CyberChrome
OnColor™
Instrument Performance

measurements are accurate and repeatable. This documentation can be used to validate the performance of your spectrophotometer for color compliance programs and international standards conformance.

The **Certification Report** can be printed and kept in a notebook for each spectrophotometer to log and certify the performance of each instrument. An example of such a report is shown below.

The **OnColor Instrument Performance** feature gives you the tools to monitor and certify the performance of your color spectrophotometer. Your customers hold you to the highest quality standards so your business depends on your color system to give accurate matches and color assurance. OnColor software provides you with tools to verify, monitor, optimize, and certify the performance of your color systems.

The **Long Term Repeatability** feature allows you to check the accuracy and inter-instrument agreement of each spectrophotometer against a set of reference points. A set of long-term stable ceramic tiles is used to measure and monitor the performance of each instrument.

Performing the test on a regular basis, such as weekly or monthly, assures and documents that your spectrophotometer is not drifting out of spec over time and that your color

Certificate of Instrument Performance

	Reference Data	Test Data
CERAM CCS II SCI		
Make & Model	CM-2600d	CM-2600d
Serial Number	1001395	1001395
Description	CM-2600D SN 1001395	Elaine's spectro
Status	CRBIMM	CRBIMM
Company	CyberChrome, Inc.	CyberChrome Color Systems, LLC
Operator	EBecker	EBecker
Date Measured	1/16/2013 -- 1:56:48 PM	4/12/2013 -- 8:35:05 AM

The tested instrument has been checked using the Tile Series listed above and compared with the reference data. The results below show the conformance of the tested instrument as compared to the reference data according to the Delta E Tolerance Limits given. The data is reported for CIE $L^*a^*b^*$; Illuminant D65 - 10° Observer.

Tile Name	P/F	ΔL*	Δa*	Δb*	ΔE*ab
WHITE	PASS	0.06	-0.05	-0.05	0.09
BLACK	PASS	-0.06	0.01	-0.03	0.06
LT GREY	PASS	0.05	-0.02	0.01	0.05
MID GREY	PASS	0.00	-0.02	0.05	0.05
DK GREY	PASS	0.03	0.01	-0.04	0.05
DK BLUE	PASS	-0.07	0.12	-0.10	0.17
CYAN	PASS	0.01	-0.03	0.03	0.05
GREEN	PASS	-0.13	0.13	-0.08	0.20
YELLOW	PASS	-0.01	-0.00	0.00	0.01
ORANGE	PASS	-0.03	-0.05	-0.14	0.15
RED	PASS	-0.05	-0.19	-0.12	0.23
DEEP ROSE	PASS	-0.05	-0.08	-0.02	0.09

Average Delta E 0.10

Total Number of Tiles: 12
Number of Tiles PASSED: 12
Number of Tiles FAILED: 0

Specular Component: SCI
Single Tile Delta E Limit: 0.50
Average Tile Delta E Limit: 0.25

Results for Tested Instrument: PASS

Certified by: _____ Name: _____

Date: Friday, April 12, 2013 Time: 8:38:32 AM

CYBERCHROME
Color Control for Industry

Data Storage and Other Reports

Each time the test is performed, a report is generated and the data is archived in a database so that reports on any given date can be retrieved. The report compares the spectral readings of today's test with the baseline data and calculates a color difference between them. The color difference data for each tile is calculated along with the average DE over the set of tiles. The differences are compared to the pre-set tolerances and a Pass/Fail assessment is reported for each tile as well as the average of all tiles.
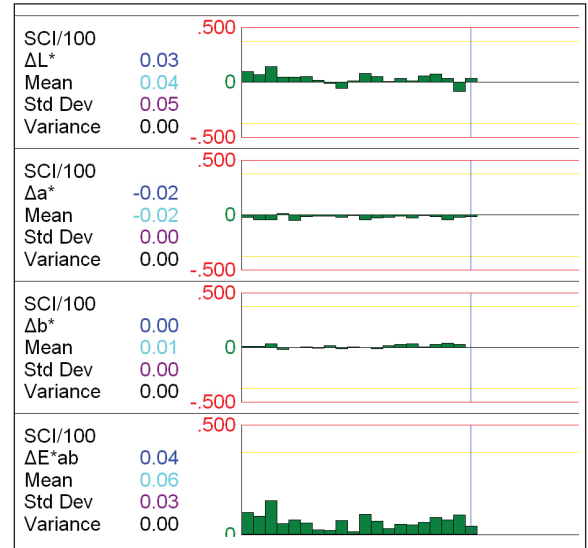
If the data is stored on a network drive, then all spectrophotometers in the fleet can be monitored remotely at the home office or central lab. Each time the test is run, the data is archived and reports can be generated both locally and remotely to document the current performance of the instrument.
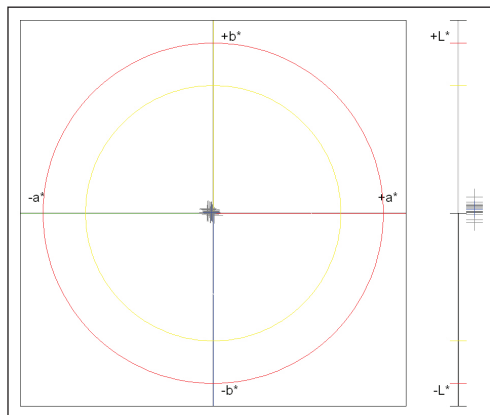
Using OnColor, various additional reports can be viewed and printed showing the trend of DL*, Da*, Db*, and DE over time. Scatter plots of each tile in CIE L*a*b* space show the distribution of the data, while the spectral graph shows if any individual wavelengths are problematic.

These trend charts and plots help you diagnose when it's time to re-profile your instrument or when it needs factory service and re-calibration.

The key is that the Instrument Performance module can alert you to changes and potential issues BEFORE you experience any bad color readings, receive color complaints from a client or make any off-color product in production. Just another OnColor feature that saves you time and reduces waste to improve your profitability.

SCI/100	
ΔL*	0.03
Mean	0.04
Std Dev	0.05
Variance	0.00

SCI/100	
Δa*	-0.02
Mean	-0.02
Std Dev	0.00
Variance	0.00

SCI/100	
Δb*	0.00
Mean	0.01
Std Dev	0.00
Variance	0.00

SCI/100	
ΔE*ab	0.04
Mean	0.06
Std Dev	0.03
Variance	0.00

CYBERCHROME
Color Control for Industry