Collaborative Testing Services, Inc.

Paper & Paperboard Testing Program

Summary Report #4402 - February 2026

Analysis	Analysis Name
3501	Thickness (Caliper), Packaging papers
3511	Bursting Strength - Packaging Papers
3513	Tearing Strength - Packaging Papers
3515	Tensile Breaking Strength - Packaging Papers
3516	Tensile Energy Absorption - Packaging Papers
3517	Elongation to Break - Packaging Papers
3531	Roughness - Print Surf Method - 0.5 to 4.0 Microns
3545	Directional Brightness
3547	Diffuse Brightness
3549	Color & Color Difference - Near White Papers - C/2deg obs
3551	Color & Color Difference - Near White Papers - D65/10deg obs
3553	Specular Gloss at 75 Degrees - High Range
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3601	Folding Endurance (MIT) - Double Folds
3603	Bending Resistance, Gurley Type
3611	Coefficient of Static Friction - Horizontal Plane Method - Printing Papers
3612	Coefficient of Kinetic Friction - Horizontal Plane Method - Printing Papers
3613	Moisture in Paper
3615	Sizing Test (Hercules Type)

The CTS Paper & Paperboard Interlaboratory Program

In 1969, the National Bureau of Standards (now designated the National Institute for Standards and Technology) and the Technical Association of the Pulp and Paper Industry (TAPPI) developed an interlaboratory program for paper and paperboard testing. Since 1971, Collaborative Testing Services has operated the Collaborative Reference Program for Paper and Paperboard. With hundreds of organizations from around the world participating in these tests, this program has become one of the largest of its kind. The program allows laboratories to compare the performance of their testing with that of other participating laboratories, and provides a realistic picture of the state of paper testing.

About CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately - owned company that specializes in interlaboratory tests for a variety of industries including color, rubber, plastics, fasteners and metals, containerboard, paper, agriculture, hemp, and wine, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality assurance objectives. Labs from the U.S., as well as more than 100 countries, currently participate in the CTS programs.

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Key for Web Summary Reports (Page 1 of 2)

WebCode — Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Paper Report published on the CTS Website. 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.

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

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

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

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

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

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

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

Common Problems Highlighted in Footnotes

1. ***Extreme data*** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. The participant is advised to immediately review his data and/or testing procedure.

2. ***Systematic bias*** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.

3. ***Inconsistency in testing between samples/sample sets*** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an * that falls on the edge of the ellipse.

4. ***Inconsistency in testing within a sample*** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.

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

Paper & Paperboard Interlaboratory Testing Program

Analysis 3501
Thickness (Caliper), Packaging papers
TAPPI Official Test Method T411

Report #4402, February 2026

WebCode	Data Flag	Sample CK49 Lab Mean	Sample CK49 Diff from Grand Mean	Sample CK49 CPV	Sample CK50 Lab Mean	Sample CK50 Diff from Grand Mean	Sample CK50 CPV	Instr Code
27PR84		13.99	0.37	2.08	13.94	0.33	1.89	LW
2CYVD7		13.61	-0.01	-0.05	13.62	0.01	0.04	OK
68CEB4		13.44	-0.18	-1.04	13.45	-0.16	-0.92	XX
793ZHY		13.53	-0.09	-0.52	13.53	-0.08	-0.46	LW
7MF9H3		13.62	0.00	-0.02	13.64	0.03	0.17	EM
7MHW23		13.33	-0.29	-1.67	13.35	-0.26	-1.49	XX
7XGWAZ		13.80	0.18	1.00	13.79	0.18	1.03	XX
8JWQHX		13.70	0.08	0.45	13.71	0.10	0.58	TA
8NC2V2		13.43	-0.19	-1.10	13.43	-0.18	-1.02	LC
BQ749R		13.80	0.18	1.03	13.85	0.24	1.40	LW
BT9ZW2		13.46	-0.16	-0.92	13.52	-0.09	-0.50	LW
BTCL8M		13.63	0.00	0.03	13.64	0.03	0.19	PP
CU36QZ		13.59	-0.04	-0.20	13.54	-0.07	-0.43	MS
DW23EX		13.60	-0.02	-0.13	13.58	-0.03	-0.19	LC
E73P2N		13.64	0.02	0.11	13.68	0.07	0.39	PP
FG4DTL		13.70	0.08	0.45	13.64	0.03	0.19	LW
FX7APP		13.39	-0.23	-1.31	13.33	-0.28	-1.64	XX
GZA69R		13.62	-0.01	-0.04	13.64	0.03	0.18	EM
HE9QTT		13.55	-0.07	-0.39	13.47	-0.14	-0.80	LW
HTL47K		13.29	-0.33	-1.88	13.27	-0.34	-1.95	TA
HUGKHG		13.60	-0.03	-0.15	13.52	-0.09	-0.55	EM
KV2BHD		13.77	0.15	0.84	13.74	0.13	0.77	PP
NE8PQH		13.53	-0.09	-0.52	13.53	-0.08	-0.47	TA
PJWLRD		13.54	-0.08	-0.48	13.48	-0.13	-0.73	XX
PKT26B		13.39	-0.23	-1.30	13.41	-0.20	-1.16	LC
Q29U7J		14.04	0.41	2.36	14.01	0.41	2.35	LW
QGMV3A		13.62	0.00	-0.01	13.57	-0.04	-0.24	LA
QNLJYF		13.79	0.16	0.93	13.74	0.13	0.77	LW
RTEYNF		13.81	0.19	1.06	13.79	0.18	1.05	LW
WK9QBA		13.89	0.26	1.50	13.84	0.23	1.34	LB
X7JD6D		13.55	-0.08	-0.44	13.56	-0.05	-0.30	EM
YX4UNY		13.56	-0.06	-0.37	13.56	-0.05	-0.30	LW
Z4P8Z8		13.75	0.13	0.73	13.75	0.14	0.81	LC

Summary Statistics	Sample CK49	Sample CK50
Grand Means	13.62 mils	13.61 mils
Stnd Dev Btwn Labs	0.18 mils	0.17 mils

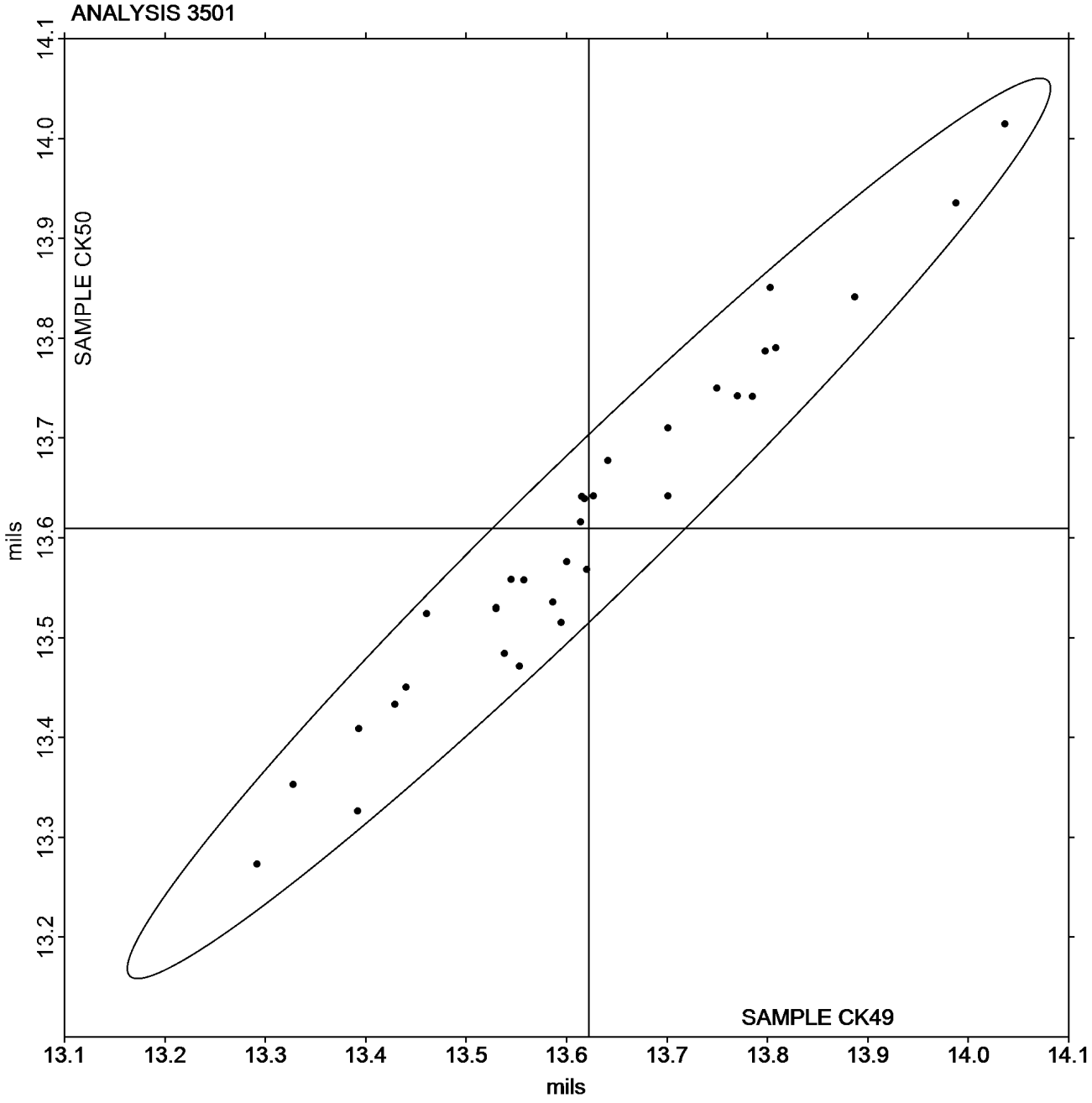
Statistics based on 33 of 33 reporting participants.

Key to Instrument Codes Reported by Participants

EM	Emveco	LA	L & W Autoline
LB	L & W Autoline 600	LC	L & W Autoline 400
LW	L & W	MS	Messmer
OK	Oakland	PP	Technidyne Profile/Plus
TA	Thwing-Albert	XX	Instrument make/model not specified by lab

Grand Mean Sample CK49 = 13.622 mils

Grand Mean Sample CK50 = 13.609 mils



Paper & Paperboard Interlaboratory Testing Program

Analysis 3511

Bursting Strength - Packaging Papers

TAPPI Official Test Method T403

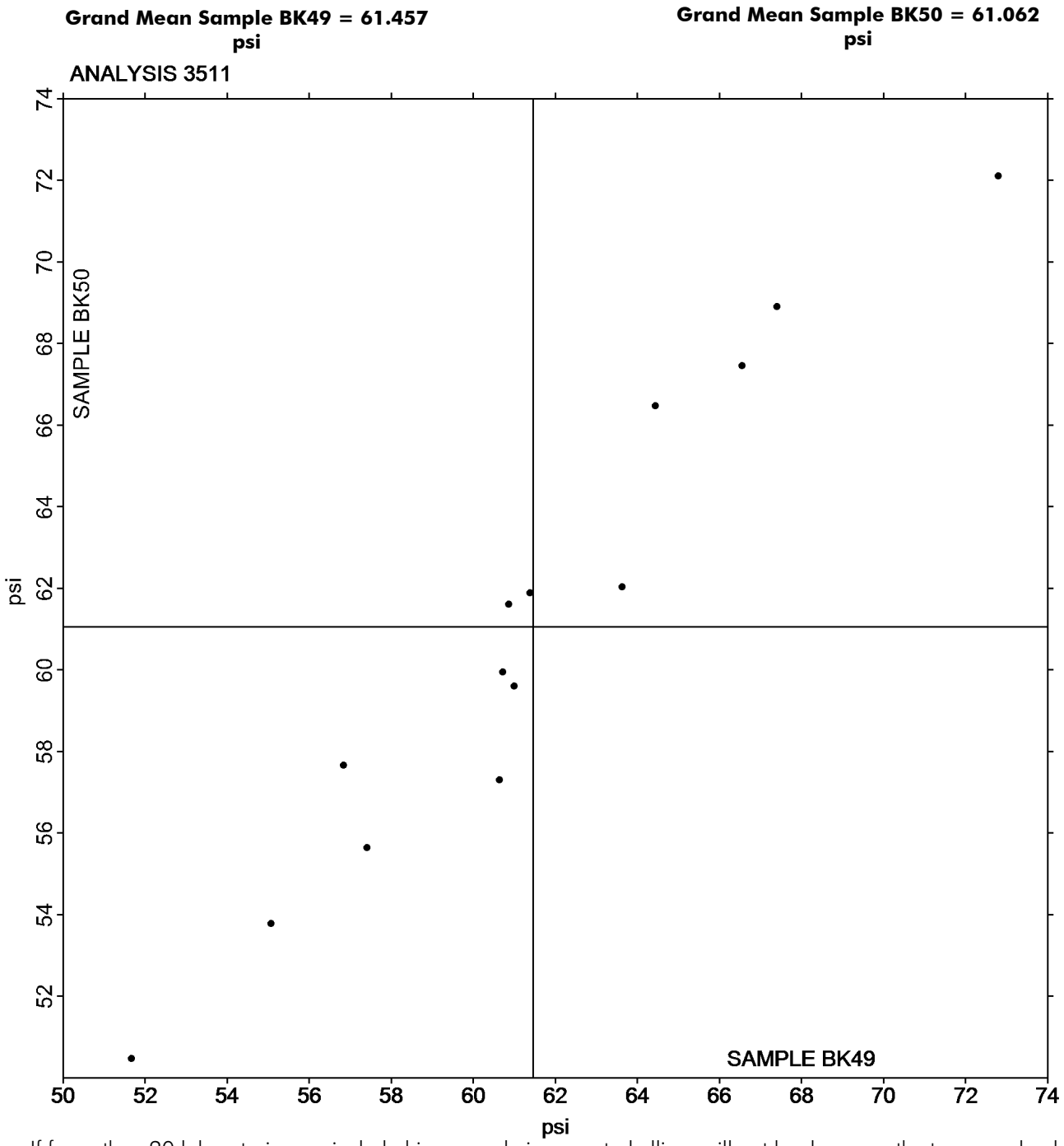
WebCode	Data Flag	Sample BK49 Lab Mean	Sample BK49 Diff from Grand Mean	Sample BK49 CPV	Sample BK50 Lab Mean	Sample BK50 Diff from Grand Mean	Sample BK50 CPV	Instr Code
27PR84		55.08	-6.38	-1.18	53.78	-7.28	-1.20	ZZ
BQ749R		60.86	-0.60	-0.11	61.61	0.55	0.09	ZZ
E73P2N		72.80	11.34	2.10	72.10	11.04	1.82	ZZ
ELHN7P		61.38	-0.08	-0.01	61.89	0.83	0.14	ZZ
HTL47K		66.55	5.09	0.94	67.45	6.39	1.05	ZZ
HUGKHG		64.44	2.98	0.55	66.48	5.42	0.89	ZZ
JDCD4F		57.41	-4.05	-0.75	55.64	-5.42	-0.89	ZZ
JG94AR		60.64	-0.82	-0.15	57.30	-3.76	-0.62	ZZ
M4QHEM		56.83	-4.62	-0.86	57.67	-3.40	-0.56	ZZ
Q29U7J		51.67	-9.79	-1.81	50.47	-10.59	-1.74	ZZ
RTEYNF		63.63	2.17	0.40	62.03	0.97	0.16	ZZ
TKXTKG		61.00	-0.46	-0.08	59.60	-1.46	-0.24	ZZ
XLVPX8		67.40	5.94	1.10	68.90	7.84	1.29	ZZ
YX4UNY		60.71	-0.74	-0.14	59.94	-1.12	-0.18	ZZ

Summary Statistics	Sample BK49	Sample BK50
Grand Means	61.46 psi	61.06 psi
Stnd Dev Btwn Labs	5.40 psi	6.07 psi

Statistics based on 14 of 14 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 3513

Tearing Strength - Packaging Papers

TAPPI Official Test Method T414

WebCode	Data Flag	Sample RK49 Lab Mean	Sample RK49 Diff from Grand Mean	Sample RK49 CPV	Sample RK50 Lab Mean	Sample RK50 Diff from Grand Mean	Sample RK50 CPV	Instr Code
27PR84		111.4	1.6	0.17	113.1	2.7	0.28	ZZ
68CEB4		118.0	8.3	0.86	116.8	6.4	0.67	ZZ
79GK73		106.0	-3.7	-0.38	107.8	-2.6	-0.27	ZZ
7MF9H3		106.0	-3.8	-0.39	107.0	-3.4	-0.35	ZZ
7XGWAZ	X	29.5	-80.3	-8.30	28.5	-81.8	-8.48	ZZ
8JWQHX		107.6	-2.1	-0.22	108.0	-2.4	-0.25	ZZ
9MCMJT	*	130.6	20.9	2.16	133.9	23.5	2.44	ZZ
AY749U		107.8	-2.0	-0.20	107.2	-3.1	-0.33	ZZ
BTCL8M		110.1	0.4	0.04	109.7	-0.7	-0.07	ZZ
DW23EX	X	343.7	233.9	24.19	376.9	266.6	27.62	ZZ
E73P2N		107.5	-2.2	-0.23	109.6	-0.8	-0.08	ZZ
EFVZCJ	*	87.4	-22.3	-2.31	91.4	-19.0	-1.97	ZZ
EWHC3T		110.7	1.0	0.10	112.1	1.7	0.18	ZZ
FG4DTL		104.0	-5.7	-0.59	103.9	-6.5	-0.67	ZZ
HE9QTT		99.0	-10.7	-1.10	100.5	-9.8	-1.02	ZZ
M4QHEM		107.0	-2.7	-0.28	107.0	-3.4	-0.35	ZZ
Q29U7J		110.2	0.5	0.05	110.2	-0.2	-0.02	ZZ
QGMV3A		107.0	-2.7	-0.28	104.5	-5.9	-0.61	ZZ
QNLJYF		131.1	21.4	2.21	132.4	22.1	2.29	ZZ
RTEYNF		109.6	-0.1	-0.01	110.5	0.1	0.01	ZZ
X7JD6D	X	376.0	266.3	27.54	368.0	257.6	26.70	ZZ
ZFLB98		113.7	3.9	0.41	111.6	1.2	0.13	ZZ

Summary Statistics	Sample RK49	Sample RK50
Grand Means	109.72 Grams	110.38 Grams
Stnd Dev Btwn Labs	9.67 Grams	9.65 Grams

Statistics based on 19 of 22 reporting participants.

Comments on Assigned Data Flags for Test #3513

DW23EX (X) - Extreme Data.

X7JD6D (X) - Extreme Data.

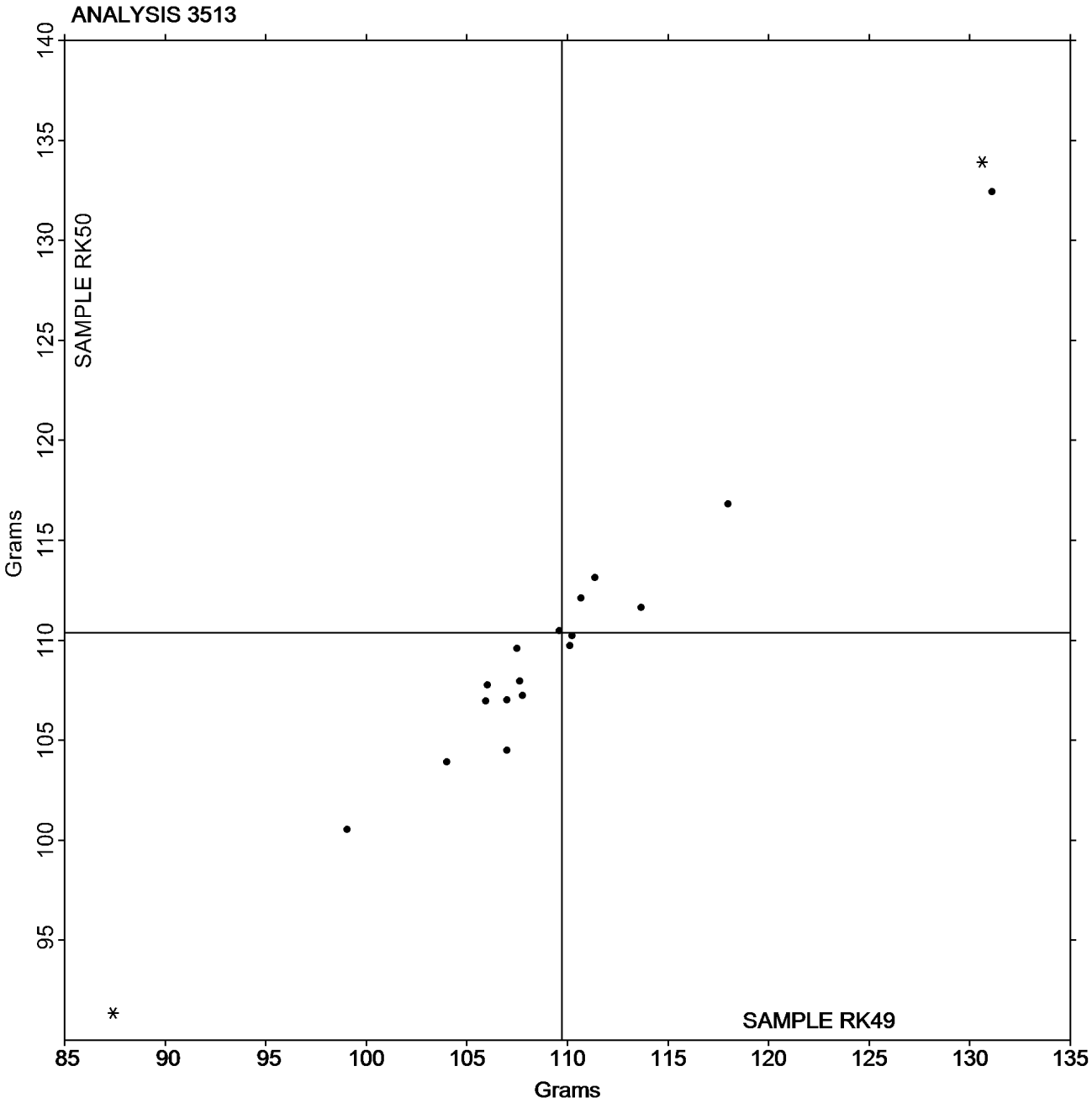
7XGWAZ (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample RK49 = 109.72 Grams

Grand Mean Sample RK50 = 110.38 Grams



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 3515

Tensile Breaking Strength - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample NK49 Lab Mean	Sample NK49 Diff from Grand Mean	Sample NK49 CPV	Sample NK50 Lab Mean	Sample NK50 Diff from Grand Mean	Sample NK50 CPV	Instr Code
27PR84		7.543	-0.785	-1.26	7.667	-0.648	-1.06	IM
68CEB4		8.775	0.447	0.72	8.786	0.471	0.77	XX
793ZHY		8.408	0.080	0.13	8.150	-0.165	-0.27	TH
79GK73		7.917	-0.411	-0.66	7.979	-0.336	-0.55	LE
7XGWAZ		8.316	-0.012	-0.02	8.324	0.009	0.01	ID
8JWQHX		8.081	-0.247	-0.40	8.043	-0.272	-0.45	TB
BPANWU		9.268	0.940	1.50	9.321	1.006	1.65	LI
C6H2QX		9.151	0.823	1.32	9.299	0.983	1.61	DM
CY9YKV		7.876	-0.452	-0.72	7.856	-0.459	-0.75	TS
E73P2N		7.627	-0.701	-1.12	7.523	-0.792	-1.30	TA
EWHC3T		7.394	-0.934	-1.50	7.205	-1.110	-1.82	LH
FG4DTL		8.616	0.288	0.46	8.720	0.404	0.66	LE
GWQDXP		8.895	0.567	0.91	8.729	0.414	0.68	LA
GZA69R		9.032	0.704	1.13	9.043	0.728	1.19	LE
HE9QTT		8.571	0.243	0.39	8.552	0.237	0.39	LW
HTL47K		8.365	0.037	0.06	8.273	-0.042	-0.07	TV
JDCD4F		8.678	0.350	0.56	8.595	0.280	0.46	LE
K4GWRG		9.574	1.246	1.99	9.319	1.004	1.64	XX
M4QHEM		7.583	-0.745	-1.19	7.563	-0.753	-1.23	TX
NE8PQH		9.072	0.743	1.19	9.138	0.823	1.35	TX
PJWLRD		8.896	0.568	0.91	8.725	0.410	0.67	TB
PKR4UE	X	17.824	9.496	15.20	17.922	9.607	15.75	LX
Q29U7J		7.939	-0.390	-0.62	8.091	-0.224	-0.37	LH
QGMV3A		8.092	-0.236	-0.38	8.307	-0.008	-0.01	LA
QNLJYF		7.410	-0.918	-1.47	7.482	-0.833	-1.37	LW
RTEYNF		7.748	-0.580	-0.93	7.817	-0.498	-0.82	LE
WK9QBA		8.417	0.089	0.14	8.287	-0.028	-0.05	LC
ZFLB98		7.618	-0.710	-1.14	7.714	-0.601	-0.98	LE

Summary Statistics	Sample NK49	Sample NK50
Grand Means	8.33 kN/m	8.32 kN/m
Stnd Dev Btwn Labs	0.62 kN/m	0.61 kN/m

Statistics based on 27 of 28 reporting participants.

Comments on Assigned Data Flags for Test #3515

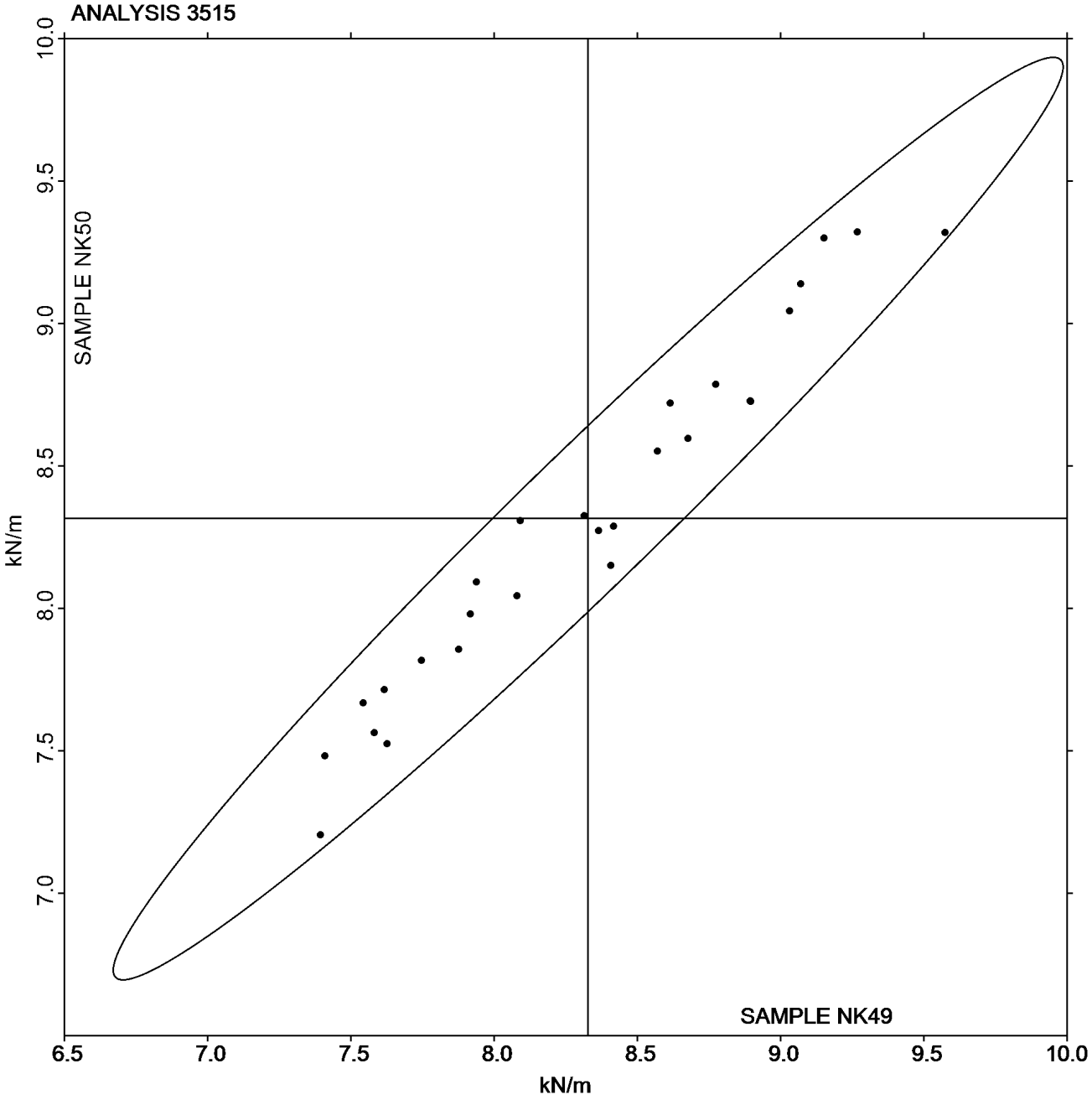
PKR4UE (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

DM	IDM MTC-100 Tensile Tester	ID	Instron 4200 Series
IM	Instron 5500 Series	LA	L & W Autoline
LC	L & W Tensile - Autoline 600	LE	L & W Tensile Tester 066
LH	L & W Alwetron TH1 (Horizontal) SE 060	LI	LLoyds Instruments
LW	L & W Tensile Tester SE062	LX	L & W (model not specified)
TA	Thwing-Albert Tensile Tester	TB	Thwing-Albert EJA/1000
TH	Thwing-Albert QC-3A	TS	TMI Horizontal Tensile Tester 84-58
TV	Thwing-Albert Vantage NX	TX	Thwing-Albert (model not specified)
XX	Instrument make/model not specified by lab		

Grand Mean Sample NK49 = 8.3282 kN/m

Grand Mean Sample NK50 = 8.3152 kN/m



Paper & Paperboard Interlaboratory Testing Program

Report #4402, February 2026

Analysis 3516

Tensile Energy Absorption - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample NK49 Lab Mean	Sample NK49 Diff from Grand Mean	Sample NK49 CPV	Sample NK50 Lab Mean	Sample NK50 Diff from Grand Mean	Sample NK50 CPV	Instr Code
27PR84		105.9	-12.0	-0.80	109.5	-6.3	-0.45	IM
68CEB4		123.9	6.0	0.40	123.8	8.1	0.58	XX
793ZHY		135.2	17.3	1.15	125.9	10.1	0.73	TH
79GK73		108.4	-9.5	-0.63	109.7	-6.0	-0.43	LE
C6H2QX		132.9	15.0	1.00	139.6	23.8	1.71	DM
CY9YKV		114.8	-3.1	-0.21	116.9	1.2	0.08	TS
E73P2N		101.9	-16.0	-1.07	93.8	-21.9	-1.57	TA
EWHC3T	*	87.4	-30.5	-2.04	80.3	-35.5	-2.55	LH
FG4DTL		112.8	-5.1	-0.34	116.7	1.0	0.07	LE
GWQDXP		114.4	-3.5	-0.23	109.9	-5.9	-0.42	LA
GZA69R		131.8	13.9	0.93	128.6	12.8	0.92	LE
HE9QTT		115.7	-2.2	-0.15	112.7	-3.0	-0.22	LW
HTL47K	*	157.7	39.9	2.67	142.2	26.4	1.90	TV
JDCD4F		122.9	5.0	0.33	121.3	5.5	0.40	LE
K4GWRG		130.4	12.5	0.83	128.8	13.1	0.94	XX
M4QHEM	X	195.5	77.7	5.19	193.6	77.9	5.59	TX
NE8PQH		121.9	4.0	0.27	123.0	7.2	0.52	TX
PJWLRD		126.4	8.6	0.57	121.2	5.4	0.39	TB
PKR4UE	X	1,656.9	1,539.0	102.91	1,732.7	1,616.9	116.08	LX
Q29U7J		113.5	-4.3	-0.29	114.2	-1.5	-0.11	LH
QGMV3A		130.3	12.4	0.83	123.6	7.9	0.56	LA
QNLJYF		102.6	-15.3	-1.03	105.8	-10.0	-0.71	LW
RTEYNF		105.2	-12.7	-0.85	106.6	-9.2	-0.66	LE
WK9QBA		113.2	-4.7	-0.31	106.6	-9.1	-0.65	LC
ZFLB98		102.2	-15.7	-1.05	101.7	-14.1	-1.01	LE

Summary Statistics	Sample NK49	Sample NK50
Grand Means	117.89 Joules/sq m	115.76 Joules/sq m
Stnd Dev Btwn Labs	14.96 Joules/sq m	13.93 Joules/sq m

Statistics based on 23 of 25 reporting participants.

Comments on Assigned Data Flags for Test #3516

M4QHEM (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

PKR4UE (X) - Extreme Data.

Analysis Notes:

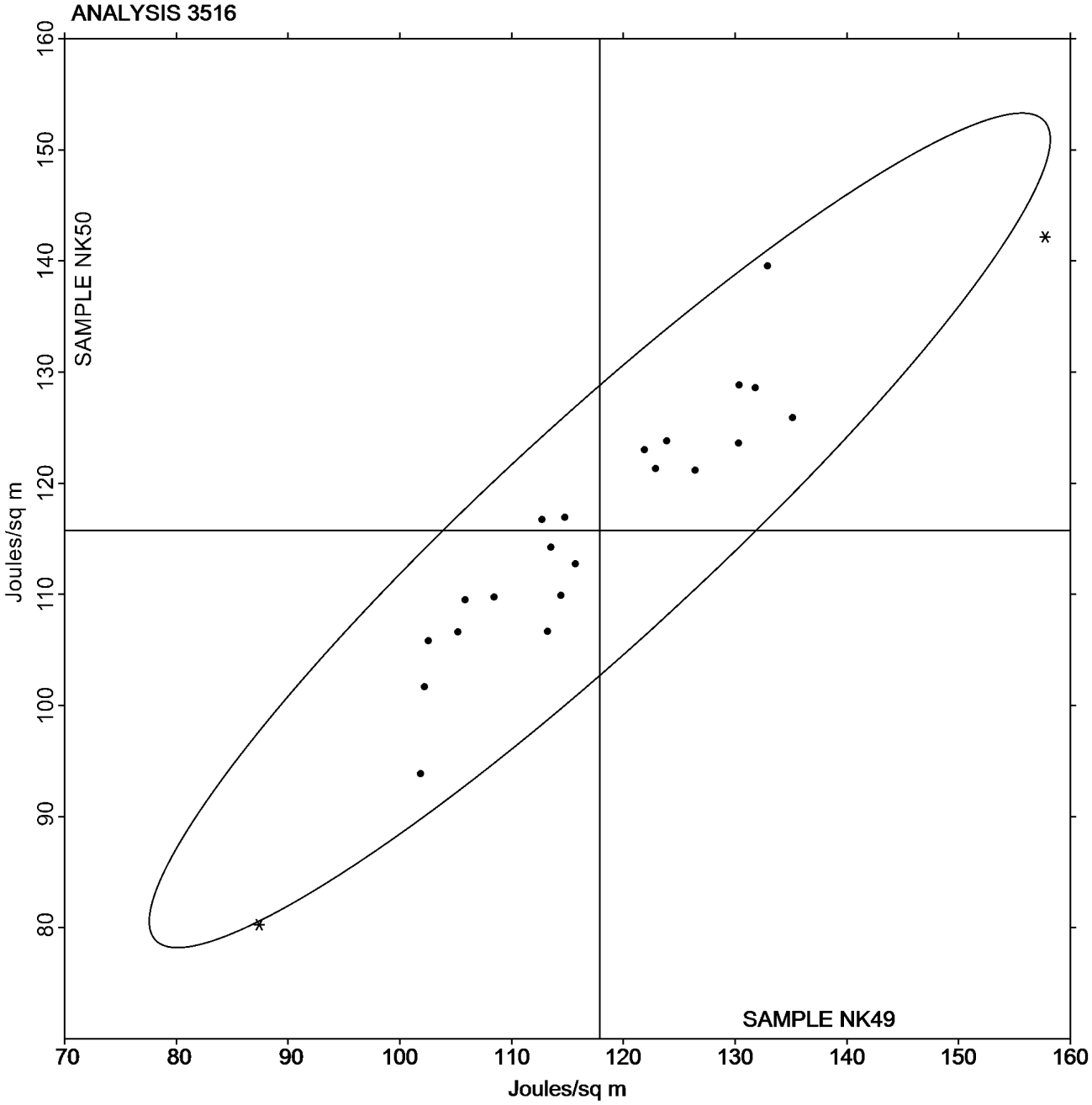
K4GWRG - One determination removed from the Lab Mean of Sample NK50 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

DM	IDM MTC-100 Tensile Tester	IM	Instron 5500 Series
LA	L & W Autoline	LC	L & W Tensile - Autoline 600
LE	L & W Tensile Tester 066	LH	L & W Alwetron TH1 (Horizontal) SE 060
LW	L & W Tensile Tester SE062	LX	L & W (model not specified)
TA	Thwing-Albert Tensile Tester	TB	Thwing-Albert EJA/1000
TH	Thwing-Albert QC-3A	TS	TMI Horizontal Tensile Tester 84-58
TV	Thwing-Albert Vantage NX	TX	Thwing-Albert (model not specified)
XX	Instrument make/model not specified by lab		

Grand Mean Sample NK49 = 117.89 Joules/sq m

Grand Mean Sample NK50 = 115.76 Joules/sq m



Paper & Paperboard Interlaboratory Testing Program

Analysis 3517

Elongation to Break - Packaging Papers

TAPPI Official Test Method T494

WebCode	Data Flag	Sample NK49 Lab Mean	Sample NK49 Diff from Grand Mean	Sample NK49 CPV	Sample NK50 Lab Mean	Sample NK50 Diff from Grand Mean	Sample NK50 CPV	Instr Code
27PR84		2.100	0.074	0.43	2.108	0.114	0.67	IM
68CEB4		1.861	-0.165	-0.95	1.877	-0.117	-0.68	XX
793ZHY	*	2.524	0.498	2.86	2.398	0.404	2.36	TH
79GK73		1.960	-0.066	-0.38	1.950	-0.044	-0.26	LE
7XGWAZ		1.981	-0.045	-0.26	1.985	-0.009	-0.05	XX
8JWQHX		2.022	-0.004	-0.02	1.981	-0.013	-0.08	TB
C6H2QX		2.181	0.155	0.89	2.236	0.242	1.41	DM
CY9YKV		2.195	0.169	0.97	2.240	0.246	1.44	TS
E73P2N		2.056	0.030	0.18	1.939	-0.055	-0.32	TA
EWHC3T		1.710	-0.316	-1.81	1.600	-0.394	-2.30	LH
FG4DTL		1.942	-0.084	-0.48	1.996	0.002	0.01	LE
GWQDXP		1.826	-0.200	-1.15	1.787	-0.207	-1.21	XX
GZA69R		2.118	0.092	0.53	2.077	0.083	0.48	LE
HE9QTT		2.013	-0.013	-0.07	1.873	-0.121	-0.71	LW
HTL47K	X	2.969	0.943	5.42	2.737	0.743	4.34	TV
JDCD4F		2.045	0.019	0.11	2.052	0.058	0.34	LW
K4GWRG		1.838	-0.187	-1.08	1.829	-0.165	-0.97	XX
M4QHEM	X	3.762	1.736	9.97	3.773	1.779	10.40	TX
NE8PQH		2.131	0.105	0.61	2.100	0.106	0.62	TX
PJWLRD		2.117	0.091	0.53	2.064	0.070	0.41	XX
PKR4UE	X	0.048	-1.978	-11.36	0.050	-1.944	-11.36	LX
Q29U7J		2.085	0.059	0.34	2.050	0.056	0.33	LX
QGMV3A		2.278	0.252	1.45	2.107	0.113	0.66	LX
QNLJYF		1.977	-0.049	-0.28	2.013	0.019	0.11	LW
RTEYNF		1.953	-0.073	-0.42	1.960	-0.034	-0.20	LE
WK9QBA		1.781	-0.245	-1.40	1.736	-0.258	-1.51	LC
ZFLB98		1.919	-0.107	-0.61	1.900	-0.094	-0.55	LE

Summary Statistics	Sample NK49	Sample NK50
Grand Means	2.03 Percent	1.99 Percent
Stnd Dev Btwn Labs	0.17 Percent	0.17 Percent

Statistics based on 24 of 27 reporting participants.

Comments on Assigned Data Flags for Test #3517

M4QHEM (X) - Extreme Data.

HTL47K (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample NK50.

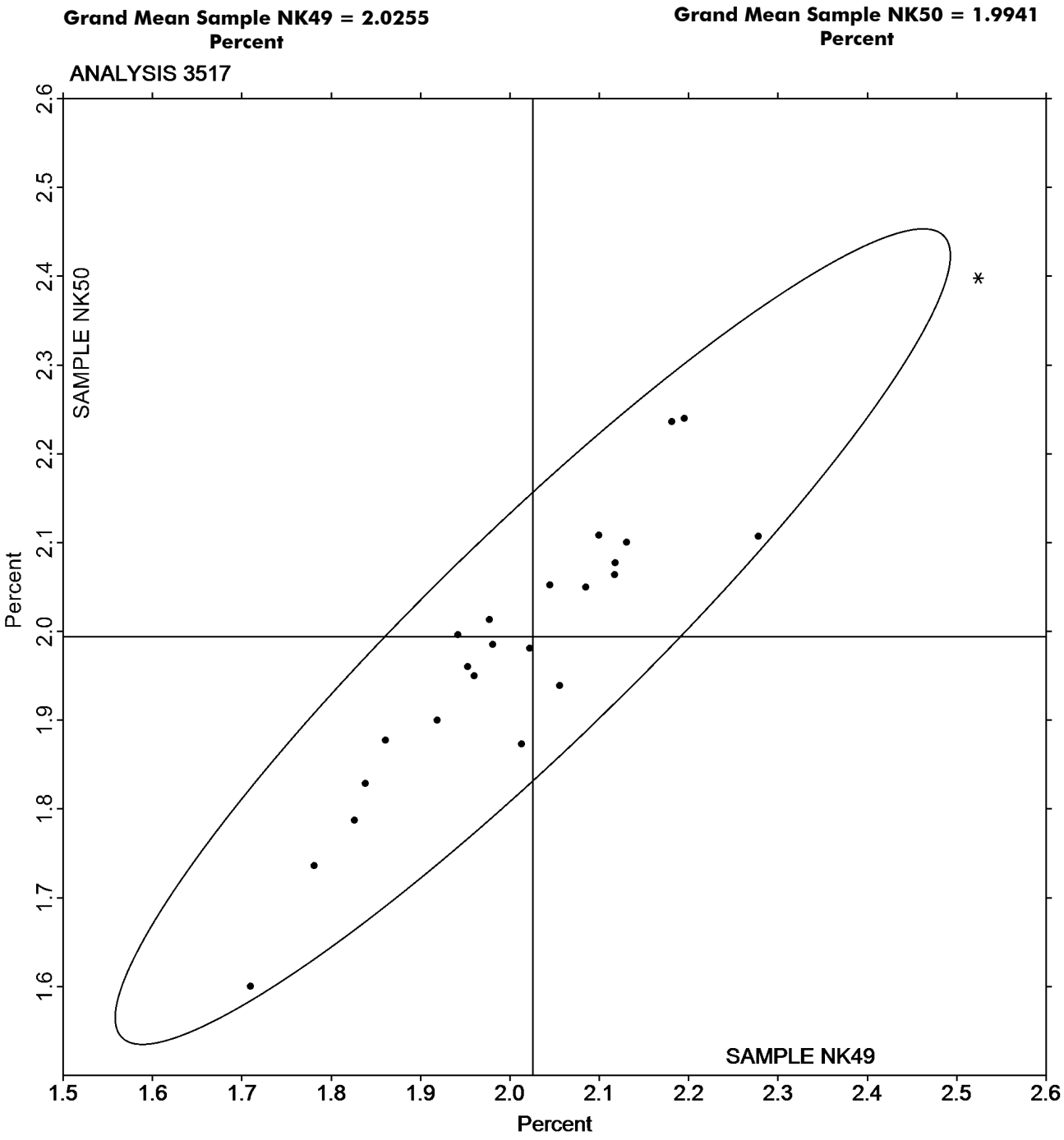
PKR4UE (X) - Extreme Data.

Analysis Notes:

K4GWRG - Two determinations removed from the Lab Mean of Sample NK50 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

DM	IDM MTC-100 Tensile Tester	IM	Instron 5500 Series
LC	L & W Tensile - Autoline 600	LE	L & W Tensile Tester 066
LH	L & W Alwetron TH1 (Horizontal) SE 060	LW	L & W Tensile Tester SE062
LX	L & W (model not specified)	TA	Thwing-Albert Tensile Tester
TB	Thwing-Albert EJA/1000	TH	Thwing-Albert QC-3A
TS	TMI Horizontal Tensile Tester 84-58	TV	Thwing-Albert Vantage NX
TX	Thwing-Albert (model not specified)	XX	Instrument make/model not specified by lab



Paper & Paperboard Interlaboratory Testing Program

Report #4402, February 2026

Analysis 3531

Roughness - Print Surf Method - 0.5 to 4.0 Microns

TAPPI Official Test Method T555

WebCode	Data Flag	Sample PS49 Lab Mean	Sample PS49 Diff from Grand Mean	Sample PS49 CPV	Sample PS50 Lab Mean	Sample PS50 Diff from Grand Mean	Sample PS50 CPV	Instr Code
2CYVD7		0.7380	-0.0133	-0.35	0.7230	-0.0246	-0.59	ZZ
793ZHY		0.7030	-0.0483	-1.28	0.7320	-0.0156	-0.37	ZZ
7MF9H3		0.7640	0.0127	0.34	0.7590	0.0114	0.28	ZZ
7MYCQ4		0.8030	0.0517	1.37	0.8120	0.0644	1.55	ZZ
8Y7HFV		0.7270	-0.0243	-0.65	0.7390	-0.0086	-0.21	ZZ
CY9YKV		0.7930	0.0417	1.11	0.7860	0.0384	0.93	ZZ
D6GNJV	*	0.7940	0.0427	1.13	0.7010	-0.0466	-1.12	ZZ
DPMUDW		0.7810	0.0297	0.79	0.7811	0.0336	0.81	ZZ
GZA69R		0.7440	-0.0073	-0.19	0.7350	-0.0126	-0.30	ZZ
KDMYQM		0.7760	0.0247	0.66	0.7890	0.0414	1.00	ZZ
LAGQ3N		0.7270	-0.0243	-0.65	0.7320	-0.0156	-0.37	ZZ
NF363E		0.7720	0.0207	0.55	0.7630	0.0154	0.37	ZZ
PJWLRD		0.7330	-0.0183	-0.49	0.7330	-0.0146	-0.35	ZZ
QNLJYF		0.6660	-0.0853	-2.27	0.6510	-0.0966	-2.33	ZZ
RZUKTC		0.7250	-0.0263	-0.70	0.7350	-0.0126	-0.30	ZZ
VTJTR6		0.7350	-0.0163	-0.43	0.7560	0.0084	0.20	ZZ
WK9QBA		0.7240	-0.0273	-0.72	0.7310	-0.0166	-0.40	ZZ
X7JD6D		0.7770	0.0257	0.68	0.7830	0.0354	0.85	ZZ
XPH4R9		0.8170	0.0657	1.74	0.8220	0.0744	1.79	ZZ
Z4P8Z8		0.7270	-0.0243	-0.65	0.6880	-0.0596	-1.44	ZZ

Summary Statistics	Sample PS49	Sample PS50
Grand Means	0.75 Microns	0.75 Microns
Stnd Dev Btwn Labs	0.04 Microns	0.04 Microns

Statistics based on 20 of 20 reporting participants.

Analysis Notes:

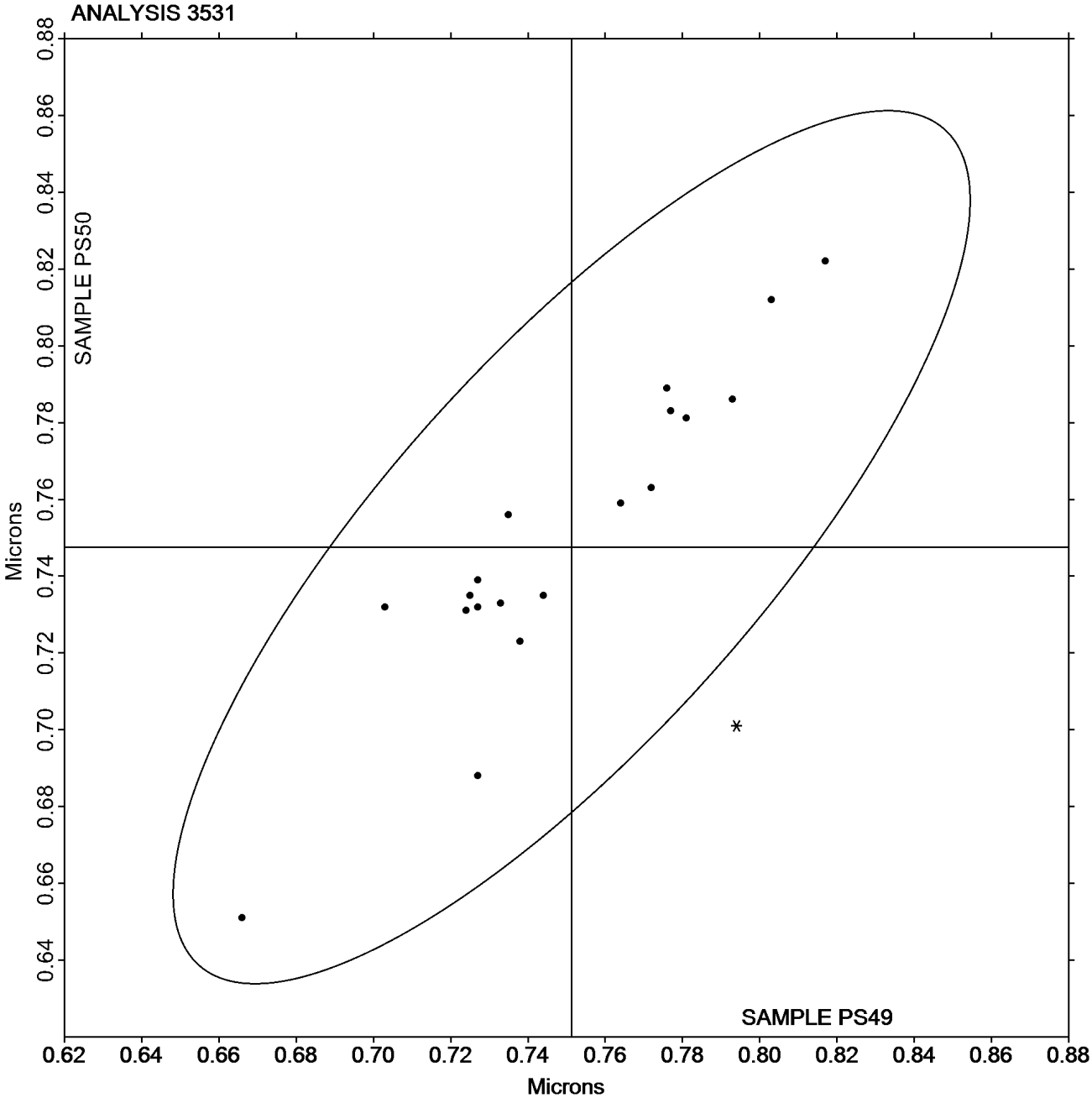
DPMUDW - One determination removed from the Lab Mean of Sample PS50 per Grubb's Test at 1% risk (TAPPI 1205).

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Grand Mean Sample PS49 = 0.75130 Microns

Grand Mean Sample PS50 = 0.74756 Microns



Paper & Paperboard Interlaboratory Testing Program

Analysis 3545
Directional Brightness
TAPPI Official Test Method T452

Report #4402, February 2026

WebCode	Data Flag	Sample BR49 Lab Mean	Sample BR49 Diff from Grand Mean	Sample BR49 CPV	Sample BR50 Lab Mean	Sample BR50 Diff from Grand Mean	Sample BR50 CPV	Instr Code
2CYVD7		77.60	0.67	0.35	77.52	0.61	0.32	HG
68CEB4		77.80	0.87	0.46	77.85	0.94	0.50	XX
793ZHY		76.01	-0.92	-0.49	76.20	-0.71	-0.37	TP
7MF9H3		79.66	2.73	1.45	79.59	2.69	1.42	HG
7XGWAZ		79.44	2.51	1.33	79.45	2.54	1.35	TD
8JWQHX		76.50	-0.43	-0.23	76.64	-0.27	-0.14	XD
8Y7HFV		76.08	-0.85	-0.45	76.03	-0.88	-0.46	PP
CY9YKV		76.23	-0.70	-0.37	76.26	-0.65	-0.34	TS
DW23EX	*	71.50	-5.44	-2.89	71.46	-5.45	-2.89	LA
E9994Q		76.04	-0.89	-0.47	75.96	-0.95	-0.50	TD
G94DUJ		77.42	0.49	0.26	77.12	0.21	0.11	TP
GZA69R		80.13	3.19	1.69	80.18	3.27	1.73	HG
HE9QTT		76.13	-0.80	-0.43	76.07	-0.83	-0.44	TS
HGBRTQ		76.27	-0.66	-0.35	75.98	-0.93	-0.49	XX
LAGQ3N		76.06	-0.87	-0.46	75.75	-1.16	-0.62	PP
NF363E		76.60	-0.33	-0.18	76.63	-0.28	-0.15	HZ
NNCW7H		75.54	-1.39	-0.74	76.00	-0.91	-0.48	TS
QNLJYF		76.67	-0.26	-0.14	76.44	-0.46	-0.25	TP
RZUKTC		79.09	2.16	1.15	79.01	2.10	1.11	TD
X7JD6D		77.87	0.94	0.50	78.02	1.11	0.59	TP

Summary Statistics	Sample BR49	Sample BR50
Grand Means	76.93 Percent	76.91 Percent
Stnd Dev Btwn Labs	1.88 Percent	1.89 Percent

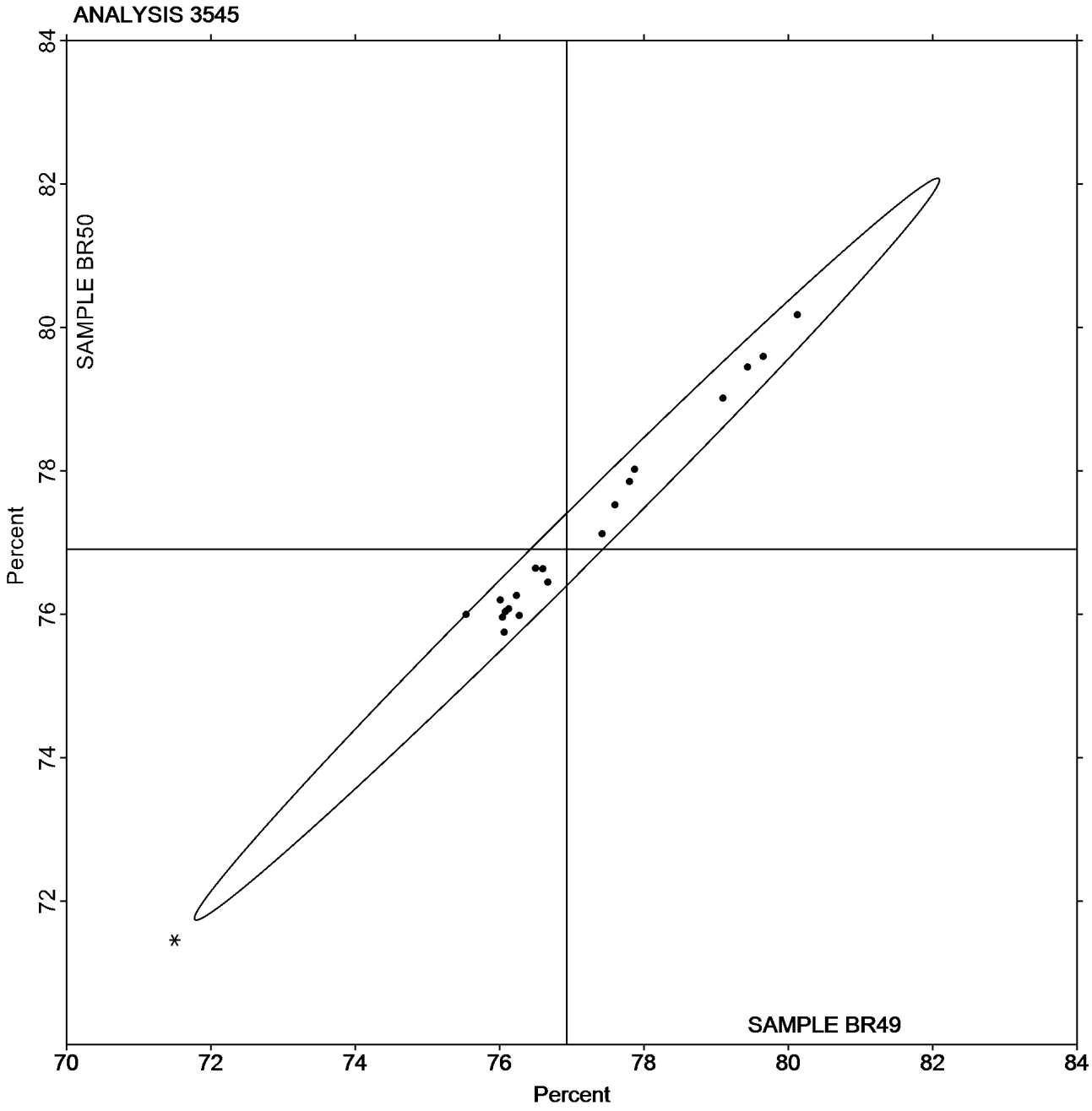
Statistics based on 20 of 20 reporting participants.

Key to Instrument Codes Reported by Participants

HG	Hunter Labscan / XE	HZ	Hunter Lab ColorFlex EZ Series
LA	L & W Elrepho - Autoline	PP	Technidyne Profile/Plus
TD	Technidyne Color Touch 45X	TP	Technidyne Test/Plus
TS	Technidyne Brightimeter Micro S-5	XD	X-Rite Color Ci7600
XX	Instrument make/model not specified by lab		

Grand Mean Sample BR49 = 76.932 Percent

Grand Mean Sample BR50 = 76.908 Percent



Paper & Paperboard Interlaboratory Testing Program

Analysis 3547
Diffuse Brightness
TAPPI Official Test Method T525

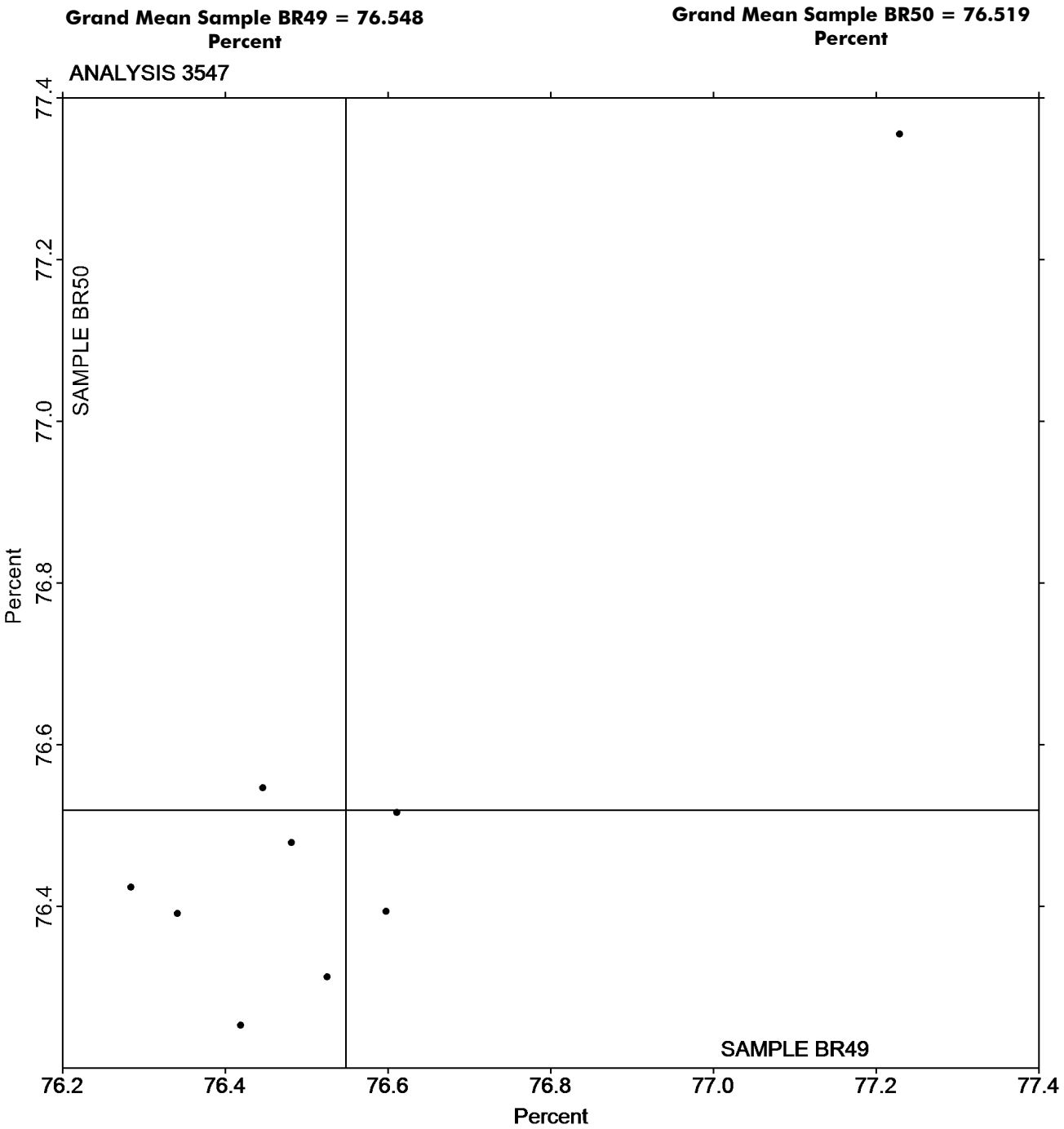
WebCode	Data Flag	Sample BR49 Lab Mean	Sample BR49 Diff from Grand Mean	Sample BR49 CPV	Sample BR50 Lab Mean	Sample BR50 Diff from Grand Mean	Sample BR50 CPV	Instr Code
2CYVD7		76.48	-0.07	-0.24	76.48	-0.04	-0.12	TC
793ZHY		76.53	-0.02	-0.08	76.31	-0.21	-0.63	LT
CY9YKV		77.23	0.68	2.46	77.36	0.84	2.56	LT
DPMUDW		76.45	-0.10	-0.37	76.55	0.03	0.08	LE
N8PF3L		76.28	-0.26	-0.95	76.42	-0.10	-0.29	LE
Q29U7J		76.61	0.06	0.23	76.52	0.00	-0.01	LT
QNLJYF		76.34	-0.21	-0.75	76.39	-0.13	-0.39	EA
RZUKTC		76.42	-0.13	-0.47	76.25	-0.27	-0.81	TD
X7JD6D		76.60	0.05	0.18	76.39	-0.13	-0.38	TC

Summary Statistics	Sample BR49	Sample BR50
Grand Means	76.55 Percent	76.52 Percent
Stnd Dev Btwn Labs	0.28 Percent	0.33 Percent

Statistics based on 9 of 9 reporting participants.

Key to Instrument Codes Reported by Participants

EA	Datacolor Elrepho	LE	L & W Elrepho
LT	L & W Elrepho SE 071	TC	Technidyne Color Touch Series
TD	Technidyne Color Touch X		



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 3549

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

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

Report #4402, February 2026

Web Code	Data Flag	Samples	Hunter L, a, b Color Values L	a		b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code
2CYVD7		**CA49**	87.30	0.90		-0.65	-0.04	-0.07	0.00	0.08	HK
		CA50	87.26	0.83		-0.65					
68CEB4		**CA49**	90.08	0.31		-0.34	-0.29	0.03	-0.26	0.39	XX
		CA50	89.78	0.34		-0.60					
7MF9H3		**CA49**	86.86	0.70		-0.82	-0.03	0.03	-0.06	0.07	HK
		CA50	86.83	0.73		-0.88					
CY9YKV	X	**CA49**	85.36	2.32	X	-1.80	0.07	-0.09	0.16	0.20	TS
		CA50	85.43	2.23		-1.64					
DW23EX		**CA49**	86.56	0.00		-0.14	0.06	0.00	0.00	0.06	XX
		CA50	86.62	0.00		-0.14					
GZA69R		**CA49**	87.40	0.80		-0.90	-0.08	0.03	-0.05	0.10	HK
		CA50	87.31	0.83		-0.94					
HUGKHG		**CA49**	89.56	0.53		-0.49	-0.06	-0.07	0.02	0.10	TC
		CA50	89.50	0.45		-0.48					
KDMYQM		**CA49**	89.45	0.35		-0.56	-0.01	-0.03	0.02	0.04	TC
		CA50	89.45	0.32		-0.54					
KMBPGK		**CA49**	85.46	0.79		-1.30	-0.04	-0.08	0.14	0.17	TD
		CA50	85.42	0.71		-1.16					
LAGQ3N		**CA49**	86.62	0.34		-0.48	0.09	-0.04	0.14	0.17	TC
		CA50	86.70	0.29		-0.34					
N8PF3L		**CA49**	89.37	0.39		-0.61	0.10	-0.07	0.22	0.25	LS
		CA50	89.47	0.32		-0.38					
RZUKTC		**CA49**	86.70	0.27		-0.39	-0.16	0.05	-0.20	0.26	TC
		CA50	86.54	0.33		-0.59					
VTJTR6		**CA49**	88.41	0.87		-1.31	-0.02	0.05	-0.15	0.16	TC
		CA50	88.38	0.92		-1.46					
WK67GF		**CA49**	89.75	-0.41		0.03	-0.12	0.04	-0.25	0.28	NH
		CA50	89.63	-0.37		-0.22					
X7JD6D		**CA49**	86.76	0.34		-0.44	-0.01	-0.07	0.05	0.09	TC
		CA50	86.75	0.27		-0.38					

Summary Statistics

Grand Means							
CA49	87.709	0.441	-0.679	-0.044	-0.014	-0.025	0.158
CA50	87.672	0.426	-0.693				
Stnd Dev Btwn Labs							
CA49	1.592	0.363	0.481	0.102	0.053	0.147	0.103
CA50	1.553	0.355	0.442				

Statistics based on 14 of 15 reporting participants

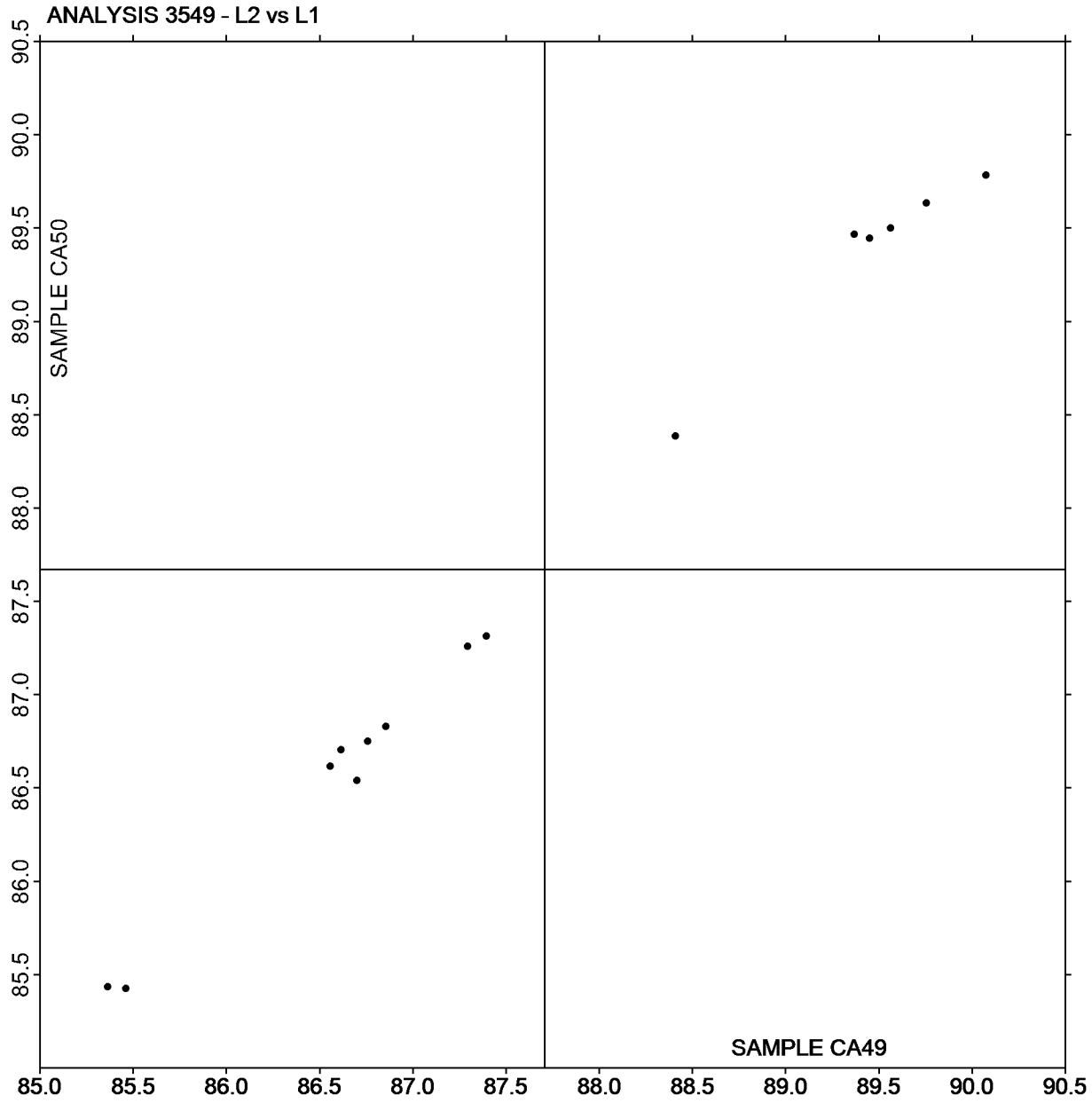
Comments on Assigned Data Flags for Test #3549

CY9YKV (X) - Very high "a" values for both samples. Inconsistent within replicate readings of "a" for both samples.

Key to Instrument Codes Reported by Participants

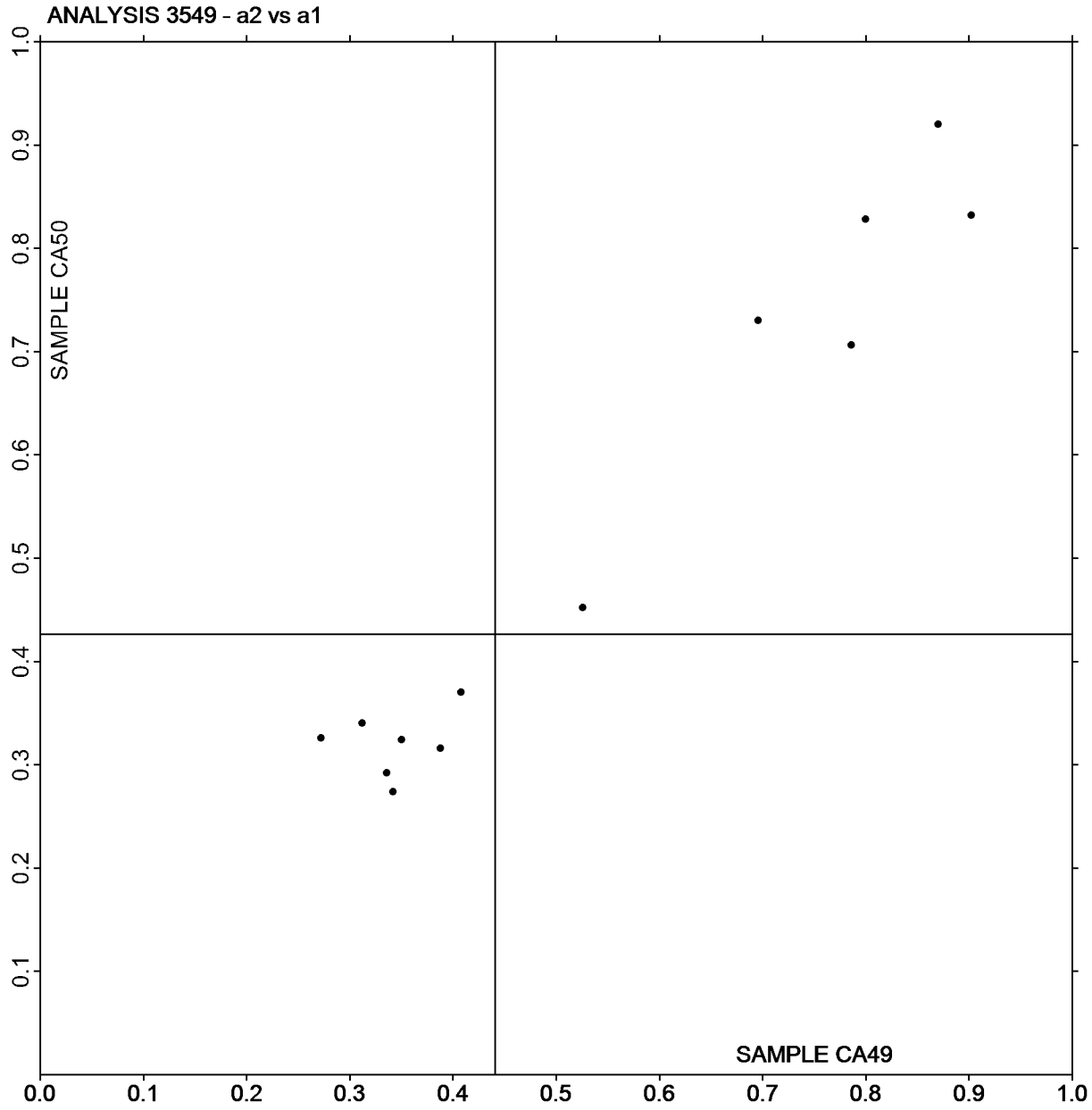
HK	Hunter LabScan XE	LS	L & W Elrepho SE 070
NH	Minolta CM-3700A Spectrophotometer	TC	Technidyne Color Touch Series
TD	Technidyne Color Touch X45	TS	Technidyne Brightimeter Micro S-5
XX	Instrument make/model not specified by lab		

Plot of L values CA50 vs L values CA49



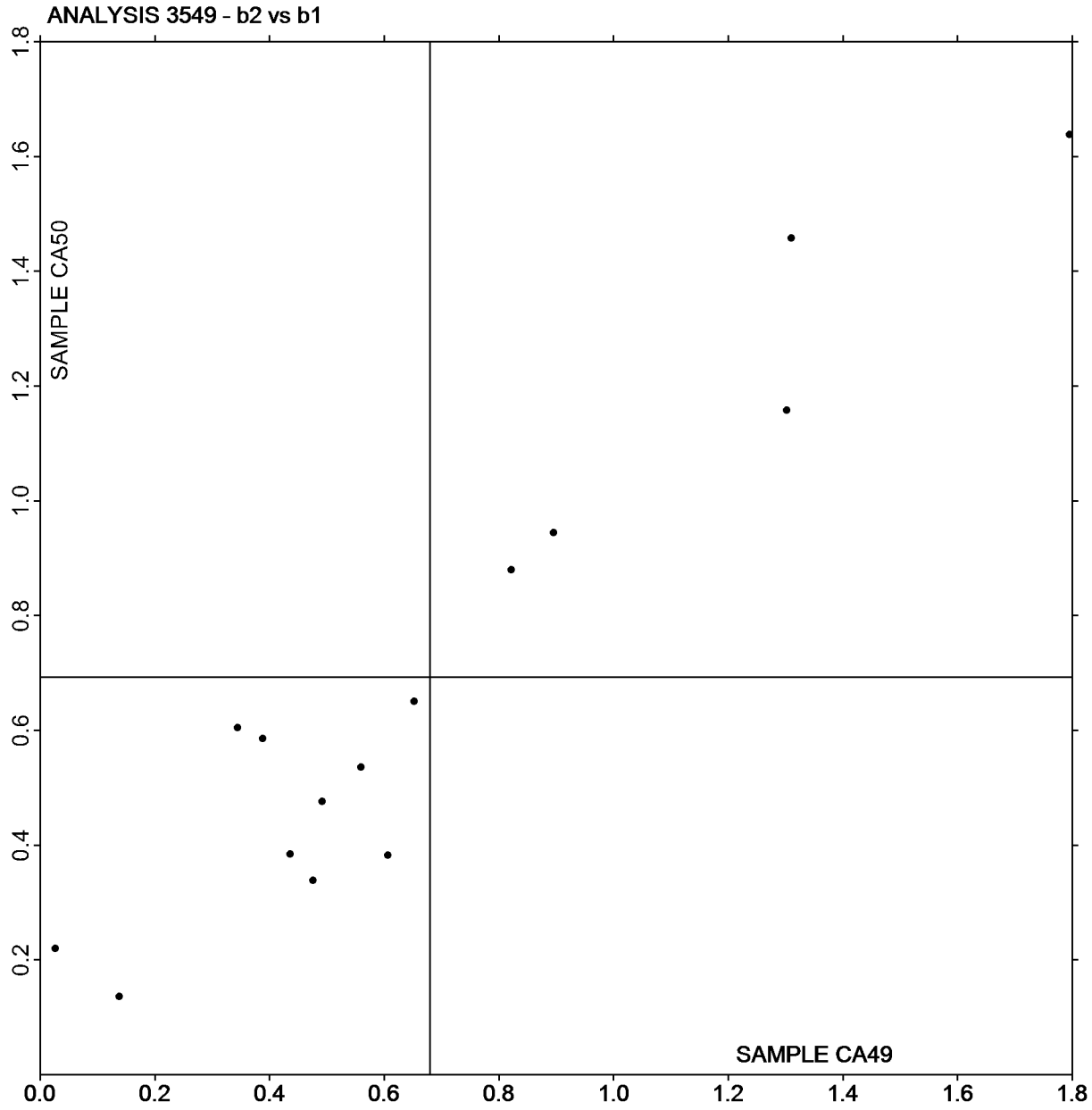
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values CA50 vs a values CA49



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

Plot of b values CA50 vs b values CA49



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

Paper & Paperboard Interlaboratory Testing Program

Report #4402, February 2026

Analysis 3551

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

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

Web Code	Data Flag	Samples	Hunter L, a, b Color Values L	a	b	Color Difference Values ΔL	Δa	Δb	ΔE	Instr Code
29YKH7		CA49	89.72	-0.52	-0.13	-0.02	-0.02	0.04	0.05	XX
		CA50	89.70	-0.54	-0.08					
2CYVD7		CA49	86.75	-0.58	-0.25	0.04	-0.03	0.12	0.13	TC
		CA50	86.79	-0.62	-0.13					
793ZHY		CA49	89.64	-0.50	0.01	-0.13	0.01	-0.15	0.20	LT
		CA50	89.50	-0.49	-0.14					
8UW4YX		CA49	89.51	-0.40	0.12	-0.03	0.04	-0.04	0.06	XX
		CA50	89.49	-0.36	0.09					
8Y7HFV		CA49	88.68	-0.51	-0.19	-0.11	0.00	-0.14	0.18	HL
		CA50	88.58	-0.52	-0.33					
EHYVVM		CA49	89.73	-0.52	-0.13	-0.01	0.27 X	-0.58	0.64 X	TC
		CA50	89.72	-0.26	-0.71					
QNLJYF		CA49	89.39	-0.52	-0.28	-0.04	-0.03	0.18	0.19	EG
		CA50	89.35	-0.56	-0.10					
TKXTKG		CA49	89.69	-0.40	-0.52	0.22	0.01	-0.12	0.25	NF
		CA50	89.92	-0.39	-0.64					
XKZ9KA	X	CA49	89.59	-0.54	13.31 X	0.07	-0.05	-13.16 X	13.16X	XX
		CA50	89.66	-0.59	0.15					

Summary Statistics

Grand Means							
CA49	89.190	-0.500	-0.171	-0.010	0.029	-0.084	0.213
CA50	89.189	-0.479	-0.255				
Stnd Dev Btwn Labs							
CA49	0.973	0.062	0.194	0.109	0.100	0.234	0.185
CA50	0.977	0.119	0.283				

Statistics based on 8 of 9 reporting participants

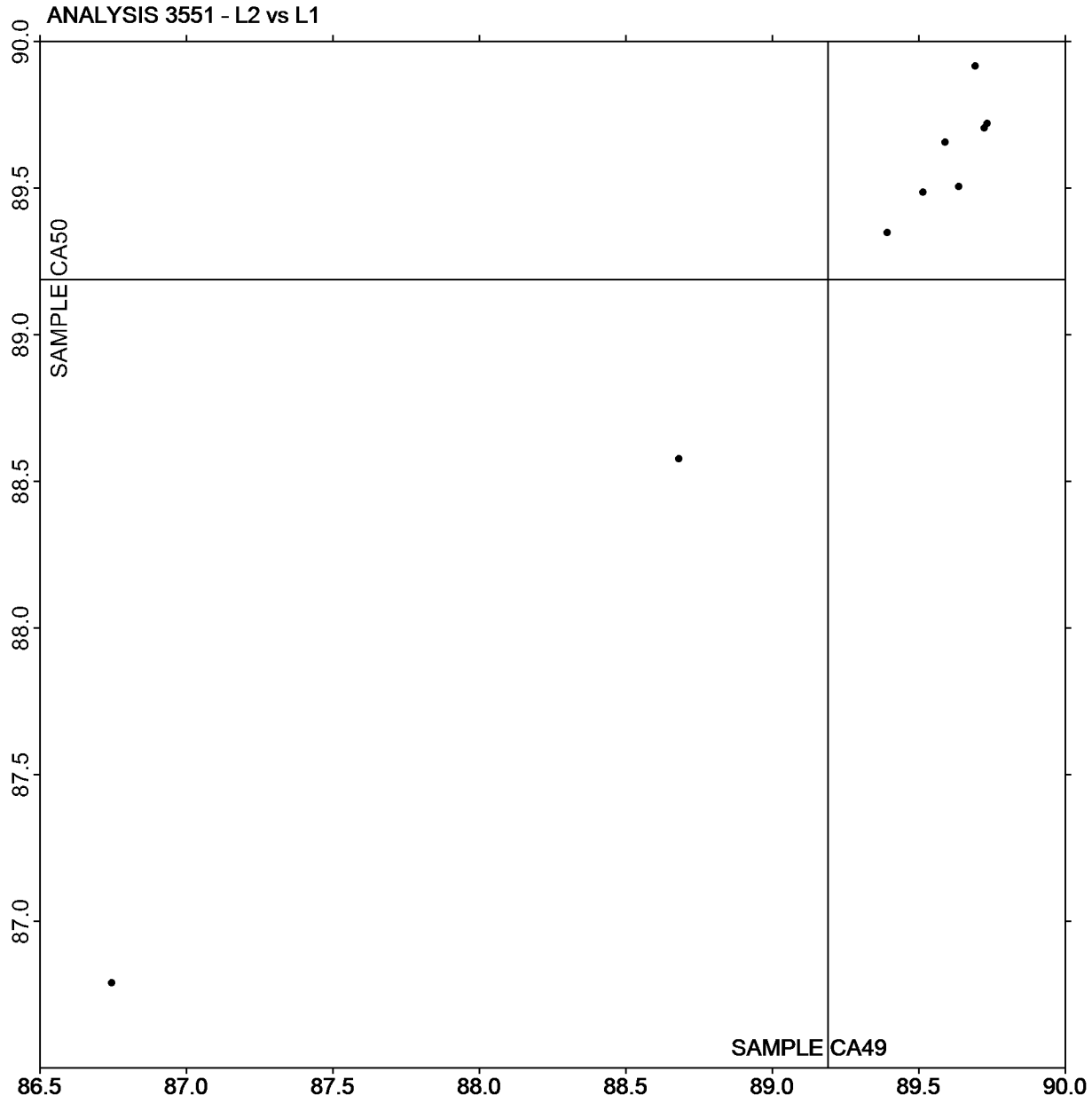
Comments on Assigned Data Flags for Test #3551

XKZ9KA (X) - Extreme data for "b" value for sample CA49. Small delta b & large delta E.

Key to Instrument Codes Reported by Participants

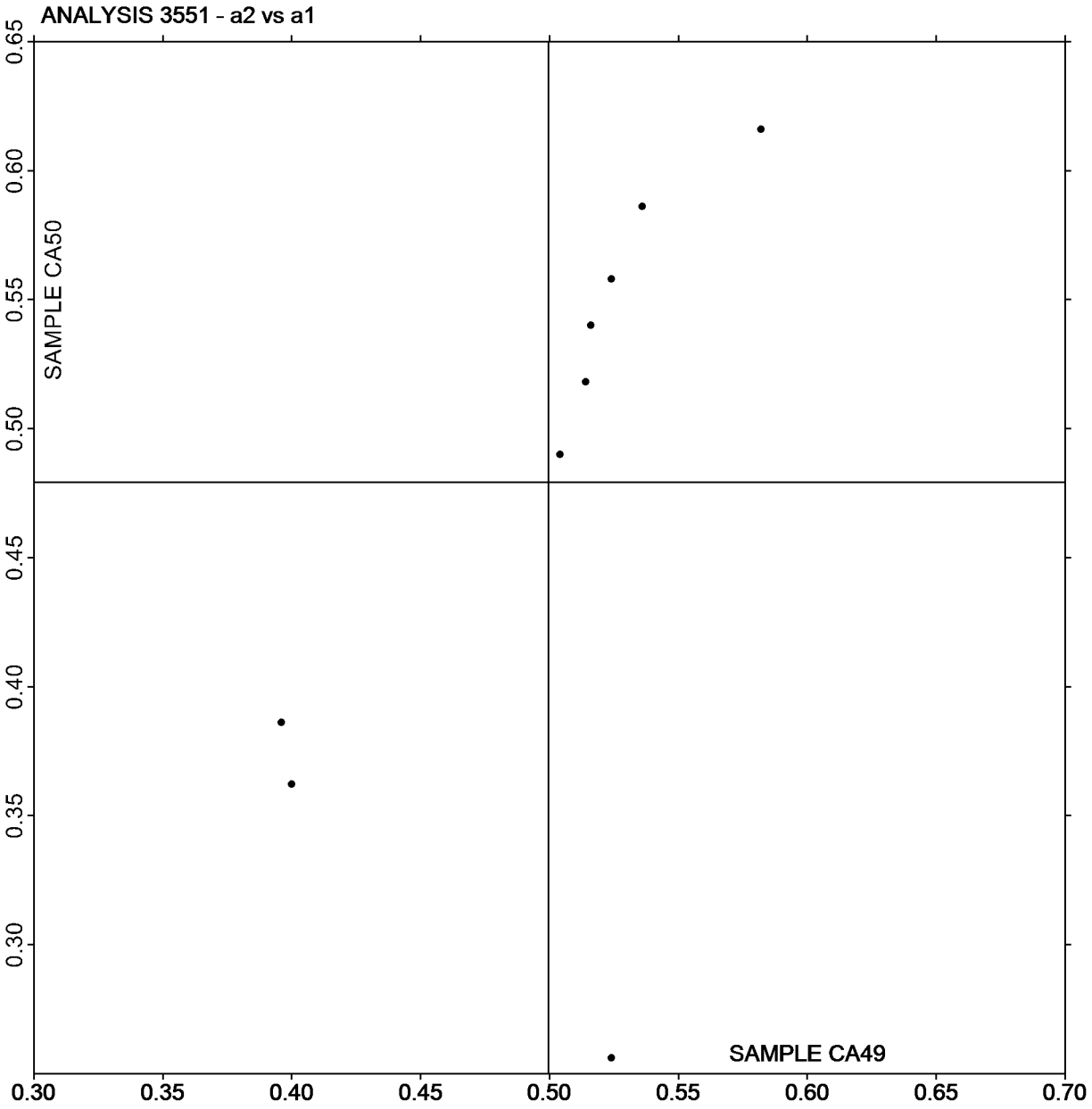
EG	Datacolor Elrepho	HL	Hunter Agera
LT	L & W Elrepho SE 071	NF	Minolta CM-3600d Spectrophotometer
TC	Technidyne Color Touch Series	XX	Instrument make/model not specified by lab

Plot of L values CA50 vs L values CA49



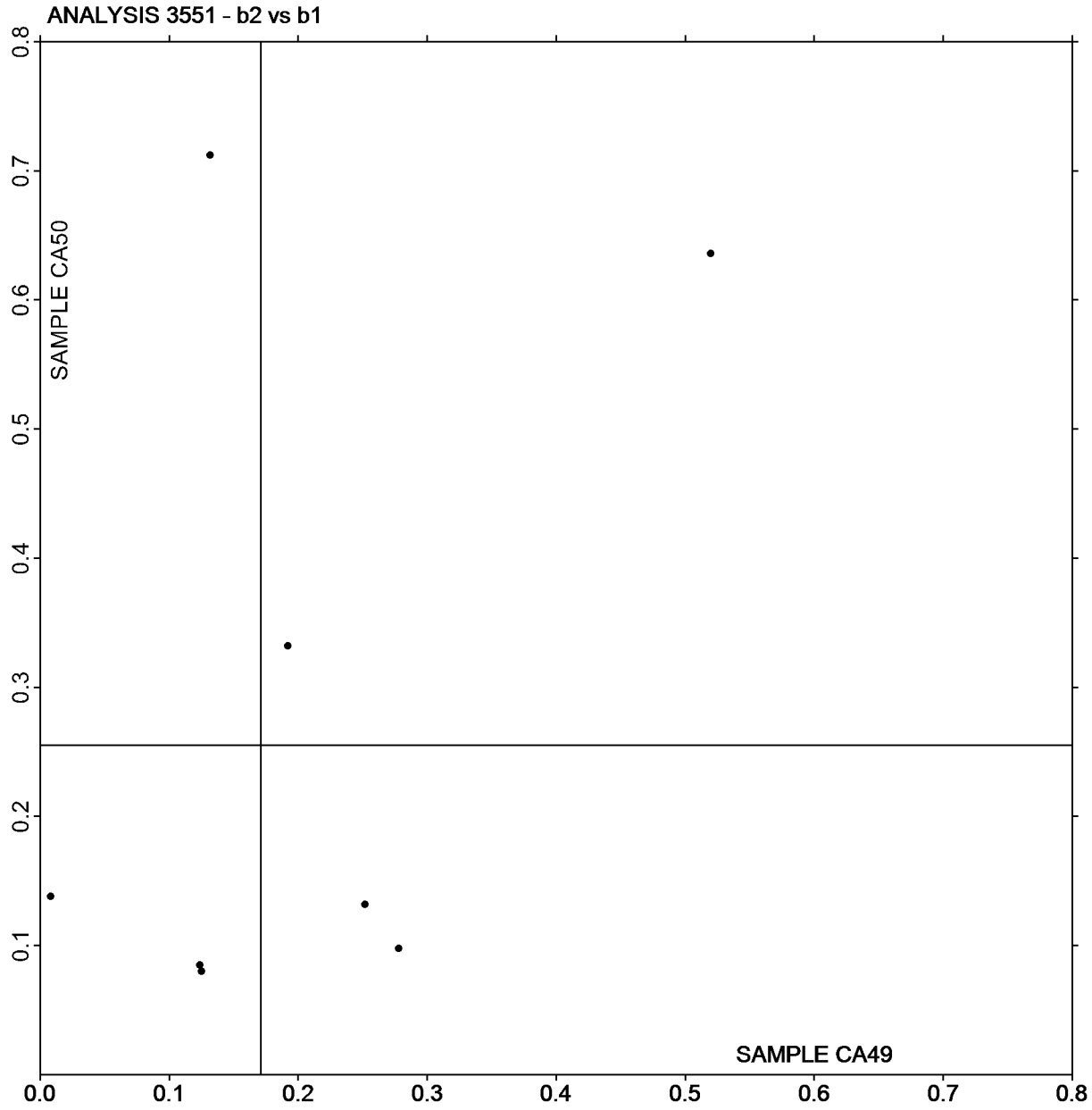
If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

Plot of a values CA50 vs a values CA49



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

Plot of b values CA50 vs b values CA49



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 3553

Specular Gloss at 75 Degrees - High Range

TAPPI Official Test Method T480

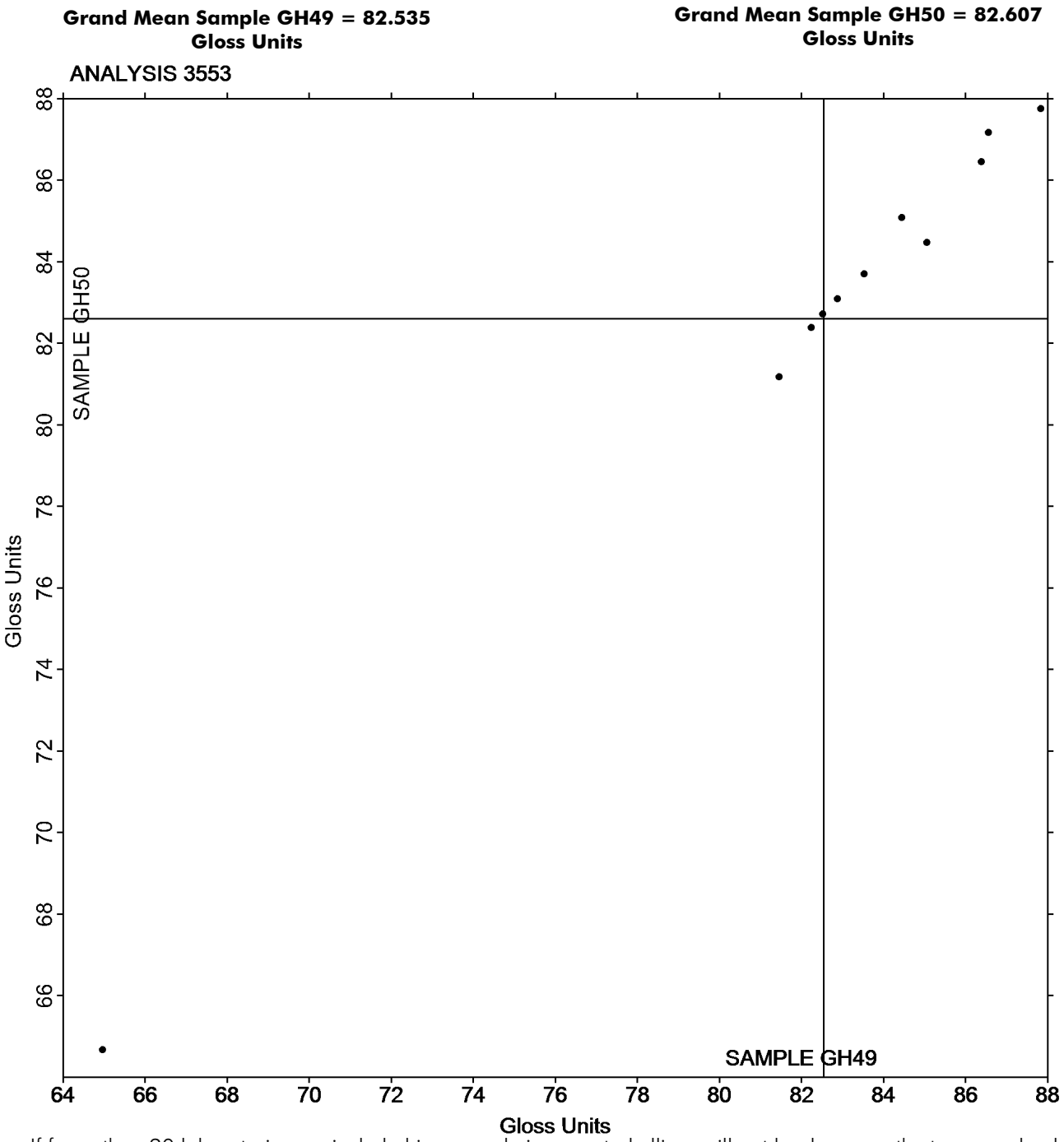
WebCode	Data Flag	Sample GH49 Lab Mean	Sample GH49 Diff from Grand Mean	Sample GH49 CPV	Sample GH50 Lab Mean	Sample GH50 Diff from Grand Mean	Sample GH50 CPV	Instr Code
793ZHY		82.88	0.34	0.06	83.09	0.48	0.08	GA
7MF9H3		82.24	-0.30	-0.05	82.39	-0.22	-0.03	TP
GZA69R		82.52	-0.02	0.00	82.72	0.11	0.02	PP
KDMYQM		84.44	1.90	0.31	85.08	2.47	0.39	LF
LAGQ3N		86.39	3.85	0.63	86.45	3.84	0.61	PP
QNLJYF		86.56	4.02	0.65	87.17	4.56	0.72	TH
RZUKTC		81.46	-1.08	-0.17	81.18	-1.43	-0.23	TA
WK9QBA		83.53	0.99	0.16	83.70	1.09	0.17	LG
X7JD6D		85.06	2.52	0.41	84.47	1.86	0.30	GM
XPH4R9		87.84	5.30	0.86	87.76	5.15	0.82	VM
Z4P8Z8		64.97	-17.57	-2.85	64.67	-17.94	-2.85	LF

Summary Statistics	Sample GH49	Sample GH50
Grand Means	82.54 Gloss Units	82.61 Gloss Units
Stnd Dev Btwn Labs	6.17 Gloss Units	6.30 Gloss Units

Statistics based on 11 of 11 reporting participants.

Key to Instrument Codes Reported by Participants

GA	BYK-Gardner (model not specified)	GM	BYK-Gardner micro-gloss
LF	L & W Autoline 400	LG	L & W Autoline 600
PP	Technidyne Profile/Plus	TA	Technidyne Test Plus Gloss 75 degree
TH	Technidyne T480A	TP	Technidyne Profile Plus
VM	Valmet PaperLab (was Kajaani/Robotest)		



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 3555

Specular Gloss at 75 Degrees - Low Range

TAPPI Official Test Method T480

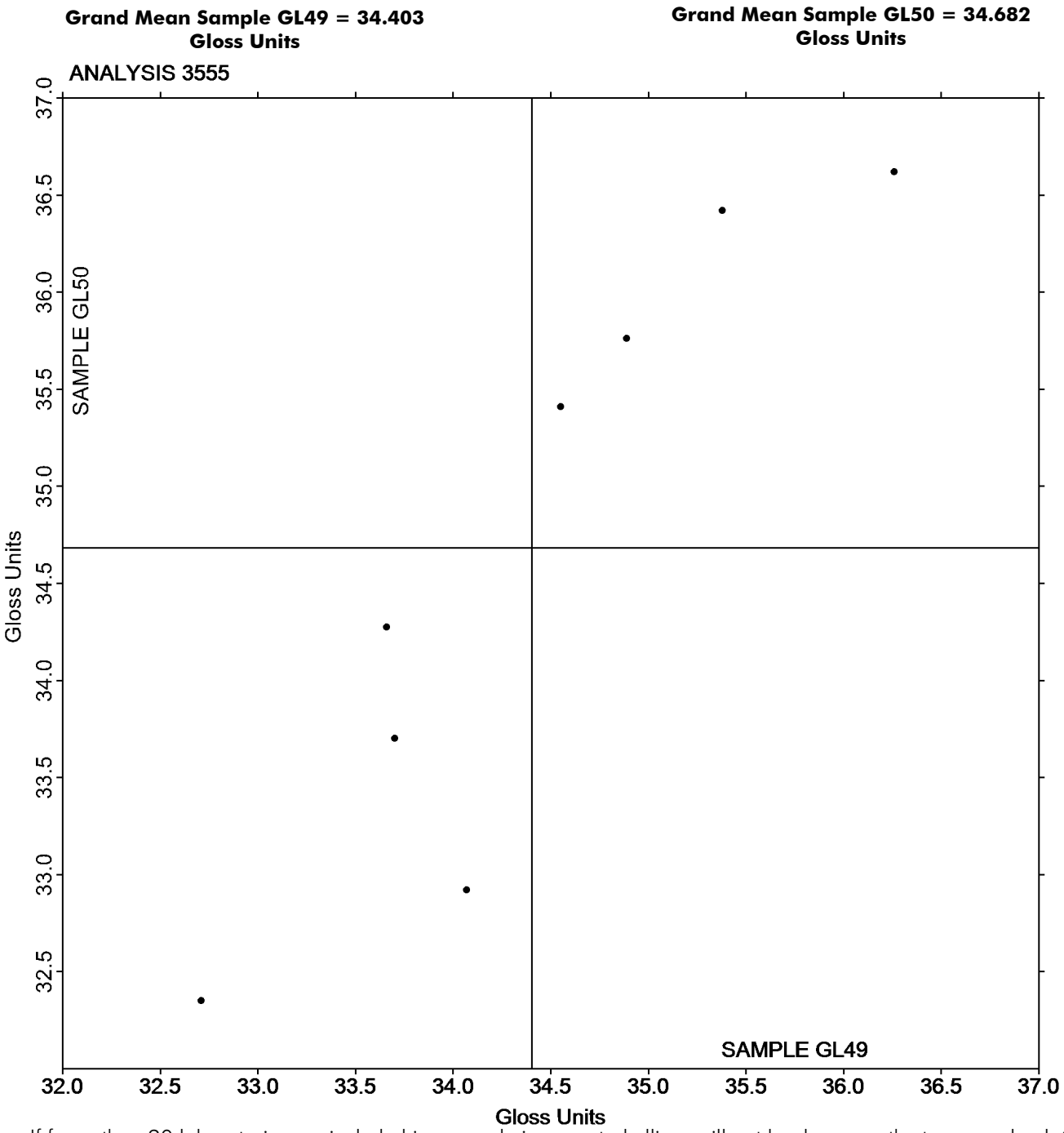
WebCode	Data Flag	Sample GL49 Lab Mean	Sample GL49 Diff from Grand Mean	Sample GL49 CPV	Sample GL50 Lab Mean	Sample GL50 Diff from Grand Mean	Sample GL50 CPV	Instr Code
2CYVD7		36.26	1.86	1.67	36.62	1.94	1.20	PP
8JWQHX		32.71	-1.69	-1.52	32.35	-2.33	-1.45	TH
ELHN7P		33.70	-0.70	-0.63	33.70	-0.98	-0.61	XX
FG4DTL		34.07	-0.33	-0.30	32.92	-1.76	-1.09	GM
JG94AR		35.38	0.98	0.88	36.42	1.74	1.08	WJ
KMBPGK		34.55	0.15	0.13	35.41	0.73	0.45	TP
NF363E		34.89	0.49	0.44	35.76	1.08	0.67	GS
RZUKTC		33.66	-0.74	-0.67	34.28	-0.41	-0.25	TA

Summary Statistics	Sample GL49	Sample GL50
Grand Means	34.40 Gloss Units	34.68 Gloss Units
Stnd Dev Btwn Labs	1.11 Gloss Units	1.61 Gloss Units

Statistics based on 8 of 8 reporting participants.

Key to Instrument Codes Reported by Participants

GM	BYK-Gardner micro-gloss	GS	BYK-Gardner Glossgard II
PP	Technidyne Profile/Plus	TA	Technidyne Test Plus Gloss 75 degree
TH	Technidyne T480A	TP	Technidyne Profile Plus
WJ	Zehntner ZLR 1020	XX	Instrument make/model not specified by lab



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 3601

Folding Endurance (MIT) - Double Folds

TAPPI Official Test Method T511

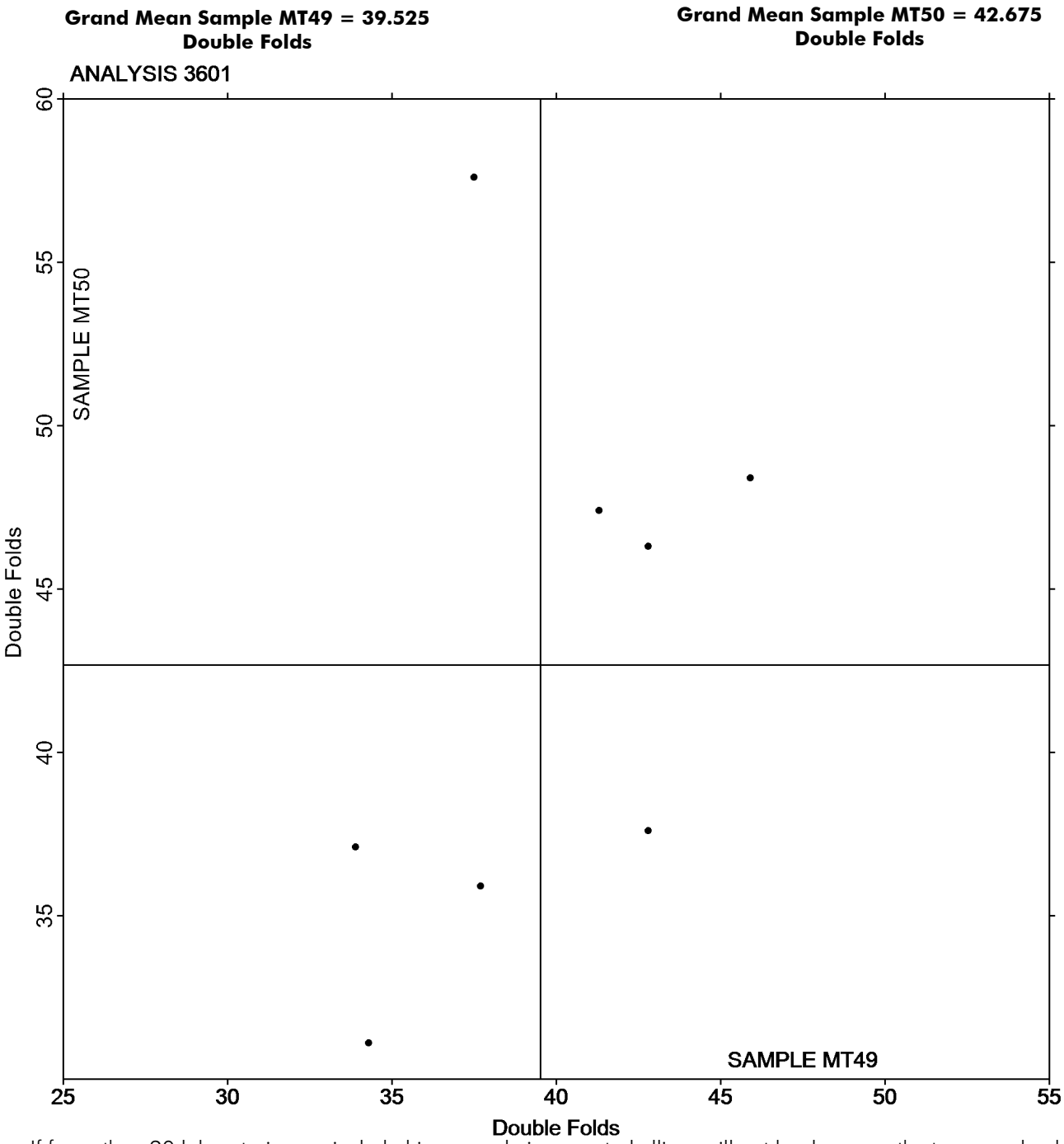
WebCode	Data Flag	Sample MT49 Lab Mean	Sample MT49 Diff from Grand Mean	Sample MT49 CPV	Sample MT50 Lab Mean	Sample MT50 Diff from Grand Mean	Sample MT50 CPV	Instr Code
23QGB4		34.30	-5.23	-1.20	31.10	-11.57	-1.33	MT
27PR84		33.90	-5.63	-1.30	37.10	-5.57	-0.64	MT
8JWQHX		37.50	-2.02	-0.47	57.60	14.93	1.72	MT
E9994Q		42.80	3.27	0.76	37.60	-5.07	-0.58	MT
QNLJYF		42.80	3.27	0.76	46.30	3.63	0.42	MT
XKZ9KA		45.90	6.38	1.47	48.40	5.73	0.66	XX
XPH4R9		37.70	-1.82	-0.42	35.90	-6.77	-0.78	MT
ZFJMP9		41.30	1.77	0.41	47.40	4.73	0.54	MT

Summary Statistics	Sample MT49	Sample MT50
Grand Means	39.53 Double Folds	42.68 Double Folds
Stnd Dev Btwn Labs	4.34 Double Folds	8.68 Double Folds

Statistics based on 8 of 8 reporting participants.

Key to Instrument Codes Reported by Participants

MT	MIT - Tinius Olsen	XX	Instrument make/model not specified by lab



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 3603
Bending Resistance, Gurley Type
TAPPI Official Test Method T543

WebCode	Data Flag	Sample BG49 Lab Mean	Sample BG49 Diff from Grand Mean	Sample BG49 CPV	Sample BG50 Lab Mean	Sample BG50 Diff from Grand Mean	Sample BG50 CPV	Instr Code
4FLKNU		117.9	-7.8	-0.38	117.3	-4.0	-0.22	ZZ
7MYCQ4		121.9	-3.8	-0.19	118.2	-3.1	-0.17	ZZ
8JWQHX		152.9	27.2	1.33	149.3	28.1	1.53	ZZ
8Y7HFV		121.6	-4.1	-0.20	114.6	-6.7	-0.37	ZZ
D6GNJV		122.9	-2.8	-0.14	125.1	3.8	0.21	ZZ
DPMUDW		135.4	9.7	0.47	125.7	4.4	0.24	ZZ
E9994Q		116.0	-9.7	-0.48	108.3	-12.9	-0.71	ZZ
HB9FWT		139.4	13.7	0.67	133.0	11.7	0.64	ZZ
HGBRTQ		134.3	8.6	0.42	128.1	6.8	0.37	ZZ
KV2BHD		115.9	-9.8	-0.48	119.2	-2.1	-0.11	ZZ
MB8CAJ		153.8	28.1	1.38	140.7	19.5	1.06	ZZ
WK67GF	X	5.3	-120.4	-5.89	5.3	-116.0	-6.33	ZZ
XPH4R9		76.6	-49.1	-2.40	75.8	-45.4	-2.48	ZZ

Summary Statistics	Sample BG49	Sample BG50
Grand Means	125.72 Gurley Units	121.28 Gurley Units
Stnd Dev Btwn Labs	20.43 Gurley Units	18.32 Gurley Units

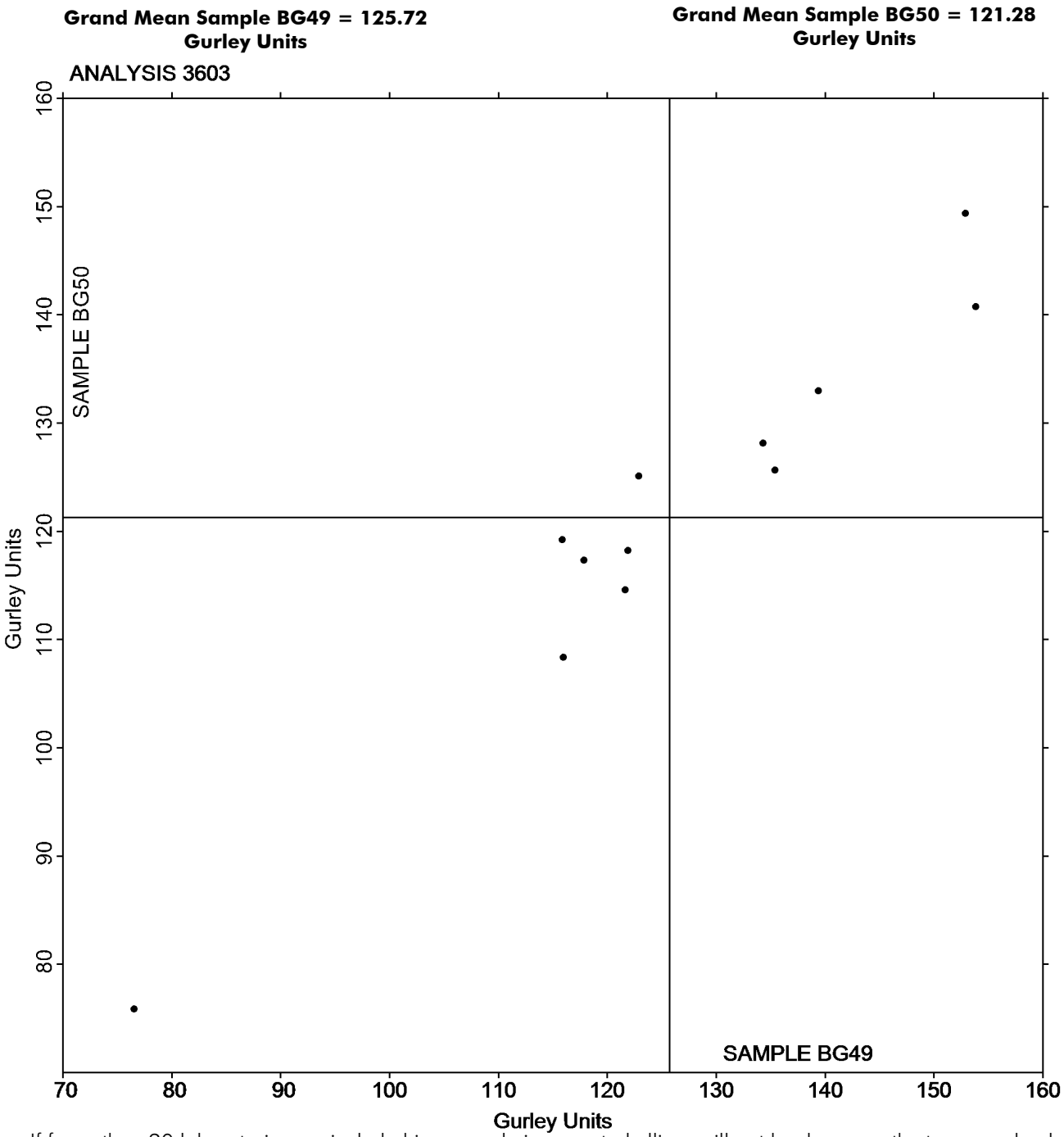
Statistics based on 12 of 13 reporting participants.

Comments on Assigned Data Flags for Test #3603

WK67GF (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 3611

Coefficient of Static Friction - Horizontal Plane Method - Printing Papers

TAPPI Official Test Method T549

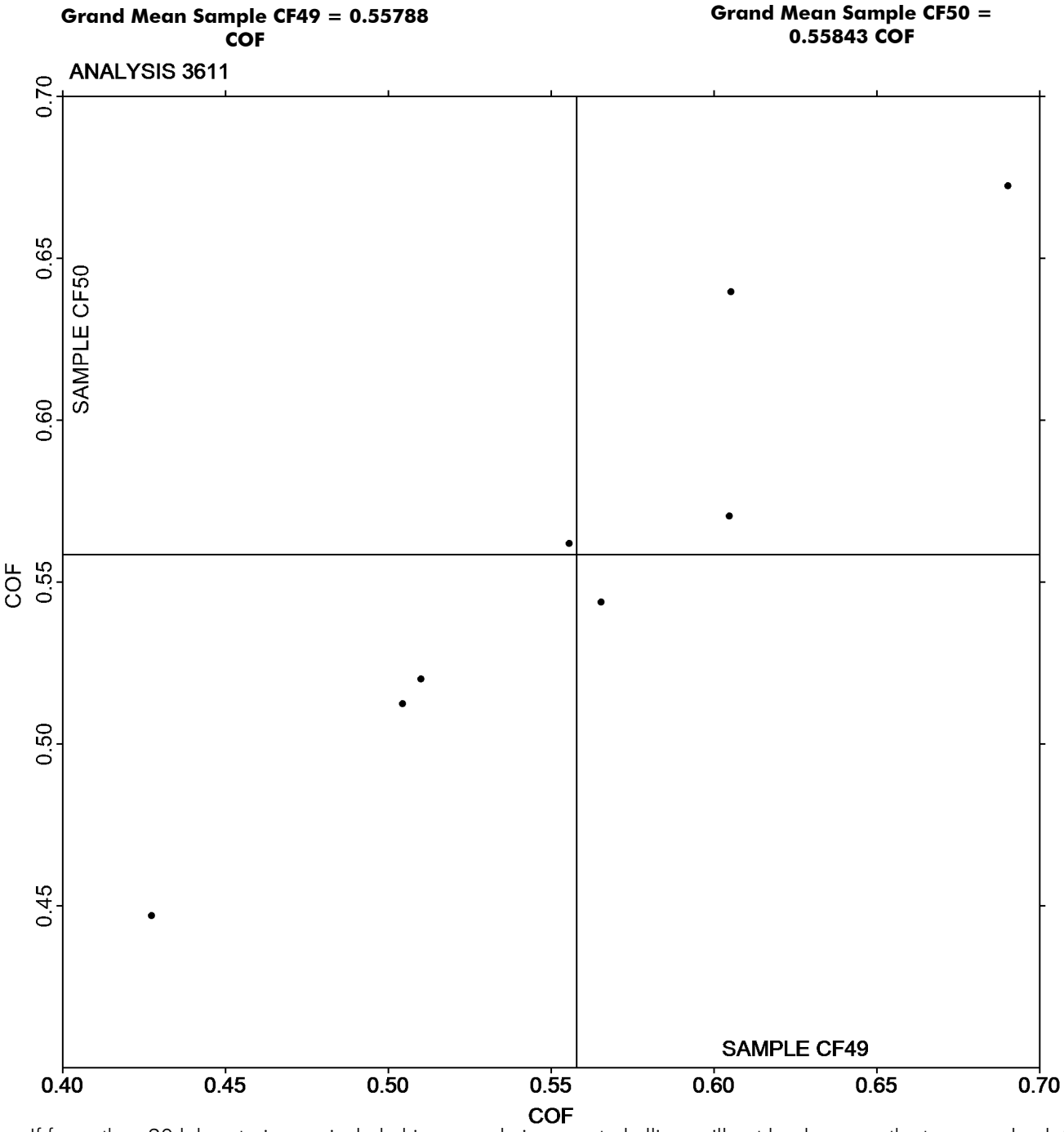
WebCode	Data Flag	Sample CF49 Lab Mean	Sample CF49 Diff from Grand Mean	Sample CF49 CPV	Sample CF50 Lab Mean	Sample CF50 Diff from Grand Mean	Sample CF50 CPV	Instr Code
27PR84		0.6048	0.0469	0.59	0.5704	0.0120	0.17	TM
68CEB4		0.5044	-0.0535	-0.67	0.5124	-0.0460	-0.64	XX
CY9YKV		0.5556	-0.0023	-0.03	0.5618	0.0034	0.05	TA
D6GNJV		0.6902	0.1323	1.67	0.6724	0.1140	1.59	TA
HB9FWT		0.5100	-0.0479	-0.60	0.5200	-0.0384	-0.54	TA
KMBPGK		0.5654	0.0075	0.09	0.5438	-0.0146	-0.20	TA
PKR4UE		0.6052	0.0473	0.60	0.6396	0.0812	1.13	TA
WK67GF		0.4274	-0.1305	-1.64	0.4470	-0.1114	-1.55	TX

Summary Statistics	Sample CF49	Sample CF50
Grand Means	0.56 COF	0.56 COF
Stnd Dev Btwn Labs	0.08 COF	0.07 COF

Statistics based on 8 of 8 reporting participants.

Key to Instrument Codes Reported by Participants

TA	Thwing-Albert Friction Tester	TM	TMI 32-06 Monitor/Slip and Friction
TX	TMI (model not specified)	XX	Instrument make/model not specified by lab



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 3612

Coefficient of Kinetic Friction - Horizontal Plane Method - Printing Papers

TAPPI Official Test Method T549

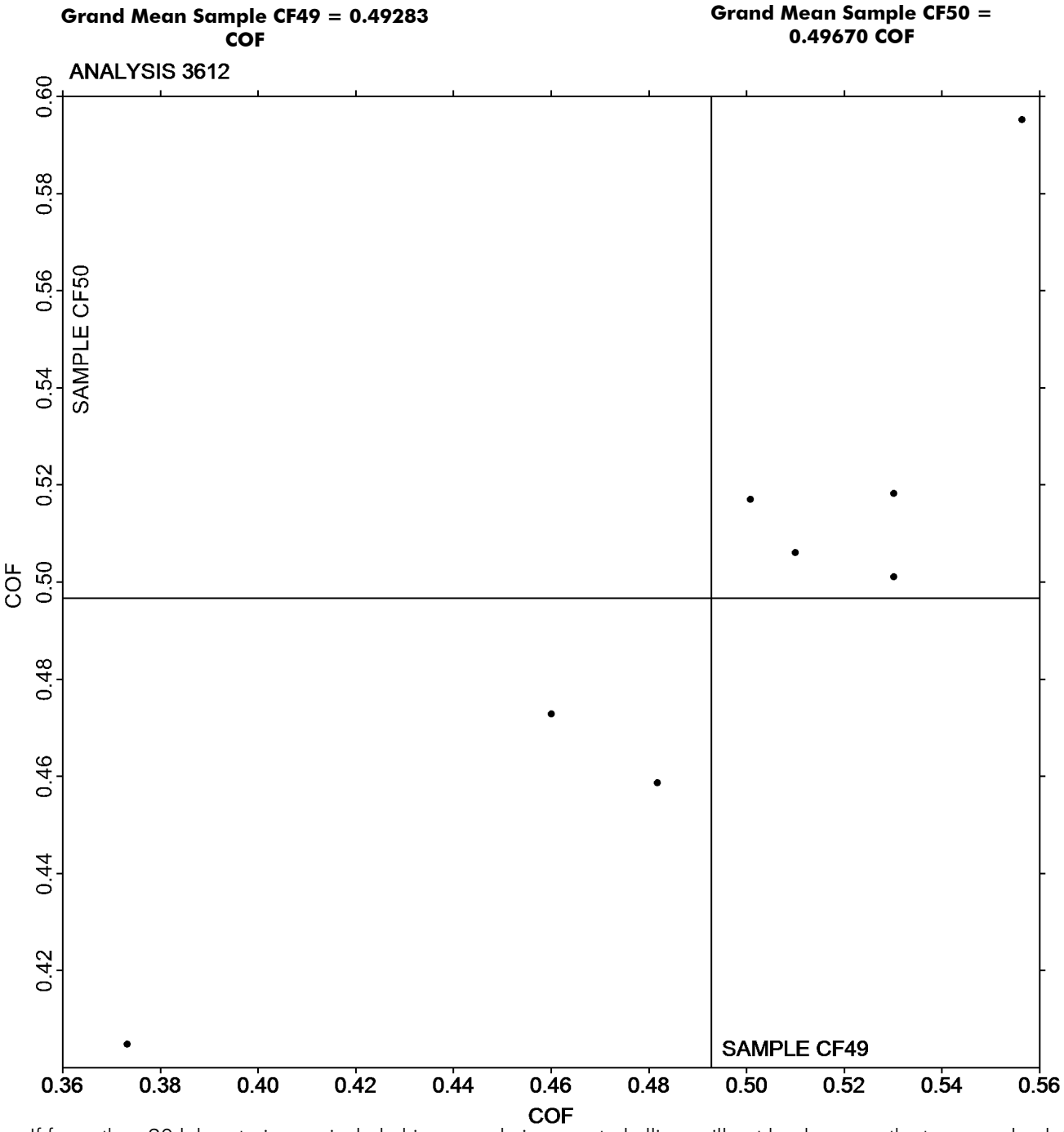
WebCode	Data Flag	Sample CF49 Lab Mean	Sample CF49 Diff from Grand Mean	Sample CF49 CPV	Sample CF50 Lab Mean	Sample CF50 Diff from Grand Mean	Sample CF50 CPV	Instr Code
27PR84		0.5302	0.0374	0.66	0.5010	0.0043	0.08	TM
68CEB4		0.5008	0.0080	0.14	0.5170	0.0203	0.37	XX
CY9YKV		0.4600	-0.0328	-0.58	0.4728	-0.0239	-0.43	TA
D6GNJV		0.5302	0.0374	0.66	0.5182	0.0215	0.39	TA
HB9FWT		0.5100	0.0172	0.30	0.5060	0.0093	0.17	TA
KMBPGK		0.4818	-0.0110	-0.19	0.4586	-0.0381	-0.69	TA
PKR4UE		0.5564	0.0636	1.12	0.5952	0.0985	1.79	TA
WK67GF		0.3732	-0.1196	-2.10	0.4048	-0.0919	-1.67	TX

Summary Statistics	Sample CF49	Sample CF50
Grand Means	0.49 COF	0.50 COF
Stnd Dev Btwn Labs	0.06 COF	0.05 COF

Statistics based on 8 of 8 reporting participants.

Key to Instrument Codes Reported by Participants

TA	Thwing-Albert Friction Tester	TM	TMI 32-06 Monitor/Slip and Friction
TX	TMI (model not specified)	XX	Instrument make/model not specified by lab



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 3613
Moisture in Paper
TAPPI Official Test Method T412

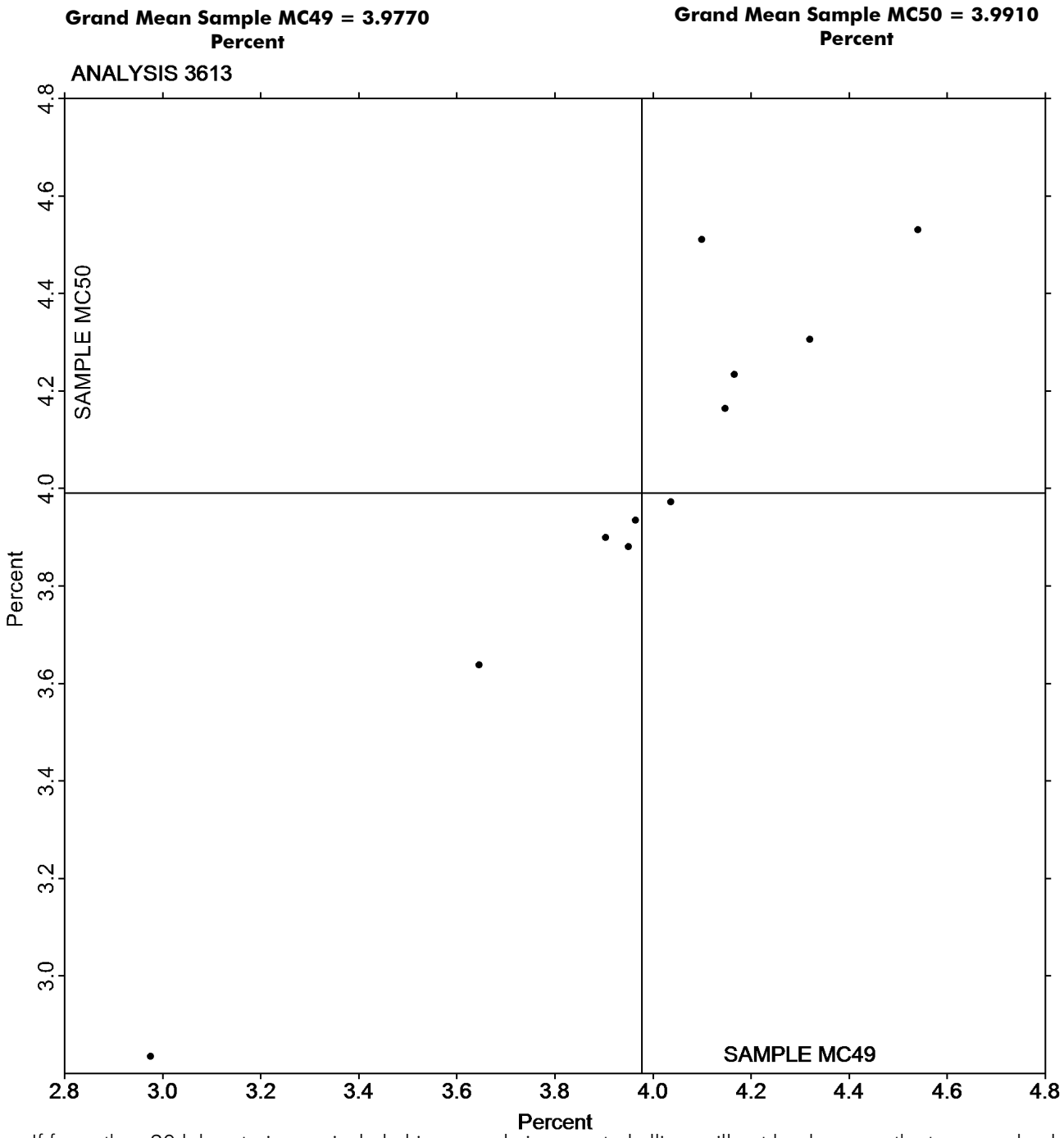
WebCode	Data Flag	Sample MC49 Lab Mean	Sample MC49 Diff from Grand Mean	Sample MC49 CPV	Sample MC50 Lab Mean	Sample MC50 Diff from Grand Mean	Sample MC50 CPV	Instr Code
4FLKNU		4.148	0.171	0.42	4.164	0.173	0.37	ZZ
79GK73		4.540	0.563	1.39	4.530	0.539	1.14	ZZ
7XGWAZ		3.903	-0.074	-0.18	3.899	-0.092	-0.19	ZZ
BLBABQ		4.036	0.059	0.15	3.972	-0.019	-0.04	ZZ
E9994Q		4.320	0.343	0.85	4.305	0.314	0.66	ZZ
FY3P3L		4.166	0.189	0.47	4.234	0.243	0.51	ZZ
HB9FWT		3.964	-0.013	-0.03	3.934	-0.057	-0.12	ZZ
JG94AR		3.645	-0.332	-0.82	3.638	-0.354	-0.75	ZZ
N8PF3L		2.975	-1.002	-2.48	2.835	-1.156	-2.45	ZZ
TKXTKG		3.950	-0.027	-0.07	3.880	-0.111	-0.23	ZZ
X8YDP3		4.100	0.123	0.30	4.510	0.519	1.10	ZZ

Summary Statistics	Sample MC49	Sample MC50
Grand Means	3.98 Percent	3.99 Percent
Stnd Dev Btwn Labs	0.40 Percent	0.47 Percent

Statistics based on 11 of 11 reporting participants.

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



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

Paper & Paperboard Interlaboratory Testing Program

Analysis 3615
Sizing Test (Hercules Type)
TAPPI Official Test Method T530

WebCode	Data Flag	Sample HS49 Lab Mean	Sample HS49 Diff from Grand Mean	Sample HS49 CPV	Sample HS50 Lab Mean	Sample HS50 Diff from Grand Mean	Sample HS50 CPV	Instr Code
68CEB4		56.89	27.33	1.48	49.39	19.00	0.81	XX
793ZHY	*	62.01	32.45	1.76	102.30	71.91	3.08	XX
8NC2V2		16.38	-13.18	-0.72	19.58	-10.81	-0.46	HE
8UW4YX		19.29	-10.27	-0.56	18.29	-12.10	-0.52	XX
8Y7HFV	X	42.69	13.13	0.71	139.22	108.83	4.67	HE
CY9YKV		14.54	-15.02	-0.82	16.37	-14.02	-0.60	HE
DPMUDW		27.13	-2.43	-0.13	26.16	-4.23	-0.18	HE
EHYVVM		24.39	-5.17	-0.28	28.01	-2.38	-0.10	HE
FG4DTL		18.40	-11.16	-0.61	18.50	-11.89	-0.51	HE
GHTYZG		16.05	-13.51	-0.73	21.62	-8.77	-0.38	HE
HB9FWT		23.44	-6.12	-0.33	21.43	-8.96	-0.38	HE
HGBRTQ	X	75.61	46.05	2.50	182.18	151.79	6.51	XX
HUGKHG		10.37	-19.19	-1.04	10.82	-19.57	-0.84	HE
KDMYQM		14.67	-14.89	-0.81	17.84	-12.55	-0.54	HE
KMBPGK		72.18	42.62	2.32	80.75	50.36	2.16	HE
KV2BHD		17.68	-11.88	-0.65	19.78	-10.61	-0.46	HE
NNCW7H		41.57	12.01	0.65	31.25	0.86	0.04	HE
QGMV3A		16.90	-12.66	-0.69	16.90	-13.49	-0.58	HE
WK67GF		52.60	23.04	1.25	30.90	0.51	0.02	HE
X2CKGA		32.60	3.04	0.17	26.80	-3.59	-0.15	HE
XPH4R9		24.46	-5.10	-0.28	20.80	-9.59	-0.41	HE

Summary Statistics	Sample HS49	Sample HS50
Grand Means	29.56 Seconds	30.39 Seconds
Stnd Dev Btwn Labs	18.41 Seconds	23.32 Seconds

Statistics based on 19 of 21 reporting participants.

Comments on Assigned Data Flags for Test #3615

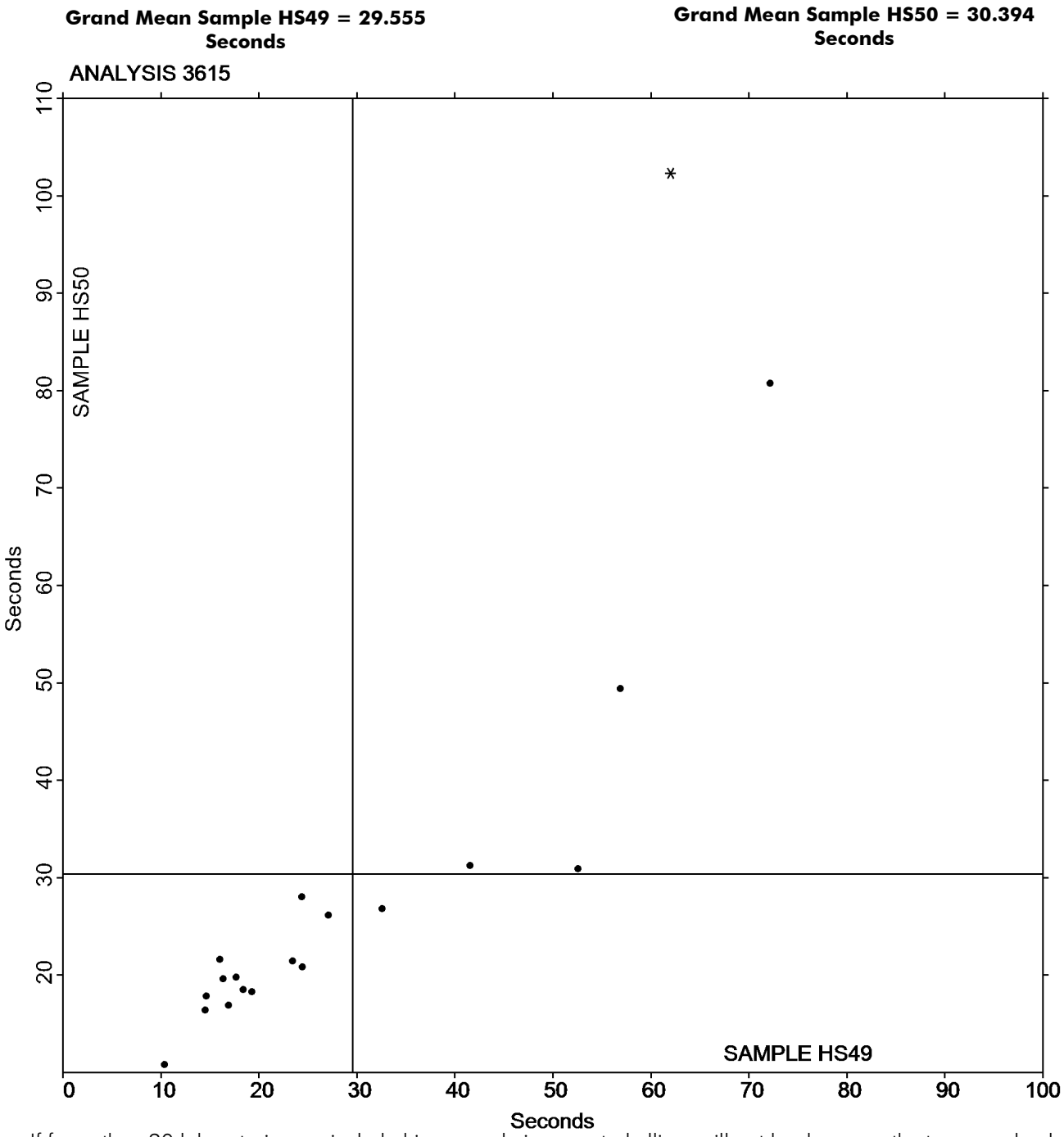
HGBRTQ (X) - Extreme Data for sample HS50. Inconsistent within the determinations of both samples.

8Y7HFV (X) - Data for sample HS50 are high. Inconsistent within the determinations of both samples.

Key to Instrument Codes Reported by Participants

HE Hercules Sizing Tester

XX Instrument make/model not specified by lab



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

-End of Report-