



International Cotton Advisory Committee



CSITC Global - Round Trial 2025 - 3 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
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Global - Round Trial 2025 - 3

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

Micronaire							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			4.255	4.134	4.971	4.506	
Reference Values for Evaluation			4.255	4.134	4.971	4.506	
Number Of Instruments			178	177	177	177	177
Inter-Instrument Variation	based on 30 tests	SD	0.055	0.053	0.049	0.069	0.056
		CV %	1.3	1.3	1.0	1.5	1.3
	based on 6 tests	SD	0.061	0.058	0.053	0.074	0.062
		CV %	1.4	1.4	1.1	1.6	1.4
	based on single tests	SD	0.068	0.066	0.063	0.082	0.070
		CV %	1.6	1.6	1.3	1.8	1.6
Typical within-instrument Variation (Median)	between different days	SD	0.021	0.020	0.020	0.023	0.021
	with each 6 tests	CV %	0.5	0.5	0.4	0.5	0.5
	between single tests	SD	0.034	0.033	0.033	0.037	0.034
	on one day	CV %	0.8	0.8	0.7	0.8	0.8
	between all tests	SD	0.038	0.038	0.039	0.045	0.040
	on different days	CV %	0.9	0.9	0.8	1.0	0.9

Strength							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			28.302	24.205	28.923	27.845	
Reference Values for Evaluation			28.302	24.205	28.923	27.845	
Number Of Instruments			178	177	177	177	177
Inter-Instrument Variation	based on 30 tests	SD	0.550	0.850	0.477	0.510	0.597
		CV %	1.9	3.5	1.6	1.8	2.2
	based on 6 tests	SD	0.626	0.903	0.516	0.602	0.662
		CV %	2.2	3.7	1.8	2.2	2.5
	based on single tests	SD	0.780	0.990	0.679	0.778	0.807
		CV %	2.8	4.1	2.3	2.8	3.0
Typical within-instrument Variation (Median)	between different days	SD	0.288	0.238	0.230	0.289	0.261
	with each 6 tests	CV %	1.0	1.0	0.8	1.0	1.0
	between single tests	SD	0.453	0.443	0.424	0.479	0.450
	on one day	CV %	1.6	1.8	1.5	1.7	1.7
	between all tests	SD	0.545	0.516	0.493	0.546	0.525
	on different days	CV %	1.9	2.1	1.7	2.0	1.9

Length							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			1.0248	0.9644	1.1775	1.1206	
Reference Values for Evaluation			1.0248	0.9644	1.1775	1.1206	
Number Of Instruments			178	177	177	177	177
Inter-Instrument Variation	based on 30 tests	SD	0.0116	0.0112	0.0091	0.0078	0.0099
		CV %	1.1	1.2	0.8	0.7	0.9
	based on 6 tests	SD	0.0127	0.0124	0.0107	0.0097	0.0114
		CV %	1.2	1.3	0.9	0.9	1.1
	based on single tests	SD	0.0151	0.0150	0.0143	0.0137	0.0146
		CV %	1.5	1.6	1.2	1.2	1.4
Typical within-instrument Variation (Median)	between different days	SD	0.0046	0.0047	0.0049	0.0048	0.0048
	with each 6 tests	CV %	0.5	0.5	0.4	0.4	0.4
	between single tests	SD	0.0089	0.0092	0.0098	0.0101	0.0095
	on one day	CV %	0.9	1.0	0.8	0.9	0.9
	between all tests	SD	0.0099	0.0104	0.0114	0.0115	0.0108
	on different days	CV %	1.0	1.1	1.0	1.0	1.0

Uniformity							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			79.685	78.026	81.858	82.426	
Reference Values for Evaluation			79.685	78.026	81.858	82.426	
Number Of Instruments			178	177	177	177	177
Inter-Instrument Variation	based on 30 tests	SD	0.474	0.469	0.371	0.381	0.424
		CV %	0.6	0.6	0.5	0.5	0.5
	based on 6 tests	SD	0.539	0.534	0.459	0.452	0.496
		CV %	0.7	0.7	0.6	0.5	0.6
	based on single tests	SD	0.679	0.681	0.629	0.619	0.652
		CV %	0.9	0.9	0.8	0.8	0.8
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.218	0.223	0.223	0.211	0.219
		CV %	0.3	0.3	0.3	0.3	0.3
	between single tests on one day	SD	0.431	0.447	0.447	0.455	0.445
		CV %	0.5	0.6	0.5	0.6	0.6
	between all tests on different days	SD	0.466	0.504	0.499	0.493	0.490
		CV %	0.6	0.6	0.6	0.6	0.6

Color Rd							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			76.335	76.854	76.996	77.457	
Reference Values for Evaluation			76.335	76.854	76.996	77.457	
Number Of Instruments			178	177	177	177	177
Inter-Instrument Variation	based on 30 tests	SD	0.521	0.468	0.460	0.596	0.511
		CV %	0.7	0.6	0.6	0.8	0.7
	based on 6 tests	SD	0.534	0.485	0.480	0.603	0.525
		CV %	0.7	0.6	0.6	0.8	0.7
	based on single tests	SD	0.559	0.511	0.509	0.633	0.553
		CV %	0.7	0.7	0.7	0.8	0.7
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.127	0.094	0.130	0.119	0.117
		CV %	0.2	0.1	0.2	0.2	0.2
	between single tests on one day	SD	0.110	0.117	0.108	0.115	0.112
		CV %	0.1	0.2	0.1	0.1	0.1
	between all tests on different days	SD	0.179	0.177	0.199	0.194	0.187
		CV %	0.2	0.2	0.3	0.3	0.2

Color +b							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			12.719	13.701	9.720	13.077	
Reference Values for Evaluation			12.719	13.701	9.720	13.077	
Number Of Instruments			178	177	177	177	177
Inter-Instrument Variation	based on 30 tests	SD	0.238	0.253	0.206	0.292	0.247
		CV %	1.9	1.8	2.1	2.2	2.0
	based on 6 tests	SD	0.251	0.241	0.229	0.307	0.257
		CV %	2.0	1.8	2.4	2.3	2.1
	based on single tests	SD	0.272	0.272	0.241	0.318	0.276
		CV %	2.1	2.0	2.5	2.4	2.3
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.085	0.077	0.071	0.069	0.076
		CV %	0.7	0.6	0.7	0.5	0.6
	between single tests on one day	SD	0.057	0.055	0.055	0.062	0.057
		CV %	0.5	0.4	0.6	0.5	0.5
	between all tests on different days	SD	0.120	0.107	0.107	0.123	0.114
		CV %	0.9	0.8	1.1	0.9	0.9

Optional Parameters

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

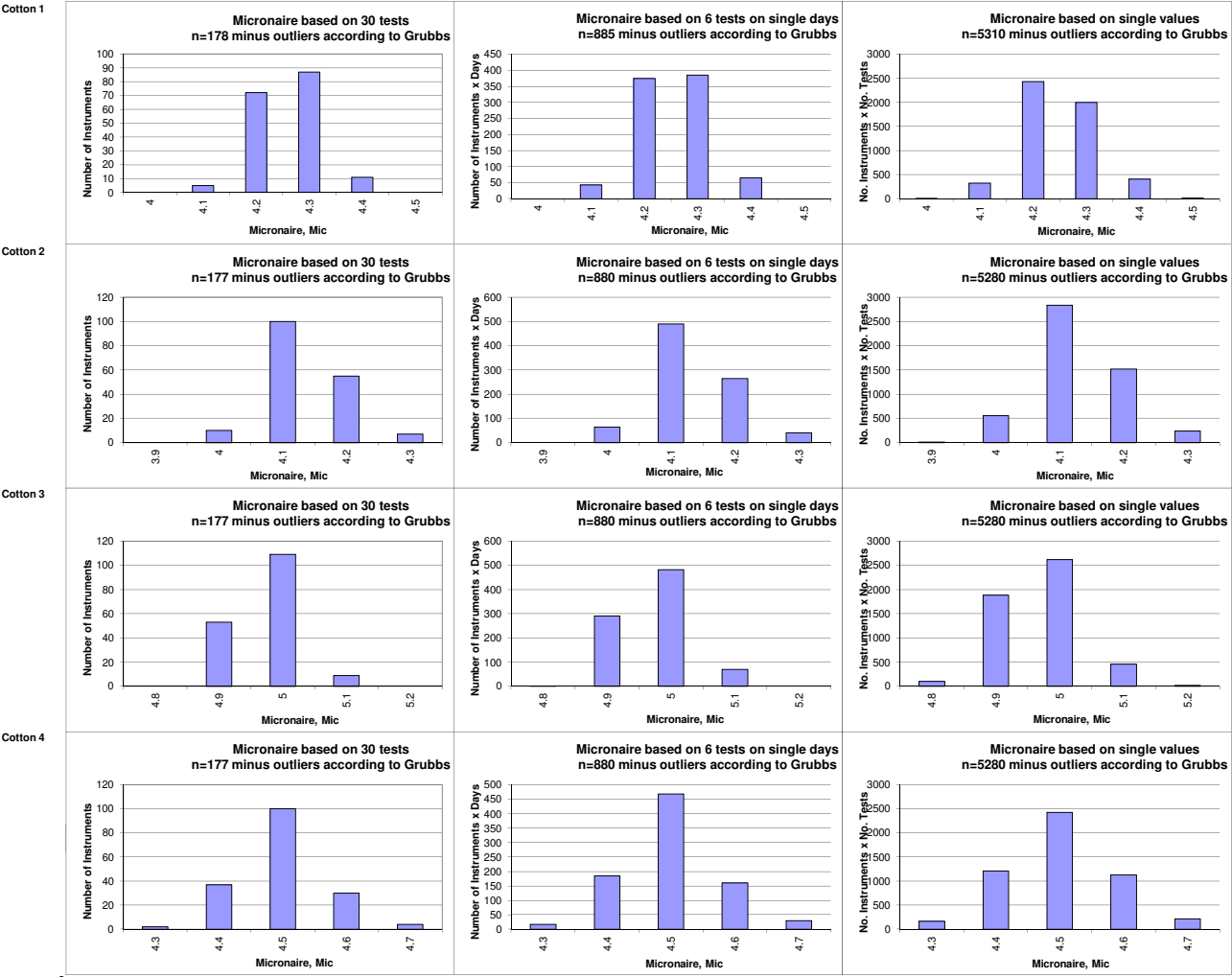
Trash Count							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			14.52	10.84	14.61	14.19	
Reference Values for Evaluation			14.52	10.84	14.61	14.19	
Number Of Instruments			114	113	113	113	113
Inter-Instrument Variation	based on 30 tests	SD	2.75	2.29	3.40	2.89	2.83
		CV %	18.9	21.2	23.3	20.4	20.9
	based on 6 tests	SD	3.22	2.92	3.89	3.54	3.39
		CV %	22.1	27.0	26.6	25.0	25.2
	based on single tests	SD	4.27	3.46	4.62	4.24	4.15
		CV %	29.4	31.9	31.6	29.9	30.7
Typical within-instrument Variation (Median)	between different days	SD	1.35	1.06	1.22	1.25	1.22
	with each 6 tests	CV %	9.3	9.7	8.4	8.8	9.1
	between single tests	SD	1.66	1.37	1.51	1.75	1.57
	on one day	CV %	11.4	12.6	10.3	12.3	11.7
	between all tests	SD	2.30	1.78	2.20	2.18	2.12
	on different days	CV %	15.8	16.4	15.1	15.4	15.7

Trash Area							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			0.148	0.104	0.135	0.161	
Reference Values for Evaluation			0.148	0.104	0.135	0.161	
Number Of Instruments			114	113	113	113	113
Inter-Instrument Variation	based on 30 tests	SD	0.033	0.018	0.035	0.040	0.032
		CV %	22.2	17.5	26.2	25.1	22.8
	based on 6 tests	SD	0.039	0.023	0.042	0.044	0.037
		CV %	26.1	22.3	31.3	27.2	26.8
	based on single tests	SD	0.046	0.030	0.047	0.052	0.044
		CV %	30.7	29.2	35.0	32.3	31.8
Typical within-instrument Variation (Median)	between different days	SD	0.018	0.010	0.015	0.018	0.015
	with each 6 tests	CV %	12.2	10.0	10.9	11.1	11.0
	between single tests	SD	0.020	0.014	0.014	0.019	0.017
	on one day	CV %	13.3	13.6	10.4	11.7	12.3
	between all tests	SD	0.032	0.020	0.023	0.033	0.027
	on different days	CV %	21.6	19.4	17.2	20.4	19.6

Maturity							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			85.99	85.57	87.32	85.34	
Reference Values for Evaluation			85.99	85.57	87.32	85.34	
Number Of Instruments			114	113	113	113	113
Inter-Instrument Variation	based on 30 tests	SD	0.78	0.72	0.65	0.79	0.74
		CV %	0.9	0.8	0.7	0.9	0.9
	based on 6 tests	SD	0.80	0.74	0.66	0.80	0.75
		CV %	0.9	0.9	0.8	0.9	0.9
	based on single tests	SD	0.82	0.86	0.70	0.91	0.82
		CV %	1.0	1.0	0.8	1.1	1.0
Typical within-instrument Variation (Median)	between different days	SD	0.09	0.07	0.07	0.09	0.08
	with each 6 tests	CV %	0.1	0.1	0.1	0.1	0.1
	between single tests	SD	0.16	0.13	0.15	0.16	0.15
	on one day	CV %	0.2	0.1	0.2	0.2	0.2
	between all tests	SD	0.23	0.18	0.18	0.24	0.21
	on different days	CV %	0.3	0.2	0.2	0.3	0.2

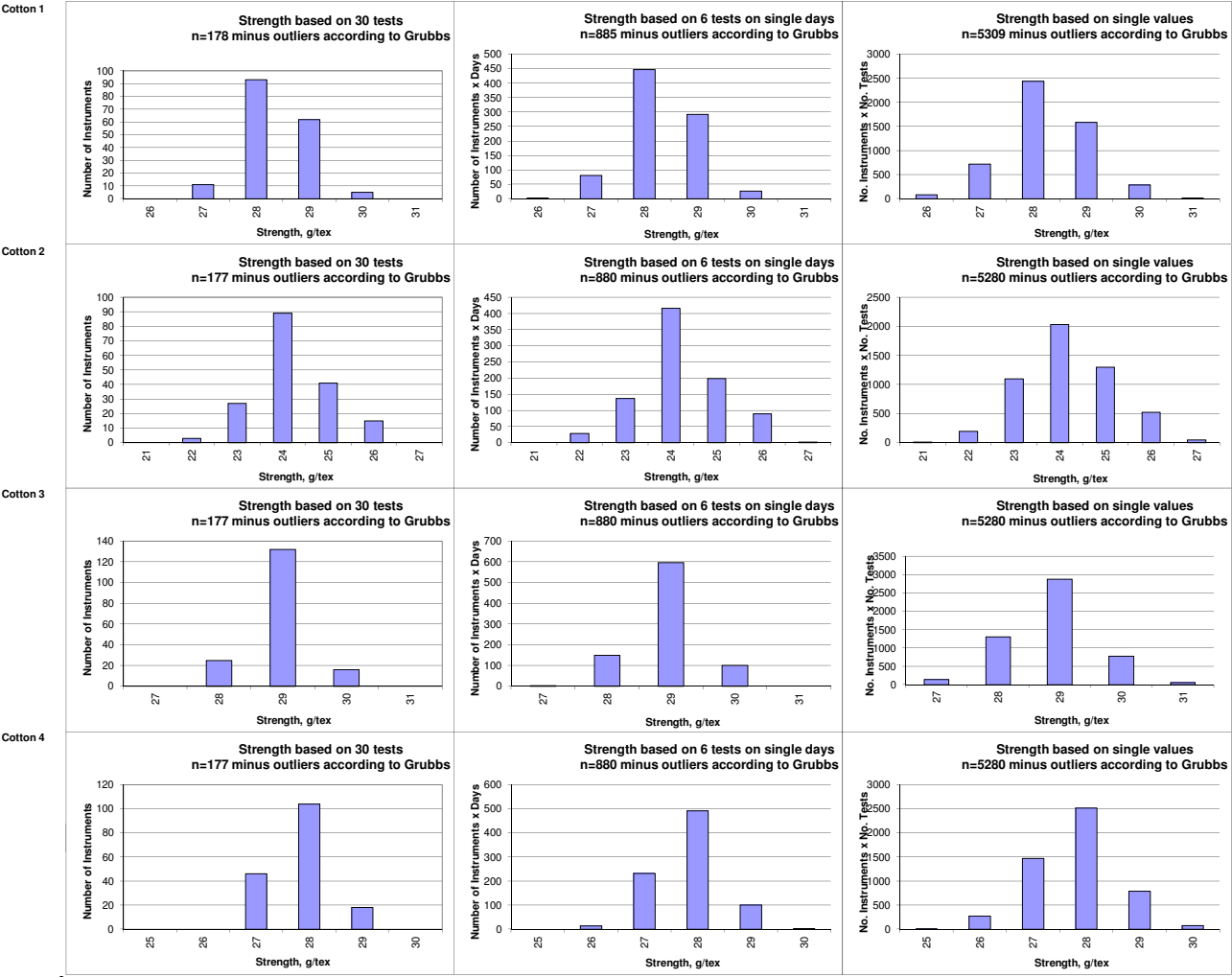
SFI						
			Cotton 1	Cotton 2	Cotton 3	Cotton 4
Average of Instruments (Grubbs)			12.62	16.58	8.83	8.92
Reference Values for Evaluation			12.62	16.58	8.83	8.92
Number Of Instruments			119	116	118	118
Inter-Instrument Variation	based on 30 tests	SD	1.06	1.54	0.67	0.58
		CV %	8.4	9.3	7.5	6.5
	based on 6 tests	SD	1.09	1.59	0.71	0.66
		CV %	8.6	9.6	8.1	7.5
	based on single tests	SD	1.38	1.91	0.81	0.85
		CV %	10.9	11.5	9.2	9.6
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.31	0.36	0.23	0.24
		CV %	2.4	2.2	2.6	2.7
	between single tests on one day	SD	0.65	0.90	0.39	0.51
		CV %	5.2	5.4	4.4	5.7
	between all tests on different days	SD	0.71	0.92	0.44	0.56
		CV %	5.6	5.5	5.0	6.3

Test Result Distributions
Micronaire



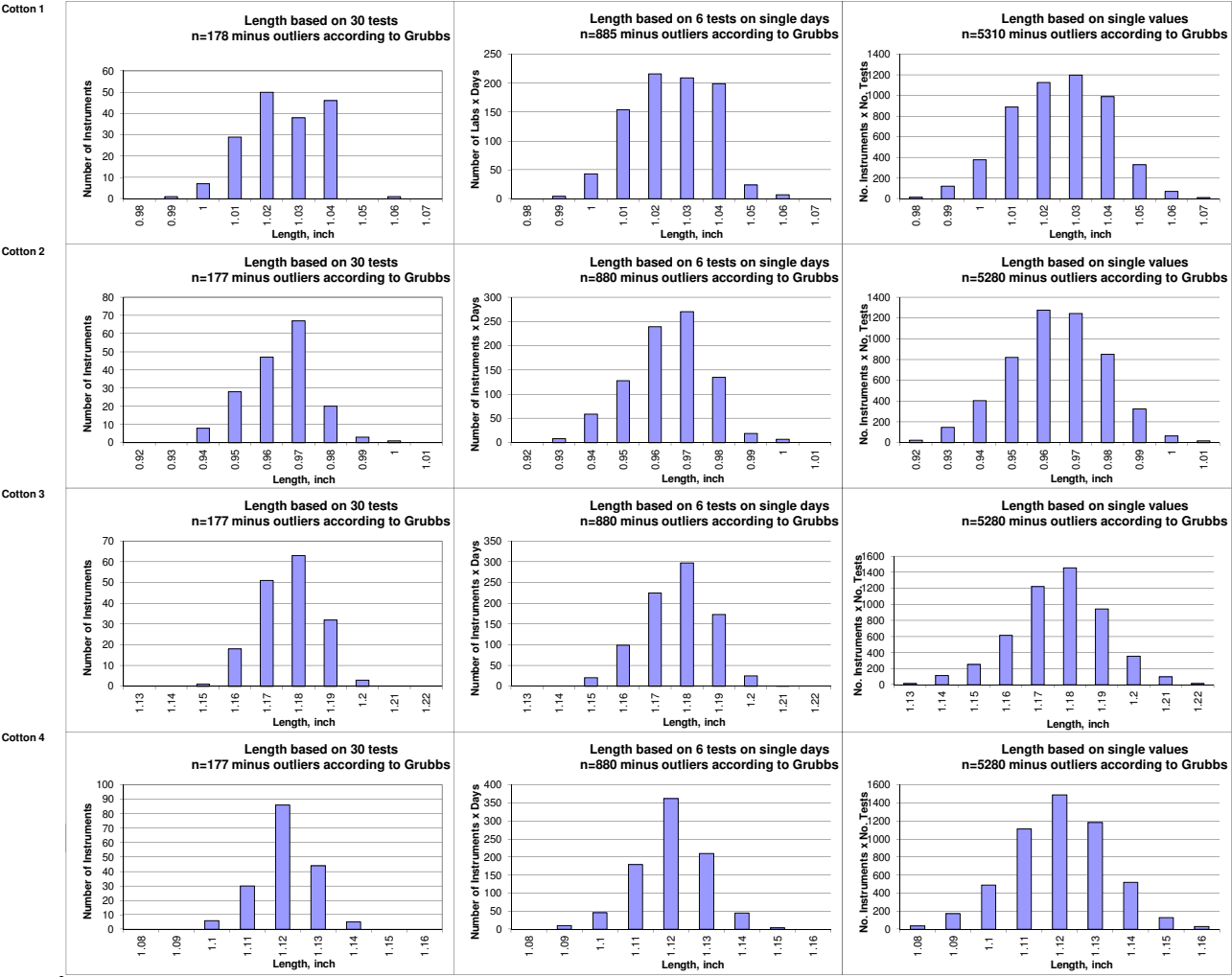
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Strength



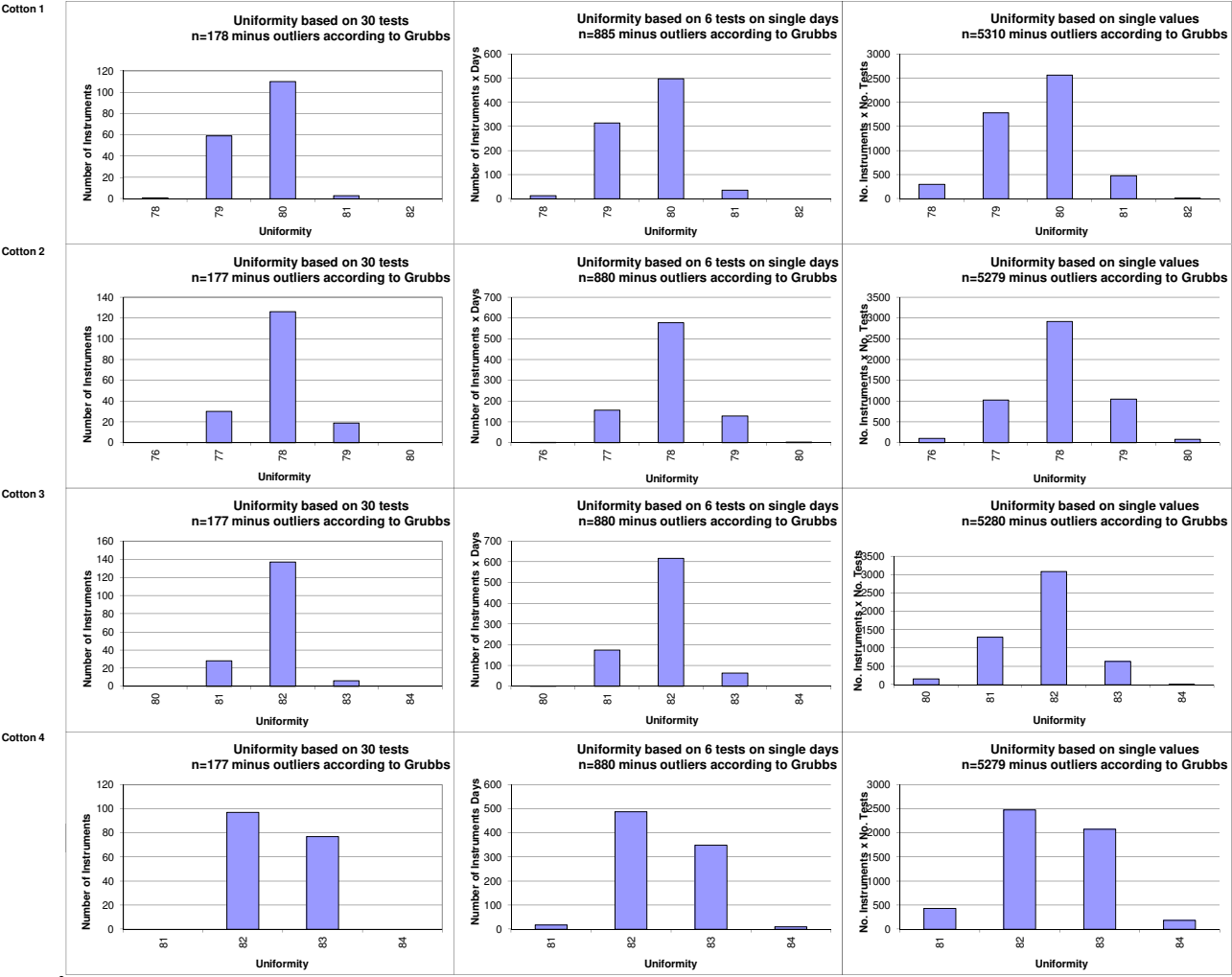
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Length



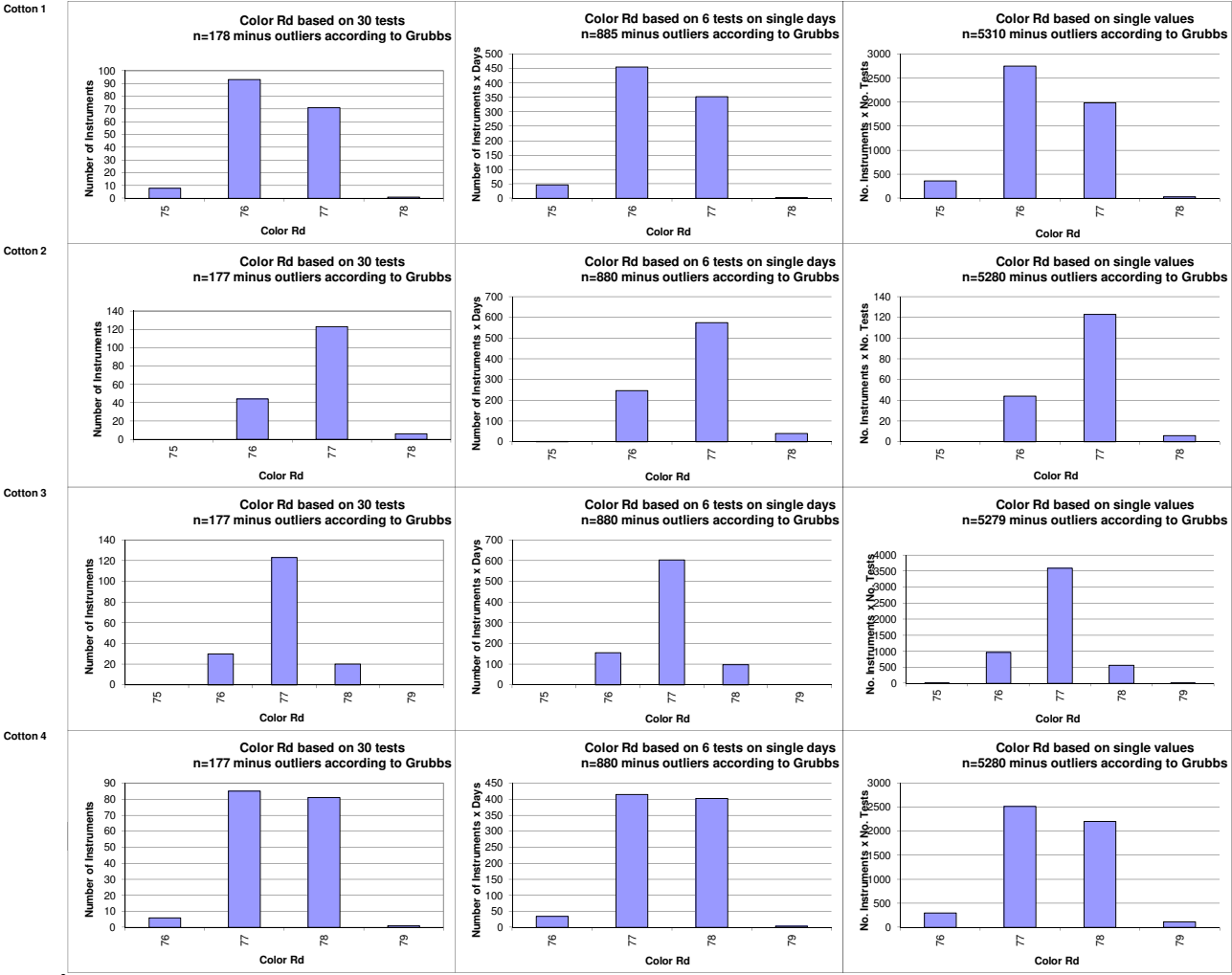
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Uniformity



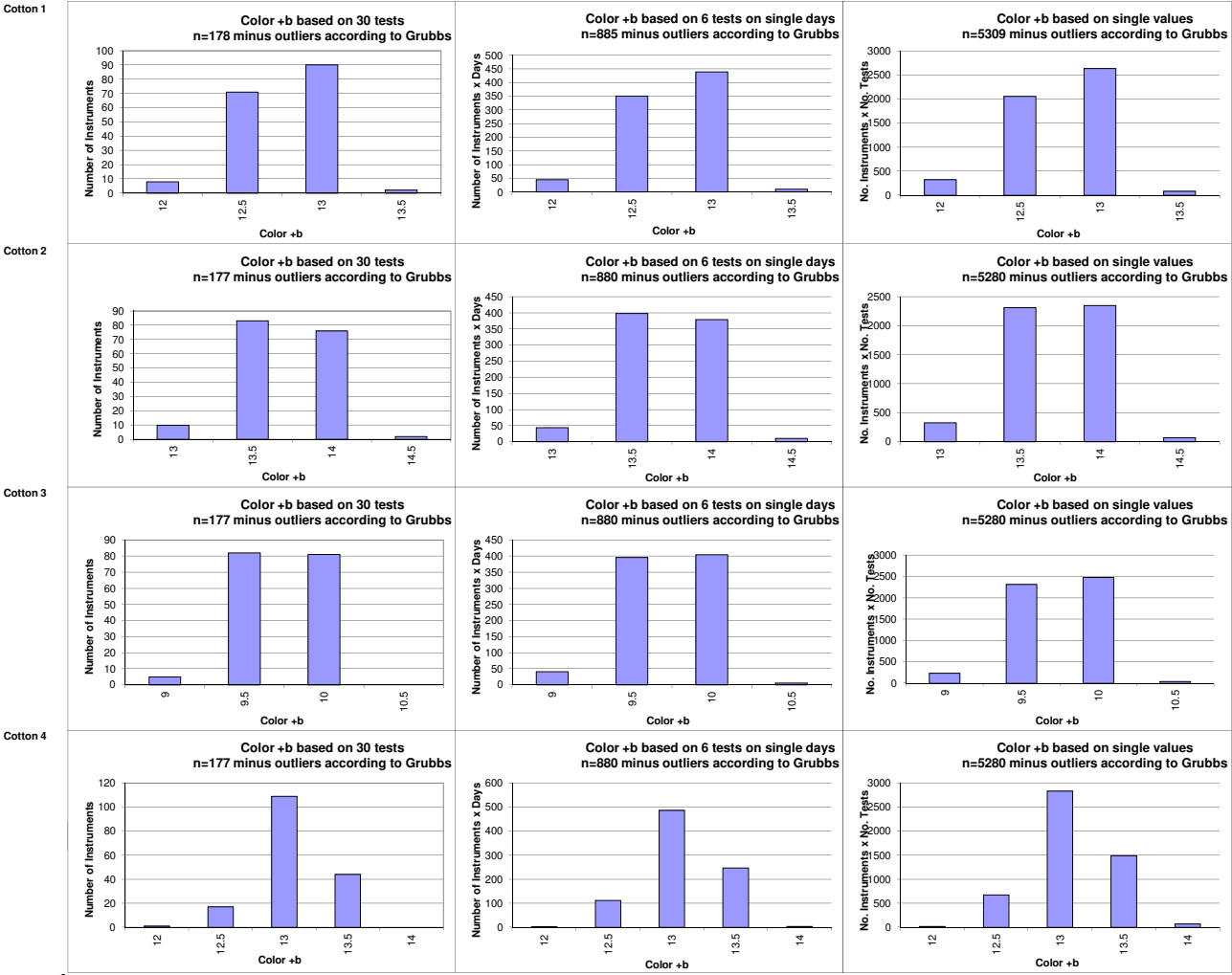
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Color Rd



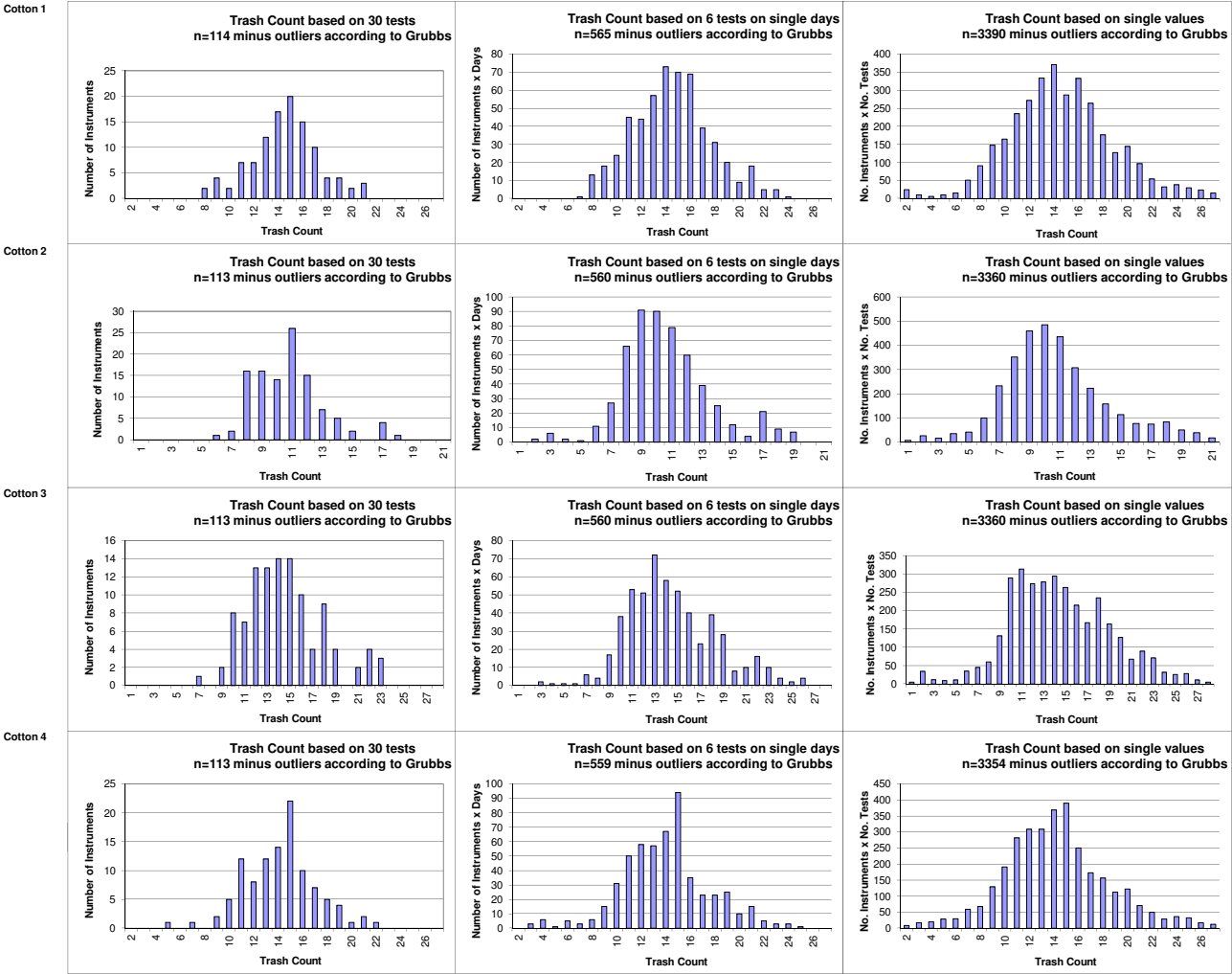
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(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Color +b



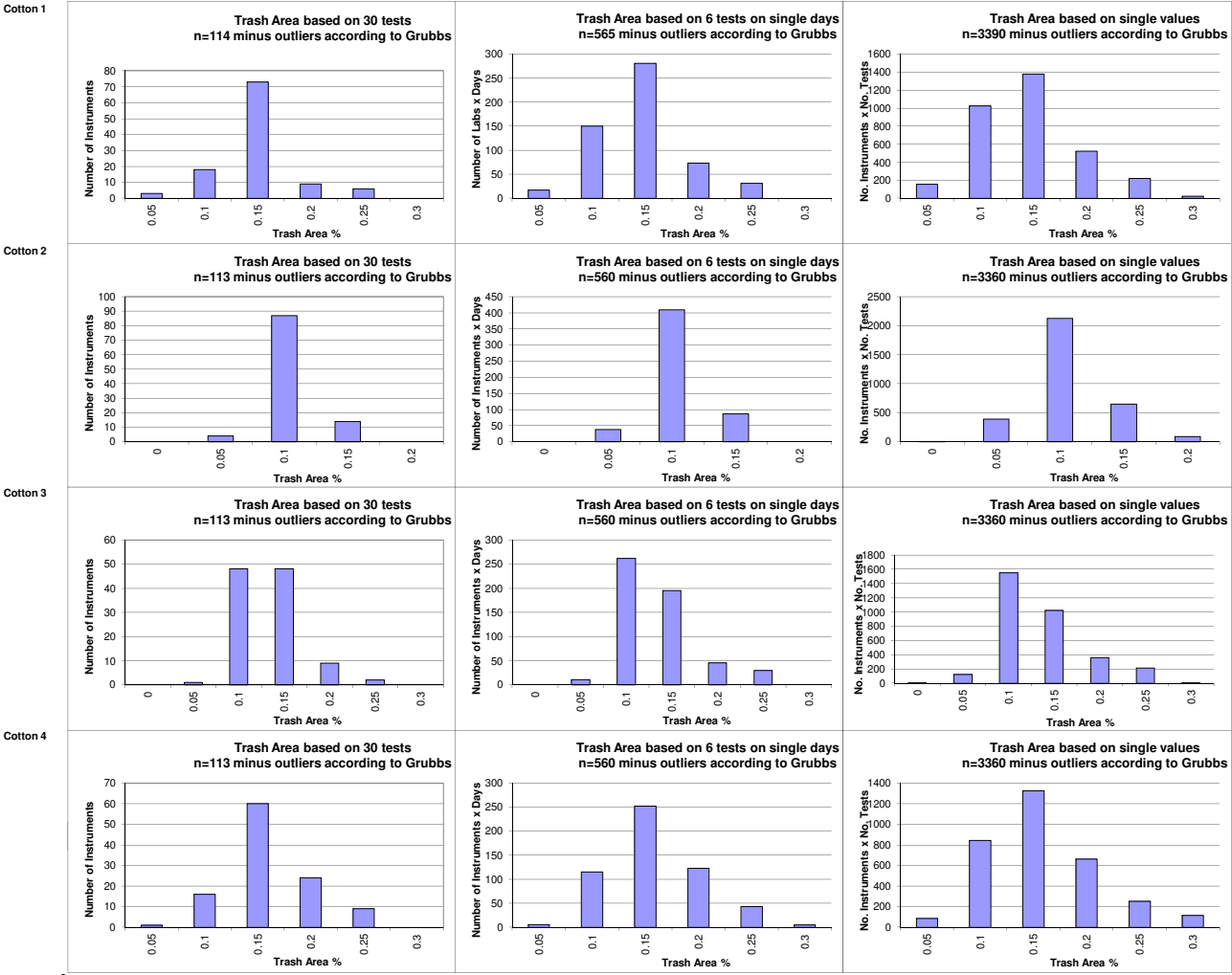
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Trash Count



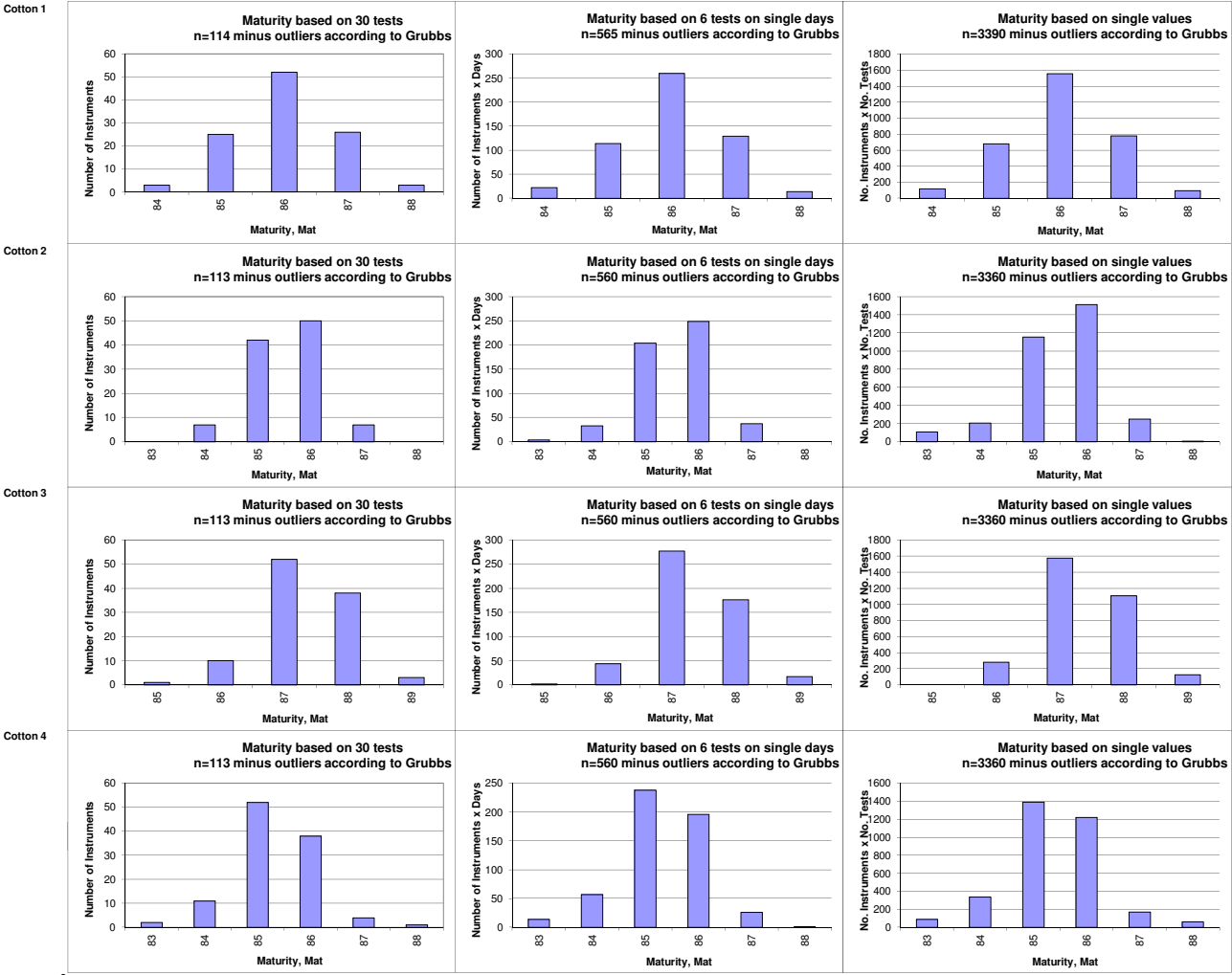
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Trash Area



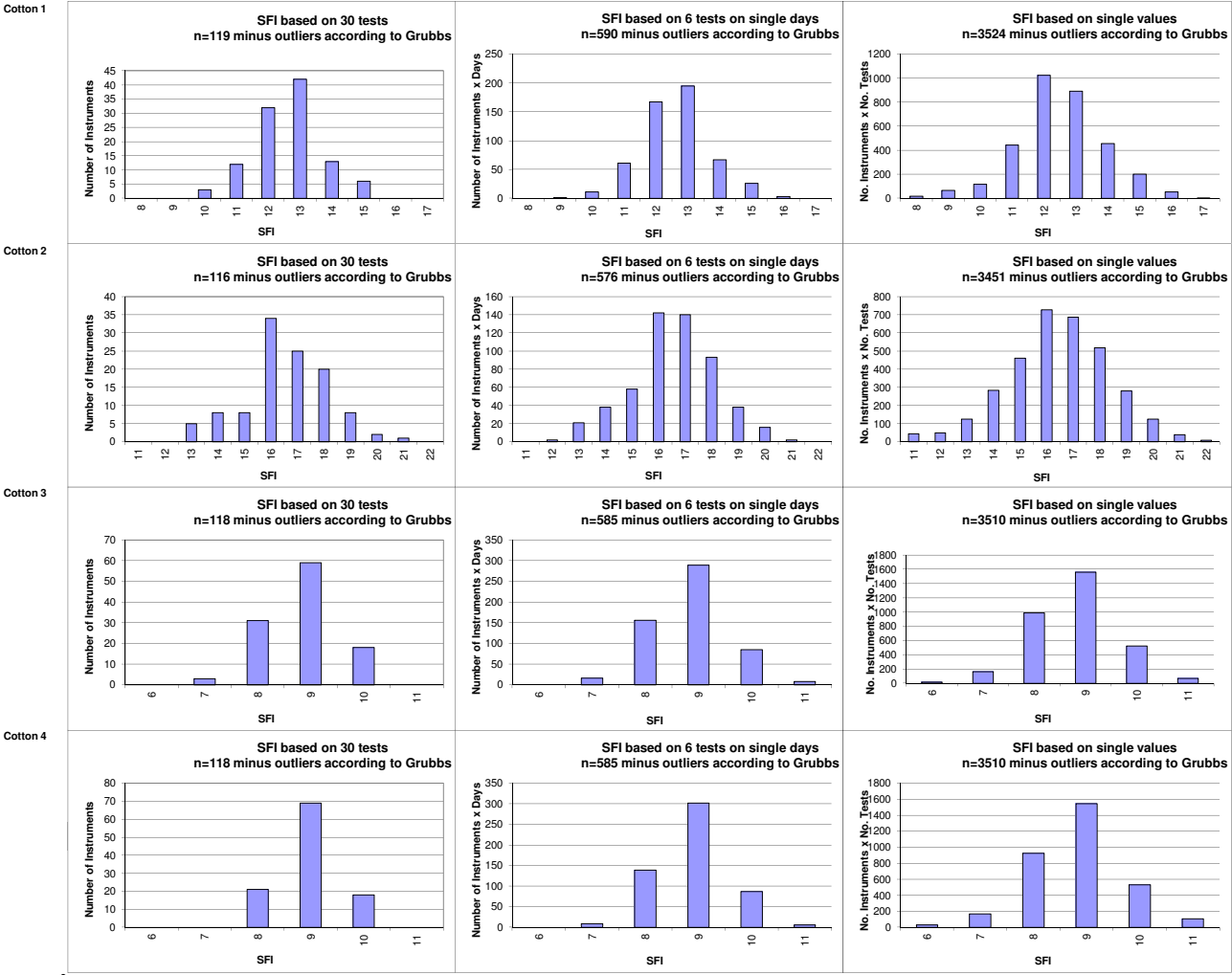
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

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 2025 - 3 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

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

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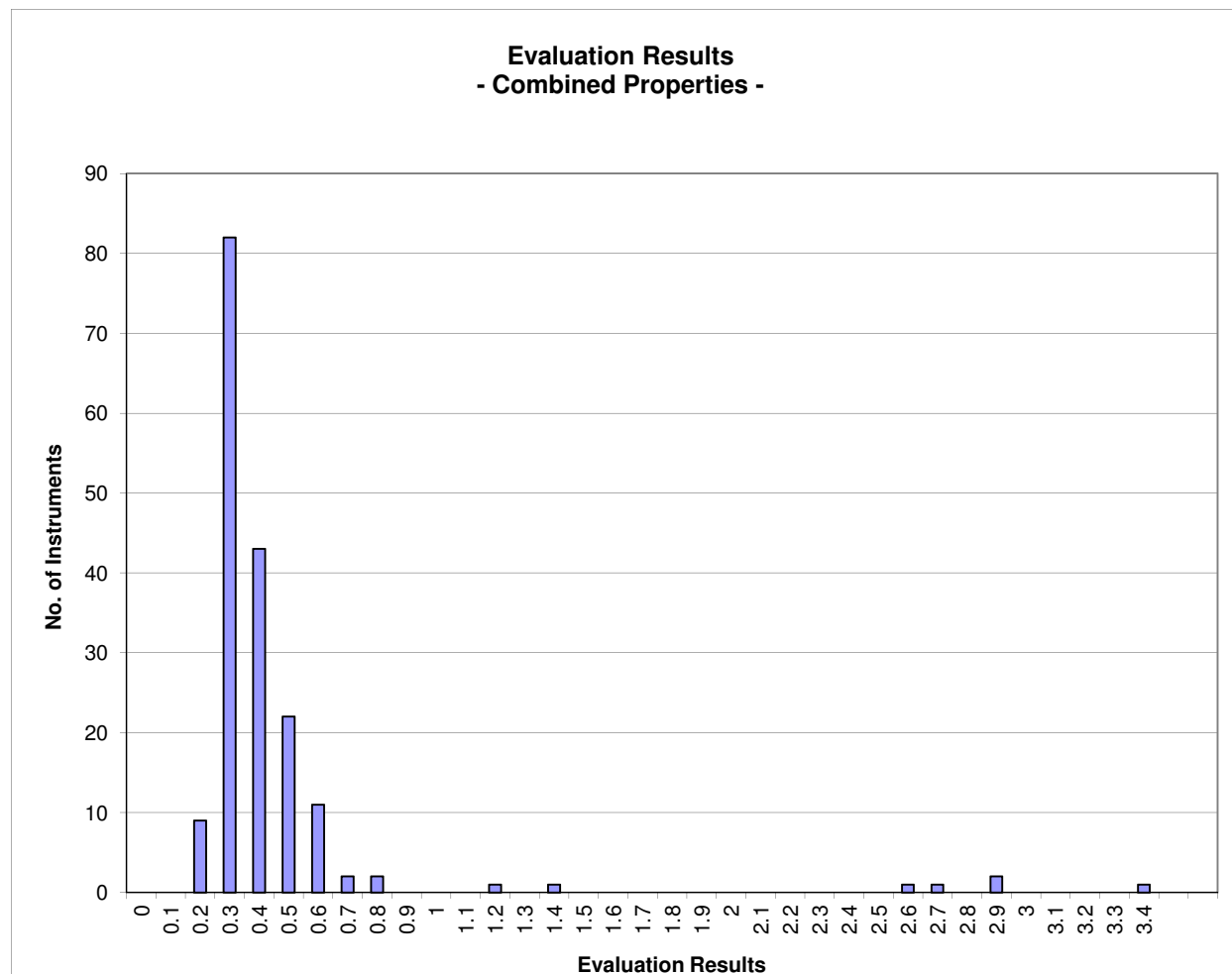
Instrument Evaluation

- Graph of Combined Properties -

According to ICAC CSITC Task Force Recommendations

Global - Round Trial 2025 - 3

Statistics	Evaluation Combined Prop.
Average Overall Evaluation Result (OER)	0.45
OER Rating for the best instrument	0.16
max. OER Limit for belonging to the best 10% of the instruments	0.27
max. OER Limit for belonging to the best 25% of the instruments	0.29
max. OER Limit for belonging to the best 50% of the instruments	0.35
max. OER Limit for belonging to the best 75% of the instruments	0.44
OER Rating for the worst instrument	3.39



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)

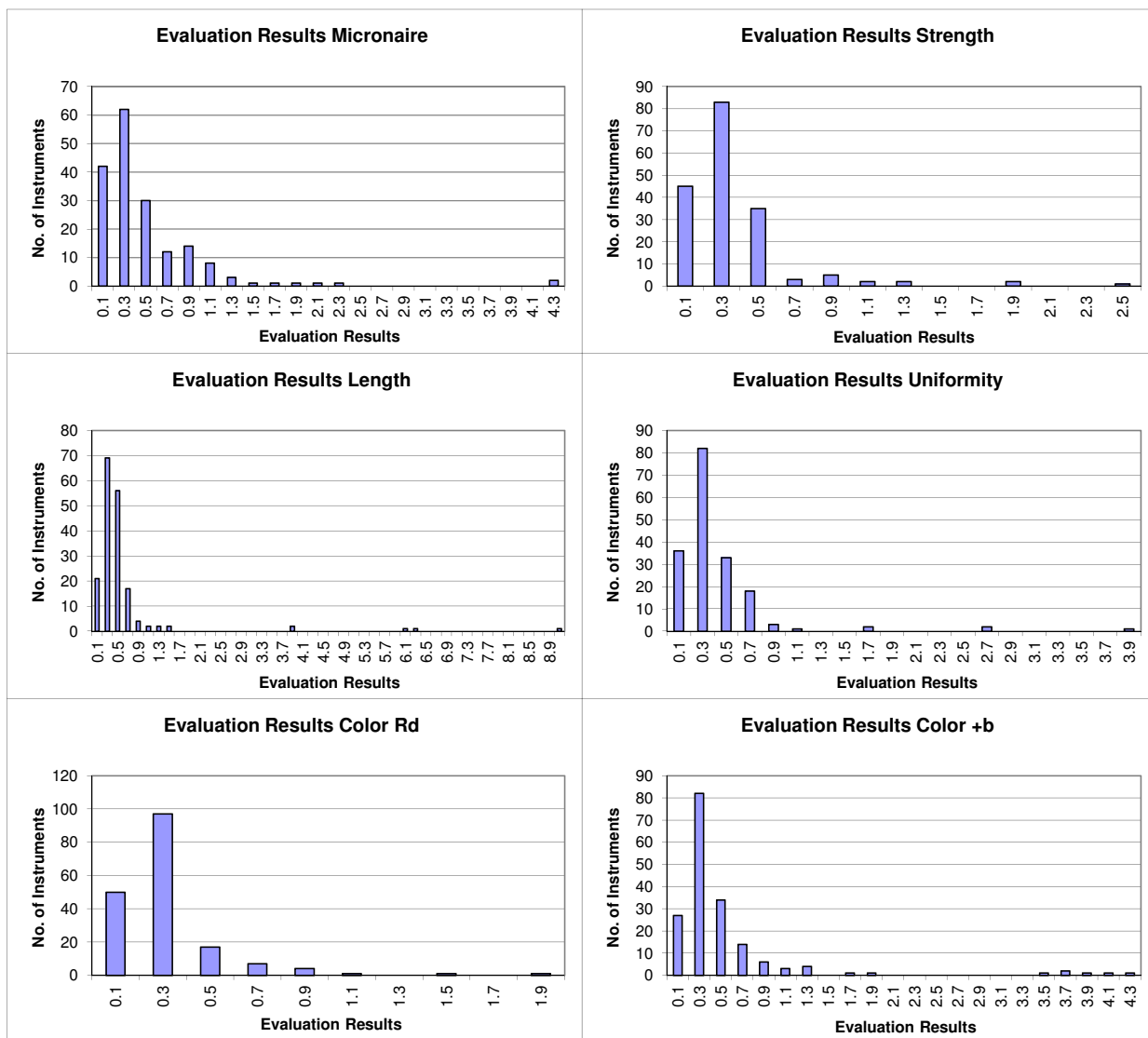
Instrument Evaluation

- Graph of Single Properties -

According to ICAC CSITC Task Force Recommendations

Global - Round Trial 2025 - 3

		Evaluation Micronaire	Evaluation Strength	Evaluation Length	Evaluation Uniformity	Evaluation Color Rd	Evaluation Color +b
Statistics	Average	0.50	0.37	0.58	0.41	0.32	0.53
	Median	0.34	0.32	0.39	0.30	0.29	0.32
	Best Instr.	0.07	0.04	0.11	0.07	0.01	0.08
	Worst Instr.	4.33	2.45	9.11	3.98	1.93	4.26



x-Axis shows midpoints of classes

The evaluation results are entered based on the unrounded values



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Section Three: Within Limits Evaluation

Section Three: Within Limits Evaluation

Content:

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

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USDA-AMS, Memphis, TN, USA

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Within Limits Evaluation

Based on average of 30 test results for each sample

	Micronaire	Strength	Length	Uniformity	Color Rd	Color +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	97.3	96.2	98.0	97.5	90.6
Completely within limits	96.1	94.4	93.3	97.2	94.9	83.1
% of Instruments $\geq 75\%$ within limits	97.8	97.2	96.1	97.2	97.2	89.9
% of Instruments $\geq 50\%$ within limits	98.9	98.3	97.2	98.3	98.9	92.7

Within Limits Evaluation

Based on Single Test Results

	Micronaire	Strength	Length	Uniformity	Color Rd	Color +b
Limits	0.20	2.0	0.030	2.0	1.5	0.5
	units	g/tex	inch	%	units	units
Average % Results within Limits	96.9	95.4	88.8	97.4	96.7	88.4
% of Instruments 100% within limits	65.2	55.1	8.4	71.9	79.8	43.8
% of Instruments $\geq 95\%$ within limits	92.1	81.5	44.9	93.8	91.0	66.3
% of Instruments $\geq 75\%$ within limits	96.1	93.8	90.4	97.2	96.1	84.8
% of Instruments $\geq 65\%$ within limits	96.1	97.8	94.4	97.2	96.6	87.6
% of Instruments $\geq 50\%$ within limits	98.3	98.3	97.2	98.3	98.9	91.0