Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #3082 G - October 2020

Analysis	Analysis Name
350	Color & Color Difference - Near White Papers - C/2deg obs
351	Color & Color Difference - Near White Papers - D65/10deg obs
360	Thickness (Caliper), Printing papers
361	Thickness (Caliper), Packaging papers
364	Coefficient of Static Friction - Horizontal Plane Method - Printing Papers
365	Coefficient of Kinetic Friction - Horizontal Plane Method - Printing Papers
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378	Roughness - Sheffield Type
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384	Opacity (89% Reflectance Backing) - Fine Papers
386	Opacity (Paper Backing) - Fine Papers and Newsprint
390	Directional Brightness
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398	Grammage (Mass per Unit Area)
399	Sizing Test (Hercules Type)

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.

If there are any questions on the report or testing program, please contact:

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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 L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code
879N3U	X	GA83	92.54	0.10	2.07	-0.01	0.04	-0.01	0.04	TS
		GA84	92.54	0.13	2.06					
9YNNN3		GA83	95.07	-0.63	2.50	-0.03	0.05	0.07	0.09	EH
		GA84	95.04	-0.59	2.57					
B3XMWE		GA83	92.82	-0.64	1.91	1.27	0.01	0.00	1.27 X	XX
		GA84	94.08	-0.63	1.91					
BC3VDY		GA83	93.61	-0.62	2.43	0.04	-0.01	0.02	0.04	TC
		GA84	93.64	-0.63	2.44					
E6BQUL		GA83	93.77	-0.62	2.45	-0.03	0.04	-0.04	0.06	TC
		GA84	93.74	-0.58	2.42					
GWVMZR		GA83	94.21	-0.75	2.12	0.01	0.03	-0.01	0.03	HE
		GA84	94.22	-0.72	2.11					
LK4RN9		GA83	92.66	-0.09	2.15	-0.11	-0.05	-0.01	0.12	TS
		GA84	92.55	-0.14	2.14					
MYGG4L		GA83	93.90	-0.70	2.37	0.00	0.01	-0.01	0.01	HE
		GA84	93.91	-0.69	2.36					
PH6MKB		GA83	92.49	-1.13	1.21	0.00	0.01	-0.03	0.03	HG
		GA84	92.49	-1.12	1.18					
Q83LKC		GA83	89.80	-0.62	1.02	0.05	0.00	0.00	0.05	LA
		GA84	89.84	-0.63	1.02					
QXC484		GA83	95.35	-0.72	3.64	-0.02	0.00	-0.06	0.07	XX
		GA84	95.34	-0.72	3.57					
RJNGEG		GA83	94.71	-0.63	2.45	0.02	0.01	0.00	0.02	HE
		GA84	94.73	-0.62	2.45					
TBDETG		GA83	92.67	-0.52	2.03	0.04	0.12	0.00	0.13	TS
		GA84	92.71	-0.40	2.03					
UU3C8D		GA83	95.00	-0.72	2.55	-0.03	0.03	-0.04	0.06	LS
		GA84	94.97	-0.69	2.51					
VE2ZCE		GA83	95.07	-0.60	2.43	0.00	-0.01	0.02	0.02	TC
		GA84	95.07	-0.60	2.45					
VYCPPC		GA83	95.30	-0.57	2.01	0.08	-0.02	0.06	0.11	XS
		GA84	95.38	-0.59	2.07					

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

Report #3082 G, October 2020

Web Code	Data Flag	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code
WP2M4B	X	GA83	81.98	0.22	0.18	-0.38	0.00	0.04	0.38	TS
		GA84	81.60	0.22	0.22					
ZHM9NB		GA83	95.03	-0.52	2.66	0.02	-0.01	-0.01	0.03	LS
		GA84	95.06	-0.53	2.65					

Summary Statistics

Grand Means							
GA83	93.824	-0.630	2.235	0.082	0.013	-0.001	0.133
GA84	93.827	-0.617	2.233				
Stnd Dev Btwn Labs							
GA83	1.501	0.201	0.575	0.318	0.038	0.035	0.304
GA84	1.501	0.194	0.567				

Statistics based on 16 of 18 reporting participants

Comments on Assigned Data Flags for Test #350

879N3U (X) - High "a" values for both samples. Inconsistent within replicate readings of both "a".

WP2M4B (X) - Extreme data for both "L". Inconsistent within replicate readings of both "L" and "a" sample GA83. High data for both "a". Low data for both "b".

Analysis Notes:

879N3U - Due to CTS graphs using Absolute Values, data Flag is located within consensus data. However, "a" data is higher than the negative Grand Mean as shown above graphs.

QXC484 - One determination removed from the Lab Mean of Sample GA84 L* per Grubb's Test at 1% risk (TAPPI 1205).

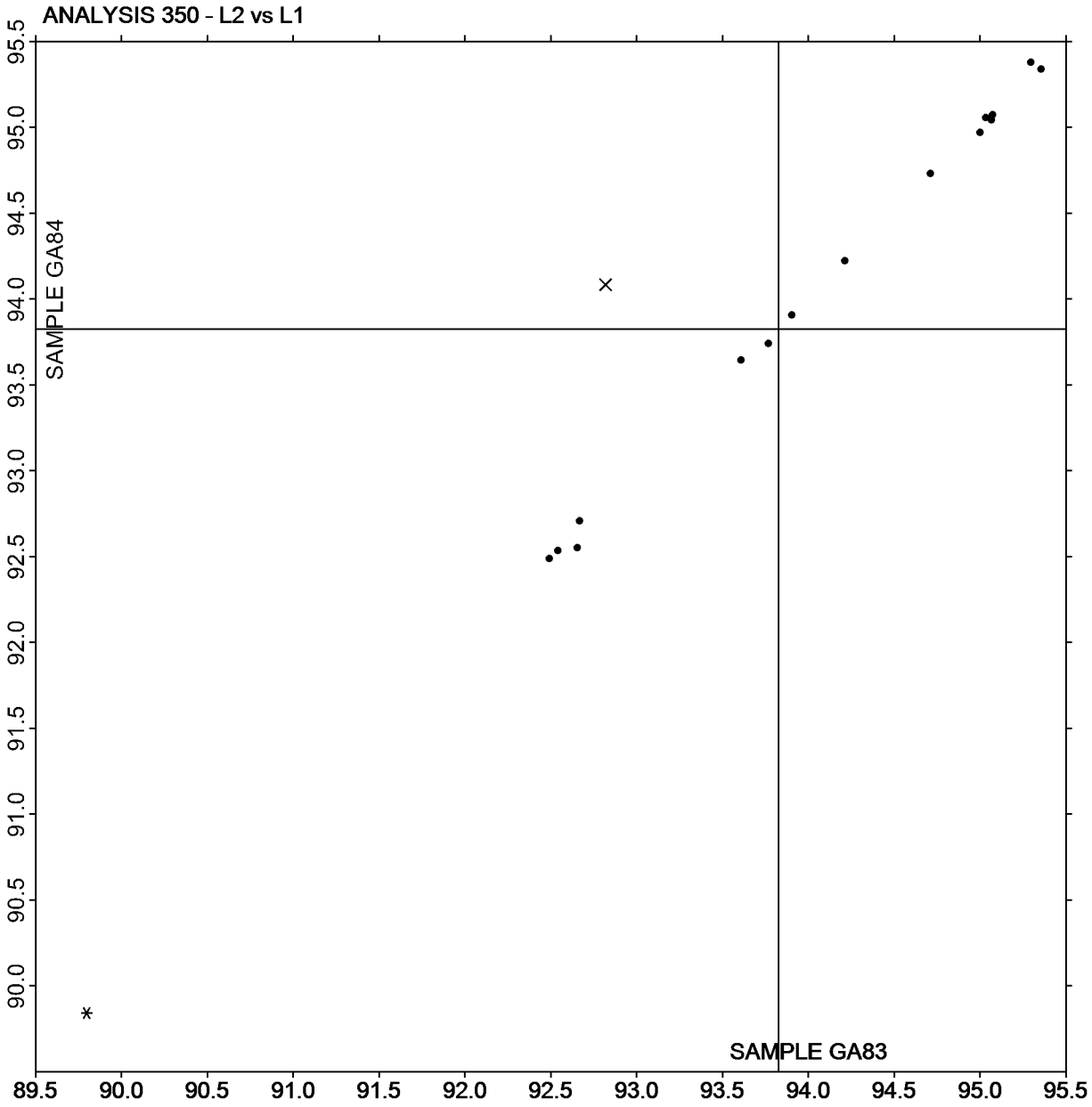
VYCPPC - One determination removed from the Lab Mean of Sample GA84 a* per Grubb's Test at 1% risk (TAPPI 1205).

WP2M4B - Due to CTS graphs using Absolute Values, data Flag is located within consensus data. However, "a" data is higher than the negative Grand Mean as shown above graphs.

Key to Instrument Codes Reported by Participants

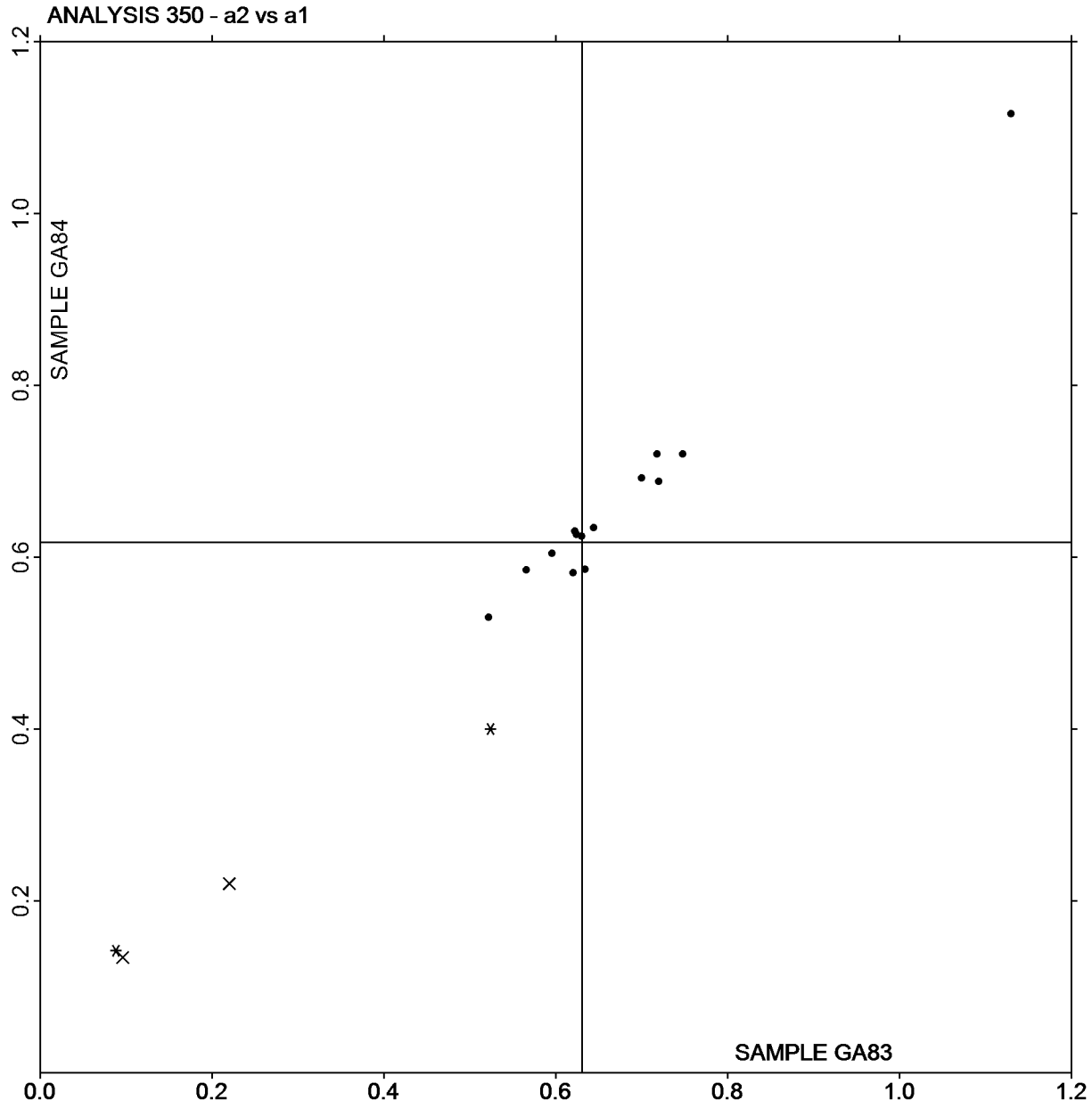
EH	Datacolor Elrepho SF450	HE	Hunter LabScan
HG	Hunter ColorQUEST	LA	L & W Elrepho AL300
LS	L & W Elrepho SE 070	TC	Technidyne Color Touch Series
TS	Technidyne Brightimeter Micro S-5	XS	X-Rite 938 Spectrodensitometer
XX	Instrument make/model not specified by lab		

Plot of L values GA84 vs L values GA83



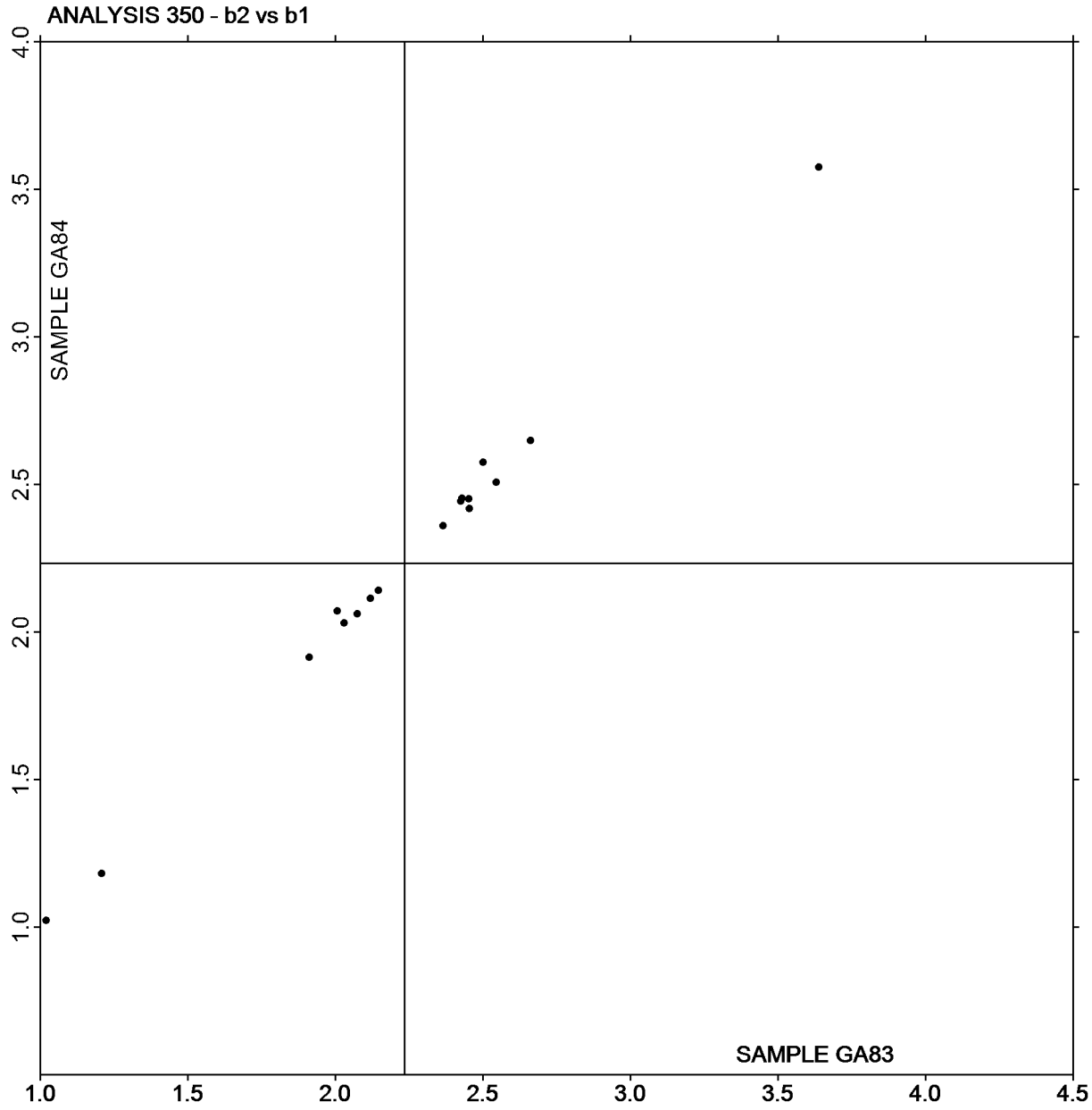
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values GA84 vs a values GA83



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

Plot of b values GA84 vs b values GA83



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

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
3TG9BY		**GA83**	95.18	-0.62	2.60	0.00	0.01	0.01	0.01	EF
		GA84	95.18	-0.62	2.61					
9YNNN3		**GA83**	95.05	-0.63	2.50	-0.03	0.03	0.06	0.07	XX
		GA84	95.02	-0.60	2.56					
A694RZ		**GA83**	95.04	-0.55	2.75	-0.01	0.03	-0.04	0.05	HT
		GA84	95.03	-0.52	2.71					
AG3JG2		**GA83**	95.08	-0.66	2.68	-0.03	-0.01	0.01	0.04	HT
		GA84	95.05	-0.67	2.69					
CBQFHD		**GA83**	97.54	-0.44	1.46	0.05	0.17	0.00	0.17	XP
		GA84	97.58	-0.27	1.46					
ED6WMM		**GA83**	93.84	-0.40	2.19	0.01	0.00	0.02	0.02	XB
		GA84	93.85	-0.40	2.21					
EY7QXX		**GA83**	95.00	-0.58	2.62	0.01	0.02	-0.02	0.03	LS
		GA84	95.01	-0.56	2.60					
FCPRTV		**GA83**	94.48	-0.51	2.33	0.01	-0.01	0.02	0.02	HE
		GA84	94.49	-0.52	2.34					
L4FDAF		**GA83**	93.80	-0.69	2.53	-0.03	0.00	0.02	0.03	TC
		GA84	93.77	-0.69	2.54					
LM6RN6		**GA83**	95.01	-0.59	2.45	0.10	0.19	-0.16	0.27 X	TC
		GA84	95.11	-0.40	2.29					
MLB7VE		**GA83**	95.16	-0.48	2.57	0.06	-0.11	0.12	0.18	XC
		GA84	95.22	-0.58	2.70					
TKHL9G		**GA83**	95.08	-0.60	2.50	0.04	-0.01	0.04	0.06	EH
		GA84	95.12	-0.61	2.54					
TRX6QU		**GA83**	95.11	-0.53	2.76	-0.03	0.05	-0.06	0.08	NG
		GA84	95.08	-0.48	2.70					
WQUJQK		**GA83**	94.98	-0.46	2.60	0.00	-0.12	0.03	0.12	EH
		GA84	94.98	-0.59	2.63					
ZHM9NB		**GA83**	95.10	-0.53	2.62	-0.05	-0.03	0.06	0.08	LS
		GA84	95.05	-0.57	2.68					

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

Summary Statistics

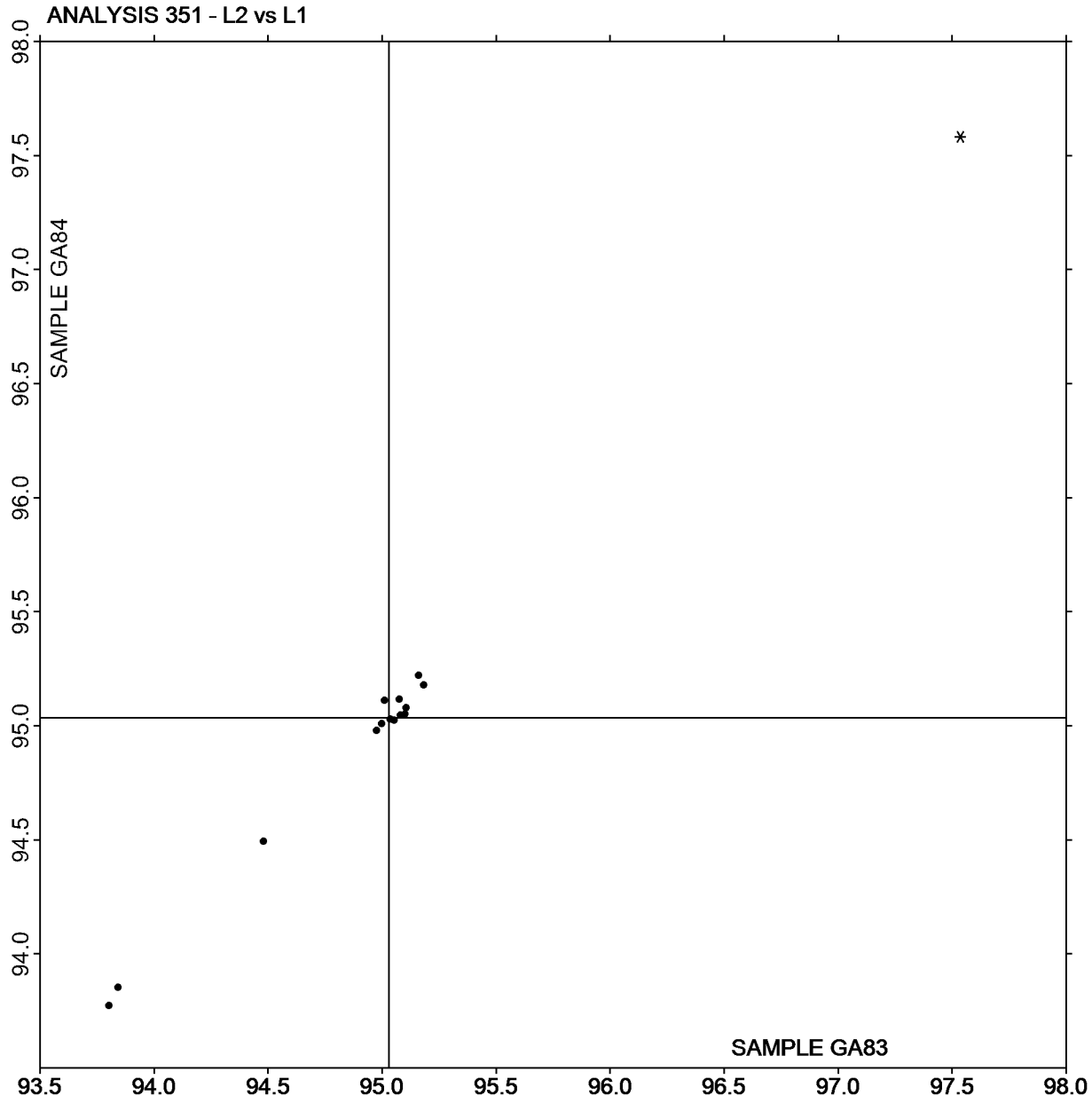
Grand Means							
GA83	95.029	-0.551	2.478	0.007	0.014	0.006	0.083
GA84	95.036	-0.537	2.484				
Stnd Dev Btwn Labs							
GA83	0.826	0.084	0.318	0.040	0.082	0.063	0.073
GA84	0.839	0.112	0.323				

Statistics based on 15 of 15 reporting participants

Key to Instrument Codes Reported by Participants

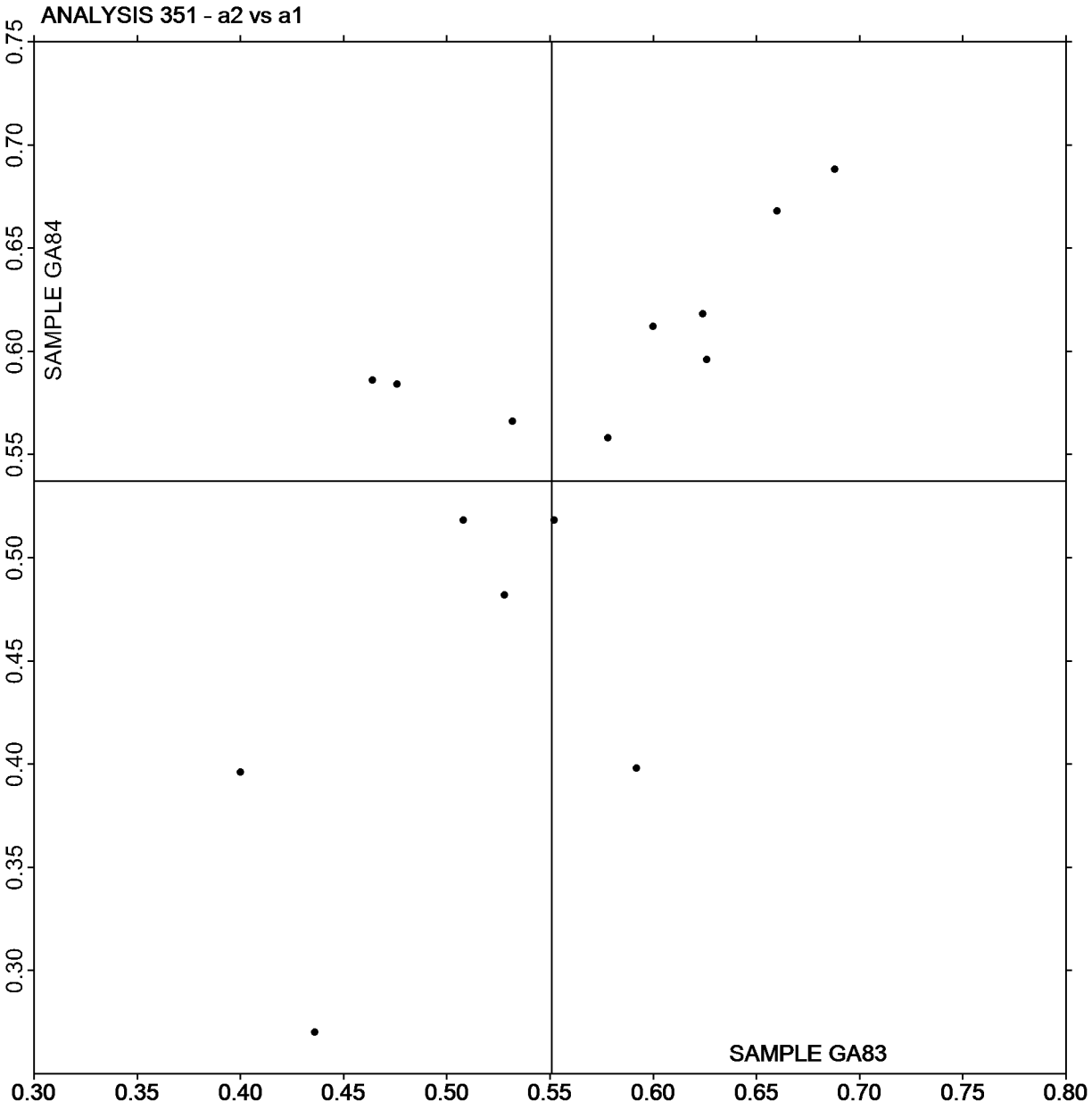
EF	Datacolor Elrepho 3000	EH	Datacolor Elrepho SF450
HE	Hunter LabScan	HT	Hunter UltraScan Vis
LS	L & W Elrepho SE 070	NG	Minolta CM-3700d Spectrophotometer
TC	Technidyne Color Touch Series	XB	X-Rite Ci7
XC	X-Rite eXact Series	XP	X-Rite Spectrophotometer DTP
XX	Instrument make/model not specified by lab		

Plot of L values GA84 vs L values GA83



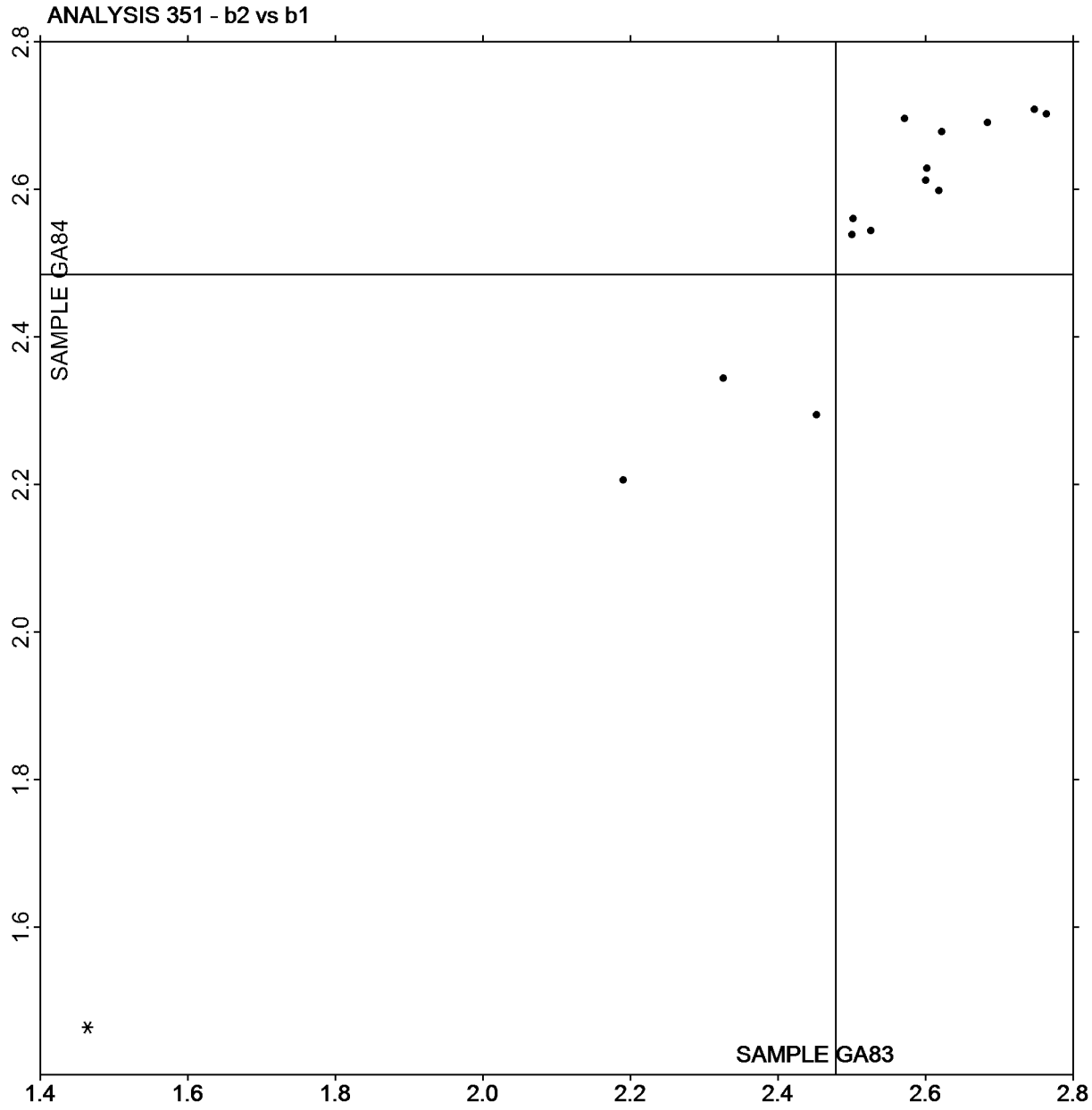
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values GA84 vs a values GA83



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

Plot of b values GA84 vs b values GA83



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

WebCode	Data Flag	Sample GV83 Lab Mean	Sample GV83 Diff from Grand Mean	Sample GV83 CPV	Sample GV84 Lab Mean	Sample GV84 Diff from Grand Mean	Sample GV84 CPV	Instr Code
22G9B2		3.904	0.017	0.30	3.854	-0.003	-0.06	PP
2B46G9		3.850	-0.036	-0.63	3.813	-0.044	-0.78	TM
2H6LPT		3.927	0.041	0.71	3.887	0.030	0.53	XX
3KNVF6		3.923	0.037	0.64	3.901	0.044	0.78	TM
3V8AGM		3.810	-0.076	-1.32	3.748	-0.109	-1.93	PP
4J77PX		3.891	0.005	0.08	3.896	0.039	0.69	TA
63FLMJ		3.909	0.023	0.40	3.866	0.009	0.16	EM
7267QW		3.906	0.020	0.34	3.894	0.037	0.66	EM
86CBJ9		3.881	-0.005	-0.09	3.834	-0.023	-0.40	PP
99E9RF		3.787	-0.099	-1.71	3.752	-0.105	-1.85	TM
9YNNN3		3.901	0.015	0.26	3.910	0.053	0.94	EM
A694RZ		3.892	0.006	0.10	3.866	0.009	0.16	EM
AG3JG2		3.972	0.086	1.49	3.943	0.086	1.52	EM
AWD62R		3.871	-0.015	-0.26	3.874	0.017	0.30	LW
B3XMWE		3.910	0.024	0.41	3.880	0.023	0.41	XX
BQLHJQ		3.841	-0.045	-0.78	3.837	-0.020	-0.35	EM
BTR39C		3.872	-0.014	-0.24	3.860	0.003	0.05	LA
BWDKQW		3.854	-0.033	-0.56	3.870	0.014	0.24	LW
CBQFHD		3.815	-0.071	-1.23	3.825	-0.032	-0.56	TM
ED6WMM		3.888	0.002	0.03	3.861	0.004	0.07	TM
FCPRTV		3.873	-0.013	-0.23	3.851	-0.006	-0.10	PP
FED4T2		3.780	-0.106	-1.84	3.782	-0.075	-1.32	LA
GZRBGY		3.970	0.084	1.46	3.924	0.068	1.19	TM
HQH4CJ		3.960	0.074	1.28	3.900	0.043	0.76	LW
JCX3YP		3.909	0.023	0.39	3.859	0.003	0.04	LW
L4FDAF		3.825	-0.061	-1.06	3.774	-0.083	-1.47	PP
LK4RN9		3.891	0.005	0.08	3.837	-0.020	-0.35	EM
LM6RN6		3.976	0.090	1.56	3.945	0.088	1.56	PP
MLB7VE		3.890	0.004	0.06	3.878	0.021	0.37	LW
N6JNJP		3.836	-0.050	-0.87	3.791	-0.066	-1.17	LW
N8Q7GK		3.905	0.019	0.33	3.859	0.002	0.04	PP
NW7YGA		3.782	-0.104	-1.80	3.737	-0.120	-2.12	PP
P7AAPK	*	3.943	0.057	0.99	3.851	-0.006	-0.10	LW
Q3N7VK		3.780	-0.106	-1.84	3.750	-0.107	-1.89	TM
TBDETG		3.843	-0.043	-0.75	3.840	-0.017	-0.30	LA
TNXUWF		3.954	0.068	1.17	3.892	0.035	0.62	LW
TRX6QU		3.910	0.024	0.41	3.869	0.012	0.21	PP
U4LQ9V		3.781	-0.105	-1.82	3.796	-0.061	-1.08	TA
ULRVW8		3.866	-0.020	-0.35	3.850	-0.007	-0.12	PP
URT63Z		3.907	0.021	0.36	3.867	0.010	0.18	TA
UU3C8D		3.925	0.039	0.68	3.874	0.017	0.30	LW

Paper & Paperboard Interlaboratory Testing Program

Analysis 360

Thickness (Caliper), Printing papers

TAPPI Official Test Method T411

WebCode	Data Flag	Sample GV83 Lab Mean	Sample GV83 Diff from Grand Mean	Sample GV83 CPV	Sample GV84 Lab Mean	Sample GV84 Diff from Grand Mean	Sample GV84 CPV	Instr Code
VE2ZCE		3.882	-0.004	-0.07	3.817	-0.040	-0.71	LA
VYCPPC		3.850	-0.036	-0.63	3.840	-0.017	-0.30	TM
WEFJWC		3.929	0.043	0.74	3.900	0.043	0.75	LW
WQUJQK		3.874	-0.012	-0.21	3.843	-0.014	-0.25	EM
X9AA24	*	4.015	0.129	2.23	4.013	0.156	2.76	TM
Y3D6MP	X	3.636	-0.250	-4.33	3.604	-0.253	-4.47	TA
ZQHDGC		3.988	0.102	1.76	3.964	0.107	1.89	TM

Summary Statistics	Sample GV83	Sample GV84
Grand Means	3.89 mils	3.86 mils
Stnd Dev Btwn Labs	0.06 mils	0.06 mils

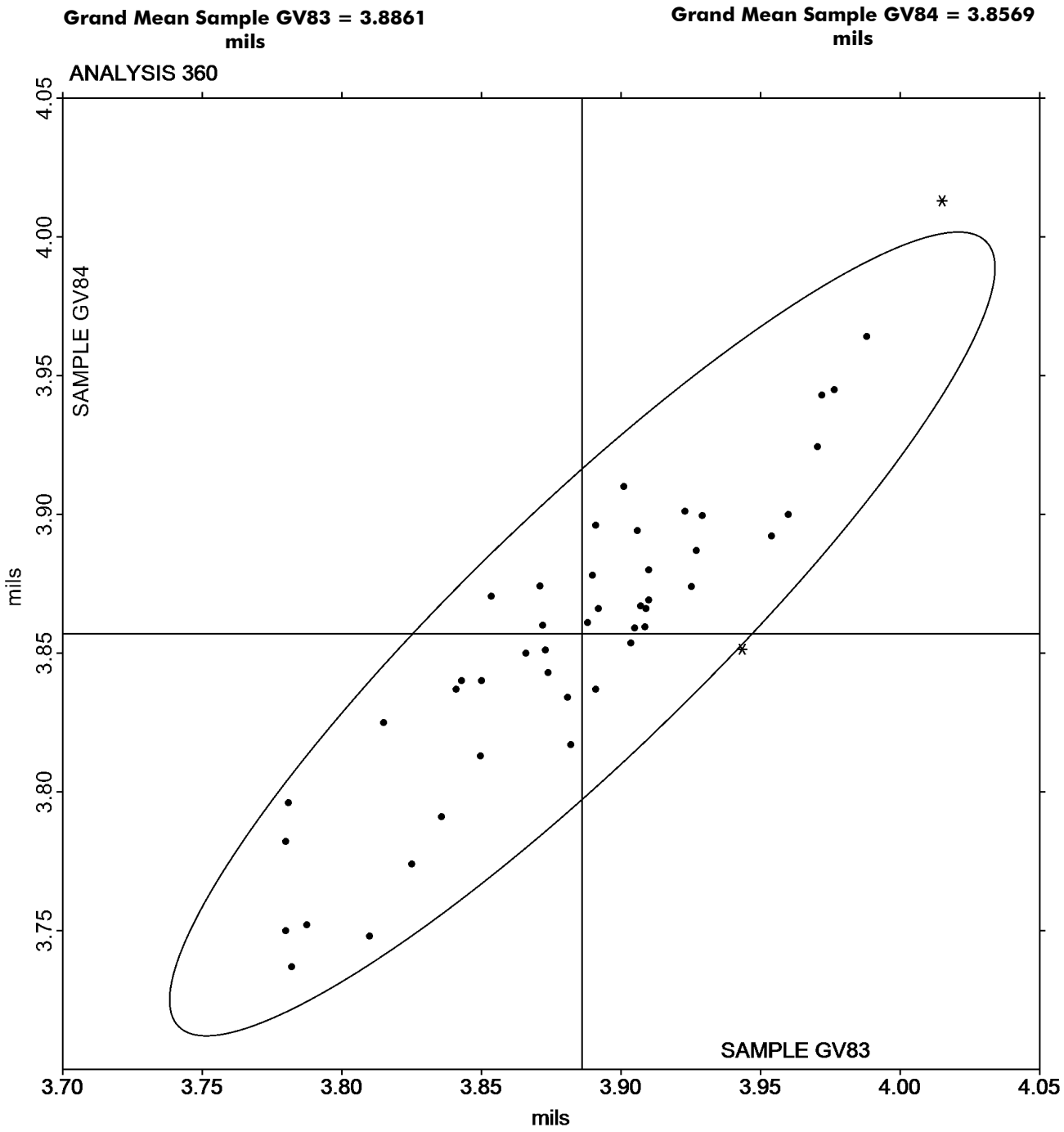
Statistics based on 47 of 48 reporting participants.

Comments on Assigned Data Flags for Test #360

Y3D6MP (X) - Data for both samples are low. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

EM	Emveco	LA	L & W Autoline
LW	L & W	PP	Technidyne Profile/Plus
TA	Thwing-Albert	TM	TMI
XX	Instrument make/model not specified by lab		



Paper & Paperboard Interlaboratory Testing Program

Analysis 361
Thickness (Caliper), Packaging papers
TAPPI Official Test Method T411

WebCode	Data Flag	Sample GY83 Lab Mean	Sample GY83 Diff from Grand Mean	Sample GY83 CPV	Sample GY84 Lab Mean	Sample GY84 Diff from Grand Mean	Sample GY84 CPV	Instr Code
22G9B2		7.346	-0.205	-1.43	9.394	-0.125	-0.85	LW
27RLTY		7.788	0.237	1.65	9.730	0.210	1.42	LW
2QXWYN		7.340	-0.212	-1.48	9.360	-0.159	-1.08	TM
3CWK4P		7.634	0.082	0.58	9.685	0.166	1.12	LW
8QUHV2		7.395	-0.157	-1.09	9.370	-0.149	-1.01	TA
8RAMPT		7.567	0.015	0.11	9.550	0.031	0.21	LA
AFTE2R		7.707	0.155	1.08	9.671	0.152	1.03	LW
ALXDE3		7.560	0.008	0.06	9.415	-0.104	-0.70	LA
E362UX		7.480	-0.072	-0.50	9.440	-0.079	-0.54	TA
EY7QXX		7.600	0.048	0.34	9.550	0.031	0.21	LW
FED4T2		7.512	-0.040	-0.28	9.470	-0.049	-0.33	LA
GWVMZR		7.521	-0.031	-0.21	9.493	-0.026	-0.18	EM
HAXF6A		7.610	0.058	0.41	9.589	0.070	0.47	PP
MQMCBK		7.560	0.008	0.06	9.508	-0.011	-0.08	TM
MYGG4L		7.616	0.064	0.45	9.666	0.147	0.99	EM
N4P3NC		7.539	-0.012	-0.08	9.512	-0.007	-0.05	LA
PPPHQL		7.792	0.240	1.68	9.671	0.152	1.03	TM
Q3N7VK		7.430	-0.122	-0.85	9.370	-0.149	-1.01	TM
Q83LKC	X	7.496	-0.056	-0.39	8.035	-1.484	-10.05	LA
QXC484		7.510	-0.042	-0.29	9.449	-0.070	-0.47	VP
RFD4WH		7.460	-0.092	-0.64	9.320	-0.199	-1.35	TA
RJNGEG		7.632	0.080	0.56	9.521	0.002	0.01	EM
RZCQ2J		7.551	0.000	0.00	9.630	0.111	0.75	LW
T7FXE2		7.854	0.303	2.11	9.878	0.359	2.43	TM
TNXUWF		7.643	0.091	0.64	9.664	0.145	0.98	LW
UNWJDH		7.208	-0.344	-2.40	9.172	-0.347	-2.35	TM
URT63Z		7.664	0.112	0.79	9.635	0.116	0.78	TA
WP2M4B		7.627	0.075	0.53	9.560	0.041	0.28	EM
WQUJQK		7.444	-0.108	-0.75	9.483	-0.036	-0.24	EM
WVQ88R		7.327	-0.225	-1.57	9.323	-0.196	-1.33	LA
Y3D6MP		7.384	-0.168	-1.17	9.355	-0.164	-1.11	TA
YJNLVD		7.660	0.108	0.76	9.673	0.154	1.04	TM
Z9XKQM	*	7.660	0.108	0.76	9.431	-0.088	-0.59	LW
ZHM9NB		7.579	0.027	0.19	9.594	0.075	0.51	TM

Summary Statistics	Sample GY83	Sample GY84
Grand Means	7.55 mils	9.52 mils
Stnd Dev Btwn Labs	0.14 mils	0.15 mils

Statistics based on 33 of 34 reporting participants.

Comments on Assigned Data Flags for Test #361

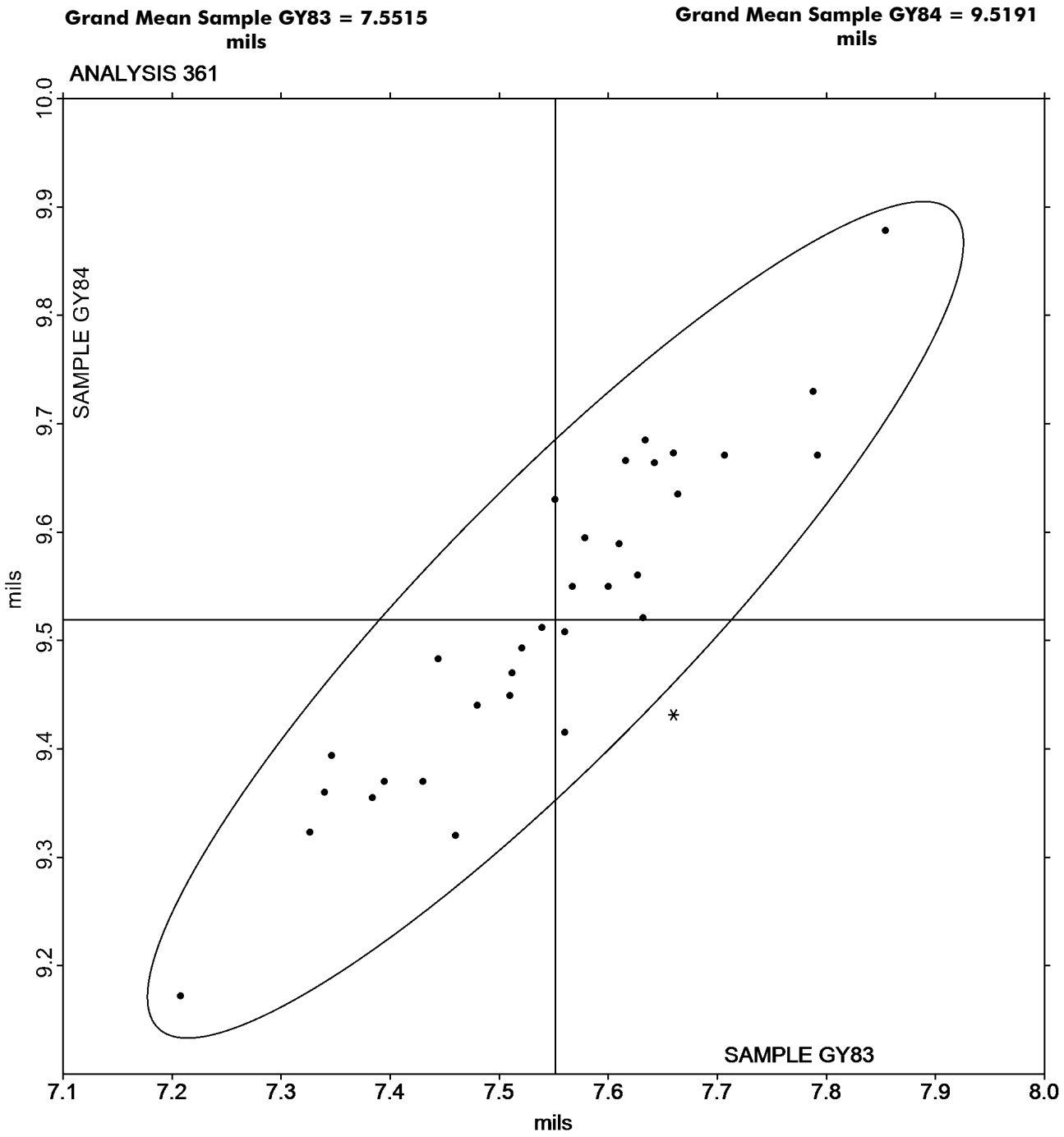
Q83LKC (X) - Extreme Data for Sample GY84.

Analysis Notes:

Z9XKQM - Data appears to be transposed between samples. Data switched by CTS.

Key to Instrument Codes Reported by Participants

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



Paper & Paperboard Interlaboratory Testing Program

Analysis 364

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

TAPPI Official Test Method T549

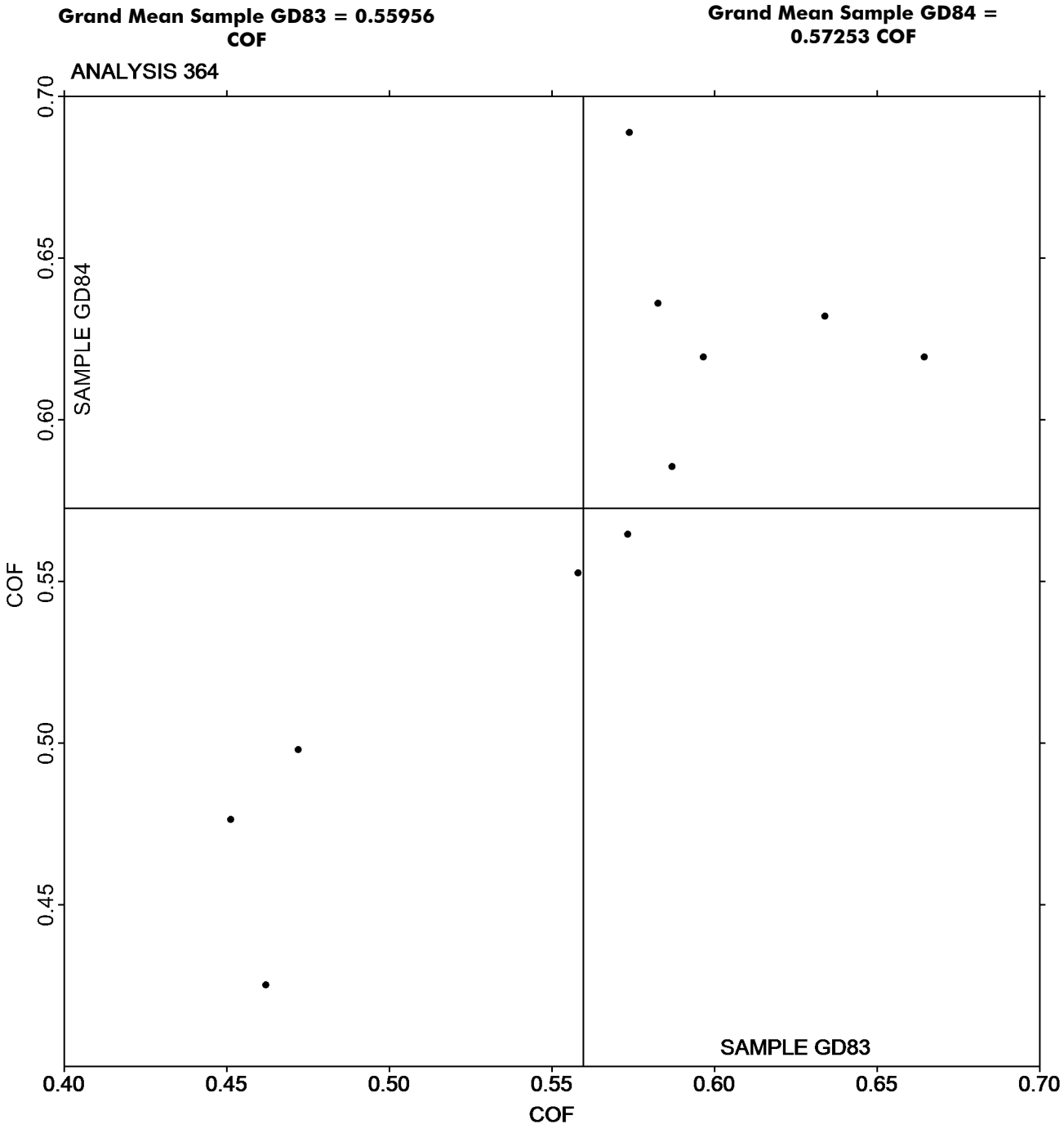
WebCode	Data Flag	Sample GD83 Lab Mean	Sample GD83 Diff from Grand Mean	Sample GD83 CPV	Sample GD84 Lab Mean	Sample GD84 Diff from Grand Mean	Sample GD84 CPV	Instr Code
27RLTY		0.5826	0.0230	0.33	0.6360	0.0635	0.80	TA
7267QW		0.6340	0.0744	1.07	0.6320	0.0595	0.75	TA
7HPWPW		0.5966	0.0370	0.53	0.6194	0.0469	0.59	IT
879N3U		0.5738	0.0142	0.20	0.6888	0.1163	1.47	TA
BQLHJQ		0.5870	0.0274	0.39	0.5854	0.0129	0.16	TA
FCPRTV		0.4720	-0.0876	-1.26	0.4980	-0.0745	-0.94	TA
LK4RN9		0.6646	0.1050	1.51	0.6194	0.0469	0.59	TA
NW7YGA		0.4620	-0.0976	-1.40	0.4252	-0.1473	-1.86	TM
U889QF		0.5734	0.0138	0.20	0.5646	-0.0079	-0.10	TA
VYCPPC		0.4512	-0.1084	-1.56	0.4764	-0.0961	-1.21	XX
WVQ88R		0.5580	-0.0016	-0.02	0.5526	-0.0199	-0.25	TA

Summary Statistics	Sample GD83	Sample GD84
Grand Means	0.56 COF	0.57 COF
Stnd Dev Btwn Labs	0.07 COF	0.08 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
TM	TMI 32-06 Monitor/Slip and Friction	XX	Instrument make/model not specified by lab



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 365

Coefficient of Kinetic Friction - Horizontal Plane Method - Printing Papers

TAPPI Official Test Method T549

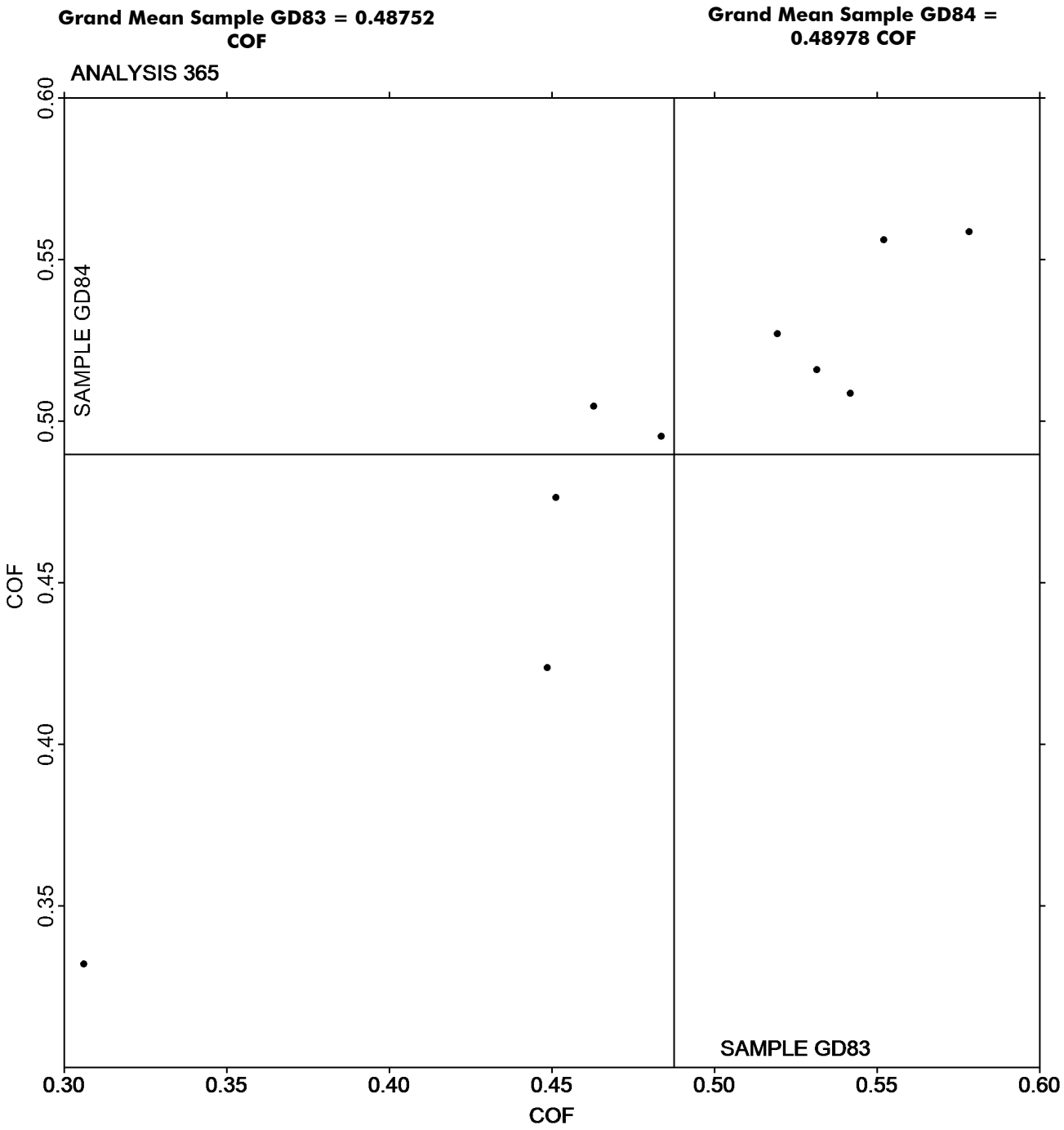
WebCode	Data Flag	Sample GD83 Lab Mean	Sample GD83 Diff from Grand Mean	Sample GD83 CPV	Sample GD84 Lab Mean	Sample GD84 Diff from Grand Mean	Sample GD84 CPV	Instr Code
27RLTY		0.5784	0.0909	1.17	0.5586	0.0688	1.02	TN
7267QW		0.5520	0.0645	0.83	0.5560	0.0662	0.98	XX
7HPWPW		0.4486	-0.0389	-0.50	0.4236	-0.0662	-0.98	IR
879N3U		0.4628	-0.0247	-0.32	0.5046	0.0148	0.22	TA
BQLHJQ		0.5194	0.0319	0.41	0.5270	0.0372	0.55	TA
FCPRTV		0.3060	-0.1815	-2.33	0.3320	-0.1578	-2.33	TA
LK4RN9		0.5418	0.0543	0.70	0.5086	0.0188	0.28	XX
U889QF		0.4836	-0.0039	-0.05	0.4952	0.0054	0.08	TA
VYCPPC		0.4512	-0.0363	-0.47	0.4764	-0.0134	-0.20	XX
WVQ88R		0.5314	0.0439	0.56	0.5158	0.0260	0.38	TA

Summary Statistics	Sample GD83	Sample GD84
Grand Means	0.49 COF	0.49 COF
Stnd Dev Btwn Labs	0.08 COF	0.07 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



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

TAPPI Official Test Method T460

WebCode	Data Flag	Sample GE83 Lab Mean	Sample GE83 Diff from Grand Mean	Sample GE83 CPV	Sample GE84 Lab Mean	Sample GE84 Diff from Grand Mean	Sample GE84 CPV	Instr Code
22G9B2		15.84	0.12	0.19	16.11	0.38	0.54	PP
3CWK4P		14.91	-0.81	-1.35	14.56	-1.17	-1.64	LP
3TG9BY		16.62	0.90	1.49	16.62	0.89	1.25	LP
3V8AGM		15.53	-0.19	-0.32	15.61	-0.12	-0.17	HG
63FLMJ		15.34	-0.39	-0.64	15.72	-0.01	-0.01	PP
7267QW		16.02	0.30	0.50	16.35	0.63	0.88	PP
7ET89P		16.63	0.91	1.50	16.81	1.08	1.52	TL
7H6BX7		16.33	0.61	1.01	16.44	0.71	1.00	XX
8FE9RH		15.15	-0.57	-0.95	14.92	-0.81	-1.13	PP
9YNNN3		15.12	-0.61	-1.01	14.87	-0.86	-1.20	PP
A694RZ		15.09	-0.64	-1.05	15.17	-0.56	-0.79	PP
AG3JG2		16.19	0.47	0.77	16.06	0.33	0.47	HG
B3XMWE		15.28	-0.44	-0.74	15.26	-0.47	-0.66	XX
ED6WMM		15.99	0.27	0.44	15.71	-0.02	-0.03	PP
FCPRTV		15.75	0.03	0.05	16.11	0.39	0.54	PP
GZRBGY		14.93	-0.79	-1.32	14.90	-0.83	-1.16	LP
L4FDAF		15.35	-0.37	-0.62	15.18	-0.55	-0.77	PP
LM6RN6		15.29	-0.43	-0.72	15.50	-0.23	-0.32	PP
MLB7VE		16.30	0.58	0.96	16.50	0.77	1.08	LW
N4P3NC		16.01	0.28	0.47	15.94	0.21	0.30	LA
N8Q7GK		15.79	0.06	0.10	14.97	-0.76	-1.07	PP
NQZ7LE		15.24	-0.48	-0.80	15.81	0.08	0.11	LP
QXC484		14.58	-1.14	-1.90	14.47	-1.26	-1.76	VM
TBDETG		15.91	0.19	0.31	16.47	0.74	1.04	LA
TLT94A		15.30	-0.42	-0.70	14.56	-1.17	-1.64	GL
U889QF		15.34	-0.38	-0.64	15.75	0.02	0.03	WG
ULRVW8		17.12	1.39	2.31	17.53	1.80	2.53	PP
URT63Z		15.81	0.09	0.14	15.11	-0.62	-0.87	GA
UU3C8D		15.54	-0.18	-0.31	15.38	-0.35	-0.49	LP
UULZP9		15.91	0.19	0.31	15.94	0.21	0.30	LP
VYCPPC		16.70	0.98	1.62	16.70	0.97	1.36	GS
WEFJWC		16.16	0.44	0.72	16.36	0.63	0.89	LP
WVQ88R		16.03	0.31	0.51	15.77	0.04	0.06	LA
XN42L6		16.12	0.40	0.66	16.15	0.42	0.59	TL
YLTENQ		16.59	0.87	1.44	16.07	0.34	0.48	PP
Z9XKQM		14.86	-0.87	-1.44	15.55	-0.18	-0.25	TL
ZQHDGC		15.14	-0.58	-0.97	15.01	-0.72	-1.01	HG

Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

TAPPI Official Test Method T460

Summary Statistics	Sample GE83	Sample GE84
Grand Means	15.72 sec/100 cc	15.73 sec/100 cc
Stnd Dev Btwn Labs	0.60 sec/100 cc	0.71 sec/100 cc

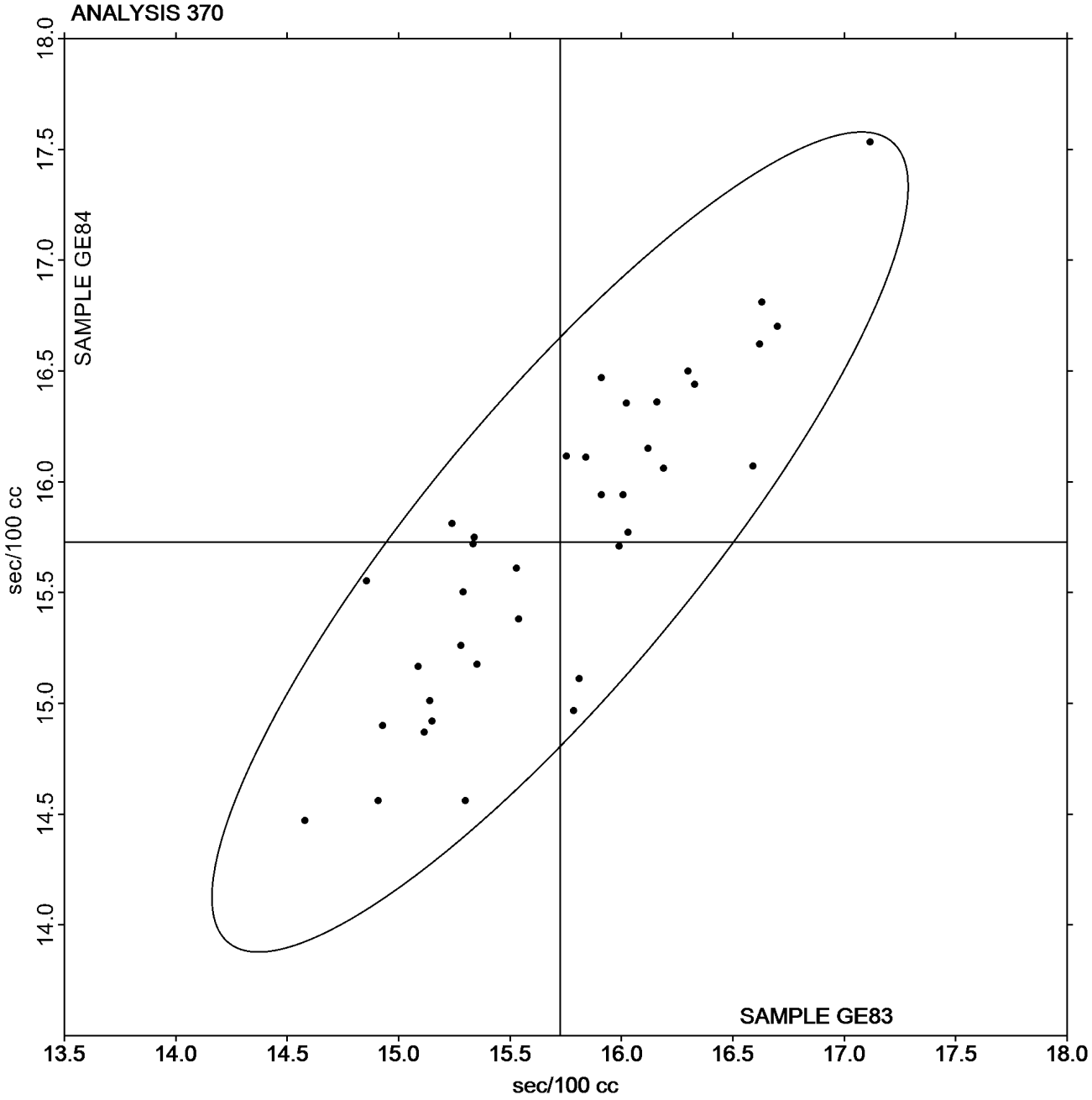
Statistics based on 37 of 37 reporting participants.

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

Grand Mean Sample GE83 = 15.724 sec/100 cc

Grand Mean Sample GE84 = 15.728 sec/100 cc



Paper & Paperboard Interlaboratory Testing Program

Analysis 372

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

TAPPI Official Test Method T547

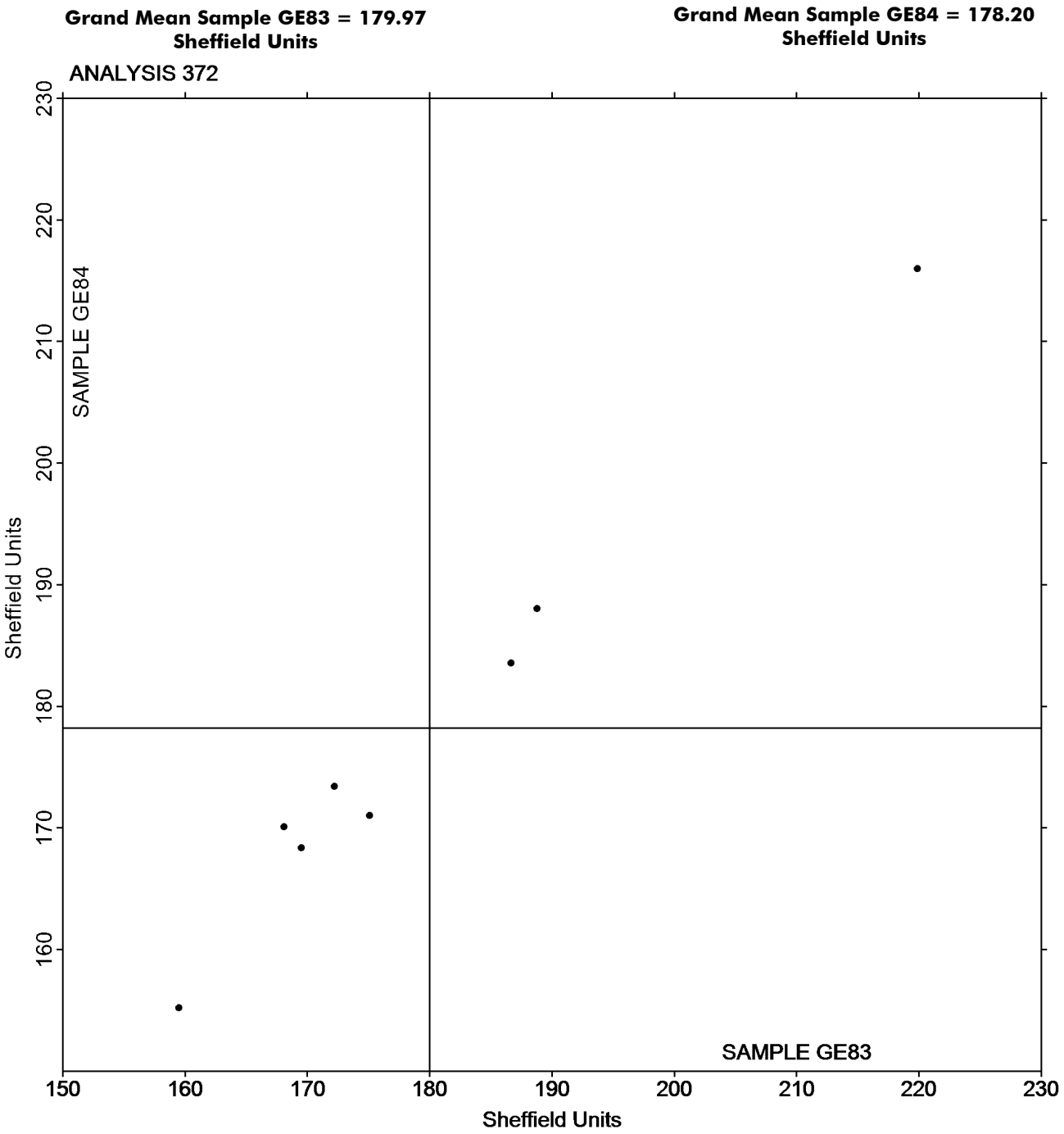
WebCode	Data Flag	Sample GE83 Lab Mean	Sample GE83 Diff from Grand Mean	Sample GE83 CPV	Sample GE84 Lab Mean	Sample GE84 Diff from Grand Mean	Sample GE84 CPV	Instr Code
2H6LPT		175.1	-4.9	-0.26	171.0	-7.2	-0.40	LA
3KNVF6		159.5	-20.5	-1.09	155.2	-23.0	-1.26	SH
4J77PX		172.2	-7.8	-0.41	173.4	-4.8	-0.26	HM
L4FDAF		169.5	-10.5	-0.56	168.4	-9.8	-0.54	PP
QXC484		186.7	6.7	0.36	183.5	5.3	0.29	PP
URT63Z		168.1	-11.9	-0.63	170.1	-8.1	-0.45	GA
XJAZKP		219.9	39.9	2.13	216.0	37.8	2.08	LP
YAYXYP		188.8	8.8	0.47	188.0	9.8	0.54	LB

Summary Statistics	Sample GE83	Sample GE84
Grand Means	179.97 Sheffield Units	178.20 Sheffield Units
Stnd Dev Btwn Labs	18.79 Sheffield Units	18.21 Sheffield Units

Statistics based on 8 of 8 reporting participants.

Key to Instrument Codes Reported by Participants

GA	Gurley Precision #4340 Automatic Densometer	HM	Technidyne - Hagerty Model #538
LA	L & W Roughness Sheffield - Autoline	LB	L & W Air Permeance - Autoline
LP	L & W Densometer, Air Permeance	PP	Technidyne Profile/Plus
SH	Sheffield		



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

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 GJ83 Lab Mean	Sample GJ83 Diff from Grand Mean	Sample GJ83 CPV	Sample GJ84 Lab Mean	Sample GJ84 Diff from Grand Mean	Sample GJ84 CPV	Instr Code
3V8AGM		0.8080	-0.0766	-0.50	0.9280	0.0665	0.49	ZZ
63FLMJ		0.9610	0.0764	0.50	0.9300	0.0685	0.50	ZZ
6RY23M		0.8990	0.0144	0.09	0.8880	0.0265	0.19	ZZ
86CBJ9	*	0.4210	-0.4636	-3.04	0.4210	-0.4405	-3.23	ZZ
879N3U		0.8570	-0.0276	-0.18	0.8660	0.0045	0.03	ZZ
8QUHV2		0.9780	0.0934	0.61	1.0550	0.1935	1.42	ZZ
9YNNN3		0.8900	0.0054	0.04	0.9150	0.0535	0.39	ZZ
ALXDE3		0.8150	-0.0696	-0.46	0.8530	-0.0085	-0.06	ZZ
AWD62R		0.6830	-0.2016	-1.32	0.7860	-0.0755	-0.55	ZZ
BC3VDY		1.1950	0.3104	2.04	1.1770	0.3155	2.31	ZZ
BTR39C		0.7470	-0.1376	-0.90	0.7720	-0.0895	-0.66	ZZ
BWDKQW		0.8980	0.0134	0.09	0.8370	-0.0245	-0.18	ZZ
E6BQUL		0.8600	-0.0246	-0.16	0.8330	-0.0285	-0.21	ZZ
EY7QXX		0.9470	0.0624	0.41	0.8410	-0.0205	-0.15	ZZ
FCPRTV		0.8570	-0.0276	-0.18	0.8320	-0.0295	-0.22	ZZ
FED4T2		0.7180	-0.1666	-1.09	0.7330	-0.1285	-0.94	ZZ
FEUKL9		1.0350	0.1504	0.99	0.9500	0.0885	0.65	ZZ
GT96H8		0.8810	-0.0036	-0.02	0.7820	-0.0795	-0.58	ZZ
GWVMZR		0.8880	0.0034	0.02	0.7920	-0.0695	-0.51	ZZ
HHUB6T		1.1060	0.2214	1.45	1.0750	0.2135	1.57	ZZ
L4FDAF	*	1.0850	0.2004	1.31	0.8570	-0.0045	-0.03	ZZ
MYGG4L		0.8600	-0.0246	-0.16	0.7870	-0.0745	-0.55	ZZ
QXC484	X	1.3340	0.4494	2.95	0.8560	-0.0055	-0.04	ZZ
RJNGEG		0.8690	-0.0156	-0.10	0.7980	-0.0635	-0.47	ZZ
TNXUWF		1.0170	0.1324	0.87	0.9380	0.0765	0.56	ZZ
U889QF		0.9540	0.0694	0.46	0.8870	0.0255	0.19	ZZ
VE2ZCE		1.0640	0.1794	1.18	1.0770	0.2155	1.58	ZZ
WP2M4B		0.8880	0.0034	0.02	0.7950	-0.0665	-0.49	ZZ
WQUJQK		0.6680	-0.2166	-1.42	0.7570	-0.1045	-0.77	ZZ
ZHM9NB		0.8030	-0.0816	-0.53	0.8220	-0.0395	-0.29	ZZ

Summary Statistics	Sample GJ83	Sample GJ84
Grand Means	0.88 Microns	0.86 Microns
Stnd Dev Btwn Labs	0.15 Microns	0.14 Microns

Statistics based on 29 of 30 reporting participants.

Comments on Assigned Data Flags for Test #376

QXC484 (X) - Data for sample GJ83 are high.

Analysis Notes:

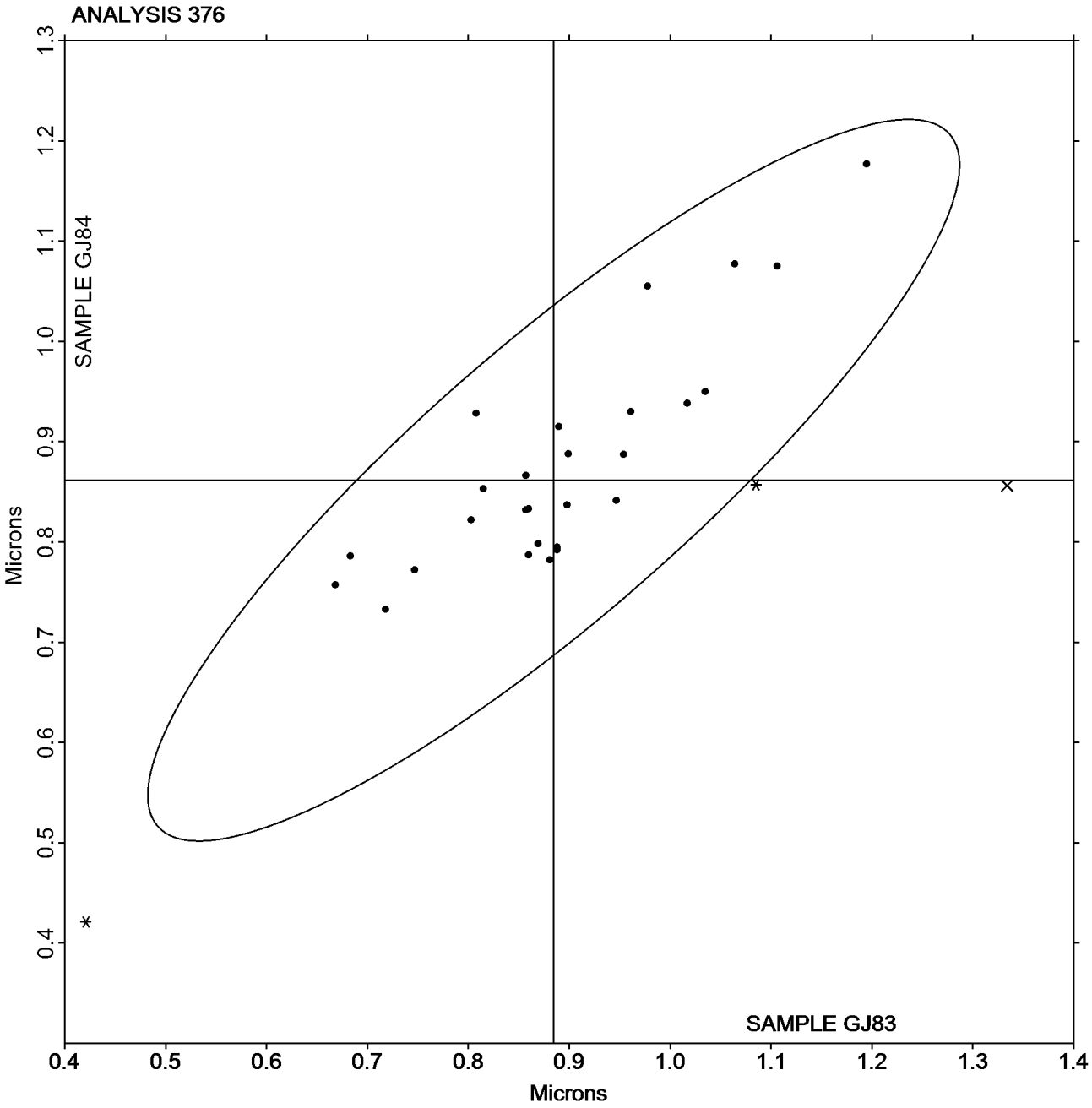
63FLMJ - Data appears to be transposed between Analysis 376 (Roughness - Print Surf) and Analysis 378 (Roughness - Sheffield). Data switched by CTS.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample GJ83 = 0.88455 Microns

Grand Mean Sample GJ84 = 0.86152 Microns



Paper & Paperboard Interlaboratory Testing Program

Analysis 377

Roughness - Print Surf Method - 2.5 to 6.0 Microns

TAPPI Official Test Method T555

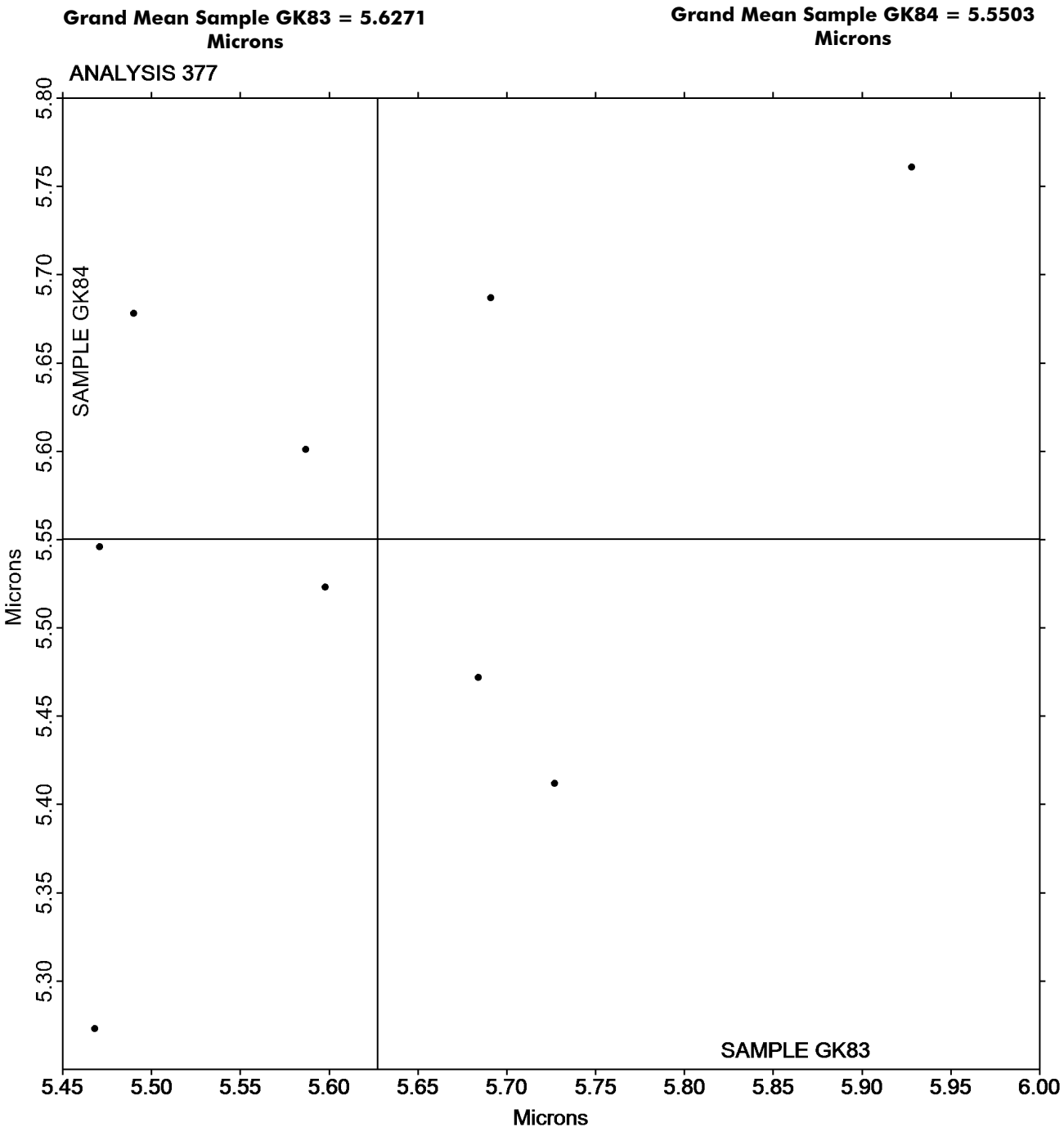
WebCode	Data Flag	Sample GK83 Lab Mean	Sample GK83 Diff from Grand Mean	Sample GK83 CPV	Sample GK84 Lab Mean	Sample GK84 Diff from Grand Mean	Sample GK84 CPV	Instr Code
22G9B2		5.598	-0.029	-0.19	5.523	-0.027	-0.18	ZZ
27RLTY		5.684	0.057	0.38	5.472	-0.078	-0.52	ZZ
7267QW		5.928	0.301	2.01	5.761	0.211	1.39	ZZ
FED4T2		5.587	-0.040	-0.27	5.601	0.051	0.33	ZZ
LK4RN9		5.691	0.064	0.43	5.687	0.137	0.90	ZZ
PPPHQL		5.727	0.100	0.67	5.412	-0.138	-0.91	ZZ
TBDETG		5.468	-0.159	-1.06	5.273	-0.277	-1.82	ZZ
U889QF		5.471	-0.156	-1.04	5.546	-0.004	-0.03	ZZ
WQUJQK		5.490	-0.137	-0.92	5.678	0.128	0.84	ZZ

Summary Statistics	Sample GK83	Sample GK84
Grand Means	5.63 Microns	5.55 Microns
Stnd Dev Btwn Labs	0.15 Microns	0.15 Microns

Statistics based on 9 of 9 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 378

Roughness - Sheffield Type

TAPPI Official Test Method T538

WebCode	Data Flag	Sample GL83 Lab Mean	Sample GL83 Diff from Grand Mean	Sample GL83 CPV	Sample GL84 Lab Mean	Sample GL84 Diff from Grand Mean	Sample GL84 CPV	Instr Code
22G9B2		132.9	12.3	1.82	122.2	7.1	1.28	PP
27RLTY		128.7	8.1	1.21	113.7	-1.3	-0.24	LW
2H6LPT		115.4	-5.2	-0.77	107.5	-7.5	-1.35	LA
3KNVF6		106.1	-14.5	-2.14	107.7	-7.3	-1.32	TZ
3TG9BY		113.5	-7.1	-1.05	111.5	-3.5	-0.64	LW
3V8AGM		119.5	-1.1	-0.16	113.0	-2.0	-0.37	HM
63FLMJ		111.9	-8.7	-1.28	108.9	-6.2	-1.10	PP
6RY23M		124.4	3.8	0.57	118.6	3.6	0.64	LW
7267QW		123.0	2.4	0.36	114.5	-0.5	-0.09	PP
879N3U		125.9	5.3	0.79	119.5	4.5	0.80	HM
8FE9RH		117.1	-3.5	-0.52	115.0	-0.1	-0.01	PP
8QUHV2		123.2	2.6	0.39	117.4	2.4	0.43	PP
A694RZ		106.0	-14.6	-2.16	105.0	-10.0	-1.80	SH
AG3JG2		116.0	-4.6	-0.68	111.5	-3.5	-0.64	HM
ALXDE3		120.6	0.0	0.01	112.1	-2.9	-0.53	LA
B3XMWE		128.0	7.4	1.10	115.7	0.7	0.12	XX
B6HR7W		126.0	5.4	0.81	111.5	-3.5	-0.64	GA
BC3VDY		129.0	8.4	1.25	118.3	3.3	0.58	LW
ED6WMM		110.8	-9.7	-1.44	102.6	-12.5	-2.24	PP
EY7QXX		116.0	-4.5	-0.67	116.0	0.9	0.17	PP
FCPRTV		121.1	0.6	0.08	113.1	-2.0	-0.35	PP
FED4T2		119.9	-0.7	-0.10	113.9	-1.1	-0.21	LA
FUAHTU		119.7	-0.9	-0.13	114.4	-0.6	-0.12	TT
GDJXMU		117.1	-3.5	-0.51	119.1	4.0	0.72	MP
GWVMZR		125.4	4.8	0.71	121.0	6.0	1.07	PP
HHUB6T		112.1	-8.5	-1.25	111.9	-3.1	-0.56	LW
L4FDAF	*	129.2	8.7	1.28	128.4	13.4	2.40	PP
LK4RN9		122.1	1.5	0.23	116.3	1.2	0.22	PP
LM6RN6		114.4	-6.1	-0.91	107.9	-7.1	-1.28	PP
LUQK2P		115.4	-5.2	-0.77	113.1	-1.9	-0.35	LA
MLB7VE		123.4	2.8	0.42	115.0	0.0	-0.01	TS
MYGG4L		122.4	1.8	0.27	123.3	8.3	1.49	PP
N8Q7GK		116.9	-3.7	-0.55	107.5	-7.6	-1.36	PP
Q3N7VK	*	139.5	18.9	2.81	130.0	15.0	2.68	GL
Q83LKC		119.6	-1.0	-0.14	115.7	0.7	0.12	LA
QXC484		123.6	3.0	0.45	114.5	-0.5	-0.10	VM
RFD4WH		119.6	-1.0	-0.14	114.0	-1.0	-0.18	PP
RJNGEG		114.6	-6.0	-0.88	112.1	-2.9	-0.53	PP
TBDETG	X	145.7	25.1	3.73	139.5	24.5	4.39	LA
TRX6QU		120.5	-0.1	-0.01	112.9	-2.1	-0.39	PP
U889QF		132.4	11.8	1.75	126.3	11.3	2.02	XX

Paper & Paperboard Interlaboratory Testing Program

Analysis 378
Roughness - Sheffield Type
TAPPI Official Test Method T538

WebCode	Data Flag	Sample GL83 Lab Mean	Sample GL83 Diff from Grand Mean	Sample GL83 CPV	Sample GL84 Lab Mean	Sample GL84 Diff from Grand Mean	Sample GL84 CPV	Instr Code
ULRVW8		127.5	7.0	1.03	118.9	3.9	0.70	PP
URT63Z		118.1	-2.5	-0.37	117.8	2.8	0.49	PP
WP2M4B	X	271.1	150.5	22.31	140.0	25.0	4.48	GL
WQUJQK		117.5	-3.1	-0.45	112.4	-2.6	-0.47	LW
XJAZKP		119.3	-1.3	-0.19	115.6	0.6	0.10	LW
YLTENQ		118.0	-2.6	-0.38	115.9	0.9	0.15	PP
ZHM9NB	X	147.5	26.9	3.99	148.9	33.9	6.07	TT
ZQHDGC		122.6	2.0	0.30	118.9	3.9	0.69	TS

Summary Statistics	Sample GL83	Sample GL84
Grand Means	120.56 Sheffield	115.05 Sheffield
Stnd Dev Btwn Labs	6.75 Sheffield	5.58 Sheffield

Statistics based on 46 of 49 reporting participants.

Comments on Assigned Data Flags for Test #378

TBDETG (X) - Data for both samples are high.

WP2M4B (X) - Extreme Data.

ZHM9NB (X) - Extreme Data.

Analysis Notes:

63FLMJ - Data appears to be transposed between Analysis 376 (Roughness - Print Surf) and Analysis 378 (Roughness - Sheffield). Data switched by CTS.

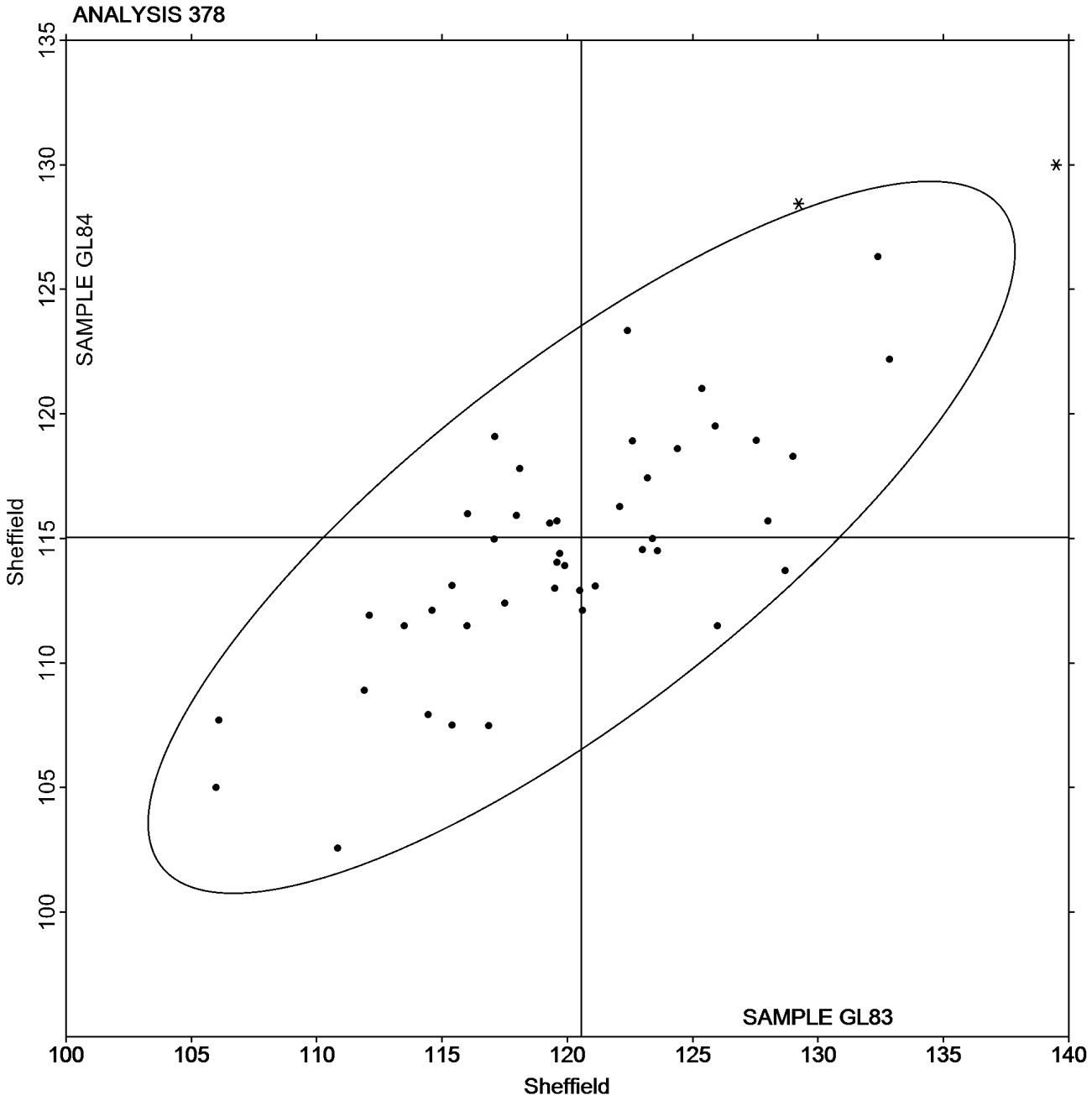
QXC484 - Data appears to be transposed between samples. Data switched by CTS.

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
LW	L & W Roughness Tester	MP	Metso Paperlab
PP	Technidyne Profile/Plus	SH	Sheffield (Bendix Precisionaire)
TS	TMI Monitor/Smoothness, Model 58-02	TT	TMI Monitor/Smoothness II, Model 58-24
TZ	TMI Sheffield Paper Tester, Model 58-25	VM	Valmet PaperLab (was Kajaani\Robotest)
XX	Instrument make/model not specified by lab		

Grand Mean Sample GL83 = 120.56
Sheffield

Grand Mean Sample GL84 = 115.05
Sheffield



Paper & Paperboard Interlaboratory Testing Program

Analysis 382
Moisture in Paper
TAPPI Official Test Method T412

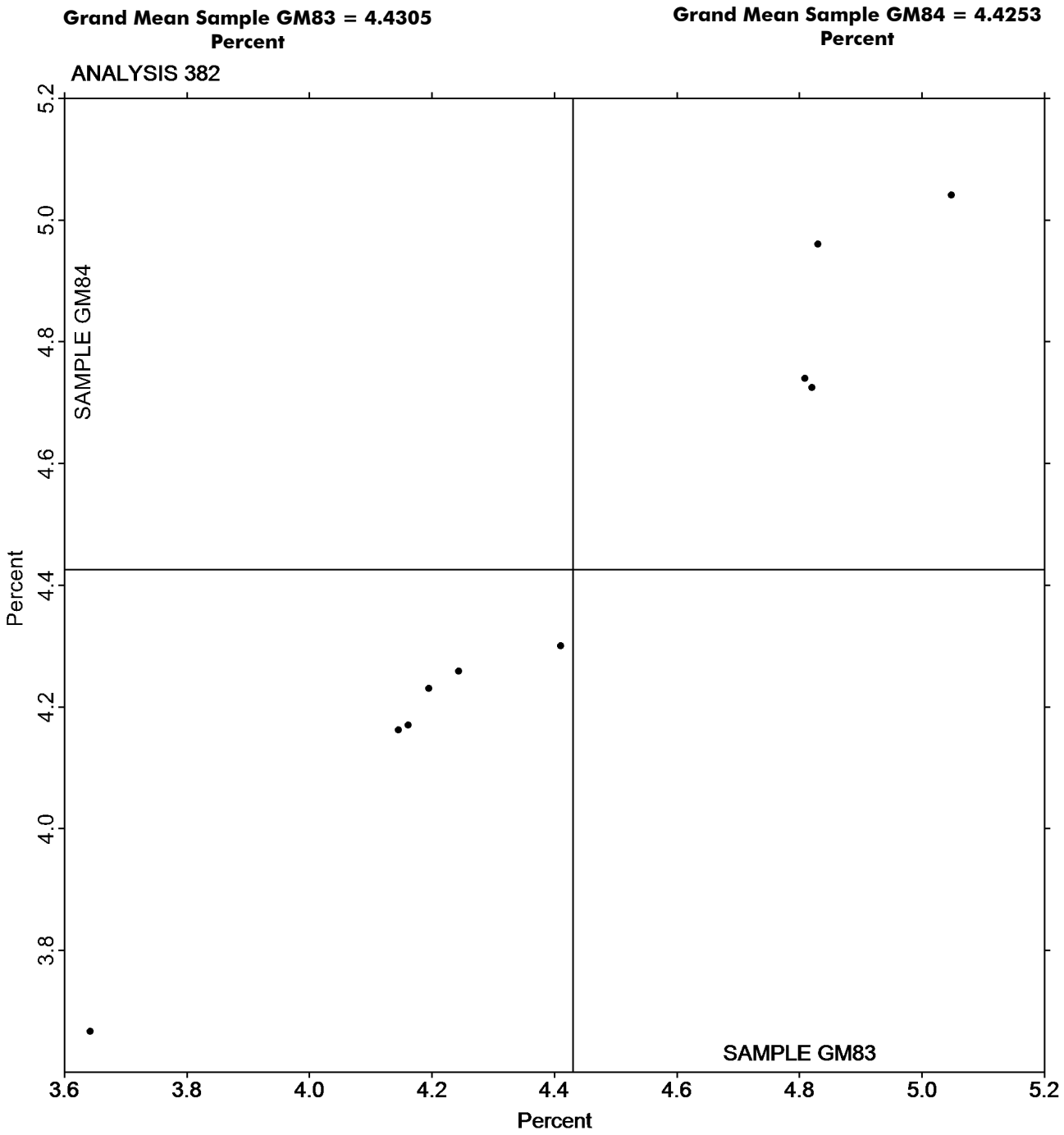
WebCode	Data Flag	Sample GM83 Lab Mean	Sample GM83 Diff from Grand Mean	Sample GM83 CPV	Sample GM84 Lab Mean	Sample GM84 Diff from Grand Mean	Sample GM84 CPV	Instr Code
467MR8		5.049	0.618	1.42	5.041	0.616	1.44	ZZ
7267QW		4.809	0.378	0.87	4.739	0.314	0.73	ZZ
BWDKQW		4.161	-0.269	-0.62	4.170	-0.255	-0.60	ZZ
H49V2U		4.195	-0.235	-0.54	4.230	-0.195	-0.46	ZZ
HRT6YH		4.820	0.390	0.90	4.725	0.300	0.70	ZZ
JJWPP4		4.145	-0.286	-0.66	4.162	-0.263	-0.62	ZZ
UU3C8D		3.642	-0.788	-1.81	3.667	-0.758	-1.77	ZZ
VQFUPT		4.410	-0.020	-0.05	4.300	-0.125	-0.29	ZZ
YJNLVD		4.244	-0.186	-0.43	4.259	-0.166	-0.39	ZZ
ZHM9NB		4.830	0.400	0.92	4.960	0.535	1.25	ZZ

Summary Statistics	Sample GM83	Sample GM84
Grand Means	4.43 Percent	4.43 Percent
Stnd Dev Btwn Labs	0.43 Percent	0.43 Percent

Statistics based on 10 of 10 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 384

Opacity (89% Reflectance Backing) - Fine Papers

TAPPI Official Test Method T425

WebCode	Data Flag	Sample GN83 Lab Mean	Sample GN83 Diff from Grand Mean	Sample GN83 CPV	Sample GN84 Lab Mean	Sample GN84 Diff from Grand Mean	Sample GN84 CPV	Instr Code
22G9B2		89.18	0.00	-0.01	89.29	0.08	0.26	ZZ
2H6LPT		89.00	-0.18	-0.44	88.99	-0.22	-0.69	ZZ
3FXL78		89.43	0.25	0.60	89.33	0.12	0.38	ZZ
3KNVF6		89.29	0.11	0.25	88.89	-0.32	-1.01	ZZ
3V8AGM		89.09	-0.09	-0.23	89.26	0.05	0.16	ZZ
7267QW		89.64	0.45	1.08	89.55	0.34	1.06	ZZ
879N3U		89.98	0.80	1.91	89.86	0.65	2.04	ZZ
9YNNN3		89.48	0.30	0.71	89.57	0.36	1.13	ZZ
A694RZ		88.83	-0.35	-0.85	88.82	-0.39	-1.22	ZZ
AG3JG2		88.87	-0.31	-0.76	89.21	0.00	0.00	ZZ
BTR39C	X	88.90	-0.28	-0.68	87.61	-1.60	-5.02	ZZ
CBQFHD		89.26	0.07	0.17	89.46	0.25	0.78	ZZ
E6BQUL		88.97	-0.21	-0.51	88.81	-0.40	-1.26	ZZ
ED6WMM		88.94	-0.24	-0.59	88.69	-0.52	-1.63	ZZ
FCPRTV		89.36	0.17	0.41	89.73	0.52	1.64	ZZ
L4FDAF		88.99	-0.19	-0.47	89.12	-0.09	-0.28	ZZ
LK4RN9		89.34	0.15	0.37	88.88	-0.33	-1.05	ZZ
LM6RN6		89.01	-0.18	-0.43	89.27	0.06	0.17	ZZ
MLB7VE		88.87	-0.31	-0.76	89.31	0.10	0.31	ZZ
TBDETG	X	91.64	2.45	5.89	91.32	2.11	6.63	ZZ
TRX6QU		88.98	-0.20	-0.49	89.30	0.09	0.28	ZZ
ULRVW8		89.86	0.67	1.62	89.17	-0.04	-0.12	ZZ
URT63Z		89.25	0.07	0.16	89.29	0.08	0.25	ZZ
VE2ZCE		89.24	0.06	0.14	89.45	0.24	0.75	ZZ
VTJPAV		89.38	0.20	0.47	88.98	-0.23	-0.72	ZZ
VYCPPC	*	87.82	-1.36	-3.28	88.60	-0.61	-1.91	ZZ
ZQHDGC		89.57	0.39	0.93	89.43	0.22	0.69	ZZ

Summary Statistics	Sample GN83	Sample GN84
Grand Means	89.18 Percent	89.21 Percent
Stnd Dev Btwn Labs	0.42 Percent	0.32 Percent

Statistics based on 25 of 27 reporting participants.

Comments on Assigned Data Flags for Test #384

TBDETG (X) - Extreme Data.

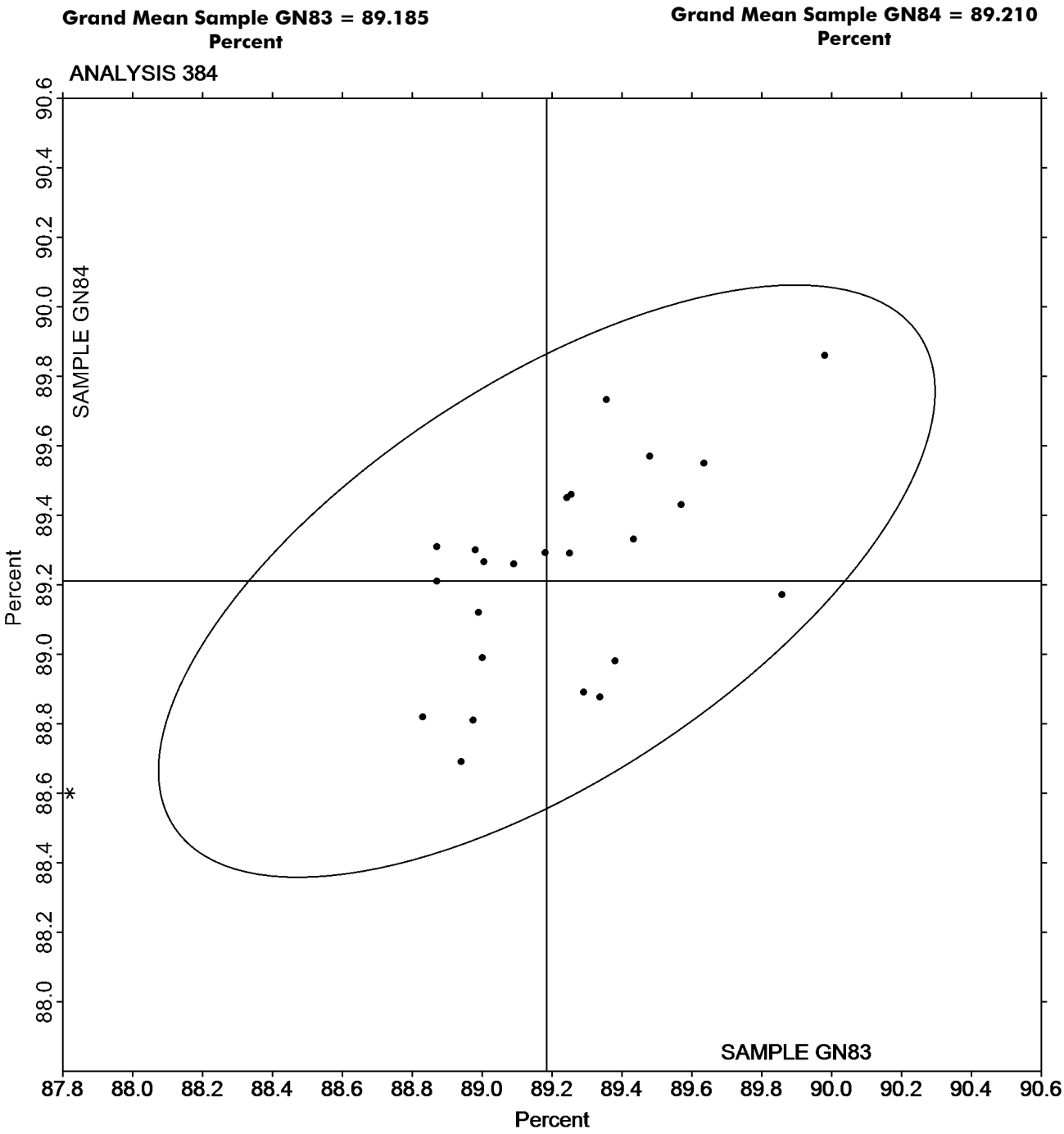
BTR39C (X) - Data for sample GN84 are low. Inconsistent within the determinations of both samples.

Analysis Notes:

CBQFHD - One determination removed from the Lab Mean of Sample GN83 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



Paper & Paperboard Interlaboratory Testing Program

Analysis 386

Opacity (Paper Backing) - Fine Papers and Newsprint

TAPPI Official Test Method T519

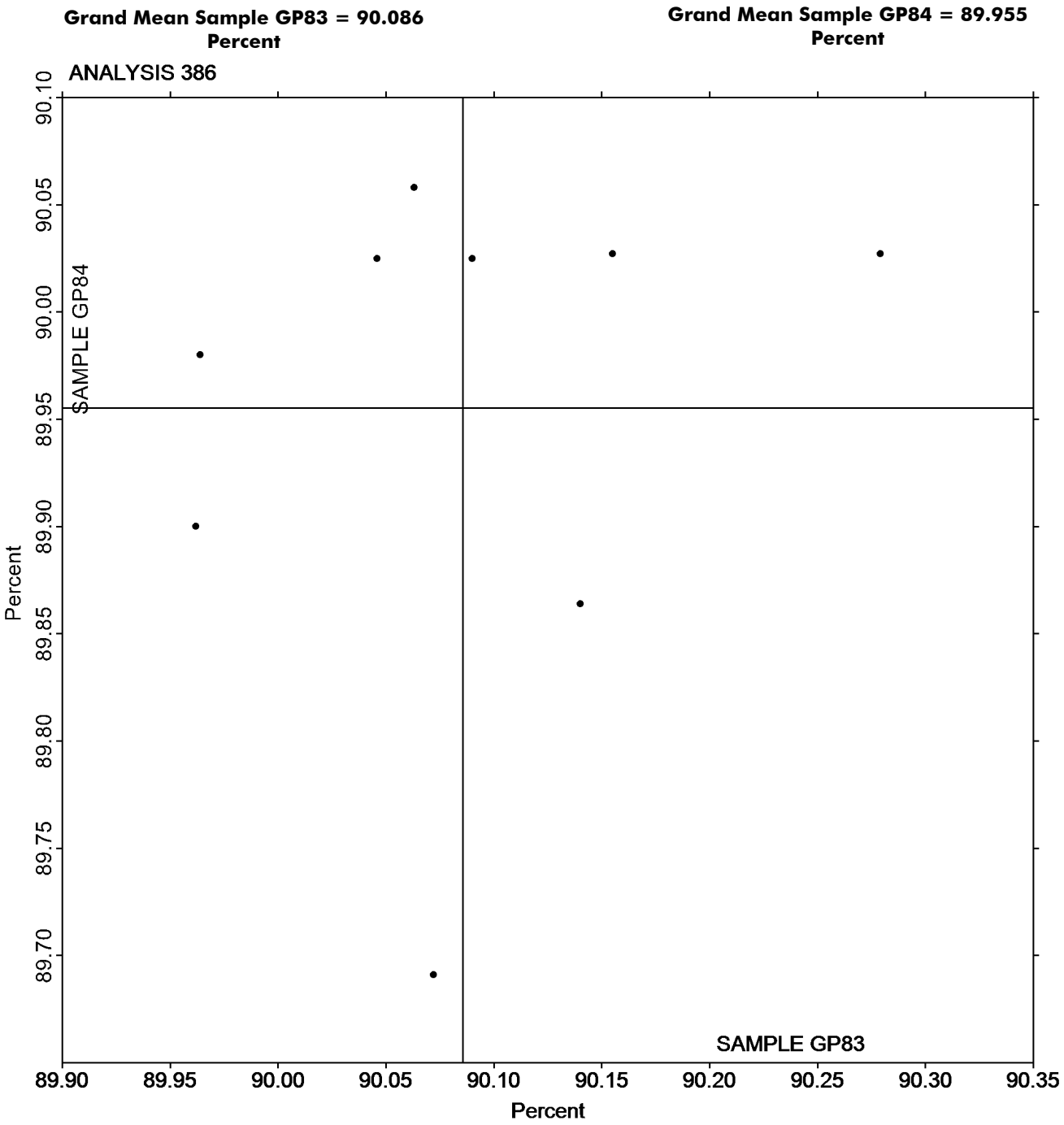
WebCode	Data Flag	Sample GP83 Lab Mean	Sample GP83 Diff from Grand Mean	Sample GP83 CPV	Sample GP84 Lab Mean	Sample GP84 Diff from Grand Mean	Sample GP84 CPV	Instr Code
3CWK4P		89.96	-0.12	-1.24	89.98	0.02	0.21	ZZ
99E9RF		90.07	-0.01	-0.14	89.69	-0.26	-2.23	ZZ
JCX3YP		90.09	0.00	0.04	90.03	0.07	0.59	ZZ
T7FXE2		89.96	-0.12	-1.26	89.90	-0.06	-0.47	ZZ
TKHL9G		90.16	0.07	0.70	90.03	0.07	0.61	ZZ
TNXUWF		90.06	-0.02	-0.23	90.06	0.10	0.87	ZZ
UU3C8D		90.05	-0.04	-0.40	90.03	0.07	0.59	ZZ
UULZP9		90.28	0.19	1.96	90.03	0.07	0.61	ZZ
X9AA24		90.14	0.05	0.55	89.86	-0.09	-0.77	ZZ

Summary Statistics	Sample GP83	Sample GP84
Grand Means	90.09 Percent	89.96 Percent
Stnd Dev Btwn Labs	0.10 Percent	0.12 Percent

Statistics based on 9 of 9 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 390
Directional Brightness
TAPPI Official Test Method T452

WebCode	Data Flag	Sample GR83 Lab Mean	Sample GR83 Diff from Grand Mean	Sample GR83 CPV	Sample GR84 Lab Mean	Sample GR84 Diff from Grand Mean	Sample GR84 CPV	Instr Code
3KNVF6	X	86.98	2.66	0.87	88.11	3.79	1.23	TS
6RY23M		85.05	0.74	0.24	85.12	0.80	0.26	HZ
879N3U		83.66	-0.65	-0.21	83.81	-0.51	-0.16	TS
8QUHV2		83.81	-0.51	-0.17	83.54	-0.78	-0.25	TS
9YNNN3		84.26	-0.05	-0.02	84.73	0.41	0.13	TP
B3XMWE		88.01	3.70	1.21	88.04	3.72	1.20	XX
BC3VDY		86.03	1.71	0.56	86.10	1.78	0.57	HG
BTR39C		86.86	2.55	0.83	86.84	2.52	0.81	TS
ED6WMM		83.66	-0.65	-0.21	83.80	-0.52	-0.17	TT
EKPRTX		86.41	2.09	0.68	86.28	1.96	0.63	TS
EY7QXX		84.21	-0.10	-0.03	84.24	-0.08	-0.03	TA
FCPRTV		83.84	-0.48	-0.16	84.18	-0.14	-0.05	TT
GWVMZR		85.92	1.60	0.52	85.85	1.53	0.50	HG
MYGG4L		85.08	0.76	0.25	84.78	0.46	0.15	HG
PPPHQL	*	74.39	-9.93	-3.25	74.18	-10.14	-3.28	TS
Q83LKC		76.61	-7.71	-2.52	76.58	-7.74	-2.50	EA
RFD4WH		84.14	-0.18	-0.06	84.20	-0.12	-0.04	TS
RJNGEG		87.04	2.72	0.89	86.94	2.62	0.85	TP
TBDETG		84.06	-0.26	-0.08	83.72	-0.60	-0.19	TS
TRX6QU		84.24	-0.08	-0.03	84.30	-0.02	-0.01	XX
ULRVW8		84.65	0.33	0.11	84.30	-0.02	-0.01	TP
URT63Z		85.56	1.25	0.41	86.00	1.68	0.54	XC
VYCPPC		88.18	3.86	1.26	88.25	3.93	1.27	PE
WP2M4B	X	67.09	-17.23	-5.64	67.73	-16.59	-5.36	TS
WQUJQK		84.08	-0.24	-0.08	84.14	-0.18	-0.06	TT
ZQHDGC		83.86	-0.45	-0.15	83.76	-0.56	-0.18	TS

Summary Statistics	Sample GR83	Sample GR84
Grand Means	84.32 Percent	84.32 Percent
Stnd Dev Btwn Labs	3.06 Percent	3.09 Percent

Statistics based on 24 of 26 reporting participants.

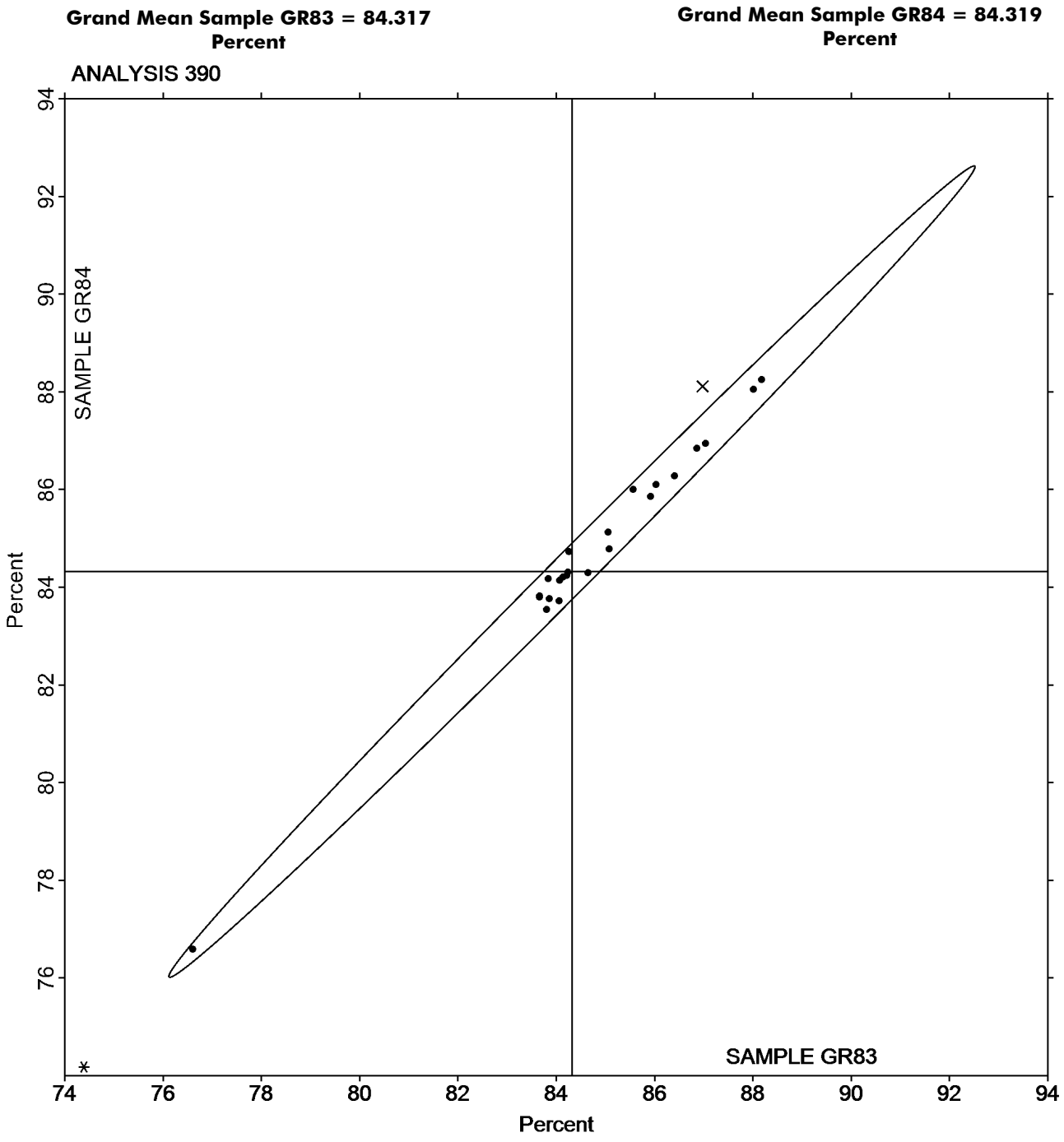
Comments on Assigned Data Flags for Test #390

WP2M4B (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

3KNVF6 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample GR83.

Key to Instrument Codes Reported by Participants

EA	L & W Autoline 400	HG	Hunter Labscan / XE
HZ	Hunter Lab ColorFlex EZ Series	PE	Photovolt 577
TA	Technidyne, Diano, M.S. S-4	TP	Technidyne Test/Plus
TS	Technidyne Brightimeter Micro S-5	TT	Technidyne Brightimeter Micro S4-M
XC	X-Rite Color i5	XX	Instrument make/model not specified by lab



Paper & Paperboard Interlaboratory Testing Program

Analysis 391

Directional Brightness of Fluorescent Samples

TAPPI Official Test Method T452

WebCode	Data Flag	Sample GZ83 Lab Mean	Sample GZ83 Diff from Grand Mean	Sample GZ83 CPV	Sample GZ84 Lab Mean	Sample GZ84 Diff from Grand Mean	Sample GZ84 CPV	Instr Code
22G9B2		95.50	-0.20	-0.32	98.68	-0.13	-0.34	TS
3V8AGM		95.06	-0.65	-1.01	98.30	-0.52	-1.34	TT
7267QW		95.38	-0.33	-0.51	98.70	-0.12	-0.31	TS
99E9RF		97.20	1.49	2.33	98.74	-0.08	-0.20	EF
CBQFHD		95.22	-0.49	-0.76	98.52	-0.30	-0.77	TT
E6BQUL		96.41	0.71	1.10	99.54	0.73	1.88	PP
LM6RN6		95.18	-0.53	-0.82	98.58	-0.24	-0.61	PP
MLB7VE		95.58	-0.13	-0.20	98.62	-0.20	-0.51	TS
ULRVW8		95.65	-0.06	-0.09	98.92	0.10	0.27	PP
VE2ZCE		96.16	0.45	0.71	99.50	0.68	1.77	TS
ZQHDGC		95.42	-0.29	-0.44	98.88	0.06	0.16	TS

Summary Statistics	Sample GZ83	Sample GZ84
Grand Means	95.71 Percent	98.82 Percent
Stnd Dev Btwn Labs	0.64 Percent	0.39 Percent

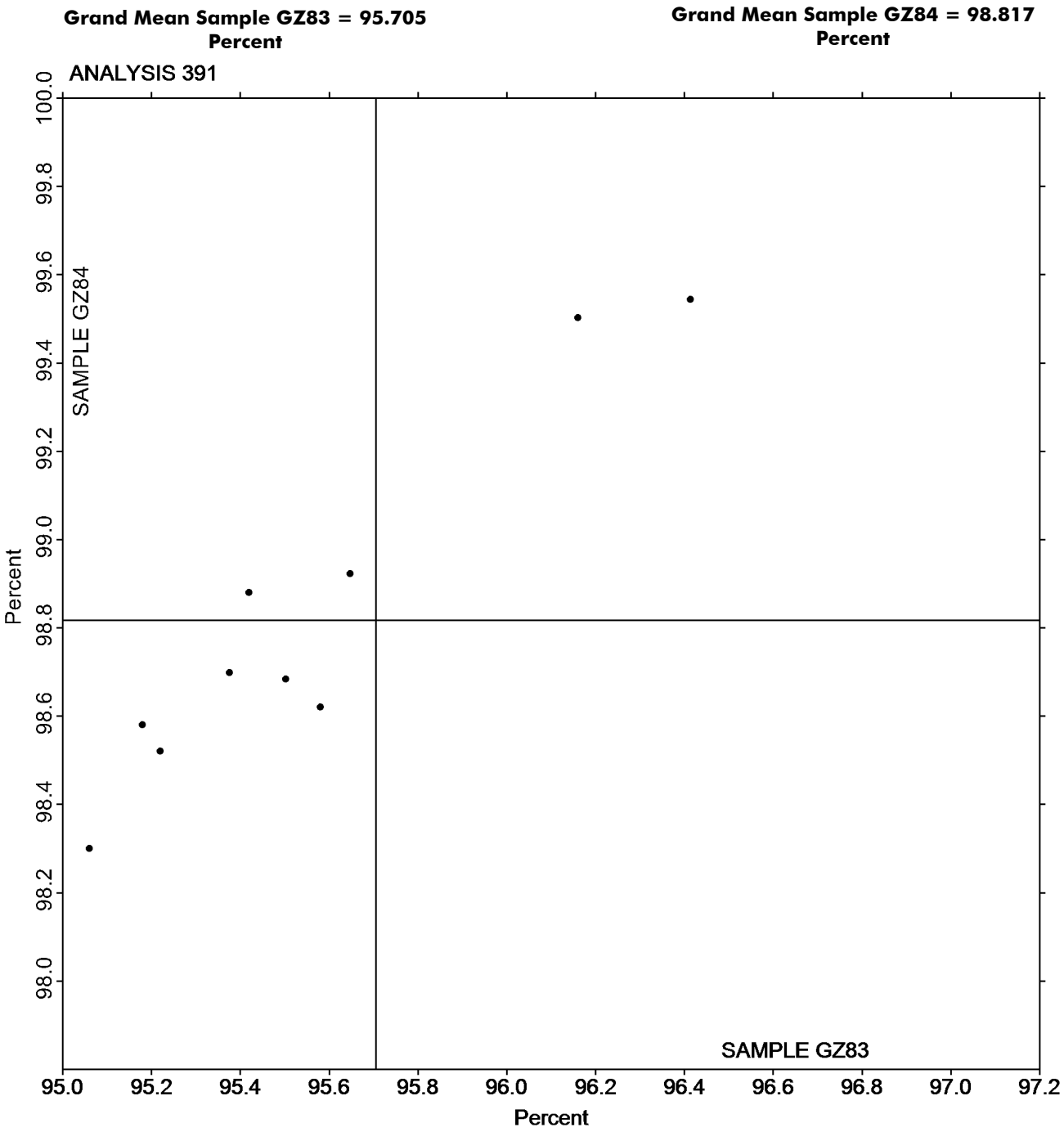
Statistics based on 11 of 11 reporting participants.

Analysis Notes:

99E9RF - Data appears to be transposed between Analysis 391 (Directional Brightness) and Analysis 394 (Fluorescent Component). Data switched by CTS.

Key to Instrument Codes Reported by Participants

EF	Datacolor Elrepho	PP	Technidyne Profile/Plus
TS	Technidyne Brightimeter Micro S-5	TT	Technidyne Brightimeter Micro S4-M



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 392
Diffuse Brightness
TAPPI Official Test Method T525

WebCode	Data Flag	Sample GR83 Lab Mean	Sample GR83 Diff from Grand Mean	Sample GR83 CPV	Sample GR84 Lab Mean	Sample GR84 Diff from Grand Mean	Sample GR84 CPV	Instr Code
3TG9BY		84.97	0.14	0.57	85.03	0.18	0.79	EF
86CBJ9		84.95	0.11	0.45	84.93	0.08	0.35	TC
879N3U		85.49	0.66	2.64	85.45	0.61	2.67	LT
8FE9RH		84.78	-0.06	-0.24	84.80	-0.05	-0.21	TC
AWD62R	X	84.95	0.12	0.47	86.21	1.37	6.03	TC
BC3VDY		84.75	-0.09	-0.35	84.79	-0.05	-0.24	TC
BQLHJQ		84.80	-0.04	-0.15	84.81	-0.04	-0.16	TC
EY7QXX		84.67	-0.16	-0.66	84.68	-0.17	-0.76	LT
FEUKL9		84.80	-0.03	-0.14	84.83	-0.01	-0.06	XX
H49V2U		84.92	0.08	0.34	84.87	0.03	0.11	EE
HQH4CJ		84.75	-0.09	-0.35	84.71	-0.14	-0.63	TC
JCX3YP		85.01	0.18	0.71	84.96	0.11	0.50	LE
L4FDAF		85.03	0.20	0.80	85.06	0.21	0.93	TC
N6JNJP		84.98	0.14	0.57	84.92	0.07	0.30	LE
RJNGEG		84.80	-0.03	-0.14	84.80	-0.05	-0.21	TL
T7FXE2		85.35	0.52	2.10	85.37	0.52	2.29	TC
TBDETG		84.83	0.00	-0.01	84.84	-0.01	-0.03	TC
TKHL9G		84.76	-0.07	-0.29	84.80	-0.05	-0.21	EG
TNXUWF		84.71	-0.13	-0.52	84.74	-0.11	-0.48	AC
UAFMXL		84.48	-0.35	-1.43	84.60	-0.24	-1.07	TC
UU3C8D	*	84.45	-0.39	-1.57	84.60	-0.25	-1.10	LE
UULZP9		84.86	0.02	0.09	84.89	0.04	0.18	TC
WQUJQK		84.66	-0.18	-0.72	84.63	-0.21	-0.94	EG
X9AA24		84.86	0.03	0.11	84.84	-0.01	-0.05	TC
ZHM9NB		84.38	-0.45	-1.82	84.40	-0.45	-1.98	LE

Summary Statistics	Sample GR83	Sample GR84
Grand Means	84.83 Percent	84.85 Percent
Stnd Dev Btwn Labs	0.25 Percent	0.23 Percent

Statistics based on 24 of 25 reporting participants.

Comments on Assigned Data Flags for Test #392

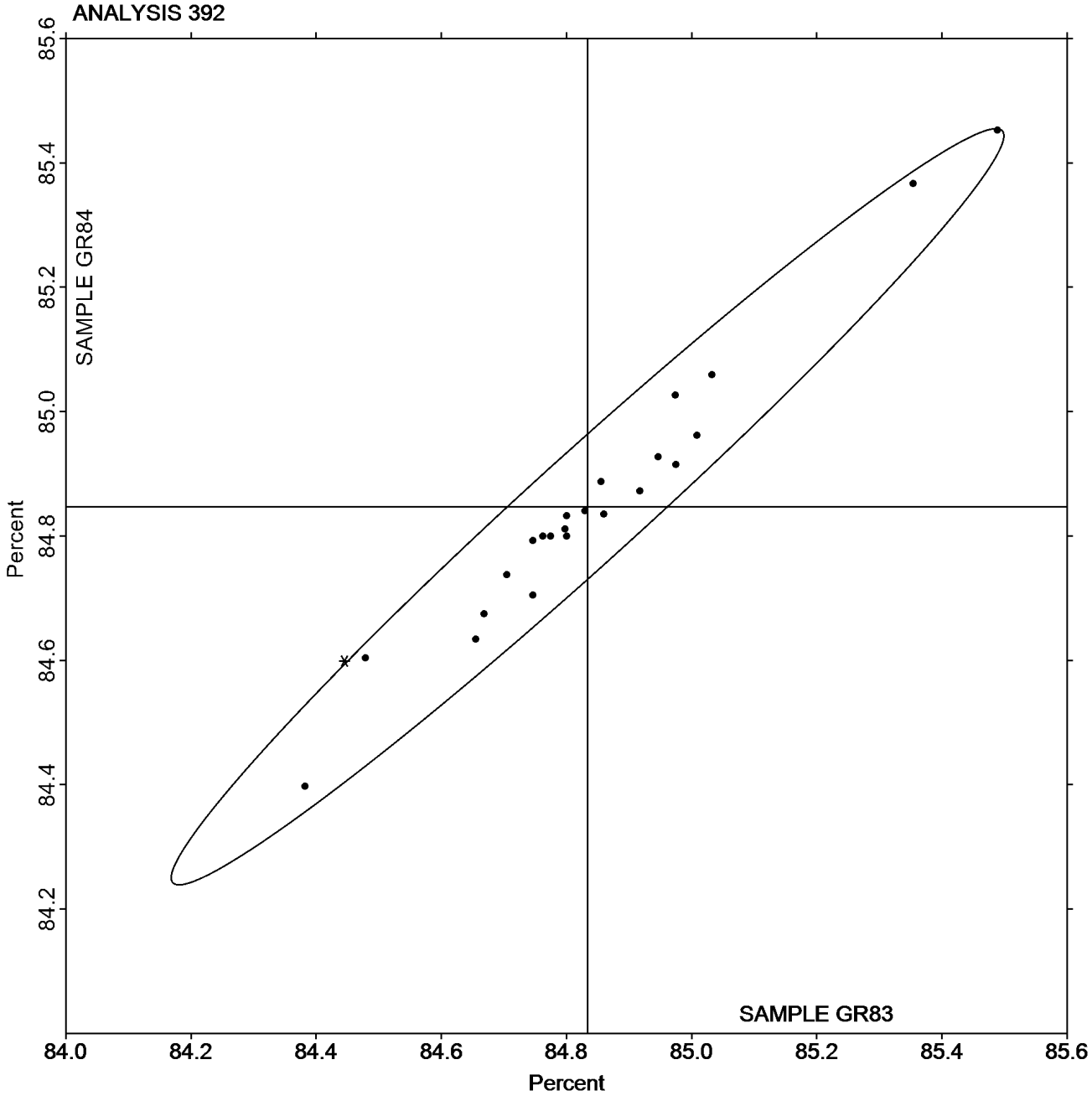
AWD62R (X) - Extreme Data for Sample GR84.

Key to Instrument Codes Reported by Participants

AC	ACS Spectro-Sensor II	EE	Datacolor Elrepho 2000
EF	Datacolor Elrepho 3000	EG	Datacolor Elrepho 450X
LE	L & W Elrepho	LT	L & W Elrepho SE 071
TC	Technidyne Color Touch Series	TL	Technidyne Technibrite TB-1
XX	Instrument make/model not specified by lab		

Grand Mean Sample GR83 = 84.833 Percent

Grand Mean Sample GR84 = 84.847 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 394

Fluorescent Component of Directional Brightness

TAPPI Official Test Method T452

WebCode	Data Flag	Sample GZ83 Lab Mean	Sample GZ83 Diff from Grand Mean	Sample GZ83 CPV	Sample GZ84 Lab Mean	Sample GZ84 Diff from Grand Mean	Sample GZ84 CPV	Instr Code
22G9B2		8.060	-0.330	-0.27	9.028	0.026	0.08	TS
3V8AGM		7.840	-0.550	-0.44	8.700	-0.303	-0.89	TT
7267QW		7.728	-0.662	-0.53	8.646	-0.357	-1.05	TS
99E9RF		11.440	3.050	2.45	9.720	0.718	2.12	EF
E6BQUL		8.066	-0.324	-0.26	8.942	-0.060	-0.18	PP
LM6RN6		7.760	-0.630	-0.51	8.860	-0.143	-0.42	PP
VE2ZCE		8.006	-0.384	-0.31	8.924	-0.078	-0.23	TS
ZQHDGC		8.220	-0.170	-0.14	9.200	0.197	0.58	TS

Summary Statistics	Sample GZ83	Sample GZ84
Grand Means	8.39 Percent	9.00 Percent
Stnd Dev Btwn Labs	1.24 Percent	0.34 Percent

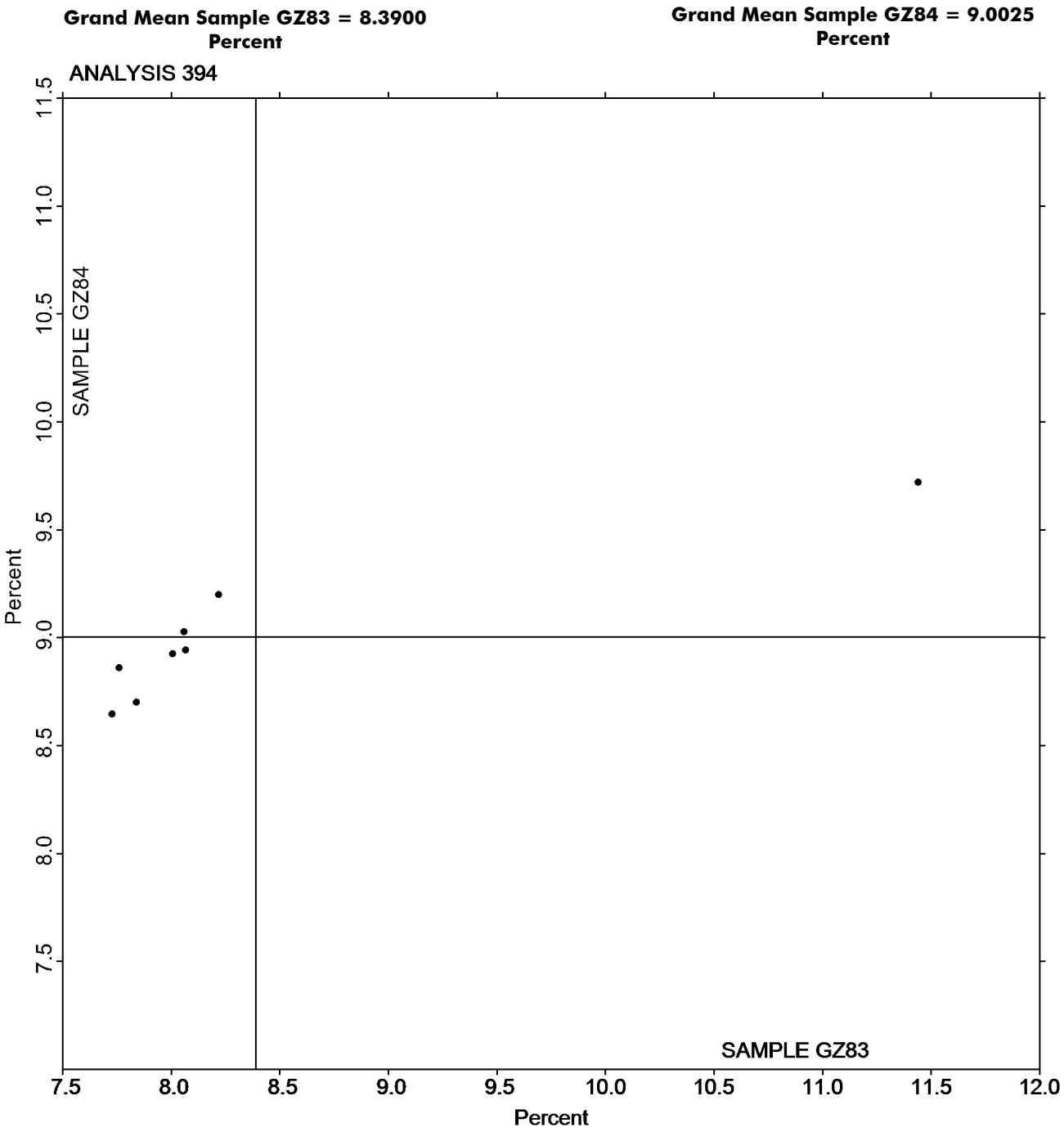
Statistics based on 8 of 8 reporting participants.

Analysis Notes:

99E9RF - Data appears to be transposed between Analysis 391 (Directional Brightness) and Analysis 394 (Fluorescent Component). Data switched by CTS.

Key to Instrument Codes Reported by Participants

EF	Datacolor Elrepho	PP	Technidyne Profile/Plus
TS	Technidyne Brightimeter Micro S-5	TT	Technidyne Brightimeter Micro S4-M



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

Paper & Paperboard Interlaboratory Testing Program

Report #3082G, October 2020

Analysis 395

Specular Gloss at 75 Degrees - High Range

TAPPI Official Test Method T480

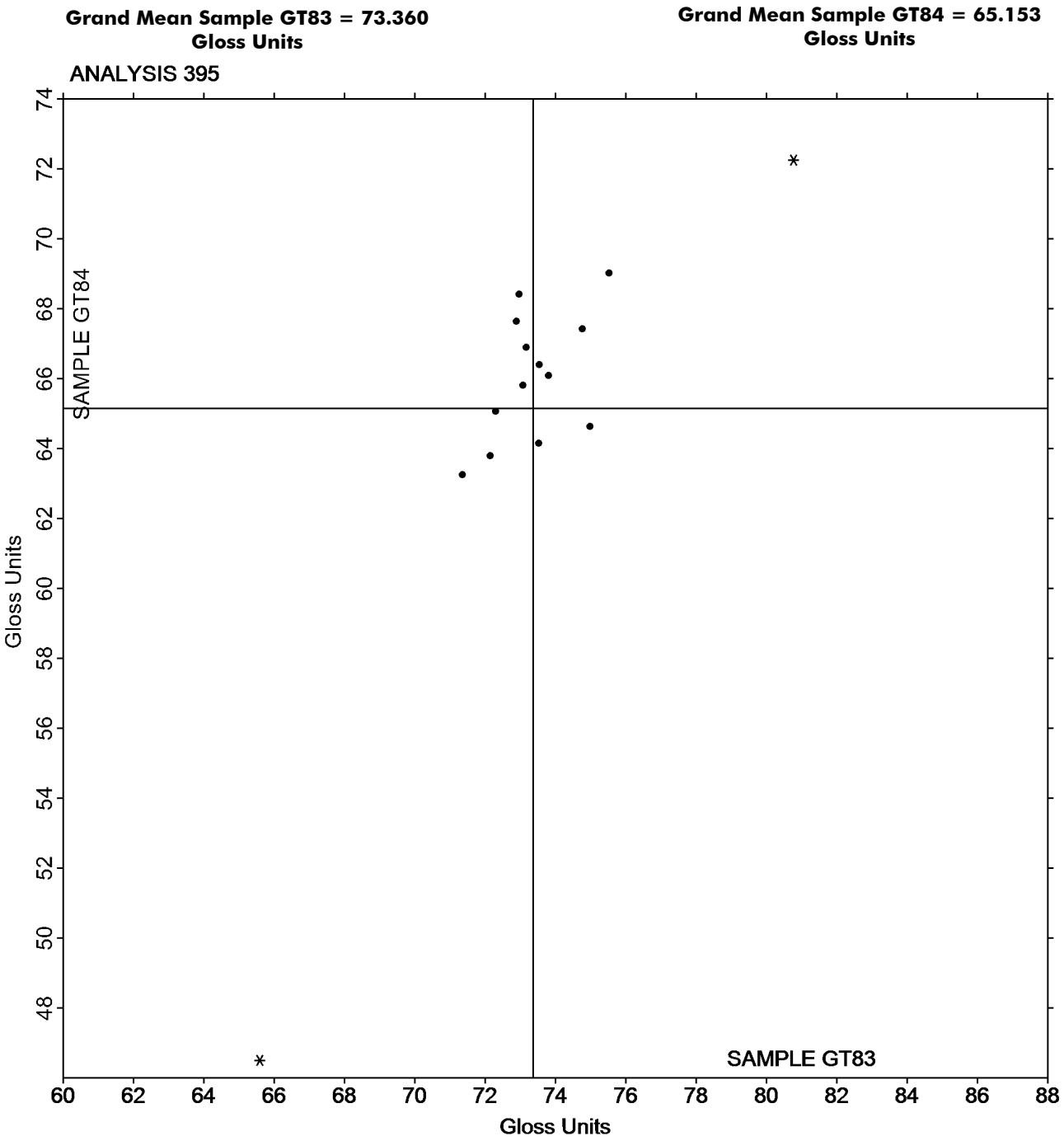
WebCode	Data Flag	Sample GT83 Lab Mean	Sample GT83 Diff from Grand Mean	Sample GT83 CPV	Sample GT84 Lab Mean	Sample GT84 Diff from Grand Mean	Sample GT84 CPV	Instr Code
3V8AGM		71.35	-2.01	-0.65	63.25	-1.90	-0.34	PP
99E9RF		72.15	-1.21	-0.39	63.79	-1.36	-0.24	GM
9YNNN3		72.30	-1.07	-0.35	65.06	-0.10	-0.02	TH
ALXDE3	*	65.59	-7.77	-2.53	46.50	-18.65	-3.30	LF
BTR39C	*	80.77	7.41	2.41	72.25	7.10	1.25	LA
E6BQUL		73.07	-0.29	-0.09	65.81	0.66	0.12	PP
EY7QXX		74.77	1.41	0.46	67.42	2.27	0.40	GA
FED4T2		74.98	1.62	0.53	64.63	-0.52	-0.09	LA
GWVMZR		73.17	-0.19	-0.06	66.89	1.74	0.31	TH
MYGG4L		75.52	2.16	0.70	69.02	3.87	0.68	TH
QXC484		73.55	0.19	0.06	66.40	1.25	0.22	VM
RJNGEG		72.89	-0.47	-0.15	67.63	2.48	0.44	GM
TNXUWF		72.97	-0.39	-0.13	68.41	3.26	0.58	LB
VE2ZCE		73.81	0.45	0.15	66.09	0.94	0.17	LF
WQUJQK		73.52	0.16	0.05	64.15	-1.00	-0.18	TH

Summary Statistics	Sample GT83	Sample GT84
Grand Means	73.36 Gloss Units	65.15 Gloss Units
Stnd Dev Btwn Labs	3.07 Gloss Units	5.66 Gloss Units

Statistics based on 15 of 15 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	PP	Technidyne Profile/Plus
TH	Technidyne T480A	VM	Valmet PaperLab (was Kajaani/Robotest)



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 396

Specular Gloss at 75 Degrees - Low Range

TAPPI Official Test Method T480

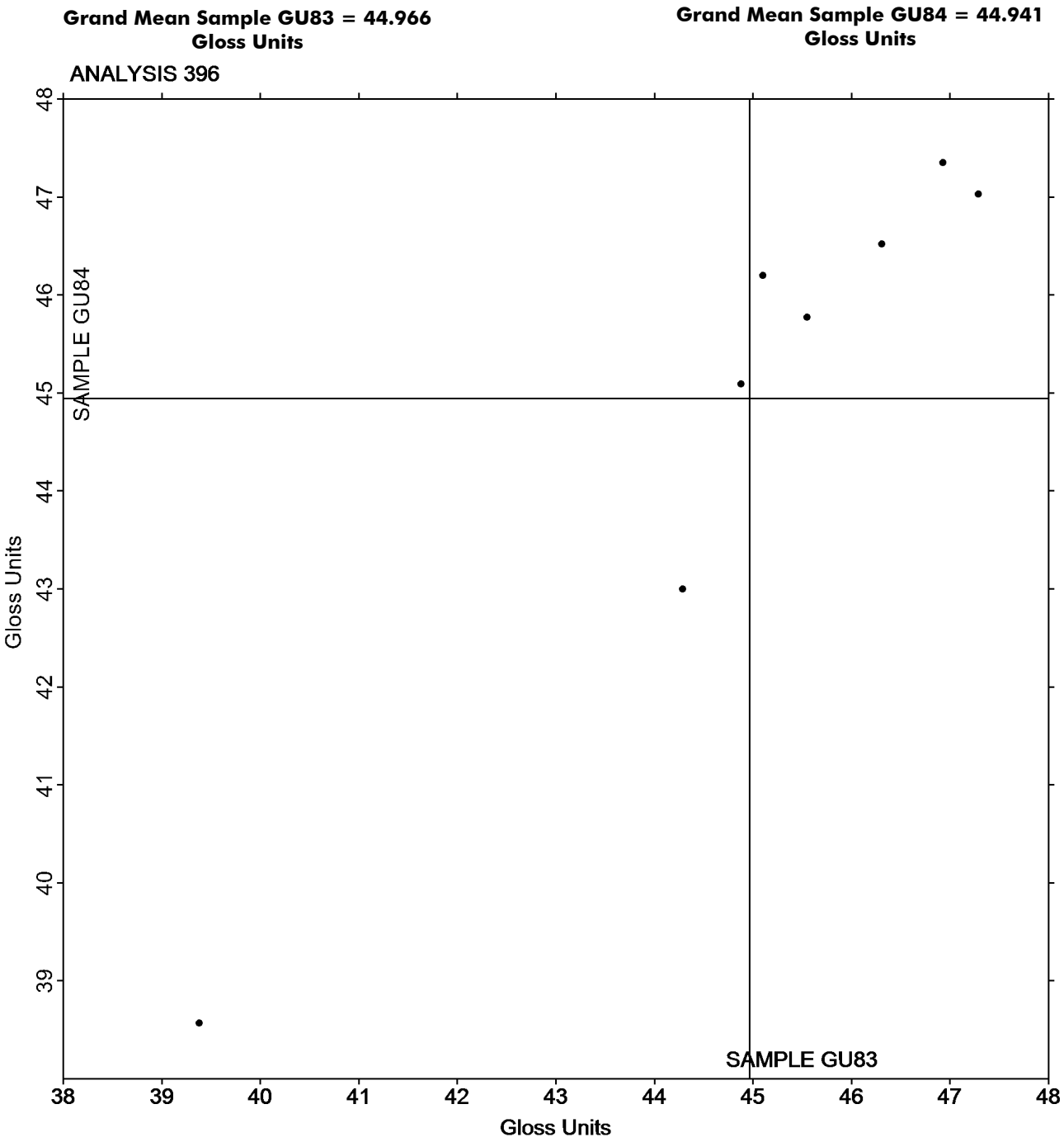
WebCode	Data Flag	Sample GU83 Lab Mean	Sample GU83 Diff from Grand Mean	Sample GU83 CPV	Sample GU84 Lab Mean	Sample GU84 Diff from Grand Mean	Sample GU84 CPV	Instr Code
6RY23M		44.88	-0.09	-0.03	45.09	0.15	0.05	GS
BC3VDY		47.29	2.32	0.94	47.03	2.09	0.72	PP
ED6WMM		46.93	1.96	0.79	47.35	2.41	0.83	TH
L4FDAF		45.55	0.58	0.24	45.77	0.83	0.28	TH
LK4RN9		44.29	-0.68	-0.27	43.00	-1.94	-0.67	PP
TNXUWF		46.31	1.34	0.54	46.52	1.58	0.54	LA
URT63Z		45.10	0.13	0.05	46.20	1.26	0.43	TH
ZHM9NB		39.38	-5.59	-2.25	38.57	-6.37	-2.19	TH

Summary Statistics	Sample GU83	Sample GU84
Grand Means	44.97 Gloss Units	44.94 Gloss Units
Stnd Dev Btwn Labs	2.48 Gloss Units	2.91 Gloss Units

Statistics based on 8 of 8 reporting participants.

Key to Instrument Codes Reported by Participants

GS	BYK-Gardner Glossgard II	LA	L & W Gloss - Autoline 300
PP	Technidyne Profile/Plus	TH	Technidyne T480A



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 398

Grammage (Mass per Unit Area)

TAPPI Official Test Method T410

WebCode	Data Flag	Sample GW83 Lab Mean	Sample GW83 Diff from Grand Mean	Sample GW83 CPV	Sample GW84 Lab Mean	Sample GW84 Diff from Grand Mean	Sample GW84 CPV	Instr Code
2H6LPT	X	19.13	-54.29	-108.66	26.9	-76.7	-93.79	ZZ
3CWK4P		73.51	0.09	0.18	103.3	-0.3	-0.41	ZZ
467MR8	*	74.27	0.85	1.71	106.0	2.4	2.92	ZZ
4J77PX		73.81	0.40	0.79	104.0	0.3	0.41	ZZ
8RAMPT		73.47	0.05	0.11	102.4	-1.3	-1.55	ZZ
99E9RF		72.67	-0.75	-1.50	102.9	-0.7	-0.90	ZZ
A694RZ	*	72.14	-1.28	-2.55	101.8	-1.8	-2.23	ZZ
AG3JG2		73.94	0.52	1.05	102.6	-1.0	-1.20	ZZ
BWDKQW		73.39	-0.02	-0.05	103.5	-0.1	-0.15	ZZ
ED6WMM		73.48	0.06	0.13	104.0	0.3	0.40	ZZ
EKPRTX		74.28	0.86	1.73	104.0	0.4	0.51	ZZ
F69GDA		74.17	0.76	1.51	103.9	0.3	0.38	ZZ
GZRBGY		73.56	0.15	0.30	104.5	0.9	1.05	ZZ
H49V2U		73.41	-0.01	-0.02	103.4	-0.2	-0.23	ZZ
L4FDAF		72.80	-0.62	-1.24	103.6	0.0	-0.02	ZZ
MLB7VE		72.97	-0.45	-0.89	103.5	-0.1	-0.10	ZZ
NNEG4M		73.02	-0.40	-0.80	102.9	-0.7	-0.91	ZZ
NVALV3		72.90	-0.51	-1.03	103.0	-0.7	-0.80	ZZ
RZCQ2J		73.78	0.37	0.74	103.1	-0.5	-0.61	ZZ
TNXUWF		73.13	-0.29	-0.58	103.5	-0.2	-0.20	ZZ
TRX6QU		73.66	0.24	0.49	103.4	-0.2	-0.25	ZZ
UNWJDH		73.70	0.28	0.57	104.1	0.5	0.58	ZZ
URT63Z		73.46	0.04	0.09	104.2	0.5	0.67	ZZ
UU3C8D		73.33	-0.09	-0.17	104.0	0.3	0.43	ZZ
WVQ88R		73.02	-0.40	-0.79	104.2	0.6	0.72	ZZ
YJNLVD		73.45	0.03	0.07	104.0	0.3	0.42	ZZ
ZHM9NB		73.50	0.08	0.17	104.5	0.9	1.08	ZZ

Summary Statistics	Sample GW83	Sample GW84
Grand Means	73.42 g/sq m	103.62 g/sq m
Stnd Dev Btwn Labs	0.50 g/sq m	0.82 g/sq m

Statistics based on 26 of 27 reporting participants.

Comments on Assigned Data Flags for Test #398

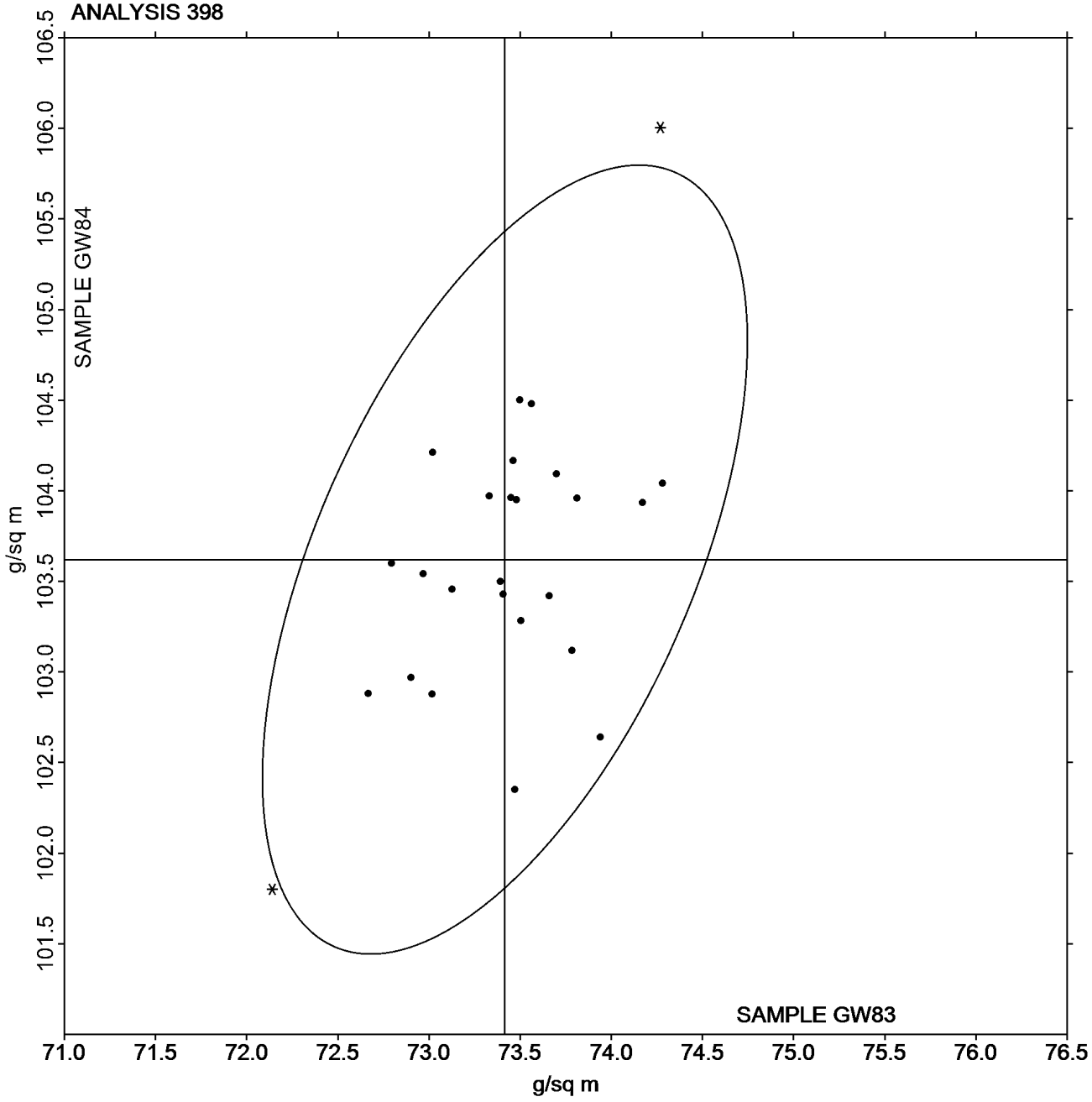
2H6LPT (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample GW83 = 73.416 g/sq m

Grand Mean Sample GW84 = 103.62 g/sq m



Paper & Paperboard Interlaboratory Testing Program

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

WebCode	Data Flag	Sample GX83 Lab Mean	Sample GX83 Diff from Grand Mean	Sample GX83 CPV	Sample GX84 Lab Mean	Sample GX84 Diff from Grand Mean	Sample GX84 CPV	Instr Code
22G9B2		10.21	-0.03	-0.01	10.25	-1.44	-0.39	HE
27RLTY		11.99	1.75	0.69	9.40	-2.29	-0.61	HE
2H6LPT		9.99	-0.25	-0.10	9.66	-2.03	-0.54	HE
3KNVF6		10.64	0.40	0.16	9.72	-1.97	-0.53	HE
7267QW		7.61	-2.63	-1.03	10.11	-1.58	-0.42	HE
879N3U		8.33	-1.91	-0.75	10.11	-1.58	-0.42	HE
8QUHV2		8.13	-2.11	-0.82	10.75	-0.94	-0.25	HE
AWD62R		11.42	1.18	0.46	17.51	5.82	1.56	HE
B3XMWE		6.02	-4.22	-1.65	5.43	-6.26	-1.67	XX
CBQFHD		12.58	2.34	0.92	14.80	3.11	0.83	HE
FCPRTV		12.61	2.37	0.93	16.08	4.39	1.17	HE
L4FDAF	*	16.37	6.13	2.40	15.77	4.08	1.09	HE
LK4RN9		13.24	3.00	1.18	14.53	2.84	0.76	HE
LM6RN6		7.74	-2.49	-0.98	8.01	-3.68	-0.98	HE
MLB7VE		7.47	-2.77	-1.08	8.23	-3.46	-0.93	HE
N4P3NC		9.09	-1.15	-0.45	11.13	-0.56	-0.15	HE
Q3N7VK		9.07	-1.17	-0.46	10.78	-0.91	-0.24	HE
QXC484		8.87	-1.37	-0.54	7.35	-4.34	-1.16	HE
RFD4WH		7.49	-2.75	-1.08	10.71	-0.98	-0.26	HE
TBDETG		11.24	1.00	0.39	15.50	3.81	1.02	HE
TRX6QU	*	12.04	1.80	0.71	19.79	8.10	2.16	XX
ULRVW8		14.33	4.09	1.60	17.52	5.83	1.56	HE
VE2ZCE		10.42	0.18	0.07	8.62	-3.07	-0.82	HE
VYCPPC		12.70	2.46	0.97	14.90	3.21	0.86	HE
XJAZKP		13.30	3.06	1.20	15.60	3.91	1.04	HE
Y3D6MP		7.43	-2.81	-1.10	7.54	-4.15	-1.11	HE
YAYXYP		7.23	-3.01	-1.18	8.49	-3.20	-0.86	HE
ZQHDGC		9.05	-1.19	-0.46	9.07	-2.62	-0.70	HE

Summary Statistics	Sample GX83	Sample GX84
Grand Means	10.24 Seconds	11.69 Seconds
Stnd Dev Btwn Labs	2.55 Seconds	3.74 Seconds

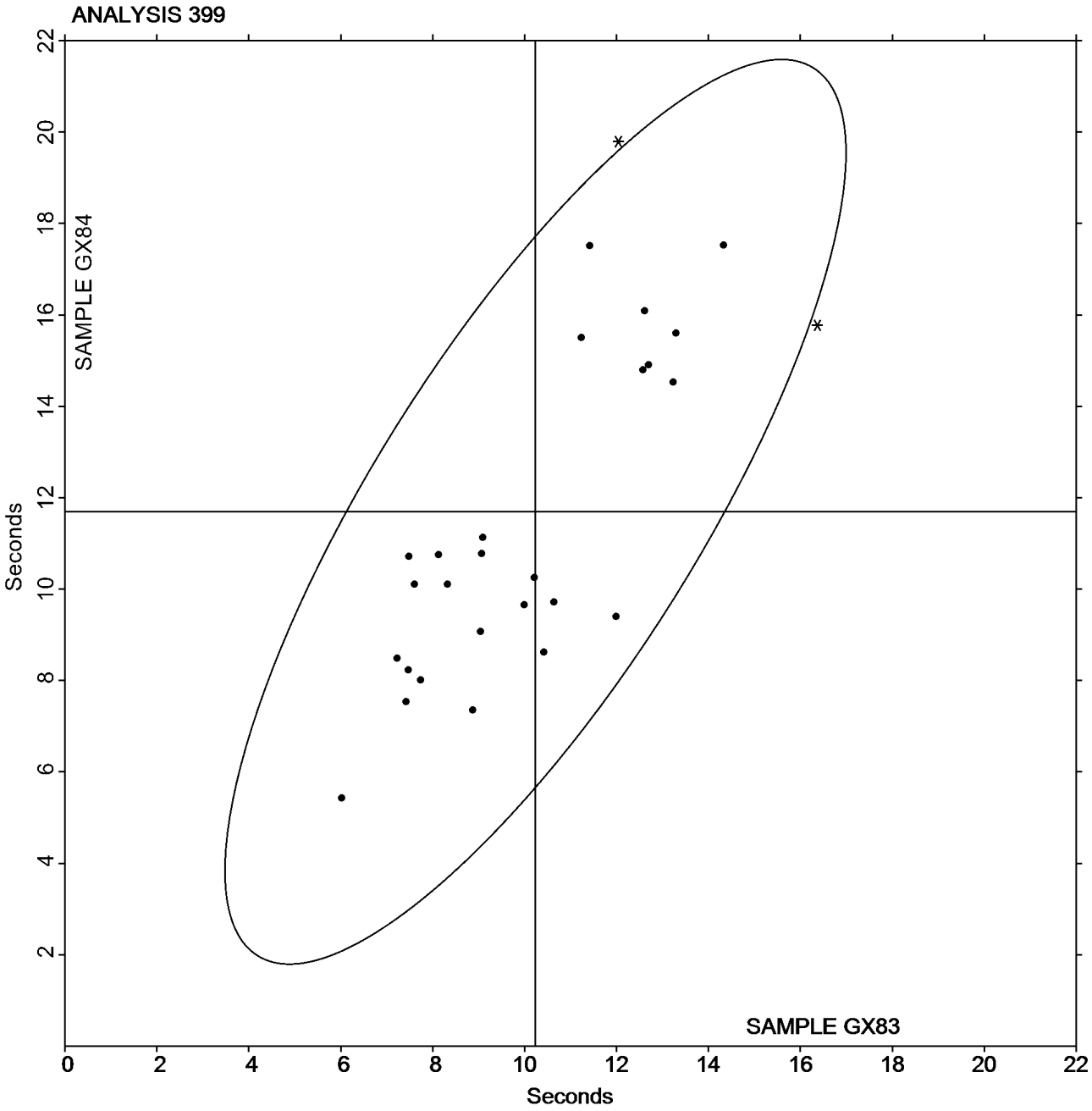
Statistics based on 28 of 28 reporting participants.

Key to Instrument Codes Reported by Participants

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

Grand Mean Sample GX83 = 10.236 Seconds

Grand Mean Sample GX84 = 11.691 Seconds



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