Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #3172 G - April 2022

Analysis	Analysis Name
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351	Color & Color Difference - Near White Papers - D65/10deg obs
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384	Opacity (89% Reflectance Backing) - Fine Papers
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The CTS Paper & Paperboard Interlaboratory Program

In 1969, the National Bureau of Standards (now designated the National Institute for Standards and Technology) and the Technical Association of the Pulp and Paper Industry (TAPPI) developed an interlaboratory program for paper and paperboard testing. Since 1971, Collaborative Testing Services has operated the Collaborative Reference Program for Paper and Paperboard. With hundreds of organizations from around the world participating in these tests, this program has become one of the largest of its kind. The program allows laboratories to compare the performance of their testing with that of other participating laboratories, and provides a realistic picture of the state of paper testing.

About CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately - owned company that specializes in interlaboratory tests for a variety of industrial sectors: rubber, plastics, fasteners and metals, CKPG, paper, color and wine, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality assurance objectives. Labs from the U.S., as well as more than 80 countries, currently participate in CTS programs.

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Key for Web Summary Reports (Page 1 of 2)

WebCode — Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Paper Report published on the CTS Web site. The WebCode for each analysis can be found on the datasheets and in the Performance Analysis Report mailed to each participant.

Lab Mean — The average of the values obtained for each sample by the participant.

Grand Mean — The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.

ΔE — The calculated total color difference between the two samples. For the Hunter L,a,b analyses it is calculated in Hunter units (ΔE). For the L*,a*,b* analyses it is calculated in CIELAB units (ΔE*).

Difference from Grand Mean — The difference of the LAB MEAN from the GRAND MEAN.

Between-Lab Standard Deviation — An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).

Comparative Performance Value — An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.

Inst Code — A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section), if instruments are tracked.

Data Flag — DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

DATA FLAG	STATISTICALLY INCLUDED/EXCLUDED	ACTION REQUIRED
*	INCLUDED	**CAUTION** - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	**STOP** - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	**PROCEED** - lab was unable to report data for at least one sample.

Graph - For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained on the previous page.

Common Problems Highlighted in Footnotes

1. ***Extreme data*** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. The participant is advised to immediately review his data and/or testing procedure.

2. ***Systematic bias*** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.

3. ***Inconsistency in testing between samples/sample sets*** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an * that falls on the edge of the ellipse.

4. ***Inconsistency in testing within a sample*** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.

Labs flagged with an * are not typically included in the footnotes of a data table. These labs may locate their position in the control ellipse and use the definitions above to help identify the type of testing error. An * should serve as a caution flag, a "yellow light", to a lab. If this error is repeated in future rounds, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm. Interlaboratory tests conducted at regular intervals permit a lab to recognize trends in testing.

Paper & Paperboard Interlaboratory Testing Program

Analysis 350

Color & Color Difference - Near White Papers - C/2deg obs

Hunter L,a,b - Illuminant C - 2 Degree Observer

Web Code	Data Flag	Samples	Hunter L, a, b Color Values			Color Difference Values				Instr Code
			L	a	b	ΔL	Δa	Δb	ΔE	
2V9G6H		GA03	94.08	-1.13	4.36	-0.01	0.00	-0.02	0.02	HZ
		GA04	94.07	-1.13	4.34					
3G869J		GA03	93.75	-0.80	4.04	-0.01	-0.01	-0.03	0.03	TC
		GA04	93.74	-0.80	4.01					
6XLD3J		GA03	92.08	-0.38	3.34	0.16	0.04	0.04	0.17	TS
		GA04	92.24	-0.34	3.38					
8WNLAA		GA03	93.97	-0.79	4.41	0.02	0.02	-0.12	0.12	HE
		GA04	93.99	-0.77	4.29					
BX687F		GA03	95.03	-0.88	4.15	0.00	0.00	-0.06	0.06	LS
		GA04	95.03	-0.88	4.09					
FPX7U3		GA03	95.10	-0.66	4.35	-0.04	-0.01	0.04	0.05	TS
		GA04	95.06	-0.66	4.38					
HCY68C		GA03	93.07	-0.80	3.32	-0.07	0.00	0.13	0.15	TC
		GA04	93.00	-0.80	3.46					
L2U3JX		GA03	93.08	-0.86	3.84	0.05	0.02	-0.03	0.06	HZ
		GA04	93.13	-0.84	3.81					
LD6QCV		GA03	94.06	-0.26	3.58	0.05	-0.06	-0.07	0.11	TS
		GA04	94.11	-0.32	3.51					
M3XDT7		GA03	95.07	-0.88	4.10	-0.01	0.01	-0.03	0.03	TC
		GA04	95.06	-0.86	4.07					
PZLFCU		GA03	93.60	-0.89	4.12	0.05	0.00	0.01	0.05	TC
		GA04	93.65	-0.88	4.12					
R9NC9W		GA03	95.18	-0.50	3.40	0.02	0.03	0.09	0.10	XS
		GA04	95.20	-0.47	3.49					
RWFBVR		GA03	92.66	-0.35	3.81	-0.05	0.01	0.03	0.06	TS
		GA04	92.61	-0.34	3.84					
TLVLDX		GA03	93.80	-1.05	4.43	-0.02	-0.01	0.06	0.06	TC
		GA04	93.78	-1.06	4.49					
U3FUPL		GA03	94.32	-0.63	4.04	0.00	0.00	-0.04	0.04	HE
		GA04	94.32	-0.63	4.00					
UKRELP		GA03	92.78	-0.28	3.63	0.00	0.06	0.00	0.06	TS
		GA04	92.78	-0.22	3.64					

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Paper & Paperboard Interlaboratory Testing Program

Analysis 350

Color & Color Difference - Near White Papers - C/2deg obs

Hunter L,a,b - Illuminant C - 2 Degree Observer

Web Code	Data Flag	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code
W6EPLU		GA03	94.99	-0.82	3.95	-0.05	0.01	-0.05	0.07	EH
		GA04	94.94	-0.81	3.90					
W8HHFT		GA03	95.19	-0.91	4.18	-0.21	0.02	-0.04	0.21	LS
		GA04	94.98	-0.89	4.15					
WCTDHG		GA03	92.85	-0.15	3.74	0.18	-0.06	0.10	0.22	TS
		GA04	93.03	-0.21	3.84					

Summary Statistics

Grand Means							
GA03	93.929	-0.684	3.936	0.003	0.004	0.001	0.088
GA04	93.933	-0.680	3.937				
Stnd Dev Btwn Labs							
GA03	0.986	0.285	0.358	0.082	0.029	0.065	0.060
GA04	0.946	0.281	0.331				

Statistics based on 19 of 19 reporting participants

Key to Instrument Codes Reported by Participants

EH	Datacolor Elrepho SF450	HE	Hunter LabScan
HZ	Hunter ColorFlex EZ	LS	L & W Elrepho SE 070
TC	Technidyne Color Touch Series	TS	Technidyne Brightimeter Micro S-5
XS	X-Rite 938 Spectrodensitometer		

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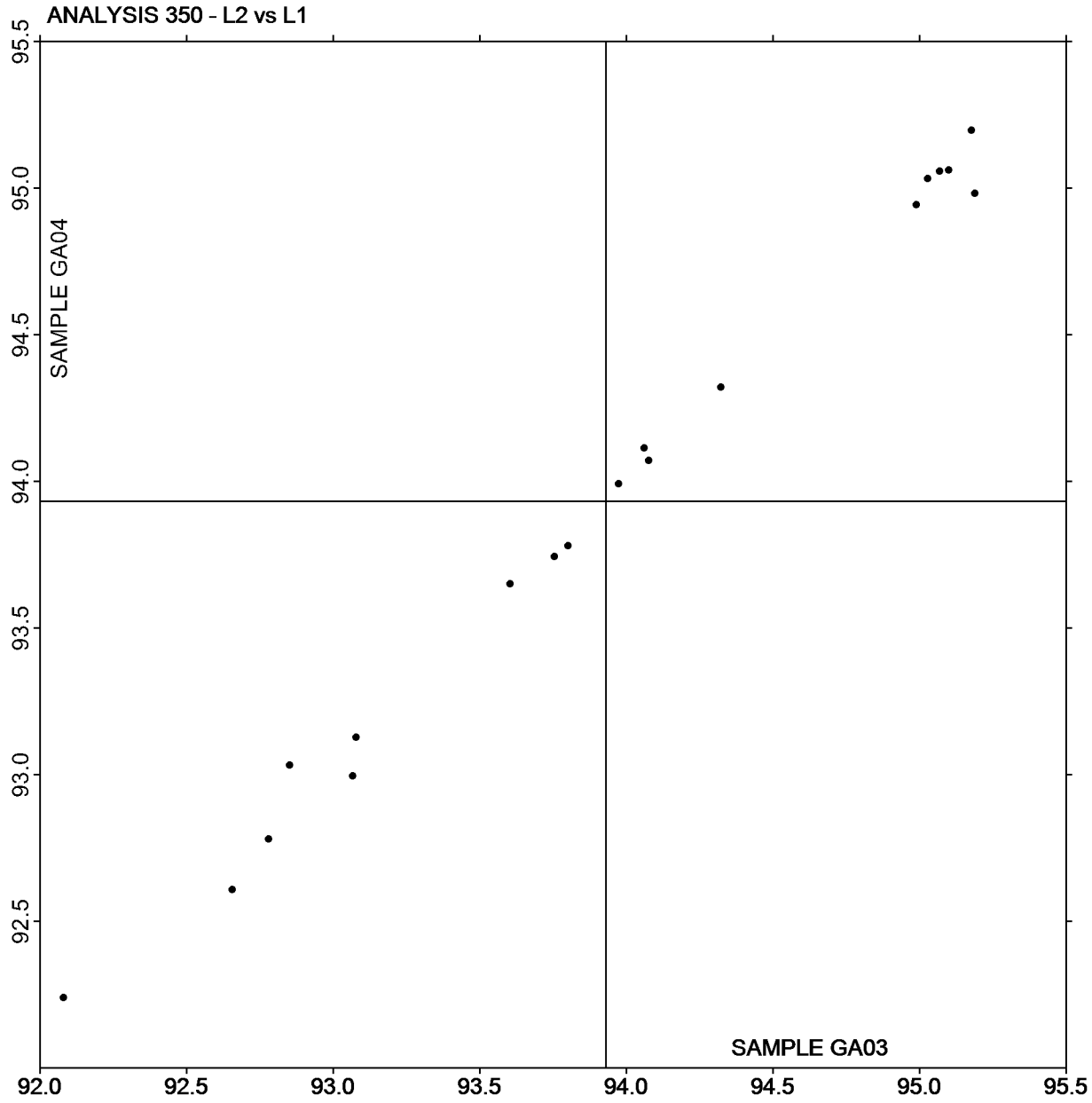
Plot of L values GA04 vs L values GA03



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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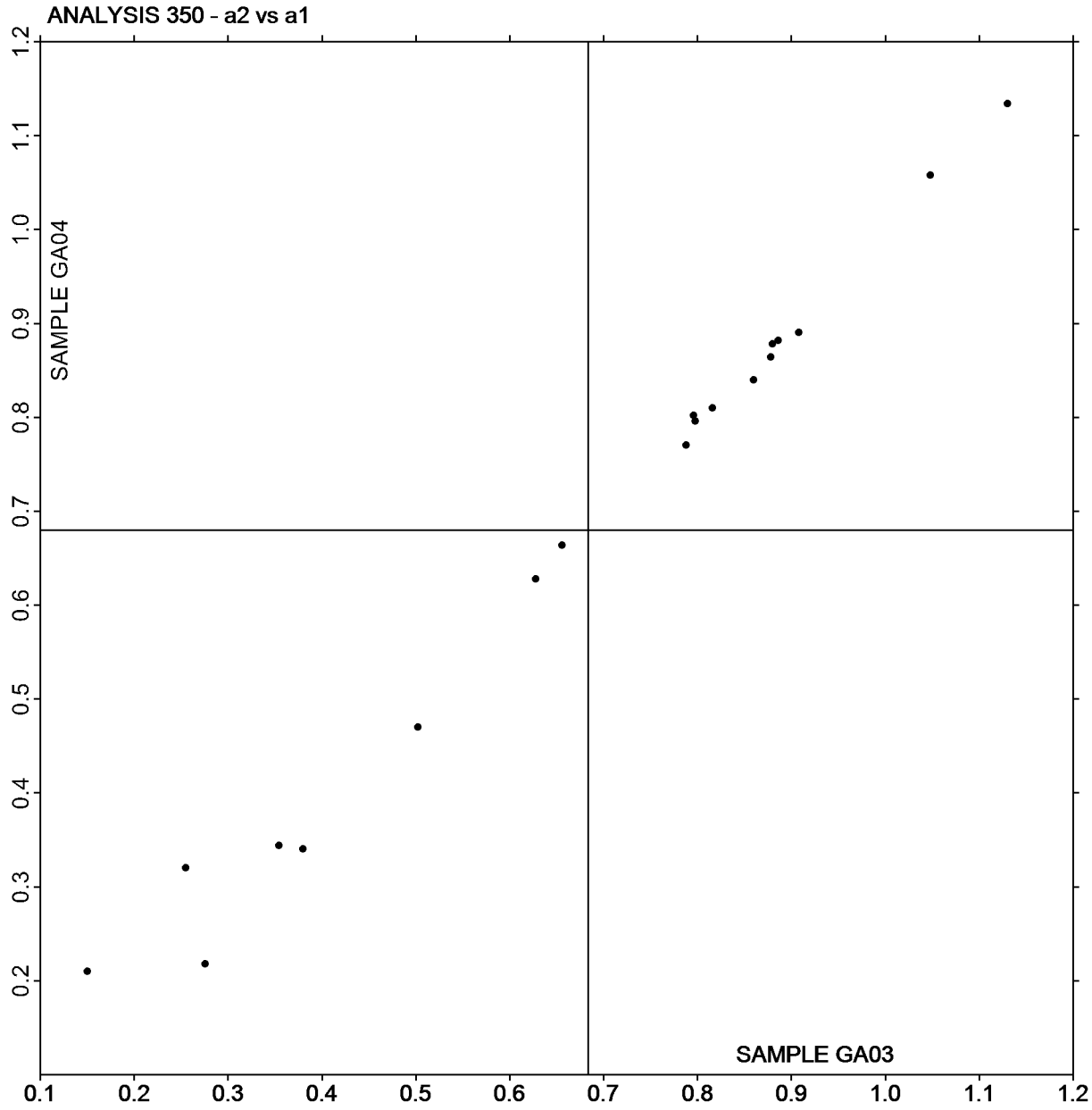
Plot of a values GA04 vs a values GA03



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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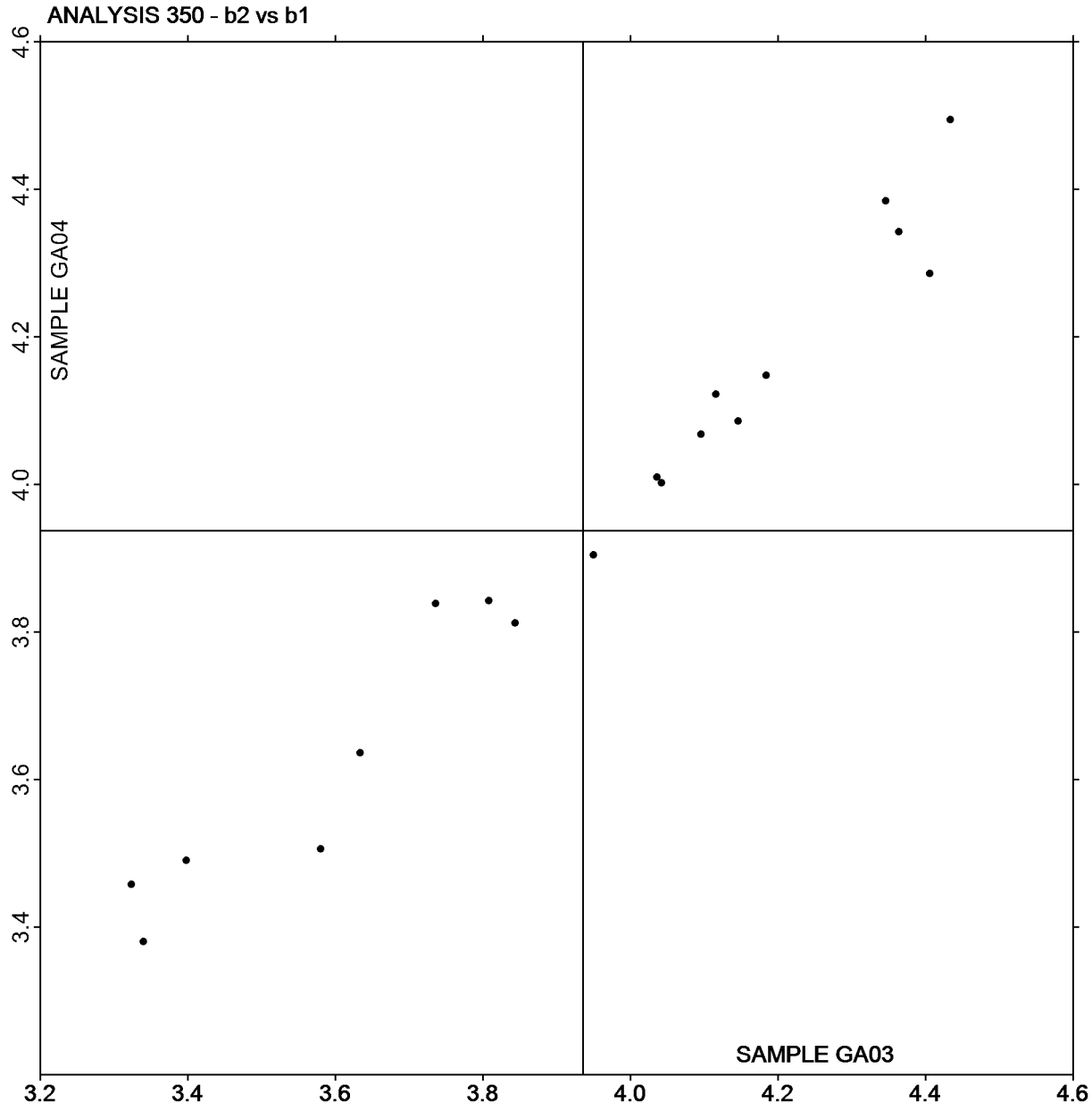
Plot of b values GA04 vs b values GA03



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 351

Color & Color Difference - Near White Papers - D65/10deg obs

Hunter L,a,b - Illuminant D65 - 10 Degree Observer

Web Code	Data Flag	Samples	CIE L* a* b* Color Values L*	a*	b*	Color Difference Values ΔL*	Δa*	Δb*	ΔE*	InstrCode
2AB6YX		GA03	95.05	-0.63	4.66	0.04	0.00	-0.15	0.15	NG
		GA04	95.08	-0.63	4.51					
2JJEQW		GA03	94.93	-0.61	4.08	-0.03	-0.02	0.01	0.03	TC
		GA04	94.90	-0.63	4.09					
62KQMN		GA03	95.46	-0.77	4.19	-0.07	0.00	-0.03	0.07	XP
		GA04	95.39	-0.77	4.16					
7DE8CN		GA03	95.13	-0.75	4.15	0.03	0.01	-0.06	0.07	HT
		GA04	95.16	-0.74	4.08					
8VAGBC		GA03	95.15	-0.64	4.18	0.10	0.03	-0.03	0.11	EH
		GA04	95.25	-0.60	4.14					
9QEMBP		GA03	94.81	-0.74	4.01	0.02	0.01	-0.04	0.04	NH
		GA04	94.83	-0.73	3.97					
BX687F		GA03	95.00	-0.89	4.18	0.04	0.00	0.00	0.04	LS
		GA04	95.04	-0.89	4.18					
C4PPYH		GA03	94.00	-0.44	3.90	0.10	-0.02	-0.10	0.14	HE
		GA04	94.10	-0.46	3.80					
CMK3UA	X	GA03	92.89	-0.85	3.65	2.23	0.05	0.23	2.24 X	XC
		GA04	95.11	-0.81	3.88					
F6AHLW		GA03	95.09	-0.72	4.27	0.00	-0.01	0.06	0.06	TC
		GA04	95.09	-0.73	4.33					
FKHTV2		GA03	95.07	-0.65	4.18	0.01	0.00	-0.08	0.08	HT
		GA04	95.08	-0.65	4.10					
HCY68C		GA03	94.35	-0.85	4.00	-0.04	-0.01	0.08	0.09	HE
		GA04	94.31	-0.86	4.08					
JHHU6R		GA03	93.83	-0.51	3.66	-0.08	-0.01	0.05	0.10	XB
		GA04	93.74	-0.52	3.71					
UW892P		GA03	95.33	-0.57	4.25	-0.01	-0.01	-0.07	0.07	NF
		GA04	95.32	-0.58	4.18					
VZ6AEQ		GA03	94.99	-0.58	4.17	0.00	0.00	0.01	0.01	LS
		GA04	94.99	-0.58	4.17					
W6EPLU		GA03	94.88	-0.66	4.09	0.00	0.01	0.00	0.01	EH
		GA04	94.87	-0.65	4.08					

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Y32WKQ	**GA03**	95.01	-0.52	4.13	0.03	-0.04	-0.09	0.10	NG
	GA04	95.04	-0.56	4.05					

Summary Statistics

Grand Means							
GA03	94.879	-0.671	4.102	0.009	-0.003	-0.027	0.074
GA04	94.888	-0.671	4.089				
Stnd Dev Btwn Labs							
GA03	0.447	0.127	0.232	0.050	0.016	0.063	0.041
GA04	0.453	0.120	0.187				

Statistics based on 16 of 17 reporting participants

Comments on Assigned Data Flags for Test #351

CMK3UA (X) - Low "L" value for sample GA03. Inconsistent within "L" values for Sample GA03. Large delta "L", "a", "b" and "E".

Key to Instrument Codes Reported by Participants

EH	Datacolor Elrepho SF450	HE	Hunter LabScan
HT	Hunter UltraScan Vis	LS	L & W Elrepho SE 070
NF	Minolta CM-3600d Spectrophotometer	NG	Minolta CM-3700d Spectrophotometer
NH	Minolta CM-3700A Spectrophotometer	TC	Technidyne Color Touch Series
XB	X-Rite Ci7	XC	X-Rite eXact Series
XP	X-Rite Spectrophotometer DTP		

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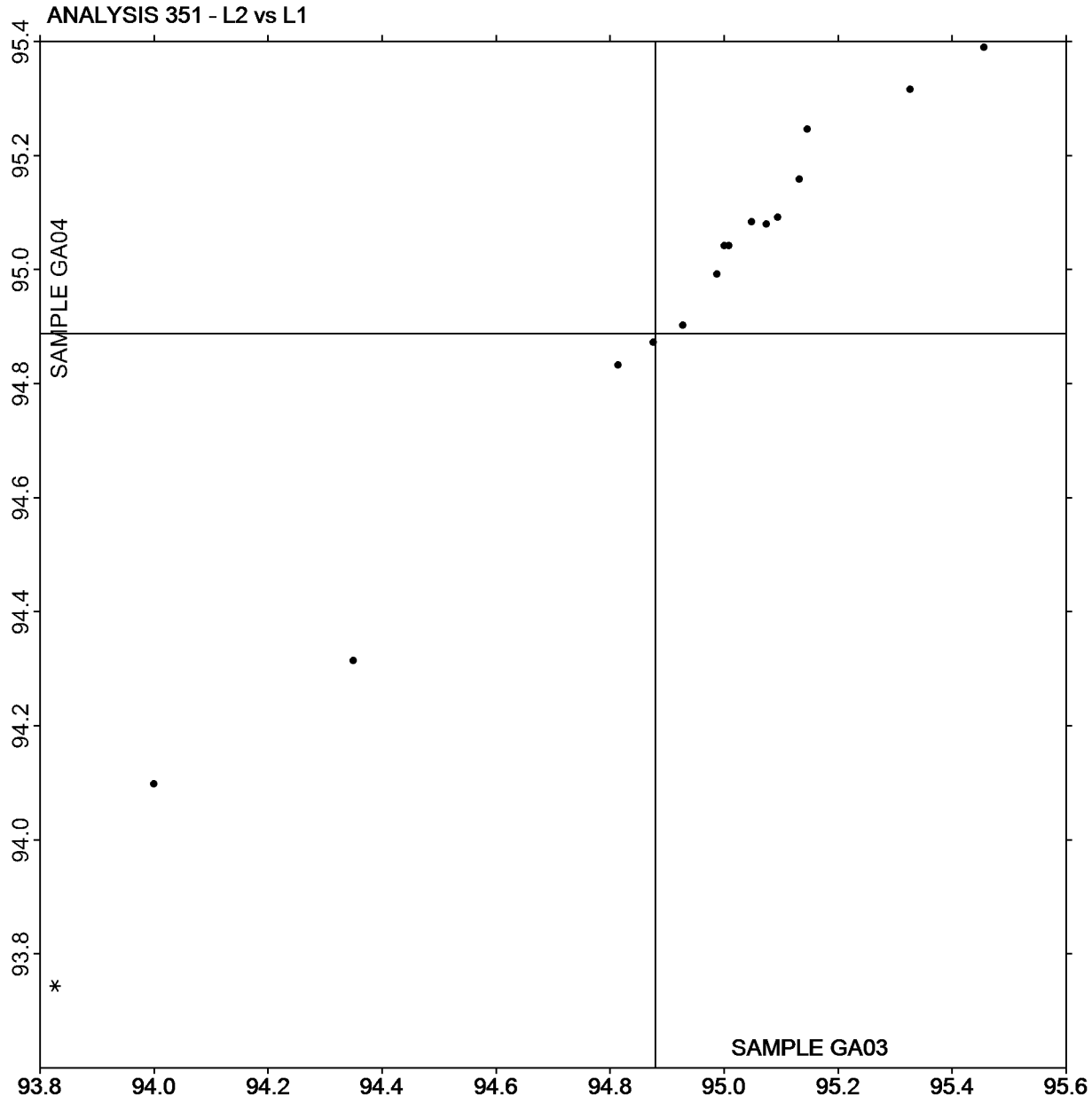
Plot of L values GA04 vs L values GA03



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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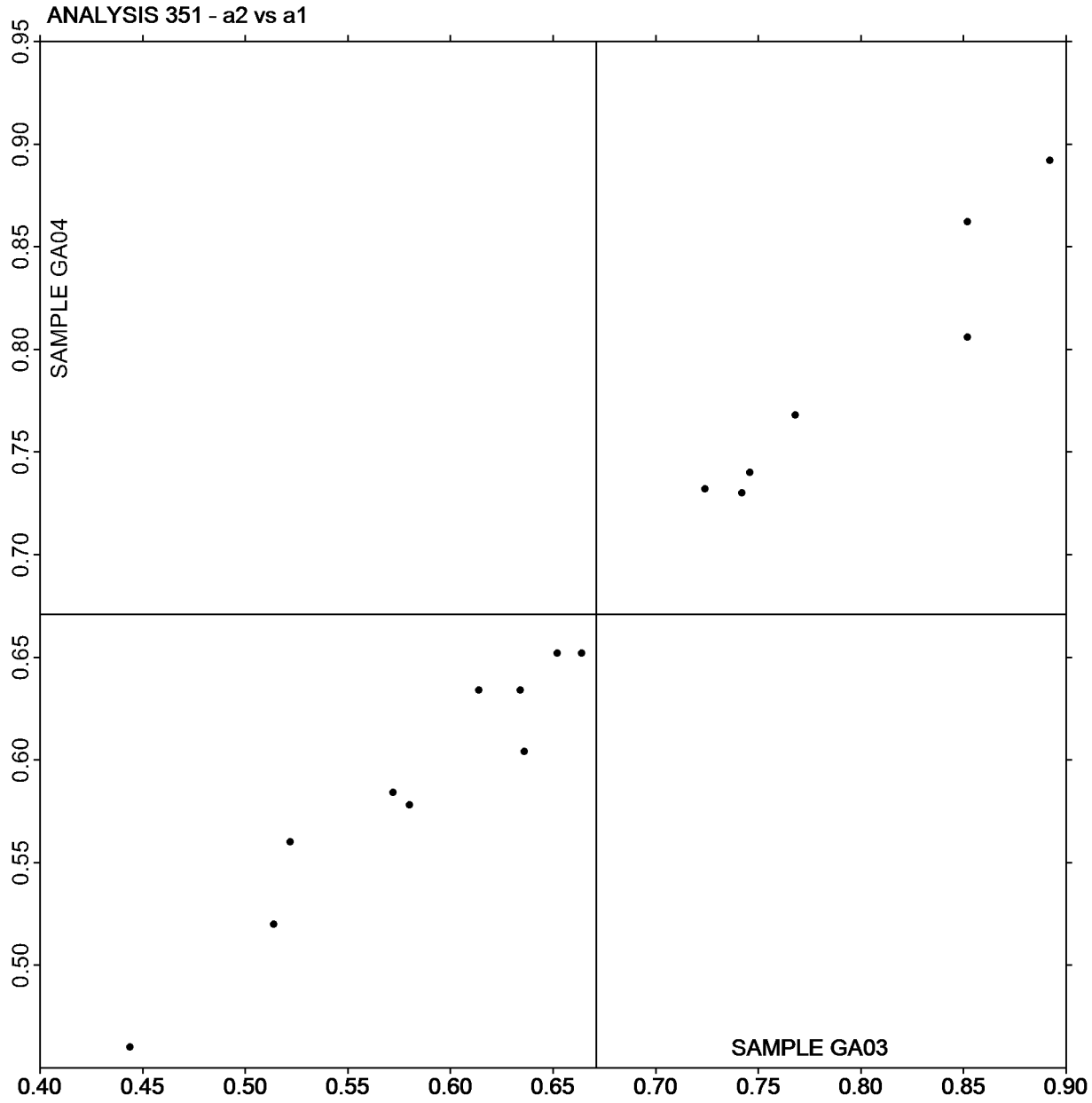
Plot of a values GA04 vs a values GA03



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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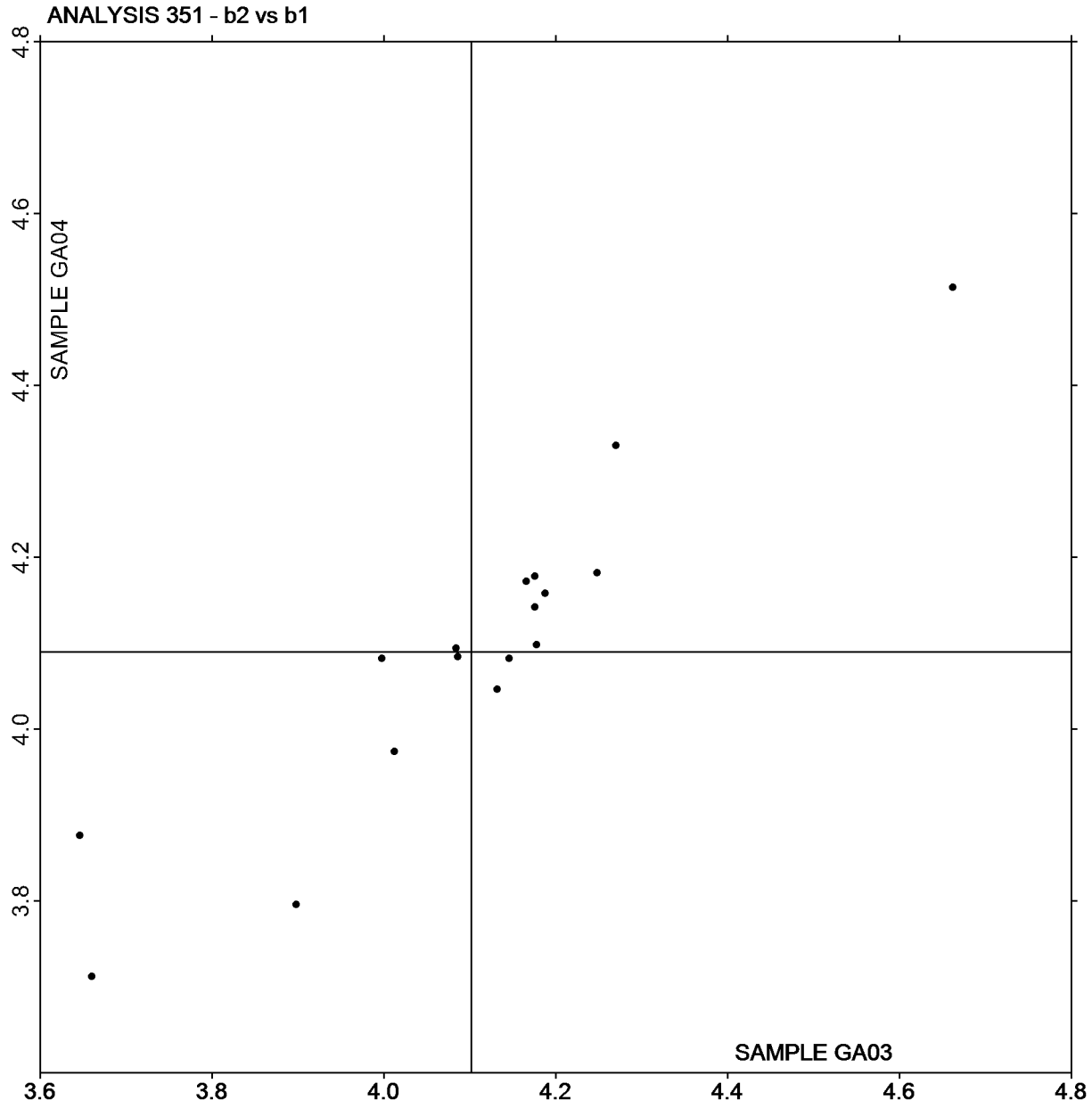
Plot of b values GA04 vs b values GA03



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 360

Thickness (Caliper), Printing papers

TAPPI Official Test Method T411

WebCode	Data Flag	Sample GV03 Lab Mean	Sample GV03 Diff from Grand Mean	Sample GV03 CPV	Sample GV04 Lab Mean	Sample GV04 Diff from Grand Mean	Sample GV04 CPV	Instr Code
2AB6YX		4.935	-0.037	-0.40	4.904	-0.047	-0.52	PP
2JJEQW		5.008	0.036	0.38	4.941	-0.010	-0.11	PP
3N9G6G		4.913	-0.059	-0.64	4.887	-0.064	-0.71	TA
4F9DFA		5.048	0.076	0.81	5.013	0.062	0.68	EM
4TY76K		5.051	0.079	0.85	5.032	0.081	0.89	LW
62KQMN		4.840	-0.132	-1.42	4.810	-0.141	-1.56	TM
6X8QQW		5.024	0.051	0.55	5.043	0.092	1.01	TM
7DE8CN		4.965	-0.007	-0.08	4.960	0.009	0.10	EM
86CJR3		4.949	-0.023	-0.25	4.988	0.037	0.40	EM
8KAN3K		4.912	-0.060	-0.65	4.952	0.001	0.01	TM
8VAGBC		5.006	0.034	0.36	5.036	0.085	0.93	EM
9QEMBP		5.000	0.028	0.30	4.958	0.007	0.07	PP
9XDEFC		5.008	0.036	0.38	4.974	0.023	0.25	TA
A4VARZ		5.187	0.215	2.30	5.113	0.162	1.78	PP
ABWEPC		4.800	-0.172	-1.85	4.743	-0.209	-2.30	TM
BHAPFH	*	4.760	-0.212	-2.28	4.837	-0.114	-1.26	TA
BQ6TKE		5.068	0.096	1.03	5.057	0.105	1.16	LW
C4PPYH		4.933	-0.039	-0.42	4.830	-0.121	-1.34	PP
CL6Y24		5.026	0.053	0.57	5.032	0.080	0.88	LW
CMK3UA		5.098	0.126	1.35	4.996	0.045	0.49	LW
CQMXGJ		4.927	-0.046	-0.49	4.872	-0.080	-0.88	FR
DG9GGW		4.899	-0.073	-0.78	4.905	-0.046	-0.51	LW
EL3X7V		4.951	-0.021	-0.23	4.954	0.003	0.03	EM
F6AHLW		4.954	-0.018	-0.20	4.909	-0.042	-0.47	PP
FKHTV2		5.031	0.059	0.63	4.932	-0.019	-0.21	EM
GZDBKY		5.008	0.036	0.38	4.936	-0.015	-0.17	TM
H3VU49		4.925	-0.047	-0.51	5.000	0.049	0.54	PP
JDVPTQ		4.861	-0.111	-1.19	4.813	-0.138	-1.53	MS
JHHU6R		5.033	0.061	0.65	5.017	0.066	0.72	TM
KMEHLY		4.992	0.020	0.21	4.966	0.015	0.16	OK
LD6QCV		4.873	-0.099	-1.06	4.954	0.003	0.03	TM
LHERVD		4.944	-0.028	-0.30	5.000	0.049	0.54	EM
M3XDT7	X	0.182	-4.790	-51.42	0.195	-4.756	-52.46	LA
MBEP78		4.789	-0.183	-1.96	4.764	-0.187	-2.06	LW
MBTBHU		5.027	0.054	0.58	5.032	0.081	0.89	EM
MZUFJY		4.993	0.021	0.22	4.971	0.020	0.22	TM
P6EGFU		4.982	0.010	0.10	4.905	-0.046	-0.51	LA
QTYNLT		4.965	-0.007	-0.08	4.921	-0.030	-0.34	TA
R9NC9W		4.810	-0.162	-1.74	4.850	-0.101	-1.12	TM
RLFZ4V		5.016	0.043	0.47	5.022	0.070	0.78	LW
RWFBVR		4.972	0.000	0.00	4.963	0.012	0.13	EM

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Paper & Paperboard Interlaboratory Testing Program

Analysis 360

Thickness (Caliper), Printing papers

TAPPI Official Test Method T411

WebCode	Data Flag	Sample GV03 Lab Mean	Sample GV03 Diff from Grand Mean	Sample GV03 CPV	Sample GV04 Lab Mean	Sample GV04 Diff from Grand Mean	Sample GV04 CPV	Instr Code
UKRELP	X	4.617	-0.355	-3.81	4.872	-0.079	-0.87	TM
UW892P		5.156	0.184	1.97	5.178	0.227	2.50	TM
VHJQK6		4.813	-0.159	-1.71	4.751	-0.200	-2.21	LA
W6EPLU		5.012	0.040	0.43	4.981	0.030	0.33	EM
W8HHFT		5.075	0.103	1.10	5.046	0.094	1.04	LW
X4YRPN		5.037	0.065	0.70	5.011	0.060	0.66	LW
XBG2EK		5.058	0.086	0.92	4.919	-0.032	-0.36	PP
XNLGZF		4.924	-0.048	-0.52	4.941	-0.010	-0.11	PP
Y64UVJ		5.112	0.140	1.50	5.047	0.096	1.05	LB

Summary Statistics	Sample GV03	Sample GV04
Grand Means	4.97 mils	4.95 mils
Stnd Dev Btwn Labs	0.09 mils	0.09 mils

Statistics based on 48 of 50 reporting participants.

Comments on Assigned Data Flags for Test #360

UKRELP (X) - Data for sample GV03 are low.

M3XDT7 (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

EM	Emveco	FR	Frank Instruments
LA	L & W Autoline	LB	L & W Autoline 600
LW	L & W	MS	Messmer
OK	Oakland	PP	Technidyne Profile/Plus
TA	Thwing-Albert	TM	TMI

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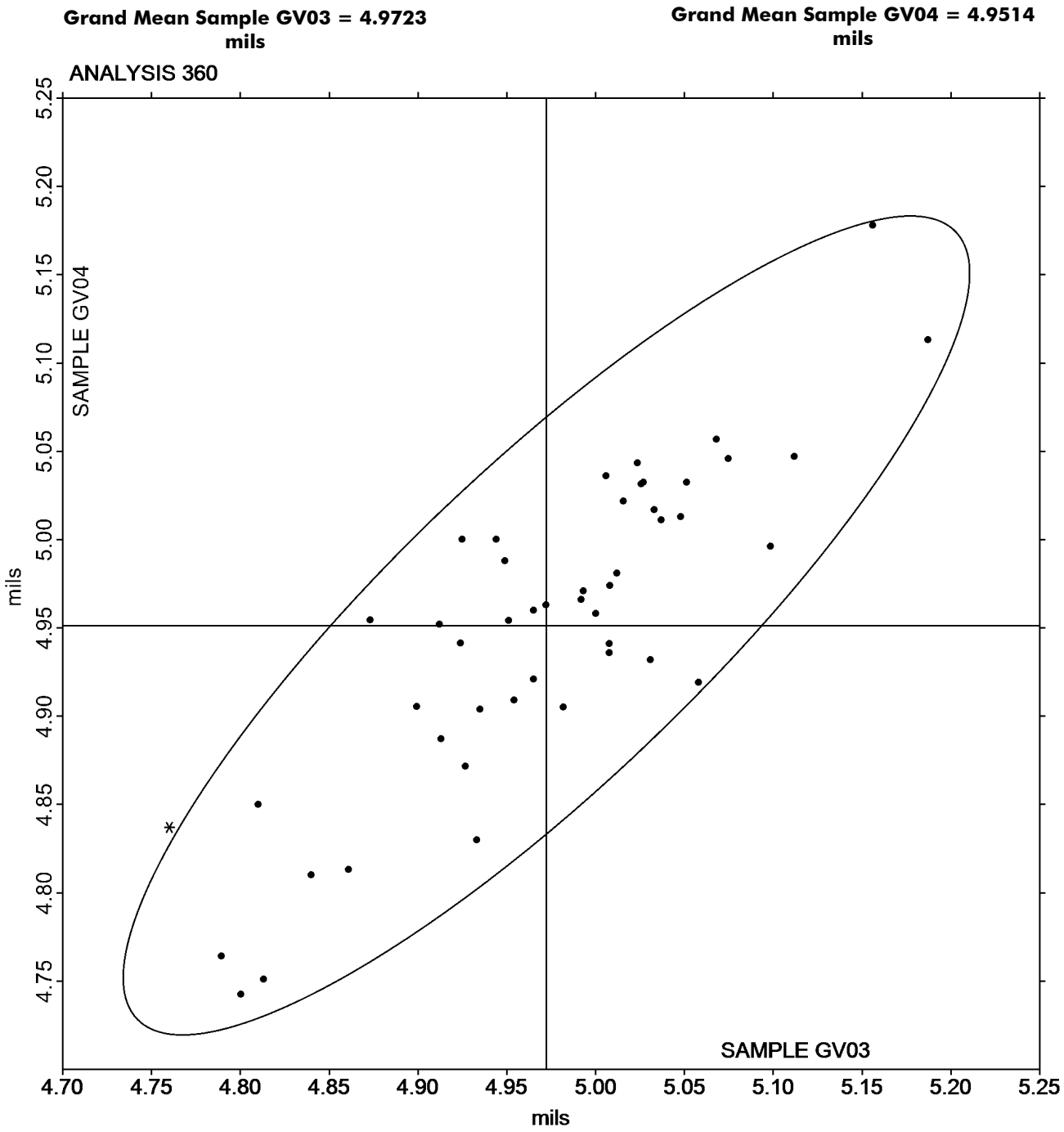

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Paper & Paperboard Interlaboratory Testing Program

Analysis 361

Thickness (Caliper), Packaging papers

TAPPI Official Test Method T411

WebCode	Data Flag	Sample GY03 Lab Mean	Sample GY03 Diff from Grand Mean	Sample GY03 CPV	Sample GY04 Lab Mean	Sample GY04 Diff from Grand Mean	Sample GY04 CPV	Instr Code
3YP2QX		7.764	0.165	1.24	7.667	0.164	1.48	LA
4UUN7L		7.602	0.003	0.02	7.472	-0.031	-0.28	LW
6KY66H		7.470	-0.129	-0.97	7.500	-0.003	-0.03	TA
6NFFEF		7.660	0.061	0.46	7.516	0.013	0.11	LA
6XLD3J		7.340	-0.259	-1.95	7.336	-0.167	-1.51	OK
8VAGBC		7.614	0.015	0.11	7.553	0.050	0.45	EM
8WNLAA		7.523	-0.076	-0.57	7.413	-0.090	-0.81	EM
98YHMC		7.543	-0.056	-0.42	7.461	-0.042	-0.38	LA
9QEMBP		7.854	0.255	1.92	7.642	0.139	1.26	PP
BF7WLJ		7.522	-0.077	-0.58	7.464	-0.039	-0.35	LA
BHAPFH		7.433	-0.166	-1.25	7.385	-0.118	-1.06	TA
BX687F	X	0.007	-7.592	-57.27	0.007	-7.496	-67.66	TM
CDX2FL		7.826	0.227	1.71	7.712	0.209	1.89	PP
CQX6F7		7.692	0.093	0.70	7.516	0.013	0.12	LW
CVTU2J		7.602	0.003	0.02	7.492	-0.011	-0.10	LW
D797RM	*	7.490	-0.109	-0.82	7.556	0.053	0.48	LW
DJX3RY		7.387	-0.212	-1.60	7.278	-0.225	-2.03	EM
E37PUJ		7.640	0.041	0.31	7.604	0.101	0.91	LW
F6BC63		7.726	0.127	0.96	7.644	0.141	1.27	LW
HCY68C		7.536	-0.063	-0.48	7.457	-0.046	-0.41	EM
HRV4HZ		7.672	0.073	0.55	7.504	0.001	0.01	LW
KXUPZE	X	7.430	-0.169	-1.28	7.870	0.367	3.31	LW
L2U3JX		7.547	-0.052	-0.39	7.480	-0.023	-0.21	VP
LHU7Z3		7.570	-0.029	-0.22	7.467	-0.036	-0.32	TM
MAYMYY		7.619	0.020	0.15	7.568	0.065	0.59	TM
MBTBHU		7.606	0.007	0.05	7.449	-0.054	-0.49	MS
MJ9WNC	*	7.248	-0.351	-2.65	7.189	-0.314	-2.83	LA
MRGNU2		7.722	0.123	0.93	7.623	0.120	1.08	LW
PZLFCU		7.660	0.061	0.46	7.567	0.064	0.58	EM
QTYNLT		7.647	0.048	0.36	7.502	-0.001	-0.01	TA
RLFZ4V		7.686	0.087	0.65	7.540	0.037	0.34	LW
U3FUPL		7.703	0.104	0.78	7.520	0.017	0.15	EM
VZ6AEQ		7.489	-0.110	-0.83	7.361	-0.142	-1.28	LW
XNLGZF		7.661	0.062	0.47	7.567	0.064	0.58	LW
Y64UVJ		7.713	0.114	0.86	7.593	0.090	0.81	LB
YXMYEP	X	6.877	-0.722	-5.45	6.899	-0.604	-5.45	TM

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Summary Statistics	Sample GY03	Sample GY04
Grand Means	7.60 mils	7.50 mils
Stnd Dev Btwn Labs	0.13 mils	0.11 mils

Statistics based on 33 of 36 reporting participants.

Comments on Assigned Data Flags for Test #361

YXMYEP (X) - Data for both samples are low. Possible Systematic Error.

BX687F (X) - Extreme Data.

KXUPZE (X) - Data for sample GY04 are high.

Key to Instrument Codes Reported by Participants

EM	Emveco	LA	L & W Autoline
LB	L & W Autoline 600	LW	L & W
MS	Messmer	OK	Oakland
PP	Technidyne Profile/Plus	TA	Thwing-Albert
TM	TMI	VP	Valmet Paper Lab Automated Tester

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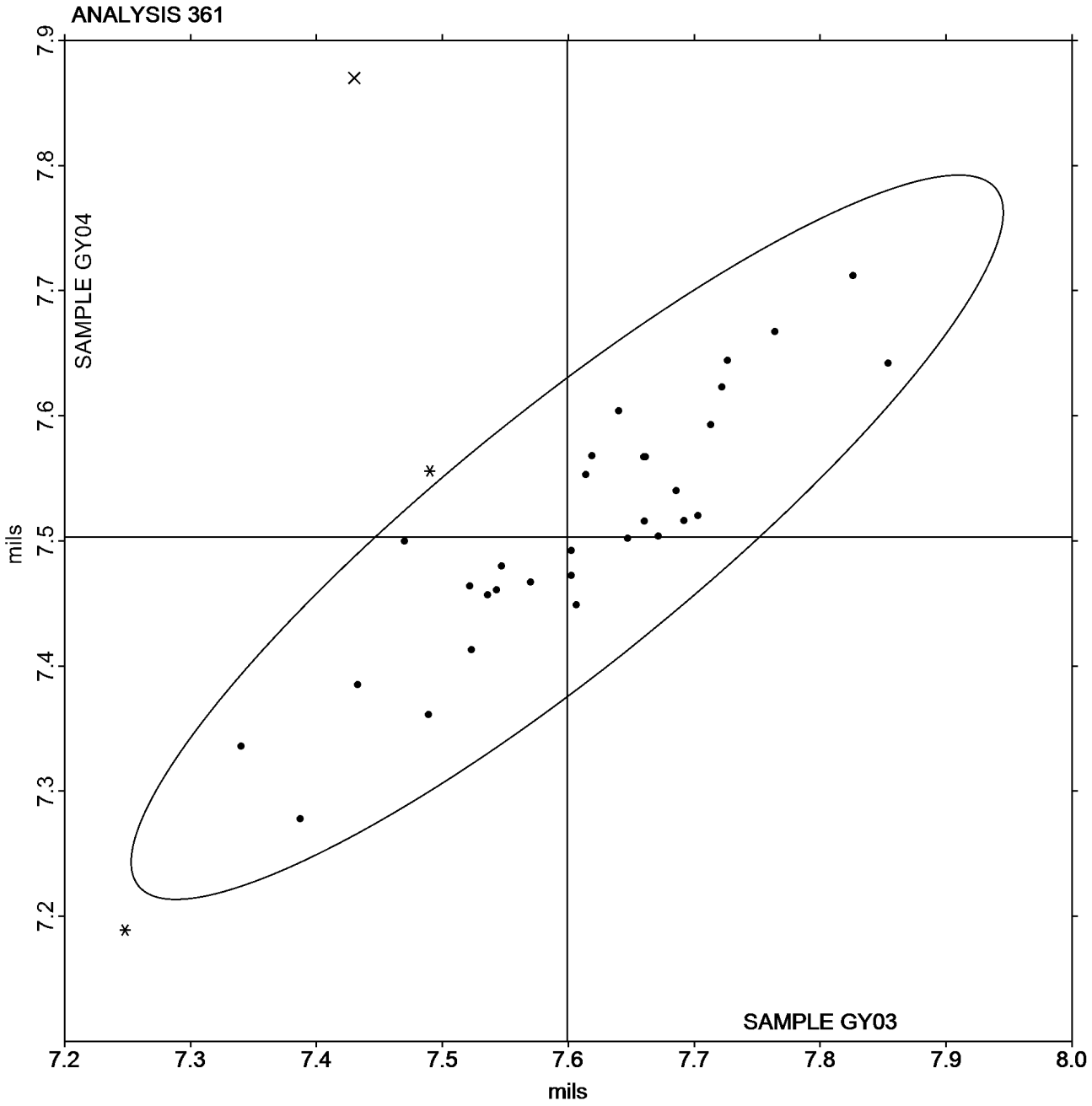
Grand Mean Sample GY03 = 7.5991 mils

Grand Mean Sample GY04 = 7.5030 mils



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Paper & Paperboard Interlaboratory Testing Program

Analysis 364

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

TAPPI Official Test Method T549

WebCode	Data Flag	Sample GD03 Lab Mean	Sample GD03 Diff from Grand Mean	Sample GD03 CPV	Sample GD04 Lab Mean	Sample GD04 Diff from Grand Mean	Sample GD04 CPV	Instr Code
3334B9		0.3766	-0.0934	-0.71	0.3648	-0.1198	-0.93	IT
4F9DFA		0.5200	0.0500	0.38	0.5460	0.0614	0.48	TA
9QEMBP		0.6040	0.1340	1.02	0.6320	0.1474	1.15	TP
A4VARZ		0.4060	-0.0640	-0.49	0.4640	-0.0206	-0.16	TA
C4PPYH		0.2204	-0.2496	-1.90	0.2442	-0.2404	-1.87	TA
F6BC63		0.4170	-0.0530	-0.40	0.4094	-0.0752	-0.58	TA
MJ9WNC		0.5276	0.0576	0.44	0.5510	0.0664	0.52	TA
R9NC9W		0.3138	-0.1562	-1.19	0.3424	-0.1422	-1.11	XX
RWFBVR		0.5890	0.1190	0.90	0.5558	0.0712	0.55	TA
TPVTUN		0.6132	0.1432	1.09	0.5986	0.1140	0.89	TA
WCTDHG		0.5822	0.1122	0.85	0.6226	0.1380	1.07	TA

Summary Statistics	Sample GD03	Sample GD04
Grand Means	0.47 COF	0.48 COF
Stnd Dev Btwn Labs	0.13 COF	0.13 COF

Statistics based on 11 of 11 reporting participants.

Key to Instrument Codes Reported by Participants

IT	IMASS SP-2100	TA	Thwing-Albert Friction Tester
TP	TMI 32-25 COF Tester (Inclined Plane)	XX	Instrument make/model not specified by lab

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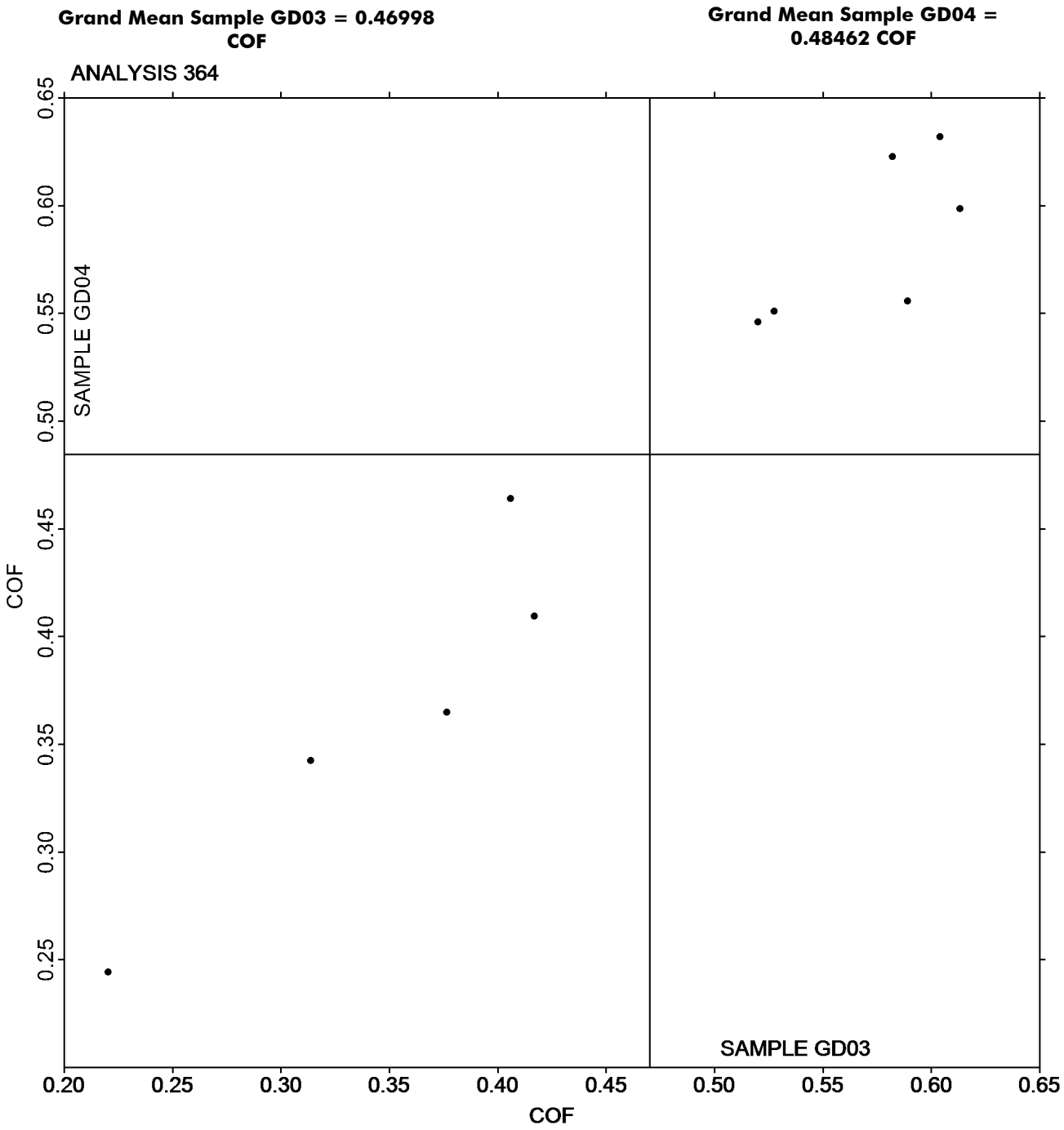

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 365

Coefficient of Kinetic Friction - Horizontal Plane Method - Printing Papers

TAPPI Official Test Method T549

WebCode	Data Flag	Sample GD03 Lab Mean	Sample GD03 Diff from Grand Mean	Sample GD03 CPV	Sample GD04 Lab Mean	Sample GD04 Diff from Grand Mean	Sample GD04 CPV	Instr Code
3334B9		0.5650	0.1711	1.76	0.5802	0.1736	1.87	IR
4F9DFA		0.3780	-0.0159	-0.16	0.3980	-0.0086	-0.09	XX
A4VARZ		0.2980	-0.0959	-0.99	0.3360	-0.0706	-0.76	TA
C4PPYH		0.2142	-0.1797	-1.85	0.2288	-0.1778	-1.91	TA
F6BC63		0.4476	0.0537	0.55	0.4154	0.0088	0.09	TN
MJ9WNC		0.4044	0.0105	0.11	0.4470	0.0404	0.43	TA
R9NC9W		0.3238	-0.0701	-0.72	0.3498	-0.0568	-0.61	XX
RWFBVR		0.4606	0.0667	0.69	0.4042	-0.0024	-0.03	TA
TPVTUN		0.4278	0.0339	0.35	0.4224	0.0158	0.17	TA
WCTDHG		0.4198	0.0259	0.27	0.4838	0.0772	0.83	TA

Summary Statistics	Sample GD03	Sample GD04
Grand Means	0.39 COF	0.41 COF
Stnd Dev Btwn Labs	0.10 COF	0.09 COF

Statistics based on 10 of 10 reporting participants.

Key to Instrument Codes Reported by Participants

IR	IMASS SP-2000	TA	Thwing-Albert Friction Tester
TN	TMI 32-07 Monitor/Slip and Friction	XX	Instrument make/model not specified by lab

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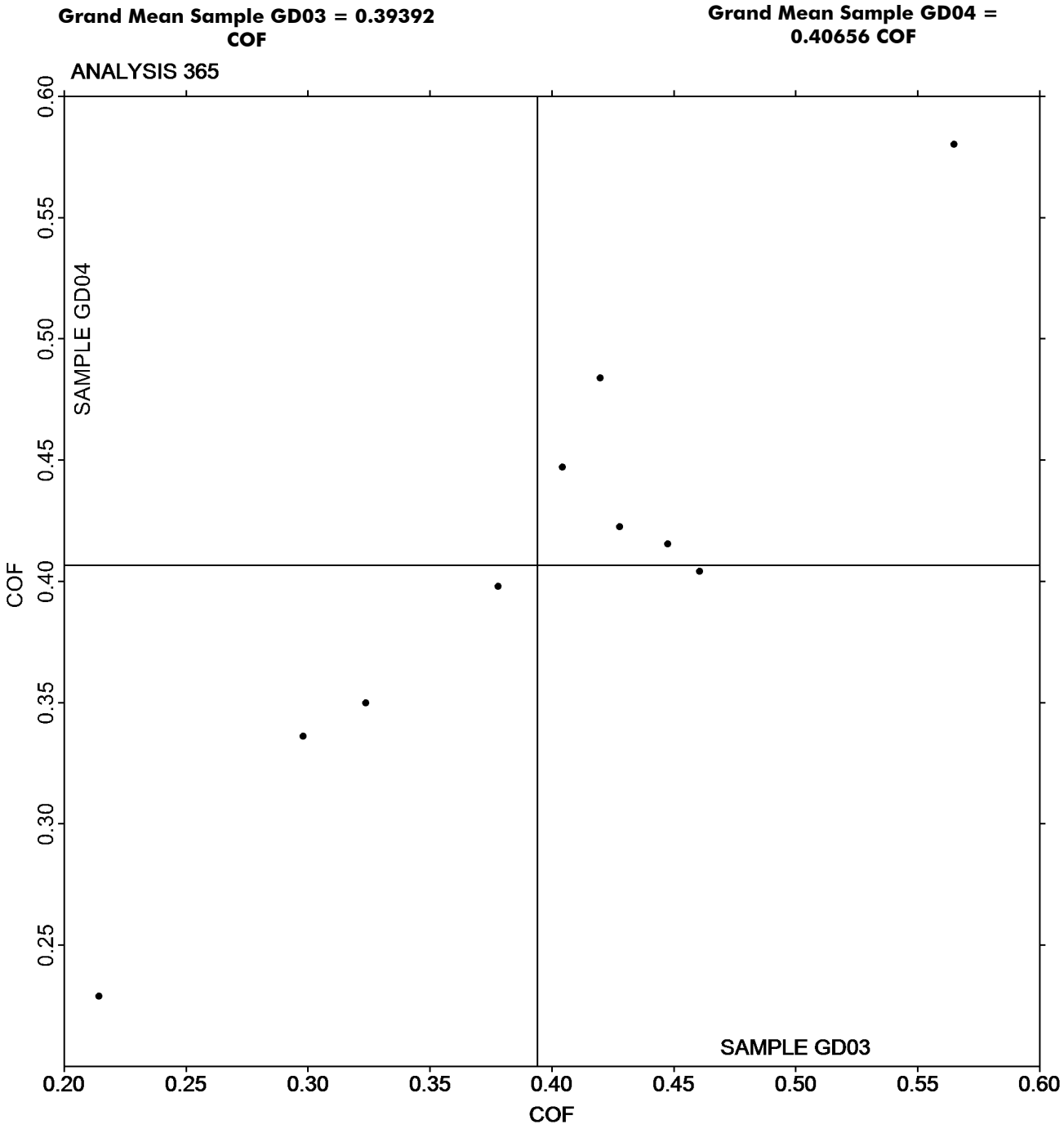

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

TAPPI Official Test Method T460

WebCode	Data Flag	Sample GE03 Lab Mean	Sample GE03 Diff from Grand Mean	Sample GE03 CPV	Sample GE04 Lab Mean	Sample GE04 Diff from Grand Mean	Sample GE04 CPV	Instr Code
2JJEQW		18.91	1.75	2.01	22.78	1.84	1.76	PP
3N9G6G		17.56	0.40	0.46	21.93	0.99	0.95	GA
3YP2QX		16.85	-0.31	-0.36	20.17	-0.77	-0.73	LA
4F9DFA		17.97	0.80	0.92	21.34	0.40	0.38	PP
7DE8CN		16.93	-0.23	-0.27	20.61	-0.33	-0.31	HG
86CJR3		16.97	-0.19	-0.22	20.79	-0.15	-0.14	TL
8KAN3K		17.06	-0.11	-0.12	21.38	0.44	0.42	GL
98YHMC		17.52	0.36	0.41	21.21	0.27	0.26	LA
9F982B		14.98	-2.18	-2.51	18.92	-2.02	-1.92	GA
9QEMBP		17.09	-0.07	-0.08	20.38	-0.56	-0.53	PP
A4VARZ		17.31	0.15	0.17	22.62	1.68	1.60	VM
BQ6TKE		17.04	-0.12	-0.14	19.99	-0.95	-0.90	LP
C4PPYH		17.94	0.78	0.89	20.92	-0.02	-0.02	PP
CMK3UA		17.10	-0.06	-0.07	21.50	0.56	0.54	LW
CVTU2J		15.63	-1.53	-1.76	19.01	-1.93	-1.84	LP
D797RM		16.95	-0.21	-0.25	20.13	-0.81	-0.77	LP
DJX3RY		18.43	1.27	1.45	22.01	1.07	1.02	LP
F6AHLW		16.57	-0.59	-0.68	20.93	-0.01	-0.01	PP
FKHTV2		17.14	-0.02	-0.03	21.24	0.30	0.29	PP
FVJWGX		17.34	0.18	0.20	20.12	-0.82	-0.78	GL
H3VU49		17.09	-0.07	-0.08	21.51	0.57	0.54	PP
HCY68C		17.32	0.15	0.17	22.22	1.28	1.22	PP
JHHU6R		16.64	-0.52	-0.60	19.85	-1.09	-1.04	PP
KXUPZE	X	15.35	-1.81	-2.08	22.00	1.06	1.01	TL
L2U3JX		17.93	0.77	0.88	22.29	1.35	1.29	VM
LD6QCV	X	12.54	-4.62	-5.31	15.45	-5.49	-5.23	LW
LHERVD		16.21	-0.95	-1.09	20.88	-0.06	-0.05	PP
MJ9WNC		16.99	-0.17	-0.20	20.36	-0.58	-0.55	LA
MZUFJY		17.51	0.35	0.40	21.41	0.47	0.45	HG
P6EGFU	*	19.43	2.27	2.61	23.18	2.25	2.14	LA
QTYNLT		17.30	0.13	0.15	21.77	0.83	0.79	PP
R9NC9W		16.70	-0.46	-0.53	20.20	-0.74	-0.70	GS
TPVTUN		18.02	0.86	0.98	22.34	1.40	1.34	WG
UKRELP		17.82	0.66	0.75	20.76	-0.18	-0.17	LP
UW892P		16.23	-0.93	-1.07	20.33	-0.61	-0.58	LP
VCHELM		16.30	-0.86	-0.99	19.42	-1.52	-1.45	LP
W6EPLU		16.42	-0.74	-0.85	21.48	0.54	0.51	PP
W8HHFT		16.84	-0.32	-0.37	20.34	-0.60	-0.57	LP
XBG2EK	*	18.75	1.58	1.82	20.53	-0.41	-0.39	PP
XNLGZF		17.29	0.13	0.15	20.84	-0.10	-0.09	PP
YPCXTN		15.69	-1.47	-1.69	18.62	-2.32	-2.21	XX

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Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

TAPPI Official Test Method T460

		Sample GE03			Sample GE04			
WebCode	Data Flag	Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	Instr Code
ZUZ2XC		16.78	-0.38	-0.44	21.20	0.26	0.25	LP

Summary Statistics	Sample GE03	Sample GE04
Grand Means	17.16 sec/100 cc	20.94 sec/100 cc
Stnd Dev Btwn Labs	0.87 sec/100 cc	1.05 sec/100 cc

Statistics based on 40 of 42 reporting participants.

Comments on Assigned Data Flags for Test #370

LD6QCV (X) - Data for both samples are low.

KXUPZE (X) - Inconsistent in testing between samples.

Key to Instrument Codes Reported by Participants

GA	Gurley Precision #4340 Automatic Densometer	GL	Gurley #4110
GS	Gurley-Hill S-P-S Tester #4190	HG	Technidyne - Hagerty Model #1
LA	L & W Autoline	LP	L & W Densometer, Air Permeance
LW	L & W Type Gurley Densometer, Oil Flotation	PP	Technidyne Profile/Plus
TL	Gurley Densometer #4110, Oil Flotation	VM	Valmet PaperLab (was Kajaani/Robotest)
WG	W & LE Gurley Tester	XX	Instrument make/model not specified by lab

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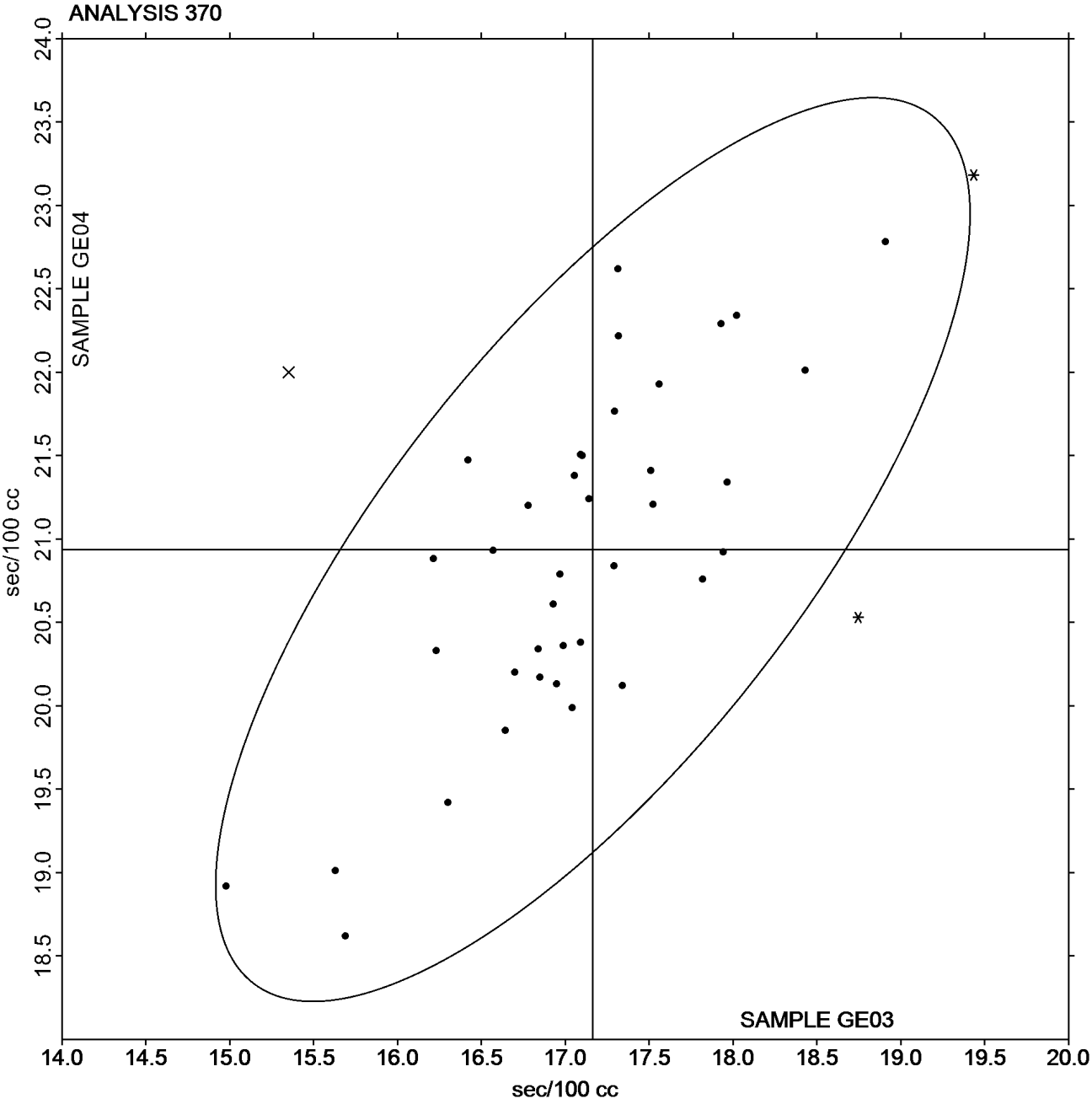
Grand Mean Sample GE03 = 17.164 sec/100 cc

Grand Mean Sample GE04 = 20.938 sec/100 cc



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Paper & Paperboard Interlaboratory Testing Program

Analysis 372

Porosity - Sheffield Type - Sheffield Units for 3/4 inch Diameter Orifice

TAPPI Official Test Method T547

WebCode	Data Flag	Sample GE03 Lab Mean	Sample GE03 Diff from Grand Mean	Sample GE03 CPV	Sample GE04 Lab Mean	Sample GE04 Diff from Grand Mean	Sample GE04 CPV	Instr Code
9XDEFC		158.2	-1.6	-0.35	134.6	-1.4	-0.23	HM
F6AHLW		157.1	-2.7	-0.59	126.7	-9.3	-1.50	PP
KMEHLY		167.6	7.8	1.70	143.4	7.4	1.18	LA
L2U3JX		162.4	2.6	0.58	141.0	5.0	0.80	PP
QTYNLT		154.7	-5.1	-1.12	131.7	-4.3	-0.69	PP
R9NC9W		158.8	-1.0	-0.22	138.7	2.7	0.43	SH

Summary Statistics	Sample GE03	Sample GE04
Grand Means	159.81 Sheffield Units	136.02 Sheffield Units
Stnd Dev Btwn Labs	4.57 Sheffield Units	6.23 Sheffield Units

Statistics based on 6 of 6 reporting participants.

Key to Instrument Codes Reported by Participants

HM	Technidyne - Hagerty Model #538	LA	L & W Roughness Sheffield - Autoline
PP	Technidyne Profile/Plus	SH	Sheffield

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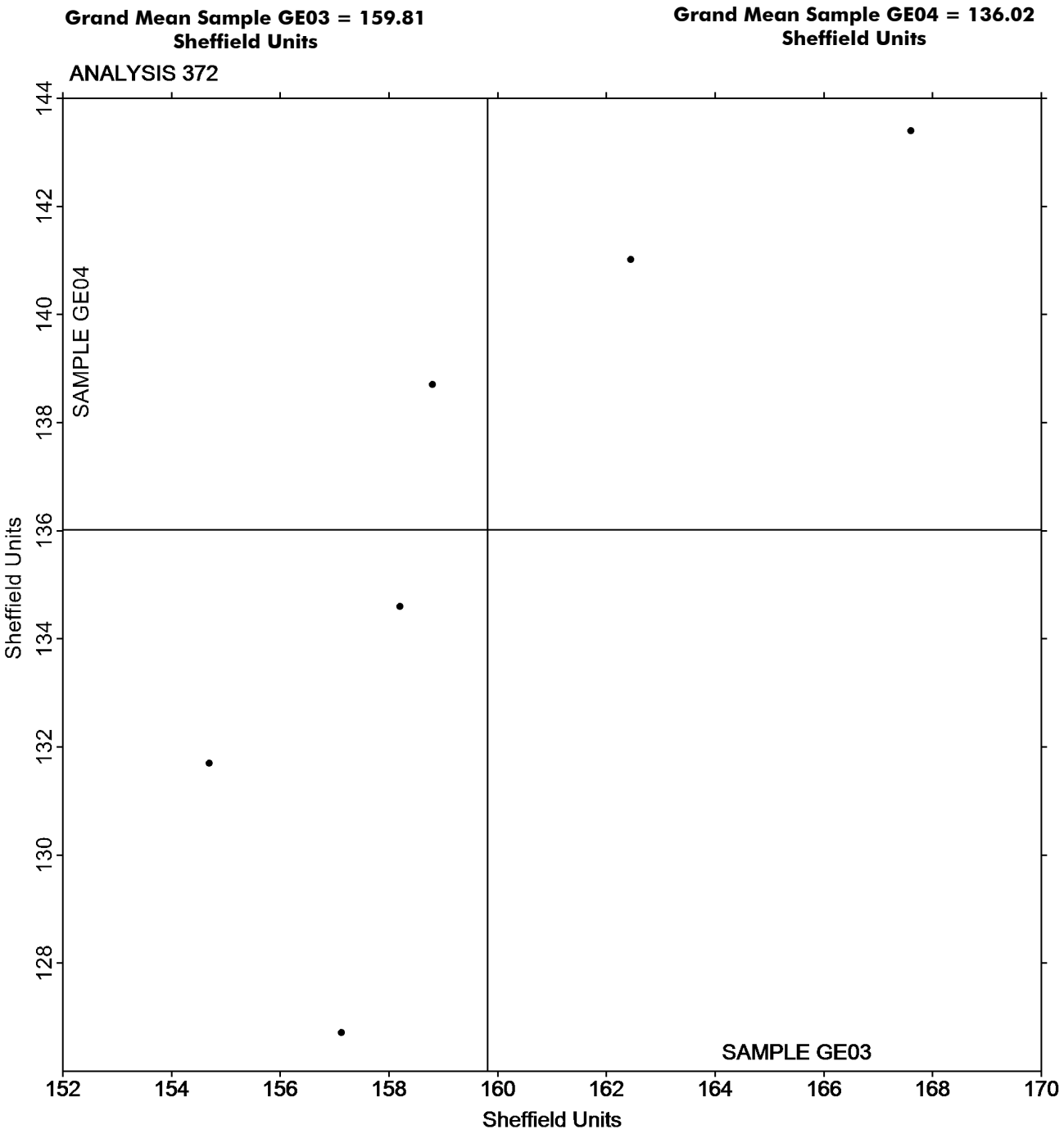

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 376

Roughness - Print Surf Method - 0.5 to 4.0 Microns

TAPPI Official Test Method T555

WebCode	Data Flag	Sample GJ03 Lab Mean	Sample GJ03 Diff from Grand Mean	Sample GJ03 CPV	Sample GJ04 Lab Mean	Sample GJ04 Diff from Grand Mean	Sample GJ04 CPV	Instr Code
3DM8KT		0.9060	-0.0055	-0.06	0.7580	-0.0746	-0.82	ZZ
3G869J		0.9240	0.0125	0.14	0.8840	0.0514	0.57	ZZ
4TY76K		0.9500	0.0385	0.42	0.9670	0.1344	1.48	ZZ
6NWN6V		0.7940	-0.1175	-1.28	0.8260	-0.0066	-0.07	ZZ
6XLD3J		0.9660	0.0545	0.60	0.8650	0.0324	0.36	ZZ
8VAGBC		0.7430	-0.1685	-1.84	0.6180	-0.2146	-2.36	ZZ
8WNLAA		0.9760	0.0645	0.71	0.8030	-0.0296	-0.33	ZZ
BF7WLJ	*	0.7880	-0.1235	-1.35	0.9910	0.1584	1.74	ZZ
BX687F		0.9450	0.0335	0.37	0.7900	-0.0426	-0.47	ZZ
C4PPYH		0.9230	0.0115	0.13	0.8170	-0.0156	-0.17	ZZ
HCY68C		0.9610	0.0495	0.54	0.7850	-0.0476	-0.52	ZZ
L2U3JX	X	1.3580	0.4465	4.88	1.3080	0.4754	5.23	ZZ
LHERVD		0.9880	0.0765	0.84	0.8260	-0.0066	-0.07	ZZ
M3XDT7		0.9710	0.0595	0.65	0.8180	-0.0146	-0.16	ZZ
PZLFCU		0.9650	0.0535	0.58	0.9090	0.0764	0.84	ZZ
RLFZ4V		0.7850	-0.1265	-1.38	0.7770	-0.0556	-0.61	ZZ
TPVTUN		0.7960	-0.1155	-1.26	0.8430	0.0104	0.11	ZZ
U3FUPL		0.9600	0.0485	0.53	0.8610	0.0284	0.31	ZZ
UKRELP		0.9380	0.0265	0.29	0.9520	0.1194	1.31	ZZ
VHJQK6		0.8310	-0.0805	-0.88	0.7320	-0.1006	-1.11	ZZ
VZ6AEQ		1.1070	0.1955	2.14	0.9800	0.1474	1.62	ZZ
W6EPLU		0.8360	-0.0755	-0.82	0.6900	-0.1426	-1.57	ZZ
WCTDHG		1.0690	0.1575	1.72	0.9110	0.0784	0.86	ZZ
X4YRPN		0.8910	-0.0205	-0.22	0.7780	-0.0546	-0.60	ZZ
XGKZQV	X	4.4010	3.4895	38.12	8.0290	7.1964	79.10	ZZ
Y64UVJ		0.8620	-0.0495	-0.54	0.8010	-0.0316	-0.35	ZZ

Summary Statistics	Sample GJ03	Sample GJ04
Grand Means	0.91 Microns	0.83 Microns
Stnd Dev Btwn Labs	0.09 Microns	0.09 Microns

Statistics based on 24 of 26 reporting participants.

Comments on Assigned Data Flags for Test #376

L2U3JX (X) - Data for both samples are high. Inconsistent within the determinations of sample GJ03.

XGKZQV (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

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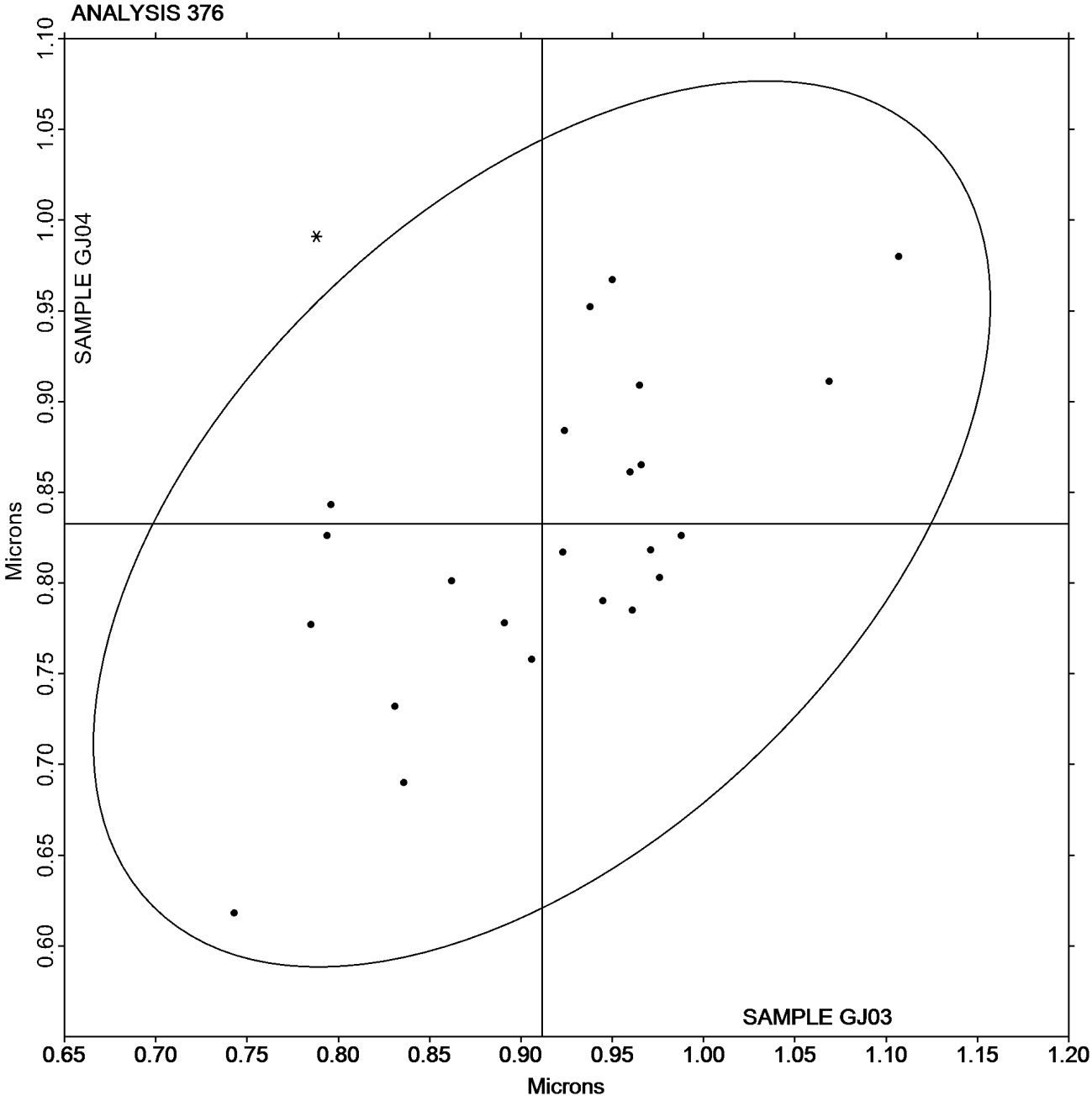
Grand Mean Sample GJ03 = 0.91146 Microns

Grand Mean Sample GJ04 = 0.83258 Microns



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Paper & Paperboard Interlaboratory Testing Program

Analysis 377

Roughness - Print Surf Method - 2.5 to 6.0 Microns

TAPPI Official Test Method T555

WebCode	Data Flag	Sample GK03 Lab Mean	Sample GK03 Diff from Grand Mean	Sample GK03 CPV	Sample GK04 Lab Mean	Sample GK04 Diff from Grand Mean	Sample GK04 CPV	Instr Code
4F9DFA		5.764	-0.024	-0.18	6.033	0.284	1.10	ZZ
8VAGBC		5.679	-0.109	-0.79	5.375	-0.374	-1.45	ZZ
9QEMBP		5.892	0.104	0.75	5.837	0.088	0.34	ZZ
F6BC63		5.770	-0.018	-0.13	5.650	-0.099	-0.38	ZZ
HCY68C		6.005	0.217	1.57	6.090	0.341	1.32	ZZ
RWFBVR		5.858	0.070	0.51	5.994	0.245	0.95	ZZ
TPVTUN		5.518	-0.270	-1.96	5.751	0.002	0.01	ZZ
XNLGZF		5.766	-0.022	-0.16	5.543	-0.206	-0.80	ZZ
Y64UVJ		5.841	0.053	0.38	5.468	-0.281	-1.09	ZZ

Summary Statistics	Sample GK03	Sample GK04
Grand Means	5.79 Microns	5.75 Microns
Stnd Dev Btwn Labs	0.14 Microns	0.26 Microns

Statistics based on 9 of 9 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

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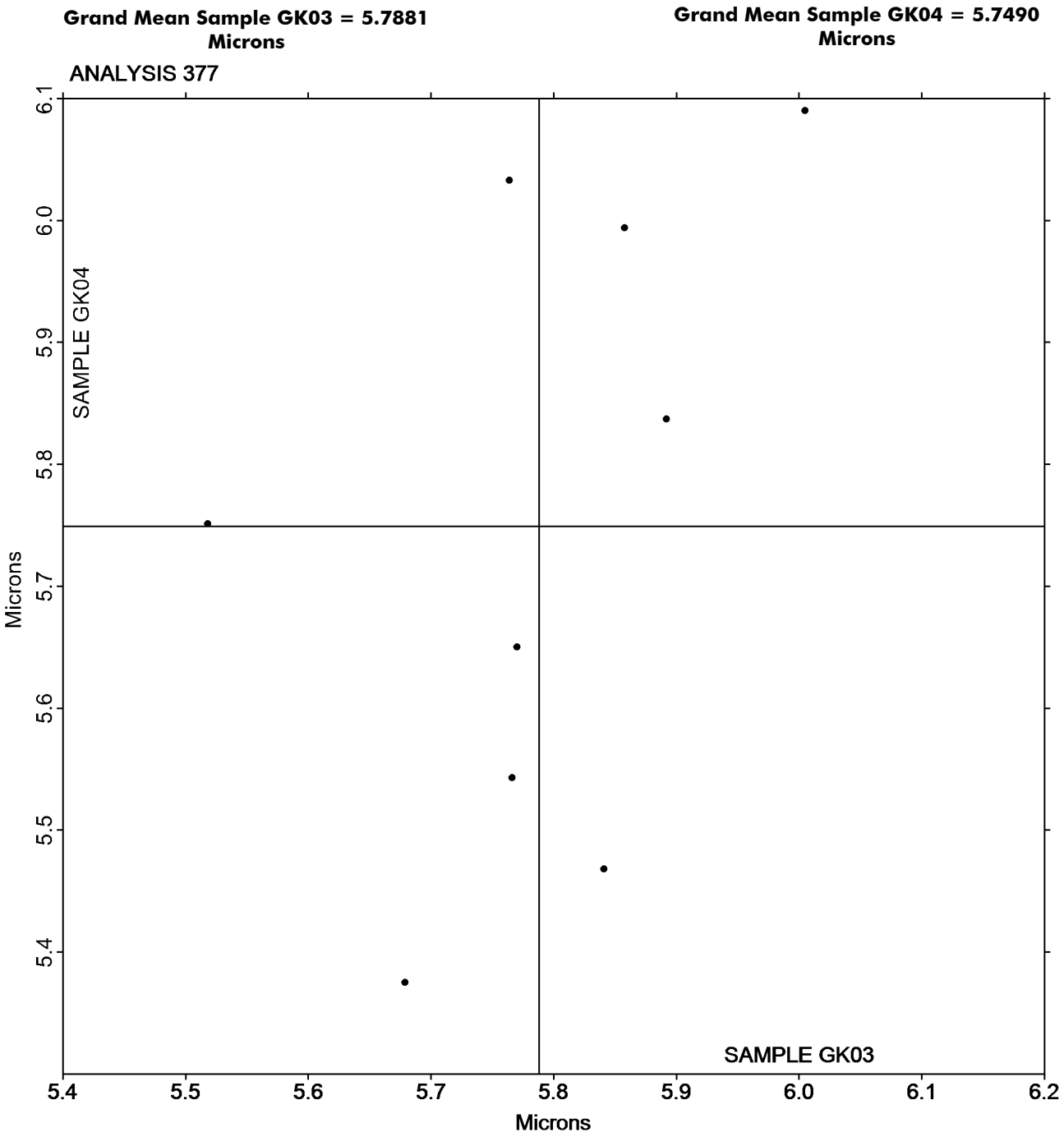

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 378

Roughness - Sheffield Type

TAPPI Official Test Method T538

WebCode	Data Flag	Sample GL03 Lab Mean	Sample GL03 Diff from Grand Mean	Sample GL03 CPV	Sample GL04 Lab Mean	Sample GL04 Diff from Grand Mean	Sample GL04 CPV	Instr Code
26XZPH	X	91.0	-31.3	-4.41	92.4	-30.5	-4.21	LA
2AB6YX		118.9	-3.5	-0.49	117.8	-5.1	-0.71	PP
2JJEQW		118.3	-4.1	-0.57	119.9	-3.0	-0.41	PP
3DM8KT		120.3	-2.0	-0.29	123.0	0.1	0.01	LW
3N9G6G		128.3	6.0	0.84	132.1	9.2	1.27	GA
3YP2QX		121.2	-1.1	-0.16	123.0	0.1	0.01	LA
4F9DFA		117.5	-4.9	-0.69	124.3	1.4	0.19	PP
6XLD3J	X	169.5	47.2	6.64	170.5	47.6	6.57	GL
7DE8CN		120.7	-1.6	-0.23	124.1	1.2	0.16	HM
86CJR3		127.8	5.5	0.77	134.2	11.3	1.56	SS
8VAGBC		120.3	-2.0	-0.29	121.6	-1.3	-0.18	LW
8WNLAA		123.2	0.9	0.13	127.1	4.2	0.58	PP
9QEMBP	X	34.5	-87.8	-12.36	7.7	-115.2	-15.91	PP
A4VARZ		106.2	-16.1	-2.27	110.5	-12.4	-1.71	PP
BF7WLJ		118.3	-4.0	-0.57	112.5	-10.4	-1.44	LA
BX687F	X	153.1	30.8	4.33	128.9	6.0	0.83	TT
C4PPYH		123.6	1.3	0.19	119.6	-3.4	-0.46	PP
CMK3UA		131.6	9.3	1.31	132.9	10.0	1.38	TS
D797RM		121.3	-1.0	-0.14	123.0	0.1	0.01	LW
F6AHLW		119.7	-2.6	-0.37	120.2	-2.7	-0.38	TT
F6BC63		122.6	0.3	0.04	125.1	2.2	0.30	LW
FKHTV2		116.1	-6.2	-0.88	121.6	-1.3	-0.18	SH
H3VU49		112.4	-10.0	-1.40	114.1	-8.8	-1.21	PP
HCY68C		126.7	4.4	0.62	126.7	3.8	0.52	LW
JHHU6R		123.1	0.8	0.11	116.3	-6.6	-0.91	PP
KMEHLY		122.1	-0.2	-0.03	120.8	-2.1	-0.29	LA
L2U3JX	*	123.1	0.8	0.11	111.9	-11.0	-1.52	VM
LD6QCV		139.1	16.8	2.36	139.0	16.1	2.22	SH
LHERVD		120.4	-1.9	-0.27	116.8	-6.1	-0.84	PP
MZUFJY		133.9	11.6	1.63	132.5	9.6	1.32	TS
P6EGFU		107.4	-15.0	-2.11	110.0	-12.9	-1.78	LA
PZLFCU		119.7	-2.6	-0.37	116.9	-6.0	-0.83	PP
QTYNLT		119.8	-2.5	-0.36	121.7	-1.2	-0.17	PP
R9NC9W		113.9	-8.4	-1.19	116.7	-6.2	-0.86	XX
RWFBVR		118.2	-4.1	-0.58	120.2	-2.7	-0.38	PP
TPVTUN		140.0	17.7	2.49	137.9	15.0	2.07	XX
U3FUPL		133.2	10.8	1.52	131.9	9.0	1.24	PP
UKRELP		123.1	0.8	0.11	127.7	4.8	0.66	TS
VZ6AEQ		112.8	-9.5	-1.34	115.3	-7.7	-1.06	PP
W6EPLU		125.6	3.2	0.46	129.5	6.6	0.91	PP
W8HHFT	X	163.9	41.6	5.85	153.2	30.3	4.18	LW

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Paper & Paperboard Interlaboratory Testing Program

Analysis 378
Roughness - Sheffield Type
TAPPI Official Test Method T538

WebCode	Data Flag	Sample GL03 Lab Mean	Sample GL03 Diff from Grand Mean	Sample GL03 CPV	Sample GL04 Lab Mean	Sample GL04 Diff from Grand Mean	Sample GL04 CPV	Instr Code
WCTDHG		130.2	7.9	1.11	127.7	4.8	0.66	HM
XBG2EK		124.4	2.0	0.29	122.2	-0.8	-0.10	PP
XNLGZF		122.7	0.3	0.05	130.5	7.6	1.05	PP
Y64UVJ		126.3	4.0	0.56	117.4	-5.5	-0.76	LB
YNFJ7V	X	149.6	27.3	3.84	152.6	29.7	4.10	TT
YY2LNQ		121.6	-0.7	-0.10	123.4	0.5	0.07	GA

Summary Statistics	Sample GL03	Sample GL04
Grand Means	122.33 Sheffield	122.92 Sheffield
Stnd Dev Btwn Labs	7.10 Sheffield	7.24 Sheffield

Statistics based on 41 of 47 reporting participants.

Comments on Assigned Data Flags for Test #378

26XZPH (X) - Data for both samples are low. Possible Systematic Error.

6XLD3J (X) - Extreme Data.

W8HHFT (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

YNFJ7V (X) - Data for both samples are high. Possible Systematic Error.

BX687F (X) - Data for sample GL03 are high.

9QEMBP (X) - Extreme Data.

Analysis Notes:

A4VARZ - One determination removed from the Lab Mean of Sample GL03 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

GA	Gurley Precision #4340 Automatic Densometer	GL	Giddings and Lewis Sheffield
HM	Technidyne - Hagerty Model #538	LA	L & W Roughness Sheffield - Autoline
LB	L & W - Autoline 600	LW	L & W Roughness Tester
PP	Technidyne Profile/Plus	SH	Sheffield (Bendix Precisionaire)
SS	Sheffield Smoothchek Tester	TS	TMI Monitor/Smoothness, Model 58-02
TT	TMI Monitor/Smoothness II, Model 58-24	VM	Valmet PaperLab (was Kajaani\Robotest)
XX	Instrument make/model not specified by lab		

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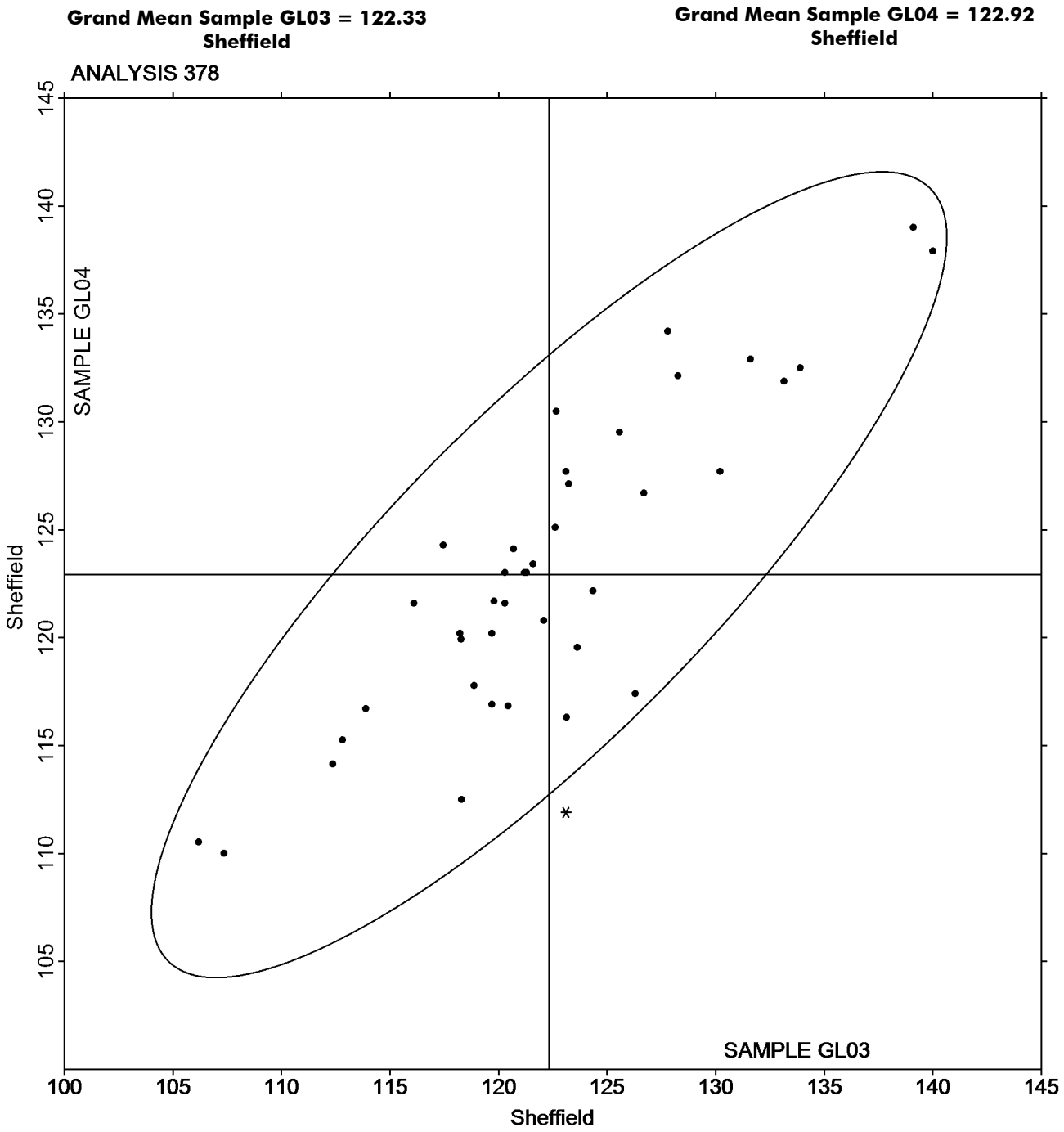

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Paper & Paperboard Interlaboratory Testing Program

Analysis 382
Moisture in Paper
TAPPI Official Test Method T412

WebCode	Data Flag	Sample GM03 Lab Mean	Sample GM03 Diff from Grand Mean	Sample GM03 CPV	Sample GM04 Lab Mean	Sample GM04 Diff from Grand Mean	Sample GM04 CPV	Instr Code
4F9DFA		4.510	0.074	0.22	4.518	0.131	0.34	ZZ
4G6R6N		5.052	0.616	1.79	4.987	0.601	1.58	ZZ
4TY76K		4.396	-0.040	-0.12	4.422	0.035	0.09	ZZ
82JF6P		4.900	0.464	1.35	4.570	0.183	0.48	ZZ
9XDEFC		4.433	-0.003	-0.01	4.565	0.178	0.47	ZZ
AGLW4M		4.418	-0.018	-0.05	4.164	-0.222	-0.58	ZZ
BX687F		4.992	0.556	1.62	5.232	0.845	2.22	ZZ
DG9GGW		4.093	-0.343	-1.00	4.073	-0.314	-0.82	ZZ
FBG72J		3.963	-0.473	-1.38	3.870	-0.516	-1.35	ZZ
MAYMYY		4.314	-0.122	-0.36	4.335	-0.052	-0.14	ZZ
RAZXZJ		4.172	-0.265	-0.77	4.130	-0.257	-0.67	ZZ
TGWBDR		4.360	-0.076	-0.22	4.380	-0.007	-0.02	ZZ
W8HHFT		4.006	-0.430	-1.25	3.906	-0.481	-1.26	ZZ
Y32WKQ		4.500	0.064	0.19	4.260	-0.127	-0.33	ZZ

Summary Statistics	Sample GM03	Sample GM04
Grand Means	4.44 Percent	4.39 Percent
Stnd Dev Btwn Labs	0.34 Percent	0.38 Percent

Statistics based on 14 of 14 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

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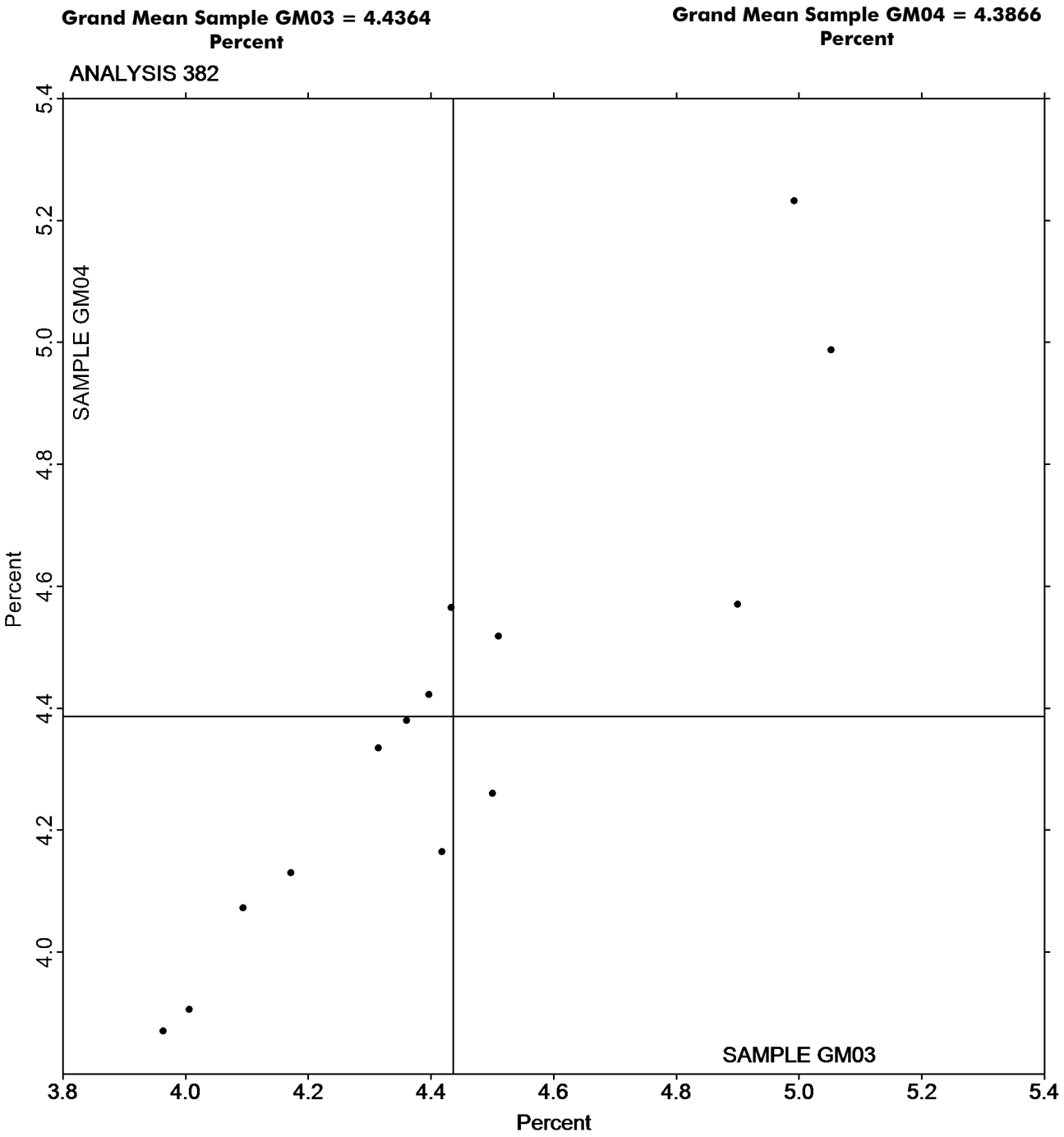

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 384

Opacity (89% Reflectance Backing) - Fine Papers

TAPPI Official Test Method T425

WebCode	Data Flag	Sample GN03 Lab Mean	Sample GN03 Diff from Grand Mean	Sample GN03 CPV	Sample GN04 Lab Mean	Sample GN04 Diff from Grand Mean	Sample GN04 CPV	Instr Code
2AB6YX		93.38	-0.18	-0.54	93.21	-0.47	-1.35	ZZ
2JJEQW		93.43	-0.13	-0.40	93.55	-0.13	-0.37	ZZ
3G869J		93.48	-0.07	-0.22	93.87	0.19	0.55	ZZ
4F9DFA		94.10	0.54	1.68	94.04	0.35	1.02	ZZ
62KQMN		94.07	0.51	1.60	94.27	0.59	1.69	ZZ
7DE8CN		93.13	-0.43	-1.32	93.43	-0.25	-0.72	ZZ
86CJR3		93.21	-0.35	-1.07	93.33	-0.35	-1.01	ZZ
8KAN3K		93.85	0.29	0.92	93.83	0.15	0.42	ZZ
9QEMBP		93.34	-0.22	-0.67	93.34	-0.34	-0.98	ZZ
A4VARZ		93.12	-0.43	-1.35	93.08	-0.60	-1.71	ZZ
C4PPYH		93.48	-0.07	-0.22	93.78	0.10	0.29	ZZ
CDEDW6		93.57	0.02	0.06	93.78	0.10	0.28	ZZ
CMK3UA		93.92	0.36	1.13	94.27	0.59	1.69	ZZ
F6AHLW		93.23	-0.33	-1.01	93.31	-0.37	-1.07	ZZ
FKHTV2		93.40	-0.16	-0.48	93.50	-0.18	-0.52	ZZ
JHHU6R		93.43	-0.13	-0.39	93.99	0.31	0.88	ZZ
KMEHLY		93.22	-0.34	-1.04	93.23	-0.45	-1.30	ZZ
M3XDT7		93.80	0.24	0.75	94.25	0.57	1.64	ZZ
P6EGFU		93.54	-0.02	-0.05	93.91	0.23	0.65	ZZ
QTYNLT		92.99	-0.57	-1.76	93.31	-0.37	-1.07	ZZ
R9NC9W		93.37	-0.19	-0.58	93.65	-0.03	-0.09	ZZ
RWFBVR		93.65	0.09	0.28	93.59	-0.10	-0.27	ZZ
UW892P		94.18	0.62	1.94	93.96	0.28	0.80	ZZ
VHJQK6		93.68	0.12	0.39	93.56	-0.12	-0.35	ZZ
W6EPLU		93.53	-0.03	-0.08	93.41	-0.27	-0.78	ZZ
WCTDHG		93.92	0.36	1.13	94.25	0.57	1.63	ZZ
XBG2EK		94.02	0.46	1.43	93.73	0.05	0.15	ZZ
XNLGZF		93.51	-0.04	-0.13	93.65	-0.03	-0.09	ZZ

Summary Statistics	Sample GN03	Sample GN04
Grand Means	93.56 Percent	93.68 Percent
Stnd Dev Btwn Labs	0.32 Percent	0.35 Percent

Statistics based on 28 of 28 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

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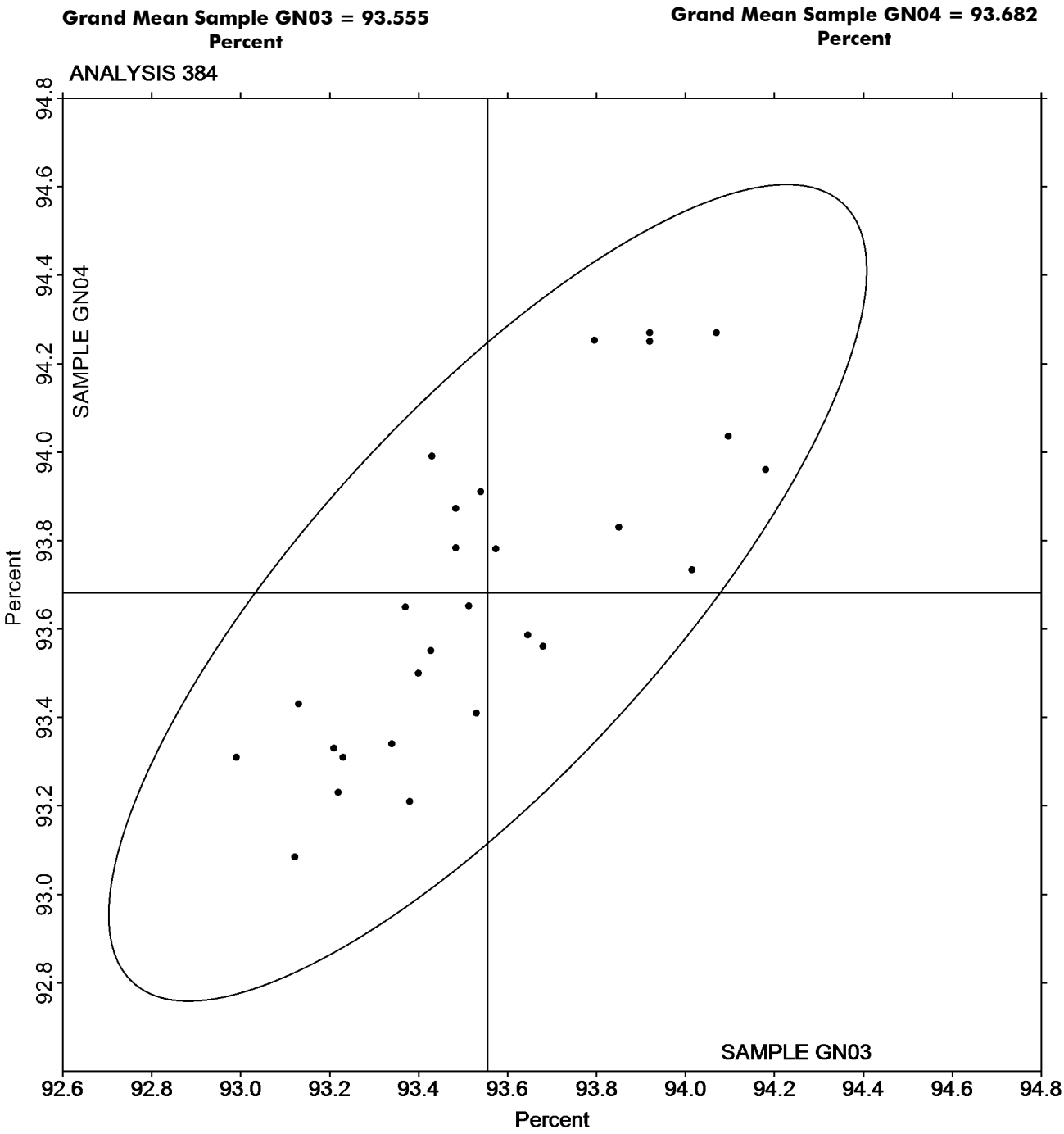

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Paper & Paperboard Interlaboratory Testing Program

Analysis 386

Opacity (Paper Backing) - Fine Papers and Newsprint

TAPPI Official Test Method T519

WebCode	Data Flag	Sample GP03 Lab Mean	Sample GP03 Diff from Grand Mean	Sample GP03 CPV	Sample GP04 Lab Mean	Sample GP04 Diff from Grand Mean	Sample GP04 CPV	Instr Code
CVTU2J		94.10	-0.22	-1.37	94.49	0.08	0.48	ZZ
RLFZ4V		94.48	0.15	0.94	94.13	-0.28	-1.75	ZZ
TLVLDX		94.42	0.09	0.56	94.48	0.06	0.38	ZZ
W8HHFT		94.43	0.10	0.61	94.44	0.03	0.16	ZZ
ZUZ2XC		94.21	-0.12	-0.74	94.53	0.12	0.73	ZZ

Summary Statistics	Sample GP03	Sample GP04
Grand Means	94.33 Percent	94.41 Percent
Stnd Dev Btwn Labs	0.16 Percent	0.16 Percent

Statistics based on 5 of 5 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

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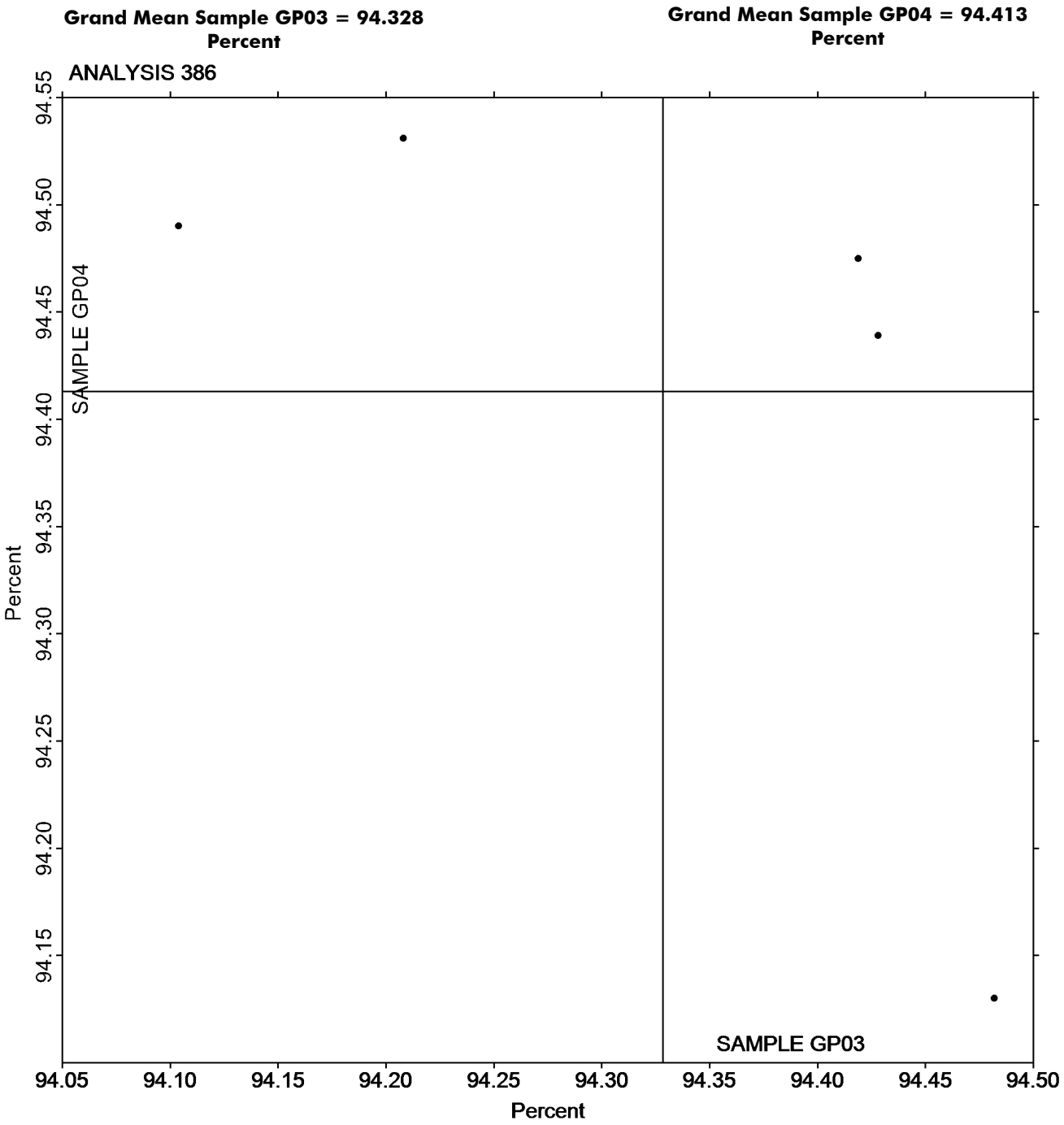

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 390
Directional Brightness
TAPPI Official Test Method T452

WebCode	Data Flag	Sample GR03 Lab Mean	Sample GR03 Diff from Grand Mean	Sample GR03 CPV	Sample GR04 Lab Mean	Sample GR04 Diff from Grand Mean	Sample GR04 CPV	Instr Code
2AB6YX		82.48	-0.62	-0.40	82.50	-0.57	-0.34	XX
3DM8KT		86.67	3.56	2.26	86.80	3.73	2.21	HZ
6NWN6V		82.20	-0.91	-0.58	82.78	-0.29	-0.17	TD
6XLD3J		81.54	-1.56	-0.99	81.55	-1.52	-0.90	TS
86CJR3		84.76	1.65	1.05	84.66	1.59	0.94	TP
8KAN3K		81.99	-1.11	-0.71	82.07	-1.00	-0.60	TP
8VAGBC		82.31	-0.79	-0.50	82.16	-0.91	-0.54	TP
8WNLAA		83.07	-0.03	-0.02	83.05	-0.02	-0.01	HG
C4PPYH		82.28	-0.82	-0.52	82.41	-0.66	-0.39	TP
HCY68C		83.90	0.80	0.51	83.88	0.81	0.48	HG
JHHU6R		84.74	1.64	1.04	84.68	1.61	0.95	TT
MZUFJY	*	80.45	-2.65	-1.68	79.51	-3.56	-2.11	TS
PZLFCU		84.06	0.96	0.61	84.01	0.94	0.56	TP
R9NC9W		85.75	2.65	1.68	85.94	2.87	1.70	PE
U3FUPL		84.15	1.05	0.67	84.02	0.95	0.56	HG
VHJQK6		82.03	-1.08	-0.68	82.20	-0.87	-0.52	TS
VZ6AEQ		82.18	-0.93	-0.59	82.01	-1.06	-0.63	TP
W6EPLU		82.28	-0.83	-0.52	82.01	-1.06	-0.63	TT
WCTDHG		82.13	-0.98	-0.62	82.10	-0.97	-0.58	TT
XBG2EK	X	84.22	1.11	0.71	82.43	-0.64	-0.38	TP

Summary Statistics	Sample GR03	Sample GR04
Grand Means	83.10 Percent	83.07 Percent
Stnd Dev Btwn Labs	1.58 Percent	1.69 Percent

Statistics based on 19 of 20 reporting participants.

Comments on Assigned Data Flags for Test #390

XBG2EK (X) - Inconsistent in testing between samples.

Key to Instrument Codes Reported by Participants

HG	Hunter Labscan / XE	HZ	Hunter Lab ColorFlex EZ Series
PE	Photovolt 577	TD	Technidyne Color Touch 45X
TP	Technidyne Test/Plus	TS	Technidyne Brightimeter Micro S-5
TT	Technidyne Brightimeter Micro S4-M	XX	Instrument make/model not specified by lab

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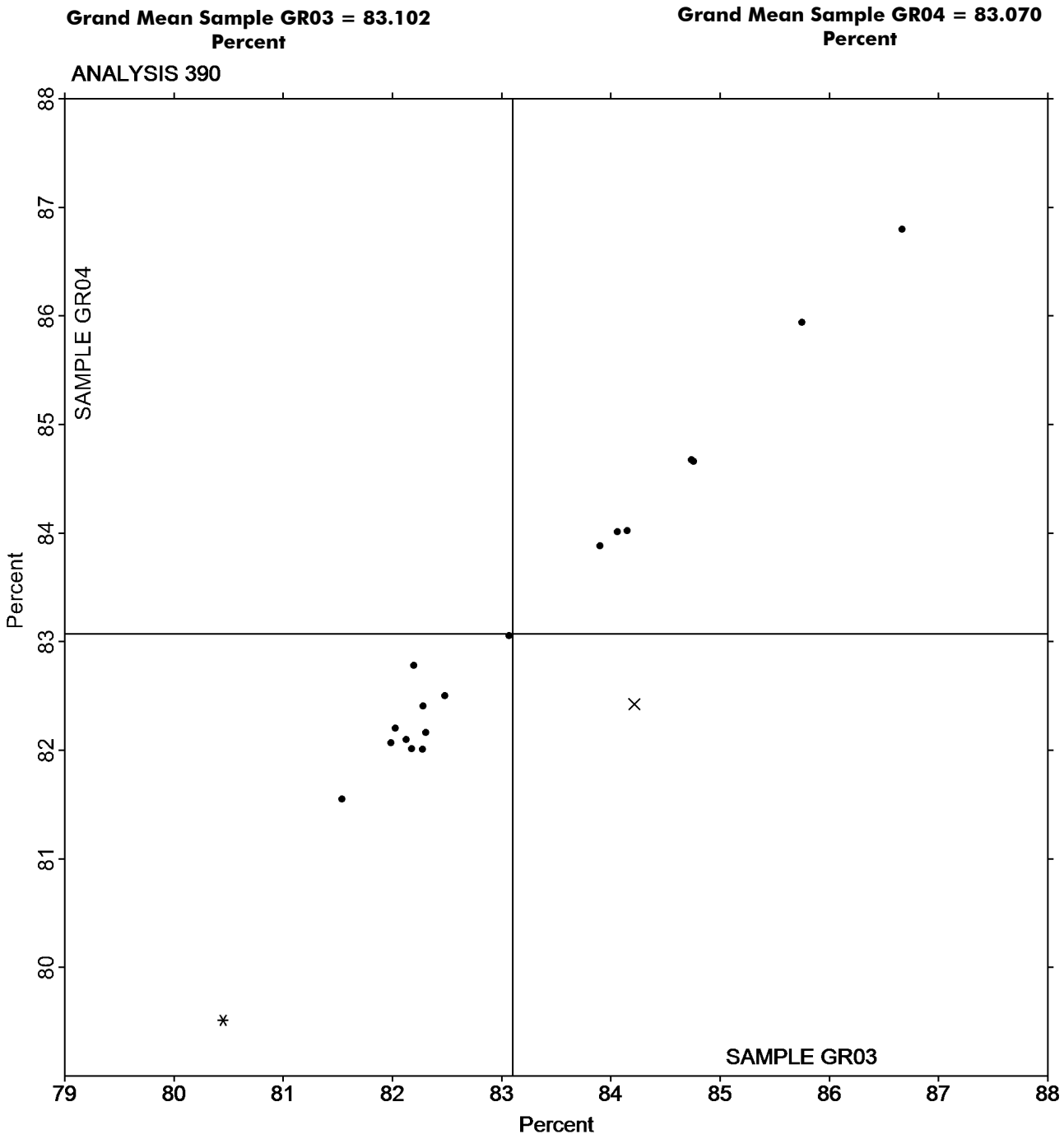

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 391

Directional Brightness of Fluorescent Samples

TAPPI Official Test Method T452

WebCode	Data Flag	Sample GZ03 Lab Mean	Sample GZ03 Diff from Grand Mean	Sample GZ03 CPV	Sample GZ04 Lab Mean	Sample GZ04 Diff from Grand Mean	Sample GZ04 CPV	Instr Code
2JJEQW		97.02	0.06	0.03	96.78	0.38	0.18	PP
3G869J		96.00	-0.97	-0.53	95.56	-0.84	-0.40	PP
4F9DFA		97.90	0.93	0.52	97.17	0.77	0.37	TS
62KQMN		95.82	-1.14	-0.63	95.38	-1.02	-0.49	TT
9QEMBP		93.06	-3.90	-2.16	92.04	-4.36	-2.11	TT
A4VARZ		93.70	-3.26	-1.80	92.62	-3.78	-1.83	PP
CMK3UA		97.56	0.60	0.33	96.72	0.32	0.15	TS
E37PUJ		95.97	-0.99	-0.55	94.76	-1.64	-0.79	LE
M3XDT7		97.62	0.66	0.36	97.14	0.74	0.36	TS
MZUFJY		97.64	0.68	0.37	97.14	0.74	0.36	TS
P6EGFU		98.79	1.82	1.01	98.92	2.52	1.22	TD
UW892P		98.53	1.56	0.86	98.12	1.72	0.83	TD
W6EPLU		99.84	2.87	1.59	99.59	3.19	1.54	EF
XBG2EK		97.43	0.47	0.26	97.09	0.69	0.33	PP
XNLGZF		97.59	0.62	0.34	96.96	0.56	0.27	TS

Summary Statistics	Sample GZ03	Sample GZ04
Grand Means	96.96 Percent	96.40 Percent
Stnd Dev Btwn Labs	1.81 Percent	2.07 Percent

Statistics based on 15 of 15 reporting participants.

Key to Instrument Codes Reported by Participants

EF	Datacolor Elrepho	LE	L & W Elrepho
PP	Technidyne Profile/Plus	TD	Technidyne Color Touch X-45
TS	Technidyne Brightimeter Micro S-5	TT	Technidyne Brightimeter Micro S4-M

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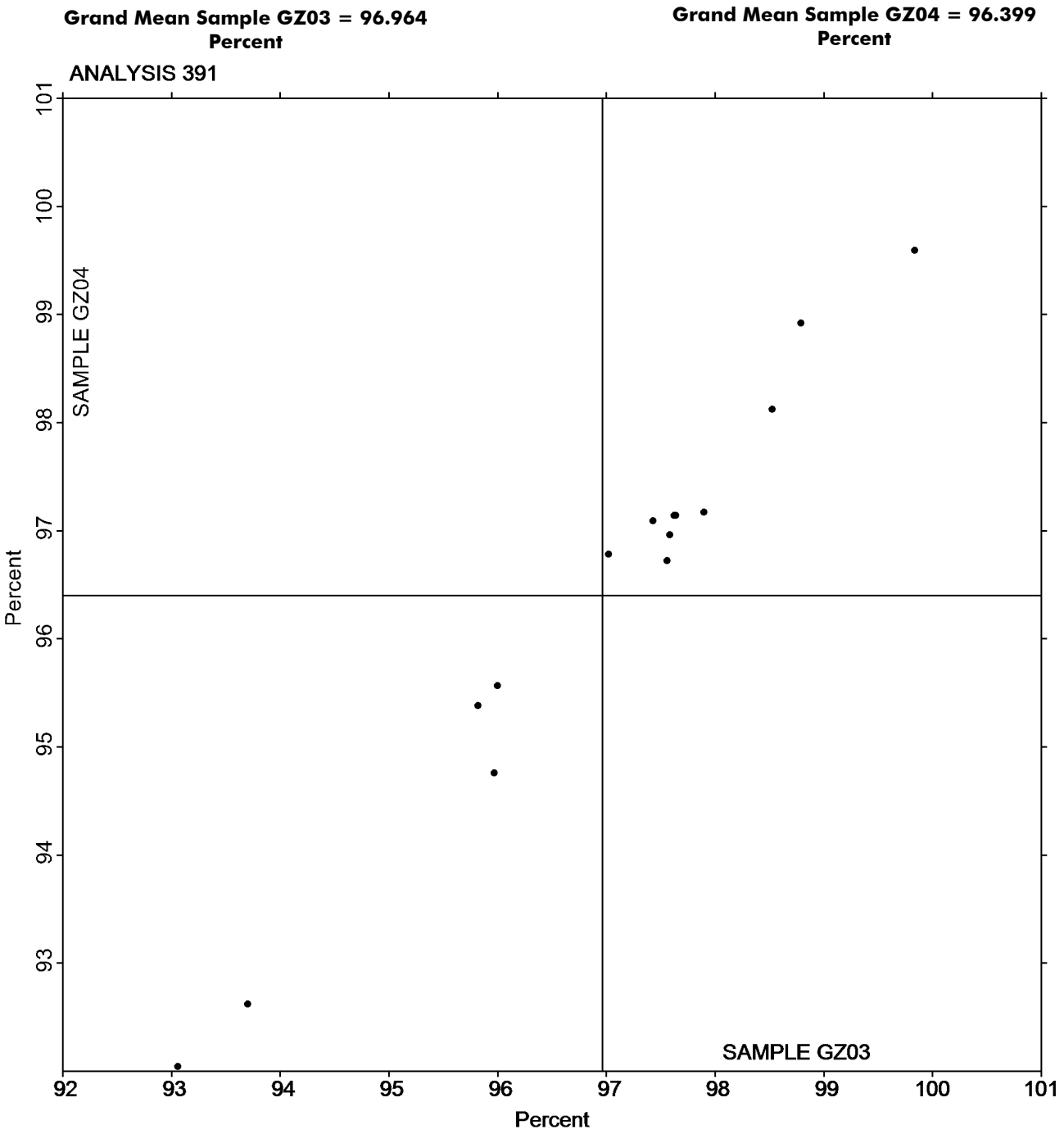

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 392
Diffuse Brightness
TAPPI Official Test Method T525

WebCode	Data Flag	Sample GR03 Lab Mean	Sample GR03 Diff from Grand Mean	Sample GR03 CPV	Sample GR04 Lab Mean	Sample GR04 Diff from Grand Mean	Sample GR04 CPV	Instr Code
8VAGBC		83.29	0.60	2.64	83.16	0.51	2.52	EG
BX687F		82.48	-0.20	-0.89	82.50	-0.15	-0.75	LE
F6AHLW		82.65	-0.04	-0.18	82.61	-0.04	-0.18	TC
FPX7U3		82.74	0.05	0.22	82.79	0.14	0.70	LA
HCY68C		82.62	-0.07	-0.31	82.44	-0.21	-1.03	TC
MBEP78		82.66	-0.03	-0.11	82.69	0.04	0.18	LE
PZLFCU		82.66	-0.03	-0.13	82.70	0.05	0.22	TC
RLFZ4V		82.78	0.09	0.39	82.82	0.17	0.82	AC
VZ6AEQ		82.45	-0.24	-1.06	82.42	-0.23	-1.15	LT
W8HHFT		82.48	-0.21	-0.91	82.46	-0.19	-0.92	LE
WCTDHG		82.56	-0.13	-0.58	82.60	-0.05	-0.27	LT
X4YRPN		82.97	0.28	1.24	82.73	0.08	0.41	TC
ZUZ2XC		82.62	-0.07	-0.31	82.54	-0.11	-0.56	TC

Summary Statistics	Sample GR03	Sample GR04
Grand Means	82.69 Percent	82.65 Percent
Stnd Dev Btwn Labs	0.23 Percent	0.20 Percent

Statistics based on 13 of 13 reporting participants.

Key to Instrument Codes Reported by Participants

AC	ACS Spectro-Sensor II	EG	Datacolor Elrepho 450X
LA	L & W Elrepho - Autoline	LE	L & W Elrepho
LT	L & W Elrepho SE 071	TC	Technidyne Color Touch Series

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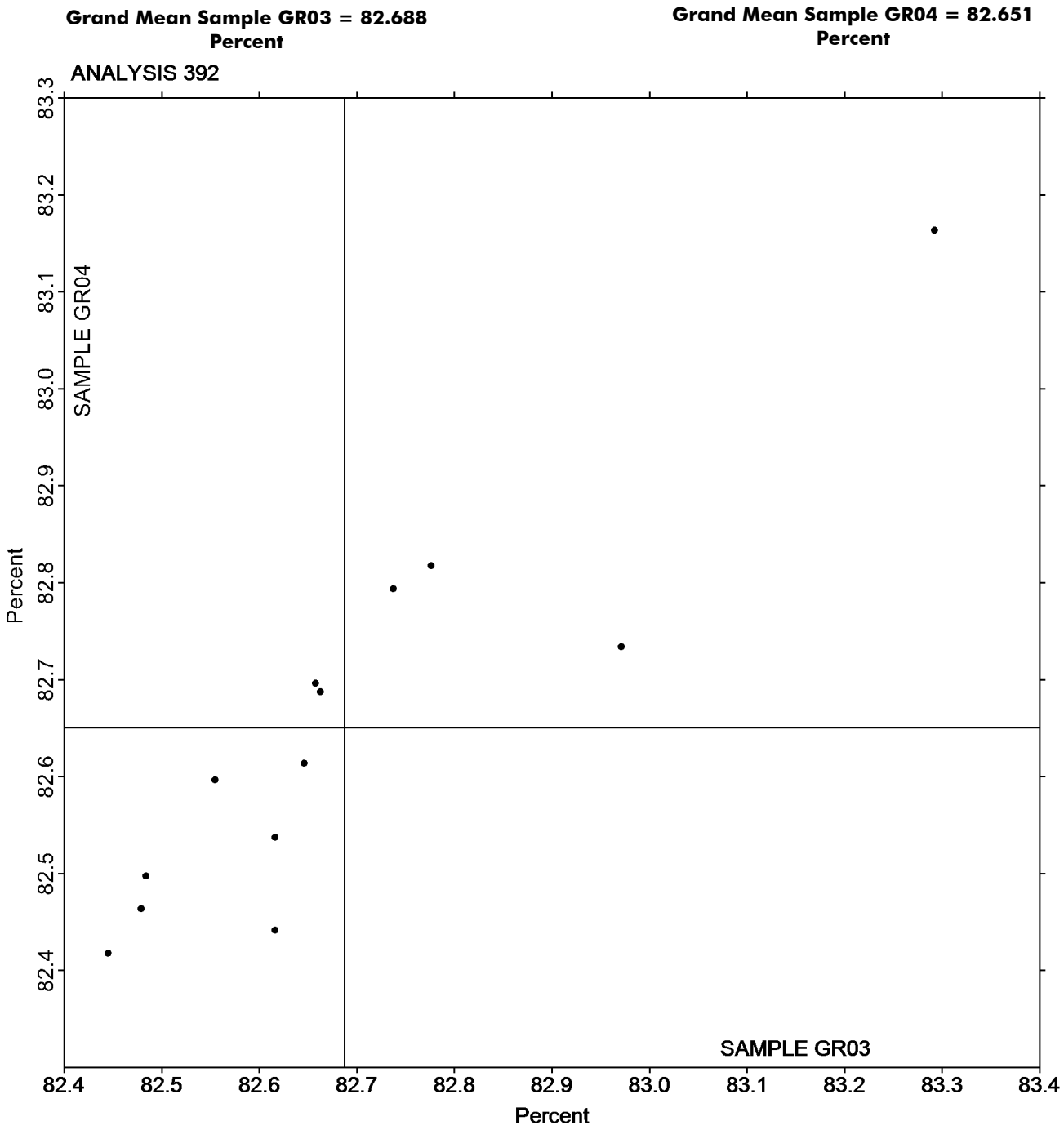

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 394

Fluorescent Component of Directional Brightness

TAPPI Official Test Method T452

WebCode	Data Flag	Sample GZ03 Lab Mean	Sample GZ03 Diff from Grand Mean	Sample GZ03 CPV	Sample GZ04 Lab Mean	Sample GZ04 Diff from Grand Mean	Sample GZ04 CPV	Instr Code
2JJEQW		7.480	-0.101	-0.12	7.520	0.013	0.01	PP
3G869J		7.232	-0.349	-0.40	7.242	-0.265	-0.29	PP
4F9DFA		7.804	0.223	0.25	7.680	0.173	0.19	TS
9QEMBP		6.500	-1.081	-1.23	6.220	-1.287	-1.41	TT
A4VARZ		6.520	-1.061	-1.21	6.420	-1.087	-1.19	PP
E37PUJ		8.098	0.517	0.59	7.974	0.467	0.51	LE
M3XDT7		6.928	-0.653	-0.74	6.912	-0.595	-0.65	TS
MZUFJY		7.712	0.131	0.15	7.700	0.193	0.21	TS
P6EGFU		7.692	0.111	0.13	7.514	0.007	0.01	TT
UW892P		7.746	0.165	0.19	7.676	0.169	0.18	TD
W6EPLU		10.010	2.429	2.77	10.024	2.517	2.75	EF
XBG2EK		7.612	0.031	0.04	7.580	0.073	0.08	XX
XNLGZF		7.220	-0.361	-0.41	7.132	-0.375	-0.41	TS

Summary Statistics	Sample GZ03	Sample GZ04
Grand Means	7.58 Percent	7.51 Percent
Stnd Dev Btwn Labs	0.88 Percent	0.92 Percent

Statistics based on 13 of 13 reporting participants.

Key to Instrument Codes Reported by Participants

EF	Datacolor Elrepho	LE	L & W Elrepho
PP	Technidyne Profile/Plus	TD	Technidyne Color Touch X-45
TS	Technidyne Brightimeter Micro S-5	TT	Technidyne Brightimeter Micro S4-M
XX	Instrument make/model not specified by lab		

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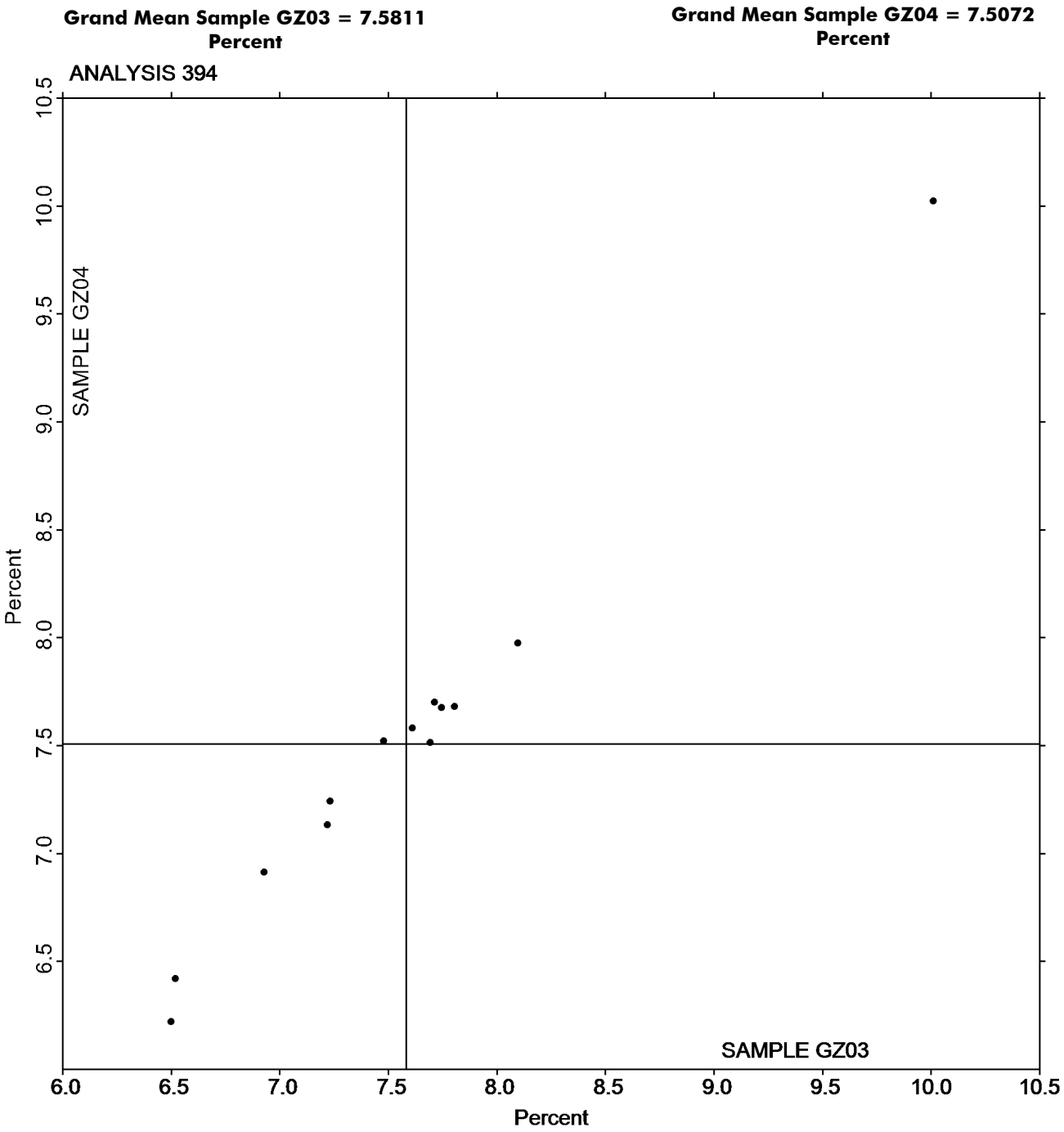

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Report #3172G, April 2022

Analysis 395

Specular Gloss at 75 Degrees - High Range

TAPPI Official Test Method T480

WebCode	Data Flag	Sample GT03 Lab Mean	Sample GT03 Diff from Grand Mean	Sample GT03 CPV	Sample GT04 Lab Mean	Sample GT04 Diff from Grand Mean	Sample GT04 CPV	Instr Code
3G869J		72.36	-0.69	-0.42	71.59	-0.44	-0.32	PP
6X8QQW		72.62	-0.43	-0.26	71.85	-0.17	-0.13	GM
8VAGBC		75.34	2.29	1.38	73.57	1.55	1.14	TH
8WNLAA		71.46	-1.59	-0.96	72.05	0.03	0.02	PP
BF7WLJ		77.15	4.10	2.47	74.08	2.06	1.52	LF
L2U3JX		73.20	0.15	0.09	71.70	-0.32	-0.24	GM
M3XDT7		72.67	-0.38	-0.23	70.84	-1.18	-0.87	LF
PZLFCU		70.18	-2.87	-1.73	70.99	-1.03	-0.76	GM
RLFZ4V		73.38	0.33	0.20	73.55	1.53	1.13	LB
TLVLDX		71.60	-1.45	-0.87	69.10	-2.92	-2.15	XX
U3FUPL		71.77	-1.28	-0.77	73.03	1.01	0.74	PP
UKRELP		72.24	-0.81	-0.49	70.50	-1.52	-1.12	XX
VHJQK6		74.36	1.31	0.79	72.99	0.97	0.71	LA
VZ6AEQ		72.73	-0.32	-0.19	71.05	-0.97	-0.72	GA
W6EPLU		73.71	0.66	0.40	73.47	1.45	1.07	TH
Y64UVJ		74.05	1.00	0.60	71.98	-0.04	-0.03	LG

Summary Statistics	Sample GT03	Sample GT04
Grand Means	73.05 Gloss Units	72.02 Gloss Units
Stnd Dev Btwn Labs	1.66 Gloss Units	1.36 Gloss Units

Statistics based on 16 of 16 reporting participants.

Key to Instrument Codes Reported by Participants

GA	BYK-Gardner (model not specified)	GM	BYK-Gardner micro-gloss
LA	L & W Gloss - Autoline 300	LB	L & W Gloss Tester Code 224
LF	L & W Autoline 400	LG	L & W Autoline 600
PP	Technidyne Profile/Plus	TH	Technidyne T480A
XX	Instrument make/model not specified by lab		

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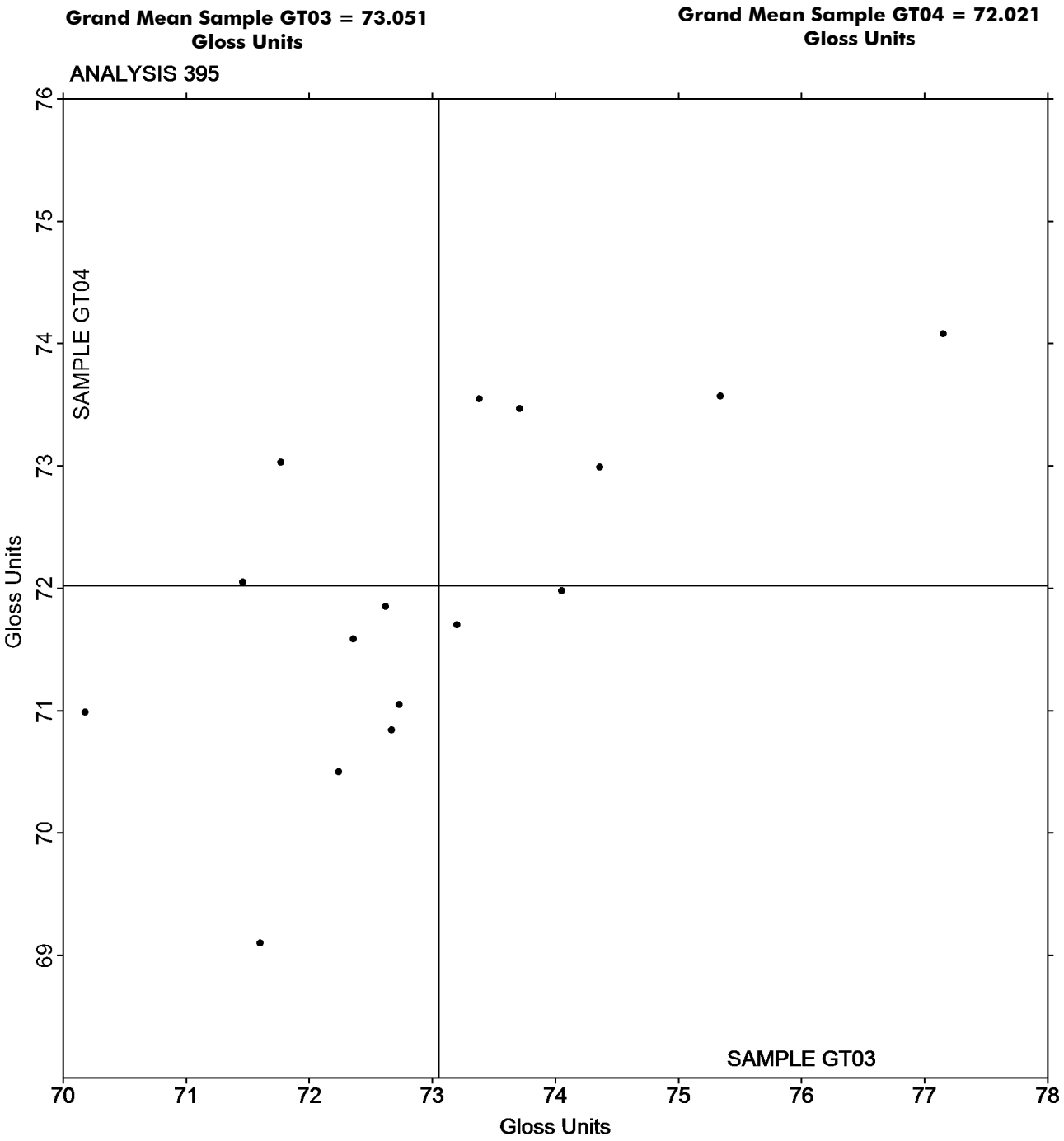

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 396

Specular Gloss at 75 Degrees - Low Range

TAPPI Official Test Method T480

WebCode	Data Flag	Sample GU03 Lab Mean	Sample GU03 Diff from Grand Mean	Sample GU03 CPV	Sample GU04 Lab Mean	Sample GU04 Diff from Grand Mean	Sample GU04 CPV	Instr Code
3DM8KT		52.75	0.98	0.32	52.83	1.61	0.54	GS
4TY76K		45.15	-6.62	-2.14	46.12	-5.10	-1.70	WJ
BX687F		54.26	2.49	0.81	49.40	-1.82	-0.61	TH
D797RM		47.60	-4.17	-1.35	46.90	-4.32	-1.44	GM
F6AHLW		53.37	1.60	0.52	52.93	1.71	0.57	TH
HCY68C		54.66	2.89	0.94	55.49	4.27	1.43	PP
JHHU6R		51.74	-0.03	-0.01	50.66	-0.56	-0.19	TH
QTYNLT		52.67	0.90	0.29	52.10	0.88	0.29	TH
RLFZ4V		54.11	2.34	0.76	54.02	2.80	0.94	LA
RWFBVR		51.38	-0.39	-0.13	51.71	0.49	0.16	PP

Summary Statistics	Sample GU03	Sample GU04
Grand Means	51.77 Gloss Units	51.22 Gloss Units
Stnd Dev Btwn Labs	3.09 Gloss Units	3.00 Gloss Units

Statistics based on 10 of 10 reporting participants.

Key to Instrument Codes Reported by Participants

GM	BYK-Gardner micro-gloss	GS	BYK-Gardner Glossgard II
LA	L & W Gloss - Autoline 300	PP	Technidyne Profile/Plus
TH	Technidyne T480A	WJ	Zehntner ZLR 1020

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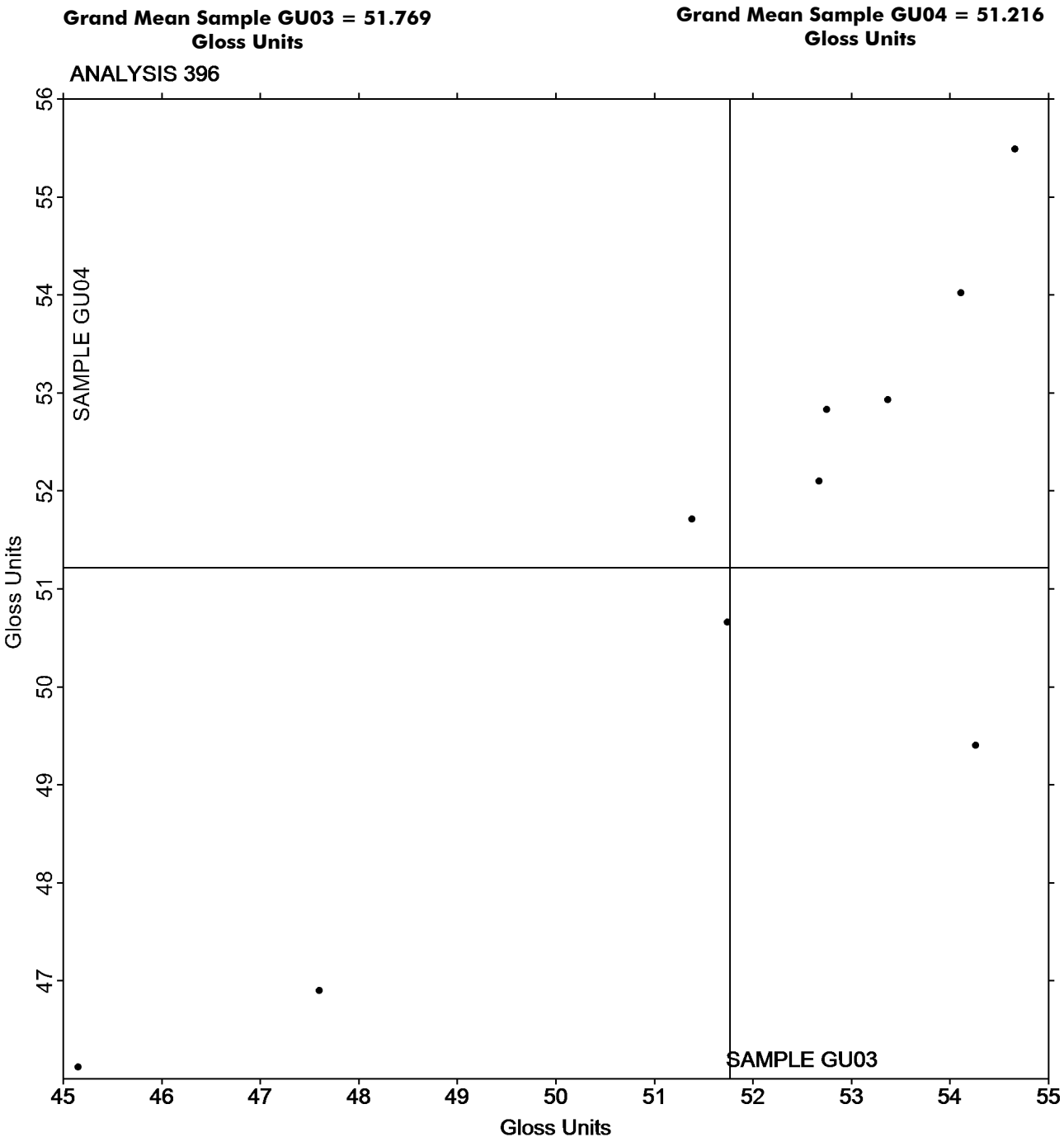

If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

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Paper & Paperboard Interlaboratory Testing Program

Analysis 398
Grammage (Mass per Unit Area)
TAPPI Official Test Method T410

WebCode	Data Flag	Sample GW03 Lab Mean	Sample GW03 Diff from Grand Mean	Sample GW03 CPV	Sample GW04 Lab Mean	Sample GW04 Diff from Grand Mean	Sample GW04 CPV	Instr Code
2AB6YX		89.50	-0.48	-0.85	102.7	-0.6	-0.74	ZZ
3N9G6G		90.08	0.10	0.18	103.2	0.0	0.00	ZZ
4G6R6N		89.45	-0.54	-0.95	103.9	0.7	0.89	ZZ
4TY76K		90.28	0.30	0.53	102.9	-0.3	-0.44	ZZ
4UUN7L		90.70	0.72	1.27	103.4	0.1	0.18	ZZ
6NFFEF	*	91.36	1.38	2.44	103.4	0.2	0.24	ZZ
6X8QQW		89.76	-0.23	-0.40	102.2	-1.0	-1.33	ZZ
7DE8CN		89.90	-0.08	-0.15	102.8	-0.5	-0.62	ZZ
8KAN3K		90.87	0.89	1.57	104.0	0.8	1.02	ZZ
9XDEFC		90.07	0.09	0.15	103.3	0.1	0.16	ZZ
ABWEPC		89.53	-0.45	-0.79	103.0	-0.2	-0.30	ZZ
BX687F		90.28	0.30	0.53	104.4	1.2	1.63	ZZ
CMK3UA		90.00	0.02	0.03	103.7	0.5	0.61	ZZ
CQMXGJ		90.59	0.61	1.08	104.3	1.1	1.46	ZZ
CVTU2J		89.73	-0.25	-0.45	103.0	-0.3	-0.35	ZZ
DG9GGW		90.21	0.23	0.41	103.1	-0.1	-0.16	ZZ
F6AHLW		89.10	-0.89	-1.57	101.5	-1.8	-2.35	ZZ
FKHTV2		90.30	0.32	0.56	103.0	-0.2	-0.24	ZZ
H4AJ3E		89.57	-0.41	-0.72	102.7	-0.5	-0.66	ZZ
JHHU6R		90.01	0.03	0.05	103.9	0.7	0.94	ZZ
KMEHLY		89.96	-0.02	-0.04	103.8	0.5	0.72	ZZ
MAYMYY		89.63	-0.36	-0.63	101.9	-1.3	-1.73	ZZ
MJ9WNC		90.80	0.82	1.45	102.8	-0.4	-0.56	ZZ
QTYNLT		89.63	-0.35	-0.62	103.5	0.2	0.32	ZZ
RAZXZJ		89.64	-0.34	-0.60	103.6	0.4	0.48	ZZ
RLFZ4V		89.86	-0.12	-0.22	103.2	0.0	-0.05	ZZ
UW892P		90.42	0.44	0.78	104.3	1.1	1.47	ZZ
W8HHFT		90.52	0.54	0.95	104.7	1.5	2.00	ZZ
X997CT		89.27	-0.71	-1.25	102.6	-0.6	-0.85	ZZ
YXMYEP		88.65	-1.33	-2.35	102.3	-1.0	-1.29	ZZ
ZUZ2XC		89.76	-0.22	-0.39	102.9	-0.3	-0.45	ZZ

Summary Statistics	Sample GW03	Sample GW04
Grand Means	89.98 g/sq m	103.22 g/sq m
Stnd Dev Btwn Labs	0.57 g/sq m	0.75 g/sq m

Statistics based on 31 of 31 reporting participants.

Analysis Notes:

KMEHLY - Data appears to be transposed between samples. CTS will not correct going forward.

QTYNLT - Data appear to be off by a factor of .10 (x10). CTS will not correct going forward.

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Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

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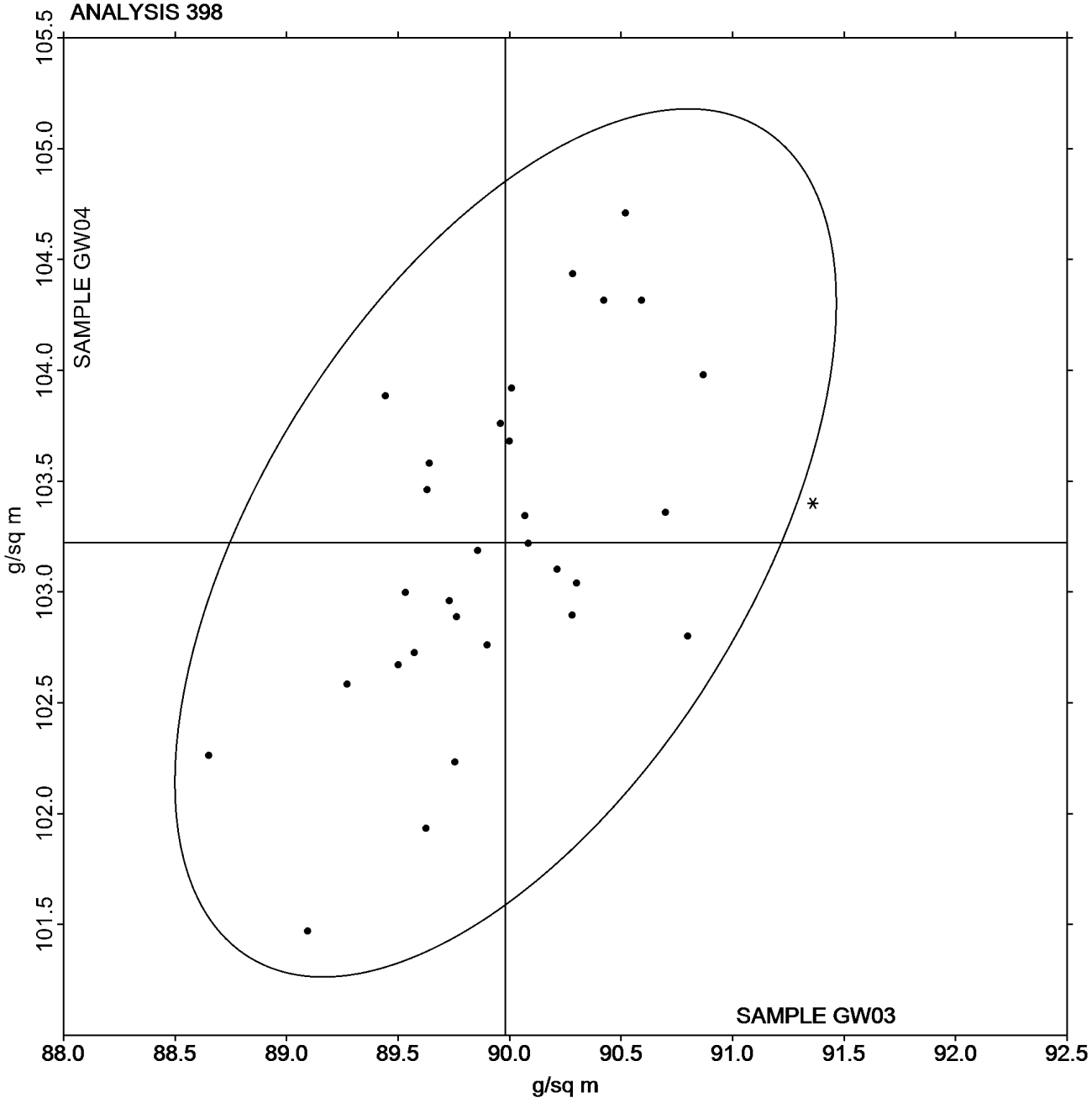
Grand Mean Sample GW03 = 89.982 g/sq m

Grand Mean Sample GW04 = 103.22 g/sq m



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Paper & Paperboard Interlaboratory Testing Program

Analysis 399
Sizing Test (Hercules Type)
TAPPI Official Test Method T530

WebCode	Data Flag	Sample GX03 Lab Mean	Sample GX03 Diff from Grand Mean	Sample GX03 CPV	Sample GX04 Lab Mean	Sample GX04 Diff from Grand Mean	Sample GX04 CPV	Instr Code
2AB6YX		12.59	0.84	0.28	11.37	0.45	0.16	XX
2JJEQW	X	10.38	-1.38	-0.45	6.17	-4.75	-1.69	HE
3YP2QX		9.79	-1.96	-0.64	9.66	-1.26	-0.45	HE
4F9DFA		10.16	-1.59	-0.52	10.06	-0.86	-0.31	HE
62KQMN		7.76	-3.99	-1.31	7.14	-3.78	-1.34	HE
98YHMC		9.64	-2.11	-0.69	8.77	-2.15	-0.76	HE
9F982B		9.71	-2.04	-0.67	8.27	-2.65	-0.94	HE
9QEMBP		8.84	-2.91	-0.96	8.85	-2.07	-0.74	HE
A4VARZ		16.48	4.73	1.55	16.13	5.21	1.85	HE
BHAPFH		10.14	-1.61	-0.53	9.09	-1.83	-0.65	HE
C4PPYH		16.78	5.03	1.65	14.85	3.93	1.39	HE
CMK3UA		11.00	-0.75	-0.25	11.10	0.18	0.06	HE
D797RM		17.50	5.75	1.89	15.60	4.68	1.66	HE
DJX3RY		10.02	-1.73	-0.57	9.38	-1.54	-0.55	HE
F6AHLW	*	15.52	3.77	1.24	16.43	5.51	1.95	HE
F6BC63		11.69	-0.06	-0.02	10.96	0.04	0.01	HE
KMEHLY		10.50	-1.25	-0.41	9.40	-1.52	-0.54	HE
L2U3JX		10.38	-1.37	-0.45	10.01	-0.91	-0.32	HE
LD6QCV		10.96	-0.79	-0.26	10.39	-0.53	-0.19	HE
M3XDT7		10.45	-1.30	-0.43	9.69	-1.23	-0.44	HE
MZUFJY		11.91	0.16	0.05	11.36	0.44	0.16	HE
R9NC9W		17.42	5.67	1.86	15.41	4.49	1.59	HE
RWFBVR		11.32	-0.43	-0.14	10.00	-0.92	-0.33	HE
UKRELP		10.45	-1.30	-0.43	10.00	-0.92	-0.33	HE
WCTDHG		7.84	-3.91	-1.28	6.44	-4.48	-1.59	HE
X4YRPN		9.41	-2.34	-0.77	8.92	-2.00	-0.71	HE
XBG2EK		17.26	5.51	1.81	14.68	3.76	1.33	HE

Summary Statistics	Sample GX03	Sample GX04
Grand Means	11.75 Seconds	10.92 Seconds
Stnd Dev Btwn Labs	3.05 Seconds	2.82 Seconds

Statistics based on 26 of 27 reporting participants.

Comments on Assigned Data Flags for Test #399

2JJEQW (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

Analysis Notes:

L2U3JX - One determination removed from the Lab Mean of Sample GX04 per Grubb's Test at 1% risk (TAPPI 1205).

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Key to Instrument Codes Reported by Participants

HE	Hercules Sizing Tester	XX	Instrument make/model not specified by lab

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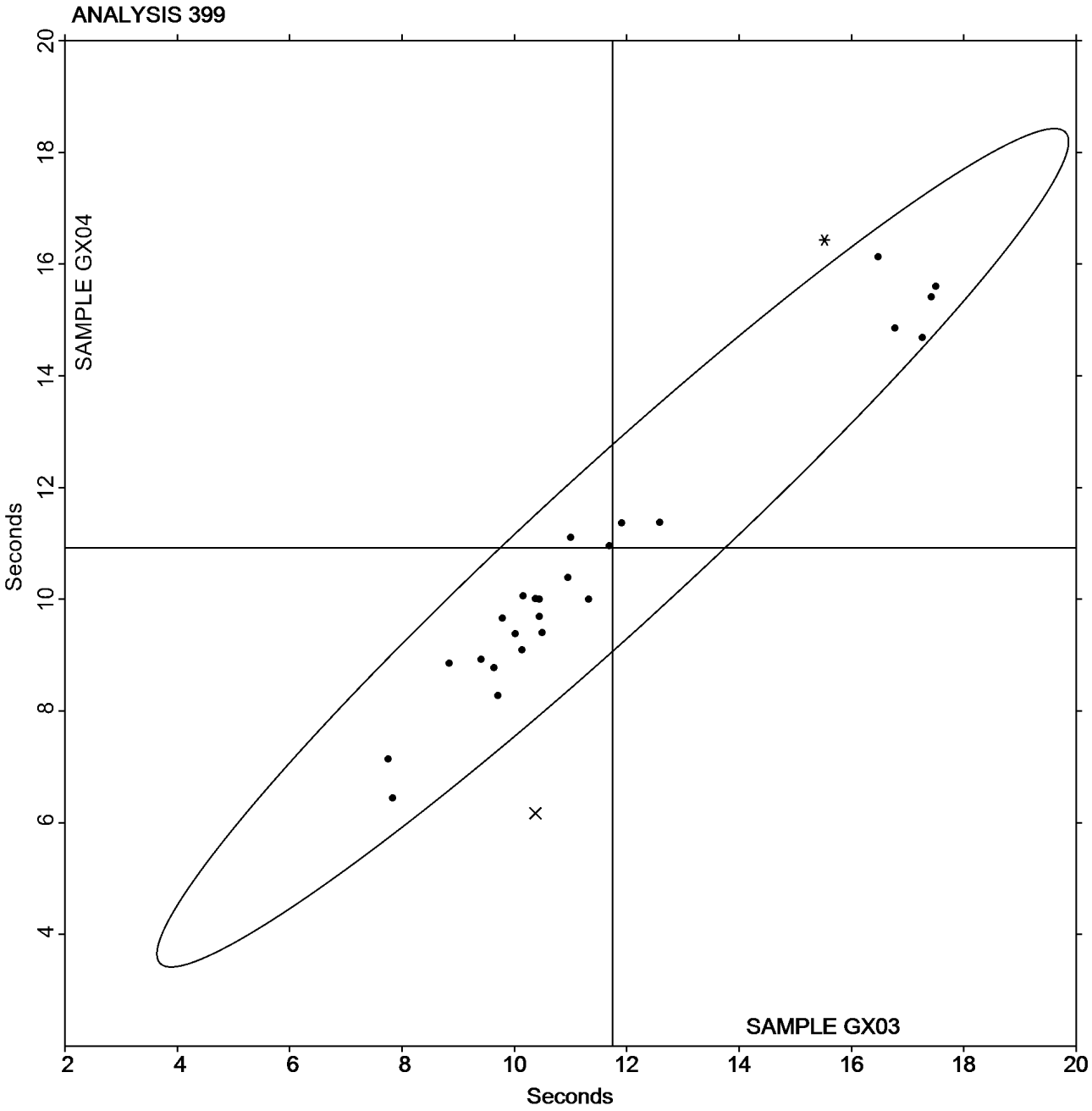
Grand Mean Sample GX03 = 11.751 Seconds

Grand Mean Sample GX04 = 10.922 Seconds



-End of Report-

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