

## Color & Appearance Testing Program

Summary Report # 153 - 3rd Q 2010

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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](#)
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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 50 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

<b>WebCode</b>	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.
<b>Lab Mean</b>	The average of the 2 test results obtained by the participant for CIE L*,a*,b* color space values.
<b>Grand Mean</b>	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.
<b>Between-Lab Standard Deviation</b>	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).
<b>Comparative Performance Value</b>	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.
<b>Graphs</b>	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.
<b>Inst Code</b>	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
<b>Data Flag</b>	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	<b>CAUTION</b> - 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	<b>STOP</b> - 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	<b>PROCEED</b> - 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

<b>WebCode</b>	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.
<b>Grand Mean</b>	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.
<b>Between-Lab Standard Deviation</b>	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).
<b>Inst Code</b>	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
<b>Data Flag</b>	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	<b>CAUTION</b> - 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	<b>STOP</b> - 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	<b>CAUTION</b> - 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	<b>STOP</b> - 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	<b>PROCEED</b> - 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 &amp; 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

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
263TTA		C101	53.87	-24.02	-19.83	1.44	0.06	-0.19	1.46	MG
		C102	55.31	-23.96	-20.02					
3JUBFC	X	C101	54.24	24.96	18.98	1.30	-0.05	0.13	1.30	GE
		C102	55.54	24.92	19.10					
8E6GGE		C101	54.03	-24.68	-19.46	1.28	0.05	0.08	1.28	HK
		C102	55.31	-24.63	-19.38					
8GPAGA		C101	54.45	-24.89	-18.95	1.29	0.09	-0.02	1.29	HK
		C102	55.74	-24.80	-18.96					
8QPXVK		C101	54.08	-25.14	-19.12	1.25	0.07	-0.25	1.27	GD
		C102	55.32	-25.07	-19.37					
AQYPYL		C101	53.84	-24.09	-19.72	1.25	0.02	-0.16	1.26	HW
		C102	55.09	-24.07	-19.88					
BMBBCH		C101	54.27	-25.18	-18.55	1.17	0.08	-0.13	1.18	XR
		C102	55.44	-25.10	-18.68					
D9HG73		C101	54.23	-24.91	-19.15	1.32	0.04	-0.14	1.32	XM
		C102	55.54	-24.88	-19.29					
DTBVNJ		C101	54.21	-24.94	-19.02	1.36	-0.04	-0.23	1.38	XU
		C102	55.57	-24.98	-19.25					
E8M8HJ		C101	53.73	-23.98	-20.15	1.30	-0.03	-0.12	1.30	HW
		C102	55.02	-24.01	-20.26					
F3LQG9		C101	53.84	-25.05	-19.44	1.26	-0.04	-0.21	1.28	GH
		C102	55.10	-25.08	-19.65					
FV49U2		C101	54.30	-24.75	-19.25	1.32	0.05	-0.12	1.33	XD
		C102	55.62	-24.70	-19.37					
FXUG7B		C101	54.28	-24.83	-18.89	1.32	-0.01	-0.17	1.33	GE
		C102	55.60	-24.84	-19.06					
GTDBA2		C101	54.49	-25.43	-18.46	1.30	0.01	-0.20	1.32	GU
		C102	55.79	-25.42	-18.67					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
HFNQ94		C101	54.20	-24.83	-19.30	1.30	0.05	-0.14	1.30	XO
		C102	55.50	-24.78	-19.44					
HXPJ9K		C101	54.36	-24.97	-19.31	1.30	0.03	-0.07	1.30	XO
		C102	55.65	-24.94	-19.38					
JCHK8Q		C101	54.25	-24.93	-19.26	1.22	-0.01	-0.20	1.23	XN
		C102	55.46	-24.93	-19.45					
JVAQDV		C101	54.54	-24.95	-19.44	1.48	0.04	-0.15	1.48	XO
		C102	56.02	-24.91	-19.58					
K4X4RL		C101	54.18	-24.91	-19.32	1.27	0.00	-0.18	1.28	XN
		C102	55.45	-24.91	-19.50					
K9JP4U		C101	53.91	-25.13	-19.23	1.23	-0.03	-0.23	1.25	GH
		C102	55.14	-25.16	-19.45					
KPG382		C101	54.25	-24.40	-19.84	1.32	0.05	-0.16	1.33	HW
		C102	55.57	-24.35	-19.99					
LR4ZFR		C101	54.14	-24.80	-19.14	1.29	0.01	-0.21	1.31	XP
		C102	55.43	-24.79	-19.34					
MDMXE		C101	54.26	-24.93	-19.17	1.26	-0.02	-0.22	1.27	XU
		C102	55.51	-24.95	-19.39					
NK2J8J		C101	54.34	-25.15	-19.20	1.32	0.04	-0.18	1.33	XV
		C102	55.66	-25.11	-19.38					
NVXVV		C101	54.26	-25.40	-18.43	1.35	0.02	-0.24	1.37	GU
		C102	55.61	-25.38	-18.67					
PMYJ8E		C101	53.97	-24.80	-19.21	1.24	0.06	-0.14	1.24	XL
		C102	55.20	-24.74	-19.35					
R4M46J		C101	54.30	-24.88	-18.73	1.28	0.00	-0.16	1.29	GA
		C102	55.58	-24.88	-18.89					
RUTGXE		C101	53.80	-24.55	-18.45	1.35	-0.05	-0.15	1.36	TN
		C102	55.15	-24.60	-18.60					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>FlaqSamples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
TX7GU7	C101	53.76	-25.12	-19.05	1.16	-0.13	-0.26	1.19	MQ
	C102	54.92	-25.25	-19.31					
TZHVD E	C101	53.89	-24.14	-19.83	1.30	0.00	-0.16	1.30	HW
	C102	55.18	-24.14	-19.99					
UBTWEL X	C101	46.89	-17.83	-18.13	1.35	-0.18	-0.26	1.39	HW
	C102	48.24	-18.01	-18.39					
WNWPU	C101	54.29	-24.84	-19.37	1.18	-0.01	-0.20	1.19	XN
	C102	55.47	-24.84	-19.57					
XBMQQL	C101	53.82	-24.04	-19.78	1.28	0.02	-0.18	1.29	HW
	C102	55.10	-24.02	-19.96					
XLKQ26	C101	54.27	-25.06	-19.10	1.31	-0.03	-0.22	1.32	XP
	C102	55.58	-25.09	-19.32					
XUBC83	C101	54.00	-24.16	-19.89	1.35	0.02	-0.19	1.36	HW
	C102	55.34	-24.15	-20.08					
YA7X84	C101	54.05	-24.18	-19.71	1.31	0.04	-0.14	1.31	HW
	C102	55.35	-24.14	-19.84					
ZNGYGY	C101	54.38	-24.76	-19.05	1.31	-0.01	-0.25	1.33	XT
	C102	55.69	-24.77	-19.30					

## 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							
C101	54.14	-24.75	-19.22				
C102	55.43	-24.74	-19.40	1.29	0.01	-0.17	1.30
Std Dev Btwn Labs							
C101	0.22	0.40	0.47				
C102	0.24	0.40	0.46	0.06	0.04	0.07	0.06

Statistics based on 35 of 37 reporting participants

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

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**Comments assigned on Data Flags for Test #408**

3JUBFC(X) - It appears that the lab may have forgotten to include the negative sign when reporting "a\*" and "b\*" values.

UBTWEL(X) - High "a\*" values and low "L\*" values.

# Interlaboratory Testing Program for Color & Appearance

## Analysis 408

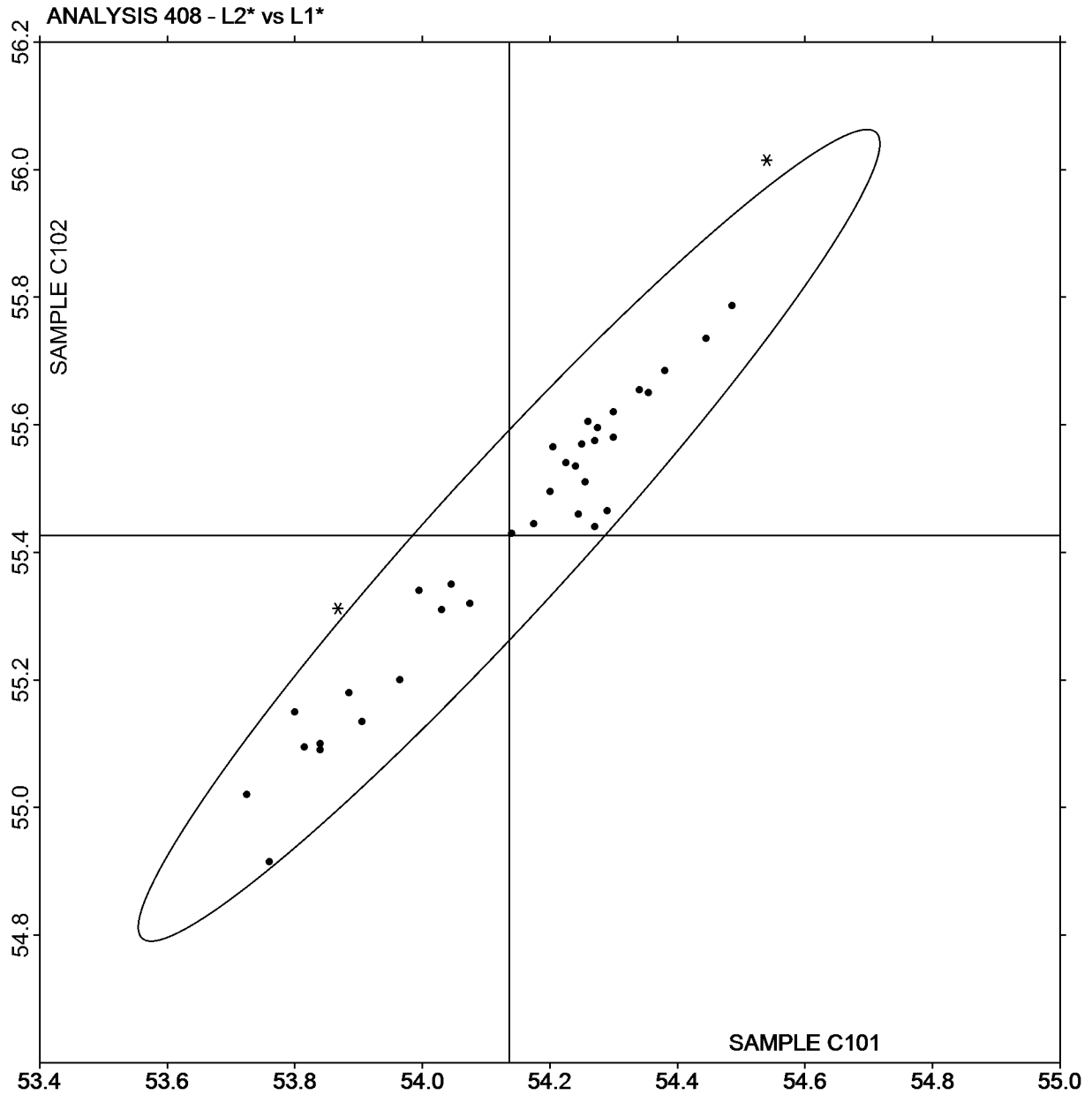
Color and Color Difference - Paint Chips - 45-0 Geometry Instruments

CIE L\*a\*b\* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

### L2\* vs L1\*

SAMPLE C101 = 54.14

SAMPLE C102 = 55.43



Interlaboratory Testing Program for Color & Appearance

Analysis 408

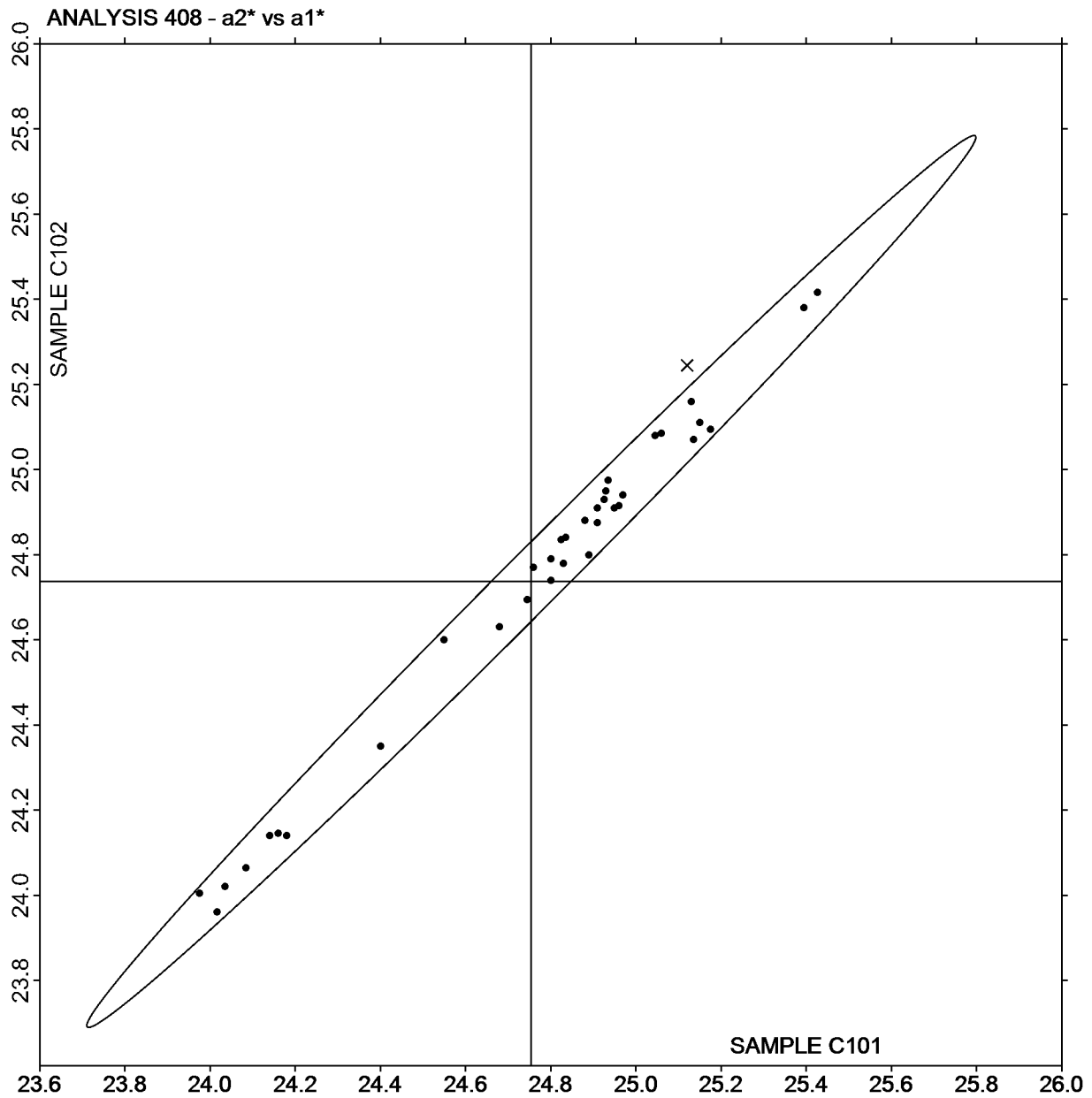
Color and Color Difference - Paint Chips - 45-0 Geometry Instruments

CIE L\*a\*b\* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

a2\* vs a1\*

SAMPLE C101 = -24.75

SAMPLE C102 = -24.74



Plot created using absolute values.

# Interlaboratory Testing Program for Color & Appearance

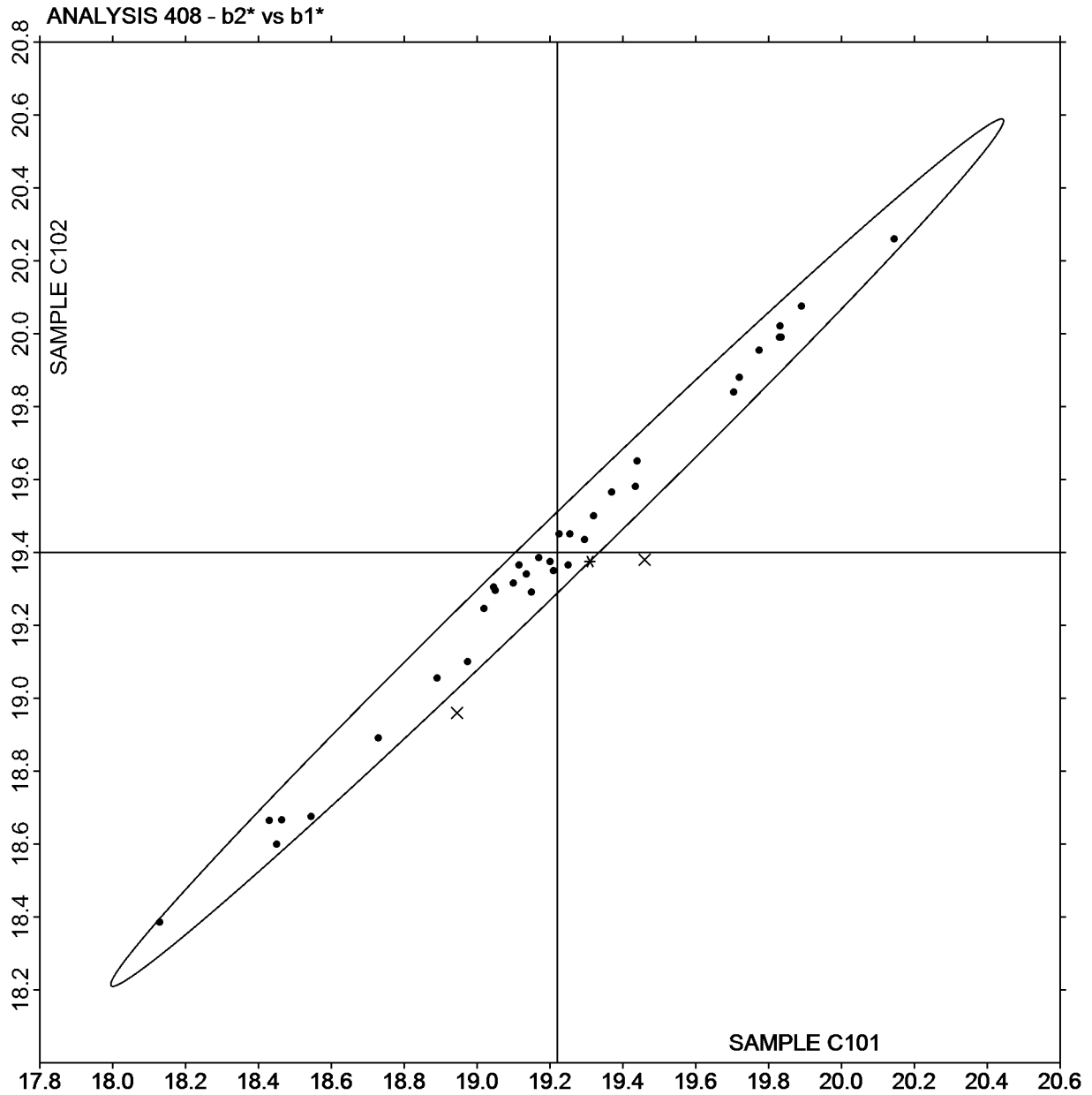
## Analysis 408

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

### b2\* vs b1\*

SAMPLE C101 = -19.22

SAMPLE C102 = -19.40



Plot created using absolute values.

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>FlaqSamples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
2BQLHU	C101	54.62	-24.86	-19.14	1.30	0.12	-0.15	1.31	AJ
	C102	55.92	-24.75	-19.29					
2DYBZC	C101	54.38	-24.06	-19.18	1.31	0.10	-0.13	1.32	MG
	C102	55.69	-23.96	-19.31					
2FH4GT	C101	54.42	-24.66	-19.14	1.29	0.05	-0.18	1.30	MM
	C102	55.70	-24.61	-19.32					
2K8LTJ	C101	54.64	-24.83	-19.39	1.29	0.14	-0.14	1.30	AM
	C102	55.92	-24.69	-19.53					
2TZUDA	C101	54.41	-25.02	-19.07	1.25	0.07	-0.15	1.26	CE
	C102	55.66	-24.96	-19.23					
2ZWPXL	C101	54.48	-24.80	-19.12	1.29	0.04	-0.09	1.29	XI
	C102	55.77	-24.77	-19.21					
3FFZXU	C101	54.39	-24.85	-19.10	1.30	0.09	-0.19	1.32	XI
	C102	55.69	-24.77	-19.29					
3G9JEF	C101	54.55	-24.80	-19.13	1.29	0.11	-0.10	1.30	AG
	C102	55.84	-24.69	-19.22					
3HMUN8	C101	54.38	-24.81	-18.98	1.35	0.08	-0.14	1.36	MV
	C102	55.73	-24.73	-19.11					
3K68VM	C101	54.65	-24.90	-19.23	1.35	0.13	-0.12	1.36	MV
	C102	55.99	-24.77	-19.35					
3TRXVP	C101	54.69	-24.98	-19.11	1.27	0.07	-0.16	1.28	AJ
	C102	55.96	-24.91	-19.26					
487VK4	C101	54.49	-24.89	-18.61	1.31	0.07	-0.18	1.32	HP
	C102	55.80	-24.82	-18.79					
48K2PE	C101	54.45	-24.89	-18.74	1.27	0.06	-0.17	1.28	MV
	C102	55.72	-24.83	-18.91					
4ANTGR	C101	54.62	-24.89	-19.45	1.31	0.08	-0.17	1.32	AM
	C102	55.93	-24.82	-19.62					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
4HWB7D		C101	54.29	-24.17	-19.24	1.31	0.06	-0.13	1.32	XQ
		C102	55.60	-24.11	-19.37					
4JNH4V	X	C101	56.40	-23.60	-18.73	1.25	0.05	-0.15	1.25	GG
		C102	57.65	-23.55	-18.87					
4N6MZ6		C101	54.49	-24.74	-19.29	1.29	0.09	-0.12	1.30	AJ
		C102	55.78	-24.65	-19.41					
4ZWH6B		C101	54.55	-24.31	-19.03	1.30	0.09	-0.15	1.31	AD
		C102	55.85	-24.22	-19.18					
6BGVBM		C101	54.73	-24.93	-19.14	1.28	0.09	-0.16	1.29	AJ
		C102	56.00	-24.84	-19.30					
6LTG3U		C101	54.59	-24.48	-19.24	1.24	0.02	-0.17	1.25	HP
		C102	55.82	-24.46	-19.41					
78Q68V		C101	54.49	-24.69	-19.13	1.23	0.04	-0.31	1.26	MM
		C102	55.71	-24.65	-19.44					
7BTZYB		C101	54.48	-24.62	-19.08	1.28	0.03	-0.19	1.29	MM
		C102	55.76	-24.60	-19.27					
7E7W8T		C101	54.62	-24.78	-19.25	1.28	0.11	-0.08	1.28	AO
		C102	55.89	-24.67	-19.33					
8JKP6D		C101	54.62	-25.01	-18.95	1.31	0.13	-0.12	1.32	MV
		C102	55.93	-24.89	-19.07					
8YF9Y9	X	C101	54.47	-24.25	-18.35	1.42	0.12	-0.14	1.43	MJ
		C102	55.88	-24.14	-18.49					
8Z3V7C		C101	54.34	-24.39	-19.17	1.37	0.07	-0.14	1.37	XO
		C102	55.70	-24.32	-19.30					
98M97N		C101	54.39	-24.64	-19.06	1.25	0.05	-0.16	1.26	MM
		C102	55.64	-24.59	-19.22					
9DVH9Q		C101	54.41	-24.76	-19.02	1.29	0.04	-0.15	1.30	GG
		C102	55.70	-24.72	-19.17					

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

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
9JXREJ		C101	54.49	-24.61	-19.07	1.32	0.07	-0.16	1.34	MK
		C102	55.82	-24.53	-19.23					
9KM36C		C101	54.18	-24.18	-19.66	1.33	0.09	-0.12	1.34	HW
		C102	55.51	-24.09	-19.78					
A7MJ8K	X	C101	53.11	-19.62	-22.43	1.31	-0.03	-0.14	1.32	AO
		C102	54.42	-19.65	-22.57					
A9VC4P		C101	54.56	-24.85	-19.20	1.28	0.08	-0.16	1.29	AJ
		C102	55.84	-24.77	-19.35					
AGV3ZG		C101	54.48	-24.85	-19.00	1.27	0.05	-0.17	1.28	AL
		C102	55.75	-24.81	-19.17					
AQWMZ		C101	54.44	-24.63	-19.37	1.28	0.09	-0.13	1.28	GG
		C102	55.72	-24.54	-19.50					
AUFEW4		C101	54.26	-24.56	-18.96	1.31	0.06	-0.18	1.32	MI
		C102	55.57	-24.51	-19.14					
BUAX2X	X	C101	95.60	1.43	-8.61	-0.06	-0.07	-0.09	0.12	HP
		C102	95.55	1.37	-8.70					
C4RTNQ		C101	54.37	-24.63	-19.17	1.28	0.16	-0.12	1.29	MK
		C102	55.65	-24.47	-19.29					
C6MYC3		C101	54.70	-24.84	-19.43	1.34	0.09	-0.16	1.35	AM
		C102	56.03	-24.75	-19.59					
CBDG4F		C101	54.25	-24.31	-19.08	1.34	0.09	-0.13	1.35	XU
		C102	55.59	-24.22	-19.21					
CCHCY6		C101	54.72	-24.95	-19.20	1.35	0.14	-0.10	1.36	AM
		C102	56.07	-24.81	-19.30					
CPFHQA		C101	54.51	-24.61	-18.60	1.30	0.11	-0.18	1.31	MM
		C102	55.81	-24.50	-18.78					
CPUUNZ	X	C101	54.44	-24.62	-18.51	1.37	0.13	-0.13	1.38	MJ
		C102	55.81	-24.48	-18.64					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
CVV7LH		C101	54.61	-24.47	-19.01	1.31	0.09	-0.17	1.32	HP
		C102	55.92	-24.39	-19.17					
DLMRFA		C101	54.52	-24.68	-19.06	1.28	0.08	-0.16	1.29	MM
		C102	55.80	-24.60	-19.22					
DTPWCZ		C101	54.58	-24.60	-19.23	1.35	0.06	-0.18	1.36	AJ
		C102	55.92	-24.55	-19.40					
DUGZZ2		C101	54.48	-24.02	-19.39	1.28	0.06	-0.16	1.29	HH
		C102	55.76	-23.97	-19.55					
DZKUP3		C101	54.40	-24.61	-19.07	1.28	0.12	-0.13	1.29	MM
		C102	55.68	-24.49	-19.19					
EA8CTN	X	C101	53.36	-24.06	-20.08	1.27	0.09	-0.19	1.28	AQ
		C102	54.62	-23.97	-20.27					
EUZTM		C101	54.67	-24.74	-19.34	1.27	0.14	-0.17	1.28	AJ
		C102	55.94	-24.61	-19.51					
F7NKGY		C101	54.49	-24.25	-19.29	1.27	0.05	-0.20	1.28	MZ
		C102	55.75	-24.20	-19.49					
FN9BFY		C101	54.33	-24.14	-19.50	1.29	0.05	-0.17	1.30	HW
		C102	55.62	-24.09	-19.67					
G27N6U		C101	54.21	-24.27	-19.49	1.28	0.05	-0.13	1.29	MM
		C102	55.49	-24.22	-19.62					
G9B4W9		C101	54.62	-24.78	-19.01	1.28	0.05	-0.18	1.29	AJ
		C102	55.90	-24.74	-19.19					
GA8UAX	X	C101	54.44	-24.83	-18.49	1.32	0.09	-0.16	1.33	HX
		C102	55.75	-24.75	-18.65					
GGY74R		C101	54.61	-24.84	-19.23	1.11	-0.07	-0.21	1.13	XX
		C102	55.71	-24.91	-19.44					
GJ7N3N		C101	54.63	-24.89	-19.20	1.26	0.07	-0.17	1.27	AJ
		C102	55.89	-24.82	-19.37					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>FlaqSamples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
GLV6B9	C101	54.30	-24.10	-19.03	1.34	0.10	-0.13	1.35	GD
	C102	55.64	-24.01	-19.16					
GRX4P7	C101	54.36	-24.51	-19.03	1.26	0.10	-0.14	1.27	MK
	C102	55.61	-24.41	-19.17					
H8CKPU	C101	54.59	-24.67	-19.45	1.32	0.05	-0.16	1.33	AJ
	C102	55.91	-24.62	-19.61					
H8V2LU	C101	54.51	-24.58	-19.32	1.26	0.08	-0.14	1.26	AJ
	C102	55.76	-24.50	-19.46					
HEDXJW	C101	54.80	-24.94	-19.17	1.32	0.07	-0.15	1.32	AJ
	C102	56.12	-24.87	-19.32					
HGW7FA	C101	54.42	-24.64	-19.13	1.31	0.08	-0.19	1.32	MK
	C102	55.73	-24.56	-19.32					
HJLFNQ X	C101	95.60	1.68	-8.61	-0.06	-0.32	-0.09	0.33	HP
	C102	95.55	1.37	-8.70					
HY4LYB	C101	54.41	-24.61	-19.09	1.30	0.05	-0.17	1.31	MM
	C102	55.71	-24.56	-19.26					
J89TDB	C101	54.33	-24.40	-18.96	1.34	0.09	-0.15	1.35	MJ
	C102	55.67	-24.31	-19.11					
JD2X6U	C101	54.35	-24.46	-19.14	1.33	0.03	-0.17	1.34	MI
	C102	55.68	-24.43	-19.31					
JXDPNN	C101	54.30	-24.59	-18.73	1.32	0.14	-0.17	1.34	MI
	C102	55.62	-24.45	-18.90					
KD8G8G	C101	54.55	-24.80	-19.18	1.31	0.06	-0.12	1.32	AM
	C102	55.86	-24.75	-19.30					
KHMRL7	C101	54.55	-24.63	-18.96	1.26	0.06	-0.10	1.26	GF
	C102	55.80	-24.57	-19.06					
KTXE9Y	C101	54.57	-24.87	-19.11	1.26	0.08	-0.16	1.27	AM
	C102	55.83	-24.79	-19.27					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
KW8BZ9		C101	54.44	-24.45	-19.21	1.30	0.10	-0.16	1.31	MK
		C102	55.74	-24.35	-19.37					
L44LQX		C101	54.72	-24.60	-19.05	1.30	0.04	-0.17	1.31	XX
		C102	56.01	-24.57	-19.22					
LEJDCL	X	C101	54.62	-25.02	-18.58	1.29	-0.41	-0.14	1.36	MK
		C102	55.91	-25.43	-18.71					
LYKMY		C101	54.59	-24.89	-19.05	1.31	0.11	-0.15	1.32	AM
		C102	55.90	-24.78	-19.20					
LZ2PXH		C101	54.47	-25.04	-18.68	1.29	0.08	-0.15	1.30	PE
		C102	55.76	-24.97	-18.83					
M4JBEV		C101	54.58	-24.72	-19.37	1.27	0.07	-0.17	1.28	AM
		C102	55.84	-24.65	-19.54					
M6RZMR		C101	54.67	-24.81	-19.01	1.28	0.05	-0.15	1.28	AJ
		C102	55.94	-24.77	-19.16					
MD3J9Q	X	C101	57.99	-38.33	-10.46	0.59	-2.61	0.07	2.67	HP
		C102	58.58	-40.94	-10.40					
MQC6P4		C101	54.53	-24.86	-19.33	1.32	0.05	-0.15	1.33	AM
		C102	55.85	-24.81	-19.47					
PDEYDH		C101	54.51	-24.55	-18.84	1.28	0.08	-0.14	1.29	MM
		C102	55.80	-24.47	-18.98					
PG9AXG		C101	54.57	-24.77	-19.20	1.30	0.14	-0.11	1.31	AO
		C102	55.86	-24.63	-19.31					
PHQ34K		C101	54.18	-24.51	-19.15	1.28	0.07	-0.13	1.29	AJ
		C102	55.46	-24.44	-19.28					
PNU2EW		C101	54.64	-24.78	-19.15	1.29	0.11	-0.14	1.30	SH
		C102	55.92	-24.67	-19.29					
QC4M66		C101	54.29	-24.61	-19.04	1.30	0.03	-0.20	1.31	XI
		C102	55.59	-24.58	-19.24					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>FlaqSamples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
QCR2AG	C101	54.95	-24.44	-19.69	1.31	0.09	-0.13	1.32	AQ
	C102	56.26	-24.35	-19.82					
QGXH4R	C101	54.61	-24.93	-18.95	1.30	0.08	-0.19	1.31	AM
	C102	55.90	-24.85	-19.13					
QXWQPJ	C101	54.50	-24.91	-19.03	1.30	0.03	-0.14	1.31	MX
	C102	55.80	-24.88	-19.17					
R92EK9	C101	54.56	-24.79	-19.20	1.27	0.08	-0.16	1.28	AJ
	C102	55.83	-24.71	-19.36					
R9QE3L	C101	54.41	-24.57	-19.16	1.30	0.08	-0.16	1.31	HP
	C102	55.70	-24.49	-19.32					
RBKTN9	C101	54.22	-24.28	-19.22	1.32	0.10	-0.18	1.34	XO
	C102	55.54	-24.18	-19.40					
RGJPE2	C101	54.72	-24.96	-19.16	1.32	0.16	-0.11	1.33	AJ
	C102	56.04	-24.80	-19.27					
RJUE2X	C101	54.45	-24.51	-19.22	1.28	0.08	-0.11	1.29	HF
	C102	55.73	-24.43	-19.32					
RLNJUQ	C101	54.51	-24.89	-19.02	1.29	0.05	-0.13	1.29	MV
	C102	55.80	-24.84	-19.15					
RXBC28	C101	54.57	-24.50	-19.07	1.22	0.04	-0.21	1.23	XR
	C102	55.78	-24.46	-19.28					
T78K8J	C101	54.62	-24.73	-19.21	1.29	0.07	-0.14	1.29	AJ
	C102	55.91	-24.66	-19.35					
T8YPFW	C101	54.16	-24.36	-18.91	1.32	0.06	-0.17	1.33	MG
	C102	55.48	-24.29	-19.07					
TCDCH3	C101	54.48	-24.61	-19.04	1.27	0.06	-0.15	1.28	MM
	C102	55.76	-24.55	-19.19					
TEWEYL X	C101	54.59	-25.41	-18.38	1.30	0.15	-0.17	1.32	HG
	C102	55.89	-25.26	-18.54					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>FlaqSamples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
		<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
TKHGVQ	C101	54.51	-24.89	-18.96	1.31	0.14	-0.12	1.32	MV
	C102	55.82	-24.75	-19.08					
TNXVND	C101	54.37	-24.21	-19.06	1.28	0.09	-0.15	1.29	XU
	C102	55.65	-24.12	-19.20					
TZVTLY	C101	54.67	-24.86	-19.20	1.35	0.13	-0.16	1.36	AM
	C102	56.02	-24.74	-19.36					
U93ZP6	C101	54.63	-25.04	-18.87	1.32	0.09	-0.19	1.33	AJ
	C102	55.95	-24.95	-19.06					
UAL6MP	C101	54.77	-25.21	-18.83	1.32	0.15	-0.19	1.34	AJ
	C102	56.08	-25.07	-19.02					
UF398R	C101	54.68	-25.04	-19.17	1.29	0.10	-0.15	1.30	AJ
	C102	55.97	-24.94	-19.32					
UKJFZK	C101	54.63	-24.79	-19.13	1.30	0.10	-0.14	1.31	MV
	C102	55.93	-24.69	-19.27					
UKW9C2	C101	54.41	-24.86	-19.00	1.33	0.13	-0.17	1.34	MV
	C102	55.73	-24.73	-19.17					
UNKAQF	C101	54.70	-24.96	-19.20	1.34	0.10	-0.19	1.35	AO
	C102	56.03	-24.87	-19.39					
URYCPR	C101	54.44	-24.62	-19.01	1.32	0.08	-0.14	1.33	MK
	C102	55.76	-24.54	-19.15					
UVFQ6L	C101	54.59	-24.91	-19.19	1.30	0.05	-0.20	1.32	AM
	C102	55.89	-24.86	-19.39					
V7VWG3	C101	54.42	-24.95	-19.07	1.28	0.13	-0.15	1.30	MV
	C102	55.70	-24.82	-19.22					
VCLET7	C101	54.65	-24.89	-19.02	1.30	0.08	-0.17	1.31	AM
	C102	55.95	-24.81	-19.19					
VEJRJC	C101	54.95	-24.45	-19.64	1.29	0.10	-0.14	1.31	AQ
	C102	56.24	-24.35	-19.78					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
VH7E7X		C101	54.53	-24.54	-19.08	1.31	0.03	-0.18	1.32	AM
		C102	55.84	-24.52	-19.26					
WD9CGN X		C101	47.44	-18.43	-17.34	1.35	-0.16	-0.32	1.40	MV
		C102	48.79	-18.59	-17.65					
WE9Q7M		C101	54.44	-24.71	-19.23	1.37	0.09	-0.16	1.38	MT
		C102	55.81	-24.62	-19.38					
WH88HG		C101	54.59	-24.85	-19.17	1.27	0.06	-0.15	1.27	MV
		C102	55.85	-24.79	-19.32					
WHFUN4		C101	54.41	-24.54	-19.08	1.25	0.10	-0.16	1.26	HF
		C102	55.66	-24.44	-19.24					
WJCCVL		C101	54.70	-24.74	-19.35	1.34	0.13	-0.13	1.35	AM
		C102	56.04	-24.62	-19.48					
X2ZBXW		C101	54.40	-24.42	-18.84	1.38	0.09	-0.17	1.39	MJ
		C102	55.78	-24.34	-19.01					
XW39UC		C101	54.64	-24.98	-19.15	1.33	0.09	-0.16	1.34	AJ
		C102	55.97	-24.89	-19.30					
YGLDVC		C101	54.46	-24.65	-19.18	1.35	0.11	-0.17	1.36	AJ
		C102	55.80	-24.54	-19.35					
YJCMW		C101	54.22	-24.31	-19.25	1.29	0.07	-0.13	1.30	XO
		C102	55.51	-24.24	-19.38					
YK28UC		C101	54.40	-24.89	-19.14	1.31	0.11	-0.15	1.32	AJ
		C102	55.71	-24.78	-19.29					
YKV3X3		C101	54.44	-24.66	-19.19	1.31	0.06	-0.19	1.32	MM
		C102	55.75	-24.60	-19.38					
YUMJE4		C101	54.52	-24.86	-19.15	1.32	0.12	-0.14	1.33	AM
		C102	55.84	-24.75	-19.28					
YXB3QM		C101	54.29	-24.51	-19.08	1.23	-0.01	-0.13	1.24	XO
		C102	55.52	-24.52	-19.20					

## Interlaboratory Testing Program for Color &amp; 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

<u>WebCode</u>	<u>Flag</u>	<u>Samples</u>	<u>CIE L* a* b* Color Values</u>			<u>Color Difference Values</u>				<u>InstrCode</u>
			<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>	
ZD4D96		C101	54.44	-24.71	-18.95	1.34	0.13	-0.17	1.35	MI
		C102	55.78	-24.59	-19.11					
ZET9U8		C101	54.30	-25.15	-19.40	1.30	0.10	-0.15	1.31	CA
		C102	55.60	-25.05	-19.55					
ZEVTQM X		C101	54.28	-24.38	-18.46	1.27	0.07	-0.14	1.28	MI
		C102	55.55	-24.31	-18.60					
ZF92QF		C101	54.47	-24.62	-19.33	1.38	0.05	-0.17	1.39	AJ
		C102	55.85	-24.58	-19.50					
ZFABR8		C101	54.61	-25.05	-19.07	1.37	0.09	-0.17	1.38	AM
		C102	55.97	-24.96	-19.23					
ZHRNYN		C101	54.51	-24.77	-19.17	1.31	0.10	-0.14	1.32	AJ
		C102	55.82	-24.67	-19.31					
ZQEN6		C101	54.37	-24.69	-19.24	1.36	0.07	-0.16	1.37	AJ
		C102	55.73	-24.62	-19.40					

## 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							
C101	54.50	-24.68	-19.13				
C102	55.80	-24.60	-19.28	1.30	0.08	-0.15	1.31
Std Dev Btwn Labs							
C101	0.15	0.26	0.20				
C102	0.15	0.25	0.19	0.04	0.04	0.03	0.04

Statistics based on 120 of 133 reporting participants

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**Comments assigned on Data Flags for Test #409**

4JNH4V(X) - High "L\*" and "a\*" values.

8YF9Y9(X) - High "b\*" values.

A7MJ8K(X) - High "a\*" values and low "L\*" and "b\*" values.

BUAX2X(X) - Apparently measured back of the samples.

CPUUNZ(X) - High "b\*" values.

EA8CTN(X) - Low "L\*" and "b\*" values.

GA8UAX(X) - High "b\*" values.

HJLFNQ(X) - Apparently measured back of the samples.

LEJDCL(X) - High "b\*" values. Large replication difference for "a" values on Sample C102.

MD3J9Q(X) - High "L\*" and "b\*" values and low "a\*" values.

TEWEYL(X) - High "b\*" values. Low "a\*" values for Sample C101.

WD9CGN(X) - High "a\*" and "b\*" values and low "L\*" values.

Z EVTQM(X) - High "b\*" values.

# Interlaboratory Testing Program for Color & Appearance

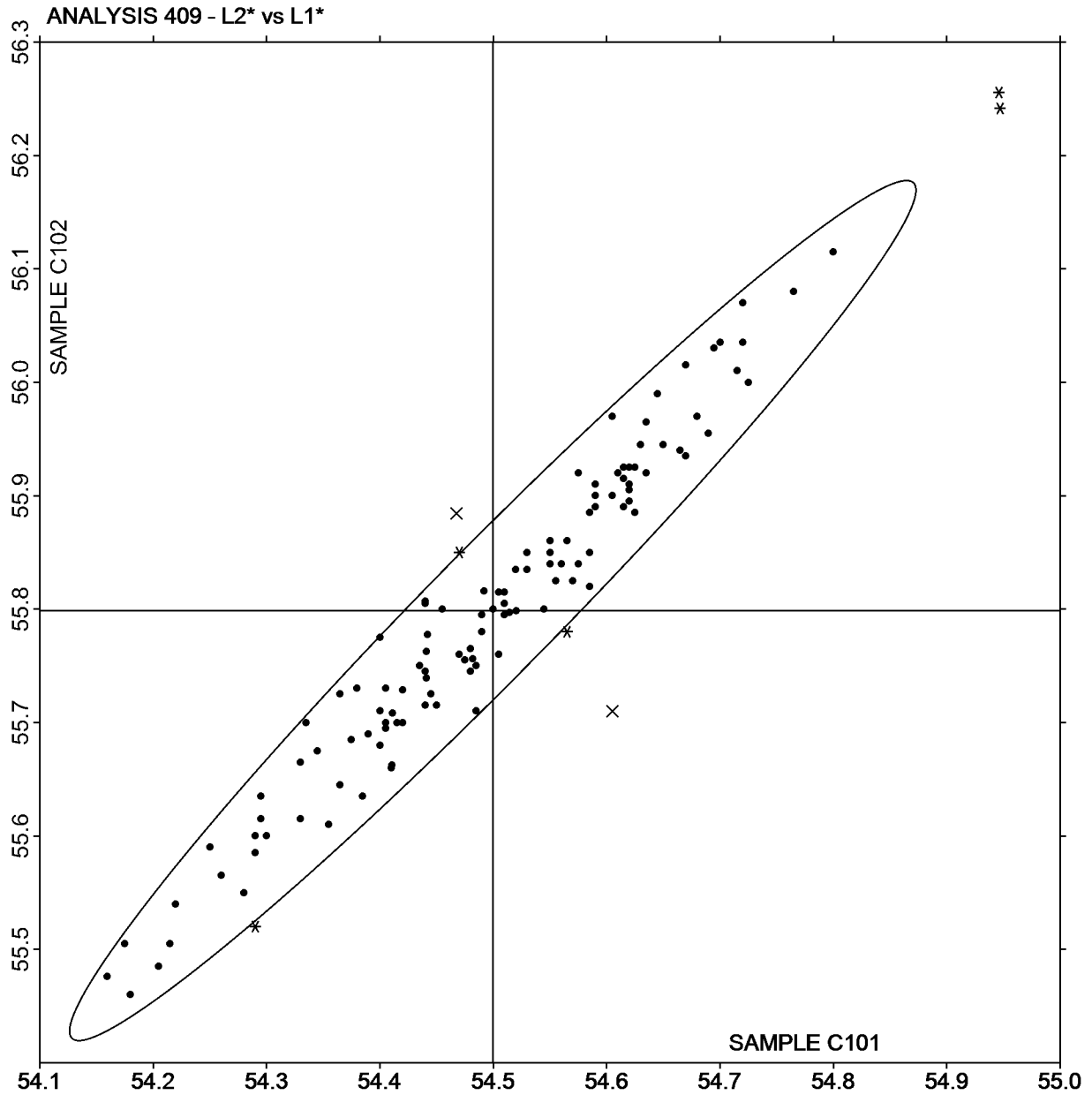
## Analysis 409

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

### L2\* vs L1\*

SAMPLE C101 = 54.50

SAMPLE C102 = 55.80



Interlaboratory Testing Program for Color & Appearance

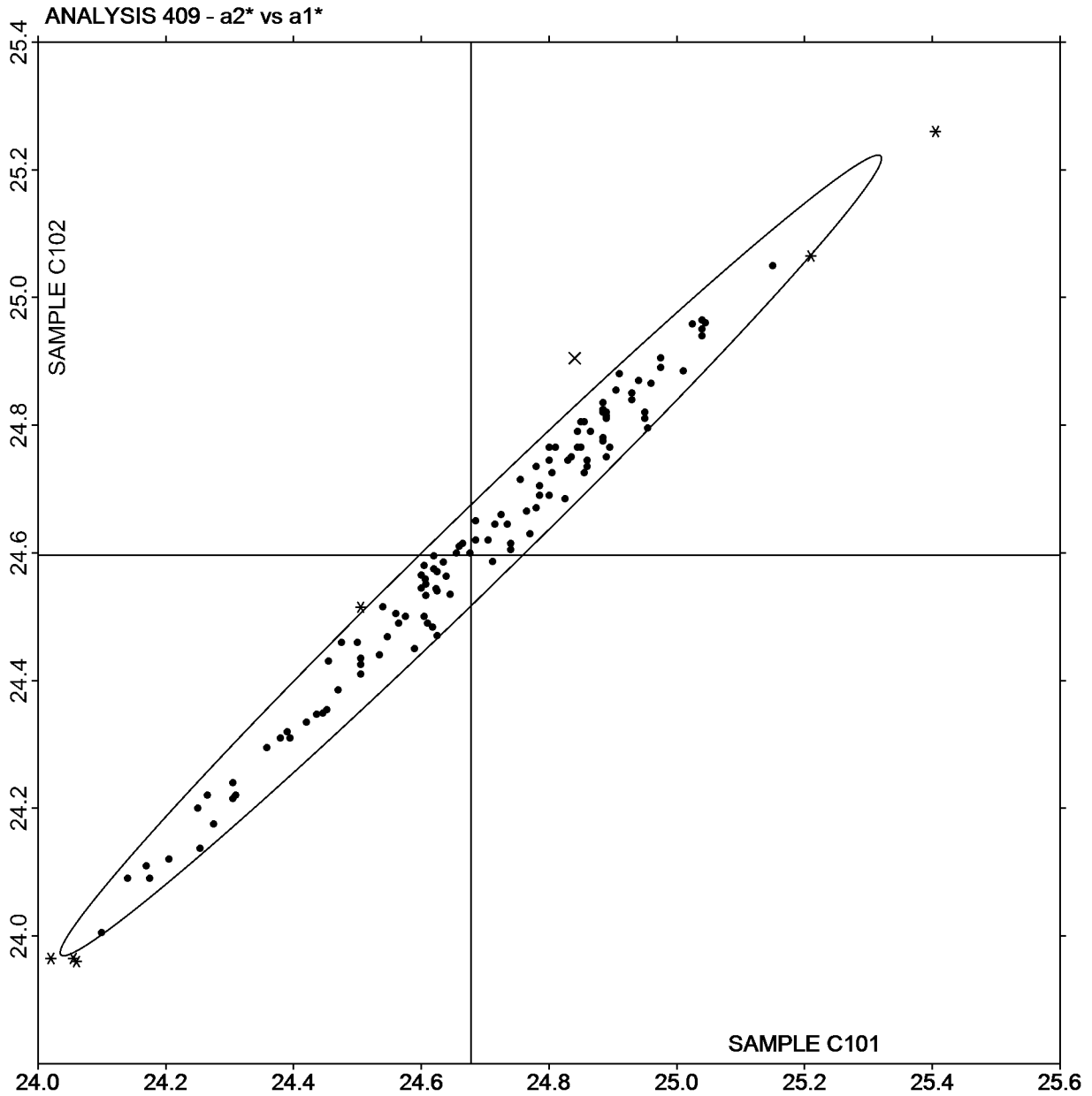
Analysis 409

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 C101 = -24.68

SAMPLE C102 = -24.60



Plot created using absolute values.

Interlaboratory Testing Program for Color & Appearance

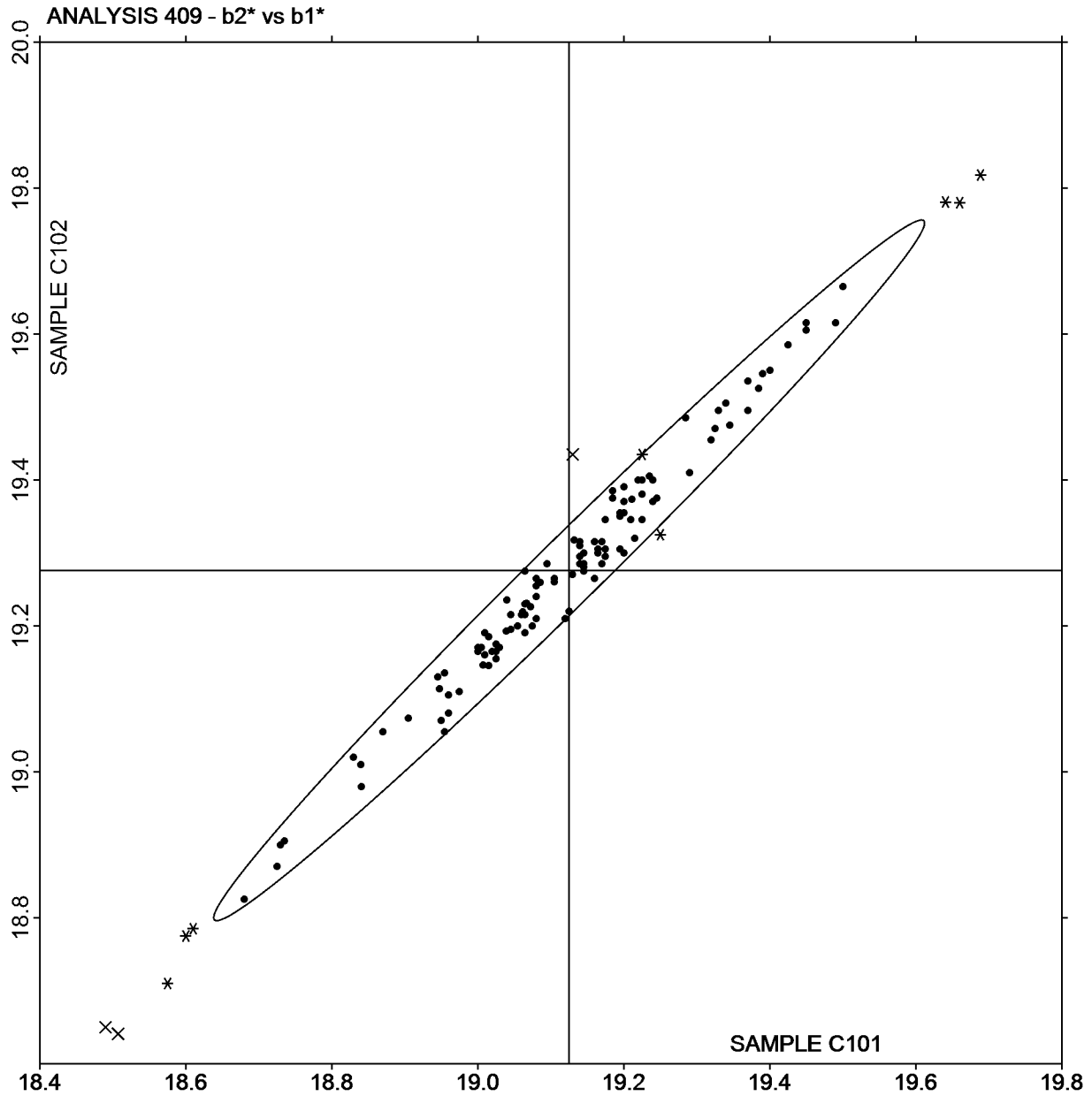
Analysis 409

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

b2\* vs b1\*

SAMPLE C101 = -19.13

SAMPLE C102 = -19.28



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 C101																		
23BVYB		21.66	28.31	33.98	37.59	37.80	37.85	34.89	26.37	17.07	12.08	10.11	9.22	9.05	9.33	9.21	8.46	AJ
2BT8DA		22.34	28.26	33.87	37.40	37.61	37.71	34.67	25.81	16.63	12.07	10.21	9.37	9.21	9.65	9.48	8.71	MZ
2U6FNN		21.26	28.10	33.57	37.32	37.54	37.64	34.57	26.22	17.04	11.99	10.06	9.22	9.17	9.54	9.20	8.56	XI
2XKQ6K		20.14X	28.12	32.78X	36.85	37.11	37.16	33.93	25.99	17.17	12.04	10.05	9.18	8.99	9.33	9.13	8.56	MI
3BNC8A		21.89	28.40	34.11	37.62	37.81	37.92	34.70	26.17	16.99	12.09	10.15	9.27	9.10	9.53	9.43	8.64	AJ
3E4LEL		21.65	28.19	33.78	37.39	37.61	37.65	34.63	26.23	17.08	12.07	10.06	9.20	9.05	9.42	9.30	8.56	MM
3KPNCQ		23.29X	28.42	34.05	37.69	37.80	38.00	34.95	26.52	17.01	12.00	10.08	9.21	9.04	9.50	9.38	8.66	MV
3XH794		21.73	27.70	33.81	37.30	37.52	37.72	34.69	26.00	16.62	11.68X	9.77X	8.90X	8.72X	9.15	9.01	8.24X	CA
448JP4		21.43	27.79	33.25	37.05	37.25	37.45	34.59	26.21	17.19	12.12	10.12	9.14	8.94	9.25	9.13	8.44	HP
4A9AWU		22.04	28.47	34.30	37.64	37.95	38.01	34.94	26.32	16.93	11.99	10.07	9.20	9.06	9.32	9.20	8.58	AM
4KT3LB		21.81	28.66	34.28	37.82	38.04	38.10	34.93	26.44	17.08	12.08	10.12	9.23	9.07	9.43	9.25	8.61	AM
4QB6C8		21.73	28.32	33.95	37.61	37.74	38.03	34.87	26.39	17.01	12.04	10.13	9.29	9.12	9.54	9.44	8.65	MV
4TM8FC		21.84	28.37	33.97	37.39	37.67	37.69	34.52	26.13	16.95	12.02	10.09	9.19	9.04	9.40	9.24	8.61	AJ
4WCF3Y	X	21.12	27.91	33.29	36.42X	36.34X	36.19X	32.98X	24.81X	16.08X	11.33X	9.43X	8.56X	8.34X	8.64X	8.45X	7.74X	AQ
6A6NVD		21.43	28.22	33.87	37.35	37.63	37.68	34.53	26.12	16.94	12.01	10.05	9.19	9.01	9.40	9.23	8.52	AJ
6AL9KC		21.88	28.17	33.66	37.05	37.24	37.33	34.08	25.83	16.83	11.95	10.03	9.14	9.01	9.42	9.39	8.62	XQ
6CQW3		22.61	28.31	33.90	37.30	37.56	37.61	34.47	26.05	16.98	12.08	10.05	9.20	9.05	9.43	9.29	8.56	MK
78TP3B		21.81	28.09	33.75	37.23	37.49	37.59	34.54	26.14	17.02	12.08	10.10	9.28	9.10	9.47	9.35	8.60	MM
79JZU4		22.77	27.86	33.73	37.66	37.17	38.12	34.58	26.28	16.99	12.01	9.87	9.22	9.04	9.45	9.54	8.52	MX
7ENQ93		21.55	28.66	34.40	37.88	38.09	37.95	34.81	26.22	16.89	11.91	9.94	9.05	8.89	9.16	8.94X	8.29	AQ
7RHUHU		21.89	28.00	33.71	36.98	37.27	37.29	33.98	25.68	16.68	11.87	10.00	9.15	9.05	9.41	9.27	8.54	XO
7UNNA7		21.05	27.56	33.09	36.94	37.13	37.32	34.55	26.26	17.10	12.02	10.12	9.24	9.04	9.42	9.40	8.80	HX
88AB7L		21.50	28.45	33.96	37.50	37.71	37.81	34.69	26.40	17.14	12.09	10.10	9.19	9.02	9.42	9.22	8.49	AJ
8EMGNA		22.19	26.72X	33.26	37.14	37.29	37.48	34.62	26.32	16.91	11.97	10.10	9.22	9.04	9.43	9.41	8.64	MV
8GZZX8		21.61	28.54	34.11	37.55	37.79	37.94	34.76	26.27	16.95	12.05	10.12	9.24	9.09	9.46	9.33	8.60	AM

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 C101																		
8KACJM		22.22	28.22	33.92	37.37	37.53	37.68	34.64	26.26	17.17	12.21	10.24	9.31	8.98	9.64	9.36	8.65	HP
8P47J9		22.10	27.79	33.07	37.00	37.46	37.57	34.85	26.67	17.32	12.04	10.01	9.02	8.86	9.21	9.16	8.45	HG
8W6BDZ		21.03	27.75	33.12	36.93	37.11	37.18	34.24	26.02	16.97	11.99	10.05	9.20	9.03	9.43	9.27	8.58	MI
9869XT		22.21	28.08	33.52	37.27	37.51	37.61	34.49	26.11	16.92	11.96	10.02	9.17	9.01	9.35	9.27	8.54	GG
9CZKUV		21.25	27.93	33.53	37.27	37.50	37.51	34.46	26.10	16.96	11.99	9.97	9.11	8.91	9.30	9.11	8.52	XI
9QRTKB		21.86	28.19	33.61	37.12	37.45	37.59	34.33	25.96	16.79	11.99	10.09	9.23	9.12	9.46	9.34	8.57	XO
A2W9X		23.04	28.58	34.30	37.65	37.95	38.01	34.87	26.33	16.96	12.04	10.10	9.27	9.11	9.40	9.28	8.64	AO
A2YUU3		21.77	28.15	33.89	37.50	37.80	37.86	34.86	26.33	16.87	12.03	10.10	9.23	9.06	9.36	9.25	8.58	AM
ABCBZ2		21.64	27.56	33.67	37.20	37.48	37.75	34.76	26.14	16.81	11.84	9.95	9.08	8.90	9.32	9.15	8.21X	CE
AMYBX		21.53	28.18	33.74	37.52	37.77	37.95	34.85	26.40	17.05	12.03	10.11	9.19	9.04	9.40	9.27	8.57	AJ
ATFT8X	X	20.55	87.86X	114.35X	102.71X	97.37X	92.70X	88.85X	86.99X	88.49X	87.03X	86.12X	86.12X	87.32X	87.76X	86.85X	87.79X	HP
B3PXYZ		21.53	28.33	33.90	37.59	37.63	37.91	34.79	26.34	16.90	11.98	10.08	9.23	9.09	9.48	9.40	8.71	MV
CEDKHZ		21.70	28.11	33.89	37.23	37.28	37.31	34.23	25.94	16.91	12.17	10.18	9.33	9.10	9.52	9.32	8.73	MG
CEPTZU		21.57	28.67	34.46	37.89	38.12	37.98	34.81	26.19	16.88	11.90	9.95	9.06	8.90	9.17	8.95X	8.29	AQ
CM6G7H		21.36	27.96	33.43	37.16	37.31	37.39	34.23	26.02	16.78	11.91	10.05	9.19	9.04	9.41	9.30	8.56	XO
CRJWVA		21.49	28.29	33.78	37.57	37.64	37.85	34.84	26.38	16.94	11.98	10.10	9.25	9.08	9.52	9.45	8.76	MV
DH4LXE		21.92	28.35	34.06	37.62	37.86	37.92	34.92	26.30	17.08	12.12	10.12	9.30	9.12	9.46	9.31	8.59	AM
DQLMG3		21.51	28.18	33.64	37.36	37.55	37.75	34.79	26.27	16.96	11.92	10.07	9.17	9.02	9.50	9.35	8.63	MV
DVDCJM		21.85	28.28	33.81	37.36	37.60	37.66	34.59	26.16	17.05	12.02	10.03	9.16	9.05	9.37	9.15	8.37	MM
DZ8NW		23.21X	28.20	33.24	37.08	37.32	37.38	34.13	25.91	17.00	12.09	10.13	9.26	9.09	9.46	9.35	8.68	MJ
E4DD8R		21.61	28.21	33.93	37.44	37.68	37.73	34.78	26.32	17.03	12.02	10.10	9.25	9.11	9.38	9.34	8.65	AO
EACVEX		21.82	28.43	34.03	37.69	37.75	38.02	34.98	26.49	17.12	12.10	10.13	9.26	9.08	9.38	9.29	8.60	AO
EG8JRB		21.72	27.75	33.34	36.77	37.06	37.02	34.02	25.72	16.80	11.97	10.06	9.18	8.95	9.37	9.24	8.59	MG
EL6ET4		21.13	28.25	33.75	37.65	37.90	38.04	35.07	26.67	17.27	12.11	10.11	9.19	9.02	9.37	9.24	8.58	AJ
EUX9RG		21.75	28.01	33.49	37.16	37.25	37.46	34.11	25.73	16.76	11.90	10.00	9.20	9.13	9.38	9.27	8.52	XO

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 C101																		
F8EM6Z		22.21	28.31	34.34	37.25	37.70	37.65	34.61	25.92	16.87	12.15	10.23	9.38	9.22	9.81X	9.62X	8.95X	HH
FPWQM		22.37	28.34	34.09	37.55	37.64	37.76	34.68	26.20	17.10	12.18	10.19	9.34	9.12	9.57	9.40	8.62	HP
FPYE6Y	X	20.45	87.99X	114.27X	102.31X	97.27X	92.61X	88.81X	86.99X	88.46X	86.98X	86.12X	86.11X	87.34X	87.86X	86.88X	87.80X	HP
FWF6BE		21.68	28.08	33.71	37.22	37.45	37.53	34.47	26.06	16.97	12.01	10.04	9.18	9.04	9.41	9.27	8.53	MM
G2992A		21.92	28.17	33.82	37.31	37.54	37.62	34.57	26.15	17.06	12.08	10.07	9.20	9.04	9.42	9.29	8.54	MK
G8QX4Q		21.82	28.38	33.89	37.43	37.68	37.76	34.61	26.15	17.01	12.00	10.06	9.17	9.02	9.40	9.28	8.56	AJ
GDWPF		21.54	28.12	33.70	37.38	37.52	37.75	34.73	26.37	16.95	11.96	10.07	9.21	9.03	9.48	9.37	8.64	MV
GQN272		21.48	28.32	33.72	37.45	37.70	37.76	34.73	26.34	17.17	12.07	10.12	9.20	9.03	9.41	9.33	8.62	AJ
GY3TLR		22.04	28.11	33.91	37.23	37.34	37.47	34.17	25.69	16.67	11.88	9.96	9.14	9.01	9.40	9.24	8.49	MM
GZYDKC		21.78	28.39	34.03	37.68	37.93	37.96	35.03	26.50	17.13	12.14	10.18	9.27	9.10	9.43	9.29	8.67	AJ
H3JULA		21.64	28.21	33.81	37.45	37.74	37.77	34.88	26.29	17.15	12.08	10.13	9.26	9.07	9.39	9.32	8.64	AJ
H6RATF		21.57	28.35	33.95	37.48	37.66	37.75	34.60	26.11	16.96	12.06	10.14	9.23	9.07	9.46	9.38	8.65	AJ
HBWDW		22.40	28.35	33.88	37.52	37.65	37.84	34.60	26.00	16.84	11.71X	10.13	9.17	9.09	9.44	9.38	8.65	GG
HGXWM		21.54	28.10	33.65	37.22	37.29	37.62	34.64	26.26	16.82	11.90	10.00	9.12	8.95	9.43	9.29	8.52	MV
HX2H4T		21.71	28.66	34.21	37.64	37.89	37.96	34.71	26.24	17.03	12.05	10.13	9.23	9.09	9.37	9.27	8.58	AJ
J3FBZE		21.62	28.04	33.55	37.47	37.70	37.83	34.86	26.44	17.12	12.12	10.15	9.24	9.07	9.45	9.28	8.64	AJ
J44X2F		21.91	28.36	34.12	37.54	37.83	37.88	34.77	26.32	17.13	12.06	10.15	9.26	9.10	9.42	9.33	8.64	AO
JHPCHL		21.06	28.02	33.46	37.21	37.33	37.52	34.57	26.15	16.79	11.91	10.02	9.15	9.00	9.42	9.34	8.65	MV
JKA3PR		21.72	28.22	33.79	37.37	37.60	37.68	34.62	26.20	17.06	12.03	10.08	9.18	9.03	9.40	9.31	8.59	AJ
KD6VB2		22.45	28.13	34.02	37.24	37.45	37.51	34.04	25.64	16.68	11.84	9.96	9.18	9.04	9.63	9.43	8.80	HW
L2UGBN		21.40	28.02	33.50	36.97	37.20	37.27	34.18	25.81	16.78	11.84	9.94	9.06	8.91	9.28	9.16	8.54	AJ
LCZ86C		21.46	28.09	33.65	37.28	37.59	37.69	34.62	26.20	17.05	12.00	10.04	9.13	8.96	9.32	9.23	8.32	AL
LKMCN		21.56	28.18	33.87	37.42	37.67	37.71	34.82	26.34	17.00	12.03	10.11	9.22	9.06	9.36	9.26	8.60	AM
LQF6UQ		21.64	28.06	33.54	37.20	37.46	37.46	34.27	25.89	16.94	12.06	10.08	9.26	9.09	9.51	9.50	8.74	MI
MG27FZ		21.61	28.35	34.05	37.71	37.99	38.03	35.08	26.38	16.98	12.03	10.07	9.18	9.01	9.29	9.17	8.51	AJ

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Reflectance at 16 Selected Wavelengths

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		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	
Sample C101																		
MHDTY		22.78	28.54	33.37	37.01	37.31	36.94X	34.35	25.83	17.05	12.04	10.40X	9.11	9.23	9.17	9.17	8.66	GD
MVLGA		21.50	28.13	33.70	37.24	37.52	37.60	34.47	25.97	16.89	11.94	10.02	9.15	8.99	9.38	9.27	8.55	AJ
MYHF6U		22.07	28.47	34.30	37.71	37.97	37.96	35.00	26.44	16.99	12.14	10.17	9.31	9.14	9.44	9.36	8.64	AM
MYLNV	X	22.41	29.17X	34.84X	38.29X	38.57X	38.59X	35.53X	27.02X	17.61X	12.49X	10.46X	9.57X	9.38X	9.71X	9.56	8.88	AM
N6JPBM		22.08	28.37	33.96	37.49	37.81	37.90	34.81	26.32	17.07	12.05	10.12	9.24	9.07	9.43	9.34	8.58	XX
NDKX8T		21.38	28.51	34.20	37.88	38.09	38.22	35.10	26.60	17.21	12.15	10.15	9.25	9.07	9.44	9.28	8.61	AJ
NFCUT2		21.62	28.19	33.99	37.54	37.80	37.84	34.82	26.16	16.91	11.94	10.07	9.18	9.01	9.29	9.17	8.55	AM
NHV3QF		21.58	28.41	33.88	37.55	37.80	37.87	34.81	26.40	17.20	12.08	10.10	9.19	9.03	9.38	9.24	8.64	AM
NRUTAN		22.35	28.04	33.79	37.26	37.42	37.57	34.50	25.98	16.90	12.05	10.08	9.14	8.91	9.34	9.14	8.50	HP
NZBHX3		22.45	28.13	33.61	36.89	37.25	37.33	33.84	25.94	16.86	12.06	10.00	9.16	9.00	9.34	9.22	8.47	XU
PMNGY		21.58	28.45	34.03	37.66	37.95	38.01	34.80	26.29	17.07	12.11	10.09	9.23	9.07	9.43	9.29	8.49	AJ
Q3DXDJ		21.65	28.17	33.61	37.17	37.44	37.45	34.39	26.26	17.31	12.17	10.11	9.22	9.04	9.36	9.28	8.64	MM
QKT9A4		21.74	28.16	33.74	37.30	37.51	37.57	34.57	26.18	17.06	12.06	10.07	9.21	9.06	9.43	9.32	8.57	MM
T4C3TB		21.63	28.02	33.66	37.16	37.51	37.48	34.36	25.97	16.93	12.00	10.03	9.17	9.01	9.39	9.28	8.55	MK
TQQCY6		21.58	28.32	33.89	37.50	37.74	37.80	34.73	26.27	17.07	12.06	10.07	9.18	8.99	9.38	9.26	8.62	AJ
U37RVZ		21.60	28.29	33.95	37.59	37.89	37.96	34.98	26.45	17.08	12.12	10.15	9.28	9.09	9.40	9.29	8.64	AJ
U7DNQ		21.76	28.44	34.18	37.69	37.94	37.97	35.01	26.52	17.08	12.10	10.17	9.24	9.09	9.38	9.25	8.59	AM
UR2EMP		21.58	28.18	33.85	37.49	37.61	37.76	34.51	26.18	16.93	11.93	10.02	9.16	9.00	9.44	9.29	8.48	MT
UX9LQU		22.02	28.67	33.75	37.17	37.60	37.48	34.40	26.09	17.05	11.99	9.99	9.59X	9.13	9.06X	9.37	9.07X	HF
V8MT4B		24.03X	28.34	33.70	37.01	37.34	37.39	33.93	26.11	16.95	12.16	10.11	9.27	9.09	9.42	9.27	8.53	XU
VAG8PX		21.10	28.12	33.37	37.16	37.40	37.40	34.21	26.08	17.11	12.10	10.14	9.25	9.10	9.46	9.36	8.71	MJ
VAYL74		21.50	28.07	33.56	37.14	37.40	37.42	34.39	26.06	16.98	12.02	10.06	9.21	9.03	9.42	9.30	8.56	MM
W7QUD		21.45	28.26	33.74	37.53	37.66	37.89	34.91	26.50	17.03	12.01	10.10	9.21	9.04	9.50	9.41	8.73	MV
W7UCHE		21.23	27.51	33.36	37.08	37.31	37.55	34.70	26.23	16.96	11.96	10.07	9.17	9.00	9.41	9.32	8.60	PE
W7Y3TN		21.15	28.02	33.34	37.03	37.49	37.35	34.25	26.22	17.42X	12.25	10.13	9.20	9.04	9.33	9.22	8.56	MM

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 C101																		
WAGUW		21.25	28.17	33.75	37.46	37.70	37.79	34.84	26.33	17.13	12.09	10.08	9.16	9.00	9.36	9.19	8.58	AM
WF2MT		21.94	28.10	33.73	37.19	37.42	37.52	34.49	26.11	16.96	11.99	10.03	9.17	9.02	9.42	9.34	8.55	MM
WUT4G		21.96	28.42	33.94	37.37	37.71	37.80	34.64	26.19	17.12	12.06	10.22	9.31	9.19	9.52	9.39	8.67	XR
WXU8A		21.79	28.12	33.77	37.30	37.47	37.59	34.53	26.08	16.95	11.99	10.02	9.16	9.01	9.40	9.29	8.54	MK
X6BZZM		21.81	28.53	34.08	37.76	37.96	37.98	34.82	26.33	17.05	12.06	10.11	9.20	9.03	9.25	9.19	8.53	AM
XBJPXD		21.78	28.43	33.98	37.52	37.82	37.92	34.87	26.32	17.17	12.10	10.18	9.25	9.10	9.49	9.29	8.59	AJ
XD7XQV		21.59	28.45	34.11	37.66	37.92	37.96	35.01	26.54	17.08	12.12	10.15	9.25	9.10	9.41	9.27	8.59	AJ
XDZMZ4		21.74	28.08	33.69	37.19	37.39	37.49	34.47	26.09	16.99	11.99	10.02	9.16	8.99	9.39	9.26	8.52	MM
XEBNL3		22.65	28.68	34.44	38.02	38.24	38.30	35.11	26.50	17.12	12.23	10.24	9.38	9.15	9.55	9.48	8.72	GG
XGAMH		20.84	28.02	33.11	37.04	37.30	37.34	34.23	26.19	17.28	12.20	10.19	9.30	9.14	9.49	9.40	8.76	MJ
XZURC		21.90	28.08	34.09	37.57	37.77	38.05	34.94	26.35	17.00	12.03	10.18	9.27	9.11	9.54	9.39	8.67	SH
Y69MYB		21.83	28.05	33.69	37.19	37.44	37.52	34.53	26.14	17.01	12.04	10.05	9.18	9.03	9.42	9.30	8.57	MK
YGWR23		21.72	28.13	33.78	37.31	37.51	37.61	34.52	26.07	16.98	12.03	10.06	9.21	9.06	9.45	9.29	8.54	MM
YQ79NE		20.83	27.93	33.08	37.00	37.23	37.26	34.23	26.23	17.29	12.15	10.13	9.21	9.05	9.37	9.30	8.65	MJ
ZHN9J3		21.61	28.23	33.83	37.38	37.64	37.75	34.62	26.24	16.97	12.03	10.07	9.19	9.00	9.41	9.26	8.60	AM
ZHXAX		21.62	28.33	33.96	37.48	37.71	37.82	34.68	26.22	17.03	12.06	10.09	9.22	9.04	9.44	9.33	8.57	AJ
ZXPTDD	X	18.84X	23.23X	27.41X	34.85X	45.92X	50.22X	41.91X	29.54X	19.18X	13.42X	10.42X	8.98X	8.57X	8.78X	9.10	8.85	HP

Summary Statistics

Grand Means																	
	21.77	28.19	33.78	37.37	37.59	37.69	34.61	26.19	17.00	12.03	10.08	9.21	9.04	9.41	9.29	8.59	
Std Dev Btwn Labs																	
	0.51	0.27	0.31	0.25	0.25	0.26	0.29	0.21	0.14	0.09	0.08	0.08	0.07	0.10	0.10	0.12	

Interlaboratory Testing Program for Color & Appearance  
Analysis 411

Spectrophotometric - Sphere Geometry Instruments  
Reflectance at 16 Selected Wavelengths

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**Comments assigned on Data Flags for Test #411**

4WCF3Y (X) - Low data for most wavelengths.

ATFT8X (X) - Apparently measured back of the sample.

FPYE6Y (X) - Apparently measured back of the sample.

MYLNVF (X) - High data for most wavelengths. Possibly reported data for samples C101 and C102 instead of two measurements from sample C101.

ZXPTDD (X) - High and low data at various wavelengths.

## Interlaboratory Testing Program for Color &amp; Appearance

## Analysis 440

## 60 Degree Gloss - Paint Chips

## ASTM Method D 523

WebCode	Data Flag	Sample G101			Sample G102			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
2AGLQU		24.93	-0.55	-0.66	34.75	-0.13	-0.14	GL
2WBLRV		25.83	0.35	0.43	34.95	0.07	0.08	GL
379NMC		26.88	1.40	1.71	36.63	1.75	1.98	GK
3B87WQ		25.03	-0.45	-0.54	34.25	-0.63	-0.71	GN
3BXHAC	*	27.93	2.45	2.98	37.58	2.70	3.06	GL
3JFW6U		25.75	0.28	0.34	34.65	-0.23	-0.26	GL
46GLDM	X	34.20	8.73	10.61	33.80	-1.08	-1.22	GK
4GALUC		25.85	0.38	0.46	34.95	0.07	0.08	GL
4P4DCJ		25.28	-0.20	-0.24	34.63	-0.25	-0.29	XX
66FJEP		26.28	0.80	0.98	35.45	0.57	0.65	GL
68WXUJ		25.40	-0.07	-0.09	34.60	-0.28	-0.31	BT
6J4ZT9		23.83	-1.65	-2.00	33.40	-1.48	-1.68	GK
6LWEEW		25.73	0.25	0.31	35.28	0.40	0.45	GK
6V7ZTL		25.60	0.13	0.16	35.18	0.30	0.34	GN
6W8LVY		25.58	0.10	0.13	34.85	-0.03	-0.03	GL
6Z2DPN		25.48	0.00	0.00	34.85	-0.03	-0.03	GK
8DFHMU		25.38	-0.10	-0.12	34.75	-0.13	-0.14	GL
8E9DA4		24.48	-1.00	-1.21	33.65	-1.23	-1.39	GS
8GFTHU		25.33	-0.15	-0.18	34.73	-0.15	-0.17	GL
8GYFGC		25.98	0.50	0.61	35.33	0.45	0.51	GK
9FRJNZ		26.03	0.55	0.67	35.25	0.37	0.42	GN
9NP48U	X	25.10	-0.37	-0.45	32.53	-2.35	-2.67	GL
ADJMTA		25.78	0.30	0.37	35.28	0.40	0.45	PA
ANAFR7		25.58	0.10	0.13	34.95	0.07	0.08	XX
BF282X		25.45	-0.02	-0.03	34.65	-0.23	-0.26	GN
BXUGRV		25.85	0.38	0.46	35.55	0.67	0.76	GL
C7FDL8		26.15	0.68	0.82	35.55	0.67	0.76	RA
C8D323		24.50	-0.97	-1.18	34.00	-0.88	-1.00	GL
CGW8Q9		25.58	0.10	0.13	34.83	-0.05	-0.06	GK
CH72NU		24.00	-1.47	-1.79	33.63	-1.25	-1.42	GQ
CM2Y2R	X	24.73	-0.75	-0.91	33.10	-1.78	-2.02	GL
D73HWY		23.55	-1.92	-2.33	32.80	-2.08	-2.36	GK
E2KK3H		25.28	-0.20	-0.24	34.85	-0.03	-0.03	GQ
ELNTA9		25.53	0.05	0.07	35.15	0.27	0.31	GN
ENUMZJ		25.03	-0.45	-0.54	34.33	-0.55	-0.63	GN
G94A83		25.88	0.40	0.49	35.48	0.60	0.68	GN
HDT89X		26.80	1.33	1.61	36.05	1.17	1.33	GK
JBBUFT		26.08	0.60	0.73	36.18	1.30	1.47	GK
JNTHPY		25.90	0.43	0.52	35.60	0.72	0.82	GL
KA93LD		26.00	0.53	0.64	35.48	0.60	0.68	GK
KF7D7D		26.35	0.88	1.07	35.98	1.10	1.25	MR
KJZFMX	X	22.83	-2.65	-3.21	31.70	-3.18	-3.60	GX
KWMP8H		25.20	-0.27	-0.33	34.63	-0.25	-0.29	GL
LANQER		25.18	-0.30	-0.36	33.95	-0.93	-1.05	GL
LEW49J		24.95	-0.52	-0.63	34.15	-0.73	-0.82	SJ

## Interlaboratory Testing Program for Color &amp; Appearance

## Analysis 440

## 60 Degree Gloss - Paint Chips

## ASTM Method D 523

WebCode	Data Flag	Sample G101			Sample G102			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
LMF7TT		26.43	0.95	1.16	36.03	1.15	1.30	GL
LY6838		26.23	0.75	0.92	36.10	1.22	1.39	GL
MLDZKX		25.45	-0.02	-0.03	34.48	-0.40	-0.46	XX
NNLVYE		25.03	-0.45	-0.54	34.25	-0.63	-0.71	GL
NRC2Z6		24.63	-0.85	-1.03	34.23	-0.65	-0.74	GK
PLUEZQ		25.25	-0.22	-0.27	34.23	-0.65	-0.74	GL
Q2M9BW		26.15	0.68	0.82	35.13	0.25	0.28	DM
Q8KNFP		26.53	1.05	1.28	36.30	1.42	1.61	GL
QNAMPX		25.40	-0.07	-0.09	35.03	0.15	0.17	GL
QVMTZW		25.80	0.33	0.40	35.50	0.62	0.71	GL
RK3WRG		25.68	0.20	0.25	35.53	0.65	0.73	GL
T4ZT9V		25.23	-0.25	-0.30	34.50	-0.38	-0.43	GN
T8D4PE		26.00	0.53	0.64	35.50	0.62	0.71	GL
TECJQT		25.88	0.40	0.49	34.95	0.07	0.08	GN
TGJ2PN		25.03	-0.45	-0.54	34.70	-0.18	-0.20	GL
U6QWZN		27.03	1.55	1.89	36.30	1.42	1.61	RA
UQM0N6		25.35	-0.12	-0.15	34.45	-0.43	-0.48	GL
UZAPCP		26.23	0.75	0.92	35.13	0.25	0.28	GN
V3ABBL		25.88	0.40	0.49	35.18	0.30	0.34	GX
VFEBHJ	*	24.00	-1.47	-1.79	33.93	-0.95	-1.08	GL
VKQE7Z		25.93	0.45	0.55	35.18	0.30	0.34	GN
WNTJHY	X	24.09	-1.39	-1.68	31.65	-3.23	-3.67	MR
XJRVFJ		24.58	-0.90	-1.09	34.18	-0.70	-0.80	GK
Y8D3KV		24.95	-0.52	-0.63	34.33	-0.55	-0.63	GL
YYNC4U	*	23.90	-1.57	-1.91	32.58	-2.30	-2.61	MR
YZDMVM		24.13	-1.35	-1.64	33.55	-1.33	-1.51	HP
Z8BUTM		24.70	-0.77	-0.94	34.35	-0.53	-0.60	GN
Z8RZ7R	*	23.63	-1.85	-2.24	33.40	-1.48	-1.68	GL

## Summary Statistics

Grand Means

25.47 Gloss Units

34.88 Gloss Units

Std Dev Btwn Labs

0.82 Gloss Units

0.88 Gloss Units

Statistics based on 68 of 73 reporting participants

**Comments on assigned Data Flags for Test #440**

46GLDM(X) - High data for Sample G101. Inconsistent within the determinations for both samples.

9NP48U(X) - Inconsistent in testing between samples.

CM2Y2R(X) - Inconsistent in testing between samples.

KJZFMX(X) - Data for both samples are low. Possible systematic error.

WNTJHY(X) - Low data for Sample G102.

Interlaboratory Testing Program for Color & Appearance

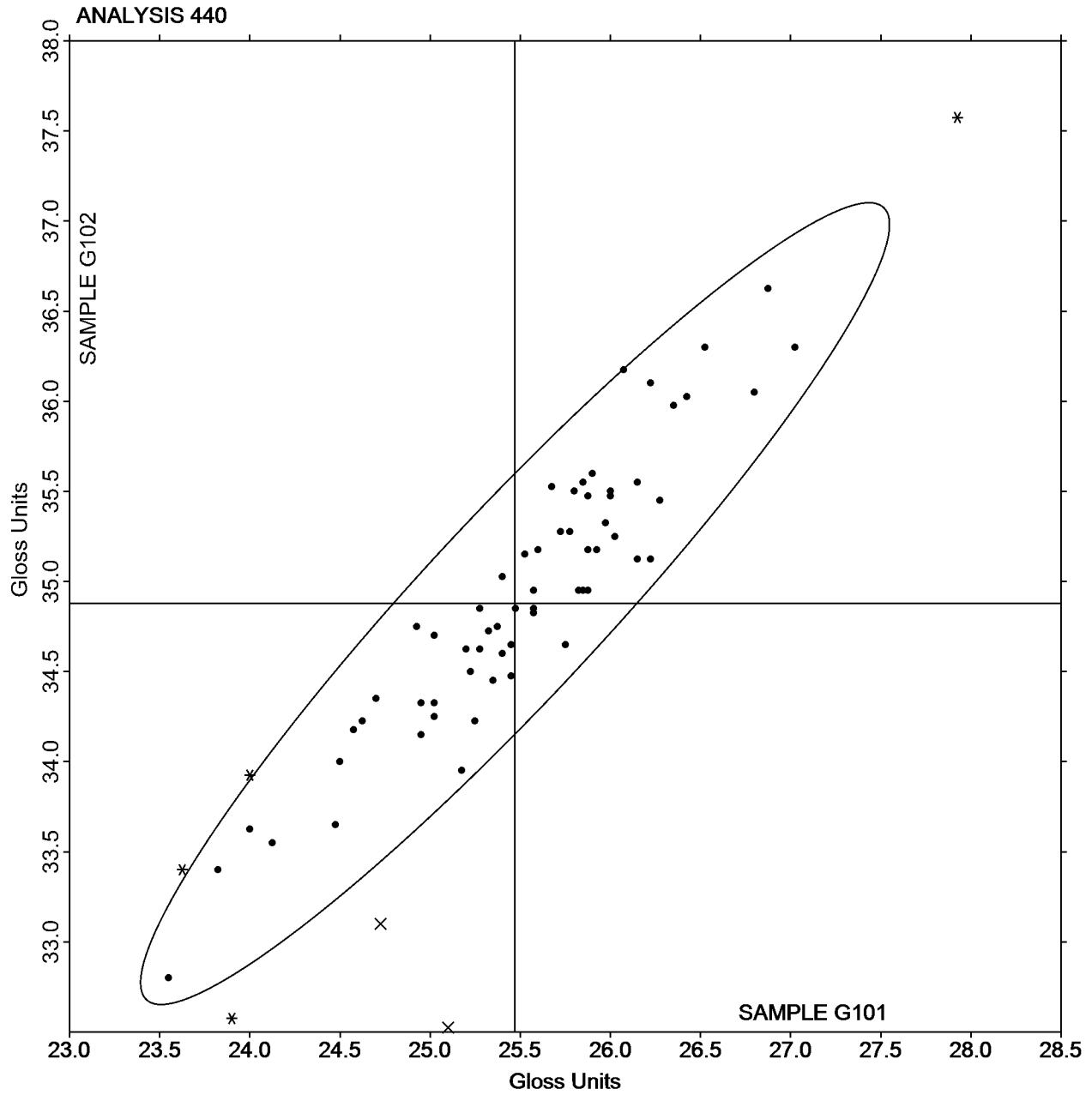
Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

SAMPLE G101 = 25.47 Gloss Units

SAMPLE G102 = 34.88 Gloss Units



## Interlaboratory Testing Program for Color &amp; Appearance

## Analysis 442

## 85 Degree Gloss - Paint Chips

## ASTM Method D 523

WebCode	Data Flag	Sample L101			Sample L102			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
22239F		4.93	-0.18	-0.33	8.35	-0.18	-0.16	GL
3B2VTU		5.38	0.27	0.49	9.05	0.52	0.48	GN
4GB6RT		4.68	-0.43	-0.78	7.80	-0.73	-0.67	HQ
7GG7QW		5.33	0.22	0.40	8.98	0.45	0.41	GL
7RU439		5.60	0.50	0.91	9.40	0.87	0.81	GN
8PPJ8L		5.08	-0.03	-0.05	8.68	0.15	0.14	GL
CH78TU	*	3.53	-1.58	-2.88	5.23	-3.30	-3.05	MH
ETRAP2		5.00	-0.10	-0.19	8.00	-0.53	-0.49	GL
F2ZN3A		5.28	0.17	0.31	8.83	0.30	0.28	GN
HGE3ZW		5.95	0.85	1.54	9.88	1.35	1.25	GL
KMVEV2		5.25	0.15	0.27	8.68	0.15	0.14	GN
MV38E2		5.33	0.22	0.40	8.78	0.25	0.23	GL
N8UJ9K		5.13	0.02	0.04	8.83	0.30	0.28	GN
NUNQG9		5.03	-0.08	-0.14	8.93	0.40	0.37	GL

## Summary Statistics

Grand Means

5.10 Gloss Units

8.53 Gloss Units

Std Dev Btwn Labs

0.55 Gloss Units

1.08 Gloss Units

Statistics based on 14 of 14 reporting participants

**Analysis Notes for Test #442**

No "X" data flags were assigned for this analysis.

Interlaboratory Testing Program for Color & Appearance

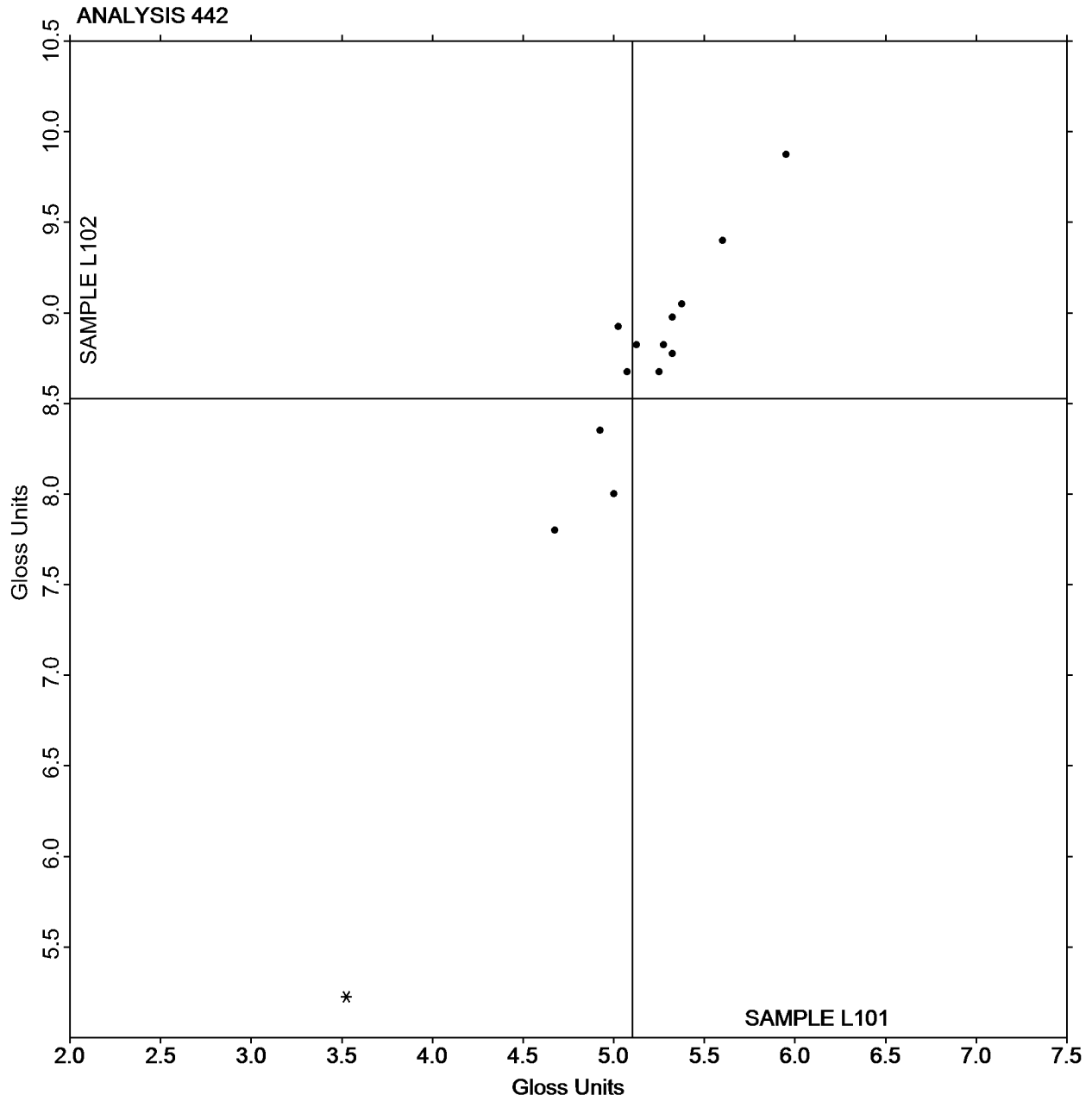
Analysis 442

85 Degree Gloss - Paint Chips

ASTM Method D 523

SAMPLE L101 = 5.10 Gloss Units

SAMPLE L102 = 8.53 Gloss Units



Instrument Code List - Report# 153

Instrument information as provided by laboratories

<u>Analysis</u>	<u>Analysis Name</u>
440	Gloss 60 Degree (Paint Chips)
Instrument code and descript	
BT	BYK-Chemie (was BYK-Labotron) Tri-Gloss
DM	Dr. Lange Refo 3
GK	BYK-Gardner micro-gloss (60)
GL	BYK-Gardner micro-TRI-gloss
GN	BYK-Gardner new micro-TRI-gloss
GQ	BYK-Gardner haze-gloss
GS	BYK-Gardner Glossgard II
GX	BYK-Gardner (model not specified)
HP	Hunter PRO-3 Glossmeter
MR	Macbeth Novo-Gloss (20/60/85)
PA	Photovolt micro-TRI-gloss G3
RA	Rhpoint Novo-Gloss Glossmeter
SJ	Sheen Minigloss 101
XX	Instrument make/model not specified by lab
442	Gloss 85 Degree (Paint Chips)
Instrument code and descript	
GL	BYK-Gardner micro-TRI-gloss
GN	BYK-Gardner new micro-TRI-gloss
HQ	Hunter D48 Glossmeter (85)
MH	X-Rite/Macbeth Color-Eye XTH

Instrument Code List - Report# 153

Instrument information as provided by laboratories

Analysis      Analysis Name

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

Instrument code and descript

GA      BYK-Gardner Color Guide (45/0)  
GD      BYK-Gardner The Color Machine  
GE      BYK-Gardner spectro-guide (45/0)  
GH      BYK-Gardner Color-View  
GU      Gretag Spectrolino Spectrophotometer  
HK      Hunter MiniScan XE (45/0)  
HW      Hunter LabScan XE  
MG      Macbeth 1500/PLUS or 2025+ Color Eye  
MQ      Minolta CM-503c Spectrophotometer  
TN      Topcon SR-1 Spectroradiometer  
XD      X-Rite 530 SpectroDensitometer  
XL      X-Rite MA90  
XM      X-Rite MA58 Multi-Angle SpectroPhotometer  
XN      X-Rite MA68 Multi-Angle SpectroPhotometer  
XO      X-Rite MA68 II Multi-Angle SpectroPhotometer  
XP      X-Rite 962 SpectroPhotometer  
XR      X-Rite 968 Portable SpectroPhotometer  
XT      X-Rite 948 SpectroColorimeter  
XU      X-Rite 964 Portable SpectroPhotometer  
XV      X-Rite 939 SpectroDensitometer

409      Color & Color Difference (Paint Chips) Sphere

Instrument code and descript

AD	ACS Chroma-Sensor CS-5	MK	Macbeth Color-Eye 7000
AG	ACS-DataColor Intl. Spectraflash 450	MM	Macbeth Color-Eye 7000a
AJ	ACS-Datacolor Intl. Spectraflash 600	MT	Minolta CM-2600d
AL	ACS-Datacolor Intl. Dataflash 100	MV	Minolta CM-3000d Series Spectrophotometer
AM	ACS-Datacolor Intl. Spectraflash 600 Plus	MX	Minolta CM-508d Spectrophotometer
AO	ACS-Datacolor Intl. Spectraflash 650X	MZ	Minolta CM-2002 Spectrophotometer
AQ	ACS-Datacolor Intl. Spectraflash 600X	PE	Perkin Elmer Spectrophotometer
CA	Cary 5000	SH	SIMADZU UV 3101PC
CE	Cary 500	XI	X-Rite Color i7
GD	BYK-Gardner spectro-guide sphere	XO	X-Rite SP64 Portable Sphere
GF	BYK-Gardner The Color Sphere (TCS)		Spectrophotometer
GG	BYK-Gardner TCS II	XQ	X-Rite SP68 Portable Sphere
HF	Hunter ColorFlex Diffuse		Spectrophotometer
HG	Hunter ColorQUEST	XR	X-Rite SP78 Portable Sphere
HH	Hunter ColorQUEST XE		Spectrophotometer
HP	Hunter UltraScan PRO	XU	X-Rite Color Premier 8200 Spectrophotometer
HW	Hunter UltraScan XE	XX	Instrument make/model not specified by lab
HX	Hitachi C-2000S Spectrophotometer		
MG	Macbeth 2180 Color Eye		
MI	Macbeth Color i 5		
MJ	Macbeth Color-Eye 3000		

## Instrument Code List - Report# 153

Instrument information as provided by laboratories

Analysis      Analysis Name

411              Spectrophotometric (Paint Chips) - Sphere

Instrument code and descript

A J	ACS-Datcolor Intl. Spectraflash 600
A L	ACS-Datcolor Intl. Dataflash 100
A M	ACS-Datcolor Intl. Spectraflash 600 Plus
A O	ACS-Datcolor Intl. Spectraflash 650X
A Q	ACS-Datcolor Intl. Spectraflash 600X
C A	Cary 5000
C E	Cary 500
G D	BYK-Gardner spectro-guide sphere
G G	BYK-Gardner TCS II
H F	Hunter ColorFlex Diffuse
H G	Hunter ColorQUEST
H H	Hunter ColorQUEST XE
H P	Hunter UltraScan PRO
H W	Hunter UltraScan XE
H X	Hitachi C-2000S Spectrophotometer
M G	Macbeth 2180 Color Eye
M I	Macbeth Color i 5
M J	Macbeth Color-Eye 3000 Spectrophotometer
M K	Macbeth Color-Eye 7000 Spectrophotometer
M M	Macbeth Color-Eye 7000a
M T	Minolta CM-2600d
M V	Minolta CM-3000d Series Spectrophotometer
M X	Minolta CM-508d Spectrophotometer
M Z	Minolta CM-2002 Spectrophotometer
P E	Perkin Elmer Spectrophotometer
S H	SIMADZU UV 3101PC
X I	X-Rite Color i7
X O	X-Rite SP64
X Q	X-Rite SP68 Portable Sphere SpectroPhotometer
X R	X-Rite SP78 Portable Sphere Spectrophotometer
X U	X-RiteColor Premier 8200 Spectrophotometer
X X	Instrument make/model not specified by lab