Hard Copy Proof Application Data Sheet

GMG ColorProof Canon ipf6450 printer using GMG ProofPaper semimatte 250 for GRACoL Coated #1

The IDEAlliance Print Properties Working Group has established a certification process for hard copy proofs. In accordance with this process the appearance of a hard copy proof must have the ability to closely simulate specific CGATS or other documented characterization data sets within tolerances outlined in this document.

The following information is intended to assist producers and consumers in the use of vendor specified proofing materials in a hard copy proofing application.

I. Manufacturer

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Certified on June 3, 2013

II. Product

GMG ColorProof – Canon ipf6450 printer Canon LUCIA EX Ink and GMG ProofPaper semimatte 250 for GRACoL Coated #1

III. Introduction

The GMG ColorProof color management software combined with the Canon ipf6450 inkjet printer provides a contract-quality proofing system in ContoneProof mode.
The GMG ColorProof software includes four main components that are part of the standard software package:

- GMG ColorProof with 4-D GMG color engine
- GMG ProfileEditor
- GMG SpotColor Editor

The GMG ColorProof software can drive up to three printers in parallel without compromising quality or performance. All connected printers will meet the color requirements for GRACoL® compliant proofing.

IV. Control Guide

IDEAlliance specifies that a Control Guide: the IDEAlliance ISO 12647-7 Digital Control Strip, or a similar target containing the same patches or a super-set thereof, be included on every hard copy proof. The control guide file should be checked for accuracy of the original CMYK percentage values, as listed in the Annex.

*NOTE: The IDEAlliance ISO 12647-7 Digital Control Strip 2008 supercedes any previous ADS Proofing Certification Strip for conformance to this process. The control guide can be downloaded from the IDEAlliance.org web site. Practical production tolerances are discussed in the **Read Me** file included with the Control Guide.*

The rendered control guide shall adhere to the appropriate characterization data and tolerances shown in the Annex.

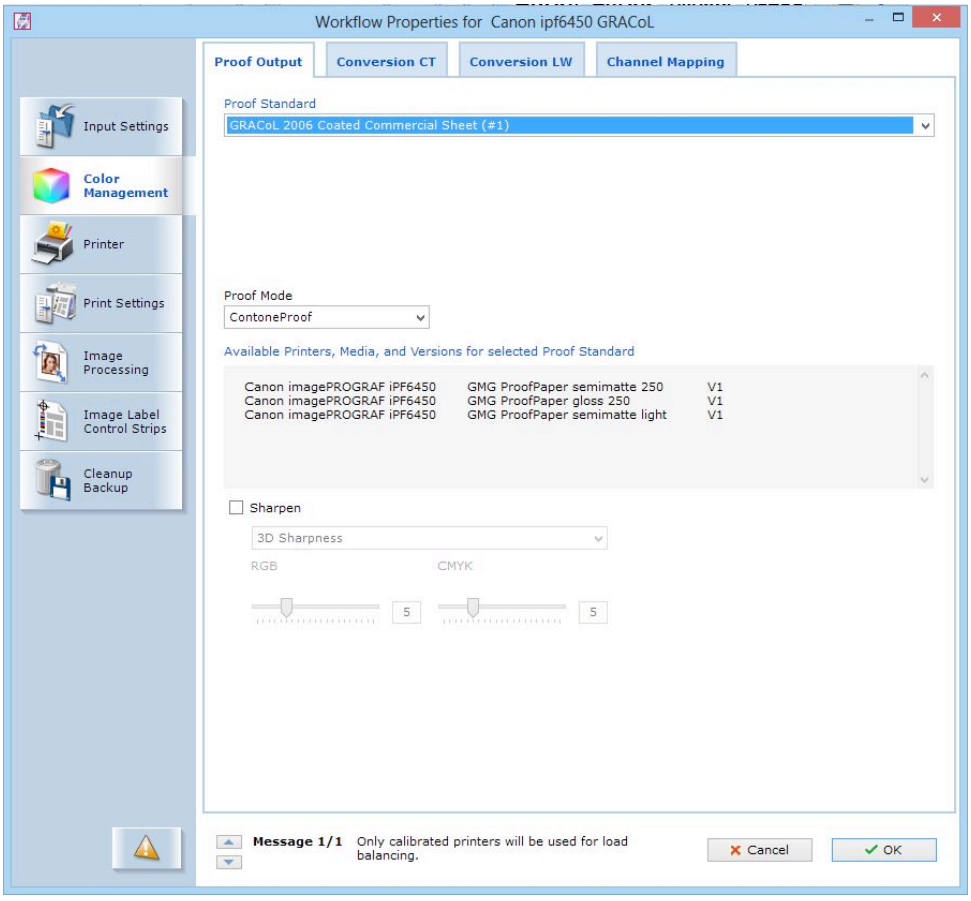
V. System Components

The following GMG ColorProof components and calibration procedures must be used to achieve conformance with this specification:

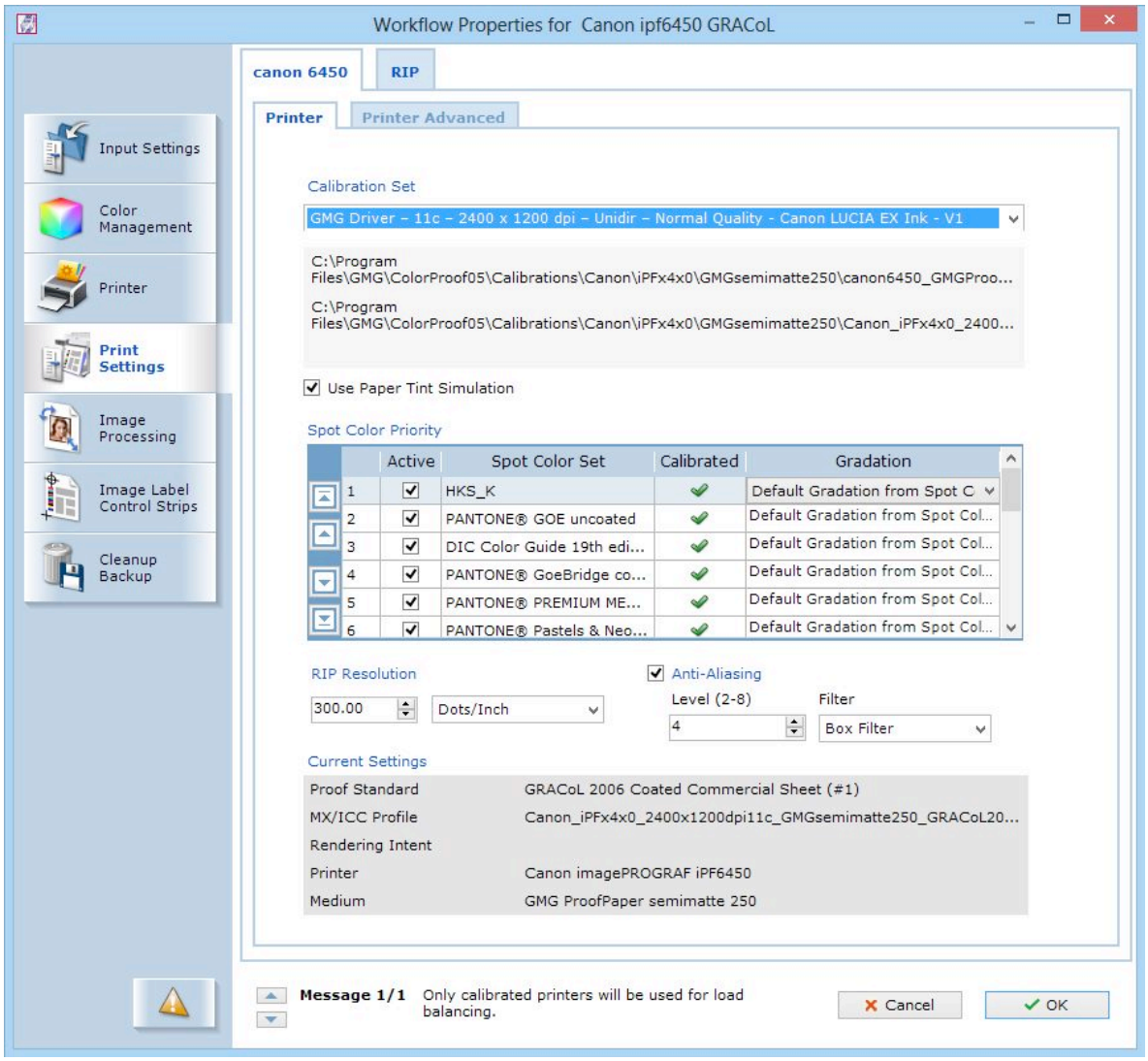
- GMG ColorProof Off-Press Proofing System Components
- GMG ColorProof Software 5.4 or later
- Canon ipf6450 series printer with Canon LUCIA EX Ink
- GMG ProofPaper semimatte 250

• Hotfolder / Workflow Setup:
To follow this ADS sheet you will need to have the Canon ipf6450 installed for use in ColorProof and have at least one Hotfolder/Workflow setup. Complete instruction on how to set up a Hotfolder and Workflow can be found in the CPo5 Manual. The Interactive Help can be accessed from within ColorProof by pressing the F1 Key, (or in the PDF located in C:\Program Files\GMG\ColorProof05\Documentation\GMG-CP05_Manual_en.pdf.) (Section 7.3)

1. To configure your Workflow to print GRACoL #1 proofs, open the Workflow Properties window.
2. Click **Color Management** (2nd option down on left-hand column).
3. Under **Proof Standard,** select GRACoL 2006 Coated Commercial Sheet (#1)
   Choosing this will display the available calibration sets specified in this Proof Standard.
   Under **Proof Type** only Contone Proof will be available


Workflow Properties for Canon ipf6450 GRACoL
Proof Output
Conversion CT
Conversion LW
Channel Mapping
Input Settings
Color Management
Printer
Print Settings
Image Processing
Image Label Control Strips
Cleanup Backup
Proof Standard
GRACoL 2006 Coated Commercial Sheet (#1)
Proof Mode
ContoneProof
Available Printers, Media, and Versions for selected Proof Standard
Canon imagePROGRAF iPF6450 GMG ProofPaper semimatte 250 V1
Canon imagePROGRAF iPF6450 GMG ProofPaper gloss 250 V1
Canon imagePROGRAF iPF6450 GMG ProofPaper semimatte light V1
Sharpen
3D Sharpness
RGB
CMYK
5
5
Message 1/1
Only calibrated printers will be used for load balancing.
Cancel
OK

4. Next select **Print Settings** (4th option down on left)
5. On **Printer** Tab, from the Calibration Set dropdown menu select:
   GMG Driver - 11c – 2400 x 1200 dpi – Unidir – Normal Quality Canon LUCIA EX Ink – V1



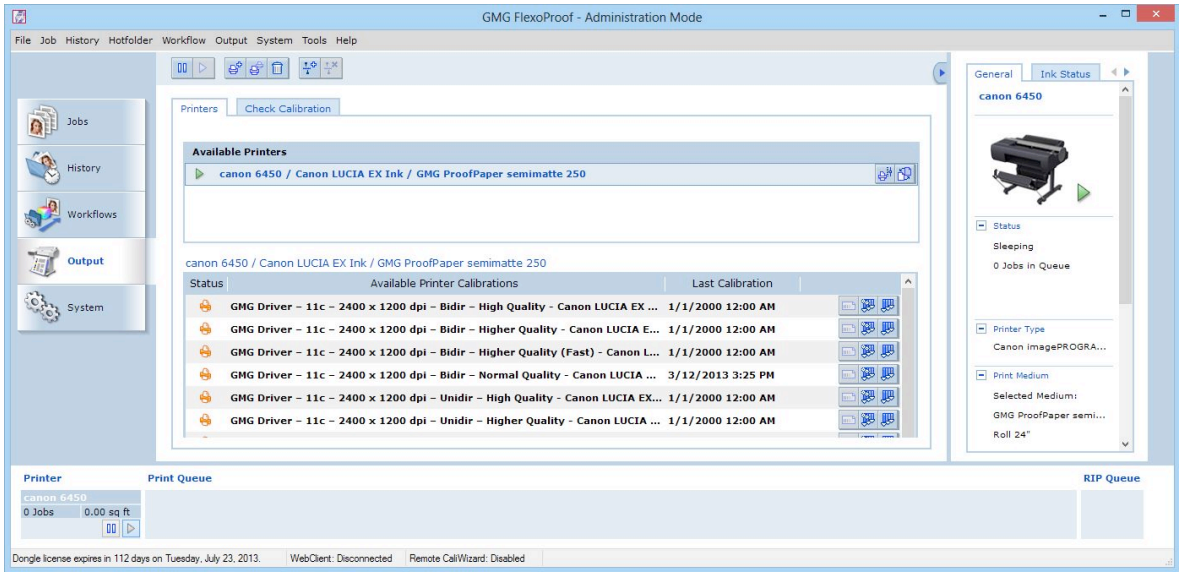
Printer Calibration Procedure

Once the Workflow is configured, the Printer needs to be calibrated to meet GRACoL proofing requirements
The Canon ipf6450 printer must be calibrated using GMG ColorProof AutoCalibration Wizard.

GMG AutoCalibration Wizard is used to calibrate printers with an integrated measuring device such as the Canon ipf6450. With the integrated measuring device, the whole process is fully automated. You can use the **Scheduler** to run calibrations at regular intervals. The wizard will lead you through all steps required.

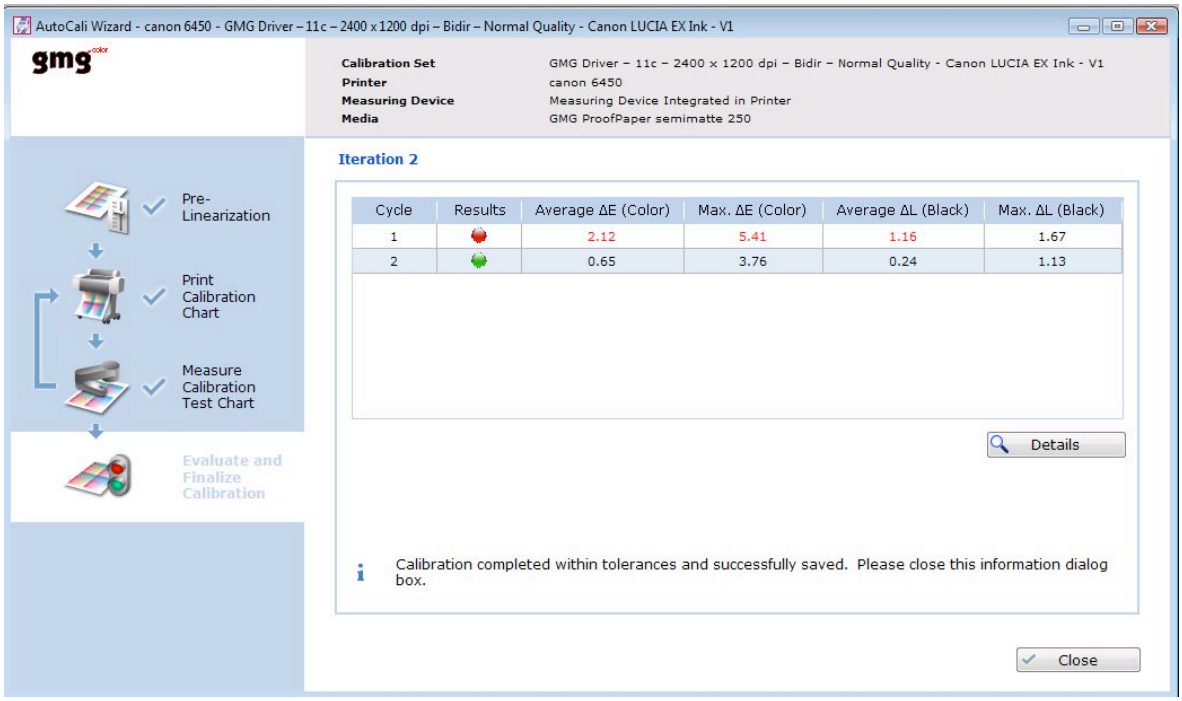
How to start GMG AutoCali Wizard

1. Click the **Output** button from the navigation panel on the left of the main window.
2. Select the your printer from the **Available Printers** list. In this example we use the Canon ipf 6450.
3. From **Available Printer Calibrations** list select **GMG Driver - 11c – 2400 x 1200 dpi – Unidir – Normal Quality Canon LUCIA EX Ink – V1** This is the calibration set specified during workflow setup.
4. Click the **AutoCali Wizard** button on the right side of the calibration set. The GMG AutoCali Wizard is started.



5. Follow the instructions of the wizard.

The iteration cycle continues until the measured values are in the **tolerances** of the target values.
The printer calibration file with the new output values is automatically saved after a successful calibration .



GMG AutoCali Wizard after successful calibration.

In the above example, the measured (current) values of the first iteration cycle were outside the tolerances defined in the **Quality Criteria** of the calibration set. Therefore, **Print** and **Measure** steps have been repeated in a second iteration cycle. The output values for iteration 2 are derived from a calculation based on the first iteration, resulting in acceptable values. The status is set to calibrated and the printer can be used. The updated calibration file is saved.

A successful calibration can normally be reached in less than 3 iterations. If the calibration tolerances cannot be reached, make sure the proper printer maintenance has been performed including nozzle checks and print head cleanings, then try calibrating again.

Once the workflow is configured and the printer is calibrated, all necessary steps are complete.

VI. Finishing Procedures

By using the GMG ColorProof off-press proofing system, described in this ADS, no finishing procedure is required.

VII. Finished Proof Characteristics

Note: Verbal forms for the expressions of provisions referenced below are: shall means 'is required' and should means 'is recommended'.

A proof that has been rendered utilizing the system components, process steps, and finishing procedures contained in the Application Data Sheet should exhibit the color characteristics referenced in the Annex when measured from the IDEAlliance ISO 12647-7 Digital Control Strip or similar target.

Visual evaluation of finished proofs should take place under standard D50 lighting, as specified in ISO 3664.

Proof Tolerances (Summary for IDEAlliance Hard Copy Proofing System Certification Process Version 19)

- Solid cyan, magenta, yellow, black shall be Delta Eab ≤5.0 from the characterization data set.
- Solid red green and blue shall be Delta Eab ≤6.0 from the characterization data set.
- The difference between the characterization data set white point and the proof white point (excluding fluorescence) shall be no different than; Delta L* +/-2.0, Delta a* +/-1.0, Delta b* +/-2.0 and have a maximum Delta Eab ≤3.
- The difference between the 3% CMY gray balance patch values and the characterization data set should be Delta Eab ≤2.5 or shall be ≤3.0.
- The difference between all other (10%, 25%, 50%, 75%) CMY gray balance patch values and the characterization data set should be Delta Eab ≤1.5 or shall be ≤2.5.
- The average difference for all patches in the IDEAlliance ISO 12647-7 Color Control Wedge and the characterization data should be Delta Eab ≤1.5 or shall be ≤2.5.

Note: The verbal forms of should and shall are used to indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted i.e. shall “is required” and should “is recommended”.

VIII. Sample Proofs

GMG Americas has supplied three (3) sets of hard copy proofs for retention that conform to this Application Data Sheet by an IDEAlliance certifying contractor.

Annex
Characterization Data Values Per Hard Copy Certification Process Version 19
IDEAlliance ISO 12647-7 Digital Control Strip 2009 for GRACoL 2006 Coated #1

SampleID	C	M	Y	K	L*	a*	b*	Max ΔE_{ab}
A1	100	0	0	60	30.05	-22.65	-28.82	
B1	100	100	0	60	15.18	8.84	-24.61	
A2	100	0	0	0	54.99	-37.12	-49.98	≤5
B2	100	100	0	0	24.13	17.21	-46.14	≤6
A3	70	0	0	0	66.68	-25.04	-36.91	
B3	70	70	0	0	40.98	17.06	-35.68	
A4	30	0	0	0	82.72	-9.92	-17.75	
B4	30	30	0	0	69.73	8.32	-19.16	
A5	0	100	0	60	26.45	41.59	-1.73	
B5	0	100	100	60	26.22	35.37	24.54	
A6	0	100	0	0	47.96	74.06	-3.03	≤5
B6	0	100	100	0	47.38	68.25	48.8	≤6
A7	0	70	0	0	60.46	51.74	-5.68	
B7	0	70	70	0	59.19	47.4	39.16	
A8	0	30	0	0	80.12	20.24	-5.33	
B8	0	30	30	0	78.72	17.78	18.08	
A9	0	0	100	60	48.52	-5.3	49.18	
B9	100	0	100	60	28.47	-39.37	12.04	
A10	0	0	100	0	88.94	-5.01	93.11	≤5
B10	100	0	100	0	50.12	-68.42	25	≤6
A11	0	0	70	0	90.58	-4.56	63.36	
B11	70	0	70	0	62.79	-41.27	20.92	
A12	0	0	30	0	92.85	-2.49	24.58	
B12	30	0	30	0	80.73	-14.64	8.19	
A13	100	0	40	0	52.53	-53.19	-19.34	
B13	100	40	0	0	42.57	-16.27	-48.19	
A14	40	100	0	0	37.89	52.56	-22.07	
B14	0	100	40	0	48.28	70.95	17.76	
A15	0	40	100	0	70.88	22.91	72.4	
B15	40	0	100	0	72.7	-25.21	65.09	
A16	0	40	70	40	50.87	15.13	32.94	
B16	10	40	40	0	70.17	19.63	18.54	
A17	0	70	40	40	42.23	33.3	13.26	
B17	20	70	70	0	53.49	36.46	28.55	
A18	40	70	0	40	34.66	22.98	-17.15	
B18	0	70	70	40	41.68	31.89	26.77	
A19	40	0	70	40	52.46	-18.03	25.99	
B19	70	0	40	40	45.46	-26.12	-3.74	
A20	70	40	0	40	36.61	-1.37	-26.56	
B20	0	0	0	0	95	-0.02	-1.96	≤3
A21	0	0	0	3	92.81	-0.07	-1.96	
B21	3.1	2.2	2.2	0	92.43	0.19	-2.06	≤3.0
A22	0	0	0	10	87.79	-0.2	-1.98	
B22	10.2	7.4	7.4	0	86.74	0.31	-2.04	≤2.5
A23	0	0	0	25	77.36	-0.4	-1.93	
B23	25	19	19	0	75.52	0.07	-1.5	≤2.5
A24	0	0	0	50	59.92	-0.53	-1.61	
B24	50	40	40	0	57.69	-0.13	-1.46	≤2.5

A25	0	0	0	75	39.84	-0.57	-1.02	
B25	75	66	66	0	39.39	-0.3	-0.55	≤2.5
A26	0	0	0	90	25.77	-0.22	-0.54	
B26	100	100	100	0	23	0.17	-0.25	
A27	0	0	0	100	14.93	0.21	-0.14	≤5
B27	80	70	70	100	8.46	0.34	0.44	

Note: CIELab values for 3-color 3%, 10%, 25% and 75% patches are interpolations of the IT8/7.4 characterization data.