

PrintControl Pro: a software tool for standardizing the press from start to finish

The significance of process control in the graphic arts industry has grown substantially in recent years. Only with a reliably controlled process is it possible to produce the necessary quality and at the same time achieve high profitability. More effective and sustainable process control will acquire even greater importance in the future. It is increasingly the case that the companies involved in the process of producing a print product are far apart - in some cases being based in different countries or even on different continents. Tools are needed that offer the businesses involved the possibility of uniform communication and compliance with international standards.

The establishment of international standards, such as the ISO 12647-2:2004 standard, promotes good process control. The ISO standard defines the necessary parameters to ensure that a reliable match between proof and print is possible.

Since conforming to these guidelines in daily work is not exactly child's play, there is a need for low-cost software tools that enable the printer to comply with these parameters.

PrintControl Pro makes it far easier to adhere to the guidelines. PrintControl Pro illustrates the complete printing process for the printer by following a series of defined steps. A detailed numerical and graphic analysis supports the printer's work. The graphic representation of key parameters simplifies process control on the press and in platemaking. This ultimately enables the printer to guarantee a standardized printing process with predictable printing results.

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Target groups

PrintControl Pro is one of the standard work tools of any printshop that uses the above-mentioned printing methods (sheet-fed offset, flexographic printing, etc.) and has corresponding four-color printing presses.

Supported standards

PrintControl Pro automatically installs the parameters of standards ISO 12647-2 (with all 5 paper types) and ISO 12647-3 (with the specifications for Newspaper 26 and 30). However, users can also create their own in-house standards. This is a particularly attractive option when dealing with printing conditions that are not yet covered by international standards. Printing with elevated densities and FM screens are examples in this context.

Easy-to-use software

The user prompting of PrintControl Pro is intuitive, meaning that any user can reliably handle the application and analyze the results after just a short time. Analysis is simplified by clearly structured diagrams.

Detailed documentation

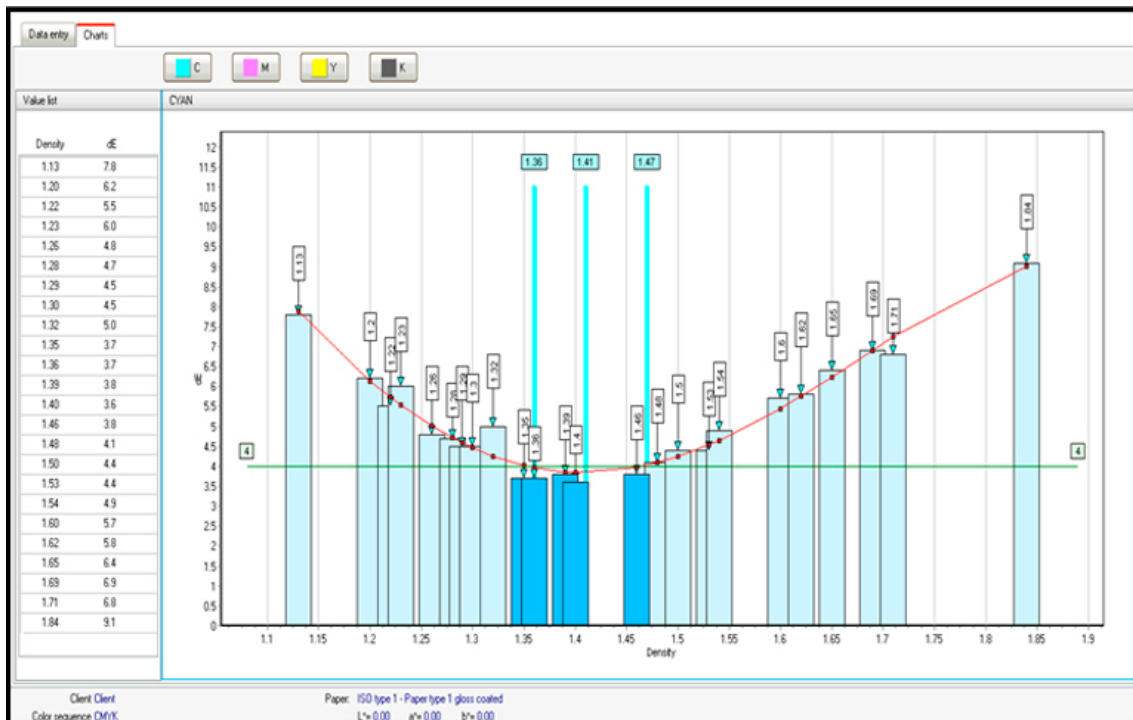
PrintControl Pro documents every production step in a detailed report. All key parameters, such as CTP curve, optimum printing density (wet/dry), trapping, dot gain, gray balance and gamut, are recorded and presented in graphs. The colorimetric target values of the ISO standards are stored, enabling the creation of reports in compliance with the standards. Needless to say, the report can also be printed out with all data, graphs and comments. If so required, the user's company logo can even be integrated in the report.

These analyses are the fundamental prerequisite for understanding the printing properties of the individual presses and identifying the differences between presses. The analyses and reports make it possible to localize problems quickly and easily. The documentation of all parameters from start to finish enables rapid and inexpensive elimination of error sources.

The functions in detail

Determination of the optimum density

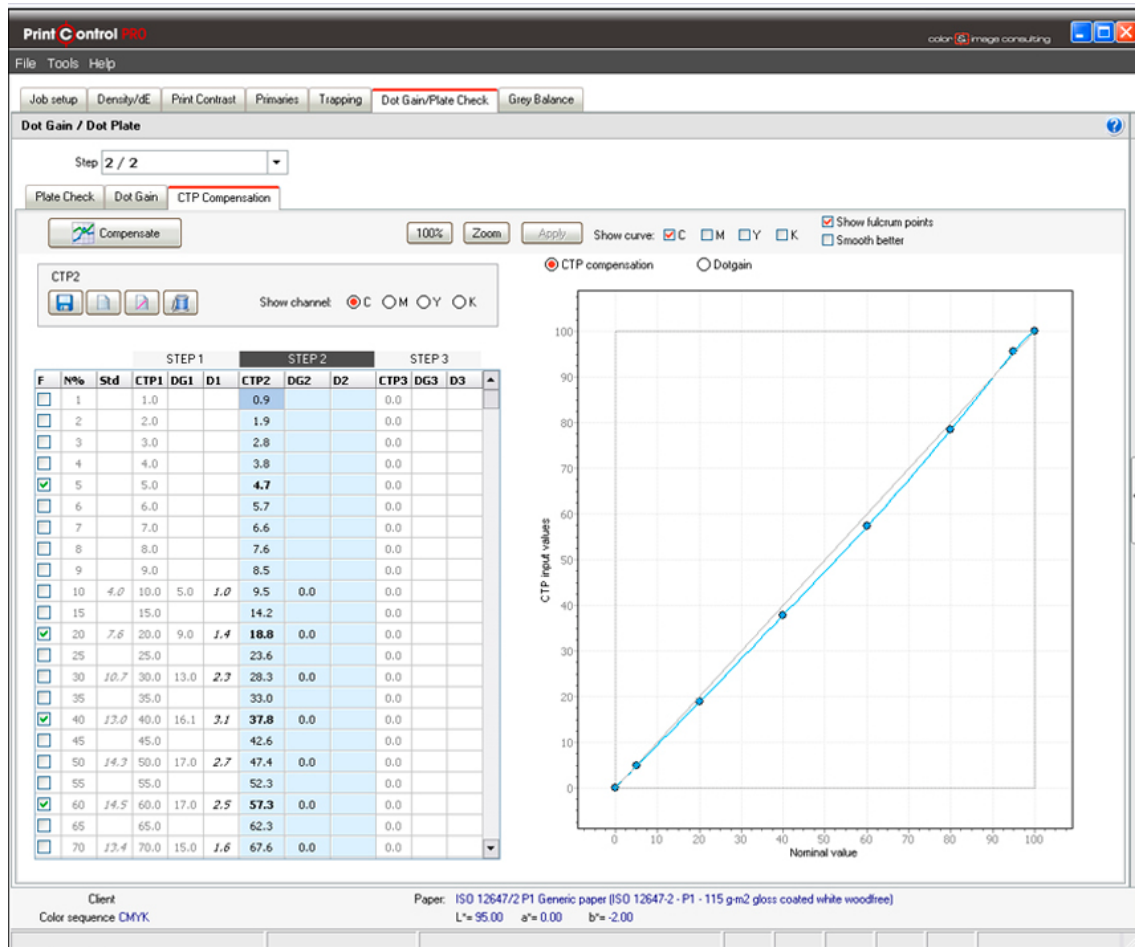
Inking series can very easily be analyzed and evaluated in order to get as close as possible to the target values of ISO 12647-2:2004. The evaluation shows the smallest deviation from the ISO values together with the corresponding wet densities in both graphic and numerical form. The program automatically indicates wet density tolerances within which overinking and underinking present no problems.



Display of wet density and color deviation from the target value

Automatic calculation of CtP correction curves

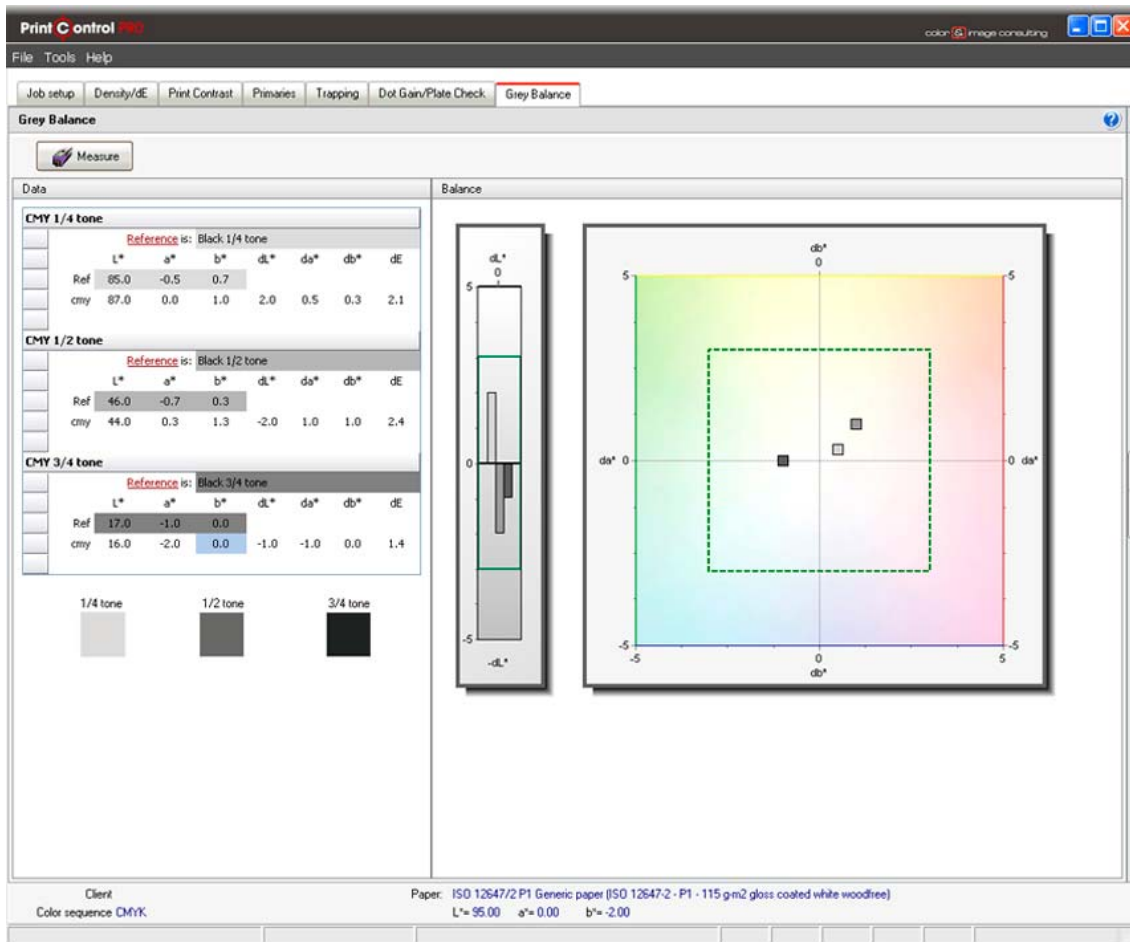
CtP compensation in PrintControlPro is iterative. You may perform as many compensation calculations as you want, saving the prior calculation for reference as you go. In the CtP compensation section, the compensation curve for the CtP or CtF RIP is calculated based upon the measured dotgain and the target dotgain specified in the standard.



CtP compensation curves

Analysis of the gray balance

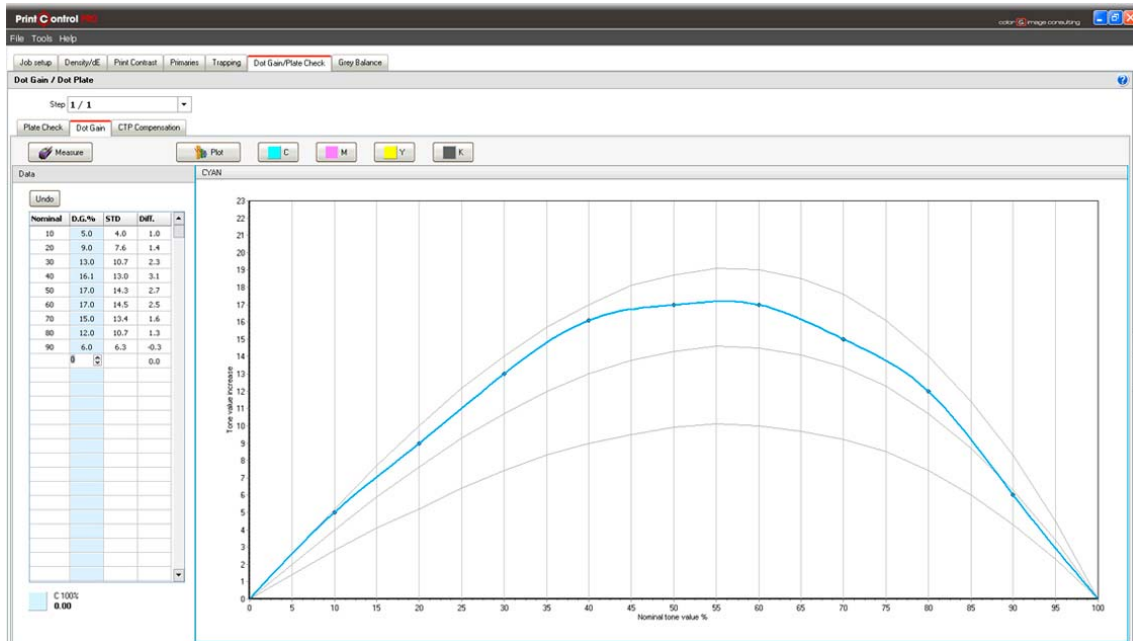
PrintControl Pro displays the deviations of the gray balance in the quarter, half and three-quarter tones. The user is offered both numerical and graphic evaluations for analysis. In the graphic a^*b^* display, the user can assess the color deviations of the gray balance from the selected gray definitions. Stored ISO standards or in-house gray definitions can be used as the gray definitions.



Analysis of the gray balance

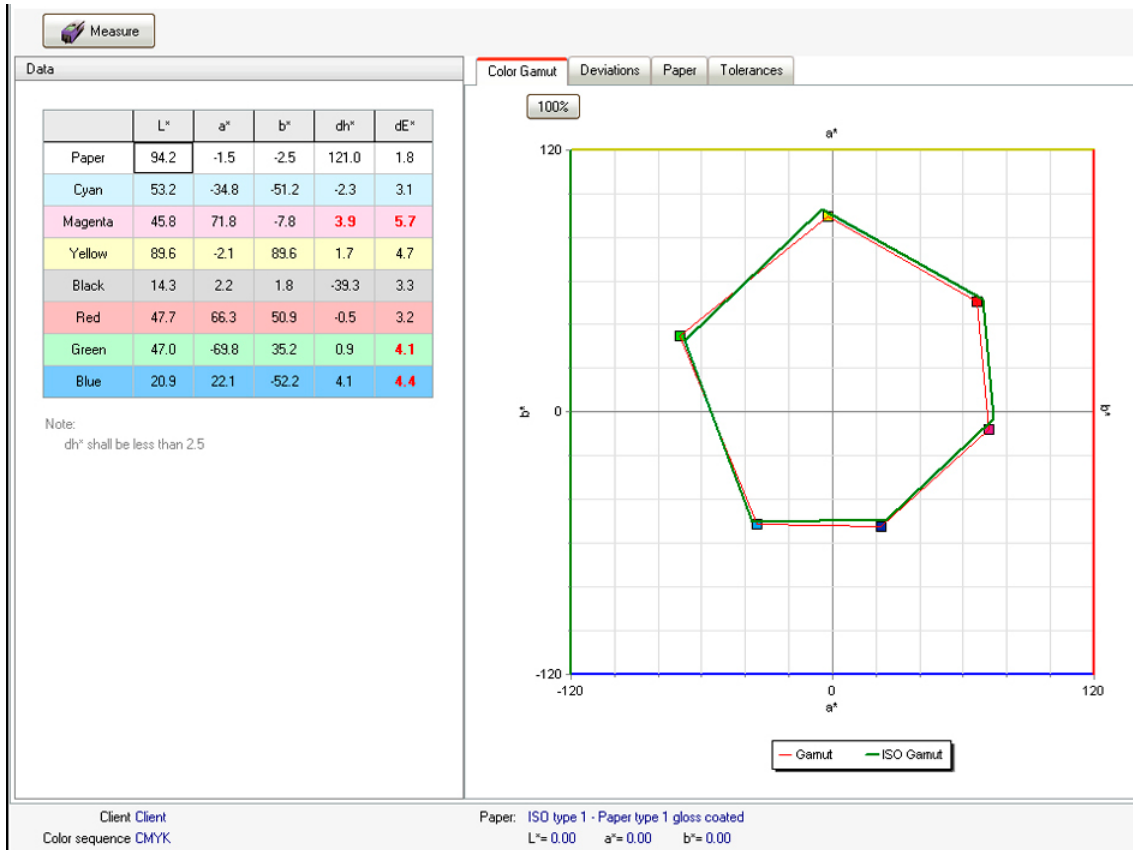
Dot gain

The dot gains are measured, and the resultant printing characteristic curve is presented in a graph. A comparison of the actual dot gain with the optimum reference values is displayed, including upper and lower limits. Virtually any control strip is supported, e.g. UGRA/FOGRA, as well as in-house strips.



Display of the dot gain curves with tolerance range

Display of the gamut compared to the ISO gamut



Printing parameter profile creation

Print machine control data - Editor

Export profile Set to ISO Print Control

Details Parameters Solid tone densities Dot Gain

Print profile specifications

Profile name: ISO - P12 - Sakata - Stochastic

Client name: Group

Profile expiration date: 04-06-2006

Printer: Epson

Paper: Creative S4: 120 gr

Ink set: Sakata

Print machine control data - Editor

Export profile Set to ISO Print Control

Details Parameters Solid tone densities Dot Gain

Parameters chromatic standards and tolerances

Backing: over white or substrate over black

Paper	L*	a*	b*	dL*	da*	db*	
Paper	95.0	0.0	-2.0	3.0	2.0	2.0	
Parameters	L*	a*	b*	dE*Tab			
Cyan	55.0	-37.0	-50.0	4.0	Min	Max	
Magenta	48.0	74.0	-3.0	4.0	Min	Max	
Yellow	91.0	-5.0	93.0	5.0	Min	Max	
Black	16.0	0.0	0.0	4.0	Min	Max	
Red	49.0	69.0	52.0	4.0	Min	Max	
Green	50.0	-68.0	33.0	4.0	Min	Max	
Blue	20.0	25.0	-49.0	4.0	Min	Max	

Print machine control data - Editor

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Color	min	opt	max
CYAN	1.36	1.41	1.47
MAGENTA	1.38	1.45	1.67
YELLOW	1.26	1.32	1.46
BLACK	1.59	1.79	2.13

Print machine control data - Editor

Export profile Set to ISO Print Control

Details Parameters Solid tone densities Dot Gain

Dot Gain standard

Non 1	low	opt	upp
5	1.4	2.0	2.6
10	2.6	4.0	5.2
15	4.1	5.9	7.7
20	5.2	7.6	10.0
25	6.4	9.3	12.2
30	7.4	10.7	14.0
35	8.3	12.0	15.7
40	9.0	13.0	17.0
45	9.5	13.8	18.1
50	9.9	14.3	18.7
55	10.1	14.6	19.1
60	10.0	14.5	19.0
65	9.7	14.1	18.5

Print machine control data - Editor

Export profile Set to ISO Print Control

Details Parameters Solid tone densities Dot Gain

Parameters chromatic standards and tolerances

Backing: over white or substrate over black

Paper	L*	a*	b*	dL*	da*	db*
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40	9.0	13.0	17.0
45	9.5	13.8	18.1
50	9.9	14.3	18.7
55	10.1	14.6	19.1
60	10.0	14.5	19.0
65	9.7	14.1	18.5

Print Profile Editor: print profiles are used by PrintControl Pro and/or RapidCheck to check and comply with the printing parameters

Colorimetric check of primary and secondary colors

An easy-to-read screen displays any color deviations occurring in the primary and secondary colors compared to the ISO values.

Trapping

In addition to classical monitoring of trapping and its display in percent, it is also possible to compare color deviations colorimetrically with the ISO target values on the a/b axis.

Production quality control

By measuring color wedges, daily production can be evaluated in RapidCheck in a matter of seconds. RapidCheck is a software tool that printers can use for daily checking of compliance with their printing standards and for quality assurance (see separate Product Information).

Paper classification

The database provided allows the user to classify all papers in use, and compare them with the ISO 12647 paper classes and with each other. The paper parameters can be saved and are thus available for future use and for quality control.

Print contrast

The combination of the "Print Contrast" function and the optimum density values guarantees maximum print contrast in the given density range.

Supported measuring instruments

PrintControl Pro supports the common measuring instruments from X-Rite (EyeOne, DensiEye, SpectroEye, the DTP 500 series, and the iCPlate plate reader) and Techkon (SpectroDens).

Technical data

Software requirements

Operating system:

Microsoft Windows 2000, Windows 2003, Windows XP, Windows Vista

Hardware requirements

Processor:

Intel Pentium or compatible, 600 MHz or higher

Memory:

Minimum 256 MB RAM, 512 MB recommended
20 MB hard disk

Graphics card:

1024x768 resolution or higher

Port:

Powered USB interface

Supported standards:

ISO 12647-2 (with all 5 paper types), ISO 12647-3 with the specifications for Newspaper 26 and 30, in-house standards

Supported media wedges:

Three versions of the ECI_bvdm Gray Control Strip, RapidCheck media wedge, and user-defined media wedges

Supported measuring instruments:

EyeOne, DensiEye, SpectroEye, the DTP 500 series and iCPlate (plate reader) from X-Rite, SpectroDens from Techkon

Import options:

Data from RapidCheck

Export options:

Data for RapidCheck

Supported languages:

English, Spanish, Italian, Portuguese, Chinese, Russian

Scope of supply:

PrintControl Pro software, User Manuals on CD, Dongle