



Certified 9/7/07



Off-Press Proof Application Data Sheet

GMG ColorProof Epson 4480/7880/9880 using GMG Proofing Media Satin Low Gloss 250g GRACoL #1 Commercial

IDEAlliance has approved the use of off-press proofs as input material to publications. IDEAlliance specifications recommend that: "The appearance of a hard copy or monitor proof used in this application must closely simulate Certified Proof." See other explanations and recommendations outlined on www.swop.org or www.gracol.org.

The following information is intended to assist producers and consumers in the use of proofing materials in a SWOP proofing application

I. Manufacturer

GMG Americas
35 Pond Park Road, Suite 17
Hingham, MA 02043-4366

II. Product

GMG ColorProof – Epson 4880/7880/9880 Series using GMG Proofing Media semi matte 250g - GRACoL #1 commercial

III. Introduction

The GMG ColorProof color management software combined with the Epson x800 ink jet printing devices provides a continuous tone contract quality proofing system.

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 profile editor
- GMG RIP Server for PDF and Postscript®
- GMG Spotcolor editor

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

IV. Control Guide

IDEAlliance specifies that a control guide such as a SWOP Proofing Bar be supplied on every off-press proof. As a minimum, this guide should contain solids for the primary process colors and two-color overprints, as well as a 25%, 50%, and 75% tint in stated line screen resolution of each of the process colors and 3-color gray patches for 25%, 50%, and 75%. A control guide containing these imaging characteristics must be present on every proof. All control guides should be checked for accuracy of the original values. Use and interpretation of a control guide is the responsibility of the user.

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



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The IDEAlliance strip is part of ColorProof 4.5.01 or higher..

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 4.5.01 or later
- Epson 4880/7880/9880 Series printer
- GMG Proofing Paper semi matte 250

- Printer Calibration Procedure

To meet GRACoL standards, the Epson 4880/7880/9880 Series printers must be calibrated by using the GMG ColorProof printer calibration procedure.

The calibration, has to achieve the following Delta E values:

- Average ΔE must be below 1.00
- Maximum allowed ΔE must be below 3.00
- Average ΔL must be below 1.00
- Maximum allowed ΔL must be below 2.00

- Color Matching Profile

- GRACoL2006_#1_commercial_Epson_X880_GMG250_V1.mx4*

- Proofing media

The GMG Proofing Paper semi matte 250 has to be used with the above profiles. GMG guarantees a paper stability of 1 ΔE from roll to roll.

- Digital Proof control Strips

All proofs created with GMG ColorProof must contain a proofing bar to verify conformance as described under *IV. Control Guide*.

* All calibrations and profile files are available on the GMG ColorProof software CD-ROM or webpage.

VI. Finishing Procedures

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



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VII. Finished Proof Characteristics

The finished proof characteristics are defined by the characterization data set provided by IDEAlliance (GRACoL2006_Coated1.txt). This characterization data set provides target values for every patch of the IT 8.7-4 test chart.

For a proof to proof verification GMG recommends IDEAlliance ISO 12647-7 Digital Control Strip v2.

Patch name	C	M	Y	K	Target CIE L* a* b*		
A1	100	0	0	60	30.05	-22.65	-28.82
B1	100	100	0	60	15.18	8.84	-24.61
C1	100	0	0	0	54.96	-37.12	-50
D1	100	100	0	0	24.13	17.2	-46.14
E1	69.8	0	0	0	66.6	-25.13	-37.01
F1	69.8	69.8	0	0	40.84	17.09	-35.77
G1	29.8	0	0	0	82.64	-9.99	-17.85
H1	29.8	29.8	0	0	69.57	8.37	-19.26
I1	0	100	0	60	26.45	41.59	-1.73
J1	0	100	100	60	26.22	35.38	24.54
K1	0	100	0	0	47.93	74.11	-3.01
L1	0	100	100	0	47.37	68.25	48.79
M1	0	69.8	0	0	60.35	51.93	-5.67
N1	0	69.8	69.8	0	59.09	47.55	39.25
O1	0	29.8	0	0	80.03	20.38	-5.35
P1	0	29.8	29.8	0	78.62	17.92	18.2
Q1	0	0	100	60	48.53	-5.3	49.19
R1	100	0	100	60	28.47	-39.38	12.04
S1	0	0	100	0	88.94	-5.02	93.17
T1	100	0	100	0	50.12	-68.43	25
U1	0	0	69.8	0	90.56	-4.57	63.58
V1	69.8	0	69.8	0	62.69	-41.44	20.96
W1	0	0	29.8	0	92.84	-2.51	24.77
X1	29.8	0	29.8	0	80.64	-14.75	8.25
Y1	100	0	40	0	52.53	-53.19	-19.34
Z1	100	40	0	0	42.57	-16.27	-48.19
1A1	40	100	0	0	37.89	52.56	-22.07
A2	0	100	40	0	48.28	70.95	17.76
B2	0	40	100	0	70.88	22.91	72.4
C2	40	0	100	0	72.7	-25.21	65.09
D2	0	40	69.8	40	50.86	15.13	33.06
E2	10.2	40	40	0	70.23	19.71	18.63
F2	0	69.8	40	40	42.17	33.42	13.25
G2	20	69.8	69.8	0	53.4	36.61	28.63
H2	40	69.8	0	40	34.6	23.09	-17.15
I2	0	69.8	69.8	40	41.61	32.01	26.83
J2	40	0	69.8	40	52.45	-18.04	26.12
K2	69.8	0	40	40	45.4	-26.2	-3.82
L2	69.8	40	0	40	36.56	-1.43	-26.62



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Patch name	C	M	Y	K	Target CIE L* a* b*		
M2	0	0	0	0	95	-0.02	-1.96
N2	0	0	0	3.1	92.88	-0.08	-1.96
O2	3.14	2.21	2.21	0	92.44	0.16	-2.11
P2	0	0	0	10.2	87.93	-0.2	-1.98
Q2	10.2	7.41	7.41	0	86.73	0.29	-2.05
R2	0	0	0	25.1	77.43	-0.4	-1.93
S2	25.1	18.8	18.8	0	75.53	0.05	-1.61
T2	0	0	0	49.8	59.77	-0.53	-1.61
U2	49.8	39.8	39.8	0	57.54	-0.12	-1.44
V2	0	0	0	74.9	39.75	-0.57	-1.02
W2	74.9	66.07	66.07	0	39.41	-0.37	-0.59
X2	0	0	0	89.8	25.57	-0.21	-0.53
Y2	100	100	100	0	23	0.17	-0.25
Z2	0	0	0	100	14.95	0.19	-0.14
1A2	78.82	70.45	70.45	100	8.45	0.39	0.38

For contract proof quality the above target values need to be within following tolerances

Printing substrate $\Delta E^*_{ab} < 3$; Mean $\Delta E^*_{ab} < 4$; Max $\Delta E^*_{ab} < 10$; Primary colors $\Delta E^*_{ab} < 5$

The following spectrophotometric measurement rules should be followed. All measurements were made with a Gretag Macbeth EyeOne (45/0° geometry, D50 illuminant, 2° observer angle, no filter). Self-backing procedures were followed. The backing sheets should be within ΔE^*_a 1.0 of each other and the imaged substrate. (According to CGATS 5).

VIII. Sample Proofs

GMG Americas has supplied three (3) sets of proofs that conform to this Application Data Sheet to IDEAlliance for its analysis and retention.

ISO12647-7 Digital Control Strip 2007

The IDEAlliance Print Properties Working Group has developed a new digital control strip for off-press proofs. As of November 2007, this control strip replaces the current FOGRA Wedge and proofing bar on the proofing certification test forms. This ADS Attachment provides the CIE Lab data for all fifty-four (54) patches contained in the new strip. These data sheets will replace Appendix 1 in the Application Data Sheets for all previous certified proofing systems to the specific data set for GRACoL C1, SWOP C3, or SWOP C5.



Control Strip Patch Values

Patch ID Top	Patch Tint % Values			
	CMYK_C	CMYK_M	CMYK_Y	CMYK_K
A1	100	0	0	60
A2	100	0	0	0
A3	70	0	0	0
A4	30	0	0	0
A5	0	100	0	60
A6	0	100	0	0
A7	0	70	0	0
A8	0	30	0	0
A9	0	0	100	60
A10	0	0	100	0
A11	0	0	70	0
A12	0	0	30	0
A13	100	0	40	0
A14	40	100	0	0
A15	0	40	100	0
A16	0	40	70	40
A17	0	70	40	40
A18	40	70	0	40
A19	40	0	70	40
A20	70	40	0	40
A21	0	0	0	3
A22	0	0	0	10
A23	0	0	0	25
A24	0	0	0	50
A25	0	0	0	75
A26	0	0	0	90
A27	0	0	0	100

Patch ID Bottom	Patch Tint % Values			
	CMYK_C	CMYK_M	CMYK_Y	CMYK_K
B1	100	100	0	60
B2	100	100	0	0
B3	70	70	0	0
B4	30	30	0	0
B5	0	100	100	60
B6	0	100	100	0
B7	0	70	70	0
B8	0	30	30	0
B9	100	0	100	60
B10	100	0	100	0
B11	70	0	70	0
B12	30	0	30	0
B13	100	40	0	0
B14	0	100	40	0
B15	40	0	100	0
B16	10	40	40	0
B17	20	70	70	0
B18	0	70	70	40
B19	70	0	40	40
B20	0	0	0	0
B21	3.1	2.2	2.2	0
B22	10.2	7.4	7.4	0
B23	25	19	19	0
B24	50	40	40	0
B25	75	66	66	0
B26	100	100	100	0
B27	80	70	70	100

Appendix 1
Characterization Data CIELab Values

ISO12647-7 Digital Control Strip 2007 for GRACoL 2006 Coated #1 Data Set

Patch ID Top	CIELab Data			Maximum
	L*	a*	b*	ΔE (ab)
A1	30.05	-22.65	-28.82	-
A2	54.96	-37.12	-50.00	5
A3	66.60	-25.13	-37.01	-
A4	82.64	-9.99	-17.85	-
A5	26.45	41.59	-1.73	-
A6	47.93	74.11	-3.01	5
A7	60.35	51.93	-5.67	-
A8	80.03	20.38	-5.35	-
A9	48.53	-5.30	49.19	-
A10	88.94	-5.02	93.17	5
A11	90.56	-4.57	63.58	-
A12	92.84	-2.51	24.77	-
A13	52.53	-53.19	-19.34	-
A14	37.89	52.56	-22.07	-
A15	70.88	22.91	72.40	-
A16	50.86	15.13	33.06	-
A17	42.17	33.42	13.25	-
A18	34.60	23.09	-17.15	-
A19	52.45	-18.04	26.12	-
A20	36.56	-1.43	-26.62	-
A21	92.88	-0.08	-1.96	-
A22	87.93	-0.20	-1.98	-
A23	77.43	-0.40	-1.93	-
A24	59.77	-0.53	-1.61	-
A25	39.75	-0.57	-1.02	-
A26	25.57	-0.21	-0.53	-

Patch ID Bottom	CIELab Data			Maximum
	L*	a*	b*	ΔE (ab)
B1	15.18	8.84	-24.61	-
B2	24.13	17.20	-46.14	6
B3	40.84	17.09	-35.77	-
B4	69.57	8.37	-19.26	-
B5	26.22	35.38	24.54	-
B6	47.37	68.25	48.79	6
B7	59.09	47.55	39.25	-
B8	78.62	17.92	18.20	-
B9	28.47	-39.38	12.04	-
B10	50.12	-68.43	25.00	6
B11	62.69	-41.44	20.96	-
B12	80.64	-14.75	8.25	-
B13	42.57	-16.27	-48.19	-
B14	48.28	70.95	17.76	-
B15	72.70	-25.21	65.09	-
B16	70.23	19.71	18.63	-
B17	53.40	36.61	28.63	-
B18	41.61	32.01	26.83	-
B19	45.40	-26.20	-3.82	-
B20	95.00	-0.02	-1.96	3
B21	92.43	0.19	-2.06	-
B22	86.74	0.31	-2.04	-
B23	75.52	0.07	-1.50	-
B24	57.54	-0.12	-1.44	3
B25	39.39	-0.30	-0.55	-
B26	23.00	0.17	-0.25	-

Note: Color measurements comparing measured proof data to this reference data requires the use of a calibrated spectrophotometer.

Appendix 2
Characterization Data CIELab Values

ISO12647-7 Digital Control Strip 2007 for SWOP 2006 Coated #3 Data Set

Patch ID Top	CIELab Data			Maximum
	L*	a*	b*	ΔE (ab)
A1	31.96	-21.01	-26.32	-
A2	56.99	-37.23	-44.95	5
A3	66.07	-27.13	-33.53	-
A4	80.52	-11.80	-15.33	-
A5	25.80	40.75	-2.90	-
A6	47.84	72.08	-3.11	5
A7	58.95	51.61	-4.46	-
A8	78.03	20.64	-3.18	-
A9	47.67	-4.29	45.76	-
A10	87.97	-5.03	88.10	5
A11	89.28	-5.09	62.78	-
A12	91.24	-2.93	25.28	-
A13	54.86	-51.51	-16.56	-
A14	38.04	51.19	-21.63	-
A15	69.74	23.44	67.23	-
A16	49.55	15.84	31.56	-
A17	40.89	33.29	12.00	-
A18	34.01	22.69	-16.52	-
A19	52.24	-17.96	25.88	-
A20	36.91	-2.13	-25.08	-
A21	90.46	-0.06	-0.21	-
A22	85.69	-0.18	-0.70	-
A23	75.49	-0.39	-1.61	-
A24	58.21	-0.51	-2.27	-
A25	39.28	-0.34	-1.80	-
A26	26.88	-0.14	-0.89	-

Patch ID Bottom	CIELab Data			Maximum
	L*	a*	b*	ΔE (ab)
B1	15.57	11.13	-25.12	-
B2	26.85	18.10	-44.32	6
B3	40.85	16.19	-34.08	-
B4	67.49	7.60	-17.17	-
B5	25.19	35.01	22.46	-
B6	46.86	66.21	45.03	6
B7	57.68	47.17	37.42	-
B8	77.94	18.06	18.43	-
B9	29.42	-36.88	12.46	-
B10	52.12	-64.75	24.83	6
B11	63.15	-41.26	21.06	-
B12	79.23	-15.72	8.94	-
B13	44.63	-16.62	-44.13	-
B14	47.87	69.02	16.49	-
B15	72.78	-24.61	60.84	-
B16	68.56	20.02	18.67	-
B17	52.11	36.50	27.30	-
B18	40.29	32.11	25.13	-
B19	45.95	-26.09	-3.01	-
B20	92.50	0.00	0.00	3
B21	90.08	-0.02	-0.08	-
B22	84.59	-0.04	-0.22	-
B23	73.54	-0.15	-0.48	-
B24	56.29	-0.48	-0.41	3
B25	39.80	-0.33	0.14	-
B26	24.79	0.22	-0.52	-

Note: Color measurements comparing measured proof data to this reference data requires the use of a calibrated spectrophotometer.

Appendix 3
Characterization Data CIELab Values

ISO12647-7 Digital Control Strip 2007 for SWOP 2006 Coated #5 Data Set

Patch ID Top	CIELab Data			Maximum
	L*	a*	b*	ΔE (ab)
A1	32.65	-22.26	-23.31	-
A2	56.56	-37.98	-40.93	5
A3	64.70	-26.67	-29.70	-
A4	78.29	-11.19	-11.42	-
A5	26.42	40.29	-3.23	-
A6	47.64	69.97	-3.54	5
A7	58.14	49.08	-2.95	-
A8	75.88	19.59	0.11	-
A9	47.09	-4.83	44.51	-
A10	85.43	-5.82	84.62	5
A11	86.28	-5.18	60.33	-
A12	88.09	-2.76	26.91	-
A13	54.38	-50.05	-13.62	-
A14	37.79	50.15	-21.11	-
A15	68.36	21.69	65.39	-
A16	48.86	15.14	31.31	-
A17	40.69	32.61	12.52	-
A18	33.04	22.15	-14.98	-
A19	51.08	-17.54	25.50	-
A20	36.75	-2.64	-22.16	-
A21	87.97	-0.06	3.85	-
A22	83.35	-0.16	3.31	-
A23	73.53	-0.34	2.37	-
A24	56.84	-0.35	1.34	-
A25	38.89	0.04	0.98	-
A26	27.07	0.55	1.06	-

Patch ID Bottom	CIELab Data			Maximum
	L*	a*	b*	ΔE (ab)
B1	15.76	11.76	-23.91	-
B2	26.54	18.56	-42.01	6
B3	40.30	15.39	-31.31	-
B4	65.80	7.14	-13.75	-
B5	26.49	34.78	21.45	-
B6	47.43	64.38	42.74	6
B7	57.01	44.95	36.24	-
B8	74.61	17.32	19.99	-
B9	30.65	-35.02	14.67	-
B10	52.26	-61.49	26.76	6
B11	61.52	-39.10	20.93	-
B12	76.68	-14.80	10.89	-
B13	44.23	-17.41	-40.21	-
B14	47.52	67.23	15.19	-
B15	70.77	-24.24	58.75	-
B16	66.70	19.12	19.70	-
B17	51.52	34.92	26.64	-
B18	40.31	31.25	24.75	-
B19	45.31	-25.37	-1.12	-
B20	90.06	-0.01	4.14	3
B21	87.67	0.00	3.75	-
B22	82.19	-0.02	3.09	-
B23	71.47	-0.07	2.12	-
B24	54.70	-0.44	1.24	3
B25	39.10	-0.23	1.19	-
B26	24.73	0.21	-0.12	-

Note: Color measurements comparing measured proof data to this reference data requires the use of a calibrated spectrophotometer.