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Off-Press Proof Application Data Sheet

GMG ColorProof Canon ipf6450 series printers using GMG ProofPaper semimatte 250 for SWOP #5

The IDEAlliance Print Properties Working Group has established a certification process for off-press proofs as input material to publications. In accordance with this process: "The appearance of a hard copy or soft proof used in this application must have the ability to closely match specific CGATS or other documented characterization data sets within outlined tolerances. See further explanations and recommendations on www.swop.org or www.swop.org.

The following information is intended to assist producers and consumers in using proofing materials specified by the vendor in an off-press proof application:

 Manufacturer GMG Americas 120 Industrial Park Road 2nd Floor Hingham, MA 02043-4366 781.740.4077



Certified on June 3, 2013

II. Product

GMG ColorProof – Canon ipf6450 printer using Canon LUCIA EX Ink and GMG ProofPaper semimatte 250 SWOP #5

III. Introduction

The GMG ColorProof color management software combined with the Canon ipf6450 inkjet printer provides a contractquality 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 RIP Server for PDF and PostScript®
- 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 SWOP® compliant proofing.

IV. Control Guide

IDEAlliance specifies that control aids such as an ISO 12647-7 Digital Control Strip 2007 should be printed on each offpress proof. As a minimum requirement, any control strip used for proofing applications should contain solid patches for the primary process colors (YMCK), two-color overprints (RGB), and a three-color overprint (YMC), as well as a 25%, 50%, and 75% tint in stated line screen resolution of each of the primary process colors and 3-color gray patches. The accuracy

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of the original values should be verified for all control strips. Use and interpretation of a control guide is the responsibility of the creator.

GMG recommends usage of the IDEAlliance ISO 12647-7 Digital Control Strip v2.



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 SWOP #5 proofs, open the Workflow Properties window.
- 2. Click Color Management (2nd option down on left-hand column).
- 3. Under **Proof Standard**, select SWOP Groundwood (#5)

Choosing this will display the available calibration sets specified in this Proof Standard. Under **Proof Type** only Contone Proof will be available

	E Allianc	e
Input Settings	Workflow Properties for Canon ipf6450 SWOP5 - Proof Output Conversion CT Conversion LW Channel Mapping Proof Standard - - SWOP Groundwood (#5) - -	
Color Management	Proof Mode ContoneProof	
Image Label Control Strips Cleanup Backup	Canon imagePROGRAF iPF6450 GMG ProofPaper semimatte light V1 Sharpen 3D Sharpness KGB CMYK	~
	Message 1/1 Only calibrated printers will be used for load	ж

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- 4. Next select **Print Settings** (4th option down on left)
- 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

	Workflow Properties for Canon ipf6450 SWOP5 -							
	canon 6450 RIP							
Input Settings	Printer Advanced	^						
Color Management	Calibration Set GMG Driver - 11c - 2400 x 1200 dpi - Unidir - Normal Quality - Canon LUCIA EX Ink - V1 🛛 🗸							
🗳 Printer	C:\Program Files\GMG\ColorProof05\Calibrations\Canon\iPFx4x0\GMGsemimatte250\canon6450_GMGP C:\Program Files\GMG\ColorProof05\Calibrations\Canon\iPFx4x0\GMGsemimatte250\Canon iPFx4x0 24							
Print Settings	✓ Use Paper Tint Simulation							
Image Processing	Spot Color Priority							
Image Label Control Strips	1 ✓ HKS_K ✓ Default Gradation from Spot C v 2 ✓ RANTONE® COE upon ✓ Default Gradation from Spot Column							
Cleanup	A DIC Color Guide 19th Default Gradation from Spot Col							
Васкир	5 PANTONE® PREMIUM Pefault Gradation from Spot Col 6 PANTONE® Partole % Pefault Gradation from Spot Col							
	RIP Resolution							
	300.00 Dots/Inch V Level (2-8) Filter							
	Current Settings Proof Standard SWOP Groundwood (#5)							
	MX/ICC Profile Canon_iPFx4x0_2400x1200dpi11c_GMGsemimatte250_SWOPg Rendering Intent							
	Printer Canon imagePROGRAF iPF6450 Medium GMG ProofPaper semimatte 250							
4	Message 1/1 Only calibrated printers will be used for load X Cancel	ок						



Printer Calibration Procedure

Once the Workflow is configured, the Printer needs to be calibrated to meet SWOP 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 on 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 ipf6450.
 - 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.

M	GMG FlexoProof - Administration Mode	- D ×
File Job History Hotfolder Wo	orkflow Output System Tools Help	
		General Ink Status
Jobs	Printers Check Calibration	canon 6450
History	Available Printers	
WORKHOWS		Status Sleeping
Output	canon 6450 / Canon LUCIA EX Ink / GMG ProofPaper semimatte 250	0 Jobs in Queue
- m	Status Available Printer Calibrations Last Calibration	
System	😚 GMG Driver - 11c - 2400 x 1200 dpi - Bidir - High Quality - Canon LUCIA EX 1/1/2000 12:00 AM 🔤 🐺 🐺	
	😚 GMG Driver - 11c - 2400 x 1200 dpi - Bidir - Higher Quality - Canon LUCIA E 1/1/2000 12:00 AM 💿 💯 💯	Printer Type
	🔒 GMG Driver – 11c – 2400 x 1200 dpi – Bidir – Higher Quality (Fast) - Canon L 1/1/2000 12:00 AM 🗈 👺 🐯	Canon imagePROGRA
	🔒 GMG Driver – 11c – 2400 x 1200 dpi – Bidir – Normal Quality - Canon LUCIA 3/12/2013 3:25 PM 💿 🐺 🐺	Print Medium
	🔒 GMG Driver – 11c – 2400 x 1200 dpi – Unidir – High Quality - Canon LUCIA EX 1/1/2000 12:00 AM 🔤 🐺 🐺	Selected Medium:
	GMG Driver - 11c - 2400 x 1200 dpi - Unidir - Higher Quality - Canon LUCIA 1/1/2000 12:00 AM	GMG ProofPaper semi Roll 24"
Printer Print	Queue	RIP Queue
canon 6450 0 Jobs 0.00 sq ft		
Dongle license expires in 112 days on Tu	uesday, July 23, 2013. WebClient: Disconnected Remote CallWizard: Disabled	

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.

DE	_/				nc	Ce
AutoCali Wizard - canon 6450 - GMG Driver – 11	c – 2400 x 1200 dpi Calibration Se Printer Measuring Dev Media	– Bidir – Norm t vice	al Quality - Canon LUCIA E) GMG Driver – 11c – 2 canon 6450 Measuring Device Int GMG ProofPaper sem	(Ink - VI 400 × 1200 dpi – Bidii egrated in Printer imatte 250	r – Normal Quality - Canor	n LUCIA EX Ink - VI
	Iteration 2					
Pre-	Cycle	Results	Average ∆E (Color)	Max. ΔE (Color)	Average ΔL (Black)	Max. ΔL (Black)
<u></u>	1	-	2.12	5.41	1.16	1.67
→ Sint Calibration ↔ Calibration	2		0.65	3.76	0.24	1.13
Measure Calibration Test Chart						Details
Evaluate and Finalize Calibration						
	i Calib box.	ration compl	eted within tolerances	and successfully sa	ved. Please close this	information dialog
	-					✓ Close

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

A proof with the color characteristics referenced in Appendix 1 is to be expected when measured from the IDEAlliance ISO 12647-7 Digital Control Strip 2007 having been properly made to all the listed system components and finishing procedures.

Note: Three-color grays are comprised of Cyan, Magenta, Yellow: 75, 66, 66; 50, 40, 40; and 25, 19, 19 values.

All measurements to control and verify SWOP and GRACoL proofs must be done with the X-Rite Eye One Pro (D50, 2 degree observer, no UV cut filter, white backing).

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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.

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Appendix 1 Characterization Data CIELab Values

IDEAlliance ISO 12647-7 Digital Control Strip 2007 for SWOP 2006 Coated #5

				Maximu					Maximu	
Patch	C	IELab Da	ta	m	Patch	CIELab Data			m	
ID				CIE	ID				CIE	
Тор	L*	a*	b*	∆Lab	Bottom	L*	a*	b*	∆Lab	
A1	32.65	-22.26	-23.31	-	B1	15.76	11.76	-23.91	-	
A2	56.56	-37.98	-40.93	5	B2	26.54	18.56	-42.01	5	
A3	64.70	-26.67	-29.70	-	B3	40.30	15.39	-31.31	-	
A4	78.29	-11.19	-11.42	-	B4	65.80	7.14	-13.75	-	
A5	26.42	40.29	-3.23	-	B5	26.49	34.78	21.45	-	
A6	47.64	69.97	-3.54	5	B6	47.43	64.38	42.74	5	
A7	58.14	49.08	-2.95	-	B7	57.01	44.95	36.24	-	
A8	75.88	19.59	0.11	-	B8	74.61	17.32	19.99	-	
A9	47.09	-4.83	44.51	-	B9	30.65	-35.02	14.67	-	
A10	85.43	-5.82	84.62	5	B10	52.26	-61.49	26.76	5	
A11	86.28	-5.18	60.33	-	B11	61.52	-39.10	20.93	-	
A12	88.09	-2.76	26.91	-	B12	76.68	-14.80	10.89	-	
A13	54.38	-50.05	-13.62	-	B13	44.23	-17.41	-40.21	-	
A14	37.79	50.15	-21.11	-	B14	47.52	67.23	15.19	-	
A15	68.36	21.69	65.39	-	B15	70.77	-24.24	58.75	-	
A16	48.86	15.14	31.31	-	B16	66.70	19.12	19.70	-	
A17	40.69	32.61	12.52	-	B17	51.52	34.92	26.64	-	
A18	33.04	22.15	-14.98	-	B18	40.31	31.25	24.75	-	
A19	51.08	-17.54	25.50	-	B19	45.31	-25.37	-1.12	-	
A20	36.75	-2.64	-22.16	-	B20	90.06	-0.01	4.14	-	
A21	87.97	-0.06	3.85	-	B21	87.67	0.00	3.75	-	
A22	83.35	-0.16	3.31	-	B22	82.19	-0.02	3.09	-	
A23	73.53	-0.34	2.37	-	B23	71.47	-0.07	2.12	-	
A24	56.84	-0.35	1.34	-	B24	54.70	-0.44	1.24	-	
A25	38.89	0.04	0.98	-	B25	39.10	-0.23	1.19	-	
A26	27.07	0.55	1.06	-	B26	24.73	0.21	-0.12	-	
A27	19.00	1.01	1.18	5	B27	10.04	0.30	0.53	5	

