Collaborative Testing Services, Inc.

Paper & PaperboardTesting Program

Summary Report #269G-April 2014

Introduction to the Paper & Paperboard Program

Explanation of Tables and Definitions of Terms

Instrument Manufacturer Contacts

Analysis	Analysis Name
350	Color & Color Difference (Near White Papers), Hunter L,a,b - Illuminant C - 2 deg obs
351	Color & Color Difference (Near White Papers), Hunter L,a,b - Illuminant D65 - 10 deg obs
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361	Thickness (Caliper), Packaging papers, High range
364	Coefficient of Static Friction-Horizontal Plane, Printing papers
365	Coefficient of Kinetic Friction-Horizontal Plane, Printing papers
370	Air Resistance, Gurley Oil Type, Printing papers
372	Porosity, Sheffield Type, Printing papers
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391	Directional Brightness of Fluorescent Samples, Printing papers
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396	Specular Gloss 75 Degreee, 20-65 Units, Low range
398	Grammage (Basis Weight), Printing papers
399	Sizing Test, Hercules Type, Printing papers

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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Sterling, Virginia 20166 USA
+1-571-434-1925
FAX #: +1-571-434-1937
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(Toll-free fax within the U.S.: 1-866-fax-2cts)
Office Hours: 8:00 a.m. - 4:30 p.m. ET

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.

Instrument Manufacturer Contacts

If your data results have been flagged with an "X" and you suspect that the problem is with your instrument (and not your testing procedure), CTS urges you to contact the appropriate instrument manufacturer. CTS has asked manufacturers to supply a contact person who is familiar with the Paper, Paperboard & Corrugated Fiberboard Interlaboratory Program. The listed service contact should be able to work with you on evaluating your results and determining possible causes of the problem.

Technidyne Corp., Hagerty Div.
George Hagerty
287 Dix Ave. P.O. Box 4741
Queensbury, NY 12804
Phone: (518) 793-2834
FAX #: (518) 792-1796

Technidyne Corporation
Jeff Hobbs / Mike Lakins
100 Quality Avenue
New Albany, IN 47150-2272 USA
Phone: (812) 948-2884
FAX #: (812) 945-6847

Thwing Albert Instrument Co.
Jack Mirkowski, Service Contact
David Zarrilli, Sales Contact
10960 Dutton Road
Philadelphia, PA 19154
Phone: (215) 637-0100
FAX #: (215) 632-8370

Testing Machines Inc.
Michael Foran, Technical Support Engineer
2910 Expressway Drive South
Islandia, NY 11722
Phone: (631) 439-5400
FAX #: (631) 439-5420

Huygen Corporation
Richard Wade
P.O. Box 316
Waconda, IL 60084
Phone: (815) 455-2200
FAX #: (815) 455-2300

Hercules, Inc.
Steven R. Boone
7510 Baymeadows Way
Jacksonville, FL 32256-7524
Phone: (904) 732-3136
FAX #: (904) 448-4995

Lorentzen & Wettre USA Inc.
Bill Crain, Technical Manager
1055 Windward Ridge Pkwy
Suite 160
Alpharetta, GA 30005
Phone: (770) 442-8015 ext 232
FAX #: (770) 442-6792

Valmet Inc.
Eeva Nettamo, Product Manager Paper Testing
3100 Medlock Bridge Road - Suite 260
Norcross, GA 30071
Phone: (770) 448-0849
FAX #: (770) 242-8386

Gurley Precision Instruments
Martin Gordinier, Product Manager
P.O. Box 88
Troy, NY 12181-0088
Phone: (800) 759-1844
FAX #: (518) 274-0336

Hunter Associates Lab, Inc.
Mary Ellen Zuyus
11491 Sunset Hills Road
Reston, VA 22090
Phone: (703) 471-6870 ext. 222
FAX #: (703) 471-4237

BYK-Gardner
Randy Snavely
9104 Guilford Road
Columbia, MD 21046-2729
Phone: (301) 483-6500
FAX #: (301) 483-6555

Emveco Inc.
Donald L. Stradley
113 North Blaine, P.O. Box 16
Newburg, OR 97132-0016
Phone: (503) 538-8616
FAX #: (503) 538-0912

Applied Paper Technology Inc.
Vann Parker, President
555 14th Street, NW
Atlanta, GA 30318
Phone: (404) 881-9801
FAX #: (404) 881-0862
appliedpapertech@mindspring.com

TAPPI-CTS Interlaboratory Testing Program

Analysis 350

Color & Color Difference - Near White Papers - C/2deg ob **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
4FLG32		GA05	93.72	-0.28	-0.41	-0.03	-0.02	0.26	0.26		HE
		GA06	93.69	-0.30	-0.15						
6MCNED		GA05	90.82	0.26	-0.64	-0.06	-0.04	0.20	0.21		TS
		GA06	90.76	0.22	-0.44						
7GH4RA		GA05	90.43	0.57	-0.24	0.04	-0.01	0.12	0.12		TS
		GA06	90.47	0.56	-0.12						
8HAAZM		GA05	92.60	-0.07	0.18	-0.20	0.02	0.06	0.21		LS
		GA06	92.40	-0.05	0.24						
93BV6B		GA05	90.17	0.05	-0.10	0.08	0.03	0.11	0.14		TS
		GA06	90.25	0.08	0.01						
A2CUWY		GA05	90.21	-0.09	0.25	-0.07	0.01	0.17	0.18		LS
		GA06	90.14	-0.08	0.41						
BUUYDA		GA05	91.18	-0.44	0.45	-0.09	0.07	0.13	0.17		HE
		GA06	91.09	-0.38	0.58						
C7HH87		GA05	90.14	-0.40	0.00	0.02	0.00	-0.12	0.12		HH
		GA06	90.16	-0.39	-0.12						
CRGZ77		GA05	90.39	-0.15	0.40	0.04	0.10	0.20	0.23		TC
		GA06	90.43	-0.05	0.61						
EGUCV4		GA05	91.67	-0.60	-0.69	-0.11	0.03	0.08	0.14		HG
		GA06	91.56	-0.57	-0.61						
F7PNC6		GA05	92.49	-0.04	-0.21	-0.03	-0.01	0.22	0.22		EH
		GA06	92.46	-0.06	0.01						
FUF4Y4		GA05	90.37	-0.67	-0.08	-0.12	-0.01	0.05	0.13		HH
		GA06	90.25	-0.68	-0.04						
G33NE2		GA05	90.50	0.24	0.39	-0.48	0.04	-0.15	0.51	X	TB
		GA06	90.02	0.29	0.24						
HURJ6G		GA05	90.22	0.12	0.05	-0.03	0.03	0.17	0.18		TM
		GA06	90.20	0.14	0.22						
HZUQM6		GA05	89.18	0.35	-0.38	0.11	0.41	-0.01	0.42		TS
		GA06	89.29	0.75	-0.38						
JH7W9L		GA05	91.47	-0.29	-0.39	0.07	-0.07	0.34	0.36		HH
		GA06	91.54	-0.37	-0.05						
JPDBBQ	X	GA05	82.27	-0.43	-0.79	0.38	0.02	-0.07	0.39		XX
		GA06	82.65	-0.41	-0.86						

TAPPI-CTS Interlaboratory Testing Program

Analysis 350

Color & Color Difference - Near White Papers - C/2deg ob **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
KDBCU4		GA05	91.43	-0.52	-0.46	0.08	-0.05	0.25	0.26	XX
		GA06	91.51	-0.57	-0.21					
KFHR82		GA05	90.20	0.35	0.05	-0.01	-0.04	0.22	0.22	TM
		GA06	90.20	0.31	0.27					
L8LACP		GA05	90.34	0.04	0.26	-0.13	-0.01	0.13	0.19	TC
		GA06	90.21	0.04	0.39					
N66Y9G		GA05	90.59	0.13	0.19	-0.04	0.01	0.22	0.22	MK
		GA06	90.56	0.14	0.41					
PF26ZU		GA05	91.85	0.09	-0.16	-0.02	0.04	0.07	0.08	XS
		GA06	91.83	0.13	-0.09					
PFMVTF		GA05	89.75	0.74	-0.03	-0.10	-0.09	0.34	0.37	TS
		GA06	89.65	0.65	0.31					
PWR36V		GA05	90.32	-0.05	0.29	0.04	-0.03	0.24	0.24	TC
		GA06	90.36	-0.08	0.53					
Q9EU46		GA05	92.21	-0.03	0.06	0.02	-0.03	0.31	0.32	EH
		GA06	92.24	-0.05	0.38					
UFYQZJ		GA05	92.50	0.15	0.31	-0.06	0.09	-0.02	0.11	MI
		GA06	92.45	0.24	0.29					

Summary Statistics

Grand Means							
GA05	91.010	-0.053	-0.065	-0.043	0.019	0.143	0.225
GA06	90.986	-0.050	0.070				
Stnd Dev Btwn Labs							
GA05	1.101	0.350	0.353	0.120	0.093	0.128	0.103
GA06	1.084	0.345	0.372				

Statistics based on 25 of 26 reporting participants

Comments assigned on Data Flags for Test #350

JPDBBQ (X) - Low L values for both samples. Inconsistent within L values for both samples. Large delta L value.

TAPPI-CTS Interlaboratory Testing Program

Analysis 350

Color & Color Difference - Near White Papers - C/2deg ob **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	

Instrument Code List as Reported by the Labs

(EH) - Datacolor Elrepho SF450

(HE) - Hunter LabScan

(HG) - Hunter ColorQUEST

(HH) - Hunter D25DP - 9000

(LS) - L & W Elrepho SE 070

(MI) - Macbeth Color i 5

(MK) - Macbeth Color-Eye 7000 Spectrophotometer

(TB) - Technidyne Technibrite TB-1C

(TC) - Technidyne Color Touch Series

(TM) - Technidyne Technibrite Micro TB-1C

(TS) - Technidyne Brightimeter Micro S-5

(XS) - X-Rite 938 Spectrodensitometer

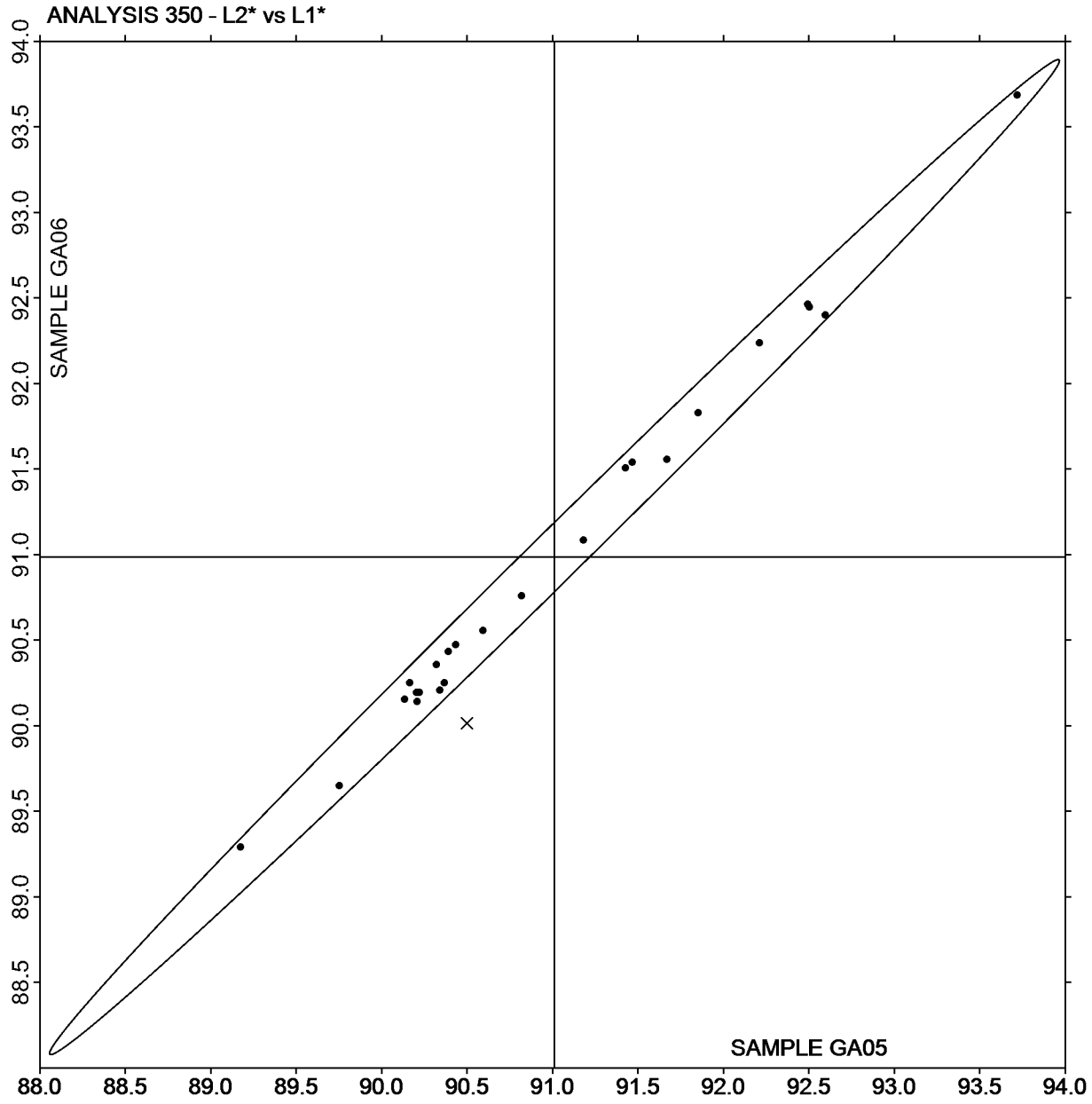
(XX) - Instrument make/model not specified by lab

TAPPI-CTS Interlaboratory Testing Program

Analysis 350

Color & Color Difference - Near White Papers - C/2deg ob **Hunter L,a,b - Illuminant C - 2 Degree Observer**

Plot of L values GA06 v L values GA05

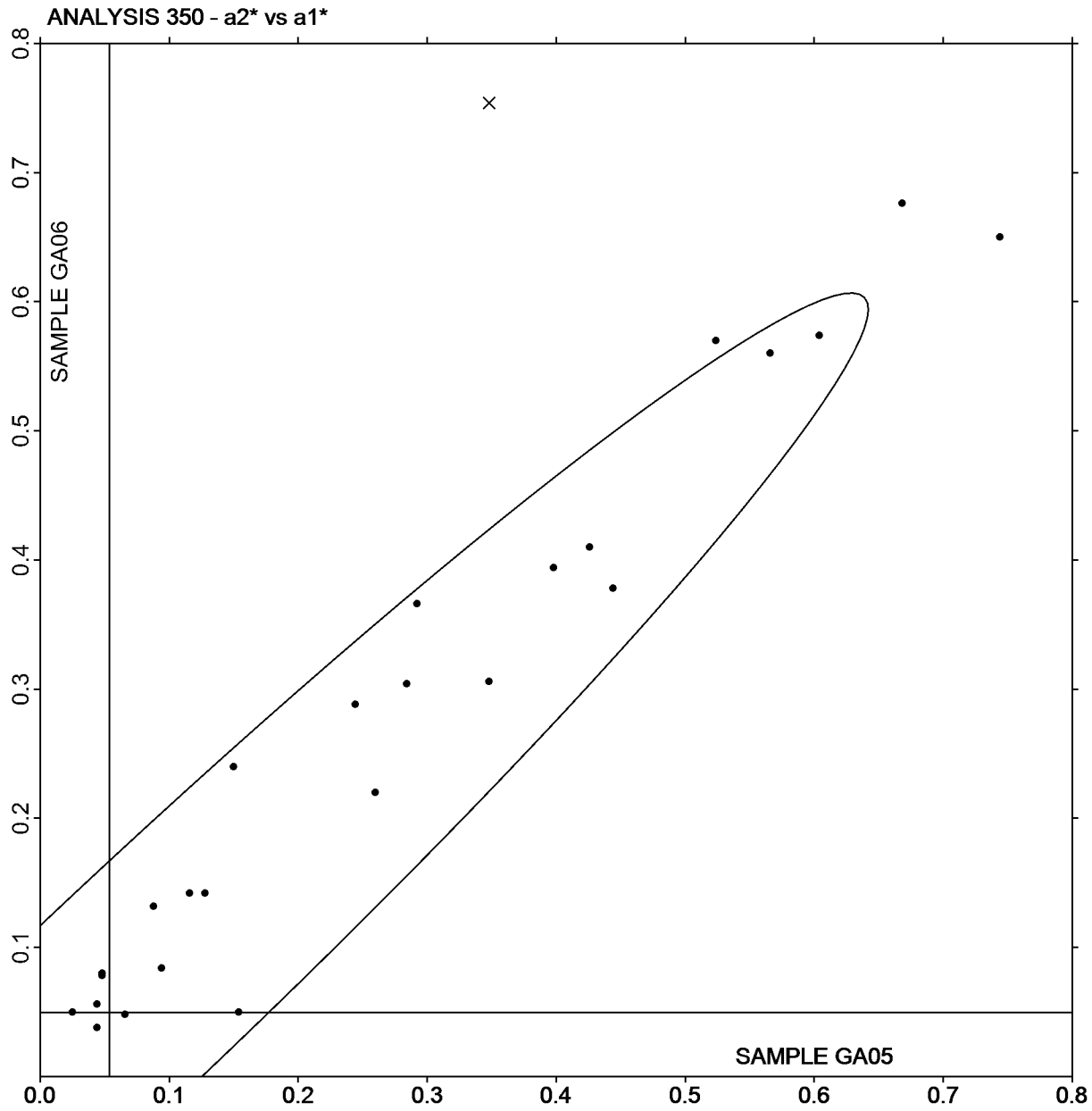


TAPPI-CTS Interlaboratory Testing Program

Analysis 350

Color & Color Difference - Near White Papers - C/2deg ob **Hunter L,a,b - Illuminant C - 2 Degree Observer**

Plot of a values GA06 v a values GA05

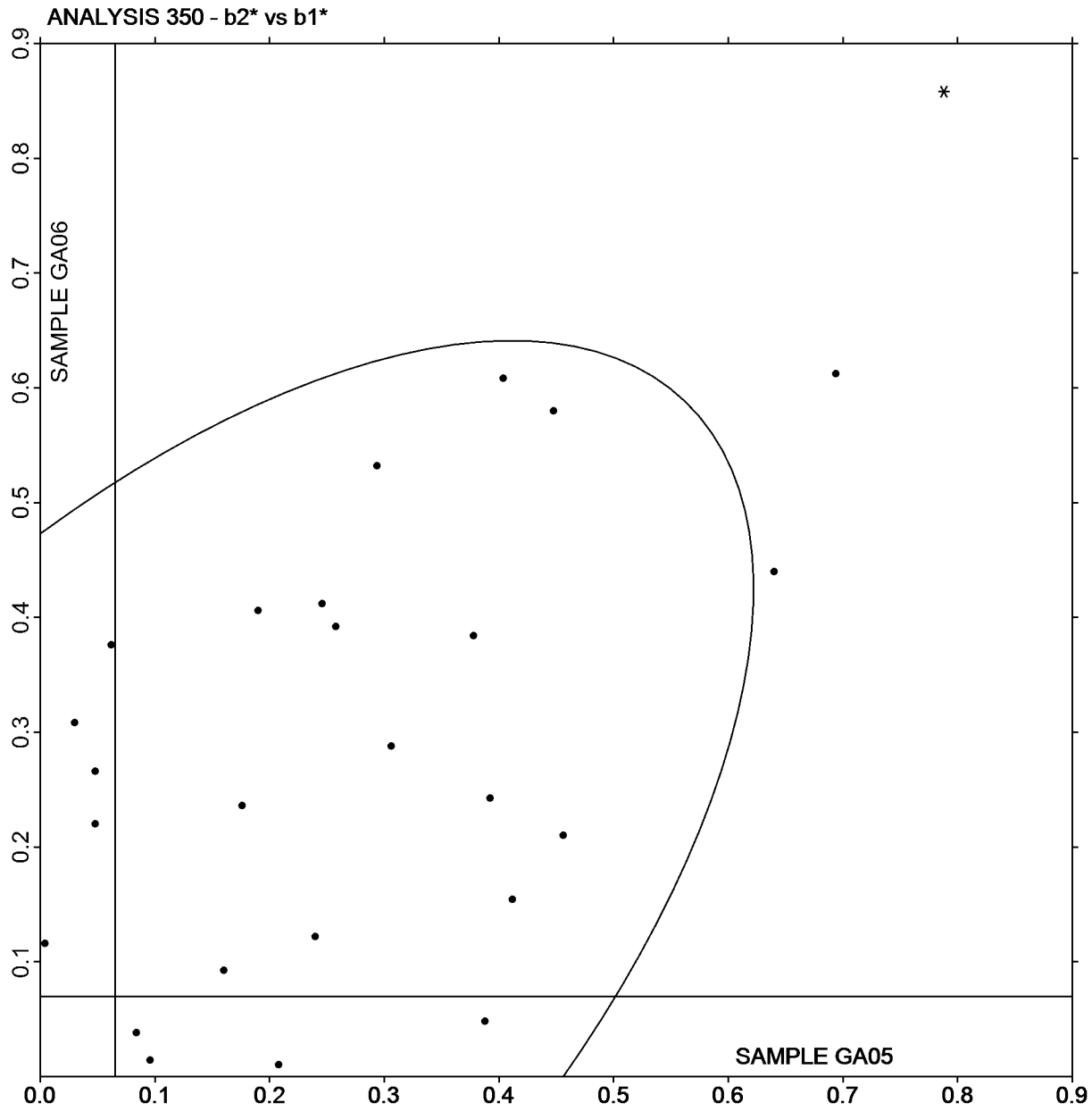


TAPPI-CTS Interlaboratory Testing Program

Analysis 350

Color & Color Difference - Near White Papers - C/2deg ob **Hunter L,a,b - Illuminant C - 2 Degree Observer**

Plot of b values GA06 v b values GA05



TAPPI-CTS Interlaboratory Testing Program

Analysis 351

Color & Color Difference - Near White Papers - D65/10deg **Hunter L,a,b - Illuminant D65 - 10 Degree Observer**

Web Code	F	Samples	Hunter L, a, b Color Values			Color Difference Values				Instr Code
			L	a	b	ΔL	Δa	Δb	ΔE	
2KD3HQ		GA05	92.26	-0.52	0.54	0.06	0.18	0.01	0.19	EH
		GA06	92.32	-0.34	0.55					
6723QG		GA05	92.63	-0.57	0.58	-0.07	0.03	0.14	0.16	HT
		GA06	92.57	-0.54	0.73					
8HAAZM		GA05	92.50	-0.67	0.38	0.00	0.01	0.18	0.18	LS
		GA06	92.50	-0.66	0.56					
8LAQ39		GA05	90.84	-0.63	0.19	-0.13	0.05	0.11	0.17	HE
		GA06	90.72	-0.57	0.30					
98R3QP		GA05	92.55	-0.72	0.57	0.00	0.03	0.27	0.27	HE
		GA06	92.55	-0.69	0.83					
ALAAE3		GA05	90.51	-0.56	0.46	-0.05	0.02	0.15	0.16	TC
		GA06	90.46	-0.55	0.61					
BUUYDA		GA05	91.22	-0.40	0.41	-0.18	-0.02	0.15	0.23	HE
		GA06	91.05	-0.41	0.56					
BZWA6Z		GA05	92.40	-0.60	0.30	-0.04	0.02	0.14	0.15	EF
		GA06	92.36	-0.58	0.44					
GHWZ36		GA05	93.86	0.39	-0.44	0.01	-0.02	0.25	0.25	XP
		GA06	93.87	0.38	-0.20					
KTLBM8		GA05	90.52	-0.49	0.46	-0.01	0.02	0.28	0.28	XX
		GA06	90.52	-0.47	0.74					
LGQCE2		GA05	92.76	-0.46	0.75	-0.25	0.02	-0.01	0.25	NG
		GA06	92.51	-0.45	0.74					
RXDL4Y		GA05	92.78	-0.56	0.60	0.00	0.05	0.22	0.23	NF
		GA06	92.79	-0.50	0.82					
WJY9BF		GA05	90.44	-0.50	0.71	0.03	0.10	0.08	0.13	XM
		GA06	90.46	-0.40	0.78					
WL82PN		GA05	91.16	-0.40	0.16	-0.01	0.01	0.30	0.30	HV
		GA06	91.15	-0.39	0.46					
X6V89X		GA05	92.34	-0.56	0.67	-0.14	-0.02	0.16	0.22	EH
		GA06	92.19	-0.58	0.83					
XR9XQY		GA05	92.56	-0.69	0.47	0.03	0.00	0.34	0.34	TC
		GA06	92.59	-0.69	0.81					
XW23FW		GA05	92.33	-0.58	0.39	0.03	0.01	0.33	0.34	LS
		GA06	92.36	-0.56	0.72					

TAPPI-CTS Interlaboratory Testing Program

Analysis 351

Color & Color Difference - Near White Papers - D65/10deg **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								
GA05	91.981	-0.501	0.424	-0.042	0.029	0.181	0.225	
GA06	91.939	-0.472	0.605					
Stnd Dev Btwn Labs								
GA05	0.995	0.248	0.278	0.086	0.048	0.104	0.065	
GA06	1.004	0.242	0.260					

Statistics based on 17 of 17 reporting participants

Instrument Code List as Reported by the Labs

(EF) - Datacolor Elrepho 3000

(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

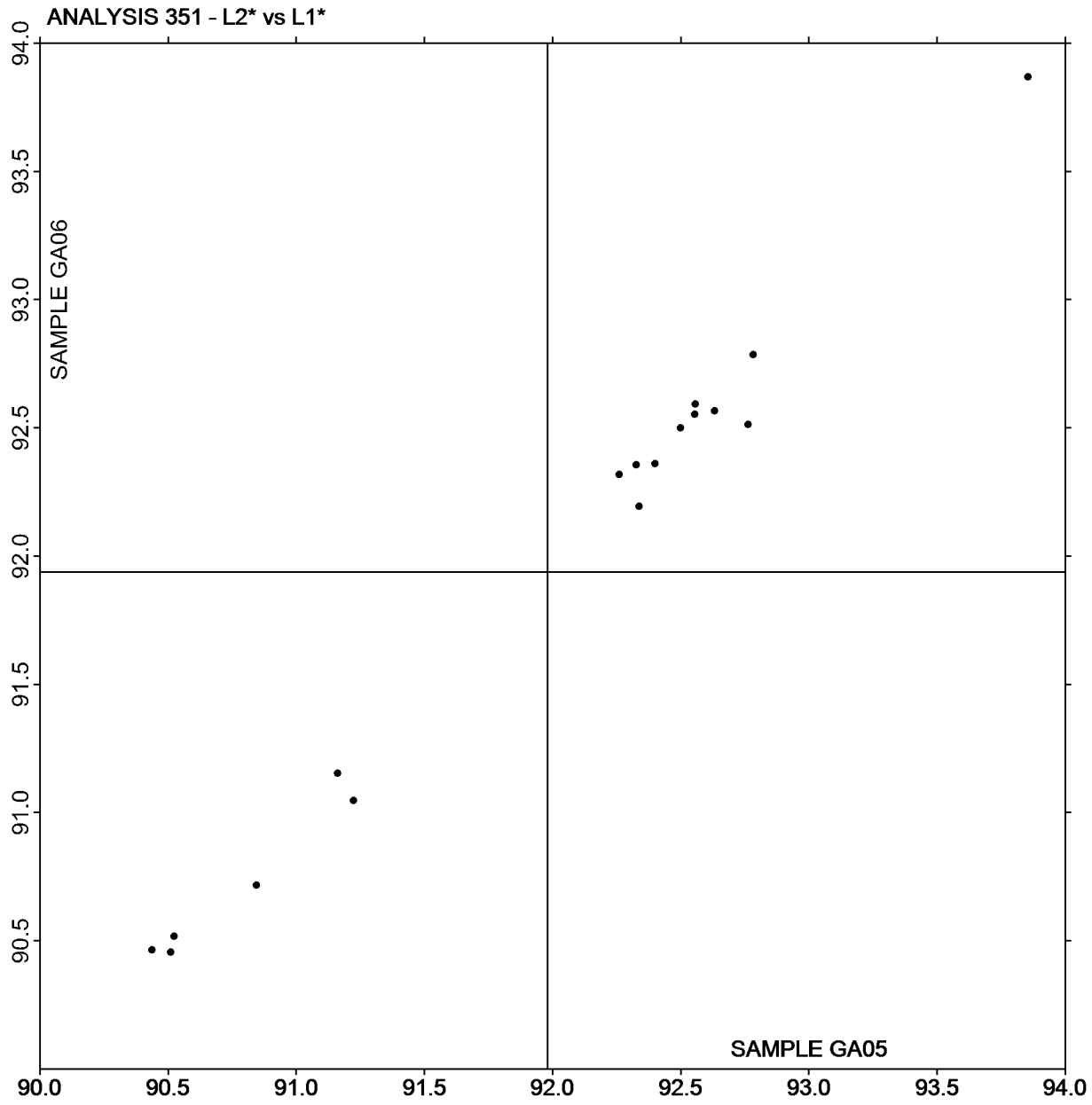
(XX) - Instrument make/model not specified by lab

TAPPI-CTS Interlaboratory Testing Program

Analysis 351

Color & Color Difference - Near White Papers - D65/10deg **Hunter L,a,b - Illuminant D65 - 10 Degree Observer**

Plot of L values GA06 v L values GA05



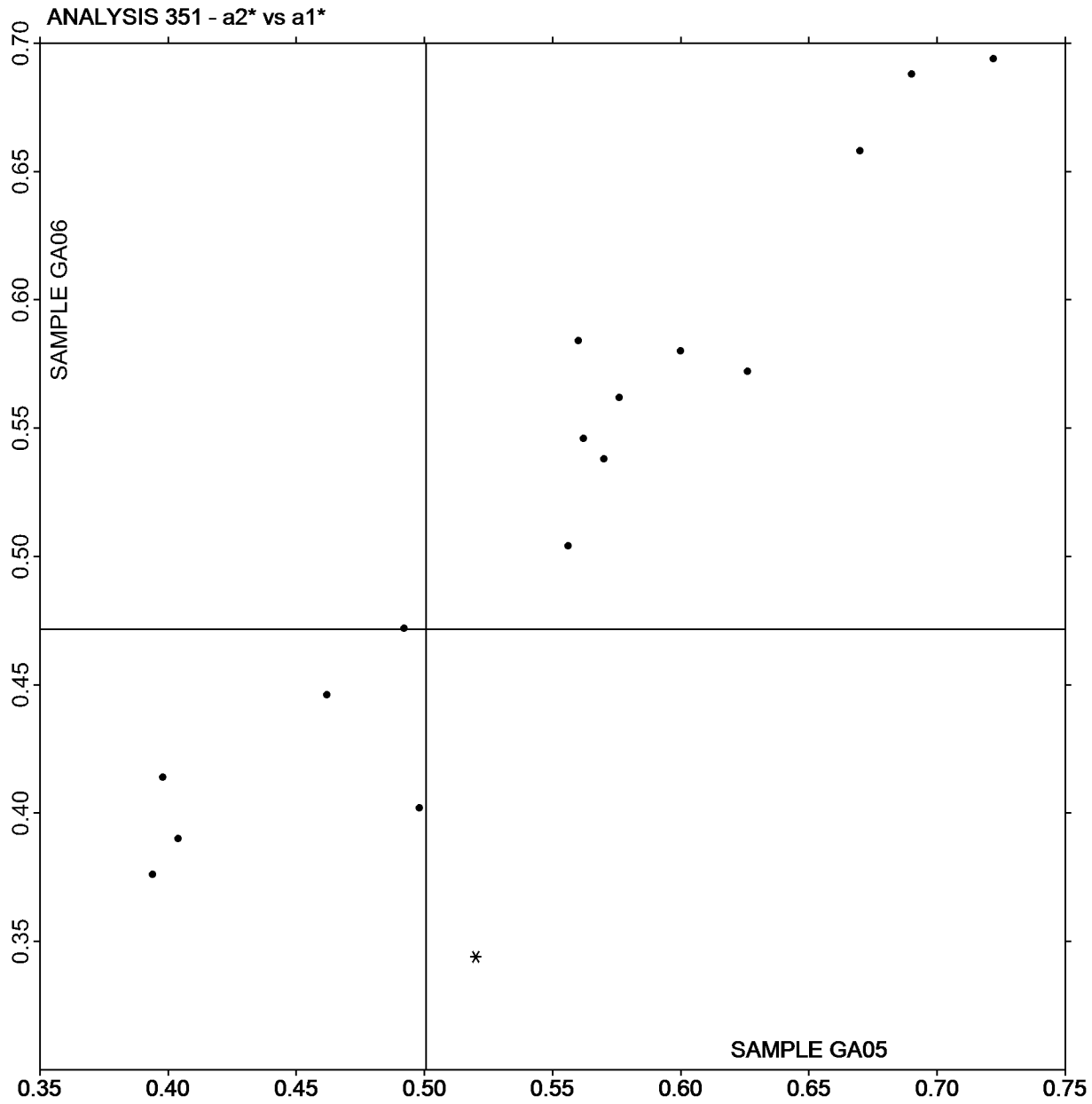
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program

Analysis 351

Color & Color Difference - Near White Papers - D65/10deg **Hunter L,a,b - Illuminant D65 - 10 Degree Observer**

Plot of a values GA06 v a values GA05



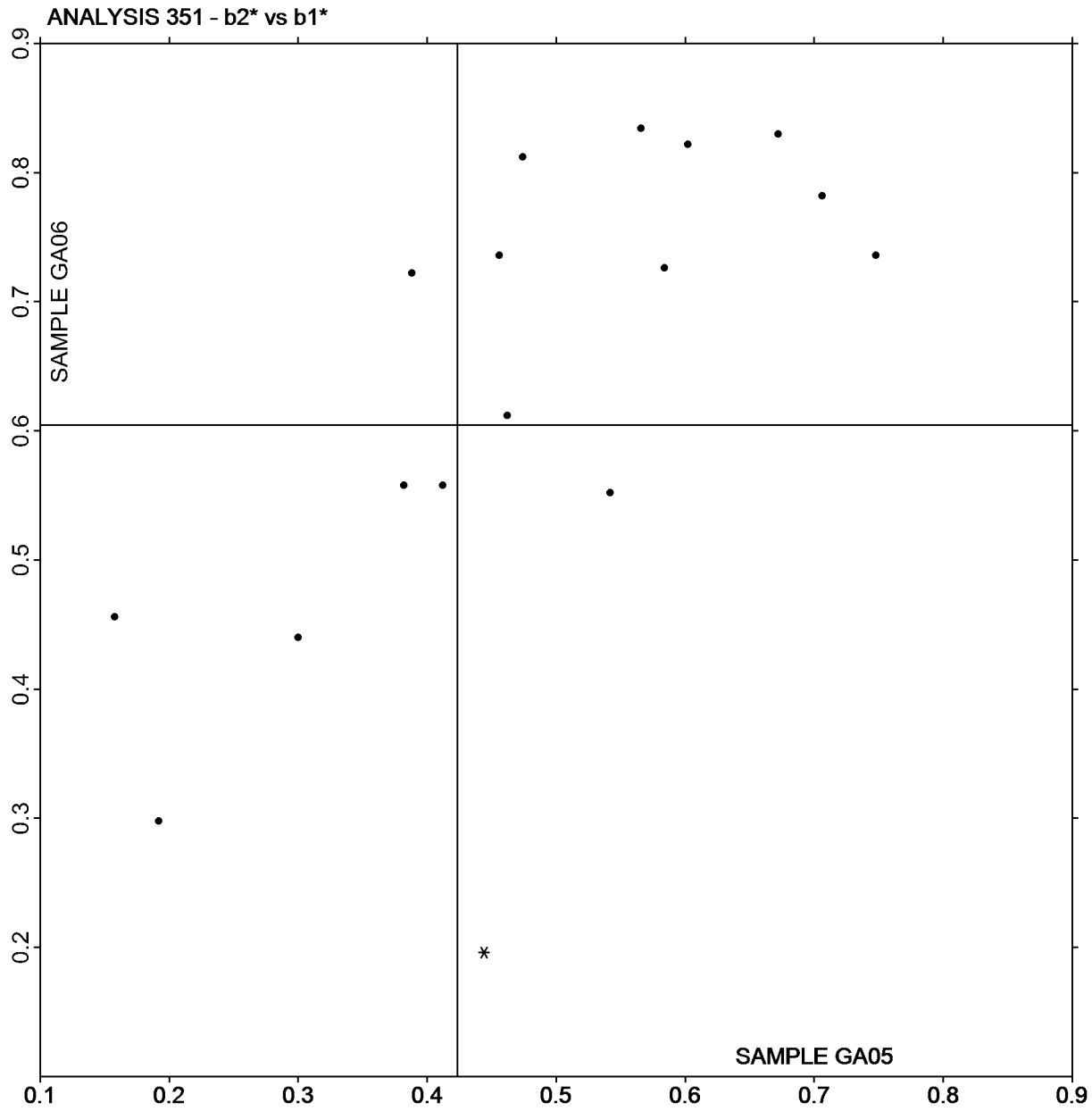
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

TAPPI-CTS Interlaboratory Testing Program

Analysis 351

Color & Color Difference - Near White Papers - D65/10deg **Hunter L,a,b - Illuminant D65 - 10 Degree Observer**

Plot of b values GA06 v b values GA05



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 GV05 Lab Mean	Sample GV05 Diff from Grand Mean	Sample GV05 CPV	Sample GV06 Lab Mean	Sample GV06 Diff from Grand Mean	Sample GV06 CPV	Instr Code
2CBL8D		4.713	0.033	0.50	3.776	-0.008	-0.12	LW
3D4WH8		4.730	0.050	0.76	3.835	0.051	0.80	PP
62P2PJ		4.692	0.012	0.19	3.732	-0.052	-0.80	TA
6723QG		4.751	0.071	1.08	3.817	0.033	0.52	EM
6LYWJB		4.734	0.054	0.82	3.789	0.005	0.08	XX
74CYXA		4.699	0.019	0.29	3.799	0.015	0.24	TM
78WZMV		4.713	0.033	0.50	3.763	-0.020	-0.31	EM
796XC7		4.669	-0.011	-0.16	3.776	-0.008	-0.12	LW
79M6F3		4.640	-0.040	-0.60	3.750	-0.034	-0.52	LW
8LAQ39		4.668	-0.012	-0.18	3.834	0.051	0.79	TM
92ZZGX		4.735	0.055	0.83	3.823	0.039	0.61	LW
93BV6B	X	4.682	0.002	0.03	4.390	0.606	9.44	LA
98R3QP		4.607	-0.072	-1.09	3.720	-0.063	-0.99	LW
9B6ZYC	*	4.510	-0.170	-2.57	3.603	-0.181	-2.81	EM
9HNB4Z		4.791	0.111	1.68	3.903	0.119	1.86	PP
9RDWD6	*	4.866	0.186	2.82	3.923	0.139	2.17	XX
9UGUKR		4.654	-0.025	-0.38	3.770	-0.014	-0.22	XX
A2CUWY		4.680	0.000	0.00	3.805	0.022	0.34	LW
ACTWXQ		4.687	0.007	0.11	3.806	0.022	0.35	TM
AGPKEX		4.620	-0.060	-0.90	3.760	-0.024	-0.37	TM
ALAAE3		4.635	-0.045	-0.68	3.754	-0.030	-0.46	TA
AUWBG7		4.708	0.028	0.42	3.802	0.018	0.29	LW
B3AJXY		4.697	0.017	0.26	3.798	0.014	0.23	LW
BFQLU4		4.585	-0.095	-1.43	3.740	-0.044	-0.68	XX
BKHV2G		4.690	0.010	0.16	3.780	-0.004	-0.06	XX
CJ7ME3	*	4.746	0.066	1.00	3.921	0.137	2.14	LW
DNF6BA		4.629	-0.051	-0.77	3.774	-0.010	-0.15	EM
EEKL9K		4.670	-0.010	-0.15	3.793	0.009	0.15	EM
ETPHQM		4.670	-0.010	-0.15	3.750	-0.034	-0.52	TM
F7PNC6		4.665	-0.014	-0.22	3.791	0.008	0.12	MT
FFEFHB		4.623	-0.057	-0.86	3.715	-0.069	-1.07	PP
G33NE2		4.711	0.031	0.47	3.809	0.026	0.40	LW
GHWZ36		4.634	-0.046	-0.69	3.722	-0.062	-0.96	TM
HC8T4W		4.639	-0.041	-0.62	3.721	-0.062	-0.97	LW
HURJ6G		4.638	-0.042	-0.63	3.806	0.022	0.35	TA
HZUQM6		4.573	-0.107	-1.62	3.710	-0.073	-1.14	TM
JTPBCN		4.637	-0.043	-0.65	3.806	0.022	0.35	PP
KDBCU4		4.740	0.060	0.91	3.820	0.036	0.57	XX
KFHR82		4.747	0.068	1.02	3.863	0.080	1.24	XX
KRQDQU		4.680	0.000	0.00	3.796	0.012	0.19	XX
KX2J9L		4.630	-0.050	-0.75	3.710	-0.074	-1.14	TM
L8LACP		4.768	0.088	1.34	3.836	0.052	0.82	TA
LDARU8		4.643	-0.037	-0.56	3.715	-0.069	-1.07	LA

Paper & Paperboard Interlaboratory Testing Program

Analysis 360

Thickness (Caliper), Printing papers

WebCode	Data Flag	Sample GV05 Lab Mean	Sample GV05 Diff from Grand Mean	Sample GV05 CPV	Sample GV06 Lab Mean	Sample GV06 Diff from Grand Mean	Sample GV06 CPV	Instr Code
LG7PUY		4.685	0.005	0.08	3.794	0.010	0.16	TA
LGQCE2		4.690	0.010	0.15	3.778	-0.006	-0.09	LW
M4EARJ		4.775	0.095	1.44	3.877	0.093	1.45	EM
MRLRVQ		4.689	0.009	0.14	3.740	-0.043	-0.67	LW
N66Y9G		4.759	0.079	1.20	3.844	0.060	0.94	EM
N966MM		4.570	-0.110	-1.66	3.670	-0.114	-1.77	TM
PBBT3D	*	4.832	0.152	2.31	3.850	0.066	1.03	TM
PF26ZU		4.550	-0.130	-1.96	3.640	-0.144	-2.23	TM
PFMVTF		4.671	-0.009	-0.13	3.769	-0.015	-0.23	EM
PQLN4R		4.698	0.019	0.28	3.783	-0.001	-0.01	LW
PT8BUT		4.640	-0.040	-0.60	3.738	-0.046	-0.71	TM
PWR36V		4.682	0.002	0.03	3.838	0.054	0.85	PP
Q9EU46		4.675	-0.005	-0.07	3.720	-0.064	-0.99	TA
RA86DX		4.775	0.095	1.44	3.839	0.056	0.87	LW
RXDL4Y		4.716	0.036	0.55	3.876	0.092	1.43	TM
UFYQZJ		4.613	-0.067	-1.01	3.708	-0.076	-1.18	TA
UPVY29		4.697	0.017	0.26	3.854	0.071	1.10	MS
UZQAAF		4.630	-0.050	-0.75	3.729	-0.055	-0.85	EM
VLV3YK		4.677	-0.002	-0.03	3.772	-0.012	-0.18	TM
VWH4QG		4.644	-0.036	-0.54	3.718	-0.065	-1.01	EM
WJY9BF		4.661	-0.018	-0.28	3.843	0.059	0.92	LW
WL82PN		4.810	0.130	1.97	3.904	0.120	1.87	EM
XUBXMP		4.591	-0.089	-1.35	3.709	-0.075	-1.17	FR
Y2838E		4.580	-0.100	-1.51	3.697	-0.087	-1.35	TM
YFU38T		4.733	0.053	0.80	3.852	0.069	1.07	LW
ZPDXJE		4.661	-0.019	-0.28	3.822	0.038	0.60	VM

Summary Statistics

	Sample GV05	Sample GV06
Grand Means	4.6797 mils	3.7835 mils
SD Btwn Labs	0.0661 mils	0.0643 mils

Statistics based on 68 of 69 reporting participants

Comments on assigned Data Flags for Test #360

93BV6B (X) - Extreme data for Sample GV06.

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

Instrument Code List as Reported by the Labs

(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

(VM) - Valmet PaperLab (was Kajaani/Robotest)

(XX) - Instrument make/model not specified by lab

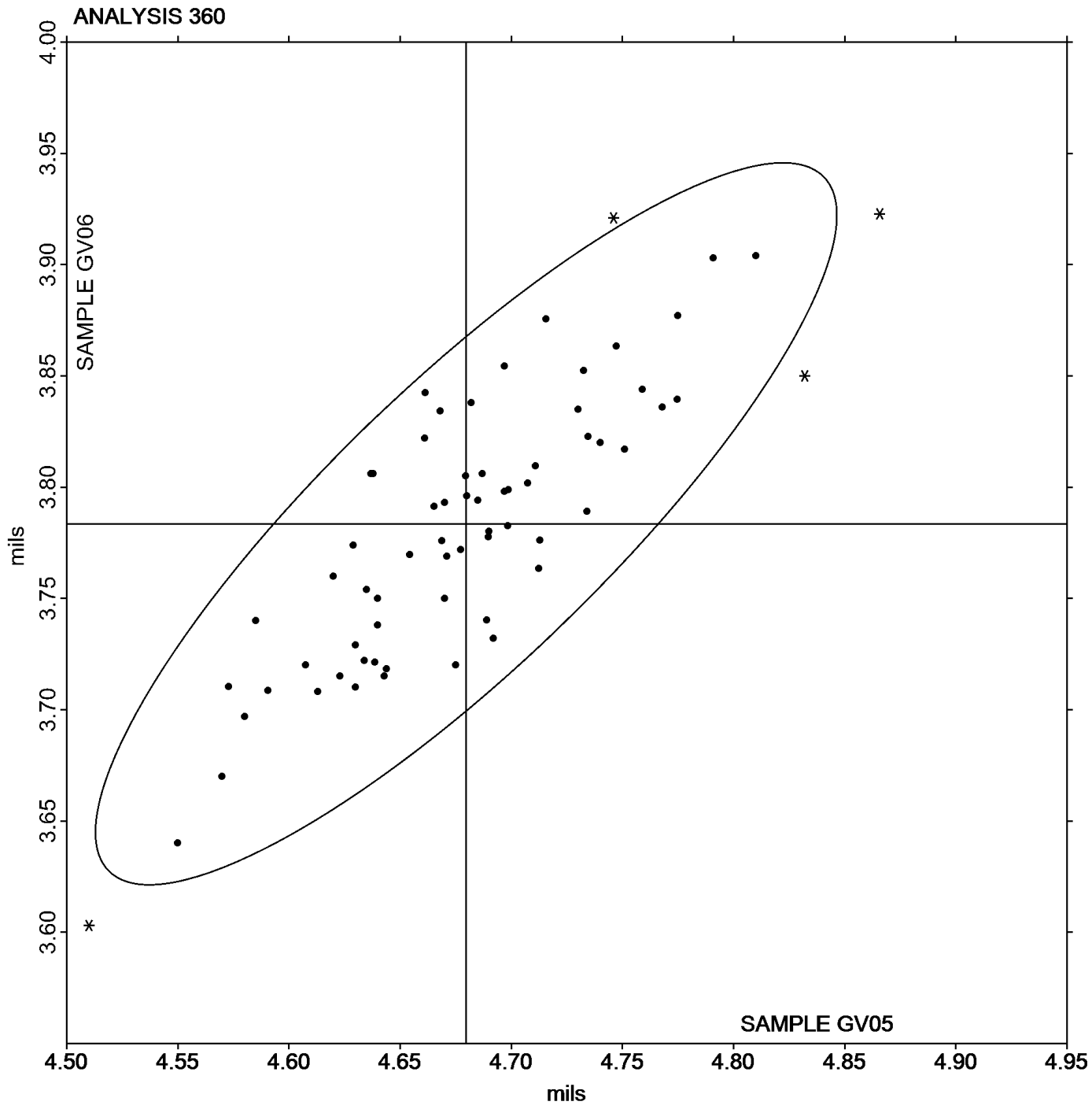
Paper & Paperboard Interlaboratory Testing Program

Analysis 360

Thickness (Caliper), Printing papers

Grand Mean Sample **GV05** = 4.6797 mils

Grand Mean Sample **GV06** = 3.7835 mils



Paper & Paperboard Interlaboratory Testing Program

Analysis 361

Thickness (Caliper), Packaging papers

WebCode	Data Flag	Sample GY05 Lab Mean	Sample GY05 Diff from Grand Mean	Sample GY05 CPV	Sample GY06 Lab Mean	Sample GY06 Diff from Grand Mean	Sample GY06 CPV	Instr Code
2BBR3N		9.420	-0.130	-0.79	7.510	-0.099	-0.62	TA
2F27PA		9.848	0.298	1.82	7.910	0.300	1.87	LA
2KD3HQ		9.770	0.220	1.34	7.812	0.203	1.26	EM
4FLG32		9.295	-0.255	-1.55	7.311	-0.298	-1.85	LA
62P2PJ		9.644	0.094	0.57	7.669	0.060	0.37	TA
6MCNED		9.378	-0.172	-1.05	7.361	-0.248	-1.54	EM
796XC7		9.595	0.045	0.27	7.655	0.046	0.28	LW
8HAAZM		9.748	0.198	1.21	7.803	0.194	1.20	TM
AGA78N		9.376	-0.175	-1.06	7.406	-0.203	-1.26	TM
B3AJXY		9.417	-0.133	-0.81	7.535	-0.074	-0.46	LW
BUUYDA		9.478	-0.072	-0.44	7.572	-0.037	-0.23	EM
C3LQB2		9.530	-0.020	-0.12	7.560	-0.049	-0.31	LW
C7HH87		9.724	0.174	1.06	7.779	0.170	1.05	EM
CKKTYX		9.657	0.107	0.65	7.689	0.080	0.50	XX
EB6W7W		9.740	0.190	1.16	7.713	0.103	0.64	XX
EJZWGH		9.570	0.020	0.12	7.680	0.071	0.44	TA
ETPHQM		9.572	0.022	0.13	7.690	0.081	0.50	TM
FH27TF		9.350	-0.200	-1.22	7.390	-0.219	-1.36	LA
FUF4Y4		9.664	0.114	0.69	7.770	0.161	1.00	EM
G7Z6NA		9.378	-0.172	-1.05	7.423	-0.186	-1.16	TM
GELX72		9.587	0.037	0.22	7.569	-0.040	-0.25	TM
GWZCLB		9.904	0.354	2.16	7.889	0.280	1.74	LA
JH7W9L		9.507	-0.043	-0.26	7.534	-0.075	-0.47	EM
KFHR82		9.671	0.121	0.74	7.747	0.138	0.86	XX
KX2J9L		9.430	-0.120	-0.73	7.490	-0.119	-0.74	TM
KXEB4N		9.646	0.096	0.58	7.717	0.107	0.67	LW
N3XEKG		9.623	0.073	0.44	7.758	0.149	0.92	TM
N966MM		9.510	-0.040	-0.24	7.600	-0.009	-0.06	TM
P6ZYKM		9.802	0.252	1.54	7.824	0.215	1.33	TM
QWKHQR		9.237	-0.313	-1.91	7.298	-0.311	-1.93	EM
UFYQZJ		9.475	-0.075	-0.46	7.569	-0.040	-0.25	TA
V2L96T		9.570	0.020	0.12	7.610	0.001	0.00	TM
X6V89X		9.500	-0.050	-0.31	7.610	0.001	0.00	LA
XR3R2N		9.488	-0.062	-0.38	7.580	-0.029	-0.18	PP
YHW8DM		9.340	-0.210	-1.28	7.392	-0.217	-1.35	PP
ZX4QPJ		9.360	-0.190	-1.16	7.510	-0.099	-0.62	TM

Summary Statistics

	Sample GY05	Sample GY06
Grand Means	9.5501 mils	7.6093 mils
SD Btwn Labs	0.1640 mils	0.1609 mils

Statistics based on 36 of 36 reporting participants

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

Instrument Code List as Reported by the Labs

(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

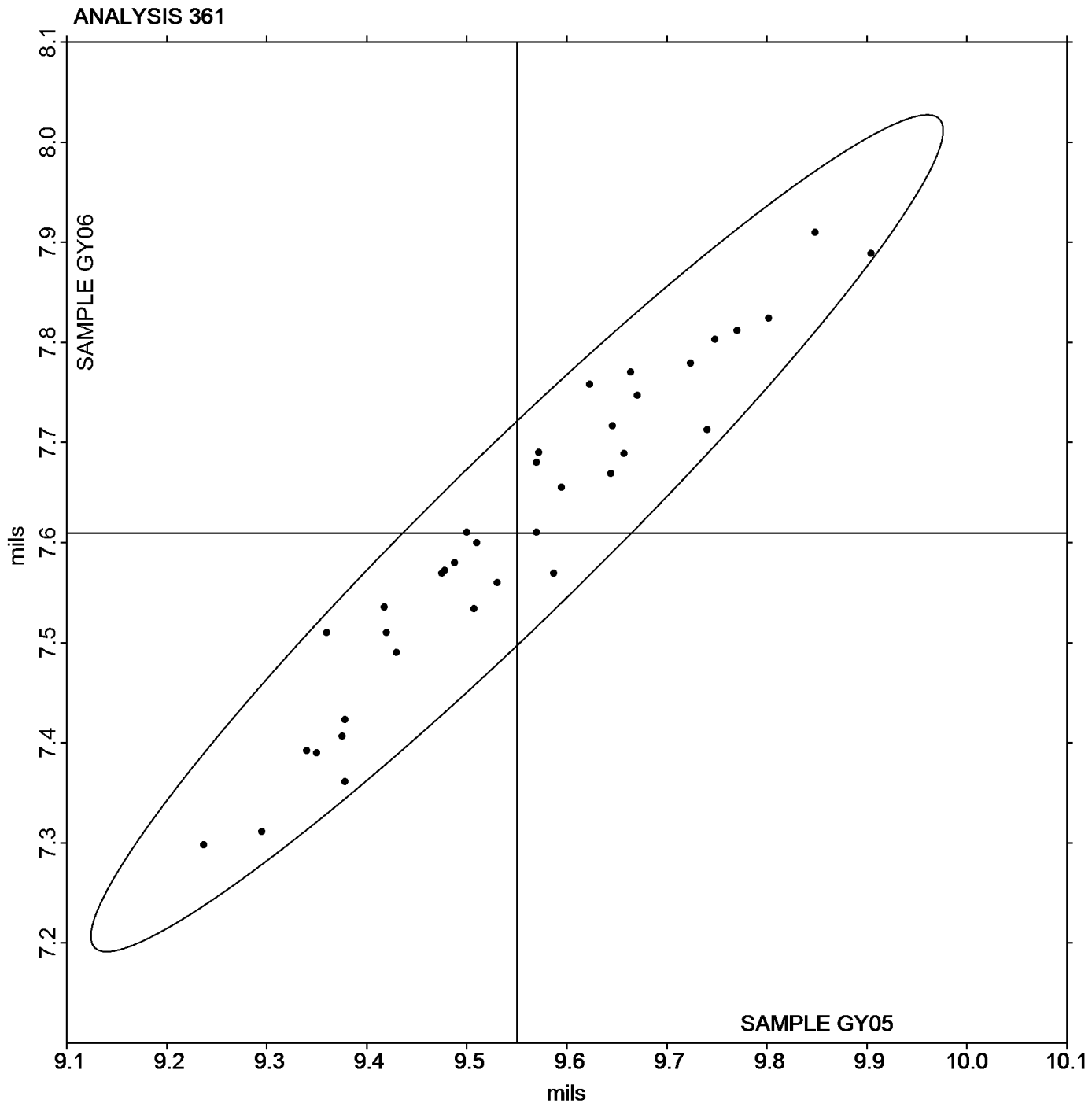
Paper & Paperboard Interlaboratory Testing Program

Analysis 361

Thickness (Caliper), Packaging papers

Grand Mean Sample **GY05** = 9.5501 mils

Grand Mean Sample **GY06** = 7.6093 mils



Paper & Paperboard Interlaboratory Testing Program

Analysis 364

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

WebCode	Data Flag	Sample GD05 Lab Mean	Sample GD05 Diff from Grand Mean	Sample GD05 CPV	Sample GD06 Lab Mean	Sample GD06 Diff from Grand Mean	Sample GD06 CPV	Instr Code
2F27PA		0.4244	-0.0903	-0.96	0.4530	-0.0509	-0.58	TA
3D4WH8		0.5776	0.0629	0.67	0.5872	0.0833	0.94	TM
KFHR82		0.6368	0.1221	1.30	0.5874	0.0835	0.95	TM
LGQCE2		0.6114	0.0967	1.03	0.5716	0.0677	0.77	TM
M4EARJ		0.6420	0.1273	1.35	0.6680	0.1641	1.86	TL
PF26ZU		0.4154	-0.0993	-1.05	0.4502	-0.0537	-0.61	XX
PFMVTF		0.5476	0.0329	0.35	0.4620	-0.0419	-0.48	XX
Q9EU46		0.4720	-0.0427	-0.45	0.4500	-0.0539	-0.61	XX
XD7CHH		0.4468	-0.0679	-0.72	0.4488	-0.0551	-0.63	TL
XZP8GG		0.5694	0.0547	0.58	0.5516	0.0477	0.54	TA
Y364FQ		0.3640	-0.1507	-1.60	0.3520	-0.1519	-1.72	CH
Y4KJQC		0.4686	-0.0461	-0.49	0.4652	-0.0387	-0.44	IT

Summary Statistics

	Sample GD05	Sample GD06
Grand Means	0.51467 COF	0.50392 COF
SD Btwn Labs	0.09428 COF	0.08813 COF

Statistics based on 12 of 12 reporting participants

Instrument Code List as Reported by the Labs

(CH) - Cheminstruments AR-1000

(IT) - IMASS SP-2100

(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

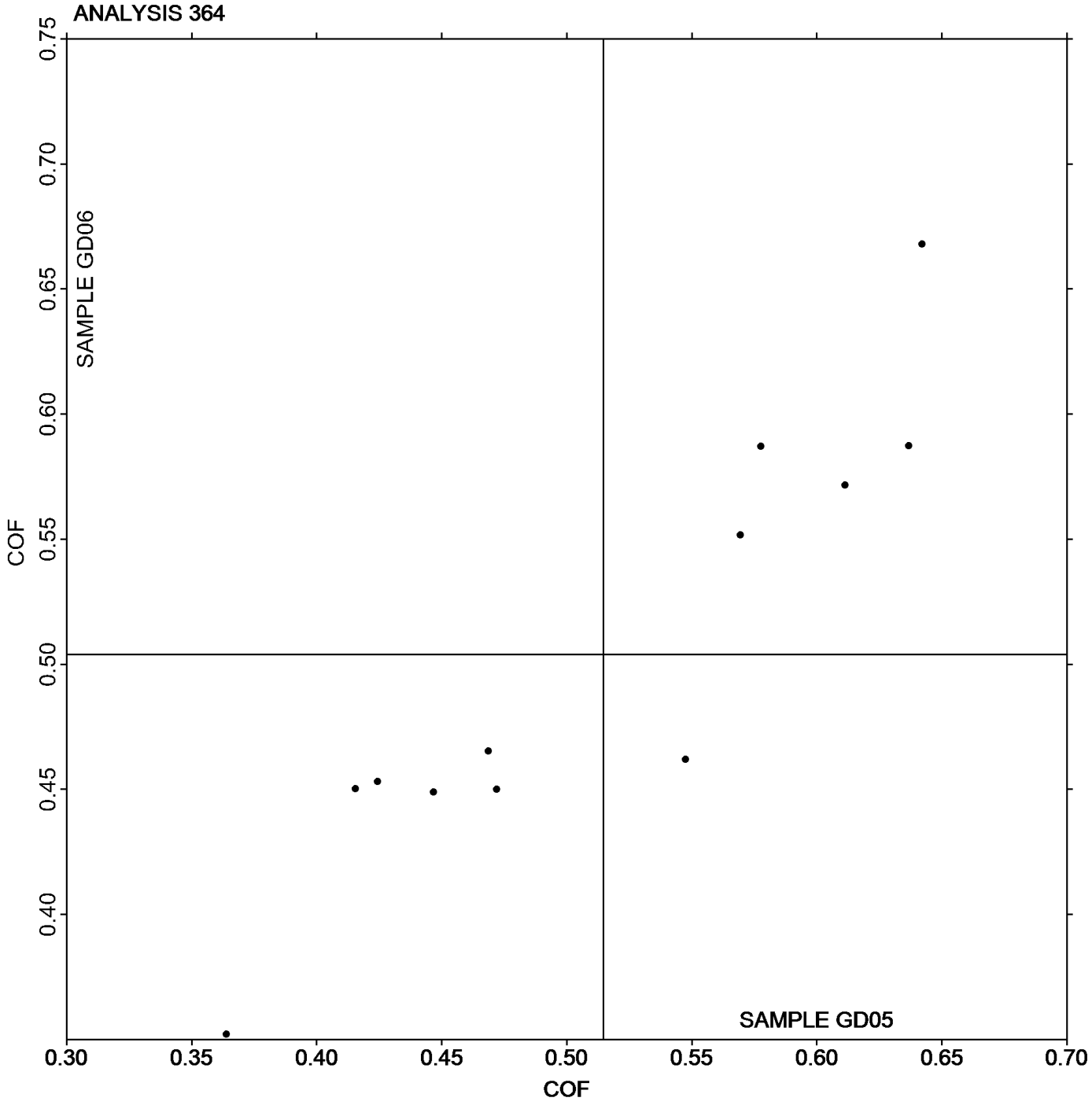
Paper & Paperboard Interlaboratory Testing Program

Analysis 364

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

Grand Mean Sample **GD05** = 0.51467 COF

Grand Mean Sample **GD06** = 0.50392 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 GD05 Lab Mean	Sample GD05 Diff from Grand Mean	Sample GD05 CPV	Sample GD06 Lab Mean	Sample GD06 Diff from Grand Mean	Sample GD06 CPV	Instr Code
2F27PA		0.4982	0.0521	0.60	0.4294	0.0233	0.27	TA
98RZD8		0.4170	-0.0291	-0.33	0.3976	-0.0085	-0.10	TM
BKWZ2V		0.3376	-0.1085	-1.24	0.4322	0.0261	0.30	TA
HURJ6G		0.3690	-0.0771	-0.88	0.3678	-0.0383	-0.44	TA
JBQ38X		0.5066	0.0605	0.69	0.4136	0.0075	0.09	TM
KFHR82		0.5766	0.1305	1.49	0.5210	0.1149	1.32	TM
LGQCE2		0.4766	0.0305	0.35	0.4160	0.0099	0.11	TM
M4EARJ		0.6380	0.1919	2.19	0.6060	0.1999	2.29	TL
PF26ZU		0.3480	-0.0981	-1.12	0.2418	-0.1643	-1.88	XX
Q9EU46		0.4640	0.0179	0.20	0.3920	-0.0141	-0.16	XX
VWH4QG		0.4008	-0.0453	-0.52	0.3850	-0.0211	-0.24	TA
XD7CHH		0.4992	0.0531	0.61	0.4608	0.0547	0.63	TL
XZP8GG		0.4098	-0.0363	-0.42	0.4152	0.0091	0.10	TA
Y364FQ		0.3500	-0.0961	-1.10	0.3080	-0.0981	-1.12	CH
Y4KJQC		0.4008	-0.0453	-0.52	0.3050	-0.1011	-1.16	IR

Summary Statistics

	Sample GD05	Sample GD06
Grand Means	0.44615 COF	0.40609 COF
SD Btwn Labs	0.08748 COF	0.08728 COF

Statistics based on 15 of 15 reporting participants

Instrument Code List as Reported by the Labs

(CH) - Cheminstruments AR-1000

(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

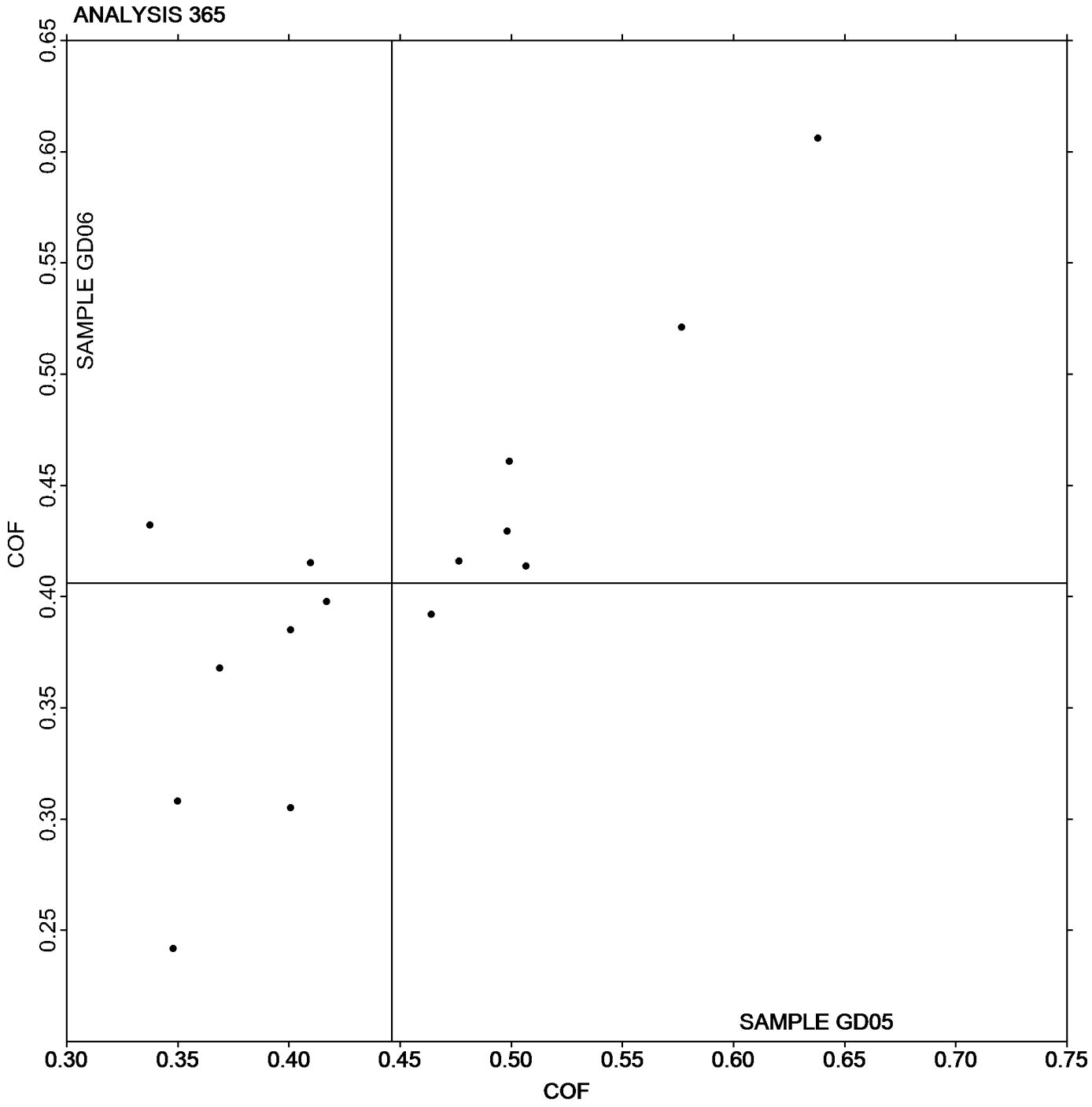
Paper & Paperboard Interlaboratory Testing Program

Analysis 365

Coefficient of Kinetic Friction - Horizontal Plane Method - Printing Papers

Grand Mean Sample **GD05** = 0.44615 COF

Grand Mean Sample **GD06** = 0.40609 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 GE05 Lab Mean	Sample GE05 Diff from Grand Mean	Sample GE05 CPV	Sample GE06 Lab Mean	Sample GE06 Diff from Grand Mean	Sample GE06 CPV	Instr Code
2F27PA	*	13.25	1.73	2.57	12.94	1.39	2.21	LA
3D4WH8		11.13	-0.38	-0.57	11.29	-0.26	-0.41	PP
6723QG		11.77	0.26	0.38	11.76	0.21	0.33	GS
6Y3DCY		12.24	0.73	1.08	11.93	0.38	0.60	TN
92ZZGX		11.71	0.20	0.29	12.02	0.47	0.74	LP
93BV6B		11.65	0.14	0.20	11.75	0.19	0.31	LA
9HNB4Z		11.32	-0.20	-0.29	11.31	-0.24	-0.39	HG
A2CUWY		11.08	-0.43	-0.64	11.55	0.00	0.00	LP
ALAAE3		11.22	-0.29	-0.43	11.39	-0.16	-0.26	HG
B3AJXY		11.70	0.19	0.28	11.70	0.15	0.23	TL
BB3R6J		11.62	0.11	0.16	11.29	-0.26	-0.42	LP
BKHV2G	X	26.82	15.31	22.70	26.97	15.42	24.51	WG
BZWA6Z		12.04	0.53	0.78	11.40	-0.15	-0.24	LP
C3LQB2		11.06	-0.45	-0.67	11.62	0.07	0.11	WG
CKKTYX		10.10	-1.41	-2.09	10.40	-1.15	-1.83	XX
EB6W7W		11.23	-0.28	-0.42	11.65	0.10	0.15	LW
EEKL9K		11.95	0.44	0.65	12.03	0.48	0.76	XX
ETPHQM		11.72	0.21	0.31	11.71	0.16	0.25	HG
F7PNC6		10.79	-0.73	-1.08	11.12	-0.43	-0.69	RE
FH27TF		11.60	0.09	0.13	11.80	0.25	0.39	LA
HZUQM6		11.03	-0.48	-0.72	10.96	-0.59	-0.94	LP
JEABFX		12.31	0.80	1.18	12.52	0.97	1.54	GA
JH7W9L		11.06	-0.45	-0.67	11.01	-0.54	-0.86	PP
JTPBCN		11.84	0.33	0.49	11.98	0.42	0.67	PP
KDBCU4		12.28	0.77	1.14	12.39	0.84	1.33	XX
KXEB4N		10.78	-0.73	-1.09	10.64	-0.91	-1.45	LW
L8LACP		11.53	0.02	0.03	11.81	0.25	0.40	HG
LDARU8	X	15.69	4.18	6.19	16.14	4.59	7.29	LA
M4EARJ		12.13	0.62	0.92	11.66	0.11	0.17	HG
PBBT3D		11.56	0.05	0.07	11.46	-0.09	-0.15	TN
PF26ZU		11.60	0.09	0.13	11.40	-0.15	-0.24	GS
Q9EU46		11.96	0.45	0.66	12.06	0.51	0.81	XX
QVWVLJ		11.74	0.23	0.34	11.97	0.42	0.66	TL
RA86DX		10.88	-0.63	-0.94	11.05	-0.50	-0.80	LP
RXDL4Y		10.58	-0.93	-1.38	10.80	-0.75	-1.20	XX
UZQAAF		12.00	0.49	0.72	12.20	0.65	1.03	PP
V2L96T	*	9.87	-1.64	-2.44	9.74	-1.81	-2.88	TL
WJY9BF		11.50	-0.01	-0.02	11.70	0.15	0.23	LW
WL82PN		11.93	0.42	0.62	11.77	0.22	0.35	HG
XR3R2N		11.46	-0.05	-0.08	11.26	-0.29	-0.47	PP
XZP8GG		11.65	0.14	0.20	12.36	0.81	1.28	WG
YFU38T		11.00	-0.51	-0.76	10.84	-0.71	-1.13	LP
YHW8DM		12.21	0.70	1.03	12.20	0.65	1.03	PP

Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

WebCode	Data Flag	Sample GE05 Lab Mean	Sample GE05 Diff from Grand Mean	Sample GE05 CPV	Sample GE06 Lab Mean	Sample GE06 Diff from Grand Mean	Sample GE06 CPV	Instr Code
YQVKYA		11.63	0.12	0.17	11.79	0.24	0.38	XX
ZPDXJE		10.02	-1.49	-2.21	10.08	-1.47	-2.34	TL
ZX4QPJ	*	12.83	1.32	1.95	12.02	0.47	0.74	XX

Summary Statistics

	Sample GE05	Sample GE06
Grand Means	11.512 sec/100 cc	11.553 sec/100 cc
SD Btwn Labs	0.674 sec/100 cc	0.629 sec/100 cc

Statistics based on 44 of 46 reporting participants

Comments on assigned Data Flags for Test #370

BKHV2G (X) - Extreme data.

LDARU8 (X) - Extreme data.

Instrument Code List as Reported by the Labs

(GA) - Gurley Precision #4340 Automatic Densometer

(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) - Teledyne Gurley Densometer #4110, Oil Flotation

(TN) - Teledyne Gurley S-P-S Tester #4190

(WG) - W & LE Gurley Tester

(XX) - Instrument make/model not specified by lab

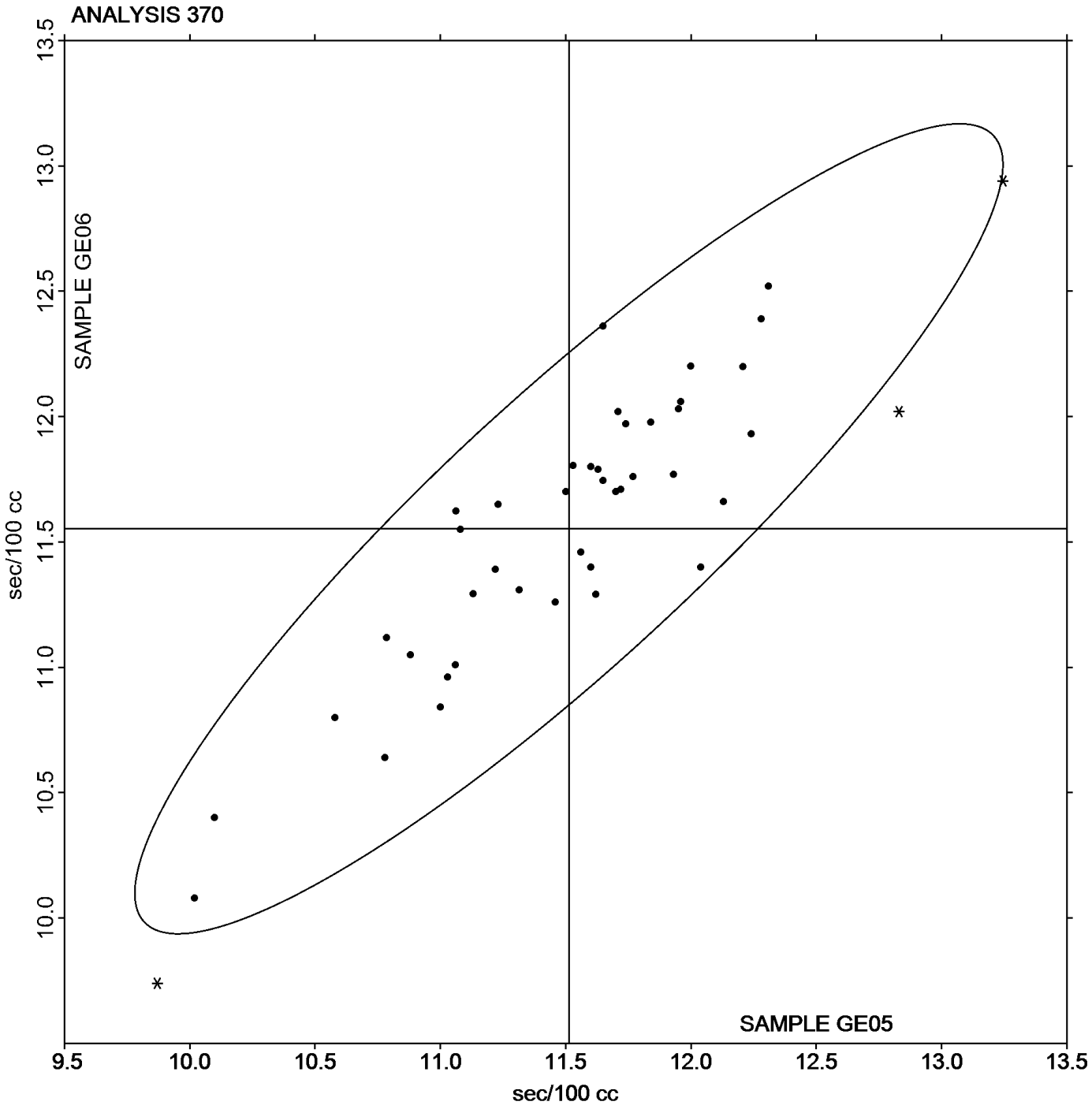
Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

Grand Mean Sample **GE05** = 11.512 sec/100 cc

Grand Mean Sample **GE06** = 11.553 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 GE05 Lab Mean	Sample GE05 Diff from Grand Mean	Sample GE05 CPV	Sample GE06 Lab Mean	Sample GE06 Diff from Grand Mean	Sample GE06 CPV	Instr Code
74CYXA		216.0	-2.8	-0.23	231.0	11.6	0.93	TT
79M6F3		216.7	-2.1	-0.18	218.6	-0.9	-0.07	LP
98R3QP		225.1	6.3	0.52	219.8	0.4	0.03	HM
ACTWXQ		216.1	-2.7	-0.23	218.8	-0.7	-0.05	SH
ALAAE3		201.5	-17.3	-1.44	197.8	-21.7	-1.75	TT
B9TRZC		202.9	-15.9	-1.33	211.9	-7.6	-0.61	LP
CZFDTT		229.0	10.2	0.85	235.2	15.8	1.27	TT
DWBXQV		201.8	-17.0	-1.42	202.5	-17.0	-1.37	LP
DXA8QR		208.2	-10.6	-0.88	207.1	-12.4	-1.00	GA
ETPHQM		228.3	9.5	0.79	227.1	7.7	0.62	HG
GHWZ36		228.1	9.3	0.77	228.3	8.9	0.71	TT
JH7W9L		231.1	12.3	1.02	241.5	22.1	1.78	SH
KDBCU4		204.4	-14.4	-1.20	203.4	-16.1	-1.30	XX
KDRNEU		222.9	4.1	0.34	218.7	-0.8	-0.06	HM
L8LACP		235.4	16.6	1.38	221.8	2.4	0.19	HM
MNQY6G	X	95.9	-122.9	-10.24	98.2	-121.3	-9.79	PP
PBA3P3	X	267.8	49.0	4.08	269.2	49.8	4.01	VM
PF26ZU	X	149.0	-69.8	-5.82	153.6	-65.9	-5.31	SH
UFYQZJ		233.5	14.7	1.22	227.7	8.3	0.67	XX

Summary Statistics

	Sample GE05	Sample GE06
Grand Means	218.81 Sheffield Units	219.45 Sheffield Units
SD Btwn Labs	12.00 Sheffield Units	12.39 Sheffield Units

Statistics based on 16 of 19 reporting participants

Comments on assigned Data Flags for Test #372

MNQY6G (X) - Extreme data.

PBA3P3 (X) - Data for both samples are high.

PF26ZU (X) - Data for both samples are low.

Instrument Code List as Reported by the Labs

(GA) - Gurley Precision #4340 Automatic Densometer

(HG) - Technidyne - Hagerty Model #1

(HM) - Technidyne - Hagerty Model #538

(LP) - L & W Densometer, Air Permeance

(PP) - Technidyne Profile/Plus

(SH) - Sheffield

(TT) - TMI Monitor/Smoothness II, Model 58-24

(VM) - Valmet PaperLab (was Kajaani/Robotest)

(XX) - Instrument make/model not specified by lab

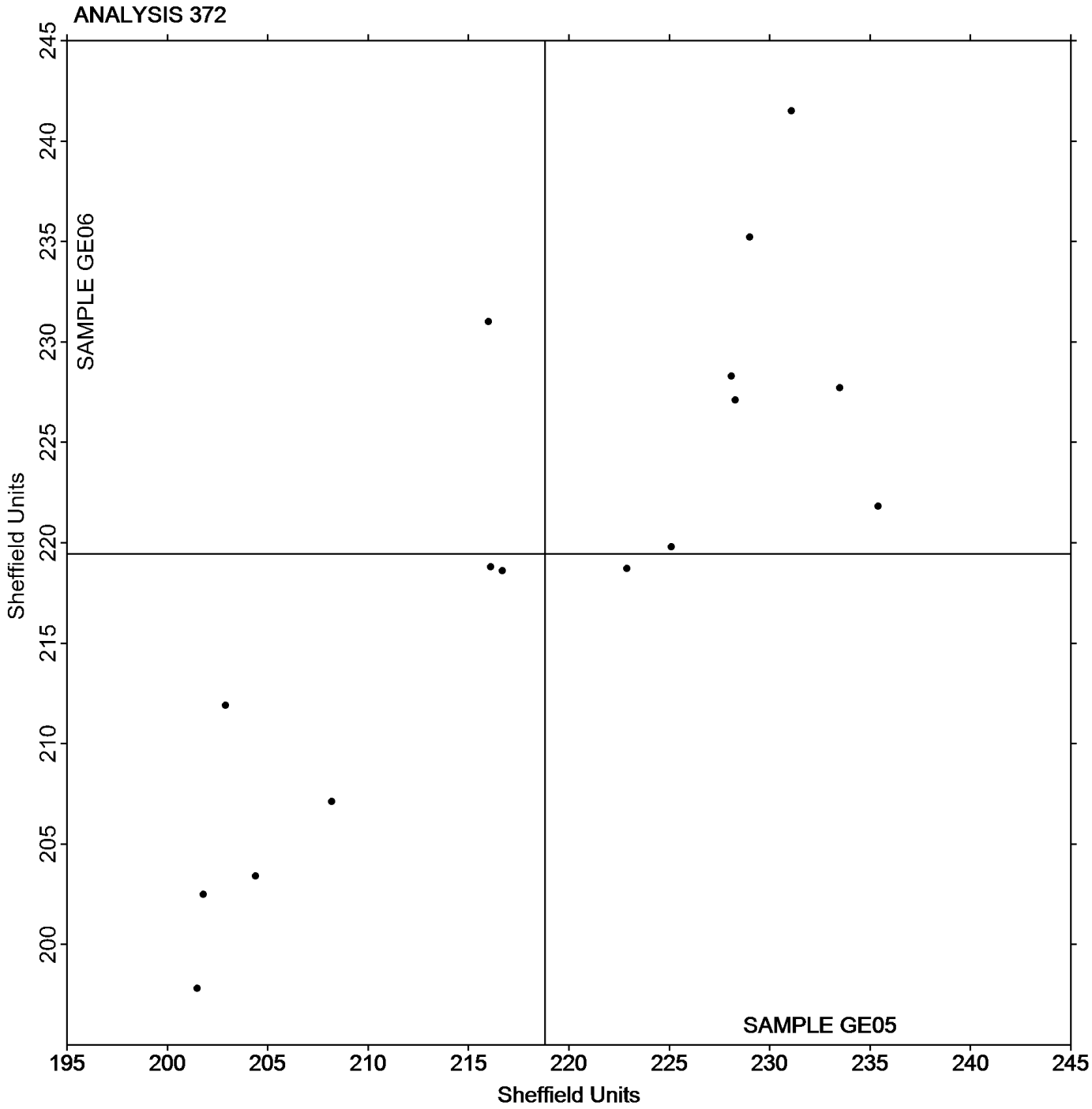
Paper & Paperboard Interlaboratory Testing Program

Analysis 372

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

Grand Mean Sample **GE05** = 218.81 Sheffield Units

Grand Mean Sample **GE06** = 219.45 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 GJ05 Lab Mean	Sample GJ05 Diff from Grand Mean	Sample GJ05 CPV	Sample GJ06 Lab Mean	Sample GJ06 Diff from Grand Mean	Sample GJ06 CPV
2KD3HQ		0.8700	-0.0151	-0.18	1.111	-0.023	-0.27
4FLG32		0.8120	-0.0731	-0.89	1.056	-0.078	-0.90
6MCNED		0.8360	-0.0491	-0.60	1.053	-0.081	-0.94
78WZMV		0.8950	0.0099	0.12	1.185	0.051	0.59
796XC7		0.8160	-0.0691	-0.84	1.066	-0.068	-0.79
ALAAE3		0.8480	-0.0371	-0.45	1.130	-0.004	-0.05
AUWBG7		0.8180	-0.0671	-0.82	1.091	-0.043	-0.50
BUUYDA		0.9540	0.0689	0.84	1.193	0.059	0.68
C7HH87		0.8430	-0.0421	-0.51	1.086	-0.048	-0.56
DERDKB		0.9310	0.0459	0.56	1.228	0.094	1.09
DNF6BA	X	43.3000	42.4149	515.71	42.500	41.366	478.22
EQERDC		0.9160	0.0309	0.38	1.127	-0.007	-0.08
FFEFHB		0.9130	0.0279	0.34	1.164	0.030	0.35
FUF4Y4		0.8970	0.0119	0.14	1.194	0.060	0.69
GHWZ36		1.0050	0.1199	1.46	1.260	0.126	1.46
GWZCLB		0.8310	-0.0541	-0.66	1.115	-0.019	-0.22
HURJ6G	*	1.0120	0.1269	1.54	1.332	0.198	2.29
HZUQM6		0.8370	-0.0481	-0.58	1.071	-0.063	-0.73
J26Y46		0.8930	0.0079	0.10	1.097	-0.037	-0.43
JH7W9L		0.9230	0.0379	0.46	1.171	0.037	0.43
KDRNEU		0.7700	-0.1151	-1.40	1.028	-0.106	-1.23
MRLRVQ		1.0060	0.1209	1.47	1.272	0.138	1.59
N66Y9G	*	1.0930	0.2079	2.53	1.308	0.174	2.01
Q9EU46		0.7760	-0.1091	-1.33	1.057	-0.077	-0.89
QENW8L		0.9980	0.1129	1.37	1.188	0.054	0.62
VEPKCR		0.8920	0.0069	0.08	1.143	0.009	0.10
WL82PN		0.7520	-0.1331	-1.62	0.969	-0.165	-1.91
X6V89X		0.9100	0.0249	0.30	1.110	-0.024	-0.28
XR3R2N		0.9310	0.0459	0.56	1.136	0.002	0.02
XW23FW		0.8770	-0.0081	-0.10	1.093	-0.041	-0.48
XZP8GG		0.7550	-0.1301	-1.58	0.986	-0.148	-1.71
YHW8DM		0.8280	-0.0571	-0.69	1.138	0.004	0.04

Summary Statistics

	Sample GJ05	Sample GJ06
Grand Means	0.88510 Microns	1.1341 Microns
SD Btwn Labs	0.08225 Microns	0.0865 Microns

Statistics based on 31 of 32 reporting participants

Comments on assigned Data Flags for Test #376

DNF6BA (X) - Extreme data.

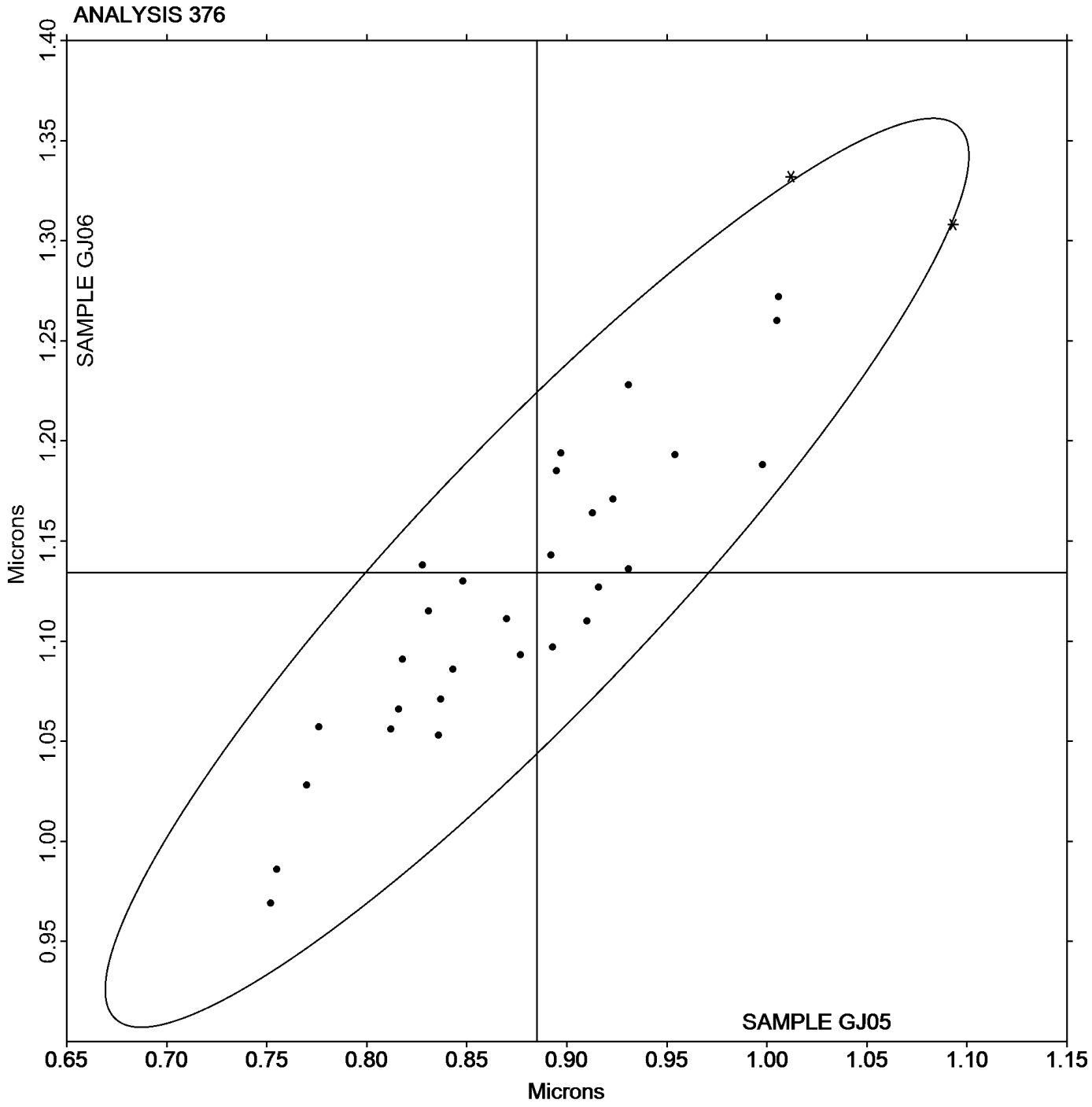
Paper & Paperboard Interlaboratory Testing Program

Analysis 376

Roughness - Print Surf Method - 0.5 to 4.0 Microns

Grand Mean Sample **GJ05** = 0.88510 Microns

Grand Mean Sample **GJ06** = 1.1341 Microns



Paper & Paperboard Interlaboratory Testing Program

Analysis 377

Roughness - Print Surf Method - 2.5 to 6.0 Microns

WebCode	Data Flag	Sample GK05 Lab Mean	Sample GK05 Diff from Grand Mean	Sample GK05 CPV	Sample GK06 Lab Mean	Sample GK06 Diff from Grand Mean	Sample GK06 CPV
3D4WH8		1.351	-0.033	-0.23	1.789	-0.006	-0.04
93BV6B		1.450	0.066	0.47	1.697	-0.098	-0.68
B3AJXY		1.250	-0.134	-0.95	1.694	-0.101	-0.70
DERDKB		1.541	0.157	1.11	1.926	0.132	0.92
G33NE2		1.328	-0.056	-0.39	1.745	-0.050	-0.35
G7Z6NA		1.330	-0.054	-0.38	1.950	0.156	1.09
M4EARJ		1.334	-0.050	-0.35	1.873	0.079	0.55
PBA3P3		1.698	0.314	2.23	2.018	0.224	1.56
PFMVTF		1.303	-0.081	-0.57	1.689	-0.106	-0.74
XZP8GG		1.251	-0.133	-0.94	1.564	-0.231	-1.61

Summary Statistics

	Sample GK05	Sample GK06
Grand Means	1.3836 Microns	1.7945 Microns
SD Btwn Labs	0.1412 Microns	0.1430 Microns

Statistics based on 10 of 10 reporting participants

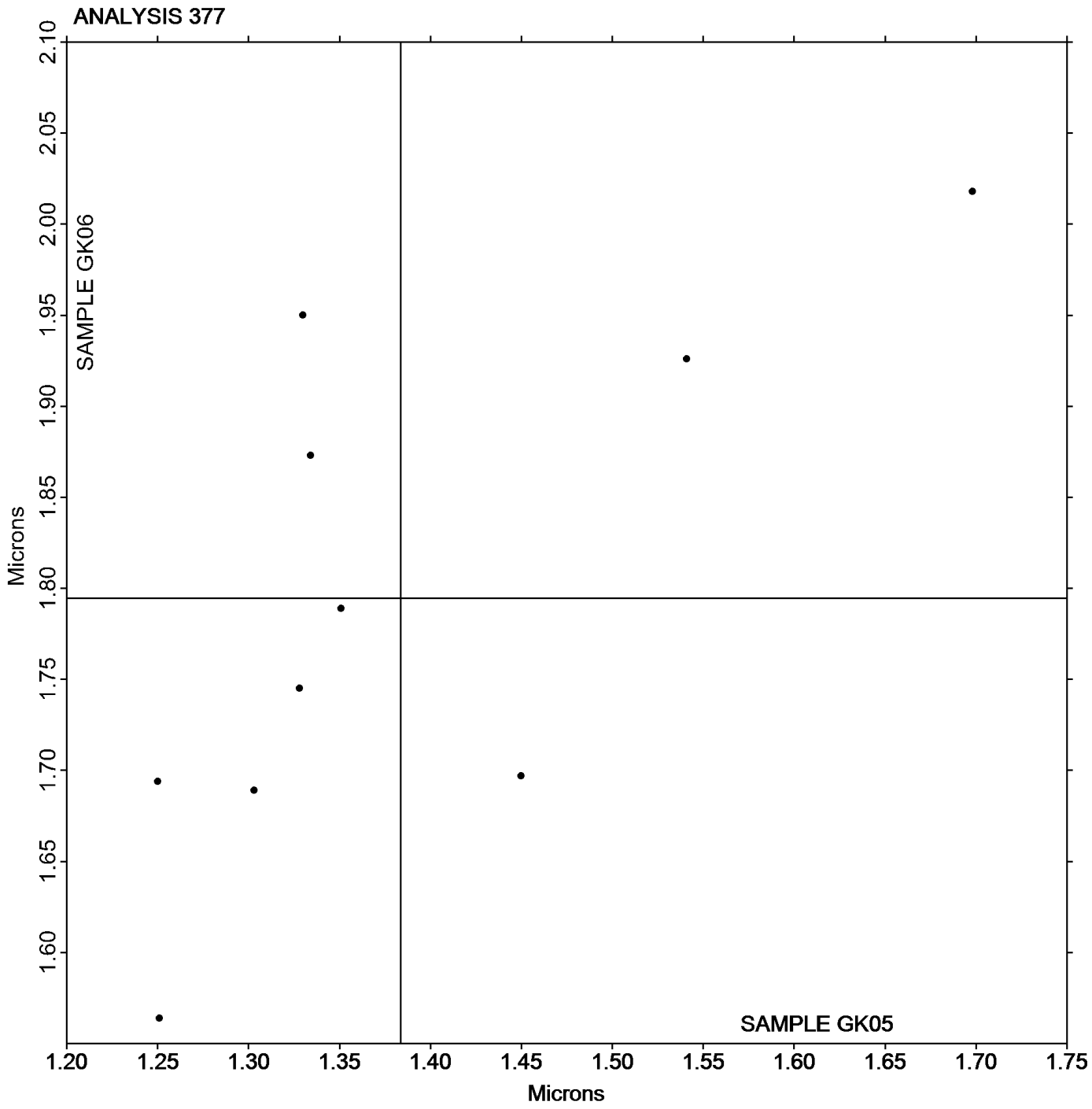
Paper & Paperboard Interlaboratory Testing Program

Analysis 377

Roughness - Print Surf Method - 2.5 to 6.0 Microns

Grand Mean Sample **GK05** = 1.3836 Microns

Grand Mean Sample **GK06** = 1.7945 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 GL05 Lab Mean	Sample GL05 Diff from Grand Mean	Sample GL05 CPV	Sample GL06 Lab Mean	Sample GL06 Diff from Grand Mean	Sample GL06 CPV	Instr Code
2BBR3N		96.9	-7.0	-0.80	164.4	3.6	0.31	PP
2CBL8D		113.3	9.4	1.08	155.5	-5.3	-0.45	SH
2KD3HQ		100.9	-3.0	-0.34	162.2	1.4	0.12	HM
36FJTE	*	89.1	-14.8	-1.70	128.3	-32.5	-2.78	TS
3D4WH8		98.0	-5.9	-0.68	158.5	-2.3	-0.20	PP
6723QG		103.5	-0.4	-0.04	153.5	-7.3	-0.62	SH
6LYWJB		96.1	-7.8	-0.90	155.4	-5.4	-0.46	XX
6MCNED	X	148.0	44.1	5.08	165.5	4.7	0.40	TS
74CYXA		98.0	-5.9	-0.68	152.0	-8.8	-0.75	TT
79M6F3		113.2	9.3	1.07	169.2	8.4	0.72	LW
8HAAZM	X	128.3	24.4	2.81	203.3	42.5	3.64	TT
93BV6B	*	104.5	0.6	0.07	127.4	-33.4	-2.86	LA
98R3QP		104.0	0.1	0.01	166.5	5.7	0.49	HM
9HNB4Z		98.3	-5.6	-0.64	166.6	5.8	0.50	HM
ACTWXQ		100.5	-3.4	-0.39	148.6	-12.2	-1.04	SH
ALAAE3		107.4	3.5	0.41	166.7	5.9	0.51	SH
B3AJXY		111.5	7.6	0.87	184.6	23.8	2.04	PP
B9TRZC		95.3	-8.6	-0.99	162.9	2.1	0.18	PP
BFQLU4		105.1	1.2	0.14	165.7	4.9	0.42	PP
BKHV2G		107.1	3.2	0.37	164.3	3.5	0.30	PG
BTVX6W		102.0	-1.9	-0.22	165.0	4.2	0.36	GA
BUUYDA		97.5	-6.4	-0.74	154.8	-6.0	-0.51	PP
BZWA6Z		99.6	-4.3	-0.49	155.2	-5.6	-0.48	XX
C7HH87		105.3	1.4	0.16	161.4	0.6	0.05	PP
D9JP8A		102.8	-1.1	-0.12	153.9	-6.9	-0.59	TT
DXA8QR		103.6	-0.3	-0.03	142.1	-18.7	-1.60	GA
EEKL9K		99.7	-4.2	-0.48	165.4	4.6	0.40	PP
ETPHQM		99.2	-4.7	-0.54	162.4	1.6	0.14	HM
FFEFHB		104.1	0.2	0.03	170.5	9.7	0.83	HM
FH27TF	X	277.0	173.1	19.94	297.2	136.4	11.67	LA
FUF4Y4		102.8	-1.1	-0.12	176.5	15.7	1.34	PP
G33NE2		106.6	2.7	0.31	188.9	28.1	2.41	HM
GELX72		116.6	12.8	1.47	160.5	-0.3	-0.03	GA
GHWZ36		103.8	-0.1	-0.01	149.8	-11.0	-0.94	TT
GWZCLB		108.1	4.2	0.49	168.3	7.5	0.64	LA
HURJ6G		98.3	-5.6	-0.64	166.5	5.7	0.49	HM
HYG2EL		117.3	13.4	1.55	161.4	0.6	0.05	MP
HZUQM6		113.9	10.0	1.15	151.2	-9.6	-0.82	TS
JBQ38X	X	41.8	-62.1	-7.15	103.3	-57.5	-4.92	TS
JH7W9L		98.7	-5.2	-0.60	164.8	4.0	0.34	PP
JTPBCN		113.4	9.5	1.09	174.6	13.8	1.18	PP
KDBCU4		98.8	-5.1	-0.59	145.5	-15.3	-1.31	XX
KRQDQU		96.5	-7.4	-0.85	147.5	-13.3	-1.14	LA

Paper & Paperboard Interlaboratory Testing Program

Analysis 378

Roughness - Sheffield Type

WebCode	Data Flag	Sample GL05 Lab Mean	Sample GL05 Diff from Grand Mean	Sample GL05 CPV	Sample GL06 Lab Mean	Sample GL06 Diff from Grand Mean	Sample GL06 CPV	Instr Code
KX2J9L	*	122.5	18.6	2.14	191.0	30.2	2.58	GL
L8LACP		96.6	-7.3	-0.84	162.0	1.2	0.10	HM
LDARU8		91.9	-12.0	-1.38	156.5	-4.3	-0.37	LA
LGQCE2		98.6	-5.3	-0.61	160.3	-0.5	-0.05	HM
M4EARJ		101.4	-2.5	-0.29	158.3	-2.5	-0.21	HM
MNQY6G	X	219.2	115.3	13.28	218.6	57.8	4.95	PP
N3XEKG		102.4	-1.5	-0.17	172.9	12.1	1.04	HM
PBBT3D		100.7	-3.2	-0.37	156.2	-4.6	-0.39	TS
PF26ZU	*	127.2	23.3	2.69	158.8	-2.0	-0.17	XX
PFMVTF		99.7	-4.2	-0.48	163.6	2.8	0.24	HM
UFYQZJ		97.5	-6.4	-0.74	158.9	-1.9	-0.16	HM
UZQAAF		96.0	-7.9	-0.91	150.0	-10.8	-0.92	HM
WJY9BF		101.9	-2.0	-0.23	157.8	-3.0	-0.26	SH
WL82PN		98.7	-5.2	-0.60	159.0	-1.8	-0.15	HM
X6V89X		92.9	-11.0	-1.27	151.2	-9.6	-0.82	LA
XR3R2N		92.9	-11.0	-1.27	161.3	0.5	0.04	PP
XW23FW		122.6	18.7	2.16	176.9	16.1	1.38	TT
YHW8DM	X	71.3	-32.6	-3.75	95.9	-64.9	-5.55	PP
ZDGX6P		124.0	20.1	2.32	174.0	13.2	1.13	TS
ZPDXJE		122.7	18.8	2.17	157.8	-3.0	-0.25	VM

Summary Statistics

	Sample GL05	Sample GL06
Grand Means	103.88 Sheffield	160.79 Sheffield
SD Btwn Labs	8.68 Sheffield	11.69 Sheffield

Statistics based on 57 of 63 reporting participants

Comments on assigned Data Flags for Test #378

6MCNED (X) - Data for Sample GL05 are high. Inconsistent in testing within determinations for Sample GL05.

8HAAZM (X) - Data for both samples are high.

FH27TF (X) - Extreme data.

JBQ38X (X) - Extreme data.

MNQY6G (X) - Extreme data.

YHW8DM (X) - Data for both samples are low.

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

Instrument Code List as Reported by the Labs

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

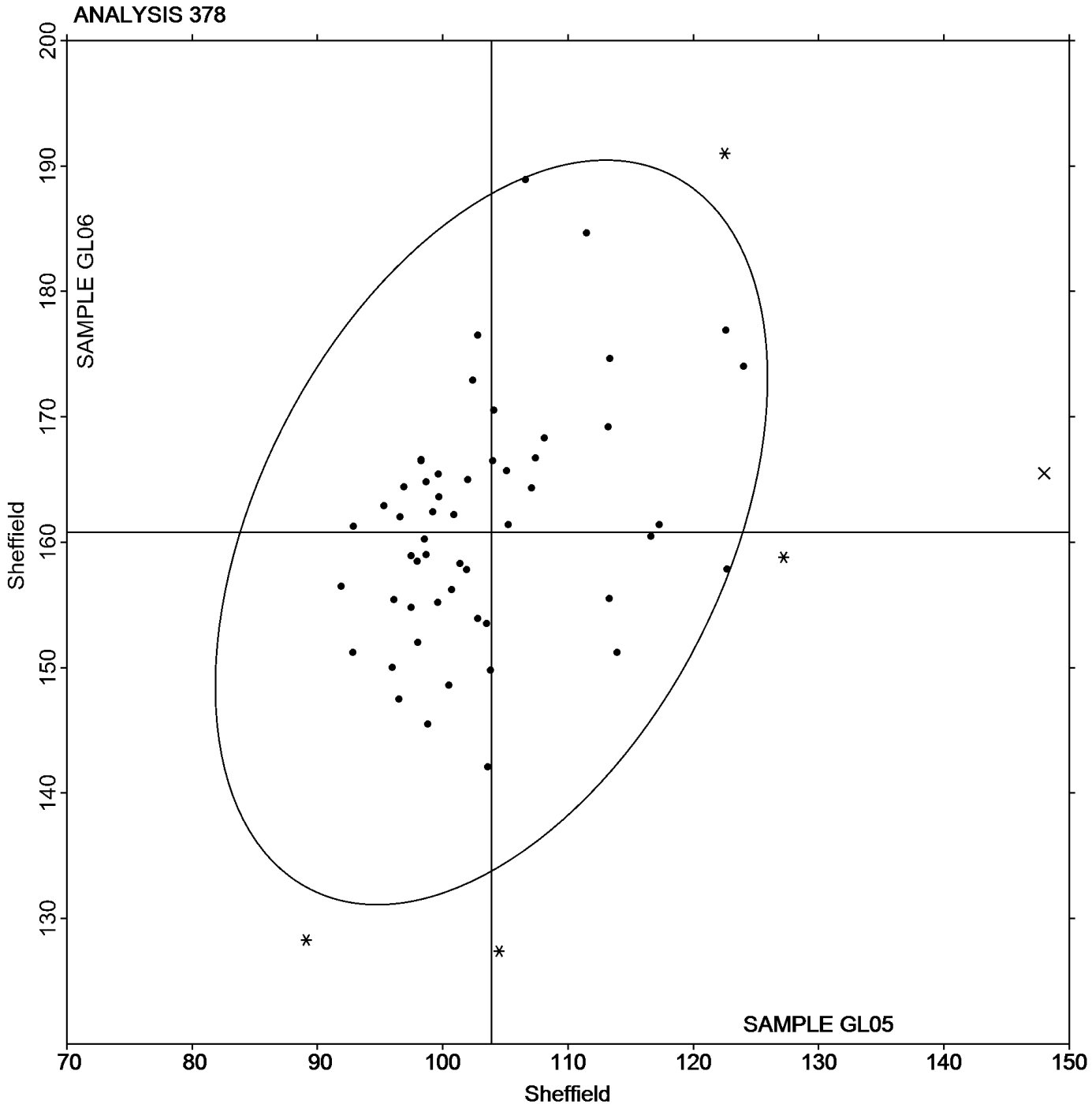
Paper & Paperboard Interlaboratory Testing Program

Analysis 378

Roughness - Sheffield Type

Grand Mean Sample **GL05** = 103.88 Sheffield

Grand Mean Sample **GL06** = 160.79 Sheffield



Paper & Paperboard Interlaboratory Testing Program

Analysis 382

Moisture in Paper

WebCode	Data Flag	Sample GM05 Lab Mean	Sample GM05 Diff from Grand Mean	Sample GM05 CPV	Sample GM06 Lab Mean	Sample GM06 Diff from Grand Mean	Sample GM06 CPV
8HAAZM		4.640	0.316	0.82	5.070	0.668	1.41
8Q4ETN		5.088	0.764	1.97	5.237	0.835	1.76
A2CUWY		3.931	-0.393	-1.02	3.645	-0.757	-1.60
F7PNC6		4.185	-0.139	-0.36	4.237	-0.164	-0.35
G7Z6NA		4.340	0.016	0.04	4.370	-0.032	-0.07
JPDBBQ		4.550	0.226	0.58	4.610	0.208	0.44
MRLRVQ		4.133	-0.192	-0.49	4.265	-0.137	-0.29
N3XEKG		4.470	0.146	0.38	4.399	-0.003	-0.01
PFMVTF		3.720	-0.604	-1.56	4.000	-0.402	-0.85
UPVY29		4.185	-0.139	-0.36	4.185	-0.217	-0.46

Summary Statistics

	Sample GM05	Sample GM06
Grand Means	4.3242 Percent	4.4018 Percent
SD Btwn Labs	0.3874 Percent	0.4732 Percent

Statistics based on 10 of 10 reporting participants

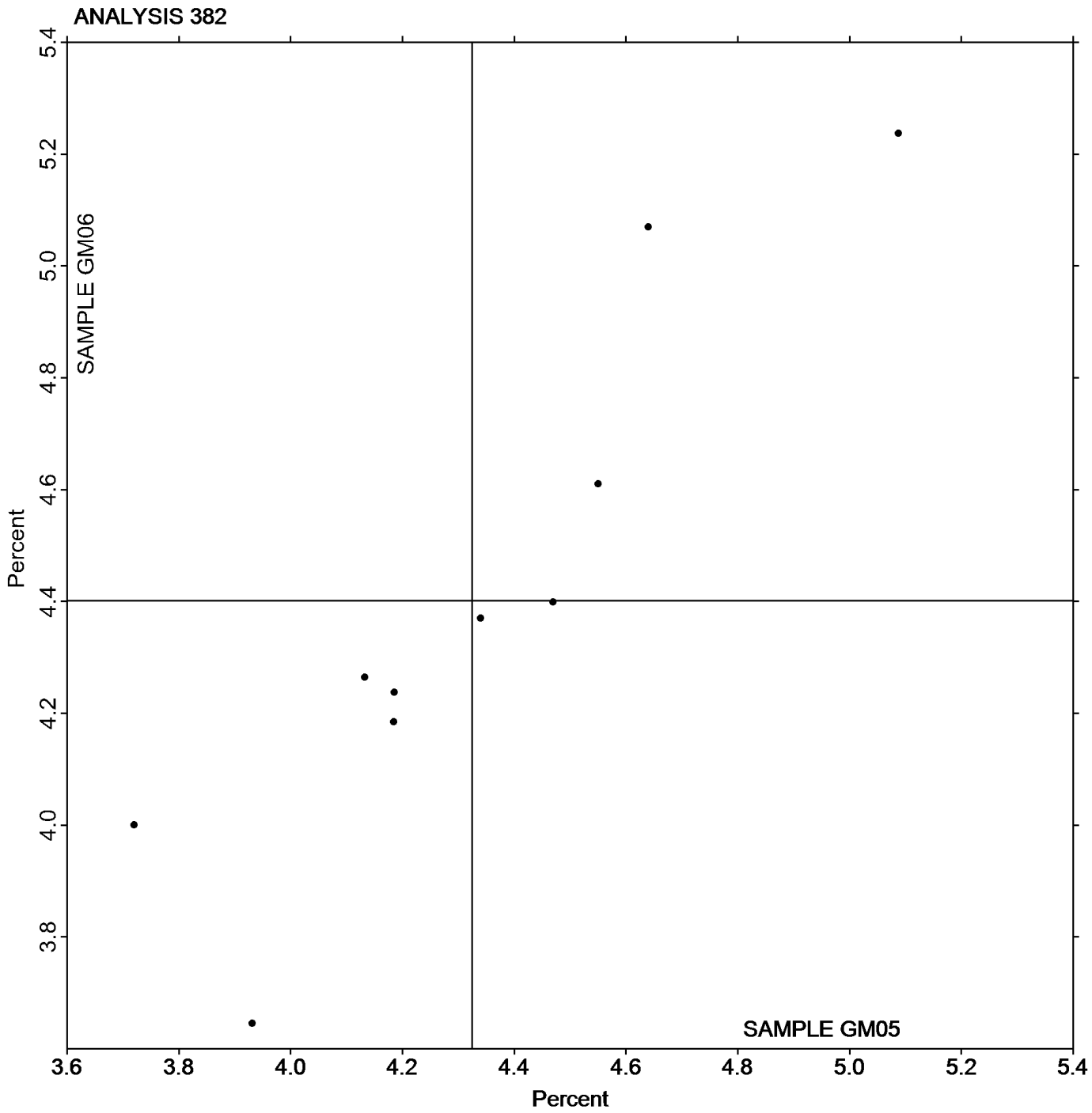
Paper & Paperboard Interlaboratory Testing Program

Analysis 382

Moisture in Paper

Grand Mean Sample **GM05** = 4.3242 Percent

Grand Mean Sample **GM06** = 4.4018 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 GN05			Sample GN06		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2CBL8D		93.38	-0.08	-0.17	86.80	-0.19	-0.29
6723QG	X	93.57	0.11	0.26	91.04	4.05	6.18
6LYWJB		93.73	0.27	0.62	87.05	0.06	0.09
74CYXA	*	94.70	1.24	2.81	89.03	2.04	3.11
78WZMV		93.29	-0.17	-0.38	86.95	-0.04	-0.06
8LAQ39		92.90	-0.56	-1.26	86.17	-0.82	-1.25
93BV6B	*	92.12	-1.34	-3.02	85.48	-1.51	-2.30
ACTWXQ		93.31	-0.15	-0.34	86.72	-0.27	-0.42
ALAAE3		93.71	0.25	0.57	87.29	0.30	0.46
B3AJXY		93.06	-0.40	-0.90	86.76	-0.23	-0.34
BFQLU4		93.58	0.12	0.28	87.03	0.04	0.06
BKHV2G		93.64	0.19	0.42	86.80	-0.19	-0.29
CRGZ77		93.25	-0.21	-0.47	86.18	-0.81	-1.23
EEKL9K		93.69	0.23	0.53	87.02	0.03	0.05
ETPHQM		93.28	-0.18	-0.40	86.81	-0.18	-0.27
G33NE2		93.75	0.29	0.65	86.98	-0.01	-0.01
HURJ6G		93.47	0.01	0.02	86.87	-0.12	-0.18
JDGHKE		93.21	-0.25	-0.56	86.55	-0.44	-0.67
JTPBCN		93.55	0.09	0.21	87.07	0.08	0.12
KDBCU4		92.79	-0.67	-1.51	85.78	-1.21	-1.84
KX2J9L		94.31	0.85	1.93	88.40	1.41	2.15
L8LACP		93.43	-0.02	-0.05	87.02	0.03	0.04
LDARU8		94.17	0.71	1.61	87.87	0.88	1.34
LGQCE2		93.04	-0.42	-0.94	86.62	-0.37	-0.56
N66Y9G		93.81	0.35	0.80	86.94	-0.05	-0.07
PBBT3D		93.49	0.03	0.07	87.14	0.15	0.23
PF26ZU	X	91.48	-1.98	-4.47	81.65	-5.34	-8.14
PFMVTF		93.35	-0.11	-0.24	87.43	0.44	0.67
PWR36V		93.40	-0.06	-0.13	86.80	-0.19	-0.29
Q9EU46		93.45	-0.01	-0.02	86.83	-0.16	-0.24
RXDL4Y		93.51	0.06	0.12	87.00	0.01	0.02
UFYQZJ		93.32	-0.14	-0.31	86.65	-0.34	-0.52
UZQAAF		93.41	-0.05	-0.11	87.12	0.13	0.20
WJY9BF		93.25	-0.21	-0.47	87.25	0.26	0.40
WL82PN		93.50	0.04	0.10	87.25	0.26	0.40
ZPDXJE		93.69	0.24	0.54	87.97	0.98	1.50
ZX4QPJ	X	92.28	-1.18	-2.66	86.68	-0.31	-0.47

Paper & Paperboard Interlaboratory Testing Program

Analysis 384

Opacity (89% Reflectance Backing) - Fine Papers

Summary Statistics

	Sample GN05	Sample GN06
Grand Means	93.457 Percent	86.989 Percent
SD Btwn Labs	0.442 Percent	0.656 Percent

Statistics based on 34 of 37 reporting participants

Comments on assigned Data Flags for Test #384

6723QG (X) - Extreme data for Sample GN06.

PF26ZU (X) - Extreme data.

ZX4QPJ (X) - Data for Sample GN05 are low. Inconsistent in testing within determinations for Sample GN05.

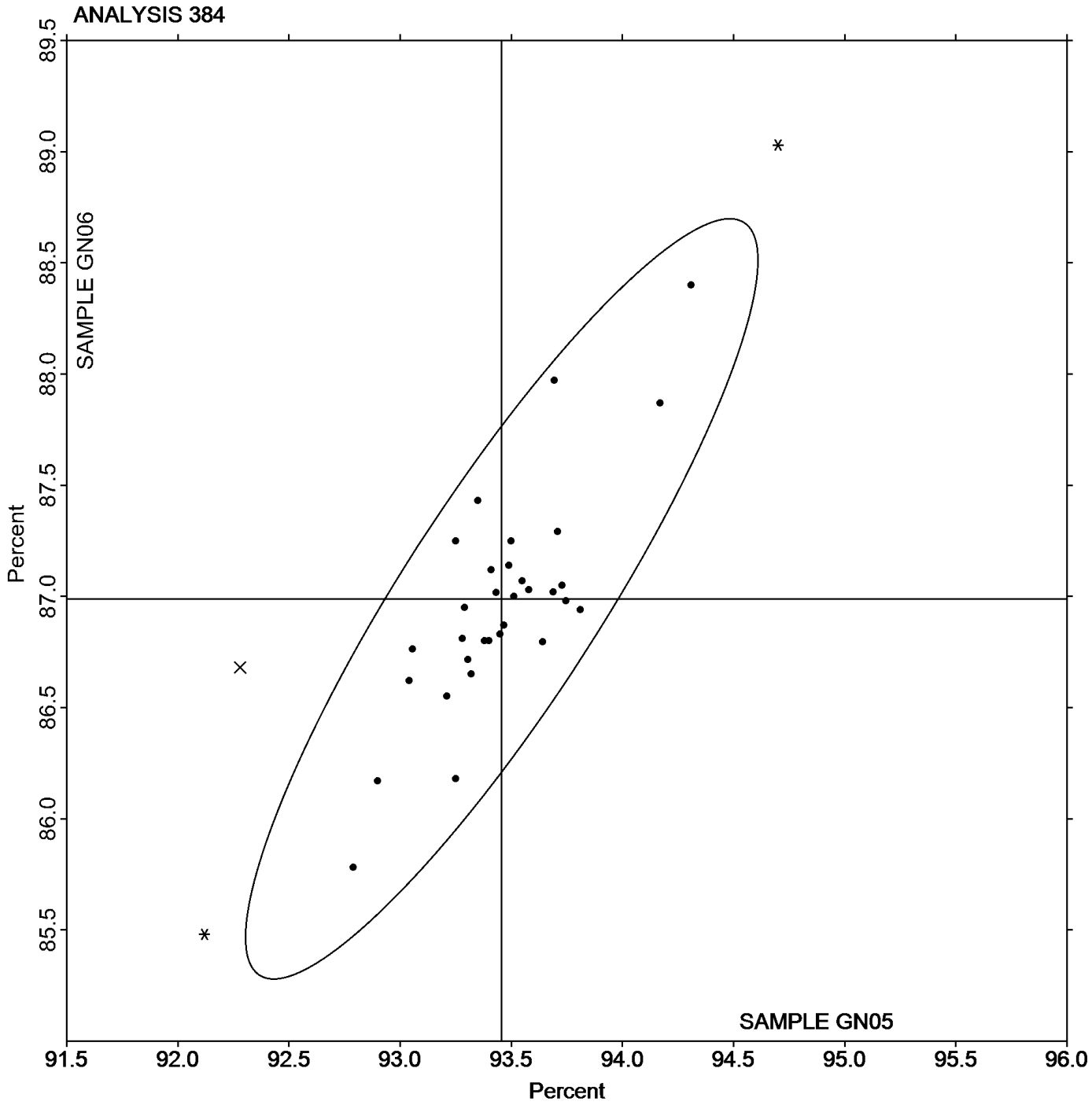
Paper & Paperboard Interlaboratory Testing Program

Analysis 384

Opacity (89% Reflectance Backing) - Fine Papers

Grand Mean Sample **GN05** = 93.457 Percent

Grand Mean Sample **GN06** = 86.989 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 386

Opacity (Paper Backing) - Fine Papers and Newsprint

WebCode	Data Flag	Sample GP05 Lab Mean	Sample GP05 Diff from Grand Mean	Sample GP05 CPV	Sample GP06 Lab Mean	Sample GP06 Diff from Grand Mean	Sample GP06 CPV
2F27PA	X	97.24	3.76	66.52	94.49	5.55	28.31
78WZMV		93.43	-0.04	-0.79	88.97	0.03	0.17
796XC7		93.49	0.01	0.24	89.06	0.12	0.62
79M6F3		93.51	0.03	0.61	88.86	-0.08	-0.43
98R3QP		93.44	-0.04	-0.75	88.75	-0.19	-0.96
9RDWD6		93.45	-0.03	-0.52	89.23	0.29	1.48
9UGUKR		93.45	-0.03	-0.49	88.66	-0.28	-1.41
A2CUWY		93.41	-0.07	-1.25	88.79	-0.15	-0.79
CKKTYX		93.46	-0.02	-0.27	88.67	-0.27	-1.37
EB6W7W		93.52	0.04	0.75	89.15	0.21	1.08
F7PNC6		93.46	-0.02	-0.36	88.89	-0.05	-0.24
G33NE2		93.51	0.03	0.49	88.78	-0.16	-0.80
HC8T4W		93.46	-0.01	-0.26	89.21	0.27	1.39
HURJ6G		93.53	0.05	0.89	88.76	-0.18	-0.92
J3GR3D		93.57	0.09	1.56	89.26	0.32	1.62
KFHR82		93.54	0.07	1.18	89.01	0.07	0.38
KXEB4N		93.58	0.11	1.88	88.87	-0.07	-0.33
L8LACP		93.52	0.04	0.75	88.85	-0.09	-0.47
PQLN4R		93.46	-0.02	-0.31	88.74	-0.20	-1.02
RA86DX		93.38	-0.10	-1.79	89.19	0.25	1.29
V2L96T	X	93.16	-0.32	-5.61	88.39	-0.55	-2.80
XR9XQY		93.53	0.05	0.96	89.21	0.27	1.36
XUBXMP		93.40	-0.08	-1.46	88.96	0.02	0.09
YFU38T		93.42	-0.06	-1.07	88.79	-0.15	-0.75

Summary Statistics

	Sample GP05	Sample GP06
Grand Means	93.478 Percent	88.939 Percent
SD Btwn Labs	0.057 Percent	0.196 Percent

Statistics based on 22 of 24 reporting participants

Comments on assigned Data Flags for Test #386

2F27PA (X) - Extreme data.

V2L96T (X) - Data for both samples are low.

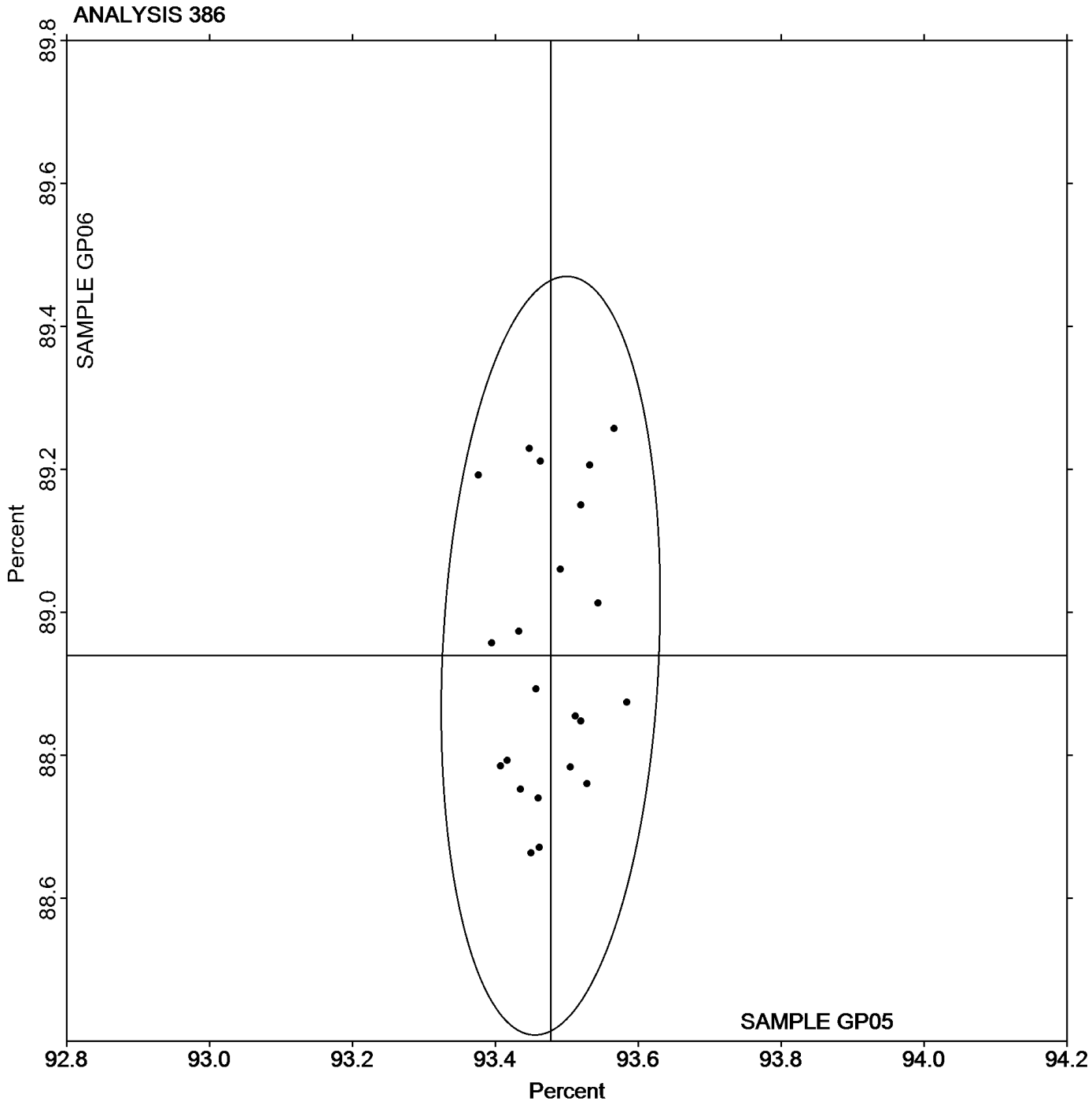
Paper & Paperboard Interlaboratory Testing Program

Analysis 386

Opacity (Paper Backing) - Fine Papers and Newsprint

Grand Mean Sample **GP05** = 93.478 Percent

Grand Mean Sample **GP06** = 88.939 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 390

Directional Brightness

WebCode	Data Flag	Sample GR05 Lab Mean	Sample GR05 Diff from Grand Mean	Sample GR05 CPV	Sample GR06 Lab Mean	Sample GR06 Diff from Grand Mean	Sample GR06 CPV	Instr Code
2BBR3N		80.61	-1.13	-1.10	80.58	-1.30	-1.26	TS
2CBL8D		80.70	-1.04	-1.02	80.86	-1.01	-0.98	TA
6LYWJB		81.58	-0.17	-0.16	81.54	-0.34	-0.33	XX
6MCNED		82.65	0.91	0.88	82.64	0.76	0.74	TS
74CYXA		82.83	1.08	1.05	82.68	0.81	0.78	TT
78WZMV		80.58	-1.17	-1.14	80.55	-1.32	-1.29	TT
93BV6B		82.07	0.32	0.32	82.64	0.77	0.74	TS
BFQLU4		82.36	0.62	0.60	82.51	0.64	0.62	XX
BKHV2G	*	81.51	-0.23	-0.22	82.73	0.85	0.83	TS
BKWZ2V		81.06	-0.69	-0.67	81.50	-0.37	-0.36	TS
BUUYDA		82.65	0.91	0.88	82.58	0.70	0.68	TT
C7HH87		82.83	1.09	1.06	82.78	0.90	0.88	HD
ETPHQM		80.93	-0.82	-0.80	81.78	-0.09	-0.09	XX
FUF4Y4		83.34	1.59	1.55	83.40	1.53	1.49	HD
G7Z6NA	X	65.80	-15.94	-15.53	65.21	-16.66	-16.20	TS
HURJ6G		80.70	-1.05	-1.02	80.63	-1.24	-1.21	TS
JTPBCN		81.19	-0.56	-0.54	81.19	-0.69	-0.67	TT
KDBCU4		83.80	2.06	2.00	84.33	2.45	2.38	XX
L8LACP		80.63	-1.12	-1.09	80.55	-1.32	-1.29	TS
N66Y9G		81.92	0.18	0.17	81.83	-0.05	-0.04	XX
PBBT3D		81.18	-0.57	-0.55	81.26	-0.61	-0.59	PE
PF26ZU		82.83	1.08	1.05	82.36	0.49	0.48	PE
PT8BUT		83.65	1.91	1.86	83.61	1.74	1.69	HG
PWR36V		80.70	-1.04	-1.02	80.71	-1.16	-1.13	TT
Q9EU46		79.95	-1.79	-1.75	80.08	-1.80	-1.75	TT
RXDL4Y		81.08	-0.66	-0.65	80.82	-1.05	-1.03	TS
UFYQZJ		81.65	-0.09	-0.09	82.05	0.18	0.18	GM
UPVY29		81.81	0.07	0.07	81.83	-0.05	-0.05	XX
UZQAAF	*	80.76	-0.98	-0.95	81.95	0.08	0.07	TT
XW23FW		82.43	0.68	0.67	81.95	0.08	0.07	TT
ZX4QPJ		82.34	0.60	0.58	82.30	0.43	0.42	TS

Summary Statistics

	Sample GR05	Sample GR06
Grand Means	81.743 Percent	81.873 Percent
SD Btwn Labs	1.026 Percent	1.028 Percent

Statistics based on 30 of 31 reporting participants

Comments on assigned Data Flags for Test #390

G7Z6NA (X) - Extreme data.

Paper & Paperboard Interlaboratory Testing Program
Analysis 390
Directional Brightness

Instrument Code List as Reported by the Labs

(GM) - Gretag Macbeth Color i5

(HD) - Hunter D25DP - 9000

(HG) - Hunter Labscan / XE

(PE) - Photovolt 577

(TA) - Technidyne, Diano, M.S. S-4

(TS) - Technidyne Brightimeter Micro S-5

(TT) - Technidyne Brightimeter Micro S4-M

(XX) - Instrument make/model not specified by lab

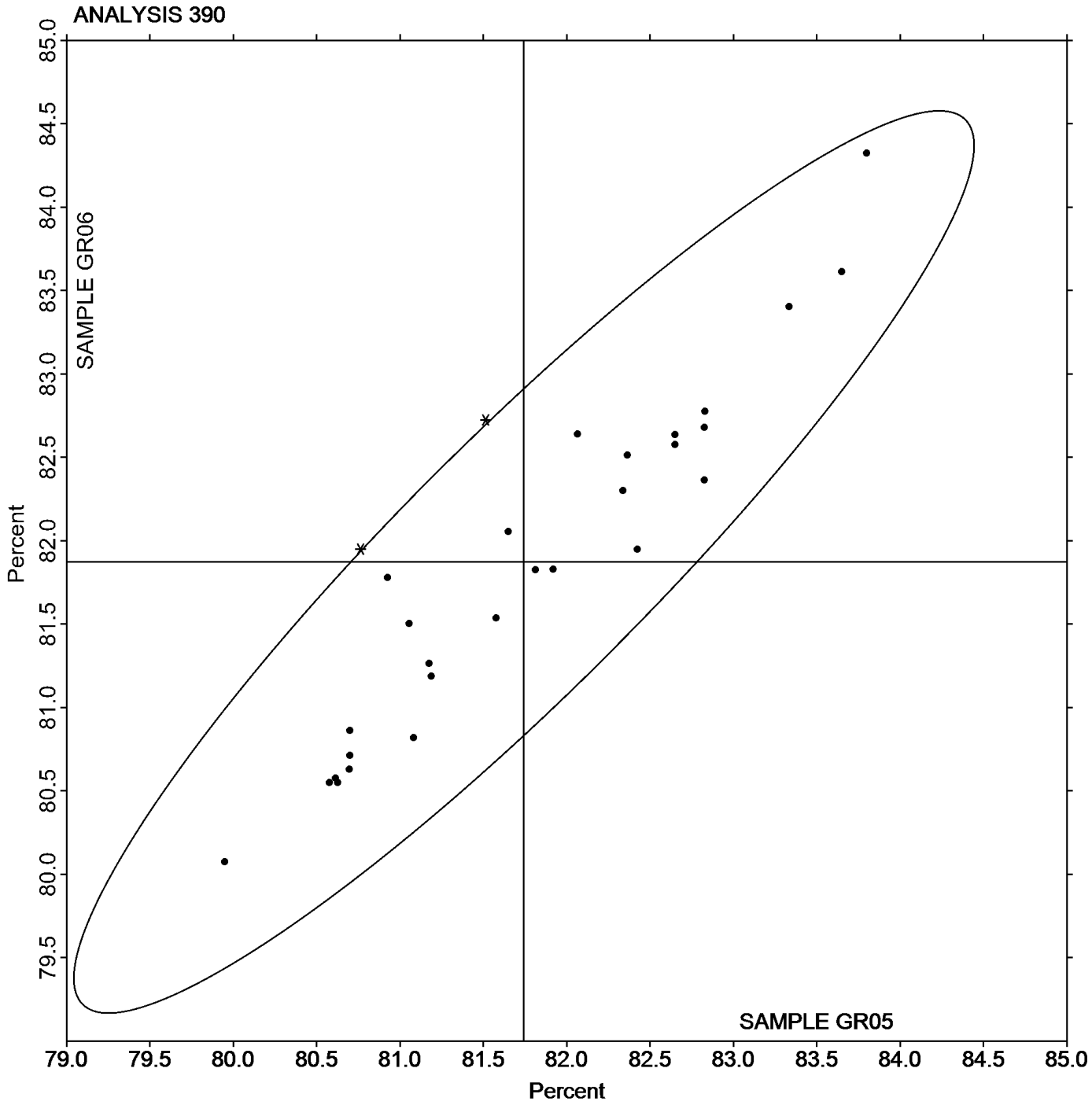
Paper & Paperboard Interlaboratory Testing Program

Analysis 390

Directional Brightness

Grand Mean Sample **GR05** = 81.743 Percent

Grand Mean Sample **GR06** = 81.873 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 391

Directional Brightness of Fluorescent Samples

WebCode	Data Flag	Sample GZ05 Lab Mean	Sample GZ05 Diff from Grand Mean	Sample GZ05 CPV	Sample GZ06 Lab Mean	Sample GZ06 Diff from Grand Mean	Sample GZ06 CPV	Instr Code
3D4WH8	X	94.77	-0.18	-0.10	95.84	-0.15	-0.12	TS
6723QG		92.67	-2.27	-1.33	94.26	-1.73	-1.38	HT
7GH4RA		94.54	-0.41	-0.24	95.70	-0.29	-0.23	TS
8HAAZM		98.04	3.10	1.81	97.43	1.45	1.15	EF
B3AJXY		95.05	0.10	0.06	96.21	0.23	0.18	TS
CRGZ77		94.54	-0.41	-0.24	95.39	-0.60	-0.48	PP
G33NE2		94.76	-0.18	-0.11	95.77	-0.22	-0.18	TS
LDARU8		94.78	-0.16	-0.10	95.52	-0.47	-0.37	TT
LGQCE2		95.29	0.35	0.20	95.95	-0.04	-0.03	TS
LQV8UZ	*	98.29	3.34	1.95	99.36	3.37	2.69	TS
PBBT3D		94.69	-0.25	-0.15	95.95	-0.04	-0.03	TS
PWR36V		95.08	0.14	0.08	96.28	0.29	0.23	TT
UFYQZJ		91.54	-3.40	-1.98	94.21	-1.78	-1.42	GM
WJY9BF		95.14	0.20	0.11	95.92	-0.07	-0.05	TS
X6V89X		94.80	-0.14	-0.08	95.88	-0.11	-0.09	TT

Summary Statistics

	Sample GZ05	Sample GZ06
Grand Means	94.943 Percent	95.988 Percent
SD Btwn Labs	1.713 Percent	1.254 Percent

Statistics based on 14 of 15 reporting participants

Analysis Notes:

3D4WH8 - Data appears to be transposed between Analysis #391 and Analysis #394. Data switched by CTS.

Instrument Code List as Reported by the Labs

(EF) - L & W Datacolor Elrepho

(GM) - Gretag Macbeth Color i5

(HT) - Hunter UltraScan Vis

(PP) - Technidyne Profile/Plus

(TS) - Technidyne Brightimeter Micro S-5

(TT) - Technidyne Brightimeter Micro S4-M

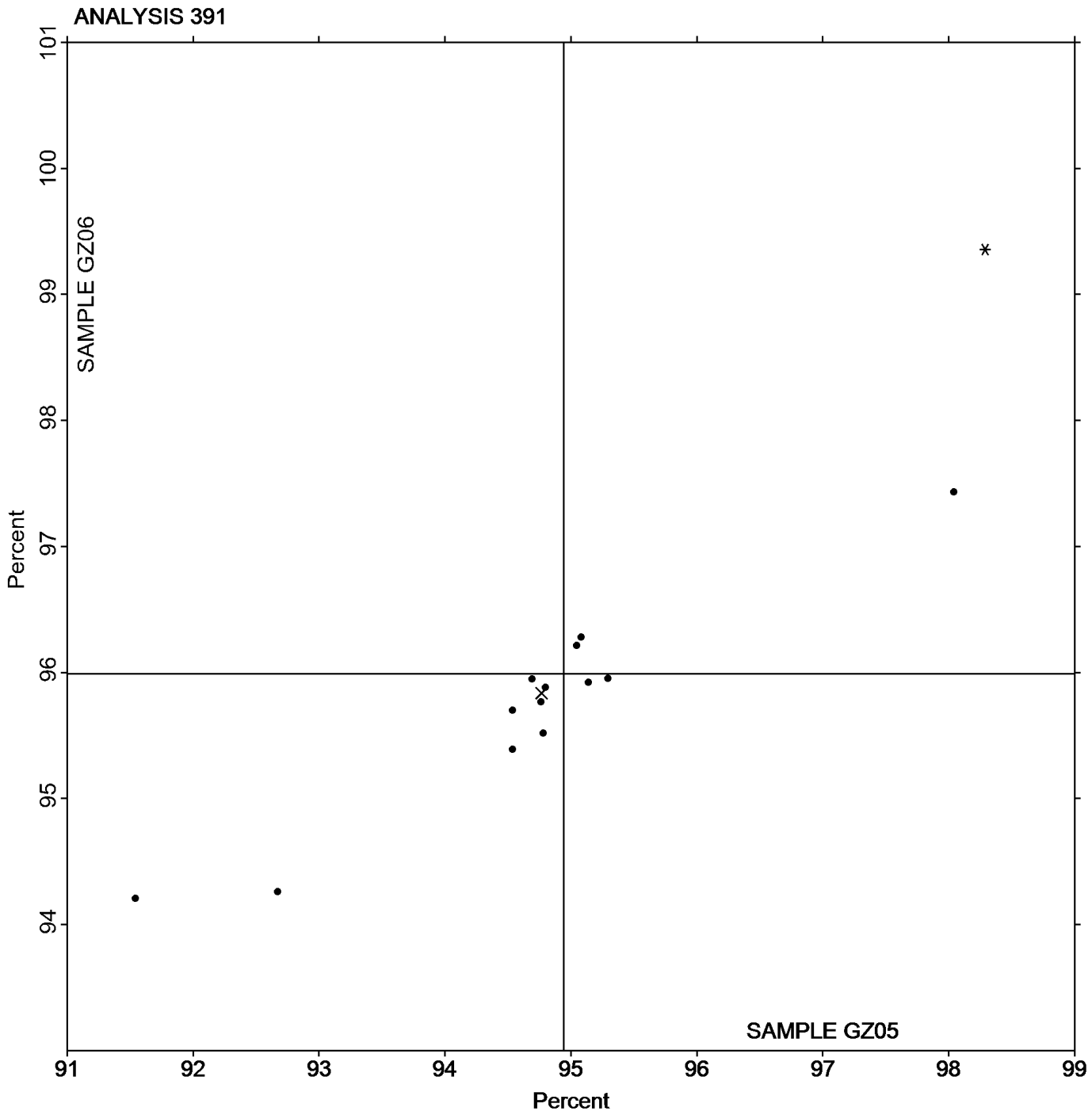
Paper & Paperboard Interlaboratory Testing Program

Analysis 391

Directional Brightness of Fluorescent Samples

Grand Mean Sample **GZ05** = 94.943 Percent

Grand Mean Sample **GZ06** = 95.988 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 GR05 Lab Mean	Sample GR05 Diff from Grand Mean	Sample GR05 CPV	Sample GR06 Lab Mean	Sample GR06 Diff from Grand Mean	Sample GR06 CPV	Instr Code
78WZMV		81.91	0.48	2.22	81.88	0.47	2.51	TM
796XC7		81.23	-0.20	-0.94	81.26	-0.15	-0.81	LS
79M6F3		81.38	-0.06	-0.27	81.54	0.13	0.69	TC
8HAAZM		81.73	0.29	1.35	81.66	0.25	1.34	LA
93BV6B		81.17	-0.27	-1.24	81.26	-0.15	-0.81	TC
98R3QP		81.75	0.31	1.45	81.66	0.25	1.32	TC
9B6ZYC		81.59	0.15	0.72	81.50	0.09	0.46	TC
9UGUKR		81.03	-0.41	-1.89	81.03	-0.38	-2.01	XX
A2CUWY		81.13	-0.31	-1.43	81.22	-0.19	-1.00	LS
AGPKEX		81.54	0.10	0.47	81.42	0.01	0.05	TC
ALAAE3		81.65	0.21	0.98	81.69	0.28	1.48	TC
AUWBG7		81.24	-0.20	-0.92	81.39	-0.02	-0.13	TC
BUUYDA		81.21	-0.22	-1.03	81.16	-0.25	-1.33	TL
BZWA6Z		81.55	0.12	0.54	81.56	0.15	0.81	EF
DERDKB		81.24	-0.20	-0.92	81.30	-0.11	-0.58	TC
DNF6BA		81.44	0.00	0.00	81.37	-0.04	-0.20	TC
F7PNC6	X	82.16	0.72	3.35	82.23	0.82	4.38	EG
G33NE2	*	81.42	-0.01	-0.06	81.19	-0.22	-1.20	TM
HURJ6G		81.32	-0.12	-0.55	81.30	-0.11	-0.57	TM
J3GR3D		81.27	-0.17	-0.77	81.25	-0.16	-0.84	TC
KFHR82		81.40	-0.04	-0.16	81.34	-0.07	-0.39	TM
L8LACP		81.37	-0.06	-0.30	81.38	-0.03	-0.16	TC
PQLN4R		81.31	-0.13	-0.59	81.30	-0.12	-0.62	TM
PWR36V		81.33	-0.11	-0.49	81.33	-0.08	-0.45	TC
UPVY29		81.70	0.26	1.21	81.54	0.12	0.66	EE
V2L96T		81.54	0.10	0.48	81.60	0.19	1.01	TM
VC3WX8		81.33	-0.11	-0.50	81.23	-0.18	-0.95	TC
VWH4QG		81.52	0.09	0.42	81.48	0.07	0.38	TC
XR3R2N		81.28	-0.15	-0.71	81.28	-0.13	-0.71	TC
XR9XQY		81.73	0.30	1.38	81.47	0.06	0.32	TC
XUBXMP		81.84	0.40	1.88	81.77	0.36	1.91	FR
XW23FW		81.28	-0.16	-0.74	81.35	-0.06	-0.32	EG
YHW8DM		81.45	0.02	0.07	81.40	-0.01	-0.06	PP
YQVKYA		81.51	0.07	0.34	81.45	0.04	0.22	TC

Summary Statistics

	Sample GR05	Sample GR06
Grand Means	81.434 Percent	81.411 Percent
SD Btwn Labs	0.216 Percent	0.187 Percent

Statistics based on 33 of 34 reporting participants

Paper & Paperboard Interlaboratory Testing Program
Analysis 392
Diffuse Brightness

Comments on assigned Data Flags for Test #392

F7PNC6 (X) - Systematic error (data for both samples are high).

Instrument Code List as Reported by the Labs

(EE) - Datacolor Elrepho 2000
(EF) - Datacolor Elrepho 3000
(EG) - Datacolor Elrepho 450X
(FR) - Frank Instruments
(LA) - L & W Elrepho - Autoline
(LS) - L & W Elrepho SE 070
(PP) - Technidyne Profile/Plus
(TC) - Technidyne Color Touch Series
(TL) - Technidyne Technibrite TB-1
(TM) - Technidyne Technibrite Micro TB-1C
(XX) - Instrument make/model not specified by lab

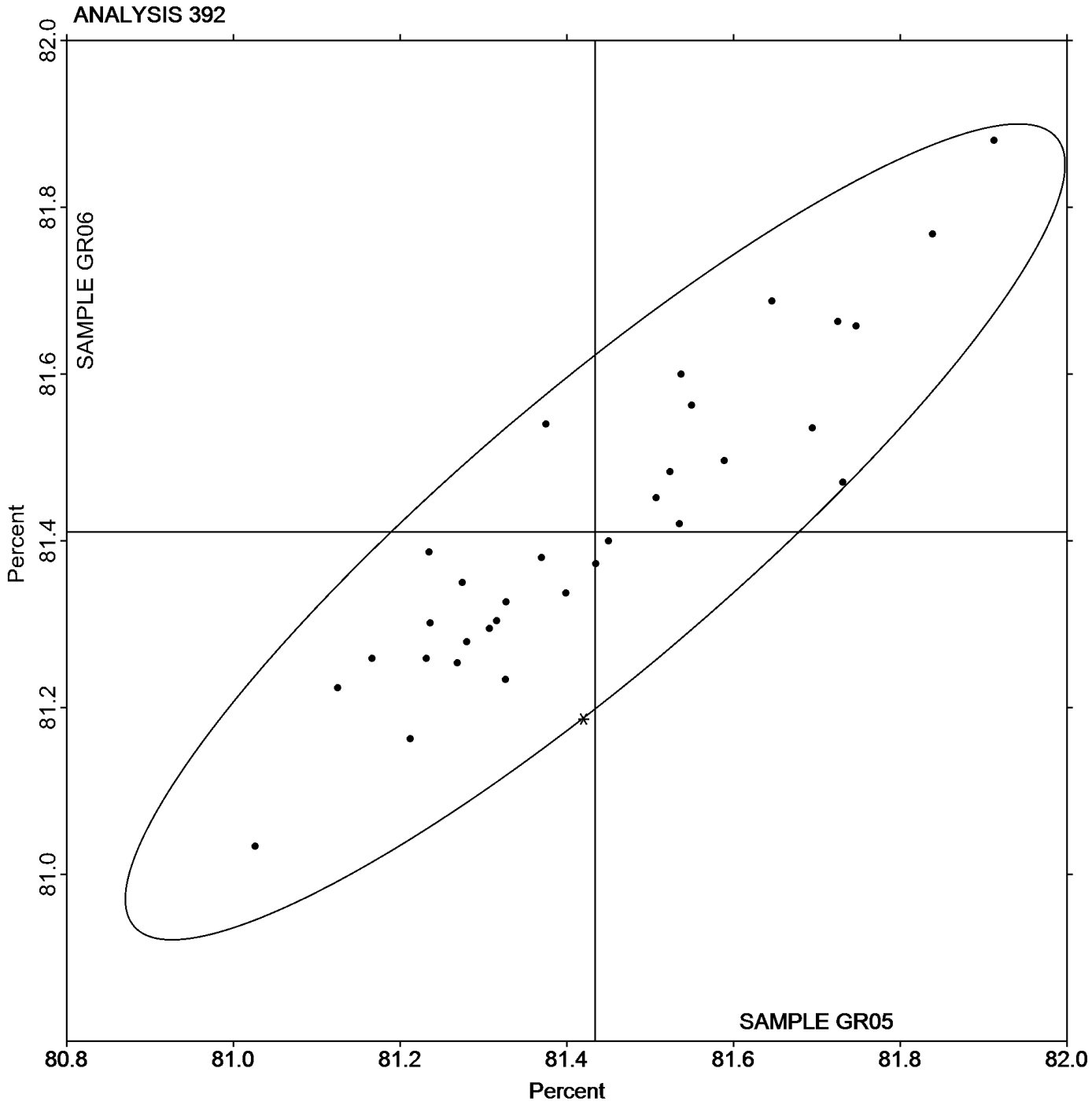
Paper & Paperboard Interlaboratory Testing Program

Analysis 392

Diffuse Brightness

Grand Mean Sample **GR05** = 81.434 Percent

Grand Mean Sample **GR06** = 81.411 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 394

Fluorescent Component of Directional Brightness

WebCode	Data Flag	Sample GZ05 Lab Mean	Sample GZ05 Diff from Grand Mean	Sample GZ05 CPV	Sample GZ06 Lab Mean	Sample GZ06 Diff from Grand Mean	Sample GZ06 CPV	Instr Code
3D4WH8	X	6.184	-0.046	-0.08	8.186	-0.185	-0.22	TS
6723QG		5.532	-0.698	-1.15	6.888	-1.483	-1.77	HT
7GH4RA		5.920	-0.310	-0.51	8.106	-0.265	-0.32	TS
8HAAZM	X	9.236	3.006	4.96	11.638	3.267	3.91	EF
B3AJXY		6.040	-0.190	-0.31	8.224	-0.147	-0.18	TS
CRGZ77		6.314	0.084	0.14	8.320	-0.051	-0.06	PP
GHWZ36	X	96.620	90.390	149.03	97.880	89.509	107.06	TT
LDARU8		6.300	0.070	0.12	8.380	0.009	0.01	TT
LGQCE2		5.586	-0.644	-1.06	7.646	-0.725	-0.87	TS
LQV8UZ		7.128	0.898	1.48	9.618	1.247	1.49	TS
PBBT3D		5.772	-0.458	-0.76	8.060	-0.311	-0.37	TS
PWR36V		6.260	0.030	0.05	8.480	0.109	0.13	TT
UFYQZJ		7.500	1.270	2.09	9.954	1.583	1.89	GM
X6V89X		6.180	-0.050	-0.08	8.400	0.029	0.04	TT

Summary Statistics

	Sample GZ05	Sample GZ06
Grand Means	6.2302 Percent	8.3705 Percent
SD Btwn Labs	0.6065 Percent	0.8360 Percent

Statistics based on 11 of 14 reporting participants

8HAAZM (X) - Data for both samples are high.

GHWZ36 (X) - Extreme data.

Analysis Notes:

3D4WH8 - Data appears to be transposed between Analysis #394 and Analysis #391. Data switched by CTS.

Instrument Code List as Reported by the Labs

(EF) - Datacolor Elrepho 3000

(GM) - Gretag Macbeth Color i5

(HT) - Hunter UltraScan Vis

(PP) - Technidyne Profile/Plus

(TS) - Technidyne Brightimeter Micro S-5

(TT) - Technidyne Brightimeter Micro S4-M

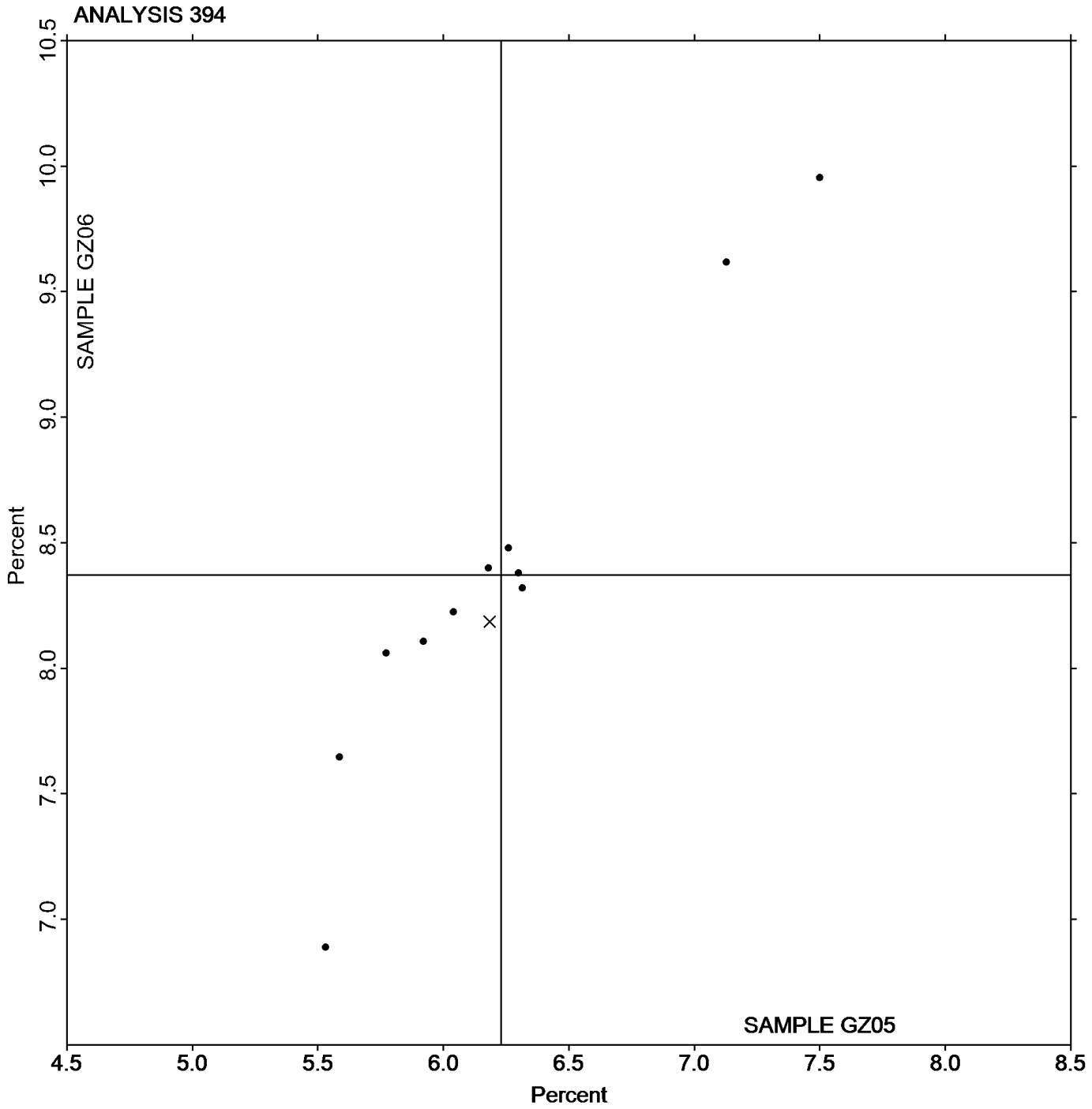
Paper & Paperboard Interlaboratory Testing Program

Analysis 394

Fluorescent Component of Directional Brightness

Grand Mean Sample **GZ05** = 6.2302 Percent

Grand Mean Sample **GZ06** = 8.3705 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 GT05 Lab Mean	Sample GT05 Diff from Grand Mean	Sample GT05 CPV	Sample GT06 Lab Mean	Sample GT06 Diff from Grand Mean	Sample GT06 CPV	Instr Code
2KD3HQ		73.71	-0.33	-0.17	71.78	0.32	0.12	TH
6MCNED	X	90.81	16.77	8.51	85.01	13.55	4.91	TH
78WZMV		77.37	3.32	1.69	74.68	3.22	1.17	TG
796XC7		72.78	-1.26	-0.64	72.48	1.02	0.37	TH
9UGUKR		73.94	-0.10	-0.05	72.12	0.66	0.24	XX
BUUYDA		78.00	3.96	2.01	76.50	5.04	1.83	GS
C7HH87		75.40	1.36	0.69	69.84	-1.62	-0.59	TH
CRGZ77		73.57	-0.47	-0.24	72.01	0.55	0.20	PP
DERDKB		72.90	-1.14	-0.58	70.87	-0.59	-0.21	ZH
F7PNC6	*	68.71	-5.33	-2.71	62.93	-8.53	-3.09	TH
FUF4Y4		74.91	0.87	0.44	72.50	1.04	0.38	TH
GWZCLB		75.64	1.60	0.81	72.14	0.68	0.25	LA
HURJ6G		74.02	-0.02	-0.01	72.79	1.33	0.48	TH
HZUQM6		72.84	-1.20	-0.61	71.69	0.23	0.08	TH
JH7W9L		72.98	-1.06	-0.54	70.40	-1.06	-0.38	GM
N66Y9G		74.17	0.13	0.06	71.20	-0.26	-0.09	TG
Q9EU46		74.25	0.21	0.10	72.49	1.03	0.37	TG
UZQAAF		73.02	-1.02	-0.52	71.55	0.09	0.03	GS
X6V89X		75.44	1.40	0.71	72.40	0.94	0.34	LA
XW23FW		73.19	-0.85	-0.43	67.30	-4.16	-1.51	GM

Summary Statistics

	Sample GT05	Sample GT06
Grand Means	74.044 Gloss Units	71.456 Gloss Units
SD Btwn Labs	1.971 Gloss Units	2.761 Gloss Units

Statistics based on 19 of 20 reporting participants

Comments on assigned Data Flags for Test #395

6MCNED (X) - Extreme data.

Instrument Code List as Reported by the Labs

(GM) - BYK-Gardner micro-gloss

(GS) - BYK-Gardner Glossgard II

(LA) - L & W Gloss - Autoline 300

(PP) - Technidyne Profile/Plus

(TG) - Technidyne T480

(TH) - Technidyne T480A

(XX) - Instrument make/model not specified by lab

(ZH) - Zehntner ZLR 1050

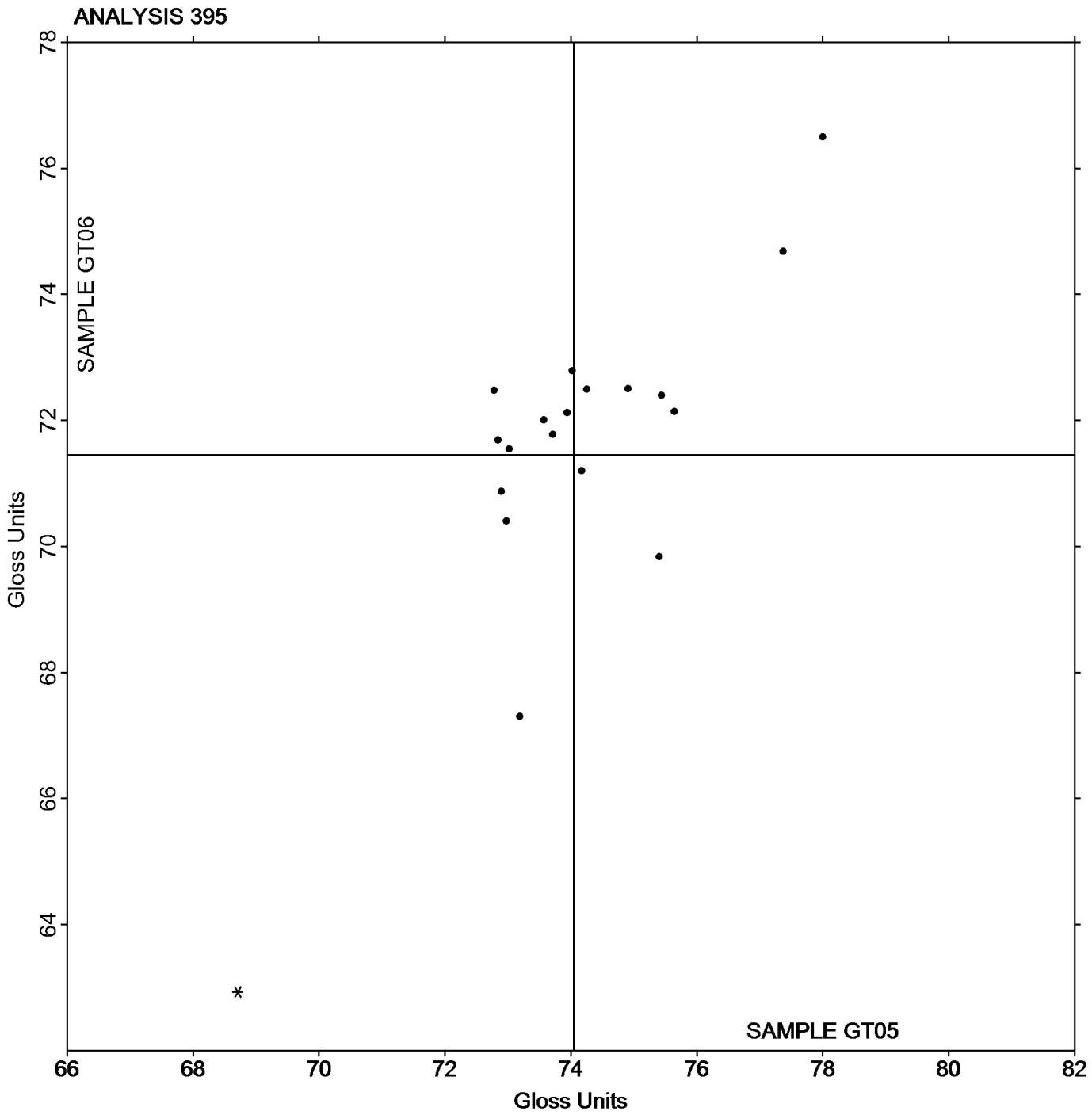
Paper & Paperboard Interlaboratory Testing Program

Analysis 395

Specular Gloss at 75 Degrees - High Range

Grand Mean Sample **GT05** = 74.044 Gloss Units

Grand Mean Sample **GT06** = 71.456 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 396

Specular Gloss at 75 Degrees - Low Range

WebCode	Data Flag	Sample GU05 Lab Mean	Sample GU05 Diff from Grand Mean	Sample GU05 CPV	Sample GU06 Lab Mean	Sample GU06 Diff from Grand Mean	Sample GU06 CPV	Instr Code
2CBL8D		41.25	-0.58	-0.83	34.64	-1.59	-1.18	TH
78WZMV		42.79	0.96	1.38	37.40	1.18	0.87	TG
796XC7		41.61	-0.22	-0.31	36.14	-0.09	-0.06	TH
8HAAZM	X	53.79	11.96	17.10	46.60	10.37	7.68	TG
ALAAE3		42.19	0.36	0.52	38.69	2.46	1.82	TH
CRGZ77		41.37	-0.46	-0.65	36.43	0.20	0.15	PP
ETPHQM		42.44	0.61	0.88	35.48	-0.75	-0.55	HN
JDGHKE		42.89	1.06	1.52	37.63	1.40	1.04	TG
MRLRVQ		41.17	-0.66	-0.94	36.12	-0.11	-0.08	XX
PFMVTF		41.62	-0.21	-0.30	34.57	-1.66	-1.23	PP
UZQAAF		40.95	-0.88	-1.25	35.17	-1.06	-0.78	GM

Summary Statistics

	Sample GU05	Sample GU06
Grand Means	41.828 Gloss Units	36.227 Gloss Units
SD Btwn Labs	0.699 Gloss Units	1.351 Gloss Units

Statistics based on 10 of 11 reporting participants

Comments on assigned Data Flags for Test #396

8HAAZM (X) - Extreme data.

Instrument Code List as Reported by the Labs

(GM) - BYK-Gardner micro-gloss

(HN) - Hunter D-48

(PP) - Technidyne Profile/Plus

(TG) - Technidyne T480

(TH) - Technidyne T480A

(XX) - Instrument make/model not specified by lab

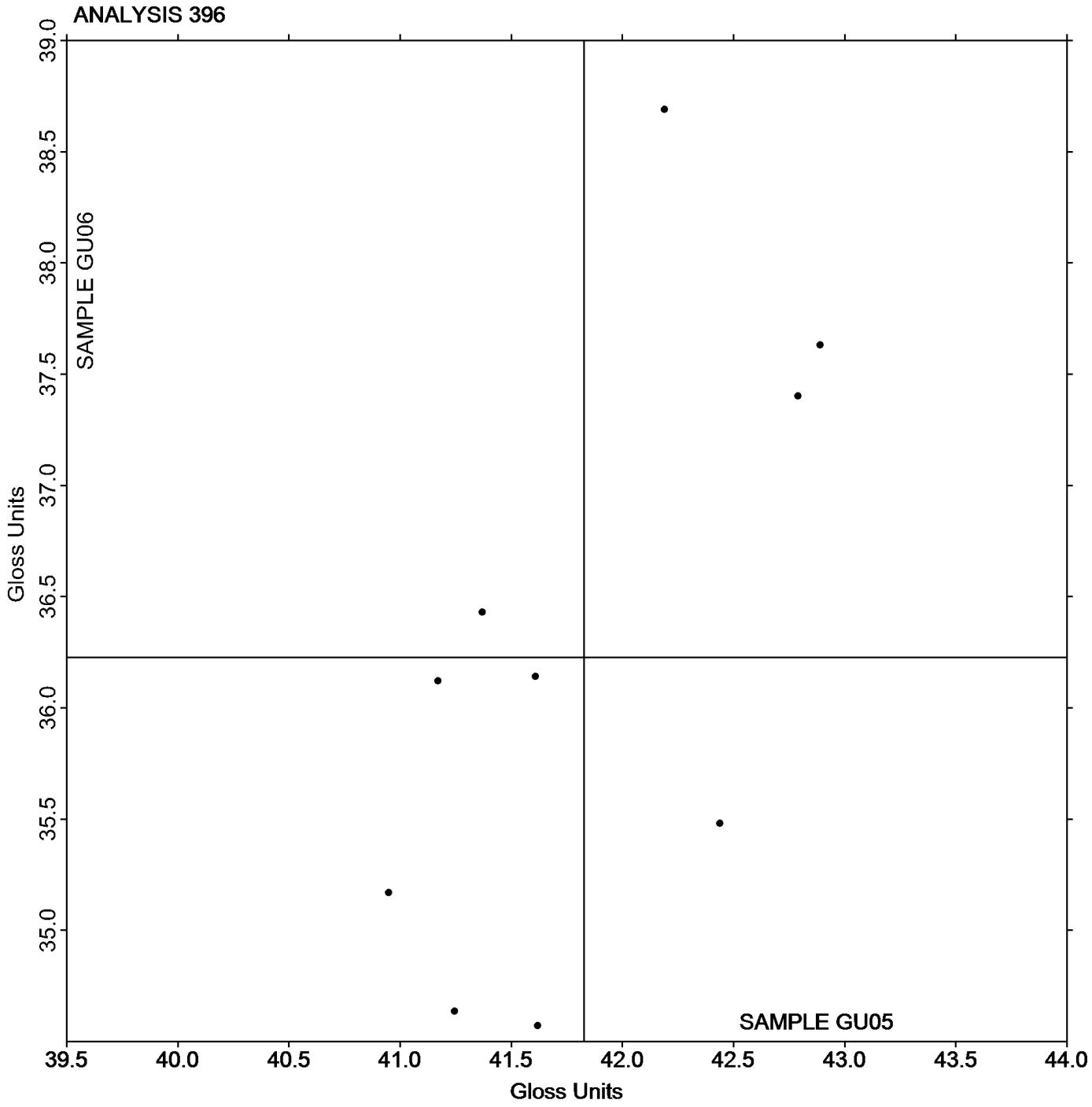
Paper & Paperboard Interlaboratory Testing Program

Analysis 396

Specular Gloss at 75 Degrees - Low Range

Grand Mean Sample **GU05** = 41.828 Gloss Units

Grand Mean Sample **GU06** = 36.227 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 GW05 Lab Mean	Sample GW05 Diff from Grand Mean	Sample GW05 CPV	Sample GW06 Lab Mean	Sample GW06 Diff from Grand Mean	Sample GW06 CPV
2CBL8D		85.94	0.02	0.03	100.5	0.0	0.03
2F27PA		85.71	-0.21	-0.40	100.2	-0.3	-0.52
6723QG		85.43	-0.49	-0.93	100.1	-0.3	-0.62
6EE2GL		85.24	-0.69	-1.29	100.2	-0.3	-0.54
6LYWJB		85.87	-0.05	-0.10	101.0	0.5	1.01
796XC7		86.28	0.36	0.68	100.7	0.2	0.38
8HAAZM		85.70	-0.22	-0.42	100.9	0.4	0.80
8LAQ39		86.29	0.36	0.68	100.7	0.2	0.39
98R3QP		85.91	-0.01	-0.02	100.6	0.1	0.22
99TC9K		86.06	0.13	0.25	100.8	0.3	0.65
9UGUKR		85.47	-0.45	-0.85	100.6	0.1	0.24
A2CUWY		85.77	-0.15	-0.29	100.6	0.1	0.22
AGA78N		86.48	0.56	1.05	100.4	-0.1	-0.23
ALAAE3		86.19	0.27	0.51	100.0	-0.4	-0.80
BFQLU4		85.76	-0.17	-0.31	100.2	-0.3	-0.56
CKKTYX		86.11	0.19	0.35	100.8	0.3	0.54
EB6W7W		86.36	0.44	0.82	100.7	0.2	0.37
ETPHQM		85.65	-0.27	-0.51	101.1	0.6	1.19
F7PNC6		85.74	-0.18	-0.34	100.0	-0.5	-0.93
HC8T4W		85.42	-0.50	-0.95	100.3	-0.2	-0.40
KRQDQU	*	86.70	0.78	1.46	102.2	1.7	3.23
KTLBM8		85.44	-0.48	-0.91	99.8	-0.7	-1.25
KXEB4N		86.04	0.12	0.22	100.5	0.0	0.05
MRLRVQ		85.52	-0.40	-0.76	100.3	-0.2	-0.36
N3XEKG	*	87.17	1.24	2.33	100.2	-0.3	-0.54
N966MM		86.57	0.65	1.22	101.1	0.6	1.18
PT8BUT		86.02	0.10	0.18	100.0	-0.4	-0.84
RXDL4Y		85.93	0.01	0.01	100.4	-0.1	-0.10
UFYQZJ	*	84.59	-1.33	-2.50	100.2	-0.3	-0.54
UPVY29		86.65	0.73	1.37	101.1	0.6	1.20
UZQAAF	X	57.12	-28.80	-54.11	67.1	-33.3	-62.72
VC3WX8		86.76	0.84	1.57	100.7	0.2	0.39
WJY9BF		85.15	-0.77	-1.45	99.1	-1.4	-2.58
XUBXMP		85.53	-0.40	-0.75	99.8	-0.7	-1.28

Summary Statistics

	Sample GW05	Sample GW06
Grand Means	85.922 g/sq m	100.47 g/sq m
SD Btwn Labs	0.532 g/sq m	0.53 g/sq m

Statistics based on 33 of 34 reporting participants

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

Comments on assigned Data Flags for Test #398

UZQAAF (X) - Extreme data.

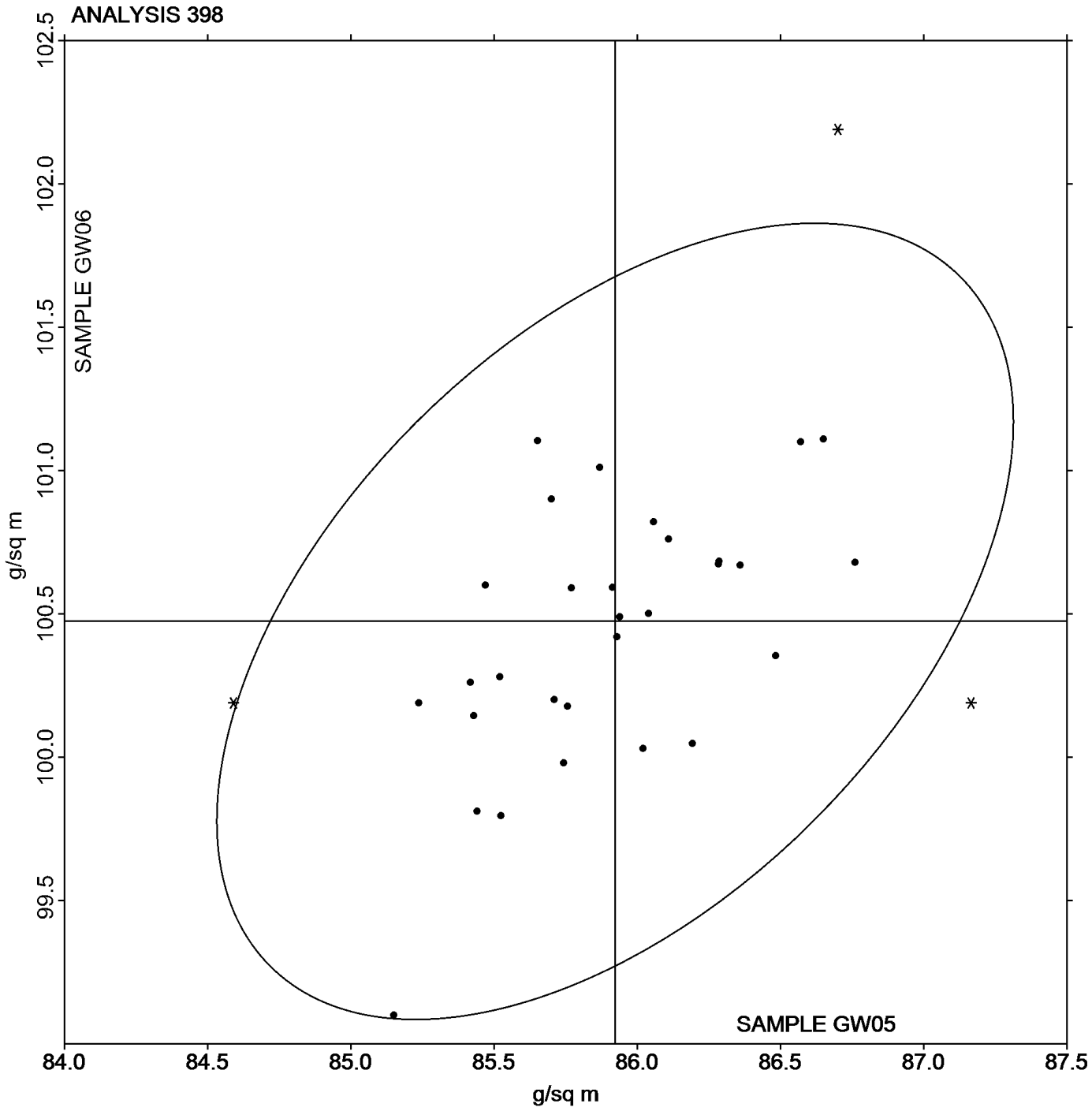
Paper & Paperboard Interlaboratory Testing Program

Analysis 398

Grammage (Mass per Unit Area)

Grand Mean Sample **GW05** = 85.922 g/sq m

Grand Mean Sample **GW06** = 100.47 g/sq m



Paper & Paperboard Interlaboratory Testing Program

Analysis 399

Sizing Test (Hercules Type)

WebCode	Data Flag	Sample GX05 Lab Mean	Sample GX05 Diff from Grand Mean	Sample GX05 CPV	Sample GX06 Lab Mean	Sample GX06 Diff from Grand Mean	Sample GX06 CPV
2BBR3N		5.000	-0.672	-0.71	5.150	-0.530	-0.72
3D4WH8		6.590	0.918	0.96	5.650	-0.030	-0.04
6LYWJB		4.900	-0.772	-0.81	5.900	0.220	0.30
6MCNED		5.140	-0.532	-0.56	6.040	0.360	0.49
93BV6B		5.300	-0.372	-0.39	5.880	0.200	0.27
98RZD8		6.920	1.248	1.31	5.960	0.280	0.38
ACTWXQ		4.910	-0.762	-0.80	5.350	-0.330	-0.45
ALAAE3		5.120	-0.552	-0.58	5.450	-0.230	-0.31
B3AJXY		5.390	-0.282	-0.30	5.480	-0.200	-0.27
BFQLU4		4.200	-1.472	-1.55	4.540	-1.140	-1.55
BKWZ2V		6.190	0.518	0.54	5.680	0.000	0.00
EEKL9K		4.800	-0.872	-0.92	4.500	-1.180	-1.61
GHWZ36		4.870	-0.802	-0.84	5.360	-0.320	-0.44
HURJ6G		6.050	0.378	0.40	5.720	0.040	0.05
JDGHKE		5.270	-0.402	-0.42	5.720	0.040	0.05
JEABFX		5.740	0.068	0.07	6.220	0.540	0.74
JH7W9L		6.600	0.928	0.97	5.100	-0.580	-0.79
JTPBCN		6.580	0.908	0.95	7.020	1.340	1.83
KDBCU4	*	3.390	-2.282	-2.40	3.450	-2.230	-3.04
KDRNEU		7.540	1.868	1.96	6.820	1.140	1.55
KX2J9L		6.370	0.698	0.73	6.310	0.630	0.86
LGQCE2		5.700	0.028	0.03	5.950	0.270	0.37
LQV8UZ		5.270	-0.402	-0.42	5.660	-0.020	-0.03
M4EARJ		4.840	-0.832	-0.87	4.880	-0.800	-1.09
MNQY6G	*	6.960	1.288	1.35	5.170	-0.510	-0.69
PBBT3D		5.700	0.028	0.03	6.500	0.820	1.12
PF26ZU	X	8.150	2.478	2.60	8.890	3.210	4.37
PFMVTF		6.050	0.378	0.40	6.180	0.500	0.68
PWR36V		5.250	-0.422	-0.44	6.040	0.360	0.49
UFYQZJ		7.530	1.858	1.95	7.110	1.430	1.95
UZQAAF		7.100	1.428	1.50	6.200	0.520	0.71
WJY9BF		4.800	-0.872	-0.92	5.400	-0.280	-0.38
WL82PN		5.720	0.048	0.05	5.740	0.060	0.08
ZPDXJE		5.400	-0.272	-0.29	5.300	-0.380	-0.52

Summary Statistics

	Sample GX05	Sample GX06
Grand Means	5.6724 Seconds	5.6797 Seconds
SD Btwn Labs	0.9522 Seconds	0.7339 Seconds

Statistics based on 33 of 34 reporting participants

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

Comments on assigned Data Flags for Test #399

PF26ZU (X) - Data for Sample GX06 are high. Inconsistent in testing within determinations for Sample GX06.

Paper & Paperboard Interlaboratory Testing Program

Analysis 399

Sizing Test (Hercules Type)

Grand Mean Sample **GX05** = 5.6724 Seconds

Grand Mean Sample **GX06** = 5.6797 Seconds