



Paper & Paperboard Testing Program

Summary Report #243G-December 2009

[Introduction to the Paper & Paperboard Program](#)

[Explanation of Tables and Definitions of Terms](#)

[Instrument Manufacturer Contacts](#)

Analysis	Analysis Name
<u>350</u>	<u>Color & Color Difference (Near White Papers), Hunter L,a,b - Illuminant C - 2 deg obs</u>
<u>351</u>	<u>Color & Color Difference (Near White Papers), Hunter L,a,b - Illuminant D65 - 10 deg obs</u>
<u>360</u>	<u>Thickness (Caliper), Printing papers, Low range</u>
<u>361</u>	<u>Thickness (Caliper), Packaging papers, High range</u>
<u>364</u>	<u>Coefficient of Static Friction-Horizontal Plane, Printing papers</u>
<u>365</u>	<u>Coefficient of Kinetic Friction-Horizontal Plane, Printing papers</u>
<u>370</u>	<u>Air Resistance, Gurley Oil Type, Printing papers</u>
<u>372</u>	<u>Porosity, Sheffield Type, Printing papers</u>
<u>376</u>	<u>Roughness - Print Surf Method 0.5 to 4.0 Microns, Low range</u>
<u>377</u>	<u>Roughness - Print Surf Method 2.5 to 6.0 Microns, High range</u>
<u>378</u>	<u>Roughness, Sheffield Type, Printing papers</u>
<u>382</u>	<u>Moisture Content, Paper Samples</u>
<u>384</u>	<u>Opacity (89% Backing) 82 to 95%, Fine papers</u>
<u>386</u>	<u>Opacity (Paper Backing) 82 to 95%, Fine papers and newsprint</u>
<u>390</u>	<u>Brightness (Directional), Printing papers</u>
<u>391</u>	<u>Directional Brightness of Fluorescent Samples, Printing papers</u>
<u>392</u>	<u>Brightness (Diffuse), Printing papers</u>
<u>394</u>	<u>Fluorescent Component of Directional Brightness, Printing papers</u>
<u>395</u>	<u>Specular Gloss 75 Degree, 50-95 Units, High range</u>
<u>396</u>	<u>Specular Gloss 75 Degree, 20-65 Units, Low range</u>
<u>398</u>	<u>Grammage (Basis Weight), Printing papers</u>
<u>399</u>	<u>Sizing Test, Hercules Type, Printing papers</u>

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.

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

Collaborative Testing Services, Inc.
21331 Gentry Drive
Sterling, Virginia 20166 USA
+1-571-434-1925
FAX #: +1-571-434-1937
paper@cts-interlab.com

(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:

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

Graph - For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained on the previous page.

Common Problems Highlighted in Footnotes

1. **Extreme data** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. The participant is advised to immediately review his data and/or testing procedure.
2. **Systematic bias** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.
3. **Inconsistency in testing between samples/sample sets** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an * that falls on the edge of the ellipse.
4. **Inconsistency in testing within a sample** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.

Labs flagged with an * are not typically included in the footnotes of a data table. These labs may locate their position in the control ellipse and use the definitions above to help identify the type of testing error. An * should serve as a caution flag, a "yellow light", to a lab. If this error is repeated in future rounds, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm. Interlaboratory tests conducted at regular intervals permit a lab to recognize trends in testing.

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

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

Huygen Corporation

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

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

Gurley Precision Instruments

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

BYK-Gardner

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

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

Technidyne Corporation

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

Testing Machines Inc.

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

Hercules, Inc.

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

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

Hunter Associates Lab, Inc.

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

Emveco Inc.

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

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	
3QBYWP		GA51	96.26	-0.43	3.24	-7.15	-0.07	-0.39	7.16	TS
		GA52	89.12	-0.49	2.85					
4VDXRR	X	GA51	94.93	-0.75	2.11	-5.60	0.14	0.80	5.66	HH
		GA52	89.33	-0.61	2.92					
4WHFPA	X	GA51	95.77	-0.97	2.15	-5.67	0.15	1.10	5.78	HG
		GA52	90.10	-0.83	3.25					
9DW24F		GA51	96.79	-0.70	3.59	-6.89	-0.11	-0.36	6.90	LS
		GA52	89.89	-0.81	3.23					
9FGLKW		GA51	96.72	-0.30	2.80	-6.76	-0.06	-0.15	6.76	TS
		GA52	89.96	-0.36	2.65					
AH9VR6		GA51	96.52	-0.51	3.14	-7.27	-0.05	-0.24	7.27	TS
		GA52	89.25	-0.56	2.89					
AHQ8EC		GA51	96.84	-0.51	3.42	-6.83	-0.11	-0.33	6.84	MK
		GA52	90.01	-0.63	3.09					
BRNJTC		GA51	96.62	-0.48	3.21	-7.28	-0.03	-0.24	7.29	TS
		GA52	89.33	-0.51	2.98					
CGKW9J		GA51	96.86	-0.65	3.50	-7.04	-0.06	-0.33	7.05	TC
		GA52	89.81	-0.71	3.17					
EHXHF6		GA51	97.50	-0.71	3.53	-6.96	-0.06	-0.34	6.97	HV
		GA52	90.54	-0.77	3.20					
FW47QK		GA51	97.49	-0.68	3.56	-5.50	-0.06	-0.28	5.51	TC
		GA52	91.99	-0.74	3.28					
K9EGQ3		GA51	96.78	-0.49	3.29	-6.89	-0.07	-0.32	6.90	TM
		GA52	89.89	-0.56	2.97					
KLWA26		GA51	97.55	-0.72	3.45	-5.48	-0.11	-0.26	5.49	EF
		GA52	92.07	-0.83	3.20					
KYVT73		GA51	96.78	-0.71	3.04	-6.92	-0.15	-0.31	6.93	HH
		GA52	89.86	-0.86	2.73					
LL3Q89		GA51	96.82	-0.66	3.59	-6.90	-0.09	-0.29	6.91	TC
		GA52	89.91	-0.75	3.30					
MN9Y6C		GA51	96.54	-0.12	3.06	-7.19	-0.11	-0.22	7.19	TS
		GA52	89.35	-0.23	2.84					
NQV8AC		GA51	96.58	-0.32	2.98	-7.14	-0.07	-0.26	7.14	TS
		GA52	89.45	-0.38	2.72					

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	
P9ZZRX		GA51	96.83	-0.45	3.31	-7.02	-0.04	-0.42	7.04	TM
		GA52	89.81	-0.48	2.90					
PE9CT6		GA51	96.70	-0.70	3.70	-6.98	-0.08	-0.32	6.99	LS
		GA52	89.72	-0.78	3.38					
PEPWTM		GA51	96.92	-0.58	3.55	-7.07	0.00	-0.38	7.08	TB
		GA52	89.86	-0.57	3.18					
PKZMW2		GA51	97.53	-0.67	3.41	-5.52	-0.12	-0.23	5.53	EH
		GA52	92.01	-0.79	3.18					
QUH6TZ		GA51	97.40	-0.71	3.57	-5.56	-0.09	-0.28	5.57	LA
		GA52	91.84	-0.80	3.29					
RQ66NR		GA51	97.12	-0.14	3.04	-6.80	-0.10	-0.14	6.80	TS
		GA52	90.32	-0.24	2.91					
T2JRG6	X	GA51	95.68	-0.84	1.89	-5.65	-0.04	1.09	5.75	HH
		GA52	90.03	-0.88	2.97					
TUV82H		GA51	97.46	-0.67	3.50	-5.28	-0.15	-0.19	5.29	XX
		GA52	92.17	-0.81	3.30					
WAFJ3W		GA51	97.12	-0.81	3.32	-6.49	-0.13	-0.35	6.50	HH
		GA52	90.63	-0.94	2.97					
WZTZA		GA51	97.46	-0.24	3.45	-6.97	-0.18	-0.25	6.97	HV
		GA52	90.50	-0.42	3.19					
XNQK8C		GA51	96.90	-0.67	3.30	-6.83	-0.11	-0.20	6.84	TC
		GA52	90.07	-0.78	3.09					
XYBR82		GA51	96.48	-0.33	3.10	-7.32	0.05	-0.26	7.33	TS
		GA52	89.15	-0.27	2.84					
YEWLQH		GA51	97.35	-0.55	3.44	-5.22	-0.17	-0.20	5.23	MI
		GA52	92.13	-0.72	3.24					
YPFWZA		GA51	96.69	-0.70	3.49	-7.00	-0.08	-0.48	7.02	EH
		GA52	89.69	-0.78	3.01					

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	

			Summary Statistics						
Grand Means									
	GA51		96.951	-0.574	3.343				
	GA52		90.298	-0.642	3.056	-6.653	-0.085	-0.286	6.660
Std Dev Btw Labs									
	GA51		0.378	0.205	0.225				
	GA52		1.001	0.201	0.204	0.676	0.051	0.079	0.676
Statistics based on 28 of 31 reporting participants									

Comments assigned on Data Flags for Test #350

4VDXRR (X) - Low L and b values for Sample GA51; inconsistent within the replicates for GA51. High delta a and delta b values.

4WHFPA (X) - Low L and b values for Sample GA51; high delta a and delta b values.

T2JRG6 (X) - Low L and b values for Sample GA51; high delta b value.

Instrument Code List as Reported by the Labs

(EF) - Datacolor Elrepho 3000

(EH) - Datacolor Elrepho SF450

(HG) - Hunter ColorQUEST

(HH) - Hunter D25DP - 9000

(HV) - Hunter Ultrascan XE

(LA) - L & W Elrepho AL300

(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

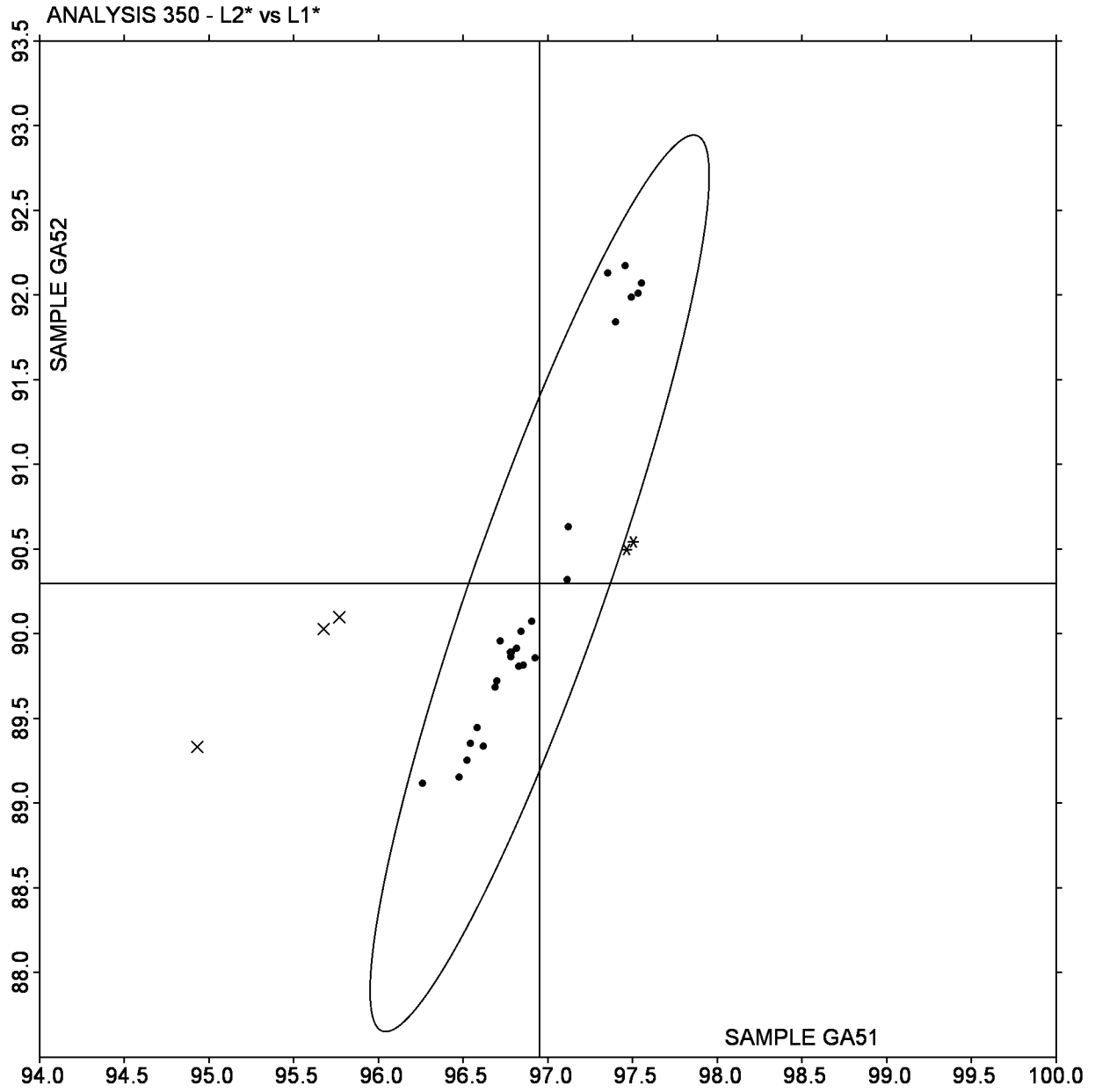
(XX) - Instrument make/model not specified by lab

Analysis 350

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

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

Plot of L values GA52 v L values GA51

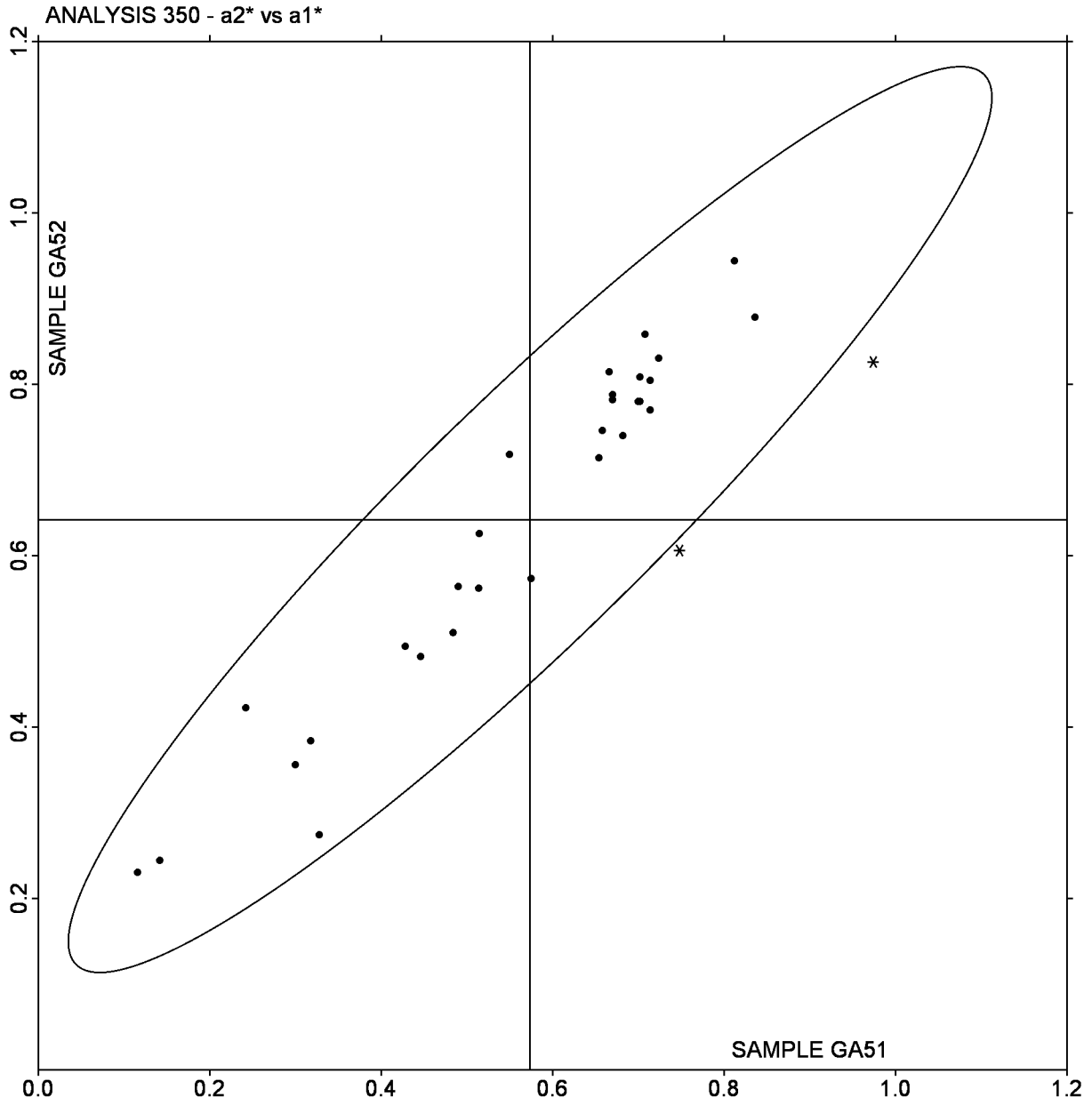


Analysis 350

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

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

Plot of a values GA52 v a values GA51

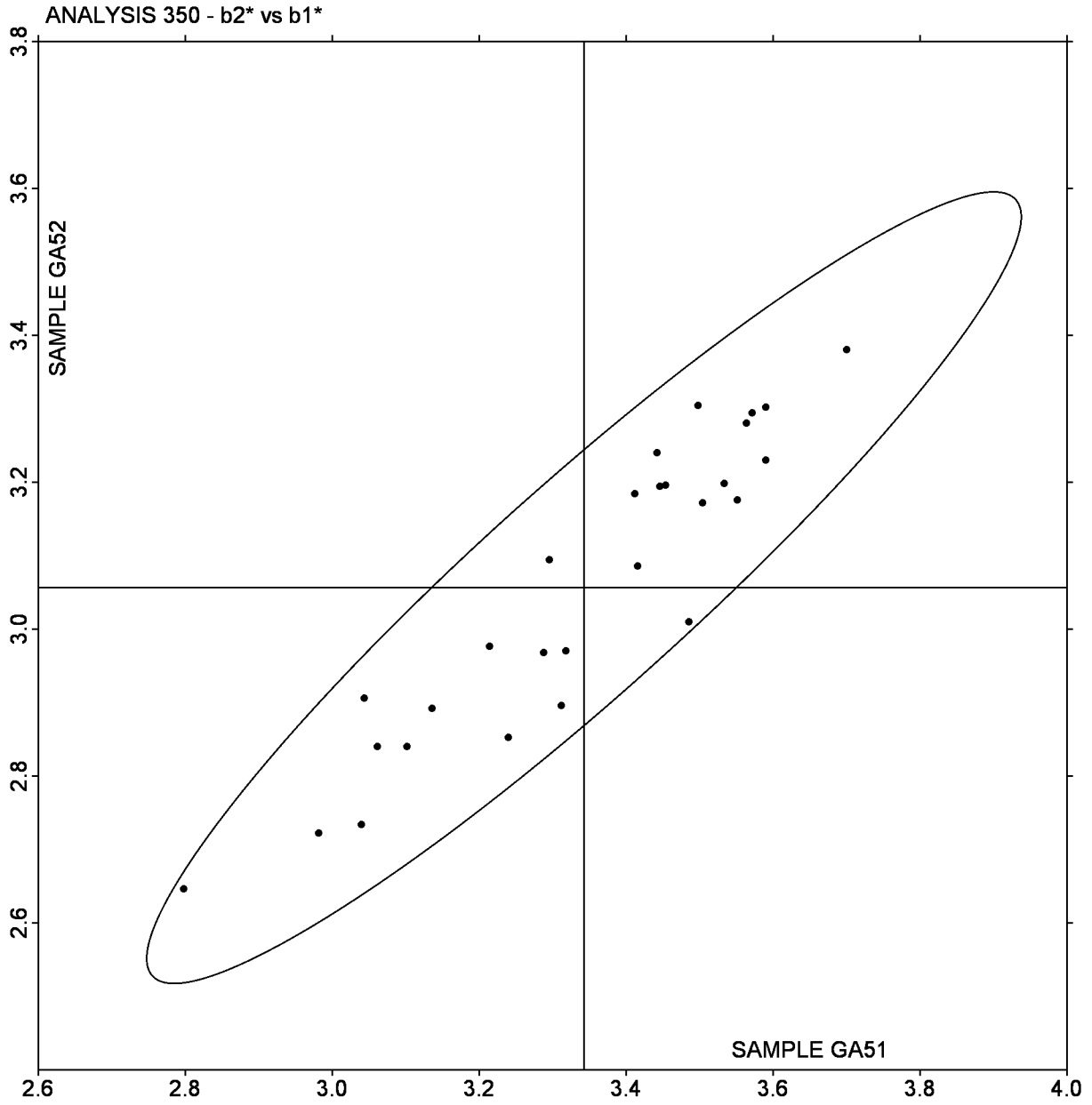


Analysis 350

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

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

Plot of b values GA52 v b values GA51



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	
43T3MR		GA51	97.40	-0.27	3.54	-5.50	-0.21	-0.24	5.50	EH
		GA52	91.91	-0.48	3.30					
4YJQYR		GA51	97.15	-0.34	3.48	-5.45	-0.14	-0.14	5.46	HV
		GA52	91.69	-0.48	3.34					
72662H		GA51	97.38	-0.13	3.60	-6.84	-0.22	-0.20	6.85	MG
		GA52	90.54	-0.35	3.40					
7UNQ2Y		GA51	96.68	-0.23	3.32	-6.77	-0.19	-0.29	6.78	TC
		GA52	89.91	-0.42	3.04					
BEWKTE		GA51	96.86	-0.18	3.39	-6.96	-0.17	-0.19	6.96	XA
		GA52	89.90	-0.35	3.20					
CCCQZL		GA51	97.49	-0.33	2.96	-5.30	-0.25	0.00	5.31	HV
		GA52	92.19	-0.58	2.96					
D6UWDE		GA51	96.33	-0.25	3.34	-6.55	-0.14	-0.29	6.56	HM
		GA52	89.78	-0.40	3.05					
ENKVAK		GA51	96.82	-0.47	3.19	-6.74	-0.14	-0.23	6.74	HV
		GA52	90.09	-0.61	2.96					
GRXNJV		GA51	97.38	-0.17	3.50	-5.45	-0.23	-0.16	5.46	TC
		GA52	91.93	-0.40	3.34					
HLU49W		GA51	96.89	-0.16	3.40	-6.77	-0.25	-0.20	6.77	XX
		GA52	90.12	-0.41	3.20					
JAEWRF		GA51	96.48	-0.32	3.13	-7.31	-0.07	-0.25	7.32	TM
		GA52	89.17	-0.39	2.88					
KJ97KC		GA51	97.64	-0.11	3.72	-5.54	-0.22	-0.20	5.55	HG
		GA52	92.10	-0.33	3.52					
KU8YVN		GA51	97.00	-0.18	3.95	-5.33	-0.21	-0.43	5.35	NG
		GA52	91.67	-0.39	3.53					
ML48DY		GA51	96.50	-0.04	3.49	-6.63	-0.26	-0.16	6.63	NF
		GA52	89.88	-0.30	3.33					
MQVBNV		GA51	97.31	-0.22	3.69	-7.23	-0.17	-0.26	7.23	MG
		GA52	90.09	-0.40	3.43					
QT7ANU		GA51	96.69	-0.19	3.34	-6.90	-0.20	-0.25	6.90	TC
		GA52	89.79	-0.38	3.10					
QWNF2V		GA51	97.30	-0.20	3.52	-5.50	-0.22	-0.24	5.51	EF
		GA52	91.80	-0.42	3.28					

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	
QX86TG		GA51	97.42	-0.24	3.42	-6.87	-0.18	-0.26	6.88	HV
		GA52	90.55	-0.42	3.16					
QYLUVT		GA51	97.81	-0.13	3.51	-5.43	-0.19	-0.04	5.43	XU
		GA52	92.38	-0.31	3.46					
RRV6PJ		GA51	96.84	-0.23	3.38	-6.66	-0.23	-0.33	6.68	HU
		GA52	90.17	-0.46	3.05					
RZKJ99		GA51	96.51	-0.22	3.13	-7.31	-0.08	-0.27	7.32	TM
		GA52	89.19	-0.30	2.86					
TC849X		GA51	97.30	-0.27	3.52	-5.48	-0.21	-0.24	5.49	LS
		GA52	91.82	-0.48	3.28					
TDR7ER		GA51	98.01	-0.23	3.49	-5.59	-0.22	-0.26	5.60	HV
		GA52	92.41	-0.45	3.23					
TFKLUZ		GA51	97.51	-0.18	3.59	-5.27	-0.22	-0.21	5.27	XD
		GA52	92.24	-0.40	3.38					
XAFNK6	X	GA51	92.88	-0.42	1.02	-4.41	-0.07	1.30	4.60	NF
		GA52	88.46	-0.49	2.32					
XX98XE		GA51	97.55	-0.21	3.36	-5.45	-0.23	-0.15	5.45	XX
		GA52	92.11	-0.44	3.21					

Grand Means		Summary Statistics							
GA51	97.130	-0.228	3.438						
GA52	90.937	-0.417	3.220	-6.193	-0.194	-0.218	6.201		
Std Dev Btwn Labs									
GA51	0.451	0.094	0.207						
GA52	1.116	0.076	0.193	0.762	0.048	0.086	0.761		

Statistics based on 25 of 26 reporting participants

Comments assigned on Data Flags for Test #351

XAFNK6 (X) - Low L and b values for both samples; high delta b value.

Analysis 351

Color & Color Difference - Near White Papers - D65/10deg

Hunter L,a,b - Illuminant D65 - 10 Degree Observer

Instrument Code List as Reported by the Labs

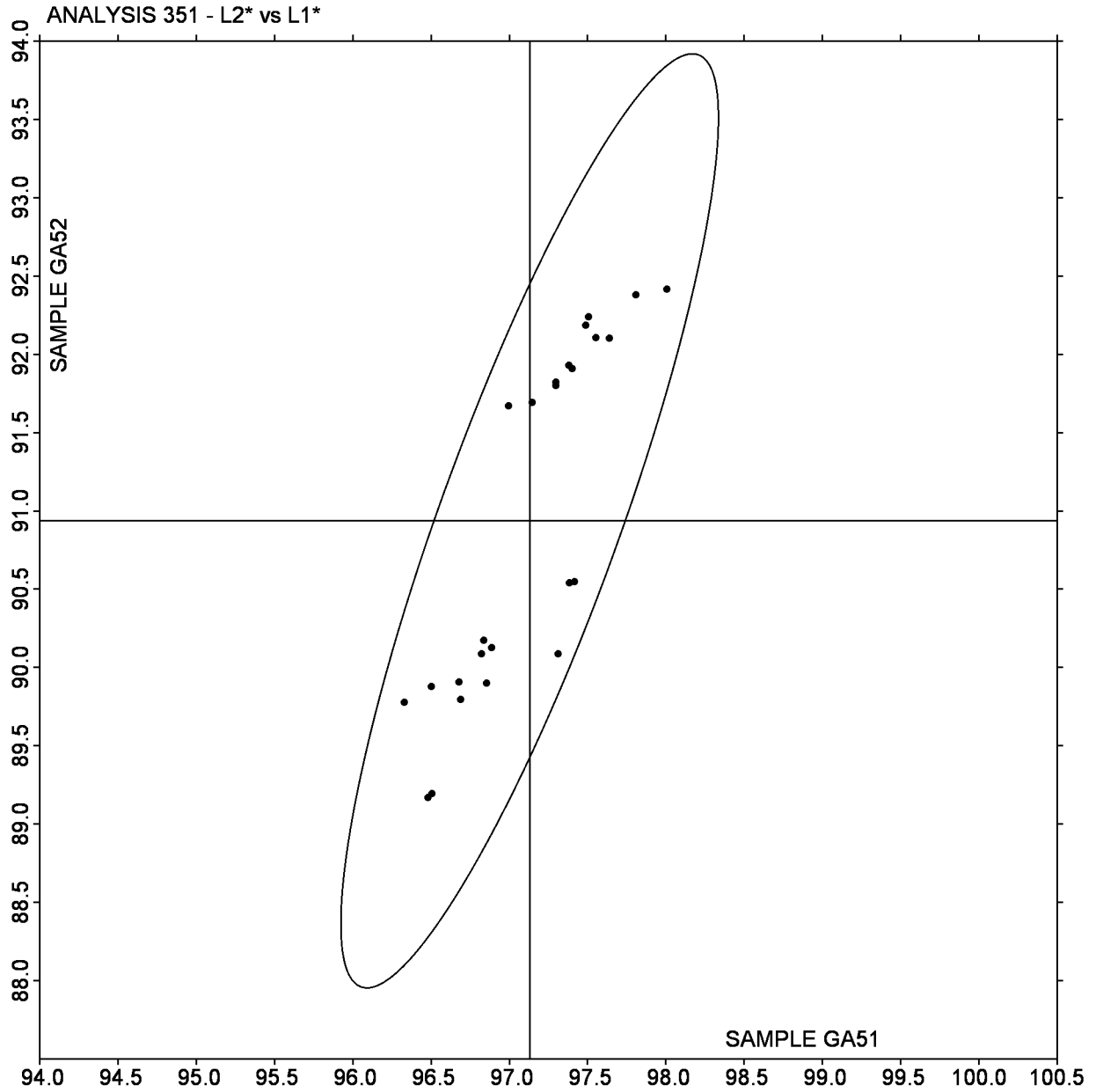
(EF) - Datacolor Elrepho 3000	(EH) - Datacolor Elrepho SF450
(HG) - Hunter ColorQUEST	(HM) - Hunter MiniScan XE Spectrophotometer
(HU) - Hunter UltraScan	(HV) - Hunter Ultrascan XE
(LS) - L & W Elrepho SE 070	(MG) - Macbeth 1500/PLUS - 2025+ Color Eye
(NF) - Minolta CM-3600d Spectrophotometer	(NG) - Minolta CM-3700d Spectrophotometer
(TC) - Technidyne Color Touch Series	(TM) - Technidyne Brightimeter Model Micro S-5
(XA) - X-Rite (model not specified)	(XD) - X-Rite 530 SpectroDensitometer
(XU) - X-Rite 968 Spectrophotometer	(XX) - Instrument make/model not specified by lab

Analysis 351

Color & Color Difference - Near White Papers - D65/10deg

Hunter L,a,b - Illuminant D65 - 10 Degree Observer

Plot of L values GA52 v L values GA51

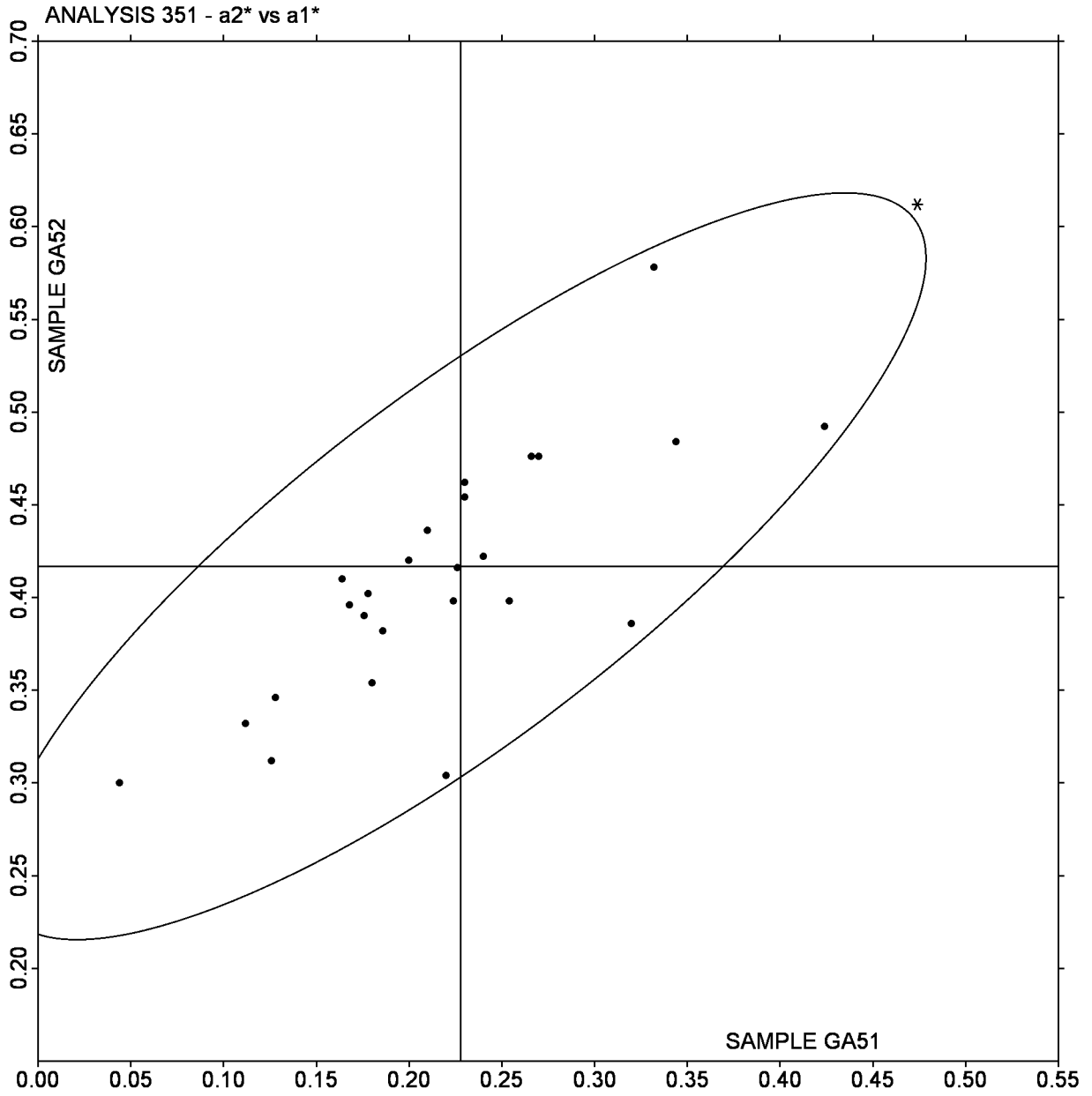


Analysis 351

Color & Color Difference - Near White Papers - D65/10deg

Hunter L,a,b - Illuminant D65 - 10 Degree Observer

Plot of a values GA52 v a values GA51



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

WebCode	Data Flag	Sample GV51			Sample GV52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27Q6WA		3.980	0.085	1.33	4.709	0.068	1.11	LW
27VYX9		3.828	-0.067	-1.05	4.554	-0.087	-1.41	TA
27XKH3		3.948	0.053	0.83	4.711	0.070	1.15	PP
2AGNHL		3.930	0.035	0.55	4.630	-0.011	-0.17	LA
2MQENN		3.972	0.077	1.21	4.692	0.052	0.84	LW
2UJVVE		3.942	0.047	0.73	4.672	0.031	0.51	EM
2YGK7K		3.811	-0.084	-1.32	4.602	-0.038	-0.62	TA
3B4NR3		3.908	0.013	0.20	4.652	0.011	0.19	TA
3PFTKG	X	3.804	-0.091	-1.42	4.589	-0.052	-0.84	TM
3WMAFP	*	3.835	-0.060	-0.95	4.677	0.037	0.60	LW
4LZ486		3.960	0.065	1.02	4.680	0.039	0.64	TM
63AJDE		3.878	-0.017	-0.27	4.602	-0.038	-0.62	LW
6H88PJ		3.825	-0.070	-1.10	4.610	-0.031	-0.50	TM
6KLWLN		3.941	0.046	0.72	4.673	0.032	0.53	TA
6NEXAX		3.830	-0.065	-1.02	4.570	-0.071	-1.15	TM
6UWMBT	X	3.957	0.062	0.96	4.563	-0.078	-1.26	XX
7733U4		3.929	0.034	0.53	4.685	0.045	0.72	LW
7JHTUY		3.844	-0.051	-0.80	4.593	-0.048	-0.77	VM
8CUJTE		3.979	0.084	1.31	4.713	0.072	1.18	PP
8N4777		3.941	0.046	0.72	4.723	0.082	1.34	TM
8NZM6W		3.800	-0.095	-1.49	4.520	-0.121	-1.96	TM
8WHMPK		3.867	-0.028	-0.44	4.573	-0.068	-1.10	EM
8XJCBV		4.042	0.147	2.30	4.769	0.128	2.09	EM
8XQ8BU		3.885	-0.010	-0.16	4.666	0.026	0.42	FR
98GGHA		3.941	0.046	0.72	4.687	0.046	0.76	TA
9LX89H		3.815	-0.081	-1.26	4.513	-0.127	-2.06	TM
AHD34Y		3.944	0.049	0.76	4.690	0.049	0.80	EM
AKVAHZ		3.907	0.012	0.19	4.629	-0.012	-0.19	EM
B6FZ4W		3.961	0.066	1.03	4.675	0.034	0.56	EM
B9UR3C	X	3.740	-0.155	-2.43	4.590	-0.051	-0.82	TM
BEW2VX		3.802	-0.093	-1.46	4.562	-0.079	-1.28	TM
C4GB7T		3.919	0.023	0.37	4.671	0.031	0.50	LW
CRGRE2		3.889	-0.006	-0.10	4.645	0.004	0.07	EM
D63QH9		3.846	-0.049	-0.77	4.654	0.013	0.22	EM
DLVNYN		3.891	-0.004	-0.06	4.605	-0.036	-0.58	LW
DU2NEJ		3.970	0.075	1.17	4.708	0.067	1.10	EM
EZ98FV		3.852	-0.043	-0.67	4.622	-0.019	-0.30	LW
F3627Q		3.931	0.035	0.56	4.677	0.037	0.60	EM
FDP4WY		3.820	-0.075	-1.18	4.641	0.000	0.01	LA
G7Q33Q		3.898	0.003	0.05	4.628	-0.012	-0.20	XX
GLEF3C		3.909	0.014	0.22	4.618	-0.022	-0.36	LW
GMGRTE		3.945	0.050	0.78	4.749	0.108	1.76	EM
GWUTD7		4.018	0.123	1.92	4.736	0.095	1.55	VM

Paper & Paperboard Interlaboratory Testing Program

Analysis 360

Thickness (Caliper), Printing papers

WebCode	Data Flag	Sample GV51			Sample GV52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
GZFHJ		3.891	-0.005	-0.07	4.626	-0.015	-0.24	TM
HGMU99		3.894	-0.001	-0.02	4.674	0.033	0.54	EM
HUQYB2		3.901	0.006	0.09	4.662	0.021	0.35	EM
J9G2AT		3.951	0.056	0.87	4.686	0.045	0.74	LW
JLA7D4		3.780	-0.115	-1.80	4.575	-0.066	-1.06	TM
JN92Q7		3.957	0.062	0.98	4.635	-0.006	-0.10	LW
JX3KJR		3.856	-0.039	-0.61	4.587	-0.054	-0.87	TA
L4ZJZE		3.941	0.046	0.72	4.634	-0.007	-0.11	LW
LF9FUG		3.871	-0.024	-0.38	4.608	-0.033	-0.53	TM
LNPKRN		3.960	0.065	1.02	4.680	0.039	0.64	LW
M7VCWB		3.823	-0.072	-1.13	4.584	-0.056	-0.91	LW
M8BGQ3		3.881	-0.014	-0.21	4.636	-0.005	-0.08	TM
MCNCPW		3.889	-0.006	-0.10	4.582	-0.059	-0.95	EM
MGUMA6		3.913	0.018	0.28	4.648	0.007	0.12	TM
MKE2TT	*	3.776	-0.120	-1.87	4.488	-0.152	-2.47	TM
MP76NR		3.890	-0.005	-0.08	4.580	-0.061	-0.98	TM
MTK3VE	*	3.720	-0.175	-2.74	4.510	-0.131	-2.12	TM
NEF4H2		3.772	-0.123	-1.93	4.539	-0.101	-1.64	TM
Q2XPBC		3.850	-0.045	-0.70	4.626	-0.015	-0.24	LW
Q4QKXL		3.990	0.095	1.48	4.751	0.111	1.80	LW
Q92C4K		3.909	0.014	0.21	4.702	0.061	0.99	LW
QQHUXY		3.957	0.062	0.96	4.677	0.037	0.60	LW
RCX6TA		3.937	0.042	0.66	4.724	0.084	1.36	MT
TG3GRT		3.877	-0.018	-0.28	4.594	-0.047	-0.76	EM
TMRFGM		3.843	-0.052	-0.81	4.547	-0.093	-1.51	TA
VMLZ2R		3.863	-0.032	-0.50	4.670	0.029	0.48	LW
VYDJQX		3.930	0.035	0.55	4.685	0.044	0.72	TM
W98PW4		3.801	-0.094	-1.47	4.573	-0.068	-1.10	LA
WQAXMB		3.944	0.049	0.77	4.650	0.009	0.15	LW
X2J36Q		3.954	0.059	0.93	4.711	0.070	1.14	LW
X384HK		3.936	0.041	0.64	4.700	0.059	0.97	TM
XUGCKU		3.970	0.075	1.17	4.698	0.057	0.93	EM
XWJF42		3.885	-0.010	-0.16	4.631	-0.010	-0.15	EM
YLLW9V		3.889	-0.006	-0.10	4.611	-0.030	-0.48	PP
ZEGYT9		3.800	-0.095	-1.49	4.566	-0.075	-1.21	XX

Sample GV51		Summary Statistics	Sample GV52	
Grand Means	3.8951 mils		4.6405 mils	
SD Btwn Labs	0.0639 mils		0.0616 mils	
Statistics based on 75 of 78 reporting participants				

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

Comments on assigned Data Flags for Test #360

3PFTKG (X) - Data appear to be off by a factor of 10; data converted by CTS (/10).

6UWMBT (X) - Inconsistent in testing between samples.

B9UR3C (X) - Inconsistent in testing between samples.

8N4777 - Data appear to be reported as mils, not micrometers as indicated on datasheet. Unit changed by CTS.

Instrument Code List as Reported by the Labs

(EM) - Emveco

(LA) - L & W Autoline

(MT) - Mitutoyo

(TA) - Thwing-Albert

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

(FR) - Frank Instruments

(LW) - L & W

(PP) - Technidyne Profile/Plus

(TM) - TMI

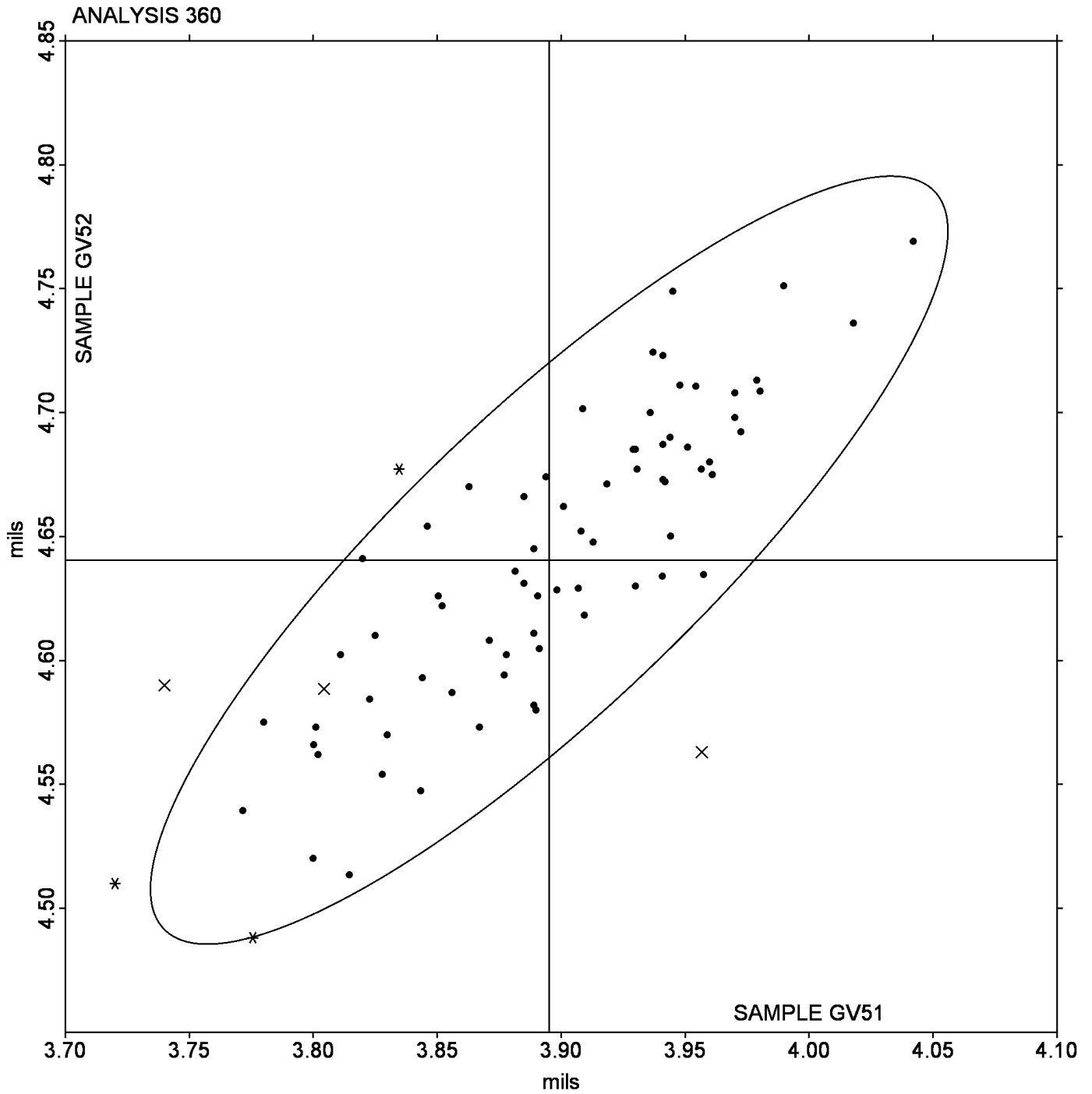
(XX) - Instrument make/model not specified by lab

Analysis 360

Thickness (Caliper), Printing papers

Grand Mean Sample **GV51** = 3.8951 mils

Grand Mean Sample **GV52** = 4.6405 mils



Paper & Paperboard Interlaboratory Testing Program

Analysis 361

Thickness (Caliper), Packaging papers

WebCode	Data Flag	Sample GY51			Sample GY52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2TLUM2		10.93	0.04	0.31	9.298	-0.025	-0.22	EM
6E67M2		10.91	0.02	0.14	9.318	-0.005	-0.04	EM
7K3AM7		10.81	-0.08	-0.63	9.245	-0.078	-0.70	TM
8QUGWY		11.06	0.17	1.34	9.437	0.114	1.03	LW
9L72DC		10.90	0.01	0.06	9.461	0.138	1.25	TM
AKNPDY		10.92	0.03	0.21	9.396	0.073	0.66	TM
BWGKVK		10.99	0.10	0.82	9.339	0.016	0.14	XX
CC27LP		10.92	0.03	0.24	9.300	-0.023	-0.21	TM
CFQ3GF		10.78	-0.11	-0.92	9.287	-0.036	-0.32	TA
CQH7CN		10.76	-0.13	-1.03	9.335	0.012	0.11	TA
DVLNUN		10.73	-0.16	-1.29	9.092	-0.231	-2.09	TM
DXDN66		10.75	-0.14	-1.15	9.175	-0.148	-1.34	EM
EEX293		10.93	0.04	0.32	9.250	-0.073	-0.66	TM
FVXF2F		10.95	0.06	0.51	9.354	0.031	0.28	EM
G7JHBU		10.92	0.03	0.27	9.342	0.019	0.17	TA
KLUHY3		10.69	-0.20	-1.63	9.180	-0.143	-1.29	TM
LHQGU6		10.85	-0.04	-0.32	9.320	-0.003	-0.03	TM
LZHUMA		10.92	0.03	0.22	9.303	-0.020	-0.18	LW
MCG7WP		11.07	0.18	1.46	9.463	0.140	1.27	TM
MZARZ4		11.06	0.17	1.36	9.380	0.057	0.52	EM
NPHGJ3		10.91	0.02	0.16	9.430	0.107	0.97	TA
QMYXBT		10.67	-0.22	-1.79	9.165	-0.158	-1.43	EM
QQ32CB		10.97	0.08	0.65	9.432	0.109	0.99	TA
RU238J		10.90	0.01	0.10	9.305	-0.018	-0.16	XX
VBE9ZZ		10.91	0.02	0.19	9.373	0.050	0.45	EM
VCZ9LA		11.00	0.11	0.85	9.480	0.158	1.42	LW
VEXY72		11.18	0.29	2.29	9.547	0.224	2.03	EM
XJD3DN		10.84	-0.05	-0.38	9.307	-0.016	-0.14	LW
YBNFPQ		10.67	-0.22	-1.75	9.100	-0.223	-2.01	TM
YDRDZJ		10.83	-0.06	-0.52	9.289	-0.034	-0.31	EM
YPEFB7		11.03	0.14	1.10	9.437	0.114	1.03	XX
ZA8LCA		10.74	-0.15	-1.19	9.191	-0.132	-1.19	TM

Sample GY51		Summary Statistics	Sample GY52	
Grand Means	10.890 mils		9.3228 mils	
SD Btwn Labs	0.125 mils		0.1106 mils	
Statistics based on 32 of 32 reporting participants				

Notes for Analysis 361

No Data Flags assigned for this analysis.

Paper & Paperboard Interlaboratory Testing Program

Analysis 361

Thickness (Caliper), Packaging papers

Analysis Notes:

QMYXBT - Data appear to be reported as mils, not inches as indicated on datasheet. Unit changed by CTS.

Instrument Code List as Reported by the Labs

(EM) - Emveco

(LW) - L & W

(TA) - Thwing-Albert

(TM) - TMI

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

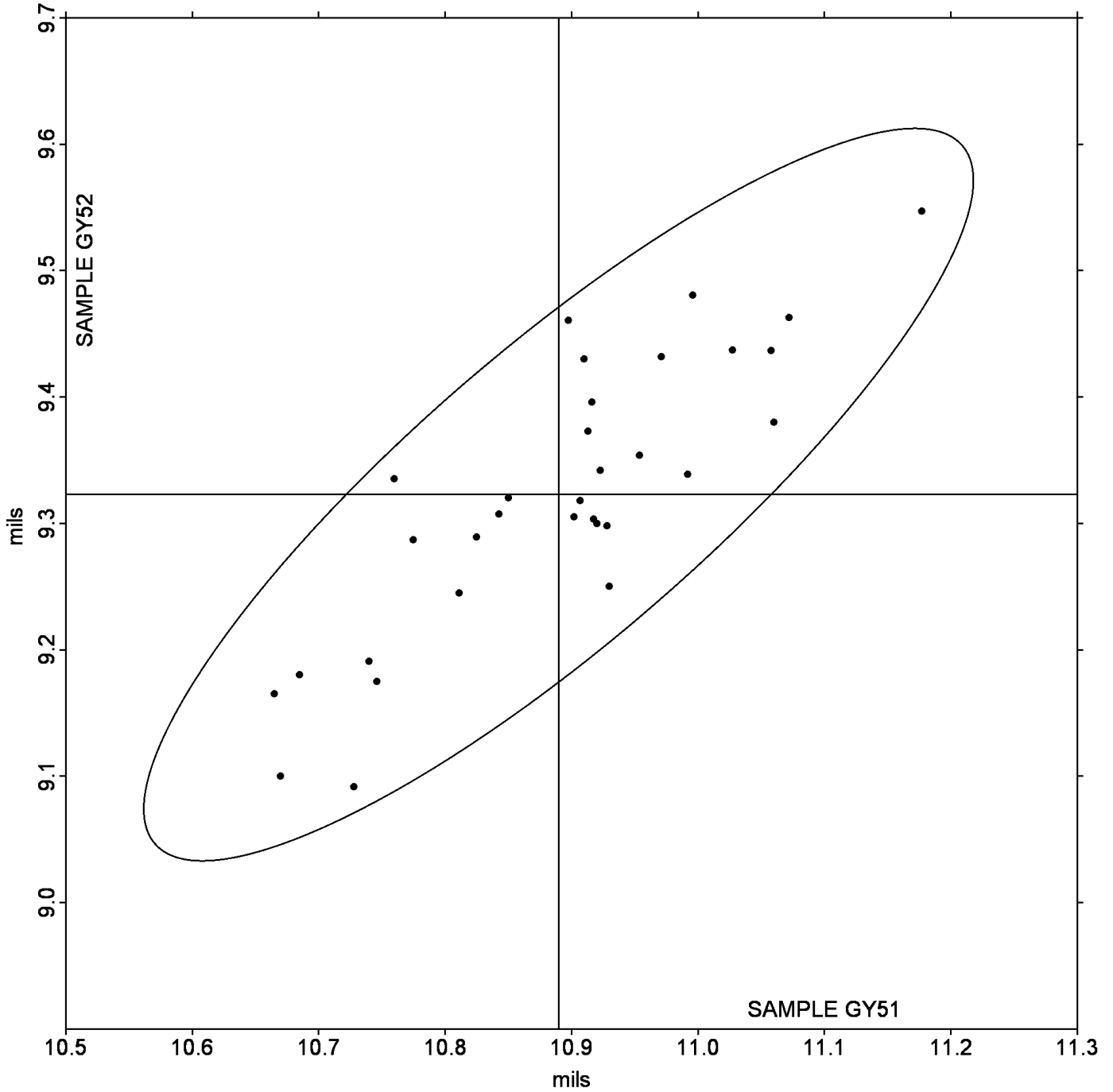
Analysis 361

Thickness (Caliper), Packaging papers

Grand Mean Sample GY51 = 10.890 mils

Grand Mean Sample GY52 = 9.3228 mils

ANALYSIS 361



**Paper & Paperboard Interlaboratory Testing Program
Analysis 364**

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

WebCode	Data Flag	Sample GD51			Sample GD52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3F9HM8		0.5774	0.0109	0.20	0.5602	0.0042	0.11	TM
4KNERY		0.5122	-0.0543	-1.01	0.5720	0.0160	0.44	IR
4MVAHC		0.5762	0.0097	0.18	0.5590	0.0030	0.08	XX
928R9V		0.4676	-0.0989	-1.83	0.4782	-0.0778	-2.14	TM
BA8Y98		0.5388	-0.0277	-0.51	0.5600	0.0040	0.11	TM
EVEHQB		0.6394	0.0729	1.35	0.5776	0.0216	0.59	TM
FTZGYA		0.5230	-0.0435	-0.81	0.5344	-0.0216	-0.60	TM
GAJ38L		0.6580	0.0915	1.70	0.6240	0.0680	1.87	TL
QHCXHL		0.5416	-0.0249	-0.46	0.5110	-0.0450	-1.24	TM
QPDL2		0.5648	-0.0017	-0.03	0.5514	-0.0046	-0.13	TM
R442JK		0.5976	0.0311	0.58	0.5676	0.0116	0.32	TA
UK9XG3		0.6010	0.0345	0.64	0.5770	0.0210	0.58	TM
Y2DCAR	X	0.4356	-0.1309	-2.42	0.3640	-0.1920	-5.28	TN

Summary Statistics			
	Sample GD51		Sample GD52
Grand Means	0.56647 COF		0.55603 COF
SD Btwn Labs	0.05399 COF		0.03634 COF
Statistics based on 12 of 13 reporting participants			

Comments on assigned Data Flags for Test #364

Y2DCAR (X) - Extreme data.

Instrument Code List as Reported by the Labs

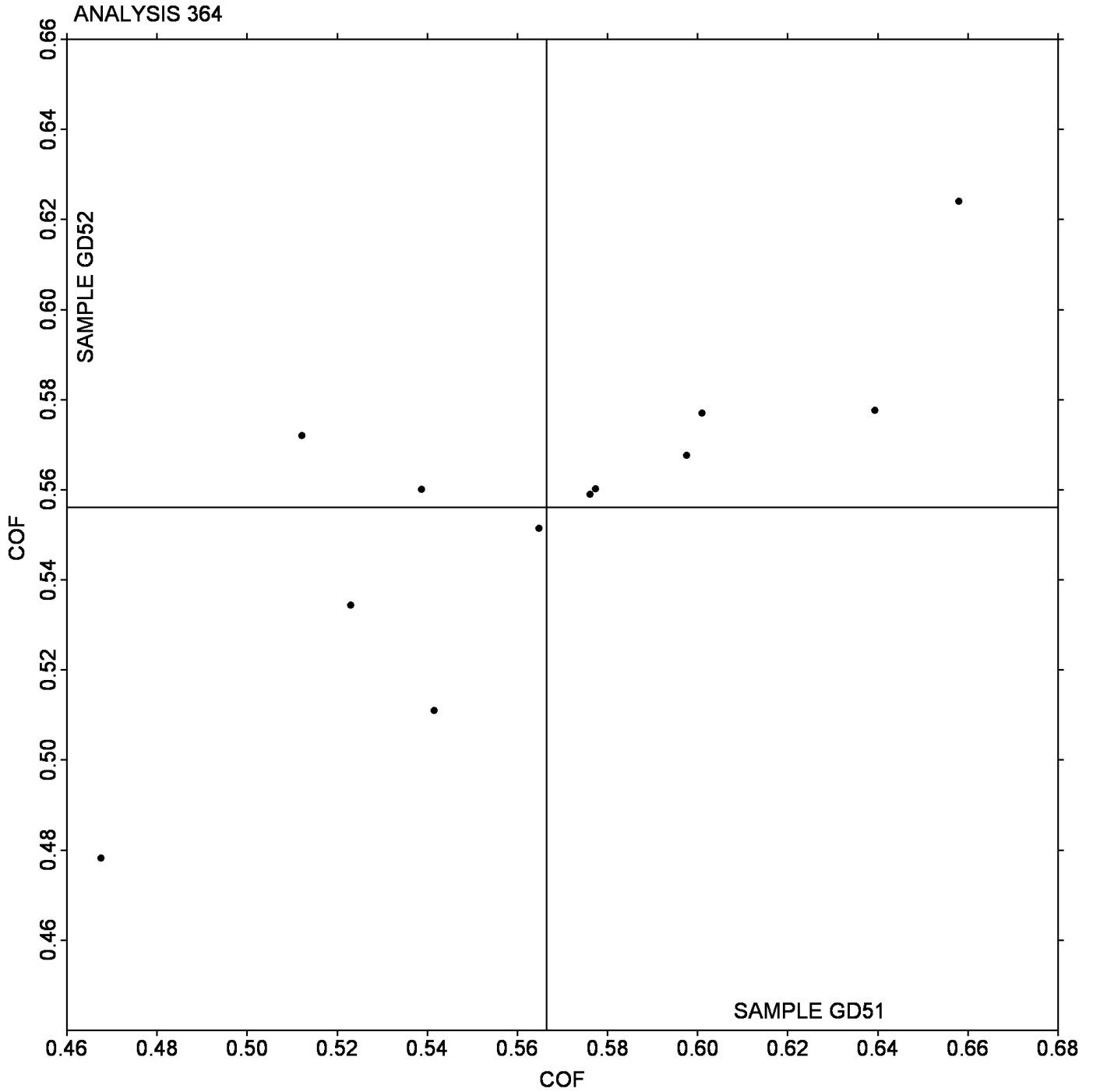
- | | |
|---|---|
| (IR) - IMASS SP-2000 | (TA) - Thwing-Albert Friction Tester |
| (TL) - TMI 32-90 Lab Master/Slip and Friction | (TM) - TMI 32-06 Monitor/Slip and Friction |
| (TN) - TMI 32-07 Monitor/Slip and Friction | (XX) - Instrument make/model not specified by lab |

Analysis 364

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

Grand Mean Sample **GD51** = 0.56647 COF

Grand Mean Sample **GD52** = 0.55603 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 GD51			Sample GD52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2HJWG9		0.5006	-0.0063	-0.09	0.4388	-0.0432	-0.65	TM
2X68PX		0.5842	0.0773	1.16	0.5468	0.0648	0.98	TN
48AYC9		0.4710	-0.0359	-0.54	0.4326	-0.0494	-0.75	TM
BK4V6E		0.4662	-0.0407	-0.61	0.5282	0.0462	0.70	TM
CJMLKZ		0.5150	0.0081	0.12	0.4714	-0.0106	-0.16	TA
JWBPWJ		0.3852	-0.1217	-1.83	0.3740	-0.1080	-1.64	IR
L6WAD2		0.5434	0.0365	0.55	0.5078	0.0258	0.39	TA
PKB24C	X	0.2648	-0.2421	-3.65	0.2566	-0.2254	-3.41	TM
UGAMK3		0.5274	0.0205	0.31	0.4918	0.0098	0.15	TM
VPQJAL		0.4600	-0.0469	-0.71	0.4308	-0.0512	-0.78	TM
ZY2TQW		0.6160	0.1091	1.64	0.5980	0.1160	1.76	TL

Summary Statistics			
	Sample GD51		Sample GD52
Grand Means	0.50690 COF		0.48202 COF
SD Btwn Labs	0.06641 COF		0.06604 COF
Statistics based on 10 of 11 reporting participants			

Comments on assigned Data Flags for Test #365

PKB24C (X) - Systematic error (data for both samples are low).

Instrument Code List as Reported by the Labs

(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

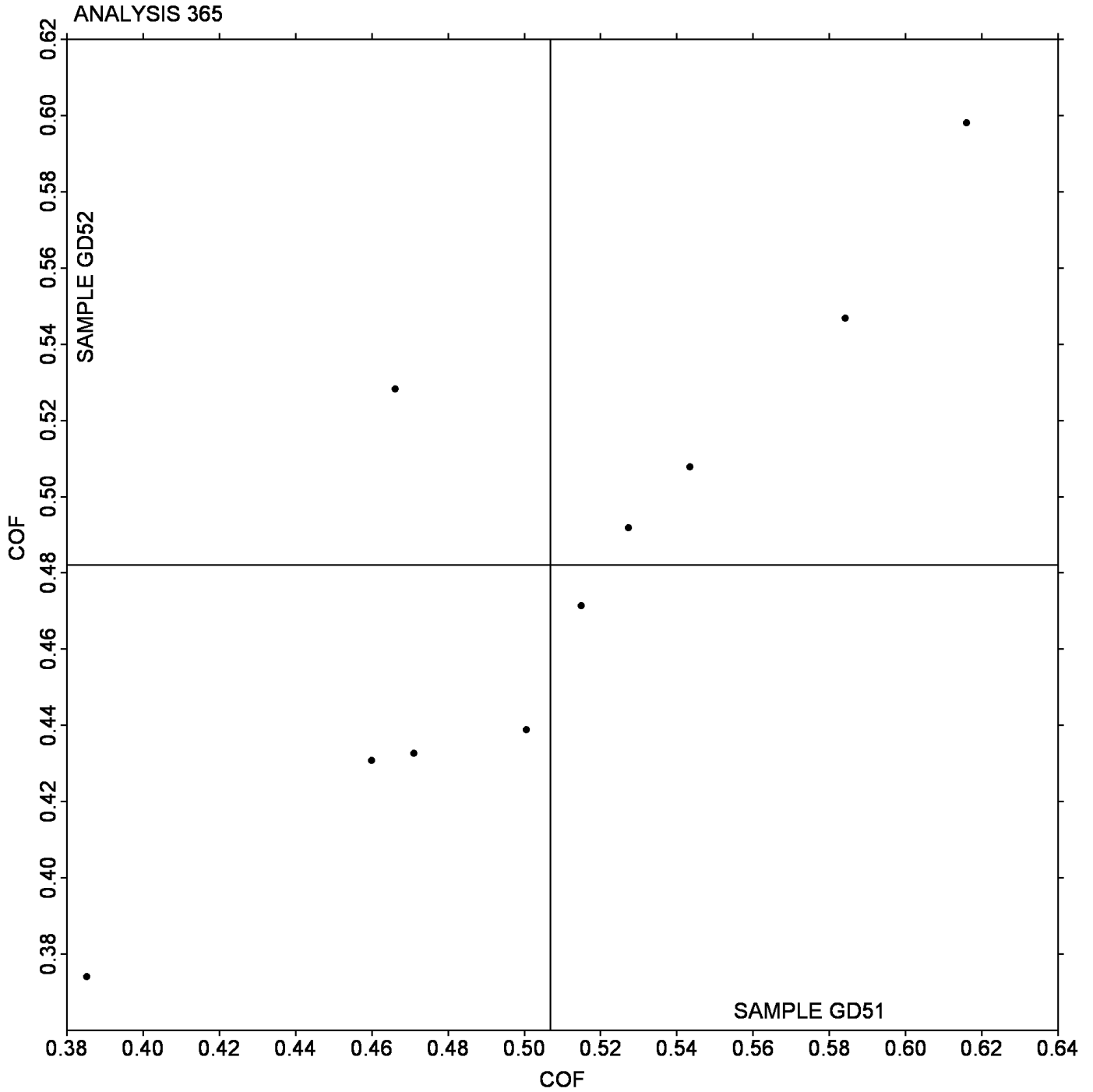
(TN) - TMI 32-07 Monitor/Slip and Friction

Analysis 365

Coefficient of Kinetic Friction - Horizontal Plane Method - Printing Papers

Grand Mean Sample **GD51** = 0.50690 COF

Grand Mean Sample **GD52** = 0.48202 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 GE51			Sample GE52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2GYXPV		21.20	0.03	0.03	42.50	-0.06	-0.01	TM
4NMHXZ		22.50	1.33	1.15	43.57	1.01	0.25	PP
4NYEPZ		21.33	0.16	0.14	42.72	0.16	0.04	VM
686RZE		20.61	-0.56	-0.48	36.19	-6.37	-1.58	LP
69MVFR		20.52	-0.65	-0.56	38.77	-3.79	-0.94	LP
6KBGKG		22.60	1.43	1.24	43.85	1.29	0.32	HG
6NVRTY		23.17	2.00	1.72	47.40	4.84	1.20	LA
76B2XR		22.00	0.83	0.72	47.10	4.54	1.12	WG
76MCFK		21.19	0.02	0.02	42.46	-0.10	-0.02	LP
7KML96		19.70	-1.47	-1.27	38.42	-4.14	-1.02	LP
8668DK		21.74	0.57	0.49	47.76	5.20	1.29	TL
8VDUAE		20.64	-0.53	-0.46	43.06	0.50	0.12	LP
97EWAM	*	22.70	1.53	1.32	37.30	-5.26	-1.30	TL
9GVNVD		20.60	-0.57	-0.49	47.70	5.14	1.27	WG
A86ZJ3		20.82	-0.35	-0.30	42.52	-0.04	-0.01	HG
CKQM2X		22.71	1.54	1.33	46.59	4.03	1.00	TL
CKW927		20.42	-0.75	-0.65	43.20	0.64	0.16	XX
D6PF2A		21.06	-0.11	-0.09	48.37	5.81	1.44	LA
D8HPE6		19.06	-2.11	-1.82	37.62	-4.94	-1.22	LW
EAYJK4		21.33	0.16	0.14	44.02	1.46	0.36	LP
EX4AXV		20.93	-0.24	-0.21	44.09	1.53	0.38	XX
FJYFVK		20.33	-0.84	-0.72	41.20	-1.36	-0.34	LW
FMDYUT		20.80	-0.37	-0.32	48.00	5.44	1.35	LW
GJAAZ4		21.74	0.57	0.49	43.16	0.60	0.15	XX
JURTRM		20.47	-0.70	-0.60	38.00	-4.56	-1.13	LP
KC4248		21.55	0.38	0.33	42.81	0.25	0.06	XX
KVYPGN		21.70	0.53	0.46	38.50	-4.06	-1.00	TN
LKFF2V		21.26	0.09	0.08	50.86	8.30	2.05	HG
MGYY9M		20.43	-0.74	-0.64	39.01	-3.55	-0.88	LW
MPKRZE	*	17.93	-3.24	-2.79	32.11	-10.45	-2.59	TN
P89VKK		21.13	-0.04	-0.03	40.87	-1.69	-0.42	LW
PVfV3V	X	46.53	25.36	21.89	57.33	14.77	3.65	GM
PWP7AY		23.18	2.01	1.74	41.47	-1.09	-0.27	TL
RC362V		21.19	0.02	0.02	38.31	-4.25	-1.05	GS
RTGQZX		20.75	-0.42	-0.36	44.77	2.21	0.55	TM
T7KDLZ		20.00	-1.17	-1.01	39.00	-3.56	-0.88	LW
U7ZRvV		22.18	1.02	0.88	44.22	1.66	0.41	PP
U99Z3W		21.59	0.42	0.36	43.39	0.83	0.21	PP
UQAR2B		23.33	2.16	1.87	44.99	2.43	0.60	HG
V4NGAC		22.60	1.43	1.24	46.83	4.27	1.06	GA
VDMENM		19.20	-1.97	-1.70	35.44	-7.12	-1.76	LP
VJB8MT		18.76	-2.41	-2.08	39.18	-3.38	-0.84	RE
VNF3ZN		21.35	0.18	0.16	41.96	-0.60	-0.15	XX

Paper & Paperboard Interlaboratory Testing Program

Analysis 370

Air Resistance - Gurley Oil Type

WebCode	Data Flag	Sample GE51			Sample GE52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
WDUF8Y		22.38	1.21	1.05	45.70	3.14	0.78	HG
WMWF27		20.84	-0.33	-0.28	49.53	6.97	1.72	HG
XMDFN9		21.40	0.23	0.20	43.30	0.74	0.18	XX
Y688UL		20.80	-0.37	-0.32	39.95	-2.61	-0.65	LW
YZ3BHR	X	11.95	-9.22	-7.96	24.00	-18.56	-4.59	LW

Summary Statistics			
	Sample GE51		Sample GE52
Grand Means	21.168 sec/100 cc		42.560 sec/100 cc
SD Btwn Labs	1.159 sec/100 cc		4.041 sec/100 cc
Statistics based on 46 of 48 reporting participants			

Comments on assigned Data Flags for Test #370

PV3V3V (X) - Extreme data.

YZ3BHR (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
- (LA) - L & W Autoline
- (LW) - L & W Type Gurley Densometer, Oil Flotation
- (RE) - Regmed Gurley Densometer PGH-T
- (TM) - TMI Densometer 58-03
- (VM) - Valmet PaperLab (was Kajaani/Robotest)
- (XX) - Instrument make/model not specified by lab
- (GM) - Gurley #4140
- (HG) - Technidyne - Hagerty Model #1
- (LP) - L & W Densometer, Air Permeance
- (PP) - Technidyne Profile/Plus
- (TL) - Teledyne Gurley Densometer #4110, Oil Flotation
- (TN) - Teledyne Gurley S-P-S Tester #4190
- (WG) - W & LE Gurley Tester

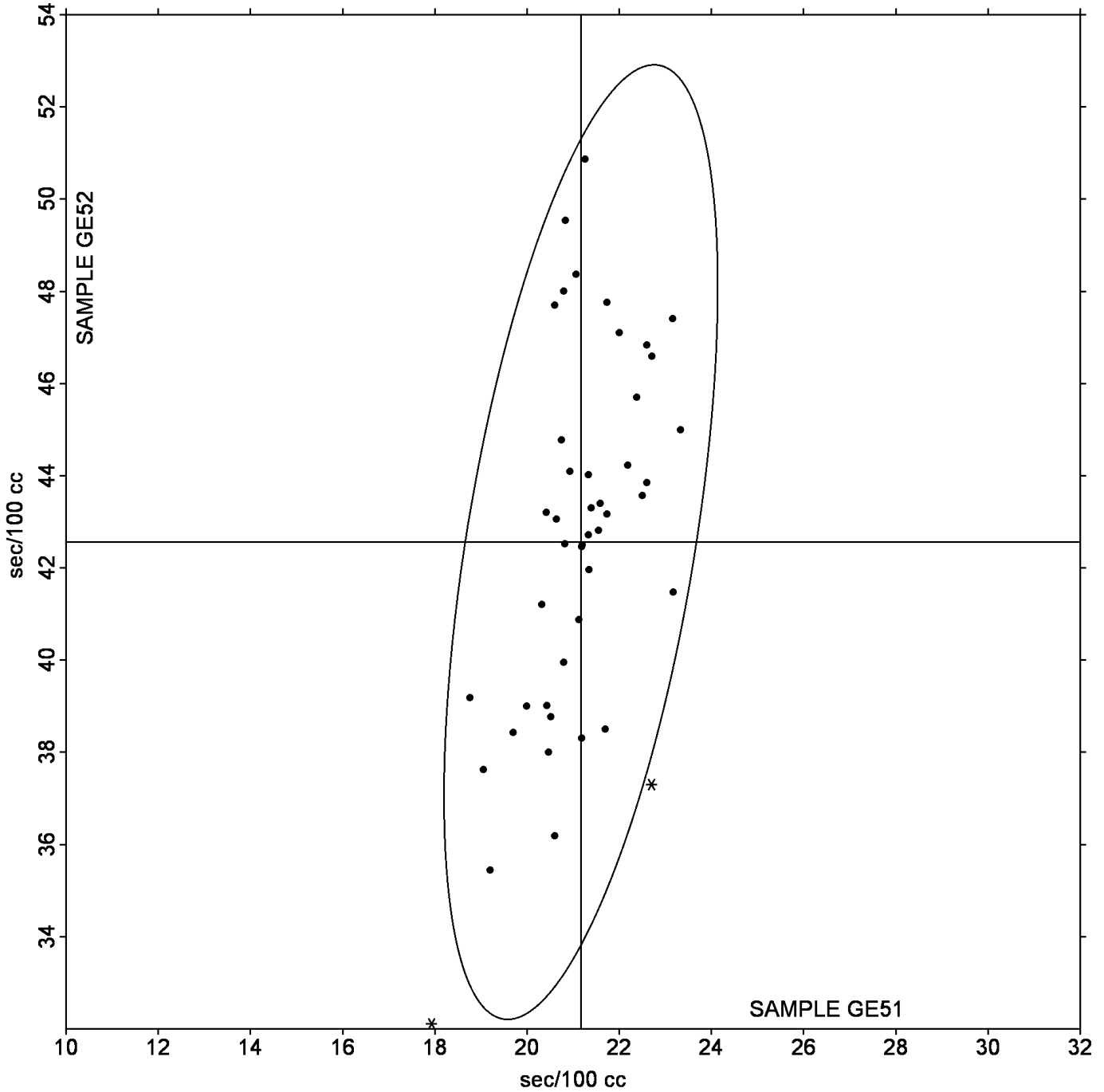
Analysis 370

Air Resistance - Gurley Oil Type

Grand Mean Sample **GE51** = 21.168 sec/100 cc

Grand Mean Sample **GE52** = 42.560 sec/100 cc

ANALYSIS 370



Paper & Paperboard Interlaboratory Testing Program

Analysis 372

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

WebCode	Data Flag	Sample GE51			Sample GE52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6WMWET		128.0	-0.8	-0.10	73.50	-0.53	-0.09	SH
7C2P8B		127.1	-1.7	-0.22	77.32	3.29	0.57	TA
87H6YA		132.7	3.9	0.51	75.80	1.77	0.31	HG
8AV6V2		126.0	-2.8	-0.36	68.20	-5.83	-1.02	TT
8RZCA3		134.0	5.2	0.67	72.64	-1.39	-0.24	XX
8XAMNG		131.4	2.6	0.34	74.40	0.37	0.06	TT
B4YNQC		110.2	-18.6	-2.40	64.75	-9.28	-1.62	LP
BZAUUQ		128.7	-0.1	-0.01	80.00	5.97	1.04	TT
CUJ8E7		125.3	-3.5	-0.45	70.40	-3.63	-0.63	TT
DFLEKF		123.2	-5.6	-0.72	79.80	5.77	1.01	SH
E4M4ND		145.0	16.2	2.10	89.20	15.17	2.65	VM
EV9RG2		119.2	-9.6	-1.24	69.00	-5.03	-0.88	HM
F9RRTL		130.9	2.1	0.27	77.58	3.55	0.62	HG
GEPC7V		123.0	-5.8	-0.75	73.40	-0.63	-0.11	HM
GUR8VU		125.2	-3.6	-0.46	75.10	1.07	0.19	HM
H2K6QW		143.0	14.2	1.84	81.98	7.95	1.39	HM
KL69GY	X	136.8	8.0	1.04	61.10	-12.93	-2.26	SH
N3JN9J		121.6	-7.2	-0.93	74.70	0.67	0.12	LP
NY7VLP		138.4	9.6	1.25	79.81	5.78	1.01	SH
PFBDFV		123.6	-5.2	-0.67	64.84	-9.19	-1.61	PP
TCPPQT		125.8	-3.0	-0.39	67.80	-6.23	-1.09	SH
VJZUCN		129.5	0.7	0.09	68.75	-5.28	-0.92	LP
VQKVR2		133.0	4.2	0.54	74.20	0.17	0.03	SH
XUQ8KJ		124.9	-3.9	-0.50	68.30	-5.73	-1.00	LA
Y9V9UM		141.6	12.8	1.66	77.60	3.57	0.62	VM
YTGWJE		128.4	-0.4	-0.05	71.80	-2.23	-0.39	GA

		Summary Statistics	
	Sample GE51		Sample GE52
Grand Means	128.79 Sheffield Units		74.035 Sheffield Units
SD Btwn Labs	7.73 Sheffield Units		5.726 Sheffield Units
Statistics based on 25 of 26 reporting participants			

KL69GY (X) - Inconsistent in testing between samples.

Analysis Notes:

BZAUUQ - Data appears to be transposed between Analysis 378 (Roughness) and Analysis 372 (Porosity). Data switched by CTS.

GEPC7V - Data appears to be transposed between Analysis 378 (Roughness) and Analysis 372 (Porosity). Data switched by CTS.

**Paper & Paperboard Interlaboratory Testing Program
Analysis 372**

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

Instrument Code List as Reported by the Labs

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

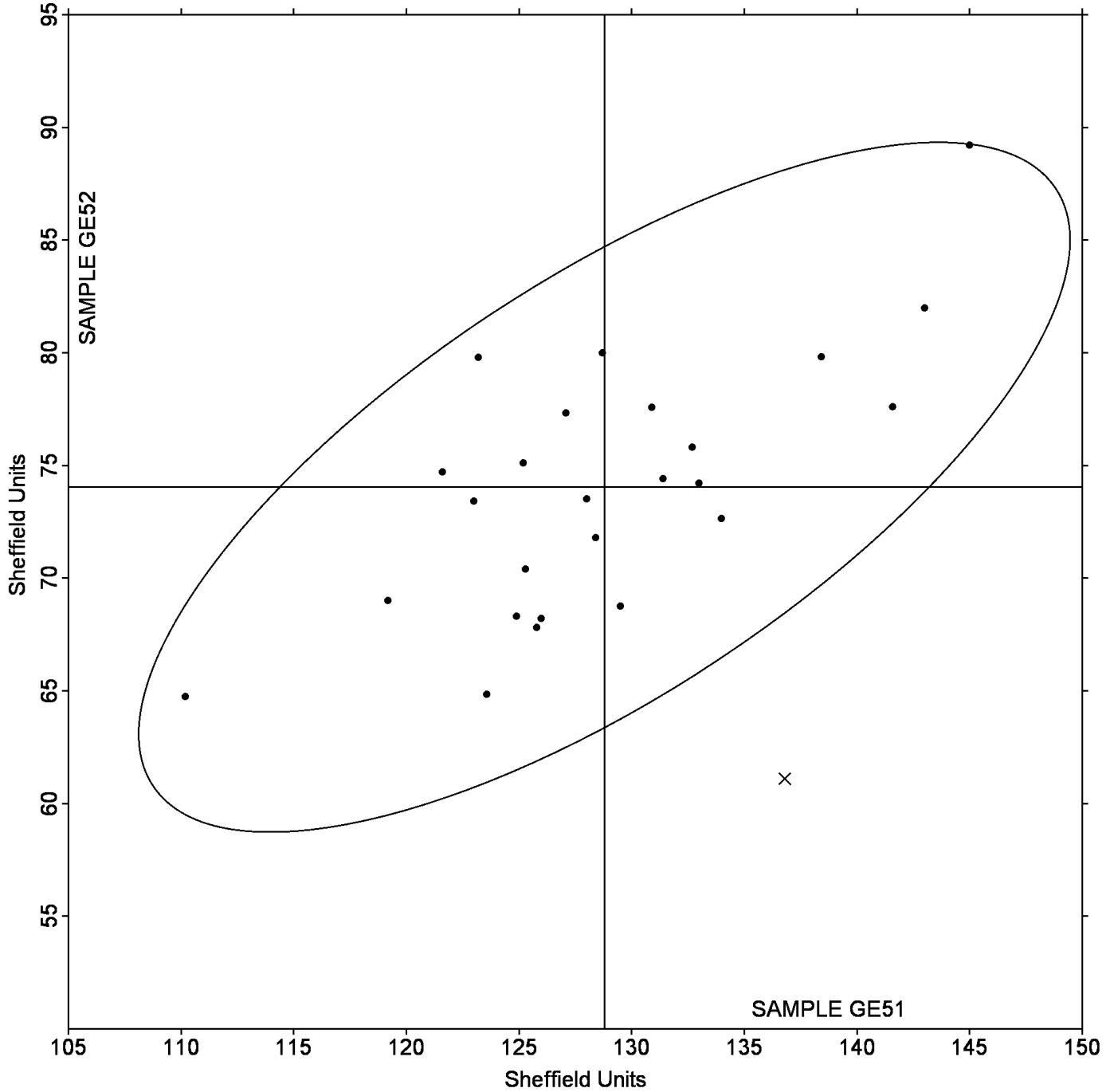
Analysis 372

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

Grand Mean Sample **GE51** = 128.79 Sheffield Units

Grand Mean Sample **GE52** = 74.035 Sheffield Units

ANALYSIS 372



Paper & Paperboard Interlaboratory Testing Program

Analysis 376

Roughness - Print Surf Method - 0.5 to 4.0 Microns

WebCode	Data Flag	Sample GJ51			Sample GJ52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3GLNRF		0.8750	-0.0943	-1.07	0.6020	-0.0914	-0.76
3PPFNJ		0.9760	0.0067	0.08	0.7130	0.0196	0.16
4JC4ZG		0.9520	-0.0173	-0.20	0.7180	0.0246	0.20
4WAFTT		0.8860	-0.0833	-0.94	0.6040	-0.0894	-0.74
6EY7YT		0.9450	-0.0243	-0.27	0.7510	0.0576	0.48
8X72WJ		0.8610	-0.1083	-1.23	0.6220	-0.0714	-0.59
9NBKKK	X	1.2630	0.2937	3.33	0.9170	0.2236	1.86
BHER7F		0.9080	-0.0613	-0.69	0.6420	-0.0514	-0.43
BQJ8R9		0.9540	-0.0153	-0.17	0.6320	-0.0614	-0.51
C3FJUE		0.9530	-0.0163	-0.18	0.6540	-0.0394	-0.33
CCMU6V		0.9330	-0.0363	-0.41	0.6580	-0.0354	-0.29
CYC8VM		1.0490	0.0797	0.90	0.8050	0.1116	0.93
E9NGWJ		1.0220	0.0527	0.60	0.7420	0.0486	0.40
EGWP36		0.9450	-0.0243	-0.27	0.5970	-0.0964	-0.80
ELU7UQ		1.0200	0.0507	0.57	0.6990	0.0056	0.05
F92247	*	1.1760	0.2067	2.34	1.0560	0.3626	3.01
FHUH9W		0.8870	-0.0823	-0.93	0.5620	-0.1314	-1.09
FQRAUV		1.0190	0.0497	0.56	0.6940	0.0006	0.00
G3U8UP		0.8630	-0.1063	-1.20	0.6170	-0.0764	-0.64
G94F37		0.8960	-0.0733	-0.83	0.6240	-0.0694	-0.58
GDNGN6		0.9320	-0.0373	-0.42	0.6580	-0.0354	-0.29
H47MWA		0.9230	-0.0463	-0.52	0.6330	-0.0604	-0.50
JHQMFZ		0.8960	-0.0733	-0.83	0.6480	-0.0454	-0.38
KUZKX9	X	0.7840	-0.1853	-2.10	0.2190	-0.4744	-3.94
MD2HVT		1.0820	0.1127	1.28	0.8140	0.1206	1.00
N9X8X7		0.8550	-0.1143	-1.29	0.5520	-0.1414	-1.18
NWUKLU	*	1.2280	0.2587	2.93	1.0780	0.3846	3.20
P662X2		0.9850	0.0157	0.18	0.6900	-0.0034	-0.03
PDNYPZ		0.9220	-0.0473	-0.54	0.6390	-0.0544	-0.45
PF4KUE		0.9390	-0.0303	-0.34	0.6570	-0.0364	-0.30
QHL3P7		0.8530	-0.1163	-1.32	0.5780	-0.1154	-0.96
QJ6YFW	*	1.0280	0.0587	0.66	0.6130	-0.0804	-0.67
QK67XC		1.1340	0.1647	1.86	0.9260	0.2326	1.93
QYBAKG		1.0200	0.0507	0.57	0.6860	-0.0074	-0.06
RDUJBZ		0.9590	-0.0103	-0.12	0.6450	-0.0484	-0.40
WZ3RAD		0.9180	-0.0513	-0.58	0.6350	-0.0584	-0.49
Y36QYH		1.0110	0.0417	0.47	0.6930	-0.0004	0.00
ZHPL96		1.0645	0.0952	1.08	0.8605	0.1671	1.39
ZMPC9Q		0.9940	0.0247	0.28	0.6590	-0.0344	-0.29

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

	Sample GJ51	Summary Statistics	Sample GJ52
Grand Means	0.96928 Microns		0.69342 Microns
SD Btwn Labs	0.08832 Microns		0.12030 Microns
Statistics based on 37 of 39 reporting participants			

Comments on assigned Data Flags for Test #376

9NBKKK (X) - Inconsistent in testing between samples, data for Sample GJ51 are high.

KUZKX9 (X) - Inconsistent in testing between samples, data for Sample GJ52 are low; and inconsistent within the determinations for Sample GJ52.

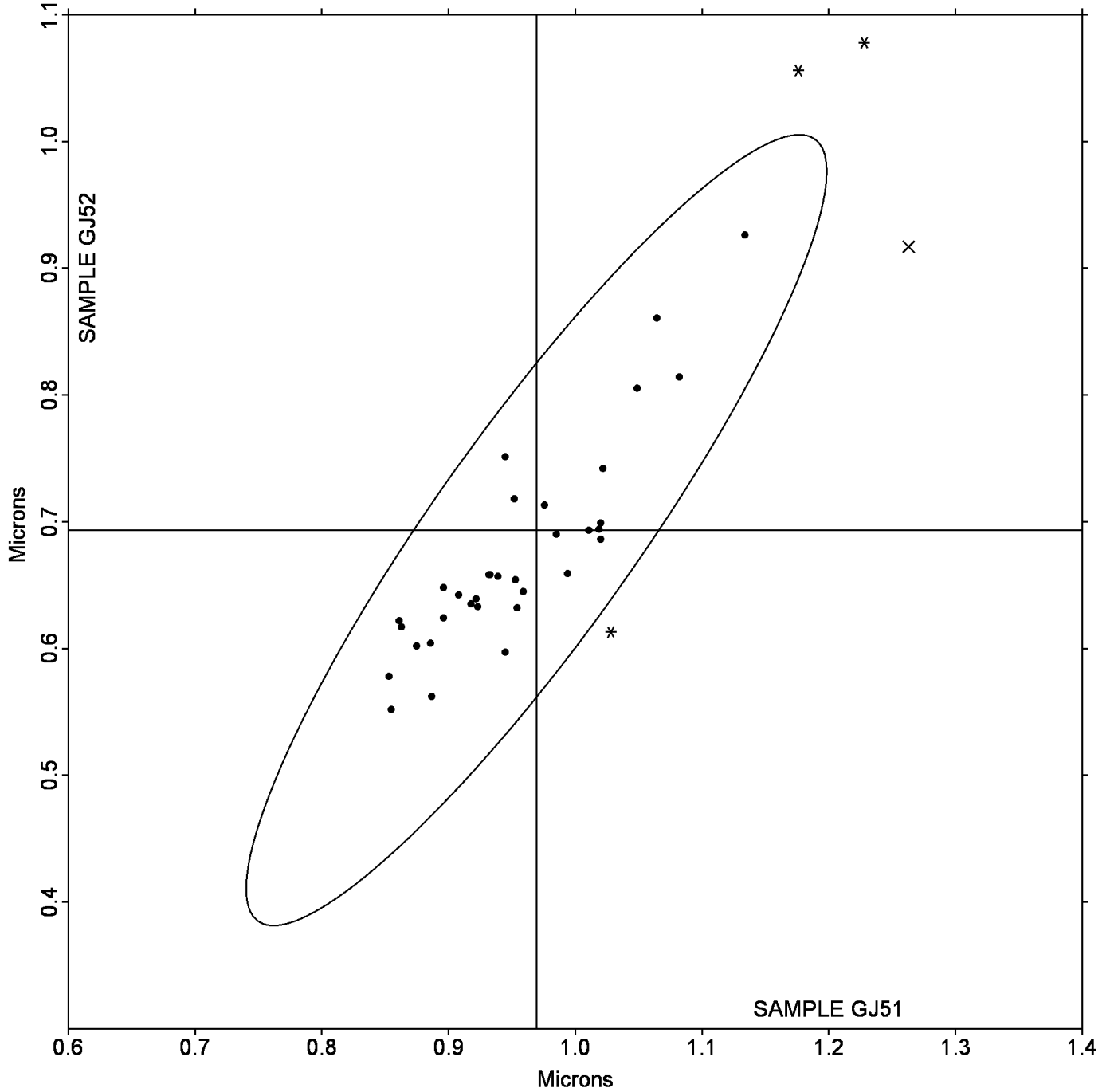
Analysis 376

Roughness - Print Surf Method - 0.5 to 4.0 Microns

Grand Mean Sample GJ51 = 0.96928 Microns

Grand Mean Sample GJ52 = 0.69342 Microns

ANALYSIS 376



Paper & Paperboard Interlaboratory Testing Program

Analysis 377

Roughness - Print Surf Method - 2.5 to 6.0 Microns

WebCode	Data Flag	Sample GK51			Sample GK52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3ERKFF		5.191	-0.370	-1.21	6.082	-0.751	-1.10
AFEWCT		5.610	0.049	0.16	6.861	0.028	0.04
CNFQCH		5.888	0.327	1.07	7.924	1.091	1.59
EMKDXA		5.609	0.048	0.16	6.984	0.151	0.22
FJEPUD	X	4.457	-1.104	-3.61	4.998	-1.835	-2.68
G3UQQ6		4.993	-0.568	-1.86	5.770	-1.063	-1.55
KVTY4Q		5.906	0.345	1.13	7.589	0.756	1.10
MMCX48		5.660	0.099	0.32	7.413	0.580	0.85
P84L6F		5.242	-0.319	-1.05	6.262	-0.571	-0.83
QTZ2BZ		5.511	-0.050	-0.16	7.064	0.231	0.34
TA3KY2		5.479	-0.082	-0.27	6.356	-0.477	-0.70
V32DRK		5.647	0.086	0.28	7.070	0.237	0.35
W2JRN2		6.180	0.619	2.02	7.603	0.770	1.13
XFUGUU		5.779	0.218	0.71	7.250	0.417	0.61
YANFE6		5.196	-0.365	-1.20	5.669	-1.164	-1.70
Z2898Z		5.640	0.079	0.26	7.162	0.329	0.48
ZYK89M		5.451	-0.110	-0.36	6.264	-0.569	-0.83

		Summary Statistics	
	Sample GK51		Sample GK52
Grand Means	5.5614 Microns		6.8327 Microns
SD Btwn Labs	0.3056 Microns		0.6847 Microns
Statistics based on 16 of 17 reporting participants			

Comments on assigned Data Flags for Test #377

FJEPUD (X) - Systematic error (data for both samples are low).

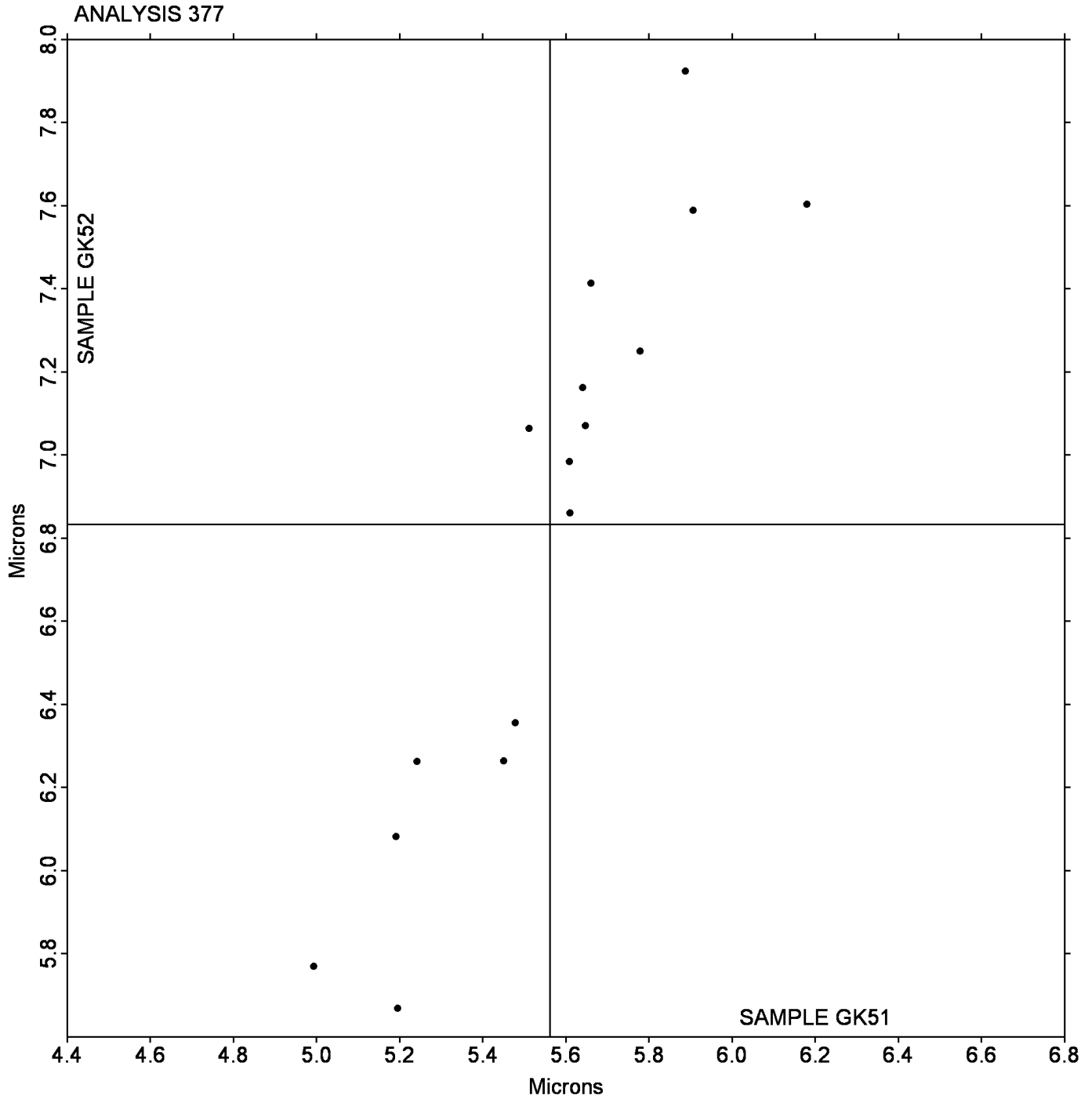
Paper & Paperboard Interlaboratory Testing Program

Analysis 377

Roughness - Print Surf Method - 2.5 to 6.0 Microns

Grand Mean Sample **GK51** = 5.5614 Microns

Grand Mean Sample **GK52** = 6.8327 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 GL51			Sample GL52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2N4WFD		134.0	1.3	0.12	242.1	13.9	0.70	PP
2QUA8Q		125.8	-6.9	-0.64	222.3	-5.8	-0.29	HM
2T8NJQ		127.4	-5.3	-0.49	198.7	-29.4	-1.48	TS
2X4EP3		130.7	-2.0	-0.18	222.5	-5.7	-0.28	PP
3WNF7C		126.0	-6.7	-0.62	236.6	8.5	0.43	HM
4GRT3H		130.1	-2.6	-0.24	227.3	-0.8	-0.04	HM
4N2LYZ	*	159.6	26.9	2.49	266.8	38.7	1.94	LA
6X9779		125.8	-6.9	-0.64	215.4	-12.7	-0.64	HM
7AMREF	X	175.2	42.5	3.93	277.5	49.4	2.48	HM
7XZLH6		128.5	-4.2	-0.39	223.7	-4.4	-0.22	HM
9G88CG		126.8	-5.9	-0.55	209.9	-18.2	-0.92	HM
9JK3DU		137.4	4.7	0.44	229.0	0.9	0.04	LW
A9ZM9D		144.5	11.8	1.09	261.5	33.4	1.68	GL
BYRCC8		139.2	6.5	0.60	253.7	25.6	1.28	TT
DC39C6	*	132.0	-0.7	-0.06	179.7	-48.4	-2.43	GA
DJYRAN		130.0	-2.7	-0.25	207.6	-20.5	-1.03	TT
DKNR38		130.2	-2.5	-0.23	192.1	-36.0	-1.81	SH
DXVEDP	X	152.5	19.8	1.83	195.4	-32.7	-1.64	TS
EH6A2L		153.7	21.0	1.94	221.9	-6.3	-0.31	GA
G6J49N		121.1	-11.6	-1.07	221.2	-6.9	-0.35	PP
G8XFEX		128.6	-4.1	-0.38	234.8	6.7	0.34	HM
GWJUJY		140.7	8.0	0.74	252.5	24.4	1.22	PG
HBBKLR		125.6	-7.1	-0.66	232.8	4.7	0.23	HM
HQMH27		125.5	-7.2	-0.67	224.9	-3.2	-0.16	LW
HRGP8J		120.4	-12.3	-1.14	228.8	0.7	0.03	HM
JBKZ8E		155.0	22.3	2.06	243.5	15.4	0.77	TT
JDKXAD		140.0	7.3	0.68	256.0	27.9	1.40	SH
JPKTVU		119.5	-13.2	-1.22	225.2	-2.9	-0.15	HM
JRH7U9		126.0	-6.7	-0.62	228.0	-0.1	-0.01	GL
JUBX6J	X	142.2	9.5	0.88	139.8	-88.3	-4.44	VM
KX2NRG		134.4	1.7	0.16	243.7	15.6	0.78	TS
LAXUKE		148.0	15.3	1.42	233.2	5.1	0.25	XX
LER6Y6	*	148.5	15.8	1.46	196.5	-31.6	-1.59	GA
LG6E4U		124.0	-8.7	-0.80	228.6	0.5	0.02	HM
LQLZYZ		126.7	-6.0	-0.55	221.9	-6.2	-0.31	HM
LU8VND		140.8	8.1	0.75	200.9	-27.2	-1.37	PP
N89HDR		123.2	-9.5	-0.88	214.0	-14.1	-0.71	HM
NBEF9Y		135.1	2.4	0.22	239.8	11.7	0.59	SH
NGT6RZ		109.5	-23.2	-2.15	197.9	-30.2	-1.52	HM
NNTJEM		120.8	-11.9	-1.10	226.4	-1.7	-0.09	HM
NNTYYU		145.8	13.1	1.21	229.0	0.9	0.04	TT
PFP9WQ		133.4	0.7	0.07	235.8	7.7	0.38	MP
R23JQP	X	5.3	-127.4	-11.78	6.6	-221.6	-11.13	TS

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

WebCode	Data Flag	Sample GL51			Sample GL52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
R68Y9U		134.2	1.5	0.14	226.6	-1.5	-0.08	HM
RDQLXX		126.1	-6.6	-0.61	205.3	-22.8	-1.15	HM
T397MG		132.1	-0.6	-0.05	231.5	3.4	0.17	HM
T3UWVU		127.0	-5.7	-0.53	210.4	-17.7	-0.89	TT
T6CH94		128.6	-4.1	-0.38	214.4	-13.7	-0.69	SH
TP2FMU		141.6	8.9	0.82	272.8	44.7	2.24	HM
TTLNC3		128.2	-4.5	-0.42	217.2	-11.0	-0.55	LA
TV443V		126.1	-6.6	-0.61	205.7	-22.4	-1.13	LW
UUD8MT		152.5	19.8	1.83	245.0	16.9	0.85	TS
UYJT8Q		117.3	-15.4	-1.42	216.8	-11.3	-0.57	SH
VQLXQY		113.2	-19.5	-1.80	209.8	-18.3	-0.92	VM
W6YBEX		125.9	-6.8	-0.63	223.7	-4.4	-0.22	HM
WJXM3N		122.2	-10.5	-0.97	238.5	10.4	0.52	TT
WJYKBW		147.5	14.8	1.37	249.5	21.4	1.07	SH
WMGRNX		142.0	9.3	0.86	240.6	12.5	0.63	SH
WU2XBW		133.0	0.3	0.02	229.0	0.9	0.04	PP
WXH7WB		137.7	5.0	0.46	230.6	2.5	0.12	SH
X86ZEL		123.4	-9.3	-0.86	221.3	-6.8	-0.34	PP
XL4J8B		137.5	4.8	0.44	247.0	18.9	0.95	SH
XMLZHQ		144.5	11.8	1.09	211.0	-17.1	-0.86	SH
YZGH9U		132.6	-0.1	-0.01	216.2	-11.9	-0.60	PP
Z2WB8P		117.3	-15.4	-1.42	222.0	-6.1	-0.31	GA
Z7FA9B		133.0	0.3	0.03	237.6	9.5	0.48	HM
Z9C4A9	*	158.5	25.8	2.39	284.0	55.9	2.81	XX
ZV3HQF		136.2	3.5	0.32	267.6	39.5	1.98	HM

		Summary Statistics			
		Sample GL51		Sample GL52	
Grand Means		132.69	Sheffield	228.13	Sheffield
SD Btwn Labs		10.81	Sheffield	19.91	Sheffield
Statistics based on 64 of 68 reporting participants					

Comments on assigned Data Flags for Test #378

7AMREF (X) - Inconsistent in testing between samples, data for Sample GL51 are high.

DXVEDP (X) - Inconsistent in testing between samples.

JUBX6J (X) - Inconsistent in testing between samples, data for Sample GL52 are low.

R23JQP (X) - Extreme data.

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

7XZLH6 - Data appears to be transposed between Analysis 378 (Roughness) and Analysis 372 (Porosity).
Data switched by CTS.

DJYRAN - Data appears to be transposed between Analysis 378 (Roughness) and Analysis 372 (Porosity).
Data switched by CTS.

R23JQP - Data appear to be Print Surf Smoothness (Analysis 377).

Instrument Code List as Reported by the Labs

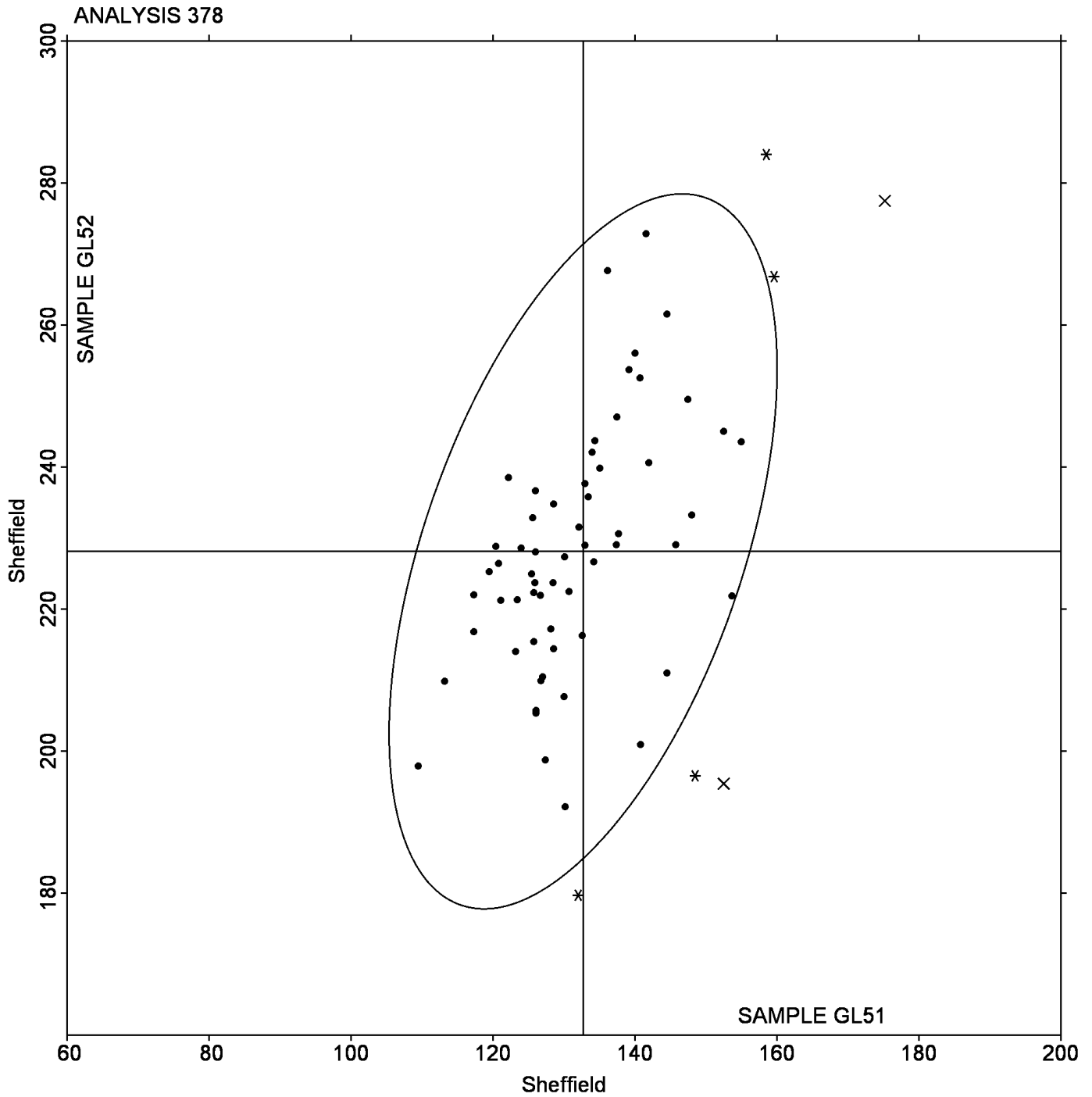
(GA) - Gurley Precision #4340 Automatic Densometer	(GL) - Giddings and Lewis Sheffield
(HM) - Technidyne - Hagerty Model #538	(LA) - L & W Roughness Sheffield - Autoline
(LW) - L & W Roughness Tester	(MP) - Metso Paperlab
(PG) - Precision Gage Smoothcheck	(PP) - Technidyne Profile/Plus
(SH) - Sheffield (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	

Analysis 378

Roughness - Sheffield Type

Grand Mean Sample GL51 = 132.69 Sheffield

Grand Mean Sample GL52 = 228.13 Sheffield



Paper & Paperboard Interlaboratory Testing Program
Analysis 382
Moisture in Paper

WebCode	Data Flag	Sample GM51			Sample GM52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3EVYCN		4.628	-0.162	-0.45	4.616	-0.157	-0.45
6XU9ZB		4.988	0.198	0.55	4.851	0.078	0.22
FKVW42		4.323	-0.467	-1.30	4.342	-0.431	-1.24
FXCWF8		5.040	0.250	0.70	4.940	0.167	0.48
HU7GE3		5.276	0.486	1.35	5.250	0.477	1.37
MT6K82		5.096	0.306	0.85	5.104	0.331	0.95
PU4DNW		4.870	0.080	0.22	4.930	0.157	0.45
VNVGAJ		4.210	-0.580	-1.61	4.170	-0.603	-1.73
YW27RZ		4.675	-0.115	-0.32	4.755	-0.018	-0.05

Summary Statistics			
	Sample GM51		Sample GM52
Grand Means	4.7896	Percent	4.7731
SD Btwn Labs	0.3591	Percent	0.3482
Statistics based on 9 of 9 reporting participants			

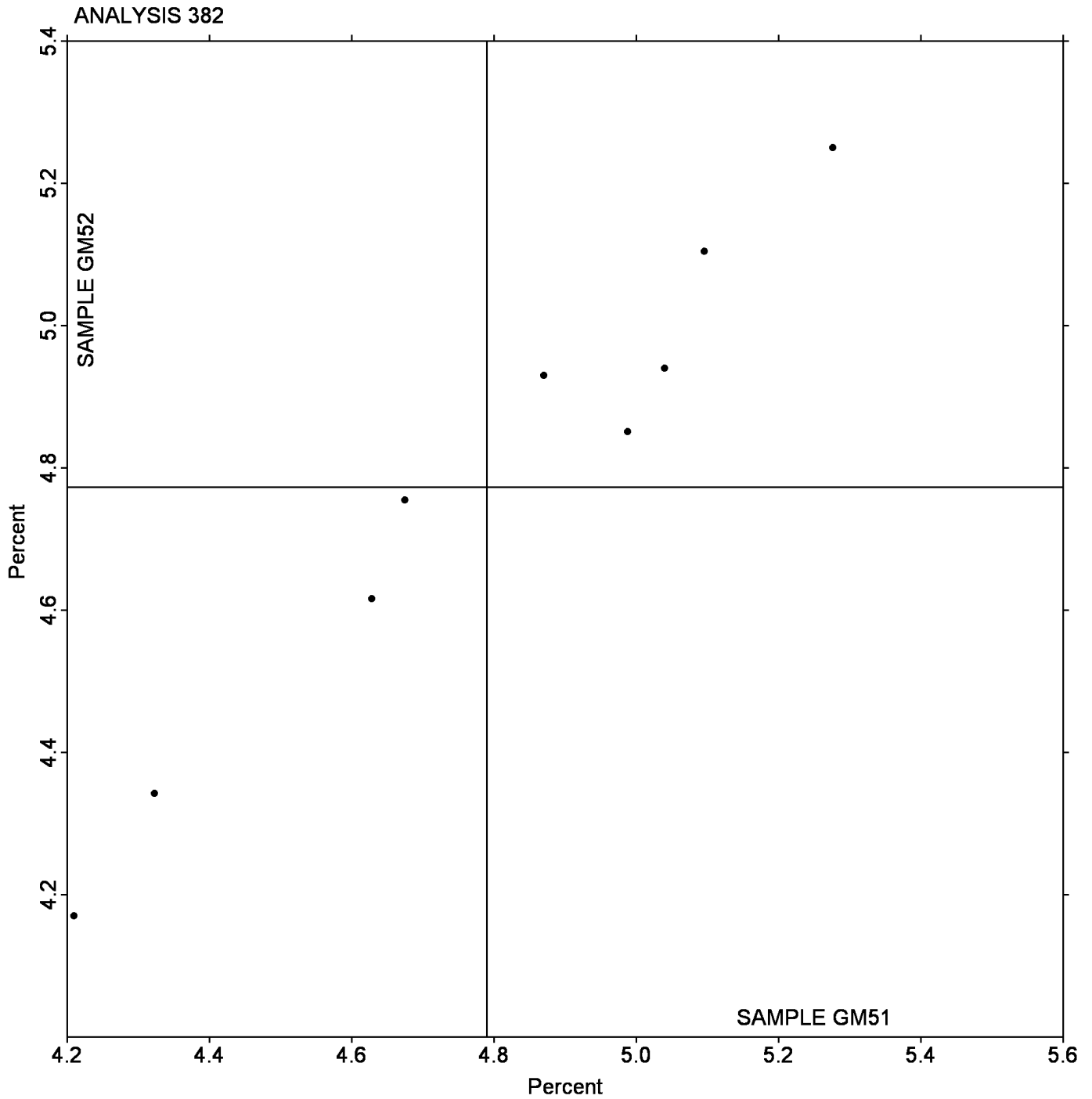
Notes for Analysis 382

No Data Flags assigned for this analysis.

Analysis 382
Moisture in Paper

Grand Mean Sample **GM51** = 4.7896 Percent

Grand Mean Sample **GM52** = 4.7731 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 GN51			Sample GN52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
242CVT		94.01	0.22	0.76	92.78	0.61	1.94
2QQT9R		93.73	-0.06	-0.19	91.95	-0.22	-0.71
62A3XN		93.44	-0.35	-1.17	92.33	0.16	0.52
7MRAPF		93.98	0.19	0.65	92.26	0.09	0.28
7XNZ69		93.64	-0.15	-0.50	92.24	0.07	0.22
9H3B3N		93.93	0.14	0.48	92.06	-0.11	-0.35
A3M3NK		93.89	0.10	0.34	92.26	0.09	0.29
D9AQCF		93.65	-0.13	-0.46	91.91	-0.26	-0.82
DRR8W8		94.01	0.22	0.76	92.29	0.12	0.37
DX3BTZ		93.44	-0.34	-1.16	91.61	-0.56	-1.79
EAUK9Z		93.58	-0.21	-0.70	91.93	-0.24	-0.77
EBU2M6		93.76	-0.03	-0.09	91.93	-0.24	-0.77
EYLN6		93.39	-0.40	-1.35	91.77	-0.40	-1.28
FZXLYK		93.47	-0.32	-1.08	91.59	-0.58	-1.86
GC9UCG		93.81	0.02	0.08	91.78	-0.39	-1.26
GVPLCL		94.19	0.40	1.37	92.37	0.20	0.64
H8ANTQ		93.86	0.07	0.25	92.48	0.31	0.99
HMEGC3	*	94.02	0.23	0.79	92.92	0.75	2.39
JMVKB8		93.69	-0.10	-0.33	91.98	-0.19	-0.61
K4AWB7		93.48	-0.31	-1.04	92.23	0.06	0.19
K6KPZE		93.79	0.00	0.01	92.03	-0.14	-0.45
KMYUBP	X	94.84	1.05	3.56	92.67	0.50	1.60
L6MGGR		93.77	-0.02	-0.06	92.19	0.02	0.06
L6R2Z8		94.21	0.42	1.43	92.41	0.24	0.76
LH3FC9		93.68	-0.11	-0.36	91.80	-0.37	-1.18
M4JAFX		94.33	0.54	1.84	92.28	0.11	0.35
MAWXQF	X	95.67	1.88	6.40	93.58	1.41	4.50
N6UBE4	X	93.24	-0.55	-1.86	92.60	0.43	1.37
ND3X2J		93.43	-0.36	-1.21	91.88	-0.29	-0.93
NPUA9B		93.39	-0.40	-1.36	92.20	0.03	0.10
QBATMV		93.45	-0.34	-1.14	92.08	-0.09	-0.29
QQM62H		93.90	0.11	0.38	92.53	0.36	1.15
R28Q4J		93.29	-0.50	-1.70	91.71	-0.46	-1.48
R369RK		94.46	0.67	2.28	92.62	0.45	1.43
T4ZJT9		93.49	-0.30	-1.01	92.30	0.13	0.41
T6U6MY		93.74	-0.05	-0.16	91.97	-0.20	-0.64
TH2GDD		93.80	0.01	0.04	92.14	-0.03	-0.10
VCREGG		93.74	-0.05	-0.15	92.19	0.02	0.05
VFLX7M		94.02	0.23	0.79	92.21	0.04	0.12
VQ4TMU		93.82	0.03	0.11	92.36	0.19	0.60
W7YDHU		93.68	-0.11	-0.36	91.98	-0.19	-0.61
WHL4XJ		93.42	-0.37	-1.25	92.22	0.05	0.16
WJ83NB		94.34	0.55	1.87	92.26	0.08	0.27

Paper & Paperboard Interlaboratory Testing Program

Analysis 384

Opacity (89% Reflectance Backing) - Fine Papers

WebCode	Data Flag	Sample GN51			Sample GN52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WUHU2B		93.57	-0.22	-0.74	91.82	-0.35	-1.12
X4LNBU		93.83	0.04	0.14	92.44	0.27	0.87
X8ZT2R		93.85	0.06	0.21	92.42	0.25	0.80
XA9QML		93.56	-0.23	-0.77	92.05	-0.12	-0.39
XVGY7J	*	94.56	0.77	2.62	93.10	0.93	2.97
YPCGKN		93.82	0.03	0.11	91.89	-0.28	-0.90
Z66CXE		93.77	-0.02	-0.06	92.25	0.08	0.25
ZPKL7K		94.11	0.32	1.10	92.21	0.04	0.12

Summary Statistics			
	Sample GN51		Sample GN52
Grand Means	93.787 Percent		92.171 Percent
SD Btwn Labs	0.295 Percent		0.313 Percent
Statistics based on 48 of 51 reporting participants			

Comments on assigned Data Flags for Test #384

KMYUBP (X) - Inconsistent in testing between samples, data for Sample GN51 are high; and inconsistent within the determinations for both samples.

MAWXQF (X) - Extreme data.

N6UBE4 (X) - Inconsistent in testing between samples.

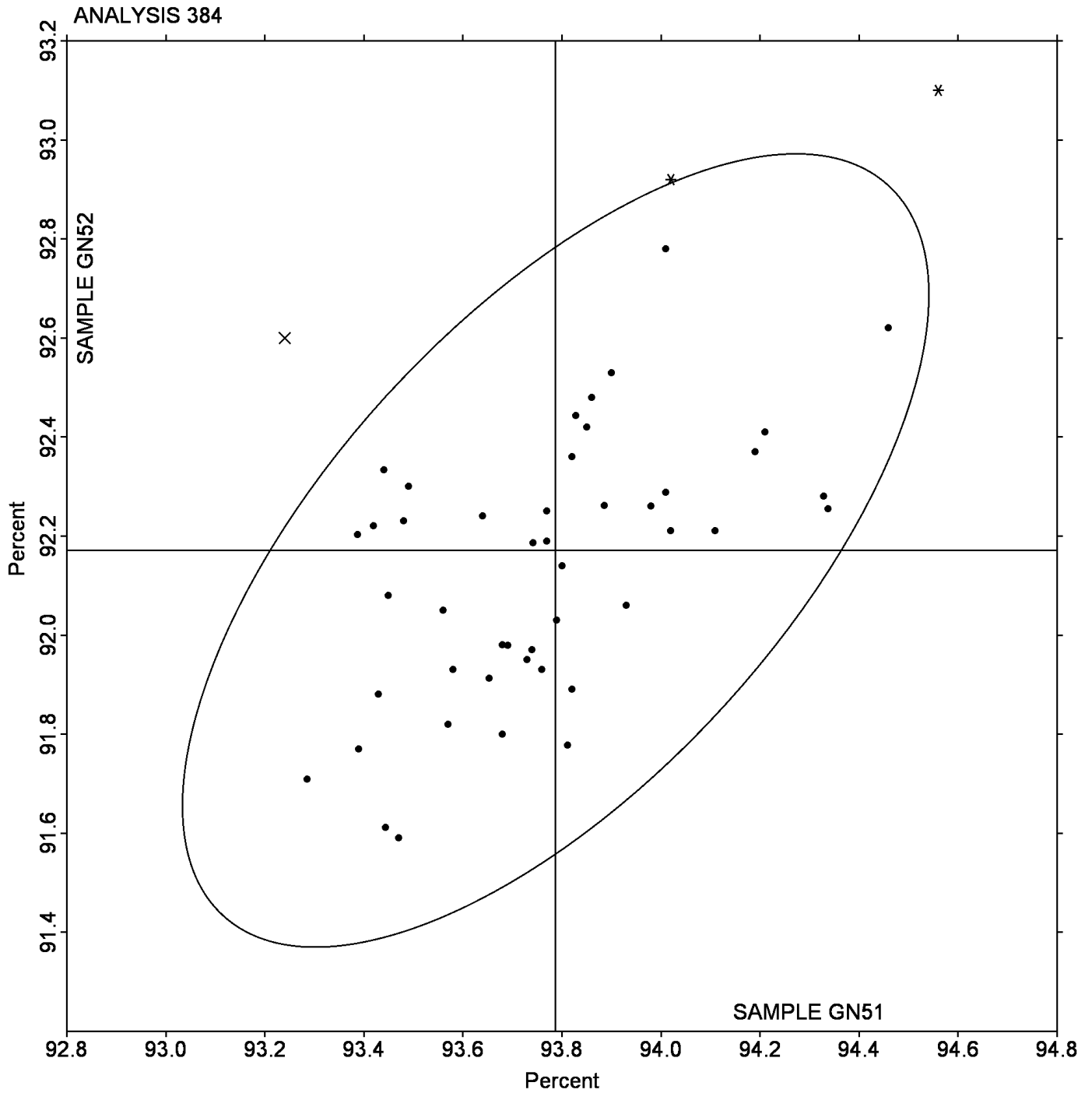
Paper & Paperboard Interlaboratory Testing Program

Analysis 384

Opacity (89% Reflectance Backing) - Fine Papers

Grand Mean Sample **GN51** = 93.787 Percent

Grand Mean Sample **GN52** = 92.171 Percent



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

WebCode	Data Flag	Sample GP51			Sample GP52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
4UQLLD		94.97	0.01	0.14	94.87	0.00	0.01
7ZVZL9		94.96	0.00	0.01	94.97	0.10	0.90
8ZXMV8		95.02	0.06	0.57	94.92	0.05	0.49
9CNKDW		95.08	0.12	1.09	95.00	0.13	1.19
ABJ67G	X	94.05	-0.91	-8.20	94.25	-0.62	-5.70
AMTZ3R		94.91	-0.05	-0.47	94.91	0.04	0.40
APKDU7		95.01	0.05	0.50	94.89	0.02	0.17
B7L4G8		94.97	0.01	0.12	94.80	-0.06	-0.59
DH48B3		95.14	0.19	1.69	94.87	0.01	0.07
DVKVUU		94.77	-0.19	-1.70	94.74	-0.12	-1.13
GTNGZ2		95.11	0.15	1.40	94.80	-0.07	-0.60
H4R69W		94.99	0.04	0.33	94.91	0.04	0.36
H8PV3E		94.90	-0.05	-0.49	95.02	0.16	1.43
HJUN6F		94.89	-0.07	-0.64	94.83	-0.04	-0.37
HK9YE7		94.92	-0.03	-0.31	94.84	-0.03	-0.27
HZ96U2	X	94.35	-0.61	-5.52	94.14	-0.72	-6.65
JBQ464		94.85	-0.11	-0.97	94.73	-0.14	-1.25
KHTGWK		95.02	0.06	0.57	94.87	0.00	0.02
MA33PQ		94.96	0.00	0.04	94.81	-0.06	-0.51
N38EQR		95.03	0.07	0.61	94.97	0.11	0.97
Q98VC3		95.01	0.05	0.50	94.92	0.06	0.51
QZ78BJ		94.91	-0.05	-0.44	94.82	-0.05	-0.46
R8X62Q		95.08	0.12	1.12	95.07	0.21	1.89
TVJC8P		94.99	0.03	0.31	94.95	0.08	0.74
UYJXUE	*	94.66	-0.30	-2.69	94.67	-0.19	-1.78
WH2T4C		95.00	0.04	0.38	94.89	0.02	0.22
XMGHJR		94.70	-0.25	-2.30	94.63	-0.24	-2.22
XVYFEC		95.02	0.06	0.57	94.83	-0.04	-0.34
YXP7N3		94.95	-0.01	-0.05	94.95	0.09	0.78
Z8CR4K		95.02	0.07	0.60	94.96	0.09	0.87
Z9HA3F		95.03	0.07	0.64	94.94	0.07	0.65
ZQPAFQ	X	94.16	-0.80	-7.21	93.85	-1.02	-9.34
ZV6D8Z		94.84	-0.12	-1.10	94.63	-0.23	-2.13

Summary Statistics		
	Sample GP51	Sample GP52
Grand Means	94.957 Percent	94.867 Percent
SD Btwn Labs	0.111 Percent	0.109 Percent
Statistics based on 30 of 33 reporting participants		

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

Comments on assigned Data Flags for Test #386

ABJ67G (X) - Extreme data.

HZ96U2 (X) - Extreme data.

ZQPAFQ (X) - Extreme data.

Paper & Paperboard Interlaboratory Testing Program
Analysis 390
Directional Brightness

WebCode	Data Flag	Sample GR51			Sample GR52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
272C2R		76.59	-0.73	-1.05	76.68	-0.66	-0.82	TS
2R2EGM		76.81	-0.51	-0.74	76.90	-0.44	-0.55	TT
43YTVG		77.64	0.31	0.45	77.58	0.23	0.29	TT
48DYKH		78.56	1.24	1.78	78.75	1.41	1.76	TS
4R48UH		77.80	0.47	0.68	78.05	0.71	0.89	MG
6VW4QH		76.65	-0.67	-0.97	76.73	-0.62	-0.77	TT
6XW3GV		77.74	0.41	0.60	77.86	0.52	0.65	PE
7B6DBH		76.49	-0.84	-1.21	76.43	-0.92	-1.14	TS
AB27U6		77.44	0.12	0.17	77.17	-0.17	-0.21	XX
BTXYF6		78.29	0.96	1.39	78.90	1.56	1.95	TS
CGGAR6		77.13	-0.20	-0.29	76.96	-0.38	-0.47	TT
CHKMME		78.06	0.74	1.06	78.18	0.83	1.04	TT
CQBRQR		78.00	0.68	0.97	78.11	0.77	0.96	TT
D7Q4ZQ		77.29	-0.04	-0.05	76.95	-0.39	-0.49	XX
EJWFAY		76.88	-0.44	-0.64	76.95	-0.39	-0.49	TS
ET9BPQ	*	76.99	-0.34	-0.48	77.70	0.36	0.45	PE
FDEKKM		76.71	-0.61	-0.88	76.74	-0.60	-0.75	TS
FWYVJD		76.68	-0.64	-0.93	76.69	-0.65	-0.82	TS
J3NRFF		77.09	-0.24	-0.34	77.29	-0.05	-0.07	TS
JC2PP4		76.28	-1.05	-1.51	75.73	-1.62	-2.02	XX
KYQKT9		76.54	-0.78	-1.13	76.48	-0.86	-1.07	TS
MGM4Z3		76.66	-0.66	-0.95	76.84	-0.50	-0.63	TT
NLUC6P		77.08	-0.24	-0.35	77.19	-0.15	-0.19	GM
PQL8WN		78.11	0.79	1.14	77.78	0.43	0.54	TA
QHRTYG		76.73	-0.60	-0.86	76.64	-0.70	-0.88	XX
RZWBZP		77.70	0.38	0.54	77.74	0.40	0.50	HG
V9XJWL		76.89	-0.43	-0.62	76.80	-0.55	-0.68	TS
VQK64C		76.91	-0.41	-0.59	76.88	-0.47	-0.58	TA
VURUL9	*	79.00	1.68	2.42	79.49	2.15	2.68	TS
VW37L4		78.77	1.44	2.08	78.81	1.47	1.83	HD
WFYEPY	X	76.44	-0.89	-1.28	77.23	-0.12	-0.14	TT
WH9CCV		77.12	-0.20	-0.29	77.12	-0.22	-0.27	PP
WU6FTU		78.31	0.98	1.42	78.31	0.97	1.20	HD
X96VGP		77.29	-0.04	-0.05	77.03	-0.32	-0.39	TS
Y6LACA		77.83	0.50	0.72	77.94	0.60	0.74	TS
YKUUFC		76.92	-0.40	-0.58	76.81	-0.53	-0.66	TS
YVUHGL		77.00	-0.32	-0.46	76.92	-0.42	-0.52	TS
Z33R92		76.89	-0.44	-0.63	76.54	-0.80	-1.00	TA
ZE7WKG		78.33	1.00	1.44	78.13	0.78	0.98	TT
ZLLJUK		76.84	-0.48	-0.69	76.79	-0.55	-0.69	TS
ZVZBMF		76.93	-0.39	-0.56	77.11	-0.23	-0.29	HD

Paper & Paperboard Interlaboratory Testing Program
Analysis 390
Directional Brightness

	Sample GR51	Summary Statistics	Sample GR52
Grand Means	77.324 Percent		77.341 Percent
SD Btwn Labs	0.694 Percent		0.801 Percent
Statistics based on 40 of 41 reporting participants			

Comments on assigned Data Flags for Test #390

WFYEPY (X) - Inconsistent in testing between samples.

Instrument Code List as Reported by the Labs

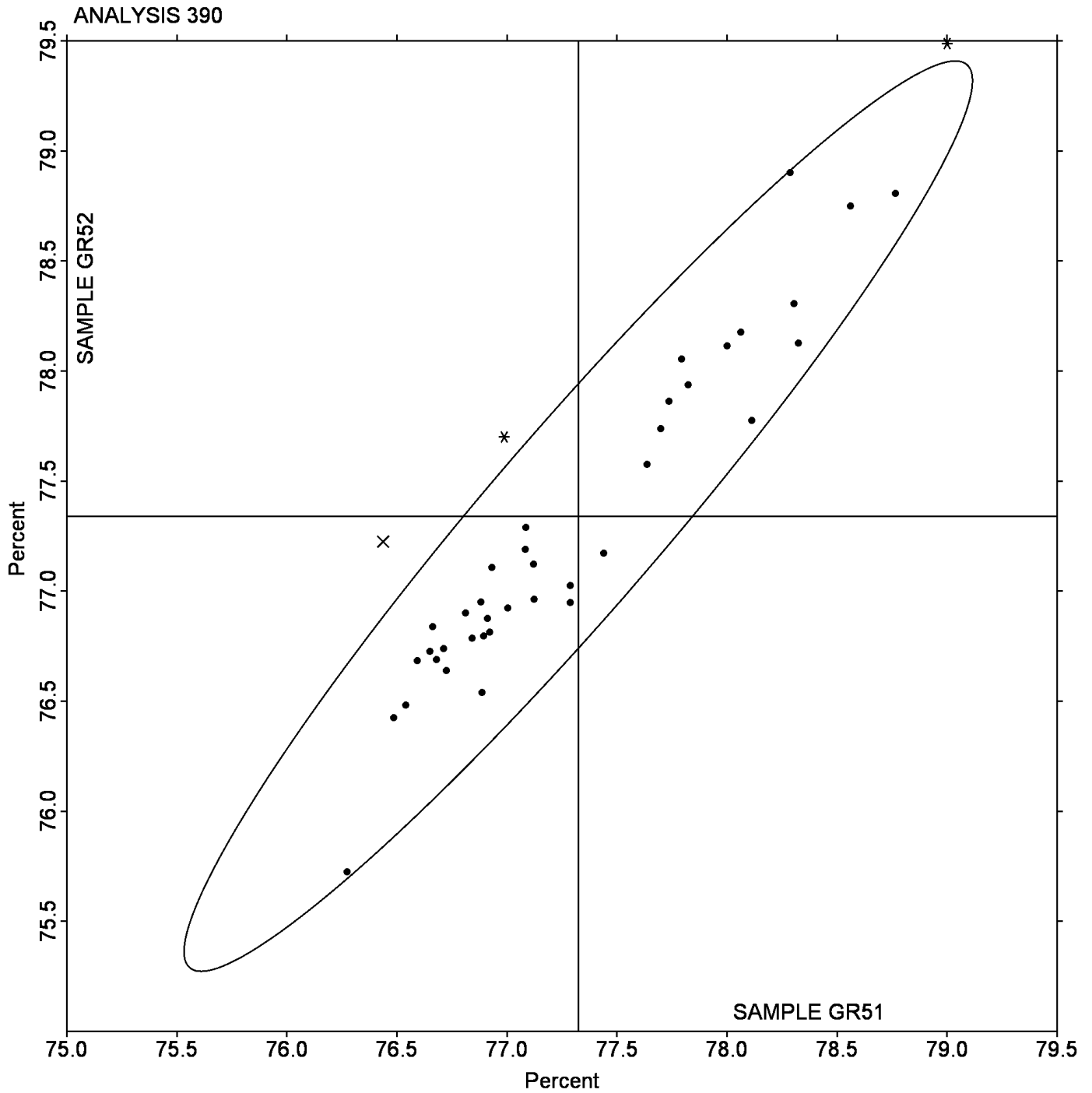
(GM) - Gretag Macbeth Color i5	(HD) - Hunter D25DP - 9000
(HG) - Hunter Labscan / XE	(MG) - Macbeth 1500/PLUS - 2025+ Color Eye
(PE) - Photovolt 577	(PP) - Technidyne Profile/Plus
(TA) - Technidyne, Diano, M.S. S-4	(TS) - Technidyne Brightimeter Micro S-5
(TT) - Technidyne Brightimeter Micro S4-M	(XX) - Instrument make/model not specified by lab

Analysis 390

Directional Brightness

Grand Mean Sample GR51 = 77.324 Percent

Grand Mean Sample GR52 = 77.341 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 391

Directional Brightness of Fluorescent Samples

WebCode	Data Flag	Sample GZ51			Sample GZ52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2RB3G7		82.60	-0.26	-0.38	92.46	-0.23	-0.14	TS
46VRGZ		83.20	0.34	0.49	90.88	-1.82	-1.09	TS
4GEJKP		83.03	0.17	0.25	94.50	1.81	1.08	HV
4UYXTQ	X	77.78	-5.08	-7.38	86.00	-6.69	-4.01	XX
64Z7NA		82.44	-0.42	-0.61	92.32	-0.37	-0.22	TS
AMVZCM		82.58	-0.28	-0.41	92.76	0.07	0.04	TT
CLXD63	*	84.72	1.86	2.70	97.38	4.69	2.80	MK
CY2HTL		82.47	-0.39	-0.57	92.39	-0.30	-0.18	TS
DLWGZJ		83.03	0.17	0.25	93.12	0.43	0.26	PP
F994BQ		82.36	-0.50	-0.72	92.14	-0.56	-0.33	TS
HXCXW7		82.84	-0.02	-0.03	93.08	0.39	0.23	TT
JEEKRJ		82.70	-0.16	-0.23	92.78	0.09	0.05	TT
JG9MZY	X	80.04	-2.82	-4.10	85.16	-7.54	-4.51	TS
JNGETH	X	87.59	4.73	6.88	105.47	12.77	7.65	HV
KP7AJG		82.05	-0.81	-1.18	92.39	-0.31	-0.18	PP
L39XEX		83.04	0.18	0.26	94.02	1.33	0.79	EF
L3AVM7		82.91	0.05	0.07	92.57	-0.13	-0.08	TS
LACV8U		83.23	0.37	0.54	91.12	-1.58	-0.94	MG
NLUYDB		82.84	-0.02	-0.03	92.73	0.04	0.02	TS
PBUZAN		81.86	-1.00	-1.45	89.43	-3.26	-1.95	GM
PHRTK3		82.54	-0.32	-0.46	92.66	-0.04	-0.02	TS
PTTUYF		84.54	1.68	2.44	94.72	2.03	1.21	TS
QHTMF2		82.79	-0.07	-0.10	93.10	0.41	0.24	TS
ZTVM4J		82.28	-0.58	-0.84	90.03	-2.66	-1.59	XX

Summary Statistics			
	Sample GZ51		Sample GZ52
Grand Means	82.859 Percent		92.694 Percent
SD Btwn Labs	0.689 Percent		1.671 Percent
Statistics based on 21 of 24 reporting participants			

Comments on assigned Data Flags for Test #391

4UYXTQ (X) - Extreme data.

JG9MZY (X) - Systematic error (data for both samples are low).

JNGETH (X) - Extreme data.

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

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

Instrument Code List as Reported by the Labs

(EF) - L & W Datacolor Elrepho

(GM) - Gretag Macbeth Color i5

(HV) - Hunter Ultrascan XE

(MG) - Macbeth 1500/Plus - 2025+ Color Eye

(MK) - Macbeth Color-Eye 7000 Spectrophotometer

(PP) - Technidyne Profile/Plus

(TS) - Technidyne Brightimeter Micro S-5

(TT) - Technidyne Brightimeter Micro S4-M

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

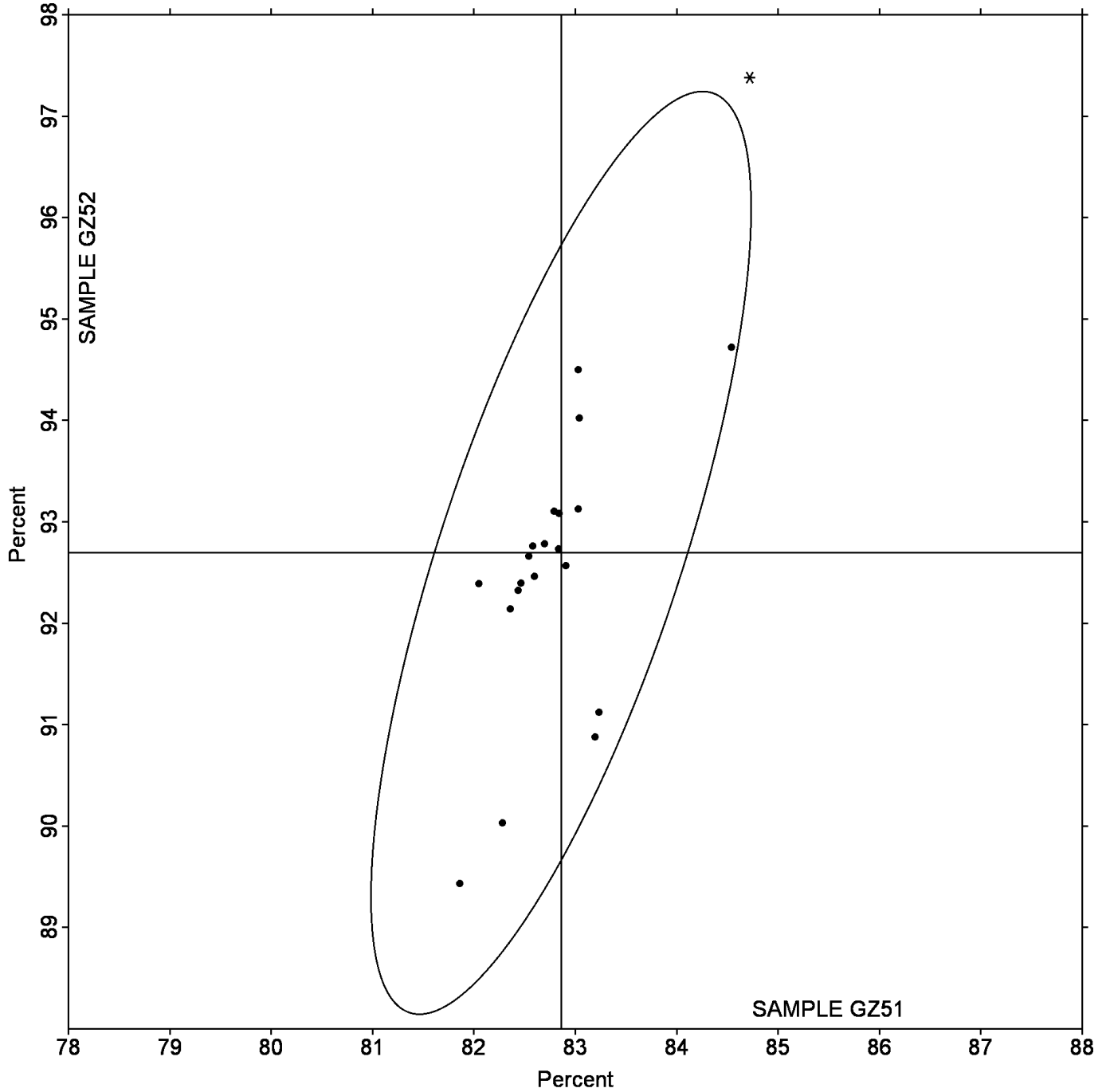
Analysis 391

Directional Brightness of Fluorescent Samples

Grand Mean Sample GZ51 = 82.859 Percent

Grand Mean Sample GZ52 = 92.694 Percent

ANALYSIS 391



Paper & Paperboard Interlaboratory Testing Program

Analysis 392

Diffuse Brightness

WebCode	Data Flag	Sample GR51			Sample GR52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2EDCYV		76.86	-0.07	-0.33	77.04	0.13	0.51	TC
3YE98U		76.72	-0.21	-0.96	76.50	-0.41	-1.62	XX
4Q92JD		77.25	0.32	1.48	77.22	0.31	1.23	TM
68J27F		76.70	-0.23	-1.05	76.95	0.04	0.15	TC
6C7RE4		76.93	0.00	0.01	76.67	-0.24	-0.96	TC
6QF9VY		76.66	-0.27	-1.24	76.33	-0.58	-2.29	LS
8KF8L9		76.78	-0.15	-0.68	76.85	-0.06	-0.22	TC
A76MQM	X	76.12	-0.81	-3.69	76.05	-0.86	-3.39	LT
AYK2L3		76.94	0.01	0.04	77.17	0.26	1.03	TM
BH89XX		76.83	-0.10	-0.46	77.04	0.13	0.51	TM
BW6ARY		77.29	0.36	1.65	76.85	-0.06	-0.23	TL
BXN3Q2		77.13	0.21	0.94	77.01	0.10	0.40	TM
CJFPNG		77.17	0.24	1.12	77.12	0.21	0.83	TM
CKZNFR		76.99	0.07	0.30	77.08	0.17	0.69	TM
CMQ3TB		76.88	-0.04	-0.20	76.68	-0.23	-0.91	TC
E24DR3		77.16	0.24	1.08	77.26	0.35	1.38	TM
ENFB9B		76.80	-0.13	-0.57	77.05	0.15	0.57	EE
FHCHZZ		76.78	-0.15	-0.68	76.69	-0.22	-0.85	LS
HRL7JN		76.82	-0.11	-0.48	76.99	0.09	0.34	XX
KEDJMH		76.81	-0.12	-0.54	76.61	-0.30	-1.17	LA
LBXVU4		76.64	-0.29	-1.32	76.49	-0.42	-1.66	EF
LZEPXU		76.70	-0.23	-1.06	76.96	0.05	0.21	TM
M8FFW4		76.80	-0.13	-0.57	76.70	-0.21	-0.83	LS
M8KLQK		77.10	0.18	0.80	76.78	-0.13	-0.50	XX
NDYHMX		76.99	0.06	0.28	76.97	0.07	0.26	TC
P4AZWW		76.91	-0.01	-0.07	76.96	0.05	0.21	TC
P7ETNA		77.03	0.10	0.46	76.90	-0.01	-0.04	TC
PBJJP4		77.02	0.09	0.42	76.76	-0.14	-0.57	EG
PH2N7N		76.82	-0.10	-0.48	77.04	0.13	0.50	TC
PJQD9B		76.80	-0.13	-0.60	77.04	0.13	0.52	FR
QUJFUQ		76.64	-0.29	-1.32	76.64	-0.27	-1.07	TC
QY9KBD		77.19	0.26	1.20	76.99	0.08	0.30	TC
TQF66U		77.14	0.21	0.96	76.96	0.05	0.21	TM
U4YRTD		77.13	0.20	0.93	77.14	0.23	0.91	TC
UHTKV7		77.16	0.24	1.08	77.09	0.18	0.71	TC
UQM3GN		77.38	0.45	2.06	77.37	0.46	1.80	LA
UU6NHN		77.16	0.23	1.06	76.90	-0.01	-0.05	TC
VE9NBN		76.61	-0.31	-1.44	76.41	-0.50	-1.95	LA
VGLUR4		77.02	0.09	0.43	77.18	0.27	1.06	EF
VH7AXH		77.06	0.14	0.62	77.17	0.26	1.04	TM
WA8NAB		76.80	-0.13	-0.58	76.58	-0.33	-1.30	TC
Y6X2U6		77.01	0.08	0.37	77.27	0.37	1.44	TC
YFWYDX		76.75	-0.18	-0.83	76.81	-0.10	-0.39	TC

Paper & Paperboard Interlaboratory Testing Program
Analysis 392
Diffuse Brightness

WebCode	Data Flag	Sample GR51			Sample GR52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
YNKVY8		77.14	0.21	0.98	77.23	0.32	1.28	TC
ZEDCKG	*	76.31	-0.61	-2.81	76.53	-0.38	-1.51	LS

		Summary Statistics	
	Sample GR51		Sample GR52
Grand Means	76.927 Percent		76.908 Percent
SD Btwn Labs	0.219 Percent		0.254 Percent
Statistics based on 44 of 45 reporting participants			

Comments on assigned Data Flags for Test #392

A76MQM (X) - Systematic error (data for both samples are low).

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

(LT) - L & W Elrepho SE 071

(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 394
Fluorescent Component of Directional Brightness**

WebCode	Data Flag	Sample GZ51			Sample GZ52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2NDGRN		1.880	0.035	0.13	7.000	0.165	0.29	TT
3JHDTV		1.716	-0.129	-0.47	6.366	-0.469	-0.82	TS
3KKPMQ	X	2.568	0.723	2.63	9.396	2.561	4.50	HV
4LNV8Q		1.400	-0.445	-1.62	5.440	-1.395	-2.45	XX
6YP96V	X	5.412	3.567	12.97	18.792	11.957	21.01	HV
76PULV		1.970	0.125	0.46	7.052	0.217	0.38	PP
9FE6VT		1.720	-0.125	-0.45	6.406	-0.429	-0.75	TS
AVDQA8		1.496	-0.349	-1.27	6.588	-0.247	-0.43	TS
BY43BQ		1.740	-0.105	-0.38	6.482	-0.353	-0.62	TS
E94AH9		2.020	0.175	0.64	7.160	0.325	0.57	TT
HRMZZ9		1.854	0.009	0.03	6.802	-0.033	-0.06	TS
K3ERKY	X	83.040	81.195	295.22	94.120	87.285	153.37	EF
K3U8R7		1.956	0.111	0.41	6.868	0.033	0.06	TS
LPLNRQ		2.278	0.433	1.58	8.064	1.229	2.16	GM
LVBV6C		1.632	-0.213	-0.77	7.282	0.447	0.79	TS
PFKEUN	*	2.540	0.695	2.53	7.416	0.581	1.02	TS
QCF73J		1.646	-0.199	-0.72	6.378	-0.457	-0.80	TS
W3GX8G	X	2.800	0.955	3.47	9.700	2.865	5.03	MK
XXFQ7Y		2.066	0.221	0.81	7.162	0.327	0.58	PP
Y7TKV7		1.660	-0.185	-0.67	7.190	0.355	0.62	TS
YMDF68		1.920	0.075	0.27	7.040	0.205	0.36	TT
ZLUB8L		1.708	-0.137	-0.50	6.328	-0.507	-0.89	TS

Summary Statistics			
	Sample GZ51		Sample GZ52
Grand Means	1.8446 Percent		6.8347 Percent
SD Btw Labs	0.2750 Percent		0.5691 Percent
Statistics based on 18 of 22 reporting participants			

Comments on assigned Data Flags for Test #394

3KKPMQ (X) - Systematic error (data for both samples are high).

6YP96V (X) - Extreme data.

K3ERKY (X) - Extreme data.

W3GX8G (X) - Extreme data.

K3ERKY - Data appear to be reported as brightness, not fluorescent component.

PFKEUN - One determination removed from the Lab Mean of Sample GZ51 per Grubb's Test at 1% risk (TAPPI 1205).

YMDF68 - Data appears to be transposed between Analysis 394 (Fluorescent Component) and Analysis 391 (Directional Brightness). Data switched by CTS.

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

Instrument Code List as Reported by the Labs

(EF) - Datacolor Elrepho 3000

(GM) - Gretag Macbeth Color i5

(HV) - Hunter Ultrascan XE

(MK) - Macbeth Color-Eye 7000 Spectrophotometer

(PP) - Technidyne Profile/Plus

(TS) - Technidyne Brightimeter Micro S-5

(TT) - Technidyne Brightimeter Micro S4-M

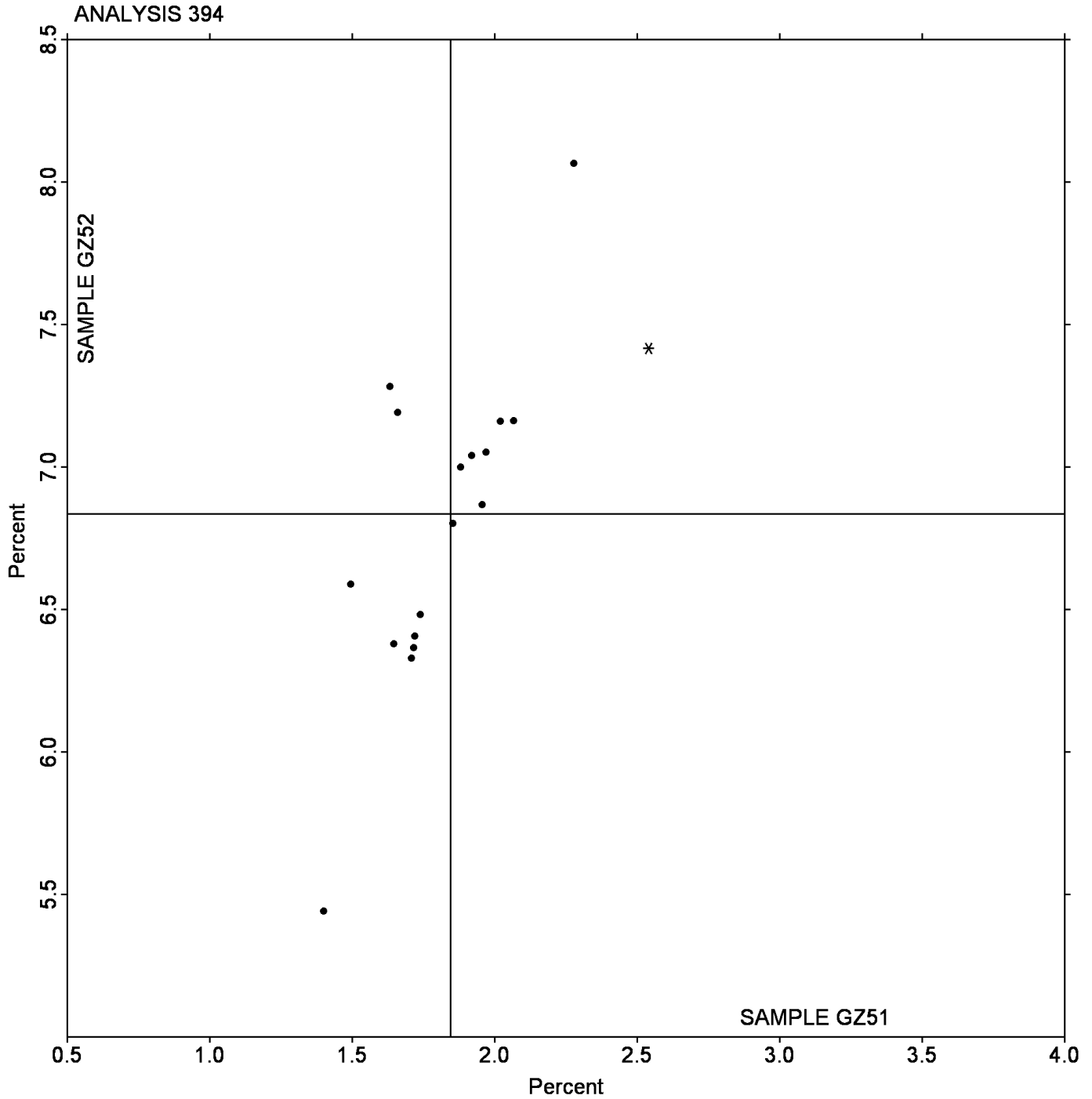
(XX) - Instrument make/model not specified by lab

Analysis 394

Fluorescent Component of Directional Brightness

Grand Mean Sample GZ51 = 1.8446 Percent

Grand Mean Sample GZ52 = 6.8347 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 GT51			Sample GT52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4W3TX2		70.96	2.29	1.98	73.56	1.44	1.24	TG
6T6LDH		68.86	0.19	0.17	71.94	-0.18	-0.15	HN
7CRFWQ		68.90	0.23	0.20	72.76	0.64	0.55	XX
7LJEN3	*	68.14	-0.53	-0.45	69.79	-2.33	-2.00	GS
99KY3R		68.43	-0.24	-0.20	71.93	-0.19	-0.16	GM
9H42BR		69.05	0.38	0.33	72.73	0.61	0.53	PP
9KZ8FQ		68.31	-0.36	-0.31	71.87	-0.25	-0.21	TH
9RMKA7		68.50	-0.17	-0.14	71.60	-0.52	-0.45	GA
9WQNKD	X	63.63	-5.04	-4.35	68.34	-3.78	-3.26	GM
9WVKD3		66.53	-2.14	-1.85	70.60	-1.52	-1.31	TH
BC3GMF		69.21	0.54	0.47	74.29	2.17	1.87	HN
BYHNMD		66.97	-1.70	-1.47	69.90	-2.22	-1.91	GM
C4YDUG		70.32	1.65	1.43	72.67	0.55	0.47	HG
EHQP9B		69.00	0.33	0.29	72.68	0.56	0.48	TH
EXM7CF		67.15	-1.52	-1.31	71.12	-1.00	-0.86	XX
FVY92A		69.12	0.45	0.39	72.58	0.46	0.40	TH
HFDAPM		69.46	0.79	0.69	71.93	-0.19	-0.16	TH
JX4ZQ7		68.63	-0.04	-0.03	71.94	-0.18	-0.15	TG
LGA6D7		68.95	0.28	0.25	71.93	-0.19	-0.16	VM
MK72UK	X	26.27	-42.40	-36.64	32.06	-40.06	-34.48	PP
MTEEBA		67.65	-1.02	-0.88	70.59	-1.53	-1.32	LB
T2B3ME		68.35	-0.32	-0.27	72.45	0.33	0.29	TG
U7E6TL		71.49	2.82	2.44	74.53	2.41	2.08	TH
UFAPQ9		68.60	-0.07	-0.06	71.54	-0.58	-0.50	XX
X6XM4Y		67.80	-0.87	-0.75	71.30	-0.82	-0.70	TH
XH36EY		66.75	-1.92	-1.66	71.83	-0.29	-0.25	ZH
YFV6WD		68.35	-0.32	-0.28	72.66	0.54	0.47	TG
ZJFQLK		69.85	1.18	1.02	73.66	1.54	1.33	TG
ZVEQEB		68.66	-0.01	-0.01	72.83	0.71	0.61	TH

		Summary Statistics	
	Sample GT51		Sample GT52
Grand Means	68.666 Gloss Units		72.119 Gloss Units
SD Btwn Labs	1.157 Gloss Units		1.162 Gloss Units
Statistics based on 27 of 29 reporting participants			

Comments on assigned Data Flags for Test #395

9WQNKD (X) - Systematic error (data for both samples are low).

MK72UK (X) - Extreme data.

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

Instrument Code List as Reported by the Labs

(GA) - BYK-Gardner (model not specified)	(GM) - BYK-Gardner micro-gloss
(GS) - BYK-Gardner Glossgard II	(HG) - Hunter ProGloss 75
(HN) - Hunter D-48	(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

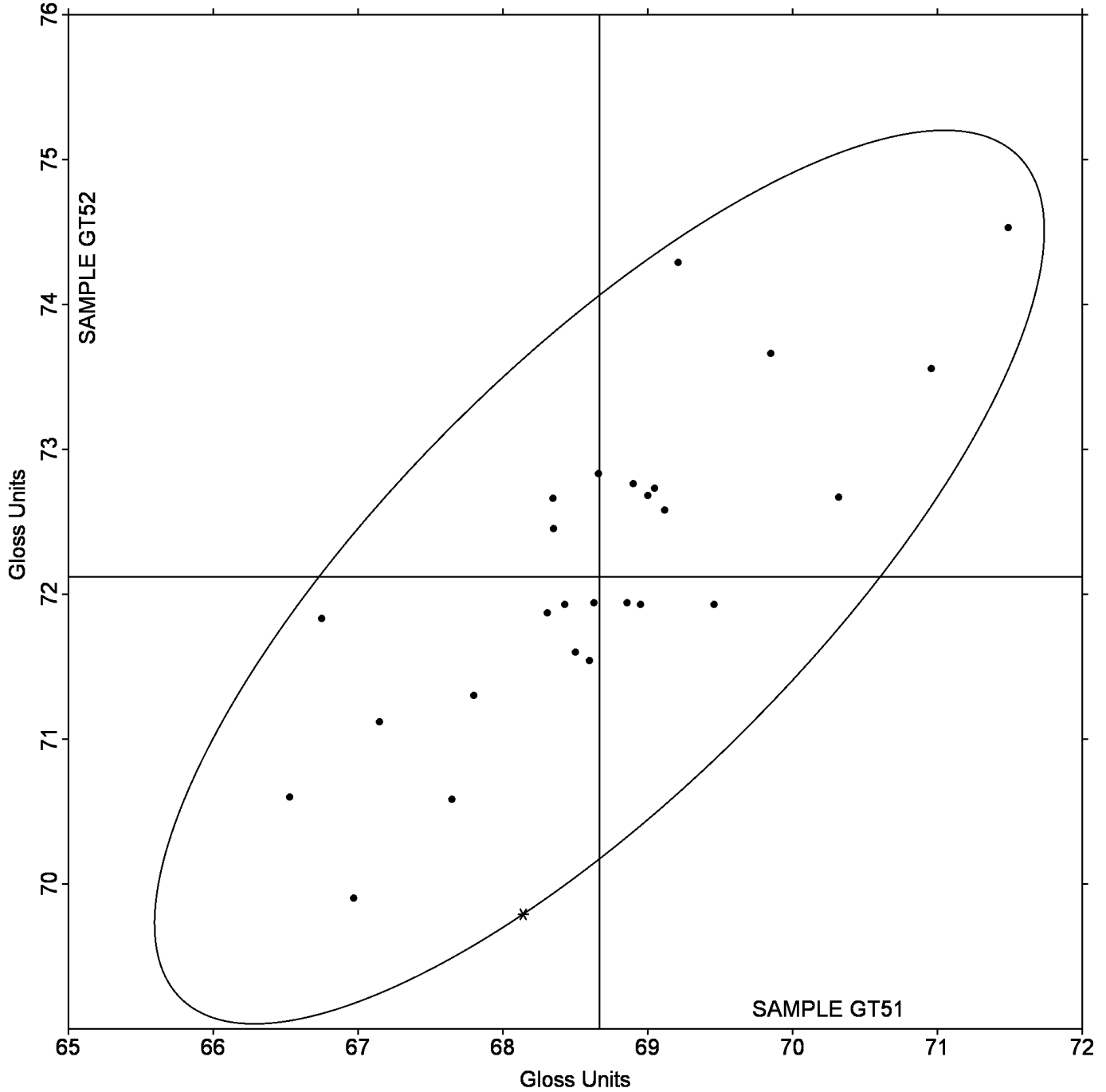
Analysis 395

Specular Gloss at 75 Degrees - High Range

Grand Mean Sample GT51 = 68.666 Gloss Units

Grand Mean Sample GT52 = 72.119 Gloss Units

ANALYSIS 395



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

WebCode	Data Flag	Sample GU51			Sample GU52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3Z8FFT		40.89	1.15	0.71	37.44	2.21	1.33	PP
9V6AXV		39.61	-0.13	-0.08	34.85	-0.38	-0.23	HN
9VDV7X	X	42.88	3.14	1.96	53.33	18.10	10.90	PP
HBZD2C		39.12	-0.62	-0.39	34.67	-0.56	-0.34	GM
HE92YL		39.14	-0.60	-0.38	35.04	-0.19	-0.11	GM
KVFRDN		40.83	1.09	0.68	34.98	-0.25	-0.15	TH
KYQXLP		41.36	1.61	1.00	36.25	1.02	0.61	TG
PERDHT		38.55	-1.19	-0.74	34.59	-0.64	-0.39	PP
RARCL9		38.13	-1.61	-1.01	34.24	-0.99	-0.60	TH
T48QQG	X	50.94	11.20	6.98	50.91	15.68	9.44	TH
T82RUQ		43.01	3.27	2.04	38.43	3.20	1.93	WG
UKPAY9		37.58	-2.16	-1.35	32.52	-2.71	-1.63	XX
VJ3VFF		39.70	-0.04	-0.03	36.00	0.77	0.46	TH
VWC2MG		40.88	1.13	0.71	36.17	0.94	0.57	XX
VXAGKT		40.67	0.93	0.58	35.63	0.40	0.24	TG
XDLHNM		39.89	0.15	0.09	35.77	0.54	0.32	TG
YFPENN		36.81	-2.93	-1.83	31.88	-3.35	-2.02	TG

Summary Statistics			
	Sample GU51		Sample GU52
Grand Means	39.744 Gloss Units		35.230 Gloss Units
SD Btw Labs	1.604 Gloss Units		1.660 Gloss Units
Statistics based on 15 of 17 reporting participants			

Comments on assigned Data Flags for Test #396

9VDV7X (X) - Extreme data for Sample GU52.

T48QQG (X) - Extreme data.

Instrument Code List as Reported by the Labs

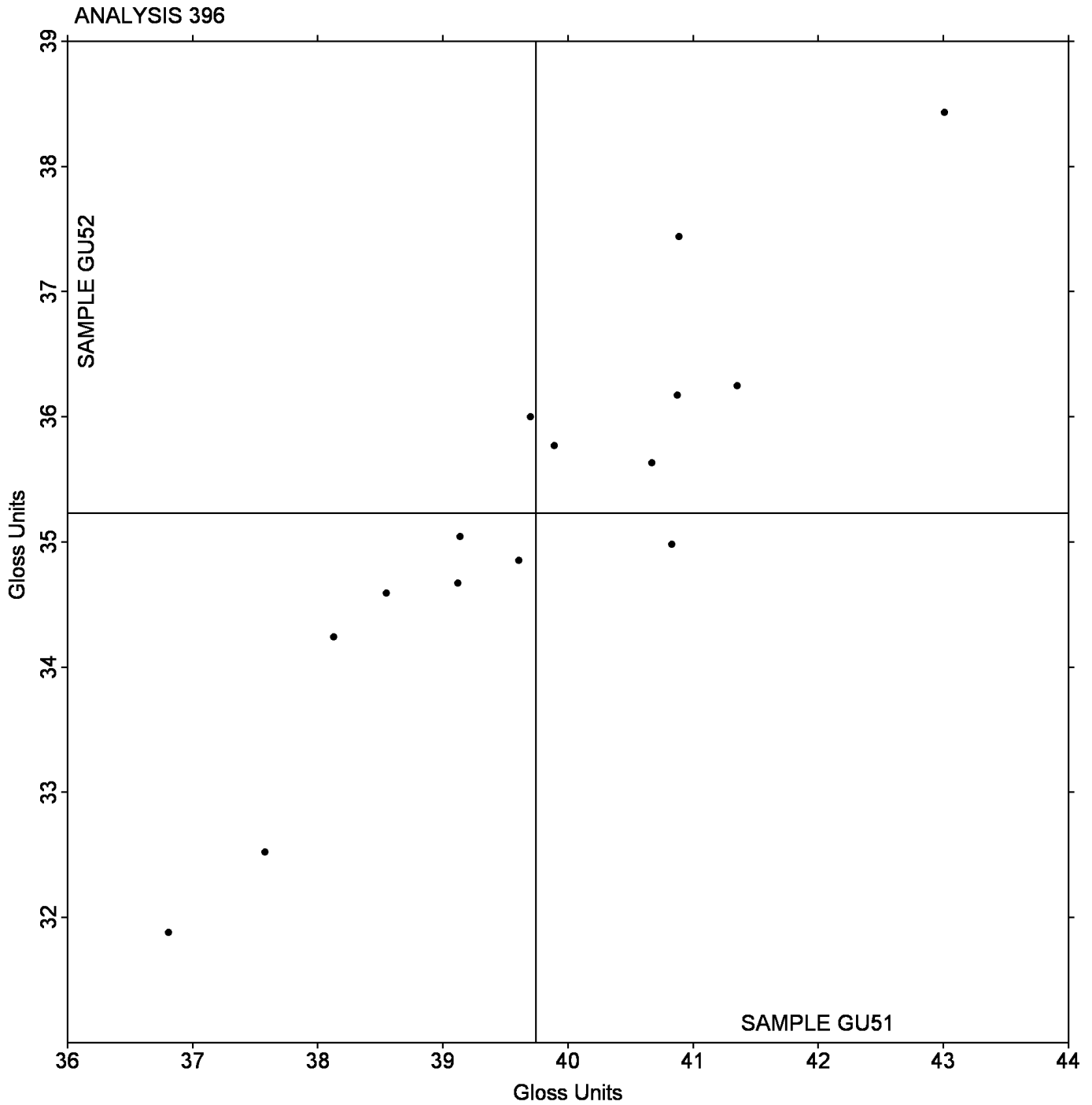
- | | |
|---|---------------------------|
| (GM) - BYK-Gardner micro-gloss | (HN) - Hunter D-48 |
| (PP) - Technidyne Profile/Plus | (TG) - Technidyne T480 |
| (TH) - Technidyne T480A | (WG) - Zehntner ZLR 1050M |
| (XX) - Instrument make/model not specified by lab | |

Analysis 396

Specular Gloss at 75 Degrees - Low Range

Grand Mean Sample **GU51** = 39.744 Gloss Units

Grand Mean Sample **GU52** = 35.230 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 GW51			Sample GW52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3UGFNC		104.7	0.2	0.31	106.3	0.1	0.21
6FXLXR		104.6	0.0	0.01	105.9	-0.2	-0.30
6RKD3M		105.9	1.3	2.22	107.2	1.1	1.67
7K4FUU		103.6	-1.0	-1.66	105.2	-0.9	-1.44
8RZTQU		104.7	0.2	0.27	106.1	-0.1	-0.14
BQAKP8		105.8	1.2	2.07	107.3	1.1	1.71
BQDP44		103.5	-1.1	-1.85	105.3	-0.9	-1.30
CEKT83		104.8	0.3	0.43	106.5	0.4	0.56
CUQQZV		104.1	-0.4	-0.73	105.6	-0.6	-0.87
D49PWQ		104.2	-0.3	-0.53	106.5	0.4	0.55
DJNKPU		104.7	0.2	0.28	106.3	0.2	0.31
DLV3NP		104.0	-0.5	-0.91	106.0	-0.2	-0.29
DXNL3V		104.2	-0.3	-0.54	105.8	-0.4	-0.60
E4RC28		105.0	0.4	0.67	106.5	0.4	0.54
E7KKQN		104.4	-0.1	-0.22	105.9	-0.2	-0.37
E7UEM3		104.3	-0.3	-0.45	106.1	-0.1	-0.11
ERGBRF		103.7	-0.9	-1.52	105.2	-1.0	-1.47
F8MFGW		103.5	-1.1	-1.80	104.9	-1.2	-1.90
JF4VHC		104.9	0.4	0.59	106.2	0.1	0.10
JXXPL9		104.6	0.0	0.05	106.3	0.1	0.18
JZQYAM		103.8	-0.7	-1.22	105.6	-0.6	-0.88
KMVC7Y		105.1	0.5	0.89	106.4	0.2	0.37
KP7CB9		104.3	-0.2	-0.41	106.6	0.4	0.63
KRTNBC		104.3	-0.2	-0.41	105.9	-0.3	-0.41
MDLU2T		104.9	0.3	0.58	106.1	-0.1	-0.13
MWZAGT		104.5	-0.1	-0.12	107.0	0.8	1.27
MY7GHD	*	104.1	-0.5	-0.83	104.7	-1.4	-2.18
N7GZDY		105.1	0.5	0.92	106.2	0.1	0.09
NAUY3K		104.0	-0.6	-0.94	106.1	-0.1	-0.14
NZAJVV		104.6	0.0	0.04	106.0	-0.1	-0.16
R2GCN9		105.6	1.1	1.82	107.8	1.6	2.48
RD2KL3		105.0	0.4	0.72	106.4	0.2	0.37
RHCP29		104.8	0.2	0.38	106.3	0.2	0.30
RR4KJH		104.1	-0.5	-0.78	105.6	-0.6	-0.89
WHKZHM		104.6	0.0	0.02	105.8	-0.3	-0.53
YN3V6H		104.8	0.3	0.43	107.1	1.0	1.49
YZKCCG		105.2	0.7	1.14	106.2	0.0	0.01
ZCWR8T		105.2	0.6	1.10	107.0	0.8	1.28

Paper & Paperboard Interlaboratory Testing Program

Analysis 398

Grammage (Mass per Unit Area)

	Sample GW51	Summary Statistics	Sample GW52
Grand Means	104.56 g/sq m		106.14 g/sq m
SD Btwn Labs	0.59 g/sq m		0.66 g/sq m
Statistics based on 38 of 38 reporting participants			

Notes for Analysis 398

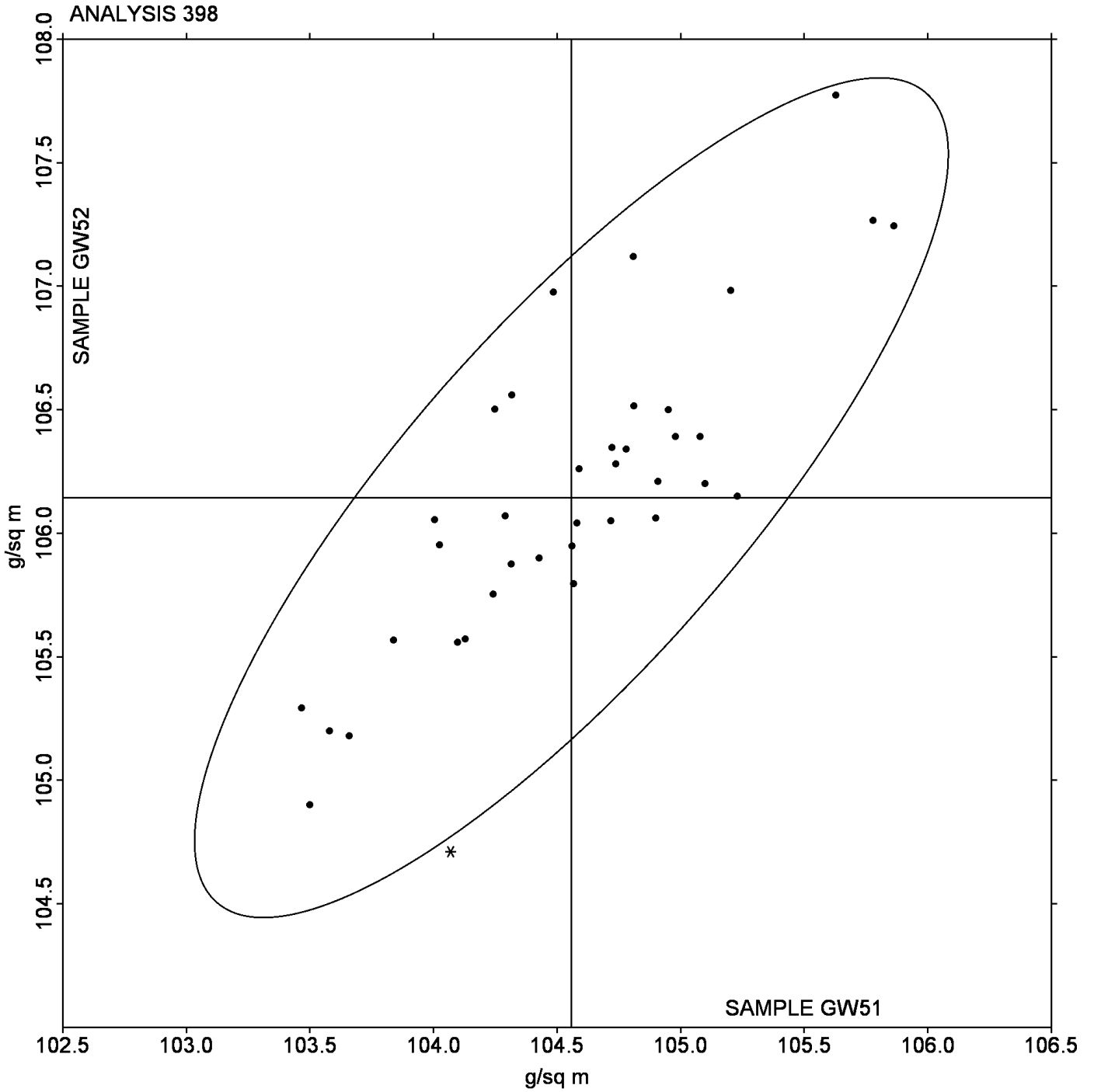
No Data Flags assigned for this analysis.

Analysis 398

Grammage (Mass per Unit Area)

Grand Mean Sample **GW51** = 104.56 g/sq m

Grand Mean Sample **GW52** = 106.14 g/sq m



Paper & Paperboard Interlaboratory Testing Program

Analysis 399

Sizing Test (Hercules Type)

WebCode	Data Flag	Sample GX51			Sample GX52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
4GAKC3		42.87	-25.96	-1.10	54.15	-16.82	-0.69
4PGVBZ	X	128.07	59.23	2.52	52.06	-18.91	-0.78
4XR7FK		72.05	3.22	0.14	80.33	9.36	0.38
4YWJGM		102.89	34.06	1.45	108.08	37.11	1.52
68ME2N		71.50	2.67	0.11	71.10	0.13	0.01
7MKU8Z		71.74	2.91	0.12	70.34	-0.63	-0.03
8GLZAY		78.42	9.59	0.41	82.61	11.64	0.48
9DBRA7		37.86	-30.97	-1.32	34.48	-36.49	-1.50
9PZHMC		76.22	7.39	0.31	91.73	20.76	0.85
A6BF74		52.11	-16.72	-0.71	48.05	-22.92	-0.94
CHPKCM		61.13	-7.70	-0.33	62.22	-8.75	-0.36
DX3PGZ		60.27	-8.56	-0.36	63.58	-7.39	-0.30
FZ4DAU	*	92.76	23.93	1.02	57.63	-13.34	-0.55
G4DGDW		18.45	-50.38	-2.14	19.19	-51.78	-2.12
HK64FD		65.21	-3.62	-0.15	66.33	-4.64	-0.19
HKRA2Y		60.18	-8.65	-0.37	58.89	-12.08	-0.50
L76NKA		49.25	-19.58	-0.83	57.12	-13.85	-0.57
LJMHH3		100.38	31.55	1.34	82.86	11.89	0.49
NAGB9W		68.20	-0.63	-0.03	73.50	2.53	0.10
NKJN8C		108.90	40.07	1.70	100.60	29.63	1.21
NL7U9N		67.41	-1.42	-0.06	62.09	-8.88	-0.36
NNFPFZ		50.40	-18.43	-0.78	60.40	-10.57	-0.43
NUQ76A	*	105.57	36.74	1.56	131.54	60.57	2.48
P88LJT		45.80	-23.03	-0.98	50.95	-20.02	-0.82
P9BQBV		97.48	28.65	1.22	111.32	40.35	1.65
QFNXFD		61.90	-6.93	-0.29	61.50	-9.47	-0.39
RMML2C		67.77	-1.06	-0.05	74.59	3.62	0.15
RW6XQM		54.26	-14.57	-0.62	57.90	-13.07	-0.54
TA737D	*	62.81	-6.02	-0.26	97.21	26.24	1.08
V2BUWK		67.07	-1.76	-0.08	77.15	6.18	0.25
WCUTMA		45.00	-23.83	-1.01	46.02	-24.95	-1.02
XUVFXD		58.46	-10.37	-0.44	58.26	-12.71	-0.52
XZYLAV		64.46	-4.37	-0.19	50.36	-20.61	-0.84
ZM2UPU	*	132.71	63.88	2.72	119.95	48.98	2.01

Summary Statistics			
	Sample GX51		Sample GX52
Grand Means	68.833 Seconds		70.971 Seconds
SD Btwn Labs	23.505 Seconds		24.395 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

4PGVBZ (X) - Inconsistent in testing between samples.

Analysis 399

Sizing Test (Hercules Type)

Grand Mean Sample **GX51** = 68.833 Seconds

Grand Mean Sample **GX52** = 70.971 Seconds

