Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #3122 G - June 2021

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
370	Air Resistance - Gurley Oil Type
372	Porosity - Sheffield Type - Sheffield Units for 3/4 inch Diameter Orifice
376	Roughness - Print Surf Method - 0.5 to 4.0 Microns
377	Roughness - Print Surf Method - 2.5 to 6.0 Microns
378	Roughness - Sheffield Type
382	Moisture in Paper
384	Opacity (89% Reflectance Backing) - Fine Papers
386	Opacity (Paper Backing) - Fine Papers and Newsprint
390	Directional Brightness
391	Directional Brightness of Fluorescent Samples
392	Diffuse Brightness
394	Fluorescent Component of Directional Brightness
395	Specular Gloss at 75 Degrees - High Range
396	Specular Gloss at 75 Degrees - Low Range
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.

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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.

Web Code	Data Flag	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code
3ECQ7E		GA91	93.22	-1.05	3.42	-0.01	-0.01	0.49	0.49	XX
		GA92	93.21	-1.07	3.91					
6RGJWG	X	GA91	94.26	-1.18	4.08	-0.30	0.37	0.11	0.48	HZ
		GA92	93.96	-0.82	4.19					
76ZQ8M		GA91	94.31	-0.75	4.48	-0.61	-0.02	-0.07	0.62	VM
		GA92	93.69	-0.77	4.42					
77B72N		GA91	93.25	-0.33	3.59	-0.24	0.08	0.09	0.27	TS
		GA92	93.01	-0.25	3.68					
7GWG7A		GA91	95.27	-0.63	4.13	-0.36	-0.02	0.09	0.37	EH
		GA92	94.91	-0.65	4.22					
8KN4C3		GA91	95.38	-0.83	4.09	-0.35	0.00	0.02	0.35	TC
		GA92	95.03	-0.83	4.11					
9746K8		GA91	95.20	-0.61	4.31	-0.35	-0.03	0.11	0.37	LS
		GA92	94.85	-0.64	4.42					
APUJYV		GA91	94.71	-0.58	4.01	-0.39	-0.03	0.05	0.39	HE
		GA92	94.32	-0.62	4.07					
DAR2J9		GA91	94.15	-0.83	4.05	-0.46	0.00	0.08	0.47	TC
		GA92	93.69	-0.82	4.13					
DXBGYC		GA91	93.19	-0.65	3.73	-0.50	-0.05	0.06	0.50	TS
		GA92	92.70	-0.71	3.79					
F94LZN		GA91	95.33	-0.89	4.15	-0.33	0.00	0.07	0.33	LS
		GA92	95.01	-0.89	4.22					
H88TFN		GA91	93.32	-0.26	3.46	-0.53	0.09	0.11	0.54	TS
		GA92	92.79	-0.17	3.57					
KJQ8D9		GA91	93.03	-0.53	3.49	-0.37	0.06	0.09	0.39	TS
		GA92	92.66	-0.47	3.57					
LK3BHJ		GA91	94.44	-0.75	4.19	-0.37	0.01	0.06	0.37	HE
		GA92	94.07	-0.74	4.25					
N4PG4F		GA91	95.29	-0.69	3.80	-0.04	0.01	0.01	0.04 X	XS
		GA92	95.24	-0.68	3.80					
RJ2N7D		GA91	94.09	-0.56	3.89	-0.40	0.00	0.08	0.41	LA
		GA92	93.69	-0.56	3.97					

Paper & Paperboard Interlaboratory Testing Program

Report #3122 G, June 2021

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
TWTD2D		GA91	94.70	-0.79	4.00	-0.47	-0.02	0.05	0.47	HE
		GA92	94.23	-0.81	4.06					
YJKHAB		GA91	93.93	-0.59	3.88	-0.40	-0.04	0.02	0.40	TC
		GA92	93.53	-0.64	3.90					
YRFLD8		GA91	93.65	-0.68	3.75	-0.41	-0.05	0.09	0.42	TS
		GA92	93.24	-0.73	3.84					
ZTMHX3		GA91	92.06	-0.52	2.88	0.10	0.06	0.42	0.44	TS
		GA92	92.16	-0.46	3.30					

Summary Statistics

Grand Means							
GA91	94.139	-0.660	3.869	-0.341	0.002	0.102	0.403
GA92	93.800	-0.657	3.971				
Stnd Dev Btwn Labs							
GA91	0.931	0.187	0.370	0.180	0.042	0.133	0.119
GA92	0.905	0.213	0.295				

Statistics based on 19 of 20 reporting participants

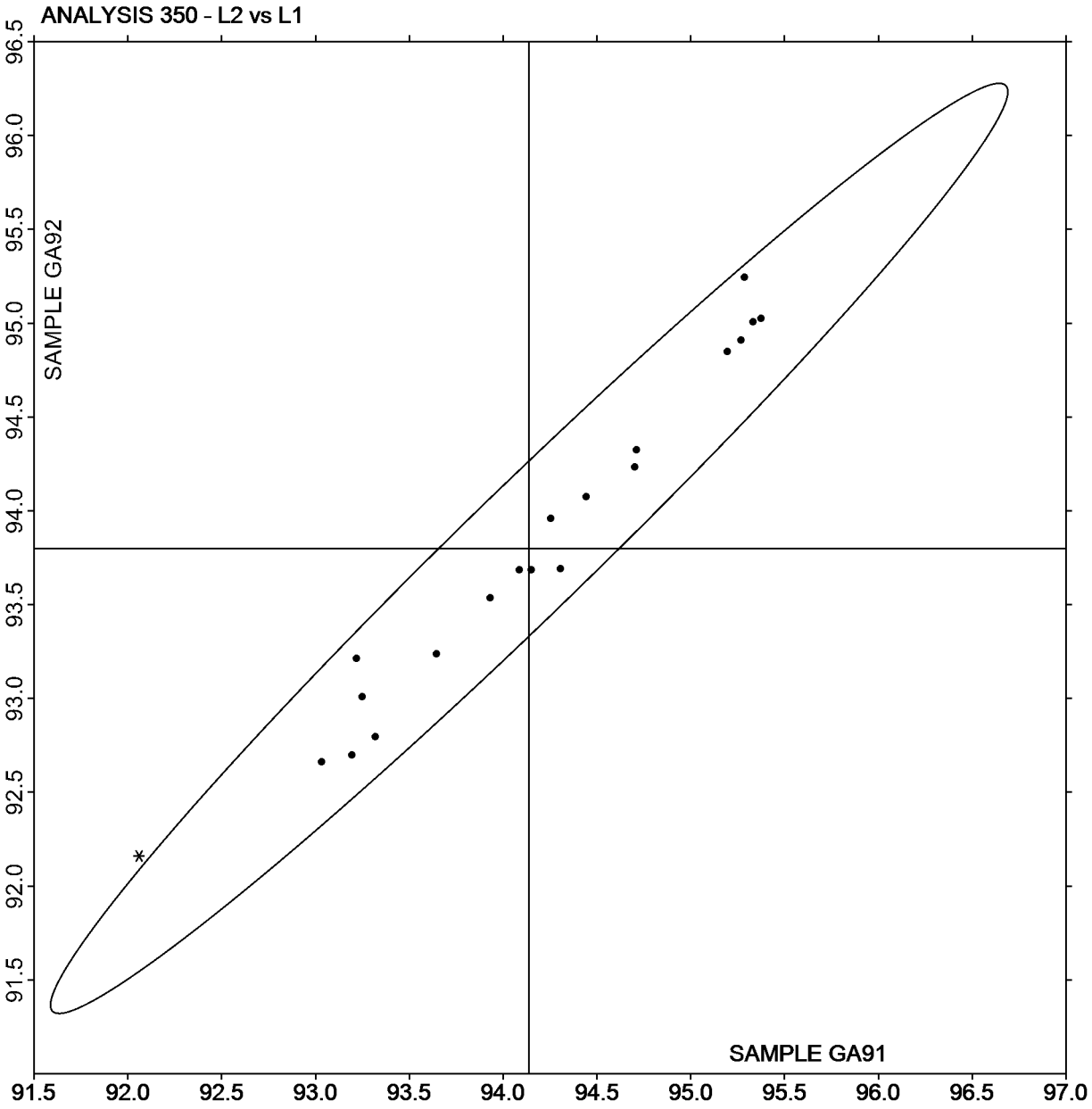
Comments on Assigned Data Flags for Test #350

6RGJWG (X) - Low "a" values for for GA91. High delta "a".

Key to Instrument Codes Reported by Participants

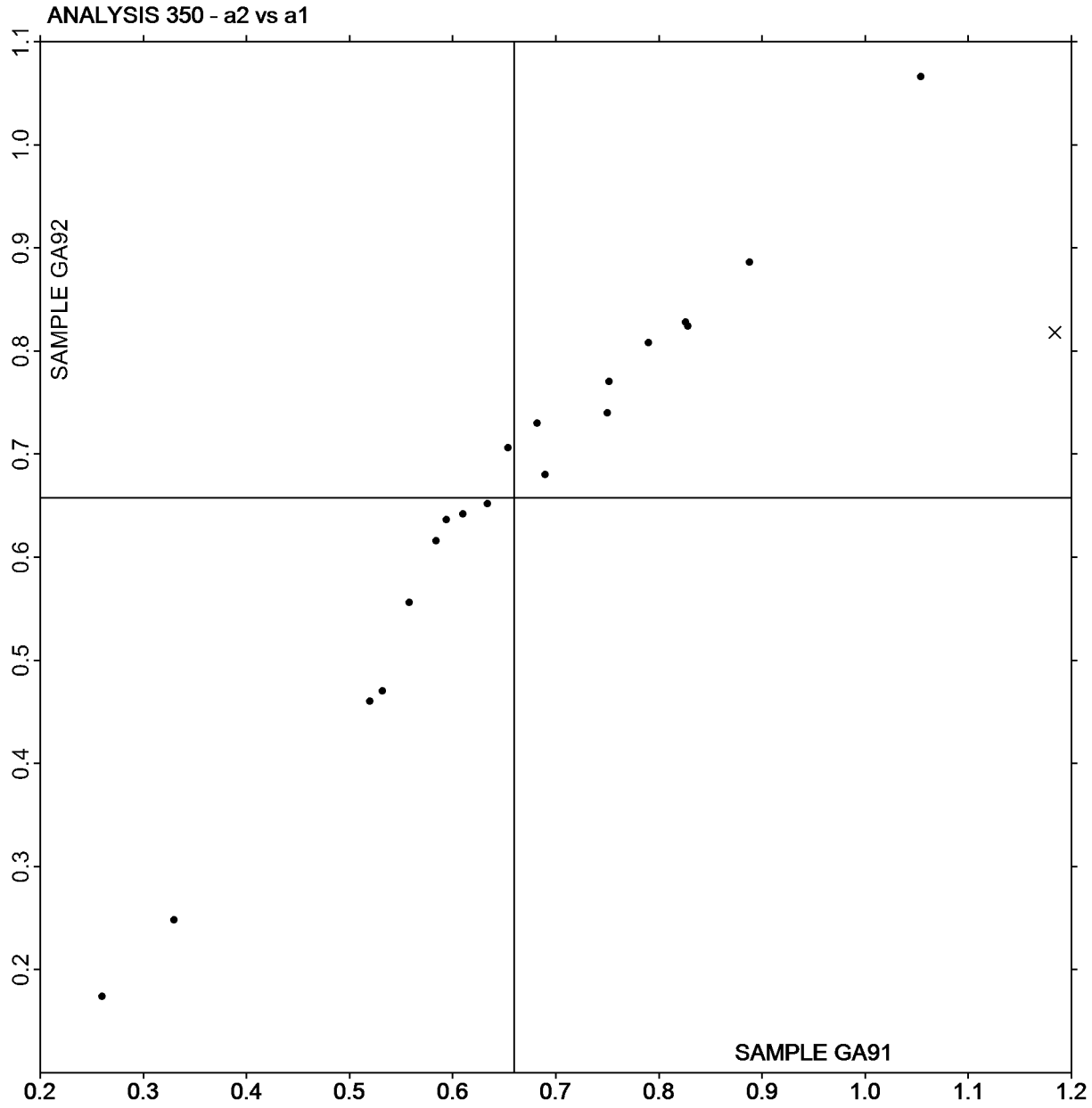
EH	Datacolor Elrepho SF450	HE	Hunter LabScan
HZ	Hunter ColorFlex EZ	LA	L & W Elrepho AL300
LS	L & W Elrepho SE 070	TC	Technidyne Color Touch Series
TS	Technidyne Brightimeter Micro S-5	VM	Valmet PaperLab (was Kajaani/Robotest)
XS	X-Rite 938 Spectrodensitometer	XX	Instrument make/model not specified by lab

Plot of L values GA92 vs L values GA91



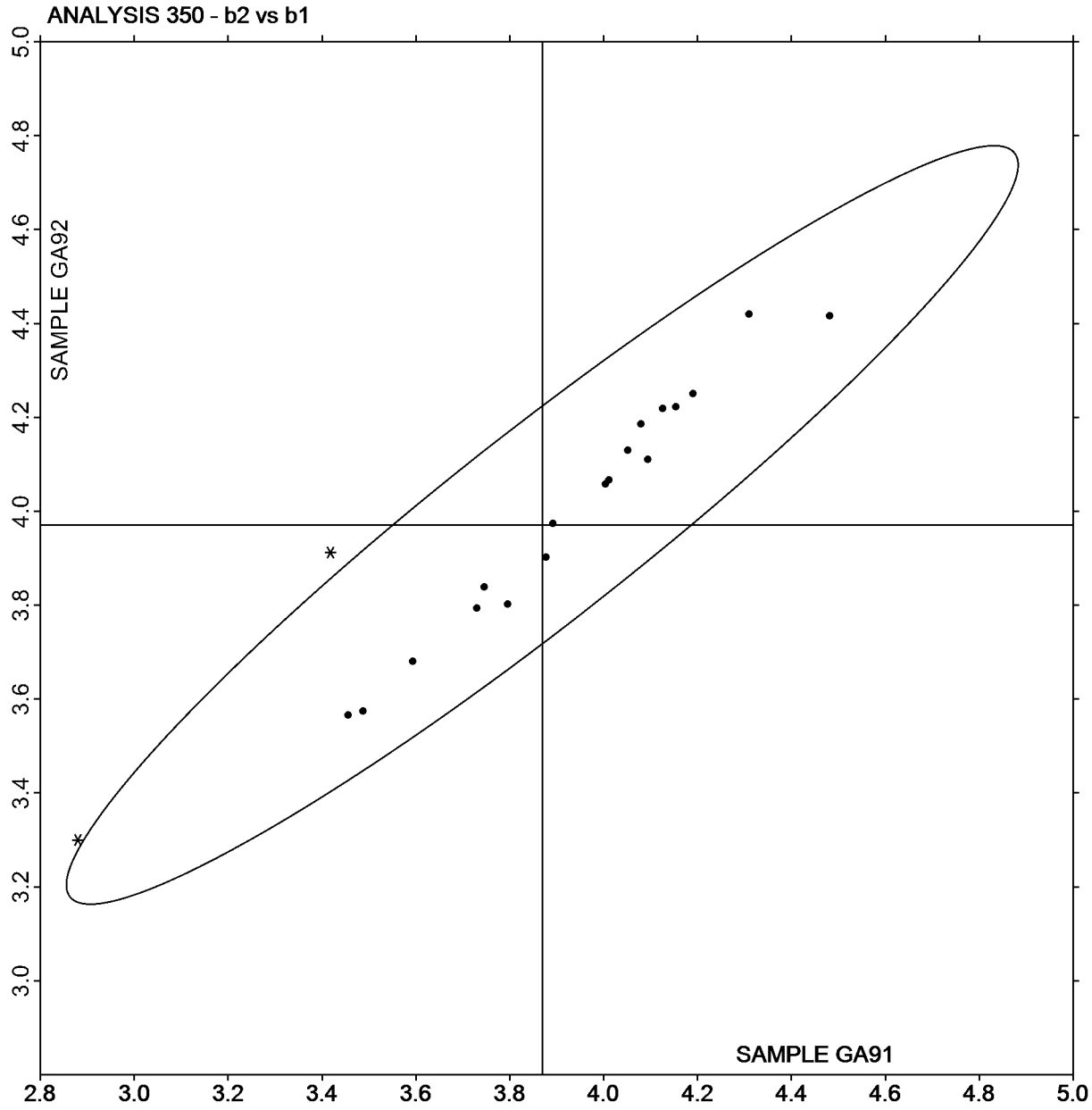
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values GA92 vs a values GA91



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 GA92 vs b values GA91



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
2FW2QG		**GA91**	94.05	-0.50	3.79	-0.37	-0.02	-0.07	0.37	XB
		GA92	93.68	-0.52	3.72					
37LY6F		**GA91**	92.95	-0.87	3.30	0.16	-0.01	0.35	0.39	TC
		GA92	93.10	-0.88	3.65					
6Z8CXF		**GA91**	95.57	-0.58	4.07	-0.28	0.01	0.07	0.29	XV
		GA92	95.29	-0.56	4.15					
76EXNX		**GA91**	95.44	-0.52	4.12	-0.43	-0.04	0.13	0.45	NG
		GA92	95.01	-0.56	4.24					
7GWG7A		**GA91**	95.26	-0.64	4.20	-0.37	-0.02	0.00	0.37	EH
		GA92	94.89	-0.66	4.20					
9746K8		**GA91**	95.17	-0.62	4.34	-0.34	-0.02	0.05	0.34	LS
		GA92	94.84	-0.64	4.39					
9748AB		**GA91**	94.66	-0.78	3.52	0.18	0.00	0.48	0.52	NH
		GA92	94.85	-0.78	4.00					
BL4WE8		**GA91**	95.33	-0.70	4.15	-0.34	-0.23	0.05	0.42	TC
		GA92	94.99	-0.93	4.20					
CDTWKW		**GA91**	95.25	-0.58	4.24	-0.33	-0.02	-0.03	0.33	LS
		GA92	94.92	-0.61	4.21					
KN4WVW		**GA91**	94.73	-0.52	3.70	-0.23	-0.02	0.07	0.24	HE
		GA92	94.50	-0.54	3.77					
LKHPUZ		**GA91**	95.21	-0.79	3.85	-0.27	0.00	0.04	0.27	XC
		GA92	94.94	-0.79	3.90					
LUP8JK		**GA91**	95.19	-0.61	4.11	-0.32	-0.03	0.06	0.33	HT
		GA92	94.87	-0.64	4.17					
N8QMHL		**GA91**	95.35	-0.72	4.14	-0.32	-0.04	0.07	0.33	HT
		GA92	95.03	-0.75	4.21					
UE4LFJ		**GA91**	96.61	-0.26	1.74	-0.27	0.00	0.34	0.43	XP
		GA92	96.34	-0.26	2.08					
W37H8V		**GA91**	95.05	-0.58	4.22	-0.34	-0.02	0.02	0.34	EH
		GA92	94.71	-0.60	4.24					
YJKHAB		**GA91**	94.56	-0.95	3.84	-0.26	0.11	0.18	0.33	HE
		GA92	94.31	-0.84	4.03					

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

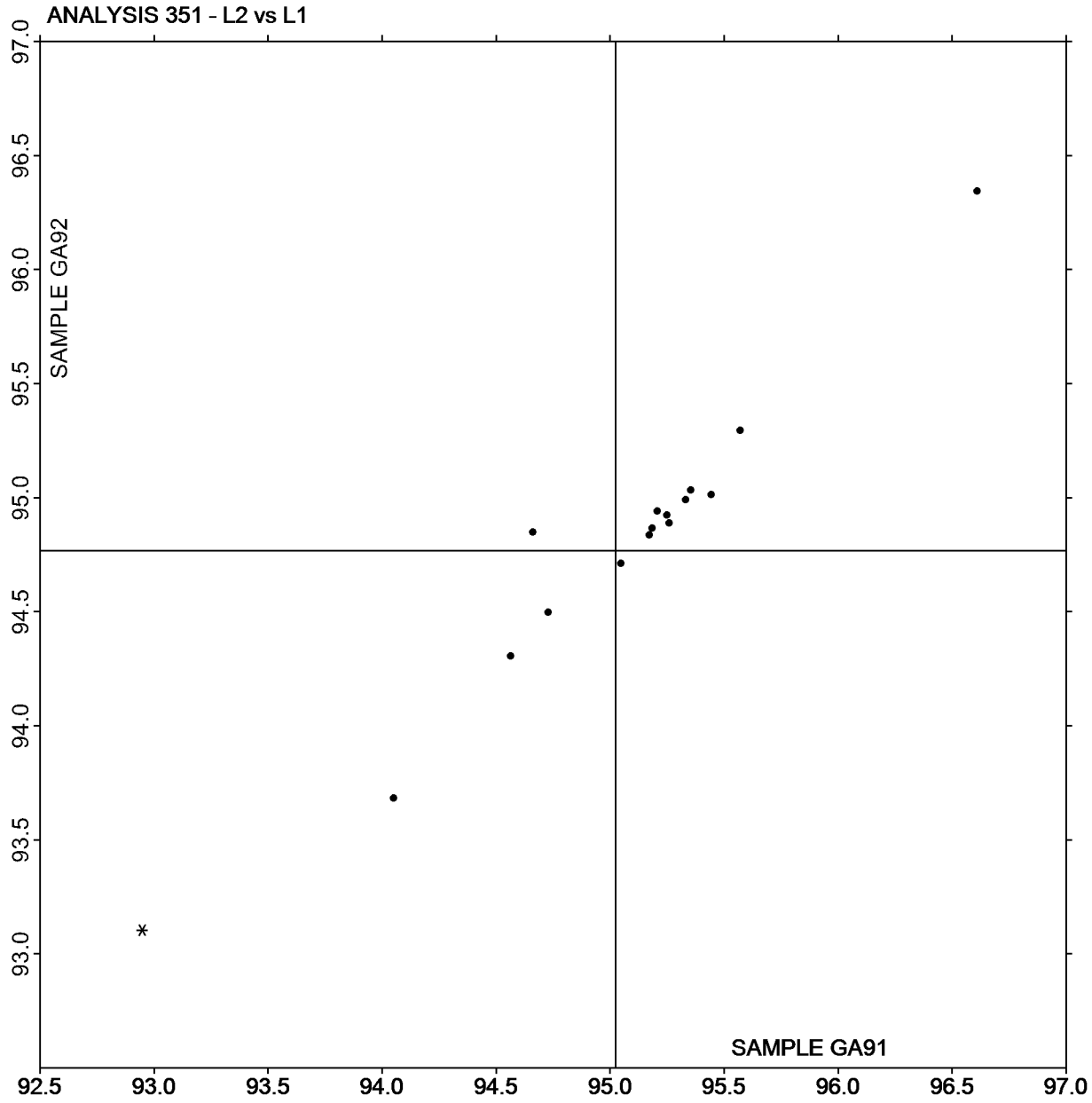
Grand Means							
GA91	95.024	-0.637	3.833	-0.257	-0.023	0.114	0.360
GA92	94.767	-0.660	3.947				
Stnd Dev Btwn Labs							
GA91	0.778	0.163	0.628	0.174	0.066	0.153	0.070
GA92	0.696	0.165	0.541				

Statistics based on 16 of 16 reporting participants

Key to Instrument Codes Reported by Participants

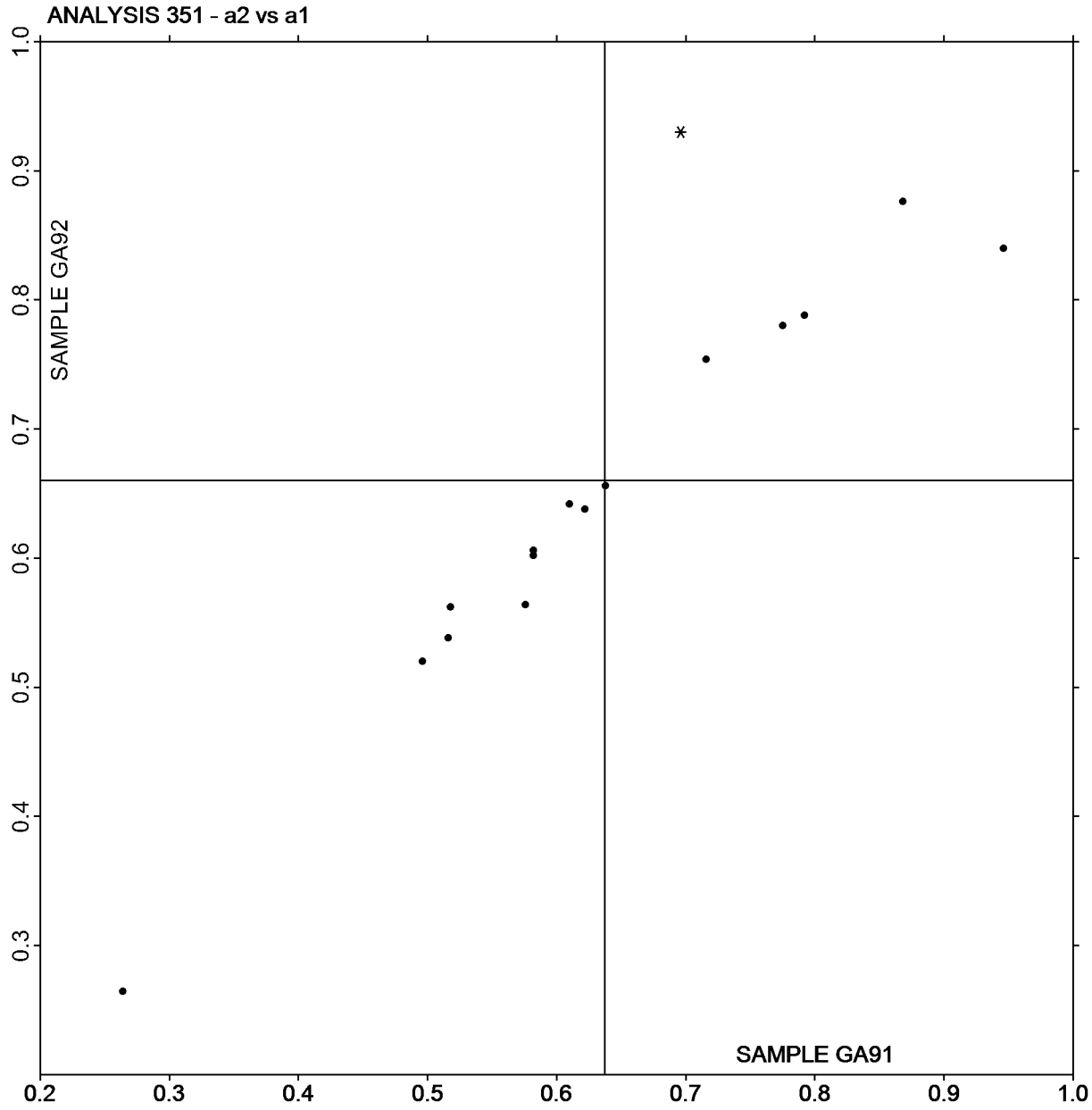
EH	Datacolor Elrepho SF450	HE	Hunter LabScan
HT	Hunter UltraScan Vis	LS	L & W Elrepho SE 070
NG	Minolta CM-3700d Spectrophotometer	NH	Minolta CM-3700A Spectrophotometer
TC	Technidyne Color Touch Series	XB	X-Rite Ci7
XC	X-Rite eXact Series	XP	X-Rite Spectrophotometer DTP
XV	X-Rite SP60 Series		

Plot of L values GA92 vs L values GA91



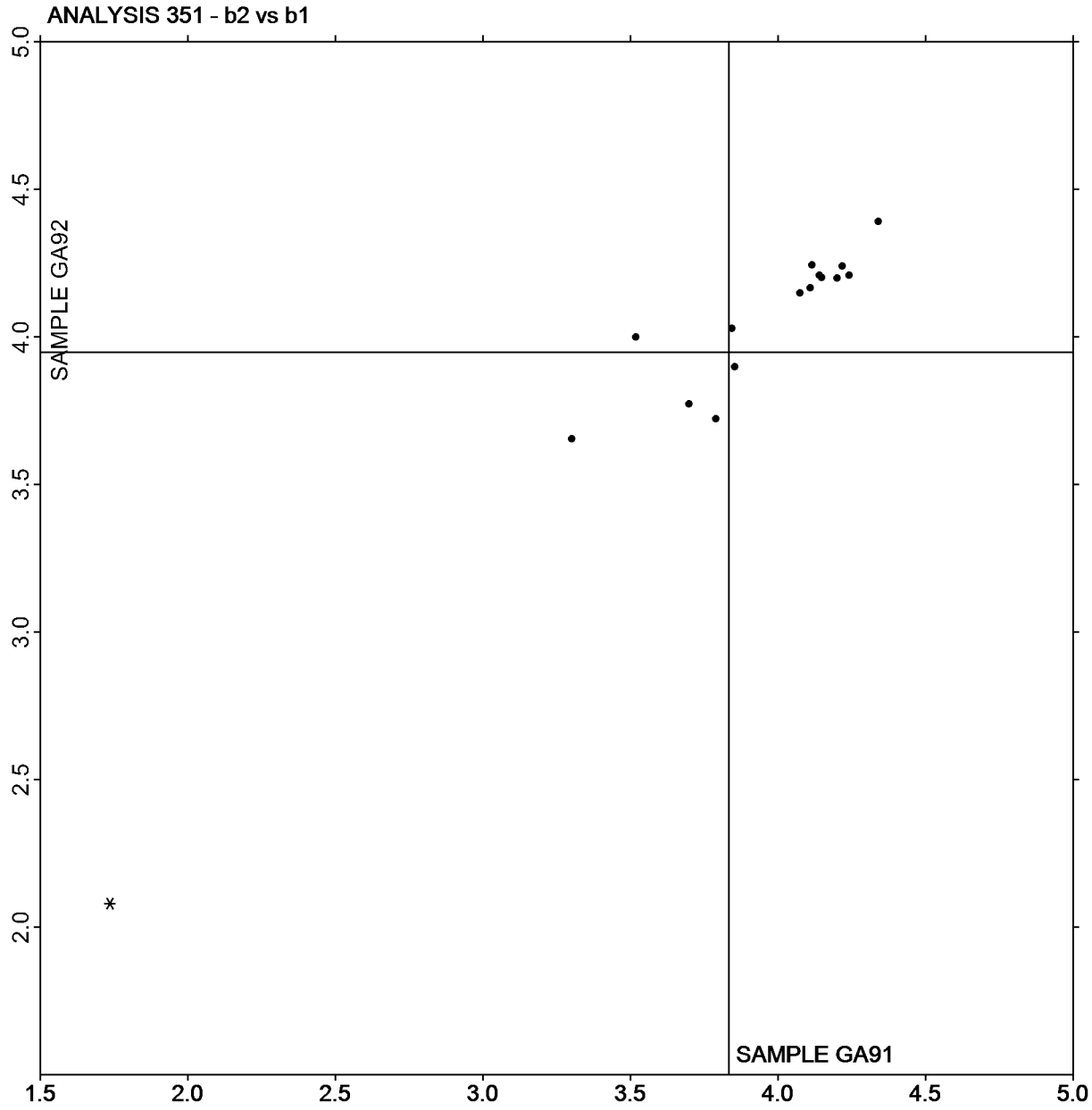
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values GA92 vs a values GA91



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 GA92 vs b values GA91



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 GV91 Lab Mean	Sample GV91 Diff from Grand Mean	Sample GV91 CPV	Sample GV92 Lab Mean	Sample GV92 Diff from Grand Mean	Sample GV92 CPV	Instr Code
23AWHJ		5.068	0.121	1.34	5.063	0.101	0.94	LW
26F42C		5.005	0.058	0.64	4.978	0.017	0.15	MT
2FW2QG		5.030	0.083	0.92	5.065	0.104	0.96	TM
37LY6F	X	0.611	-4.336	-48.10	0.612	-4.349	-40.40	TA
3AM6JL		4.971	0.024	0.27	4.987	0.026	0.24	EM
3ECQ7E		5.020	0.073	0.81	5.020	0.059	0.54	XX
3HC33E		4.895	-0.052	-0.58	4.890	-0.071	-0.66	TA
3J9DZ3		5.036	0.089	0.99	5.084	0.122	1.14	LW
49N9QG	*	4.714	-0.233	-2.58	4.660	-0.301	-2.80	LA
6VD9DN		4.880	-0.067	-0.74	4.839	-0.122	-1.14	TA
77B72N		4.878	-0.069	-0.76	4.955	-0.006	-0.06	EM
7GWG7A		4.993	0.046	0.51	4.958	-0.003	-0.03	EM
8KN4C3		4.938	-0.009	-0.10	5.063	0.102	0.94	LA
9748AB		5.028	0.081	0.90	5.034	0.073	0.67	PP
9QAHGZ		4.752	-0.195	-2.17	4.720	-0.241	-2.24	LW
BL4WE8		4.965	0.018	0.20	4.996	0.035	0.32	PP
BVVAGR		5.039	0.092	1.03	5.043	0.082	0.76	LW
BZQ2VG		4.960	0.013	0.15	4.915	-0.046	-0.43	LA
F94LZN		4.948	0.002	0.02	5.048	0.086	0.80	LW
H88TFN		4.915	-0.032	-0.36	4.910	-0.052	-0.48	TM
K9BHE3		4.969	0.022	0.25	4.968	0.007	0.06	TM
KJQ8D9	*	4.701	-0.246	-2.73	4.659	-0.302	-2.81	TM
KN4WVW		4.998	0.051	0.57	4.981	0.020	0.18	PP
L4BDGN		4.922	-0.025	-0.28	4.927	-0.035	-0.32	FR
LKHPUZ		4.917	-0.030	-0.33	4.976	0.015	0.14	LW
LUP8JK		5.052	0.105	1.17	5.082	0.121	1.12	EM
LZWZEF		4.975	0.028	0.31	5.033	0.071	0.66	LW
M3HWL8		4.938	-0.009	-0.10	4.925	-0.036	-0.34	TA
M62YMK		4.931	-0.016	-0.18	4.916	-0.046	-0.42	TM
N4PG4F		4.820	-0.127	-1.41	4.860	-0.101	-0.94	TM
N6ZG72		4.941	-0.006	-0.07	5.078	0.117	1.08	LW
N8QMHL		4.901	-0.046	-0.51	4.837	-0.124	-1.16	EM
PPH7TX	*	5.114	0.167	1.85	4.983	0.022	0.20	TA
PY6BHP		4.817	-0.130	-1.44	4.848	-0.113	-1.05	PP
Q8FUEU	X	4.500	-0.447	-4.96	4.437	-0.524	-4.87	TM
R7YXNF		5.019	0.072	0.80	5.024	0.063	0.58	LW
RJ2N7D		5.030	0.083	0.92	5.059	0.098	0.91	EM
RRHXZ2		4.896	-0.051	-0.56	5.049	0.088	0.81	LA
RVH9QA		4.983	0.037	0.41	4.998	0.036	0.34	LW
RYJCL4		5.059	0.112	1.24	5.035	0.074	0.68	OK
UB776B		4.881	-0.066	-0.73	4.937	-0.024	-0.23	PP

Paper & Paperboard Interlaboratory Testing Program

Analysis 360

Thickness (Caliper), Printing papers

TAPPI Official Test Method T411

WebCode	Data Flag	Sample GV91 Lab Mean	Sample GV91 Diff from Grand Mean	Sample GV91 CPV	Sample GV92 Lab Mean	Sample GV92 Diff from Grand Mean	Sample GV92 CPV	Instr Code
UE4LFJ		4.900	-0.047	-0.52	4.855	-0.106	-0.99	TM
UGBXFT		5.010	0.063	0.70	4.964	0.003	0.02	PP
UR7DWG		4.943	-0.004	-0.04	5.031	0.070	0.65	TM
W37H8V		5.001	0.054	0.60	4.932	-0.029	-0.27	EM
X9N98V		4.911	-0.036	-0.40	4.948	-0.013	-0.12	PP
XJ7WXM		4.983	0.036	0.40	5.007	0.046	0.42	EM
YHTFMV	*	5.044	0.097	1.07	5.202	0.241	2.23	TM
YRFLD8		4.814	-0.133	-1.47	4.845	-0.116	-1.08	LA

Summary Statistics	Sample GV91	Sample GV92
Grand Means	4.95 mils	4.96 mils
Stnd Dev Btwn Labs	0.09 mils	0.11 mils

Statistics based on 47 of 49 reporting participants.

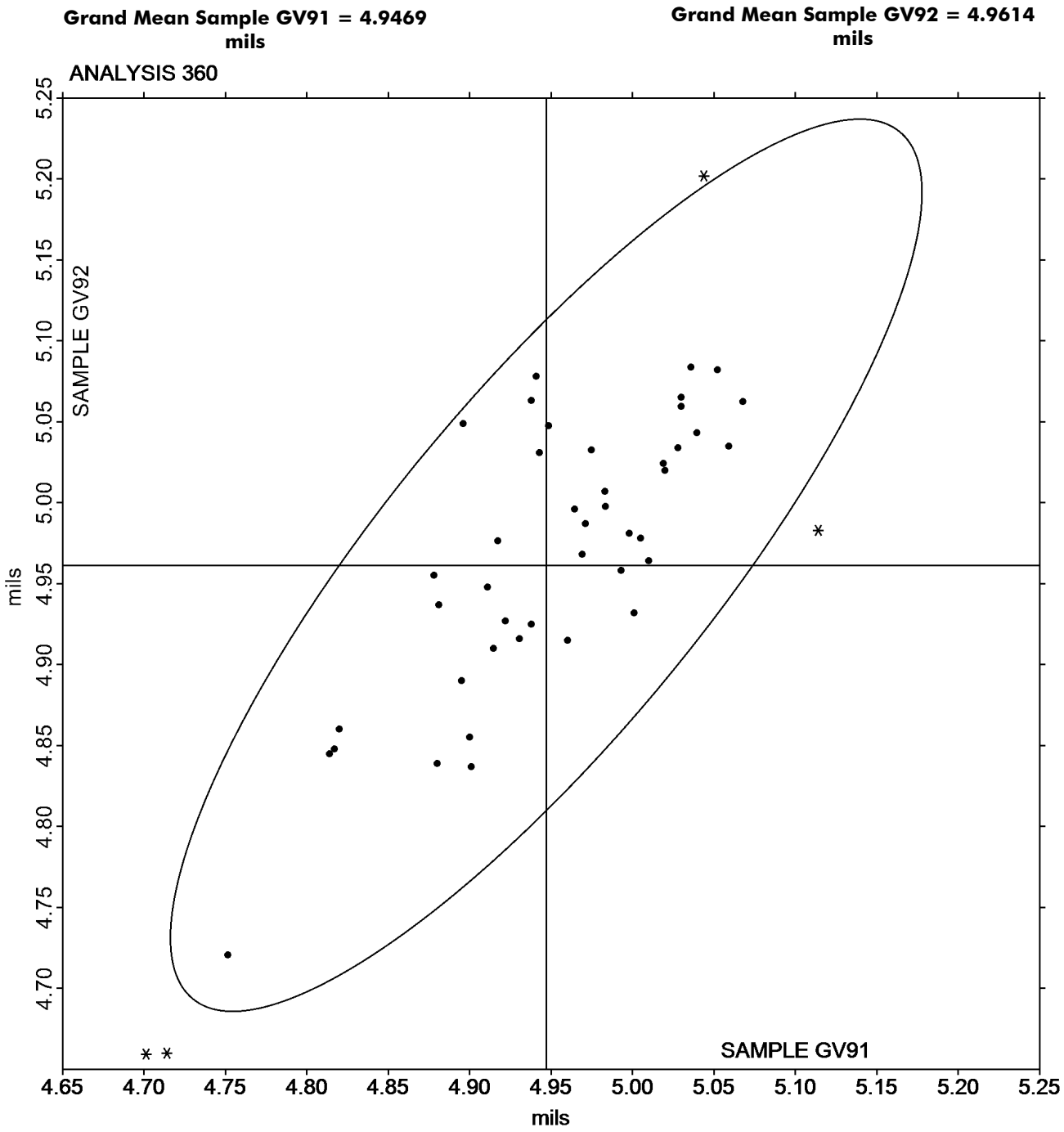
Comments on Assigned Data Flags for Test #360

37LY6F (X) - Extreme Data.

Q8FUEU (X) - Data for both samples are low.

Key to Instrument Codes Reported by Participants

EM	Emveco	FR	Frank Instruments
LA	L & W Autoline	LW	L & W
MT	Mitutoyo	OK	Oakland
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 GY91 Lab Mean	Sample GY91 Diff from Grand Mean	Sample GY91 CPV	Sample GY92 Lab Mean	Sample GY92 Diff from Grand Mean	Sample GY92 CPV	Instr Code
32AZPF		13.93	-0.21	-1.22	13.95	-0.21	-1.13	LW
32PGJ9		14.04	-0.11	-0.61	14.08	-0.08	-0.44	TA
3HC33E		14.01	-0.14	-0.78	14.02	-0.14	-0.75	TA
6LBQ3L		13.92	-0.22	-1.29	13.91	-0.25	-1.35	LW
76ZQ8M		14.12	-0.03	-0.17	14.04	-0.12	-0.64	TM
7B83G3		13.94	-0.21	-1.20	13.97	-0.19	-1.01	LA
7UKLE7	*	13.69	-0.45	-2.62	13.75	-0.41	-2.23	TM
8AUR6V	X	14.01	-0.14	-0.80	13.75	-0.41	-2.20	TM
9746K8		13.92	-0.23	-1.32	13.95	-0.21	-1.15	TM
9748AB	*	14.35	0.21	1.18	14.51	0.35	1.87	EM
APUJYV		14.25	0.11	0.61	14.32	0.16	0.86	EM
AX63VZ		14.14	-0.01	-0.05	14.17	0.01	0.04	LW
CBMCVB		14.17	0.02	0.12	14.21	0.05	0.24	LA
CDTWKW		14.24	0.10	0.55	14.28	0.12	0.64	LW
D9G6CH		14.24	0.09	0.52	14.19	0.03	0.18	LW
GM3TRX		13.76	-0.39	-2.23	13.73	-0.43	-2.31	LA
H849PZ		14.35	0.20	1.18	14.28	0.12	0.66	PP
KFNFZ2		14.19	0.05	0.27	14.24	0.08	0.42	LW
L8WBQZ		14.24	0.10	0.57	14.30	0.14	0.74	LA
LK3BHJ		14.05	-0.10	-0.57	14.13	-0.03	-0.15	EM
M3HWL8		14.29	0.15	0.84	14.29	0.13	0.70	TA
M7DVRP	X	13.94	-0.21	-1.19	14.22	0.06	0.31	TM
N6YJW7		14.11	-0.04	-0.21	13.99	-0.17	-0.92	TM
N6ZG72		14.20	0.06	0.34	14.17	0.01	0.04	LW
NFYAD8		14.12	-0.02	-0.12	14.18	0.02	0.10	LW
PLJUXX		14.26	0.11	0.65	14.27	0.11	0.58	LW
RJ2N7D		14.38	0.23	1.35	14.39	0.23	1.23	EM
RRHXZ2		14.29	0.14	0.83	14.41	0.25	1.34	LA
RVH9QA		14.26	0.11	0.63	14.22	0.06	0.30	LW
TWTD2D		14.20	0.05	0.29	14.12	-0.04	-0.20	EM
V3P66R		14.41	0.27	1.55	14.45	0.29	1.57	LW
V83ULF		14.20	0.05	0.30	14.23	0.07	0.39	TM
VLGX7P		14.14	-0.01	-0.06	14.20	0.03	0.19	MM
W37H8V		14.22	0.07	0.42	14.32	0.16	0.86	EM
XDJZFR		14.20	0.06	0.34	14.16	0.00	0.00	LA
YJKHAB		14.36	0.21	1.22	14.31	0.14	0.77	EM
ZTMHX3		13.92	-0.23	-1.32	13.90	-0.27	-1.43	OK

Summary Statistics	Sample GY91	Sample GY92
Grand Means	14.15 mils	14.16 mils
Stnd Dev Btwn Labs	0.17 mils	0.19 mils

Statistics based on 35 of 37 reporting participants.

Comments on Assigned Data Flags for Test #361

8AUR6V (X) - Inconsistent in testing between samples.

M7DVRP (X) - Inconsistent in testing between samples.

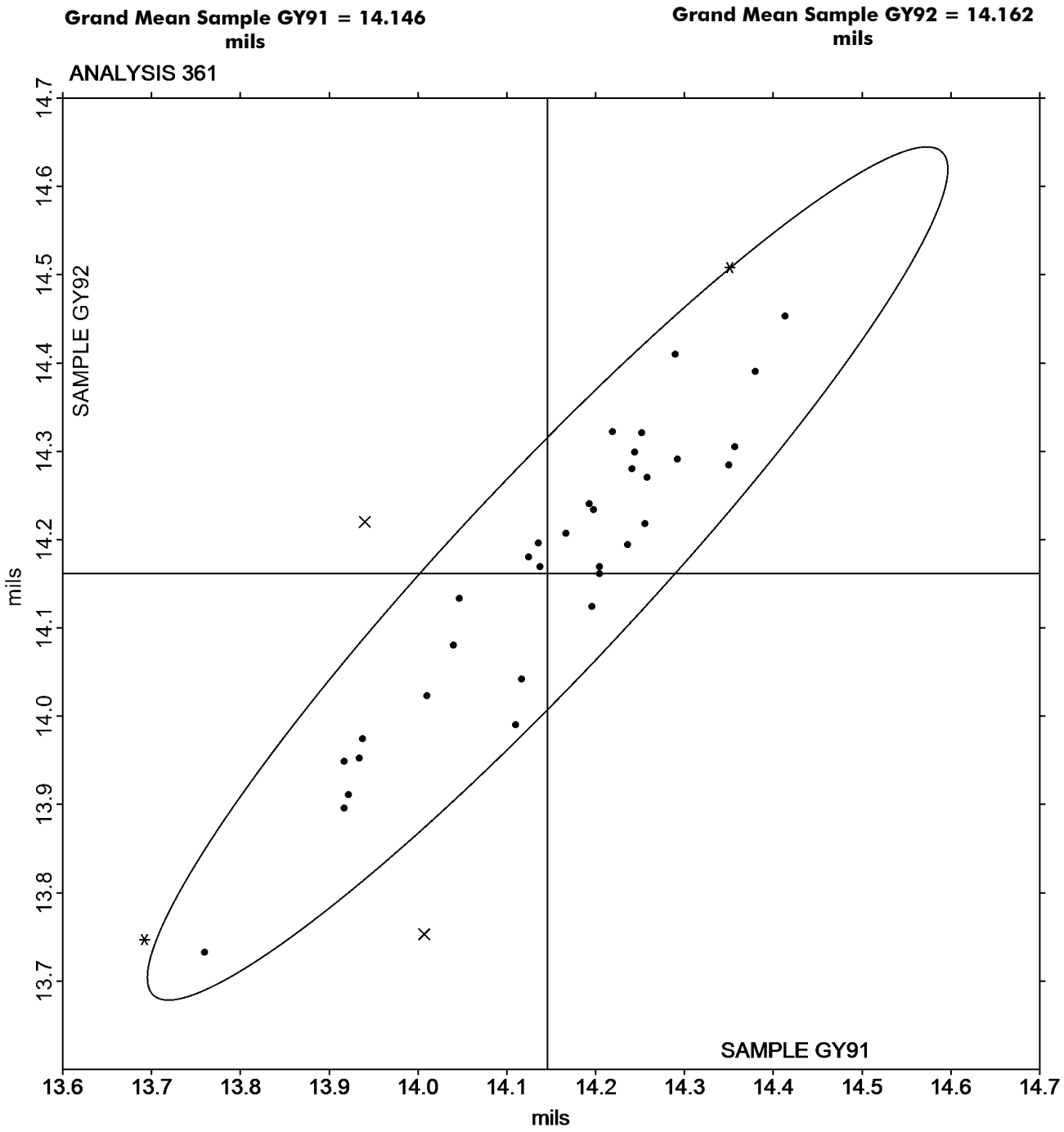
Analysis Notes:

9746K8 - Data appear to be reported as micrometers, not mm as indicated on data entry form. CTS will not correct the Units going forward.

VLGX7P - Data appear to be reported as mils, not micrometers as indicated on data entry form. CTS will not correct the Units going forward.

Key to Instrument Codes Reported by Participants

EM	Emveco	LA	L & W Autoline
LW	L & W	MM	Mitutoyo Digital Micrometer
OK	Oakland	PP	Technidyne Profile/Plus
TA	Thwing-Albert	TM	TMI



Paper & Paperboard Interlaboratory Testing Program

Analysis 364

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

TAPPI Official Test Method T549

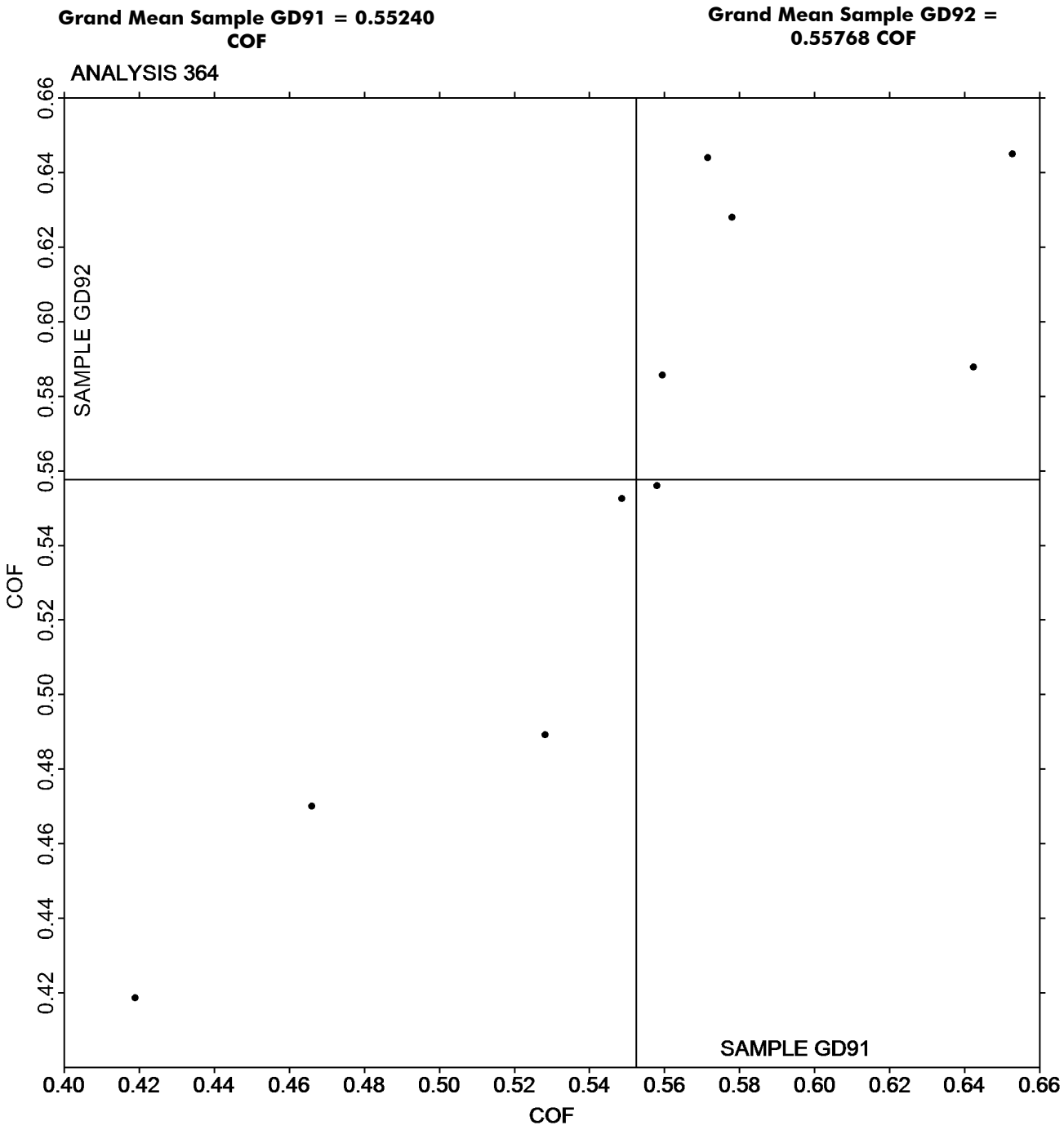
WebCode	Data Flag	Sample GD91 Lab Mean	Sample GD91 Diff from Grand Mean	Sample GD91 CPV	Sample GD92 Lab Mean	Sample GD92 Diff from Grand Mean	Sample GD92 CPV	Instr Code
3AM6JL		0.5580	0.0056	0.08	0.5560	-0.0017	-0.02	TA
77B72N		0.5716	0.0192	0.27	0.6440	0.0863	1.12	TA
7QL9T2		0.5282	-0.0242	-0.34	0.4892	-0.0685	-0.89	TA
9748AB		0.5780	0.0256	0.36	0.6280	0.0703	0.91	TP
9Y797G		0.6424	0.0900	1.27	0.5878	0.0301	0.39	IT
DXBGYC		0.6528	0.1004	1.42	0.6450	0.0873	1.13	TA
GM3TRX		0.5486	-0.0038	-0.05	0.5526	-0.0051	-0.07	TA
KN4WVW		0.4660	-0.0864	-1.22	0.4700	-0.0877	-1.14	TA
N4PG4F		0.4190	-0.1334	-1.88	0.4186	-0.1391	-1.80	XX
V3P66R		0.5594	0.0070	0.10	0.5856	0.0279	0.36	TA

Summary Statistics	Sample GD91	Sample GD92
Grand Means	0.55 COF	0.56 COF
Stnd Dev Btwn Labs	0.07 COF	0.08 COF

Statistics based on 10 of 10 reporting participants.

Key to Instrument Codes Reported by Participants

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



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

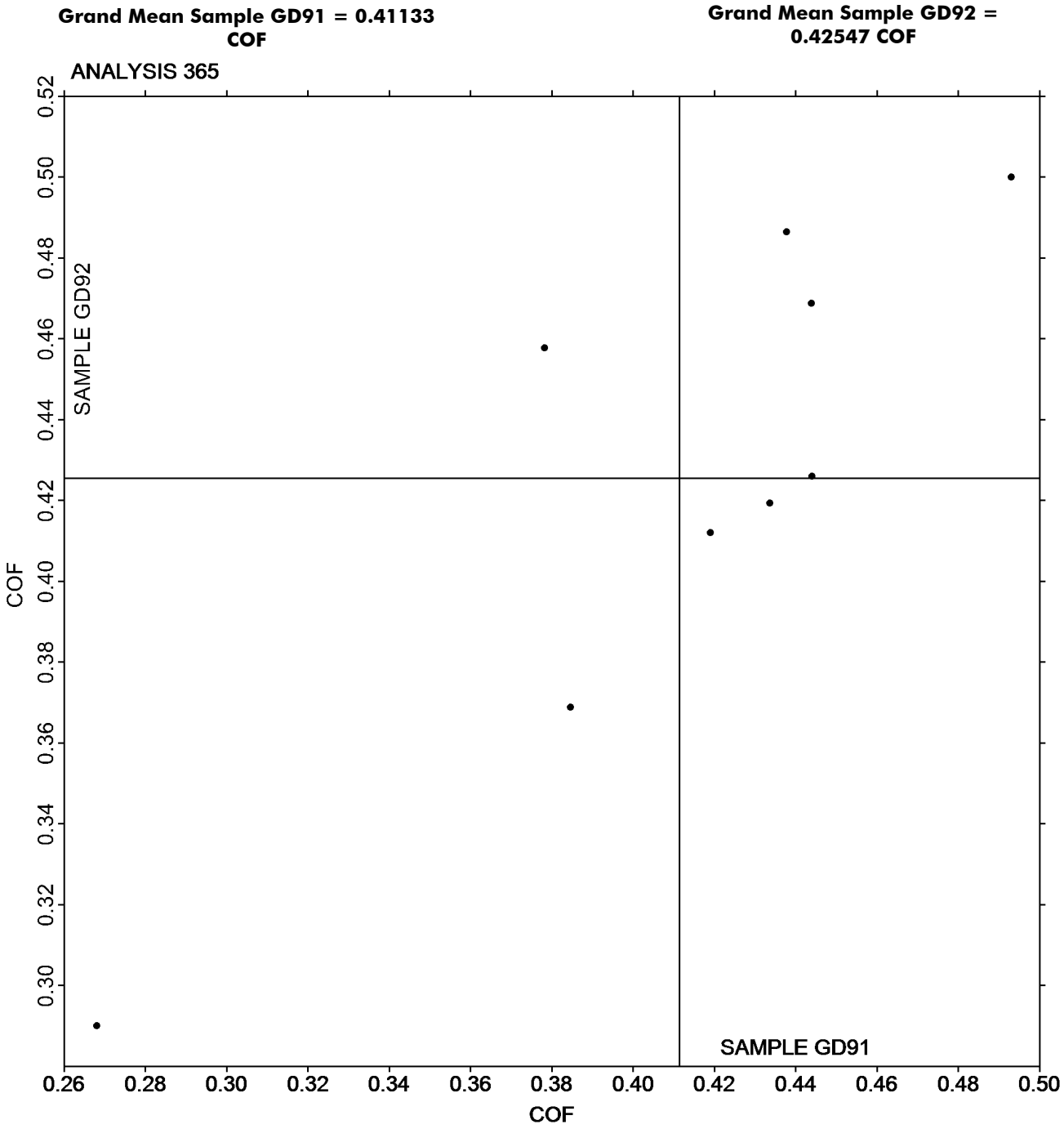
WebCode	Data Flag	Sample GD91 Lab Mean	Sample GD91 Diff from Grand Mean	Sample GD91 CPV	Sample GD92 Lab Mean	Sample GD92 Diff from Grand Mean	Sample GD92 CPV	Instr Code
3AM6JL		0.4440	0.0327	0.51	0.4260	0.0005	0.01	XX
77B72N		0.3782	-0.0331	-0.52	0.4578	0.0323	0.50	TA
7QL9T2		0.3846	-0.0267	-0.42	0.3688	-0.0567	-0.87	TA
9Y797G		0.4336	0.0223	0.35	0.4194	-0.0061	-0.09	IR
DXBGYC		0.4930	0.0817	1.28	0.5000	0.0745	1.14	TA
GM3TRX		0.4438	0.0325	0.51	0.4688	0.0433	0.66	TA
KN4WVW		0.2680	-0.1433	-2.25	0.2900	-0.1355	-2.08	TA
N4PG4F		0.4190	0.0077	0.12	0.4120	-0.0135	-0.21	XX
V3P66R		0.4378	0.0265	0.42	0.4864	0.0609	0.94	TN

Summary Statistics	Sample GD91	Sample GD92
Grand Means	0.41 COF	0.43 COF
Stnd Dev Btwn Labs	0.06 COF	0.07 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 GE91 Lab Mean	Sample GE91 Diff from Grand Mean	Sample GE91 CPV	Sample GE92 Lab Mean	Sample GE92 Diff from Grand Mean	Sample GE92 CPV	Instr Code
2FW2QG		19.86	-1.04	-0.88	20.31	-0.57	-0.49	PP
3AM6JL		22.15	1.24	1.05	22.45	1.57	1.35	PP
3ECQ7E		18.97	-1.93	-1.63	18.94	-1.94	-1.67	LP
3LGL9M		22.28	1.38	1.16	21.38	0.50	0.43	TL
667JNJ		22.83	1.93	1.63	22.33	1.45	1.24	TM
6KBU9H		21.69	0.79	0.67	20.77	-0.11	-0.10	LP
6LBQ3L	*	17.69	-3.21	-2.72	17.82	-3.06	-2.63	WG
6VD9DN		20.84	-0.06	-0.05	21.85	0.97	0.83	GA
76ZQ8M		18.52	-2.38	-2.01	18.86	-2.02	-1.73	VM
7GWG7A		20.02	-0.88	-0.74	20.27	-0.62	-0.53	PP
7KAKT6	X	21.81	0.91	0.77	24.34	3.46	2.97	XX
7QL9T2		22.54	1.64	1.38	21.95	1.07	0.92	WG
8A6UN9		21.34	0.44	0.37	22.21	1.33	1.14	PP
9748AB		20.54	-0.36	-0.31	20.76	-0.12	-0.10	PP
AX8MRF		21.21	0.31	0.26	21.44	0.56	0.48	LP
BL4WE8		22.14	1.24	1.04	20.97	0.09	0.08	PP
BVVAGR		21.08	0.18	0.15	21.05	0.17	0.15	LP
BZQ2VG	*	23.66	2.76	2.33	24.50	3.61	3.10	LA
CBMCVB		18.80	-2.10	-1.78	19.23	-1.65	-1.42	LA
D9G6CH	X	16.37	-4.53	-3.83	15.63	-5.25	-4.51	HM
F94LZN		20.34	-0.56	-0.48	21.59	0.71	0.61	LP
FK2KTE	X	16.25	-4.65	-3.93	16.84	-4.04	-3.47	HM
GM3TRX		21.38	0.48	0.40	20.90	0.02	0.02	LA
H88TFN		20.75	-0.15	-0.13	20.58	-0.30	-0.26	LW
KFNFZ2		20.16	-0.74	-0.63	20.25	-0.63	-0.54	LP
KJQ8D9		20.92	0.02	0.01	21.00	0.12	0.10	LP
KN4WVW		21.65	0.75	0.63	20.86	-0.02	-0.02	PP
LKHPUZ		19.90	-1.00	-0.85	19.70	-1.18	-1.01	LW
LPWZ84		21.02	0.12	0.10	21.06	0.18	0.15	GL
LUP8JK		20.39	-0.51	-0.43	21.38	0.49	0.42	PP
M3HWL8		21.51	0.61	0.51	21.71	0.83	0.71	GA
N4PG4F		19.60	-1.30	-1.10	19.50	-1.38	-1.19	GS
N6YJW7		20.40	-0.50	-0.43	21.26	0.38	0.33	TL
N6ZG72		20.65	-0.25	-0.21	21.18	0.30	0.26	PP
N8QMHL		22.30	1.40	1.18	21.96	1.08	0.93	HG
NLKAMR		20.54	-0.36	-0.31	19.87	-1.01	-0.87	PP
PLJUXX		20.88	-0.02	-0.02	20.27	-0.61	-0.52	LW
PY6BHP	X	0.63	-20.27	-17.13	0.63	-20.25	-17.39	HG
REACD3		21.86	0.96	0.81	21.77	0.89	0.76	TL
UB776B		21.71	0.81	0.68	20.91	0.03	0.03	PP
UGBXFT		21.41	0.50	0.43	22.39	1.51	1.29	PP

Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

TAPPI Official Test Method T460

WebCode	Data Flag	Sample GE91 Lab Mean	Sample GE91 Diff from Grand Mean	Sample GE91 CPV	Sample GE92 Lab Mean	Sample GE92 Diff from Grand Mean	Sample GE92 CPV	Instr Code
UR7DWG		22.10	1.20	1.02	20.60	-0.28	-0.24	HG
XDJZFR		21.56	0.66	0.55	20.52	-0.36	-0.31	LA
XJ7WXM		20.79	-0.11	-0.09	20.39	-0.49	-0.42	PP
YHTFMV		20.39	-0.51	-0.43	19.47	-1.41	-1.21	PR
YJKHAB		21.62	0.72	0.60	21.81	0.93	0.80	PP
YRFLD8		20.05	-0.85	-0.72	20.94	0.06	0.05	LA
ZYA4AV		19.68	-1.22	-1.03	19.80	-1.08	-0.93	LP

Summary Statistics	Sample GE91	Sample GE92
Grand Means	20.90 sec/100 cc	20.88 sec/100 cc
Stnd Dev Btwn Labs	1.18 sec/100 cc	1.16 sec/100 cc

Statistics based on 44 of 48 reporting participants.

Comments on Assigned Data Flags for Test #370

D9G6CH (X) - Data for both samples are low. Possible Systematic Error.

FK2KTE (X) - Data for both samples are low. Possible Systematic Error.

7KAKT6 (X) - Data for sample GE92 are high.

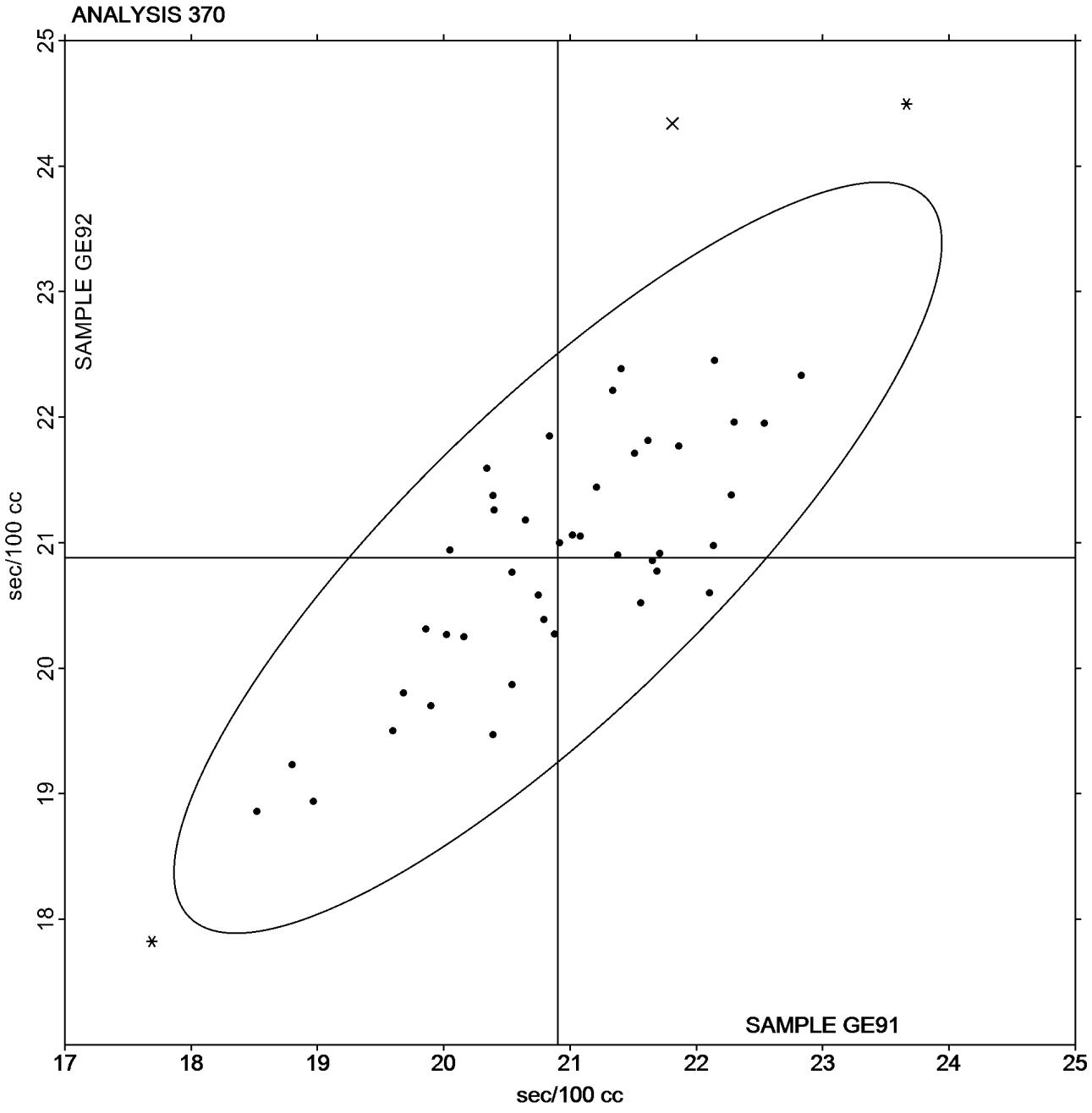
PY6BHP (X) - Extreme Data.

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
HM	Technidyne - Hagerty Model #538	LA	L & W Autoline
LP	L & W Densometer, Air Permeance	LW	L & W Type Gurley Densometer, Oil Flotation
PP	Technidyne Profile/Plus	PR	Parker Print-Surf (PPS) Model M590
TL	Gurley Densometer #4110, Oil Flotation	TM	TMI Densometer 58-03
VM	Valmet PaperLab (was Kajaani/Robotest)	WG	W & LE Gurley Tester
XX	Instrument make/model not specified by lab		

Grand Mean Sample GE91 = 20.903 sec/100 cc

Grand Mean Sample GE92 = 20.881 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

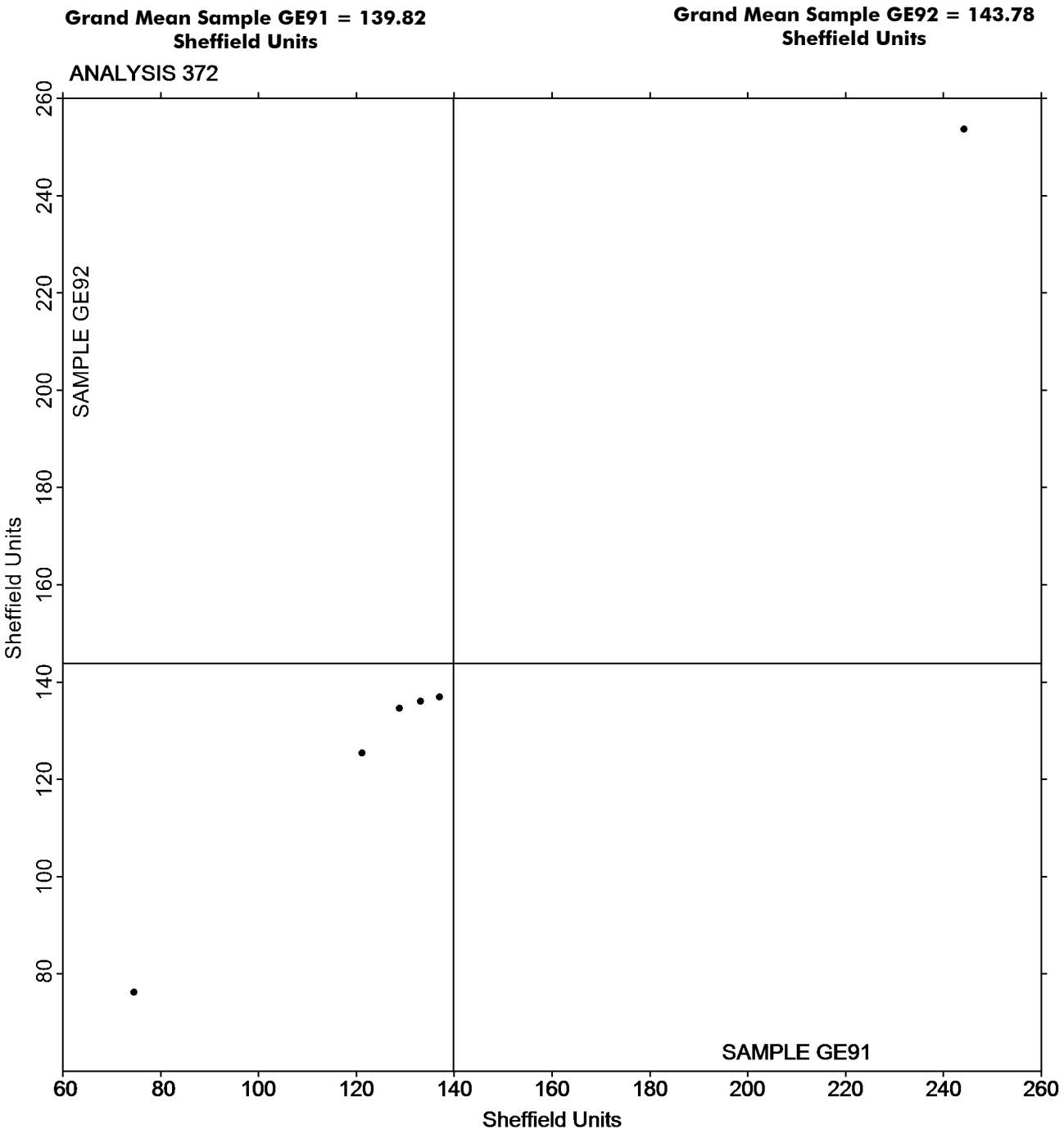
WebCode	Data Flag	Sample GE91 Lab Mean	Sample GE91 Diff from Grand Mean	Sample GE91 CPV	Sample GE92 Lab Mean	Sample GE92 Diff from Grand Mean	Sample GE92 CPV	Instr Code
76ZQ8M		244.2	104.4	1.86	253.6	109.8	1.87	PP
K9BHE3		74.6	-65.2	-1.16	76.2	-67.6	-1.15	LB
M3HWL8		121.2	-18.6	-0.33	125.4	-18.4	-0.31	GA
N4PG4F		133.1	-6.7	-0.12	136.0	-7.8	-0.13	SH
PPH7TX		128.8	-11.0	-0.20	134.6	-9.2	-0.16	HM
RYJCL4		137.0	-2.8	-0.05	136.9	-6.9	-0.12	LA

Summary Statistics	Sample GE91	Sample GE92
Grand Means	139.82 Sheffield Units	143.78 Sheffield Units
Stnd Dev Btwn Labs	55.98 Sheffield Units	58.58 Sheffield Units

Statistics based on 6 of 6 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
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 GJ91 Lab Mean	Sample GJ91 Diff from Grand Mean	Sample GJ91 CPV	Sample GJ92 Lab Mean	Sample GJ92 Diff from Grand Mean	Sample GJ92 CPV	Instr Code
23AWHJ		0.8530	-0.1036	-0.88	0.8730	-0.0645	-0.74	ZZ
2NTNXF	X	0.9090	-0.0476	-0.40	1.1150	0.1775	2.02	ZZ
37LY6F		1.0490	0.0924	0.78	0.9380	0.0005	0.01	ZZ
49N9QG		0.9150	-0.0416	-0.35	0.8780	-0.0595	-0.68	ZZ
4ZXMKJ	X	6.8360	5.8794	49.87	6.4410	5.5035	62.79	ZZ
6ZRQNE		0.9530	-0.0036	-0.03	0.9160	-0.0215	-0.25	ZZ
76ZQ8M		0.8980	-0.0586	-0.50	0.9540	0.0165	0.19	ZZ
7B83G3		0.9710	0.0144	0.12	0.9450	0.0075	0.09	ZZ
7GWG7A		0.8360	-0.1206	-1.02	0.8580	-0.0795	-0.91	ZZ
7QL9T2		0.8120	-0.1446	-1.23	0.7810	-0.1565	-1.79	ZZ
8KN4C3		1.0090	0.0524	0.44	0.9160	-0.0215	-0.25	ZZ
9746K8	X	3.7000	2.7434	23.27	3.7000	2.7625	31.52	ZZ
AKGXN4		0.9350	-0.0216	-0.18	0.9510	0.0135	0.15	ZZ
APUJYV		0.9030	-0.0536	-0.46	0.8720	-0.0655	-0.75	ZZ
CDTWKW		0.8820	-0.0746	-0.63	0.9180	-0.0195	-0.22	ZZ
DAR2J9		0.9430	-0.0136	-0.12	0.9090	-0.0285	-0.33	ZZ
DXBGYC		0.9140	-0.0426	-0.36	0.8670	-0.0705	-0.80	ZZ
E2QDW2		1.0860	0.1294	1.10	1.0650	0.1275	1.45	ZZ
KJQ8D9		0.8740	-0.0826	-0.70	0.8350	-0.1025	-1.17	ZZ
KN4WVW		0.9640	0.0074	0.06	0.9250	-0.0125	-0.14	ZZ
LK3BHJ		0.9740	0.0174	0.15	0.9640	0.0265	0.30	ZZ
LZWZEF		1.0110	0.0544	0.46	0.9980	0.0605	0.69	ZZ
PLJY4U	*	1.2620	0.3054	2.59	1.1010	0.1635	1.86	ZZ
PY6BHP	X	10.1000	9.1434	77.56	10.5000	9.5625	109.10	ZZ
RRHXZ2		0.8130	-0.1436	-1.22	0.8680	-0.0695	-0.79	ZZ
RVH9QA	*	1.2100	0.2534	2.15	1.1890	0.2515	2.87	ZZ
TWTD2D		0.9780	0.0214	0.18	0.9360	-0.0015	-0.02	ZZ
W37H8V	*	0.7270	-0.2296	-1.95	0.9150	-0.0225	-0.26	ZZ
X9N98V		1.1020	0.1454	1.23	1.0820	0.1445	1.65	ZZ
XJ7WXM		1.0870	0.1304	1.11	0.9970	0.0595	0.68	ZZ
YJKHAB		0.8870	-0.0696	-0.59	0.8600	-0.0775	-0.88	ZZ
ZTMHX3		0.9380	-0.0186	-0.16	0.9400	0.0025	0.03	ZZ

Summary Statistics	Sample GJ91	Sample GJ92
Grand Means	0.96 Microns	0.94 Microns
Stnd Dev Btwn Labs	0.12 Microns	0.09 Microns

Statistics based on 28 of 32 reporting participants.

Comments on Assigned Data Flags for Test #376

9746K8 (X) - Extreme Data.

PY6BHP (X) - Extreme Data.

2NTNXF (X) - Inconsistent in testing between samples.

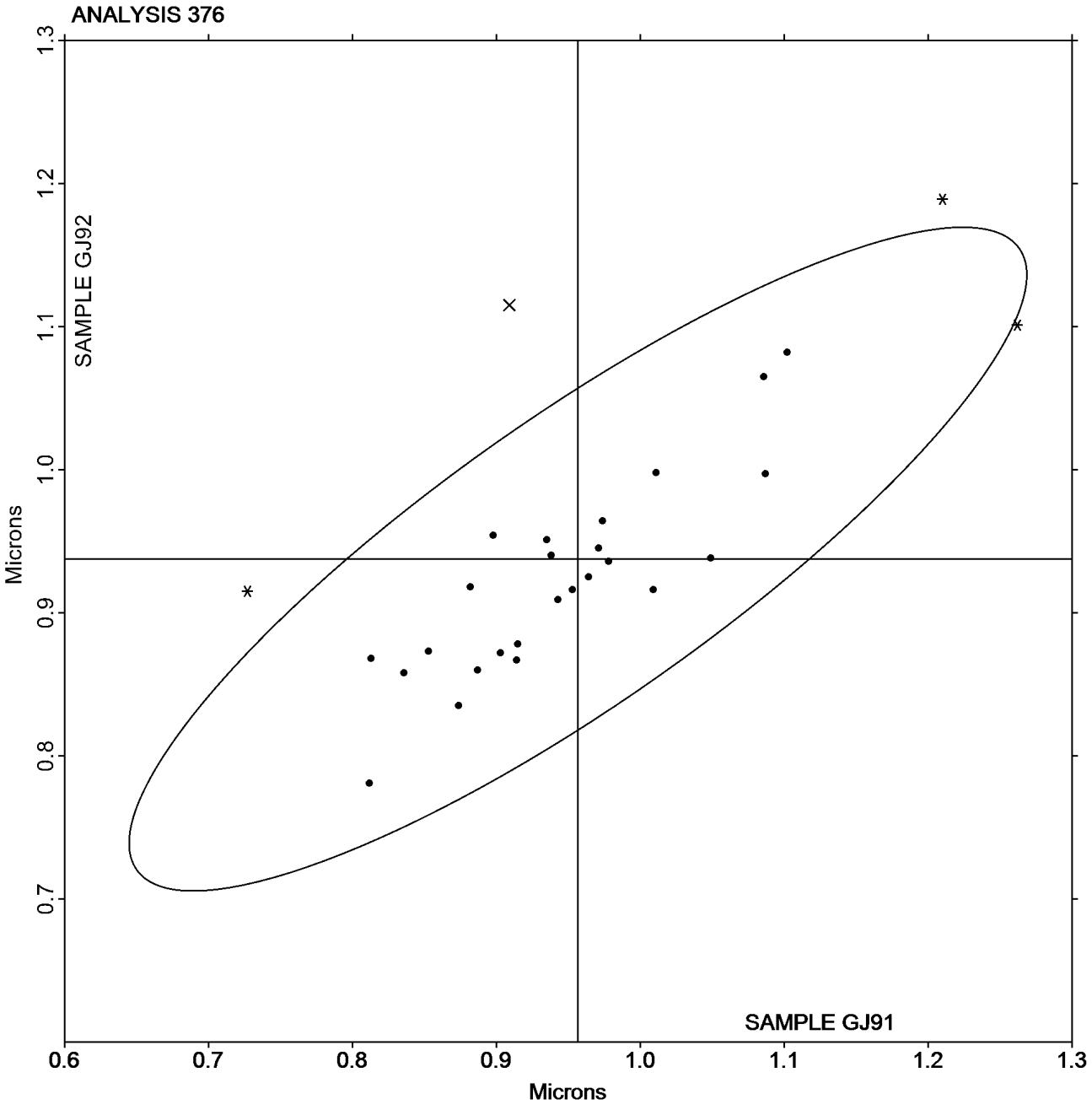
4ZXMKJ (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample GJ91 = 0.95664 Microns

Grand Mean Sample GJ92 = 0.93754 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 GK91 Lab Mean	Sample GK91 Diff from Grand Mean	Sample GK91 CPV	Sample GK92 Lab Mean	Sample GK92 Diff from Grand Mean	Sample GK92 CPV	Instr Code
3AM6JL		5.850	0.059	0.29	6.038	0.291	1.17	ZZ
77B72N		6.097	0.306	1.52	6.040	0.293	1.18	ZZ
7QL9T2		5.513	-0.278	-1.38	5.668	-0.079	-0.32	ZZ
9748AB	X	15.315	9.524	47.20	14.619	8.872	35.70	ZZ
N6ZG72		5.837	0.046	0.23	5.769	0.022	0.09	ZZ
RRHXZ2		5.802	0.011	0.06	5.572	-0.175	-0.71	ZZ
V3P66R		5.910	0.119	0.59	5.352	-0.395	-1.59	ZZ
W37H8V		5.831	0.040	0.20	5.852	0.105	0.42	ZZ
YJKHAB		5.846	0.055	0.27	5.959	0.212	0.85	ZZ
YRFLD8		5.430	-0.361	-1.79	5.475	-0.272	-1.10	ZZ

Summary Statistics	Sample GK91	Sample GK92
Grand Means	5.79 Microns	5.75 Microns
Stnd Dev Btwn Labs	0.20 Microns	0.25 Microns

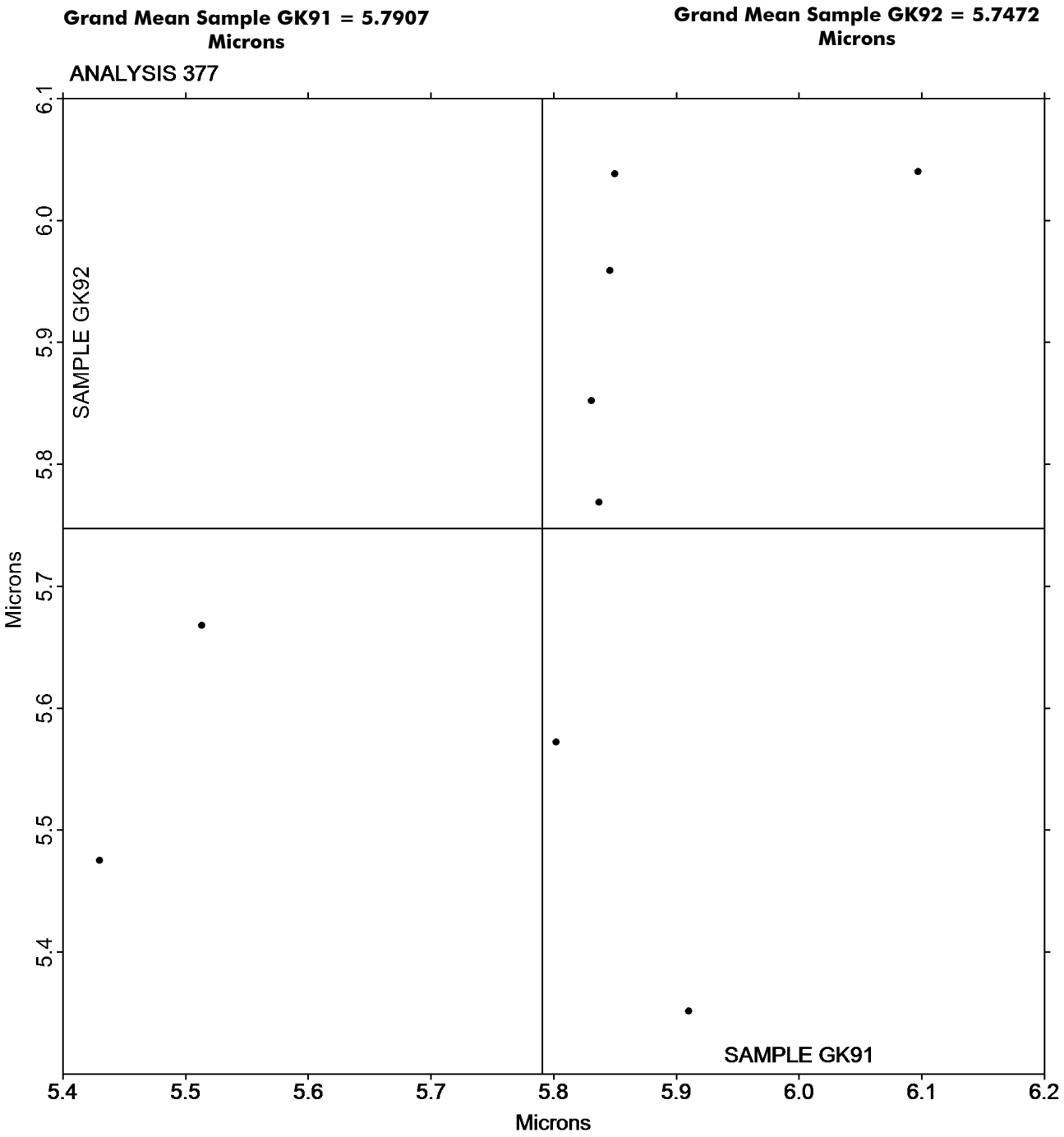
Statistics based on 9 of 10 reporting participants.

Comments on Assigned Data Flags for Test #377

9748AB (X) - Extreme Data.

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 GL91 Lab Mean	Sample GL91 Diff from Grand Mean	Sample GL91 CPV	Sample GL92 Lab Mean	Sample GL92 Diff from Grand Mean	Sample GL92 CPV	Instr Code
2FW2QG		113.6	-11.2	-0.81	115.2	-9.7	-0.71	PP
37LY6F		130.2	5.4	0.39	129.3	4.5	0.33	SS
3AM6JL		117.1	-7.7	-0.56	122.5	-2.3	-0.17	PP
3ECQ7E		102.9	-21.9	-1.59	101.6	-23.2	-1.70	XX
4ZGMLN		96.1	-28.7	-2.08	99.9	-24.9	-1.82	LA
6J3KJ7		123.5	-1.4	-0.10	123.8	-1.0	-0.07	MP
6KBU9H		122.7	-2.1	-0.16	119.0	-5.8	-0.43	LW
6VD9DN		128.5	3.6	0.26	126.7	1.9	0.14	GA
6ZRQNE		125.2	0.4	0.03	123.3	-1.5	-0.11	LW
76ZQ8M		117.2	-7.6	-0.55	116.6	-8.2	-0.60	VM
77B72N		119.3	-5.6	-0.40	119.8	-5.0	-0.36	PP
7B83G3		124.2	-0.6	-0.05	118.4	-6.4	-0.47	LA
7QL9T2		133.0	8.2	0.59	136.4	11.6	0.85	XX
8A6UN9		119.5	-5.3	-0.39	120.1	-4.7	-0.34	PP
9746K8	X	3.7	-121.2	-8.75	3.6	-121.3	-8.87	TT
9748AB		138.8	14.0	1.01	141.6	16.8	1.23	PP
AKGXN4		133.7	8.9	0.64	130.4	5.5	0.41	PP
APUJYV	*	135.2	10.4	0.75	123.5	-1.3	-0.10	PP
BL4WE8		129.2	4.4	0.31	127.9	3.1	0.23	PP
BZQ2VG		109.0	-15.9	-1.15	105.5	-19.3	-1.41	LA
CBMCVB		121.6	-3.2	-0.23	116.6	-8.2	-0.60	LA
CDTWKW		118.9	-6.0	-0.43	122.1	-2.7	-0.20	PP
D9G6CH		117.7	-7.1	-0.52	119.4	-5.4	-0.39	HM
DXBGYC		132.4	7.6	0.55	134.6	9.8	0.72	HM
E2QDW2		113.8	-11.0	-0.80	113.9	-10.9	-0.80	LW
E8ZA3V	*	163.6	38.8	2.80	164.4	39.6	2.90	TT
F94LZN	*	166.8	42.0	3.03	161.9	37.1	2.71	LW
FC4XVM		125.0	0.2	0.01	119.7	-5.1	-0.37	GA
FK2KTE		136.9	12.1	0.87	131.8	7.0	0.51	HM
H88TFN		136.0	11.2	0.81	142.0	17.2	1.26	SH
KJQ8D9		115.3	-9.5	-0.69	113.8	-11.0	-0.81	TS
KN4WVW		116.8	-8.1	-0.58	116.1	-8.7	-0.64	PP
LK3BHJ		130.3	5.5	0.40	137.0	12.1	0.89	PP
LKHPUZ		122.8	-2.0	-0.15	117.8	-7.0	-0.51	TS
LUP8JK		121.2	-3.6	-0.26	126.6	1.8	0.13	SH
M3HWL8		127.9	3.1	0.22	122.3	-2.5	-0.18	PP
N4PG4F		116.4	-8.4	-0.61	121.4	-3.4	-0.25	XX
N6ZG72		126.9	2.0	0.14	132.4	7.6	0.56	PP
N8QMHL		113.2	-11.6	-0.84	118.0	-6.8	-0.50	HM
NLKAMR		114.1	-10.8	-0.78	116.5	-8.3	-0.61	PP
PLJY4U		94.5	-30.3	-2.19	97.5	-27.3	-2.00	LA

Paper & Paperboard Interlaboratory Testing Program

Analysis 378

Roughness - Sheffield Type

TAPPI Official Test Method T538

WebCode	Data Flag	Sample GL91 Lab Mean	Sample GL91 Diff from Grand Mean	Sample GL91 CPV	Sample GL92 Lab Mean	Sample GL92 Diff from Grand Mean	Sample GL92 CPV	Instr Code
PY6BHP		120.7	-4.1	-0.30	112.2	-12.6	-0.92	HM
RRHXZ2		130.4	5.6	0.40	124.1	-0.7	-0.05	LA
RUA2MG		131.7	6.8	0.49	130.1	5.2	0.38	TT
RYJCL4		116.3	-8.5	-0.62	117.0	-7.8	-0.57	LA
TWTD2D		113.3	-11.6	-0.84	114.1	-10.7	-0.78	PP
UB776B	X	433.9	309.0	22.32	432.3	307.5	22.50	PP
UGBXFT		122.3	-2.6	-0.18	124.8	0.0	0.00	PP
UR7DWG		115.2	-9.7	-0.70	124.0	-0.8	-0.06	TS
V3P66R		131.6	6.8	0.49	134.6	9.8	0.72	LW
W37H8V		131.9	7.1	0.51	131.6	6.8	0.50	LW
XJ7WXM		132.7	7.9	0.57	132.9	8.1	0.59	PP
YJKHAB		129.5	4.7	0.34	128.0	3.2	0.23	LW
YRFLD8		123.8	-1.0	-0.08	126.5	1.7	0.12	LA
ZTMHX3	*	166.5	41.7	3.01	168.0	43.2	3.16	GL

Summary Statistics	Sample GL91	Sample GL92
Grand Means	124.85 Sheffield	124.82 Sheffield
Stnd Dev Btwn Labs	13.84 Sheffield	13.67 Sheffield

Statistics based on 53 of 55 reporting participants.

Comments on Assigned Data Flags for Test #378

UB776B (X) - Extreme Data.

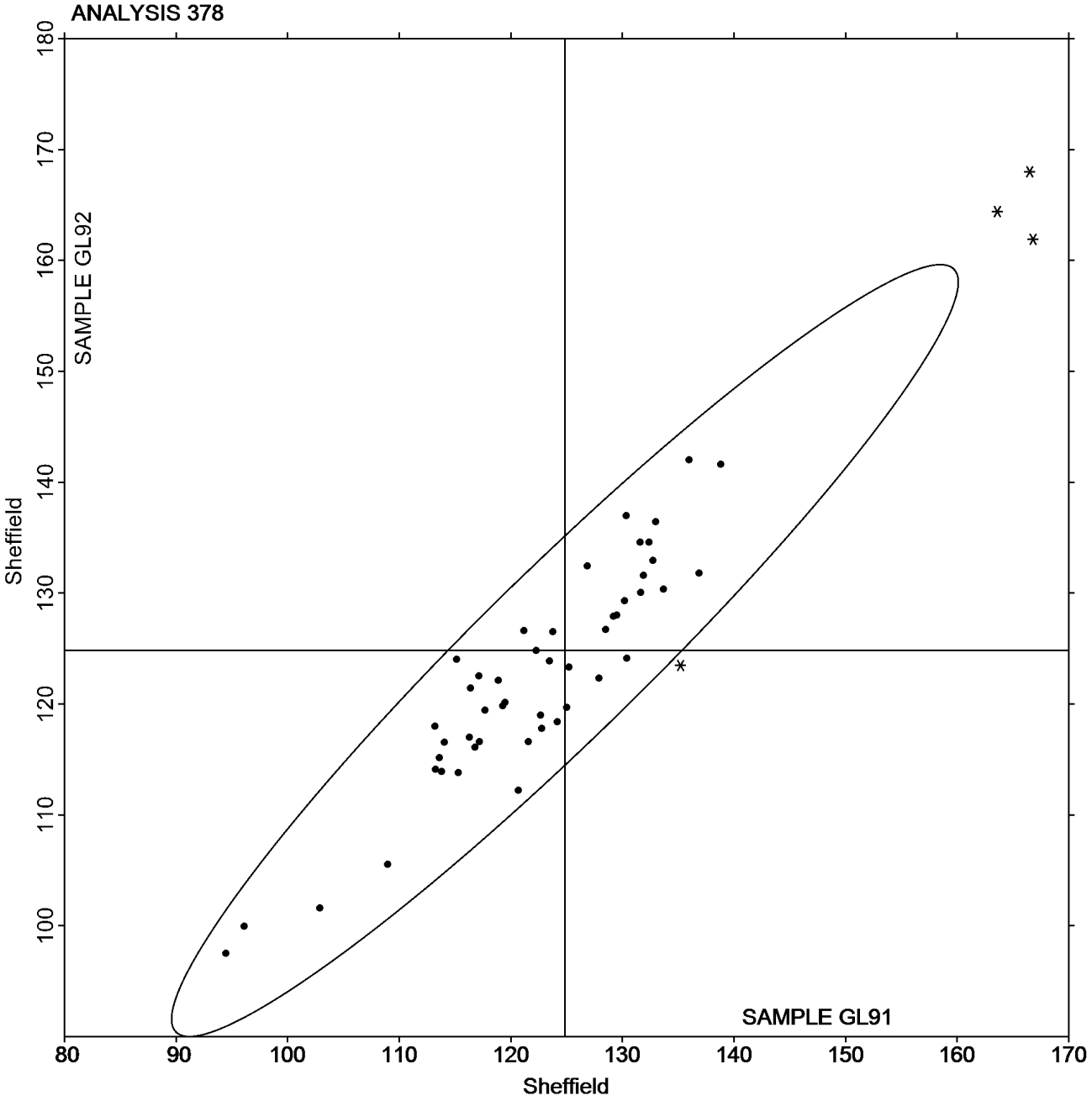
9746K8 (X) - Extreme Data.

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	VM	Valmet PaperLab (was Kajaani\Robotest)
XX	Instrument make/model not specified by lab		

Grand Mean Sample GL91 = 124.85
Sheffield

Grand Mean Sample GL92 = 124.82
Sheffield



Paper & Paperboard Interlaboratory Testing Program

Analysis 382
Moisture in Paper
TAPPI Official Test Method T412

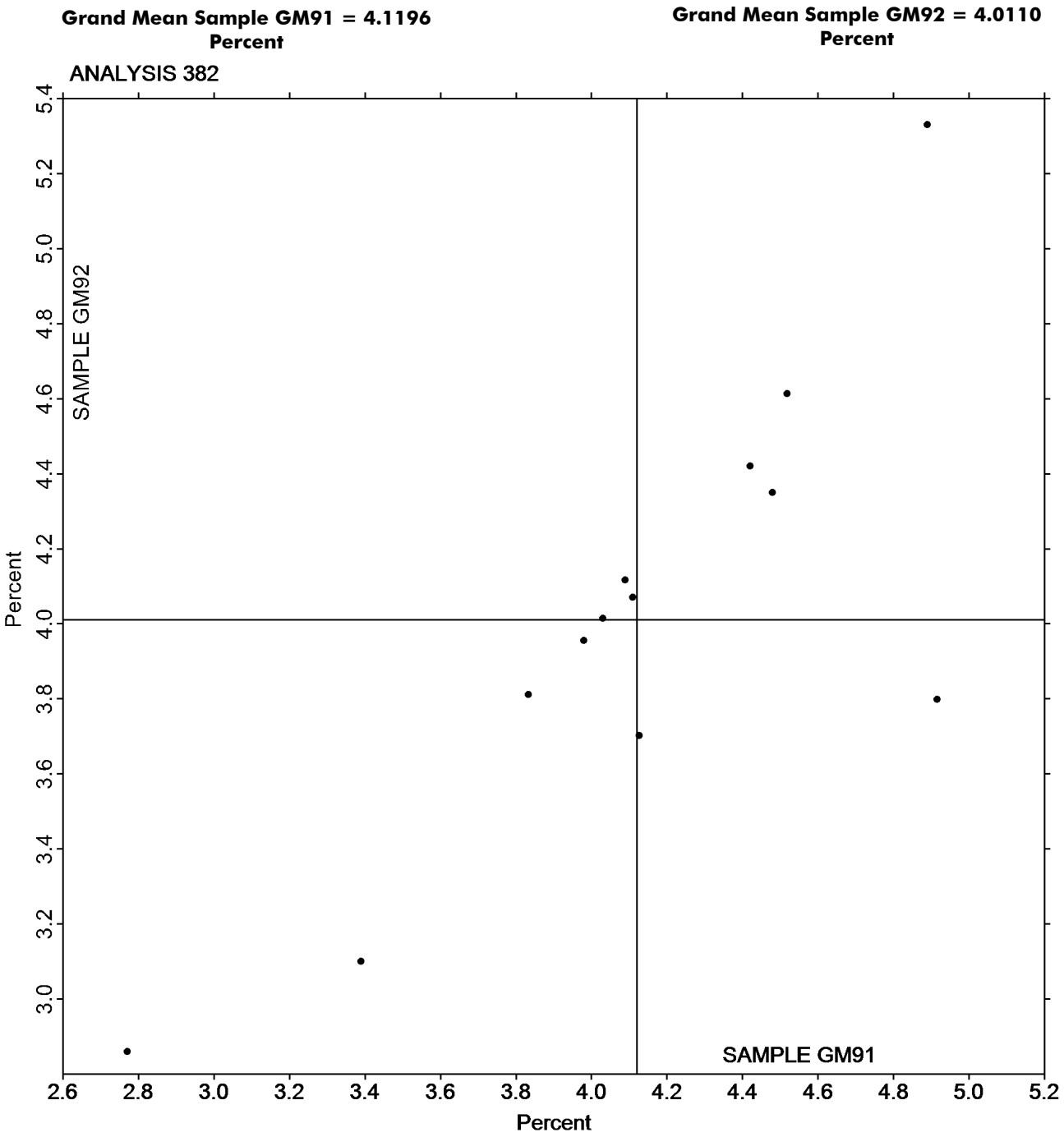
WebCode	Data Flag	Sample GM91 Lab Mean	Sample GM91 Diff from Grand Mean	Sample GM91 CPV	Sample GM92 Lab Mean	Sample GM92 Diff from Grand Mean	Sample GM92 CPV	Instr Code
3AM6JL		4.518	0.399	0.68	4.613	0.602	0.96	ZZ
4KGPFH		4.420	0.300	0.52	4.420	0.409	0.65	ZZ
4ZRLHH		4.480	0.360	0.62	4.350	0.339	0.54	ZZ
747MUF		4.031	-0.089	-0.15	4.015	0.004	0.01	ZZ
76EXNX		2.770	-1.350	-2.32	2.860	-1.151	-1.83	ZZ
9746K8		4.890	0.770	1.32	5.330	1.319	2.10	ZZ
F94LZN		3.833	-0.287	-0.49	3.812	-0.199	-0.32	ZZ
LZWZEF		3.980	-0.139	-0.24	3.955	-0.056	-0.09	ZZ
MB7XWP		4.110	-0.010	-0.02	4.070	0.059	0.09	ZZ
PPH7TX		4.916	0.796	1.37	3.799	-0.212	-0.34	ZZ
V83ULF		4.090	-0.030	-0.05	4.116	0.105	0.17	ZZ
VLGX7P		3.390	-0.730	-1.25	3.100	-0.911	-1.45	ZZ
XCK4LN		4.126	0.007	0.01	3.703	-0.308	-0.49	ZZ

Summary Statistics	Sample GM91	Sample GM92
Grand Means	4.12 Percent	4.01 Percent
Stnd Dev Btwn Labs	0.58 Percent	0.63 Percent

Statistics based on 13 of 13 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 GN91 Lab Mean	Sample GN91 Diff from Grand Mean	Sample GN91 CPV	Sample GN92 Lab Mean	Sample GN92 Diff from Grand Mean	Sample GN92 CPV	Instr Code
2FW2QG		93.59	-0.12	-0.34	93.56	-0.10	-0.25	ZZ
37LY6F		93.52	-0.19	-0.55	93.55	-0.11	-0.27	ZZ
3AM6JL		93.64	-0.07	-0.21	93.83	0.17	0.44	ZZ
49N9QG	*	92.69	-1.02	-2.97	92.36	-1.30	-3.32	ZZ
77B72N		93.56	-0.15	-0.43	93.79	0.13	0.34	ZZ
7GWG7A		93.76	0.05	0.15	94.07	0.41	1.06	ZZ
8KN4C3		94.05	0.34	1.00	93.92	0.27	0.68	ZZ
9748AB		93.65	-0.06	-0.16	93.58	-0.08	-0.20	ZZ
BL4WE8		93.66	-0.05	-0.14	93.28	-0.38	-0.97	ZZ
BZQ2VG		94.06	0.35	1.03	94.14	0.48	1.23	ZZ
DAR2J9		93.79	0.08	0.24	93.83	0.17	0.44	ZZ
DXBGYC		94.01	0.30	0.88	93.73	0.07	0.19	ZZ
KN4WVW		93.66	-0.05	-0.14	93.77	0.11	0.28	ZZ
LKHPUZ		93.32	-0.39	-1.13	93.30	-0.36	-0.91	ZZ
LUP8JK		93.80	0.09	0.27	93.65	-0.01	-0.02	ZZ
M3HWL8		93.54	-0.17	-0.49	93.58	-0.08	-0.20	ZZ
N4PG4F		93.82	0.11	0.33	93.94	0.28	0.72	ZZ
N6ZG72		93.59	-0.12	-0.34	93.47	-0.19	-0.48	ZZ
N8QMHL		93.35	-0.36	-1.04	93.66	0.00	0.01	ZZ
PY6BHP		93.61	-0.10	-0.28	93.44	-0.22	-0.55	ZZ
QZT26F		93.77	0.06	0.18	93.30	-0.36	-0.91	ZZ
RYJCL4		93.33	-0.38	-1.10	93.55	-0.11	-0.27	ZZ
UE4LFJ		93.89	0.18	0.53	93.68	0.02	0.06	ZZ
UGBXFT		93.87	0.16	0.46	93.74	0.09	0.22	ZZ
UR7DWG		93.81	0.10	0.30	93.58	-0.07	-0.19	ZZ
YHTFMV		94.15	0.44	1.29	93.73	0.07	0.19	ZZ
YRFLD8	*	94.62	0.91	2.67	94.71	1.05	2.68	ZZ

Summary Statistics	Sample GN91	Sample GN92
Grand Means	93.71 Percent	93.66 Percent
Stnd Dev Btwn Labs	0.34 Percent	0.39 Percent

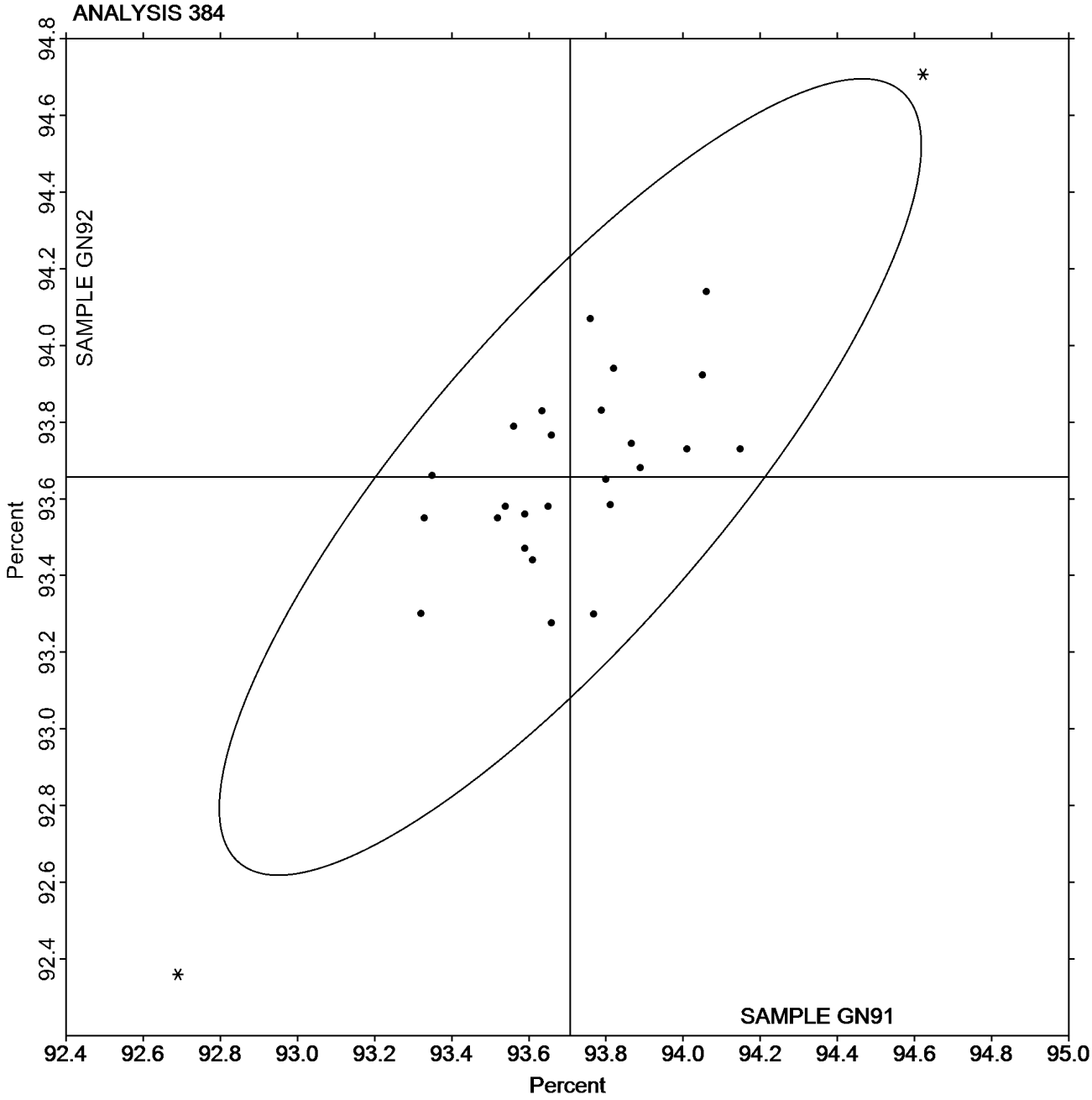
Statistics based on 27 of 27 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample GN91 = 93.707 Percent

Grand Mean Sample GN92 = 93.657 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 386

Opacity (Paper Backing) - Fine Papers and Newsprint

TAPPI Official Test Method T519

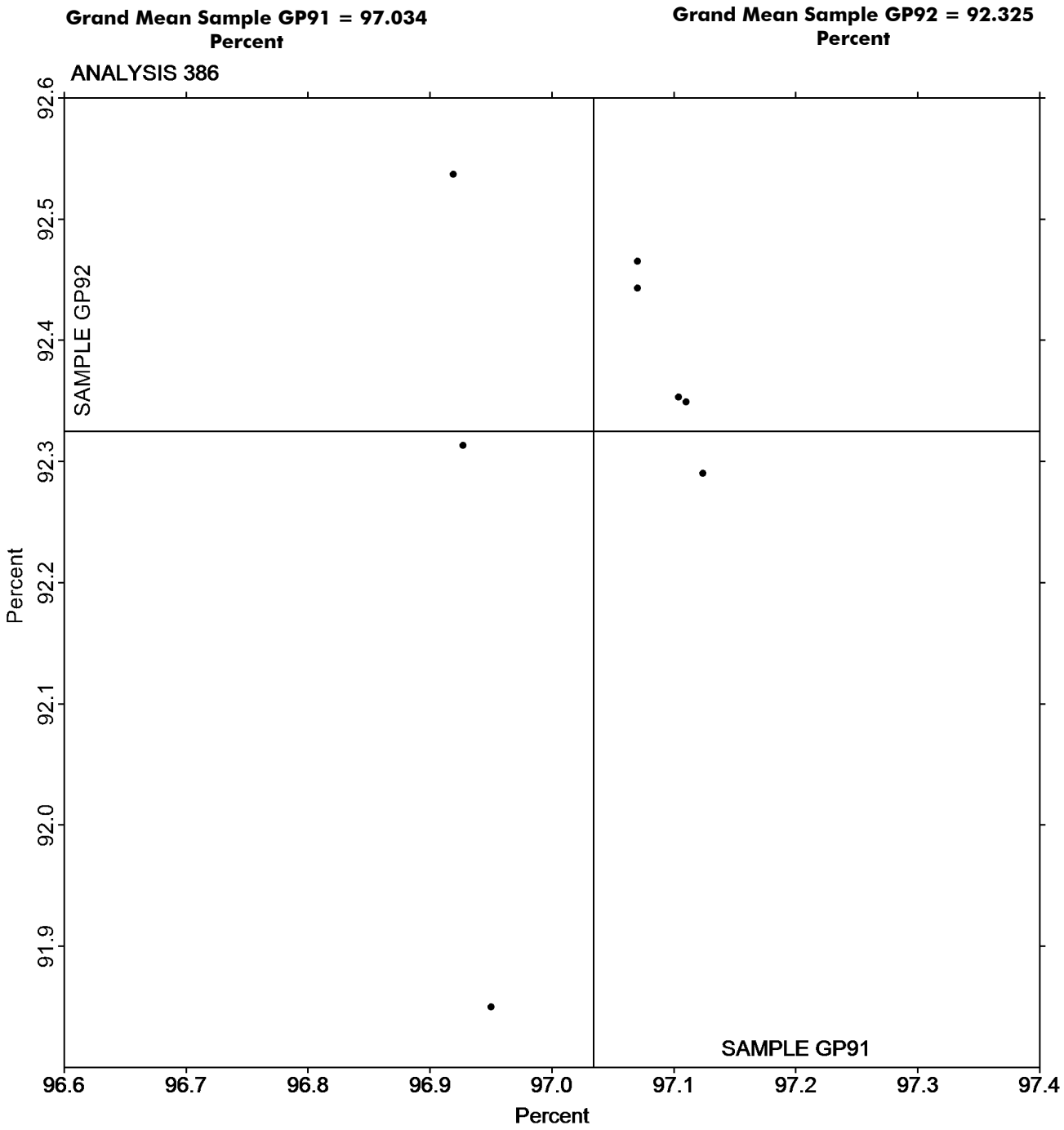
WebCode	Data Flag	Sample GP91 Lab Mean	Sample GP91 Diff from Grand Mean	Sample GP91 CPV	Sample GP92 Lab Mean	Sample GP92 Diff from Grand Mean	Sample GP92 CPV	Instr Code
3J9DZ3		97.11	0.08	0.87	92.35	0.02	0.11	ZZ
F94LZN		97.07	0.04	0.41	92.47	0.14	0.67	ZZ
K9BHE3		97.10	0.07	0.80	92.35	0.03	0.13	ZZ
KFNFZ2		96.92	-0.12	-1.32	92.54	0.21	1.01	ZZ
N6YJW7		96.95	-0.08	-0.97	91.85	-0.47	-2.27	ZZ
PLJUXX		97.12	0.09	1.03	92.29	-0.03	-0.17	ZZ
RJ2N7D		96.93	-0.11	-1.23	92.31	-0.01	-0.06	ZZ
RVH9QA		97.07	0.04	0.41	92.44	0.12	0.56	ZZ

Summary Statistics	Sample GP91	Sample GP92
Grand Means	97.03 Percent	92.33 Percent
Stnd Dev Btwn Labs	0.09 Percent	0.21 Percent

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 390
Directional Brightness
TAPPI Official Test Method T452

WebCode	Data Flag	Sample GR91 Lab Mean	Sample GR91 Diff from Grand Mean	Sample GR91 CPV	Sample GR92 Lab Mean	Sample GR92 Diff from Grand Mean	Sample GR92 CPV	Instr Code
2FW2QG		83.20	-0.68	-0.57	82.45	-0.70	-0.62	TT
3ECQ7E	X	71.59	-12.29	-10.34	69.76	-13.39	-11.92	XX
49N9QG		82.86	-1.02	-0.86	82.14	-1.00	-0.89	TS
6ZRQNE	X	86.45	2.57	2.16	86.89	3.74	3.33	HZ
7GWG7A		85.47	1.59	1.34	84.79	1.64	1.46	TP
AKGXN4		85.24	1.36	1.14	84.69	1.54	1.37	TS
APUJYV		84.70	0.82	0.69	84.01	0.86	0.76	HG
CDTWKW		83.31	-0.57	-0.48	82.70	-0.45	-0.40	TT
DXBGYC		82.87	-1.01	-0.85	81.90	-1.25	-1.11	TS
H49C3U		85.26	1.38	1.16	84.25	1.11	0.98	TS
KN4WVW		82.83	-1.05	-0.89	82.13	-1.02	-0.91	PP
LK3BHJ		84.02	0.14	0.12	83.34	0.19	0.17	HG
M3HWL8		83.86	-0.02	-0.02	83.10	-0.05	-0.05	XC
N4PG4F		86.00	2.12	1.78	85.03	1.88	1.68	PE
TWTD2D		85.16	1.28	1.08	84.31	1.16	1.04	TT
UGBXFT		82.89	-0.99	-0.84	82.38	-0.77	-0.69	TP
UR7DWG		82.39	-1.49	-1.26	81.59	-1.56	-1.39	TS
W37H8V		83.43	-0.45	-0.38	82.65	-0.50	-0.44	TT
YJKHAB		84.70	0.82	0.69	83.93	0.78	0.70	HG
YRFLD8		83.70	-0.18	-0.15	82.85	-0.30	-0.27	TS
ZTMHX3	*	81.83	-2.05	-1.73	81.58	-1.57	-1.40	TS

Summary Statistics	Sample GR91	Sample GR92
Grand Means	83.88 Percent	83.15 Percent
Stnd Dev Btwn Labs	1.19 Percent	1.12 Percent

Statistics based on 19 of 21 reporting participants.

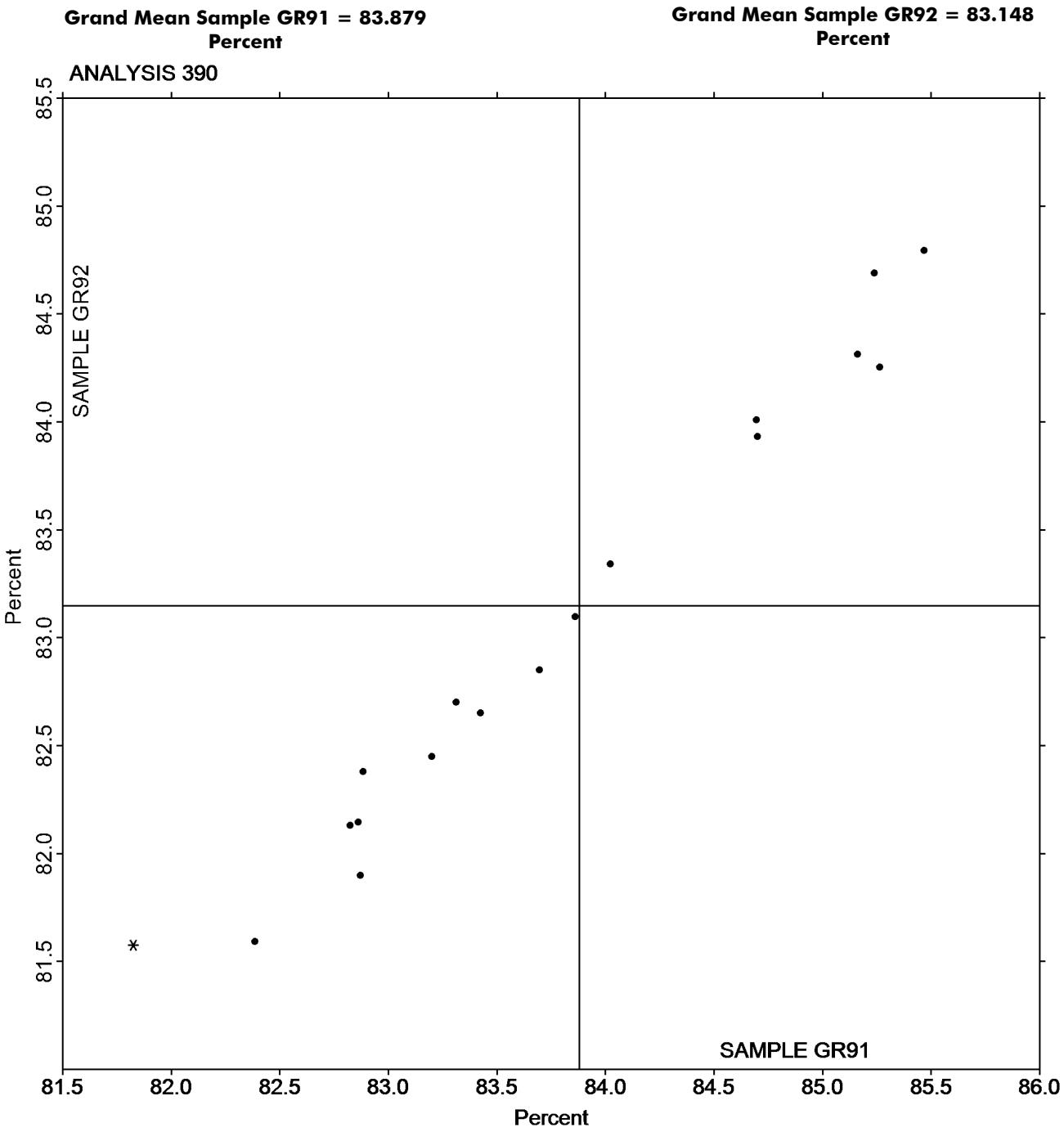
Comments on Assigned Data Flags for Test #390

3ECQ7E (X) - Extreme Data.

6ZRQNE (X) - Data for sample GR92 are high.

Key to Instrument Codes Reported by Participants

HG	Hunter Labscan / XE	HZ	Hunter Lab ColorFlex EZ Series
PE	Photovolt 577	PP	Technidyne Profile/Plus
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		



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 391

Directional Brightness of Fluorescent Samples

TAPPI Official Test Method T452

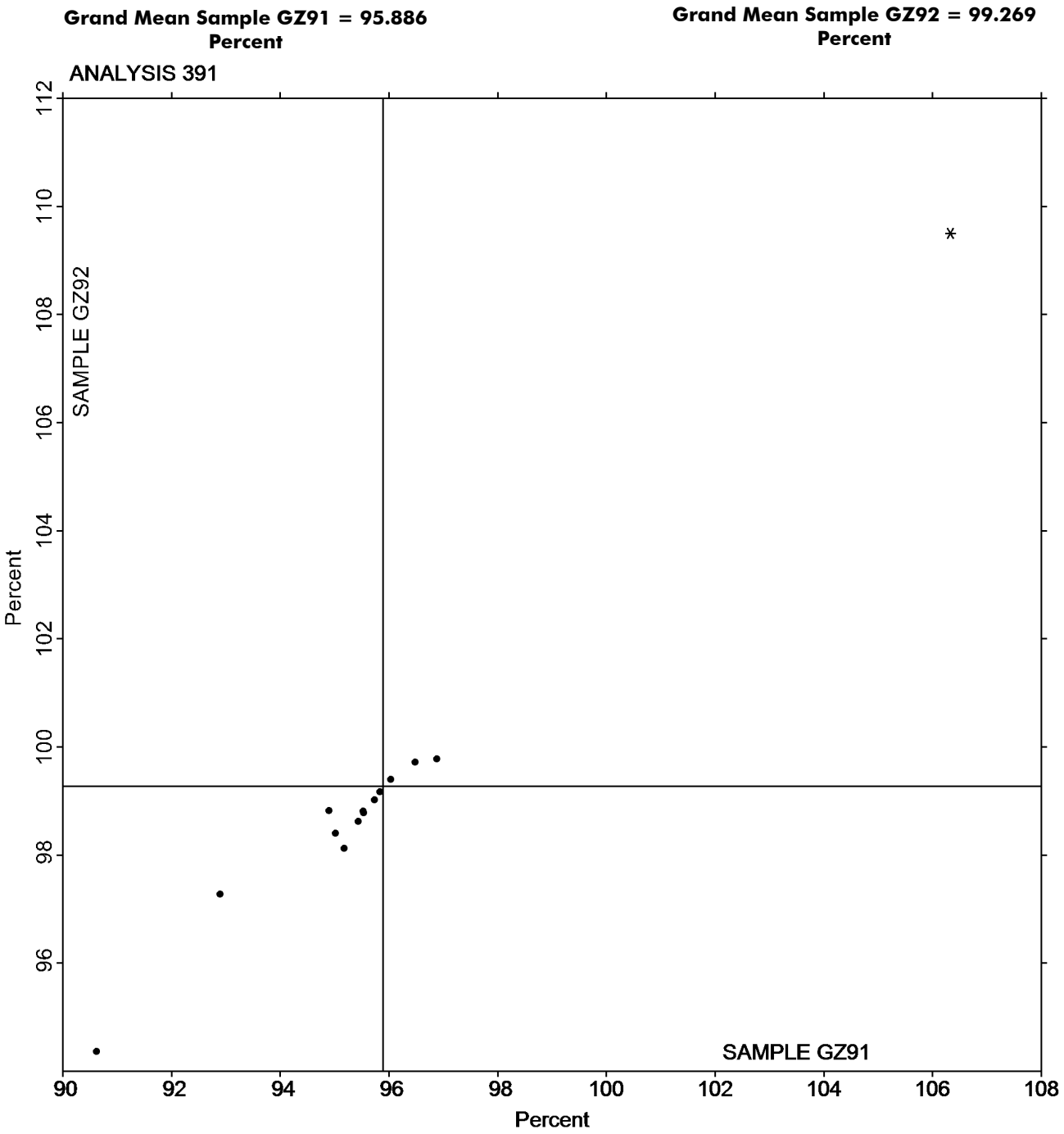
WebCode	Data Flag	Sample GZ91 Lab Mean	Sample GZ91 Diff from Grand Mean	Sample GZ91 CPV	Sample GZ92 Lab Mean	Sample GZ92 Diff from Grand Mean	Sample GZ92 CPV	Instr Code
32AZPF	*	106.33	10.44	3.08	109.50	10.23	3.16	LE
3AM6JL		95.84	-0.05	-0.01	99.16	-0.10	-0.03	TS
8KN4C3		96.03	0.14	0.04	99.39	0.13	0.04	TS
9748AB		96.48	0.59	0.17	99.72	0.45	0.14	TT
BL4WE8		94.90	-0.99	-0.29	98.82	-0.45	-0.14	PP
BZQ2VG		95.74	-0.15	-0.04	99.02	-0.25	-0.08	TT
DAR2J9		95.54	-0.35	-0.10	98.78	-0.49	-0.15	PP
LKHPUZ		95.18	-0.71	-0.21	98.12	-1.15	-0.35	TS
N6ZG72		95.44	-0.45	-0.13	98.62	-0.65	-0.20	TS
PY6BHP		90.62	-5.27	-1.55	94.36	-4.91	-1.51	TT
UE4LFJ		95.02	-0.87	-0.26	98.40	-0.87	-0.27	TT
UGBXFT		95.52	-0.36	-0.11	98.81	-0.46	-0.14	PP
UR7DWG		92.90	-2.99	-0.88	97.28	-1.99	-0.61	TS
YHTFMV		96.88	0.99	0.29	99.78	0.51	0.16	TS

Summary Statistics	Sample GZ91	Sample GZ92
Grand Means	95.89 Percent	99.27 Percent
Stnd Dev Btwn Labs	3.39 Percent	3.24 Percent

Statistics based on 14 of 14 reporting participants.

Key to Instrument Codes Reported by Participants

LE	L & W 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 GR91 Lab Mean	Sample GR91 Diff from Grand Mean	Sample GR91 CPV	Sample GR92 Lab Mean	Sample GR92 Diff from Grand Mean	Sample GR92 CPV	Instr Code
23AWHJ		83.73	0.35	0.94	82.80	0.14	0.50	TC
37LY6F		82.86	-0.52	-1.41	82.60	-0.06	-0.19	TC
3J9DZ3		83.69	0.31	0.84	82.73	0.07	0.24	LE
3UD32D		83.35	-0.03	-0.08	82.57	-0.09	-0.30	XX
9746K8		82.89	-0.49	-1.33	82.26	-0.39	-1.36	LE
9QAHGZ		83.44	0.06	0.15	82.61	-0.05	-0.16	LE
AKGXN4		83.53	0.15	0.41	82.70	0.04	0.15	TC
AX8MRF		83.37	-0.01	-0.02	82.52	-0.14	-0.49	TC
CDTWKW		83.20	-0.19	-0.50	82.70	0.04	0.14	LT
DXBGYC		83.25	-0.13	-0.34	82.39	-0.27	-0.94	LT
F3JJYC		82.83	-0.55	-1.48	82.51	-0.15	-0.50	TC
F94LZN		83.23	-0.15	-0.42	82.45	-0.21	-0.72	LE
K9BHE3		83.47	0.08	0.22	82.53	-0.13	-0.46	TC
N6YJW7	*	84.26	0.88	2.37	83.60	0.94	3.24	TM
NLKAMR		83.85	0.47	1.26	82.81	0.15	0.53	TC
Q8FUEU	X	85.35	1.97	5.30	84.23	1.57	5.39	PE
RJ2N7D		83.47	0.09	0.25	82.60	-0.06	-0.22	LA
RVH9QA		83.74	0.36	0.98	83.15	0.49	1.68	AC
TWTD2D		83.76	0.38	1.03	82.84	0.18	0.62	TL
W37H8V		82.89	-0.50	-1.33	82.13	-0.53	-1.82	EG
X9N98V		82.86	-0.52	-1.41	82.58	-0.08	-0.28	TC
X9P7HQ		83.13	-0.26	-0.69	82.74	0.08	0.27	TL
YJKHAB		83.51	0.13	0.34	82.72	0.06	0.21	TC
YRFLD8		83.46	0.08	0.22	82.61	-0.05	-0.17	TC

Summary Statistics	Sample GR91	Sample GR92
Grand Means	83.38 Percent	82.66 Percent
Stnd Dev Btwn Labs	0.37 Percent	0.29 Percent

Statistics based on 23 of 24 reporting participants.

Comments on Assigned Data Flags for Test #392

Q8FUEU (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

Analysis Notes:

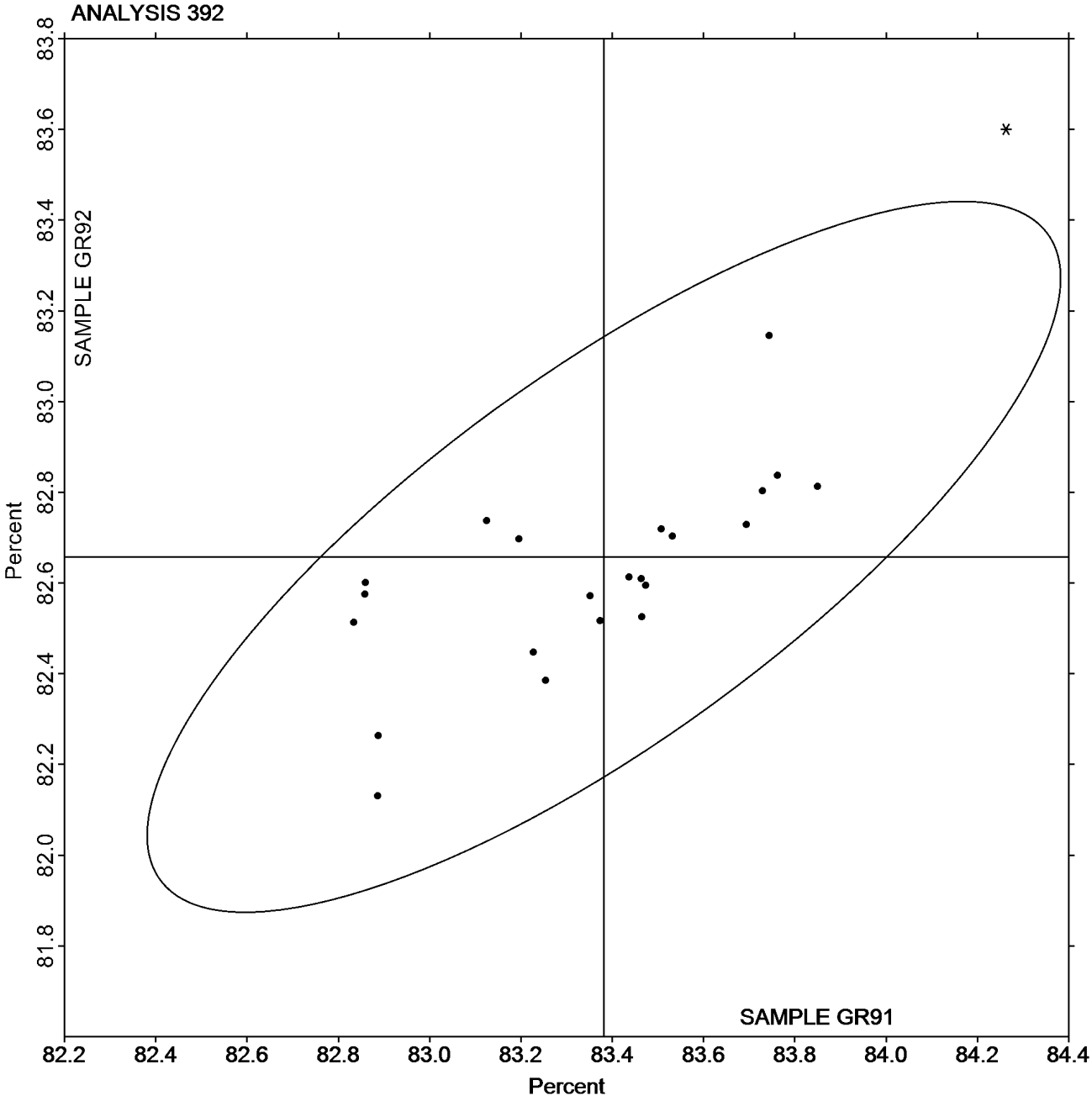
3UD32D - One determination removed from the Lab Mean of Sample GR91 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

AC	ACS Spectro-Sensor II	EG	Datacolor Elrepho 450X
LA	L & W Elrepho - Autoline	LE	L & W Elrepho
LT	L & W Elrepho SE 071	PE	Photovolt 577
TC	Technidyne Color Touch Series	TL	Technidyne Technibrite TB-1
TM	Technidyne Technibrite Micro TB-1C	XX	Instrument make/model not specified by lab

Grand Mean Sample GR91 = 83.382 Percent

Grand Mean Sample GR92 = 82.658 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 394

Fluorescent Component of Directional Brightness

TAPPI Official Test Method T452

WebCode	Data Flag	Sample GZ91 Lab Mean	Sample GZ91 Diff from Grand Mean	Sample GZ91 CPV	Sample GZ92 Lab Mean	Sample GZ92 Diff from Grand Mean	Sample GZ92 CPV	Instr Code
32AZPF	X	106.752	99.058	159.76	109.778	101.197	198.08	LE
3AM6JL		7.850	0.156	0.25	8.810	0.229	0.45	TS
8KN4C3		7.322	-0.372	-0.60	8.190	-0.391	-0.77	TS
9748AB		8.920	1.226	1.98	9.560	0.979	1.92	TT
BL4WE8		7.940	0.246	0.40	8.640	0.059	0.12	PP
BZQ2VG		7.540	-0.154	-0.25	8.580	-0.001	0.00	TT
DAR2J9		7.694	0.000	0.00	8.556	-0.025	-0.05	PP
N6ZG72		7.586	-0.108	-0.17	8.492	-0.089	-0.17	TS
PY6BHP		7.480	-0.214	-0.35	8.140	-0.441	-0.86	TT
UR7DWG		6.484	-1.210	-1.95	7.740	-0.841	-1.65	TS
YHTFMV		8.128	0.434	0.70	9.102	0.521	1.02	TS

Summary Statistics	Sample GZ91	Sample GZ92
Grand Means	7.69 Percent	8.58 Percent
Stnd Dev Btwn Labs	0.62 Percent	0.51 Percent

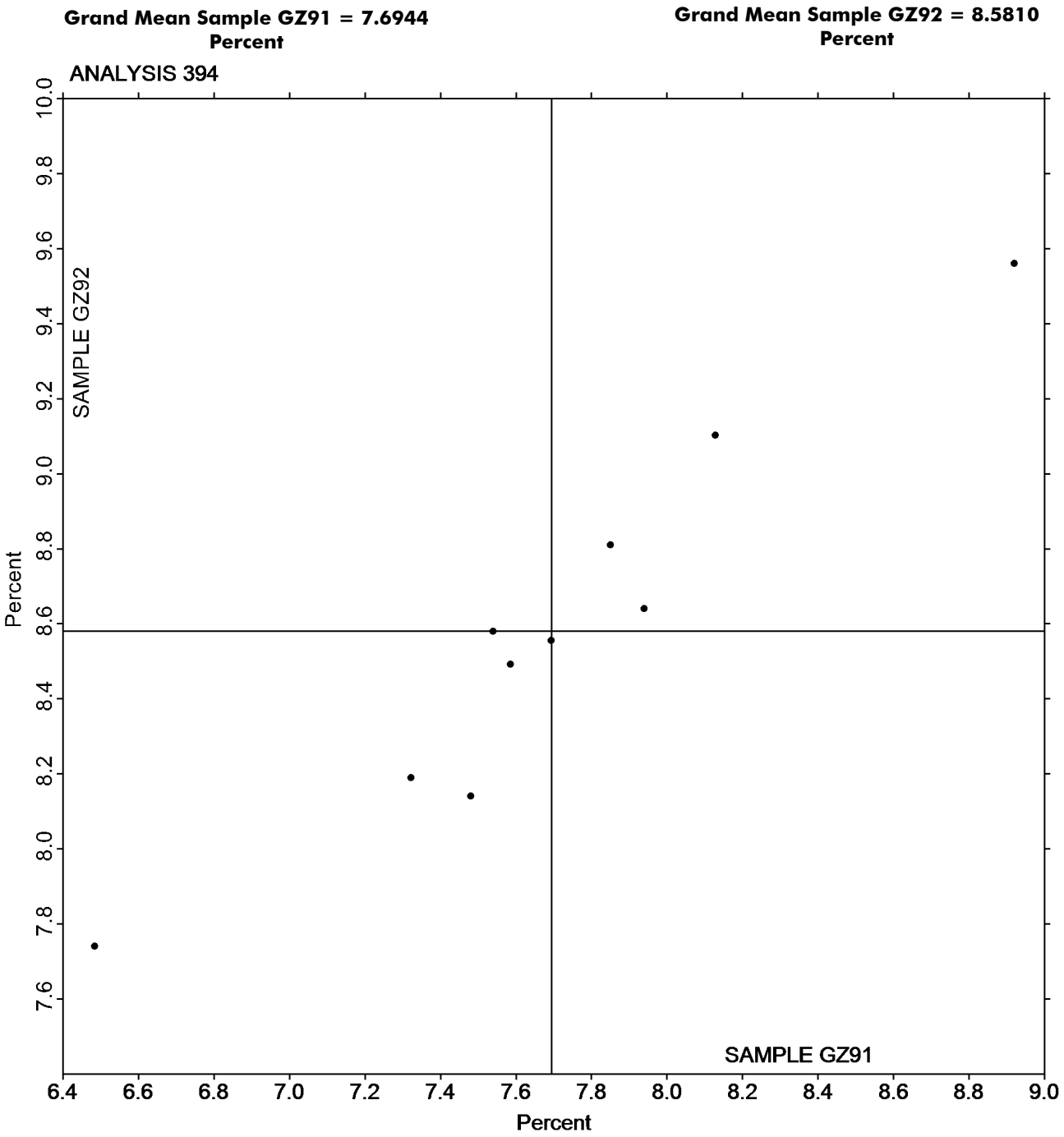
Statistics based on 10 of 11 reporting participants.

Comments on Assigned Data Flags for Test #394

32AZPF (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

LE	L & W 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 395

Specular Gloss at 75 Degrees - High Range

TAPPI Official Test Method T480

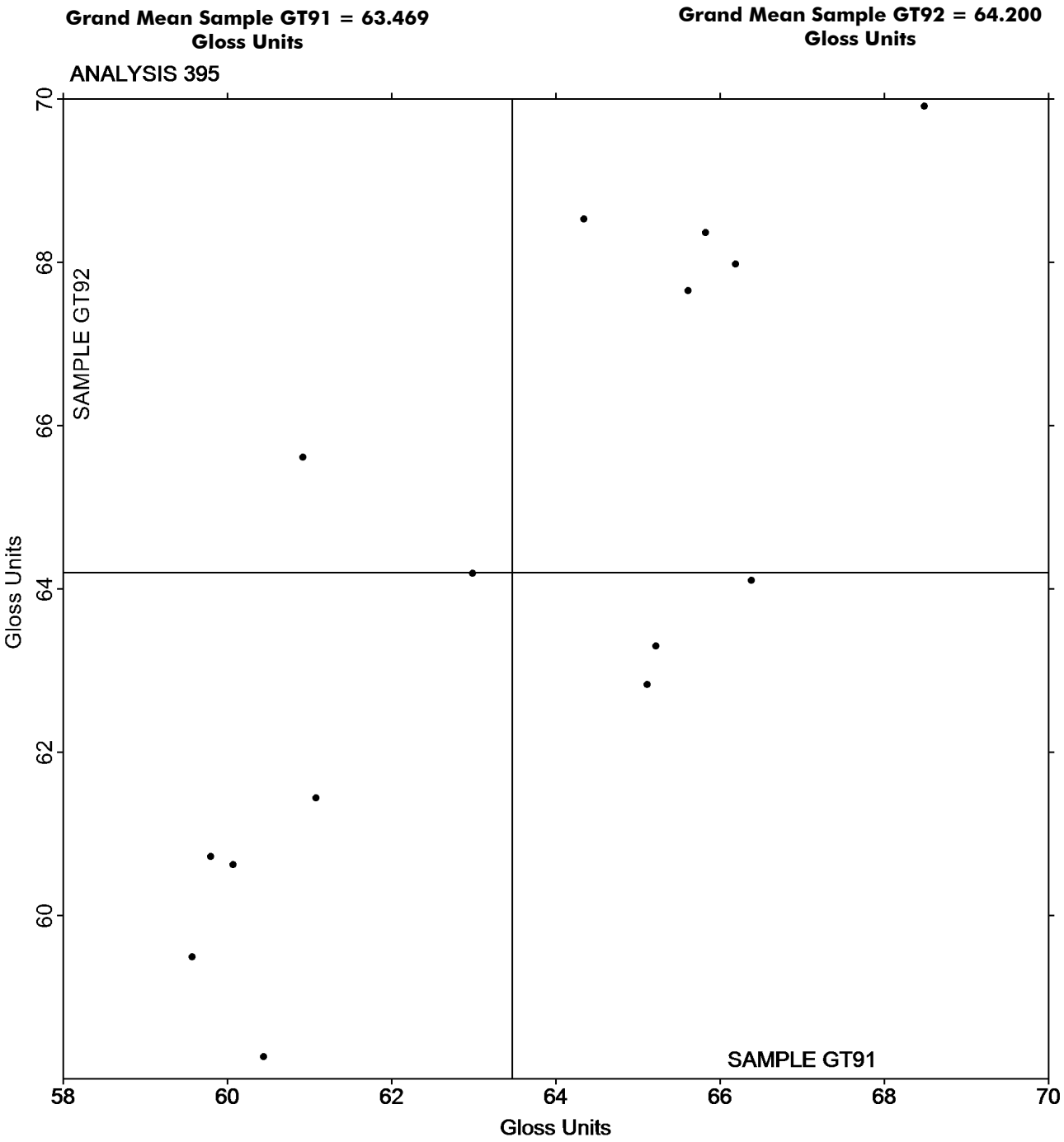
WebCode	Data Flag	Sample GT91 Lab Mean	Sample GT91 Diff from Grand Mean	Sample GT91 CPV	Sample GT92 Lab Mean	Sample GT92 Diff from Grand Mean	Sample GT92 CPV	Instr Code
49N9QG		60.92	-2.55	-0.87	65.61	1.41	0.38	LA
76ZQ8M		62.99	-0.48	-0.16	64.19	-0.01	0.00	VM
7B83G3		65.22	1.75	0.60	63.30	-0.90	-0.24	LF
7GWG7A		65.83	2.36	0.81	68.36	4.16	1.13	TH
8KN4C3		65.61	2.14	0.73	67.65	3.45	0.94	LF
APUJYV		61.08	-2.39	-0.82	61.44	-2.76	-0.75	PP
CDTWKW		59.80	-3.67	-1.26	60.72	-3.48	-0.95	GA
DAR2J9		66.19	2.72	0.93	67.98	3.78	1.03	PP
KJQ8D9		60.07	-3.40	-1.16	60.62	-3.58	-0.97	XX
LK3BHJ		60.44	-3.03	-1.04	58.27	-5.93	-1.61	PP
PY6BHP		59.57	-3.90	-1.33	59.49	-4.71	-1.28	PP
RRHXZ2		66.38	2.91	1.00	64.10	-0.10	-0.03	LA
RVH9QA		65.11	1.64	0.56	62.83	-1.37	-0.37	LB
TWTD2D		64.34	0.87	0.30	68.53	4.33	1.18	GM
W37H8V		68.49	5.02	1.72	69.91	5.71	1.55	TH

Summary Statistics	Sample GT91	Sample GT92
Grand Means	63.47 Gloss Units	64.20 Gloss Units
Stnd Dev Btwn Labs	2.92 Gloss Units	3.68 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)
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

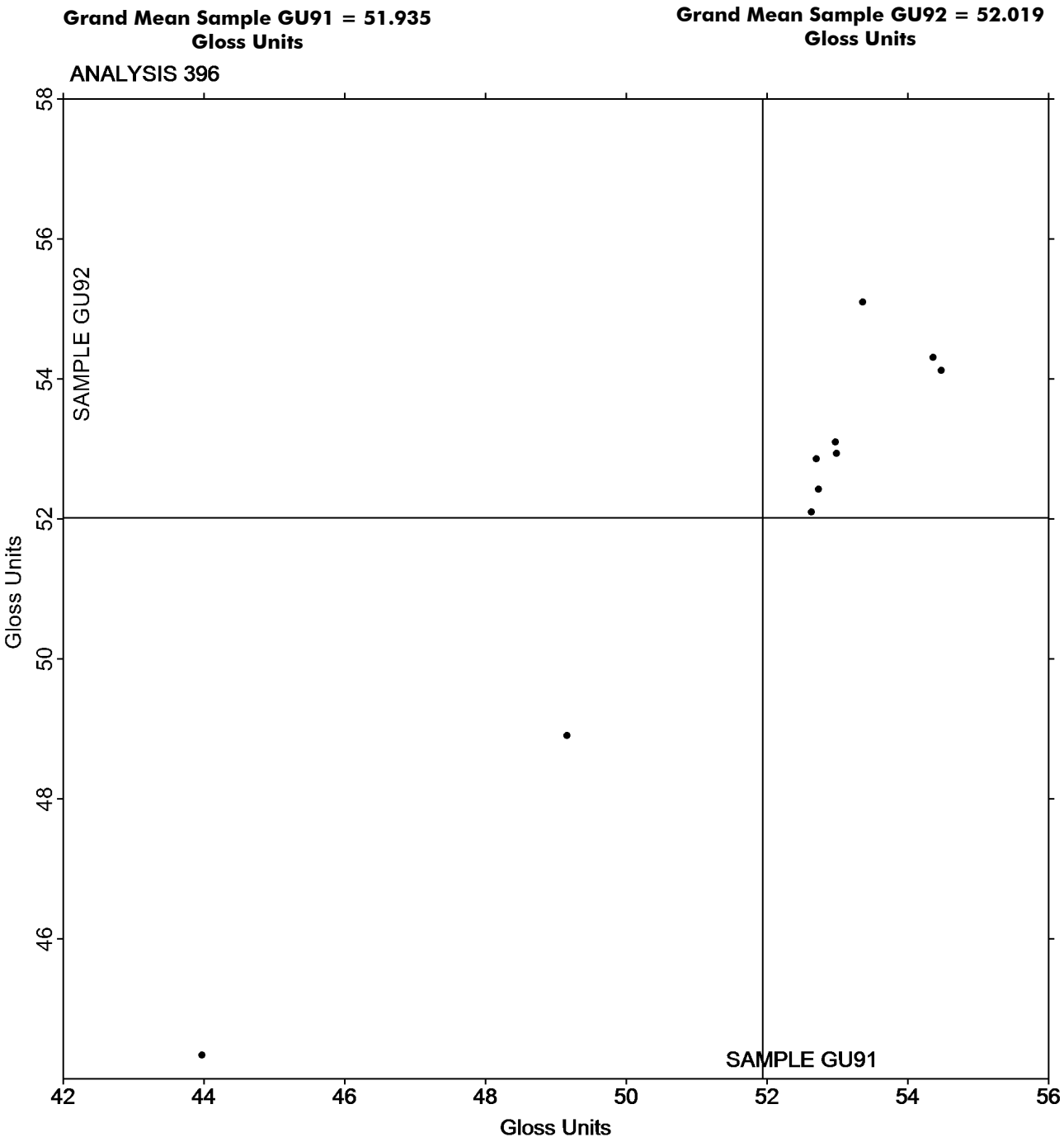
WebCode	Data Flag	Sample GU91 Lab Mean	Sample GU91 Diff from Grand Mean	Sample GU91 CPV	Sample GU92 Lab Mean	Sample GU92 Diff from Grand Mean	Sample GU92 CPV	Instr Code
2FW2QG		52.99	1.05	0.33	52.94	0.92	0.29	TH
37LY6F		53.36	1.43	0.45	55.10	3.08	0.97	TH
6KBU9H		52.70	0.77	0.24	52.86	0.84	0.27	GM
6ZRQNE		52.97	1.04	0.33	53.10	1.08	0.34	GS
77B72N		52.63	0.70	0.22	52.10	0.08	0.03	PP
9746K8		43.97	-7.96	-2.53	44.34	-7.68	-2.42	TH
LZWZEF		49.16	-2.77	-0.88	48.90	-3.12	-0.98	WJ
M3HWL8		52.73	0.80	0.25	52.42	0.40	0.13	TH
RVH9QA		54.36	2.43	0.77	54.31	2.29	0.72	LA
YJKHAB		54.48	2.55	0.81	54.12	2.10	0.66	PP

Summary Statistics	Sample GU91	Sample GU92
Grand Means	51.93 Gloss Units	52.02 Gloss Units
Stnd Dev Btwn Labs	3.15 Gloss Units	3.18 Gloss Units

Statistics based on 10 of 10 reporting participants.

Key to Instrument Codes Reported by Participants

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



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 GW91 Lab Mean	Sample GW91 Diff from Grand Mean	Sample GW91 CPV	Sample GW92 Lab Mean	Sample GW92 Diff from Grand Mean	Sample GW92 CPV	Instr Code
2FW2QG		75.05	-0.28	-0.63	89.61	-0.56	-0.88	ZZ
37LY6F	X	68.97	-6.36	-14.53	82.09	-8.08	-12.69	ZZ
6QGN4D		75.55	0.23	0.52	90.20	0.03	0.05	ZZ
6VD9DN		75.45	0.13	0.29	89.87	-0.30	-0.47	ZZ
7UKLE7		75.51	0.19	0.43	89.98	-0.19	-0.29	ZZ
9746K8	X	15.14	-60.18	-137.57	18.12	-72.05	-113.24	ZZ
9EE878		75.00	-0.32	-0.73	90.34	0.18	0.28	ZZ
AX63VZ		75.69	0.37	0.84	90.17	0.00	0.00	ZZ
AX8MRF	X	381.60	306.28	700.14	453.60	363.43	571.18	ZZ
ERZRQ3		75.45	0.13	0.30	89.98	-0.18	-0.29	ZZ
F94LZN		75.30	-0.02	-0.05	90.83	0.66	1.04	ZZ
GM3TRX		75.80	0.48	1.09	89.70	-0.47	-0.73	ZZ
KFNFZ2		75.95	0.63	1.43	89.85	-0.32	-0.50	ZZ
L4BDGN		75.82	0.50	1.15	90.68	0.51	0.81	ZZ
L8WBQZ	X	15.46	-59.86	-136.84	18.56	-71.61	-112.54	ZZ
LKHPUZ		74.80	-0.52	-1.19	89.80	-0.37	-0.58	ZZ
LUP8JK	X	78.00	2.68	6.12	89.90	-0.27	-0.42	ZZ
LZWZEF		75.21	-0.11	-0.26	89.73	-0.44	-0.69	ZZ
M3HWL8		75.95	0.63	1.43	90.67	0.50	0.79	ZZ
MB7XWP		75.38	0.06	0.13	90.76	0.60	0.94	ZZ
N8QMHL	X	76.76	1.44	3.29	89.36	-0.81	-1.27	ZZ
PLJUXX		75.26	-0.06	-0.14	90.46	0.29	0.46	ZZ
PPH7TX		74.22	-1.10	-2.52	89.43	-0.74	-1.16	ZZ
Q8FUEU		74.89	-0.43	-0.98	89.18	-0.99	-1.55	ZZ
RVH9QA		75.53	0.21	0.48	90.40	0.23	0.37	ZZ
RYJCL4		74.76	-0.56	-1.29	89.61	-0.56	-0.88	ZZ
V83ULF		75.63	0.31	0.71	91.08	0.91	1.43	ZZ
VLGX7P	*	75.59	0.26	0.60	91.86	1.69	2.66	ZZ
Y8AB8H		74.63	-0.69	-1.59	89.18	-0.99	-1.55	ZZ
YHTFMV		75.32	-0.01	-0.01	90.64	0.47	0.75	ZZ

Summary Statistics	Sample GW91	Sample GW92
Grand Means	75.32 g/sq m	90.17 g/sq m
Stnd Dev Btwn Labs	0.44 g/sq m	0.64 g/sq m

Statistics based on 24 of 30 reporting participants.

Comments on Assigned Data Flags for Test #398

37LY6F (X) - Extreme Data.

AX8MRF (X) - Extreme Data.

L8WBQZ (X) - Extreme Data.

LUP8JK (X) - Extreme Data for Sample GW91.

N8QMHL (X) - Data for sample GW91 are high. Inconsistent within the determinations of sample GW91.

9746K8 (X) - Extreme Data.

Analysis Notes:

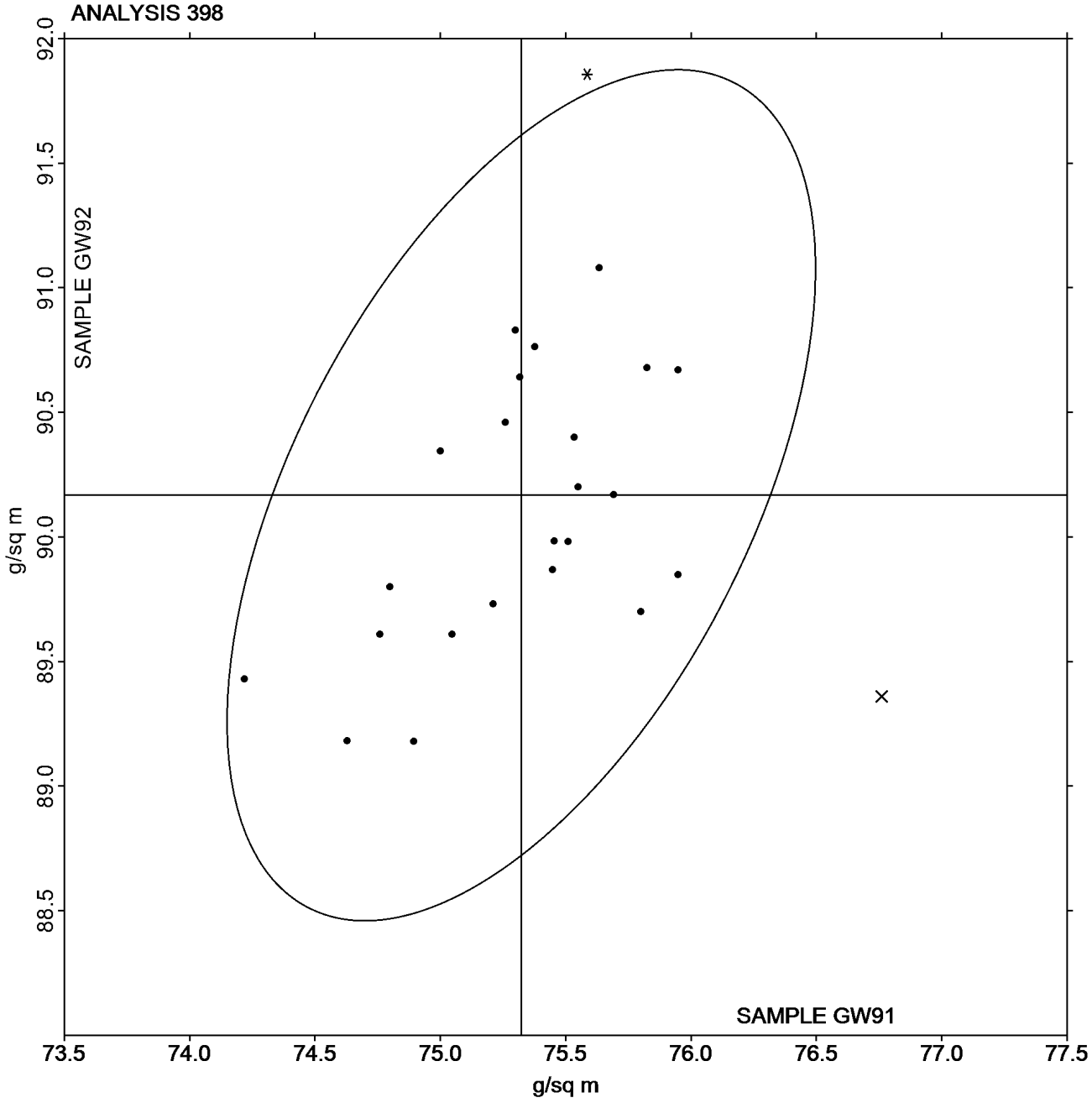
2FW2QG - Data appears to be transposed between samples. CTS will not correct going forward.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample GW91 = 75.323 g/sq m

Grand Mean Sample GW92 = 90.168 g/sq m



Paper & Paperboard Interlaboratory Testing Program

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

WebCode	Data Flag	Sample GX91 Lab Mean	Sample GX91 Diff from Grand Mean	Sample GX91 CPV	Sample GX92 Lab Mean	Sample GX92 Diff from Grand Mean	Sample GX92 CPV	Instr Code
23AWHJ	X	18.29	5.60	1.74	6.43	-5.15	-1.57	HE
37LY6F		16.74	4.05	1.26	13.48	1.90	0.58	HE
3AM6JL		11.06	-1.63	-0.50	10.68	-0.90	-0.27	HE
3ECQ7E		8.76	-3.93	-1.22	7.47	-4.11	-1.25	HE
3HC33E		10.87	-1.82	-0.56	8.18	-3.40	-1.03	HE
6KBU9H		12.52	-0.17	-0.05	11.10	-0.48	-0.15	HE
6LBQ3L		10.54	-2.15	-0.66	10.91	-0.67	-0.20	HE
76ZQ8M		11.15	-1.54	-0.48	10.81	-0.77	-0.23	HE
77B72N		14.65	1.96	0.61	13.60	2.02	0.61	HE
8KN4C3		11.95	-0.74	-0.23	10.96	-0.62	-0.19	HE
9748AB		11.00	-1.69	-0.52	8.40	-3.18	-0.97	HE
BL4WE8		15.97	3.28	1.02	15.97	4.39	1.34	HE
CBMCVB		9.23	-3.46	-1.07	8.12	-3.46	-1.05	HE
DXBGYC		8.02	-4.67	-1.45	6.38	-5.20	-1.58	HE
H88TFN		12.85	0.16	0.05	11.33	-0.25	-0.08	HE
KJQ8D9		13.66	0.97	0.30	13.04	1.46	0.44	HE
KN4WVW		16.02	3.33	1.03	13.69	2.11	0.64	HE
LKHPUZ		10.20	-2.49	-0.77	9.60	-1.98	-0.60	HE
N4PG4F		19.35	6.66	2.06	18.12	6.54	1.99	HE
N6ZG72		13.02	0.33	0.10	13.88	2.30	0.70	HE
RUA2MG		11.59	-1.10	-0.34	10.94	-0.64	-0.19	HE
RYJCL4		10.89	-1.80	-0.56	10.17	-1.41	-0.43	HE
UE4LFJ		11.23	-1.46	-0.45	10.14	-1.44	-0.44	HE
UGBXFT		18.82	6.13	1.90	18.10	6.52	1.98	HE
UR7DWG		11.75	-0.94	-0.29	9.72	-1.86	-0.57	HE
V3P66R		10.83	-1.86	-0.57	10.20	-1.38	-0.42	HE
XDJZFR		9.77	-2.92	-0.90	8.69	-2.89	-0.88	HE
YRFLD8		20.07	7.38	2.29	18.97	7.39	2.25	HE

Summary Statistics	Sample GX91	Sample GX92
Grand Means	12.69 Seconds	11.58 Seconds
Stnd Dev Btwn Labs	3.23 Seconds	3.29 Seconds

Statistics based on 27 of 28 reporting participants.

Comments on Assigned Data Flags for Test #399

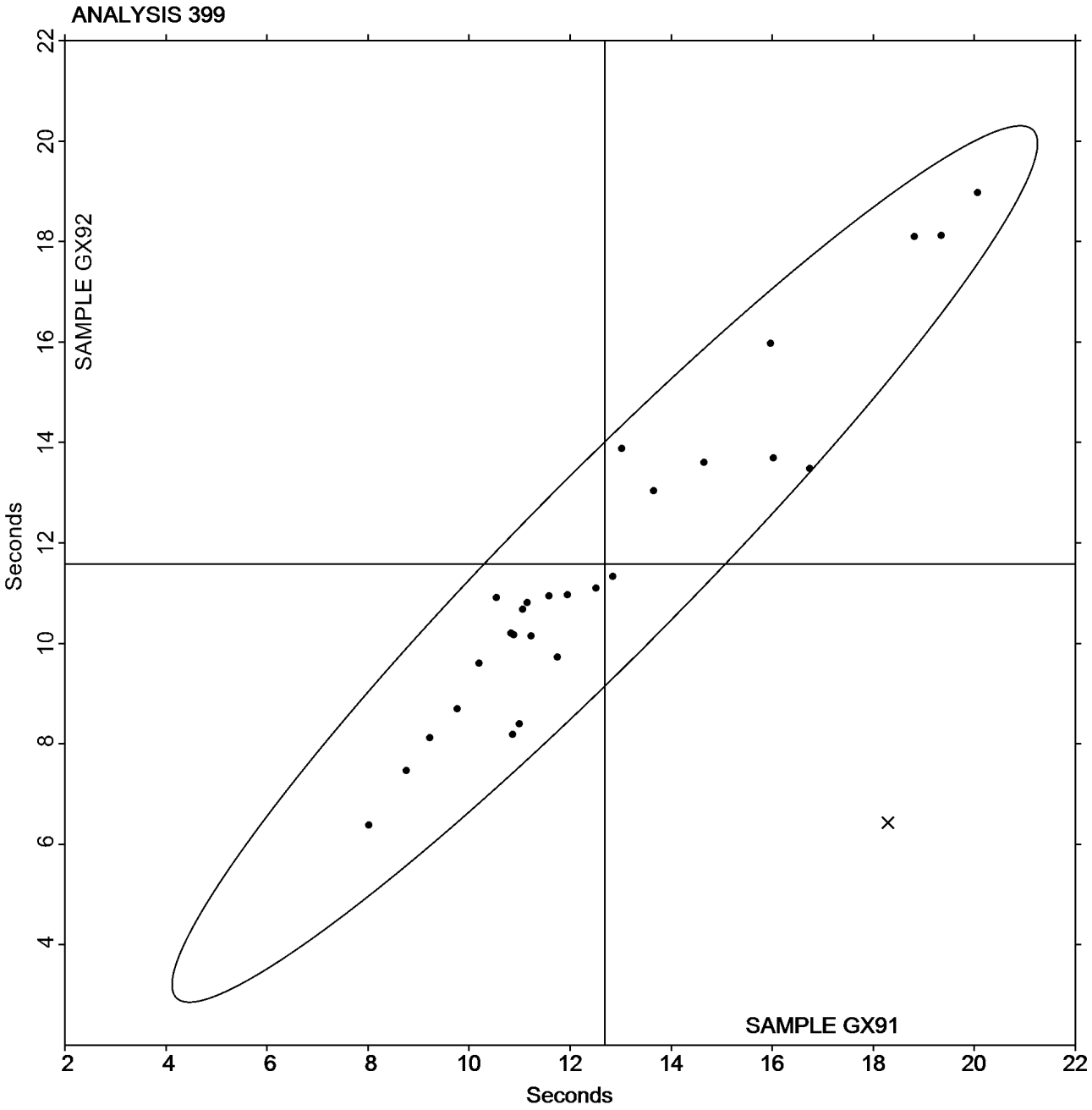
23AWHJ (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample GX91.

Key to Instrument Codes Reported by Participants

HE Hercules Sizing Tester

Grand Mean Sample GX91 = 12.686 Seconds

Grand Mean Sample GX92 = 11.580 Seconds



-End of Report-