



SWOP[®] Application Data Sheet

EFI / Canon ColorPASS-Z800[™] with Canon CLC 1100 Series

Certified – December, 2004

Overview

The SWOP[®] Review Committee has approved the use of off-press proofs as input material to publications. SWOP[®] Specifications recommend that: “The appearance of an off-press proof used in this application must closely simulate a SWOP[®] press proof.”

The following information is intended to assist producers and consumers in the use of EFI graphic arts solutions in a SWOP[®] proofing application. For an EFI SWOP[®] proof to meet the intended requirements, it must be made according to ALL of the following guidelines. A proof made according to this document was SWOP-certified and is based on visual comparison to a current, certified press proof, which is representative of the characterization data contained in ANSI/CGATS TR001.

1. Manufacturer

EFI
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Foster City, CA 94404
<http://www.efi.com/>
650-357-3500

2. Product

The ColorPASS-Z800 color server is compatible with Macintosh[™], Windows[®] and other Adobe[®] PostScript[™] or PDF[™] generating workstations. The ColorPASS-Z800 server is also known as PS-NX800 in some markets. This server is used to process and color manage files for printing on the Canon CLC 1100 series of digital color copiers. EFI's Graphic Arts Package is an optional set of utilities for color servers and includes Paper Simulation, Hot Folders, TIFF-IT support and a host of other features.

3. Introduction

EFI SWOP[®] proofs require the ColorPASS-Z800 color server with the Canon CLC 1100 digital color copier and the optional Graphic Arts Package. The ColorPASS-Z800 color server includes ColorWise[®], EFI's patented color, calibration and profile managing environment. When using a ColorPASS-Z800 color server and when made to specifications, an EFI SWOP[®] proof will simulate the characteristics of SWOP[®] certified press proofs operating within the SWOP[®] proofing guidelines for production printing. The following information defines the methodology and specifications to produce an EFI SWOP[®] certified proof.

4. Control Guides

SWOP[®] Specifications recommend the use of the GCA/GATF Digital Color Bar or other suitable guides (e.g., GATF/ SWOP[®] Digital Proofing Bar), which meet these requirements. As a minimum, this guide should contain solids of the primary process colors and two-color overprints, as well as a 25%, 50% and 75% tint of each of the process colors. Any exposure guide should be checked for accuracy of the original values. Use and interpretation of a control guide is the responsibility of the user.



5. System Components

To be considered an EFI SWOP proof, the following components must be used:

Printer:	Canon CLC 1100 Series
Controller:	ColorPASS-Z800 (is also know as PS-NX800 in some markets)
Paper:	Canon Coated One Side Glossy Card Stock (160gms / 60# cover)
Simulation Profile:	EFI_SWOP_2004.icc
Output Profile:	CLC1100_SWOP_2004.icc

System components and related instructions are available at <http://www.efi.com/>

6. Consumables

In order to most closely simulate the appearance of a SWOP press proof, EFI recommends the following:

6.1 Paper:

EFI specifies the use of Canon Coated One Side Glossy Card Stock (160 gsm / 60# cover) as a base media.

This stock is available at <http://www.usa.canon.com/consumables> under these product codes:

0282V797 (8.5"x11")

0282V800 (17"x11")

0282V802 (18"x12")

6.2 Canon Consumables:

All consumables (toner, developer, etc.) are to be manufactured and maintained by Canon as specified in the Canon owner guidelines for the CLC 1100 digital color copier.

7. Set Up Conditions:

In order to ensure color quality and consistency, EFI specifies that an EFI SWOP proof must be run in a calibrated workflow. The calibration procedure uses the components and consumables in section 5 & 6. The following setup is for the 12x18 media.

7.1 Calibration Procedure:

7.1.1 Launch ColorWise Pro Tools / Profile Manager

7.1.2 Load the EFI_SWOP_2004 simulation profile into the color server.

You can optionally set it as the Default Simulation Profile and have it appear in driver as SWOP-Coated.

7.1.3 Load the CLC1100_SWOP_2004 output profile into the color server, assign it to the "Fine" calibration set and set it as the Default Output Profile

7.1.4 Apply settings and close ColorWise Profile Manager

7.1.5 Launch EFI Command WorkStation

7.1.6 Load the EFI Calibrator patch page in the Hold queue and ensure the following Job Properties are set:

Black Overprint	Off
CMYK Simulation Profile	ColorWise Off (Gamma)
Output Profile	CLC1100_SWOP_2004
Pure Black Text/Graphics	Off
Copier Mode	Photo
Halftone Screen	Contone
Sharpness	None
Toner Reduction	On
GA Features	Installed
Media Type	Heavy Paper
Page Size	12x18 (Larger Printable Area)
Paper Source	SB (Stack Bypass)

7.1.7 Print the calibration patch page on Canon Coated One Side Glossy Card Stock (160 gsm / 60# cover)

7.1.8 Launch ColorWise Pro Tools Calibrator and select the calibration instrument

7.1.9 Going directly to the "Measure" step, measure the calibration patch page printed

7.1.10 Apply the new calibration data within ColorWise Calibrator and close ColorWise Calibrator

Refer to the color server user documentation for further information on calibration.

7.2 Proof Printing Procedure:

When printing SWOP proofs, ensure the following CWS Job Properties are set after the calibration is completed.

Black Overprint	Off
CMYK Simulation Profile	EFI_SWOP_2004
Simulation Method	Full (Output GCR)
Paper Simulation	On
Output Profile	CLC1100_SWOP_2004
Pure Black Text/Graphics	Off
Copier Mode	Photo
Halftone Screen	Contone
Sharpness	None
Toner Reduction	On
GA Features	Installed
Media Type	Heavy Paper
Page Size	12x18 (Larger Printable Area)
Paper Source	SB (Stack Bypass)

Refer to the color server user documentation for further information.

8a. Finished Proof Characteristics (SWOP certification)

A properly printed EFI SWOP[®] proof using a ColorPASS-Z800 color server and Canon CLC 1100 color printer MUST have the characteristics shown in the following table in order to be considered a SWOP[®] Certified Proof.

To validate the quality of the EFI SWOP proof, measure at least 5 samples across pages and compute delta E relative to the values, then determine the average delta E.

Color	Density (Absolute)	Tolerance (+/-)	TVI at 50% (Dot Gain)	Tolerance (+/-)	Print Contrast @ 75%	Tolerance (+/-)	L*	C*	h(ab) [°]	L*	a*	b*	Delta E (max)
Cyan	1.22	0.06	14.0%	3%	39.3%	3%	58.2	55.2	226.0	58.2	-38.3	-39.7	3
Magenta	1.47	0.05	20.7%	3%	36.3%	3%	48.5	71.4	0.5	48.5	71.4	0.6	3
Yellow	0.91	0.05	15.3%	3%	31.1%	3%	84.9	82.5	92.8	84.9	-2.9	81.0	3
Black	1.40	0.06	22.2%	3%	32.3%	3%	23.7	1.2	n/a	23.7	1.6	0.1	3
Red	n/a	n/a	n/a	n/a	n/a	n/a	48.3	73.4	30.8	48.3	66.0	36.1	3
Green	n/a	n/a	n/a	n/a	n/a	n/a	52.8	57.1	159.1	52.8	-60.3	28.3	3
Blue	n/a	n/a	n/a	n/a	n/a	n/a	26.5	43.8	294.3	26.5	18.9	-41.4	3
Paper	n/a	n/a	n/a	n/a	n/a	n/a	90.8	3.4	74.6	90.8	0.9	3.3	2

Paper (Simulated Background)	Cyan	Magenta	Yellow	Tolerance (+/-)
Density (absolute)	0.09	0.11	0.13	0.02

These measurements were made using a calibrated GretagMacbeth Eye-One Spectrophotometer (D50 illuminant, 2° observer). All density measurements are absolute Status T and colorimetric values are absolute, base included, measured over black. The dot gain values were calculated using the Murray-Davies equation and Print Contrast is absolute (conforming to CGATS 4).

8b. Finished Proof Characteristics (Not formally certified by SWOP)

Many EFI controllers are sold with an EFI Spectrophotometer ES-1000, which always includes a UV filter because of its flexibility in multiple applications. As measurements made with instruments featuring a UV filter cannot be used when sharing data in accordance with CGATS standards, SWOP does not certify the following table. It is included for reference only, as a courtesy to EFI customers.

Color	Density (Absolute)	Tolerance (+/-)	TVI at 50% (Dot Gain)	Tolerance (+/-)	Print Contrast @ 75%	Tolerance (+/-)	L*	C*	h(ab) ^o	L*	a*	b*	Delta E (max)
Cyan	1.23	0.06	14.7%	3%	39.2%	3%	58.5	55.3	223.3	58.5	-40.3	-37.9	3
Magenta	1.48	0.05	21.1%	3%	36.7%	3%	47.6	70.9	205.8	47.6	70.9	0.1	3
Yellow	0.94	0.05	16.0%	3%	31.4%	3%	84.5	82.1	91.8	84.5	-2.6	82.1	3
Black	1.41	0.06	22.4%	3%	32.7%	3%	23.5	0.9	n/a	23.5	0.7	0.4	3
Red	n/a	n/a	n/a	n/a	n/a	n/a	47.6	74.5	28.0	47.6	65.7	35.0	3
Green	n/a	n/a	n/a	n/a	n/a	n/a	52.9	67.9	153.9	52.9	-61.0	29.8	3
Blue	n/a	n/a	n/a	n/a	n/a	n/a	26.5	44.4	293.1	26.5	17.4	-40.8	3
Paper	n/a	n/a	n/a	n/a	n/a	n/a	90.7	5.1	n/a	90.7	0.2	5.1	2

These measurements were made using a calibrated EFI Spectrophotometer ES-1000 (D50 illuminant, 2° observer, UV filter).

9. Sample Proofs

EFI has supplied two EFI SWOP[®] proofs, which conform to this Application Data Sheet, to the SWOP Technical Committee for their certification and retention. Copies of this document are on file with SWOP Inc., or can be acquired by contacting <http://www.efi.com>.

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