

Color & Appearance Testing Program



Summary Report # 173 - 3rd Qtr 2015

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[Key to Tables and Graphs \(Color Tests\)](#)

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Analysis **Analysis Name**

[408](#) [Color & Color Difference \(Paint Chips\) - 45-0](#)

[409](#) [Color & Color Difference \(Paint Chips\) Sphere](#)

[411](#) [Spectrophotometric \(Paint Chips\) - Sphere](#)

[440](#) [Gloss 60 Degree \(Paint Chips\)](#)

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ABOUT THE PROGRAM

The Collaborative Reference Program for Color & Appearance is operated and maintained by Collaborative Testing Services, Inc. (CTS), with technical guidance and advice provided by representatives from various instrument manufacturers. The program allows laboratories to compare periodically the performance of their testing with that of other laboratories.

Paint chip samples, which have been custom-made specifically for Collaborative Testing Services by Munsell Color, X-Rite Inc., Grand Rapids, MI, are distributed four times per year to participating laboratories. Gloss participants test two pairs of paint chip samples at different gloss levels, approximately 5-10 units apart. Color & Color Difference participants measure a set of two opaque color paint chips, selected from throughout the full color spectrum, consisting of a nonmetameric match with small color differences. These data are analyzed in two separate tables based on the conditions of measurement used. Laboratories that also participate in the Spectrophotometric analyses measure one of the opaque color chips for % reflectance at 16 wavelengths.

Please refer to each test's 'Key' for definitions of terms used in the tables and graphs and guidelines to interpreting the results. Also shown are notes concerning specific laboratory results, as well as significant findings related to instrument types or other testing variations.

ABOUT CTS

Founded in 1971, CTS is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 80 countries, currently participate in the CTS programs.

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

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Key for Color Program Web Summary Report

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Color Report published on the CTS web site. The Web Code for each analysis can be found in the Performance Analysis Report mailed to each participant.
Lab Mean	The average of the 2 test results obtained by the participant for CIE L*,a*,b* color space values.
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.
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.
Graphs	For each laboratory, the LAB MEAN for the first sample is plotted against the LAB MEAN for the second sample with each point representing a laboratory. The horizontal and vertical axes are the GRAND MEANS for each sample. For each test there are three plots: L*2 vs L*1, a*2 vs a*1 and b*2 vs b*1. The a* and b* plots are created using absolute values.
Inst Code	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
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 and one or more CPV are greater than critical value. See specific notes following each table for more information on why the data is excluded. It is also possible to have an "X" for individual color coordinate (L*, a* or b*) without overall "X" flag. It means that results fall outside the 99% ellipse for particular coordinate but have no CPV flags. Those results will not require any action.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two of more M flags for a test may need to stop and review its testing procedures.

Key for Spectrophotometric Web Summary Report

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Color Report published on the CTS web site. The Web Code for each analysis can be found in the Performance Analysis Report mailed to each 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.
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).
Inst Code	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
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. See specific notes following each table for more information on why the data is excluded.

In addition to the DATA FLAG column, it is also possible to have an X on individual wavelength values as follows:

- X - The laboratory's mean for that wavelength is greater than a 95% deviation from the GRAND MEAN.

Key for Color Program (Gloss) Web Summary Report

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

Lab Mean The average of the test results obtained 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).

Graphs 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 above.

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. However, a lab receiving two of more M flags for a test may need to stop and review its testing procedures.

**Interlaboratory Testing Program for Color & Appearance
Analysis 408**

**Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
2DQ3GW	X	C151	47.66	-22.70	-10.77	0.82	-0.27	-0.49	0.99	HW
		C152	48.48	-22.96	-11.25					
2RAQQU		C151	48.47	-24.39	-7.81	0.81	-0.26	-0.58	1.02	HG
	C152	49.27	-24.65	-8.39						
3CXYEW		C151	49.29	-23.98	-8.76	0.74	-0.26	-0.39	0.87	AE
	C152	50.03	-24.24	-9.15						
4YKWTY		C151	48.91	-24.02	-8.79	0.91	-0.37	-0.46	1.08	XO
	C152	49.81	-24.39	-9.25						
66AVKY		C151	48.38	-23.60	-9.32	0.83	-0.34	-0.49	1.01	HW
	C152	49.20	-23.93	-9.80						
6WW28H		C151	48.69	-23.81	-9.32	0.87	-0.29	-0.43	1.01	HW
	C152	49.56	-24.10	-9.75						
78PFTD		C151	48.66	-24.22	-8.15	0.79	-0.29	-0.41	0.93	XR
	C152	49.45	-24.51	-8.56						
79KV7A		C151	48.88	-24.29	-8.44	0.78	-0.28	-0.35	0.90	XZ
	C152	49.66	-24.57	-8.79						
7J2HEB		C151	48.36	-24.52	-8.51	0.80	-0.24	-0.43	0.94	MQ
	C152	49.16	-24.76	-8.94						
8UJLYF		C151	48.61	-24.50	-8.62	0.84	-0.32	-0.46	1.00	GH
	C152	49.44	-24.82	-9.08						
9MF2AP		C151	48.77	-23.85	-8.17	0.89	-0.38	-0.42	1.05	GB
	C152	49.65	-24.23	-8.59						
AGHGNY	X	C151	48.26	-25.41	-8.48	0.78	-0.31	-0.45	0.95	FA
		C152	49.04	-25.71	-8.93					
CLUUQY		C151	48.41	-23.69	-9.73	0.82	-0.34	-0.47	1.00	HW
	C152	49.23	-24.03	-10.20						
EKBRXF		C151	48.57	-23.71	-8.77	0.82	-0.31	-0.39	0.95	HK
	C152	49.39	-24.02	-9.15						

**Interlaboratory Testing Program for Color & Appearance
Analysis 408**

**Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
F4YT3H	X	C151	47.64	-21.27	-11.38	0.82	-0.23	-0.48	0.97	HW
		C152	48.46	-21.50	-11.86					
FDLRTM		C151	48.55	-23.70	-9.17	0.80	-0.30	-0.43	0.95	HW
	C152	49.35	-23.99	-9.60						
G4WVG7		C151	48.56	-23.38	-9.36	0.85	-0.27	-0.46	1.00	MG
	C152	49.41	-23.65	-9.81						
HRTPT6		C151	48.73	-23.66	-9.42	0.86	-0.31	-0.45	1.01	HW
	C152	49.59	-23.97	-9.87						
JVQZB3		C151	49.45	-23.79	-8.40	0.80	-0.32	-0.44	0.96	XZ
	C152	50.24	-24.11	-8.84						
KA4TCE		C151	48.58	-24.03	-8.61	0.83	-0.28	-0.44	0.98	XU
	C152	49.41	-24.31	-9.05						
MAH89A		C151	48.68	-23.87	-8.85	0.76	-0.25	-0.34	0.86	HK
	C152	49.43	-24.12	-9.19						
N94UPC		C151	48.71	-24.08	-8.76	0.87	-0.33	-0.46	1.04	XN
	C152	49.58	-24.41	-9.22						
NBCC2A		C151	48.75	-23.98	-8.35	0.80	-0.31	-0.41	0.95	GE
	C152	49.55	-24.29	-8.76						
NYWPQM		C151	49.33	-23.86	-9.46	0.89	-0.29	-0.46	1.04	HW
	C152	50.21	-24.14	-9.91						
QFFX6W		C151	48.49	-23.97	-8.48	0.95	-0.38	-0.47	1.12	XU
	C152	49.44	-24.35	-8.95						
QG9JKL		C151	48.99	-24.01	-8.55	0.88	-0.29	-0.39	1.00	TO
	C152	49.87	-24.30	-8.94						
QYMBVQ		C151	48.78	-24.13	-8.76	0.80	-0.29	-0.43	0.95	XO
	C152	49.57	-24.41	-9.19						
T27TEY		C151	48.64	-24.49	-8.57	0.83	-0.32	-0.46	1.00	XZ
	C152	49.47	-24.80	-9.03						

**Interlaboratory Testing Program for Color & Appearance
Analysis 408**

**Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
TG3HLC		C151	49.60	-23.89	-8.41	0.86	-0.34	-0.39	1.00	XZ
		C152	50.45	-24.23	-8.80					
TJL666		C151	48.49	-23.65	-9.30	0.84	-0.32	-0.46	1.01	HW
		C152	49.33	-23.97	-9.75					
UPN2HW		C151	48.27	-24.20	-8.57	0.87	-0.29	-0.44	1.02	HY
		C152	49.14	-24.49	-9.01					
UYW3PV		C151	48.62	-23.57	-9.25	0.80	-0.27	-0.44	0.96	HW
		C152	49.42	-23.84	-9.69					
VEM9V4		C151	48.64	-24.11	-8.56	0.86	-0.30	-0.44	1.01	XU
		C152	49.50	-24.41	-9.00					
X336F4		C151	48.82	-24.03	-8.55	0.81	-0.30	-0.45	0.97	XD
		C152	49.63	-24.33	-9.00					
X8VY2N		C151	48.78	-24.11	-8.60	0.73	-0.30	-0.42	0.89	XM
		C152	49.51	-24.41	-9.01					
XGLK8L		C151	48.12	-24.15	-8.81	0.76	-0.29	-0.44	0.92	GH
		C152	48.88	-24.44	-9.25					
YHVEDT		C151	48.57	-23.85	-8.69	0.82	-0.34	-0.46	1.00	XK
		C152	49.38	-24.19	-9.15					
ZKGWFR X		C151	51.49	-26.32	-12.04	0.84	-0.31	-0.45	1.00	HW
		C152	52.33	-26.63	-12.48					
ZNWTYU		C151	48.67	-24.22	-8.28	0.88	-0.28	-0.45	1.02	GD
		C152	49.55	-24.50	-8.73					

**Interlaboratory Testing Program for Color & Appearance
Analysis 408**

**Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

Summary Statistics

<u>Samples</u>	<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>
Grand Means							
C151	48.64	-23.98	-8.76				
C152	49.46	-24.28	-9.20	0.83	-0.30	-0.44	0.98
Std Dev Btwn Labs							
C151	0.39	0.28	0.40				
C152	0.40	0.27	0.42	0.05	0.03	0.04	0.06

Statistics based on 35 of 39 reporting participants

Comments assigned on Data Flags for Test #408

2DQ3GW(X) - High a* values and low b* values.

AGHGNY(X) - Low a* values.

F4YT3H(X) - High a* values. Low b* values.

ZKGWFR(X) - High L* values. Low a* and b* values.

Interlaboratory Testing Program for Color & Appearance

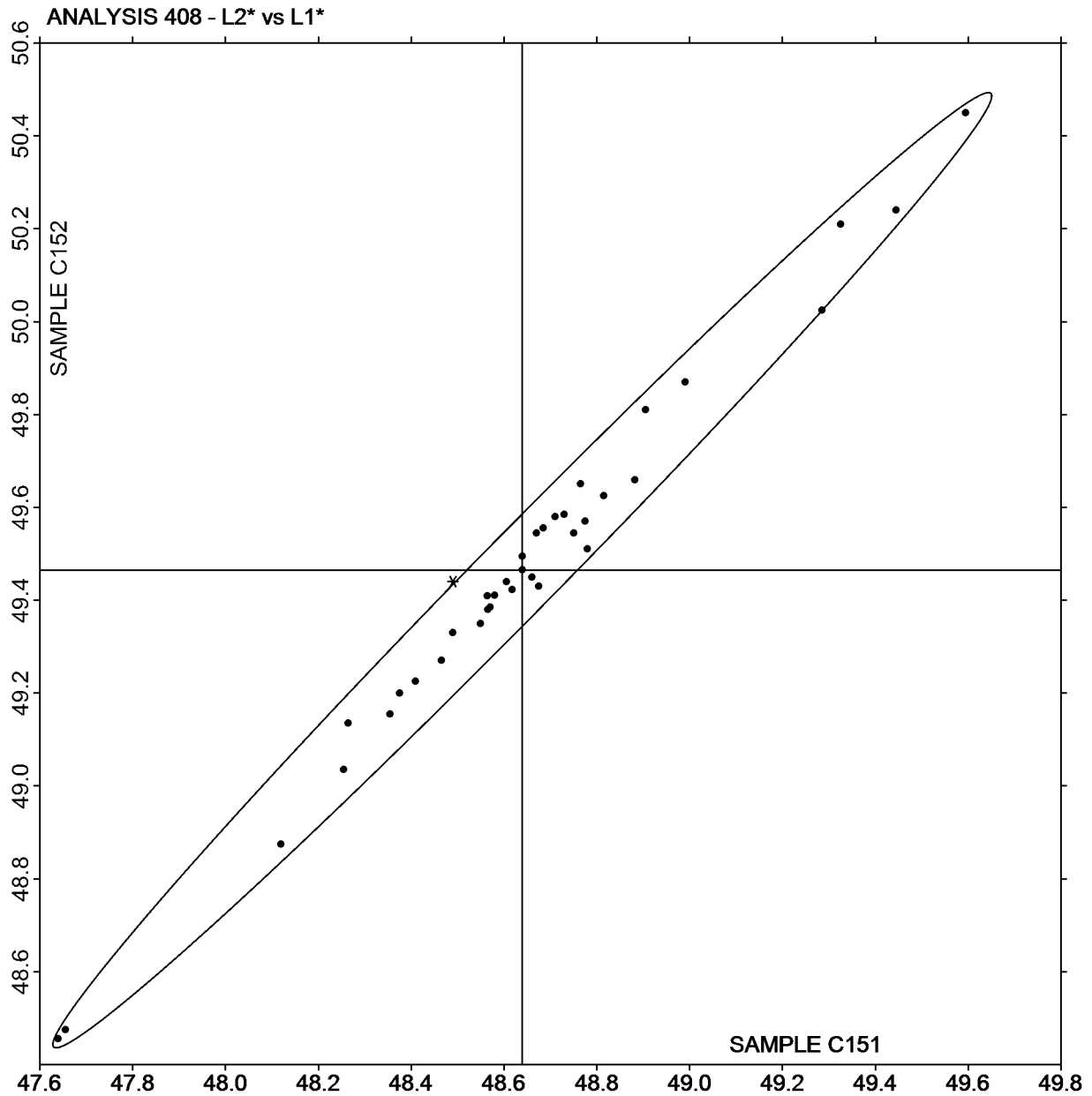
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

L2* vs L1*

SAMPLE C151 = 48.64

SAMPLE C152 = 49.46



Interlaboratory Testing Program for Color & Appearance

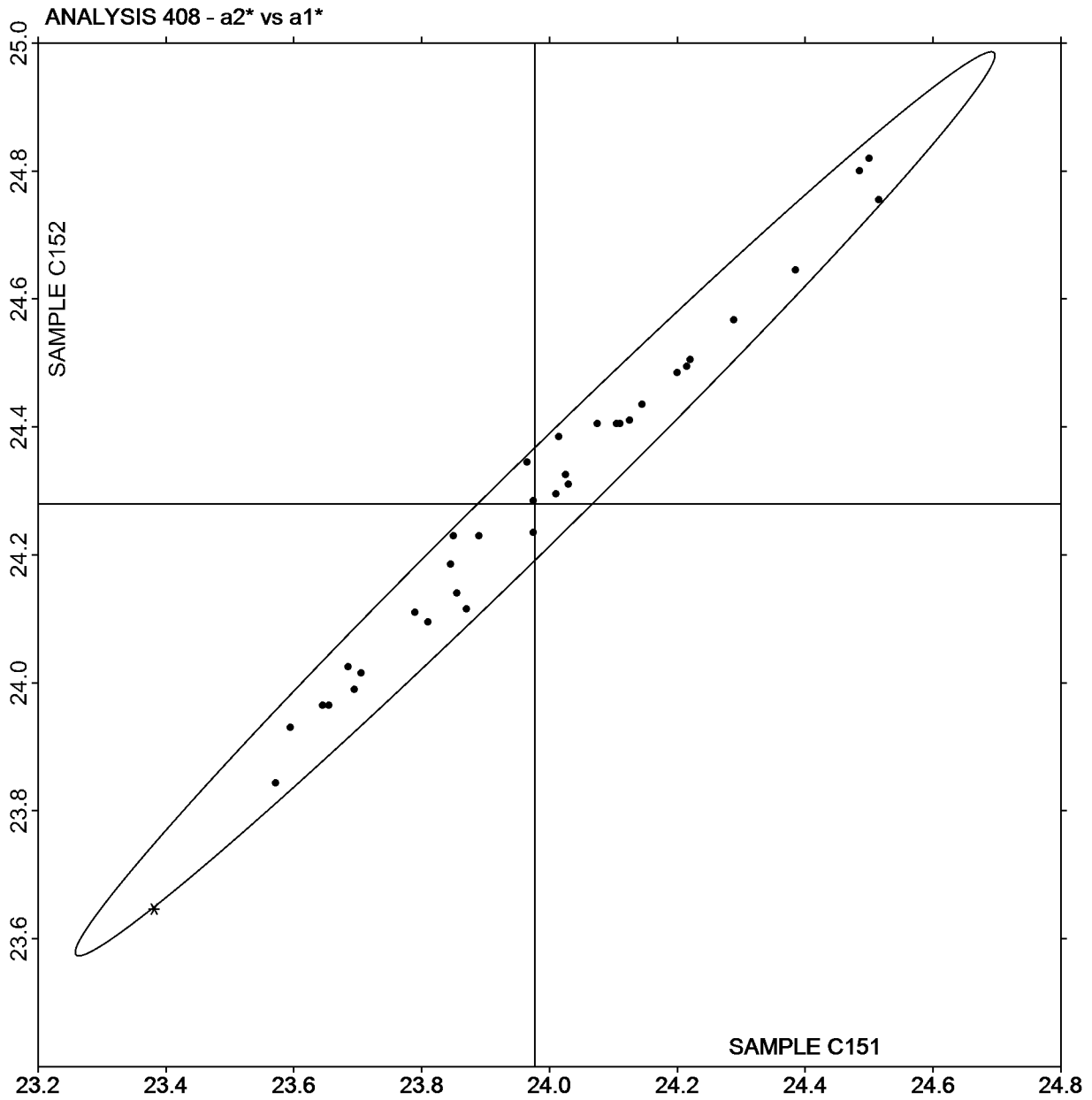
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

a2* vs a1*

SAMPLE C151 = -23.98

SAMPLE C152 = -24.28



Interlaboratory Testing Program for Color & Appearance

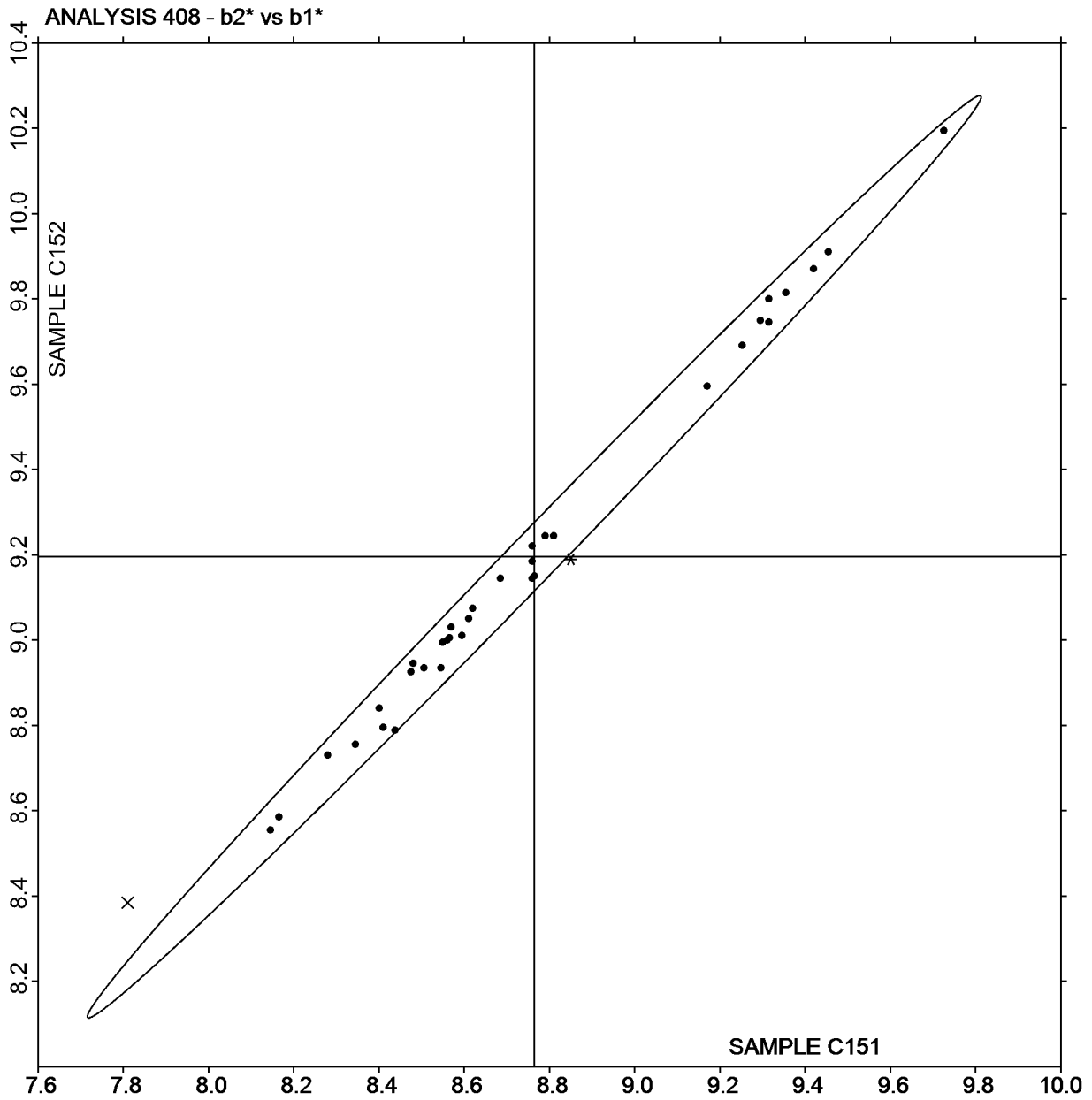
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

b2* vs b1*

SAMPLE C151 = -8.76

SAMPLE C152 = -9.20



Plot created using absolute values.

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
22223B		C151	49.28	-23.98	-8.73	0.81	-0.32	-0.43	0.97	A0
		C152	50.08	-24.30	-9.16					
29H62K		C151	49.07	-24.23	-8.66	0.84	-0.31	-0.42	0.99	CE
		C152	49.91	-24.53	-9.08					
2DDCQ2		C151	49.05	-24.21	-8.45	0.84	-0.27	-0.41	0.97	GD
		C152	49.89	-24.48	-8.86					
2RAQQU		C151	48.82	-23.61	-8.78	0.85	-0.29	-0.46	1.01	XI
		C152	49.67	-23.90	-9.24					
39ZQHU		C151	48.70	-23.98	-8.60	1.34	-0.33	-0.45	1.45	AJ
		C152	50.04	-24.30	-9.05					
3AQGF2		C151	49.12	-23.86	-8.66	0.82	-0.27	-0.43	0.96	MM
		C152	49.94	-24.13	-9.09					
3MELNX		C151	48.93	-23.59	-8.83	0.84	-0.25	-0.40	0.96	X0
		C152	49.77	-23.84	-9.22					
3UXGDK		C151	49.15	-23.75	-8.71	0.83	-0.31	-0.44	0.98	XI
		C152	49.98	-24.05	-9.15					
3V8WXT		C151	49.22	-23.62	-8.99	0.84	-0.27	-0.43	0.98	AJ
		C152	50.05	-23.89	-9.42					
4EXXD9		C151	48.92	-23.59	-8.76	0.78	-0.29	-0.42	0.93	XI
		C152	49.69	-23.88	-9.17					
4K446R		C151	49.10	-23.83	-8.80	0.86	-0.24	-0.43	0.99	XI
		C152	49.96	-24.07	-9.22					
4LE3Y2		C151	49.12	-23.90	-8.87	0.84	-0.24	-0.44	0.97	AQ
		C152	49.95	-24.14	-9.31					
4NKXRX		C151	49.06	-23.82	-8.83	0.88	-0.28	-0.44	1.02	AJ
		C152	49.94	-24.10	-9.26					
69MX7V		C151	49.14	-23.87	-8.77	0.83	-0.30	-0.40	0.97	AM
		C152	49.97	-24.16	-9.16					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
6AX99L		C151	49.22	-24.01	-8.65	0.84	-0.27	-0.44	0.98	AO
		C152	50.05	-24.28	-9.09					
6HRD48		C151	48.82	-23.45	-8.75	0.81	-0.31	-0.42	0.96	XM
		C152	49.63	-23.76	-9.17					
6XP68W		C151	48.94	-23.70	-8.72	0.89	-0.29	-0.43	1.03	MM
		C152	49.83	-23.99	-9.15					
7RTTDR		C151	49.21	-23.91	-8.80	0.80	-0.29	-0.40	0.94	AJ
		C152	50.00	-24.20	-9.20					
7YV89L		C151	48.94	-24.02	-8.64	0.89	-0.24	-0.41	1.00	AJ
		C152	49.83	-24.26	-9.05					
89YEET		C151	48.85	-23.86	-8.65	0.85	-0.27	-0.42	0.99	MM
		C152	49.70	-24.13	-9.07					
8FEV73		C151	48.84	-23.51	-8.51	0.82	-0.30	-0.43	0.97	XH
		C152	49.66	-23.81	-8.93					
8HQ3KA		C151	49.05	-23.76	-8.70	0.83	-0.27	-0.42	0.96	HP
		C152	49.87	-24.03	-9.12					
8RUMWX		C151	49.17	-24.02	-8.66	0.81	-0.27	-0.48	0.98	AM
		C152	49.97	-24.29	-9.14					
8U3XRF		C151	49.13	-23.92	-8.68	0.86	-0.24	-0.44	0.99	MM
		C152	49.99	-24.15	-9.12					
8UJLYF		C151	49.16	-23.89	-8.66	0.84	-0.32	-0.46	1.01	MV
		C152	49.99	-24.21	-9.12					
9DMGXJ	X	C151	51.67	-24.35	-9.48	0.88	-0.31	-0.46	1.03	XI
		C152	52.54	-24.65	-9.94					
A6DGBF		C151	48.91	-23.64	-8.84	0.77	-0.29	-0.40	0.91	XI
		C152	49.68	-23.93	-9.24					
A8FHBD		C151	48.90	-23.54	-8.58	0.82	-0.22	-0.43	0.95	XH
		C152	49.71	-23.75	-9.01					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
AED8RG		C151	48.88	-23.61	-8.54	0.76	-0.36	-0.41	0.93	XH
		C152	49.64	-23.96	-8.95					
BFACYH		C151	49.19	-24.01	-8.70	0.84	-0.31	-0.39	0.97	AJ
		C152	50.02	-24.32	-9.09					
BRXAME		C151	48.83	-23.53	-8.69	0.84	-0.24	-0.43	0.97	XM
		C152	49.66	-23.76	-9.12					
CDU8MH		C151	49.08	-24.10	-8.59	0.86	-0.27	-0.45	1.01	AL
		C152	49.94	-24.37	-9.04					
CTP4QV		C151	48.98	-23.70	-8.63	0.85	-0.32	-0.46	1.01	MU
		C152	49.83	-24.02	-9.08					
CVEVWD		C151	48.87	-23.63	-8.90	0.81	-0.29	-0.45	0.97	XI
		C152	49.68	-23.92	-9.34					
D2KRFD		C151	49.02	-23.82	-8.75	0.82	-0.33	-0.44	0.99	HP
		C152	49.84	-24.15	-9.19					
E2W3A3		C151	49.23	-23.89	-8.39	0.88	-0.32	-0.40	1.01	GF
		C152	50.11	-24.21	-8.78					
E7BJ4Z	X	C151	48.80	-23.75	-8.62	15.86	-0.31	-0.42	15.87	XH
		C152	64.66	-24.06	-9.04					
EWXPLC		C151	49.08	-23.72	-8.72	0.84	-0.28	-0.46	1.00	MM
		C152	49.92	-24.00	-9.18					
FAPF8G		C151	49.12	-23.67	-8.68	0.86	-0.26	-0.47	1.01	AO
		C152	49.98	-23.93	-9.15					
FD3DE4		C151	49.05	-23.64	-8.77	0.82	-0.30	-0.43	0.97	XI
		C152	49.86	-23.94	-9.20					
GER7ND		C151	49.02	-23.86	-8.78	0.82	-0.35	-0.44	0.99	MK
		C152	49.84	-24.21	-9.22					
GHTAFZ		C151	49.15	-24.04	-8.61	0.80	-0.27	-0.41	0.94	MV
		C152	49.95	-24.30	-9.02					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
GKGLDK		C151	48.93	-23.84	-8.66	0.90	-0.26	-0.44	1.03	GD
		C152	49.82	-24.09	-9.10					
GKHGZW		C151	48.86	-23.76	-8.73	0.89	-0.34	-0.45	1.05	MI
		C152	49.75	-24.09	-9.18					
GMP7EL		C151	49.14	-24.15	-8.47	0.88	-0.27	-0.46	1.03	AM
		C152	50.02	-24.42	-8.93					
H638MT		C151	49.05	-23.74	-8.81	0.83	-0.25	-0.44	0.97	MM
		C152	49.87	-23.99	-9.25					
HVJ4Q9		C151	49.19	-23.92	-8.89	0.84	-0.27	-0.44	0.98	AM
		C152	50.03	-24.18	-9.33					
KA4TCE		C151	49.07	-23.88	-8.59	0.84	-0.28	-0.42	0.97	XI
		C152	49.90	-24.16	-9.01					
KTJ646		C151	48.86	-23.73	-8.35	0.76	-0.36	-0.42	0.94	XH
		C152	49.62	-24.08	-8.77					
KW3PZF		C151	49.01	-23.88	-8.71	0.86	-0.29	-0.43	1.00	MM
		C152	49.87	-24.17	-9.14					
L8EMU4		C151	49.19	-23.96	-8.79	0.84	-0.32	-0.45	1.00	AJ
		C152	50.03	-24.28	-9.23					
LN7JVX		C151	49.06	-23.75	-8.73	0.84	-0.27	-0.44	0.98	MM
		C152	49.90	-24.01	-9.17					
LYM76Y		C151	49.30	-24.25	-8.69	0.83	-0.28	-0.43	0.97	AM
		C152	50.13	-24.52	-9.11					
LZEW2K		C151	49.20	-24.03	-8.62	0.83	-0.19	-0.46	0.96	MT
		C152	50.03	-24.22	-9.08					
MEETYD		C151	49.08	-24.16	-8.52	0.88	-0.22	-0.44	1.01	AJ
		C152	49.96	-24.38	-8.96					
MF7JUB		C151	48.64	-23.46	-8.64	0.85	-0.32	-0.46	1.01	XH
		C152	49.48	-23.78	-9.09					

Interlaboratory Testing Program for Color & Appearance
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
MZV9FJ	X	C151	48.39	-23.26	-10.32	0.75	-0.30	-0.50	0.95	MU
		C152	49.14	-23.56	-10.81					
N94UPC	X	C151	48.53	-23.50	-8.83	0.91	-0.24	-0.45	1.04	XO
		C152	49.44	-23.74	-9.28					
NAZ8EP		C151	49.11	-23.76	-9.00	0.82	-0.34	-0.44	0.99	AJ
		C152	49.92	-24.10	-9.44					
NBCC2A		C151	49.03	-24.01	-8.40	0.78	-0.35	-0.40	0.94	GD
		C152	49.81	-24.36	-8.79					
NC46LC		C151	48.98	-23.83	-8.59	0.95	-0.26	-0.43	1.07	XH
		C152	49.93	-24.08	-9.02					
NGWCHL	X	C151	51.59	-25.54	-6.44	0.64	-0.14	-0.37	0.74	XX
		C152	52.23	-25.68	-6.80					
NU4QPR	X	C151	48.38	-21.83	-10.69	0.86	-0.18	-0.47	0.99	AO
		C152	49.23	-22.01	-11.15					
P8J36D		C151	48.99	-23.86	-8.85	0.84	-0.25	-0.43	0.97	AR
		C152	49.83	-24.11	-9.27					
P9YU63		C151	49.10	-24.01	-8.69	0.81	-0.30	-0.45	0.97	MV
		C152	49.90	-24.30	-9.14					
PDRYX7		C151	49.09	-23.82	-8.56	0.87	-0.29	-0.46	1.02	AO
		C152	49.96	-24.10	-9.02					
QA4CRJ		C151	48.74	-23.41	-8.72	0.86	-0.31	-0.41	1.00	XO
		C152	49.60	-23.72	-9.13					
QBMZDK		C151	49.08	-23.65	-9.03	0.87	-0.23	-0.41	0.98	HW
		C152	49.95	-23.88	-9.44					
QG9JKL		C151	48.71	-24.39	-8.73	0.80	-0.27	-0.41	0.94	CA
		C152	49.51	-24.66	-9.13					
QGCF6D		C151	48.92	-23.78	-8.86	0.85	-0.25	-0.43	0.98	XI
		C152	49.76	-24.02	-9.29					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
QJCE4P		C151	49.23	-23.89	-8.74	0.88	-0.31	-0.41	1.01	AO
		C152	50.11	-24.19	-9.15					
QJF92W		C151	48.91	-23.51	-8.62	0.73	-0.35	-0.42	0.91	XH
		C152	49.64	-23.86	-9.04					
QP3Q27		C151	49.25	-24.00	-8.77	0.81	-0.34	-0.44	0.98	AJ
		C152	50.06	-24.34	-9.21					
QV8XUB	X	C151	49.15	-24.45	-8.75	0.81	-0.36	-0.46	0.99	CA
		C152	49.95	-24.80	-9.21					
QYMBVQ		C151	48.99	-23.76	-8.71	0.83	-0.26	-0.44	0.97	MI
		C152	49.81	-24.02	-9.15					
RDLTPU		C151	49.21	-23.98	-8.83	0.86	-0.23	-0.49	1.02	AM
		C152	50.07	-24.21	-9.32					
RK46ZA		C151	48.98	-23.38	-8.58	0.86	-0.31	-0.45	1.01	HU
		C152	49.83	-23.69	-9.03					
RMDE4L		C151	48.65	-23.32	-8.70	0.93	-0.29	-0.44	1.07	MG
		C152	49.58	-23.60	-9.14					
RMDGR6		C151	49.06	-23.76	-8.65	0.89	-0.27	-0.46	1.04	MM
		C152	49.95	-24.03	-9.11					
RQAXU7		C151	49.25	-23.96	-8.84	0.80	-0.32	-0.40	0.95	AO
		C152	50.05	-24.28	-9.24					
RYLKRT		C151	49.00	-23.48	-8.38	0.75	-0.32	-0.42	0.91	MU
		C152	49.75	-23.80	-8.79					
T9L2U3		C151	49.03	-23.71	-8.74	0.85	-0.22	-0.41	0.97	MM
		C152	49.88	-23.93	-9.14					
TJL666		C151	49.26	-23.70	-8.62	0.83	-0.35	-0.43	1.00	HP
		C152	50.09	-24.05	-9.05					
TWEUE7		C151	48.87	-23.92	-8.77	0.87	-0.22	-0.43	0.99	MV
		C152	49.73	-24.13	-9.19					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
U26NQX		C151	48.94	-23.75	-8.62	0.86	-0.28	-0.43	1.00	XI
		C152	49.80	-24.03	-9.04					
UBTJRY		C151	49.02	-23.67	-8.95	0.87	-0.28	-0.42	1.00	GD
		C152	49.88	-23.95	-9.37					
UGVNHV		C151	49.17	-24.02	-8.69	0.85	-0.28	-0.41	0.98	AJ
		C152	50.02	-24.30	-9.10					
UJKPAJ		C151	48.95	-23.95	-8.47	0.85	-0.30	-0.41	0.99	PE
		C152	49.79	-24.25	-8.88					
UVH9AY		C151	48.89	-23.57	-8.70	0.88	-0.32	-0.48	1.05	XH
		C152	49.77	-23.89	-9.17					
UVJ4UP		C151	48.96	-23.86	-8.90	0.84	-0.27	-0.42	0.97	XI
		C152	49.79	-24.13	-9.32					
V6FQYR		C151	48.82	-23.86	-8.74	0.83	-0.27	-0.48	0.99	XI
		C152	49.65	-24.12	-9.22					
V6KFF6		C151	48.85	-23.74	-8.73	0.86	-0.29	-0.42	1.00	XI
		C152	49.71	-24.03	-9.15					
VEM9V4		C151	48.72	-23.99	-8.78	0.89	-0.29	-0.45	1.04	XI
		C152	49.61	-24.28	-9.23					
VMWULJ		C151	49.00	-23.94	-8.63	0.86	-0.25	-0.41	0.98	MU
		C152	49.86	-24.19	-9.03					
VMZE9M		C151	49.28	-23.95	-8.54	0.79	-0.26	-0.42	0.93	AM
		C152	50.07	-24.21	-8.96					
VNQKRX		C151	49.24	-23.80	-8.81	0.85	-0.30	-0.44	1.00	AJ
		C152	50.09	-24.10	-9.25					
W7A7ZA	X	C151	52.00	-23.16	-10.39	0.89	-0.31	-0.48	1.05	HH
		C152	52.88	-23.46	-10.87					
W83PQV		C151	48.60	-23.84	-8.67	0.81	-0.32	-0.45	0.97	AM
		C152	49.40	-24.16	-9.12					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
W84JCL		C151	49.29	-24.10	-8.63	0.84	-0.28	-0.41	0.97	AJ
		C152	50.12	-24.38	-9.04					
WQVX2R		C151	49.13	-23.85	-8.67	0.79	-0.36	-0.44	0.97	MM
		C152	49.92	-24.21	-9.10					
XFQ36K		C151	48.96	-23.50	-8.78	0.86	-0.17	-0.44	0.98	XO
		C152	49.82	-23.67	-9.22					
XUCKCQ		C151	49.00	-23.75	-8.81	0.79	-0.25	-0.41	0.92	HP
		C152	49.78	-24.00	-9.22					
YHRXFU		C151	49.05	-23.86	-8.57	0.82	-0.26	-0.38	0.94	SH
		C152	49.87	-24.11	-8.95					
YHVEDT		C151	49.16	-24.06	-8.87	0.81	-0.28	-0.41	0.95	AO
		C152	49.97	-24.34	-9.28					
YQLZJR		C151	49.08	-23.92	-8.77	0.79	-0.25	-0.43	0.93	AQ
		C152	49.87	-24.17	-9.20					
Z9ZA7Q		C151	48.89	-23.62	-8.64	0.78	-0.27	-0.44	0.93	MM
		C152	49.67	-23.88	-9.08					
ZC46PT		C151	49.26	-24.02	-8.74	0.79	-0.32	-0.44	0.96	AO
		C152	50.05	-24.33	-9.18					
ZC6YBK		C151	48.75	-23.79	-8.80	0.82	-0.30	-0.44	0.98	XI
		C152	49.57	-24.09	-9.24					
ZM398P		C151	48.95	-23.61	-8.94	0.80	-0.39	-0.46	1.00	HP
		C152	49.75	-24.00	-9.39					
ZNE6DT		C151	49.22	-24.00	-8.75	0.83	-0.24	-0.38	0.94	XX
		C152	50.05	-24.24	-9.13					
ZT9C6V		C151	49.11	-24.03	-8.62	0.88	-0.30	-0.47	1.04	MV
		C152	49.99	-24.33	-9.08					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

Summary Statistics

<u>Samples</u>	<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>
Grand Means							
C151	49.03	-23.81	-8.70				
C152	49.86	-24.10	-9.13	0.84	-0.28	-0.43	0.99
Std Dev Btwn Labs							
C151	0.15	0.22	0.13				
C152	0.16	0.22	0.13	0.06	0.04	0.02	0.06
Statistics based on 103 of 111 reporting participants							

Comments assigned on Data Flags for Test #409

9DMGXJ(X) - High L* values and low b* values.

E7BJ4Z(X) - High L* values for Sample C152. Large replication difference for L* value on Sample C152. Large DL and DE values.

MZV9FJ(X) - Low L* and b* values. Large Db values.

N94UPC(X) - Low L* values for Sample C151.

NGWCHL(X) - High L* and b* values. Low a* values. Small DL, Da, Db, and DE values.

NU4QPR(X) - High a* values. Low L* and b* values.

QV8XUB(X) - Low a* values. Large replication difference for a* value on both samples.

W7A7ZA(X) - High L* and a* values. Low b* values. Large replication difference for L* value on Sample C151.

Interlaboratory Testing Program for Color & Appearance

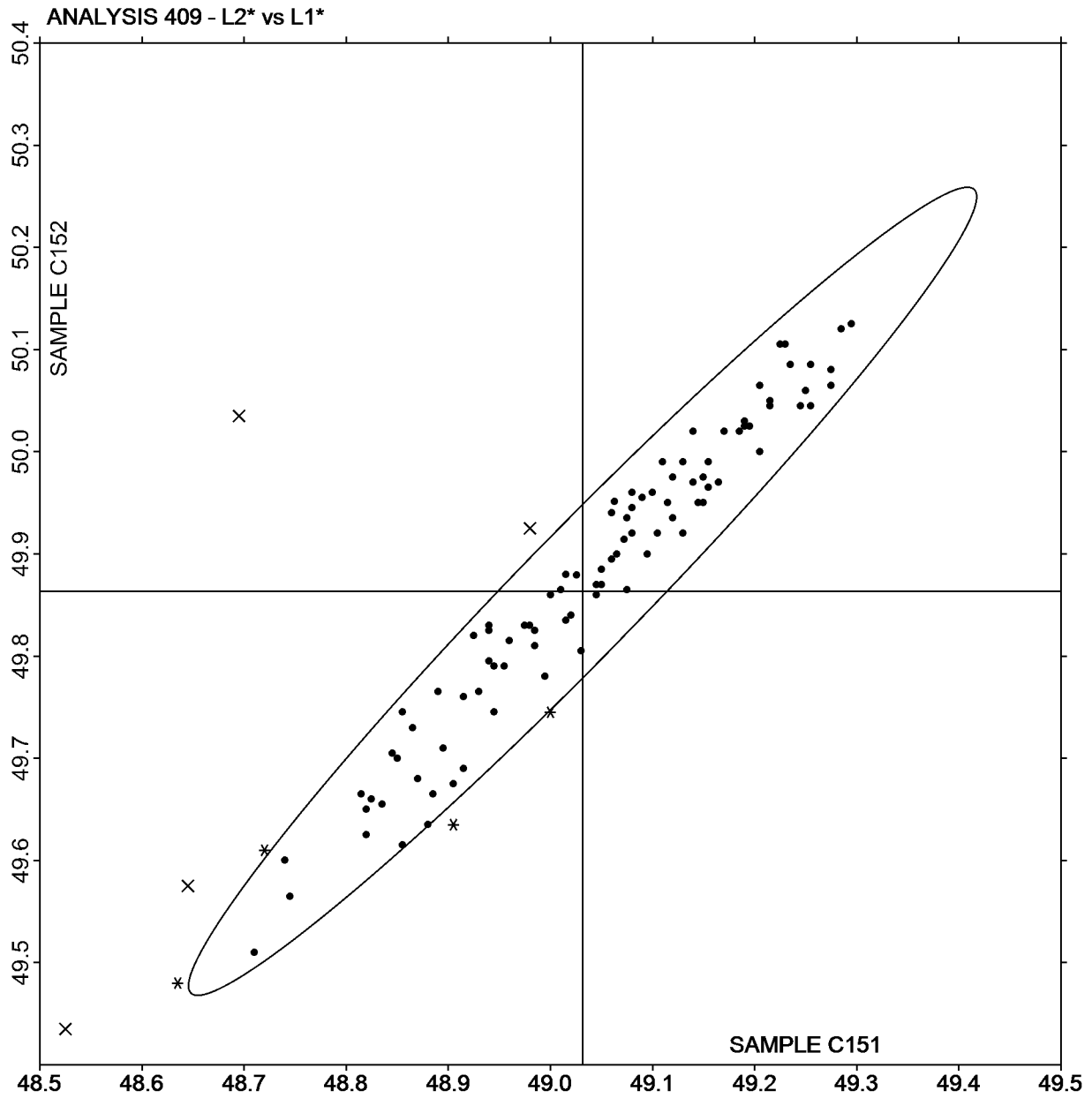
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

L2* vs L1*

SAMPLE C151 = 49.03

SAMPLE C152 = 49.86



Interlaboratory Testing Program for Color & Appearance

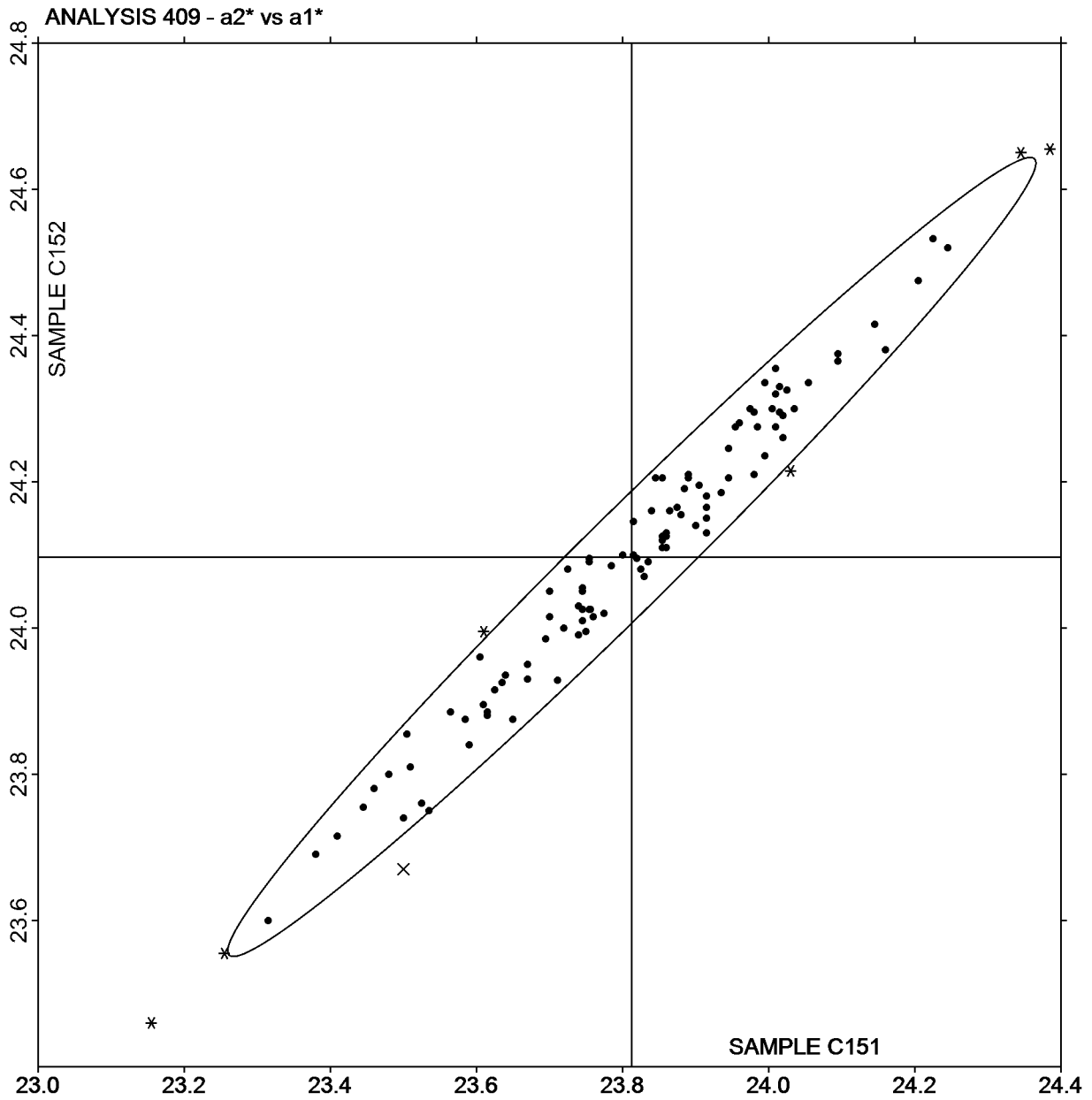
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

a2* vs a1*

SAMPLE C151 = -23.81

SAMPLE C152 = -24.10



Interlaboratory Testing Program for Color & Appearance

Analysis 409

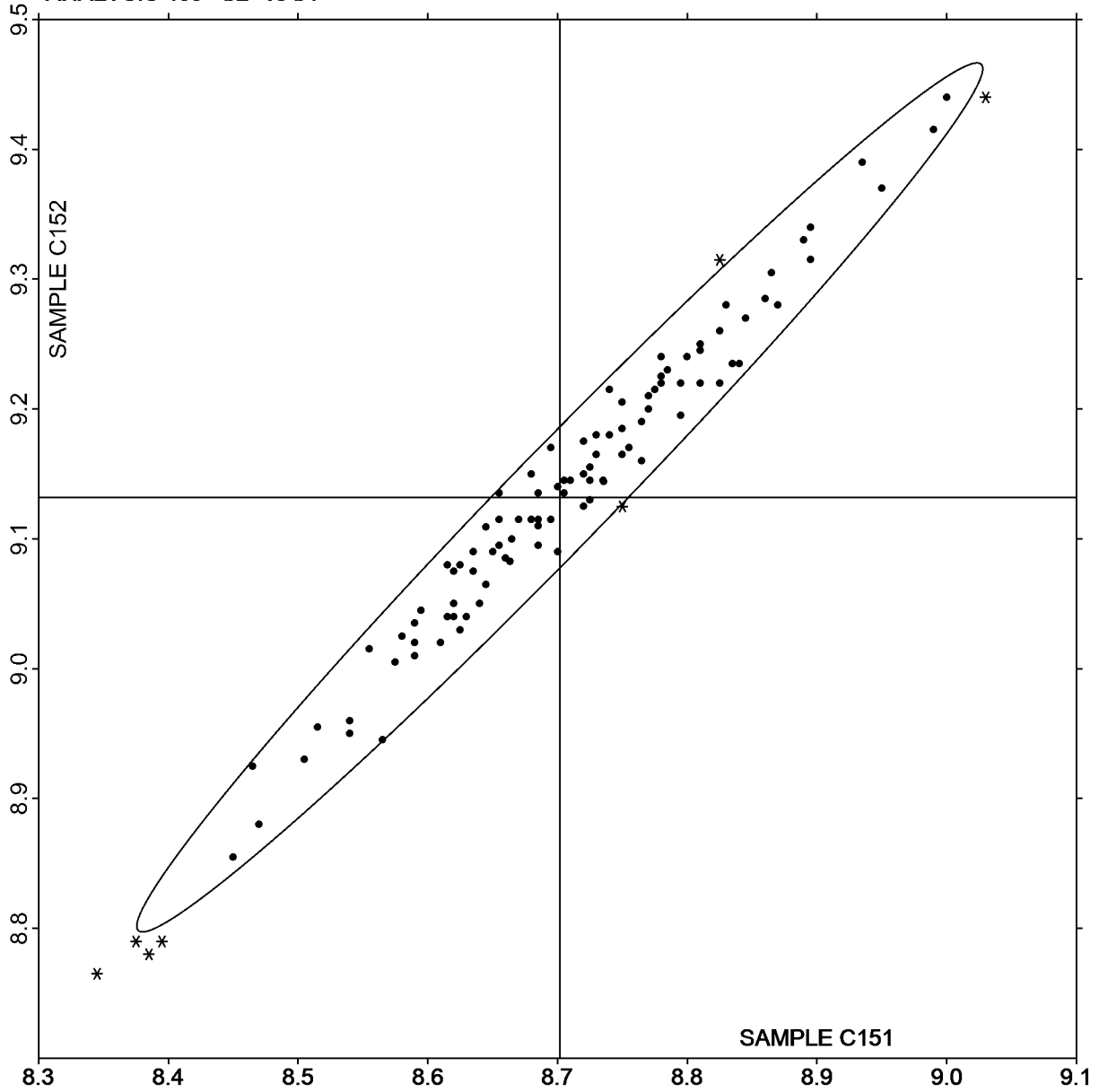
Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

b2* vs b1*

SAMPLE C151 = -8.70

SAMPLE C152 = -9.13

ANALYSIS 409 - b2* vs b1*



Plot created using absolute values.

Interlaboratory Testing Program for Color & Appearance Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths																Instr Code
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	
Sample C151																		
22223B		14.56	17.31	21.23	23.88	24.61	26.31	27.26	22.43	14.61	10.50	8.99	8.42	8.38	8.69	8.62	8.13	AO
29H62K		14.34	16.87	21.06	23.72	24.36	26.15	27.21	22.35	14.45	10.27	8.79	8.22	8.15	8.55	8.37	7.59X	CE
2DDCQ2		17.91X	16.41X	20.86	23.59	24.35	26.45	26.28	22.21	14.57	10.42	8.75	8.34	8.26	8.52	8.41	7.95	GD
2RAQQU		14.40	17.08	20.86	23.47	24.14	25.80	26.52	21.87	14.44	10.35	8.83	8.25	8.22	8.56	8.39	7.95	XI
39ZQHU		14.53	17.19	21.12	23.72	24.47	26.17	27.16	22.35	14.67	10.44	8.95	8.39	8.36	8.63	8.50	8.07	AJ
3AQGF2		14.52	17.21	21.08	23.76	24.35	26.06	26.91	22.27	14.71	10.46	8.90	8.33	8.29	8.66	8.54	7.96	MM
3MELNX		14.36	17.15	20.99	23.66	24.34	26.00	26.83	21.98	14.41	10.35	8.88	8.31	8.33	8.65	8.56	7.96	XO
3UXGDK		14.47	17.29	21.11	23.79	24.43	26.14	26.94	22.23	14.69	10.49	8.96	8.40	8.38	8.71	8.48	7.99	XI
4EXXD9		14.47	17.24	20.99	23.51	24.28	26.02	26.69	21.93	14.48	10.35	8.88	8.29	8.28	8.65	8.40	7.79	XI
4K446R		14.49	17.26	21.15	23.77	24.43	26.20	26.99	22.21	14.54	10.46	8.90	8.37	8.32	8.66	8.47	7.95	XI
4NKXRX		14.47	17.18	21.17	23.75	24.40	25.99	26.96	22.26	14.54	10.36	8.90	8.32	8.27	8.56	8.40	8.00	AJ
69MX7V		14.56	17.23	21.22	23.81	24.45	26.13	26.97	22.27	14.63	10.45	8.94	8.33	8.28	8.67	8.53	8.01	AM
6AX99L		14.51	17.18	21.10	23.80	24.55	26.19	27.16	22.40	14.66	10.45	8.97	8.35	8.32	8.60	8.60	8.09	AO
6HRD48		14.80	17.19	21.36	23.77	24.41	26.16	26.69	21.82	14.36	10.26	8.81	8.32	8.32	8.89X	8.67	8.20	HW
6XP68W		14.45	17.09	21.00	23.60	24.25	25.94	26.76	22.06	14.53	10.36	8.82	8.26	8.24	8.60	8.46	7.90	MM
7YV89L		14.22	16.97	20.84	23.59	24.29	25.92	26.88	22.13	14.55	10.26	8.75	8.18	8.12	8.43	8.35	7.87	AJ
8FEV73		14.18	16.97	20.61	23.46	23.92	25.84	26.58	21.73	14.54	10.36	8.90	8.41	8.37	8.70	8.53	8.02	XH
8HQ3KA		14.62	17.00	21.02	23.69	24.21	25.95	26.88	22.17	14.68	10.44	8.87	8.41	8.21	8.85	8.43	7.82	HP
8RUMWX		15.08	17.02	21.09	23.76	24.46	26.13	27.08	22.38	14.58	10.42	8.93	8.34	8.29	8.57	8.46	7.99	AM
8U3XRF		14.39	17.17	21.10	23.77	24.40	26.11	26.99	22.26	14.68	10.45	8.80	8.33	8.28	8.66	8.52	7.95	MM
8UJLYF		14.38	17.15	21.11	23.86	24.39	26.22	27.12	22.33	14.61	10.38	8.95	8.38	8.35	8.73	8.64	8.02	MV
9DMGXJ		14.35	17.14	20.89	23.50	24.13	25.86	26.66	22.00	14.57	10.35	8.86	8.31	8.28	8.59	8.40	7.90	XI
A6DGBF		14.49	17.18	21.09	23.58	24.22	25.91	26.75	22.02	14.50	10.26	8.82	8.28	8.25	8.64	8.44	7.89	XI
A8FHBD		14.36	17.05	20.79	23.48	24.11	25.75	26.54	21.97	14.58	10.43	8.90	8.32	8.32	8.66	8.50	8.00	XH
BFACYH		14.48	17.22	21.12	23.79	24.50	26.11	27.11	22.43	14.62	10.44	8.92	8.33	8.29	8.57	8.41	8.00	AJ

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WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths															Instr Code	
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680		700
Sample C151																		
BRXAME		14.19	17.03	20.86	23.48	24.12	25.85	26.63	21.83	14.44	10.33	8.85	8.26	8.28	8.58	8.48	7.92	XM
CDU8MH		14.28	17.06	20.97	23.67	24.34	26.08	26.93	22.24	14.65	10.39	8.85	8.26	8.20	8.56	8.44	7.77	AL
CTP4QV		14.46	17.12	20.90	23.63	24.23	25.92	26.81	22.14	14.56	10.38	8.87	8.31	8.27	8.64	8.51	7.95	MU
CVEVWD		14.29	17.12	21.02	23.61	24.26	25.93	26.67	21.87	14.44	10.34	8.81	8.29	8.26	8.63	8.40	7.91	XI
D2KRFD		14.59	17.14	21.07	23.72	24.29	26.03	26.91	22.09	14.58	10.41	8.88	8.24	8.17	8.49	8.37	7.72	HP
E7BJ4Z		14.14	16.94	20.74	23.40	24.06	25.80	26.57	21.89	14.44	10.28	8.78	8.28	8.26	8.59	8.40	7.88	XH
EWXPLC		14.49	17.25	21.14	23.72	24.32	26.01	26.84	22.20	14.71	10.47	8.91	8.33	8.29	8.66	8.53	8.01	MM
FAPF8G		14.40	17.10	21.20	23.70	24.40	26.10	27.10	22.20	14.60	10.40	9.00	8.40	8.40	8.70	8.50	8.10	AO
FD3DE4		14.43	17.27	21.10	23.72	24.38	26.06	26.84	22.16	14.60	10.43	8.89	8.32	8.26	8.62	8.43	7.82	XI
GER7ND		14.40	17.14	21.07	23.70	24.32	26.08	26.86	22.12	14.55	10.39	8.85	8.29	8.26	8.63	8.50	7.93	MK
GHTAFZ		14.37	17.14	21.06	23.89	24.35	26.14	27.14	22.46	14.58	10.35	8.88	8.33	8.26	8.69	8.58	8.03	MV
GKGLDK		14.94	16.33X	20.86	23.51	24.23	25.61	27.32	21.72	14.35	10.50	8.68	8.26	8.27	8.48	8.39	7.95	GD
GKHGZW		14.29	17.06	20.85	23.50	24.17	25.88	26.64	21.93	14.47	10.34	8.78	8.25	8.26	8.60	8.44	7.94	MI
GMP7EL	X	16.25X	17.69X	19.64X	21.07X	21.42X	22.25X	22.67X	20.22X	16.24X	14.01X	13.22X	12.90X	12.85X	13.01X	12.98X	12.65X	AM
H638MT		14.31	17.21	21.13	23.73	24.36	26.06	26.86	22.13	14.61	10.42	8.88	8.34	8.29	8.65	8.49	7.94	MM
HVJ4Q9		14.58	17.28	21.36	23.89	24.56	26.25	27.18	22.32	14.58	10.42	8.94	8.36	8.31	8.60	8.48	8.03	AM
KA4TCE		14.20	17.12	20.98	23.66	24.31	26.08	26.86	22.21	14.63	10.41	8.93	8.35	8.26	8.61	8.41	7.92	XI
KTJ646		13.96	16.82	20.54	23.37	24.00	25.71	26.55	21.97	14.54	10.38	8.86	8.31	8.29	8.63	8.49	7.99	XH
KW3PZF		14.42	17.12	21.01	23.66	24.27	25.97	26.82	22.16	14.60	10.40	8.84	8.26	8.23	8.59	8.48	7.91	MM
LN7JVX		14.47	17.22	21.09	23.68	24.37	26.02	26.84	22.13	14.68	10.47	8.89	8.33	8.27	8.63	8.50	7.96	MM
LYM76Y		14.69	17.16	21.20	23.94	24.67	26.38	27.36	22.49	14.65	10.42	8.93	8.37	8.35	8.67	8.53	7.94	AM
LZEW2K		14.32	17.14	21.15	23.89	24.47	26.20	27.12	22.42	14.72	10.42	8.90	8.30	8.25	8.65	8.52	7.97	XX
MEETYD		14.35	16.92	20.93	23.61	24.40	26.06	27.08	22.28	14.53	10.35	8.87	8.28	8.26	8.61	8.46	7.96	AJ
MF7JUB		14.09	16.91	20.59	23.27	23.86	25.55	26.30	21.69	14.31	10.25	8.77	8.30	8.24	8.63	8.35	7.84	XH
MZV9FJ		14.40	17.00	21.00	23.75	24.25	26.05	26.80	22.40	14.70	10.40	8.95	8.30	8.30	8.60	8.50	8.00	MU

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WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths															Instr Code	
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680		700
Sample C151																		
N94UPC		13.59	16.84	20.75	23.28	23.83	25.61	26.30	21.46X	14.05	10.11X	8.70	8.13	8.15	8.47	8.34	7.77	XO
NAZ8EP		14.51	17.42	21.33	23.85	24.49	26.21	26.95	22.17	14.58	10.40	8.92	8.33	8.30	8.61	8.47	7.94	AJ
NBCC2A		10.66X	17.34	20.75	23.57	24.27	26.45	27.26	22.13	14.79	10.52	8.93	8.30	8.26	8.49	8.43	7.97	GD
NGWCHL	X	.40X	.18X	.21X	.25X	.26X	.28X	.30X	.25X	.16X	.12X	.10X	.09X	.09X	.10X	.10X	.09X	XX
NU4QPR		14.52	17.23	21.27	23.92	24.63	26.25	27.26	22.52	14.77	10.46	8.98	8.38	8.34	8.71	8.58	8.07	AO
P8J36D		14.55	17.20	21.09	23.68	24.30	26.00	26.84	22.11	14.53	10.35	8.83	8.26	8.19	8.59	8.38	7.79	AR
P9YU63		14.39	17.12	21.07	23.82	24.29	26.12	27.13	22.34	14.50	10.31	8.87	8.32	8.26	8.70	8.58	8.04	MV
PDRYX7		14.30	17.10	21.00	23.60	24.30	26.00	27.00	22.30	14.60	10.40	8.90	8.30	8.30	8.70	8.55	8.00	AO
QA4CRJ		14.31	17.08	20.68	23.42	24.05	25.73	26.51	21.68	14.43	10.27	8.85	8.24	8.23	8.58	8.47	7.90	XO
QBMZDK		14.72	17.24	21.38	23.94	24.56	26.29	26.93	22.14	14.62	10.34	8.86	8.34	8.35	8.86	8.59	8.11	HW
QG9JKL		14.11	16.61	20.78	23.39	24.03	25.84	26.88	21.98	14.17	10.05X	8.58X	8.00X	7.94X	8.36X	8.20X	7.61X	CA
QGCF6D		14.43	17.17	21.02	23.63	24.30	26.00	26.74	21.95	14.48	10.34	8.82	8.27	8.27	8.59	8.35	7.83	XI
QJCE4P		14.58	17.28	21.20	23.84	24.55	26.21	27.18	22.37	14.61	10.48	8.97	8.41	8.38	8.69	8.59	8.10	AO
QJF92W		14.22	17.02	20.86	23.55	24.17	25.83	26.67	21.96	14.51	10.39	8.88	8.35	8.33	8.66	8.49	7.99	XH
QP3Q27		14.47	17.51	21.24	23.86	24.60	26.21	27.23	22.47	14.70	10.46	8.95	8.36	8.32	8.63	8.57	8.02	AJ
QV8XUB		14.58	17.09	21.16	23.90	24.50	26.25	27.33	22.50	14.66	10.41	8.90	8.32	8.25	8.67	8.52	7.92	CA
QYMVBQ		14.34	17.13	20.92	23.67	24.28	26.02	26.78	22.06	14.50	10.37	8.86	8.36	8.27	8.65	8.47	7.98	MI
RDLTPU		14.51	17.42	21.22	24.03	24.64	26.28	27.08	22.34	14.68	10.49	8.95	8.34	8.29	8.48	8.43	7.91	AM
RK46ZA		14.22	17.48	20.81	23.64	24.26	25.94	26.60	21.96	14.70	10.49	8.96	8.37	8.34	8.68	8.59	8.09	HU
RMDE4L		14.37	16.93	20.73	23.22	23.85	25.56	26.36	21.61	14.36	10.29	8.80	8.18	8.20	8.55	8.48	8.08	MG
RMDGR6		14.41	17.14	21.04	23.70	24.33	26.03	26.92	22.20	14.63	10.43	8.88	8.31	8.27	8.63	8.51	7.95	MM
RQAXU7		14.56	17.27	21.28	23.57	24.60	26.32	27.22	22.40	14.57	10.43	8.97	8.39	8.37	8.69	8.56	8.12	AO
RYLKRT		14.25	17.02	20.79	23.50	24.10	25.78	26.66	22.15	14.70	10.47	8.96	8.39	8.36	8.75	8.65	8.14	MU
T9L2U3		14.35	17.21	21.06	23.72	24.33	26.03	26.87	22.13	14.59	10.39	8.86	8.29	8.25	8.64	8.57	8.05	MM
TJL666		14.41	17.20	21.26	23.85	24.46	26.17	27.15	22.31	14.80	10.57	9.03	8.39	8.37	8.67	8.46	7.94	HP

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		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680		700
Sample C151																		
TWEUE7		14.36	16.98	21.05	23.63	24.11	25.93	26.86	22.14	14.34	10.21	8.78	8.20	8.18	8.58	8.48	7.89	MV
U26NQX		14.35	17.07	20.91	23.53	24.14	25.84	26.64	22.06	14.63	10.38	8.85	8.29	8.23	8.56	8.36	7.87	XI
UGVNHW		14.42	17.12	21.13	23.81	24.49	26.20	27.18	22.35	14.56	10.41	8.94	8.36	8.32	8.61	8.42	8.02	AJ
UJKPAJ		14.29	16.76	20.84	23.49	24.06	25.88	26.94	22.12	14.40	10.28	8.85	8.29	8.23	8.64	8.52	7.93	PE
UVH9AY		14.33	17.05	20.86	23.56	24.19	25.83	26.65	21.93	14.46	10.39	8.90	8.34	8.29	8.67	8.45	7.95	XH
UVJ4UP		14.49	17.18	21.10	23.68	24.35	26.08	26.78	22.01	14.52	10.34	8.81	8.24	8.18	8.58	8.31	7.81	XI
V6FQYR		14.18	16.95	20.83	23.51	24.15	25.82	26.65	21.93	14.43	10.26	8.75	8.21	8.17	8.52	8.36	7.77	XI
V6KFF6		14.32	17.05	20.83	23.51	24.14	25.84	26.58	21.93	14.47	10.29	8.81	8.25	8.19	8.58	8.34	7.82	XI
VEM9V4		14.28	16.96	20.73	23.48	24.08	25.81	26.56	21.87	14.33	10.22	8.62X	8.08X	8.06	8.42	8.29	7.83	XI
VMWULJ		14.25	17.07	20.90	23.72	24.23	26.01	27.01	22.21	14.46	10.28	8.87	8.29	8.25	8.65	8.55	7.96	MV
VMZE9M		14.49	17.30	21.18	23.90	24.48	26.19	27.14	22.57	14.87	10.52	8.99	8.36	8.31	8.69	8.51	8.02	AM
VNQKRX		14.58	17.30	21.35	23.90	24.57	26.30	27.21	22.40	14.57	10.46	8.98	8.41	8.36	8.67	8.50	8.09	AJ
W7A7ZA		14.73	17.05	21.17	23.35	23.95	25.57	26.55	21.60	14.18	10.35	8.89	8.38	8.36	8.87X	8.68	8.18	HH
W83PQV		14.12	16.89	20.59	23.21	23.83	25.49	26.36	21.81	16.12X	10.11X	8.67	8.07X	8.06	8.39	8.29	7.71	AM
W84JCL		15.57	17.25	21.22	23.83	24.59	26.23	27.23	22.51	14.78	10.45	8.96	8.37	8.35	8.65	8.54	8.05	AJ
WQVX2R		14.38	17.19	21.08	23.77	24.38	26.06	26.94	22.27	14.69	10.48	8.91	8.34	8.30	8.67	8.53	7.98	MM
XFQ36K		14.50	17.13	21.07	23.61	24.30	26.02	26.87	21.95	14.51	10.39	8.90	8.36	8.38	8.70	8.56	7.98	XO
XUCKCQ		14.65	17.14	21.09	23.73	24.30	26.04	26.85	22.07	14.47	10.40	8.87	8.24	8.13	8.54	8.33	7.85	HP
YHRXFU		14.37	16.92	21.04	23.66	24.23	25.99	27.01	22.26	14.53	10.35	8.89	8.32	8.27	8.65	8.56	7.96	SH
YHVEDT		14.45	17.17	21.23	23.86	24.53	26.21	27.16	22.32	14.54	10.36	8.88	8.32	8.31	8.59	8.50	8.02	AO
YQLZJR		14.36	17.09	21.13	23.70	24.43	26.11	26.95	22.20	14.54	10.38	8.88	8.31	8.29	8.58	8.44	7.97	AQ
Z9ZA7Q		14.33	17.04	20.89	23.52	24.14	25.81	26.59	22.02	14.59	10.37	8.81	8.24	8.22	8.57	8.44	7.91	MM
ZC46PT		14.57	17.30	21.15	23.94	24.64	26.25	27.16	22.45	14.72	10.48	8.95	8.38	8.31	8.61	8.52	8.04	AO
ZC6YBK		14.16	17.07	20.79	23.40	24.09	25.76	26.51	21.87	14.39	10.25	8.71	8.16	8.10	8.49	8.31	7.77	XI
ZM398P		14.61	17.26	21.17	23.70	24.28	26.03	26.81	21.96	14.56	10.34	8.81	8.26	8.17	8.64	8.35	7.89	HP

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WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths															Instr Code	
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680		700
Sample C151																		
ZNE6DT		14.48	17.24	21.16	23.93	24.59	26.17	27.15	22.38	14.71	10.44	8.94	8.35	8.28	8.57	8.44	8.00	XX
ZT9C6V		14.83	17.45	21.00	23.80	24.28	26.05	27.13	22.43	14.56	10.31	8.86	8.29	8.24	8.69	8.54	8.01	MV

Summary Statistics

Grand Means																	
	14.42	17.11	21.02	23.66	24.31	26.02	26.88	22.14	14.57	10.38	8.87	8.30	8.27	8.62	8.47	7.95	
Std Dev Btwn Labs																	
	0.56	0.18	0.19	0.18	0.19	0.20	0.26	0.23	0.21	0.09	0.08	0.07	0.08	0.09	0.09	0.11	

Comments assigned on Data Flags for Test #411

GMP7EL (X) - High and low % reflectance data at various wavelengths.

NGWCHL (X) - Low % reflectance data at all wavelengths.

Interlaboratory Testing Program for Color & Appearance

Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample G151			Sample G152			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
2A9BJV	X	45.88	19.91	48.13	46.38	9.67	22.34	GL
2DDCQ2		26.30	0.34	0.81	36.63	-0.08	-0.19	GB
2RAQQU		26.58	0.61	1.48	37.03	0.32	0.73	RA
3MELNX		26.10	0.14	0.33	36.73	0.02	0.04	GN
3UXGDK		26.43	0.46	1.11	37.53	0.82	1.89	GL
3V8WXT		26.20	0.24	0.57	36.75	0.04	0.10	GL
4EXXD9		25.98	0.01	0.03	36.63	-0.08	-0.19	GK
4LE3Y2		25.98	0.01	0.03	36.68	-0.03	-0.08	PC
67ZYD7		26.15	0.19	0.45	36.55	-0.16	-0.36	GK
694KRB		25.75	-0.21	-0.52	36.43	-0.28	-0.65	GK
6HRD48		25.65	-0.31	-0.76	36.55	-0.16	-0.36	GK
8HQ3KA		25.58	-0.39	-0.94	36.78	0.07	0.16	XX
9FCKQQ		26.13	0.16	0.39	36.53	-0.18	-0.42	GL
9MF2AP	X	24.75	-1.21	-2.94	34.73	-1.98	-4.58	GB
A8FHBD		26.55	0.59	1.41	37.03	0.32	0.73	GL
AGHGNY		26.58	0.61	1.48	36.85	0.14	0.33	GL
BFACYH		25.90	-0.06	-0.16	36.95	0.24	0.56	GK
BFP7LQ		25.75	-0.21	-0.52	36.68	-0.03	-0.08	GL
CDU8MH		26.13	0.16	0.39	36.60	-0.11	-0.25	GL
CVEVWD		26.14	0.18	0.43	37.18	0.47	1.09	GL
D2KRFD		25.28	-0.69	-1.67	35.85	-0.86	-1.98	GL
E2W3A3		25.53	-0.44	-1.06	36.15	-0.56	-1.29	GL
EKBRXF		25.75	-0.21	-0.52	36.28	-0.43	-1.00	GL
FEYUQZ		25.98	0.01	0.03	36.70	-0.01	-0.02	GX
GA4U3C	X	27.78	1.81	4.38	37.93	1.22	2.81	GT
GKGLDK		26.00	0.04	0.09	36.65	-0.06	-0.13	GB
GKHGZW		26.10	0.14	0.33	36.70	-0.01	-0.02	GL
GWERM6		25.65	-0.31	-0.76	36.73	0.02	0.04	GK
H93E76		26.20	0.24	0.57	37.13	0.42	0.96	GN
HVJ4Q9		26.13	0.16	0.39	36.98	0.27	0.62	GK
JVQZB3	*	26.68	0.71	1.72	37.93	1.22	2.81	GL
KA4TCE		26.18	0.21	0.51	37.13	0.42	0.96	GN
LN7JVX		26.15	0.19	0.45	36.68	-0.03	-0.08	RA
LVMMT8		25.83	-0.14	-0.34	37.05	0.34	0.79	GL
MAH89A		25.75	-0.21	-0.52	36.63	-0.08	-0.19	GK
MEETYD		25.63	-0.34	-0.82	36.00	-0.71	-1.63	MW
MF7JUB		25.70	-0.26	-0.64	36.03	-0.68	-1.58	GL
N94UPC		25.75	-0.21	-0.52	37.03	0.32	0.73	GL
NBCC2A		25.96	-0.01	-0.02	36.37	-0.34	-0.78	GN
NT9BDU		26.20	0.24	0.57	37.13	0.42	0.96	GL
QA4CRJ		25.98	0.01	0.03	36.10	-0.61	-1.40	GK
QBMZDK		25.58	-0.39	-0.94	36.58	-0.13	-0.31	GL
QFFX6W		25.88	-0.09	-0.22	36.05	-0.66	-1.52	RA
QG9JKL		26.40	0.44	1.05	37.13	0.42	0.96	GL
QGCF6D		25.45	-0.51	-1.24	35.95	-0.76	-1.75	GL

Interlaboratory Testing Program for Color & Appearance
Analysis 440
60 Degree Gloss - Paint Chips
ASTM Method D 523

WebCode	Data Flag	Sample G151			Sample G152			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
QJF92W		26.25	0.29	0.69	37.25	0.54	1.25	GL
QYMVBQ		25.60	-0.36	-0.88	36.68	-0.03	-0.08	GL
RMDGR6		26.23	0.26	0.63	36.60	-0.11	-0.25	GL
RYLKRT		25.18	-0.79	-1.91	36.50	-0.21	-0.48	GK
T27TEY		26.60	0.64	1.54	37.60	0.89	2.06	GK
UBTJRY		25.58	-0.39	-0.94	36.28	-0.43	-1.00	GB
UGVNHW	*	27.13	1.16	2.80	37.63	0.92	2.12	MW
UVH9AY		26.15	0.19	0.45	36.98	0.27	0.62	GK
V6FQYR		25.63	-0.34	-0.82	36.33	-0.38	-0.88	MH
VEM9V4		26.48	0.51	1.23	37.05	0.34	0.79	GL
VMWULJ		25.70	-0.26	-0.64	36.48	-0.23	-0.54	GL
VNQRX		26.05	0.09	0.21	36.60	-0.11	-0.25	XX
VT4VV9	X	27.38	1.41	3.41	37.43	0.72	1.66	EC
WRRF28		26.40	0.44	1.05	36.78	0.07	0.16	GK
X8VY2N		25.05	-0.91	-2.21	36.05	-0.66	-1.52	GL
XAK7LK		26.48	0.51	1.23	37.50	0.79	1.83	GL
XFQ36K	X	24.13	-1.83	-4.43	34.22	-2.48	-5.74	MR
XGKQLV		25.33	-0.64	-1.55	36.48	-0.23	-0.54	GK
YHVEDT		25.38	-0.59	-1.43	36.28	-0.43	-1.00	GQ
ZNWTYU		25.80	-0.16	-0.40	36.73	0.02	0.04	GA
ZT9C6V		26.30	0.34	0.81	36.30	-0.41	-0.94	RA
ZVDYHZ		25.85	-0.11	-0.28	36.78	0.07	0.16	GK
ZZ72LZ	*	25.13	-0.84	-2.03	36.80	0.09	0.21	GK

Summary Statistics

Grand Means	25.96	Gloss Units	36.71	Gloss Units
Stnd Dev Btwn Labs	0.41	Gloss Units	0.43	Gloss Units
Statistics based on 63 of 68 reporting participants				

Comments on assigned Data Flags for Test #440

- 2A9BJV(X) - Data for both samples are high. Also Inconsistent in testing within Sample G151.
- 9MF2AP(X) - Data for both samples are low. Also Inconsistent in testing within Sample G151.
- GA4U3C(X) - Data for both samples are high.
- VT4VV9(X) - High data for Sample Sample G151.
- XFQ36K(X) - Data for both samples are low. Also Inconsistent in testing within Sample G151.

Interlaboratory Testing Program for Color & Appearance

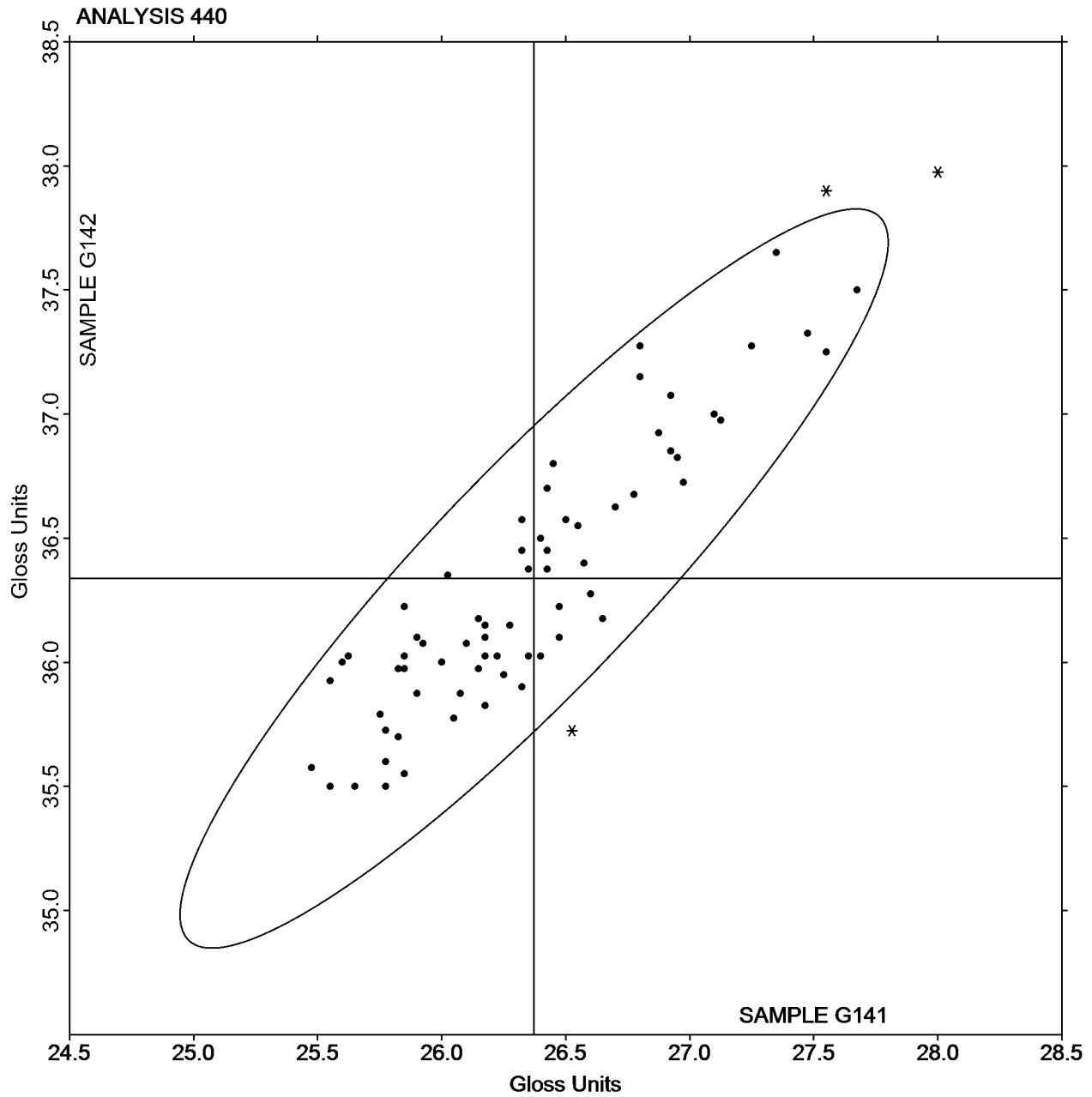
Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

SAMPLE G151 = 25.96 Gloss Units

SAMPLE G152 = 36.71 Gloss Units



Interlaboratory Testing Program for Color & Appearance

Analysis 442

85 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample L151			Sample L152			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
2RAQQU		9.00	-0.03	-0.18	13.68	0.60	1.39	RA
3MELNX		9.13	0.09	0.46	13.83	0.75	1.74	GN
KA4TCE		9.28	0.24	1.23	12.98	-0.10	-0.23	GL
MF7JUB		8.88	-0.16	-0.82	12.88	-0.20	-0.47	GL
NBCC2A		9.24	0.20	1.03	13.31	0.23	0.54	GN
QG9JKL		8.68	-0.36	-1.84	12.70	-0.38	-0.87	GL
QGCF6D		8.88	-0.16	-0.82	12.70	-0.38	-0.87	GL
VEM9V4		9.13	0.09	0.46	12.68	-0.40	-0.93	GL
VMWULJ		9.13	0.09	0.46	12.95	-0.13	-0.29	GL

Summary Statistics

Grand Means	9.03	Gloss Units	13.08	Gloss Units
Std Dev Btwn Labs	0.19	Gloss Units	0.43	Gloss Units
Statistics based on 9 of 9 reporting participants				

Interlaboratory Testing Program for Color & Appearance

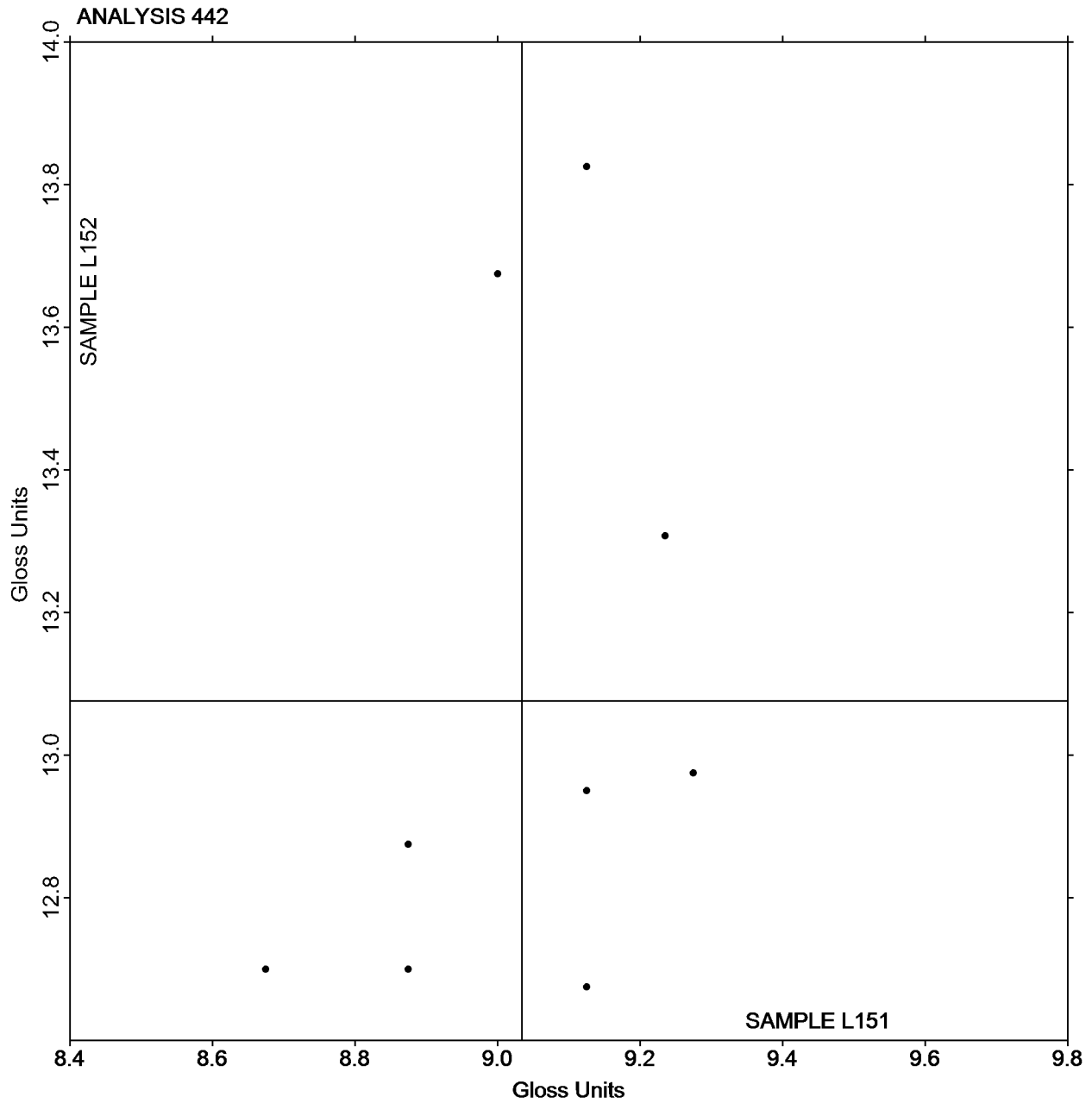
Analysis 442

85 Degree Gloss - Paint Chips

ASTM Method D 523

SAMPLE L151 = 9.03 Gloss Units

SAMPLE L152 = 13.08 Gloss Units



Instrument Code List - Report# 173

Instrument information as provided by laboratories

<u>Analysis</u>	<u>Analysis Name</u>
440	Gloss 60 Degree (Paint Chips)

Instrument code and description

EC	Elcometer
GA	BYK Gardner Color - Guide Gloss
GB	BYK Gardner Spectro - Guide Sphere Gloss
GK	BYK-Gardner micro-gloss (60)
GL	BYK-Gardner micro-TRI-gloss
GN	BYK-Gardner new micro-TRI-gloss
GQ	BYK-Gardner haze-gloss
GT	Gardco Novo-Gloss (20/60/85)
GX	BYK-Gardner (model not specified)
MH	X-Rite/Macbeth Color-Eye XTH
MR	Macbeth Novo-Gloss (20/60/85)
MW	Minolta Multi-Gloss 268
PC	Picogloss 503 Erichson
RA	Rhopoint Novo-Gloss Glossmeter
XX	Instrument make/model not specified by lab

442	Gloss 85 Degree (Paint Chips)
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Instrument code and description

GL	BYK-Gardner micro-TRI-gloss
GN	BYK-Gardner new micro-TRI-gloss
RA	Rhopoint

Instrument Code List - Report# 173

Instrument information as provided by laboratories

Analysis Analysis Name

408 Color & Color Difference (Paint Chips) - 45-0

Instrument code and description

AE	ACS Chroma-Sensor CS-3
FA	BYK Mac
GB	BYK-Gardner spectro-guide sphere gloss
GD	BYK-Gardner The Color Machine
GE	BYK-Gardner spectro-guide (45/0)
GH	BYK-Gardner Color-View
HG	Hunter ColorQUEST
HK	Hunter MiniScan XE (45/0)
HW	Hunter LabScan XE
HY	Hunter Color Flex 45/0
MG	Macbeth 1500/PLUS or 2025+ Color Eye
MQ	Minolta CM-503c Spectrophotometer
TO	Topcon SR-3 Spectroradiometer
XD	X-Rite 500 Series SpectroDensitometer
XK	X-Rite MA100 Multi-Angle SpectroPhotometer
XM	X-Rite MA58 Multi-Angle SpectroPhotometer
XN	X-Rite MA68 Multi-Angle SpectroPhotometer
XO	X-Rite MA68 II Multi-Angle SpectroPhotometer
XR	X-Rite 968 Portable SpectroPhotometer
XU	X-Rite 964 Portable SpectroPhotometer
XZ	X-Rite

409 Color & Color Difference (Paint Chips) Sphere

Instrument code and description

AJ	ACS-Datacolor 600	MV	Minolta CM-3000d Series Spectrophotometer
AL	ACS-Datacolor Intl. Dataflash 100	PE	Perkin Elmer Spectrophotometer
AM	ACS-Datacolor 600 Plus	SH	SIMADZU UV 3101PC
AO	ACS-Datacolor 650X	XH	X-Rite Color i5
AQ	ACS-Datacolor 600X	XI	X-Rite Color i7
AR	Datacolor 400	XM	X-Rite SP62 Portable Sphere Spectrophotometer
CA	Cary 5000	XO	X-Rite SP64 Portable Sphere Spectrophotometer
CE	Cary 500	XX	Instrument make/model not specified by lab
GD	BYK-Gardner spectro-guide sphere		
GF	BYK-Gardner The Color Sphere (TCS)		
HH	Hunter ColorQUEST XE		
HP	Hunter UltraScan PRO		
HU	Hunter UltraScan		
HW	Hunter UltraScan XE		
MG	Macbeth 2180 Color Eye		
MI	Macbeth Color i 5		
MK	Macbeth Color-Eye 7000		
MM	Macbeth Color-Eye 7000a		
MT	Minolta CM-2600d		
MU	Minolta		

Instrument Code List - Report# 173

Instrument information as provided by laboratories

Analysis Analysis Name

411 Spectrophotometric (Paint Chips) - Sphere

Instrument code and description

A J ACS-Datcolor 600
A L ACS-Datcolor Intl. Dataflash 100
A M ACS-Datcolor 600 Plus
A O ACS-Datcolor 650
A Q ACS-Datcolor 600X
A R Datcolor 400
C A Cary 5000
C E Cary 500
G D BYK-Gardner spectro-guide sphere
H H Hunter ColorQUEST XE
H P Hunter UltraScan PRO
H U Hunter UltraScan
H W Hunter UltraScan XE
M G Macbeth 2180 Color Eye
M I Macbeth Color i5
M K Macbeth Color-Eye 7000 Spectrophotometer
M M Macbeth Color-Eye 7000a
M U Minolta
M V Minolta CM-3000d Series Spectrophotometer
P E Perkin Elmer Spectrophotometer
S H SIMADZU UV 3101PC
X H X-Rite Color i5
X I X-Rite Color i7
X M X-Rite SP62
X O X-Rite SP64
X X Instrument make/model not specified by lab