



**International Cotton Advisory Committee**



# CSITC

## Global - Round Trial 2015 - 2

### 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 - 2

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

Micronaire							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			5.062	3.326	4.087	4.216	
Reference Values for Evaluation			5.062	3.326	4.087	4.216	
Number Of Instruments			124	124	124	124	<b>124</b>
Inter-Instrument Variation	based on 30 tests	SD	0.048	0.056	0.064	0.069	<b>0.059</b>
		CV %	0.9	1.7	1.6	1.6	<b>1.5</b>
		SD	0.052	0.057	0.070	0.071	<b>0.063</b>
	based on 6 tests	CV %	1.0	1.7	1.7	1.7	<b>1.5</b>
		SD	0.065	0.067	0.081	0.080	<b>0.073</b>
		CV %	1.3	2.0	2.0	1.9	<b>1.8</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.023	0.017	0.022	0.021	<b>0.021</b>
		CV %	0.4	0.5	0.5	0.5	<b>0.5</b>
	between single tests on one day	SD	0.036	0.030	0.040	0.037	<b>0.036</b>
		CV %	0.7	0.9	1.0	0.9	<b>0.9</b>
	between all tests on different days	SD	0.043	0.036	0.049	0.045	<b>0.043</b>
		CV %	0.9	1.1	1.2	1.1	<b>1.0</b>

Strength							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			27.206	29.458	24.991	33.642	
Reference Values for Evaluation			27.206	29.458	24.991	33.642	
Number Of Instruments			124	124	124	124	<b>124</b>
Inter-Instrument Variation	based on 30 tests	SD	0.705	0.746	0.697	0.626	<b>0.694</b>
		CV %	2.6	2.5	2.8	1.9	<b>2.4</b>
		SD	0.787	0.824	0.743	0.726	<b>0.770</b>
	based on 6 tests	CV %	2.9	2.8	3.0	2.2	<b>2.7</b>
		SD	0.949	0.986	0.873	0.949	<b>0.939</b>
		CV %	3.5	3.3	3.5	2.8	<b>3.3</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.275	0.284	0.285	0.318	<b>0.290</b>
		CV %	1.0	1.0	1.1	0.9	<b>1.0</b>
	between single tests on one day	SD	0.518	0.541	0.488	0.603	<b>0.537</b>
		CV %	1.9	1.8	2.0	1.8	<b>1.9</b>
	between all tests on different days	SD	0.582	0.625	0.554	0.683	<b>0.611</b>
		CV %	2.1	2.1	2.2	2.0	<b>2.1</b>

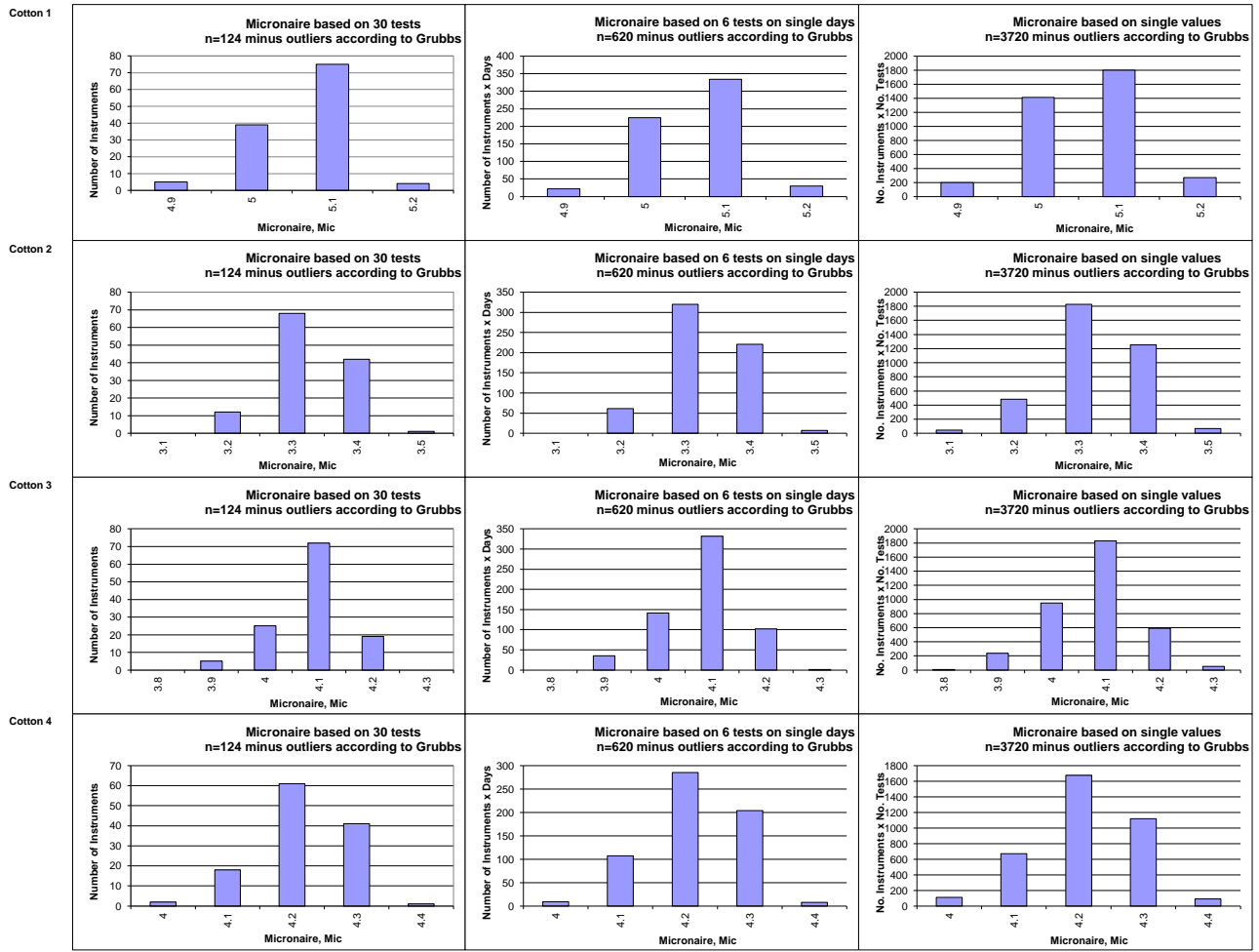
Length							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			1.0161	1.1225	0.9828	1.2230	
Reference Values for Evaluation			1.0161	1.1225	0.9828	1.2230	
Number Of Instruments			125	125	125	125	<b>125</b>
Inter-Instrument Variation	based on 30 tests	SD	0.0125	0.0087	0.0136	0.0113	<b>0.0115</b>
		CV %	1.2	0.8	1.4	0.9	<b>1.1</b>
		SD	0.0137	0.0100	0.0146	0.0124	<b>0.0127</b>
	based on 6 tests	CV %	1.3	0.9	1.5	1.0	<b>1.2</b>
		SD	0.0167	0.0136	0.0174	0.0160	<b>0.0159</b>
		CV %	1.6	1.2	1.8	1.3	<b>1.5</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.0047	0.0043	0.0054	0.0045	<b>0.0047</b>
		CV %	0.5	0.4	0.5	0.4	<b>0.4</b>
	between single tests on one day	SD	0.0093	0.0096	0.0100	0.0101	<b>0.0097</b>
		CV %	0.9	0.9	1.0	0.8	<b>0.9</b>
	between all tests on different days	SD	0.0105	0.0100	0.0111	0.0112	<b>0.0107</b>
		CV %	1.0	0.9	1.1	0.9	<b>1.0</b>

Uniformity							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			79.807	81.588	78.714	84.950	
Reference Values for Evaluation			79.807	81.588	78.714	84.950	
Number Of Instruments			124	124	124	124	<b>124</b>
Inter-Instrument Variation	based on 30 tests	SD	0.560	0.496	0.652	0.525	<b>0.558</b>
		CV %	0.7	0.6	0.8	0.6	<b>0.7</b>
		SD	0.588	0.548	0.674	0.577	<b>0.597</b>
	based on 6 tests	CV %	0.7	0.7	0.9	0.7	<b>0.7</b>
		SD	0.758	0.734	0.829	0.740	<b>0.765</b>
		CV %	1.0	0.9	1.1	0.9	<b>0.9</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.236	0.253	0.261	0.225	<b>0.244</b>
		CV %	0.3	0.3	0.3	0.3	<b>0.3</b>
	between single tests on one day	SD	0.484	0.482	0.522	0.476	<b>0.491</b>
		CV %	0.6	0.6	0.7	0.6	<b>0.6</b>
	between all tests on different days	SD	0.545	0.534	0.581	0.510	<b>0.543</b>
		CV %	0.7	0.7	0.7	0.6	<b>0.7</b>

Color Rd							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			77.318	71.097	70.970	77.628	
Reference Values for Evaluation			77.318	71.097	70.970	77.628	
Number Of Instruments			122	122	122	122	<b>122</b>
Inter-Instrument Variation	based on 30 tests	SD	0.492	0.636	0.568	0.576	<b>0.568</b>
		CV %	0.6	0.9	0.8	0.7	<b>0.8</b>
		SD	0.459	0.655	0.589	0.575	<b>0.569</b>
	based on 6 tests	CV %	0.6	0.9	0.8	0.7	<b>0.8</b>
		SD	0.538	0.710	0.604	0.614	<b>0.616</b>
		CV %	0.7	1.0	0.9	0.8	<b>0.8</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.135	0.155	0.155	0.155	<b>0.150</b>
		CV %	0.2	0.2	0.2	0.2	<b>0.2</b>
	between single tests on one day	SD	0.179	0.190	0.186	0.201	<b>0.189</b>
		CV %	0.2	0.3	0.3	0.3	<b>0.3</b>
	between all tests on different days	SD	0.234	0.259	0.260	0.272	<b>0.256</b>
		CV %	0.3	0.4	0.4	0.4	<b>0.3</b>

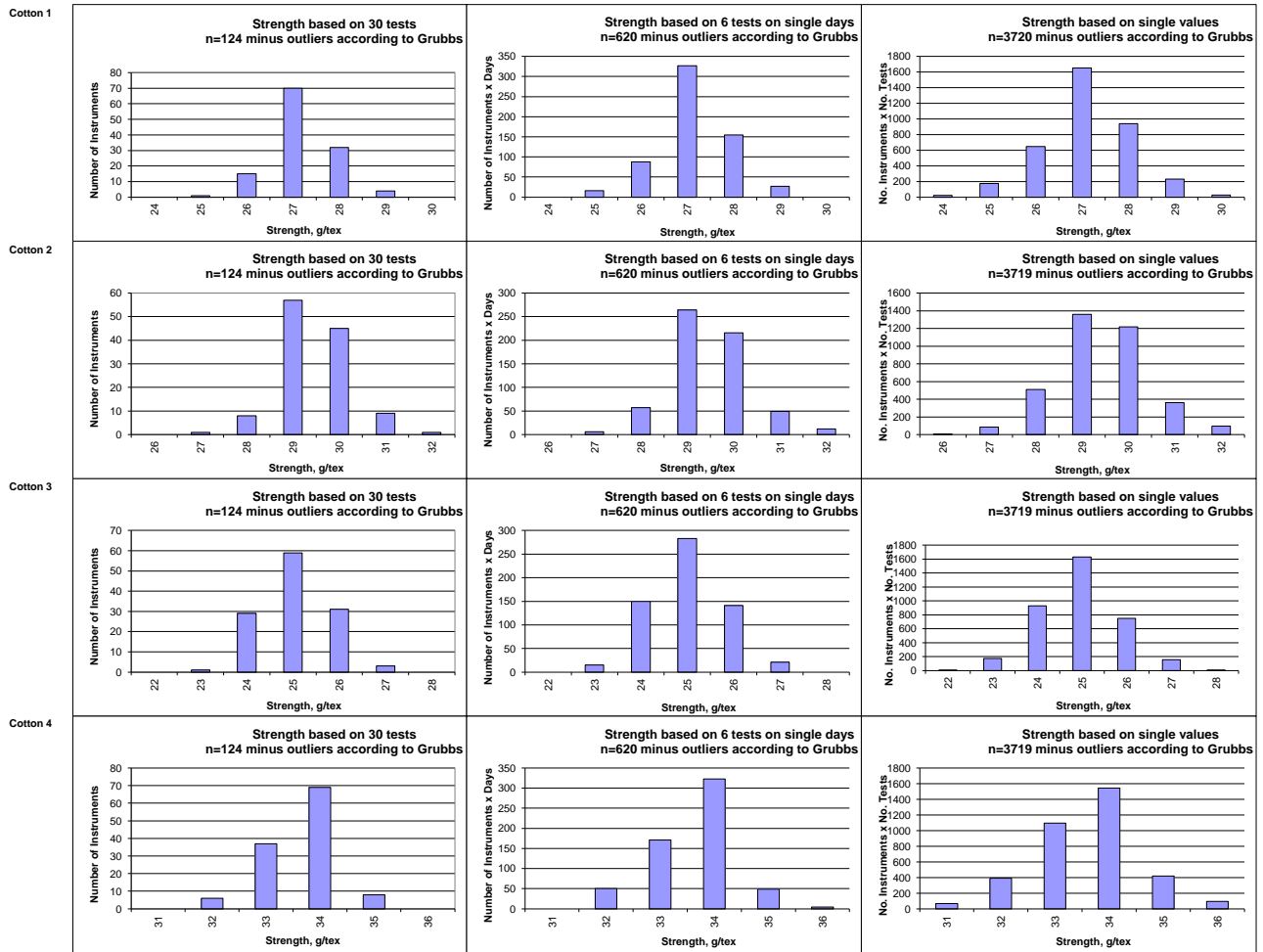
Color +b							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			8.644	14.819	9.333	12.855	
Reference Values for Evaluation			8.644	14.819	9.333	12.855	
Number Of Instruments			122	122	122	122	<b>122</b>
Inter-Instrument Variation	based on 30 tests	SD	0.202	0.377	0.229	0.367	<b>0.294</b>
		CV %	2.3	2.5	2.5	2.9	<b>2.5</b>
		SD	0.225	0.389	0.235	0.383	<b>0.308</b>
	based on 6 tests	CV %	2.6	2.6	2.5	3.0	<b>2.7</b>
		SD	0.257	0.410	0.258	0.395	<b>0.330</b>
		CV %	3.0	2.8	2.8	3.1	<b>2.9</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.075	0.089	0.070	0.087	<b>0.080</b>
		CV %	0.9	0.6	0.7	0.7	<b>0.7</b>
	between single tests on one day	SD	0.096	0.117	0.089	0.111	<b>0.103</b>
		CV %	1.1	0.8	1.0	0.9	<b>0.9</b>
	between all tests on different days	SD	0.117	0.152	0.113	0.143	<b>0.131</b>
		CV %	1.4	1.0	1.2	1.1	<b>1.2</b>

Test Result Distributions  
Micronaire



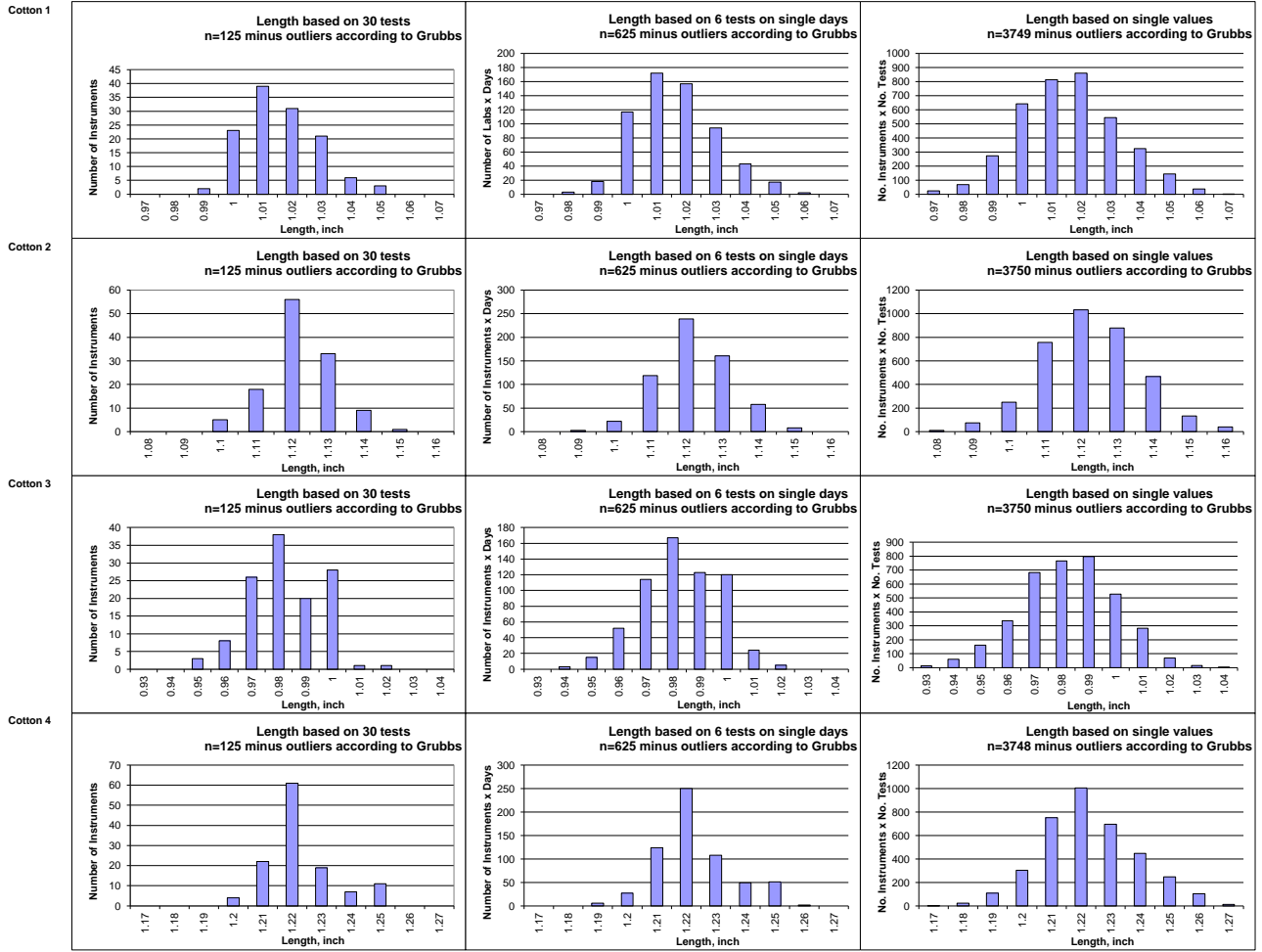
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)  
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Strength



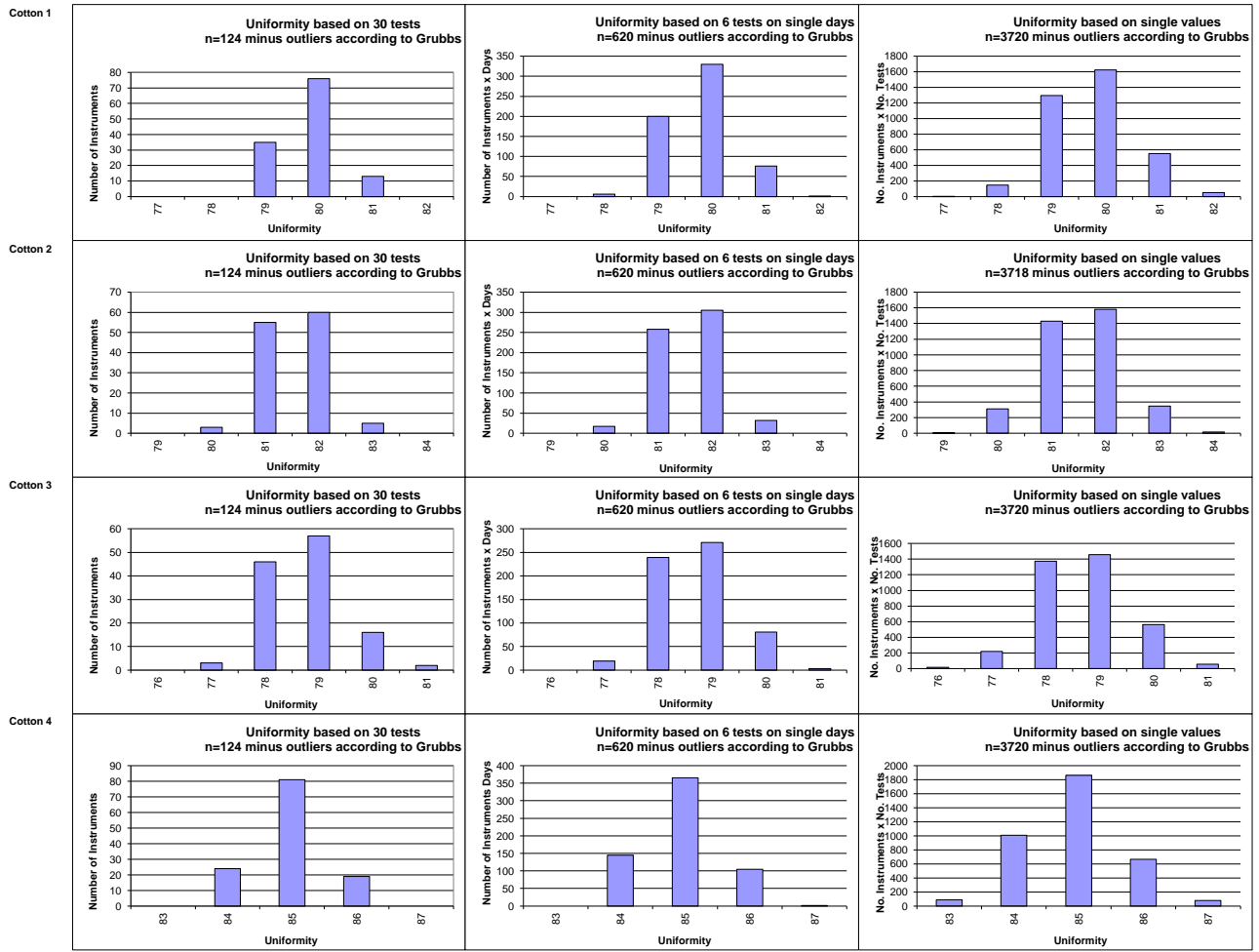
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method) (classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Length



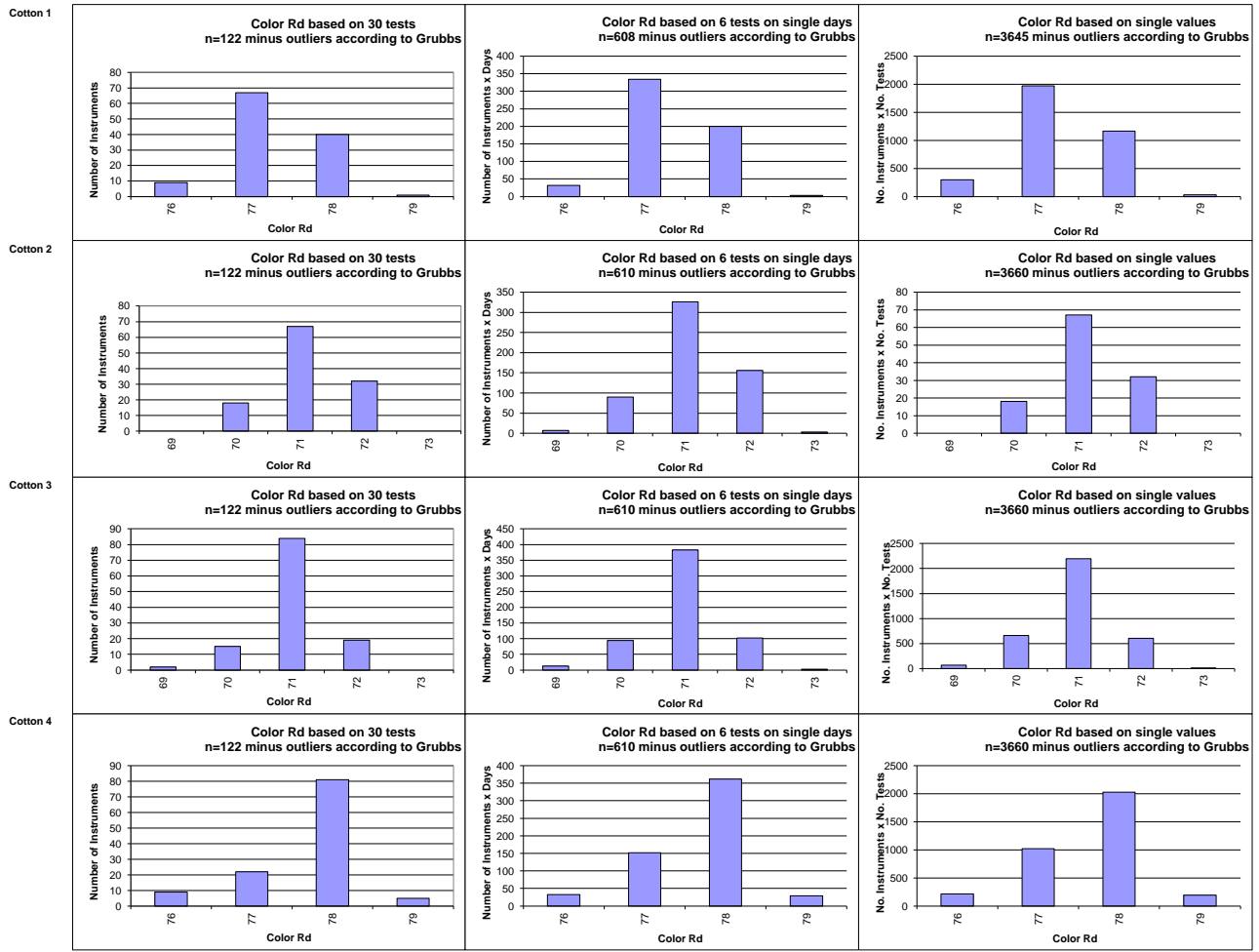
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method) (classes are defined as > lower limit and <= upper limit)

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)

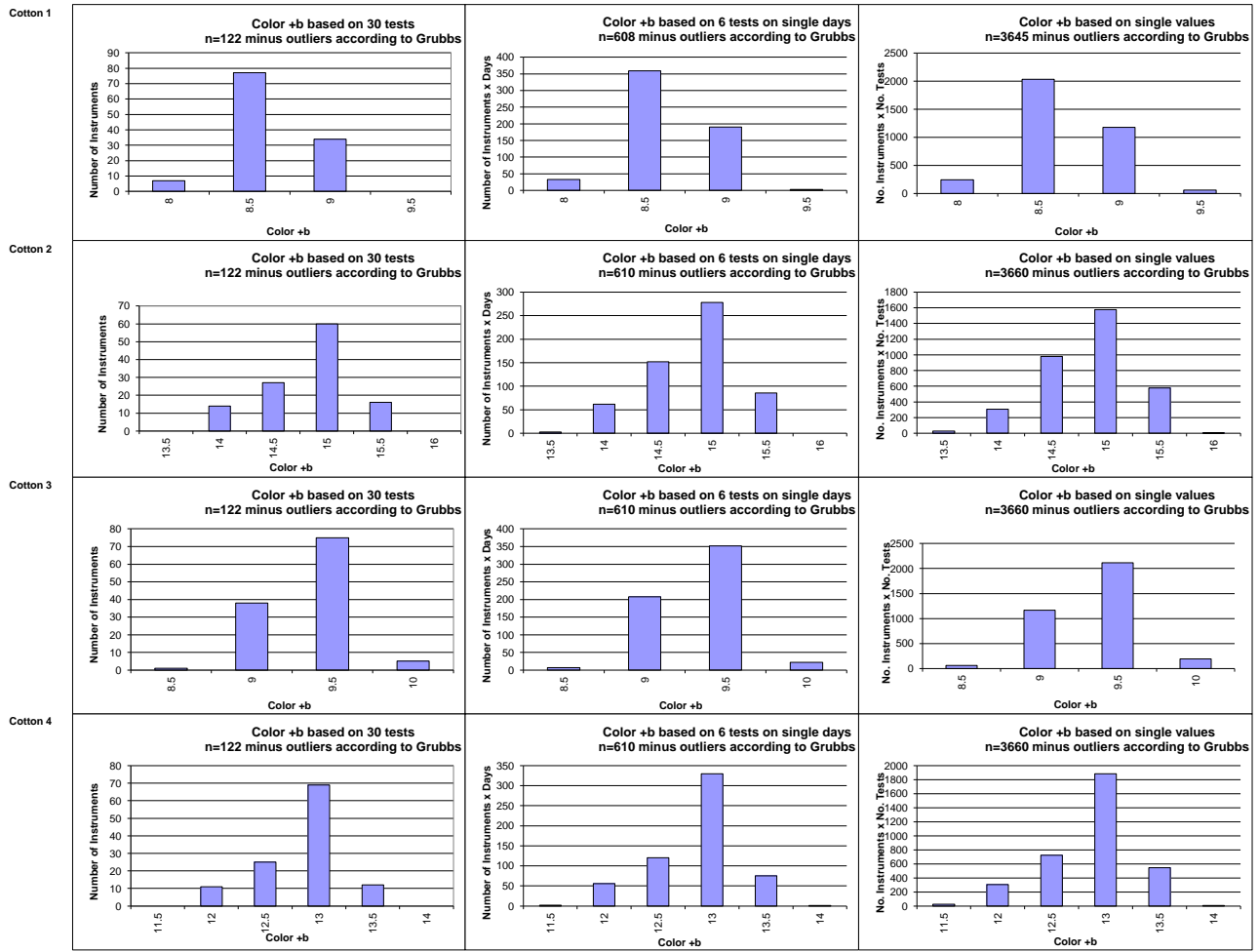
Test Result Distributions  
Color Rd



(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

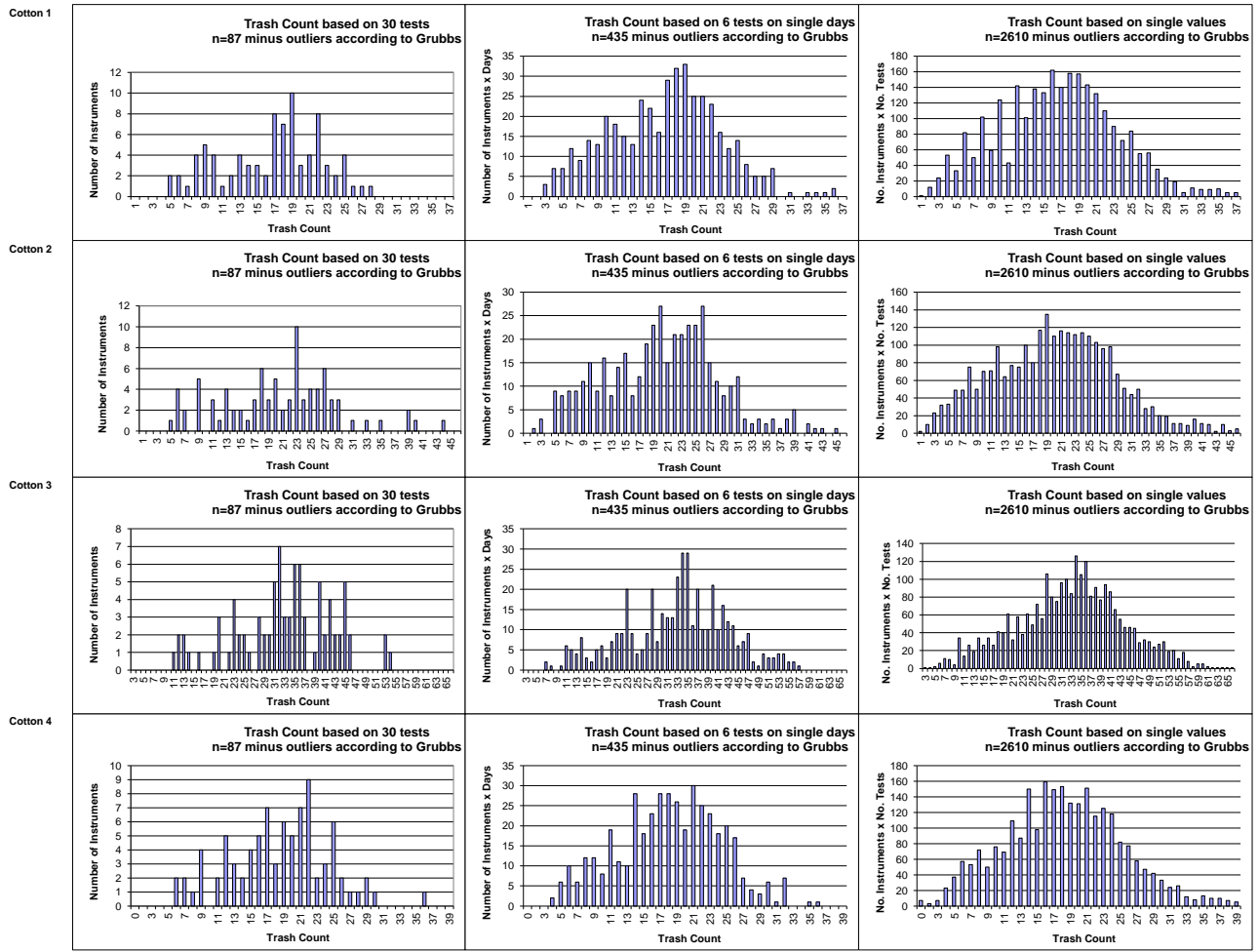
Trash Count							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			16.73	20.54	32.95	18.42	
Reference Values for Evaluation			16.73	20.54	32.95	18.42	
Number Of Instruments			87	87	87	87	<b>87</b>
Inter-Instrument Variation	based on 30 tests	SD	5.70	8.28	9.69	6.02	<b>7.43</b>
		CV %	34.0	40.3	29.4	32.7	<b>34.1</b>
		SD	6.37	8.17	10.18	6.32	<b>7.76</b>
	based on 6 tests	CV %	38.1	39.8	30.9	34.3	<b>35.8</b>
		SD	6.76	8.64	10.96	7.05	<b>8.35</b>
		CV %	40.4	42.1	33.3	38.3	<b>38.5</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	1.68	1.93	2.67	1.69	<b>1.99</b>
		CV %	10.0	9.4	8.1	9.2	<b>9.2</b>
	between single tests on one day	SD	2.39	2.64	3.66	2.51	<b>2.80</b>
		CV %	14.3	12.9	11.1	13.6	<b>13.0</b>
	between all tests on different days	SD	3.08	3.32	4.46	3.39	<b>3.56</b>
		CV %	18.4	16.2	13.5	18.4	<b>16.6</b>

Trash Area							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			0.171	0.170	0.338	0.222	
Reference Values for Evaluation			0.171	0.170	0.338	0.222	
Number Of Instruments			87	87	87	87	<b>87</b>
Inter-Instrument Variation	based on 30 tests	SD	0.043	0.053	0.081	0.060	<b>0.059</b>
		CV %	25.4	31.2	23.9	27.0	<b>26.9</b>
		SD	0.049	0.056	0.084	0.064	<b>0.063</b>
	based on 6 tests	CV %	28.4	32.6	24.9	28.6	<b>28.6</b>
		SD	0.060	0.063	0.102	0.078	<b>0.076</b>
		CV %	34.9	36.9	30.3	34.9	<b>34.3</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.024	0.026	0.038	0.033	<b>0.030</b>
		CV %	14.2	15.5	11.3	14.8	<b>13.9</b>
	between single tests on one day	SD	0.040	0.033	0.054	0.051	<b>0.044</b>
		CV %	23.4	19.2	15.9	23.0	<b>20.4</b>
	between all tests on different days	SD	0.047	0.041	0.069	0.059	<b>0.054</b>
		CV %	27.5	24.3	20.6	26.7	<b>24.8</b>

Maturity							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			87.75	82.44	83.44	85.25	
Reference Values for Evaluation			87.75	82.44	83.44	85.25	
Number Of Instruments			89	89	89	89	<b>89</b>
Inter-Instrument Variation	based on 30 tests	SD	1.57	2.81	1.76	2.03	<b>2.04</b>
		CV %	1.8	3.4	2.1	2.4	<b>2.4</b>
		SD	1.40	2.76	1.74	2.01	<b>1.98</b>
	based on 6 tests	CV %	1.6	3.3	2.1	2.4	<b>2.3</b>
		SD	1.59	2.83	1.72	2.02	<b>2.04</b>
		CV %	1.8	3.4	2.1	2.4	<b>2.4</b>
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.18	0.15	0.19	0.18	<b>0.18</b>
		CV %	0.2	0.2	0.2	0.2	<b>0.2</b>
	between single tests on one day	SD	0.27	0.29	0.31	0.35	<b>0.30</b>
		CV %	0.3	0.3	0.4	0.4	<b>0.4</b>
	between all tests on different days	SD	0.41	0.38	0.43	0.41	<b>0.41</b>
		CV %	0.5	0.5	0.5	0.5	<b>0.5</b>

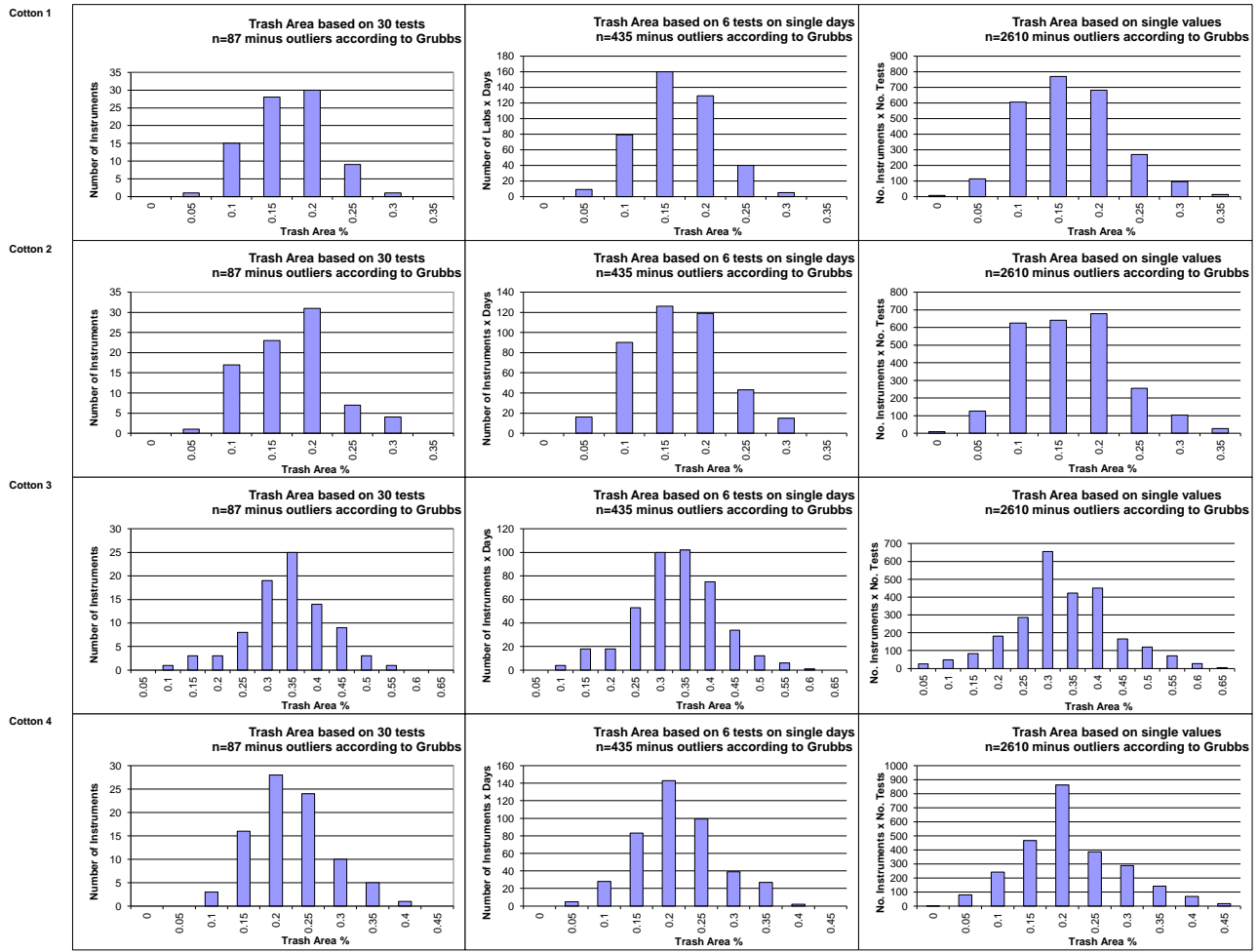
SFI							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
<b>Average of Instruments (Grubbs)</b>			11.93	9.49	13.38	6.62	
<b>Reference Values for Evaluation</b>			11.93	9.49	13.38	6.62	
<b>Number Of Instruments</b>			99	99	99	99	<b>99</b>
<b>Inter-Instrument Variation</b>	based on 30 tests	SD	0.81	0.67	1.10	0.64	<b>0.80</b>
		CV %	6.8	7.0	8.2	9.6	<b>7.9</b>
	based on 6 tests	SD	0.89	0.68	1.16	0.65	<b>0.85</b>
		CV %	7.4	7.2	8.7	9.9	<b>8.3</b>
	based on single tests	SD	1.03	0.80	1.34	0.70	<b>0.97</b>
		CV %	8.6	8.4	10.0	10.6	<b>9.4</b>
<b>Typical within-instrument Variation (Median)</b>	between different days	SD	0.29	0.22	0.34	0.14	<b>0.25</b>
		CV %	2.4	2.3	2.5	2.1	<b>2.3</b>
	between single tests on one day	SD	0.52	0.41	0.65	0.24	<b>0.46</b>
		CV %	4.4	4.4	4.8	3.6	<b>4.3</b>
	between all tests on different days	SD	0.60	0.46	0.75	0.26	<b>0.52</b>
		CV %	5.1	4.9	5.6	3.9	<b>4.9</b>

Test Result Distributions  
Trash Count



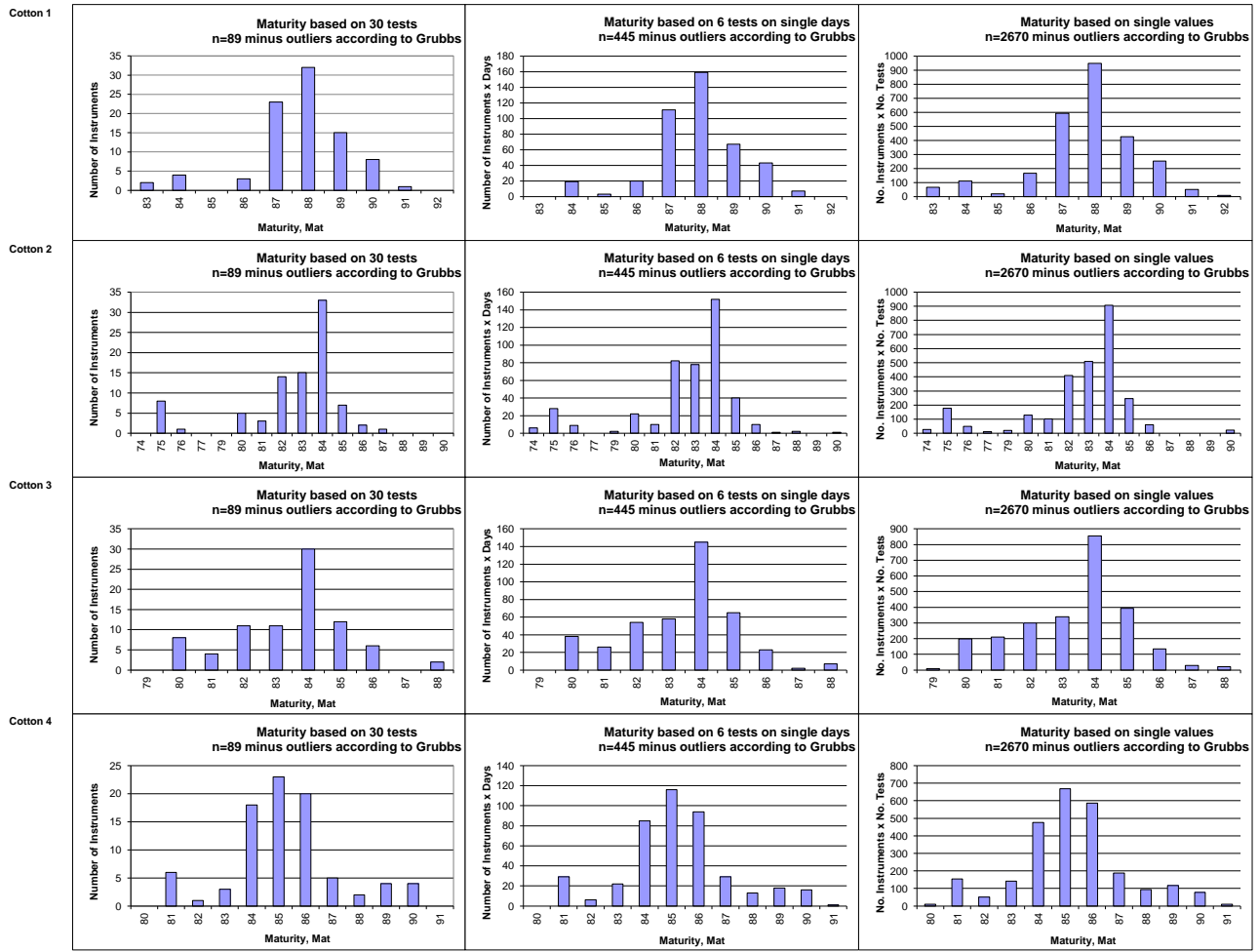
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
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Test Result Distributions  
Trash Area



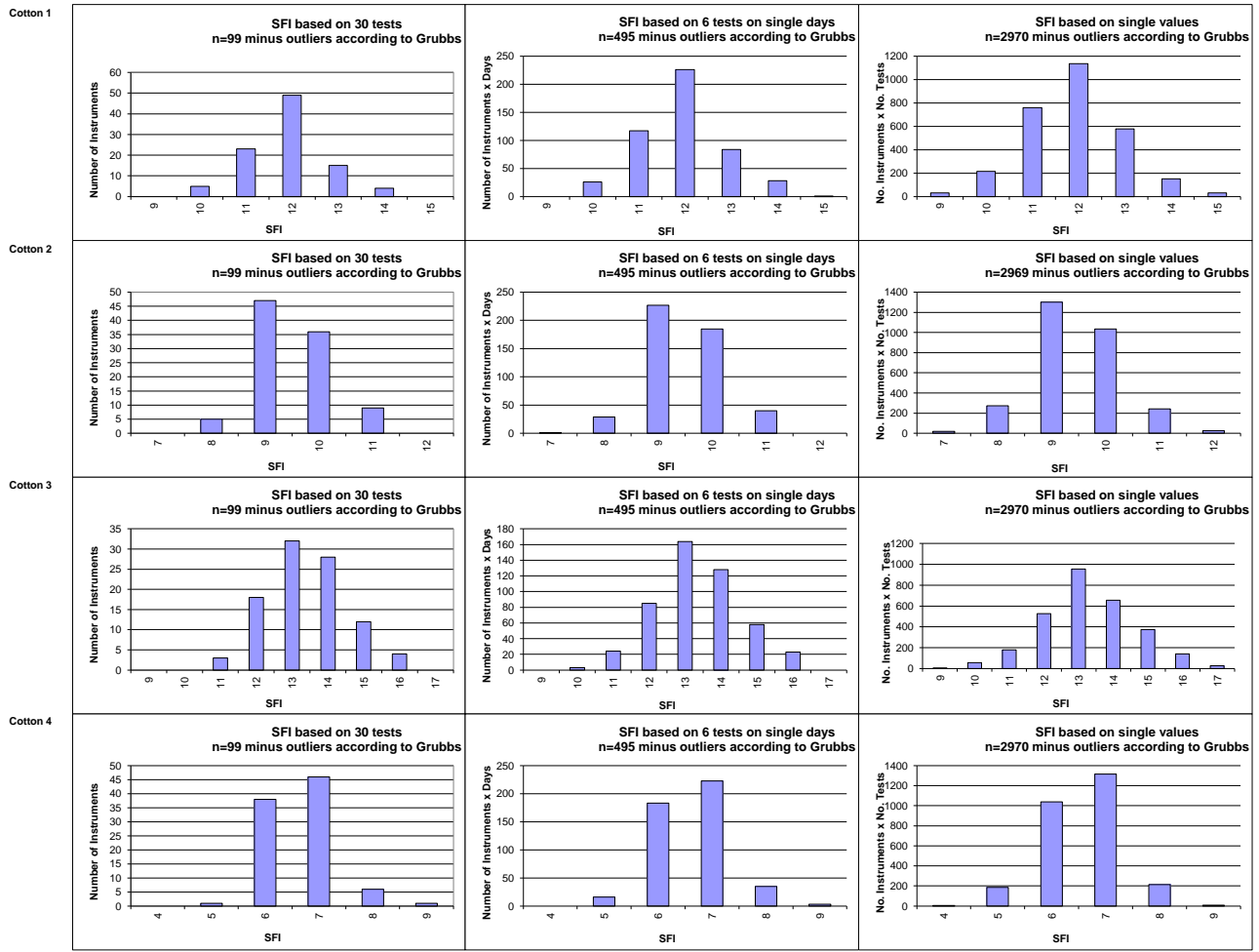
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method) (classes are defined as > lower limit and <= upper limit)

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 - 2 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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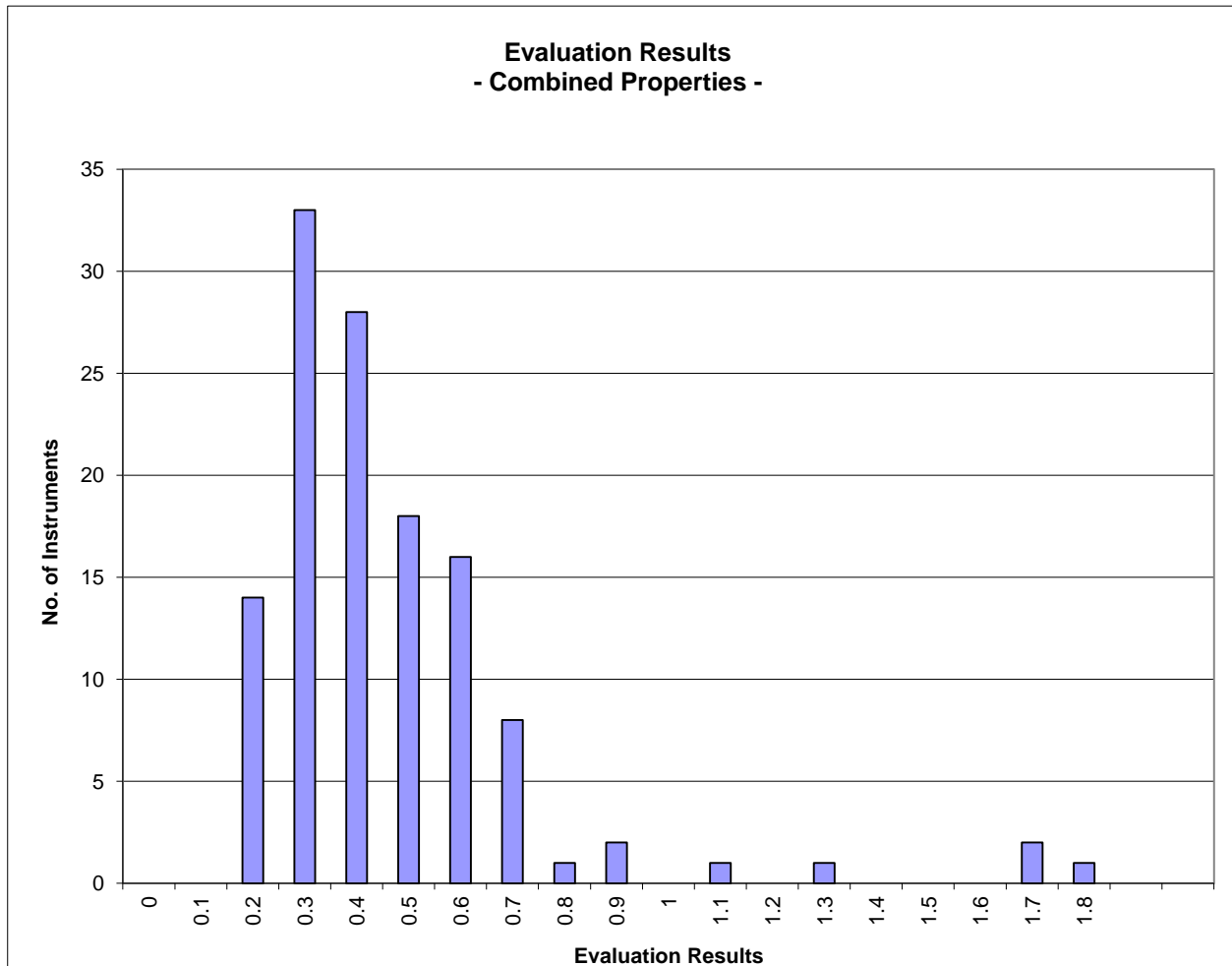
Instrument Evaluation

- Graph of Combined Properties -

According to ICAC CSITC Task Force Recommendations

Global - Round Trial 2015 - 2

		<b>Evaluation Combined Prop.</b>
<b>Statistics</b>	Average	0.46
	Median	0.39
	Best Instrument	0.18
	Worst Instrument	1.77

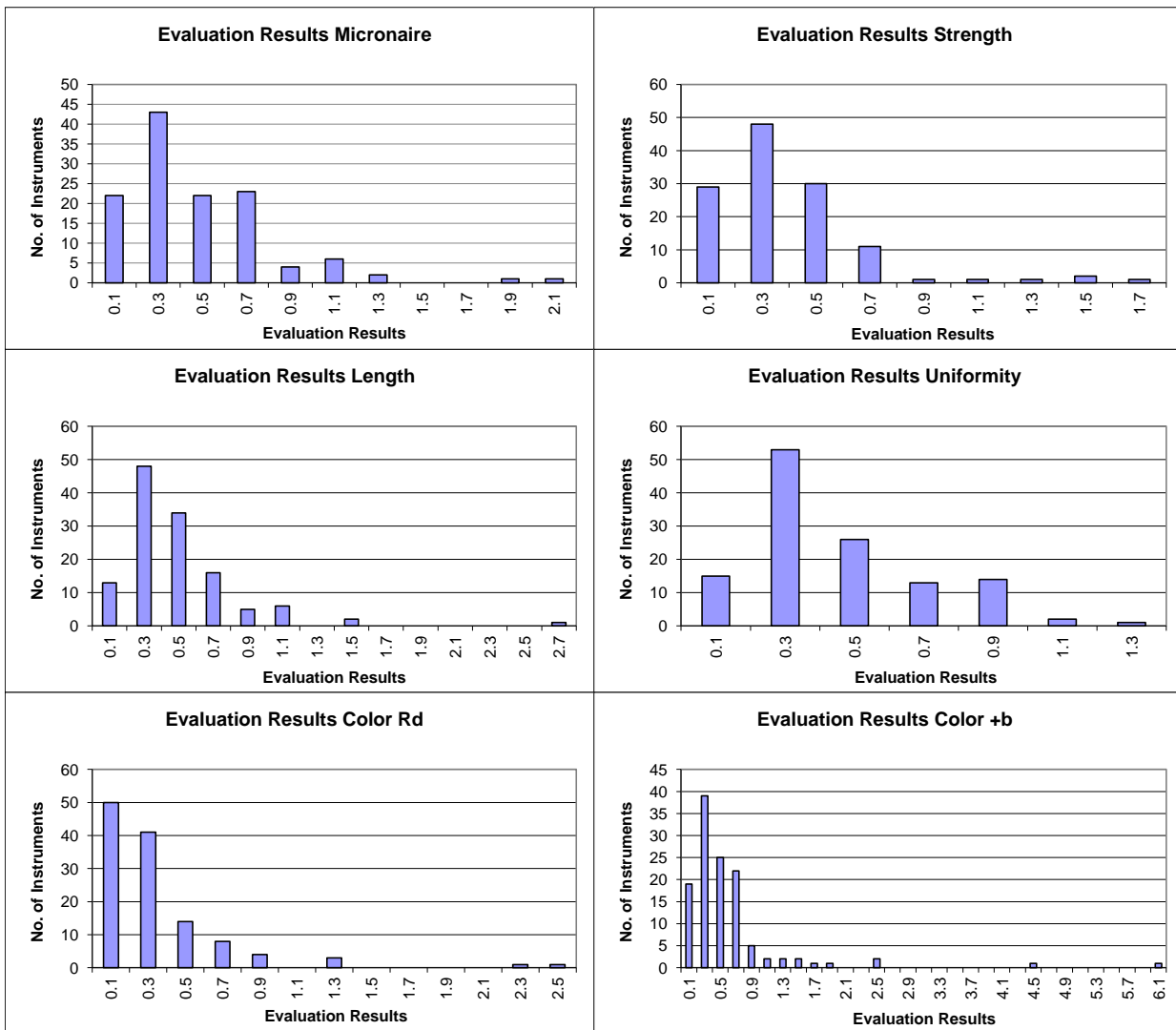


x-Axis shows midpoints of classes

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 - 2

	Evaluation Micronaire	Evaluation Strength	Evaluation Length	Evaluation Uniformity	Evaluation Color Rd	Evaluation Color +b
<b>Statistics</b>	<b>Average</b>	0.48	0.40	0.48	0.44	0.35
	<b>Median</b>	0.38	0.33	0.41	0.38	0.23
	<b>Best Instr.</b>	0.08	0.11	0.07	0.08	0.04
	<b>Worst Instr.</b>	2.03	1.64	2.77	1.28	6.10



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 - 2  
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	98.8	97.0	97.8	100.0	95.5	85.7
Completely within limits	97.6	91.9	93.6	100.0	91.0	68.0
% of Instruments $\geq 75\%$ within limits	98.4	96.8	98.4	100.0	95.9	82.8
% of Instruments $\geq 50\%$ within limits	99.2	99.2	99.2	100.0	97.5	94.3

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>
GL152-001-11	100	100	100	100	100	100
GL152-002-01	100	100	100	100	100	100
GL152-002-02	100	100	100	100	100	100
GL152-004-01	100	100	100	100	100	100
GL152-004-02	100	100	100	100	100	100
GL152-005-01	100	100	100	100	100	25
GL152-005-02	100	100	100	100	100	100
GL152-006-01	100	100	100	100	100	100
GL152-006-04	100	100	100	100	100	100
GL152-006-05	100	100	100	100	100	100
GL152-007-60	100	100	100	100	100	100
GL152-007-61	100	100	100	100	100	100
GL152-009-28	100	100	100	100	100	75
GL152-009-29	100	100	100	100	100	100
GL152-010-01	100	100	100	100	100	100
GL152-011-01	100	75	100	100	100	25
GL152-011-02	100	100	100	100	100	50
GL152-011-03	100	100	100	100	100	100
GL152-012-01	100	100	100	100	100	50
GL152-013-01	100	100	100	100	75	50
GL152-014-01	100	100	100	100	100	100
GL152-016-01	100	100	75	100	100	75
GL152-017-05	100		25			
GL152-018-05	100	50	100	100	100	100
GL152-019-01	100	100	100	100	100	50
GL152-020-01	100	100	100	100	100	100
GL152-021-03	100	100	100	100	100	100
GL152-021-04	100	100	100	100	100	100
GL152-021-06	100	100	100	100	100	100
GL152-022-01	100	75	100	100	75	75
GL152-023-01	100	100	100	100	100	100
GL152-023-03	100	100	100	100	100	75
GL152-025-01	100	50	100	100	100	100
GL152-028-01	100	100	100	100	100	100

GL152-030-01	100	100	100	100	100	100
GL152-030-02	100	100	100	100	100	100
GL152-030-03	100	100	100	100	100	100
GL152-030-04	100	100	100	100	100	100
GL152-031-01	100	100	100	100	100	100
GL152-032-01	100	100	100	100	100	100
GL152-034-01	100	100	75	100	100	75
GL152-035-07	100	100	100	100	100	100
GL152-035-08	100	100	100	100	100	100
GL152-035-09	100	100	100	100	100	100
GL152-035-10	100	100	100	100	100	100
GL152-035-11	100	100	100	100	100	100
GL152-035-12	100	100	100	100	100	100
GL152-036-02		100	100	100		
GL152-037-02	100	100	100	100	100	75
GL152-038-01	100	100	100	100	100	75
GL152-038-02	100	100	100	100	100	75
GL152-039-01	100	100	100	100	100	100
GL152-039-02	100	100	100	100	100	50
GL152-040-01	100	100	100	100	100	100
GL152-042-01	100	75	50	100	0	100
GL152-043-01	100	100	100	100	100	100
GL152-044-04	100	100	100	100	100	100
GL152-045-01	100	100	100	100	100	75
GL152-045-02	100	100	100	100	100	75
GL152-046-01	100	100	75	100	0	75
GL152-047-03	100	100	100	100	100	100
GL152-049-03	100	100	100	100	100	100
GL152-050-01	100	100	100	100	100	75
GL152-050-02	100	100	100	100	100	50
GL152-051-01	100	75	100	100	75	75
GL152-052-01	75	100	100	100	100	100
GL152-053-03	100	100	100	100	100	100
GL152-054-03	25	100	100	100	50	25
GL152-055-03	100	100	100	100	100	100
GL152-056-06	100	100	100	100	100	50
GL152-057-01	100	100	100	100	100	100
GL152-058-01	50	100	100	100	100	100
GL152-059-10	100	100	100	100	100	100
GL152-059-29	100	100	100	100	100	100
GL152-060-01	100	100	100	100	100	100
GL152-060-05	100	100	100	100	100	75
GL152-060-07	100	100	100	100	100	100
GL152-061-01	100	100	100	100	100	50
GL152-062-01	100	100	100	100	100	0
GL152-063-01	100	100	100	100	100	100
GL152-064-01	100	100	100	100	100	75
GL152-065-06	100	100	100	100	100	100
GL152-065-07	100	100	100	100	100	100
GL152-065-08	100	100	100	100	100	100
GL152-068-01	100	100	100	100	100	100
GL152-069-23	100	75	100	100	100	0
GL152-070-01	100	100	100	100	100	100
GL152-070-02	100	100	100	100	100	100
GL152-071-01	100	75	100	100	75	50

GL152-072-02	100	100	100	100	100	100
GL152-073-01	100	100	100	100	0	0
GL152-074-01	100	25	75	100	100	100
GL152-075-01	100	100	100	100	50	100
GL152-077-01	100	100	100	100	100	100
GL152-078-04	100	100	100	100	100	100
GL152-078-05	100	100	100	100	100	75
GL152-079-04	100	100	100	100	100	100
GL152-081-01	100	100	100	100	100	100
GL152-082-14	100	100	100	100	100	100
GL152-083-02	100	100	100	100	100	100
GL152-084-01	100	100	100	100	100	100
GL152-084-02	100	100	100	100	100	100
GL152-084-03	100	100	100	100	100	100
GL152-084-04	100	100	100	100	100	100
GL152-085-01	100	100	100	100	100	50
GL152-086-01	100	100	100	100	100	100
GL152-087-01	100	100	100	100	100	50
GL152-089-02	100	100	100	100	100	100
GL152-089-04	100	100	100	100	100	25
GL152-089-07	100	100	100	100	100	50
GL152-089-08	100	100	75	100	100	100
GL152-090-01	100	100	100	100	100	100
GL152-090-02	100	100	100	100	100	100
GL152-090-04	100	100	100	100	100	100
GL152-092-01	100	100	100	100	100	100
GL152-093-01	100	100	100	100	100	75
GL152-093-02	100	100	100	100	100	50
GL152-095-01	100	100	100	100	100	75
GL152-095-02	100	100	100	100	100	100
GL152-096-04	100	100	100	100	75	100
GL152-097-01	100	100	100	100	100	50
GL152-098-01	100	100	100	100	100	100
GL152-099-01	100	50	75	100		
GL152-100-02	100	100	100	100	75	100
GL152-100-03	100	100	100	100	100	100

## 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	98.2	93.8	95.3	98.3	93.2	82.3
% of Instruments 100% within limits	63.7	38.7	32.0	58.1	60.7	23.8
% of Instruments ≥95% within limits	91.9	67.7	74.4	88.7	79.5	46.7
% of Instruments ≥75% within limits	98.4	94.4	97.6	100.0	91.0	74.6
% of Instruments ≥65% within limits	98.4	96.0	98.4	100.0	95.1	84.4
% of Instruments ≥50% within limits	100.0	98.4	99.2	100.0	96.7	89.3

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>
GL152-001-11	98	98	99	100	100	83
GL152-002-01	100	100	98	98	98	87
GL152-002-02	100	100	100	98	100	67
GL152-004-01	100	100	100	100	100	100
GL152-004-02	100	98	97	100	100	100
GL152-005-01	98	93	97	98	100	26
GL152-005-02	96	83	88	99	97	99
GL152-006-01	100	100	100	100	100	100
GL152-006-04	100	100	100	100	100	100
GL152-006-05	100	100	99	100	100	100
GL152-007-60	100	97	100	100	100	100
GL152-007-61	99	99	99	100	100	100
GL152-009-28	100	98	100	100	100	88
GL152-009-29	100	97	99	100	100	100
GL152-010-01	100	98	99	99	100	97
GL152-011-01	99	83	79	84	86	22
GL152-011-02	96	93	98	83	81	31
GL152-011-03	96	97	99	100	100	83
GL152-012-01	100	100	93	100	97	58
GL152-013-01	92	89	98	98	66	42
GL152-014-01	90	92	98	99	100	97
GL152-016-01	100	100	89	100	100	86
GL152-017-05	95		38			
GL152-018-05	99	48	87	100	99	98
GL152-019-01	100	100	100	100	100	68
GL152-020-01	100	100	98	92	99	100
GL152-021-03	100	100	98	100	100	100
GL152-021-04	100	100	98	100	100	100
GL152-021-06	100	100	100	100	100	100
GL152-022-01	100	73	95	93	75	43

GL152-023-01	99	100	100	100	100	99
GL152-023-03	100	100	99	99	100	78
GL152-025-01	100	56	99	99	98	85
GL152-028-01	100	98	100	100	91	100
GL152-030-01	100	100	98	100	100	99
GL152-030-02	100	100	98	98	100	96
GL152-030-03	100	100	99	99	100	92
GL152-030-04	99	99	95	99	100	91
GL152-031-01	100	98	100	100	99	93
GL152-032-01	100	99	100	98	99	83
GL152-034-01	94	100	85	100	100	77
GL152-035-07	100	100	99	100	99	100
GL152-035-08	100	98	100	100	100	100
GL152-035-09	100	98	100	100	100	96
GL152-035-10	100	98	100	100	100	100
GL152-035-11	100	98	100	100	100	100
GL152-035-12	100	99	98	100	100	100
GL152-036-02		57	94	93		
GL152-037-02	100	100	98	100	100	68
GL152-038-01	100	100	93	100	100	81
GL152-038-02	100	99	93	100	100	84
GL152-039-01	99	98	86	100	98	88
GL152-039-02	89	93	100	99	80	43
GL152-040-01	100	100	100	100	100	99
GL152-042-01	100	82	52	81	4	71
GL152-043-01	100	94	100	100	99	98
GL152-044-04	100	100	93	95	100	100
GL152-045-01	100	93	92	100	100	88
GL152-045-02	100	96	90	98	100	88
GL152-046-01	99	78	85	100	19	86
GL152-047-03	99	87	97	100	100	98
GL152-049-03	100	100	98	100	100	98
GL152-050-01	100	99	100	100	99	70
GL152-050-02	100	100	96	100	99	51
GL152-051-01	95	78	88	98	63	68
GL152-052-01	83	98	90	99	70	98
GL152-053-03	100	98	91	96	100	80
GL152-054-03	58	79	97	84	49	9
GL152-055-03	99	90	100	99	100	99
GL152-056-06	100	100	100	100	100	67
GL152-057-01	100	100	99	100	100	99
GL152-058-01	62	82	100	99	100	100
GL152-059-10	100	85	95	99	98	88
GL152-059-29	100	100	97	99	100	97
GL152-060-01	100	100	98	100	100	100
GL152-060-05	98	100	93	97	100	73
GL152-060-07	99	100	89	100	100	97
GL152-061-01	100	100	100	100	100	65
GL152-062-01	100	96	99	97	100	5
GL152-063-01	99	100	94	100	99	98
GL152-064-01	100	100	100	100	100	75
GL152-065-06	98	99	99	100	100	100
GL152-065-07	99	98	99	100	100	91
GL152-065-08	96	99	100	100	100	98
GL152-068-01	98	94	99	100	89	79



GL152-069-23	100	80	95	100	68	35
GL152-070-01	100	99	100	100	100	99
GL152-070-02	100	100	100	99	100	100
GL152-071-01	99	85	100	100	80	42
GL152-072-02	98	100	100	100	100	100
GL152-073-01	82	94	90	93	5	1
GL152-074-01	100	32	93	98	79	76
GL152-075-01	98	88	95	99	63	90
GL152-077-01	98	100	96	100	87	69
GL152-078-04	98	98	98	100	100	84
GL152-078-05	100	93	90	99	100	77
GL152-079-04	99	98	83	93	98	94
GL152-081-01	100	99	98	99	100	66
GL152-082-14	100	100	100	100	100	100
GL152-083-02	99	88	98	100	88	99
GL152-084-01	100	100	100	100	100	100
GL152-084-02	100	100	100	100	100	100
GL152-084-03	100	93	98	84	100	89
GL152-084-04	100	91	97	91	99	89
GL152-085-01	99	100	95	100	97	55
GL152-086-01	100	98	100	100	100	98
GL152-087-01	100	95	79	98	88	54
GL152-089-02	100	89	91	98	97	96
GL152-089-04	93	92	93	94	77	23
GL152-089-07	99	94	96	99	95	42
GL152-089-08	99	71	77	93	99	94
GL152-090-01	100	98	99	100	83	93
GL152-090-02	98	98	98	99	100	99
GL152-090-04	100	100	96	98	99	98
GL152-092-01	100	90	87	96	100	95
GL152-093-01	100	100	99	100	100	66
GL152-093-02	100	100	100	100	98	58
GL152-095-01	100	100	100	100	100	75
GL152-095-02	100	100	100	100	100	99
GL152-096-04	100	100	100	91	75	100
GL152-097-01	97	93	98	100	73	50
GL152-098-01	100	96	98	98	100	100
GL152-099-01	93	50	75	98		
GL152-100-02	100	91	100	100	69	96
GL152-100-03	100	94	100	100	100	88