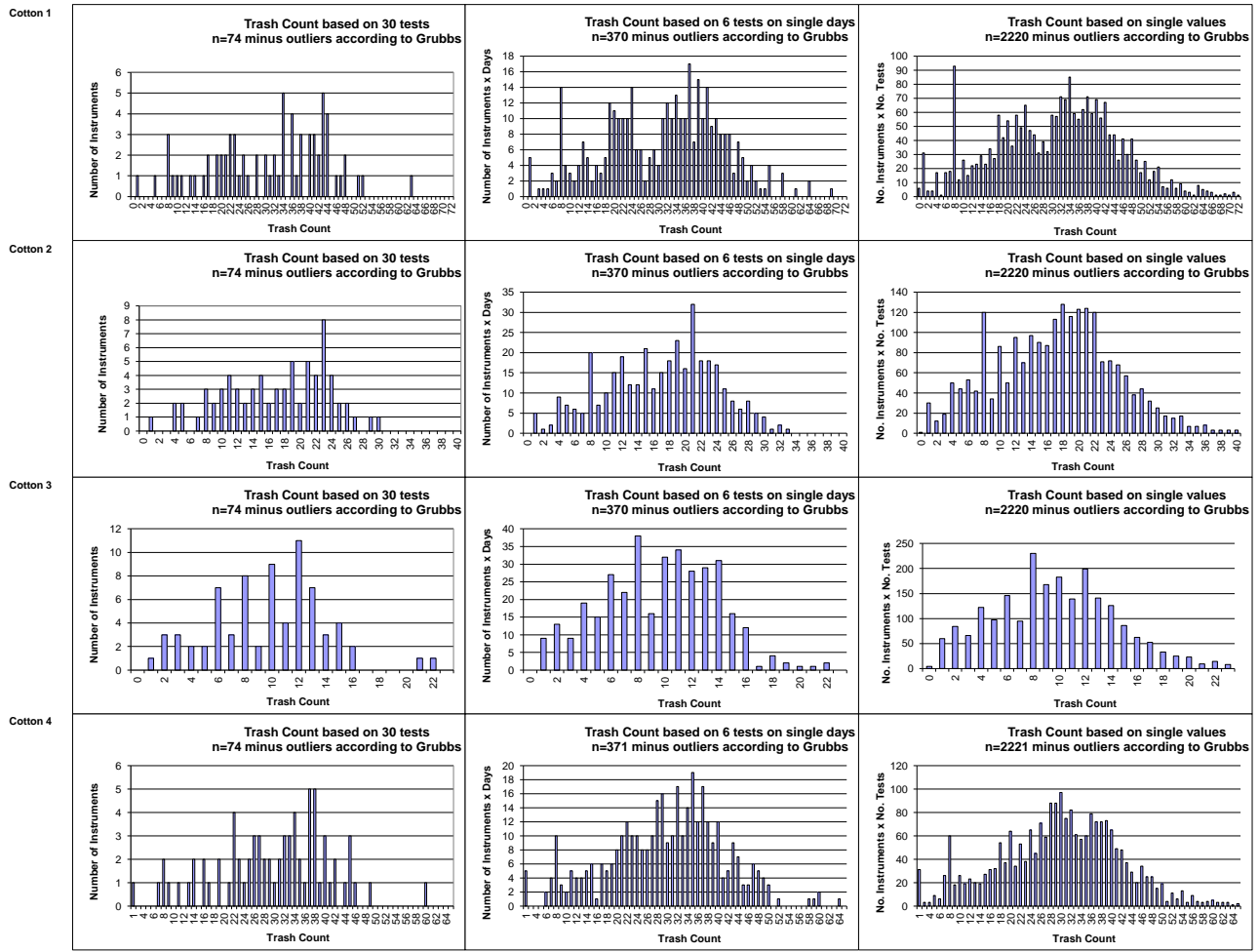
Trash Count							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			30.72	17.00	9.80	29.70	
Reference Values for Evaluation			30.72	17.00	9.80	29.70	
Number Of Instruments			74	74	74	74	<b>74</b>
Inter-Instrument Variation	based on 30 tests	SD	13.07	6.66	4.27	11.26	<b>8.81</b>
		CV %	42.5	39.1	43.6	37.9	<b>40.8</b>
		SD	13.40	6.95	4.22	11.53	<b>9.02</b>
	based on 6 tests	CV %	43.6	40.9	43.1	38.8	<b>41.6</b>
		SD	13.91	7.58	4.64	12.03	<b>9.54</b>
		CV %	45.3	44.6	47.4	40.5	<b>44.4</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	2.92	1.59	1.18	2.38	<b>2.02</b>
		CV %	9.5	9.4	12.1	8.0	<b>9.7</b>
	between single tests on one day	SD	3.52	2.73	1.72	3.65	<b>2.90</b>
		CV %	11.5	16.1	17.6	12.3	<b>14.3</b>
	between all tests on different days	SD	4.62	3.42	2.20	4.48	<b>3.68</b>
		CV %	15.0	20.1	22.4	15.1	<b>18.2</b>

Trash Area							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			0.276	0.172	0.110	0.311	
Reference Values for Evaluation			0.276	0.172	0.110	0.311	
Number Of Instruments			74	74	74	74	<b>74</b>
Inter-Instrument Variation	based on 30 tests	SD	0.088	0.053	0.033	0.100	<b>0.068</b>
		CV %	31.8	30.7	30.0	32.1	<b>31.1</b>
		SD	0.095	0.059	0.037	0.106	<b>0.074</b>
	based on 6 tests	CV %	34.3	34.0	33.3	33.9	<b>33.9</b>
		SD	0.104	0.067	0.042	0.116	<b>0.082</b>
		CV %	37.6	38.8	38.0	37.3	<b>38.0</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.033	0.026	0.015	0.035	<b>0.027</b>
		CV %	11.9	15.0	13.2	11.2	<b>12.8</b>
	between single tests on one day	SD	0.048	0.039	0.020	0.052	<b>0.040</b>
		CV %	17.4	22.9	18.0	16.7	<b>18.8</b>
	between all tests on different days	SD	0.055	0.050	0.030	0.062	<b>0.049</b>
		CV %	19.9	29.0	27.1	19.9	<b>24.0</b>

Maturity							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			83.24	88.05	87.26	85.90	
Reference Values for Evaluation			83.24	88.05	87.26	85.90	
Number Of Instruments			74	74	73	74	<b>74</b>
Inter-Instrument Variation	based on 30 tests	SD	2.88	1.55	1.92	1.69	<b>2.01</b>
		CV %	3.5	1.8	2.2	2.0	<b>2.3</b>
		SD	2.89	1.56	1.93	1.70	<b>2.02</b>
	based on 6 tests	CV %	3.5	1.8	2.2	2.0	<b>2.4</b>
		SD	2.94	1.57	1.96	1.75	<b>2.06</b>
		CV %	3.5	1.8	2.2	2.0	<b>2.4</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.18	0.22	0.22	0.19	<b>0.20</b>
		CV %	0.2	0.2	0.2	0.2	<b>0.2</b>
	between single tests on one day	SD	0.39	0.40	0.29	0.32	<b>0.35</b>
		CV %	0.5	0.5	0.3	0.4	<b>0.4</b>
	between all tests on different days	SD	0.48	0.48	0.47	0.46	<b>0.47</b>
		CV %	0.6	0.5	0.5	0.5	<b>0.5</b>

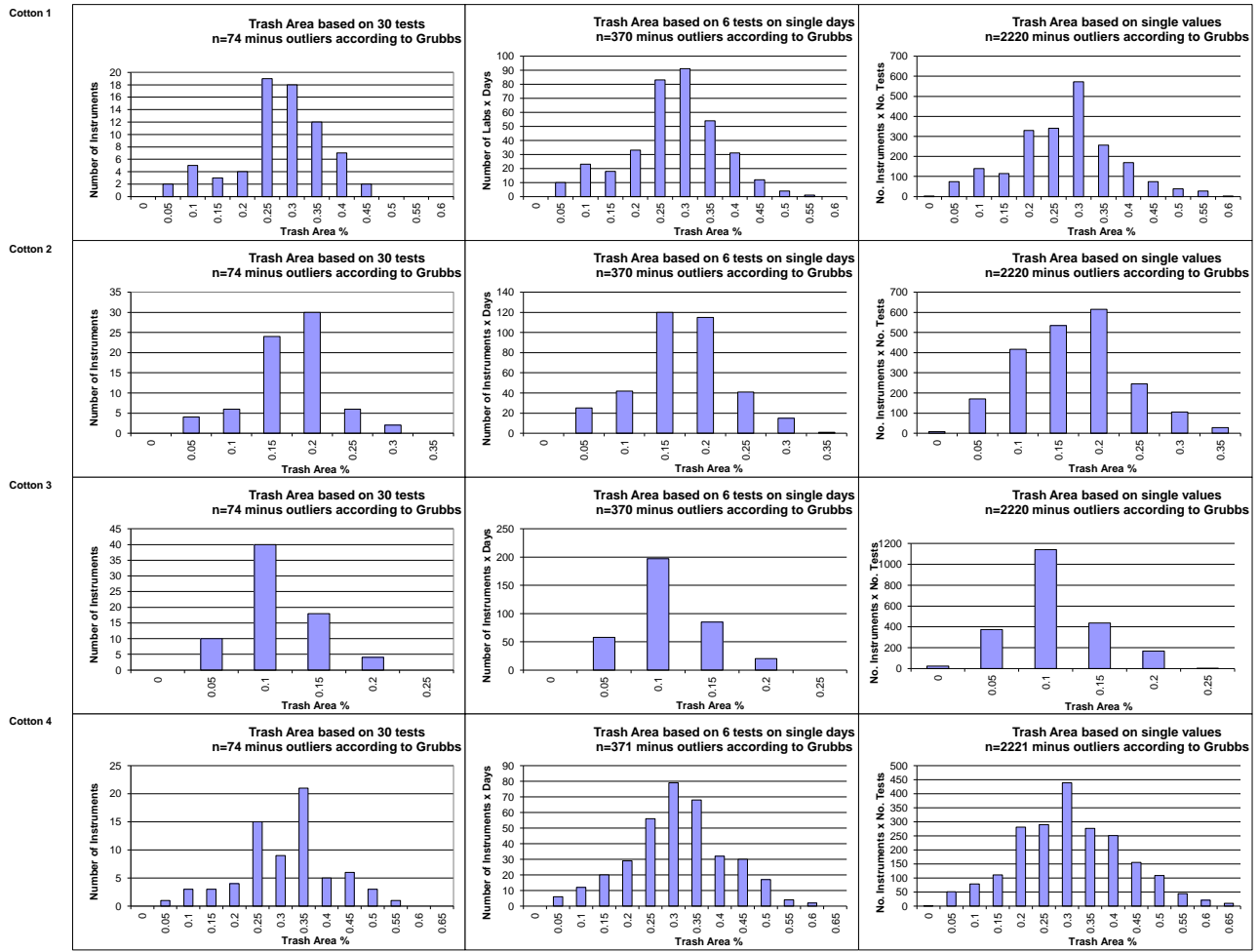
SFI							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
<b>Average of Instruments (Grubbs)</b>			15.43	9.97	8.26	9.61	
<b>Reference Values for Evaluation</b>			15.43	9.97	8.26	9.61	
<b>Number Of Instruments</b>			83	83	83	83	<b>83</b>
<b>Inter-Instrument Variation</b>	based on 30 tests	SD	1.80	0.86	0.72	0.85	<b>1.06</b>
		CV %	11.7	8.6	8.8	8.8	<b>9.5</b>
	based on 6 tests	SD	1.83	0.87	0.77	0.88	<b>1.09</b>
		CV %	11.8	8.7	9.3	9.2	<b>9.8</b>
	based on single tests	SD	1.97	1.02	0.84	0.97	<b>1.20</b>
		CV %	12.8	10.3	10.2	10.1	<b>10.8</b>
<b>Typical within-instrument Variation (Median)</b>	between different days	SD	0.41	0.26	0.17	0.24	<b>0.27</b>
		CV %	2.7	2.6	2.0	2.5	<b>2.4</b>
	between single tests on one day	SD	0.77	0.51	0.36	0.44	<b>0.52</b>
		CV %	5.0	5.1	4.3	4.5	<b>4.7</b>
	between all tests on different days	SD	0.86	0.59	0.39	0.51	<b>0.58</b>
		CV %	5.5	5.9	4.7	5.3	<b>5.4</b>

Test Result Distributions  
Trash Count



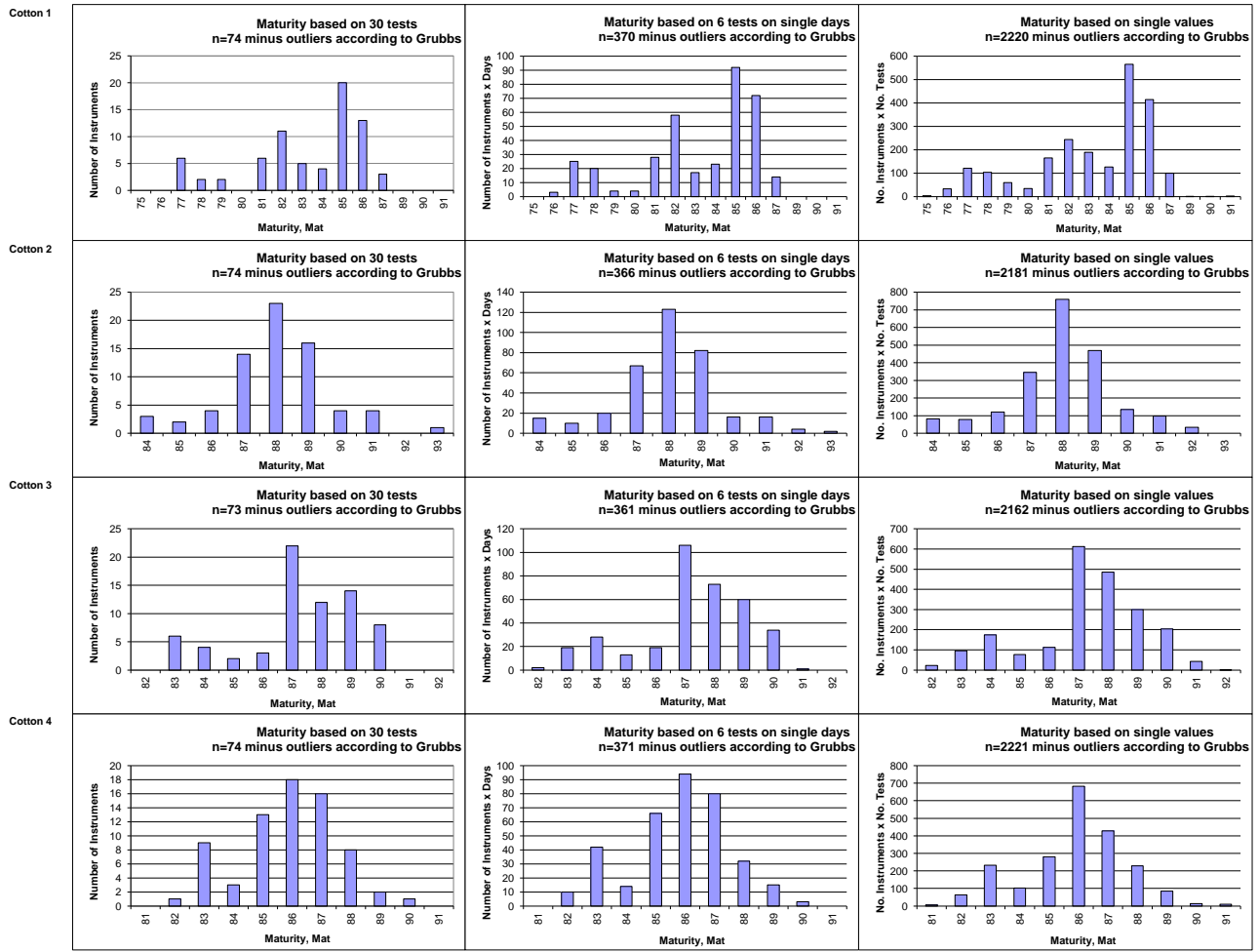
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Trash Area



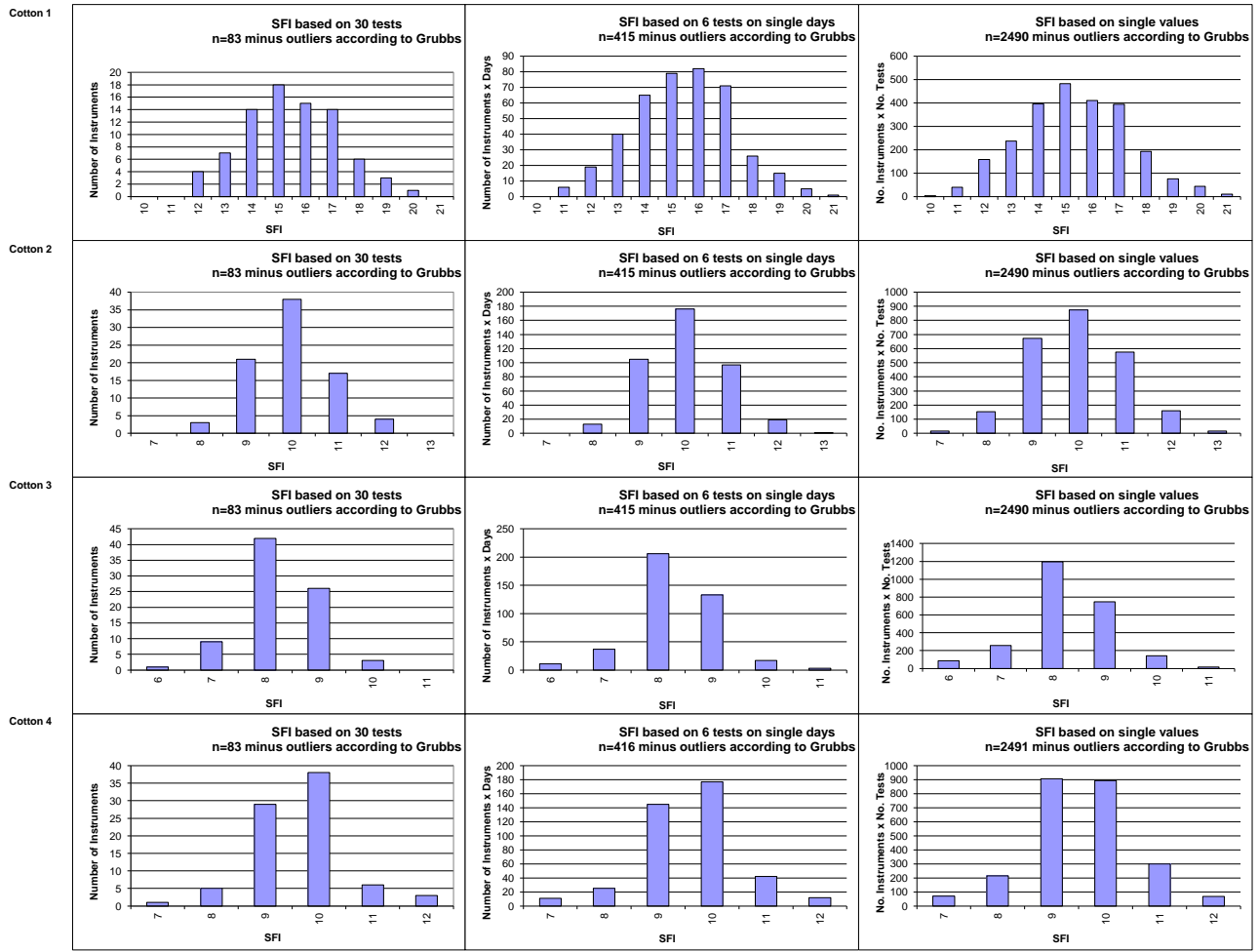
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method) (classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Maturity



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)  
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
SFI



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)



International Cotton Advisory Committee



## CSITC Global - Round Trial 2015 - 1 General Evaluation

Section One: Result Distribution

**Section Two: Instrument Evaluation**

Section Three: Within Limits Evaluation

### Section Two: Instrument Evaluation

Content:

- Evaluation of Combined Parameters
- Evaluation of Single Parameters

Executed By:

Faserinstitut Bremen e.V., Bremen, Germany\*  
USDA-AMS, Memphis, TN, USA

System Provided by:  
Generation 10 Limited



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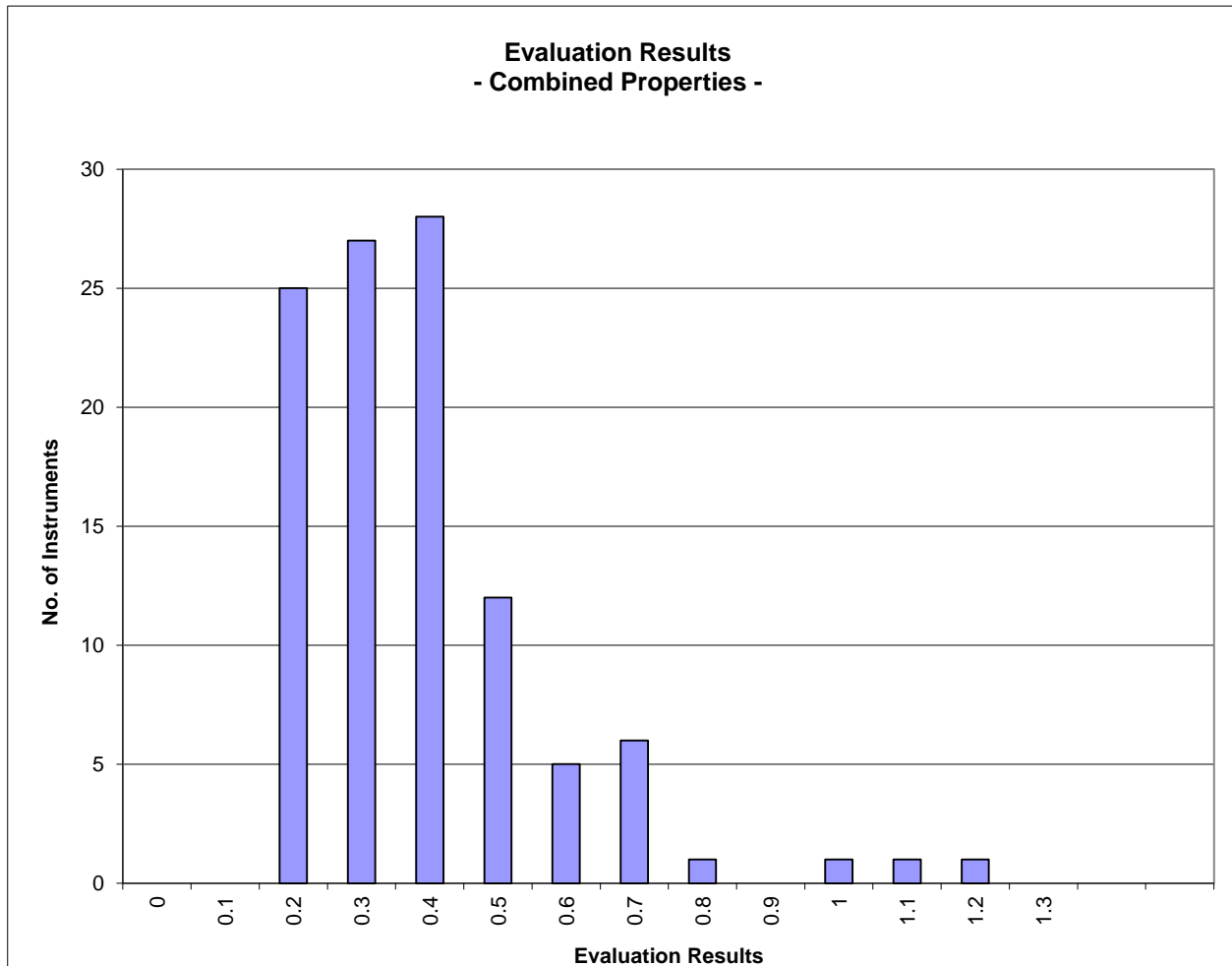
Instrument Evaluation

- Graph of Combined Properties -

According to ICAC CSITC Task Force Recommendations

Global - Round Trial 2015 - 1

		<b>Evaluation Combined Prop.</b>
<b>Statistics</b>	Average	0.39
	Median	0.36
	Best Instrument	0.16
	Worst Instrument	1.18

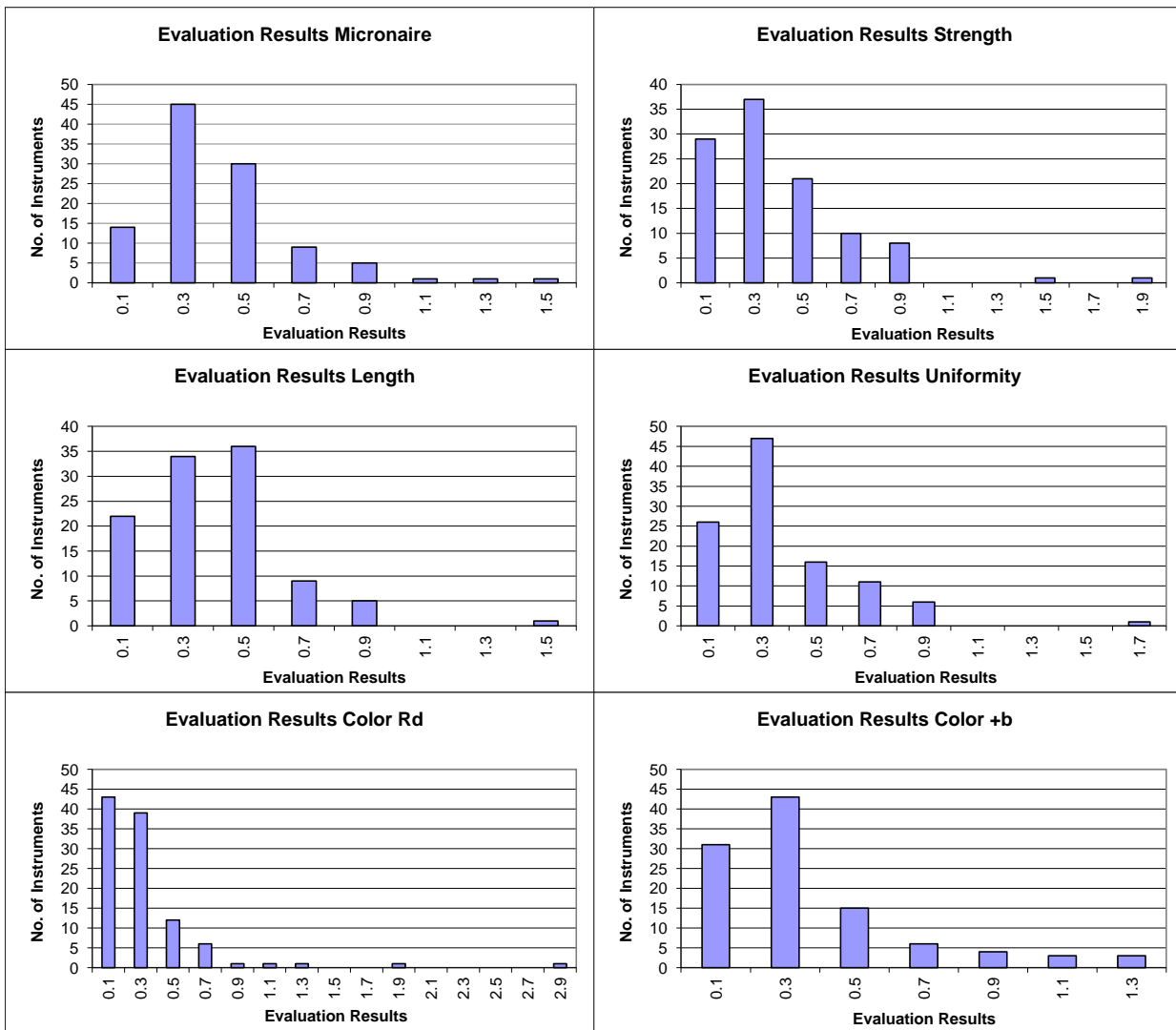


x-Axis shows midpoints of classes

The evaluation results are entered based on the unrounded values  
 (classes are defined as > lower limit and <= upper limit)

Instrument Evaluation  
 - Graph of Single Properties -  
 According to ICAC CSITC Task Force Recommendations  
 Global - Round Trial 2015 - 1

	Evaluation Micronaire	Evaluation Strength	Evaluation Length	Evaluation Uniformity	Evaluation Color Rd	Evaluation Color +b
<b>Statistics</b>	<b>Average</b>	0.42	0.39	0.40	0.38	0.38
	<b>Median</b>	0.37	0.32	0.38	0.33	0.30
	<b>Best Instr.</b>	0.06	0.02	0.07	0.08	0.05
	<b>Worst Instr.</b>	1.47	1.97	1.49	1.75	2.93



x-Axis shows midpoints of classes  
 The evaluation results are entered based on the unrounded values



International Cotton Advisory Committee



## CSITC Global - Round Trial 2015 - 1 General Evaluation

Section One: Result Distribution  
Section Two: Instrument Evaluation  
**Section Three: Within Limits Evaluation**

### Section Three: Within Limits Evaluation

Content:

- Based on Average of 30 Test Results
- Based on Single Test Results

Executed By:  
Faserinstitut Bremen e.V., Bremen, Germany\*  
USDA-AMS, Memphis, TN, USA

System Provided by:  
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## Within Limits Evaluation

Based on average of 30 test results for each sample

	<b>Micronaire</b>	<b>Strength</b>	<b>Length</b>	<b>Uniformity</b>	<b>Color Rd</b>	<b>Color +b</b>
Limits	0.20	2.0	0.030	2.0	1.5	0.5
	units	g/tex	inch	%	units	units
Average % Results within Limits	100.0	94.6	99.3	99.5	95.2	93.8
Completely within limits	100.0	82.2	98.1	98.1	90.5	87.6
% of Instruments $\geq 75\%$ within limits	100.0	98.1	99.1	100.0	96.2	93.3
% of Instruments $\geq 50\%$ within limits	100.0	98.1	100.0	100.0	96.2	95.2

Percentage of Results Within Limits						
<b>Instrument</b>	<b>Micronaire</b>	<b>Strength</b>	<b>Length</b>	<b>Uniformity</b>	<b>Color Rd</b>	<b>Color +b</b>
GL151-001-06	100	100	100	100	100	100
GL151-002-01	100	100	100	100	75	100
GL151-003-01	100	75	50	100	0	75
GL151-004-01	100	75	100	100	100	100
GL151-005-01	100	100	100	100	75	100
GL151-006-01	100	100	100	100	100	25
GL151-008-03	100	100	100	100	100	100
GL151-009-04	100	100	100	100	100	100
GL151-010-02	100	100	100	100	100	100
GL151-011-01	100	75	100	100	100	100
GL151-012-01	100	100	100	100	100	75
GL151-013-01	100	25	100	100	100	25
GL151-014-01	100	75	100	100	100	75
GL151-015-04	100	100	100	100	100	100
GL151-016-01	100	100	100	100	100	100
GL151-016-03	100	100	100	100	100	100
GL151-017-01	100	100	100	100	100	75
GL151-018-22	100	100	100	100	100	50
GL151-019-01	100	75	100	100	100	100
GL151-021-14	100	100	100	100	100	100
GL151-023-11	100	100	100	100	100	100
GL151-024-02	100	100	100	100	100	100
GL151-026-01	100	100	100	100	100	100
GL151-028-01	100	100	100	100	100	100
GL151-029-01	100	100	100	100	100	75
GL151-030-11		100	100	100		
GL151-031-01	100	100	100	100	100	100
GL151-032-01	100	75	100	100	100	100
GL151-032-02	100	75	100	100	100	100
GL151-034-03	100	100	100	100	100	100
GL151-034-04	100	100	100	100	100	100
GL151-034-06	100	100	100	100	100	100
GL151-035-02	100	100	100	100	100	100
GL151-035-04	100	100	100	100	75	0

GL151-035-07	100	100	100	100	75	100
GL151-035-08	100	100	100	100	0	100
GL151-036-16	100	100	100	100	100	100
GL151-036-29	100	100	100	100	100	100
GL151-038-01	100	100	100	100	100	100
GL151-038-02	100	100	100	100	100	100
GL151-038-03	100	100	100	100	100	100
GL151-038-04	100	100	100	100	100	100
GL151-039-01	100	100	100	100	100	100
GL151-041-02	100	100	100	100	100	100
GL151-042-01	100	75	100	100	100	100
GL151-042-02	100	75	100	100	100	100
GL151-042-03	100	75	100	100	100	75
GL151-042-04	100	100	100	75	100	100
GL151-044-01	100	75	100	100	100	100
GL151-045-12	100	100	100	100	100	100
GL151-045-13	100	100	100	100	100	100
GL151-046-01	100	100	100	100	100	100
GL151-048-01	100	100	100	100	100	100
GL151-050-02	100	100	100	100	100	100
GL151-051-02	100	75	100	100	100	100
GL151-051-03	100	100	100	100	100	100
GL151-052-01	100	100	100	100	100	100
GL151-052-02	100	100	100	100	100	100
GL151-053-01	100	100	100	100	100	100
GL151-055-01	100	100	100	100	100	100
GL151-055-02	100	100	100	100	100	100
GL151-056-01	100	100	100	100	100	100
GL151-056-02	100	100	100	100	100	100
GL151-059-01	100	100	100	100	100	100
GL151-060-01	100	100	100	100	25	100
GL151-061-60	100	100	100	100	100	100
GL151-061-61	100	100	100	100	100	100
GL151-062-01	100	25	75	100		
GL151-064-01	100	100	100	100	75	50
GL151-065-06	100	100	100	100	100	100
GL151-065-08	100	100	100	100	100	100
GL151-066-01	100	100	100	100	100	100
GL151-067-28	100	100	100	100	100	100
GL151-067-29	100	100	100	100	100	100
GL151-068-25	100	100	100	100	100	100
GL151-068-27	100	100	100	100	100	100
GL151-069-04	100	100	100	100	100	100
GL151-069-05	100	100	100	100	100	100
GL151-070-01	100	100	100	100	100	100
GL151-071-03	100	100	100	100	100	100
GL151-072-01	100	100	100	100	100	100
GL151-073-01	100	100	100	100	100	100
GL151-073-02	100	100	100	100	100	100
GL151-074-01	100	100	100	100	100	100
GL151-075-01	100	100	100	100	100	100
GL151-075-02	100	100	100	100	100	100
GL151-076-01	100	100	100	100	100	100
GL151-077-01	100	75	100	100	25	100
GL151-078-01	100	100	100	100	100	100

GL151-078-02	100	100	100	100	100	100
GL151-078-04	100	100	100	100	100	100
GL151-079-02	100	75	100	100	100	100
GL151-080-02	100	100	100	100	100	100
GL151-081-01	100	75	100	100	100	100
GL151-081-02	100	75	100	100	100	100
GL151-082-05	100	100	100	100	100	100
GL151-084-01	100	75	100	100	75	25
GL151-085-03	100	100	100	100	100	100
GL151-086-01	100	100	100	75	100	100
GL151-088-01	100	100	100	100	100	100
GL151-088-02	100	100	100	100	100	100
GL151-089-01	100	100	100	100	100	100
GL151-089-04	100	100	100	100	100	100
GL151-089-05	100	100	100	100	100	100
GL151-090-12	100	100	100	100	100	100
GL151-090-13	100	100	100	100	100	100
GL151-091-01	100	100	100	100	100	25

## Within Limits Evaluation

Based on Single Test Results

	<b>Micronaire</b>	<b>Strength</b>	<b>Length</b>	<b>Uniformity</b>	<b>Color Rd</b>	<b>Color +b</b>
Limits	0.20	2.0	0.030	2.0	1.5	0.5
	units	g/tex	inch	%	units	units
Average % Results within Limits	98.7	91.2	96.7	97.8	93.1	89.7
% of Instruments 100% within limits	61.3	23.4	37.4	52.3	55.2	37.1
% of Instruments ≥95% within limits	91.5	64.5	83.2	86.9	75.2	62.9
% of Instruments ≥75% within limits	100.0	91.6	98.1	99.1	91.4	86.7
% of Instruments ≥65% within limits	100.0	96.3	99.1	100.0	96.2	89.5
% of Instruments ≥50% within limits	100.0	98.1	100.0	100.0	96.2	95.2

Percentage of Results Within Limits						
<b>Instrument</b>	<b>Micronaire</b>	<b>Strength</b>	<b>Length</b>	<b>Uniformity</b>	<b>Color Rd</b>	<b>Color +b</b>
GL151-001-06	100	100	100	100	98	96
GL151-002-01	99	98	95	89	69	80
GL151-003-01	88	74	54	76	3	71
GL151-004-01	98	78	100	90	100	92
GL151-005-01	99	98	98	99	71	100
GL151-006-01	99	91	88	94	98	55
GL151-008-03	99	95	100	100	100	99
GL151-009-04	100	93	95	94	100	100
GL151-010-02	98	100	100	100	100	100
GL151-011-01	99	72	98	100	90	90
GL151-012-01	100	93	99	99	98	76
GL151-013-01	99	27	96	98	88	36
GL151-014-01	100	83	100	100	99	85
GL151-015-04	100	98	98	100	100	100
GL151-016-01	100	100	100	100	100	100
GL151-016-03	100	93	100	100	100	100
GL151-017-01	99	92	89	94	98	61
GL151-018-22	100	99	93	98	93	47
GL151-019-01	100	68	99	98	91	98
GL151-021-14	100	99	100	100	100	100
GL151-023-11	85	99	98	100	100	83
GL151-024-02	99	100	98	99	97	93
GL151-026-01	100	100	100	100	100	97
GL151-028-01	94	100	96	97	100	89
GL151-029-01	89	92	89	98	97	64
GL151-030-11		51	74	80		
GL151-031-01	100	98	95	99	100	88
GL151-032-01	98	76	100	100	100	95
GL151-032-02	100	81	98	100	96	96
GL151-034-03	99	100	100	100	100	100

GL151-034-04	98	100	100	100	100	100
GL151-034-06	100	100	100	100	100	100
GL151-035-02	94	98	93	100	93	88
GL151-035-04	99	81	87	99	68	31
GL151-035-07	99	100	93	99	80	95
GL151-035-08	90	98	98	94	1	76
GL151-036-16	100	98	100	99	100	100
GL151-036-29	99	99	98	100	98	97
GL151-038-01	100	99	98	99	100	100
GL151-038-02	98	96	99	99	100	90
GL151-038-03	100	96	98	97	100	53
GL151-038-04	94	98	98	99	100	95
GL151-039-01	100	100	100	100	100	96
GL151-041-02	98	97	96	93	100	89
GL151-042-01	100	75	100	100	100	98
GL151-042-02	100	75	100	100	100	98
GL151-042-03	98	85	98	92	94	87
GL151-042-04	97	71	87	66	99	92
GL151-044-01	100	82	100	100	98	100
GL151-045-12	97	93	99	97	99	100
GL151-045-13	100	97	99	100	100	100
GL151-046-01	85	97	97	100	100	97
GL151-048-01	100	98	100	100	100	100
GL151-050-02	100	96	98	100	100	97
GL151-051-02	100	78	99	98	95	81
GL151-051-03	100	98	100	100	100	100
GL151-052-01	100	99	84	95	98	62
GL151-052-02	97	88	96	99	98	78
GL151-053-01	100	98	99	100	100	99
GL151-055-01	100	99	98	100	91	89
GL151-055-02	100	99	100	100	100	100
GL151-056-01	100	100	100	100	100	98
GL151-056-02	100	100	100	99	99	98
GL151-059-01	100	98	98	99	85	98
GL151-060-01	91	80	98	98	38	83
GL151-061-60	100	98	97	100	100	100
GL151-061-61	100	100	94	100	100	100
GL151-062-01	100	25	95	100		
GL151-064-01	100	99	100	99	66	48
GL151-065-06	100	96	100	100	99	99
GL151-065-08	100	82	98	100	99	100
GL151-066-01	100	98	96	99	100	99
GL151-067-28	100	100	100	100	100	99
GL151-067-29	100	100	100	100	100	100
GL151-068-25	100	100	100	100	100	100
GL151-068-27	100	100	100	100	100	100
GL151-069-04	98	92	93	96	100	96
GL151-069-05	100	98	95	100	100	99
GL151-070-01	100	98	100	100	100	99
GL151-071-03	100	100	98	99	100	100
GL151-072-01	98	95	80	100	83	72
GL151-073-01	99	96	100	100	94	80
GL151-073-02	100	96	99	99	97	66
GL151-074-01	95	78	93	94	89	81
GL151-075-01	100	100	100	100	100	100



GL151-075-02	100	100	100	100	100	100
GL151-076-01	100	86	91	96	100	100
GL151-077-01	99	69	84	100	28	88
GL151-078-01	100	99	99	100	81	93
GL151-078-02	100	95	98	99	100	100
GL151-078-04	100	98	99	99	100	99
GL151-079-02	100	76	98	97	93	90
GL151-080-02	99	98	99	100	81	77
GL151-081-01	100	78	100	99	89	100
GL151-081-02	100	78	100	98	89	100
GL151-082-05	100	88	97	100	98	98
GL151-084-01	99	59	97	98	74	28
GL151-085-03	99	100	98	98	100	100
GL151-086-01	100	99	99	75	100	99
GL151-088-01	100	97	99	98	100	100
GL151-088-02	100	98	100	100	100	100
GL151-089-01	100	100	100	100	100	100
GL151-089-04	100	100	100	100	100	100
GL151-089-05	100	100	100	100	100	100
GL151-090-12	99	93	100	100	100	100
GL151-090-13	100	95	99	100	100	100
GL151-091-01	98	93	93	94	99	53