

Kodak Approval Digital Color Imaging System For SWOP Coated #3 with 3333 Donors

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.org 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.

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 **Kodak 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 a **Kodak 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 in stated line screen resolution of 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.



ADS Proofing Certification Strip

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 Values for C3 D3333 (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_D3333_SWOP_C3_06_v1_a_U.dvl is available on the Kodak website: <http://graphics.kodak.com>



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 or a FOGRA Wedge 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 certify the **Kodak 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 hard copy proofs for retention and has verified that they conform to this Application Data Sheet by an IDEAlliance certifying contractor.

Appendix 1
Characterization Data CIELab Values

ADS Proofing Certification Strip 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

| 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 |

| 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 |