Kodak Approval Digital Color Imaging System for SWOP Coated #3 Proofs

Off-Press Proof Application Data Sheet

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 monitor 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 outlined on www.swop.orgT or www.gracol.org.

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

I. Manufacturer

Eastman Kodak Company
343 State Street
Rochester, NY 14650 U.S.A.

Certified - January 2007

II. Product

Kodak Approval Digital Color Imaging System

III. Introduction

Kodak Approval Digital Color Imaging System is a thermal laser halftone proofing solution offering true halftone contract quality proofs laminated on the customer's custom stock. The **Approval** System is based on a unique, highly accurate process offering image integrity with complete control over density, dot gain, overprints, traps, bump plates, and moiré. It also has built in specialty and corporate color capability. A proof made with an **Approval** Digital Color Imaging System, to this Application Data Sheet specification, is intended to simulate the characteristics of a production press operating within **SWOP** Guidelines for production printing.

IV. Control Guide

IDEAlliance specifies a control guide such as an ADS Proofing Certification Strip be supplied on every off-press proof. As a minimum, this guide should contain solids 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 at 150 lines per inch for each of the primary process colors and 3-color gray patches. All control guides should be checked for accuracy of the original values. Use and interpretation of a control guide is the responsibility of the creator.

Example:

V. System Components

For a proof from the **Kodak Approval** System to be considered a **SWOP** Coated #3 Proof, the system front-end must be color management enabled and the device link profile indicated below (under **Output Parameters**) must be installed and selected during the printing step. In addition, the following components must be used.

CAT Numbers /Description		
Materials	**XP, NX 34 cm**	**XP4, NX 68 cm**
Cyan Donor – DC03	879-7169	193-9289
Magenta Donor – DM03	855-0550	859-8567
Yellow Donor – DY03	100-3474	842-9086
Black Donor – DK03	812-8936	822-3547
Intermediate – I01	816-0319	106-7560
Pre-laminate – P02	832-3131	882-3791
Paper Stock	80# Fortune Gloss or equivalent	
Laminator	800XL	

Approval System Target Input Values (Before Applying DVL)				
Dot In	Cyan	Magenta	Yellow	Black
100	100.0	100.0	100.0	100.0
95	97.7	97.9	98.1	98.1
90	95.2	95.7	96.1	96.1
85	92.6	93.3	93.9	93.9
80	89.8	90.8	91.5	91.4
75	86.6	87.9	88.6	88.6
70	83.1	84.9	85.3	85.4
65	79.3	81.8	81.8	82.0
60	75.2	78.3	77.9	78.3
55	70.9	74.5	73.6	74.2
50	66.2	70.1	68.9	69.6
45	61.3	65.0	63.7	64.7
40	56.1	59.4	58.0	59.2
35	50.6	53.4	52.0	53.5
30	44.8	47.1	45.7	47.4
25	38.9	40.7	39.3	41.2
20	32.4	33.9	32.5	34.5
15	25.3	26.8	25.1	27.1
10	17.7	18.5	17.4	19.1
8	14.5	15.2	14.2	15.6
6	11.0	11.6	10.8	12.0
4	7.4	7.8	7.3	8.1
2	3.8	3.9	3.7	4.1
0	0.0	0.0	0.0	0.0

Output Parameters:

- Line screen ruling: 150 lpi
- Dot Shape: Euclidean (Round-Square-Round)
- Proofing sequence: KCMY
- Screen Angles: Y=0, M=105, C=165, K=45
- Target Solid Densities (Before applying DVL): Cyan=1.40, Magenta=1.42, Yellow=0.94, Black=1.65

  Note: Solid densities were measured with an **X-Rite** 500 Series Spectrophotometer with non-UV over white backing.
- Device Link: APP_FG_SWOP_C3_06_v1_a.dvl is available on the Kodak website: http://graphics.kodak.com/global/consumables/proofing_media/Application_Data_Sheets.

VI. Finishing Procedures

None Required

VII. Finished Proof Characteristics

A proof with the color characteristics referenced in Appendix 1 is to be expected when measured from the ADS Proofing Certification Strip having been properly made to all the listed system components and finishing procedures. Likewise the second chart depicts data referenced to the **FOGRA** Wedge for color comparison.

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

All measurements to certify the **Approval** System to the **SWOP** 2006 Coated #3 characterization data were made using a calibrated **X-Rite** DTP70 Spectrophotometer (D50, 2 degree observer, UV excluded, with white backing). All tolerances reflect normal systems variability and assume the use of a calibrated measurement device.

VIII. Sample Proofs

Kodak has supplied three (3) sets of proofs that conform to this Application Data Sheet and have been certified by the IDEAlliance certifying contractor.

Appendix 1

Characterization Data CIELab Values

*ADS Proofing Certification Strip for **SWOP** 2006 Coated #3*

Patch ID	CIELab Data			Maximum Delta E(ab)
	L*	a*	b*	
Paper	92.50	0.00	0.00	3
Yellow Solid	87.97	-5.03	88.10	5
Yellow 75%	89.01	-5.15	67.40	-
Yellow 50%	90.32	-4.34	43.74	-
Yellow 25%	91.46	-2.50	20.87	-
Magenta Solid	47.84	72.08	-3.11	5
Magenta 75%	56.81	55.45	-4.35	-
Magenta 50%	68.16	35.77	-4.37	-
Magenta 25%	80.49	17.04	-2.70	-
Cyan Solid	56.99	-37.23	-44.95	5
Cyan 75%	64.40	-28.99	-35.65	-
Cyan 50%	73.08	-19.51	-24.73	-
Cyan 25%	82.45	-9.86	-12.88	-
Black Solid	18.06	0.01	-0.11	-
Black 75%	39.28	-0.34	-1.80	-
Black 50%	58.21	-0.51	-2.27	-
Black 25%	75.49	-0.39	-1.61	-
Red Solid	46.86	66.21	45.03	6
Green Solid	52.12	-64.75	24.83	6
Blue Solid	26.85	18.10	-44.32	6
3 Color 100%	24.79	0.22	-0.52	6
3 Color 75%	39.81	-0.46	0.13	-
3 Color 50%	56.29	-0.48	-0.41	3
3 Color 25%	73.50	0.03	-0.29	-

Note: 3-color 25% and 75% CIELab values are calculations from the IT8/7.4 characterization data as these patches are not a subset of that data.

FOGRA Wedge Characterization Data CIELab Values for SWOP 2006 Coated #3 Proof

Patch ID	CIELab Data		
	L*	a*	b*
Top 1-1	56.99	-37.23	-44.95
Top 1-2	66.07	-27.13	-33.53
Top 1-3	76.68	-15.58	-20.13
Top 1-4	47.84	72.08	-3.11
Top 1-5	58.95	51.61	-4.46
Top 1-6	73.11	27.81	-3.93
Top 1-7	87.97	-5.03	88.10
Top 1-8	89.28	-5.09	62.78
Top 1-9	90.78	-3.69	34.25
Top 1-10	52.11	36.50	27.30
Top 1-11	39.97	20.57	14.49
Top 1-12	31.11	36.33	20.69
Top 1-13	32.17	39.98	-2.94
Top 1-14	49.02	0.90	37.50
Top 1-15	35.01	-34.17	11.23
Top 1-16	37.09	-24.36	-18.62
Top 1-17	22.79	7.70	-22.88
Top 1-18	85.69	-0.18	-0.70
Top 1-19	78.87	-0.35	-1.40
Top 1-20	65.26	-0.51	-2.24
Top 1-21	51.02	-0.51	-2.31
Top 1-22	35.26	-0.28	-1.63
Top 1-23	18.06	0.01	-0.11

Patch ID	CIELab Data		
	L*	a*	b*
Bottom 2-1	26.85	18.10	-44.32
Bottom 2-2	40.85	16.19	-34.08
Bottom 2-3	59.98	9.94	-22.00
Bottom 2-4	46.86	66.21	45.03
Bottom 2-5	57.68	47.17	37.42
Bottom 2-6	71.81	24.79	23.57
Bottom 2-7	52.12	-64.75	24.83
Bottom 2-8	63.15	-41.26	21.06
Bottom 2-9	74.98	-21.34	12.00
Bottom 2-10	68.56	20.02	18.67
Bottom 2-11	69.74	23.44	67.23
Bottom 2-12	47.87	69.02	16.49
Bottom 2-13	38.04	51.19	-21.63
Bottom 2-14	72.78	-24.61	60.84
Bottom 2-15	54.86	-51.51	-16.56
Bottom 2-16	44.63	-16.62	-44.13
Bottom 2-17	92.50	0.00	0.00
Bottom 2-18	85.38	-0.74	-1.07
Bottom 2-19	78.59	-1.59	-2.16
Bottom 2-20	64.76	-2.56	-2.79
Bottom 2-21	51.46	-3.19	-2.38
Bottom 2-22	39.01	-4.75	-2.42
Bottom 2-23	28.66	-6.48	-3.79