



Color & Appearance Testing Program

Summary Report # 151 - 1st Q 2010

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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

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^*	
2834AG		A101	62.59	19.46	31.31	0.99	-0.50	-0.64	1.28	HW
		A102	63.58	18.96	30.67					
2EGZYB		A101	62.57	19.66	31.60	0.97	-0.50	-0.50	1.19	GH
		A102	63.53	19.16	31.10					
2FT2EH		A101	62.46	19.87	31.34	1.24	-0.52	-0.62	1.47	XN
		A102	63.69	19.35	30.72					
47WL3J		A101	62.42	19.85	31.26	1.02	-0.51	-0.52	1.25	XN
		A102	63.43	19.35	30.74					
4TN6UT		A101	62.25	19.93	31.35	0.99	-0.54	-0.57	1.26	XL
		A102	63.23	19.39	30.79					
7DD68V		A101	62.50	19.63	31.12	1.00	-0.46	-0.51	1.21	HW
		A102	63.50	19.17	30.61					
933GFG		A101	62.36	19.90	31.08	0.99	-0.42	-0.43	1.16	XT
		A102	63.35	19.49	30.65					
9W33LT		A101	62.52	19.82	31.11	0.91	-0.45	-0.47	1.11	XO
		A102	63.43	19.38	30.65					
ADGURH		A101	62.50	19.57	31.28	1.04	-0.50	-0.58	1.28	HW
		A102	63.53	19.08	30.70					
APBBGH		A101	62.58	19.77	31.39	0.99	-0.48	-0.46	1.19	HK
		A102	63.57	19.29	30.93					
BER77B		A101	62.64	19.65	31.32	0.97	-0.47	-0.57	1.22	HW
		A102	63.61	19.18	30.76					
FQ4B4V		A101	62.41	20.12	31.11	1.04	-0.53	-0.55	1.29	GE
		A102	63.44	19.59	30.56					
GBNG7P		A101	62.00	19.89	30.82	0.99	-0.42	-0.46	1.16	XR
		A102	62.98	19.47	30.36					
HVG9E		A101	62.50	19.54	31.18	0.95	-0.45	-0.52	1.17	HW
		A102	63.45	19.09	30.66					

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^*	
JN9QQM		A101	62.72	19.71	31.45	0.97	-0.49	-0.57	1.23	HW
		A102	63.69	19.22	30.88					
L823Z7		A101	62.60	19.91	31.16	1.06	-0.48	-0.55	1.28	XN
		A102	63.66	19.43	30.62					
MM43DE		A101	62.21	19.94	31.01	0.95	-0.43	-0.44	1.13	XV
		A102	63.16	19.51	30.57					
PD89TD		A101	62.87	19.78	31.72	1.02	-0.46	-0.55	1.25	HW
		A102	63.89	19.32	31.17					
PRU8XA	X	A101	62.26	20.55	32.23	0.99	-0.58	-0.54	1.26	TN
		A102	63.25	19.98	31.69					
QJF64		A101	62.39	19.95	31.21	1.05	-0.52	-0.58	1.30	XU
		A102	63.43	19.43	30.63					
RPYAPE		A101	62.59	19.87	31.17	1.01	-0.41	-0.50	1.19	XO
		A102	63.60	19.46	30.67					
TRF7BW		A101	61.88	19.81	30.84	1.00	-0.49	-0.48	1.21	MQ
		A102	62.88	19.32	30.36					
VFHXVQ		A101	62.71	19.74	31.20	1.02	-0.46	-0.52	1.23	HW
		A102	63.73	19.28	30.69					
VP8LRE		A101	62.38	19.86	31.13	0.98	-0.51	-0.57	1.23	XM
		A102	63.35	19.36	30.56					
WC7PTK	X	A101	61.61	20.20	29.92	1.04	-0.48	-0.45	1.22	GU
		A102	62.65	19.72	29.47					
WHEXD		A101	62.35	20.16	30.91	1.01	-0.45	-0.46	1.19	GE
		A102	63.36	19.72	30.46					
XX8YP6		A101	62.45	19.75	31.12	0.96	-0.43	-0.43	1.13	GH
		A102	63.41	19.32	30.69					
ZJQML3		A101	62.43	20.30	31.24	0.97	-0.48	-0.61	1.24	GA
		A102	63.40	19.83	30.63					

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^*	
ZRF9R2		A101	62.42	19.88	31.15	1.01	-0.50	-0.59	1.27	XU
		A102	63.42	19.39	30.56					
ZW64WD		A101	62.43	19.94	31.37	1.01	-0.49	-0.54	1.24	XP
		A102	63.43	19.45	30.84					

Summary Statistics

Samples	L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*
Grand Means							
A101	62.42	19.84	31.21	1.00	-0.47	-0.53	1.23
A102	63.41	19.37	30.68				
Std Dev Btwn Labs							
A101	0.26	0.19	0.20	0.06	0.04	0.06	0.07
A102	0.25	0.19	0.18				

Statistics based on 28 of 30 reporting participants

Comments assigned on Data Flags for Test #408

PRU8XA(X) - High "a*" and "b*" values. Large replication difference for "b*" values.

WC7PTK(X) - Low "L*" and "b*" values.

Interlaboratory Testing Program for Color & Appearance

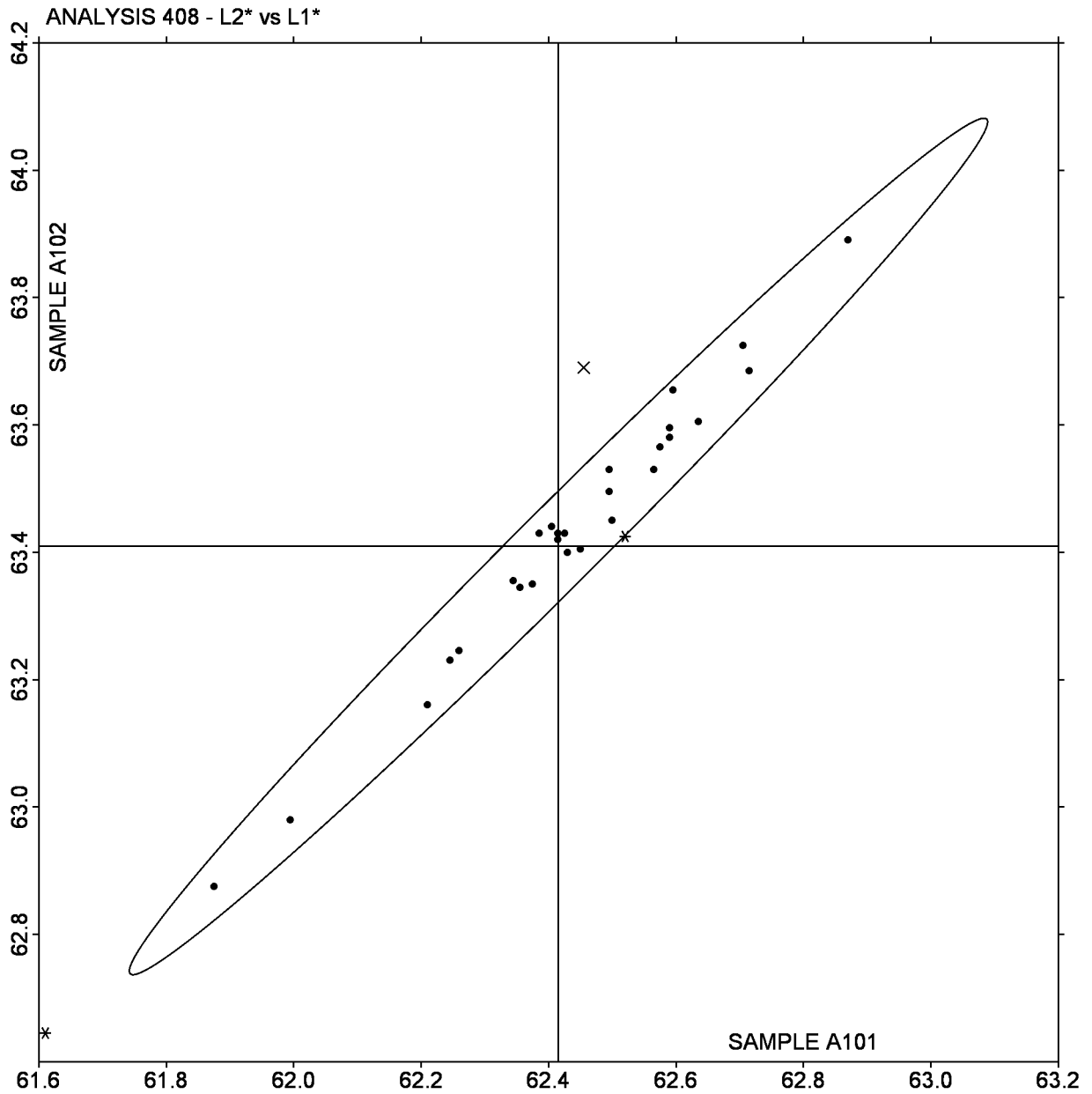
Analysis 408

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 A101 = 62.42

SAMPLE A102 = 63.41



Interlaboratory Testing Program for Color & Appearance

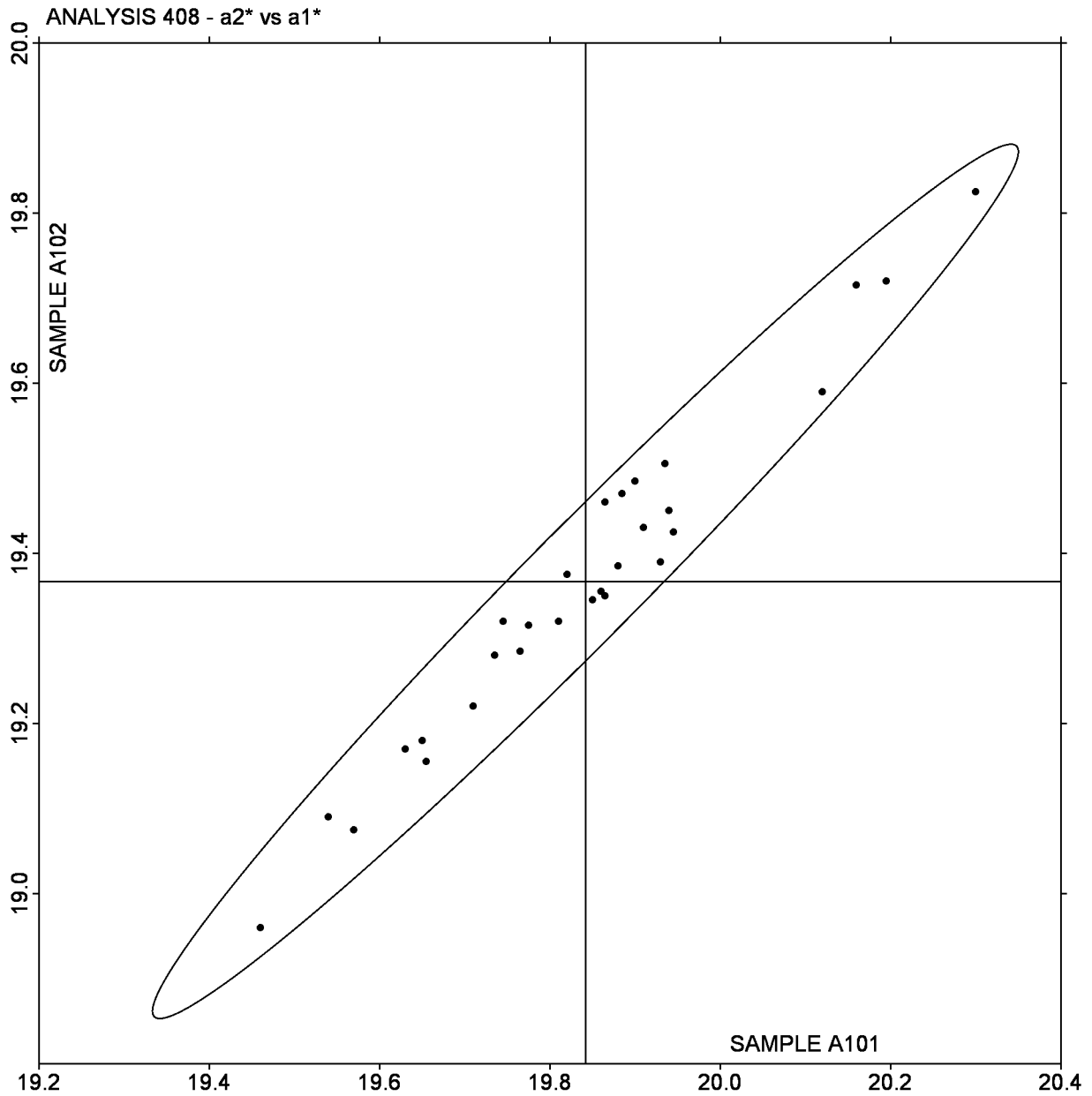
Analysis 408

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 A101 = 19.84

SAMPLE A102 = 19.37



Interlaboratory Testing Program for Color & Appearance

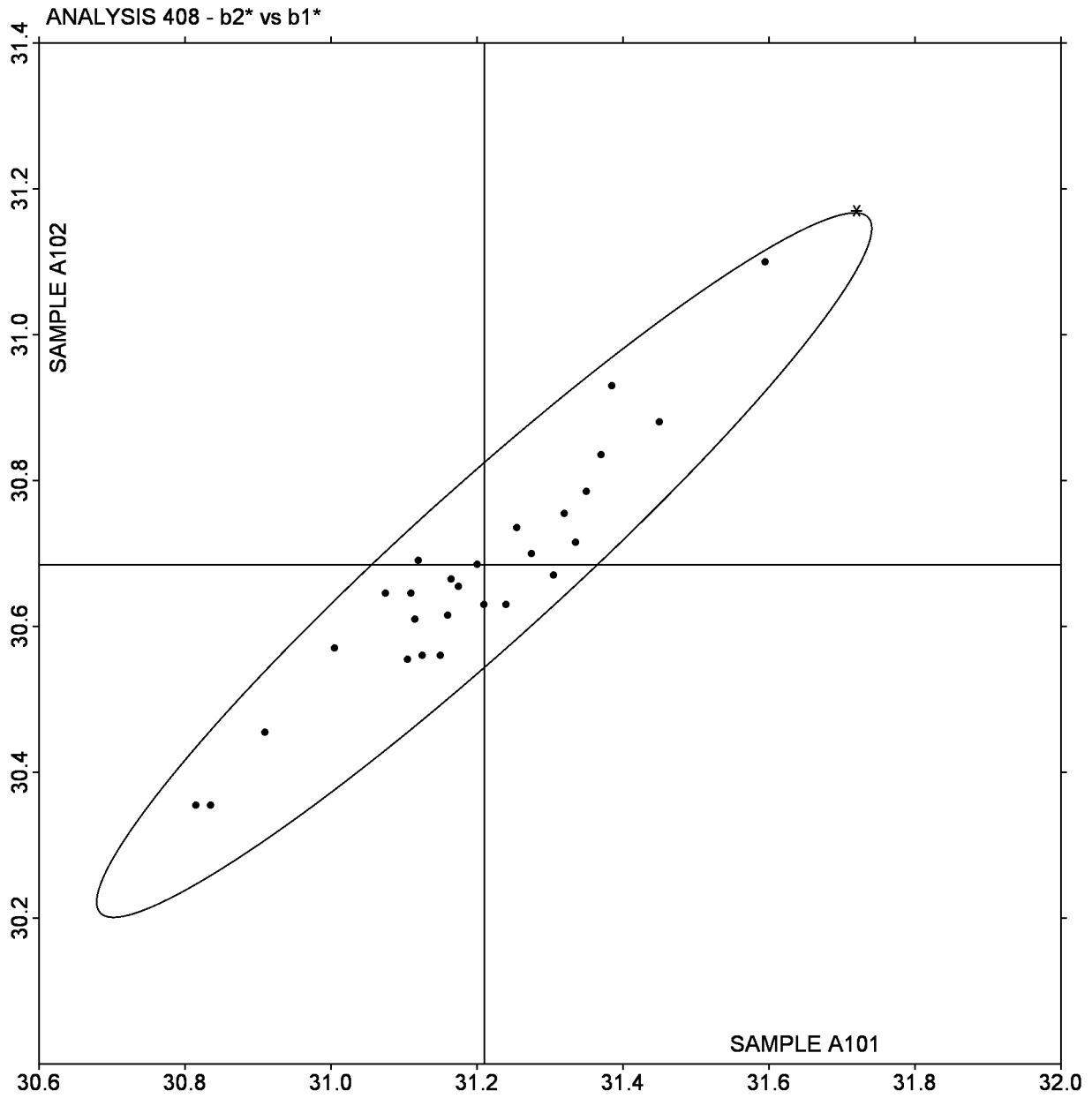
Analysis 408

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 A101 = 31.21

SAMPLE A102 = 30.68



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^*	
2363LV		A101	62.28	19.80	30.01	1.04	-0.54	-0.60	1.31	AO
		A102	63.32	19.27	29.42					
26TACJ		A101	62.18	19.68	30.11	1.00	-0.52	-0.56	1.25	MM
		A102	63.17	19.17	29.55					
2CF479		A101	62.37	19.75	30.05	0.92	-0.43	-0.53	1.14	AM
		A102	63.28	19.32	29.52					
2FFBR7		A101	62.28	19.67	30.11	0.94	-0.47	-0.57	1.19	MM
		A102	63.22	19.20	29.55					
2JRFZM		A101	62.54	19.82	30.27	0.98	-0.46	-0.51	1.19	AJ
		A102	63.52	19.36	29.76					
2JXH8T		A101	62.61	19.51	30.52	0.97	-0.47	-0.56	1.21	AJ
		A102	63.58	19.05	29.96					
2L4WRT		A101	62.27	19.60	30.08	0.95	-0.37	-0.38	1.08	MX
		A102	63.21	19.23	29.70					
2MEQH2		A101	62.33	19.86	30.14	0.99	-0.49	-0.56	1.23	XX
		A102	63.32	19.38	29.58					
3CVL8T		A101	62.31	19.81	30.26	0.96	-0.45	-0.53	1.18	MV
		A102	63.26	19.36	29.73					
3UEK3J		A101	62.31	19.28	30.16	0.89	-0.37	-0.41	1.05	MM
		A102	63.20	18.91	29.75					
3WWUZ		A101	62.31	19.63	29.92	1.00	-0.49	-0.48	1.21	HP
		A102	63.30	19.15	29.44					
4XC7T2		A101	62.37	19.75	30.18	0.97	-0.47	-0.51	1.19	AJ
		A102	63.34	19.28	29.67					
668JW9		A101	62.44	19.55	30.35	0.99	-0.54	-0.61	1.28	HF
		A102	63.42	19.01	29.74					
68RQWH		A101	62.44	19.85	30.21	1.00	-0.45	-0.39	1.16	AM
		A102	63.43	19.40	29.82					

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^*	
6HB6YX		A101	62.29	19.59	30.17	0.98	-0.48	-0.52	1.20	MK
		A102	63.27	19.12	29.65					
6L9UDK		A101	62.19	19.75	30.05	0.97	-0.51	-0.57	1.23	HP
		A102	63.16	19.24	29.48					
6PJDXF		A101	62.58	19.80	30.15	0.95	-0.47	-0.57	1.20	AM
		A102	63.52	19.33	29.59					
6THRHK		A101	62.29	19.22	30.11	0.93	-0.39	-0.43	1.09	MJ
		A102	63.22	18.83	29.68					
7CD4BC		A101	61.87	19.69	30.38	0.98	-0.55	-0.60	1.28	CA
		A102	62.86	19.14	29.78					
7HRPDU		A101	62.45	19.61	30.47	1.01	-0.52	-0.65	1.30	XI
		A102	63.45	19.10	29.82					
7RGBJE		A101	62.37	19.72	30.11	0.95	-0.45	-0.49	1.15	AM
		A102	63.32	19.28	29.62					
84MMFT		A101	62.29	19.81	30.19	0.97	-0.48	-0.52	1.20	AM
		A102	63.26	19.33	29.67					
86XRTG		A101	62.16	19.76	30.05	0.95	-0.51	-0.61	1.23	HP
		A102	63.11	19.26	29.45					
8HYGJ3		A101	62.17	19.82	30.28	0.99	-0.49	-0.51	1.21	MV
		A102	63.16	19.33	29.77					
8QFUVT		A101	62.40	19.67	30.15	0.91	-0.40	-0.44	1.08	AM
		A102	63.30	19.27	29.72					
94GNVW		A101	62.23	19.43	30.27	0.95	-0.47	-0.51	1.17	HW
		A102	63.18	18.96	29.77					
98FGC8		A101	62.28	19.96	30.43	0.97	-0.51	-0.66	1.27	MV
		A102	63.25	19.46	29.78					
9CMPXH		A101	62.34	19.58	30.23	0.99	-0.45	-0.48	1.19	MK
		A102	63.33	19.13	29.75					

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^*	
9L3FU9		A101	62.33	19.70	30.03	0.94	-0.51	-0.66	1.25	AJ
		A102	63.27	19.20	29.37					
9L6448		A101	62.39	19.51	29.93	0.96	-0.42	-0.46	1.14	AJ
		A102	63.35	19.09	29.47					
9UTX94	X	A101	61.81	19.35	29.85	1.03	-0.45	-0.49	1.23	MJ
		A102	62.84	18.89	29.36					
A8NUB2		A101	62.24	19.56	30.06	0.93	-0.42	-0.50	1.13	MM
		A102	63.17	19.14	29.56					
A8TAN2		A101	62.28	19.79	30.26	0.97	-0.50	-0.49	1.19	MV
		A102	63.24	19.29	29.77					
ABXMR8		A101	62.42	19.61	30.14	0.97	-0.47	-0.54	1.20	AM
		A102	63.39	19.14	29.60					
AKJRY8		A101	62.34	19.90	30.28	0.98	-0.49	-0.56	1.23	AJ
		A102	63.32	19.41	29.72					
AZF3JJ		A101	62.43	19.79	30.25	0.99	-0.49	-0.55	1.23	AJ
		A102	63.42	19.30	29.71					
BCLFB4		A101	62.27	19.71	30.26	0.97	-0.44	-0.49	1.17	MM
		A102	63.24	19.27	29.77					
BDVN6A		A101	62.29	19.68	30.08	0.98	-0.48	-0.54	1.22	MM
		A102	63.27	19.20	29.53					
BGLUX8		A101	62.31	19.27	30.12	0.95	-0.45	-0.54	1.18	MJ
		A102	63.26	18.82	29.58					
C94K8P		A101	62.30	19.56	30.15	0.97	-0.51	-0.59	1.25	MM
		A102	63.27	19.05	29.55					
CDBH6X		A101	62.48	19.83	30.32	0.97	-0.49	-0.58	1.23	MV
		A102	63.45	19.35	29.75					
CE7THX		A101	62.35	19.74	30.19	0.93	-0.49	-0.63	1.22	AM
		A102	63.28	19.25	29.57					

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^*	
CFFRDU	X	A101	62.13	19.18	29.36	1.02	-0.50	-0.57	1.27	AQ
		A102	63.15	18.68	28.79					
CL87AE		A101	62.22	19.35	30.46	1.10	-0.60	-0.68	1.42	XO
		A102	63.32	18.75	29.78					
CT8J43		A101	62.33	19.70	29.91	0.95	-0.40	-0.41	1.11	AJ
		A102	63.27	19.30	29.50					
CTQAHG		A101	62.28	19.79	30.17	1.05	-0.53	-0.57	1.30	XI
		A102	63.33	19.26	29.60					
D7B67T		A101	62.44	19.36	30.55	0.92	-0.41	-0.49	1.12	XU
		A102	63.36	18.95	30.06					
D9E399		A101	62.38	19.16	30.20	0.97	-0.46	-0.58	1.22	AD
		A102	63.35	18.71	29.63					
DAAKAA		A101	62.59	19.43	30.37	0.95	-0.48	-0.54	1.19	XX
		A102	63.53	18.95	29.83					
DV6JLL		A101	62.38	19.76	30.20	0.97	-0.45	-0.45	1.16	AJ
		A102	63.35	19.31	29.75					
E2EYVA		A101	62.35	19.61	29.78	0.96	-0.40	-0.38	1.10	HP
		A102	63.30	19.21	29.40					
E69YXW		A101	62.61	19.32	30.17	0.99	-0.54	-0.47	1.22	GF
		A102	63.60	18.78	29.71					
E79VPF		A101	62.70	19.70	30.28	0.94	-0.42	-0.50	1.14	AJ
		A102	63.64	19.28	29.78					
E9CUGZ		A101	62.36	19.71	30.00	0.97	-0.49	-0.54	1.21	AM
		A102	63.33	19.23	29.46					
EN2Q3Q		A101	62.26	19.73	29.94	0.90	-0.30	-0.29	0.99	AM
		A102	63.16	19.44	29.65					
EQPECH		A101	62.65	19.70	30.33	0.85	-0.40	-0.49	1.05	AJ
		A102	63.50	19.31	29.85					

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^*	
ETUY3Q	X	A101	62.16	19.15	29.33	0.99	-0.50	-0.57	1.25	AQ
		A102	63.15	18.65	28.76					
EYJJ6J		A101	61.96	19.61	30.10	0.95	-0.48	-0.60	1.22	AJ
	A102	62.91	19.13	29.50						
F7ZB8H		A101	62.25	19.83	30.61	1.02	-0.47	-0.45	1.20	CA
	A102	63.27	19.37	30.16						
FDL4QG		A101	62.33	19.66	30.27	0.94	-0.44	-0.52	1.16	MK
	A102	63.27	19.22	29.75						
FFV2BQ		A101	62.48	19.59	29.95	0.97	-0.46	-0.50	1.18	AJ
	A102	63.45	19.13	29.45						
FLG7TT		A101	62.54	19.78	30.12	0.89	-0.42	-0.51	1.10	AJ
	A102	63.43	19.37	29.62						
FYG6BB		A101	62.44	19.53	30.23	0.99	-0.48	-0.53	1.22	MK
	A102	63.43	19.05	29.70						
G93RMY		A101	62.16	19.69	29.98	1.01	-0.54	-0.56	1.27	HP
	A102	63.16	19.15	29.42						
GUG99X		A101	62.24	19.60	29.88	1.01	-0.49	-0.51	1.24	MM
	A102	63.25	19.11	29.37						
H44L2E		A101	62.27	19.77	30.03	0.86	-0.37	-0.40	1.02	AJ
	A102	63.13	19.40	29.63						
HCZ92R		A101	62.45	19.80	29.98	0.91	-0.43	-0.46	1.10	AJ
	A102	63.35	19.38	29.52						
HLP343		A101	62.59	19.36	30.25	0.97	-0.45	-0.46	1.16	MZ
	A102	63.56	18.91	29.79						
HP4U4G		A101	62.29	19.61	30.14	0.95	-0.45	-0.57	1.19	XI
	A102	63.23	19.16	29.57						
J2XF2Y		A101	62.46	19.48	29.91	0.96	-0.45	-0.55	1.20	MM
	A102	63.42	19.03	29.37						

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^*	
J43ZR8	X	A101	63.28	13.45	33.04	0.97	-0.35	-0.66	1.22	AM
		A102	64.24	13.10	32.38					
J46RUA	X	A101	62.43	19.39	30.56	0.93	-0.35	-0.39	1.07	XL
		A102	63.36	19.05	30.17					
JKB3M8	X	A101	62.30	19.75	29.34	0.91	-0.44	-0.54	1.14	MK
		A102	63.20	19.31	28.80					
K34FGQ		A101	62.33	19.76	30.02	0.97	-0.43	-0.50	1.17	AM
	A102	63.29	19.33	29.53						
KA3U8K		A101	62.48	19.65	30.07	0.94	-0.41	-0.47	1.13	AG
	A102	63.42	19.24	29.60						
KC8MYX		A101	62.00	19.63	30.14	1.01	-0.53	-0.55	1.26	MG
	A102	63.00	19.09	29.59						
KGR47W		A101	62.41	19.29	30.17	0.93	-0.50	-0.53	1.18	MG
	A102	63.34	18.79	29.64						
KLMVDT		A101	62.55	19.80	30.29	0.97	-0.52	-0.66	1.27	AO
	A102	63.51	19.28	29.64						
L3XMUP		A101	62.36	19.66	30.24	0.89	-0.39	-0.41	1.05	MK
	A102	63.24	19.27	29.83						
L696GD		A101	62.44	19.55	30.27	0.98	-0.47	-0.50	1.19	MK
	A102	63.41	19.09	29.76						
LCTCB6		A101	62.28	19.64	30.13	0.90	-0.41	-0.44	1.08	MM
	A102	63.18	19.23	29.69						
LEWZT3		A101	62.34	19.71	30.01	0.99	-0.49	-0.54	1.22	AJ
	A102	63.33	19.22	29.48						
M7EB3T		A101	62.61	19.82	30.29	0.98	-0.47	-0.50	1.20	MV
	A102	63.59	19.35	29.79						
MAAXM		A101	62.46	19.67	30.12	0.94	-0.43	-0.49	1.14	AO
	A102	63.40	19.24	29.63						

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^*	
MDFE6K		A101	62.36	19.65	30.18	0.99	-0.50	-0.60	1.26	AJ
		A102	63.35	19.15	29.59					
N8EDUV		A101	62.60	19.80	30.37	0.96	-0.43	-0.45	1.14	MV
		A102	63.56	19.37	29.92					
N9JXPH		A101	62.39	19.61	30.15	0.94	-0.48	-0.59	1.20	MM
		A102	63.33	19.13	29.56					
NRC6CF		A101	62.12	19.56	30.13	0.93	-0.44	-0.48	1.13	HX
		A102	63.05	19.13	29.65					
NYVBB8		A101	62.44	19.55	30.38	0.91	-0.43	-0.47	1.11	AJ
		A102	63.35	19.12	29.91					
PL2ACC		A101	62.50	19.47	30.15	0.95	-0.40	-0.41	1.11	AJ
		A102	63.45	19.07	29.74					
Q43CTG		A101	62.69	19.35	30.38	1.04	-0.50	-0.59	1.29	GG
		A102	63.73	18.85	29.79					
QBFDTD		A101	62.50	19.35	30.47	0.91	-0.42	-0.48	1.11	XO
		A102	63.41	18.94	29.99					
QPKNFC	X	A101	62.84	19.55	30.80	0.98	-0.49	-0.57	1.23	HW
		A102	63.82	19.06	30.23					
QVMTC3	X	A101	62.09	18.99	30.02	0.97	-0.43	-0.52	1.18	MJ
		A102	63.06	18.55	29.51					
R6EGUC		A101	62.55	19.66	30.34	0.95	-0.49	-0.58	1.21	AJ
		A102	63.50	19.17	29.76					
RTCANQ		A101	62.38	19.65	30.34	0.93	-0.41	-0.50	1.13	MT
		A102	63.31	19.24	29.84					
RUALCT		A101	62.63	19.53	30.25	0.95	-0.43	-0.46	1.13	XX
		A102	63.57	19.10	29.80					
RWNEW		A101	62.45	19.63	29.86	0.98	-0.49	-0.53	1.21	AM
		A102	63.43	19.14	29.33					

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^*	
TBVCB7	X	A101	62.47	19.54	30.79	1.04	-0.53	-0.63	1.33	MI
		A102	63.52	19.00	30.16					
TC83AN		A101	62.48	19.74	30.25	0.98	-0.41	-0.45	1.15	AJ
		A102	63.46	19.33	29.80					
TJL2GV		A101	62.57	19.38	30.48	0.99	-0.43	-0.47	1.18	XR
		A102	63.56	18.95	30.02					
TNCGXF		A101	62.27	19.32	30.22	0.63	-0.55	-0.72	1.10	XQ
		A102	62.90	18.77	29.50					
TRDJVG		A101	62.35	19.89	30.22	0.98	-0.44	-0.52	1.19	MV
		A102	63.32	19.45	29.70					
U3BK37		A101	62.19	19.96	30.34	0.99	-0.48	-0.53	1.22	PE
		A102	63.18	19.48	29.81					
U3DGEB		A101	62.27	19.14	30.24	0.95	-0.41	-0.49	1.14	XX
		A102	63.22	18.74	29.75					
UE48XF		A101	62.22	19.81	29.94	0.92	-0.40	-0.45	1.09	AM
		A102	63.13	19.41	29.50					
VNAECT		A101	62.29	19.55	30.02	0.95	-0.45	-0.47	1.15	HP
		A102	63.24	19.11	29.55					
VVBRBB		A101	62.38	19.39	30.47	1.07	-0.48	-0.58	1.30	XO
		A102	63.44	18.91	29.89					
W3HTT4		A101	62.45	19.63	30.17	0.96	-0.46	-0.60	1.22	AM
		A102	63.41	19.17	29.57					
WJQW94		A101	62.51	19.76	30.15	1.03	-0.51	-0.53	1.26	AM
		A102	63.53	19.25	29.62					
WLW38		A101	61.93	19.71	29.95	0.98	-0.48	-0.54	1.22	HG
		A102	62.91	19.23	29.41					
WUNNZ3	X	A101	61.88	20.18	31.19	1.00	-0.57	-0.74	1.37	AJ
		A102	62.88	19.62	30.45					

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^*	
WWNPA	X	A101	62.95	19.44	30.44	1.01	-0.47	-0.47	1.20	HW
		A102	63.95	18.97	29.97					
X8NV96	X	A101	63.99	19.12	29.06	0.92	-0.41	-0.46	1.11	GG
		A102	64.91	18.71	28.60					
X9JEB7		A101	62.26	19.77	30.10	1.02	-0.51	-0.53	1.25	AJ
		A102	63.28	19.26	29.57					
XXMB8B		A101	62.33	19.36	30.35	0.84	-0.43	-0.46	1.05	XO
		A102	63.16	18.93	29.89					
Y94DA3		A101	62.55	19.69	30.26	0.99	-0.59	-0.70	1.34	AM
		A102	63.53	19.11	29.56					
YGWX63		A101	62.45	19.74	30.34	0.98	-0.44	-0.49	1.18	MV
		A102	63.43	19.30	29.85					
YKXLVD		A101	62.17	19.81	30.52	1.04	-0.56	-0.61	1.33	GD
		A102	63.21	19.26	29.92					
Z79AV9		A101	62.23	19.89	30.09	0.94	-0.46	-0.49	1.15	MV
		A102	63.17	19.44	29.60					
ZBZHXU		A101	62.31	19.79	30.06	0.96	-0.51	-0.56	1.22	AM
		A102	63.27	19.28	29.50					
ZHAQT4		A101	62.46	19.74	30.21	0.97	-0.46	-0.51	1.18	AJ
		A102	63.42	19.29	29.70					
ZKPAKL		A101	62.29	19.63	30.17	0.99	-0.53	-0.58	1.26	AM
		A102	63.28	19.10	29.59					
ZUZH8R	X	A101	62.64	19.43	29.57	0.90	-0.44	-0.49	1.11	HH
		A102	63.54	18.99	29.08					
ZZ9WX4		A101	62.33	19.68	30.32	0.91	-0.40	-0.45	1.09	AL
		A102	63.24	19.28	29.87					

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

Samples	L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*
Grand Means							
A101	62.36	19.62	30.18				
A102	63.32	19.16	29.66	0.96	-0.46	-0.52	1.19
Std Dev Btwn Labs							
A101	0.16	0.19	0.16				
A102	0.17	0.19	0.17	0.05	0.05	0.07	0.07

Statistics based on 112 of 125 reporting participants

Comments assigned on Data Flags for Test #409

9UTX94(X) - Low "L*" values.

CFFRDU(X) - Low "b*" values.

ETUY3Q(X) - Low "b*" values.

J43ZR8(X) - High "L*" and "b*" values and low "a*" values.

J46RUA(X) - Low "b*" values for Sample A102.

JKB3M8(X) - Low "b*" values.

QPKNFC(X) - High "L*" and "b*" values.

QVMTC3(X) - Low "a*" values.

TBVCB7(X) - High "b*" values.

WUNNZ3(X) - High "a*" and "b*" values and low "L*" values for Sample A101. High "b*" values for Sample A102.

WWNPAE(X) - High "L*" values.

X8NV96(X) - High "L*" values and low "b*" values.

ZUZH8R(X) - Low "b*" values.

Interlaboratory Testing Program for Color & Appearance

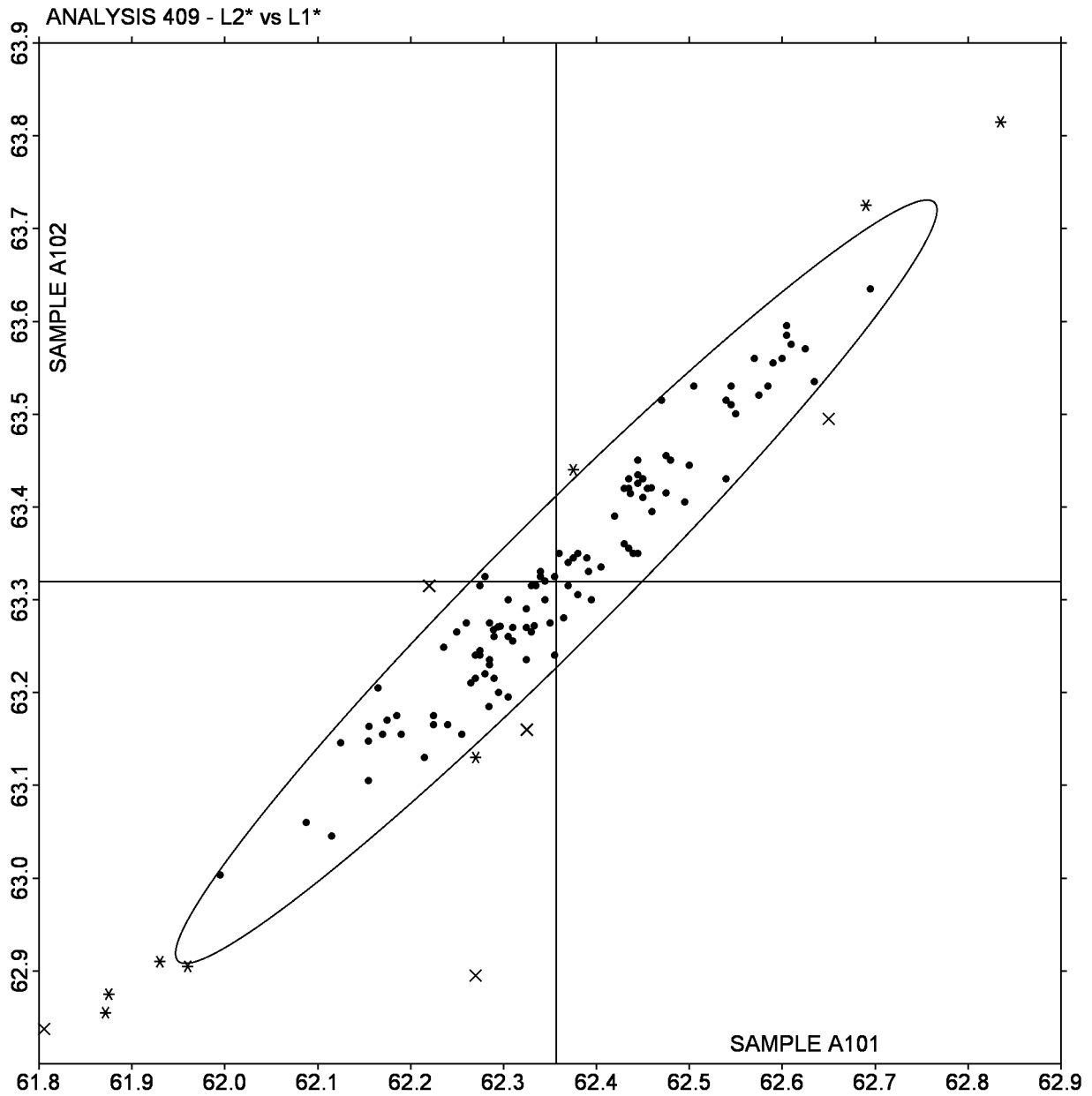
Analysis 409

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 A101 = 62.36

SAMPLE A102 = 63.32



Interlaboratory Testing Program for Color & Appearance

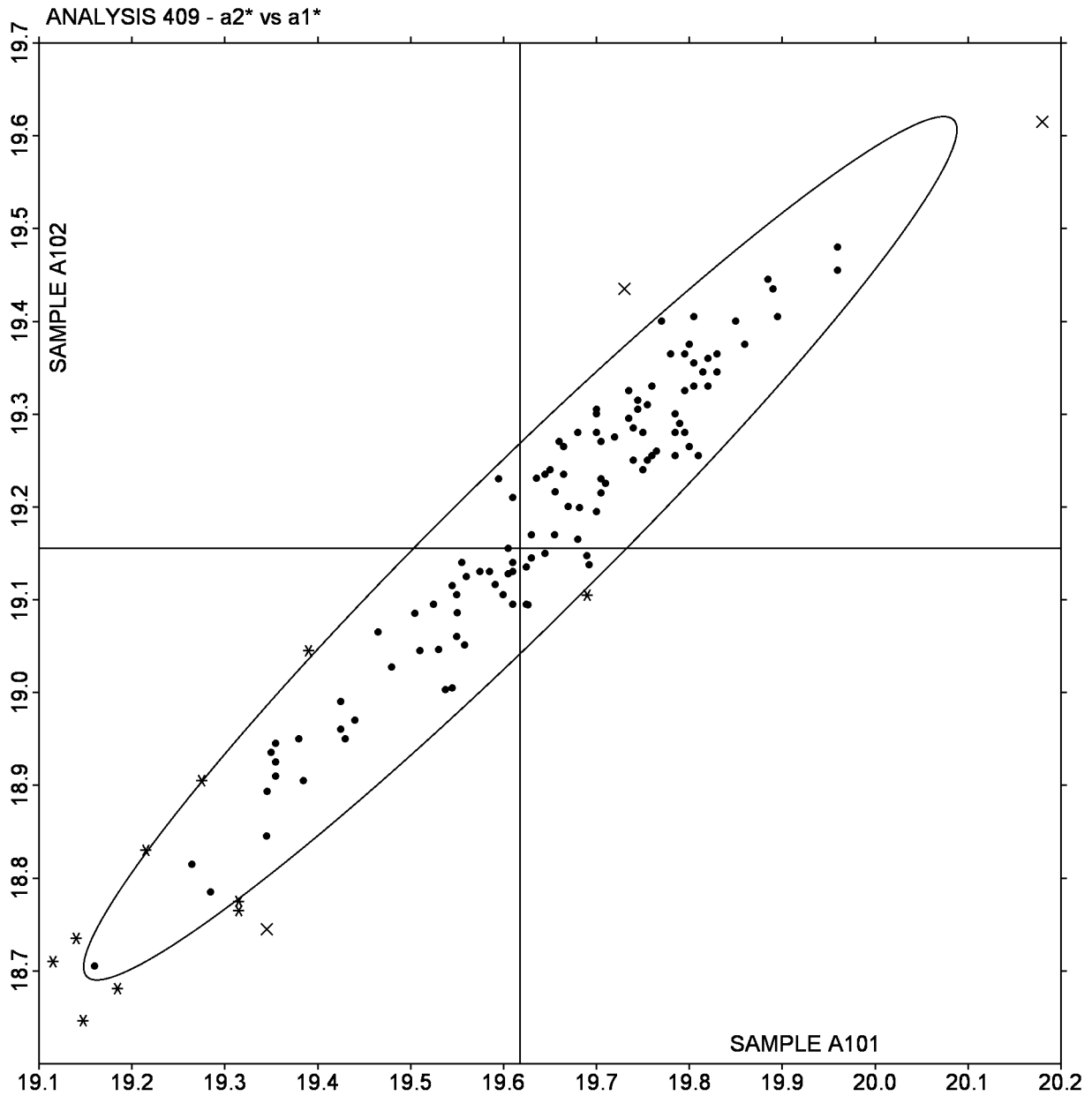
Analysis 409

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 A101 = 19.62

SAMPLE A102 = 19.16



Interlaboratory Testing Program for Color & Appearance

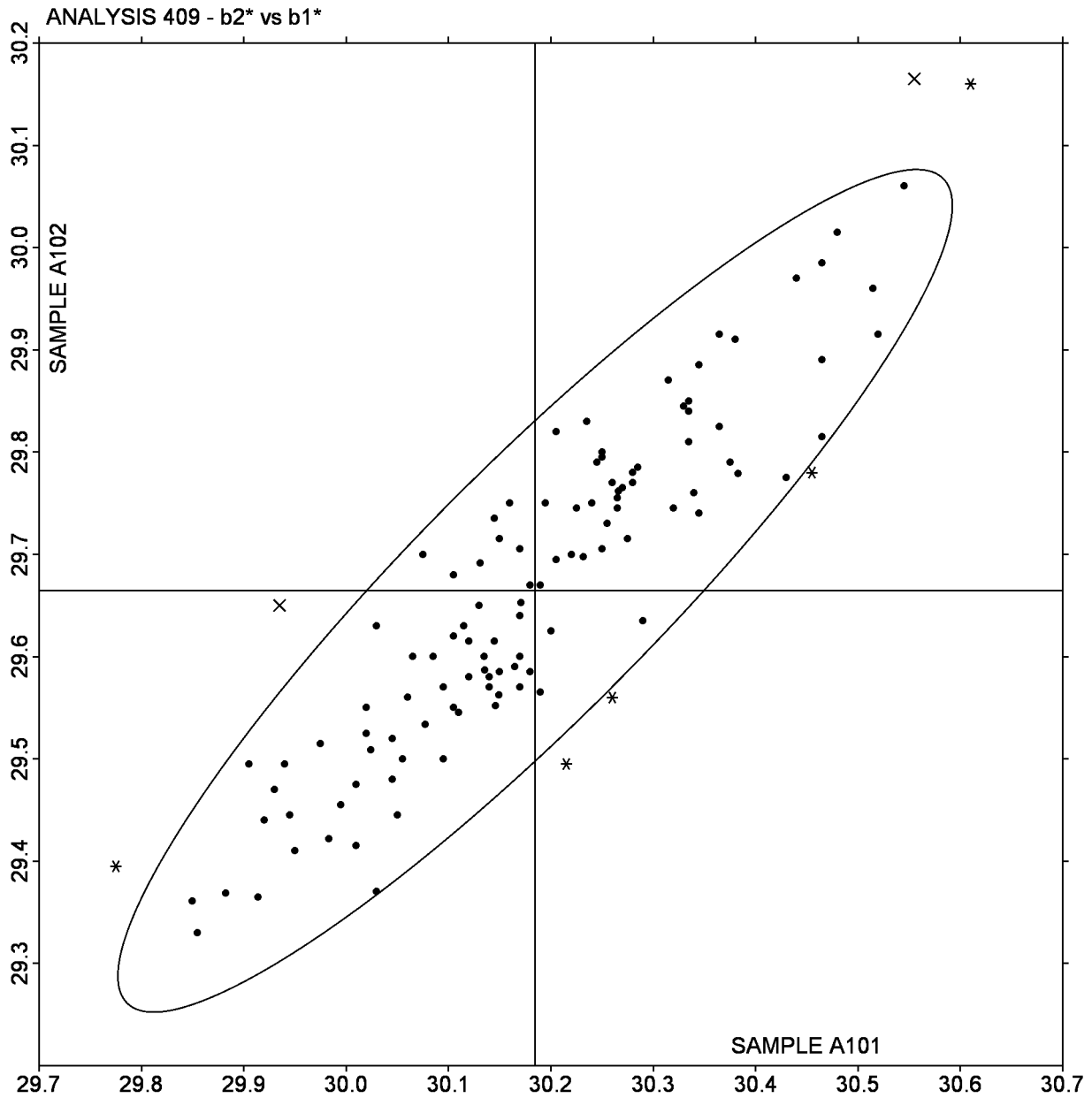
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
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b2* vs b1*

SAMPLE A101 = 30.18

SAMPLE A102 = 29.66



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 A101																		
23B2EH		10.96	12.18	14.11	15.23	15.59	17.10	20.59	25.23	31.03	40.78	49.03	51.05	51.19	52.03	54.03	56.47	AM
2PGZ43		10.90	12.21	14.19	15.28	15.64	17.09	20.44	24.91	30.48	40.06	47.93	49.68	49.69X	50.55X	51.95X	54.62X	AG
2WHXBT		10.92	11.90	13.78	14.91	15.26	16.92	20.28	24.91	29.99	39.90	48.66	50.29	50.27	51.03	52.69	56.27	HP
2XCTKA		9.78X	11.78	13.60	14.82	15.11	16.62X	20.22	24.75	30.34	40.56	48.87	50.28	50.24	51.14	53.05	56.09	GD
73UG83		10.83	11.91	13.89	15.08	15.32	16.89	20.23	24.79	30.32	40.31	48.78	50.58	50.64	51.40	53.28	56.66	MV
7DT86G		11.03	12.01	13.92	15.26	15.53	17.16	20.54	25.30	31.02	40.98	48.87	50.69	50.77	51.46	53.45	56.66	XX
7E8QZL		10.73	12.14	13.96	15.06	15.42	16.99	20.45	25.05	30.89	40.64	48.77	50.74	50.96	51.77	53.90	55.88	AJ
7H7828		10.88	12.07	14.03	15.11	15.51	17.02	20.41	25.06	30.71	40.40	48.59	50.54	50.75	51.55	53.71	56.24	AM
7VQM6U		10.98	12.11	14.07	15.17	15.58	17.07	20.48	25.18	30.79	40.86	48.99	50.72	50.87	51.62	53.70	56.37	AM
86XKTB		10.79	11.90	13.90	15.07	15.39	16.95	20.43	25.03	30.64	40.65	48.88	50.59	50.49	51.27	53.16	56.61	MT
89APZR		11.13	12.22	14.20	15.20	15.65	17.11	20.54	25.21	30.74	40.55	48.72	50.60	50.85	51.71	53.65	56.64	AM
89CJVJ		10.82	12.08	13.98	15.10	15.46	17.07	20.45	25.16	30.82	40.66	48.78	50.55	50.77	51.59	53.57	56.90	MK
8ABKP2		10.97	11.98	13.91	15.08	15.34	16.89	20.30	24.90	30.50	40.69	48.97	50.63	50.64	51.48	53.44	56.75	MV
8MGEEK		11.18	12.22	14.01	15.07	15.43	17.02	20.41	25.05	30.66	40.40	48.57	50.52	50.70	51.57	53.55	56.82	AJ
9CFEEL		11.15	11.95	13.94	15.12	15.32	17.02	20.34	24.78	30.58	40.40	48.38	50.42	50.57	51.35	53.34	56.22	MX
9GPTQ4		10.98	12.16	14.09	15.21	15.60	17.06	20.50	25.22	30.94	40.84	48.98	50.87	50.99	51.88	53.78	56.52	AJ
9K7XKR		10.56	11.83	13.81	15.02	15.25	16.90	20.33	25.02	30.95	40.89	48.56	50.19	50.32	51.28	53.37	56.67	XO
9LHVM4		10.61	11.89	13.58	14.88	15.24	16.70	20.07	24.56	30.08	39.29X	47.44X	49.64X	49.87	50.67	52.51	55.54	MJ
A4G6FL		10.96	12.04	13.99	15.11	15.48	17.01	20.35	25.02	30.76	40.62	48.70	50.65	50.77	51.63	53.53	55.72	AM
A8ZA4H		11.84X	11.96	13.57	14.88	15.21	16.72	20.05	24.74	30.16	39.46X	47.87	50.18	50.56	51.31	53.17	56.41	HG
AFRLD6		10.77	11.91	13.85	14.96	15.31	16.93	20.27	24.95	30.57	40.45	48.62	50.32	50.50	51.29	53.27	56.56	MM
AG2U6P		10.96	11.89	13.82	15.07	15.38	16.94	20.31	24.94	30.61	40.33	48.50	50.68	50.86	51.73	53.77	56.46	AJ
ANLPAZ		10.84	12.06	13.89	15.09	15.44	16.95	20.39	24.98	30.69	40.37	48.69	50.69	50.87	51.71	53.65	56.16	AM
BDLH38		11.53	12.18	13.84	15.07	15.45	17.06	20.52	25.00	30.86	40.47	48.18	50.01	50.25	51.04	52.89	56.01	MJ
BEBX4P	X	10.21X	11.28X	13.20X	14.29X	14.65X	16.25X	19.66X	24.40X	30.09	40.05	48.30	50.22	50.35	51.11	52.19X	54.39X	AJ

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 A101																		
BRE9QN		10.90	12.03	13.96	15.07	15.44	17.06	20.44	25.14	30.81	40.67	48.79	50.58	50.74	51.58	53.54	56.85	MK
BWA8Y		10.73	11.81	13.72	14.97	15.32	16.85	20.25	24.89	30.31	39.93	48.20	50.19	50.43	51.15	53.07	56.22	HX
CH64DX		10.95	12.13	14.02	15.08	15.48	17.00	20.40	25.06	30.70	40.37	48.63	50.59	50.81	51.67	53.73	56.73	AM
CJED2P		10.75	11.91	13.85	15.06	15.33	16.92	20.32	24.88	30.49	40.61	48.89	50.49	50.51	51.31	53.25	56.59	MV
DF2NK2	X	.96X	.92X	.86X	.82X	.81X	.77X	.69X	.60X	.51X	.40X	.31X	.30X	.29X	.29X	.27X	.25X	AJ
DG9BTY		10.80	12.18	13.90	15.05	15.39	16.98	20.51	25.10	30.87	40.60	48.80	50.68	50.71	51.40	53.75	56.72	HF
DGNH2N		11.05	11.98	13.96	15.10	15.36	16.94	20.34	24.91	30.45	40.47	48.88	50.71	50.81	51.63	53.59	56.92	XX
DJ28CR		10.98	12.22	14.10	15.25	15.60	17.17	20.59	25.16	30.86	40.74	48.70	50.55	50.76	51.55	53.52	55.92	AJ
DJRGT9		11.07	12.14	13.94	15.11	15.46	16.98	20.40	25.00	30.84	40.80	48.82	50.74	50.86	51.76	53.64	55.91	AM
DWY64R		10.83	12.18	14.16	15.24	15.60	17.06	20.42	24.88	30.45	40.04	47.94	49.70	49.73X	50.61	52.03X	54.74X	AQ
EAKZX		10.83	11.94	13.87	15.02	15.30	16.90	20.22	24.81	30.43	40.59	48.82	50.48	50.53	51.36	53.27	56.64	MV
EP74WR		10.89	12.02	13.89	15.04	15.39	16.99	20.35	25.01	30.62	40.33	48.52	50.43	50.62	51.49	53.44	56.70	MM
EQAVU7		10.92	12.04	13.91	15.07	15.40	16.98	20.29	24.95	30.52	40.35	48.62	50.51	50.68	51.47	53.40	56.68	MM
EXENYA		11.17	12.17	14.09	15.21	15.53	17.17	20.51	25.10	30.27	40.10	48.72	50.68	50.64	51.37	53.40	56.70	HP
F73ZJE		10.86	12.17	14.05	15.12	15.50	17.09	20.55	25.22	30.99	40.94	48.92	50.77	50.89	51.75	53.83	56.39	AM
F8H9N9		11.02	12.01	13.95	15.08	15.44	17.06	20.40	25.13	30.50	40.04	48.58	50.51	50.62	51.42	53.40	56.63	HP
FJCLW7		10.73	12.07	13.84	15.05	15.52	17.10	20.43	25.02	30.88	40.13	48.12	50.41	50.68	51.46	53.42	56.58	MM
FPUVAG		10.80	11.96	13.93	15.11	15.41	16.97	20.43	25.07	30.73	40.68	48.95	50.79	50.89	51.73	53.57	56.85	MV
FWBJN7		10.90	11.98	13.92	15.02	15.34	16.95	20.31	24.98	30.53	40.40	48.63	50.40	50.57	51.43	53.41	56.76	MK
FWDCLR		10.86	12.01	13.90	15.03	15.40	16.98	20.31	24.99	30.62	40.35	48.44	50.39	50.60	51.45	53.39	56.65	MM
FZPGU8		10.92	12.11	14.02	15.13	15.53	17.02	20.48	25.20	30.87	40.98	49.10	50.85	50.83	51.67	53.48	55.97	AJ
G787T9	X	10.62	11.93	13.73	14.72X	14.97X	16.33X	19.49X	23.73X	28.91X	37.96X	45.41X	47.04X	46.86X	47.35X	48.76X	50.70X	AM
GAJQBH		10.89	12.06	13.95	15.05	15.40	17.00	20.36	25.00	30.69	40.67	48.77	50.52	50.60	51.39	53.29	56.43	AJ
H38DF4		11.02	11.97	13.98	15.05	15.38	17.06	20.39	25.04	30.42	40.08	48.73	50.59	50.50	51.40	53.29	56.56	HP
H3UJ2N		10.82	12.09	13.89	15.05	15.53	16.98	20.40	25.14	30.60	40.35	48.70	50.64	50.85	51.72	53.72	56.43	AJ

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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 A101																		
H9FLZE		10.83	12.12	13.95	15.07	15.45	16.91	20.28	25.01	30.46	40.35	48.53	50.46	50.69	51.63	53.63	56.42	AO
HJHMZQ		10.78	11.84	13.85	14.98	15.34	16.99	20.44	25.01	30.84	40.64	48.46	50.24	50.19	51.14	53.17	56.48	XO
JAFRD6		10.97	12.15	13.87	15.05	15.41	17.01	20.49	25.00	30.82	40.38	48.17	50.04	50.21	51.05	52.93	56.08	MJ
JD4GJX		10.74	11.83	13.80	14.94	15.20	16.79	20.21	24.77	30.38	40.70	48.99	50.59	50.56	51.40	53.41	56.89	MV
JTFYBX		10.96	11.97	13.87	15.01	15.36	16.91	20.32	24.94	30.03	39.87	48.51	50.38	50.45	51.29	53.31	56.54	HP
JYK3WP		10.97	12.09	13.94	15.05	15.42	16.93	20.29	24.85	30.54	40.20	48.46	50.45	50.62	51.43	53.48	55.98	AM
K8G6YE		10.90	12.05	13.96	15.14	15.53	17.12	20.61	25.27	31.07	40.92	49.17	50.84	51.00	51.77	53.72	56.27	AJ
KBT6XD		10.93	12.09	13.89	15.01	15.36	16.93	20.30	24.93	30.56	40.35	48.50	50.44	50.60	51.46	53.44	56.73	AJ
KFXHC6		10.86	11.99	13.91	15.02	15.37	16.96	20.31	24.96	30.55	40.36	48.59	50.43	50.59	51.37	53.37	56.69	MM
L37BUU		10.94	12.10	13.99	15.05	15.42	17.05	20.47	25.15	30.81	40.76	48.44	50.24	50.31	51.11	52.95	55.89	MG
L3JW6J		10.72	11.84	13.77	14.94	15.22	16.74	20.13	24.73	30.34	40.46	48.64	50.23	50.23	51.06	53.04	56.39	MV
L78BZT	X	.96X	.91X	.85X	.82X	.81X	.77X	.69X	.60X	.51X	.39X	.31X	.30X	.30X	.29X	.27X	.25X	AJ
LECMQ		11.18	12.29	14.12	15.23	15.58	17.21	20.55	25.21	30.84	40.50	48.65	50.70	50.88	51.69	53.56	56.78	MM
LJ8AHB		10.82	11.90	13.87	14.92	15.36	16.93	20.47	25.26	31.06	40.74	48.72	50.29	50.60	51.40	53.44	56.37	XL
LZ8B4W		10.86	11.89	13.76	14.75X	15.11	16.72	20.04	24.62	30.25	40.15	48.10	49.75	49.91	50.72	52.63	55.75	MG
M7GYEP		11.12	12.20	14.07	15.21	15.58	17.06	20.43	25.10	30.78	40.59	48.85	50.72	50.90	51.74	53.70	56.38	AJ
MDWM7		10.93	11.90	13.84	14.94	15.29	16.97	20.30	24.95	30.04	39.96	48.73	50.28	50.39	50.96	52.77	56.25	HP
MP8ZBF		10.83	12.04	13.91	14.99	15.44	17.05	20.52	25.29	31.20	40.84	48.84	50.36	50.63	51.35	53.51	56.59	XO
MTBRQ7		10.73	11.96	13.85	15.03	15.39	16.96	20.28	24.93	30.57	40.34	48.49	50.59	50.74	51.62	53.60	56.86	XI
N4KV2V		10.62	11.92	13.84	14.96	15.31	16.88	20.23	24.89	30.47	40.17	48.36	50.21	50.41	51.21	53.15	56.38	MM
NAT4M7		10.81	12.05	13.96	15.07	15.44	16.95	20.32	25.00	30.59	40.43	48.67	50.44	50.67	51.55	53.52	56.51	AM
P82FNB		10.85	11.98	13.96	15.15	15.56	17.08	20.51	25.24	30.76	40.58	48.60	50.75	50.90	51.82	53.51	56.42	AM
PXVP2D		10.85	11.98	13.90	15.02	15.36	16.95	20.31	24.99	30.59	40.41	48.56	50.40	50.56	51.42	53.38	56.64	MK
PZ3ZXG		10.94	12.07	13.94	15.30	15.66	17.33X	20.75	25.43	31.12	41.18	49.00	50.77	50.95	51.66	53.57	56.85	GG
Q278FM		10.91	12.06	13.95	15.13	15.46	16.98	20.30	24.95	30.48	40.12	48.45	50.41	50.60	51.42	53.30	56.54	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 A101																		
Q366FH		10.77	12.05	13.87	14.99	15.34	16.93	20.40	24.88	30.92	40.32	48.17	50.09	50.40	51.29	53.27	56.29	XQ
QG47TJ		11.09	12.11	14.07	15.23	15.50	17.11	20.54	25.15	30.89	41.14	49.36	51.01	51.02	51.81	53.72	56.98	MV
QGA4PM		10.88	12.10	13.96	15.17	15.48	17.08	20.50	25.18	30.87	40.85	49.06	50.80	51.00	51.90	53.81	56.85	AO
QHDEM		10.89	12.22	14.06	15.13	15.52	17.10	20.56	25.20	30.72	40.68	48.78	50.63	50.89	51.68	53.56	56.60	AO
QJTD7E		10.72	12.18	13.69	15.03	15.42	17.06	20.37	24.78	30.93	40.33	48.07	50.17	50.36	51.24	53.00	55.96	XX
RBAHM		10.94	12.10	13.95	15.09	15.42	16.99	20.32	24.96	30.54	40.21	48.44	50.48	50.62	51.48	53.39	56.65	AJ
RKKXG		11.16	12.23	14.05	15.16	15.54	17.14	20.47	25.39	31.19	41.03	48.83	50.49	50.62	51.48	53.54	56.84	MZ
RTE3BR		11.08	12.19	14.09	15.15	15.57	17.13	20.58	25.25	30.90	40.68	48.77	50.63	50.76	51.66	53.52	56.03	AJ
TZVVB4		10.88	11.98	13.90	15.00	15.35	16.94	20.29	24.98	30.62	40.60	48.77	50.44	50.56	51.36	53.33	56.67	MK
UB7UA4		10.72	11.89	13.72	14.81	15.15	16.70	20.02	24.61	30.19	39.87	48.00	49.91	50.13	50.94	52.88	55.60	AJ
UC4ZPP		10.91	12.02	13.95	15.11	15.46	16.98	20.38	25.06	30.64	40.53	48.68	50.53	50.76	51.51	53.53	56.36	AM
UVRLBL		11.12	11.87	13.85	15.06	15.39	16.91	20.24	24.91	30.74	40.61	48.71	50.68	50.77	51.71	53.67	56.20	AJ
VUHT36		10.94	12.03	13.94	15.10	15.42	17.03	20.38	25.09	30.68	40.40	48.67	50.61	50.82	51.69	53.64	56.74	MM
VWKRD		10.81	12.04	13.71	14.99	15.35	16.93	20.32	24.78	30.52	39.80	47.76	49.92	50.15	50.98	52.83	55.89	MJ
VWZ97R		11.21	12.12	13.97	15.06	15.50	17.11	20.57	25.20	31.10	41.23	48.71	50.53	50.74	51.53	53.66	56.82	XR
VXUXB	X	10.46	11.52X	13.52X	14.63X	14.97X	16.55X	19.88X	24.56	29.95	39.97	48.09	49.71	49.80X	50.55X	52.55	55.77	CA
W6FZLV		10.70	11.84	13.78	14.86	15.16	16.80	20.36	25.05	30.77	40.35	48.28	49.97	50.28	51.16	53.30	56.41	XO
WALM2		10.87	12.00	13.91	15.03	15.37	16.96	20.30	24.97	30.53	40.21	48.41	50.11	50.54	51.36	53.30	56.56	MK
WTU37C		10.88	12.01	13.94	15.14	15.42	16.98	20.42	25.05	30.74	40.85	49.14	50.85	50.91	51.73	53.68	56.94	MV
XD2FTX		10.75	11.81	13.74	14.93	15.20	16.76	20.10	24.77	30.18	40.36	48.91	50.69	50.66	51.46	53.33	56.66	PE
XMUP98		10.85	11.96	13.86	14.93	15.40	16.97	20.69	25.10	30.91	40.41	48.78	50.38	50.56	51.49	53.57	56.76	XU
XR47GV		10.84	12.19	14.14	15.28	15.63	17.20	20.65	25.28	31.11	41.11	49.36	51.16	51.12	51.89	53.89	56.21	AJ
XRBKGB		10.84	11.97	13.90	15.01	15.43	17.00	20.34	25.02	30.70	40.61	48.71	50.40	50.51	51.30	53.23	56.59	MO
XRL3X2		10.71	11.92	13.85	15.02	15.37	17.03	20.42	25.09	30.87	40.88	48.80	50.52	50.44	51.27	53.35	56.58	XI
Y4D3Y4		10.80	11.95	13.83	15.00	15.34	16.93	20.30	24.96	30.62	40.52	48.70	50.53	50.60	51.40	53.34	56.50	AL

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 A101																		
Y7JATH		10.87	12.10	13.94	15.10	15.47	16.98	20.33	25.06	30.54	40.30	48.69	50.62	50.82	51.61	53.57	56.79	AJ
Y9RMBJ		10.97	12.05	14.08	15.23	15.48	17.07	20.52	25.13	30.93	41.15	49.30	50.97	50.97	51.78	53.70	57.00	MV
YU6DDT		11.45	12.53X	14.55X	15.40X	15.80X	17.30	20.80X	25.41	30.65	41.01	49.16	50.49	50.45	51.18	53.27	56.46	HH
YWPKD3		12.25X	12.52X	14.24	15.25	15.59	17.23	20.66	25.38	31.11	41.03	48.97	50.70	50.73	51.52	53.44	56.65	GG
Z9ZBP4		10.97	11.93	13.80	14.92	15.24	16.82	20.30	24.89	30.83	40.49	48.36	49.90	49.77X	50.39X	52.61	55.62	HW
ZGD4C6		10.85	12.06	13.96	15.10	15.47	16.95	20.34	25.06	30.64	40.42	48.58	50.63	50.82	51.63	53.63	56.24	AM
ZGE8R2		10.97	12.12	14.02	15.11	15.54	17.06	20.60	25.17	30.98	40.79	48.99	50.89	51.00	51.89	53.91	56.64	AJ
ZP96JX		10.65	11.70	13.70	14.82	15.13	16.73	20.16	24.89	30.43	40.57	48.83	50.46	50.53	51.34	53.25	56.55	CA
ZUHKVF		10.85	12.10	14.00	15.11	15.48	17.03	20.52	25.15	30.90	40.69	48.85	50.78	50.86	51.73	53.67	56.49	AJ

Summary Statistics

Grand Means																	
	10.91	12.04	13.93	15.07	15.42	16.99	20.39	25.02	30.67	40.50	48.65	50.48	50.61	51.44	53.39	56.43	
Std Dev Btwn Labs																	
	0.25	0.14	0.14	0.11	0.13	0.12	0.15	0.17	0.26	0.35	0.33	0.29	0.29	0.30	0.35	0.41	

Comments assigned on Data Flags for Test #411

- BEBX4P (X) - Low data for most wavelengths.
- DF2NK2 (X) - Laboratory reported differences instead of total percent reflectance.
- G787T9 (X) - Low data for most wavelengths.
- L78BZT (X) - Laboratory reported differences instead of total percent reflectance.
- VXUXBK (X) - Low data for most wavelengths.

Interlaboratory Testing Program for Color & Appearance

Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample E101			Sample E102			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
2NA9J3		40.43	0.88	1.22	50.63	1.32	1.50	GX
2RMFHL		38.93	-0.62	-0.87	48.60	-0.70	-0.80	RA
2X2K7U		40.48	0.93	1.29	50.65	1.35	1.52	XX
32EX2N		39.83	0.28	0.39	49.25	-0.05	-0.06	GL
33JL7R		40.25	0.70	0.98	49.53	0.22	0.25	GL
3P76UV		39.90	0.35	0.49	49.13	-0.18	-0.20	GQ
428DP6		39.65	0.10	0.14	49.50	0.20	0.22	GL
4HUQ4W		39.25	-0.30	-0.41	49.65	0.35	0.39	GL
4TKYAR		38.83	-0.72	-1.01	49.08	-0.23	-0.26	GL
4WMGPT		38.25	-1.30	-1.81	48.20	-1.10	-1.25	SJ
6CAXPP		39.70	0.15	0.21	49.45	0.15	0.17	GK
6Y7CLZ		39.93	0.38	0.53	49.53	0.22	0.25	GN
76R872		40.75	1.20	1.68	50.45	1.15	1.30	GL
79FPMY		39.83	0.28	0.39	49.78	0.47	0.53	GN
7AYARX		39.38	-0.17	-0.24	49.50	0.20	0.22	HP
7VC4KA		40.03	0.48	0.66	50.03	0.72	0.82	GL
877W9Q		37.93	-1.62	-2.26	47.38	-1.93	-2.18	MR
8CHR9U		40.25	0.70	0.98	50.85	1.55	1.75	GL
99EDBG		40.05	0.50	0.70	49.95	0.65	0.73	GK
9LDB4G		39.83	0.28	0.39	49.10	-0.20	-0.23	GZ
AETPDA		39.58	0.03	0.04	49.88	0.57	0.65	GK
AK2XYK		40.28	0.73	1.01	49.45	0.15	0.17	GL
ALWHW6		38.05	-1.50	-2.09	47.18	-2.13	-2.41	XX
B8AL78		39.50	-0.05	-0.07	49.58	0.27	0.31	GN
BB6GMK		38.60	-0.95	-1.32	48.83	-0.48	-0.54	GQ
BLD2GF		39.38	-0.17	-0.24	48.23	-1.08	-1.22	GL
CT9EKN	X	34.93	-4.62	-6.43	44.31	-5.00	-5.66	MR
D3PH7E		39.30	-0.25	-0.35	49.28	-0.03	-0.03	GL
DEH3G4		38.08	-1.47	-2.05	47.30	-2.00	-2.27	GX
DENZD8		39.40	-0.15	-0.21	48.98	-0.33	-0.37	GK
DLV6D6		39.35	-0.20	-0.28	49.73	0.42	0.48	GL
E7TK29		39.65	0.10	0.14	49.18	-0.13	-0.15	GN
G4TDAU		39.33	-0.22	-0.31	48.23	-1.08	-1.22	GK
G6QMEH		38.85	-0.70	-0.97	48.48	-0.83	-0.94	GL
G9LJVW		39.33	-0.22	-0.31	49.33	0.02	0.02	GL
GCXJVV		39.13	-0.42	-0.59	48.63	-0.68	-0.77	GN
GWF8ZV		40.30	0.75	1.05	49.73	0.42	0.48	GK
GYYHFM		38.60	-0.95	-1.32	47.60	-1.70	-1.93	GL
HCD3D9		39.48	-0.07	-0.10	49.13	-0.18	-0.20	GL
HFZKWR		39.03	-0.52	-0.73	48.65	-0.65	-0.74	GL
J38KEM		38.53	-1.02	-1.43	47.83	-1.48	-1.67	GL
JCYXKE		38.90	-0.65	-0.90	49.10	-0.20	-0.23	GL
JXCQH9		39.73	0.18	0.25	49.63	0.32	0.36	GK
KGABZR		39.58	0.03	0.04	49.35	0.05	0.05	GN
KLL66P		40.83	1.28	1.78	51.28	1.97	2.23	GL

Interlaboratory Testing Program for Color & Appearance

Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample E101			Sample E102			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
LWGU6X		39.20	-0.35	-0.48	49.03	-0.28	-0.31	GK
LYJPPM		40.33	0.78	1.08	50.55	1.25	1.41	GN
M9KR8P		39.33	-0.22	-0.31	49.68	0.37	0.42	GN
M9LCFX		39.93	0.38	0.53	49.85	0.55	0.62	GK
NHMD4G		38.63	-0.92	-1.29	48.45	-0.85	-0.97	GN
NWUXXF		41.15	1.60	2.23	51.23	1.92	2.17	MR
PMYEVV		40.40	0.85	1.19	50.38	1.07	1.21	XX
PYTVKR		40.35	0.80	1.12	49.95	0.65	0.73	GK
TZ9GMD		39.60	0.05	0.07	49.30	0.00	0.00	PA
U3DAE4		39.13	-0.42	-0.59	49.28	-0.03	-0.03	GN
UNEAHU		39.80	0.25	0.35	49.78	0.47	0.53	GL
UWM4DM		39.35	-0.20	-0.28	48.65	-0.65	-0.74	GY
V3A8U4		39.73	0.18	0.25	49.50	0.20	0.22	GK
V7DQE4	*	38.78	-0.77	-1.08	49.50	0.20	0.22	GL
VHKU9D		38.65	-0.90	-1.25	47.85	-1.45	-1.64	BT
W7N6Z7		38.70	-0.85	-1.18	48.63	-0.68	-0.77	GL
WGZLHB		40.23	0.68	0.94	49.58	0.27	0.31	GL
WXHB36	M	37.80	-1.75	-2.44				GS
X6KZP2		41.18	1.63	2.27	50.78	1.47	1.67	GK
XTFNRF		39.28	-0.27	-0.38	48.60	-0.70	-0.80	GL
YUKPWK		39.85	0.30	0.42	49.93	0.62	0.70	GN
Z2GYLA		39.90	0.35	0.49	49.30	0.00	0.00	GN
ZVWPM		40.10	0.55	0.77	49.38	0.07	0.08	GL
ZYVAD4		40.28	0.73	1.01	50.03	0.72	0.82	GL
ZYW7YK		39.28	-0.27	-0.38	48.78	-0.53	-0.60	DM

Summary Statistics

Grand Means	39.55	Gloss Units	49.30	Gloss Units
Std Dev Btwn Labs	0.72	Gloss Units	0.88	Gloss Units

Statistics based on 68 of 70 reporting participants

Comments on assigned Data Flags for Test #440

CT9EKN(X) - Data for both samples are low.

WXHB36(M) - Laboratory did not submit data for Sample A102.

Interlaboratory Testing Program for Color & Appearance

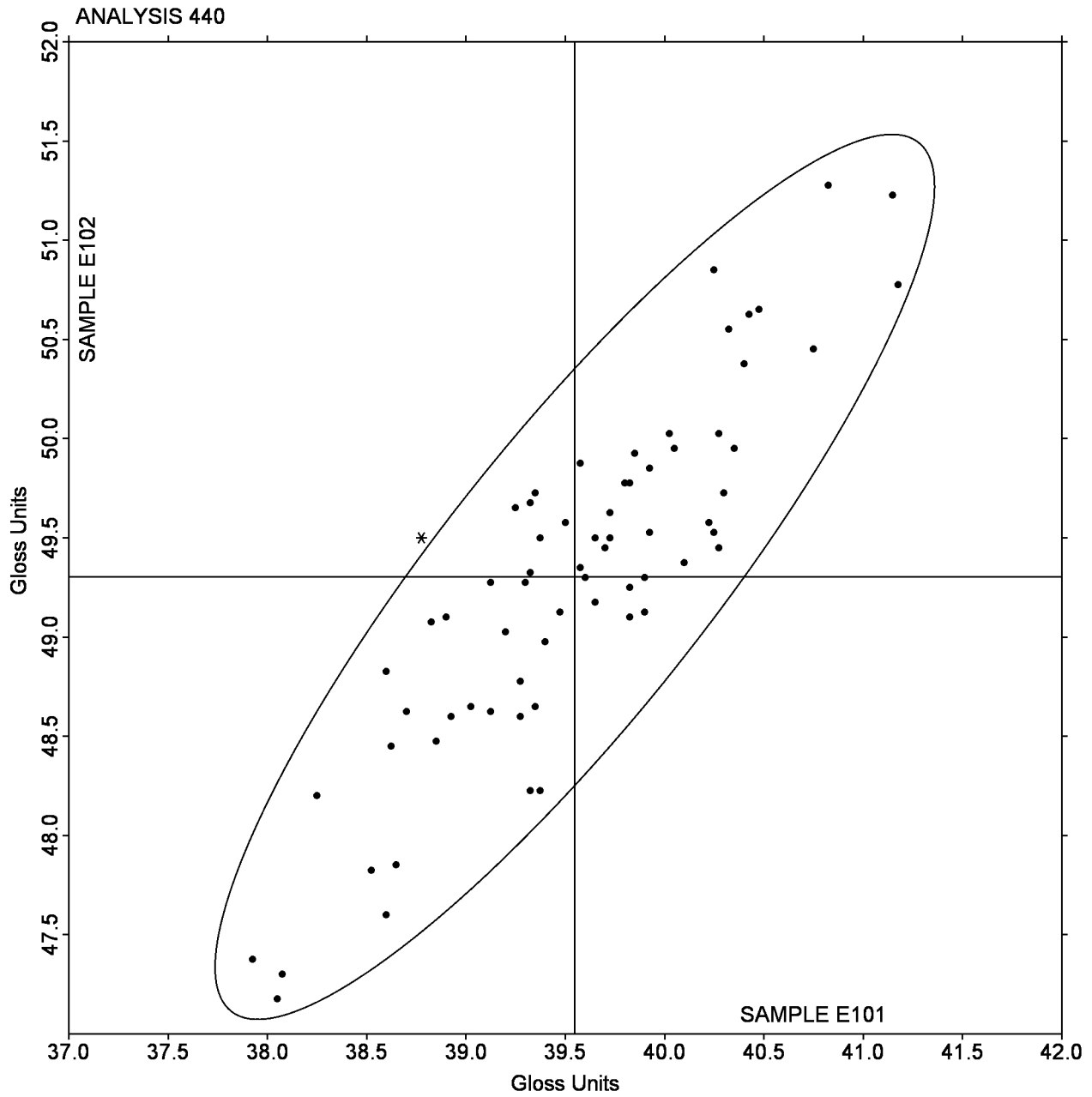
Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

SAMPLE E101 = 39.55 Gloss Units

SAMPLE E102 = 49.30 Gloss Units



Interlaboratory Testing Program for Color & Appearance

Analysis 442

85 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample J101			Sample J102			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
7E3AR3		9.38	0.50	0.96	14.65	0.89	1.47	GN
7FMXLG		8.45	-0.42	-0.80	13.33	-0.43	-0.71	GL
7WUYH4		9.80	0.93	1.76	14.70	0.94	1.55	GL
BHZ2JN		8.65	-0.22	-0.42	13.95	0.19	0.32	GL
DKVT7H		7.70	-1.17	-2.22	12.53	-1.23	-2.03	HQ
DMPVGY		9.00	0.13	0.25	13.70	-0.06	-0.09	GN
HC2879		9.00	0.13	0.25	13.85	0.09	0.15	GL
NUYUKL		8.95	0.08	0.15	13.75	-0.01	-0.01	GN
PWLG88		8.90	0.03	0.06	13.90	0.14	0.24	GN
TTA3WH		8.98	0.10	0.20	13.70	-0.06	-0.09	GN
XQ9KN6		8.78	-0.10	-0.18	13.28	-0.48	-0.79	GL

Summary Statistics

Grand Means	8.87	Gloss Units	13.76	Gloss Units
Std Dev Btwn Labs	0.53	Gloss Units	0.61	Gloss Units
Statistics based on 11 of 11 reporting participants				

Analysis Notes for Test #442

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

Instrument Code List - Report# 151

Instrument information as provided by laboratories

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

Instrument code and description

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)
GY	Gardco Novo-Gloss (20/60)
GZ	Gardco Statistical Novo-Gloss (60)
HP	Hunter PRO-3 Glossmeter
MR	Macbeth Novo-Gloss (20/60/85)
PA	Photovolt micro-TRI-gloss G3
RA	Rhopoint Novo-Gloss Glossmeter
SJ	Sheen Minigloss 101
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
HQ	Hunter D48 Glossmeter (85)

Instrument Code List - Report# 151

Instrument information as provided by laboratories

Analysis Analysis Name

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

Instrument code and description

GA BYK-Gardner Color Guide (45/0)
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
MQ Minolta CM-503c Spectrophotometer
TN Topcon SR-1 Spectroradiometer
X L 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 description

AD	ACS Chroma-Sensor CS-5	MX	Minolta CM-508d Spectrophotometer
AG	ACS-DataColor Intl. Spectraflash 450	MZ	Minolta CM-2002 Spectrophotometer
A J	ACS-Datacolor Intl. Spectraflash 600	P E	Perkin Elmer Spectrophotometer
A L	ACS-Datacolor Intl. Dataflash 100	X I	X-Rite Color i7
AM	ACS-Datacolor Intl. Spectraflash 600 Plus	X L	X-Rite SP60 Portable Sphere Spectrophotometer
AO	ACS-Datacolor Intl. Spectraflash 650X	XO	X-Rite SP64 Portable Sphere Spectrophotometer
AQ	ACS-Datacolor Intl. Spectraflash 600X	XQ	X-Rite SP68 Portable Sphere Spectrophotometer
CA	Cary 5000	XR	X-Rite SP78 Portable Sphere Spectrophotometer
GD	BYK-Gardner spectro-guide sphere	XU	X-Rite Color Premier 8200 Spectrophotometer
GF	BYK-Gardner The Color Sphere (TCS)	XX	Instrument make/model not specified by lab
GG	BYK-Gardner TCS II		
HF	Hunter ColorFlex Diffuse		
HG	Hunter ColorQUEST		
HH	Hunter ColorQUEST XE		
HP	Hunter UltraScan PRO		
HW	Hunter UltraScan XE		
HX	Hitachi C-2000S Spectrophotometer		
MG	Macbeth 2180 Color Eye		
MI	Macbeth Color i 5		
MJ	Macbeth Color-Eye 3000		
MK	Macbeth Color-Eye 7000		
MM	Macbeth Color-Eye 7000a		
MT	Minolta CM-2600d		
MV	Minolta CM-3000d Series Spectrophotometer		

Instrument Code List - Report# 151

Instrument information as provided by laboratories

Analysis Analysis Name

411 Spectrophotometric (Paint Chips) - Sphere

Instrument code and description

AG ACS-DataColor Intl. Spectraflash 450
A J ACS-Datacolor Intl. Spectraflash 600
A L ACS-Datacolor Intl. Dataflash 100
AM ACS-Datacolor Intl. Spectraflash 600 Plus
AO ACS-Datacolor Intl. Spectraflash 650X
AQ ACS-Datacolor Intl. Spectraflash 600X
CA Cary 5000
GD BYK-Gardner spectro-guide sphere
GG BYK-Gardner TCS II
HF Hunter ColorFlex Diffuse
HG Hunter ColorQUEST
HH Hunter ColorQUEST XE
HP Hunter UltraScan PRO
HW Hunter UltraScan XE
HX Hitachi C-2000S Spectrophotometer
MG Macbeth 2180 Color Eye
MJ Macbeth Color-Eye 3000 Spectrophotometer
MK Macbeth Color-Eye 7000 Spectrophotometer
MM Macbeth Color-Eye 7000a
MO Macbeth Optiview 7000
MT Minolta CM-2600d
MV Minolta CM-3000d Series Spectrophotometer
MX Minolta CM-508d Spectrophotometer
MZ Minolta CM-2002 Spectrophotometer
P E Perkin Elmer Spectrophotometer
X I X-Rite Color i7
X L X-Rite SP60 Spectrophotometer
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