

Curve Pilot 14.1.1

What's New

Peter Morisse, 03-dec-2015

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1 Description

This document describes the changes and new options added in Curve Pilot 14.1.1. These consist of:

- Allowing users to specify the color difference formula (ΔE) to be used when comparing inks in the 'ink solids' verification panel.
- Allowing users to specify different color difference tolerance values for process colors and spot colors.
- Allowing users to have density displayed relative to the paper or in absolute terms.
- Removed display of non-spectral based desired density in the 'ink solids' verification panel.

2 Changes in Curve Pilot's Preferences dialog

In Curve Pilot 14.1.1 a user can specify what color difference formula to use when comparing measured colors versus desired ink colors. Furthermore, a different color difference formula can be selected for process colors and spot colors.

These new options are present in Curve Pilot's Preferences dialog under the 'PressSync Measurements' group of options:

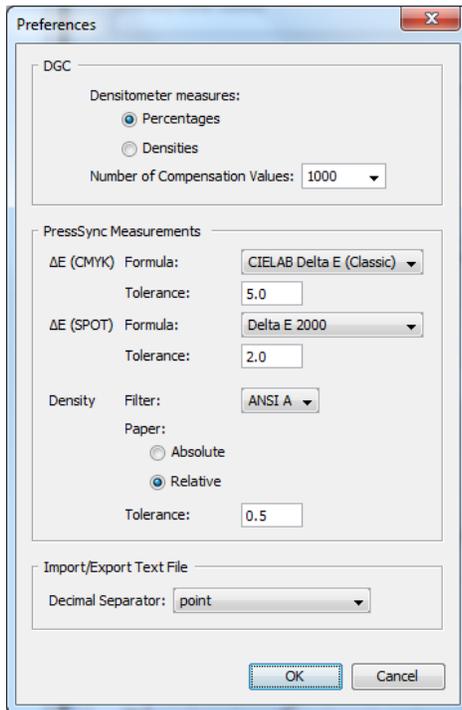
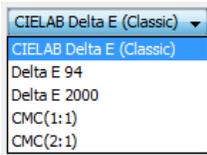


Figure 1: Curve Pilot's Preferences dialog

ΔE (CMYK) Formula:

This is the color difference formula to use when comparing process colors (Cyan, Magenta, Yellow and Black). Colors are compared in the 'ink solids' verification panel, in the 'automatic measurement' panels and in reports.

The following color difference formulas are supported:



These are the same formulas that are supported in Color Engine Pilot.

The selection depends on the printing process control standard used in your environment. For example, most ISO printing standards specify color difference tolerances based on the Classic ΔE formula for process colors, while for spot colors tolerances are based on the Delta E 2000 formula.

ΔE (CMYK) Tolerance:

This is the maximum color difference allowed between measured and desired process colors. This value is used in the 'ink solids' verification panel and in reports: When the color difference between the measured ink solid and the desired ink solid exceeds the ΔE (CMYK) tolerance value, the values in these panels are marked in red.

ΔE (SPOT) Formula:

This is the color difference formula to use when comparing spot colors (any non-CMYK color). See ΔE (CMYK) Formula for a list of the supported formulas.

ΔE (SPOT) Tolerance:

This is the maximum color difference allowed between measured and desired spot colors. It works similarly to the ΔE (CMYK) Tolerance.

Density Filter:

This is the density filter or 'response' used by densitometers, and the reflected light captured over a specific range of wavelengths.

It is important to select the density filter that is used by your measurement devices, so that Curve Pilot can extract and calculate the proper density value from spectral data.

Density Paper:

Choose if the density values displayed in the 'ink solids' panel, the 'measurement' panels and reports should be relative to the paper or not.

3 Changes in the 'ink solids' verification panel

demo_IE4157_CMYKOGV.prsync History: 2015-11-27T09:56:25+0 - Automated Measurements

Changed by: pemo Reason:

Results: F22 E25 G28 F20 H43 G44 H64 -- PressSync Curve Fit: Robust Advanced curves

Overview Ink Solids | Process Colors | Spot Colors

Desired Printing Condition: Eds_Nsy
Measurement Condition: Measurement Illumination Condition M0

Tolerances ink solids: ΔE (CMYK): **5.00** (CIELAB Delta E (Classic))
 ΔE (SPOT): **2.00** (Delta E 2000)
 Δ Density: **0.50** (ANSI A - Paper relative)

Paper CMY Solid Colors

	Measured						Desired					ΔE	Density			
	L	a	b	C	h		L	a	b	C	h		Measured	Desired	Δ Density	Filter
Paper	90.50	-0.70	-0.10	0.71	188.13°		94.44	-0.22	3.58	3.58	93.57°	5.41	0.00	1.10	0.00	Black
CMY Solid	28.50	-11.00	-8.40	13.84	217.37°		24.18	0.61	2.31	2.39	75.27°	16.37	1.18	1.27	0.14	Black

Colors	L	a	b	C	h	ΔE	Density	Filter		
Cyan	54.00	-34.40	-48.30	59.30	234.54°	7.84	2.39	2.42	1.02	Red
Magenta	47.80	68.70	-3.30	68.78	357.25°	8.39	2.33	2.37	1.02	Green
Yellow	86.50	-8.20	98.70	99.04	94.75°	11.70	2.20	2.25	1.05	Blue
Black	15.50	2.00	4.30	4.74	65.06°	4.46	1.57	1.53	0.01	Black
Orange	62.70	52.40	80.50	96.05	56.94°	3.22	2.68	2.67	1.11	Blue
Green	57.30	-72.90	2.10	72.93	178.35°	2.07	2.58	2.81	0.83	Red
Violet	21.50	41.80	-53.30	67.74	308.10°	3.42	2.65	2.85	0.87	Green
Red (M+Y)	47.20	61.70	40.20	73.64	33.09°	10.72	2.39	2.51	0.97	Blue
Green (C+Y)	47.20	-60.50	19.80	63.66	161.88°	7.88	2.38	2.34	1.10	Red
Blue (C+M)	27.00	9.70	-41.90	43.01	283.03°	8.73	2.41	2.39	1.08	Red

Some measured values are out of tolerance.
"i" indicates that a desired value cannot be extracted from the desired printing condition.

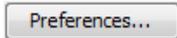
OK Report...

A: Tolerances in ink solids

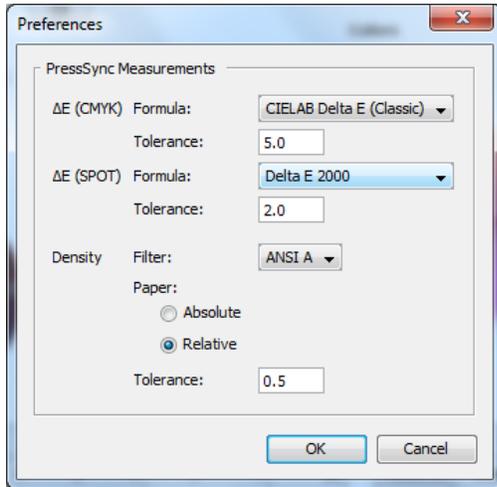
Tolerances ink solids: ΔE (CMYK): **5.00** (CIELAB Delta E (Classic))
 ΔE (SPOT): **2.00** (Delta E 2000)
 Δ Density: **0.50** (ANSI A - Paper relative)

This sub-panel displays the Preferences settings: Color difference functions and tolerances, density filter and tolerances.

B: Preferences



Clicking this button opens the PressSync Measurements Preferences dialog.



In this dialog you can set the formula and tolerance preferences, similarly to the main Curve Pilot Preferences dialog.

Note:

Changing a value in this dialog and clicking 'OK' permanently saves the changes as Curve Pilot Preferences.

C: ΔE values

This column shows the color difference between **measured** and **desired ink solids colors**, using the ΔE formula as specified in the Preferences dialog.

For process inks the color difference is calculated using the ΔE (CMYK) formula, for spot colors (non-CMYK inks) the ΔE (SPOT) formula is used.

If a color difference exceeds the tolerance value set in the Preferences dialog, the color difference value is indicated in red.

Measured ink solids colors: Represented by Lab values extracted from the measurements.

Desired ink solids color: Represented by Lab values extracted from the '**Desired Printing Condition**'.

'Desired Printing Condition': This is a profile or a characterization data file that represents the printing gamut for the specific printing condition. It is specified in the PressSync curve set setup panel.

D: ΔDensity

This column shows the density difference between measured and desired ink solids. As with the Lab values, the measured density is extracted from the measurements, and the desired density is extracted from the 'Desired Printing Condition'.

These densities are extracted and calculated using the density filter and the paper settings selected in the Preferences dialog.

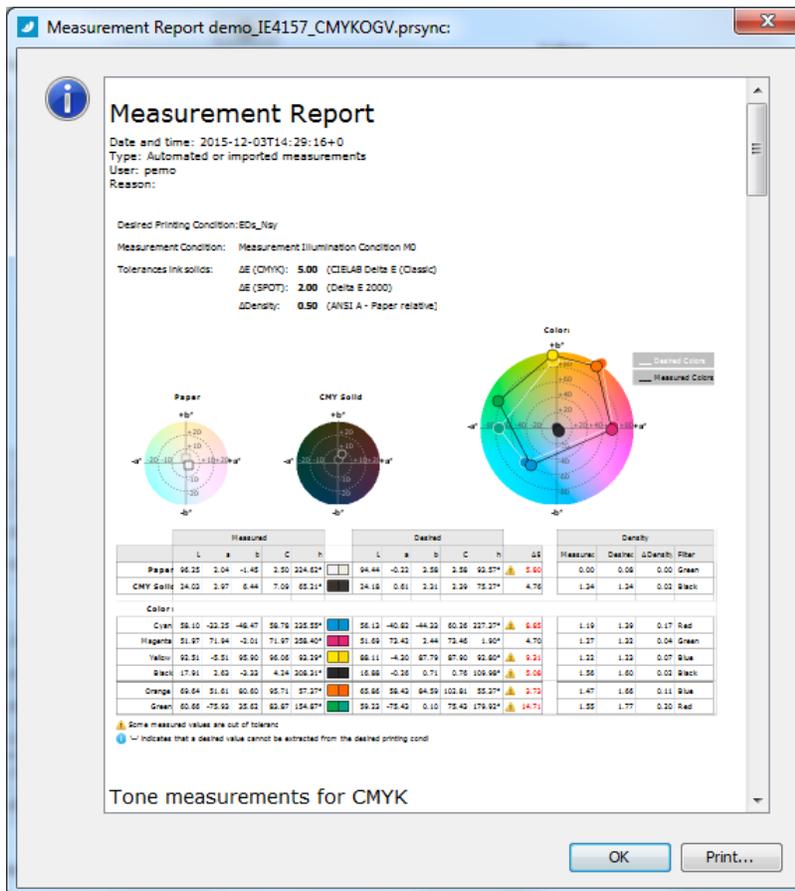
Important:

If the desired printing condition profile does not contain spectral data, the desired density cannot be extracted. In that case the 'Desired Density' column and the 'ΔDensity' column will be marked with '--'.

4 Changes in reports

A report can be created from the measurement results panel by clicking 'Report...'

This report contains the same new information as the 'ink solids' verification panel.



5 Changes in the 'Measurement Chart' panels

A 'Measurement Chart' panel is shown when a new automated measurement is started, or when an external measurement (CGATS file) is selected into the measurement panel and 'Show' is clicked.

In that panel on the right side, a new information window is added, that displays the measurement condition and the metric preferences set in the Preferences dialog (ΔE formula, density filter, absolute or relative density).

When a patch is selected in the chart panel, the 'Desired' and 'Measured' areas on the right show the desired and measured values for the selected patch.

The 'Density' value uses the density filter and paper settings indicated under 'Metric Preferences'.

The ΔE value displayed under the 'Measured' colored rectangle will use the formula ΔE (CMYK) or ΔE (SPOT), depending on whether the selected patch uses CMYK inks or not.

The 'Metric Preferences' area displays the measurement condition and the settings specified in the Preferences dialog.

