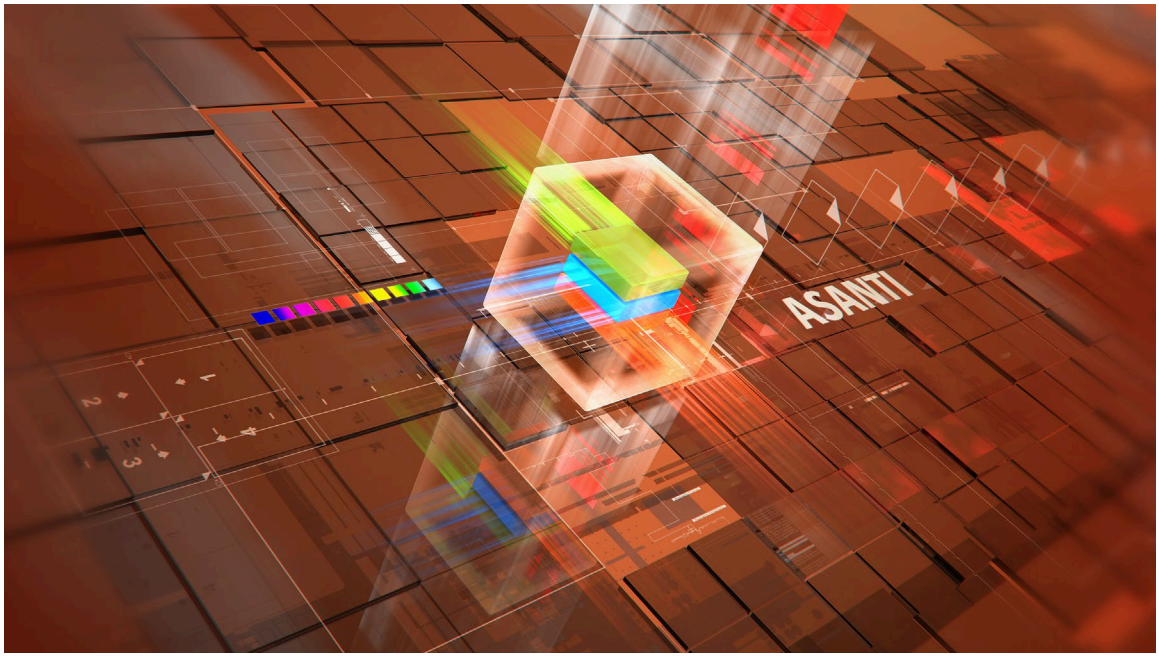
G7® System Certification Application Data Sheet

Asanti 6.1



The Idealliance Print Properties Working Group has established a certification process for G7 Systems. In accordance with this process The G7 System Certification Program is designed to evaluate the ability of a candidate system to calibrate a printing device to meet the G7 greyscale definition using four 1-D Curves within the tolerances outlined in this document. All evaluations are based on the parameters of the G7 Specification (draft 2008). The following information is intended to assist producers and consumers in the use of the vendor system as specified for creating the four 1-D Curves.

Manufacturer

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Tel: +32 3 444 21 11
Web: www.agfa.com

Product

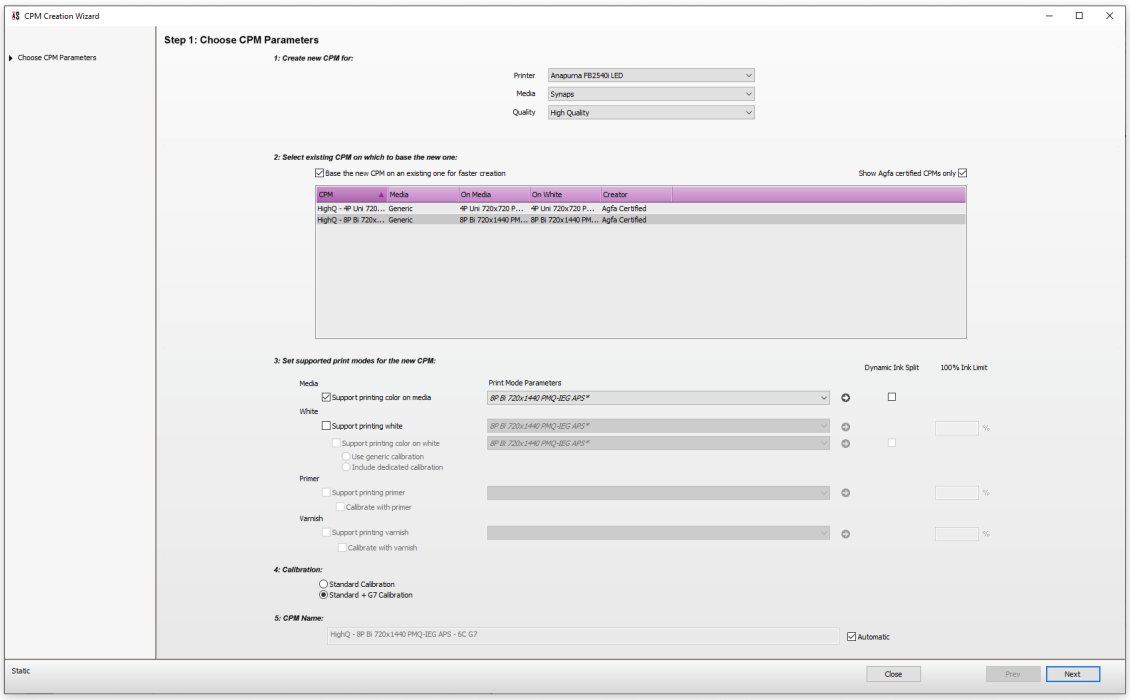
Asanti 6.1

Asanti is a complete, automated Sign & Display production hub featuring Agfa Offset BV award-winning color management solution, integration with the latest version of Adobe PDF Print Engine (APPE), highly specific functionalities (e.g. nesting, see-through concept, proofing support) and fast, automatic pre-flighting.
New to Asanti Color Management is the support of G7 method to achieve visual accurate colors. This support is part of the integrated color management wizard of Asanti.

Testing Instructions (procedures)

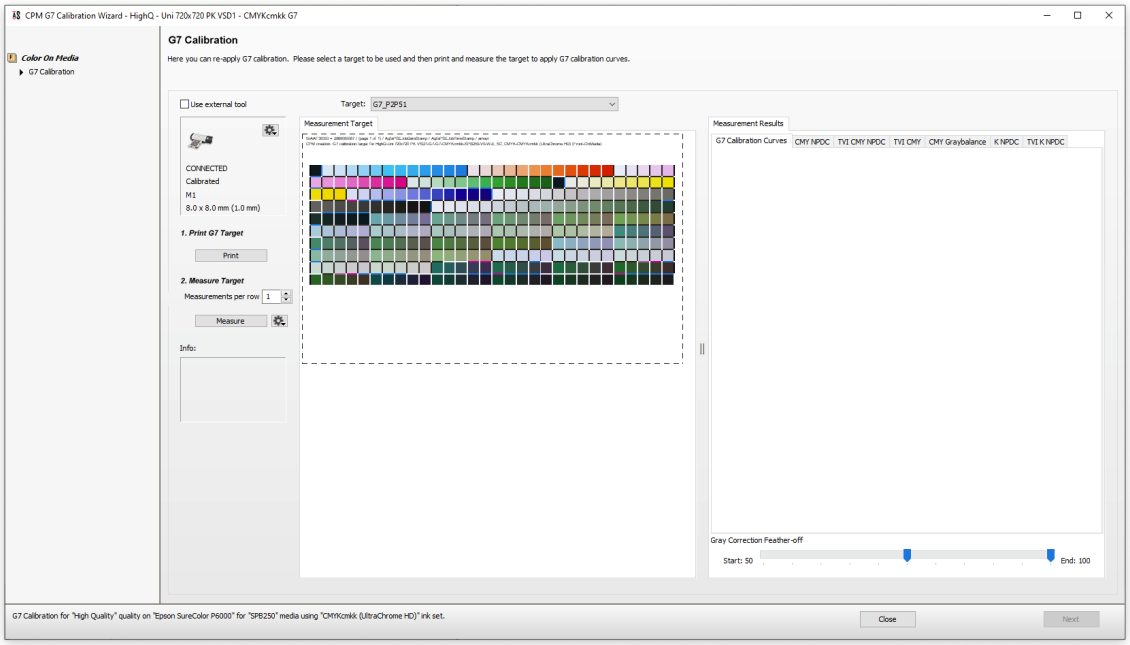
Enabling G7 in the calibrated printing mode (CPM)

In the media hub, select a quality, a media and CPM creation method (base on existing or start one from scratch). Activate the Standard + G7 calibration button to add the G7 calibration methodology to the CPM.



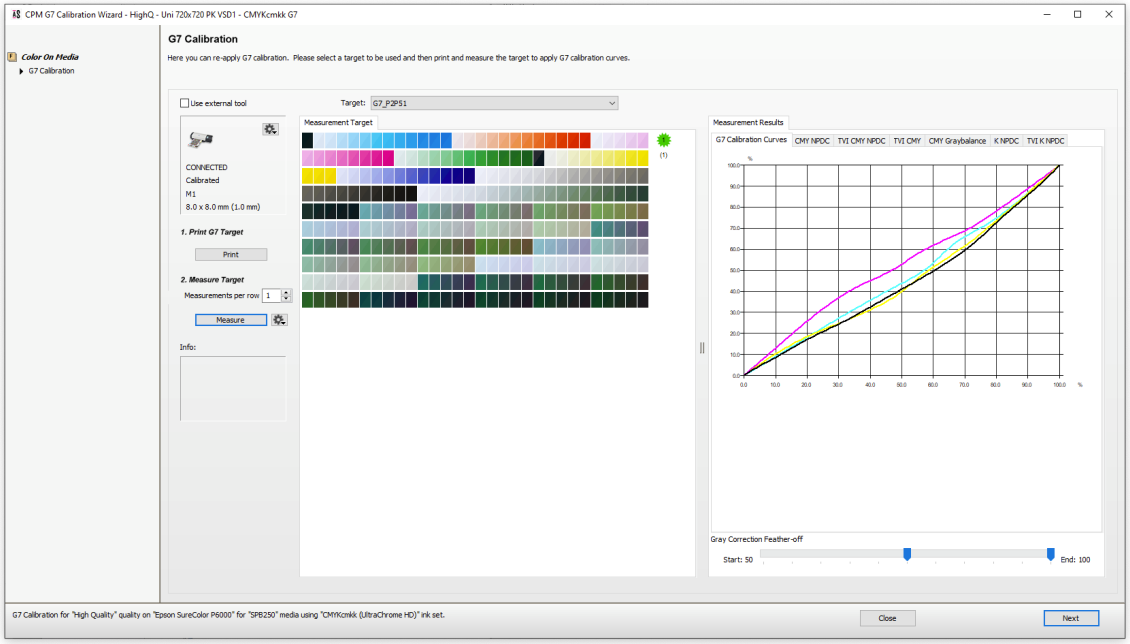
Printing the test target(s)

In the G7 calibration step select the G7_P2P51 target. After selecting the measurement device click *Print* to print the target.



Measuring the target(s)

Once the target has been printed click *Measure.*

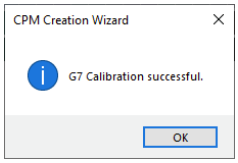


Measured results in Asanti

The G7 calibration curves are automatically calculated inside the CPM wizard.

Applying parameters, the printing system

Click next to add the G7 compensation to the CPM.

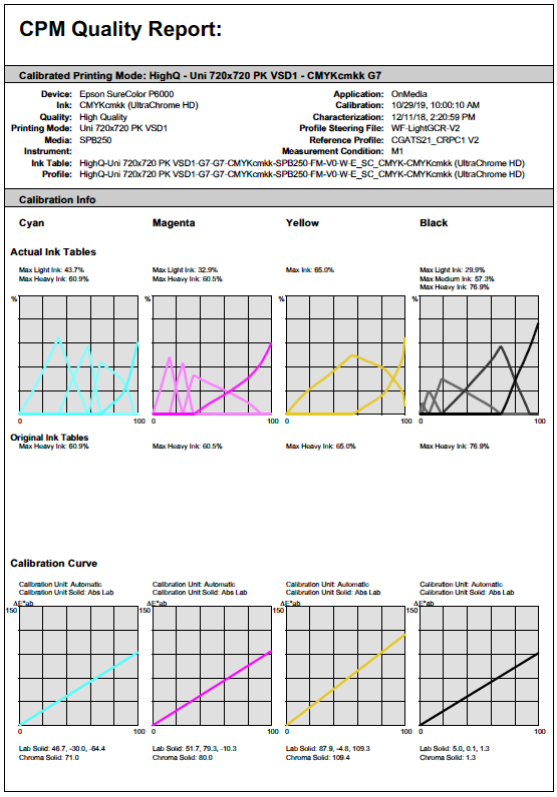


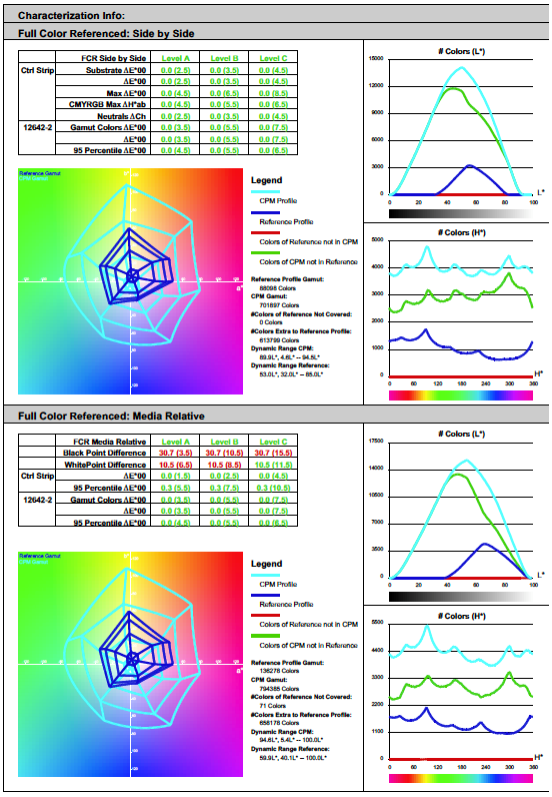
The Asanti G7 routines are an integral part of the CPM creation and calibration routines. They are wizard based. No additional tool or software is needed.

Verification by Physical Print Testing

CPM quality report

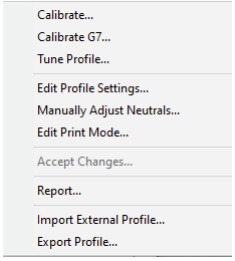
The CPM quality report can be used to validate how good colors can be reproduced with the G7 calibrated CPM.





Printing, measuring and updating the G7 calibration

A G7 enabled CPM can always calibrated to update the curves. The verification target is based on the P2P target and follows the same G7 routines as when creating the CPM: *Calibrate G7*



Asanti 6.1 Tolerances

Using the 2010 G7 System Certification sample test files and the Analysis Instructions (see above) or the Idealliance Validation Process (see below), "Product Name" will achieve tolerances equal to or lower than the following.

Metric	Average	Maximum
ΔF* (CMY only)	≤1.0	≤2
ΔL* (CMY & K)	≤1.0	≤2

Table 1: "Product Name" tolerances for 2010 sample test files

Note: Because the current G7 System Certification method uses a simulation process that eliminates print-to-print variation, and because the sample data provided by Idealliance for G7 System Certification is highly uniform, "Product Name" can produce extremely low delta errors with those specific data files. Higher errors should be expected when calibrating live printing devices, depending on the characteristics and variability of each printing system.

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Idealliance Validation Process

To validate that the G7 calibration process has been successful, a target consisting of two gray scales having the CMYK patch values listed in ***Appendix A:*** shall be printed through the calculated correction curves using the same print settings in use when the calibration was calculated.

Validating NPDC (CMY and K scales)

To validate NPDC correction, both the K-only scale and the CMY-only scale shall be measured with a densitometer or spectrophotometer and the relative neutral density (ND) values (measured in the "K" or "Visual" channel) shall be recorded for each patch. To obtain relative ND values, either the measuring device shall be zeroed on the substrate, or the white patch neutral density value shall be subtracted from itself and all other patches.
The (relative) ND values shall be converted to (relative) L* by the standard CIE formula in ***Appendix B:***
The Delta L* (ΔL*) error shall be computed for each patch compared to target values on file with Idealliance by the formula in ***Appendix B:***
The average and maximum ΔL* must not exceed the Idealliance Tolerance values in **Table 2**, below.

Validating Gray Balance (CMY scale only)

To validate gray balance correction, the CMY-only scale shall be measured with a spectrophotometer and the a* and b* values recorded for each patch.
The Delta F* (ΔF*) error shall be computed for each patch compared to target values on file with Idealliance by the formula in ***Appendix B:***
The average and maximum ΔF* must not exceed the Idealliance Tolerance values in **Table 2**, below.

Idealliance Tolerances

Metric	Average	Maximum
ΔF* (CMY only)	≤1.5	≤3
ΔL* (CMY & K)	≤1.5	≤3

Table 2: Idealliance required tolerances

Appendix A:

P2P patch values

Column 4 (K only)

C%	M%	Y%	K%
0	0	0	0
0	0	0	1.96
0	0	0	3.92
0	0	0	5.88
0	0	0	7.84
0	0	0	10.2
0	0	0	14.9
0	0	0	20
0	0	0	25.1
0	0	0	30.2
0	0	0	34.9
0	0	0	40
0	0	0	45.1
0	0	0	49.8
0	0	0	54.9
0	0	0	60
0	0	0	65.1
0	0	0	69.8
0	0	0	74.9
0	0	0	80
0	0	0	85.1
0	0	0	89.8
0	0	0	94.9
0	0	0	98.04
0	0	0	100

Table 3: CMYK percentage values in column 4 of the P2P target

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P2P patch values

Column 5 (CMY only)

C%	M%	Y%	K%
0	0	0	0
1.96	1.18	1.18	0
3.92	2.77	2.77	0
5.88	4.15	4.15	0
7.84	5.61	5.61	0
10.2	7.41	7.41	0
14.9	11	11	0
20	14.9	14.9	0
25.1	18.8	18.8	0
30.2	22.91	22.91	0
34.9	26.78	26.78	0
40	30.98	30.98	0
45.1	35.48	35.48	0
49.8	39.82	39.89	0
54.9	44.71	44.71	0
60	49.8	49.8	0
65.1	54.9	54.9	0
69.8	60.16	60.16	0
74.9	66.07	66.07	0
80	71.77	71.77	0
85.1	78.06	78.06	0
89.8	84.61	84.61	0
94.9	92.2	92.2	0
98.04	96.86	96.86	0
100	100	100	0

Table 4: CMYK percentage values in column 5 of the P2P target

Appendix B:

Formulae

Converting ND to L*

$Y = 1/10^{ND}$

If: $Y > (6/29)3$

$L^* = 116 \times Y^{1/3} - 16$

Else:

$L^* = 116 \times (841/108 \times Y + 4/29) - 16$

Calculating Delta L* (ΔL*)

$\Delta L^* = (L^*_{sample} - L^*_{target})$

Calculating Delta F* (ΔF*) – also known as Delta-ab

$\Delta F^* = ((a^*_{sample} - a^*_{target})^2 + (b^*_{sample} - b^*_{target})^2)^{1/2}$