Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #283G-August 2016

The CTS Paper, Paperboard & Corrugated Fiberboard 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, wine, and color, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality assurance objectives. Labs from the U.S., as well as more than 80 countries, currently participate in CTS programs.

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

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Key for Web Summary Reports (Page 1 of 2)

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

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

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

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

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

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

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

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

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

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

Key for Web Summary Reports (Page 2 of 2)

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	F	Samples	Hunter L, a, b Color Values			Color Difference Values				Instr Code
			L	a	b	ΔL	Δa	Δb	ΔE	
3AWBEL		GA33	92.72	-0.54	1.95	0.16	0.21	-0.07	0.27	MK
		GA34	92.88	-0.33	1.88					
69WX3D		GA33	91.29	0.13	1.80	-0.03	-0.08	0.03	0.09	TS
		GA34	91.26	0.05	1.84					
9GZ7XV		GA33	92.64	0.02	1.49	-0.03	0.00	-0.05	0.06	TS
		GA34	92.61	0.02	1.45					
9QMA3A		GA33	92.42	-0.80	2.49	0.05	-0.01	-0.17	0.17	HH
		GA34	92.47	-0.80	2.32					
A23GE4		GA33	92.90	0.08	1.68	0.06	-0.22	0.04	0.23	TS
		GA34	92.96	-0.14	1.72					
AEMVH4		GA33	94.01	-0.62	2.23	0.04	0.01	0.07	0.08	EH
		GA34	94.05	-0.61	2.29					
DJDAXN		GA33	93.89	0.67	1.92	-0.04	-0.11	0.08	0.14	HE
		GA34	93.86	0.57	1.99					
DV2E4Z		GA33	91.63	-0.63	0.60	0.00	0.03	0.01	0.03	HH
		GA34	91.63	-0.60	0.62					
DWXP2N		GA33	91.40	0.11	1.76	0.11	-0.01	0.00	0.11	TS
		GA34	91.51	0.10	1.76					
GW49F2		GA33	92.03	-0.52	1.80	0.04	0.08	0.02	0.10	XX
		GA34	92.08	-0.44	1.82					
NL2MNV		GA33	91.28	0.05	1.43	0.01	0.01	0.03	0.03	TS
		GA34	91.28	0.07	1.46					
QPAKDT		GA33	94.13	-0.68	2.11	0.13	0.15	-0.07	0.21	EH
		GA34	94.26	-0.53	2.03					
T79HNN		GA33	94.18	-0.70	2.05	0.02	0.00	0.03	0.04	TC
		GA34	94.20	-0.70	2.08					
THKPKN		GA33	92.63	0.06	1.73	-0.91	-0.06	0.00	0.92 X	TM
		GA34	91.72	0.01	1.73					
TMYK6R		GA33	94.36	-0.57	1.98	-0.18	-0.04	-0.05	0.19	NE
		GA34	94.18	-0.61	1.93					
U6V88B		GA33	91.60	-1.15	0.80	-0.01	-0.03	0.04	0.05	HG
		GA34	91.59	-1.18	0.84					

Paper & Paperboard Interlaboratory Testing Program

Report #283G
August 2016

Analysis 350

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

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

Web Code	F	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code
U7N3UJ		GA33	91.62	-0.33	1.82	0.19	0.09	-0.01	0.21	TS
		GA34	91.81	-0.24	1.81					
VM99EH		GA33	91.94	-0.07	1.62	-0.03	0.01	0.01	0.04	TS
		GA34	91.90	-0.06	1.63					
WRX9AN		GA33	93.94	-0.73	2.02	-0.03	-0.02	0.04	0.05	LS
		GA34	93.91	-0.76	2.06					
X6ZXMG		GA33	94.57	-0.57	1.05	0.03	-0.04	0.14	0.15	XS
		GA34	94.60	-0.61	1.19					
X7VJG8		GA33	92.61	-0.72	2.09	0.01	-0.01	0.07	0.07	TC
		GA34	92.62	-0.73	2.16					
XMHWTE		GA33	93.28	-0.71	2.20	0.01	0.00	0.05	0.05	HE
		GA34	93.29	-0.71	2.25					
XYCDLL		GA33	94.02	-0.63	2.09	0.00	0.04	0.02	0.04	LS
		GA34	94.02	-0.59	2.11					
Y4MQZE		GA33	92.70	-0.83	0.95	0.05	-0.08	0.05	0.11	HH
		GA34	92.75	-0.91	1.00					
ZXU7A4		GA33	92.45	-0.57	1.99	0.10	0.04	0.02	0.11	TC
		GA34	92.55	-0.53	2.01					

Summary Statistics

Grand Means							
GA33	92.818	-0.409	1.746	-0.010	-0.002	0.013	0.142
GA34	92.845	-0.411	1.760				
Stnd Dev Btwn Labs							
GA33	1.091	0.423	0.467	0.203	0.084	0.060	0.176
GA34	1.076	0.401	0.449				

Statistics based on 25 of 25 reporting participants

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	F	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code

Key to Instrument Codes Reported by Participants

EH	Datacolor Elrepho SF450	HE	Hunter LabScan
HG	Hunter ColorQUEST	HH	Hunter D25DP - 9000
LS	L & W Elrepho SE 070	MK	Macbeth Color-Eye 7000 Spectrophotometer
NE	Minolta CM-3500d Spectrophotometer	TC	Technidyne Color Touch Series
TM	Technidyne Technibrite Micro TB-1C	TS	Technidyne Brightimeter Micro S-5
XS	X-Rite 938 Spectrodensitometer	XX	Instrument make/model not specified by lab

Paper & Paperboard Interlaboratory Testing Program

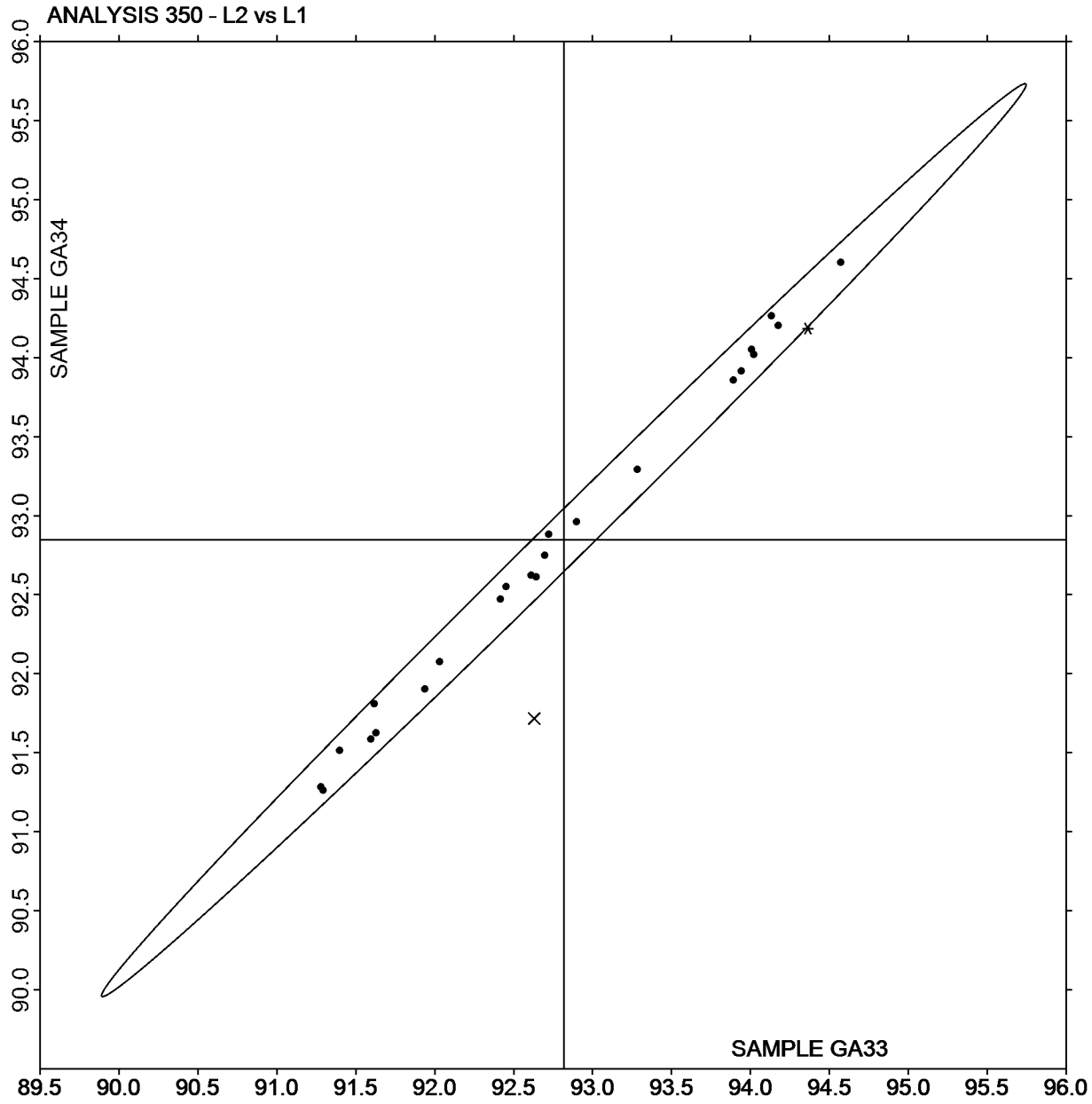
Analysis 350

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

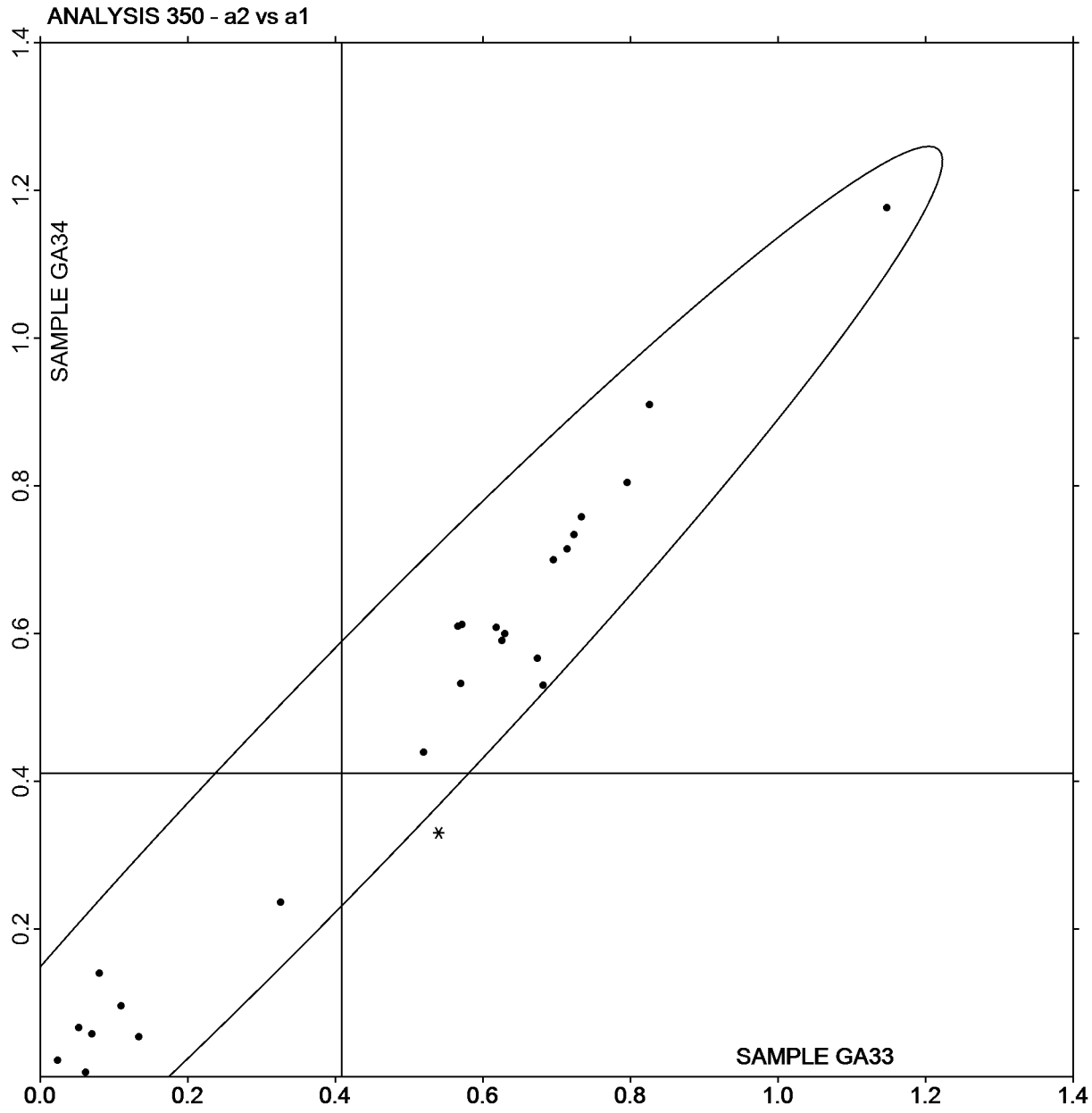
Hunter L,a,b - Illuminant C - 2 Degree Observer

Web Code	F	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code

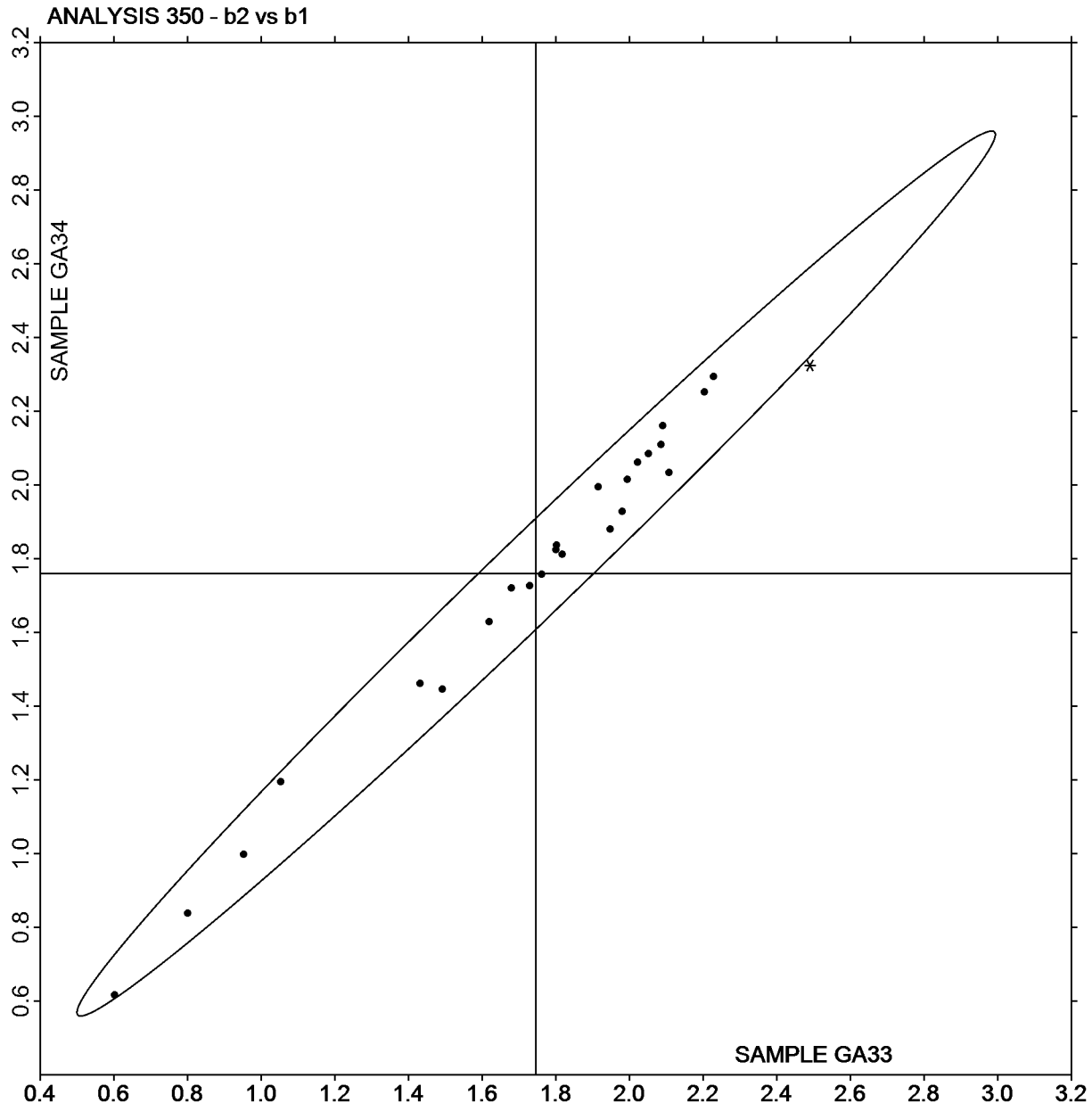
Plot of L values GA34 v L values GA33



Plot of a values GA34 v a values GA33



Plot of b values GA34 v b values GA33



2RJEGG	X	GA33	94.31	-1.69	7.74	-0.01	-0.03	0.02	0.04	NF
		GA34	94.30	-1.72	7.76					
AHNYAQ		GA33	93.18	-0.77	2.41	-0.02	-0.02	0.03	0.04	XP
		GA34	93.15	-0.79	2.44					
BH7DB9	X	GA33	94.19	-0.82	2.59	0.20	0.36	-0.09	0.42 X	EH
		GA34	94.39	-0.46	2.49					
BL7JUK		GA33	94.22	-0.74	2.42	-0.03	-0.02	-0.02	0.04	NG
		GA34	94.19	-0.76	2.40					
D29ZTH		GA33	94.32	-0.81	2.42	0.01	0.00	0.03	0.03	NG
		GA34	94.33	-0.80	2.45					
EWUMNN		GA33	92.48	-0.67	2.34	-0.09	-0.08	0.05	0.13	XM
		GA34	92.39	-0.75	2.39					
GDTGCZ		GA33	94.49	-0.77	2.52	0.03	-0.04	0.07	0.09	HT
		GA34	94.51	-0.81	2.60					
J8CX3W		GA33	94.50	-0.66	2.51	-0.12	-0.13	-0.07	0.19	HT
		GA34	94.38	-0.78	2.43					
KJMP6W		GA33	92.97	-0.58	2.27	-0.21	-0.06	-0.15	0.27	LS
		GA34	92.76	-0.64	2.12					
PZXYYK		GA33	94.54	-0.73	2.19	-0.10	-0.04	0.04	0.11	XX
		GA34	94.44	-0.77	2.22					
R6KQWR		GA33	93.97	-0.72	2.42	0.12	-0.01	0.04	0.12	NG
		GA34	94.09	-0.73	2.46					
U3QH7M		GA33	93.39	-0.66	2.05	-0.11	-0.03	-0.03	0.12	HV
		GA34	93.28	-0.69	2.02					
UXWM6E		GA33	92.55	-0.74	2.20	0.09	0.00	-0.06	0.11	TC
		GA34	92.65	-0.75	2.13					
VWYUM2		GA33	95.70	-0.37	1.50	0.07	-0.03	0.05	0.09	XP
		GA34	95.77	-0.40	1.55					
XMHWTE		GA33	93.32	-0.71	2.20	-0.09	-0.02	0.02	0.09	HE
		GA34	93.23	-0.73	2.22					
XMKM2H		GA33	92.65	-0.68	2.39	0.00	-0.02	0.03	0.04	TC
		GA34	92.65	-0.70	2.42					
XYCDLL		GA33	94.12	-0.53	2.20	-0.11	-0.07	-0.15	0.20	LS
		GA34	94.01	-0.60	2.05					
ZG8NHN		GA33	94.11	-0.77	2.32	0.02	-0.01	0.02	0.03	LS
		GA34	94.13	-0.78	2.34					

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	F	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code

Summary Statistics

Grand Means								
	GA33	93.834	-0.682	2.291	-0.034	-0.036	-0.008	0.107
	GA34	93.815	-0.718	2.278				
Stnd Dev Btwn Labs								
	GA33	0.850	0.111	0.248	0.089	0.034	0.071	0.068
	GA34	0.879	0.103	0.252				

Statistics based on 16 of 18 reporting participants

Comments on Assigned Data Flags for Test #351

BH7DB9 (X) - High a values for Sample GA34. Large delta L, delta a and delta E.

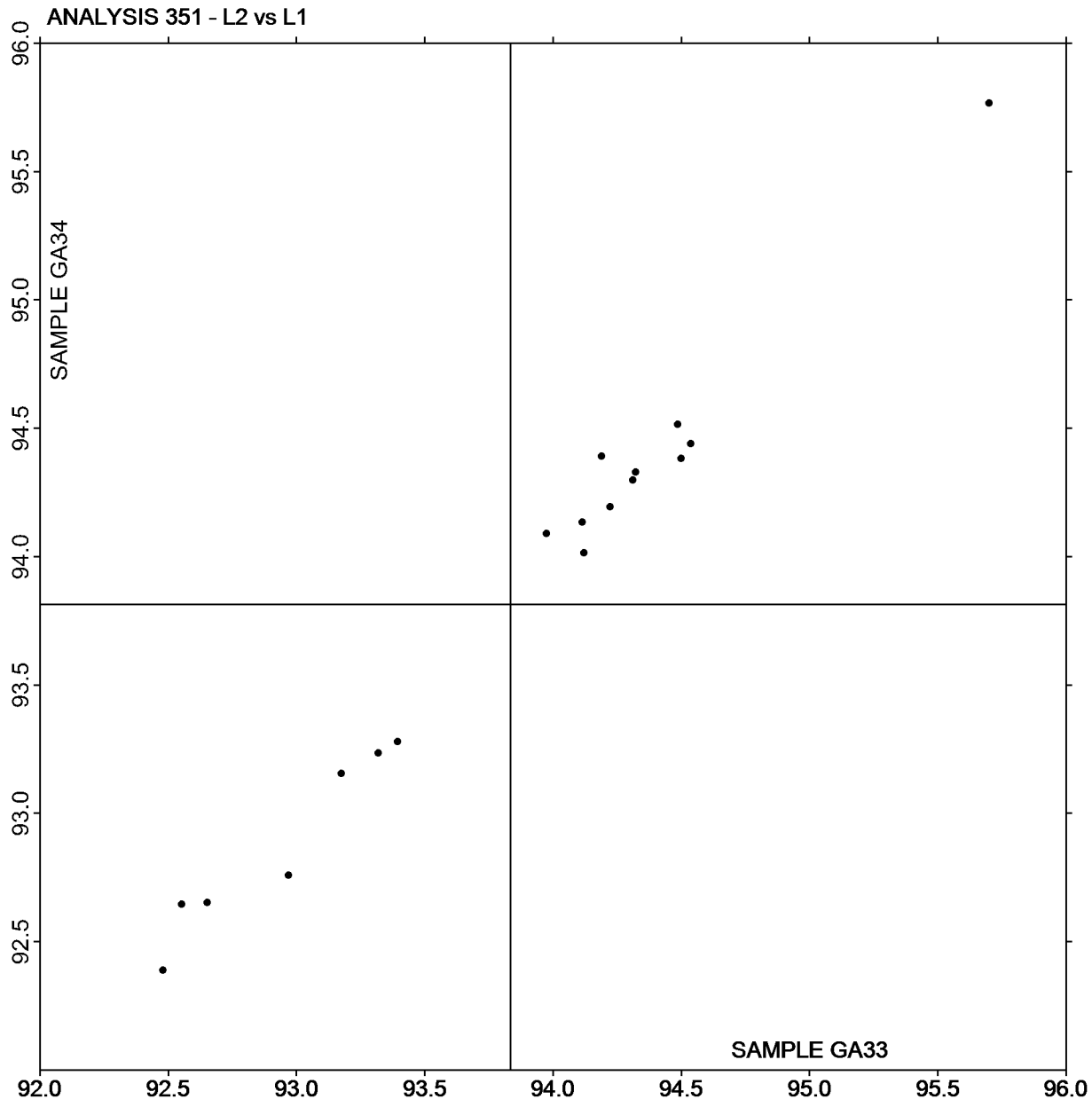
2RJEGG (X) - Low a values for both samples. High b values for both samples.

Key to Instrument Codes Reported by Participants

EH	Datacolor Elrepho SF450	HE	Hunter LabScan
HT	Hunter UltraScan Vis	HV	Hunter Ultrascan XE
LS	L & W Elrepho SE 070	NF	Minolta CM-3600d Spectrophotometer
NG	Minolta CM-3700d Spectrophotometer	TC	Technidyne Color Touch Series
XM	X-Rite CA-22	XP	X-Rite Spectrophotometer DTP
XX	Instrument make/model not specified by lab		

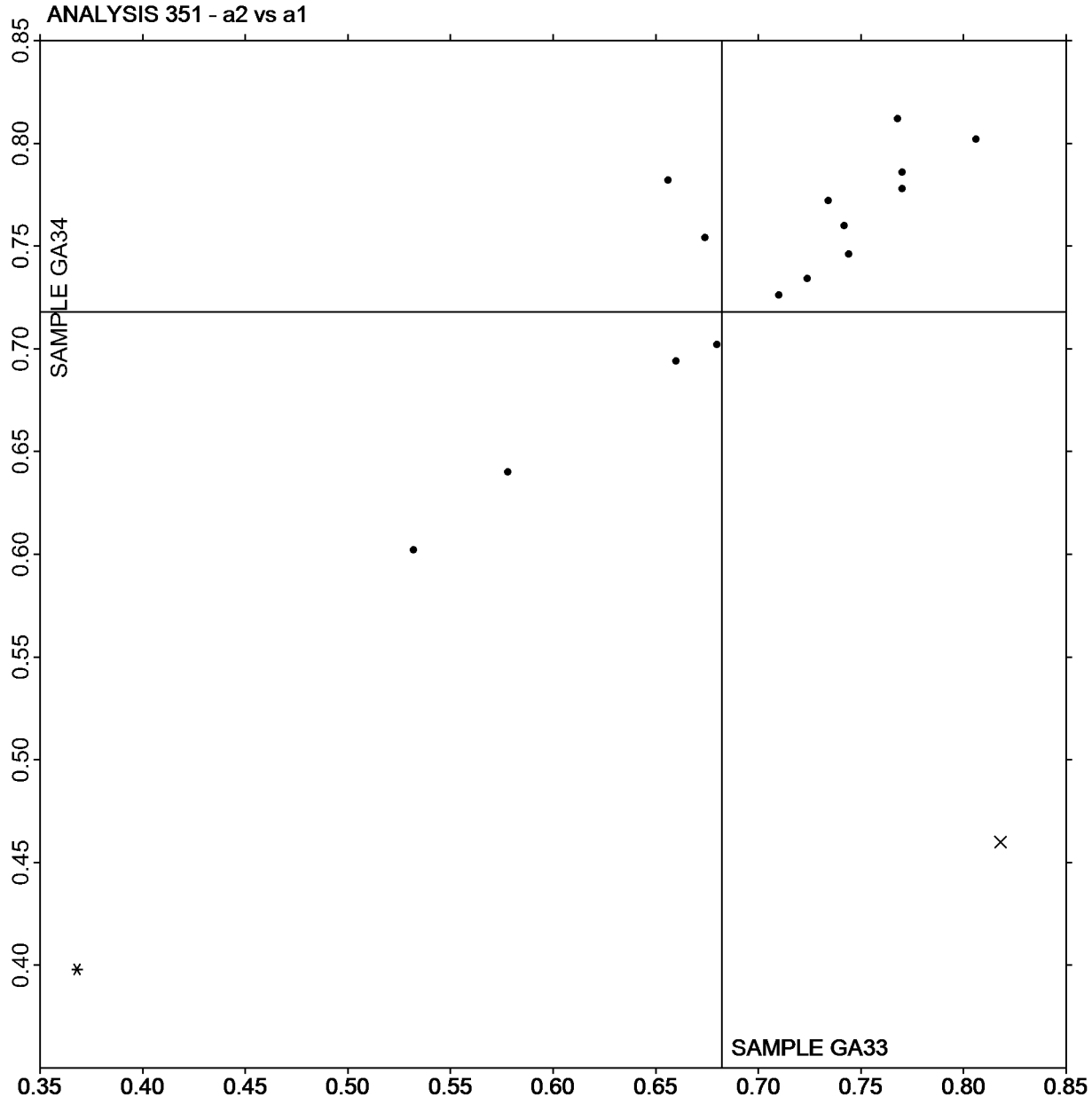
Web Code	F	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code

Plot of L values GA34 v L values GA33



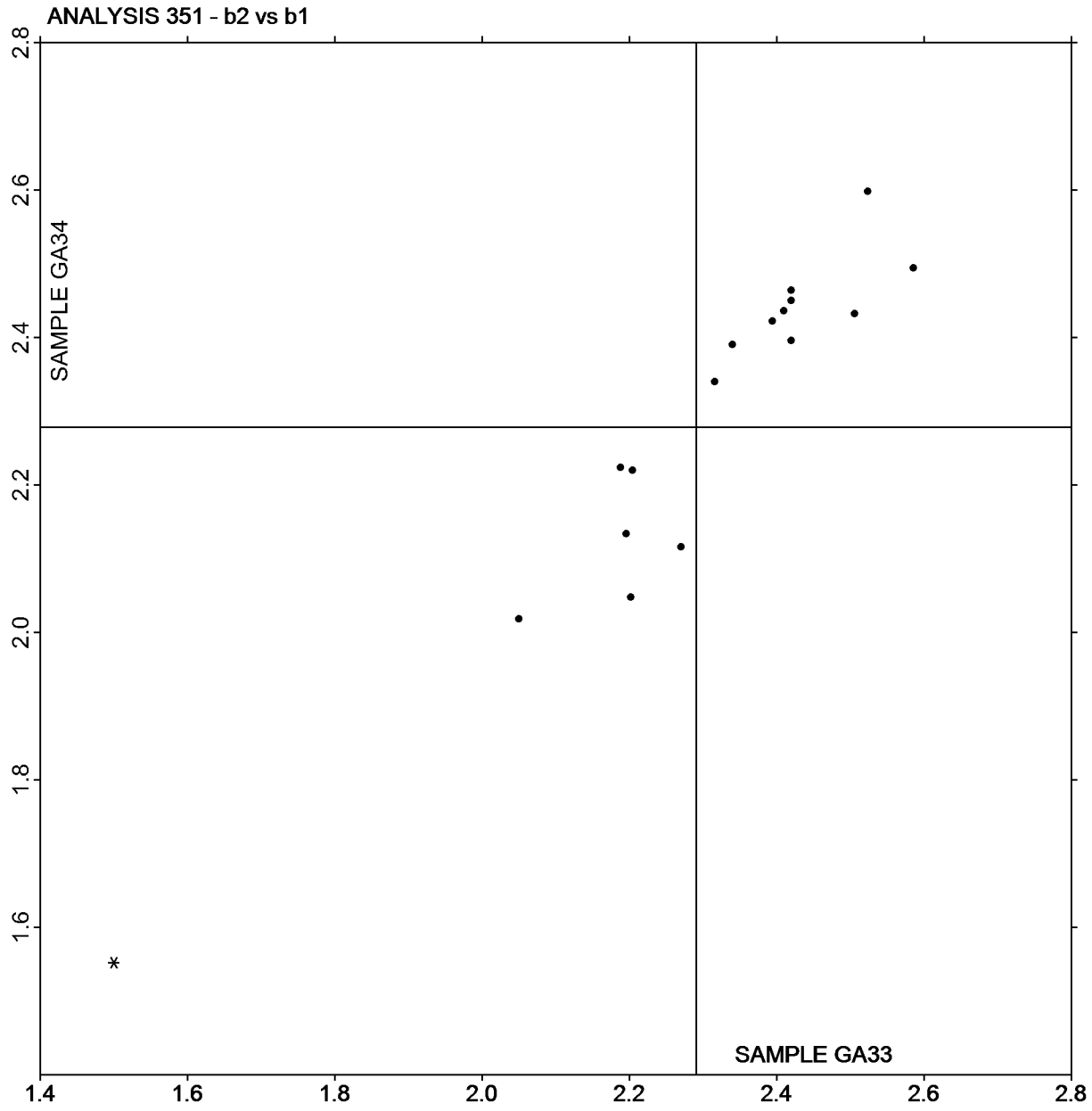
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values GA34 v a values GA33



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 GA34 v b values GA33



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

WebCode	Data Flag	Sample GV33 Lab Mean	Sample GV33 Diff from Grand Mean	Sample GV33 CPV	Sample GV34 Lab Mean	Sample GV34 Diff from Grand Mean	Sample GV34 CPV	Instr Code
2RJEGG		5.105	0.099	1.16	3.869	0.065	1.00	TM
38BCJC	X	4.705	-0.301	-3.51	3.646	-0.158	-2.42	TM
3AWBEL		5.029	0.024	0.28	3.871	0.067	1.03	PP
3PD46E		5.009	0.004	0.05	3.844	0.040	0.62	LW
3WVFHE		4.992	-0.013	-0.15	3.787	-0.016	-0.25	TA
69WX3D		5.008	0.003	0.03	3.764	-0.040	-0.61	EM
6EKDVQ		5.103	0.098	1.14	3.873	0.069	1.06	XX
72VX8H		4.990	-0.015	-0.18	3.832	0.028	0.43	TM
7AP7N3		4.955	-0.050	-0.59	3.748	-0.056	-0.85	TA
7MQYYB	X	4.913	-0.092	-1.08	3.549	-0.255	-3.89	TA
8TXMCD		4.932	-0.073	-0.86	3.742	-0.062	-0.94	PP
92JD84		5.028	0.023	0.27	3.781	-0.023	-0.35	EM
A6Y39R		4.836	-0.169	-1.98	3.696	-0.108	-1.65	EM
AREM38		4.955	-0.050	-0.59	3.766	-0.038	-0.58	PP
AVVT23		4.943	-0.062	-0.73	3.730	-0.073	-1.12	TM
AYBH27		4.962	-0.043	-0.51	3.742	-0.062	-0.94	TM
BJGCAN		5.004	-0.001	-0.01	3.841	0.037	0.57	EM
BL7JUK		5.000	-0.005	-0.06	3.757	-0.047	-0.72	XX
BV7CY6		5.082	0.076	0.89	3.817	0.013	0.20	EM
BW6C3B		4.986	-0.019	-0.22	3.815	0.011	0.17	LW
CKMXXN		5.051	0.045	0.53	3.796	-0.008	-0.13	XX
CR6KA6	*	5.130	0.125	1.46	3.958	0.154	2.36	LW
D29ZTH		4.940	-0.065	-0.76	3.757	-0.047	-0.72	XX
D99G4N		5.077	0.072	0.84	3.793	-0.010	-0.16	LW
DGN3DR		5.007	0.001	0.02	3.806	0.002	0.03	LW
E2Q7T9		4.975	-0.030	-0.35	3.816	0.012	0.18	TM
E9NZQ7		5.049	0.044	0.51	3.849	0.045	0.69	PP
EWUMNN		5.067	0.062	0.72	3.854	0.051	0.77	LW
FF6XUK		4.970	-0.035	-0.41	3.770	-0.034	-0.52	EM
GDTGCZ		5.019	0.014	0.16	3.834	0.030	0.46	EM
GW49F2		5.170	0.165	1.92	3.880	0.076	1.16	XX
HWERC6		4.983	-0.023	-0.26	3.752	-0.052	-0.79	LW
J8CX3W		5.041	0.036	0.42	3.852	0.048	0.74	EM
J999ZK		5.005	-0.001	-0.01	3.801	-0.003	-0.05	LW
J9QJCX	*	5.244	0.239	2.79	3.943	0.139	2.13	TM
KWBPZ6		5.051	0.046	0.54	3.823	0.019	0.29	MS
LPLQKG		5.012	0.007	0.08	3.872	0.068	1.04	EM
NDP8GV		5.156	0.151	1.76	3.895	0.091	1.40	LW
NL2MNV		4.927	-0.078	-0.91	3.788	-0.016	-0.24	TM
PQB2AZ		4.920	-0.085	-1.00	3.690	-0.114	-1.74	TM
PZXYYK		5.071	0.066	0.77	3.856	0.052	0.80	LW

Paper & Paperboard Interlaboratory Testing Program
Analysis 360
Thickness (Caliper), Printing papers

WebCode	Data Flag	Sample GV33 Lab Mean	Sample GV33 Diff from Grand Mean	Sample GV33 CPV	Sample GV34 Lab Mean	Sample GV34 Diff from Grand Mean	Sample GV34 CPV	Instr Code
QPAKDT		5.043	0.038	0.44	3.843	0.039	0.60	EM
R6KQWR		5.061	0.056	0.65	3.857	0.053	0.81	LW
RE9GL6		4.894	-0.111	-1.29	3.782	-0.022	-0.33	MT
RUYMRD		5.057	0.051	0.60	3.876	0.073	1.11	LW
T79HNN		4.958	-0.047	-0.55	3.794	-0.010	-0.15	LA
THKPKN		4.939	-0.066	-0.77	3.766	-0.038	-0.58	TA
TRN2GH		4.956	-0.049	-0.58	3.762	-0.042	-0.64	LW
TTM3KN		4.969	-0.037	-0.43	3.775	-0.029	-0.44	FR
U3QH7M		4.967	-0.038	-0.45	3.790	-0.014	-0.21	TA
U7N3UJ		4.941	-0.064	-0.75	3.698	-0.106	-1.62	LA
UBKPM8	*	4.990	-0.015	-0.18	3.710	-0.094	-1.43	TM
UXWM6E		5.041	0.036	0.42	3.840	0.036	0.55	TA
V8FFUG		4.867	-0.138	-1.62	3.737	-0.067	-1.02	EM
VM99EH		4.803	-0.202	-2.37	3.668	-0.136	-2.07	TM
VWYUM2		4.845	-0.160	-1.87	3.700	-0.104	-1.59	TM
VXRMLQ		5.125	0.120	1.40	3.907	0.103	1.58	LW
WRX9AN		5.035	0.029	0.34	3.868	0.064	0.98	LW
X6ZXMG		4.960	-0.045	-0.53	3.800	-0.004	-0.06	TM
YHJZMK		4.820	-0.185	-2.16	3.660	-0.144	-2.20	XX
YJZWBD		5.078	0.072	0.85	3.849	0.045	0.69	LW
ZG6XAK		5.030	0.025	0.29	3.806	0.002	0.03	LA
ZXU7A4		5.160	0.155	1.81	3.883	0.079	1.21	TA

Summary Statistics

	Sample GV33	Sample GV34
Grand Means	5.0053 mils	3.8038 mils
SD Btwn Labs	0.0856 mils	0.0655 mils

Statistics based on 61 of 63 reporting participants

Comments on Assigned Data Flags for Test #360

38BCJC (X) - Data for sample GV33 are low.

7MQYYB (X) - Data for sample GV34 are low.

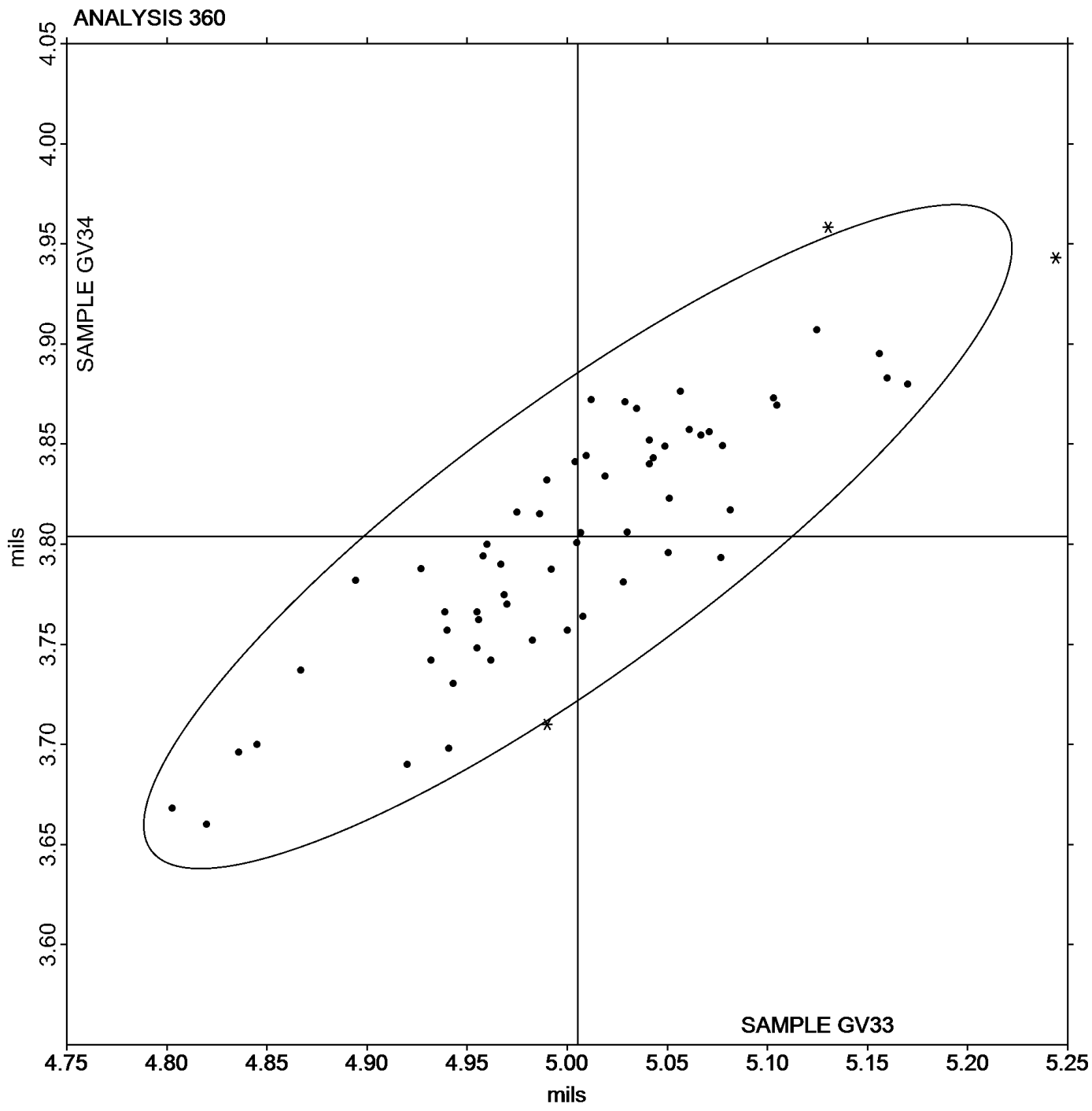
Key to Instrument Codes Reported by Participants

EM	Emveco	FR	Frank Instruments
LA	L & W Autoline	LW	L & W
MS	Messmer	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 360
Thickness (Caliper), Printing papers

Grand Mean Sample **GV33** = 5.0053 mils

Grand Mean Sample **GV34** = 3.8038 mils



Paper & Paperboard Interlaboratory Testing Program
Analysis 361
Thickness (Caliper), Packaging papers

WebCode	Data Flag	Sample GY33 Lab Mean	Sample GY33 Diff from Grand Mean	Sample GY33 CPV	Sample GY34 Lab Mean	Sample GY34 Diff from Grand Mean	Sample GY34 CPV	Instr Code
6ARDEB		9.430	-0.149	-0.70	14.01	-0.12	-0.60	TA
7EGBKD		9.545	-0.034	-0.16	14.19	0.07	0.35	PP
7MQYYB		9.559	-0.020	-0.09	14.03	-0.10	-0.50	TA
9QMA3A		9.533	-0.046	-0.22	14.13	0.01	0.04	EM
A23GE4	*	10.149	0.570	2.69	14.64	0.52	2.63	EM
AYBH27		9.584	0.005	0.02	14.16	0.03	0.18	TM
BH7DB9		9.886	0.307	1.45	14.28	0.15	0.77	EM
BW6C3B		9.670	0.091	0.43	14.09	-0.03	-0.15	LW
D99G4N		9.457	-0.122	-0.58	14.14	0.02	0.09	LW
DJDAXN		9.417	-0.162	-0.76	13.97	-0.15	-0.78	LA
DPGDL2		9.390	-0.189	-0.89	13.99	-0.14	-0.70	TA
DV2E4Z		9.674	0.095	0.45	14.18	0.05	0.27	EM
E7YU7A		9.595	0.016	0.08	14.15	0.03	0.16	TM
EHCUZH		9.568	-0.011	-0.05	14.09	-0.04	-0.19	LA
EM4YV8		9.650	0.071	0.33	14.09	-0.03	-0.14	LA
G398N7		9.239	-0.340	-1.61	13.89	-0.24	-1.20	TM
JF8VT6		9.290	-0.289	-1.37	13.97	-0.15	-0.78	TA
JHBTZR		9.688	0.109	0.51	14.31	0.18	0.94	TM
JHDFEK		9.472	-0.107	-0.50	14.02	-0.10	-0.52	XX
KYFGU4		9.820	0.241	1.14	14.33	0.21	1.05	LA
M6FH6G	*	9.402	-0.178	-0.84	13.73	-0.39	-1.98	XX
NDP8GV		9.644	0.065	0.31	14.33	0.21	1.07	XX
PQB2AZ		9.320	-0.259	-1.22	13.80	-0.32	-1.64	TM
TAQG44		9.386	-0.193	-0.91	14.01	-0.12	-0.59	LW
XGRP9K		9.716	0.137	0.65	14.28	0.15	0.78	LA
XMHWTE		9.566	-0.013	-0.06	14.11	-0.01	-0.06	EM
XMKM2H		9.611	0.032	0.15	14.11	-0.01	-0.05	EM
XYCDLL	*	10.165	0.586	2.77	14.69	0.56	2.85	TM
Y4MQZE		9.694	0.115	0.54	14.17	0.05	0.25	EM
Y7CUTL		9.580	0.001	0.00	14.03	-0.09	-0.47	TM
YZKTPL		9.410	-0.169	-0.80	14.05	-0.07	-0.37	LA
ZG8NHN		9.660	0.081	0.38	14.17	0.05	0.24	XX
ZTXGTW		9.340	-0.239	-1.13	13.94	-0.18	-0.93	TM

Summary Statistics

	Sample GY33	Sample GY34
Grand Means	9.5791 mils	14.123 mils
SD Btwn Labs	0.2117 mils	0.197 mils

Statistics based on 33 of 33 reporting participants

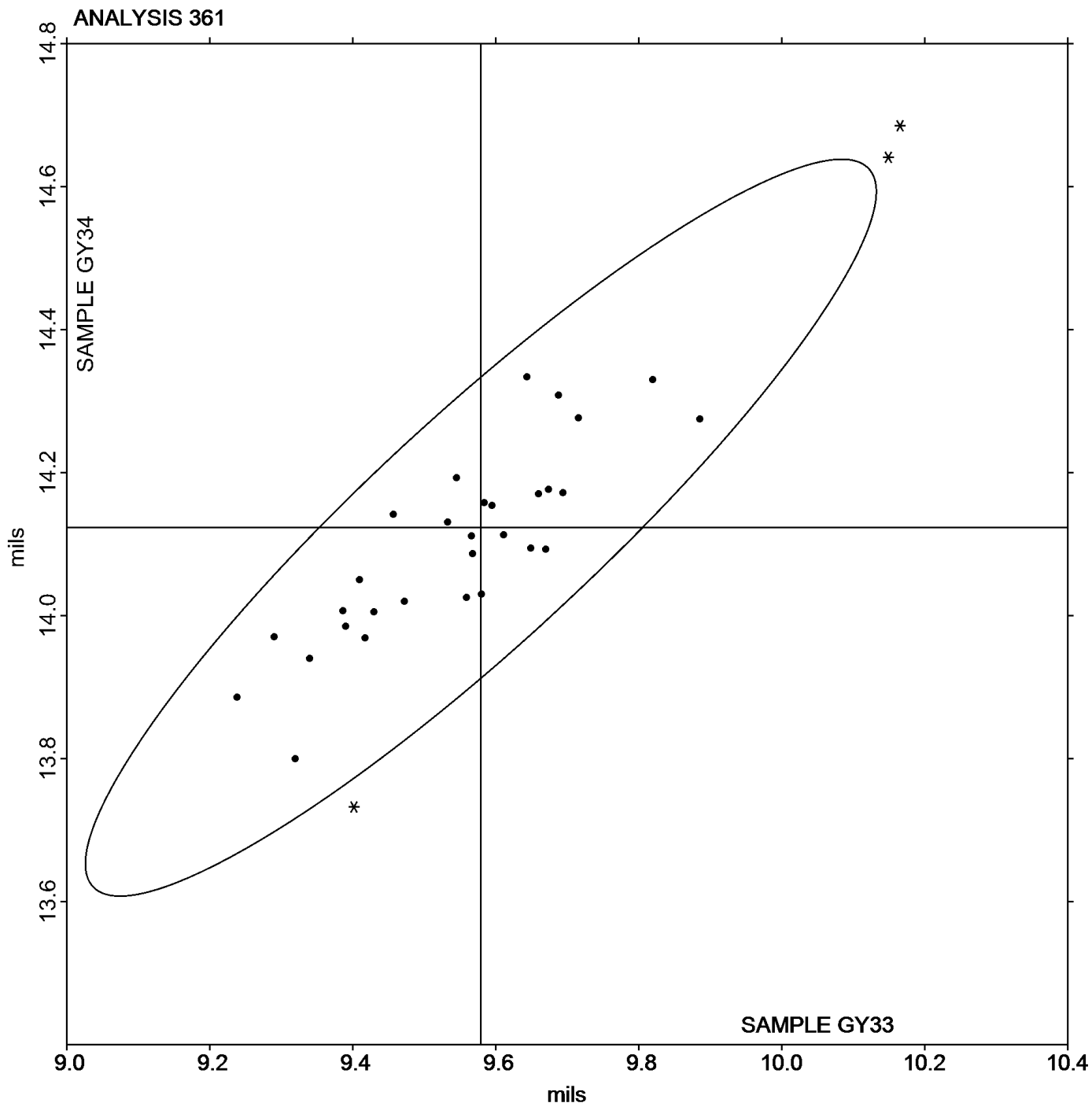
Key to Instrument Codes Reported by Participants

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

Paper & Paperboard Interlaboratory Testing Program
Analysis 361
Thickness (Caliper), Packaging papers

Grand Mean Sample **GY33** = 9.5791 mils

Grand Mean Sample **GY34** = 14.123 mils



Paper & Paperboard Interlaboratory Testing Program
Analysis 364
Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

WebCode	Data Flag	Sample GD33 Lab Mean	Sample GD33 Diff from Grand Mean	Sample GD33 CPV	Sample GD34 Lab Mean	Sample GD34 Diff from Grand Mean	Sample GD34 CPV	Instr Code
69WX3D		0.6142	0.0648	0.41	0.5252	-0.0097	-0.07	XX
7LFZZV		0.6408	0.0914	0.58	0.6408	0.1059	0.75	IT
EHCUZH		0.5006	-0.0488	-0.31	0.5068	-0.0281	-0.20	TA
LHM98P		0.5806	0.0312	0.20	0.5692	0.0343	0.24	TA
NDP8GV		0.7800	0.2306	1.46	0.7440	0.2091	1.48	TL
QPAKDT		0.4434	-0.1060	-0.67	0.4640	-0.0709	-0.50	TA
X6ZXMG		0.2860	-0.2634	-1.67	0.2944	-0.2405	-1.70	XX

Summary Statistics

	Sample GD33	Sample GD34
Grand Means	0.54937 COF	0.53491 COF
SD Btwn Labs	0.15796 COF	0.14134 COF

Statistics based on 7 of 7 reporting participants

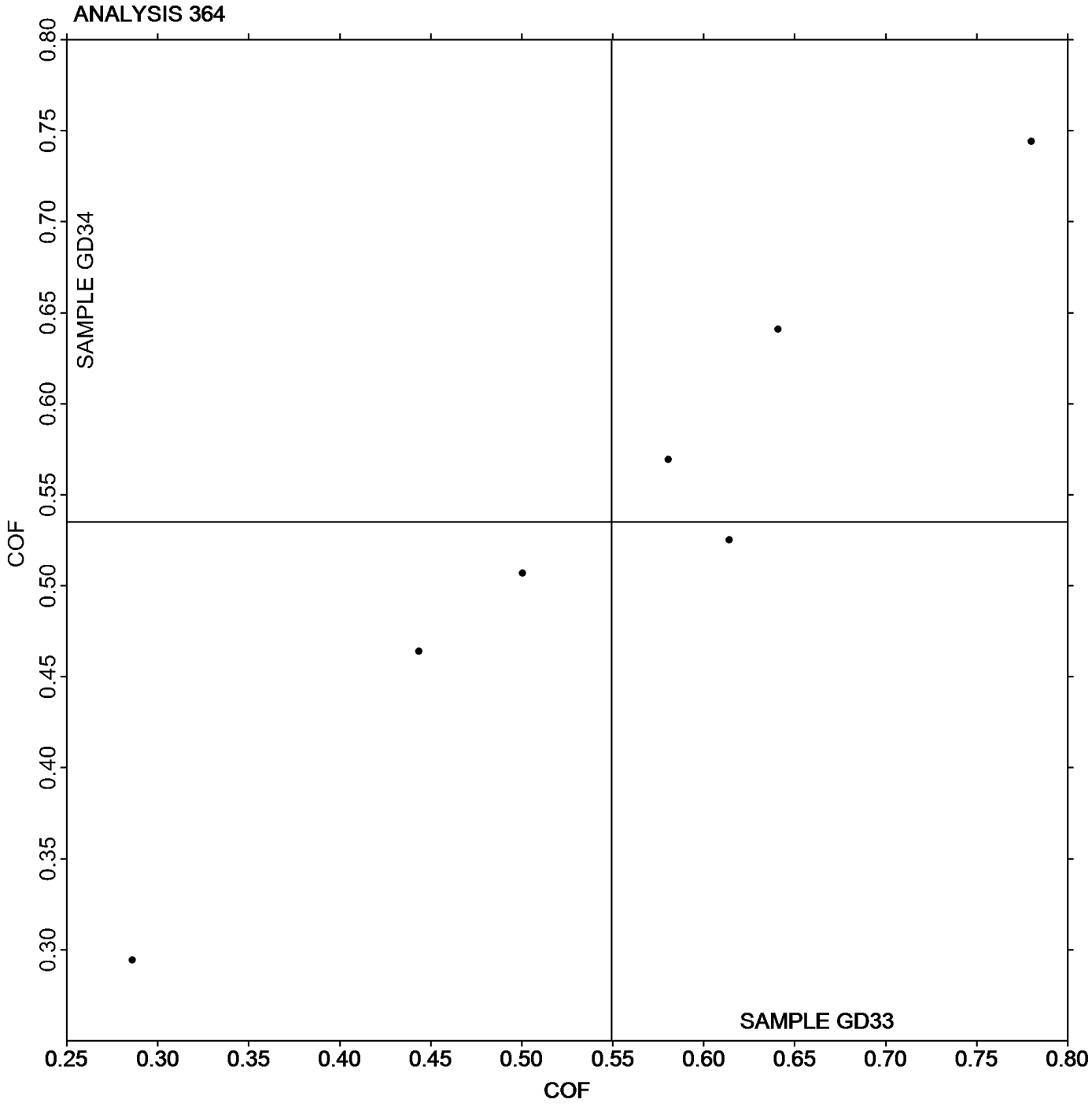
Key to Instrument Codes Reported by Participants

IT	IMASS SP-2100	TA	Thwing-Albert Friction Tester
TL	TMI 32-90 Lab Master/Slip and Friction	XX	Instrument make/model not specified by lab

Paper & Paperboard Interlaboratory Testing Program
Analysis 364
Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

Grand Mean Sample **GD33** = 0.54937 COF

Grand Mean Sample **GD34** = 0.53491 COF



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

WebCode	Data Flag	Sample GD33 Lab Mean	Sample GD33 Diff from Grand Mean	Sample GD33 CPV	Sample GD34 Lab Mean	Sample GD34 Diff from Grand Mean	Sample GD34 CPV	Instr Code
7AP7N3		0.3216	-0.1002	-0.62	0.2996	-0.1462	-1.08	TM
7LFZZV		0.4380	0.0162	0.10	0.4766	0.0308	0.23	IR
A6Y39R		0.4714	0.0496	0.31	0.4900	0.0442	0.33	TA
DWXP2N		0.4572	0.0354	0.22	0.4660	0.0202	0.15	TA
EHCUZH		0.4568	0.0350	0.22	0.4732	0.0274	0.20	TA
LHM98P		0.4392	0.0174	0.11	0.4590	0.0132	0.10	TA
NDP8GV		0.6980	0.2762	1.72	0.6780	0.2322	1.71	TL
P73WMQ		0.6526	0.2307	1.43	0.6076	0.1618	1.19	TA
QPAKDT		0.2880	-0.1338	-0.83	0.2788	-0.1670	-1.23	TA
THKPKN		0.1722	-0.2496	-1.55	0.3252	-0.1206	-0.89	TA
TL2A84		0.4816	0.0598	0.37	0.5558	0.1100	0.81	TM
X6ZXMG		0.1854	-0.2364	-1.47	0.2400	-0.2058	-1.52	XX

Summary Statistics

	Sample GD33	Sample GD34
Grand Means	0.42183 COF	0.44582 COF
SD Btwn Labs	0.16089 COF	0.13571 COF

Statistics based on 12 of 12 reporting participants

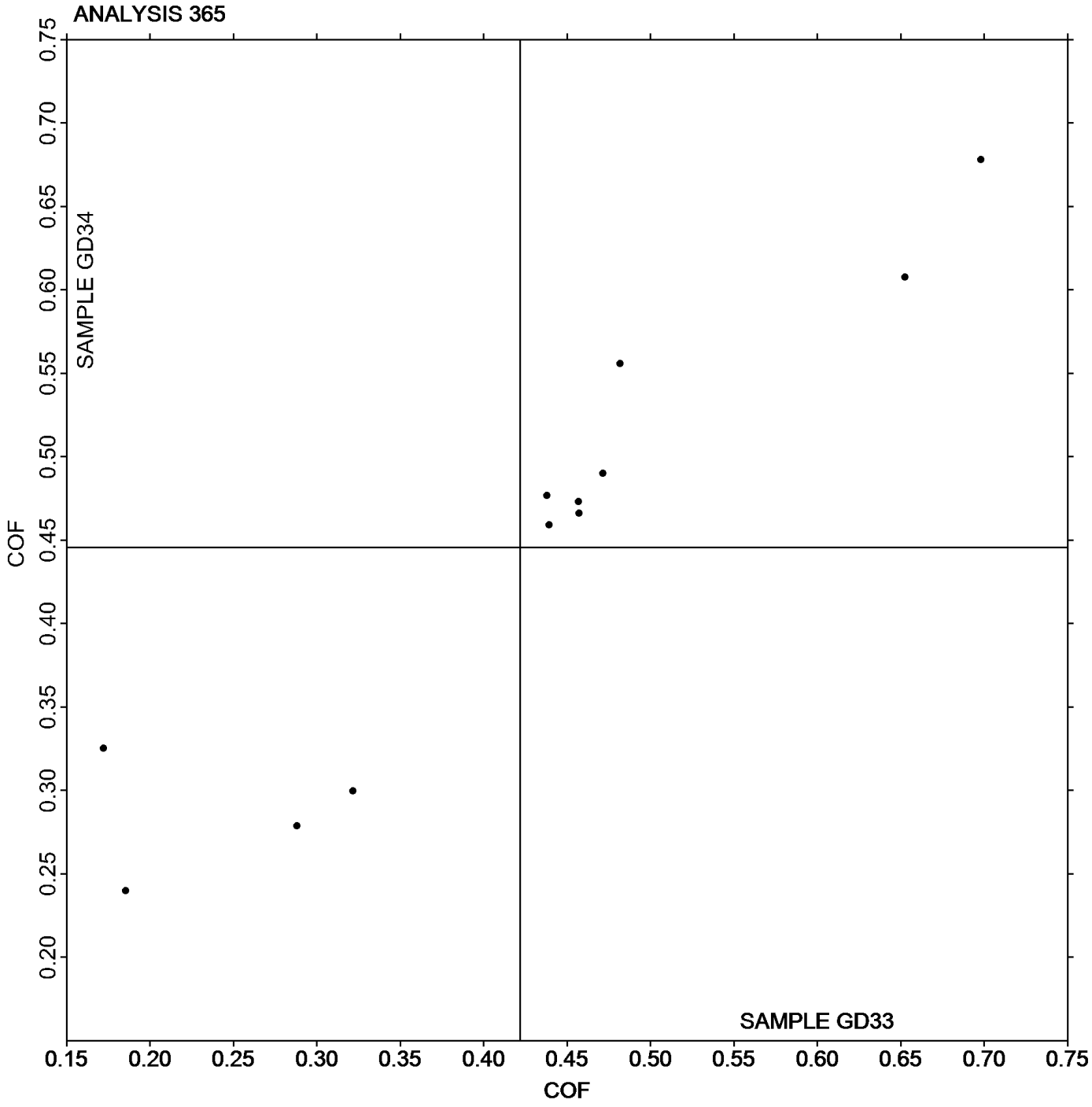
Key to Instrument Codes Reported by Participants

IR	IMASS SP-2000	TA	Thwing-Albert Friction Tester
TL	TMI 32-90 Lab Master/Slip and Friction	TM	TMI 32-06 Monitor/Slip and Friction
XX	Instrument make/model not specified by lab		

Paper & Paperboard Interlaboratory Testing Program
Analysis 365
Coefficient of Kinetic Friction - Horizontal Plane Method - Printing Papers

Grand Mean Sample **GD33** = 0.42183 COF

Grand Mean Sample **GD34** = 0.44582 COF



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

WebCode	Data Flag	Sample GE33 Lab Mean	Sample GE33 Diff from Grand Mean	Sample GE33 CPV	Sample GE34 Lab Mean	Sample GE34 Diff from Grand Mean	Sample GE34 CPV	Instr Code
32MM2N		17.03	0.23	0.27	12.15	0.06	0.09	TN
3PD46E		16.01	-0.79	-0.93	11.26	-0.83	-1.27	LP
6PK72W		17.50	0.70	0.83	12.88	0.79	1.20	LA
72VX8H		16.79	-0.01	-0.01	11.64	-0.45	-0.69	HG
7EGBKD		16.64	-0.16	-0.19	11.79	-0.30	-0.46	PP
8TXMCD		16.61	-0.19	-0.22	12.32	0.23	0.35	HG
9QMA3A		15.42	-1.38	-1.63	11.11	-0.98	-1.50	PP
AEMVH4	*	14.67	-2.13	-2.52	11.00	-1.09	-1.67	RE
AREM38		17.27	0.47	0.56	12.66	0.57	0.87	PP
AYBH27		17.10	0.30	0.36	11.39	-0.70	-1.07	HG
BJGCAN	X	4.61	-12.19	-14.45	4.57	-7.52	-11.50	HG
CR6KA6		14.95	-1.85	-2.19	10.94	-1.15	-1.76	LP
D99G4N		16.79	-0.01	-0.01	11.77	-0.32	-0.49	PP
E9NZQ7		16.96	0.16	0.19	11.79	-0.30	-0.46	HG
EHCUZH		17.03	0.23	0.27	12.10	0.01	0.01	LA
EWUMNN		15.80	-1.00	-1.18	11.60	-0.49	-0.75	LW
GDTGCZ		18.22	1.42	1.68	12.62	0.53	0.81	HG
GW49F2		17.20	0.40	0.48	12.87	0.78	1.19	XX
J8CX3W		16.00	-0.80	-0.95	11.18	-0.91	-1.40	PP
JHDFEK		15.80	-1.00	-1.18	10.92	-1.17	-1.79	XX
LHM98P		16.91	0.11	0.13	12.72	0.63	0.96	WG
LPLQKG		16.87	0.08	0.09	12.23	0.14	0.22	PP
M6FH6G		16.40	-0.40	-0.47	12.20	0.11	0.16	LW
NDP8GV		16.82	0.02	0.03	12.13	0.04	0.06	LP
NL2MNV		15.94	-0.86	-1.02	11.87	-0.22	-0.34	LP
P7P8JE		16.59	-0.21	-0.25	12.56	0.47	0.72	LP
PX8V7D		16.96	0.16	0.19	12.62	0.53	0.81	XX
QPAKDT		17.38	0.58	0.69	12.02	-0.07	-0.11	HG
TAQG44		16.87	0.07	0.08	12.13	0.03	0.05	TL
U3QH7M		16.90	0.10	0.12	11.68	-0.41	-0.63	PP
U7N3UJ		17.23	0.43	0.51	12.93	0.84	1.28	LA
UXWM6E		18.70	1.90	2.25	13.11	1.02	1.56	HG
VM99EH	X	7.27	-9.53	-11.29	5.18	-6.91	-10.57	LW
VXRMLQ		16.90	0.10	0.12	12.02	-0.07	-0.11	LP
W93GAN		16.05	-0.75	-0.89	11.78	-0.31	-0.48	LP
WEWAMR		17.24	0.44	0.52	12.70	0.61	0.93	XX
WRX9AN		17.32	0.52	0.62	12.24	0.15	0.23	LP
X6ZXMG		15.90	-0.90	-1.07	11.50	-0.59	-0.91	GS
XMKM2H		17.66	0.86	1.02	12.83	0.73	1.12	PP
Y7CUTL		15.88	-0.92	-1.09	10.93	-1.16	-1.78	TL
YHJZMK		18.00	1.20	1.42	13.13	1.04	1.59	WG

Paper & Paperboard Interlaboratory Testing Program
Analysis 370
Air Resistance - Gurley Oil Type

WebCode	Data Flag	Sample GE33 Lab Mean	Sample GE33 Diff from Grand Mean	Sample GE33 CPV	Sample GE34 Lab Mean	Sample GE34 Diff from Grand Mean	Sample GE34 CPV	Instr Code
YZKTPL		17.20	0.40	0.48	12.50	0.41	0.62	LA
ZG6XAK		18.55	1.75	2.08	13.22	1.13	1.72	LA
ZTXGTW		16.89	0.09	0.11	12.65	0.56	0.85	TL
ZXU7A4		17.40	0.60	0.71	12.27	0.18	0.28	PP

Summary Statistics

	Sample GE33	Sample GE34
Grand Means	16.799 sec/100 cc	12.092 sec/100 cc
SD Btwn Labs	0.844 sec/100 cc	0.654 sec/100 cc

Statistics based on 43 of 45 reporting participants

Comments on Assigned Data Flags for Test #370

VM99EH (X) - Extreme Data.

BJGCAN (X) - Extreme Data.

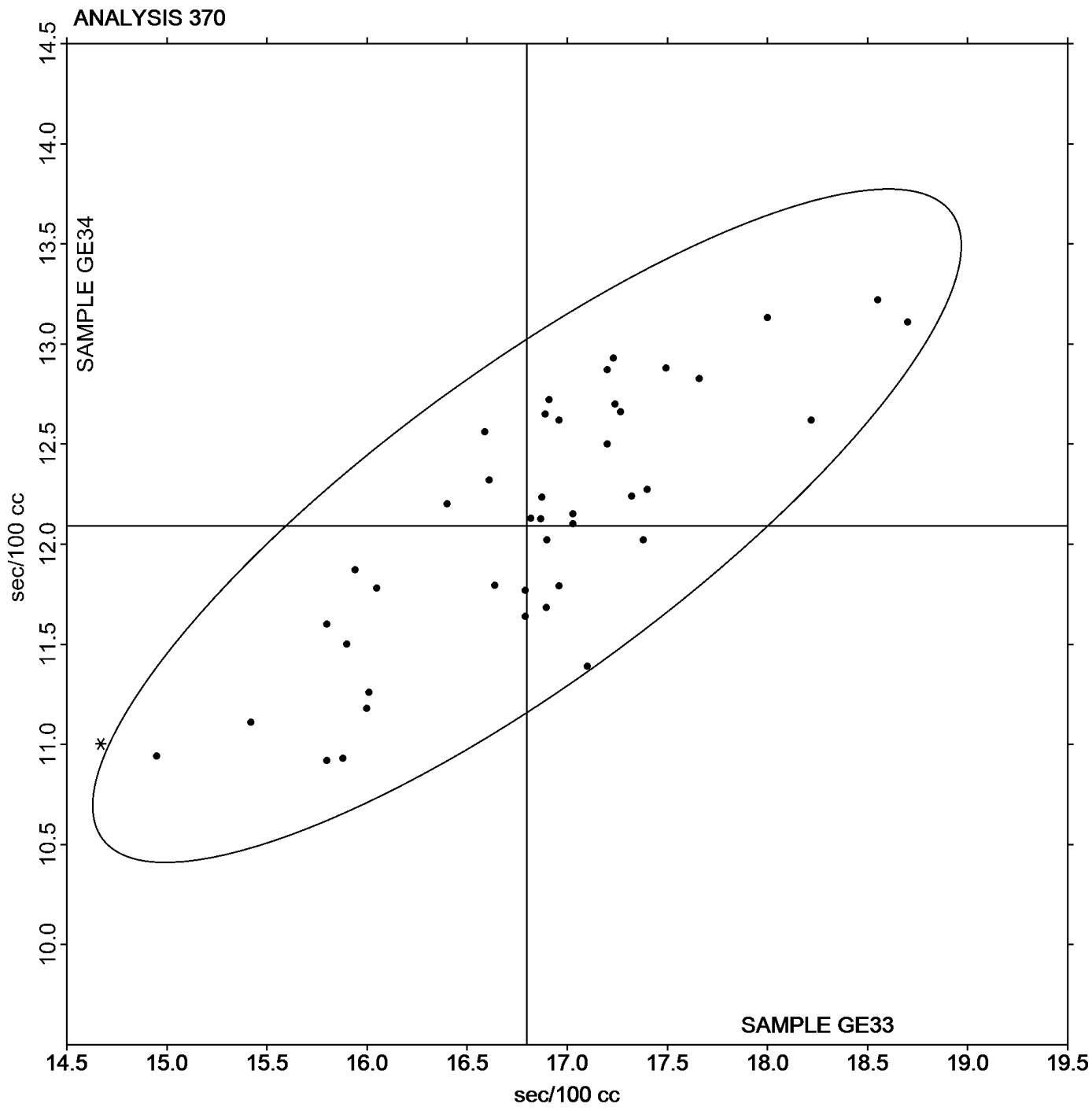
Key to Instrument Codes Reported by Participants

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
RE	Regmed Gurley Densometer PGH-T	TL	Gurley Densometer #4110, Oil Flotation
TN	Gurley S-P-S Tester #4190	WG	W & LE Gurley Tester
XX	Instrument make/model not specified by lab		

Paper & Paperboard Interlaboratory Testing Program
Analysis 370
Air Resistance - Gurley Oil Type

Grand Mean Sample **GE33** = 16.799 sec/100 cc

Grand Mean Sample **GE34** = 12.092 sec/100 cc



Paper & Paperboard Interlaboratory Testing Program
Analysis 372
Porosity - Sheffield Type - Sheffield Units for 3/4 inch Diameter Orifice

WebCode	Data Flag	Sample GE33 Lab Mean	Sample GE33 Diff from Grand Mean	Sample GE33 CPV	Sample GE34 Lab Mean	Sample GE34 Diff from Grand Mean	Sample GE34 CPV	Instr Code
6MEKDW		144.7	-11.9	-1.19	200.7	-8.4	-0.75	LP
9QMA3A		167.1	10.5	1.04	221.2	12.1	1.08	SH
AYBH27		165.7	9.1	0.90	219.4	10.3	0.92	HG
CA93F4		152.2	-4.4	-0.44	197.7	-11.4	-1.02	LP
E2Q7T9		150.1	-6.5	-0.65	191.0	-18.1	-1.62	TT
EBUKCL		156.4	-0.2	-0.02	212.7	3.6	0.32	TT
EZB7B4		178.4	21.8	2.17	227.6	18.5	1.65	VM
GW49F2		146.0	-10.6	-1.06	202.3	-6.8	-0.61	XX
UXWM6E		153.3	-3.3	-0.33	217.2	8.1	0.72	TT
VWYUM2		147.9	-8.7	-0.87	197.8	-11.3	-1.01	TT
X6ZXMG	X	138.9	-17.7	-1.77	164.1	-45.0	-4.02	SH
Y4J2X3		162.4	5.8	0.58	211.3	2.2	0.20	GA
ZXU7A4		155.4	-1.2	-0.12	210.3	1.2	0.11	HM

Summary Statistics

	Sample GE33	Sample GE34
Grand Means	156.64 Sheffield Units	209.10 Sheffield Units
SD Btwn Labs	10.03 Sheffield Units	11.21 Sheffield Units

Statistics based on 12 of 13 reporting participants

Comments on Assigned Data Flags for Test #372

X6ZXMG (X) - Data for sample GE34 are low.

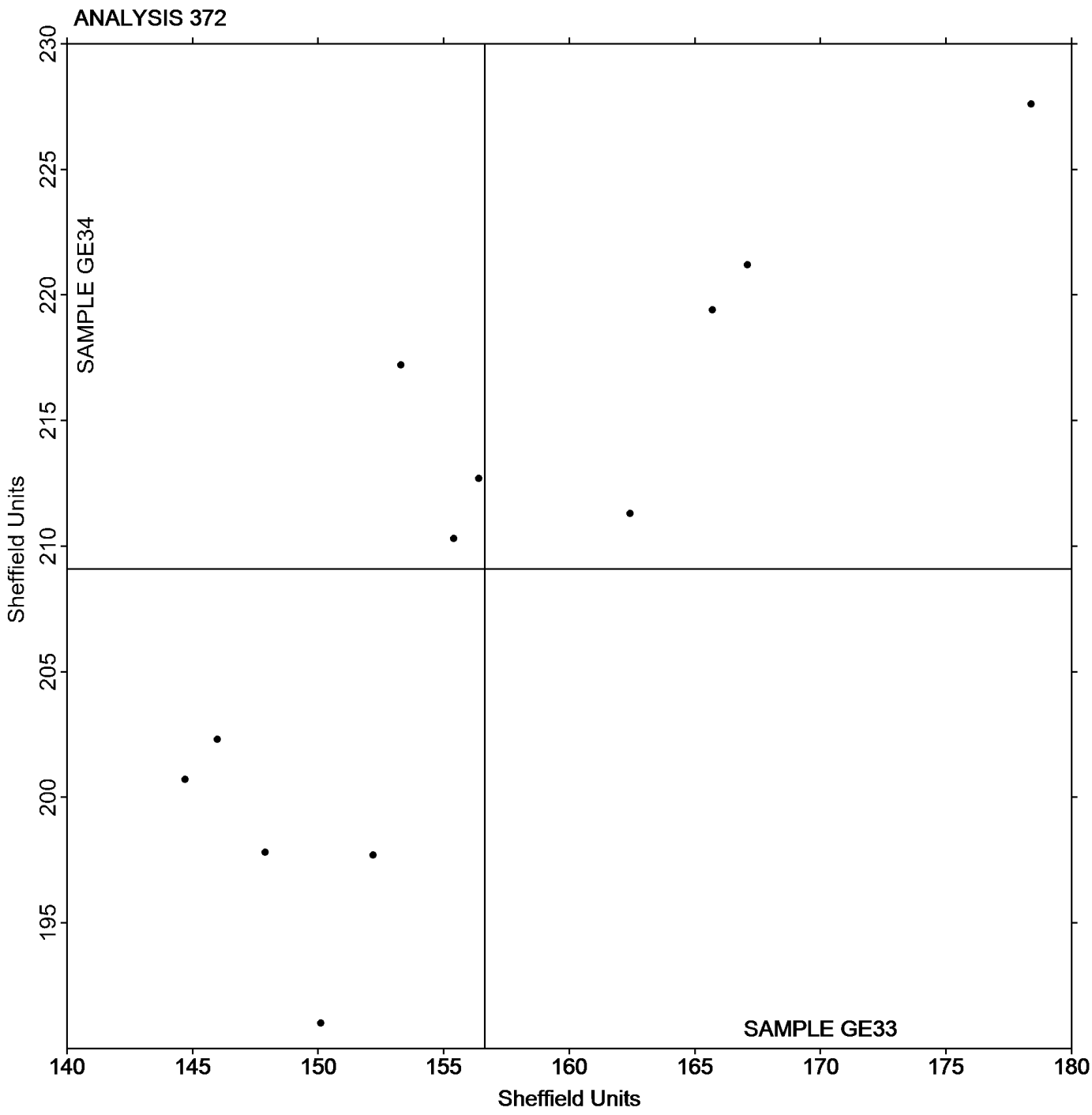
Key to Instrument Codes Reported by Participants

GA	Gurley Precision #4340 Automatic Densometer	HG	Technidyne - Hagerty Model #1
HM	Technidyne - Hagerty Model #538	LP	L & W Densometer, Air Permeance
SH	Sheffield	TT	TMI Monitor/Smoothness II, Model 58-24
VM	Valmet PaperLab (was Kajaani/Robotest)	XX	Instrument make/model not specified by lab

Paper & Paperboard Interlaboratory Testing Program
Analysis 372
Porosity - Sheffield Type - Sheffield Units for 3/4 inch Diameter Orifice

Grand Mean Sample **GE33** = 156.64 Sheffield Units

Grand Mean Sample **GE34** = 209.10 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

WebCode	Data Flag	Sample GJ33 Lab Mean	Sample GJ33 Diff from Grand Mean	Sample GJ33 CPV	Sample GJ34 Lab Mean	Sample GJ34 Diff from Grand Mean	Sample GJ34 CPV
2C8WMV	X	1.712	0.566	8.68	1.1750	0.4762	7.56
3AWBEL		1.197	0.051	0.79	0.6600	-0.0388	-0.62
7EGBKD		1.104	-0.042	-0.64	0.6160	-0.0828	-1.31
8TXMCD	X	1.151	0.005	0.08	1.0710	0.3722	5.91
92JD84		1.098	-0.048	-0.73	0.7110	0.0122	0.19
9QMA3A		1.148	0.002	0.03	0.7330	0.0342	0.54
A23GE4		1.199	0.053	0.82	0.6650	-0.0338	-0.54
BH7DB9		1.231	0.085	1.31	0.6600	-0.0388	-0.62
BJGCAN		1.144	-0.002	-0.03	0.6850	-0.0138	-0.22
BV7CY6		1.164	0.018	0.27	0.8090	0.1102	1.75
BW6C3B		1.127	-0.019	-0.29	0.6800	-0.0188	-0.30
DGN3DR		1.115	-0.031	-0.47	0.6840	-0.0148	-0.23
DJDAXN	X	1.372	0.226	3.47	0.9480	0.2492	3.96
DV2E4Z		1.110	-0.036	-0.55	0.6700	-0.0288	-0.46
DWXP2N		1.079	-0.067	-1.02	0.6570	-0.0418	-0.66
FF6XUK		1.134	-0.012	-0.18	0.7050	0.0062	0.10
FVT7T4		1.117	-0.029	-0.44	0.6470	-0.0518	-0.82
GHKL74	X	1.474	0.328	5.03	1.0930	0.3942	6.26
JJAT4X		1.285	0.139	2.14	0.6790	-0.0198	-0.31
KYFGU4		1.141	-0.005	-0.07	0.7400	0.0412	0.65
LHM98P		1.041	-0.105	-1.61	0.6800	-0.0188	-0.30
NL2MNV		1.114	-0.032	-0.49	0.8200	0.1212	1.92
QPAKDT		1.101	-0.045	-0.69	0.7170	0.0182	0.29
THKPKN		1.267	0.121	1.86	0.7020	0.0032	0.05
U3QH7M		1.214	0.068	1.05	0.6410	-0.0578	-0.92
UPYVWL		1.101	-0.045	-0.69	0.7140	0.0152	0.24
UXWM6E		1.145	-0.001	-0.01	0.6580	-0.0408	-0.65
VWYUM2		1.288	0.142	2.18	0.6010	-0.0978	-1.55
X7VJG8		1.101	-0.045	-0.69	0.6290	-0.0698	-1.11
XGRP9K		1.013	-0.133	-2.04	0.6750	-0.0238	-0.38
XMHWTE		1.151	0.005	0.08	0.7370	0.0382	0.61
XYCDLL	*	1.196	0.050	0.77	0.8580	0.1592	2.53
Y4MQZE		1.131	-0.015	-0.23	0.6900	-0.0088	-0.14
ZG8NHN		1.117	-0.029	-0.44	0.8400	0.1412	2.24

Summary Statistics

	Sample GJ33	Sample GJ34
Grand Means	1.1458 Microns	0.69877 Microns
SD Btwn Labs	0.0652 Microns	0.06299 Microns

Statistics based on 30 of 34 reporting participants

Comments on Assigned Data Flags for Test #376

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

GHKL74 (X) - Extreme Data.

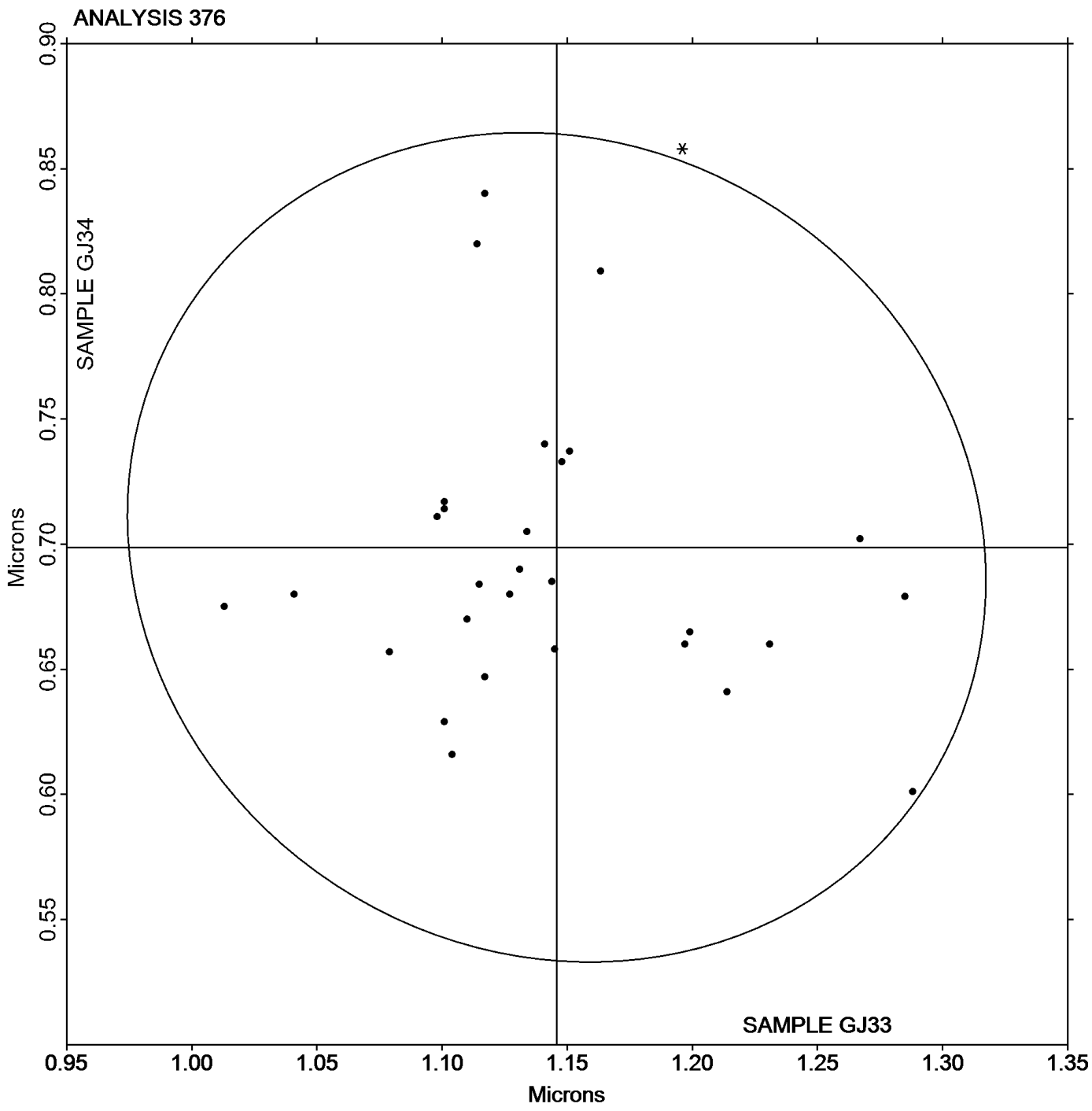
8TXMCD (X) - Data for sample GJ34 are high. Inconsistent within the determinations of sample GJ34.

2C8WMV (X) - Extreme Data.

Paper & Paperboard Interlaboratory Testing Program
Analysis 376
Roughness - Print Surf Method - 0.5 to 4.0 Microns

Grand Mean Sample **GJ33** = 1.1458 Microns

Grand Mean Sample **GJ34** = 0.69877 Microns



Paper & Paperboard Interlaboratory Testing Program
Analysis 377
Roughness - Print Surf Method - 2.5 to 6.0 Microns

WebCode	Data Flag	Sample GK33 Lab Mean	Sample GK33 Diff from Grand Mean	Sample GK33 CPV	Sample GK34 Lab Mean	Sample GK34 Diff from Grand Mean	Sample GK34 CPV
69WX3D		4.207	0.329	1.63	4.355	0.123	1.24
D99G4N		3.898	0.020	0.10	4.174	-0.058	-0.59
EZB7B4		3.988	0.110	0.54	4.379	0.147	1.48
JJAT4X	X	4.793	0.915	4.53	5.164	0.932	9.41
LHM98P		3.902	0.024	0.12	4.143	-0.089	-0.90
LPLQKG		3.985	0.107	0.53	4.206	-0.026	-0.26
NDP8GV		3.971	0.093	0.46	4.216	-0.016	-0.16
QPAKDT		3.539	-0.339	-1.68	4.175	-0.057	-0.58
U7N3UJ		3.780	-0.098	-0.49	4.106	-0.126	-1.27
XMKM2H		3.632	-0.246	-1.22	4.334	0.102	1.03

Summary Statistics

	Sample GK33	Sample GK34
Grand Means	3.8780 Microns	4.2320 Microns
SD Btwn Labs	0.2020 Microns	0.0990 Microns

Statistics based on 9 of 10 reporting participants

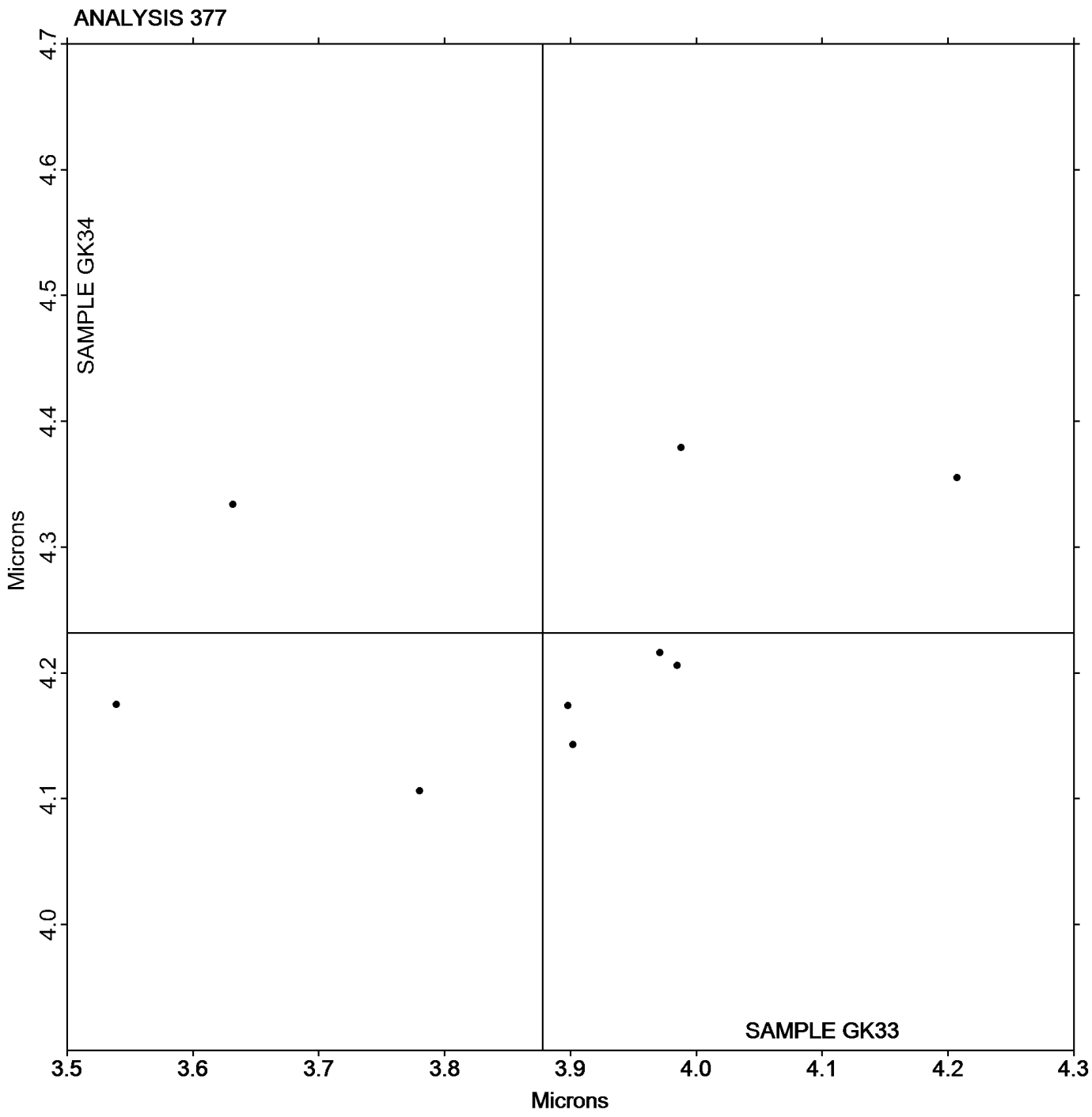
Comments on Assigned Data Flags for Test #377

JJAT4X (X) - Extreme Data.

Paper & Paperboard Interlaboratory Testing Program
Analysis 377
Roughness - Print Surf Method - 2.5 to 6.0 Microns

Grand Mean Sample **GK33** = 3.8780 Microns

Grand Mean Sample **GK34** = 4.2320 Microns



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

WebCode	Data Flag	Sample GL33 Lab Mean	Sample GL33 Diff from Grand Mean	Sample GL33 CPV	Sample GL34 Lab Mean	Sample GL34 Diff from Grand Mean	Sample GL34 CPV	Instr Code
69WX3D		237.2	9.7	0.62	152.1	-8.4	-0.98	HM
6ARDEB		225.6	-1.9	-0.12	152.0	-8.6	-1.00	PP
6EKDVQ		208.4	-19.1	-1.22	156.0	-4.5	-0.53	LA
72VX8H		218.7	-8.8	-0.56	151.4	-9.1	-1.06	TS
7DPC7E		220.8	-6.7	-0.43	152.4	-8.1	-0.95	GA
7EGBKD		231.5	4.0	0.26	160.4	-0.2	-0.02	PP
8NNAP8		210.6	-16.9	-1.08	170.7	10.2	1.18	TS
8TXMCD		245.0	17.5	1.13	163.7	3.2	0.37	HM
9QMA3A		239.1	11.6	0.75	162.5	2.0	0.23	PP
A23GE4		242.8	15.3	0.98	171.7	11.2	1.30	GL
AREM38		239.3	11.8	0.76	153.4	-7.1	-0.83	PP
AYBH27		240.1	12.6	0.81	155.5	-5.0	-0.59	HM
BH7DB9		231.2	3.7	0.24	171.9	11.4	1.32	LW
BJGCAN		202.9	-24.6	-1.58	163.4	2.9	0.33	HM
BL7JUK		193.2	-34.3	-2.20	145.8	-14.7	-1.71	XX
BV7CY6		228.1	0.6	0.04	159.5	-1.1	-0.13	XX
CA93F4		254.4	27.0	1.73	161.4	0.9	0.10	PP
CKMXXN		223.5	-4.0	-0.25	157.5	-3.0	-0.35	XX
D29ZTH		220.4	-7.1	-0.46	154.4	-6.1	-0.72	PP
D99G4N		241.1	13.6	0.87	158.1	-2.5	-0.29	PP
DJDAXN		223.0	-4.5	-0.29	164.4	3.9	0.45	LW
DPGDL2		228.4	1.0	0.06	146.1	-14.4	-1.68	PP
DV2E4Z		235.0	7.5	0.48	162.0	1.5	0.17	PP
DWXP2N		226.4	-1.1	-0.07	162.3	1.8	0.21	HM
E2Q7T9		238.0	10.5	0.68	170.0	9.5	1.10	TT
E8QPTH		233.8	6.3	0.41	166.0	5.5	0.64	TS
E9NZQ7		229.9	2.4	0.16	161.3	0.8	0.09	HM
EWUMNN		236.6	9.1	0.59	156.6	-3.9	-0.46	TS
GDTGCZ		228.2	0.7	0.05	162.4	1.9	0.22	HM
GHKL74		202.8	-24.7	-1.58	154.1	-6.4	-0.75	XX
GW49F2		212.4	-15.1	-0.97	158.6	-1.9	-0.23	XX
J8CX3W		227.0	-0.5	-0.03	149.0	-11.5	-1.34	SH
JHBTZR		243.6	16.1	1.03	151.2	-9.3	-1.08	GA
KYFGU4		193.8	-33.7	-2.16	159.9	-0.6	-0.07	LA
LHM98P		246.8	19.3	1.24	172.5	12.0	1.39	XX
LPLQKG	*	239.5	12.0	0.77	185.6	25.0	2.91	PP
NDP8GV		225.6	-1.9	-0.12	159.7	-0.8	-0.10	LW
NL2MNV		196.7	-30.8	-1.97	149.2	-11.3	-1.32	TS
PQB2AZ		235.0	7.5	0.48	169.0	8.5	0.98	GL
PZXYYK		216.2	-11.3	-0.72	146.2	-14.3	-1.67	SH
R6KQWR		236.5	9.0	0.58	164.2	3.7	0.43	PP

Paper & Paperboard Interlaboratory Testing Program
Analysis 378
Roughness - Sheffield Type

WebCode	Data Flag	Sample GL33 Lab Mean	Sample GL33 Diff from Grand Mean	Sample GL33 CPV	Sample GL34 Lab Mean	Sample GL34 Diff from Grand Mean	Sample GL34 CPV	Instr Code
RVXPLN	*	263.0	35.5	2.28	178.6	18.1	2.10	TT
THKPKN		240.6	13.1	0.84	164.4	3.9	0.45	PP
TL2A84		216.1	-11.4	-0.73	169.0	8.5	0.98	TS
U3QH7M		236.7	9.2	0.59	162.5	2.0	0.23	PP
U7N3UJ		201.5	-26.0	-1.67	163.1	2.6	0.30	LA
UXWM6E		230.6	3.1	0.20	160.9	0.4	0.04	TT
VM99EH	X	162.3	-65.2	-4.18	130.2	-30.3	-3.53	SH
VWYUM2		189.0	-38.5	-2.47	147.0	-13.5	-1.58	TT
X6ZXMG		251.6	24.1	1.55	169.9	9.4	1.09	XX
XGRP9K		216.8	-10.7	-0.68	159.4	-1.1	-0.13	LA
XMHWTE		219.8	-7.7	-0.49	150.4	-10.1	-1.18	PP
XMKM2H		228.1	0.6	0.04	153.7	-6.8	-0.79	PP
XRB4BM		225.2	-2.3	-0.15	158.7	-1.8	-0.21	XX
XYCDLL		236.2	8.7	0.56	156.4	-4.1	-0.48	TT
Y4J2X3		243.6	16.2	1.04	168.7	8.1	0.95	GA
Y4MQZE		225.2	-2.2	-0.14	167.8	7.2	0.84	PP
YHJZMK		246.6	19.1	1.23	169.8	9.3	1.08	PG
ZG6XAK		216.3	-11.2	-0.72	149.0	-11.6	-1.35	LA
ZG8NHN		227.9	0.4	0.03	177.6	17.1	1.99	TT
ZXU7A4		223.9	-3.5	-0.23	161.2	0.7	0.08	PP

Summary Statistics

	Sample GL33	Sample GL34
Grand Means	227.46 Sheffield	160.54 Sheffield
SD Btwn Labs	15.59 Sheffield	8.59 Sheffield

Statistics based on 60 of 61 reporting participants

VM99EH (X) - Data for both samples are low.

Analysis Notes:

CA93F4 - One determination removed from the Lab Mean of Sample GL33 per Grubb's Test at 1% risk (TAPPI 1205).

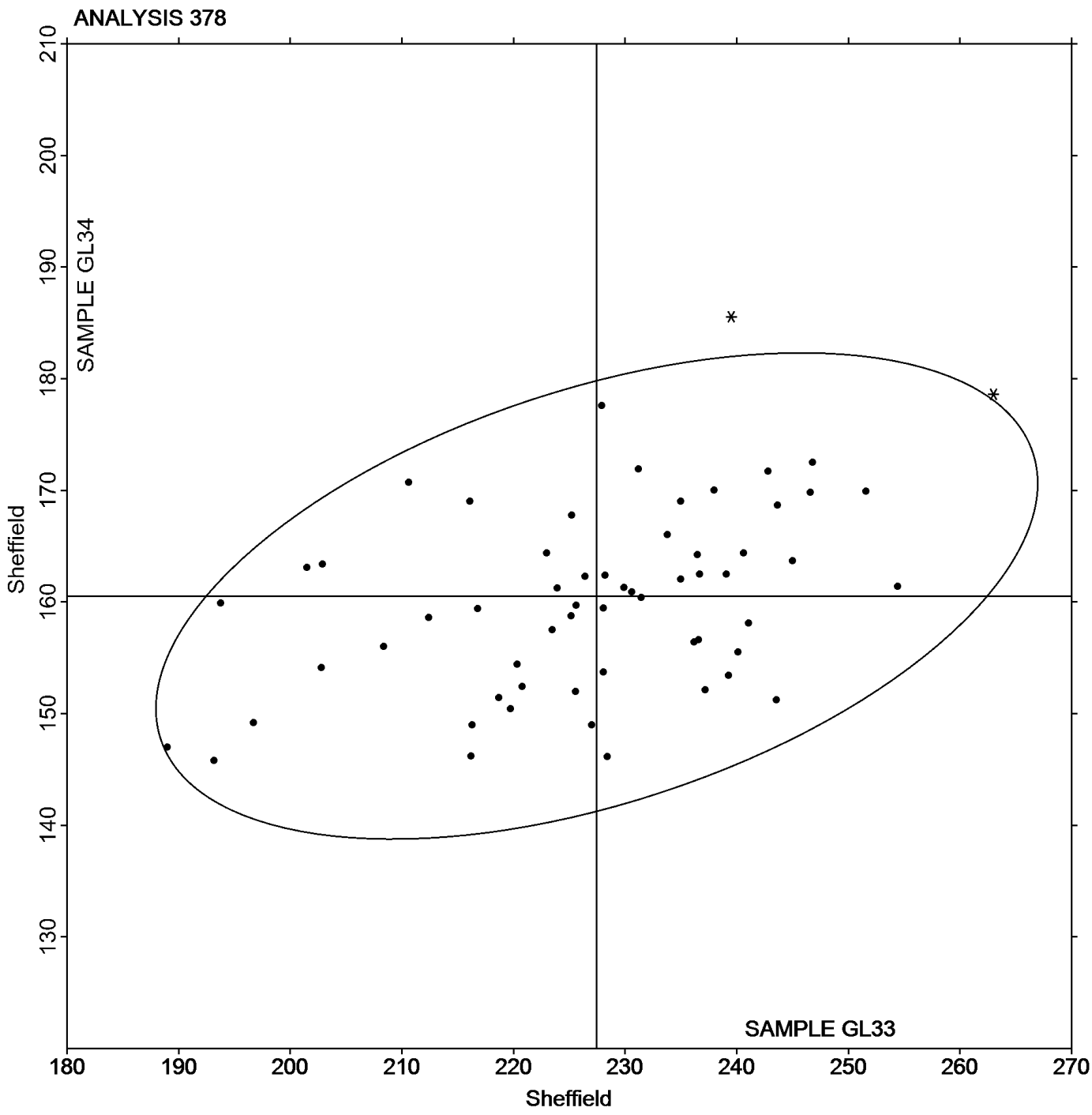
Key to Instrument Codes Reported by Participants

GA	Gurley Precision #4340 Automatic Densometer	GL	Giddings and Lewis Sheffield
HM	Technidyne - Hagerty Model #538	LA	L & W Roughness Sheffield - Autoline
LW	L & W Roughness Tester	PG	Precision Gage Smoothcheck
PP	Technidyne Profile/Plus	SH	Sheffield (Bendix Precisionaire)
TS	TMI Monitor/Smoothness, Model 58-02	TT	TMI Monitor/Smoothness II, Model 58-24
XX	Instrument make/model not specified by lab		

Paper & Paperboard Interlaboratory Testing Program
Analysis 378
Roughness - Sheffield Type

Grand Mean Sample **GL33** = 227.46 Sheffield

Grand Mean Sample **GL34** = 160.54 Sheffield



Paper & Paperboard Interlaboratory Testing Program
Analysis 382
Moisture in Paper

WebCode	Data Flag	Sample GM33 Lab Mean	Sample GM33 Diff from Grand Mean	Sample GM33 CPV	Sample GM34 Lab Mean	Sample GM34 Diff from Grand Mean	Sample GM34 CPV
69WX3D		4.900	0.220	0.33	4.670	0.105	0.17
E7YU7A	M	4.311	-0.369	-0.56	No data reported for this sample		
HWERC6		4.493	-0.188	-0.28	4.460	-0.105	-0.17
KWBPZ6		4.580	-0.100	-0.15	4.530	-0.035	-0.06
LPLQKG		4.401	-0.279	-0.42	4.392	-0.173	-0.28
P6RWNB		4.291	-0.389	-0.59	4.337	-0.228	-0.37
TMYK6R		5.020	0.340	0.51	4.650	0.085	0.14
VPXF4K		5.181	0.501	0.76	5.045	0.481	0.78
WRX9AN		4.288	-0.392	-0.59	4.197	-0.368	-0.60
XYCDLL		6.060	1.380	2.09	5.890	1.325	2.15
ZWLQ4H		3.589	-1.091	-1.65	3.476	-1.089	-1.77

Summary Statistics

	Sample GM33	Sample GM34
Grand Means	4.6803 Percent	4.5648 Percent
SD Btwn Labs	0.6615 Percent	0.6164 Percent

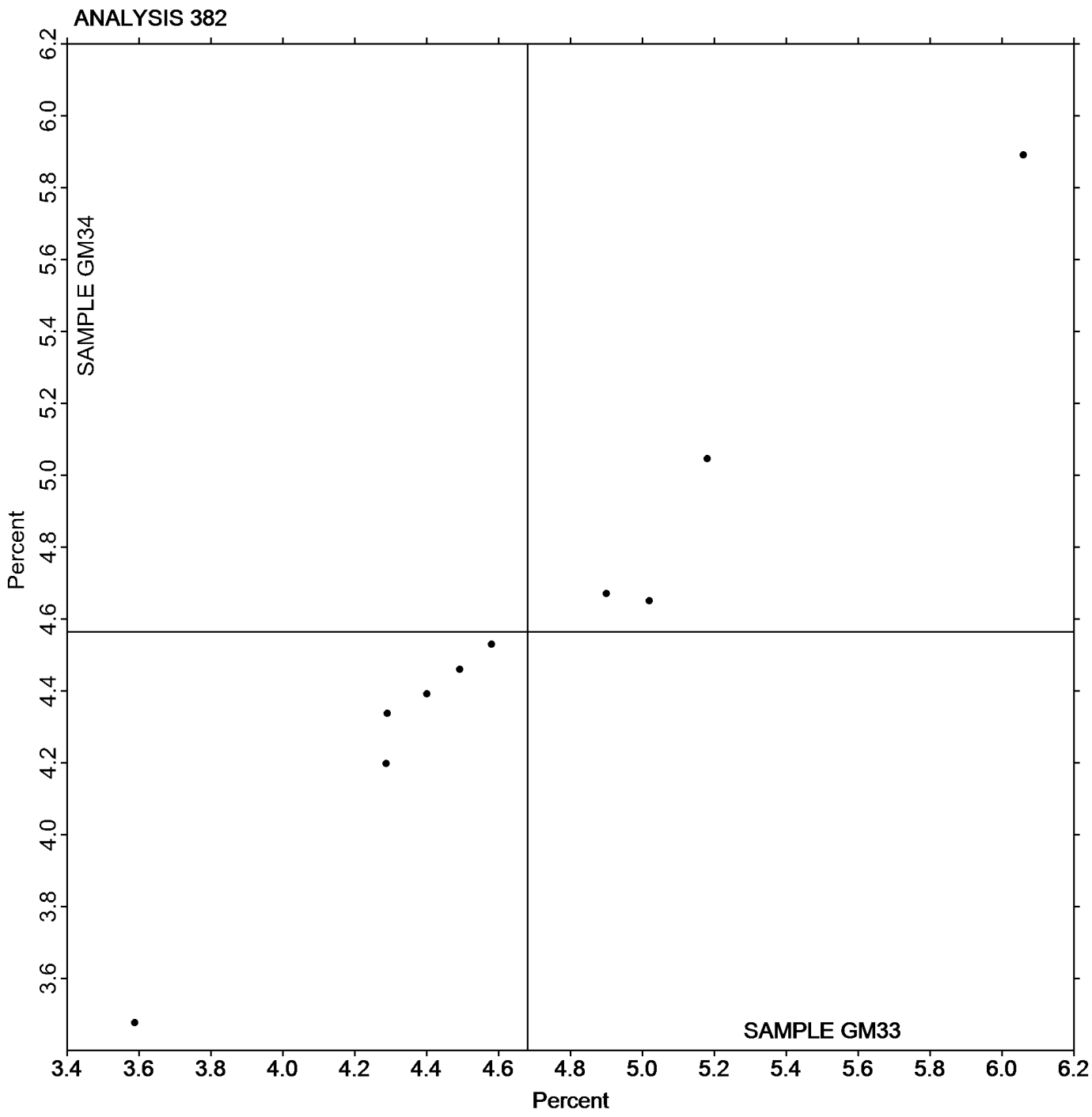
Statistics based on 10 of 11 reporting participants

Comments on Assigned Data Flags for Test #382

E7YU7A (M) - Participant did not submit data for sample GM34.

Grand Mean Sample **GM33** = 4.6803 Percent

Grand Mean Sample **GM34** = 4.5648 Percent



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

WebCode	Data Flag	Sample GN33 Lab Mean	Sample GN33 Diff from Grand Mean	Sample GN33 CPV	Sample GN34 Lab Mean	Sample GN34 Diff from Grand Mean	Sample GN34 CPV
2C8WMV	*	92.27	-1.26	-2.71	85.45	-1.44	-2.15
2RJEGG		93.74	0.21	0.46	86.87	-0.02	-0.03
3AWBEL		93.19	-0.34	-0.73	86.72	-0.17	-0.25
69WX3D		93.45	-0.08	-0.17	86.75	-0.14	-0.21
72VX8H		93.31	-0.22	-0.47	86.82	-0.07	-0.10
8TXMCD		93.49	-0.04	-0.08	86.66	-0.23	-0.34
AREM38		93.63	0.10	0.21	85.93	-0.96	-1.43
AYBH27		93.32	-0.21	-0.44	86.40	-0.49	-0.73
BL7JUK		93.47	-0.06	-0.13	86.96	0.07	0.11
BV7CY6		93.08	-0.45	-0.97	86.14	-0.75	-1.12
CKMXXN	*	94.44	0.91	1.96	88.76	1.87	2.78
D29ZTH		93.75	0.22	0.47	86.85	-0.04	-0.06
D99G4N		92.96	-0.57	-1.21	86.75	-0.14	-0.20
DWXP2N		93.89	0.36	0.78	86.90	0.01	0.02
E2Q7T9		93.35	-0.18	-0.39	87.41	0.52	0.78
EWUMNN		93.05	-0.48	-1.03	86.62	-0.27	-0.40
FF6XUK		93.98	0.45	0.97	87.12	0.23	0.35
GDTGCZ		94.13	0.60	1.29	86.87	-0.02	-0.03
GW49F2		92.57	-0.96	-2.06	85.58	-1.31	-1.95
J8CX3W		93.47	-0.06	-0.13	87.50	0.61	0.91
LPLQKG		93.69	0.16	0.35	87.20	0.31	0.46
PQB2AZ		94.04	0.51	1.10	88.11	1.22	1.82
PZXYYK		94.01	0.48	1.03	87.17	0.28	0.42
QPAKDT		93.95	0.42	0.90	87.37	0.48	0.72
R6KQWR		93.45	-0.08	-0.17	86.76	-0.13	-0.19
T79HNN		93.20	-0.33	-0.71	86.89	0.00	0.00
THKPKN	X	86.78	-6.75	-14.51	76.11	-10.78	-16.07
U3QH7M		93.58	0.05	0.11	86.82	-0.07	-0.10
U7N3UJ		93.59	0.06	0.13	86.73	-0.16	-0.24
UXWM6E		94.03	0.50	1.07	87.18	0.29	0.43
VWYUM2		93.98	0.45	0.97	88.07	1.18	1.76
W3EUFJ		93.88	0.35	0.76	87.76	0.87	1.30
X6ZXMG	X	89.34	-4.19	-9.00	82.74	-4.15	-6.18
X7VJG8		93.92	0.39	0.84	87.12	0.23	0.35
YHJZMK		93.63	0.10	0.22	86.36	-0.53	-0.79
ZG6XAK		92.77	-0.76	-1.63	86.05	-0.84	-1.25
ZTXGTW		93.25	-0.28	-0.60	86.46	-0.43	-0.64

Paper & Paperboard Interlaboratory Testing Program
Analysis 384
Opacity (89% Reflectance Backing) - Fine Papers

Summary Statistics

	Sample GN33	Sample GN34
Grand Means	93.529 Percent	86.888 Percent
SD Btwn Labs	0.465 Percent	0.671 Percent

Statistics based on 35 of 37 reporting participants

THKPKN (X) - Extreme Data.

X6ZXMG (X) - Extreme Data.

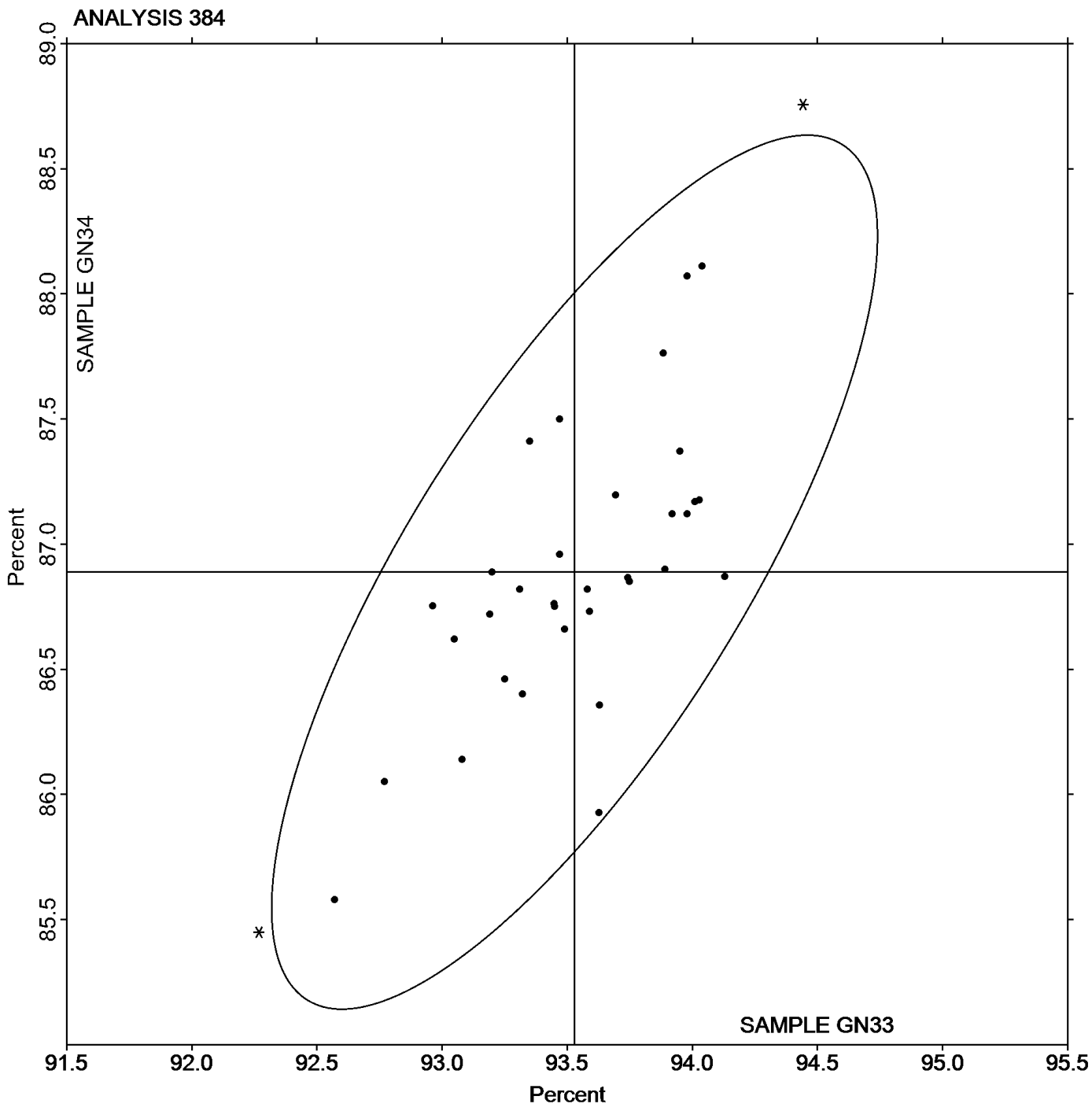
Analysis Notes:

AYBH27 - One determination removed from the Lab Mean of Sample GN33 per Grubb's Test at 1% risk (TAPPI 1205).

Paper & Paperboard Interlaboratory Testing Program
Analysis 384
Opacity (89% Reflectance Backing) - Fine Papers

Grand Mean Sample **GN33** = 93.529 Percent

Grand Mean Sample **GN34** = 86.888 Percent



Paper & Paperboard Interlaboratory Testing Program
Analysis 386
Opacity (Paper Backing) - Fine Papers and Newsprint

WebCode	Data Flag	Sample GP33 Lab Mean	Sample GP33 Diff from Grand Mean	Sample GP33 CPV	Sample GP34 Lab Mean	Sample GP34 Diff from Grand Mean	Sample GP34 CPV
38BCJC		94.35	-0.04	-0.36	88.89	-0.12	-0.82
3PD46E		94.40	0.00	0.03	89.03	0.02	0.17
AEMVH4		94.27	-0.12	-1.05	89.10	0.10	0.70
BV7CY6	X	93.24	-1.16	-10.08	86.41	-2.60	-18.46
BW6C3B		94.51	0.12	1.01	88.75	-0.25	-1.80
CR6KA6		94.46	0.07	0.57	88.92	-0.09	-0.61
J999ZK		94.37	-0.02	-0.18	88.89	-0.11	-0.81
JHDFEK		94.56	0.17	1.46	88.86	-0.14	-1.00
M6FH6G		94.43	0.04	0.34	89.02	0.01	0.11
R2JM8P		94.14	-0.25	-2.21	89.28	0.27	1.95
RUYMRD		94.54	0.15	1.27	88.86	-0.15	-1.07
THKPKN	X	79.28	-15.11	-131.91	71.68	-17.33	-123.00
TRN2GH		94.33	-0.06	-0.52	89.18	0.17	1.21
UV4U6P		94.41	0.02	0.16	89.07	0.06	0.45
WRX9AN		94.25	-0.15	-1.28	89.09	0.08	0.57
Y7CUTL		94.38	-0.01	-0.10	89.04	0.03	0.25
ZXU7A4		94.49	0.10	0.84	89.11	0.10	0.72

Summary Statistics

	Sample GP33	Sample GP34
Grand Means	94.391 Percent	89.005 Percent
SD Btwn Labs	0.115 Percent	0.141 Percent

Statistics based on 15 of 17 reporting participants

Comments on Assigned Data Flags for Test #386

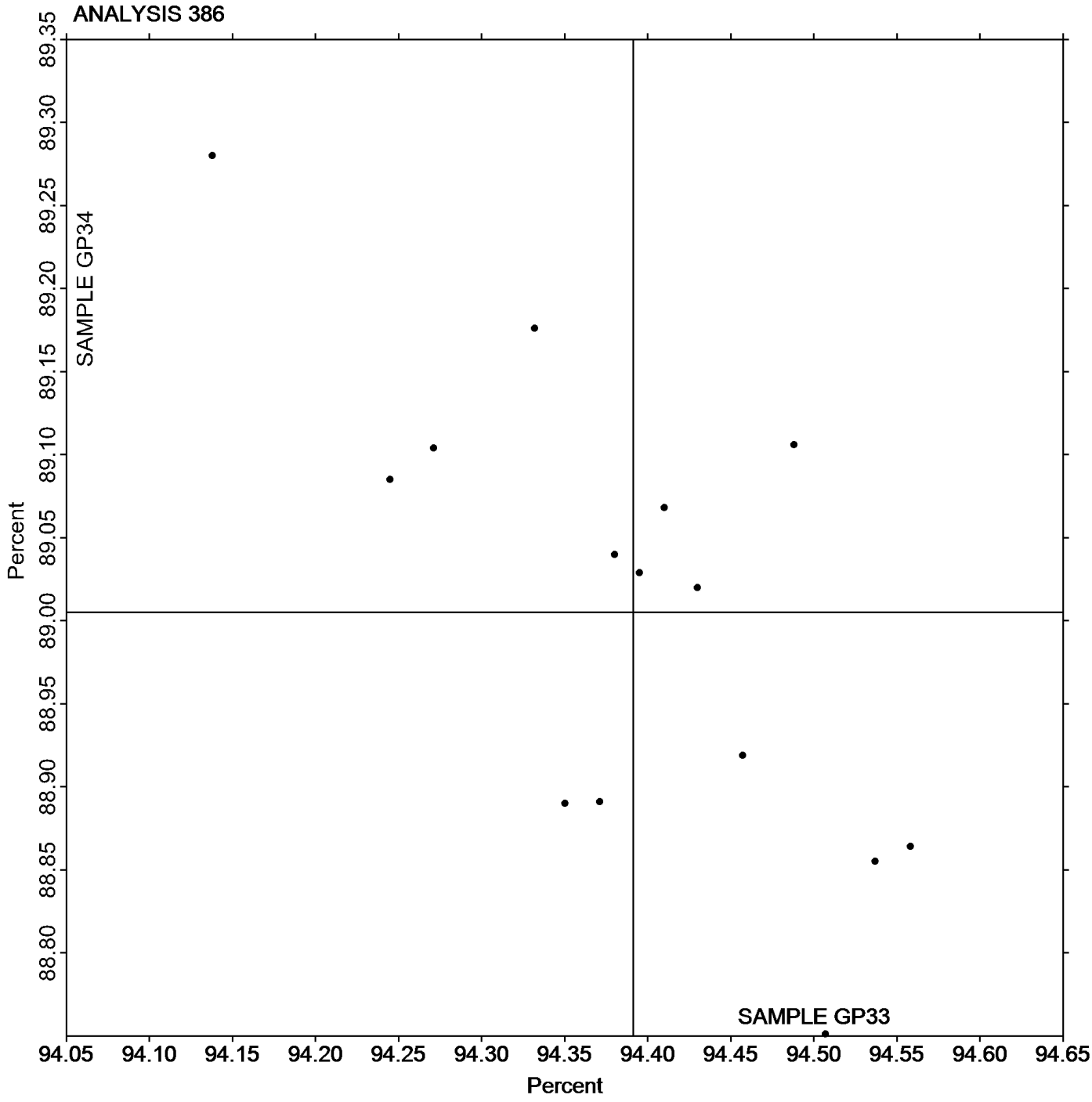
BV7CY6 (X) - Extreme Data.

THKPKN (X) - Extreme Data.

Paper & Paperboard Interlaboratory Testing Program
Analysis 386
Opacity (Paper Backing) - Fine Papers and Newsprint

Grand Mean Sample **GP33** = 94.391 Percent

Grand Mean Sample **GP34** = 89.005 Percent



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

WebCode	Data Flag	Sample GR33 Lab Mean	Sample GR33 Diff from Grand Mean	Sample GR33 CPV	Sample GR34 Lab Mean	Sample GR34 Diff from Grand Mean	Sample GR34 CPV	Instr Code
2C8WMV		83.59	-0.46	-0.25	83.67	-0.37	-0.21	VM
3AWBEL		83.69	-0.36	-0.20	83.56	-0.49	-0.27	MK
6ARDEB		82.76	-1.29	-0.71	82.75	-1.29	-0.71	TS
72VX8H		82.25	-1.80	-1.00	82.28	-1.77	-0.97	TS
A23GE4		85.05	1.00	0.55	85.10	1.06	0.58	TS
AREM38	X	81.65	-2.40	-1.33	84.69	0.64	0.35	TT
AYBH27	X	81.47	-2.58	-1.43	83.38	-0.67	-0.37	XS
BH7DB9		82.18	-1.87	-1.04	82.30	-1.74	-0.96	TT
BL7JUK		82.16	-1.89	-1.05	82.08	-1.97	-1.08	XX
BV7CY6		81.24	-2.81	-1.56	81.36	-2.68	-1.48	TT
CKMXXN		87.23	3.18	1.76	86.95	2.91	1.60	XX
D29ZTH		84.89	0.84	0.46	84.51	0.47	0.26	XX
DPGDL2		81.52	-2.53	-1.40	81.83	-2.22	-1.22	TS
DV2E4Z		84.26	0.21	0.12	84.18	0.14	0.07	HD
DWXP2N		81.93	-2.12	-1.18	81.80	-2.24	-1.24	TS
E2Q7T9		84.35	0.30	0.17	84.20	0.16	0.09	TT
GW49F2		85.58	1.53	0.84	86.04	1.99	1.10	XX
KWBPZ6		83.46	-0.59	-0.33	83.63	-0.42	-0.23	XX
PZXYYK		82.59	-1.46	-0.81	82.21	-1.83	-1.01	TA
QPAKDT		83.88	-0.17	-0.10	83.75	-0.29	-0.16	TT
THKPKN	X	59.39	-24.66	-13.66	61.23	-22.82	-12.57	TS
U3QH7M		84.53	0.48	0.26	84.84	0.79	0.44	TS
U7N3UJ		83.09	-0.96	-0.53	82.88	-1.17	-0.64	TS
UBKPM8		85.36	1.31	0.73	85.23	1.18	0.65	HG
X6ZXMG	*	88.86	4.81	2.67	88.85	4.81	2.65	PE
XMHWTE		84.68	0.63	0.35	84.61	0.57	0.31	TT
XMKM2H	X	75.44	-8.61	-4.77	75.39	-8.66	-4.77	XX
Y4MQZE		86.26	2.21	1.22	86.61	2.57	1.42	HD
YHJZMK	X	81.81	-2.24	-1.24	79.00	-5.04	-2.78	TS
ZG8NHN		85.54	1.49	0.82	85.53	1.48	0.82	TT
ZTXGTW		84.39	0.34	0.19	84.43	0.38	0.21	TS

Summary Statistics

	Sample GR33	Sample GR34
Grand Means	84.050 Percent	84.044 Percent
SD Btwn Labs	1.806 Percent	1.815 Percent

Statistics based on 26 of 31 reporting participants

Comments on Assigned Data Flags for Test #390

AREM38 (X) - Inconsistent in testing between samples.

AYBH27 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample GR33.

THKPKN (X) - Extreme Data.

XMKM2H (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample GR33.

YHJZMK (X) - Data for sample GR34 are low. Inconsistent within the determinations of both samples.

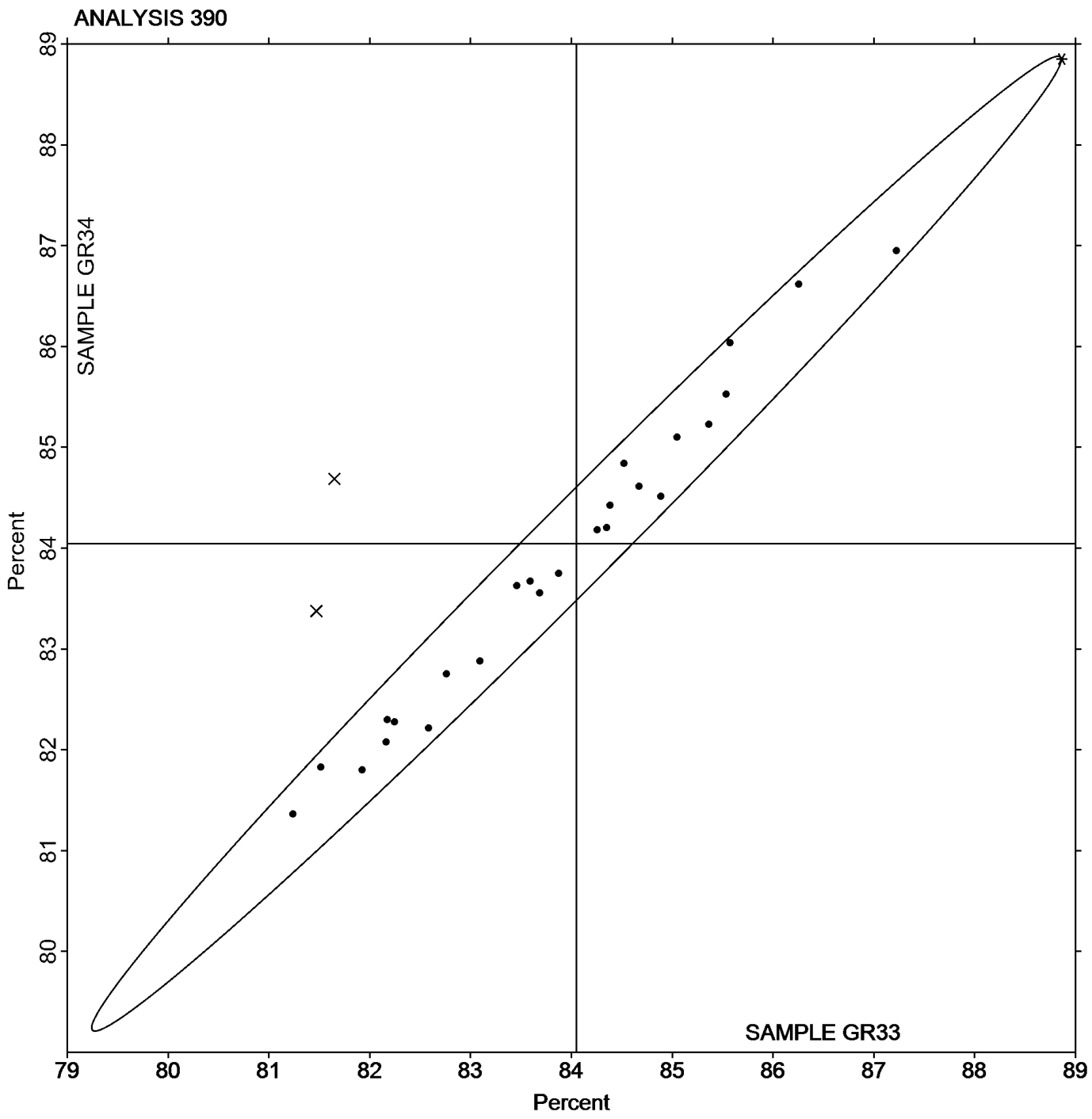
Key to Instrument Codes Reported by Participants

HD	Hunter D25DP - 9000	HG	Hunter Labscan / XE
MK	Macbeth Color-Eye 7000 Spectrophotometer	PE	Photovolt 577
TA	Technidyne, Diano, M.S. S-4	TS	Technidyne Brightimeter Micro S-5
TT	Technidyne Brightimeter Micro S4-M	VM	Valmet PaperLab (was Kajaani/Robotest)
XS	X-Rite 938 Spectrodensitometer	XX	Instrument make/model not specified by lab

Paper & Paperboard Interlaboratory Testing Program
Analysis 390
Directional Brightness

Grand Mean Sample **GR33** = 84.050 Percent

Grand Mean Sample **GR34** = 84.044 Percent



Paper & Paperboard Interlaboratory Testing Program
Analysis 391
Directional Brightness of Fluorescent Samples

WebCode	Data Flag	Sample GZ33 Lab Mean	Sample GZ33 Diff from Grand Mean	Sample GZ33 CPV	Sample GZ34 Lab Mean	Sample GZ34 Diff from Grand Mean	Sample GZ34 CPV	Instr Code
2RJEGG		90.84	-0.17	-0.39	89.78	-0.21	-0.38	TS
72VX8H		90.96	-0.04	-0.10	89.94	-0.05	-0.09	TS
8TXMCD		91.14	0.14	0.33	90.72	0.73	1.32	TT
9GZ7XV		91.64	0.64	1.51	90.94	0.95	1.73	TS
CKMXXN	X	94.48	3.48	8.19	92.58	2.59	4.69	XX
D99G4N		90.72	-0.28	-0.67	89.80	-0.19	-0.34	TS
DWXP2N		91.16	0.16	0.38	89.35	-0.64	-1.16	TS
EWUMNN		91.20	0.20	0.47	89.52	-0.47	-0.85	TS
FF6XUK		91.12	0.12	0.28	90.34	0.35	0.63	TT
GDTGCZ		90.15	-0.86	-2.01	89.14	-0.85	-1.54	HT
J8CX3W	X	97.98	6.98	16.42	89.99	0.00	0.01	HT
LPLQKG		90.74	-0.26	-0.61	89.66	-0.33	-0.59	TS
P73WMQ		91.54	0.54	1.28	90.47	0.48	0.86	TS
R6KQWR		90.62	-0.38	-0.90	89.64	-0.35	-0.63	TS
T79HNN		90.76	-0.24	-0.57	89.68	-0.31	-0.56	TS
VWYUM2		91.84	0.84	1.97	90.98	0.99	1.79	TT
X7VJG8		90.77	-0.23	-0.54	90.07	0.08	0.15	PP
XYCDLL	X	92.74	1.74	4.10	93.06	3.07	5.55	EF
ZG6XAK		90.82	-0.18	-0.43	89.80	-0.19	-0.34	TT

Summary Statistics

	Sample GZ33	Sample GZ34
Grand Means	91.002 Percent	89.990 Percent
SD Btwn Labs	0.425 Percent	0.552 Percent

Statistics based on 16 of 19 reporting participants

Comments on Assigned Data Flags for Test #391

J8CX3W (X) - Extreme Data for Sample GZ33.

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

CKMXXN (X) - Extreme Data.

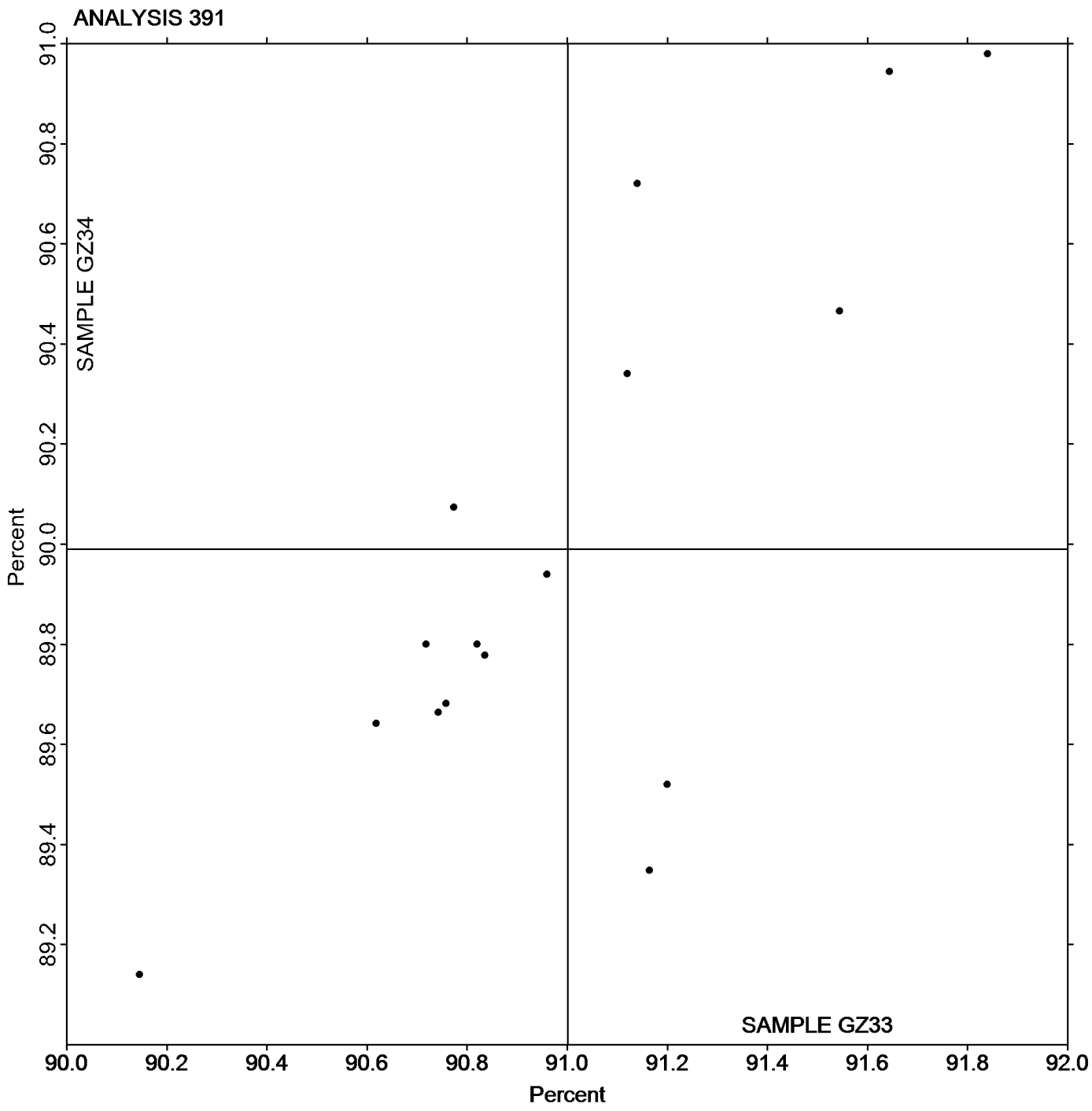
Key to Instrument Codes Reported by Participants

EF	L & W Datacolor Elrepho	HT	Hunter UltraScan Vis
PP	Technidyne Profile/Plus	TS	Technidyne Brightimeter Micro S-5
TT	Technidyne Brightimeter Micro S4-M	XX	Instrument make/model not specified by lab

Paper & Paperboard Interlaboratory Testing Program
Analysis 391
Directional Brightness of Fluorescent Samples

Grand Mean Sample **GZ33** = 91.002 Percent

Grand Mean Sample **GZ34** = 89.990 Percent



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

WebCode	Data Flag	Sample GR33 Lab Mean	Sample GR33 Diff from Grand Mean	Sample GR33 CPV	Sample GR34 Lab Mean	Sample GR34 Diff from Grand Mean	Sample GR34 CPV	Instr Code
3WVFHE		83.43	0.36	0.84	83.26	0.16	0.46	TC
7EGBKD		83.41	0.34	0.78	83.42	0.31	0.91	TC
92JD84		83.23	0.16	0.37	83.00	-0.11	-0.32	TC
A6Y39R		83.17	0.09	0.22	83.31	0.20	0.60	TC
AEMVH4		82.79	-0.29	-0.66	82.55	-0.56	-1.66	EG
BH7DB9		83.01	-0.06	-0.14	83.02	-0.09	-0.26	EG
BV7CY6		82.10	-0.97	-2.26	82.22	-0.89	-2.62	TM
BW6C3B		82.84	-0.24	-0.55	82.89	-0.22	-0.64	LS
DGN3DR	*	82.63	-0.44	-1.03	83.20	0.09	0.26	TC
DWXP2N		83.73	0.66	1.53	83.64	0.53	1.58	LT
J9QJCX		83.51	0.43	1.01	83.40	0.29	0.85	TC
JJAT4X		82.95	-0.12	-0.27	82.98	-0.13	-0.38	TC
KJMP6W		83.62	0.55	1.28	83.56	0.45	1.34	LA
KWBPZ6		83.40	0.33	0.77	83.27	0.17	0.49	EE
P7P8JE		83.46	0.39	0.91	83.46	0.35	1.04	TC
R2JM8P		83.28	0.21	0.49	83.11	0.00	0.00	TC
THKPKN	X	80.21	-2.86	-6.66	77.23	-5.88	-17.36	TM
TRN2GH		83.11	0.04	0.09	83.18	0.07	0.20	TM
U7N3UJ		83.19	0.12	0.27	83.26	0.15	0.44	TC
UV4U6P		83.24	0.16	0.38	83.22	0.11	0.33	TC
UXWM6E		83.17	0.10	0.23	83.41	0.30	0.88	TC
V8FFUG		82.84	-0.23	-0.55	83.15	0.05	0.13	TC
WRX9AN		82.78	-0.29	-0.67	82.80	-0.31	-0.90	LS
XMHWTE		83.25	0.18	0.42	83.18	0.07	0.20	TL
XMKM2H	*	81.86	-1.21	-2.81	82.47	-0.64	-1.89	TC
XYCDLL		82.88	-0.20	-0.46	82.96	-0.15	-0.44	LA
Y7CUTL		83.41	0.34	0.80	83.28	0.17	0.49	TM
ZG8NHN		82.50	-0.57	-1.33	82.56	-0.55	-1.61	EG
ZXU7A4		83.22	0.15	0.35	83.29	0.18	0.54	TC

Summary Statistics

	Sample GR33	Sample GR34
Grand Means	83.071 Percent	83.108 Percent
SD Btwn Labs	0.430 Percent	0.339 Percent

Statistics based on 28 of 29 reporting participants

Comments on Assigned Data Flags for Test #392

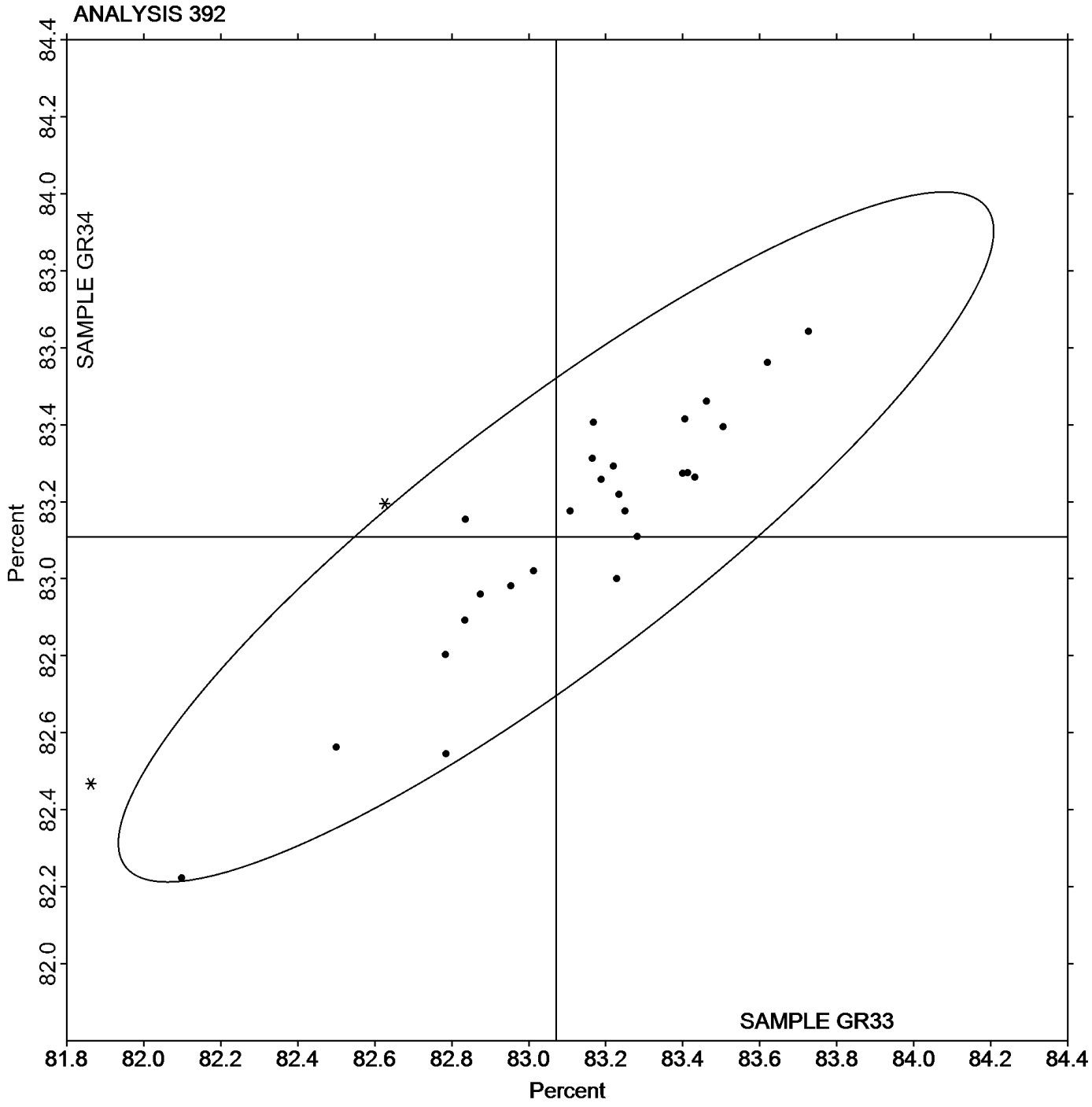
THKPKN (X) - Extreme Data.

Key to Instrument Codes Reported by Participants			
EE	Datacolor Elrepho 2000	EG	Datacolor Elrepho 450X
LA	L & W Elrepho - Autoline	LS	L & W Elrepho SE 070
LT	L & W Elrepho SE 071	TC	Technidyne Color Touch Series
TL	Technidyne Technibrite TB-1	TM	Technidyne Technibrite Micro TB-1C

Paper & Paperboard Interlaboratory Testing Program
Analysis 392
Diffuse Brightness

Grand Mean Sample **GR33** = 83.071 Percent

Grand Mean Sample **GR34** = 83.108 Percent



Paper & Paperboard Interlaboratory Testing Program
Analysis 394
Fluorescent Component of Directional Brightness

WebCode	Data Flag	Sample GZ33 Lab Mean	Sample GZ33 Diff from Grand Mean	Sample GZ33 CPV	Sample GZ34 Lab Mean	Sample GZ34 Diff from Grand Mean	Sample GZ34 CPV	Instr Code
2RJEGG		3.510	-0.039	-0.19	7.238	0.063	0.22	TS
72VX8H		3.380	-0.169	-0.83	6.920	-0.255	-0.90	TS
8TXMCD		3.780	0.231	1.13	7.460	0.285	1.01	TT
9GZ7XV		3.156	-0.393	-1.92	7.234	0.059	0.21	TS
CKMXXN		3.302	-0.247	-1.21	6.656	-0.519	-1.84	XX
D99G4N		3.648	0.099	0.48	7.478	0.303	1.08	TS
DWXP2N		3.750	0.201	0.98	6.778	-0.397	-1.41	TS
LPLQKG		3.756	0.207	1.01	7.024	-0.151	-0.53	TS
P73WMQ		3.524	-0.025	-0.12	7.290	0.115	0.41	TS
R6KQWR		3.618	0.069	0.34	7.358	0.183	0.65	TS
T79HNN		3.318	-0.231	-1.13	6.946	-0.229	-0.81	TS
X7VJG8		3.756	0.207	1.01	7.528	0.353	1.25	PP
XYCDLL	X	5.634	2.085	10.20	10.640	3.465	12.30	EF
ZG6XAK		3.640	0.091	0.44	7.360	0.185	0.66	TT

Summary Statistics

	Sample GZ33	Sample GZ34
Grand Means	3.5491 Percent	7.1746 Percent
SD Btwn Labs	0.2045 Percent	0.2818 Percent

Statistics based on 13 of 14 reporting participants

Comments on Assigned Data Flags for Test #394

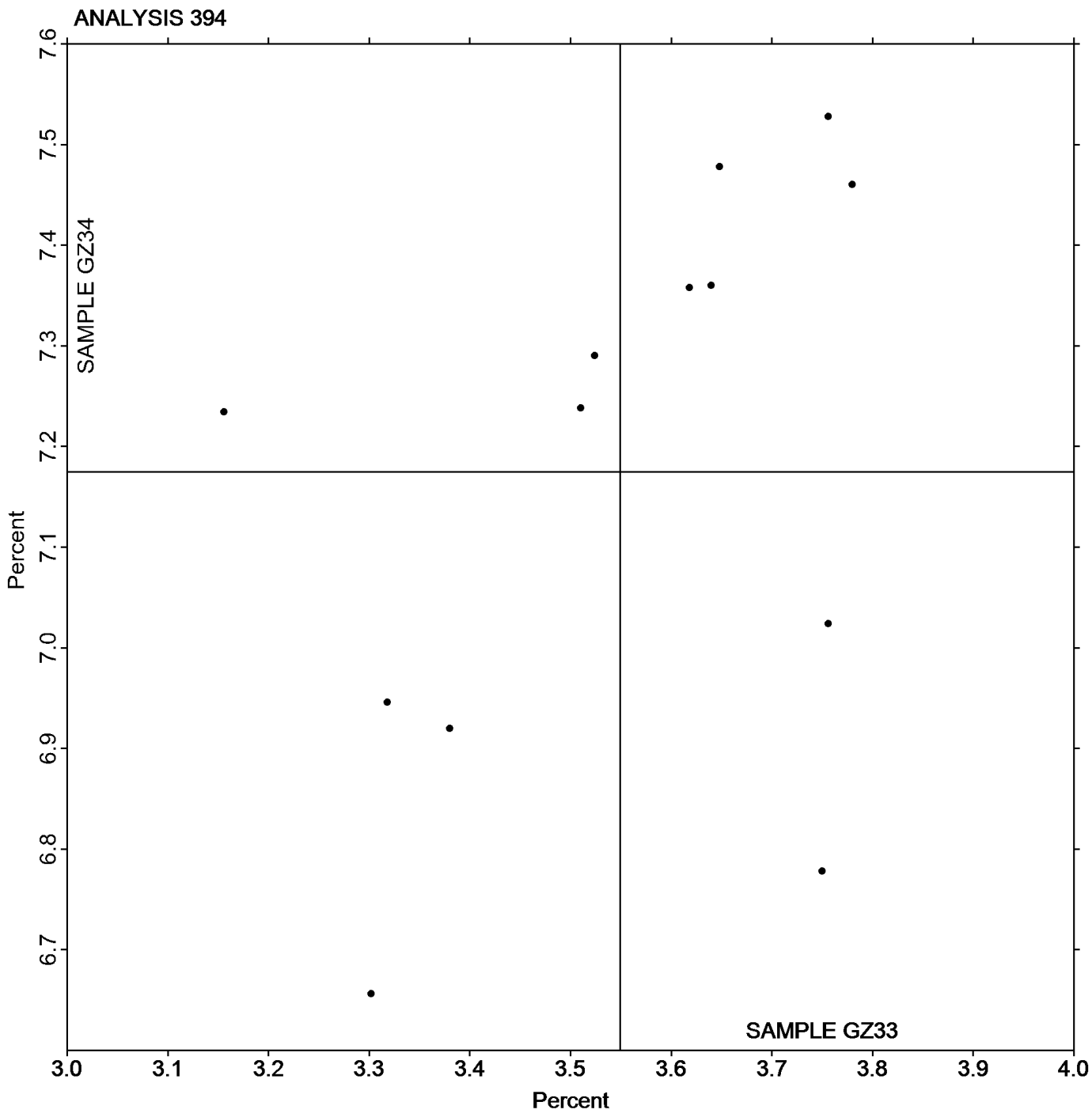
XYCDLL (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

EF	Datacolor Elrepho 3000	PP	Technidyne Profile/Plus
TS	Technidyne Brightimeter Micro S-5	TT	Technidyne Brightimeter Micro S4-M
XX	Instrument make/model not specified by lab		

Grand Mean Sample **GZ33** = 3.5491 Percent

Grand Mean Sample **GZ34** = 7.1746 Percent



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

WebCode	Data Flag	Sample GT33 Lab Mean	Sample GT33 Diff from Grand Mean	Sample GT33 CPV	Sample GT34 Lab Mean	Sample GT34 Diff from Grand Mean	Sample GT34 CPV	Instr Code
2C8WMV		69.17	-0.22	-0.11	80.94	-0.86	-0.47	VM
38BCJC		66.70	-2.68	-1.41	79.40	-2.39	-1.31	GA
3AWBEL		70.59	1.21	0.64	81.49	-0.30	-0.16	PP
8TXMCD		69.62	0.24	0.13	80.38	-1.42	-0.77	PP
9QMA3A		68.82	-0.56	-0.30	81.46	-0.33	-0.18	GM
BH7DB9		70.74	1.36	0.72	82.32	0.53	0.29	TH
BV7CY6		71.89	2.51	1.32	82.43	0.64	0.35	TG
BW6C3B		71.01	1.63	0.86	83.13	1.34	0.73	LB
DV2E4Z		69.29	-0.09	-0.05	82.14	0.35	0.19	TH
FF6XUK		71.21	1.82	0.96	82.11	0.32	0.17	TG
JJAT4X		66.79	-2.59	-1.37	81.83	0.04	0.02	ZH
KYFGU4	*	71.72	2.34	1.23	87.44	5.65	3.08	XX
NL2MNV		68.42	-0.96	-0.51	82.46	0.67	0.36	XX
QPAKDT		68.23	-1.15	-0.61	81.67	-0.12	-0.07	TH
T79HNN		68.60	-0.78	-0.41	82.21	0.42	0.23	LA
THKPKN		72.22	2.84	1.50	81.94	0.15	0.08	TH
X7VJG8		69.67	0.29	0.15	82.50	0.71	0.39	PP
XGRP9K		66.61	-2.77	-1.46	78.06	-3.73	-2.04	LA
XMHWTE		67.78	-1.60	-0.84	79.16	-2.63	-1.44	GS
Y4MQZE		71.70	2.32	1.22	83.11	1.32	0.72	TH
ZG8NHN		66.23	-3.15	-1.66	81.45	-0.34	-0.19	GM

Summary Statistics

	Sample GT33	Sample GT34
Grand Means	69.381 Gloss Units	81.792 Gloss Units
SD Btwn Labs	1.896 Gloss Units	1.832 Gloss Units

Statistics based on 21 of 21 reporting participants

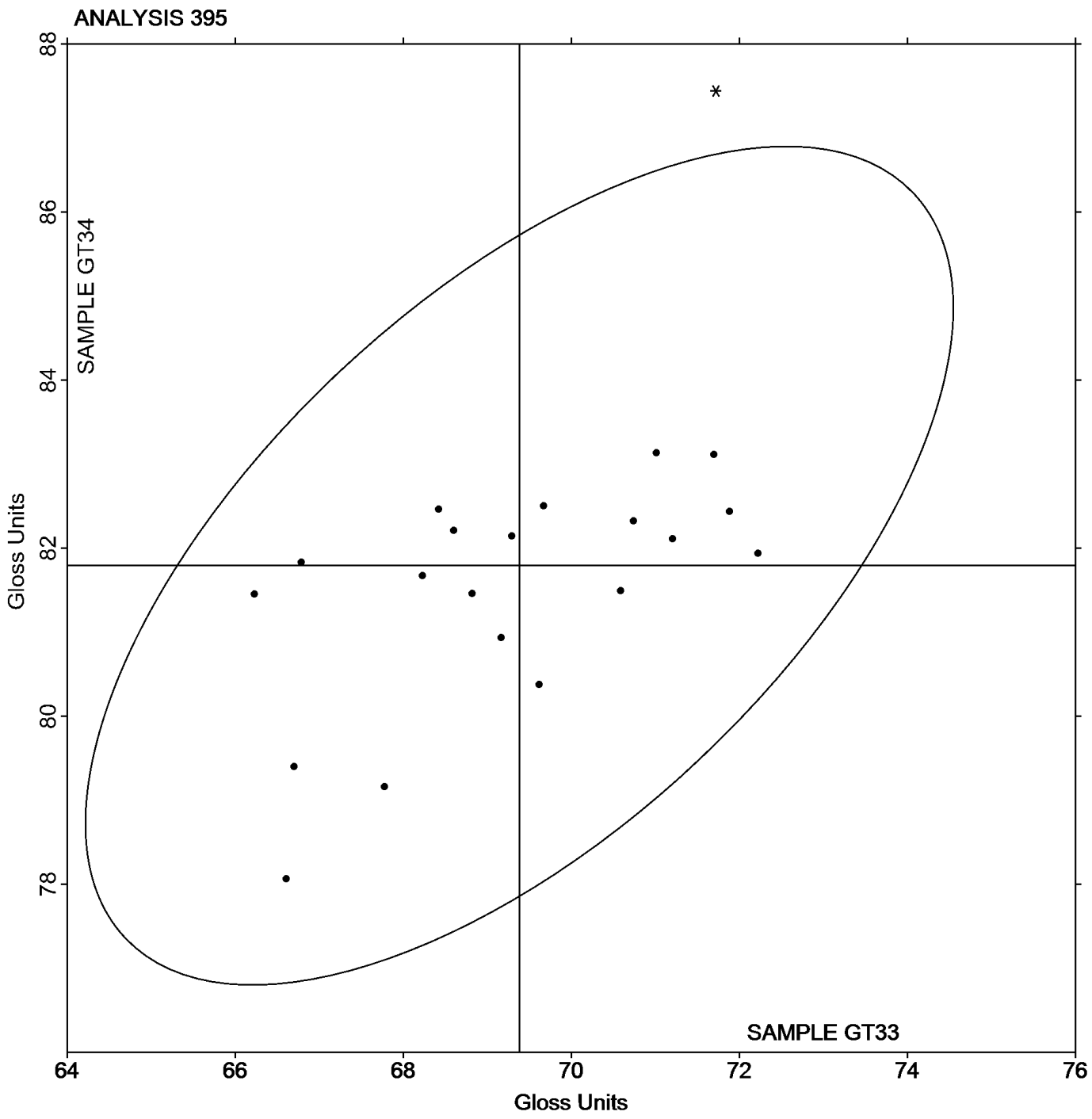
Key to Instrument Codes Reported by Participants

GA	BYK-Gardner (model not specified)	GM	BYK-Gardner micro-gloss
GS	BYK-Gardner Glossgard II	LA	L & W Gloss - Autoline 300
LB	L & W Gloss Tester Code 224	PP	Technidyne Profile/Plus
TG	Technidyne T480	TH	Technidyne T480A
VM	Valmet PaperLab (was Kajaani/Robotest)	XX	Instrument make/model not specified by lab
ZH	Zehntner ZLR 1050		

Paper & Paperboard Interlaboratory Testing Program
Analysis 395
Specular Gloss at 75 Degrees - High Range

Grand Mean Sample **GT33** = 69.381 Gloss Units

Grand Mean Sample **GT34** = 81.792 Gloss Units



Paper & Paperboard Interlaboratory Testing Program
Analysis 396
Specular Gloss at 75 Degrees - Low Range

WebCode	Data Flag	Sample GU33 Lab Mean	Sample GU33 Diff from Grand Mean	Sample GU33 CPV	Sample GU34 Lab Mean	Sample GU34 Diff from Grand Mean	Sample GU34 CPV	Instr Code
69WX3D		42.57	0.39	0.28	25.99	-0.15	-0.18	PP
72VX8H		39.41	-2.77	-1.97	25.77	-0.37	-0.44	GN
AYBH27		40.98	-1.20	-0.85	25.72	-0.42	-0.50	TH
BV7CY6		43.50	1.32	0.94	26.80	0.66	0.78	TG
BW6C3B		41.49	-0.69	-0.49	25.43	-0.71	-0.84	LA
HWERC6		42.04	-0.14	-0.10	25.39	-0.75	-0.89	XX
PZXYYK		43.01	0.83	0.59	26.53	0.39	0.46	TH
UXWM6E		44.32	2.14	1.52	27.94	1.80	2.13	TH
XMKM2H		42.95	0.77	0.55	26.66	0.52	0.61	TH
XYCDLL		41.54	-0.64	-0.46	25.18	-0.96	-1.14	TG

Summary Statistics

	Sample GU33	Sample GU34
Grand Means	42.181 Gloss Units	26.141 Gloss Units
SD Btwn Labs	1.405 Gloss Units	0.845 Gloss Units

Statistics based on 10 of 10 reporting participants

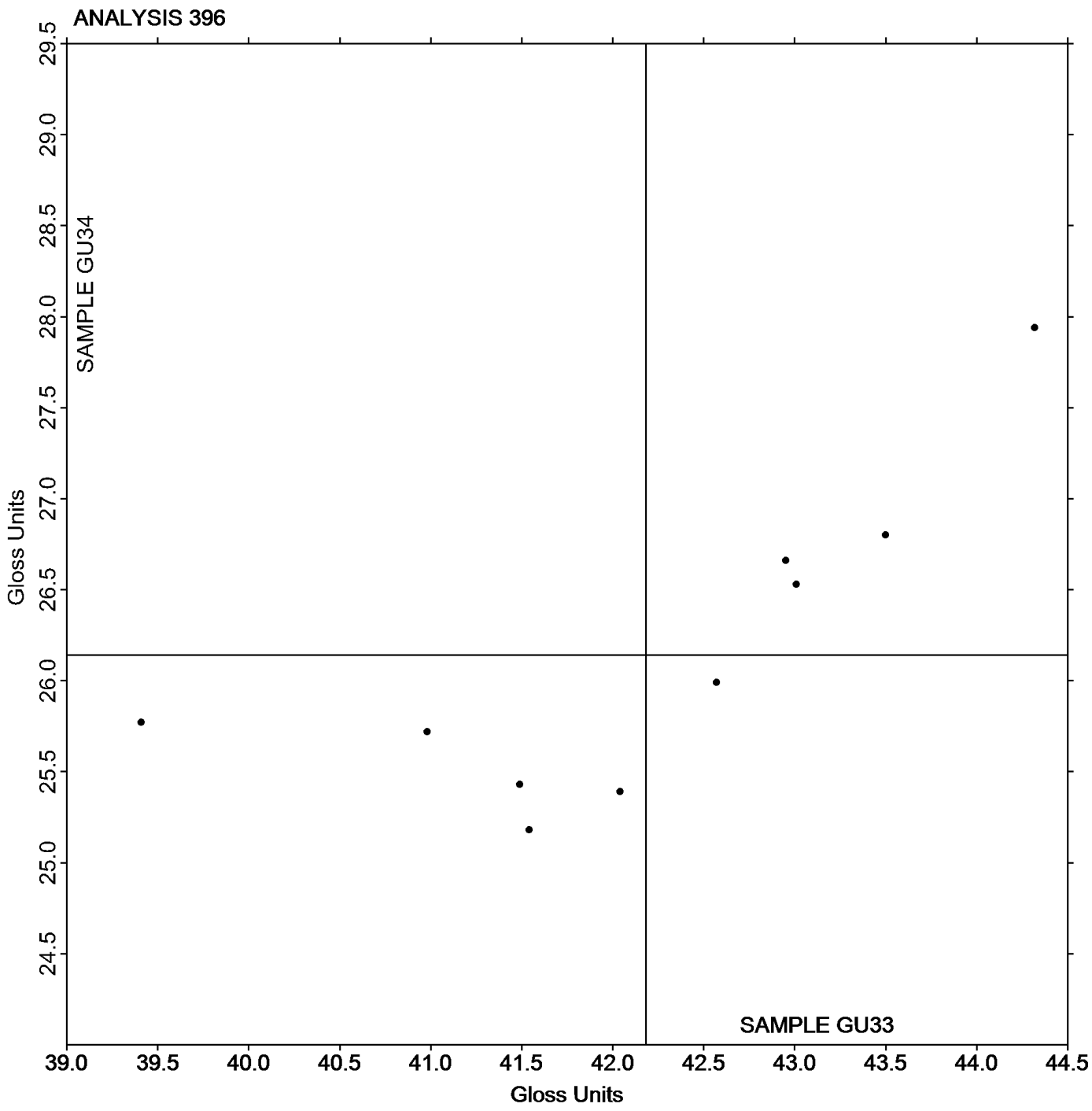
Key to Instrument Codes Reported by Participants

GN	Gardco Novo-Gloss	LA	L & W Gloss - Autoline 300
PP	Technidyne Profile/Plus	TG	Technidyne T480
TH	Technidyne T480A	XX	Instrument make/model not specified by lab

Paper & Paperboard Interlaboratory Testing Program
Analysis 396
Specular Gloss at 75 Degrees - Low Range

Grand Mean Sample **GU33** = 42.181 Gloss Units

Grand Mean Sample **GU34** = 26.141 Gloss 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 398
Grammage (Mass per Unit Area)

WebCode	Data Flag	Sample GW33 Lab Mean	Sample GW33 Diff from Grand Mean	Sample GW33 CPV	Sample GW34 Lab Mean	Sample GW34 Diff from Grand Mean	Sample GW34 CPV
2HVGVH		101.0	0.6	1.26	85.97	-0.22	-0.35
2RJEGG		100.3	-0.1	-0.27	86.25	0.06	0.10
6EKDVQ		100.6	0.1	0.28	86.97	0.78	1.26
AYBH27		99.8	-0.6	-1.47	85.40	-0.79	-1.27
BL7JUK		100.7	0.2	0.48	86.36	0.17	0.28
BW6C3B		100.4	0.0	-0.02	85.78	-0.41	-0.65
D29ZTH		99.8	-0.6	-1.48	86.14	-0.05	-0.07
DM927L		100.6	0.2	0.43	86.30	0.11	0.17
E7YU7A	*	99.4	-1.0	-2.38	85.99	-0.20	-0.32
EHCUZH		100.1	-0.4	-0.86	86.94	0.75	1.21
EM4YV8		100.6	0.1	0.34	86.20	0.01	0.02
EWUMNN		100.9	0.4	0.96	86.88	0.69	1.11
G398N7		100.8	0.4	0.90	86.46	0.27	0.44
GDTGCZ		99.8	-0.6	-1.41	85.27	-0.92	-1.47
HWERC6		100.6	0.2	0.43	86.27	0.09	0.14
J8CX3W		100.7	0.2	0.57	85.66	-0.53	-0.86
JHDFEK		100.4	0.0	-0.03	86.01	-0.17	-0.28
KWBPZ6		100.7	0.3	0.60	86.14	-0.05	-0.08
M6FH6G		100.5	0.1	0.23	86.25	0.06	0.10
PJRVB8		100.2	-0.2	-0.50	84.67	-1.51	-2.43
PZXYYK		100.0	-0.4	-0.97	85.96	-0.23	-0.36
RUYMRD		100.5	0.1	0.22	85.98	-0.21	-0.34
TTM3KN		100.6	0.2	0.44	86.43	0.24	0.39
UBKPM8		100.7	0.2	0.48	86.14	-0.05	-0.08
UXWM6E	*	101.5	1.1	2.48	88.15	1.96	3.15
VPXF4K		100.3	-0.1	-0.27	86.67	0.48	0.77
WRX9AN		100.0	-0.5	-1.04	85.83	-0.36	-0.58
XYCDLL		100.7	0.3	0.60	86.20	0.01	0.02

Summary Statistics

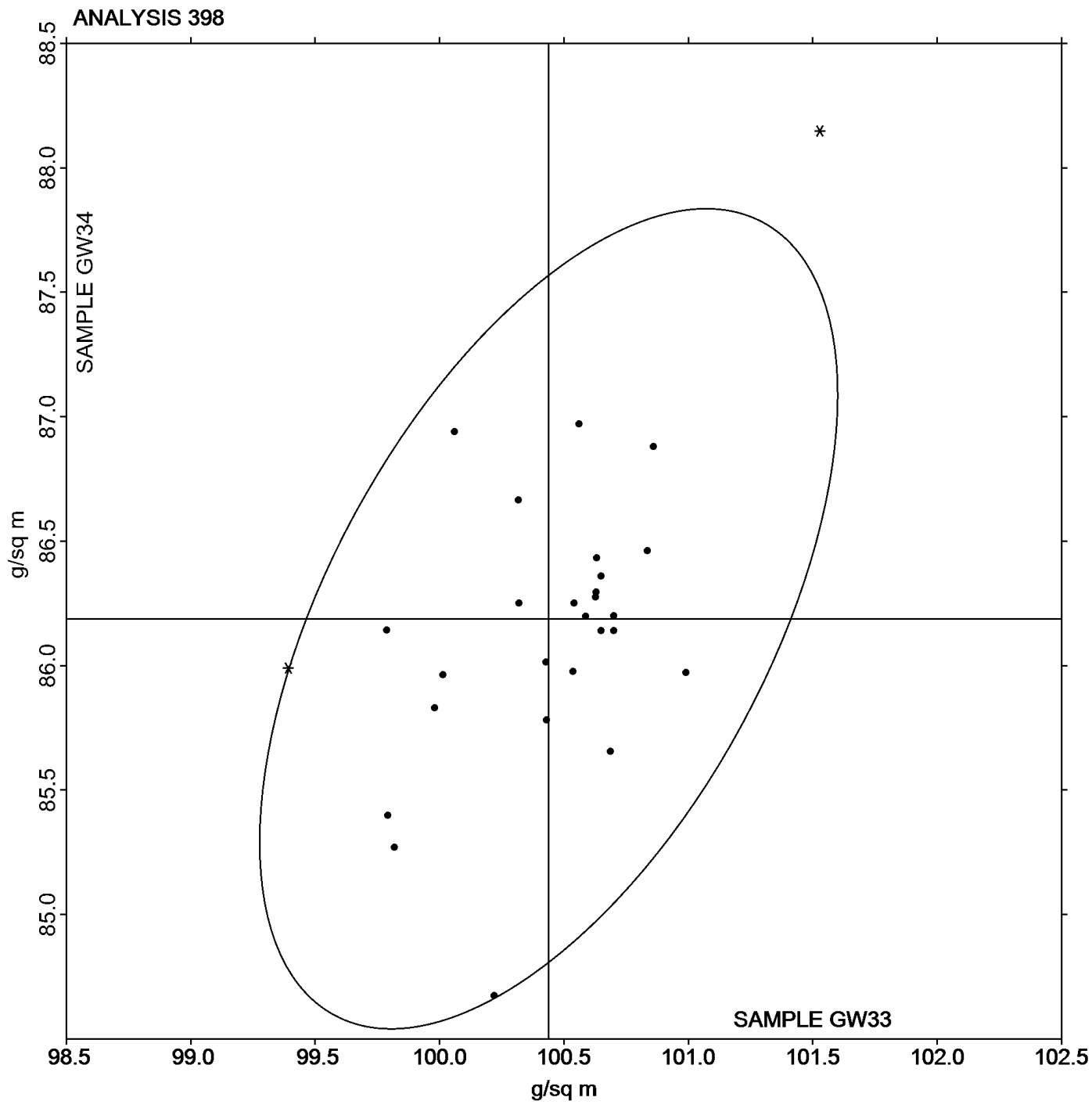
	Sample GW33	Sample GW34
Grand Means	100.44 g/sq m	86.188 g/sq m
SD Btwn Labs	0.44 g/sq m	0.623 g/sq m

Statistics based on 28 of 28 reporting participants

Paper & Paperboard Interlaboratory Testing Program
Analysis 398
Grammage (Mass per Unit Area)

Grand Mean Sample **GW33** = 100.44 g/sq m

Grand Mean Sample **GW34** = 86.188 g/sq m



Paper & Paperboard Interlaboratory Testing Program
Analysis 399
Sizing Test (Hercules Type)

WebCode	Data Flag	Sample GX33 Lab Mean	Sample GX33 Diff from Grand Mean	Sample GX33 CPV	Sample GX34 Lab Mean	Sample GX34 Diff from Grand Mean	Sample GX34 CPV
3AWBEL	*	15.82	4.35	2.12	10.04	-2.01	-0.62
69WX3D		10.61	-0.86	-0.42	11.01	-1.04	-0.32
6ARDEB		10.57	-0.90	-0.44	10.76	-1.29	-0.40
6PK72W		9.26	-2.21	-1.08	10.01	-2.04	-0.63
72VX8H		13.90	2.43	1.18	15.44	3.39	1.05
7AP7N3		11.42	-0.05	-0.03	8.55	-3.50	-1.08
7MQYYB		11.80	0.33	0.16	12.80	0.75	0.23
9QMA3A	*	8.90	-2.57	-1.25	17.00	4.95	1.53
AREM38		14.26	2.79	1.36	18.07	6.02	1.86
BL7JUK		11.80	0.33	0.16	11.20	-0.85	-0.26
D29ZTH		14.32	2.85	1.39	20.56	8.51	2.63
D99G4N		13.98	2.51	1.22	13.84	1.79	0.55
DPGDL2		10.47	-1.00	-0.49	10.40	-1.65	-0.51
DWXP2N		10.73	-0.74	-0.36	13.33	1.28	0.40
E2Q7T9		12.52	1.05	0.51	11.57	-0.48	-0.15
EWUMNN		7.80	-3.67	-1.79	7.40	-4.65	-1.44
GW49F2		8.66	-2.81	-1.37	6.74	-5.31	-1.64
LPLQKG		10.61	-0.86	-0.42	9.18	-2.87	-0.89
NDP8GV		9.77	-1.70	-0.83	10.21	-1.84	-0.57
PQB2AZ	X	14.40	2.93	1.43	493.53	481.48	148.97
QPAKDT		11.84	0.37	0.18	15.35	3.30	1.02
R6KQWR		14.82	3.35	1.63	13.50	1.45	0.45
T79HNN		10.00	-1.47	-0.72	9.50	-2.55	-0.79
U3QH7M		9.29	-2.18	-1.06	9.73	-2.32	-0.72
U7N3UJ		10.57	-0.90	-0.44	11.34	-0.71	-0.22
UXWM6E		11.21	-0.26	-0.13	12.75	0.70	0.22
VWYUM2		11.80	0.33	0.16	10.72	-1.33	-0.41
X6ZXMG		13.01	1.54	0.75	14.41	2.36	0.73

Summary Statistics

	Sample GX33	Sample GX34
Grand Means	11.472 Seconds	12.052 Seconds
SD Btwn Labs	2.053 Seconds	3.232 Seconds

Statistics based on 27 of 28 reporting participants

Comments on Assigned Data Flags for Test #399

PQB2AZ (X) - Extreme Data for Sample GX34.

Paper & Paperboard Interlaboratory Testing Program
Analysis 399
Sizing Test (Hercules Type)

Grand Mean Sample **GX33** = 11.472 Seconds

Grand Mean Sample **GX34** = 12.052 Seconds