Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #3062 G - June 2020

Introduction to the Paper & Paperboard Interlaboratory Program

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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 L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code
2JYCZK		GA79	94.49	-0.92	3.61	-0.30	0.08	0.34	0.46	TC
		GA80	94.20	-0.84	3.95					
2RRKKB		GA79	94.22	-0.74	4.14	-0.43	-0.03	0.05	0.44	VM
		GA80	93.79	-0.77	4.19					
3CB97M		GA79	95.35	-0.55	3.40	-0.33	0.00	0.25	0.42	XS
		GA80	95.02	-0.55	3.66					
42TNLQ		GA79	95.33	-0.87	3.96	-0.30	-0.02	0.19	0.35	LS
		GA80	95.03	-0.89	4.14					
4R378H		GA79	95.33	-0.77	3.91	-0.28	-0.01	0.15	0.31	TC
		GA80	95.05	-0.78	4.06					
87QEHD		GA79	93.19	-0.97	3.07	0.09	-0.04	0.53	0.54	XX
		GA80	93.28	-1.00	3.60					
D7ABBE		GA79	94.82	-0.61	3.74	-0.35	-0.03	0.08	0.36	HE
		GA80	94.47	-0.63	3.82					
DAAM8D		GA79	94.45	-0.74	4.02	-0.35	-0.02	0.09	0.36	HE
		GA80	94.11	-0.75	4.11					
EJUD7B	X	GA79	94.48	0.00	3.39	-0.10	0.02	0.01	0.10 X	TS
		GA80	94.38	0.01	3.40					
FJNHZA		GA79	93.36	-0.26	3.70	-0.37	0.08	0.18	0.42	TS
		GA80	92.99	-0.17	3.89					
NL794L		GA79	93.17	-0.28	3.49	-0.41	0.00	0.18	0.45	TS
		GA80	92.76	-0.28	3.68					
PK9EJM		GA79	93.15	-0.49	3.65	-0.35	0.05	0.18	0.39	TS
		GA80	92.81	-0.44	3.83					
TVZ4QX		GA79	93.53	-0.06	3.59	-0.27	-0.03	0.09	0.29	TS
		GA80	93.26	-0.08	3.68					
TX332Q		GA79	95.31	-0.75	3.79	-0.39	0.01	0.16	0.42	EH
		GA80	94.92	-0.74	3.95					
XQT89T		GA79	94.55	-0.74	3.35	0.14	-0.04	0.68	0.69	NG
		GA80	94.69	-0.78	4.03					
YXLYUR		GA79	94.91	-0.81	3.84	-0.61	-0.02	0.11	0.62	HE
		GA80	94.30	-0.83	3.95					

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
ZH8TLD		GA79	94.05	-0.81	3.92	-0.36	-0.01	0.14	0.38	TC
		GA80	93.69	-0.81	4.06					

Summary Statistics

Grand Means							
GA79	94.334	-0.647	3.682	-0.304	-0.001	0.212	0.431
GA80	94.043	-0.648	3.882				
Stnd Dev Btwn Labs							
GA79	0.806	0.258	0.279	0.181	0.038	0.171	0.107
GA80	0.799	0.270	0.218				

Statistics based on 16 of 17 reporting participants

EJUD7B (X) - High "a" values. Inconsistent within replicate readings of "a" for sample GA79. Low Delta E.

Analysis Notes:

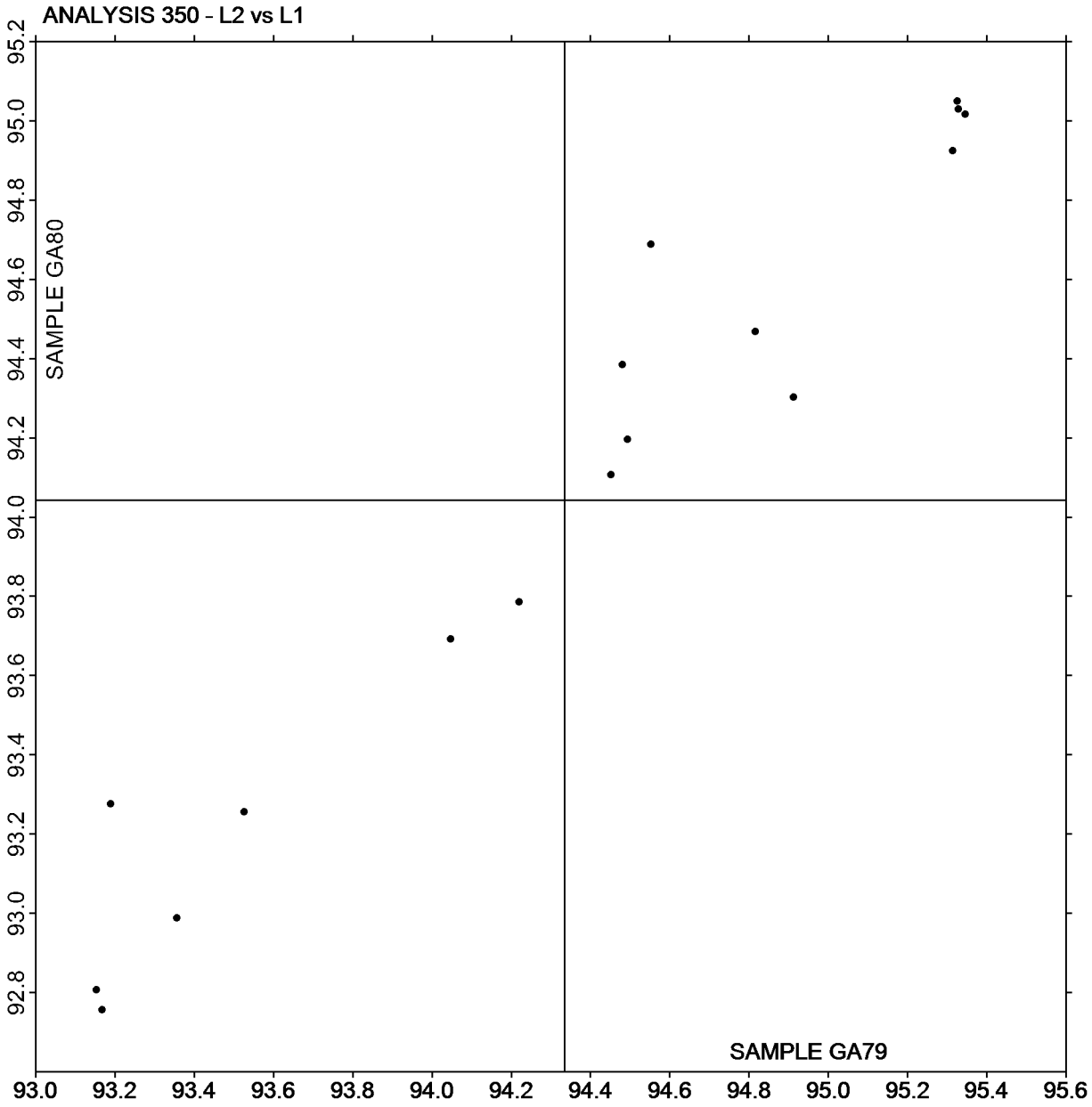
EJUD7B - Due to CTS graphs using Absolute Values, data Flag is located within consensus data. However, "a" data is higher than the negative Grand Mean as shown above graphs.

TVZ4QX - One determination removed from the Lab Mean of Sample GA79, b values, per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

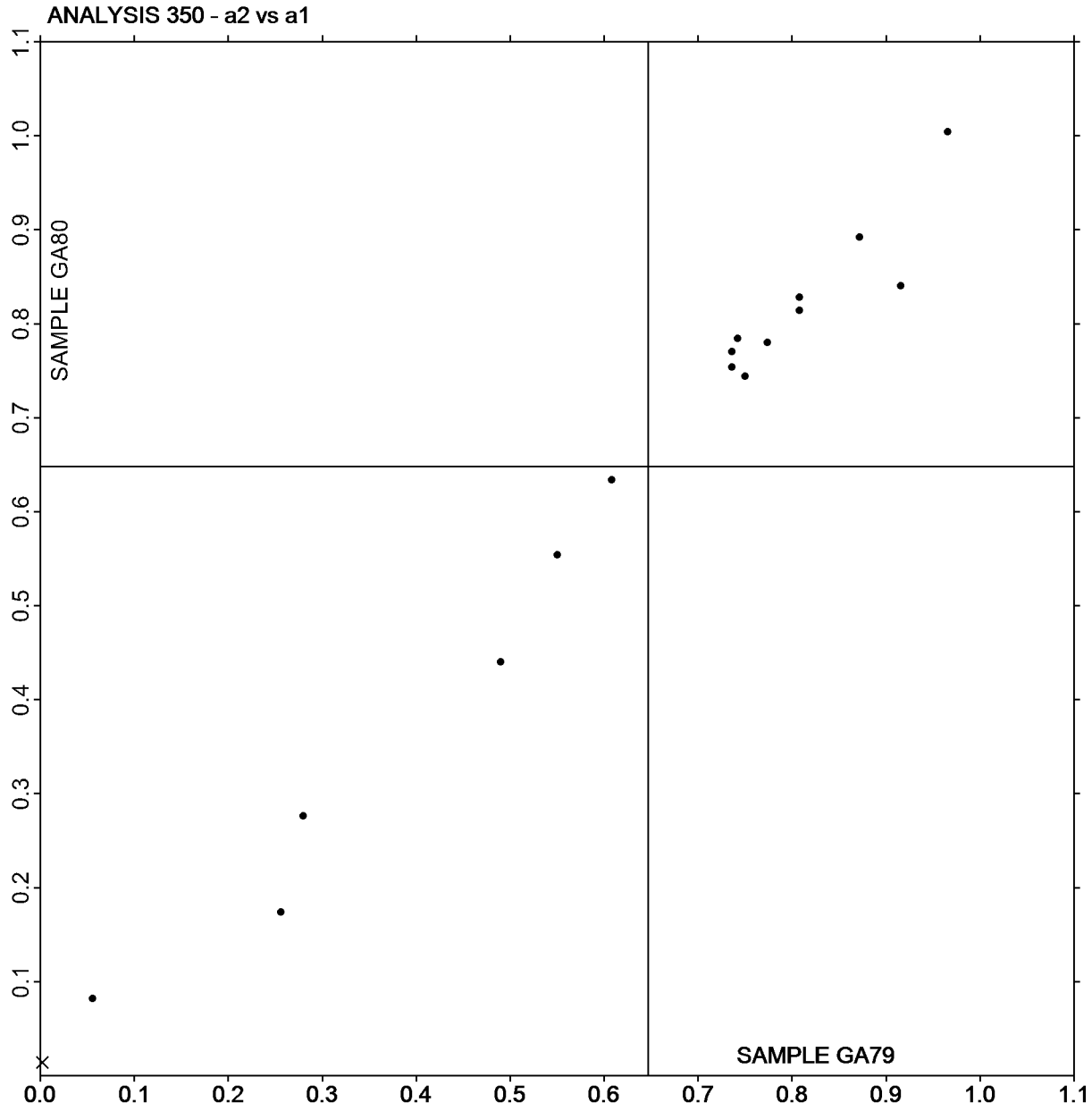
EH	Datacolor Elrepho SF450	HE	Hunter LabScan
LS	L & W Elrepho SE 070	NG	Minolta CM-3700d Spectrophotometer
TC	Technidyne Color Touch Series	TS	Technidyne Brightimeter Micro S-5
VM	Valmet PaperLab (was Kajaani/Robotest)	XS	X-Rite 938 Spectrodensitometer
XX	Instrument make/model not specified by lab		

Plot of L values GA80 vs L values GA79



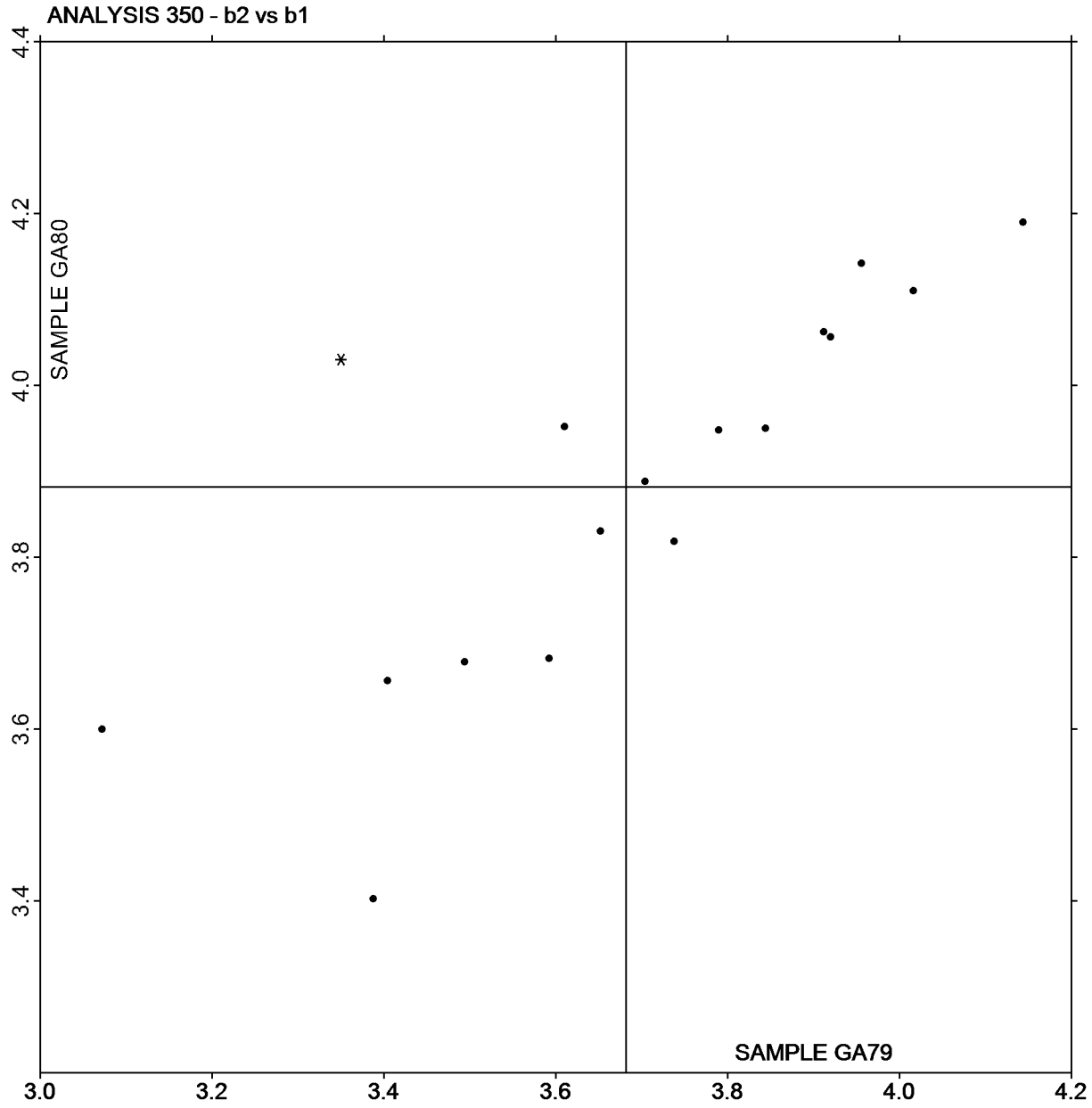
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values GA80 vs a values GA79



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 GA80 vs b values GA79



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 #3062 G, June 2020

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
2L2ABC		GA79	95.35	-0.69	3.96	-0.29	-0.01	0.17	0.33	EF
		GA80	95.07	-0.70	4.13					
4BGHZ9		GA79	93.95	-0.55	3.81	-0.35	-0.02	0.11	0.36	TC
		GA80	93.60	-0.57	3.92					
76KWKG		GA79	94.44	-0.79	3.28	0.17	-0.03	0.66	0.68 X	NG
		GA80	94.61	-0.81	3.93					
9EJ74C		GA79	97.42	-0.51	3.17	-0.25	0.02	0.06	0.26	XP
		GA80	97.17	-0.48	3.23					
BRHU9B		GA79	95.31	-0.69	4.01	-0.30	-0.03	0.09	0.32	HT
		GA80	95.01	-0.72	4.11					
CE7WVU		GA79	95.22	-0.64	3.87	-0.29	-0.04	0.15	0.33	TC
		GA80	94.93	-0.68	4.02					
JCHL63		GA79	94.66	-0.68	3.77	-0.37	-0.03	0.11	0.39	HE
		GA80	94.29	-0.71	3.87					
KN78N4		GA79	95.40	-0.61	4.27	-0.31	-0.03	0.13	0.34	NG
		GA80	95.09	-0.64	4.41					
TX332Q		GA79	95.24	-0.61	3.88	-0.44	0.01	0.05	0.44	XX
		GA80	94.80	-0.60	3.93					
Y3GTRT		GA79	95.26	-0.58	3.98	-0.41	-0.02	0.17	0.45	LS
		GA80	94.85	-0.59	4.14					
YHT8AQ		GA79	95.45	-0.62	3.98	-0.29	-0.02	0.10	0.30	HT
		GA80	95.16	-0.64	4.08					
Z2M3LE		GA79	95.29	-0.80	3.67	-0.11	0.00	0.21	0.23	XC
		GA80	95.18	-0.80	3.87					
ZLMNYP		GA79	95.17	-0.65	4.00	-0.30	-0.01	0.19	0.36	EH
		GA80	94.87	-0.66	4.20					

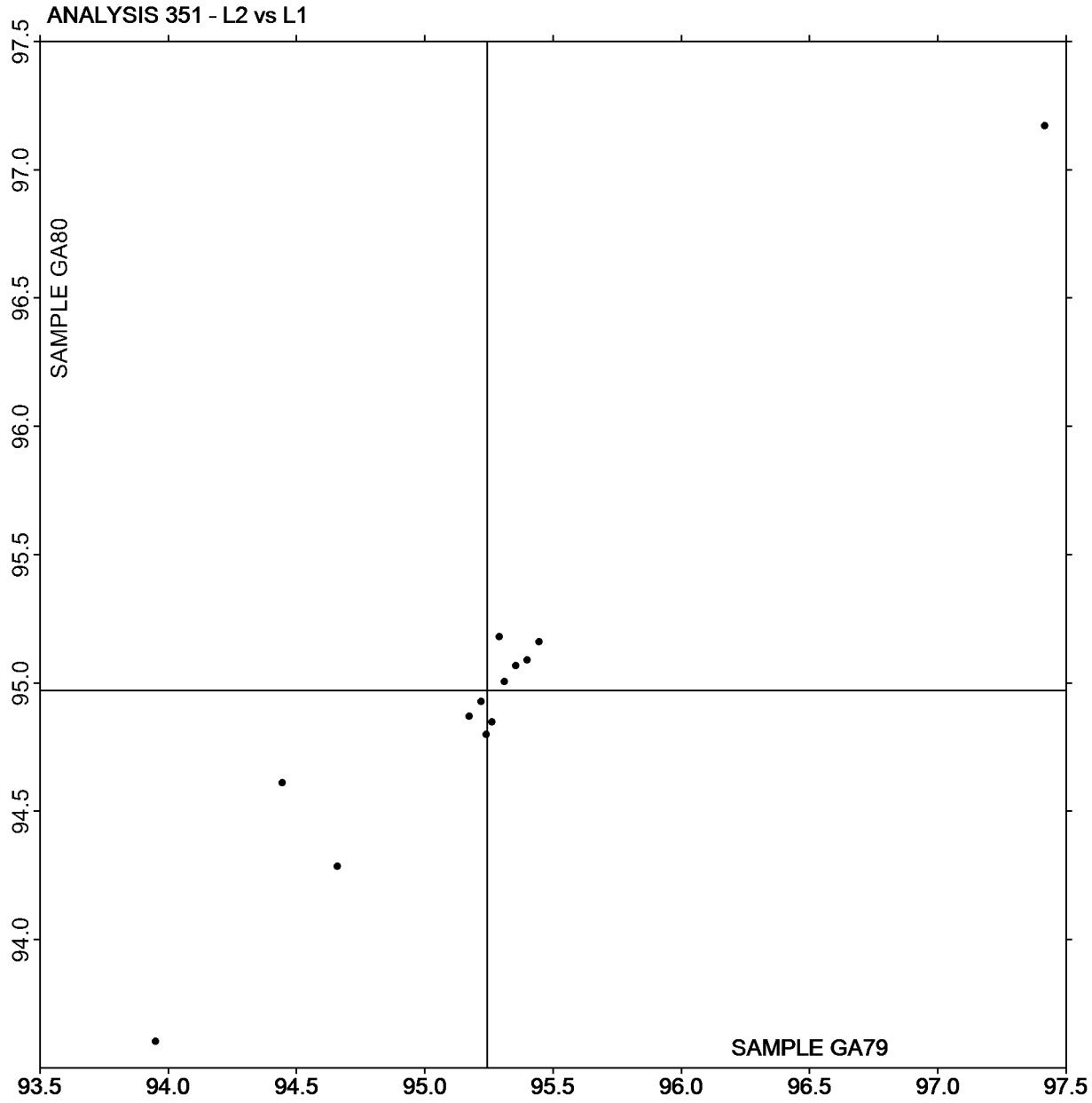
Summary Statistics

Grand Means							
GA79	95.244	-0.647	3.819	-0.273	-0.015	0.168	0.369
GA80	94.971	-0.662	3.988				
Stnd Dev Btwn Labs							
GA79	0.789	0.085	0.303	0.155	0.018	0.154	0.111
GA80	0.789	0.091	0.273				

Statistics based on 13 of 13 reporting participants

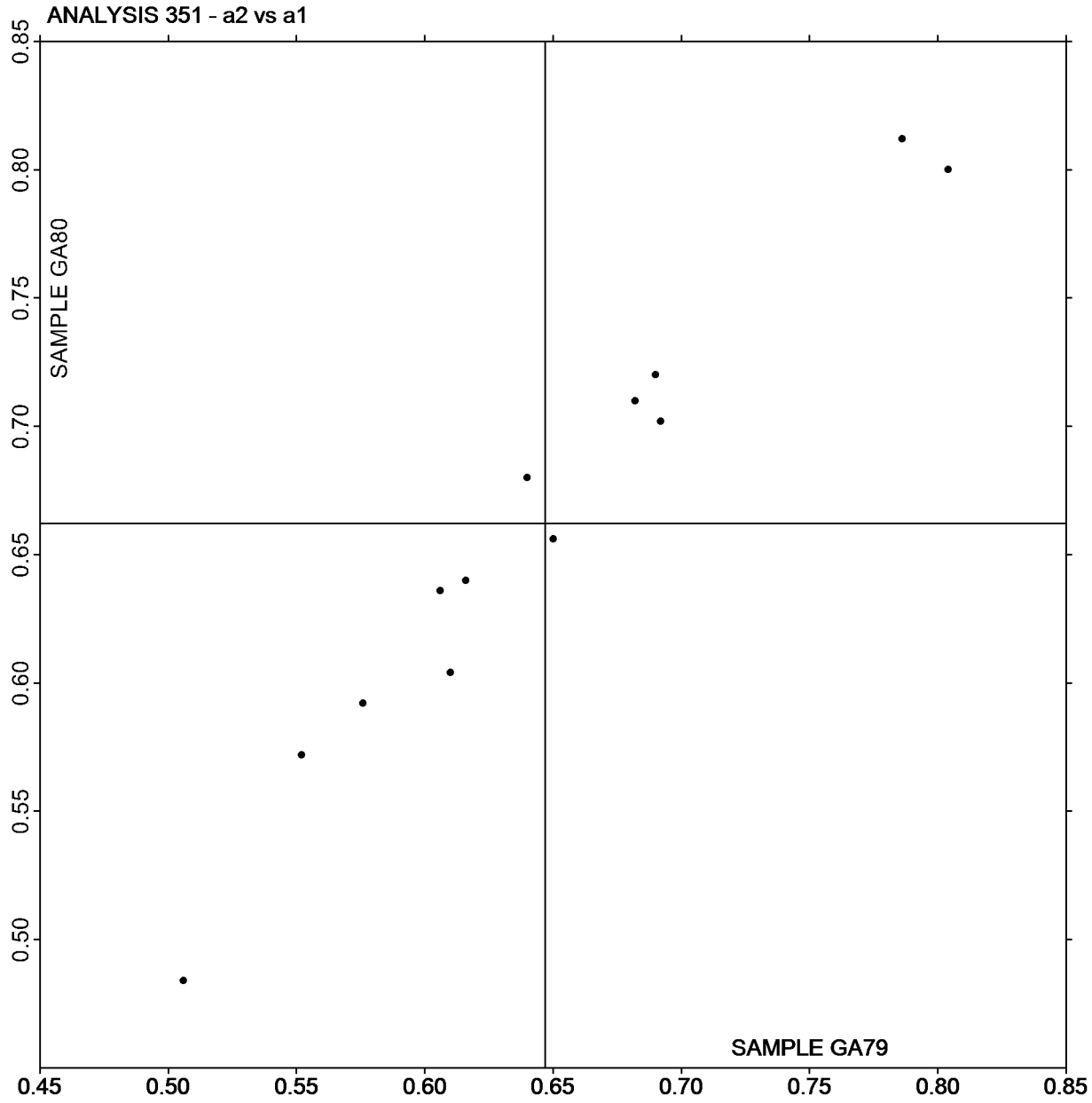
Key to Instrument Codes Reported by Participants			
EF	Datacolor Elrepho 3000	EH	Datacolor Elrepho SF450
HE	Hunter LabScan	HT	Hunter UltraScan Vis
LS	L & W Elrepho SE 070	NG	Minolta CM-3700d Spectrophotometer
TC	Technidyne Color Touch Series	XC	X-Rite eXact Series
XP	X-Rite Spectrophotometer DTP	XX	Instrument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

Plot of L values GA80 vs L values GA79



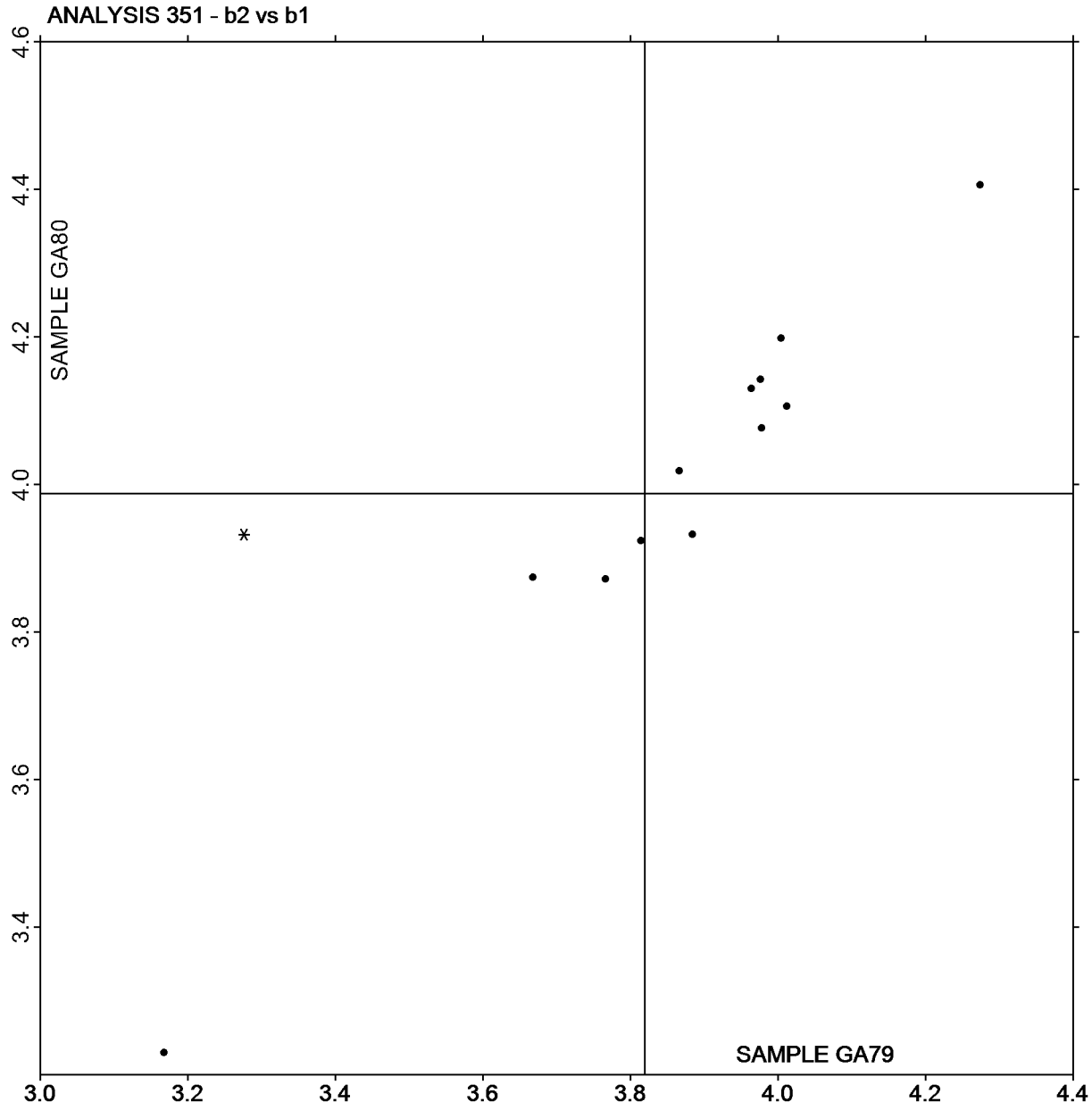
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values GA80 vs a values GA79



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 GA80 vs b values GA79



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 360

Thickness (Caliper), Printing papers

TAPPI Official Test Method T411

WebCode	Data Flag	Sample GV79 Lab Mean	Sample GV79 Diff from Grand Mean	Sample GV79 CPV	Sample GV80 Lab Mean	Sample GV80 Diff from Grand Mean	Sample GV80 CPV	Instr Code
2B8TLC		3.880	-0.004	-0.05	3.880	0.012	0.15	TA
3BYCZH		3.824	-0.061	-0.70	3.777	-0.091	-1.10	MT
3CB97M		3.730	-0.154	-1.77	3.740	-0.128	-1.55	TM
3LWCDL		3.853	-0.031	-0.36	3.829	-0.039	-0.47	TM
42TNLQ		3.928	0.043	0.50	3.900	0.032	0.39	LW
4BGHZ9		3.838	-0.046	-0.53	3.780	-0.088	-1.06	TA
4R378H		3.842	-0.042	-0.49	3.839	-0.029	-0.35	LA
6FHB89	*	4.140	0.256	2.93	4.090	0.222	2.69	LW
6FJB6M		3.914	0.029	0.34	3.882	0.014	0.17	LW
6R2RYF		3.862	-0.022	-0.26	3.839	-0.029	-0.35	XX
76KWKG		3.816	-0.068	-0.79	3.797	-0.071	-0.86	EM
86YJV4		3.859	-0.025	-0.29	3.793	-0.075	-0.91	PP
87QEHD		3.880	-0.004	-0.05	3.850	-0.018	-0.22	XX
9CCRW7		3.962	0.078	0.89	3.989	0.121	1.47	TA
9EJ74C		3.820	-0.064	-0.74	3.840	-0.028	-0.34	TM
9KLFB4		3.926	0.042	0.48	3.887	0.019	0.23	LW
9T2YRH		3.949	0.064	0.74	3.969	0.101	1.22	LW
AA2C2J		3.849	-0.035	-0.41	3.817	-0.051	-0.61	PP
B92NYZ		3.795	-0.089	-1.03	3.791	-0.077	-0.93	PP
BRHU9B		3.916	0.031	0.36	3.920	0.052	0.63	EM
CE7WVU		3.917	0.033	0.38	3.902	0.034	0.41	PP
EJUD7B		3.873	-0.012	-0.13	3.793	-0.074	-0.90	TM
ELW9PE		3.919	0.035	0.40	3.857	-0.010	-0.12	LW
FJNHZA		3.690	-0.194	-2.23	3.694	-0.174	-2.10	TM
GBDGEA		3.948	0.064	0.73	3.953	0.085	1.03	PP
GJ43K8		3.928	0.044	0.50	3.916	0.048	0.58	EM
JCHL63		3.799	-0.085	-0.98	3.792	-0.076	-0.92	PP
K3M34Z	X	3.513	-0.371	-4.26	3.569	-0.299	-3.62	TA
KN78N4		3.838	-0.046	-0.53	3.796	-0.072	-0.87	PP
LBFWE3		3.922	0.037	0.43	3.929	0.062	0.75	LW
LLWGYY		4.093	0.209	2.39	4.033	0.165	2.00	LW
MCMEDY		3.926	0.042	0.48	3.937	0.070	0.84	FR
MTPCBN		3.800	-0.084	-0.97	3.761	-0.107	-1.29	EM
NKCKJ6		3.871	-0.014	-0.16	3.881	0.013	0.16	TM
PK9EJM		3.906	0.022	0.25	3.866	-0.002	-0.02	EM
Q9RR9Z		3.951	0.067	0.76	3.897	0.029	0.35	XX
RRLADL	*	4.108	0.224	2.57	4.098	0.230	2.79	TM
TBPEDZ		3.690	-0.194	-2.23	3.700	-0.168	-2.03	TM
TVZ4QX		3.796	-0.088	-1.01	3.804	-0.064	-0.77	LA
TX332Q		3.925	0.041	0.47	3.935	0.067	0.81	EM
U26ZCJ		3.814	-0.070	-0.81	3.841	-0.027	-0.32	LA

Paper & Paperboard Interlaboratory Testing Program

Analysis 360
Thickness (Caliper), Printing papers
TAPPI Official Test Method T411

WebCode	Data Flag	Sample GV79 Lab Mean	Sample GV79 Diff from Grand Mean	Sample GV79 CPV	Sample GV80 Lab Mean	Sample GV80 Diff from Grand Mean	Sample GV80 CPV	Instr Code
U6FDUH		3.865	-0.019	-0.22	3.847	-0.021	-0.25	PP
UTQE2U		3.831	-0.054	-0.62	3.882	0.014	0.17	TM
V2Z77H		3.831	-0.053	-0.61	3.784	-0.084	-1.02	LW
WKKJXC		3.940	0.056	0.64	3.912	0.044	0.53	EM
XQT89T	*	3.996	0.112	1.28	3.900	0.032	0.39	LW
XTW3TV		3.988	0.104	1.19	3.929	0.061	0.74	LW
YHT8AQ		3.909	0.024	0.28	3.906	0.038	0.46	EM
Z2M3LE		3.827	-0.058	-0.66	3.839	-0.029	-0.35	LW
Z4MBQN		3.884	0.000	0.00	3.876	0.008	0.10	LA
ZE8HPD		3.915	0.030	0.35	3.913	0.045	0.55	LW
ZJ2JQR		3.896	0.012	0.13	3.902	0.034	0.41	TM
ZLMNYP		3.899	0.015	0.17	3.901	0.033	0.40	EM
ZNEJNJ		3.797	-0.087	-1.00	3.809	-0.059	-0.71	PP

Summary Statistics	Sample GV79	Sample GV80
Grand Means	3.88 mils	3.87 mils
Stnd Dev Btwn Labs	0.09 mils	0.08 mils

Statistics based on 53 of 54 reporting participants.

Comments on Assigned Data Flags for Test #360

K3M34Z (X) - Data for both samples are low. Possible Systematic Error.

Analysis Notes:

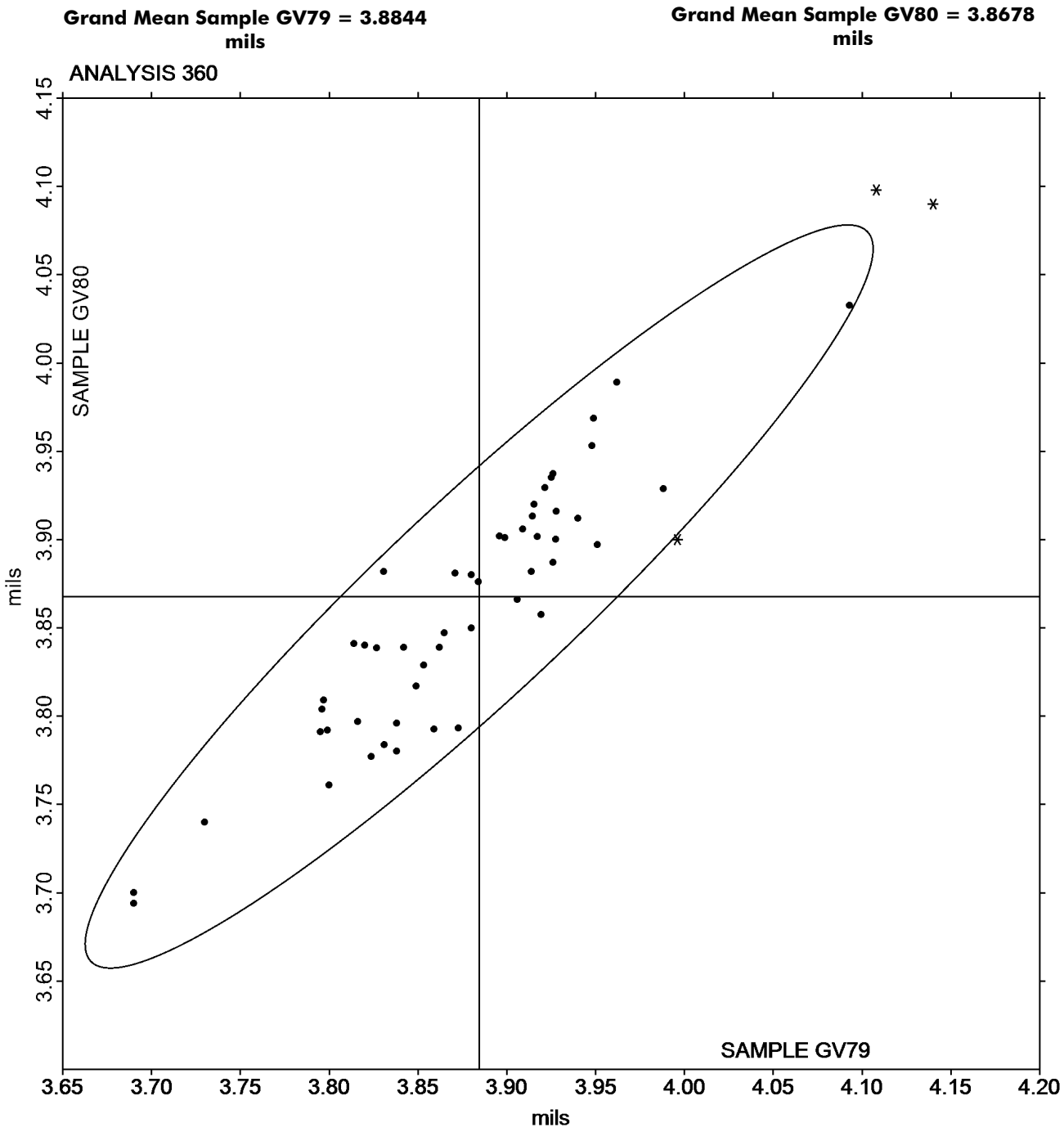
3LWCDL - One determination removed from the Lab Mean of Sample GV79 per Grubb's Test at 1% risk (TAPPI 1205).

BRHU9B - One determination removed from the Lab Mean of Sample GV79 per Grubb's Test at 1% risk (TAPPI 1205).

YHT8AQ - One determination removed from the Lab Mean of Sample GV79 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

EM	Emveco	FR	Frank Instruments
LA	L & W Autoline	LW	L & W
MT	Mitutoyo	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 GY79 Lab Mean	Sample GY79 Diff from Grand Mean	Sample GY79 CPV	Sample GY80 Lab Mean	Sample GY80 Diff from Grand Mean	Sample GY80 CPV	Instr Code
23BYLR		9.468	-0.016	-0.07	7.531	-0.001	0.00	TM
2B8TLC		9.620	0.136	0.62	7.630	0.098	0.53	TA
2RRKKB		9.290	-0.194	-0.89	7.448	-0.084	-0.45	VP
86YJV4		9.457	-0.028	-0.13	7.453	-0.079	-0.42	LW
8PM6CL		9.742	0.258	1.18	7.763	0.231	1.24	TM
B32C2H		9.374	-0.110	-0.50	7.428	-0.104	-0.56	LA
BHU4LH		9.803	0.319	1.45	7.705	0.173	0.93	LW
C22NZX		9.494	0.010	0.04	7.552	0.020	0.11	LA
CACPLY		9.539	0.055	0.25	7.583	0.051	0.27	LA
D7ABBE		9.790	0.306	1.39	7.731	0.199	1.07	EM
DAAM8D		9.591	0.107	0.49	7.612	0.080	0.43	EM
ECAAY9		9.314	-0.171	-0.78	7.436	-0.095	-0.51	LW
ELW9PE		9.595	0.111	0.51	7.565	0.033	0.18	LW
FEW9QC	X	8.870	-0.614	-2.80	7.570	0.038	0.21	TA
K3M34Z		9.182	-0.302	-1.38	7.267	-0.265	-1.42	TA
L3LRL2		9.017	-0.468	-2.13	7.137	-0.395	-2.12	LA
LXPZFQ		9.882	0.398	1.81	7.929	0.397	2.13	TM
MQ8UGX		9.400	-0.084	-0.38	7.420	-0.112	-0.60	TM
Q366DV	*	9.076	-0.408	-1.86	7.092	-0.440	-2.36	TM
Q9RR9Z		9.688	0.204	0.93	7.683	0.151	0.81	LA
TBPEDZ		9.250	-0.234	-1.07	7.330	-0.202	-1.08	TM
U928MC		9.596	0.112	0.51	7.637	0.105	0.56	PP
UL6LPU		9.250	-0.234	-1.07	7.460	-0.072	-0.38	TA
UNG2JV		9.250	-0.234	-1.07	7.390	-0.142	-0.76	TA
VW6C9G		9.757	0.272	1.24	7.757	0.225	1.21	LW
Y3GTRT	*	9.496	0.012	0.05	7.692	0.160	0.86	LW
Y8TL27		9.555	0.071	0.32	7.594	0.063	0.34	LW
YF29VR		9.333	-0.151	-0.69	7.344	-0.188	-1.01	TM
YXLYUR		9.468	-0.016	-0.07	7.496	-0.036	-0.19	EM
ZLMNYP		9.662	0.178	0.81	7.632	0.100	0.54	EM
ZX2K4T		9.591	0.107	0.49	7.657	0.125	0.67	TM

Summary Statistics	Sample GY79	Sample GY80
Grand Means	9.48 mils	7.53 mils
Stnd Dev Btwn Labs	0.22 mils	0.19 mils

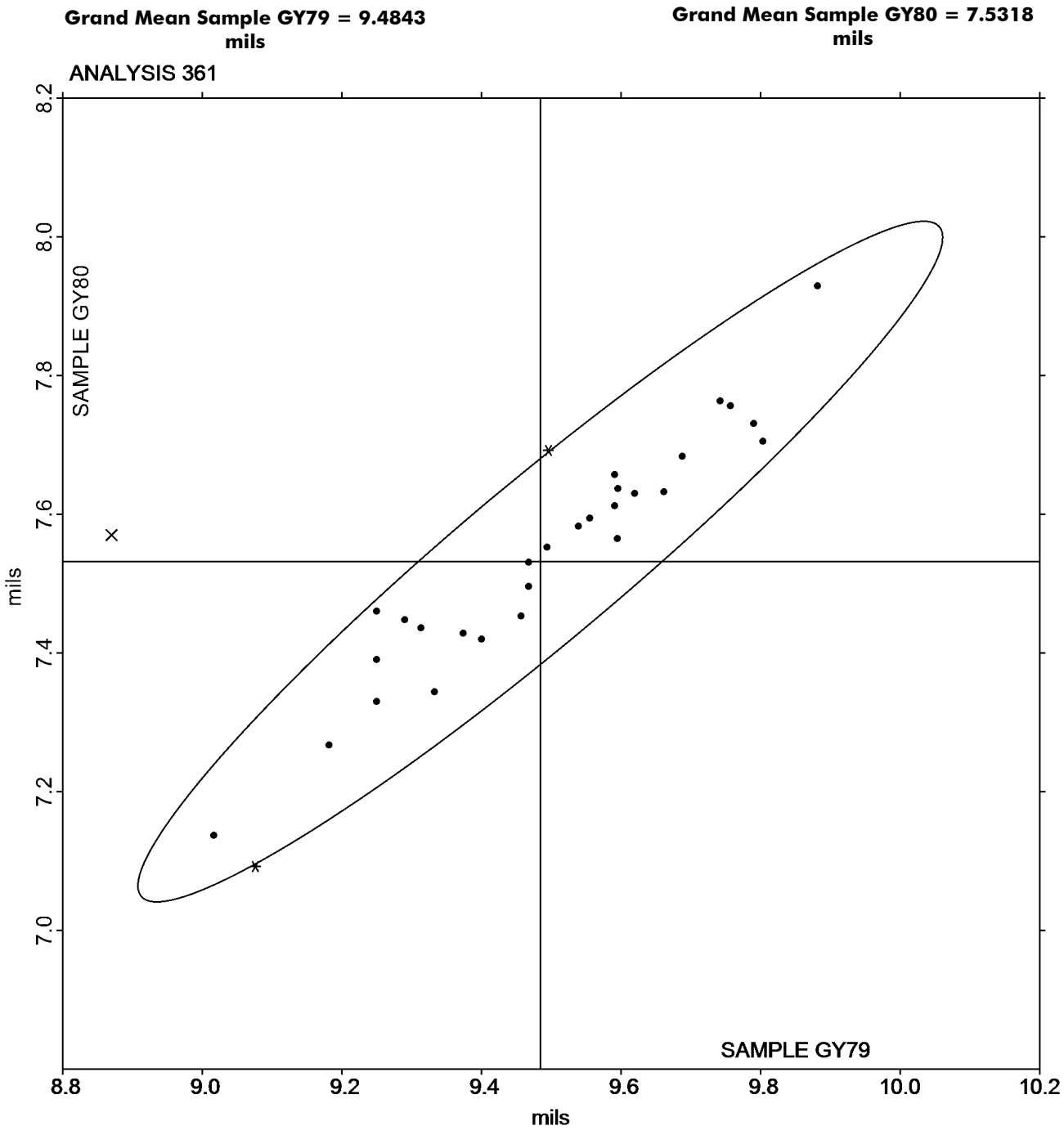
Statistics based on 30 of 31 reporting participants.

Comments on Assigned Data Flags for Test #361

FEW9QC (X) - Data for sample GY79 are low.

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		



Paper & Paperboard Interlaboratory Testing Program

Analysis 364

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

TAPPI Official Test Method T549

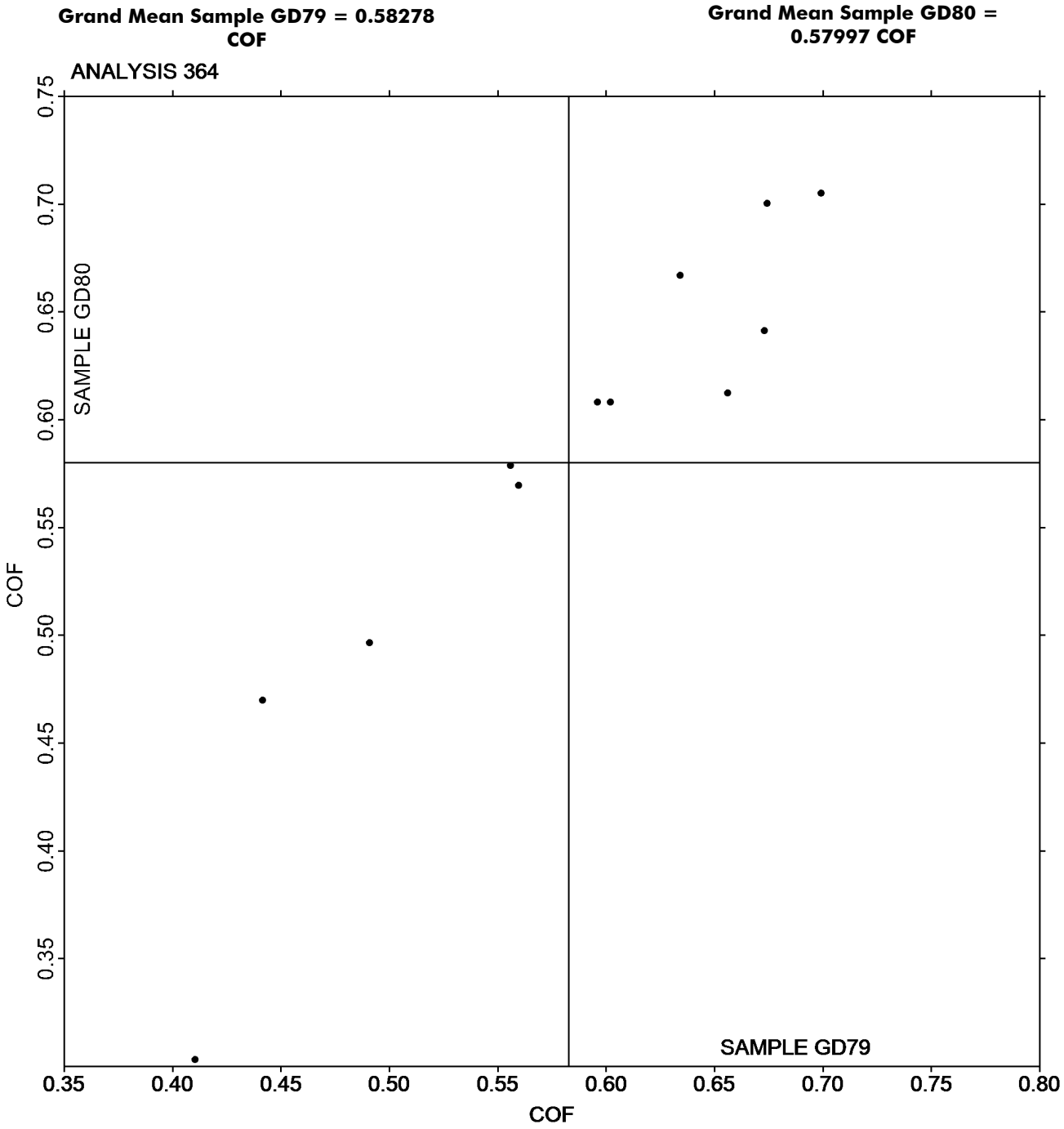
WebCode	Data Flag	Sample GD79 Lab Mean	Sample GD79 Diff from Grand Mean	Sample GD79 CPV	Sample GD80 Lab Mean	Sample GD80 Diff from Grand Mean	Sample GD80 CPV	Instr Code
3CB97M		0.4416	-0.1412	-1.50	0.4698	-0.1102	-0.98	XX
B92NYZ		0.4910	-0.0918	-0.97	0.4964	-0.0836	-0.74	TM
JCHL63		0.5960	0.0132	0.14	0.6080	0.0280	0.25	TA
L3LRL2		0.5560	-0.0268	-0.28	0.5788	-0.0012	-0.01	TA
MTPCBN		0.5598	-0.0230	-0.24	0.5696	-0.0104	-0.09	XX
NL794L		0.6992	0.1164	1.23	0.7050	0.1250	1.11	TA
NVU442		0.6560	0.0732	0.78	0.6124	0.0324	0.29	TA
PK9EJM		0.6342	0.0514	0.54	0.6670	0.0870	0.77	TA
VW6C9G		0.6730	0.0902	0.96	0.6412	0.0612	0.54	TA
WKKJXC		0.6020	0.0192	0.20	0.6080	0.0280	0.25	TA
XQT89T		0.4104	-0.1724	-1.83	0.3030	-0.2770	-2.45	TM
YNX4VC		0.6742	0.0914	0.97	0.7004	0.1204	1.07	IT

Summary Statistics	Sample GD79	Sample GD80
Grand Means	0.58 COF	0.58 COF
Stnd Dev Btwn Labs	0.09 COF	0.11 COF

Statistics based on 12 of 12 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

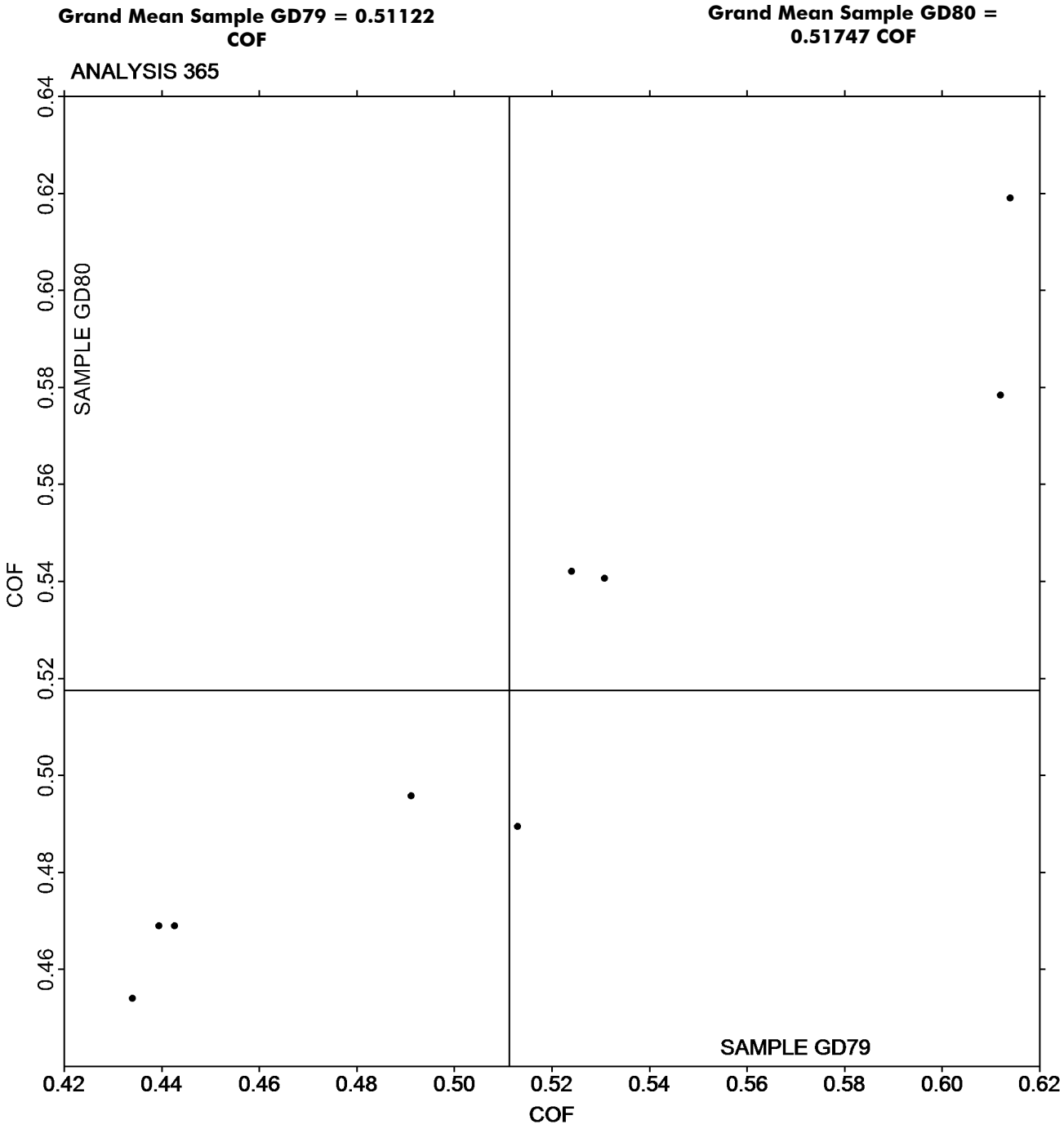
WebCode	Data Flag	Sample GD79 Lab Mean	Sample GD79 Diff from Grand Mean	Sample GD79 CPV	Sample GD80 Lab Mean	Sample GD80 Diff from Grand Mean	Sample GD80 CPV	Instr Code
3CB97M		0.4394	-0.0718	-1.05	0.4690	-0.0485	-0.86	XX
JCHL63		0.4340	-0.0772	-1.13	0.4540	-0.0635	-1.13	TA
L3LRL2		0.4426	-0.0686	-1.00	0.4690	-0.0485	-0.86	TA
MTPCBN		0.4912	-0.0200	-0.29	0.4958	-0.0217	-0.39	TA
NL794L		0.6140	0.1028	1.50	0.6190	0.1015	1.81	TA
NVU442		0.5130	0.0018	0.03	0.4894	-0.0281	-0.50	TA
VW6C9G		0.6120	0.1008	1.47	0.5784	0.0609	1.09	TN
WKKJXC		0.5240	0.0128	0.19	0.5420	0.0245	0.44	XX
YNX4VC		0.5308	0.0196	0.29	0.5406	0.0231	0.41	IR

Summary Statistics	Sample GD79	Sample GD80
Grand Means	0.51 COF	0.52 COF
Stnd Dev Btwn Labs	0.07 COF	0.06 COF

Statistics based on 9 of 9 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 GE79 Lab Mean	Sample GE79 Diff from Grand Mean	Sample GE79 CPV	Sample GE80 Lab Mean	Sample GE80 Diff from Grand Mean	Sample GE80 CPV	Instr Code
2B8TLC		16.01	0.27	0.33	15.76	0.02	0.02	GA
2L2ABC		16.77	1.03	1.26	16.68	0.94	1.19	LP
2RRKKB		14.50	-1.24	-1.51	14.91	-0.83	-1.06	VM
3CB97M		15.60	-0.14	-0.17	15.10	-0.64	-0.82	GS
42TNLQ		15.39	-0.35	-0.43	15.36	-0.38	-0.49	LP
4BGHZ9		15.52	-0.22	-0.27	15.84	0.10	0.13	PP
6R2RYF		16.04	0.30	0.37	15.67	-0.07	-0.09	GG
86YJV4	*	16.56	0.82	1.00	15.63	-0.11	-0.14	PP
87QEHD		15.29	-0.45	-0.55	15.31	-0.43	-0.55	XX
89XUR4		15.07	-0.67	-0.82	14.95	-0.79	-1.01	GL
8LJ74D		14.68	-1.06	-1.29	15.23	-0.51	-0.65	GL
AA2C2J		15.45	-0.29	-0.36	15.07	-0.68	-0.86	PP
BCLFB3		14.80	-0.94	-1.15	14.95	-0.79	-1.01	LP
BRHU9B		15.68	-0.06	-0.07	15.95	0.21	0.26	HG
CACPLY		15.83	0.09	0.11	16.20	0.45	0.58	LA
CE7WVU		15.12	-0.62	-0.76	15.19	-0.55	-0.70	PP
ECAAY9		14.77	-0.97	-1.19	15.21	-0.53	-0.68	TL
EJUD7B		14.94	-0.80	-0.98	15.34	-0.40	-0.51	LW
EPF4T7		14.85	-0.89	-1.09	15.17	-0.57	-0.73	PP
FJNHZA		16.38	0.64	0.78	16.42	0.68	0.86	LP
FRKDZU		16.16	0.42	0.51	16.42	0.68	0.86	TL
GJ43K8		16.14	0.40	0.49	15.88	0.13	0.17	PP
HUHBNR		15.89	0.15	0.18	15.98	0.24	0.30	XX
JCHL63		15.62	-0.12	-0.15	15.52	-0.23	-0.29	PP
KL3C6Z		16.53	0.79	0.96	17.09	1.35	1.72	PP
L3LRL2		17.04	1.30	1.58	16.58	0.83	1.06	LA
LLWGYY		15.86	0.12	0.15	15.71	-0.03	-0.04	LP
NVU442		15.50	-0.24	-0.29	15.20	-0.54	-0.69	WG
TF6M2Z		16.45	0.71	0.87	16.46	0.72	0.91	XX
TVZ4QX		15.60	-0.14	-0.17	15.50	-0.24	-0.31	LA
TX332Q		14.66	-1.08	-1.32	15.31	-0.44	-0.56	PP
U26ZCJ	*	18.14	2.40	2.93	18.13	2.38	3.04	LA
U6FDUH		17.26	1.52	1.86	17.62	1.88	2.39	PP
WKKJXC		15.47	-0.27	-0.33	15.12	-0.63	-0.80	PP
WTZ78F		16.91	1.17	1.43	16.60	0.86	1.09	TL
XTW3TV		15.66	-0.08	-0.10	16.12	0.38	0.48	LP
Y8TL27		14.07	-1.67	-2.04	13.83	-1.91	-2.44	LP
YHT8AQ		15.30	-0.44	-0.54	15.37	-0.37	-0.48	PP
Z2M3LE		16.20	0.46	0.56	15.80	0.06	0.07	LW
ZJ2JQR		16.03	0.29	0.35	15.47	-0.27	-0.35	HG
ZNEJNJ		15.62	-0.12	-0.15	15.84	0.10	0.12	HG

Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

TAPPI Official Test Method T460

Summary Statistics	Sample GE79	Sample GE80
Grand Means	15.74 sec/100 cc	15.74 sec/100 cc
Stnd Dev Btwn Labs	0.82 sec/100 cc	0.78 sec/100 cc

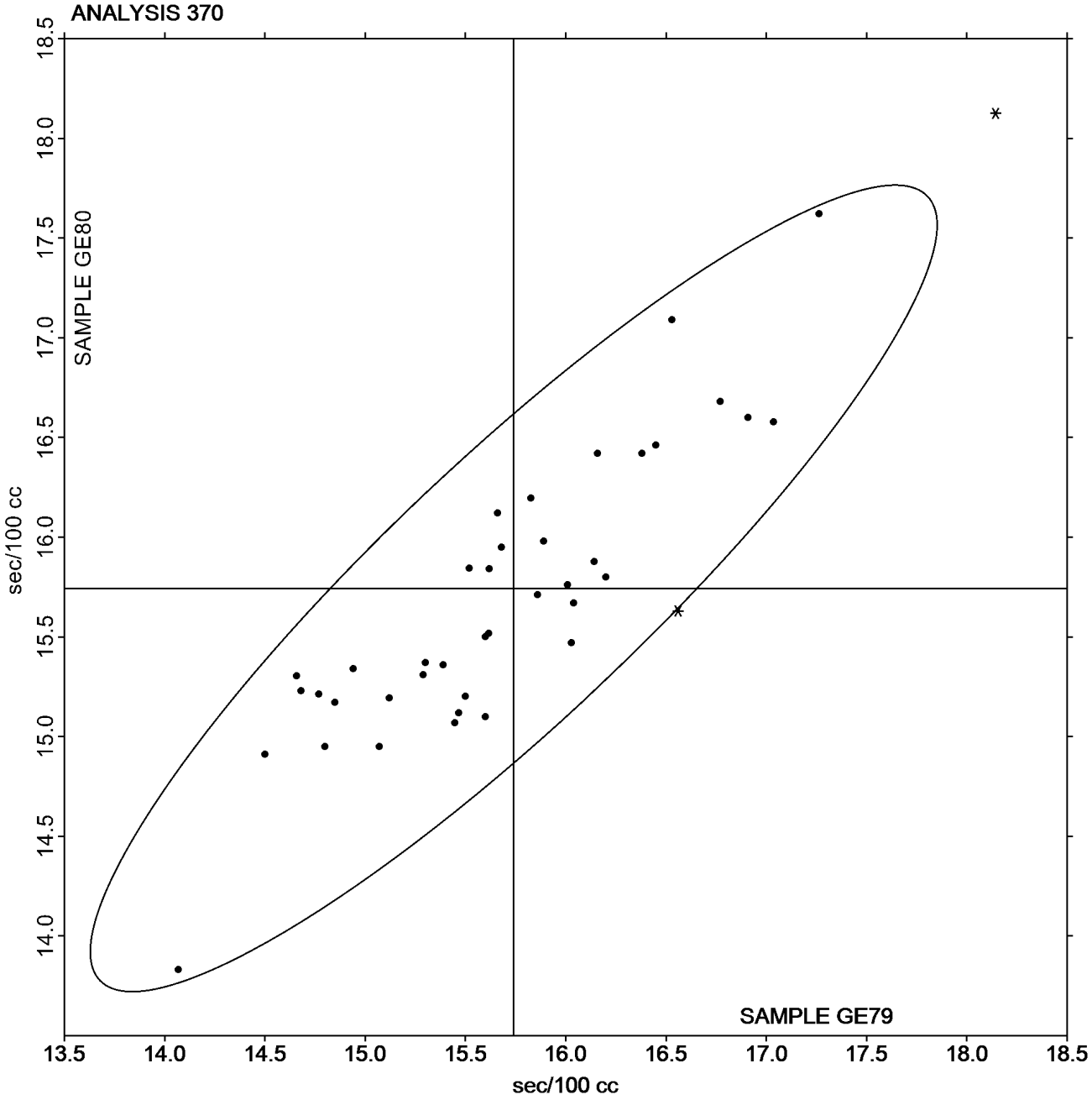
Statistics based on 41 of 41 reporting participants.

Key to Instrument Codes Reported by Participants

GA	Gurley Precision #4340 Automatic Densometer	GG	Gurley Precision Model #4320
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 GE79 = 15.740 sec/100 cc

Grand Mean Sample GE80 = 15.743 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 GE79 Lab Mean	Sample GE79 Diff from Grand Mean	Sample GE79 CPV	Sample GE80 Lab Mean	Sample GE80 Diff from Grand Mean	Sample GE80 CPV	Instr Code
2B8TLC		159.6	-16.9	-0.91	163.2	-13.5	-0.75	GA
2RRKKB		179.1	2.7	0.14	178.9	2.2	0.12	PP
4BGHZ9		166.0	-10.4	-0.56	165.6	-11.1	-0.62	PP
9CCRW7		173.2	-3.3	-0.18	179.1	2.4	0.13	HM
NKCKJ6		165.0	-11.5	-0.62	163.7	-13.0	-0.73	SH
P3MZXH		176.9	0.4	0.02	172.0	-4.7	-0.26	XX
Q7LCTG		215.4	38.9	2.10	214.4	37.7	2.10	LP

Summary Statistics	Sample GE79	Sample GE80
Grand Means	176.46 Sheffield Units	176.70 Sheffield Units
Stnd Dev Btwn Labs	18.52 Sheffield Units	17.93 Sheffield Units

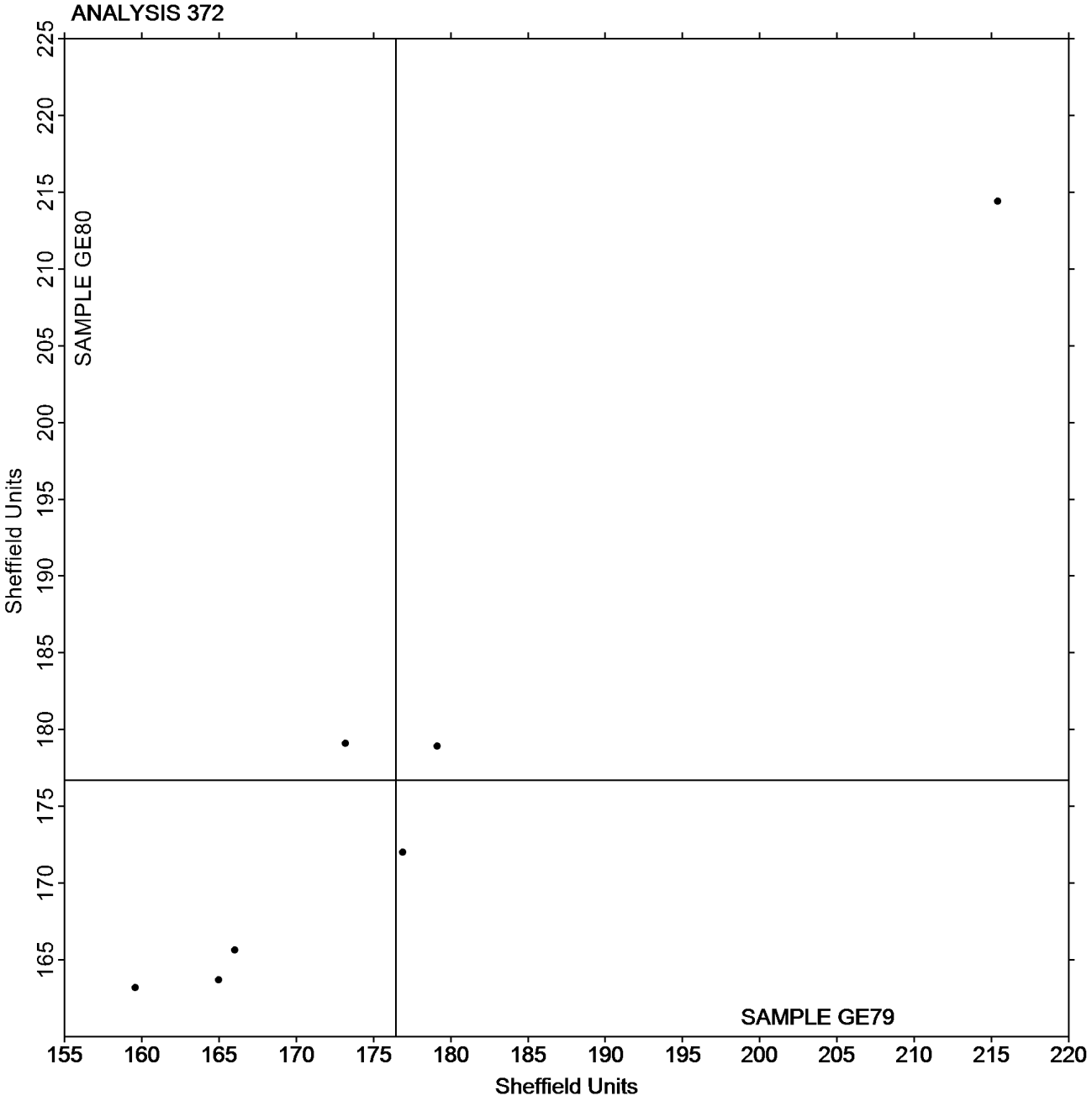
Statistics based on 7 of 7 reporting participants.

Key to Instrument Codes Reported by Participants

GA	Gurley Precision #4340 Automatic Densometer	HM	Technidyne - Hagerty Model #538
LP	L & W Densometer, Air Permeance	PP	Technidyne Profile/Plus
SH	Sheffield	XX	Instrument make/model not specified by lab

Grand Mean Sample GE79 = 176.46 Sheffield Units

Grand Mean Sample GE80 = 176.70 Sheffield Units



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 GJ79 Lab Mean	Sample GJ79 Diff from Grand Mean	Sample GJ79 CPV	Sample GJ80 Lab Mean	Sample GJ80 Diff from Grand Mean	Sample GJ80 CPV	Instr Code
2JYCZK		1.1590	0.1821	1.39	1.2420	0.2704	2.15	ZZ
2RRKKB	*	1.4040	0.4271	3.27	1.3160	0.3444	2.73	ZZ
4BGHZ9		0.9440	-0.0329	-0.25	0.9820	0.0104	0.08	ZZ
4R378H		1.0570	0.0801	0.61	0.9510	-0.0206	-0.16	ZZ
B32C2H		0.9170	-0.0599	-0.46	0.8930	-0.0786	-0.62	ZZ
D7ABBE		0.8720	-0.1049	-0.80	0.9010	-0.0706	-0.56	ZZ
DAAM8D		0.8800	-0.0969	-0.74	0.9750	0.0034	0.03	ZZ
ELW9PE		1.0850	0.1081	0.83	1.0330	0.0614	0.49	ZZ
FJNHZA		0.8610	-0.1159	-0.89	0.8190	-0.1526	-1.21	ZZ
FLFEP4		0.9460	-0.0309	-0.24	0.9020	-0.0696	-0.55	ZZ
GBDGEA		0.9820	0.0051	0.04	1.0190	0.0474	0.38	ZZ
GJ43K8		1.0110	0.0341	0.26	1.0320	0.0604	0.48	ZZ
JCHL63		0.9230	-0.0539	-0.41	0.9370	-0.0346	-0.27	ZZ
KGM4G2		1.1030	0.1261	0.96	1.0690	0.0974	0.77	ZZ
NL794L		0.9710	-0.0059	-0.05	1.0620	0.0904	0.72	ZZ
NVU442		0.7810	-0.1959	-1.50	0.8160	-0.1556	-1.23	ZZ
PBKNXU		0.9630	-0.0139	-0.11	0.9840	0.0124	0.10	ZZ
Q9RR9Z		0.7870	-0.1899	-1.45	0.7780	-0.1936	-1.54	ZZ
TX332Q		1.1140	0.1371	1.05	1.0450	0.0734	0.58	ZZ
UL6LPU		1.0670	0.0901	0.69	1.0240	0.0524	0.42	ZZ
Y3GTRT		1.0100	0.0331	0.25	1.0020	0.0304	0.24	ZZ
YXLYUR		0.9140	-0.0629	-0.48	0.9020	-0.0696	-0.55	ZZ
Z4MBQN		0.8290	-0.1479	-1.13	0.8730	-0.0986	-0.78	ZZ
ZE8HPD		0.8740	-0.1029	-0.79	0.8630	-0.1086	-0.86	ZZ
ZH8TLD		0.9470	-0.0299	-0.23	0.8820	-0.0896	-0.71	ZZ
ZLMNYP		0.8490	-0.1279	-0.98	0.7690	-0.2026	-1.61	ZZ
ZNEJNJ		1.0340	0.0571	0.44	1.0210	0.0494	0.39	ZZ
ZT7TP6		1.0700	0.0931	0.71	1.1120	0.1404	1.11	ZZ

Summary Statistics	Sample GJ79	Sample GJ80
Grand Means	0.98 Microns	0.97 Microns
Stnd Dev Btwn Labs	0.13 Microns	0.13 Microns

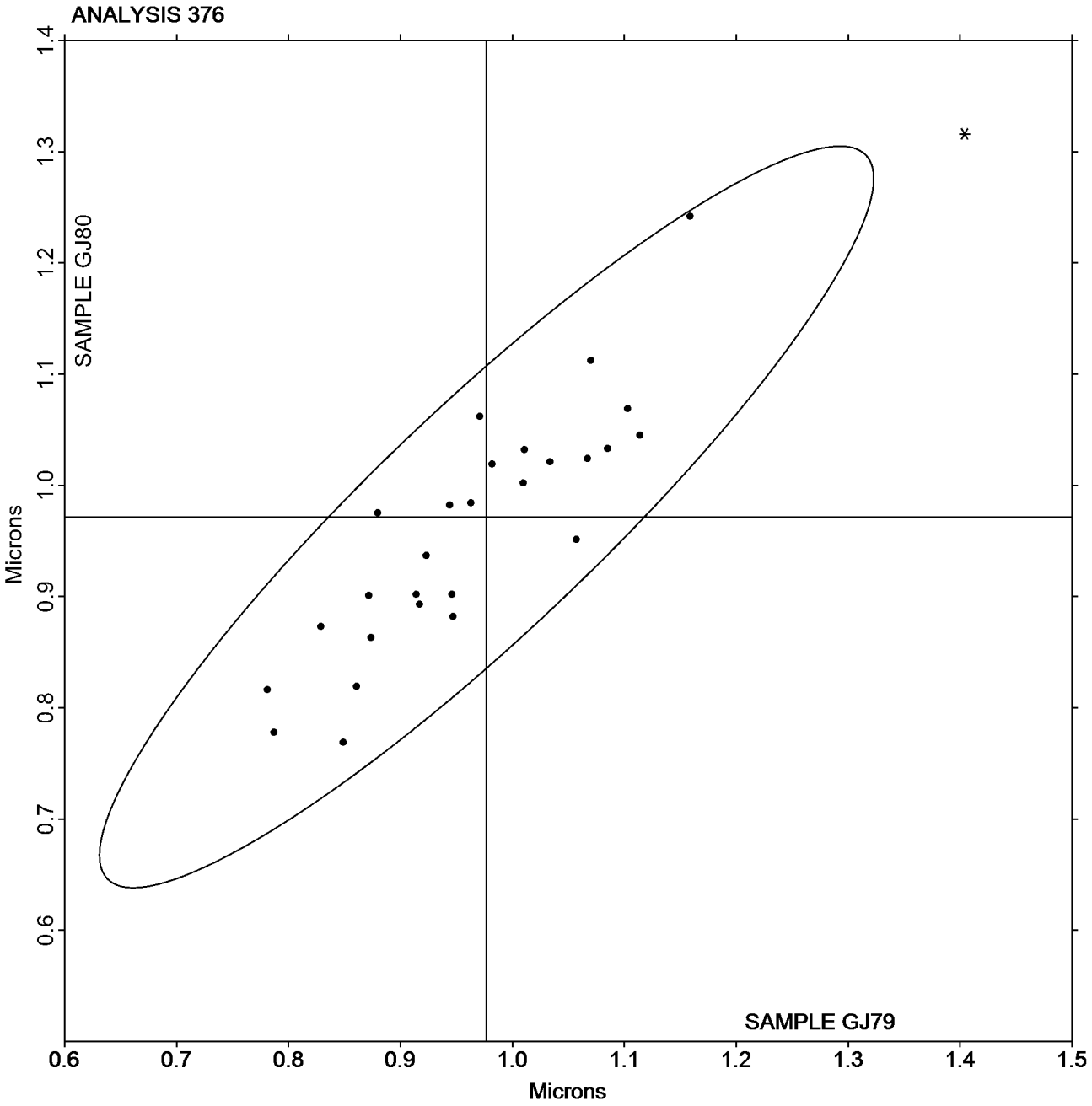
Statistics based on 28 of 28 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample GJ79 = 0.97693 Microns

Grand Mean Sample GJ80 = 0.97157 Microns



Paper & Paperboard Interlaboratory Testing Program

Analysis 377

Roughness - Print Surf Method - 2.5 to 6.0 Microns

TAPPI Official Test Method T555

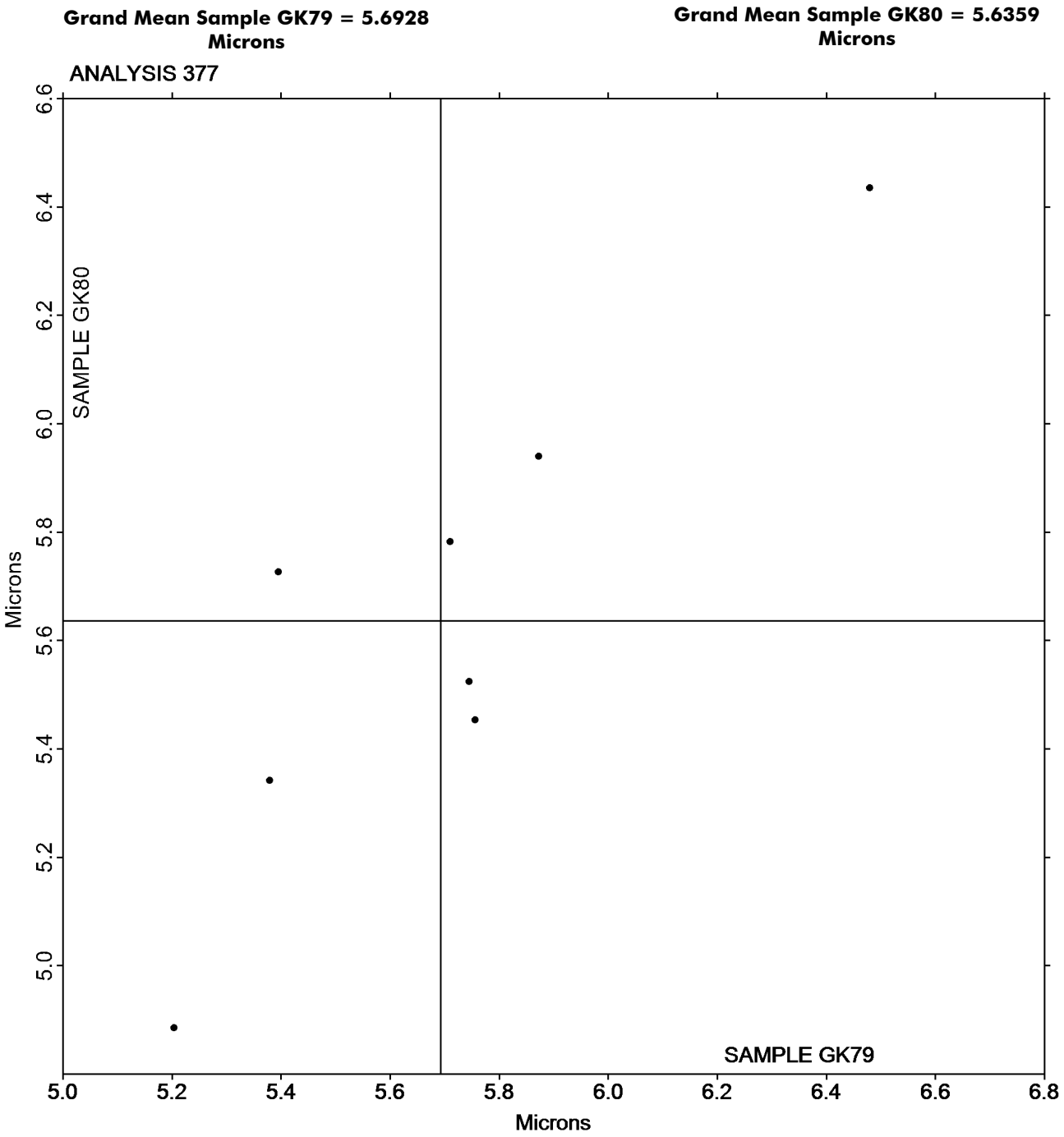
WebCode	Data Flag	Sample GK79 Lab Mean	Sample GK79 Diff from Grand Mean	Sample GK79 CPV	Sample GK80 Lab Mean	Sample GK80 Diff from Grand Mean	Sample GK80 CPV	Instr Code
86YJV4		5.745	0.052	0.13	5.524	-0.112	-0.25	ZZ
NVU442		5.379	-0.314	-0.80	5.342	-0.294	-0.64	ZZ
PK9EJM		5.710	0.017	0.04	5.782	0.146	0.32	ZZ
Q366DV		6.480	0.787	2.00	6.435	0.799	1.75	ZZ
Q9RR9Z		5.756	0.063	0.16	5.453	-0.183	-0.40	ZZ
TVZ4QX		5.204	-0.489	-1.24	4.885	-0.751	-1.65	ZZ
VW6C9G		5.873	0.180	0.46	5.940	0.304	0.67	ZZ
ZLMNYP		5.395	-0.298	-0.76	5.726	0.090	0.20	ZZ

Summary Statistics	Sample GK79	Sample GK80
Grand Means	5.69 Microns	5.64 Microns
Stnd Dev Btwn Labs	0.39 Microns	0.46 Microns

Statistics based on 8 of 8 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 GL79 Lab Mean	Sample GL79 Diff from Grand Mean	Sample GL79 CPV	Sample GL80 Lab Mean	Sample GL80 Diff from Grand Mean	Sample GL80 CPV	Instr Code
2B8TLC		119.9	1.6	0.23	115.4	-1.6	-0.24	PP
2JYCZK		122.3	4.0	0.57	120.6	3.6	0.53	LW
2L2ABC		108.4	-9.9	-1.42	113.1	-3.9	-0.58	LW
2RRKKB		117.1	-1.2	-0.18	119.5	2.5	0.36	VM
4BGHZ9		112.5	-5.8	-0.83	114.5	-2.6	-0.38	PP
62PJL8		118.1	-0.2	-0.04	120.9	3.9	0.57	LA
6PAWBL		122.7	4.4	0.63	128.5	11.5	1.69	SS
76KWKG		114.9	-3.4	-0.48	110.2	-6.8	-1.01	PP
86YJV4		132.6	14.3	2.05	128.6	11.5	1.70	PP
87QEHD		108.9	-9.4	-1.35	108.1	-8.9	-1.32	XX
AA2C2J		113.2	-5.1	-0.74	108.1	-8.9	-1.32	PP
B32C2H		113.9	-4.4	-0.63	109.9	-7.1	-1.05	LA
BRHU9B		117.5	-0.8	-0.12	111.2	-5.8	-0.86	HM
CE7WVU		115.0	-3.3	-0.48	118.1	1.0	0.15	PP
D7ABBE		125.5	7.1	1.03	120.7	3.7	0.54	PP
DAAM8D		126.0	7.7	1.10	121.2	4.1	0.61	PP
EDMKCF		117.9	-0.4	-0.06	115.5	-1.5	-0.23	GA
EJUD7B		134.7	16.4	2.35	130.0	13.0	1.92	SH
EPF4T7		119.2	0.9	0.12	114.5	-2.6	-0.38	PP
FJNHZA		117.5	-0.8	-0.12	117.0	0.0	0.00	TS
GJ43K8	X	158.6	40.3	5.79	156.2	39.2	5.79	PP
JCHL63		115.7	-2.7	-0.38	122.2	5.1	0.76	PP
JT3C63		113.0	-5.3	-0.76	112.2	-4.8	-0.71	TT
KGM4G2		111.0	-7.3	-1.05	106.7	-10.3	-1.53	LW
KL3C6Z		113.2	-5.1	-0.74	112.0	-5.0	-0.74	PP
KN78N4		113.4	-4.9	-0.70	113.1	-4.0	-0.59	PP
NKCKJ6		119.3	1.0	0.14	115.3	-1.7	-0.26	TZ
NL794L		125.3	7.0	1.00	124.9	7.9	1.16	HM
NVU442		133.5	15.2	2.18	130.5	13.5	1.99	XX
PK9EJM		115.9	-2.4	-0.34	112.8	-4.2	-0.63	PP
Q7LCTG		117.0	-1.3	-0.19	118.5	1.5	0.22	LW
Q9RR9Z		118.9	0.6	0.08	119.4	2.4	0.35	LA
TBPEDZ	X	92.0	-26.3	-3.78	98.0	-19.0	-2.81	GL
TVZ4QX		123.0	4.7	0.67	125.4	8.4	1.24	LA
U26ZCJ		103.3	-15.0	-2.16	103.9	-13.1	-1.94	LA
U3EDRY		132.1	13.8	1.98	133.5	16.5	2.43	HM
U6FDUH		124.8	6.4	0.92	115.7	-1.3	-0.19	PP
UL6LPU		117.8	-0.5	-0.07	112.3	-4.8	-0.71	PP
UNG2JV		112.4	-5.9	-0.85	111.0	-6.0	-0.89	PP
VLJ8YW		108.1	-10.2	-1.47	116.9	-0.2	-0.02	MP
VW6C9G		122.7	4.4	0.63	120.1	3.1	0.45	LW

Paper & Paperboard Interlaboratory Testing Program

Analysis 378

Roughness - Sheffield Type

TAPPI Official Test Method T538

WebCode	Data Flag	Sample GL79 Lab Mean	Sample GL79 Diff from Grand Mean	Sample GL79 CPV	Sample GL80 Lab Mean	Sample GL80 Diff from Grand Mean	Sample GL80 CPV	Instr Code
WKKJXC		121.1	2.8	0.40	117.7	0.6	0.09	PP
XQT89T		104.7	-13.7	-1.96	106.9	-10.2	-1.50	PP
Y3GTRT		119.0	0.6	0.09	116.4	-0.7	-0.10	PP
YHT8AQ		120.5	2.2	0.31	110.0	-7.0	-1.04	SH
YXLYUR		114.9	-3.5	-0.50	110.8	-6.2	-0.92	PP
Z2M3LE		117.9	-0.4	-0.06	125.9	8.9	1.31	TS
ZJ2JQR		119.6	1.3	0.18	123.7	6.7	0.98	TS
ZLMNYP		124.9	6.6	0.94	117.1	0.1	0.01	LW
ZNEJNJ		111.6	-6.7	-0.96	115.3	-1.7	-0.26	HM
ZT7TP6		125.4	7.1	1.02	119.2	2.2	0.32	LW

Summary Statistics	Sample GL79	Sample GL80
Grand Means	118.32 Sheffield	117.03 Sheffield
Stnd Dev Btwn Labs	6.96 Sheffield	6.77 Sheffield

Statistics based on 49 of 51 reporting participants.

Comments on Assigned Data Flags for Test #378

GJ43K8 (X) - Data for both samples are high. Possible Systematic Error.

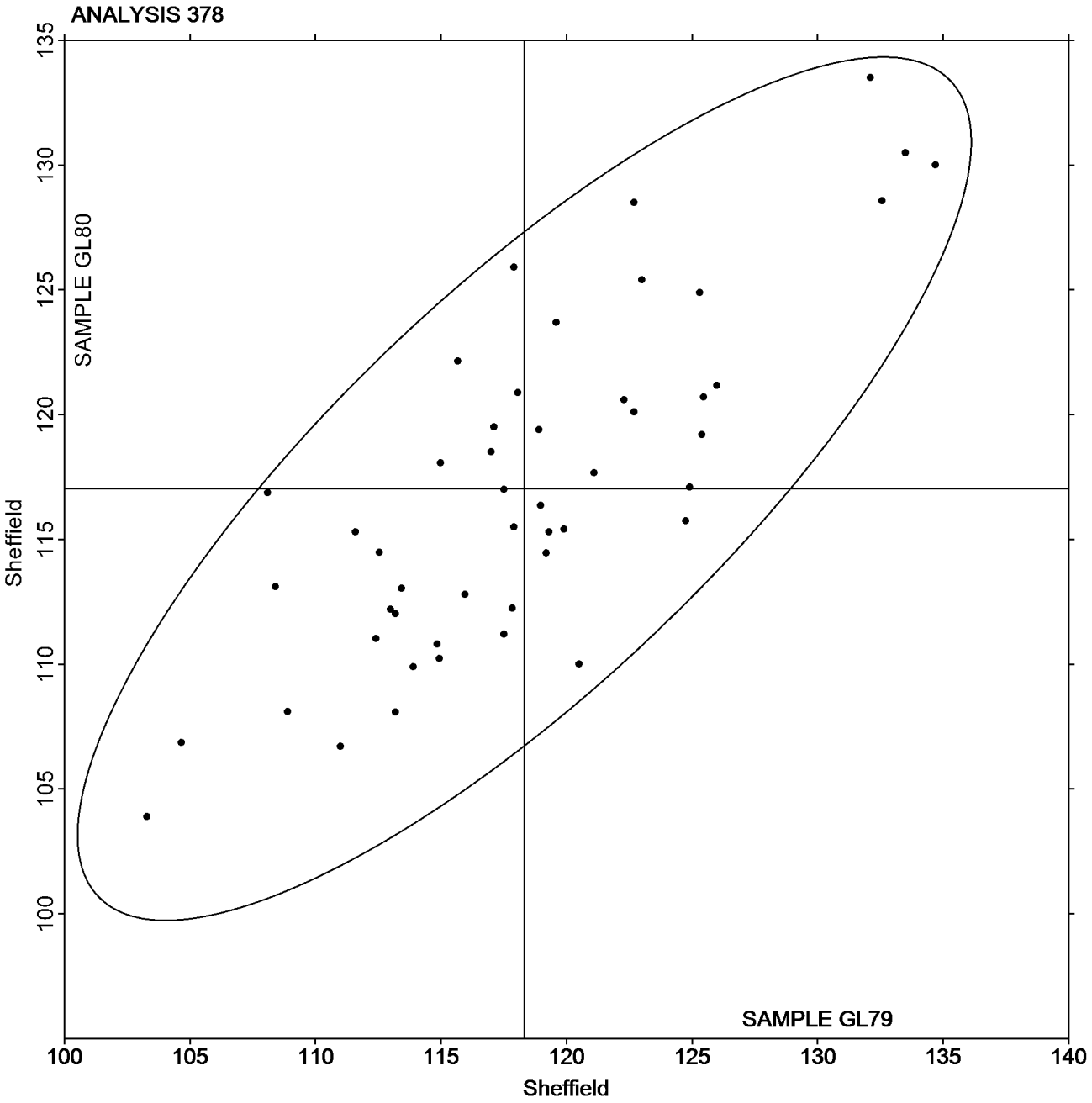
TBPEDZ (X) - Data for both samples are low. Possible Systematic Error.

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)
SS	Sheffield Smoothchek Tester	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 GL79 = 118.32
Sheffield

Grand Mean Sample GL80 = 117.03
Sheffield



Paper & Paperboard Interlaboratory Testing Program

Analysis 382
Moisture in Paper
TAPPI Official Test Method T412

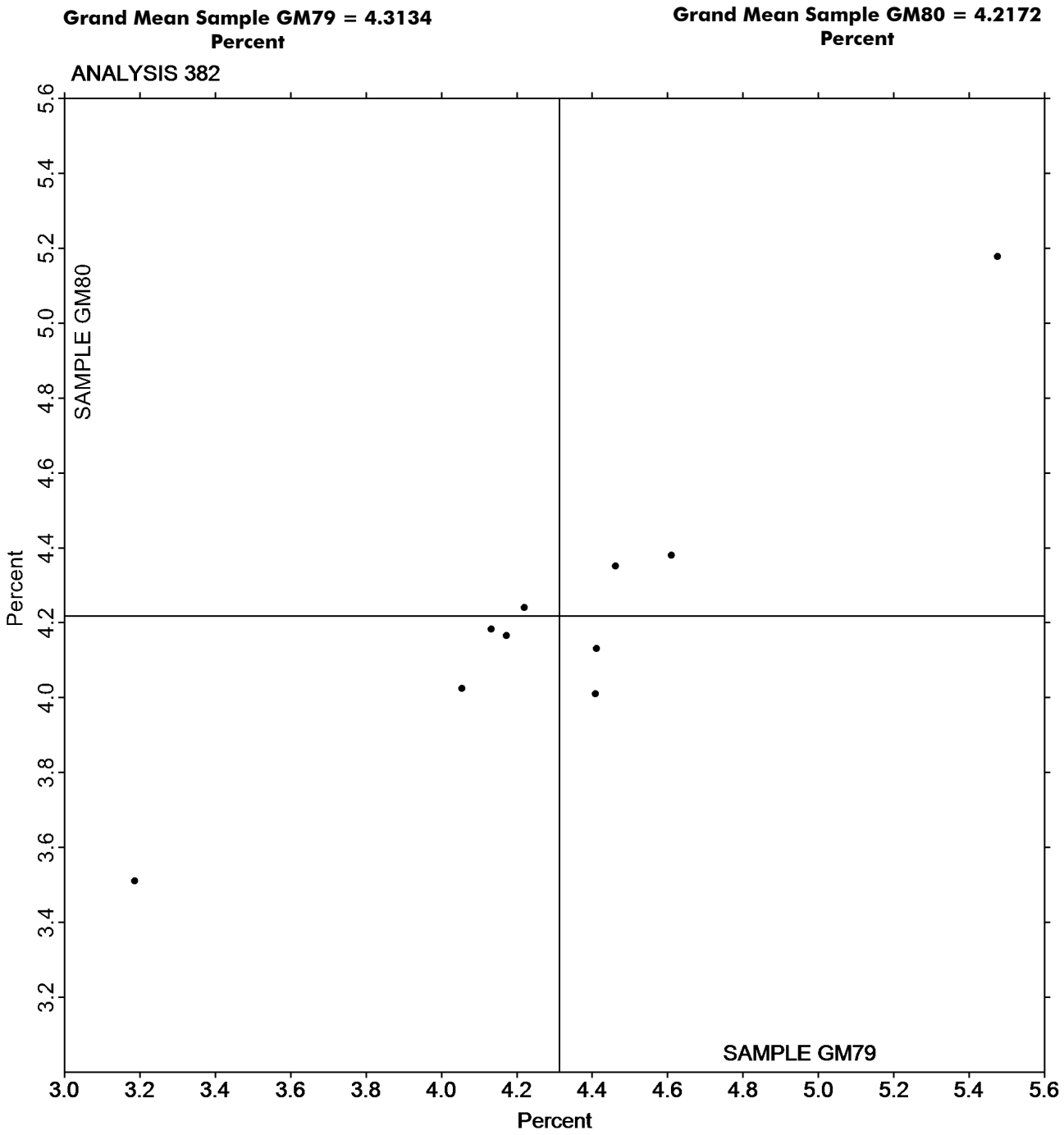
WebCode	Data Flag	Sample GM79 Lab Mean	Sample GM79 Diff from Grand Mean	Sample GM79 CPV	Sample GM80 Lab Mean	Sample GM80 Diff from Grand Mean	Sample GM80 CPV	Instr Code
42TNLQ		3.187	-1.126	-1.99	3.510	-0.707	-1.70	ZZ
6FJB6M		4.133	-0.181	-0.32	4.183	-0.035	-0.08	ZZ
9HHKQ2		4.409	0.096	0.17	4.010	-0.207	-0.50	ZZ
F6R2BC		4.055	-0.258	-0.46	4.025	-0.192	-0.46	ZZ
H9JAA3		5.475	1.162	2.06	5.177	0.960	2.31	ZZ
LPENEL		4.610	0.297	0.52	4.380	0.163	0.39	ZZ
Q366DV		4.220	-0.093	-0.17	4.240	0.023	0.05	ZZ
WKKJXC		4.461	0.148	0.26	4.352	0.135	0.32	ZZ
YDXDCP		4.412	0.099	0.17	4.131	-0.086	-0.21	ZZ
ZX2K4T		4.172	-0.141	-0.25	4.165	-0.052	-0.13	ZZ

Summary Statistics	Sample GM79	Sample GM80
Grand Means	4.31 Percent	4.22 Percent
Stnd Dev Btwn Labs	0.57 Percent	0.42 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 GN79 Lab Mean	Sample GN79 Diff from Grand Mean	Sample GN79 CPV	Sample GN80 Lab Mean	Sample GN80 Diff from Grand Mean	Sample GN80 CPV	Instr Code
2B8TLC		89.04	-0.48	-0.61	89.14	-0.29	-0.38	ZZ
3CB97M		88.14	-1.38	-1.75	88.03	-1.40	-1.81	ZZ
4BGHZ9		89.05	-0.47	-0.59	89.26	-0.17	-0.22	ZZ
4R378H		89.56	0.05	0.06	89.37	-0.06	-0.08	ZZ
76KWKG		89.99	0.47	0.60	89.70	0.27	0.34	ZZ
86YJV4		89.18	-0.34	-0.43	89.16	-0.27	-0.35	ZZ
9EJ74C		91.18	1.66	2.12	91.06	1.63	2.09	ZZ
BRHU9B		89.46	-0.06	-0.07	89.53	0.10	0.12	ZZ
CE7WVU		88.63	-0.88	-1.12	89.16	-0.28	-0.36	ZZ
JCHL63		90.45	0.93	1.19	90.93	1.50	1.93	ZZ
JUBVJP		89.34	-0.18	-0.22	89.21	-0.22	-0.29	ZZ
KN78N4		89.96	0.44	0.57	89.72	0.29	0.37	ZZ
NKCKJ6		88.65	-0.87	-1.10	88.72	-0.71	-0.92	ZZ
NL794L		89.72	0.20	0.26	89.59	0.16	0.20	ZZ
PK9EJM		89.36	-0.15	-0.19	88.90	-0.54	-0.69	ZZ
TBPEDZ		90.91	1.39	1.78	90.38	0.95	1.22	ZZ
TVZ4QX	*	91.58	2.07	2.64	91.47	2.03	2.62	ZZ
TX332Q		89.47	-0.05	-0.06	89.05	-0.38	-0.49	ZZ
U26ZCJ	X	85.66	-3.86	-4.91	85.72	-3.71	-4.78	ZZ
U6FDUH		89.23	-0.29	-0.36	89.02	-0.41	-0.53	ZZ
WKKJXC		89.50	-0.02	-0.02	89.05	-0.38	-0.50	ZZ
YHT8AQ		89.21	-0.31	-0.39	89.67	0.24	0.30	ZZ
Z2M3LE		89.41	-0.11	-0.13	89.31	-0.12	-0.16	ZZ
Z4MBQN		88.82	-0.69	-0.88	88.67	-0.77	-0.99	ZZ
ZH8TLD		89.11	-0.41	-0.52	88.58	-0.85	-1.10	ZZ
ZJ2JQR		89.09	-0.43	-0.54	89.25	-0.18	-0.24	ZZ
ZNEJNJ		89.34	-0.18	-0.22	89.36	-0.07	-0.09	ZZ

Summary Statistics	Sample GN79	Sample GN80
Grand Means	89.52 Percent	89.43 Percent
Stnd Dev Btwn Labs	0.78 Percent	0.78 Percent

Statistics based on 26 of 27 reporting participants.

Comments on Assigned Data Flags for Test #384

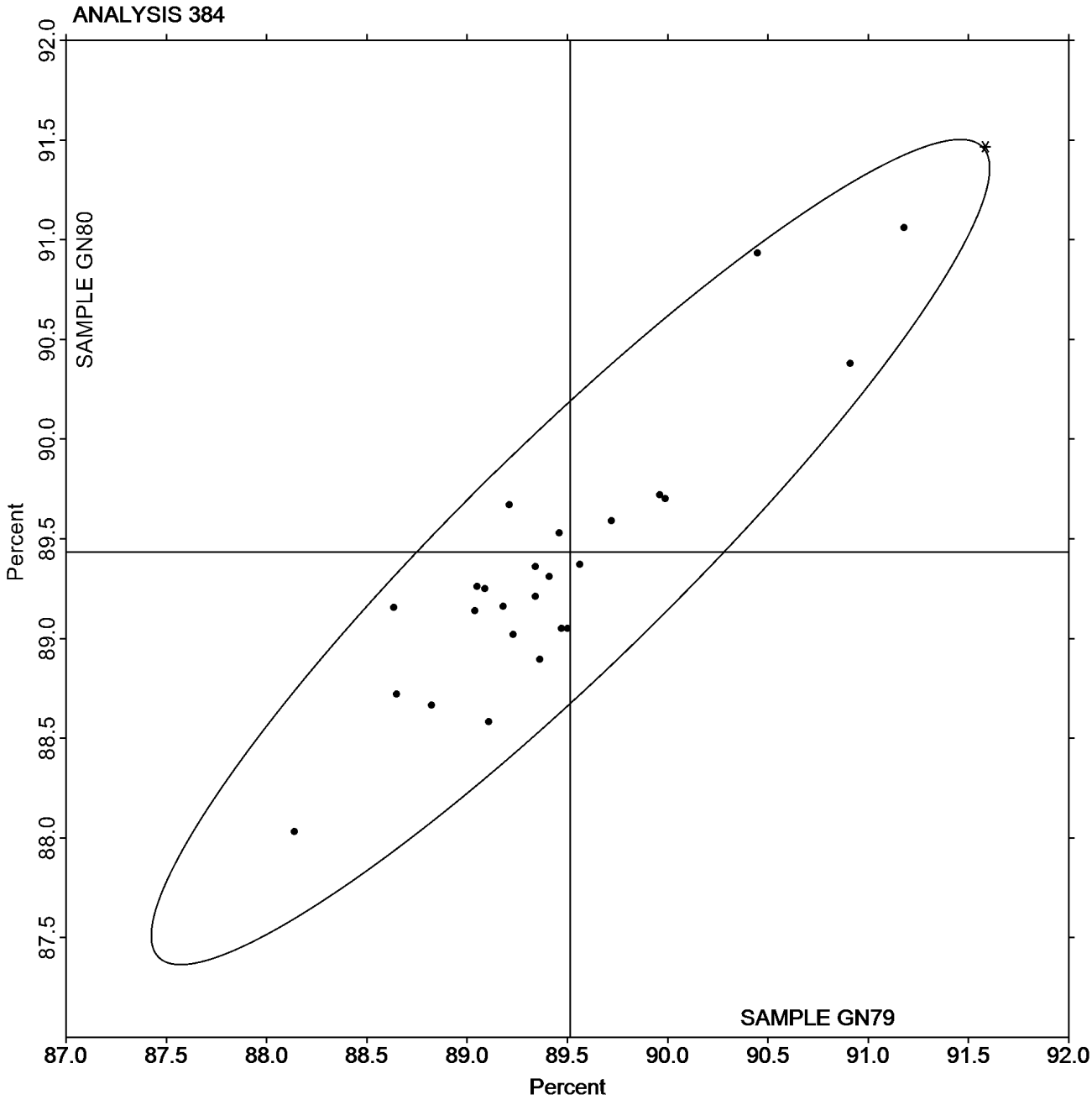
U26ZCJ (X) - Data for both samples are low. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample GN79 = 89.515 Percent

Grand Mean Sample GN80 = 89.434 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 386

Opacity (Paper Backing) - Fine Papers and Newsprint

TAPPI Official Test Method T519

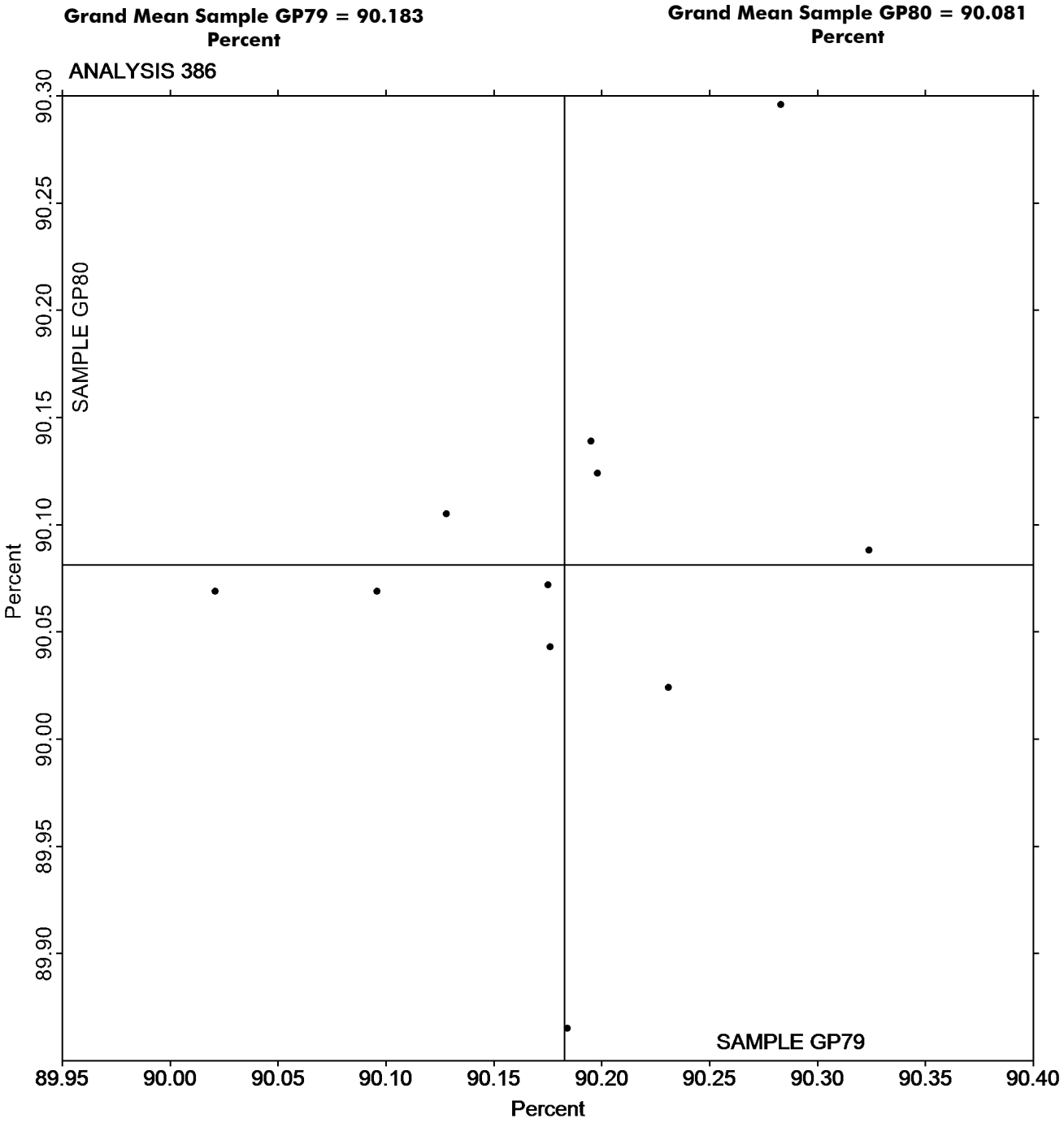
WebCode	Data Flag	Sample GP79 Lab Mean	Sample GP79 Diff from Grand Mean	Sample GP79 CPV	Sample GP80 Lab Mean	Sample GP80 Diff from Grand Mean	Sample GP80 CPV	Instr Code
42TNLQ		90.18	0.00	0.01	89.87	-0.22	-2.12	ZZ
9KLFB4		90.23	0.05	0.58	90.02	-0.06	-0.56	ZZ
9T2YRH		90.20	0.02	0.18	90.12	0.04	0.42	ZZ
ELW9PE		90.10	-0.09	-1.04	90.07	-0.01	-0.12	ZZ
L72ZA2		90.02	-0.16	-1.94	90.07	-0.01	-0.12	ZZ
LLWGYY		90.13	-0.05	-0.66	90.11	0.02	0.23	ZZ
LXPZFQ		90.18	-0.01	-0.08	90.04	-0.04	-0.38	ZZ
RRLADL		90.18	-0.01	-0.09	90.07	-0.01	-0.09	ZZ
UTQE2U		90.28	0.10	1.20	90.30	0.21	2.11	ZZ
V2Z77H		90.32	0.14	1.69	90.09	0.01	0.07	ZZ
Y8TL27		90.20	0.01	0.15	90.14	0.06	0.57	ZZ

Summary Statistics	Sample GP79	Sample GP80
Grand Means	90.18 Percent	90.08 Percent
Stnd Dev Btwn Labs	0.08 Percent	0.10 Percent

Statistics based on 11 of 11 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

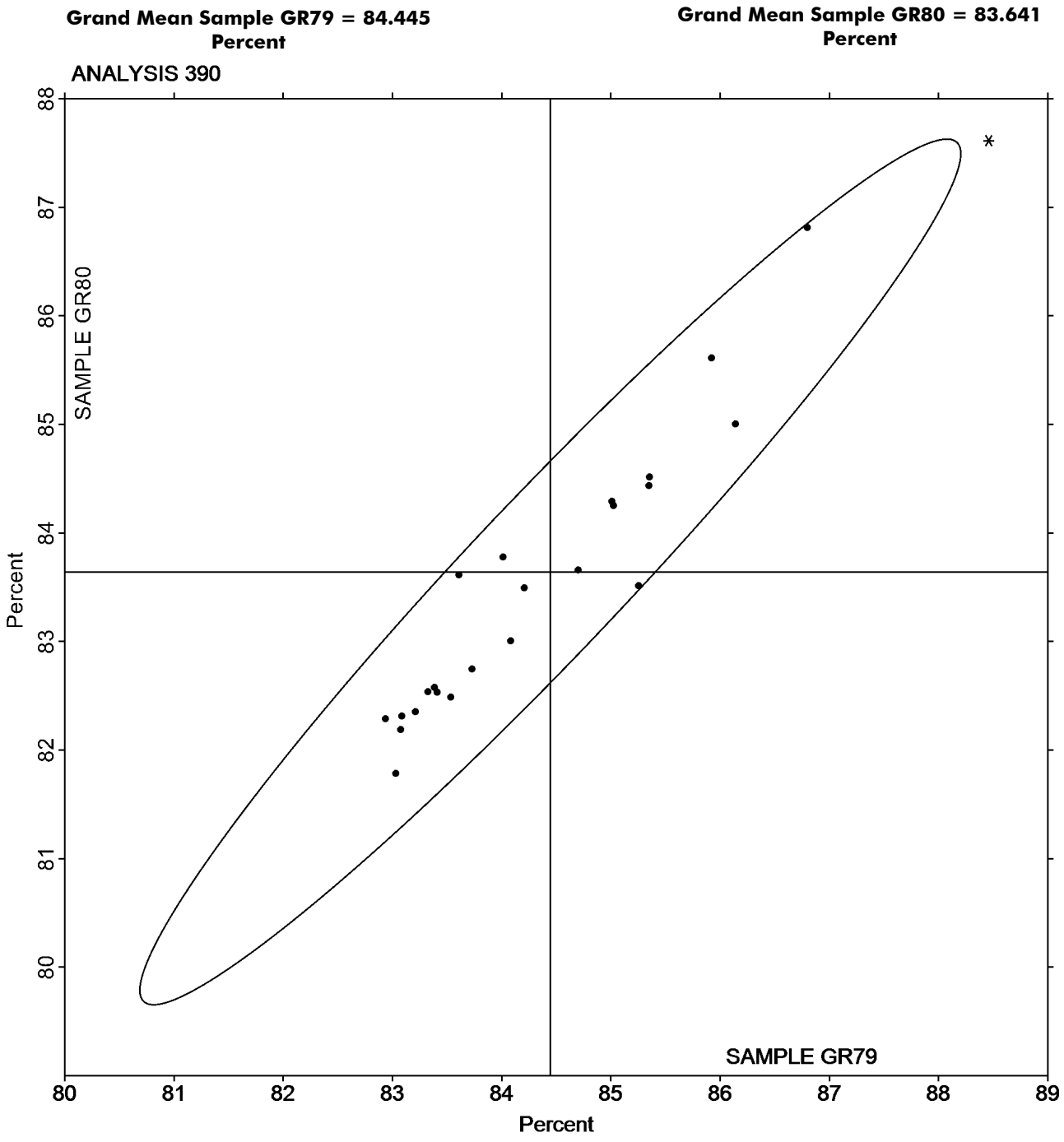
WebCode	Data Flag	Sample GR79 Lab Mean	Sample GR79 Diff from Grand Mean	Sample GR79 CPV	Sample GR80 Lab Mean	Sample GR80 Diff from Grand Mean	Sample GR80 CPV	Instr Code
2B8TLC		83.61	-0.83	-0.59	83.61	-0.03	-0.02	XC
2JYCZK		84.70	0.26	0.18	83.66	0.02	0.01	HG
3CB97M		86.14	1.70	1.21	85.00	1.36	0.92	PE
76KWKG		83.41	-1.04	-0.74	82.53	-1.11	-0.75	TS
87QEHD		86.80	2.36	1.68	86.81	3.17	2.13	XX
BPRVUC		85.35	0.90	0.64	84.44	0.79	0.53	TS
D7ABBE		85.35	0.91	0.65	84.52	0.88	0.59	HG
DAAM8D		84.21	-0.24	-0.17	83.50	-0.15	-0.10	HG
JCHL63		85.03	0.58	0.41	84.25	0.61	0.41	TT
KN78N4		83.39	-1.06	-0.76	82.58	-1.07	-0.72	XX
NKCKJ6		85.93	1.48	1.06	85.61	1.97	1.33	TS
NL794L		83.03	-1.41	-1.01	81.78	-1.86	-1.25	TS
Q366DV		84.01	-0.43	-0.31	83.78	0.13	0.09	TS
TVZ4QX		84.09	-0.36	-0.26	83.01	-0.63	-0.43	TS
TX332Q		82.94	-1.51	-1.08	82.29	-1.35	-0.91	TP
U6FDUH		83.21	-1.23	-0.88	82.35	-1.29	-0.87	TT
UL6LPU		83.73	-0.71	-0.51	82.75	-0.89	-0.60	TS
UNG2JV		83.33	-1.12	-0.80	82.54	-1.10	-0.74	TS
Y3GTRT		83.54	-0.91	-0.65	82.49	-1.15	-0.78	TA
YXLYUR		85.01	0.57	0.41	84.29	0.65	0.44	TP
Z4MBQN		85.25	0.81	0.58	83.51	-0.13	-0.09	TS
ZJ2JQR		83.08	-1.37	-0.98	82.19	-1.45	-0.98	TS
ZLMNYP		83.09	-1.36	-0.97	82.31	-1.33	-0.89	TT
ZT7TP6	*	88.46	4.01	2.87	87.61	3.97	2.67	HZ

Summary Statistics	Sample GR79	Sample GR80
Grand Means	84.44 Percent	83.64 Percent
Stnd Dev Btwn Labs	1.40 Percent	1.49 Percent

Statistics based on 24 of 24 reporting participants.

Key to Instrument Codes Reported by Participants

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

		Sample GZ79			Sample GZ80			
WebCode	Data Flag	Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	Instr Code
4R378H		92.67	-0.06	-0.11	92.71	-0.14	-0.20	TS
86YJV4		92.58	-0.16	-0.30	92.57	-0.28	-0.41	TS
9EJ74C		92.58	-0.15	-0.29	92.68	-0.17	-0.25	TT
CE7WVU		93.38	0.65	1.24	94.16	1.31	1.90	PP
L72ZA2		93.08	0.35	0.68	93.09	0.24	0.34	TS
U26ZCJ		93.38	0.65	1.24	93.94	1.09	1.58	TT
U6FDUH		92.58	-0.15	-0.29	92.56	-0.29	-0.42	TT
UTQE2U		91.36	-1.37	-2.63	91.38	-1.47	-2.13	EF
WKKJXC		93.09	0.36	0.69	93.07	0.22	0.32	TS
XQT89T	X	81.46	-11.27	-21.66	85.78	-7.07	-10.28	TS
Z2M3LE		92.88	0.15	0.28	92.94	0.09	0.13	TS
ZH8TLD		92.91	0.17	0.33	92.98	0.13	0.18	PP
ZJ2JQR		92.69	-0.04	-0.09	92.62	-0.23	-0.34	TS
ZNEJNJ		92.34	-0.39	-0.75	92.36	-0.49	-0.71	TT

Summary Statistics	Sample GZ79	Sample GZ80
Grand Means	92.73 Percent	92.85 Percent
Stnd Dev Btwn Labs	0.52 Percent	0.69 Percent

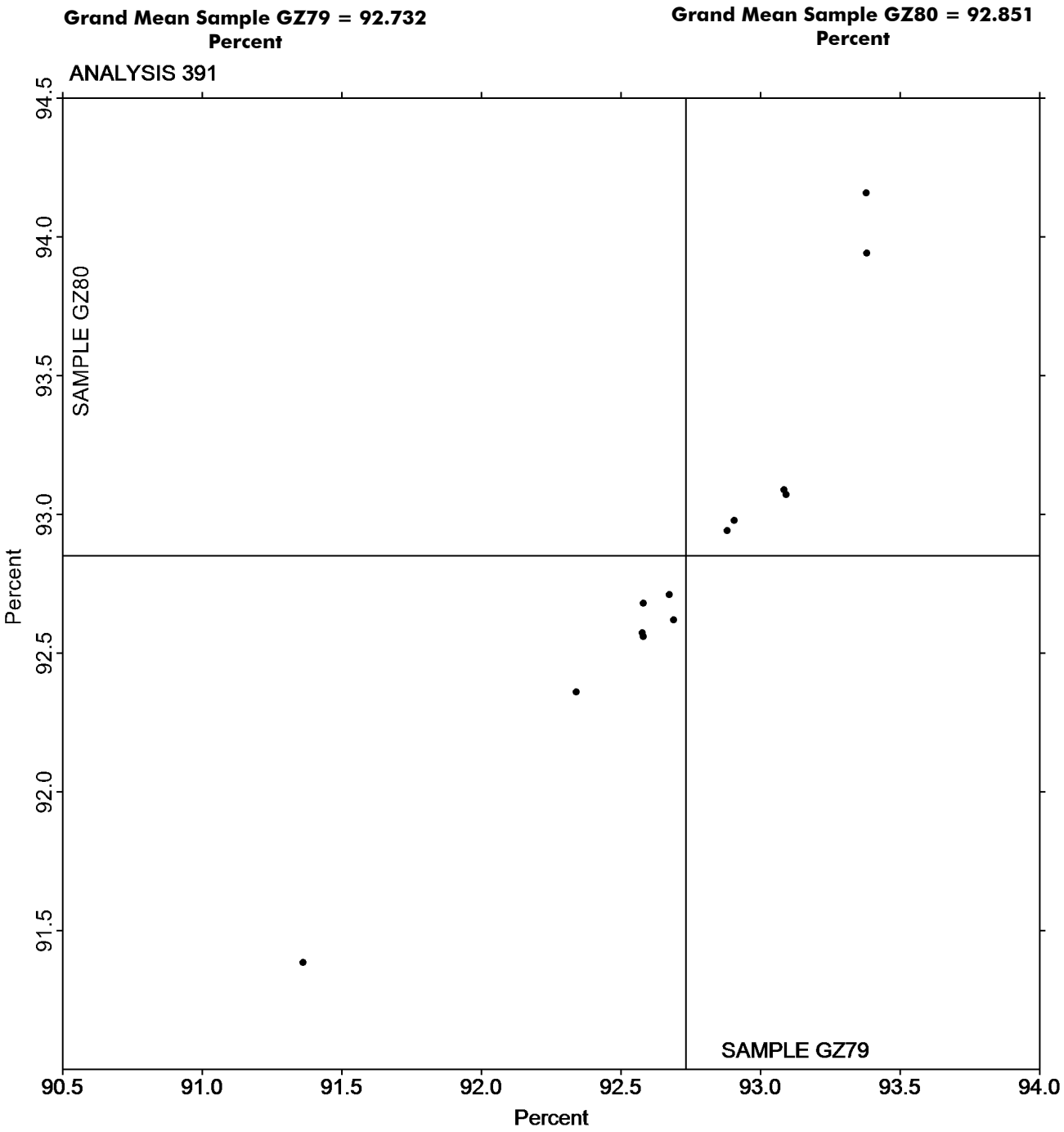
Statistics based on 13 of 14 reporting participants.

Comments on Assigned Data Flags for Test #391

XQT89T (X) - Extreme Data.

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 GR79 Lab Mean	Sample GR79 Diff from Grand Mean	Sample GR79 CPV	Sample GR80 Lab Mean	Sample GR80 Diff from Grand Mean	Sample GR80 CPV	Instr Code
2JYCZK	*	82.80	-0.74	-2.34	82.54	-0.22	-1.00	TC
2L2ABC		83.69	0.15	0.49	83.06	0.31	1.41	EF
42TNLQ		83.47	-0.07	-0.21	82.63	-0.13	-0.58	LE
4BGHZ9		83.72	0.18	0.56	82.84	0.08	0.37	TC
6FHB89		83.46	-0.08	-0.24	82.72	-0.04	-0.17	TC
9T2YRH		83.75	0.21	0.66	82.87	0.12	0.55	LE
AMTX9Z	*	82.50	-1.04	-3.29	82.20	-0.55	-2.55	TZ
BPRVUC		83.53	-0.01	-0.03	82.65	-0.10	-0.47	TC
ELW9PE		83.77	0.23	0.74	83.08	0.32	1.49	AC
EPF4T7		83.58	0.04	0.11	82.80	0.05	0.21	TC
F6R2BC		83.55	0.01	0.04	82.75	-0.01	-0.04	EE
GBDGEA		83.67	0.13	0.40	82.66	-0.09	-0.42	TC
L72ZA2		83.54	0.00	-0.01	82.60	-0.15	-0.69	TC
LXPZFQ		84.09	0.55	1.76	83.29	0.53	2.46	TC
M7ZPQ4		83.36	-0.18	-0.57	82.52	-0.24	-1.10	TC
MTPCBN		83.59	0.05	0.17	82.76	0.01	0.03	TC
NL794L		83.75	0.21	0.68	82.92	0.17	0.77	LT
PBKNXU		83.74	0.20	0.64	82.81	0.05	0.24	XX
RRLADL		83.55	0.01	0.03	82.81	0.06	0.27	TC
TVZ4QX		83.56	0.02	0.07	82.66	-0.09	-0.42	TC
Y3GTRT		83.47	-0.07	-0.21	82.60	-0.16	-0.73	LT
YXLYUR		83.58	0.04	0.11	82.74	-0.02	-0.08	TL
ZE8HPD		83.75	0.21	0.68	82.94	0.18	0.84	TC
ZLMNYP		83.46	-0.08	-0.24	82.67	-0.09	-0.39	EG

Summary Statistics	Sample GR79	Sample GR80
Grand Means	83.54 Percent	82.75 Percent
Stnd Dev Btwn Labs	0.32 Percent	0.22 Percent

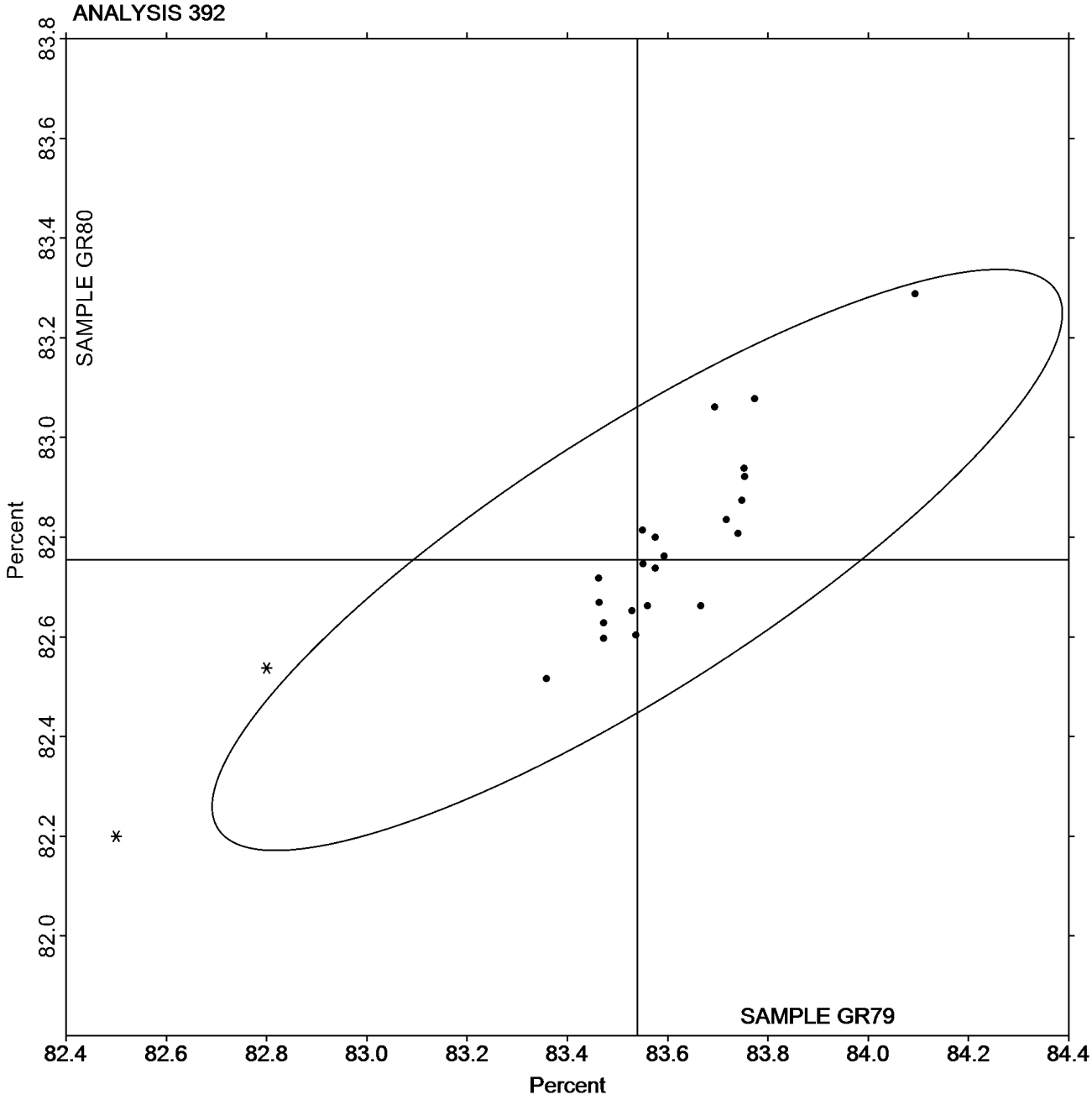
Statistics based on 24 of 24 reporting participants.

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
TZ	Technibrite Model TB-1	XX	Instrument make/model not specified by lab

Grand Mean Sample GR79 = 83.539 Percent

Grand Mean Sample GR80 = 82.754 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 394

Fluorescent Component of Directional Brightness

TAPPI Official Test Method T452

WebCode	Data Flag	Sample GZ79 Lab Mean	Sample GZ79 Diff from Grand Mean	Sample GZ79 CPV	Sample GZ80 Lab Mean	Sample GZ80 Diff from Grand Mean	Sample GZ80 CPV	Instr Code
4R378H		5.728	-0.462	-1.80	5.744	-0.455	-1.80	TS
86YJV4		6.264	0.074	0.29	6.162	-0.037	-0.15	TS
CE7WVU		6.018	-0.172	-0.67	6.178	-0.021	-0.08	PP
L72ZA2		6.602	0.412	1.61	6.576	0.377	1.50	TS
U26ZCJ		6.040	-0.150	-0.59	5.980	-0.219	-0.87	TT
UTQE2U	X	8.824	2.634	10.28	8.864	2.665	10.56	DE
WKKJXC		6.242	0.052	0.20	6.260	0.061	0.24	TS
ZH8TLD		6.420	0.230	0.90	6.470	0.271	1.08	PP
ZJ2JQR		6.320	0.130	0.51	6.338	0.139	0.55	TS
ZNEJNJ		6.080	-0.110	-0.43	6.080	-0.119	-0.47	TT

Summary Statistics	Sample GZ79	Sample GZ80
Grand Means	6.19 Percent	6.20 Percent
Stnd Dev Btwn Labs	0.26 Percent	0.25 Percent

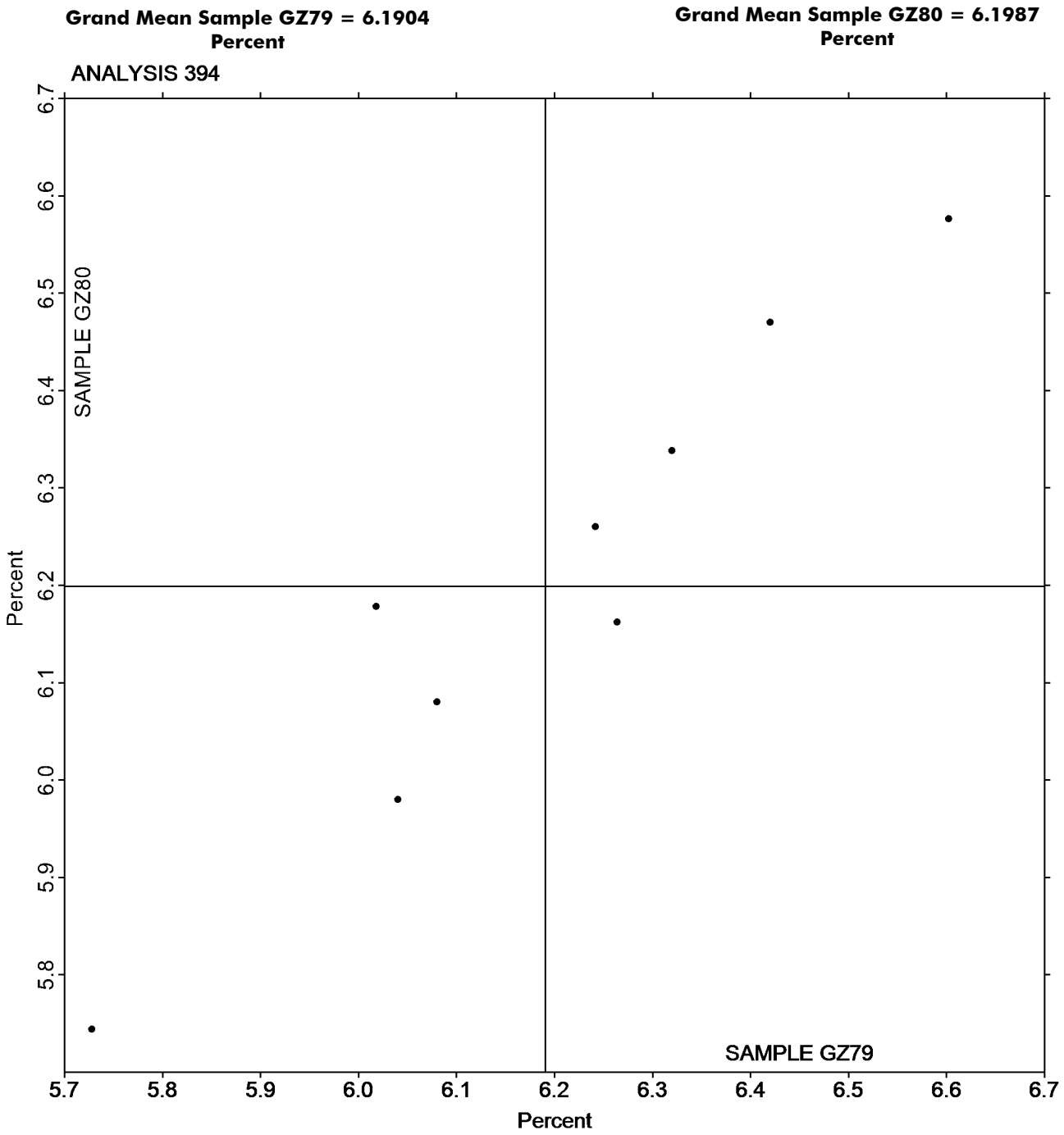
Statistics based on 9 of 10 reporting participants.

Comments on Assigned Data Flags for Test #394

UTQE2U (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

DE	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 #3062G, June 2020

Analysis 395

Specular Gloss at 75 Degrees - High Range

TAPPI Official Test Method T480

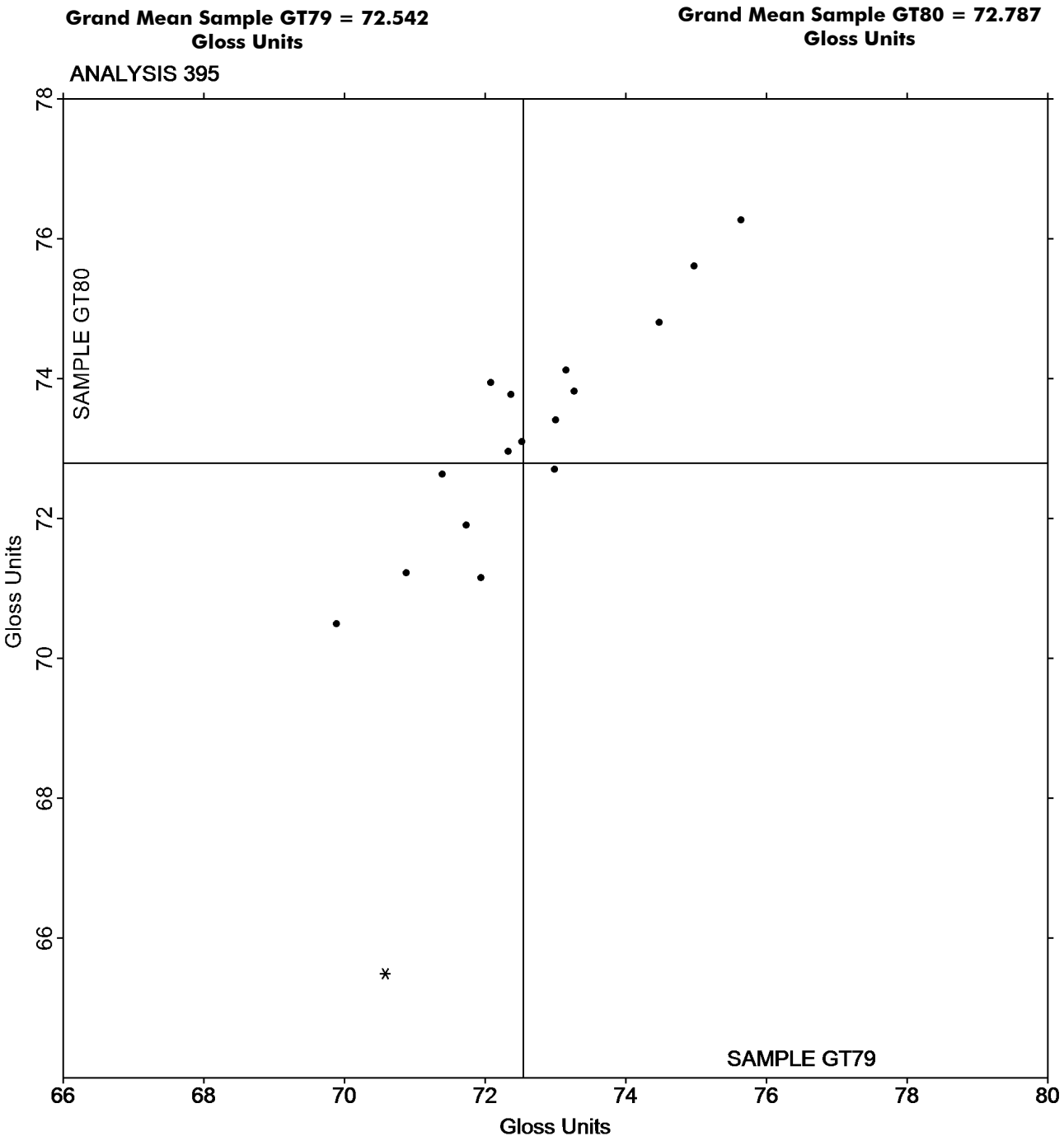
WebCode	Data Flag	Sample GT79 Lab Mean	Sample GT79 Diff from Grand Mean	Sample GT79 CPV	Sample GT80 Lab Mean	Sample GT80 Diff from Grand Mean	Sample GT80 CPV	Instr Code
2RRKKB		72.08	-0.46	-0.30	73.94	1.15	0.47	VM
4R378H		71.39	-1.15	-0.76	72.63	-0.16	-0.06	LF
B32C2H	*	70.58	-1.96	-1.29	65.49	-7.30	-3.01	LF
D7ABBE		74.97	2.43	1.60	75.61	2.82	1.16	TH
DAAM8D		73.27	0.73	0.48	73.82	1.03	0.43	TH
ELW9PE		72.37	-0.17	-0.11	73.77	0.98	0.40	LB
FJNHZA		75.64	3.10	2.04	76.27	3.48	1.43	XX
L72ZA2		73.00	0.46	0.30	73.41	0.62	0.26	LA
Q9RR9Z		74.48	1.94	1.28	74.80	2.01	0.83	LA
TX332Q		72.52	-0.02	-0.01	73.10	0.31	0.13	TH
UTQE2U		72.33	-0.21	-0.14	72.96	0.17	0.07	GM
Y3GTRT		72.99	0.45	0.30	72.70	-0.09	-0.04	GA
YXLYUR		69.89	-2.65	-1.75	70.49	-2.30	-0.95	GM
Z4MBQN		71.73	-0.81	-0.53	71.90	-0.89	-0.37	LA
ZH8TLD		70.88	-1.66	-1.10	71.22	-1.57	-0.65	PP
ZLMNYP		73.15	0.61	0.40	74.12	1.33	0.55	TH
ZNEJNJ		71.94	-0.60	-0.40	71.15	-1.64	-0.67	PP

Summary Statistics	Sample GT79	Sample GT80
Grand Means	72.54 Gloss Units	72.79 Gloss Units
Stnd Dev Btwn Labs	1.52 Gloss Units	2.43 Gloss Units

Statistics based on 17 of 17 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)
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 396

Specular Gloss at 75 Degrees - Low Range

TAPPI Official Test Method T480

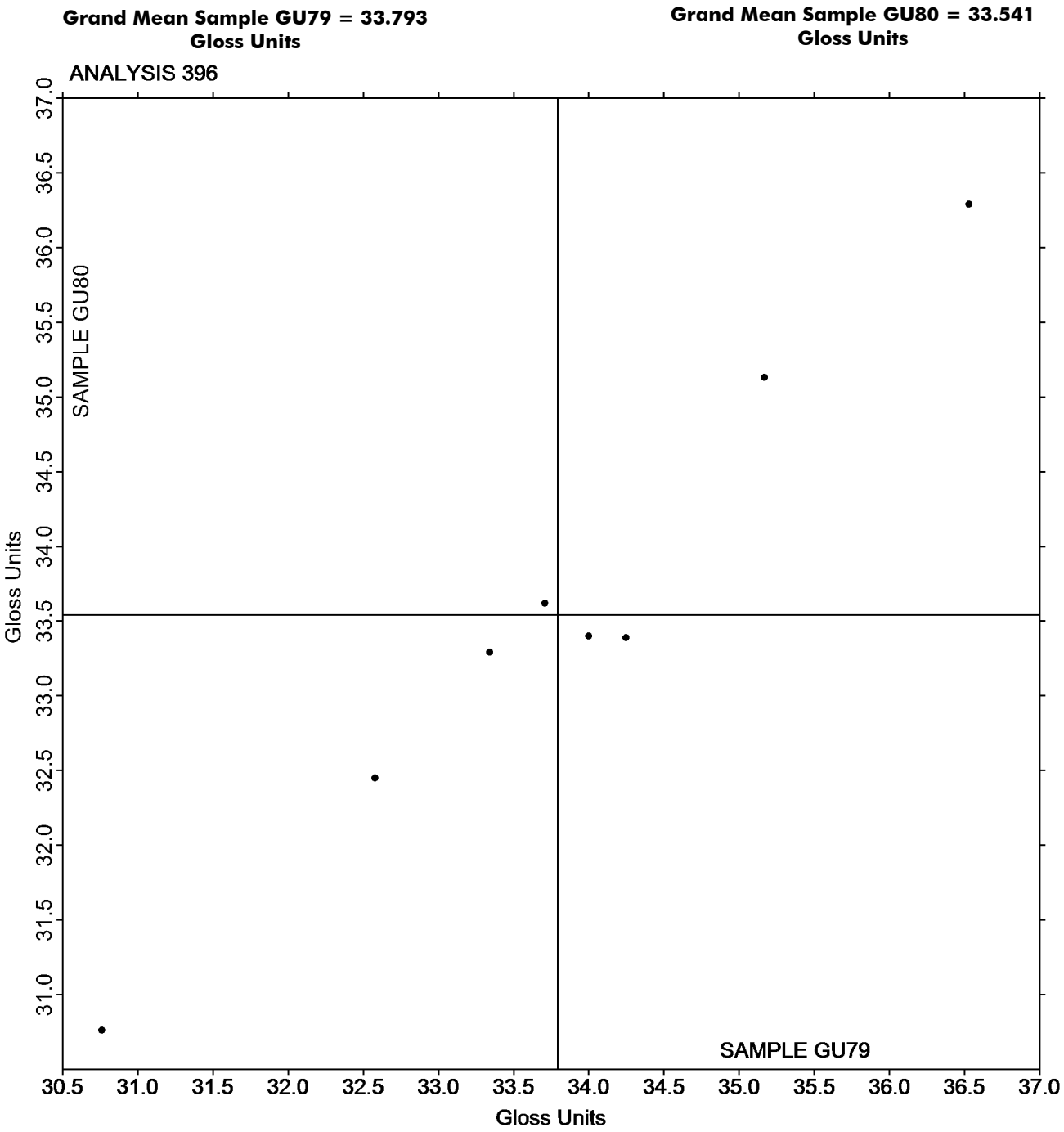
WebCode	Data Flag	Sample GU79 Lab Mean	Sample GU79 Diff from Grand Mean	Sample GU79 CPV	Sample GU80 Lab Mean	Sample GU80 Diff from Grand Mean	Sample GU80 CPV	Instr Code
2B8TLC		34.00	0.21	0.12	33.40	-0.14	-0.09	TH
2JYCZK		35.17	1.38	0.80	35.13	1.59	0.96	PP
4BGHZ9		36.53	2.74	1.60	36.29	2.75	1.66	TH
6FJB6M		34.25	0.46	0.27	33.39	-0.15	-0.09	ZT
ELW9PE		33.34	-0.45	-0.26	33.29	-0.25	-0.15	LA
L72ZA2		30.76	-3.03	-1.77	30.76	-2.78	-1.68	LA
PK9EJM		32.58	-1.21	-0.71	32.45	-1.09	-0.66	PP
ZT7TP6		33.71	-0.08	-0.05	33.62	0.08	0.05	GS

Summary Statistics	Sample GU79	Sample GU80
Grand Means	33.79 Gloss Units	33.54 Gloss Units
Stnd Dev Btwn Labs	1.71 Gloss Units	1.65 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
ZT	Zehntner ZLR 1020		



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 GW79 Lab Mean	Sample GW79 Diff from Grand Mean	Sample GW79 CPV	Sample GW80 Lab Mean	Sample GW80 Diff from Grand Mean	Sample GW80 CPV	Instr Code
24LXHM	X	74.72	1.32	3.62	107.2	3.7	6.48	ZZ
2B8TLC		73.79	0.40	1.08	104.2	0.6	1.05	ZZ
42TNLQ		73.55	0.16	0.44	103.9	0.3	0.56	ZZ
4BGHZ9		73.35	-0.04	-0.11	104.3	0.7	1.32	ZZ
4X6GV2		72.83	-0.56	-1.52	103.6	0.0	0.07	ZZ
6FJB6M		73.12	-0.27	-0.75	103.6	0.0	0.06	ZZ
6R2RYF		73.23	-0.17	-0.45	104.1	0.5	0.94	ZZ
6VT222		73.98	0.59	1.61	103.7	0.2	0.28	ZZ
76KWKG		73.30	-0.09	-0.25	102.5	-1.0	-1.80	ZZ
9CCRW7	X	4.45	-68.94	-188.15	6.2	-97.3	-171.63	ZZ
BHU4LH	*	74.09	0.70	1.90	105.0	1.5	2.60	ZZ
BRHU9B		73.12	-0.27	-0.74	103.6	0.0	0.00	ZZ
C22NZX		72.96	-0.43	-1.17	103.5	-0.1	-0.11	ZZ
ELW9PE		73.24	-0.15	-0.41	103.1	-0.4	-0.74	ZZ
EUBXQ8		73.53	0.14	0.37	103.9	0.3	0.59	ZZ
F6R2BC		73.47	0.08	0.22	102.8	-0.8	-1.42	ZZ
H9JAA3		73.57	0.18	0.50	103.6	0.0	0.06	ZZ
KN78N4		73.79	0.40	1.09	103.4	-0.2	-0.35	ZZ
L3LRL2		73.40	0.01	0.03	103.9	0.3	0.60	ZZ
MCMEDY		74.04	0.65	1.78	104.2	0.6	1.07	ZZ
UTQE2U		72.97	-0.42	-1.15	103.0	-0.5	-0.96	ZZ
V2Z77H		73.00	-0.39	-1.07	103.6	0.0	0.08	ZZ
Y8TL27		73.14	-0.25	-0.69	103.1	-0.5	-0.89	ZZ
YF29VR		73.67	0.28	0.76	103.5	-0.1	-0.17	ZZ
YHT8AQ		73.32	-0.07	-0.19	103.0	-0.5	-0.95	ZZ
Z2M3LE		72.79	-0.60	-1.64	102.7	-0.9	-1.61	ZZ
ZX2K4T		73.52	0.13	0.37	103.4	-0.2	-0.28	ZZ

Summary Statistics	Sample GW79	Sample GW80
Grand Means	73.39 g/sq m	103.56 g/sq m
Stnd Dev Btwn Labs	0.37 g/sq m	0.57 g/sq m

Statistics based on 25 of 27 reporting participants.

Comments on Assigned Data Flags for Test #398

9CCRW7 (X) - Extreme Data.

24LXHM (X) - Extreme Data.

Analysis Notes:

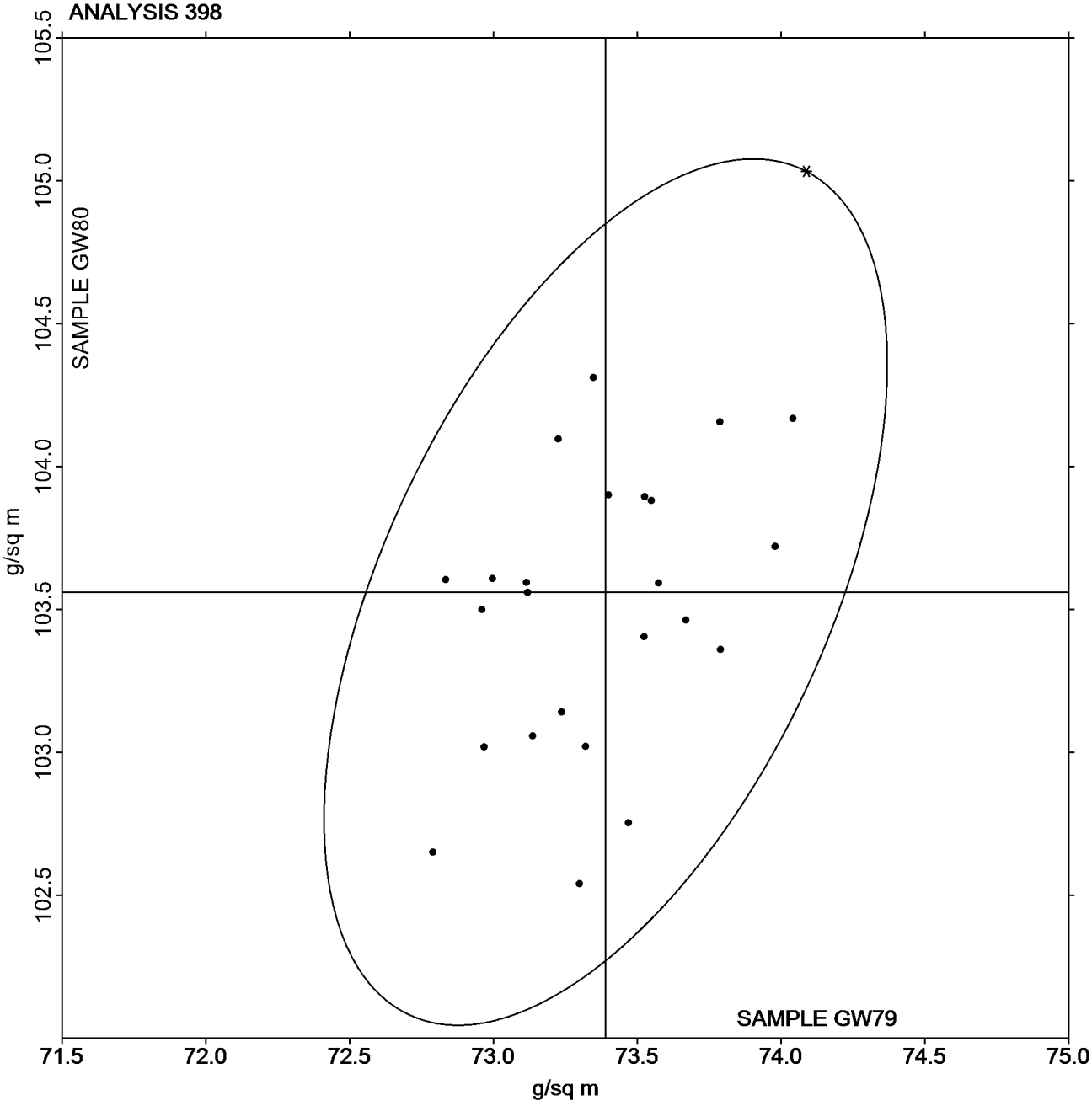
Y8TL27 - Data appears to be transposed between samples. Data Switched by CTS.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample GW79 = 73.390 g/sq m

Grand Mean Sample GW80 = 103.56 g/sq m



Paper & Paperboard Interlaboratory Testing Program

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

WebCode	Data Flag	Sample GX79 Lab Mean	Sample GX79 Diff from Grand Mean	Sample GX79 CPV	Sample GX80 Lab Mean	Sample GX80 Diff from Grand Mean	Sample GX80 CPV	Instr Code
2RRKKB		11.58	-2.59	-0.70	12.67	-1.12	-0.30	HE
3CB97M		19.30	5.13	1.40	18.20	4.41	1.19	HE
4BGHZ9		19.14	4.97	1.35	19.87	6.08	1.64	HE
4R378H		13.32	-0.85	-0.23	12.69	-1.10	-0.29	HE
76KWKG		16.49	2.32	0.63	15.47	1.68	0.45	HE
86YJV4		15.69	1.52	0.42	14.49	0.70	0.19	HE
87QEHD		12.54	-1.63	-0.44	11.54	-2.25	-0.60	XX
8LJ74D		12.40	-1.77	-0.48	11.70	-2.09	-0.56	HE
9EJ74C		11.25	-2.92	-0.79	11.85	-1.94	-0.52	HE
CACPLY		13.40	-0.77	-0.21	11.74	-2.05	-0.55	HE
CE7WVU		9.14	-5.02	-1.37	8.21	-5.58	-1.50	HE
EJUD7B		14.68	0.51	0.14	14.85	1.06	0.29	HE
FJNHZA		13.44	-0.73	-0.20	15.33	1.54	0.42	XX
JCHL63		18.20	4.03	1.10	16.16	2.37	0.64	HE
K3M34Z		10.20	-3.97	-1.08	9.71	-4.08	-1.10	HE
KN78N4	*	25.42	11.25	3.06	24.51	10.72	2.89	XX
NKCKJ6		14.90	0.73	0.20	13.60	-0.19	-0.05	HE
NL794L		10.86	-3.31	-0.90	10.27	-3.52	-0.95	HE
P3MZXH		12.28	-1.89	-0.51	11.41	-2.38	-0.64	HE
PK9EJM		19.54	5.37	1.46	19.78	5.99	1.61	HE
Q7LCTG		13.10	-1.07	-0.29	13.92	0.13	0.04	HE
TBPEDZ		17.03	2.86	0.78	16.95	3.16	0.85	HE
TVZ4QX		15.22	1.05	0.29	15.17	1.38	0.37	HE
U6FDUH		18.86	4.69	1.28	17.29	3.50	0.94	HE
UL6LPU		10.06	-4.11	-1.12	9.13	-4.66	-1.25	HE
UNG2JV		10.19	-3.98	-1.08	9.26	-4.53	-1.22	HE
VW6C9G		12.30	-1.87	-0.51	12.38	-1.41	-0.38	HE
WKKJXC		11.42	-2.75	-0.75	10.93	-2.86	-0.77	HE
XQT89T		12.72	-1.45	-0.39	11.52	-2.27	-0.61	HE
Z2M3LE		8.90	-5.27	-1.43	8.50	-5.29	-1.42	HE
ZE8HPD		15.79	1.62	0.44	17.31	3.52	0.95	XX
ZJ2JQR		13.93	-0.24	-0.06	14.73	0.94	0.25	HE

Summary Statistics	Sample GX79	Sample GX80
Grand Means	14.17 Seconds	13.79 Seconds
Stnd Dev Btwn Labs	3.67 Seconds	3.72 Seconds

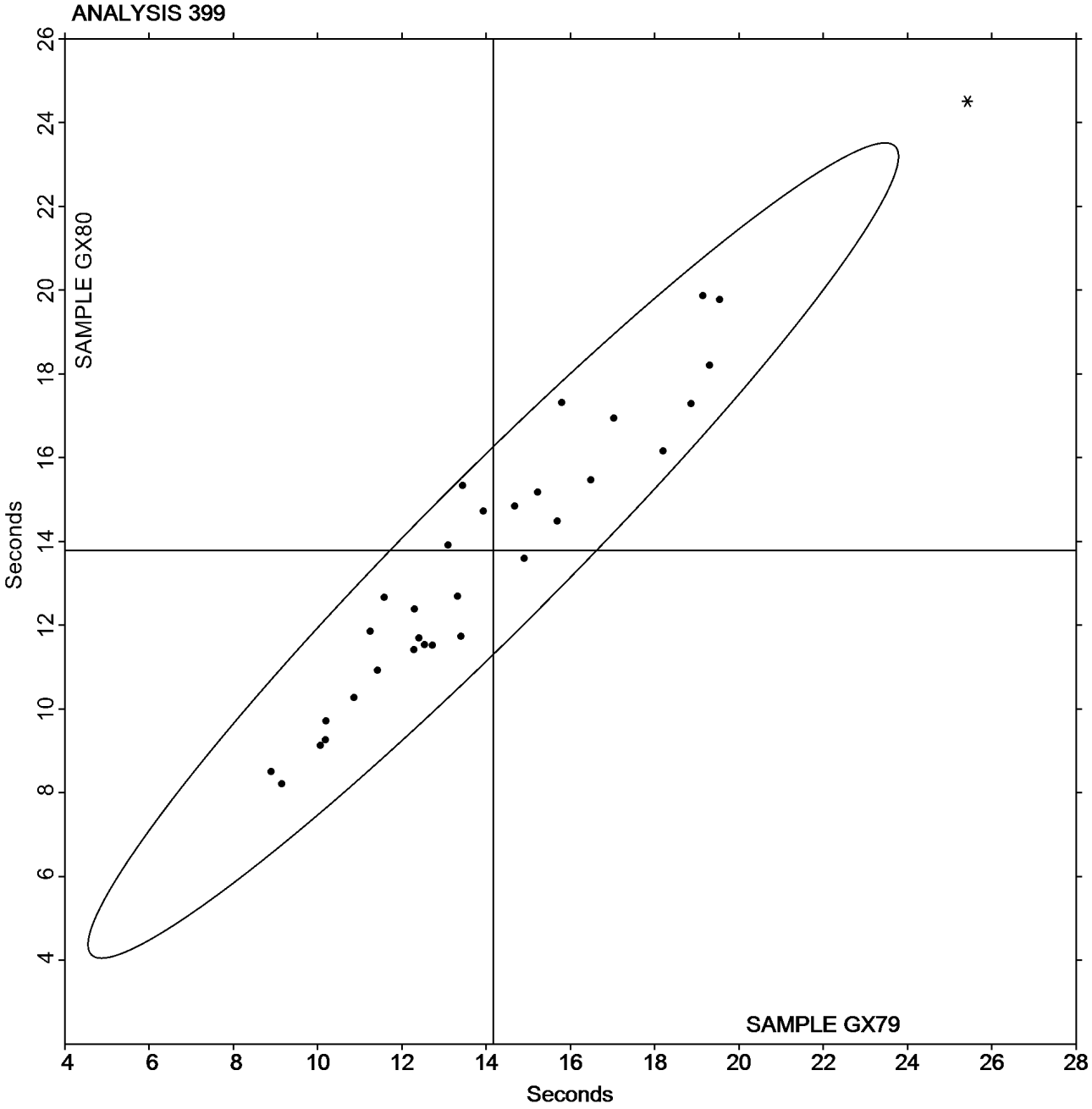
Statistics based on 32 of 32 reporting participants.

Key to Instrument Codes Reported by Participants

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

Grand Mean Sample GX79 = 14.165 Seconds

Grand Mean Sample GX80 = 13.786 Seconds



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