

# Aardenburg

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## IMAGING & ARCHIVES

*Tested System:*

*ID#:292*

Printer: Epson Stylus Pro 9800

Inks/Colorants: Epson OEM (K3 Ultrachrome)

Media: IJ Technologies Premium Edition Water Resistant Canvas

Coating(s): Clearstar Clearshield® Gloss, spray coated

**Sample #: AaI\_20091008\_SN017**

**Testing Status: 160 Megalux hours total light exposure**

*Testing Is ongoing, next update on approximately OCT 05, 2014*

### Conservation Display Rating (CDR)

*Lower limit:* 27 Megalux hours (for weakest 10% of the color patches)

*Upper limit:* 60 Megalux hours (for average of all the color patches)

Note: a CDR with narrow range (typically less than 2:1) indicates relatively even overall fading of the image. A wide range indicates faster fading in certain local colors/tones prior to general fading of most colors/tones in the entire image. Compare ratings for different systems directly and/or use the table on page 2 to estimate time (years) on display.

\* Please read document AaI\_2009\_0118\_TA-01.pdf, “An Overview of the AaI&A Conservation Display Ratings”, located on the Documents page of the AaI&A website for further explanation of the Conservation display ratings.

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## About this Report

This report contains light fastness information about a sample test print produced by a specific digital printing system. “System” refers to all hardware, software, and materials used to make the finished print. The hardware, software, material components, and printmaker’s skills contribute to the final image quality and image permanence. The tested sample is made with current or recently discontinued stocks of commercially available products unless otherwise stated. Each sample has been prepared by Aardenburg Imaging & Archives or one of its members in accordance with customary print making practices unless otherwise noted. The sample may also contain additional finishing materials such as overcoats and laminates which are also noted when used. Finally, the sample has been tested under standardized conditions that are defined on the Sample Description page (see page 4). AaI&A makes every effort to ensure but cannot guarantee that the samples are properly identified and documented and that test results are accurate. For this reason, AaI&A also strives to test independently produced sample replicates in order to increase sampling confidence and to provide information on process variability. Please compare the results in this report to replicate test samples when the data become available.

## Understanding this Report



The magnitude and visual appearance of fading depends not only on the chosen printing system but the chosen image as well. In other words, different images are comprised of different colors, and the fading relationships between those colors dictate how the image will look as it fades. The sample print in this test report was made by reproducing the digital image shown on the left. It contains 30 standard colors. 24 of the colors are colorimetrically matched to the Macbeth ColorChecker™ chart viewed under D50 illumination. The remaining six colors supplement the ColorChecker™ array with four additional skin tone colors, one patch for paper white, and another for maximum black. The additional colors also round out the distribution of CIELAB L\* (lightness) values in the test target.

Information about the fading characteristics of the product is provided in three ways:

**1) You can visually assess the fading.** The target images reproduced in this report are digitally reconstructed from the spectrally measured color data rather than scanning or otherwise reproducing the physical print by conventional techniques. This method ensures a colorimetrically accurate representation of the print appearance as the print fades. A calibrated monitor is recommended to experience the best possible reproduction of the test sample appearance. The side-by-side “before and after” presentation of the target images simulates looking at a perfect copy of the unexposed original print along side the same print after light exposure. You can also use Adobe Reader’s full screen mode to cycle through the pages and “animate” the fading.

**2) I\* Color and tonal accuracy scores are reported.** This report includes I\* metric scores that compare the color and tonal relationships of the light exposed samples to the color and tonal relationships existing in the original print prior to light exposure. Perfect I\* scores of 100% can be approached when no significant fading occurs. Average scores above 90% generally indicate excellent retention of original quality, 80% good, 70% fair, etc., but your conclusions may vary depending on your image quality requirements. I\* color rates the retained color accuracy (hue and chroma) while I\* tone rates the retained tonal accuracy (lightness and contrast). The score is on a percentile scale where 100% is a perfect match between the comparison image (e.g., “after” light exposure) and the reference image (e.g., “before” any light exposure). 0% I\* color means no color accuracy is left. 0% I\* tone means essentially no tonality remains and all image information content is lost. Negative I\* values have significance as well and contribute to the average I\* score when they occur. Negative I\* color values mean false color has occurred, for example, when a skin tone turns green or a neutral gray becomes distinctly colorful. Negative I\* tone scores mean visual contrast between colors has become inverted (i.e., like the tonal relationships in a photographic film negative). Serious image quality problems must arise before false colors and/or tones appear. For more information on the I\* metric, please refer to the AaI&A web site.

**3) Color changes are also reported using the classic color difference model,  $\Delta E$ .** Note that  $\Delta E$  values lose perceptual scaling significance when they become large (e.g., > 15). Also, the  $\Delta E$  equation does not unambiguously measure changes in image contrast. This limitation is generally not a problem for paints and textiles, but can be a serious oversight when evaluating photographic images. Properly tracking changes in image contrast was a major reason behind the development of the I\* metric.

Table to Convert Megalux-hours of Light Exposure to estimated “Years on Display”												
Indoor Light Levels for Print Display		Multiply Mlux-hrs by	Megalux-hours in test									
Light Exposure	Description		10	20	30	40	50	60	70	80	90	100
≤ 10 Lux 24 hours per day	Interior rooms, storage areas, or hallways without windows, illuminated sparingly by artificial lighting	11.4	114	228	342	457	571	685	799	913	1027	1142
50 Lux 12 hours per day	“Museum Standard” display condition	4.6	46	91	137	183	228	274	325	365	411	457
120 Lux 12 hours per day “Kodak Display Years” (1)	Average home illumination level for photos is ~ 60 lux. 90% of all displayed photos do not exceed 120 lux (1).	1.9	19	38	57	76	95	114	133	152	171	190
228 Lux 12 hours per day	Relatively bright home or office. Note the simple 1:1 relationship between “years on display” and Mlux-hr values at this condition.	1.0	10	20	30	40	50	60	70	80	90	100
450 Lux 12 hours per day “WIR Display Years” (2)  Also equals 500 lux for 11.8 hours per day	A bright home or commercial office building illumination level is 200-500 lux. Also, good illumination for color critical viewing and color matching tasks begins at about 500 lux.	0.5	5	10	15	20	25	30	35	41	46	51

Light levels commonly encountered in the real world fluctuate widely throughout indoor print display environments and produce large variations in how long it takes for artwork to acquire light-induced damage. Use this table as a guide to estimate how many “years on display” (denoted in red text) it takes to accumulate the light exposure test dosage. Review the test results to decide which Megalux-hour dose has caused fading to your level of concern (e.g., just noticeable, easily noticeable, objectionable, etc.). Then choose the print display description that best represents how your print is likely to be displayed. You may want to obtain a lux meter and make some measurements in your own display environment!

Note that as the years of display time increase, light-induced fading can be eclipsed by other serious aging mechanisms such as fading and/or staining caused by heat, humidity, and air pollutants. Mould damage can also occur at high humidity. Even when colorants remain water fast, direct contact with liquids may result in physical deformation and staining of the substrate. Also, temperature and especially humidity cycling can cause physical cracks and/or flaking, etc. Handling damage such as scratching, abrasion, tears and creases, and catastrophic damage by smoke, fire, flood, etc., also degrade print quality over time. Thus, as illumination levels are reduced other forms of degradation take on greater proportion of risk and may appear in shorter time intervals.

(1) Eastman Kodak cited this exposure condition with a 90% confidence limit as a rationale for estimating print fading times of traditional color photo materials in typical home display environments. For light fading claims regarding its newer line of pigment-based inkjet printers, Kodak adopted the higher level of 450lux/12 hours per day which is also used by Wilhelm Imaging Research, Inc. (See below).

(2) Wilhelm Imaging Research (WIR) standardized its light fastness ratings on 450 lux for 12 hours per day in order to estimate the years on display necessary to reach “easily noticeable” fading. This average daily light exposure dose (at 75°F/60%RH assumed temperature and humidity levels) used in conjunction with WIR’s visually weighted densitometric endpoint criteria set V3.0 became a de facto industry standard during the first decade of the 21st century in the absence of a published International Standards Organization (ISO) test standard. However, the WIR V3.0 visual criteria set used to predict “easily noticeable fade” was designed for traditional 20th century silver-halide color photofinishing processes. It is not well suited to the evaluation of modern digital media. Nevertheless, the WIR assumed daily light exposure dose is one of many commonly encountered light exposure conditions existing within the range of real world picture display locations.

# Sample Description

**Sample #** AaI\_20091008\_SN017 **Batch #:** I1a  
**Printer:** Epson Stylus Pro 9800  
**Ink:** Epson OEM (K3 Ultrachrome)  
**Media:** IJ Technologies Premium Edition Water Resistant Canvas  
**Coating(s):** Clearstar Clearshield® Gloss, spray coated

**Test Print Prepared by:** AaI&A member  
**Printed:** October 8, 2009  
**Initial Print colors measured** September 19, 2010  
**Test Started:** September 19, 2010

**Test Image:** AaI\_StandardColorSet(v2)forSRGB.tif  
**RIP?Driver settings:** Colorbyte ImagePrint v6.1, 1440 8 pass high speed

**Media Setting** canvas

**Profile:** 9800MKIJPEWR Rel.icc **Rendering** relative  
**Profile type:** custom

## Paper White Color (UV-included versus UV-excluded)

<b>Optical Brighteners Present?</b> <i>yes (low)</i>	<b>L*</b>		<b>a*</b>		<b>b*</b>	
<b>Media Whitepoint Color</b>	UV inc	UV exc	UV inc	UV exc	UV inc	UV exc
	95.6	95.6	-0.1	-0.7	0.9	3.1
	<b>UV-inc/UV-exc <math>\Delta L^*</math>, <math>\Delta a^*</math>, <math>\Delta b^*</math> respectively</b>					
	0.0		0.6		2.2	
	<i>Calculated differences, especially for <math>\Delta b^*</math>, indicate the role and magnitude of fluorescence on original paper color</i>					
<b>Maximum Printed Black</b>	<b>L*</b>	<b>a*</b>	<b>b*</b>	<b>Optical Density (Dmax)</b>		
	11.7	0.3	0.6	1.87		

**Light source:** Phillips Colortone F40T12/C50 – 5000°K full spectrum fluorescent. Color rendering Index (CRI) =92), soda lime glass filtered  
**Light Exposure Cycle:** 8 hours on, 4 hours off, twice per 24 hours  
**CIELAB measurements:** D50 2° observer, Xrite Gretag/Macbeth Spectrolino/Spectroscan

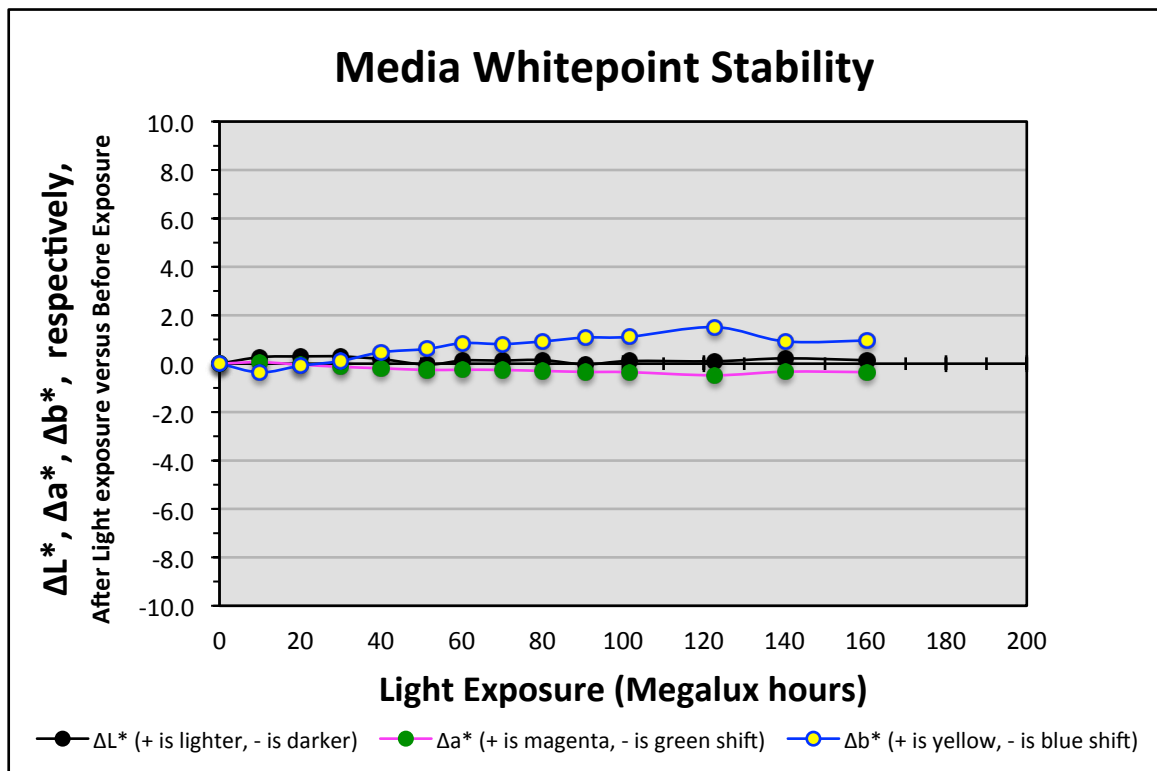
**Average Illuminance during “on” cycle:** 11254 Lux  
**Average Temperature:** 23.3°C over full test duration, 24.7°C during light exposure.  
**Average Relative humidity:** 56.7%RH over full test duration, 56.5%RH during light exposure.

**Notes/Comments:**

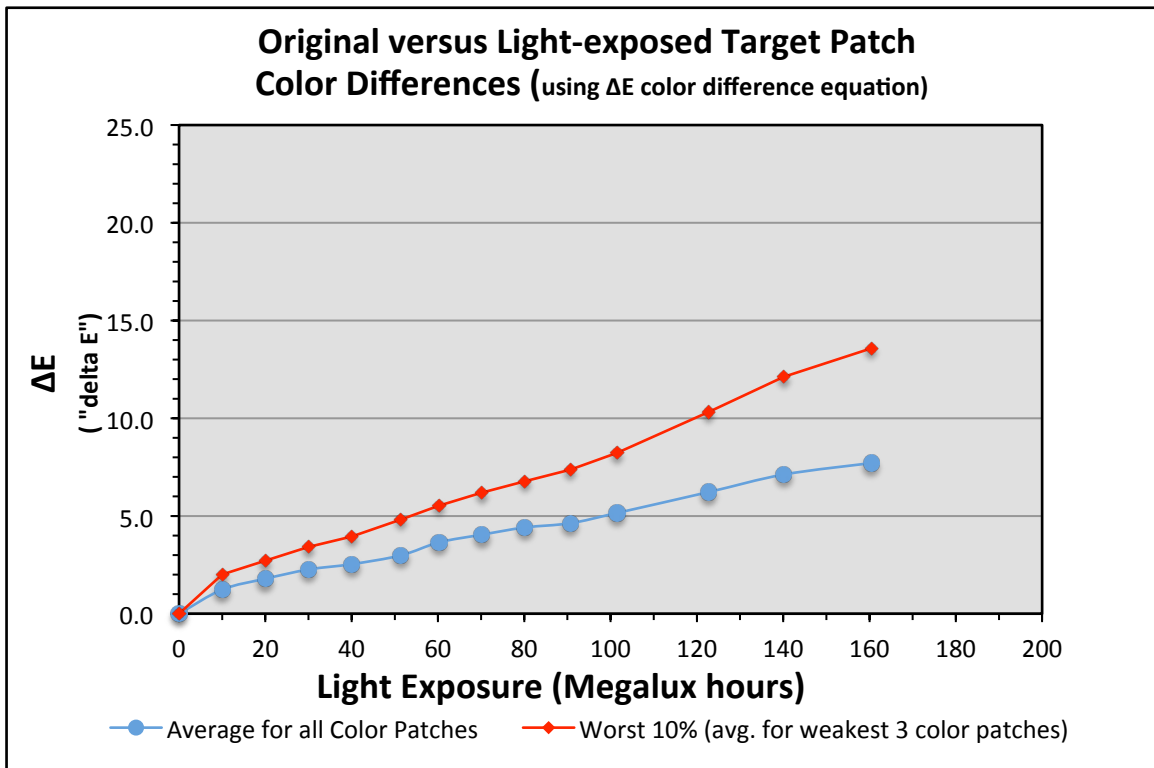
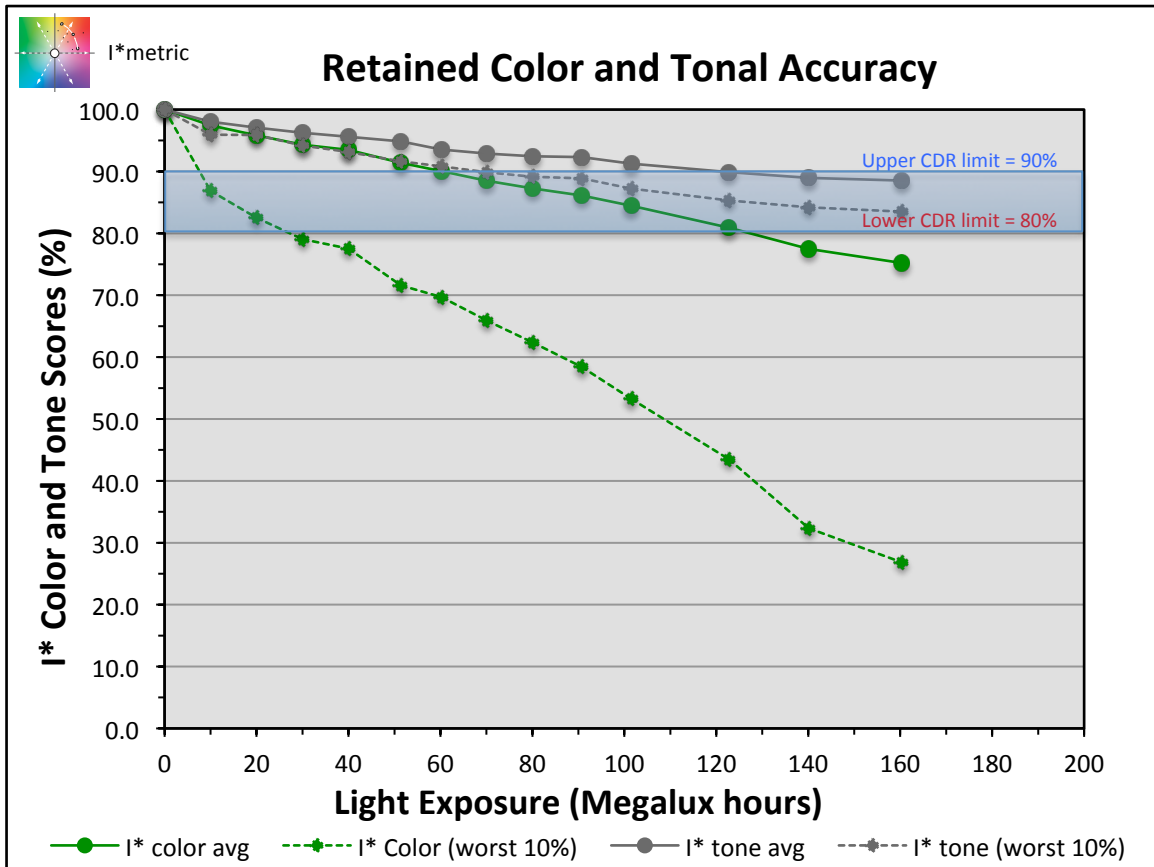
MHMG 2013-11-07: Compare this test sample to samples **AaI\_20091008\_SN011** and **AaI\_20091008\_SN014**. SN011 was printed with the same printer, ink, and media but is uncoated. Sample SN014 was also printed with the same printer, ink, and media but was coated with the Clearstar Clearshield® Satin rather than gloss acrylic varnish.

**Graphs:**

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*

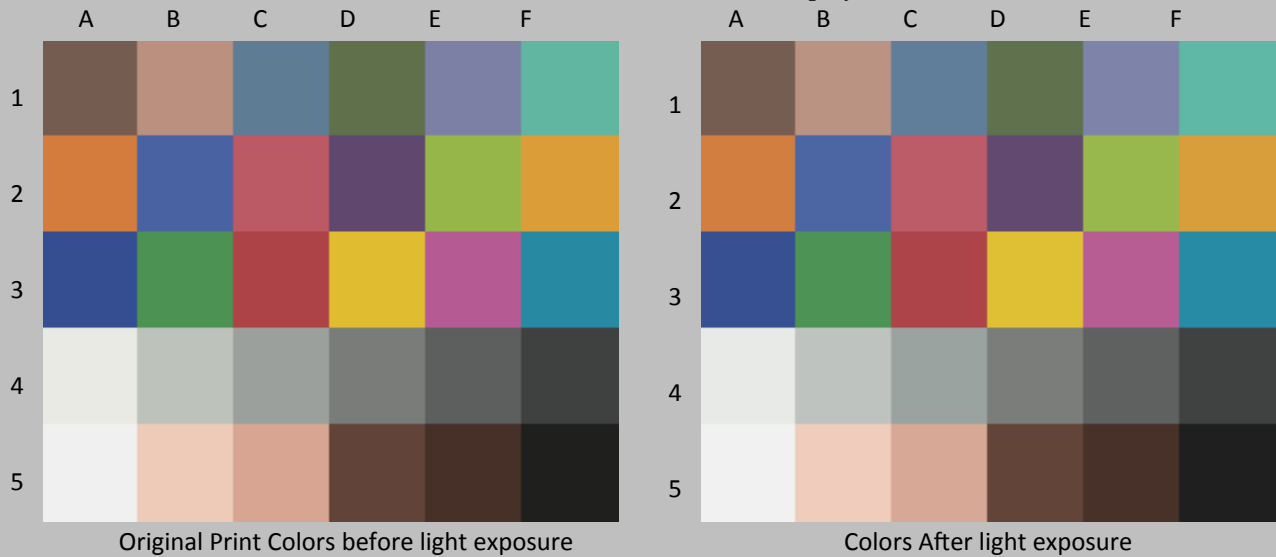


*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



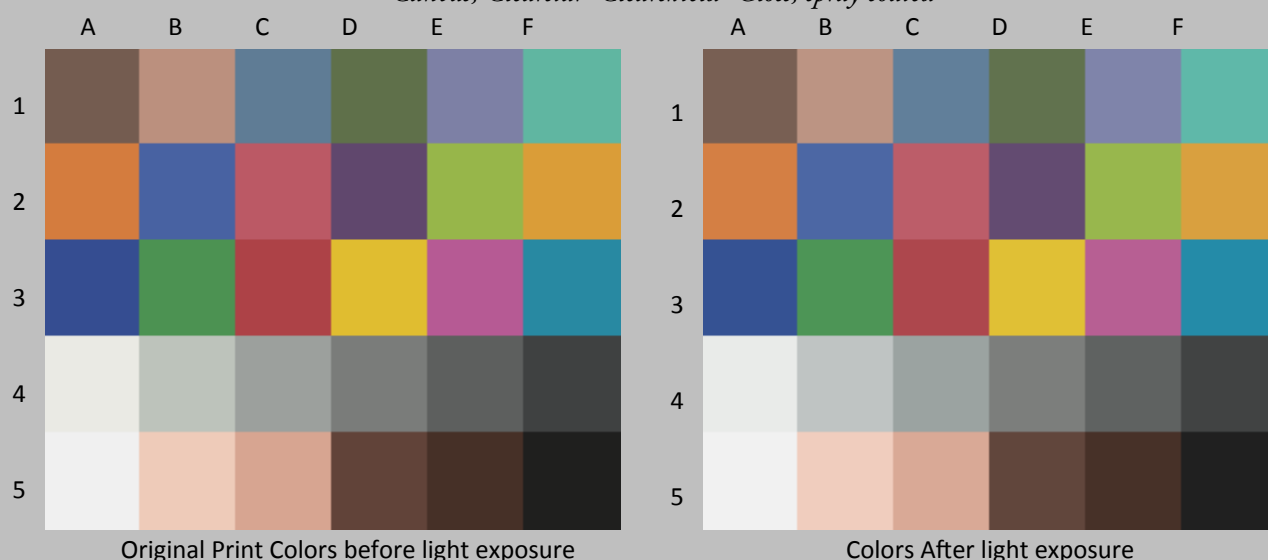
Values:

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	99.7	0.9	41.4	42.1	9.4	9.2	11.4	11.0
B1	Light Skin	97.3	1.3	63.7	64.4	14.6	14.1	16.2	15.3
C1	Blue sky	98.6	1.1	50.7	51.5	-6.1	-6.3	-17.2	-17.9
D1	Foliage	98.8	1.0	45.0	45.6	-11.7	-11.8	18.7	17.9
E1	blue flower	98.8	1.0	54.5	55.2	5.4	5.1	-20.3	-21.0
F1	bluish green	96.0	1.8	68.2	68.6	-31.2	-31.0	1.8	0.1
A1	orange	98.1	1.7	61.3	61.7	31.1	30.1	48.3	47.1
B2	purplish blue	99.9	1.0	42.1	43.0	4.7	4.2	-37.6	-37.4
C2	moderate red	98.5	1.3	50.8	51.3	41.4	40.4	13.1	12.5
D2	purple	98.5	1.3	34.1	35.0	16.9	16.1	-18.1	-17.8
E2	yellow green	98.5	1.4	70.2	70.6	-22.5	-22.9	50.5	49.2
F2	orange yellow	98.4	1.6	69.5	70.0	16.6	15.6	58.7	57.6
A3	blue	97.8	1.8	33.6	34.6	7.9	6.8	-41.3	-40.3
B3	green	99.1	1.1	54.8	55.5	-34.4	-34.4	27.1	26.2
C3	red	98.3	1.4	43.5	44.1	45.0	44.0	20.6	19.8
D3	yellow	98.6	1.5	78.1	78.5	3.2	2.4	70.2	69.0
E3	magenta	97.3	1.9	51.5	52.2	43.3	41.9	-13.9	-12.9
F3	cyan	98.2	1.3	52.5	53.2	-22.0	-21.9	-22.0	-23.0
A4	white	81.1	2.3	92.4	92.7	-1.2	-0.7	3.4	1.1
B4	neutral 8	86.6	1.8	78.1	78.5	-2.5	-2.5	2.5	0.8
C4	neutral 6.5	95.2	1.1	65.6	66.1	-2.4	-2.7	0.9	-0.1
D4	neutral 5	100.0	0.8	51.6	52.3	-1.1	-1.4	1.3	0.9
E4	neutral 3.5	100.0	0.9	39.9	40.7	-1.1	-1.3	-0.2	-0.3
F4	black	100.0	0.8	27.3	28.0	-1.3	-1.3	-0.1	-0.1
A5	paper white	100.0	0.5	95.0	95.3	0.1	0.2	0.5	0.1
B5	Skin highlight L*=88	92.9	1.9	84.3	84.8	11.2	10.8	14.4	12.6
C5	Skin highlight L* =75	97.4	1.3	72.3	72.9	17.1	16.3	18.4	17.5
D5	Skin shadow L*=28	100.0	0.8	31.6	32.3	11.7	11.5	11.8	11.5
E5	Skin shadow L*=13	100.0	0.4	22.3	22.7	8.7	8.8	9.9	9.8
F5	Maximum Black	100.0	0.3	11.7	11.9	0.3	0.4	0.6	0.4
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>10 Megalux hours</b>				
Average Score for all patches		97.5	98.0	1.2					
Worst 10% (3 lowest scoring patches)		86.9	95.9	2.0					

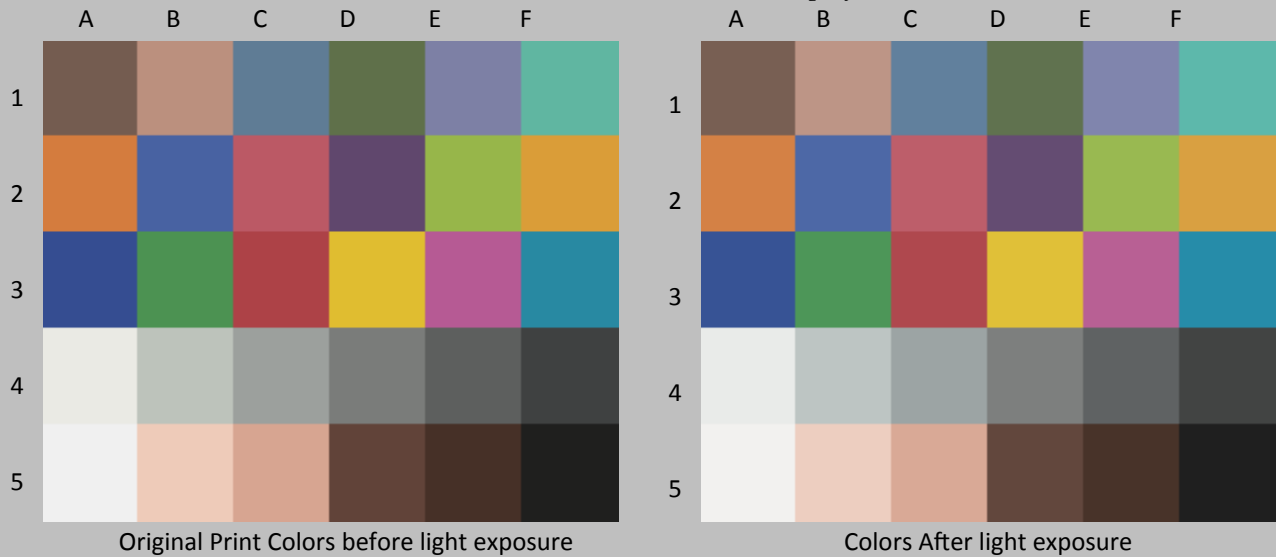
*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	98.1	1.4	41.4	42.6	9.4	9.1	11.4	10.7
B1	Light Skin	95.1	1.9	63.7	64.8	14.6	13.8	16.2	14.9
C1	Blue sky	96.8	1.6	50.7	51.9	-6.1	-6.3	-17.2	-18.2
D1	Foliage	97.3	1.4	45.0	45.8	-11.7	-11.7	18.7	17.6
E1	blue flower	97.2	1.6	54.5	55.7	5.4	4.9	-20.3	-21.3
F1	bluish green	93.4	2.6	68.2	68.9	-31.2	-30.8	1.8	-0.7
A1	orange	96.8	2.5	61.3	62.1	31.1	29.6	48.3	46.5
B2	purplish blue	99.2	1.5	42.1	43.4	4.7	3.9	-37.6	-37.3
C2	moderate red	97.5	1.9	50.8	51.8	41.4	40.1	13.1	12.2
D2	purple	97.4	1.8	34.1	35.5	16.9	15.8	-18.1	-17.8
E2	yellow green	97.3	2.1	70.2	70.7	-22.5	-23.1	50.5	48.6
F2	orange yellow	97.2	2.3	69.5	70.2	16.6	15.3	58.7	56.9
A3	blue	96.4	2.5	33.6	35.1	7.9	6.4	-41.3	-40.0
B3	green	97.7	1.7	54.8	55.7	-34.4	-34.5	27.1	25.6
C3	red	96.7	2.4	43.5	44.6	45.0	43.3	20.6	19.4
D3	yellow	98.1	2.0	78.1	78.8	3.2	2.1	70.2	68.7
E3	magenta	95.4	2.8	51.5	52.7	43.3	41.2	-13.9	-12.5
F3	cyan	96.0	2.0	52.5	53.5	-22.0	-21.7	-22.0	-23.7
A4	white	78.3	2.6	92.4	92.8	-1.2	-0.7	3.4	0.9
B4	neutral 8	80.7	2.4	78.1	78.8	-2.5	-2.5	2.5	0.2
C4	neutral 6.5	90.8	1.6	65.6	66.5	-2.4	-2.7	0.9	-0.5
D4	neutral 5	98.2	1.2	51.6	52.6	-1.1	-1.4	1.3	0.7
E4	neutral 3.5	100.0	1.4	39.9	41.2	-1.1	-1.3	-0.2	-0.5
F4	black	100.0	1.0	27.3	28.3	-1.3	-1.4	-0.1	-0.2
A5	paper white	100.0	0.3	95.0	95.3	0.1	0.1	0.5	0.4
B5	Skin highlight L*=88	88.6	2.7	84.3	85.0	11.2	10.6	14.4	11.9
C5	Skin highlight L* =75	95.6	1.9	72.3	73.2	17.1	16.2	18.4	17.1
D5	Skin shadow L*=28	99.2	1.3	31.6	32.7	11.7	11.4	11.8	11.2
E5	Skin shadow L*=13	100.0	0.6	22.3	22.9	8.7	8.9	9.9	9.8
F5	Maximum Black	100.0	0.5	11.7	12.2	0.3	0.4	0.6	0.3
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>20 Megalux hours</b>				
Average Score for all patches		95.8	97.1	1.8					
Worst 10% (3 lowest scoring patches)		82.5	95.9	2.7					

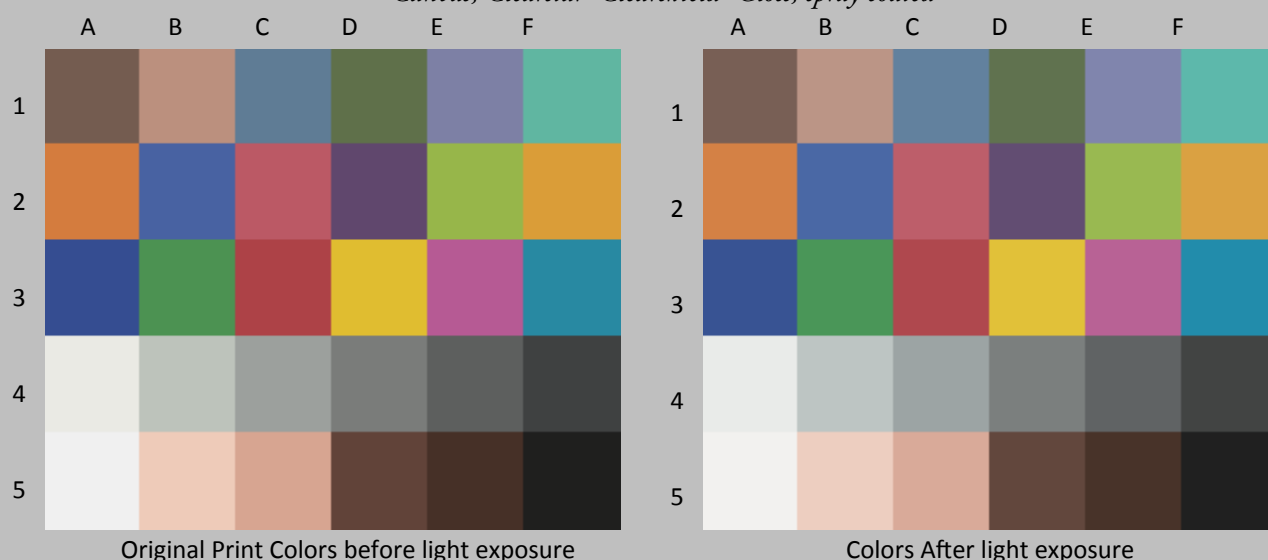


*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



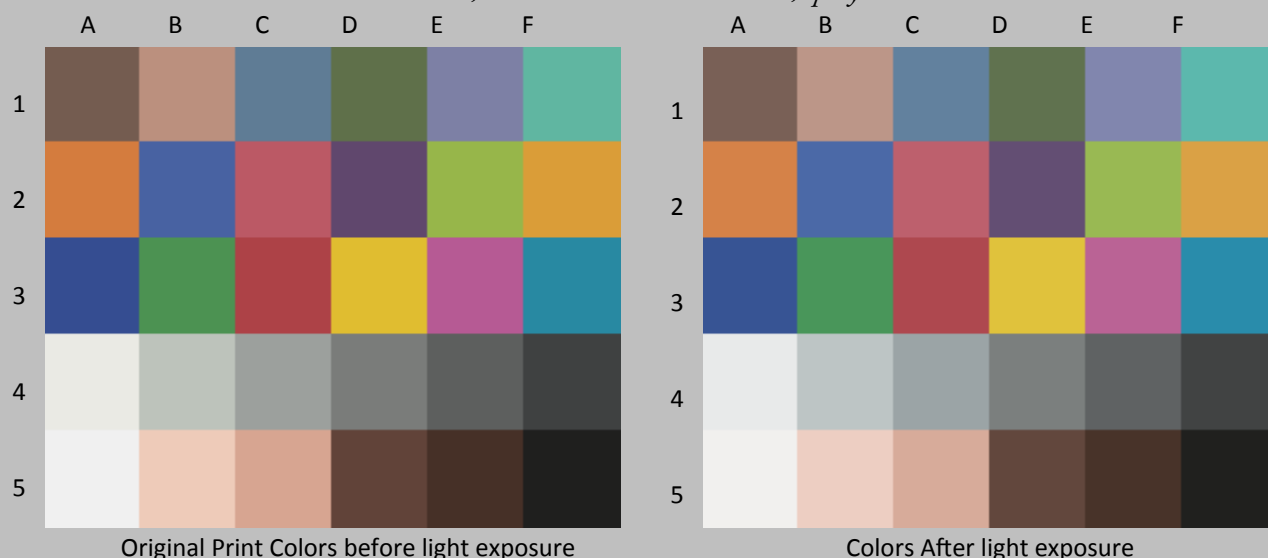
Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	96.8	1.7	41.4	42.8	9.4	9.0	11.4	10.6
B1	Light Skin	92.2	2.6	63.7	65.1	14.6	13.6	16.2	14.3
C1	Blue sky	95.0	2.1	50.7	52.3	-6.1	-6.3	-17.2	-18.6
D1	Foliage	95.6	1.8	45.0	46.0	-11.7	-11.7	18.7	17.2
E1	blue flower	95.8	2.0	54.5	56.0	5.4	4.8	-20.3	-21.6
F1	bluish green	90.8	3.5	68.2	69.0	-31.2	-30.7	1.8	-1.5
A1	orange	95.7	3.2	61.3	62.4	31.1	29.4	48.3	45.9
B2	purplish blue	98.5	2.0	42.1	43.7	4.7	3.7	-37.6	-37.3
C2	moderate red	96.2	2.5	50.8	52.1	41.4	39.7	13.1	11.8
D2	purple	96.2	2.5	34.1	36.1	16.9	15.5	-18.1	-17.8
E2	yellow green	96.3	2.6	70.2	71.0	-22.5	-23.2	50.5	48.1
F2	orange yellow	96.0	3.1	69.5	70.4	16.6	14.9	58.7	56.3
A3	blue	95.1	3.2	33.6	35.5	7.9	6.0	-41.3	-39.6
B3	green	96.3	2.4	54.8	55.9	-34.4	-34.4	27.1	25.0
C3	red	95.9	2.9	43.5	44.9	45.0	43.2	20.6	18.9
D3	yellow	97.0	2.8	78.1	78.9	3.2	1.9	70.2	67.9
E3	magenta	94.1	3.6	51.5	53.1	43.3	40.7	-13.9	-12.1
F3	cyan	94.2	2.6	52.5	53.7	-22.0	-21.6	-22.0	-24.3
A4	white	75.5	2.8	92.4	92.8	-1.2	-0.7	3.4	0.6
B4	neutral 8	76.0	2.9	78.1	78.9	-2.5	-2.5	2.5	-0.3
C4	neutral 6.5	86.8	2.0	65.6	66.6	-2.4	-2.8	0.9	-0.9
D4	neutral 5	95.2	1.6	51.6	52.9	-1.1	-1.5	1.3	0.4
E4	neutral 3.5	100.0	1.5	39.9	41.4	-1.1	-1.4	-0.2	-0.6
F4	black	100.0	1.2	27.3	28.5	-1.3	-1.4	-0.1	-0.2
A5	paper white	100.0	0.3	95.0	95.3	0.1	0.0	0.5	0.6
B5	Skin highlight L*=88	85.7	3.2	84.3	85.2	11.2	10.4	14.4	11.4
C5	Skin highlight L* =75	93.3	2.5	72.3	73.5	17.1	15.9	18.4	16.5
D5	Skin shadow L*=28	99.4	1.4	31.6	32.9	11.7	11.4	11.8	11.3
E5	Skin shadow L*=13	100.0	1.1	22.3	23.4	8.7	8.8	9.9	9.7
F5	Maximum Black	100.0	0.2	11.7	11.9	0.3	0.3	0.6	0.5
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>30 Megalux hours</b>				
Average Score for all patches		94.3	96.3	2.3					
Worst 10% (3 lowest scoring patches)		79.1	94.2	3.4					

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



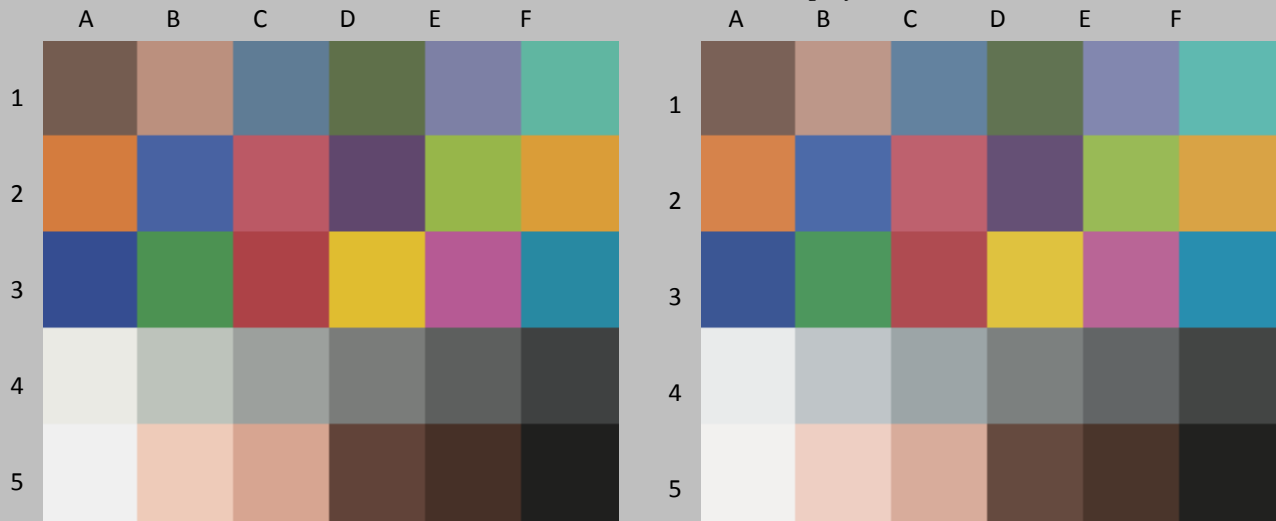
Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	95.9	1.9	41.4	42.9	9.4	9.0	11.4	10.4
B1	Light Skin	90.8	3.0	63.7	65.3	14.6	13.4	16.2	14.0
C1	Blue sky	93.9	2.3	50.7	52.4	-6.1	-6.3	-17.2	-18.8
D1	Foliage	94.4	2.0	45.0	46.0	-11.7	-11.7	18.7	17.0
E1	blue flower	95.1	2.3	54.5	56.2	5.4	4.6	-20.3	-21.6
F1	bluish green	89.3	4.0	68.2	69.1	-31.2	-30.7	1.8	-2.0
A1	orange	95.0	3.6	61.3	62.5	31.1	29.1	48.3	45.5
B2	purplish blue	97.7	2.3	42.1	44.0	4.7	3.5	-37.6	-37.0
C2	moderate red	95.7	2.8	50.8	52.3	41.4	39.6	13.1	11.6
D2	purple	95.5	2.7	34.1	36.3	16.9	15.4	-18.1	-17.7
E2	yellow green	95.6	3.1	70.2	71.0	-22.5	-23.4	50.5	47.7
F2	orange yellow	95.6	3.3	69.5	70.5	16.6	14.9	58.7	56.0
A3	blue	94.2	3.6	33.6	35.8	7.9	5.7	-41.3	-39.4
B3	green	95.4	2.8	54.8	56.0	-34.4	-34.6	27.1	24.6
C3	red	95.4	3.2	43.5	45.1	45.0	43.1	20.6	18.6
D3	yellow	96.9	2.8	78.1	79.1	3.2	1.7	70.2	68.0
E3	magenta	92.8	4.2	51.5	53.4	43.3	40.3	-13.9	-11.7
F3	cyan	93.0	3.0	52.5	53.8	-22.0	-21.8	-22.0	-24.6
A4	white	75.4	2.9	92.4	92.8	-1.2	-0.6	3.4	0.6
B4	neutral 8	74.0	3.1	78.1	79.0	-2.5	-2.6	2.5	-0.5
C4	neutral 6.5	85.5	2.2	65.6	66.8	-2.4	-2.9	0.9	-1.0
D4	neutral 5	95.0	1.6	51.6	52.9	-1.1	-1.6	1.3	0.4
E4	neutral 3.5	100.0	1.7	39.9	41.5	-1.1	-1.4	-0.2	-0.6
F4	black	100.0	1.3	27.3	28.5	-1.3	-1.3	-0.1	-0.2
A5	paper white	99.9	0.5	95.0	95.2	0.1	-0.1	0.5	1.0
B5	Skin highlight L*=88	83.2	3.7	84.3	85.2	11.2	10.1	14.4	11.0
C5	Skin highlight L* =75	91.6	2.9	72.3	73.6	17.1	15.6	18.4	16.2
D5	Skin shadow L*=28	97.8	1.8	31.6	33.1	11.7	11.4	11.8	11.0
E5	Skin shadow L*=13	100.0	1.1	22.3	23.4	8.7	8.8	9.9	9.7
F5	Maximum Black	100.0	0.4	11.7	12.2	0.3	0.3	0.6	0.5
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>40 Megalux hours</b>				
Average Score for all patches		93.5	95.6	2.5					
Worst 10% (3 lowest scoring patches)		77.5	93.1	3.9					

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	94.1	2.2	41.4	43.1	9.4	9.0	11.4	10.1
B1	Light Skin	87.8	3.6	63.7	65.4	14.6	13.4	16.2	13.3
C1	Blue sky	90.2	2.9	50.7	52.5	-6.1	-6.4	-17.2	-19.4
D1	Foliage	93.1	2.3	45.0	46.1	-11.7	-11.8	18.7	16.7
E1	blue flower	92.7	2.8	54.5	56.4	5.4	4.7	-20.3	-22.2
F1	bluish green	85.5	5.1	68.2	69.1	-31.2	-30.6	1.8	-3.2
A1	orange	94.0	4.2	61.3	62.6	31.1	28.9	48.3	45.0
B2	purplish blue	97.5	2.6	42.1	44.2	4.7	3.4	-37.6	-37.0
C2	moderate red	94.6	3.3	50.8	52.5	41.4	39.3	13.1	11.1
D2	purple	95.7	3.0	34.1	36.6	16.9	15.4	-18.1	-17.8
E2	yellow green	94.2	3.8	70.2	71.1	-22.5	-23.3	50.5	46.9
F2	orange yellow	94.3	4.1	69.5	70.6	16.6	14.5	58.7	55.4
A3	blue	93.3	4.1	33.6	36.0	7.9	5.4	-41.3	-39.1
B3	green	94.0	3.4	54.8	56.0	-34.4	-34.7	27.1	24.0
C3	red	94.5	3.7	43.5	45.3	45.0	42.9	20.6	18.2
D3	yellow	96.1	3.4	78.1	79.1	3.2	1.5	70.2	67.4
E3	magenta	91.8	4.7	51.5	53.5	43.3	40.0	-13.9	-11.3
F3	cyan	90.6	3.7	52.5	53.9	-22.0	-21.5	-22.0	-25.3
A4	white	71.4	3.2	92.4	92.6	-1.2	-0.6	3.4	0.2
B4	neutral 8	65.7	3.9	78.1	79.0	-2.5	-2.6	2.5	-1.2
C4	neutral 6.5	78.8	2.8	65.6	66.8	-2.4	-2.9	0.9	-1.6
D4	neutral 5	92.0	1.8	51.6	52.9	-1.1	-1.5	1.3	0.1
E4	neutral 3.5	98.8	1.6	39.9	41.4	-1.1	-1.3	-0.2	-0.8
F4	black	100.0	1.1	27.3	28.4	-1.3	-1.4	-0.1	-0.3
A5	paper white	98.3	0.7	95.0	95.0	0.1	-0.1	0.5	1.1
B5	Skin highlight L*=88	77.7	4.7	84.3	85.2	11.2	10.0	14.4	10.0
C5	Skin highlight L* =75	88.0	3.7	72.3	73.5	17.1	15.4	18.4	15.3
D5	Skin shadow L*=28	96.9	1.8	31.6	33.1	11.7	11.4	11.8	10.8
E5	Skin shadow L*=13	100.0	1.1	22.3	23.4	8.7	8.7	9.9	9.7
F5	Maximum Black	100.0	0.3	11.7	12.0	0.3	0.3	0.6	0.5
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>50 Megalux hours</b>				
Average Score for all patches		91.4	94.9	3.0					
Worst 10% (3 lowest scoring patches)		71.6	91.6	4.8					

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*

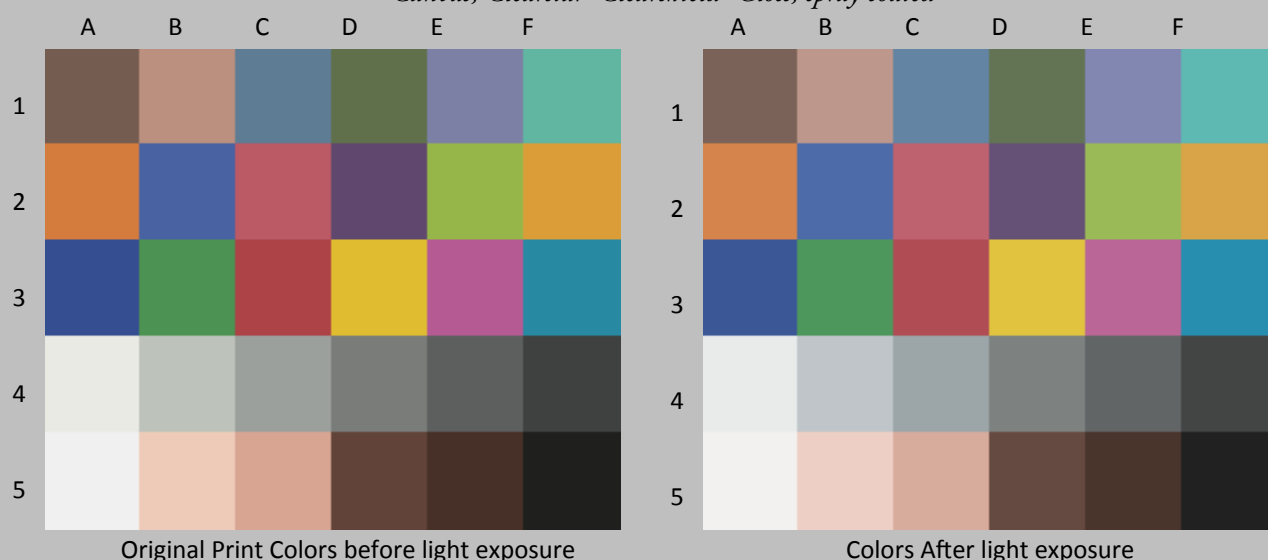


Original Print Colors before light exposure

Colors After light exposure

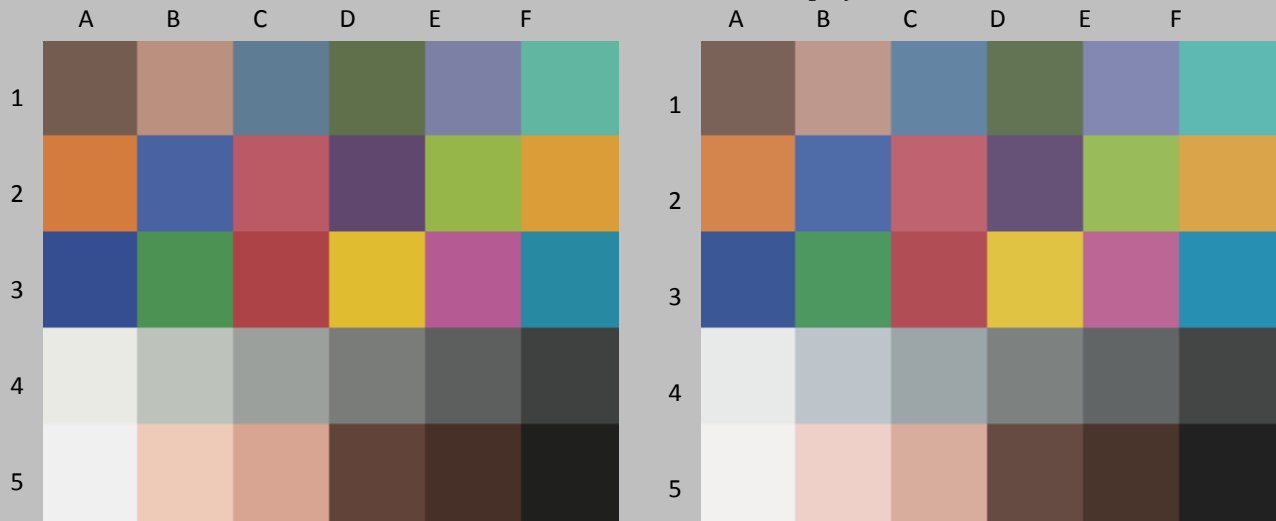
Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	92.1	2.8	41.4	43.6	9.4	8.8	11.4	9.9
B1	Light Skin	85.5	4.2	63.7	65.8	14.6	13.1	16.2	12.9
C1	Blue sky	90.3	3.3	50.7	53.1	-6.1	-6.2	-17.2	-19.4
D1	Foliage	91.0	2.9	45.0	46.5	-11.7	-11.6	18.7	16.2
E1	blue flower	92.9	3.1	54.5	56.8	5.4	4.6	-20.3	-22.1
F1	bluish green	83.6	5.7	68.2	69.4	-31.2	-30.1	1.8	-3.7
A1	orange	92.5	5.1	61.3	63.0	31.1	28.6	48.3	44.2
B2	purplish blue	96.2	3.3	42.1	44.8	4.7	3.0	-37.6	-36.6
C2	moderate red	93.3	4.1	50.8	53.1	41.4	38.8	13.1	10.8
D2	purple	94.1	3.8	34.1	37.3	16.9	15.0	-18.1	-17.7
E2	yellow green	93.0	4.5	70.2	71.3	-22.5	-23.5	50.5	46.2
F2	orange yellow	93.0	5.0	69.5	70.9	16.6	14.3	58.7	54.5
A3	blue	91.5	5.2	33.6	36.8	7.9	5.0	-41.3	-38.4
B3	green	92.5	4.1	54.8	56.5	-34.4	-34.2	27.1	23.3
C3	red	92.7	4.8	43.5	46.0	45.0	42.2	20.6	17.6
D3	yellow	94.7	4.4	78.1	79.3	3.2	1.4	70.2	66.4
E3	magenta	90.2	5.6	51.5	54.2	43.3	39.4	-13.9	-10.9
F3	cyan	89.5	4.2	52.5	54.4	-22.0	-21.3	-22.0	-25.7
A4	white	71.8	3.2	92.4	92.8	-1.2	-0.5	3.4	0.3
B4	neutral 8	62.0	4.3	78.1	79.2	-2.5	-2.5	2.5	-1.6
C4	neutral 6.5	76.8	3.1	65.6	67.2	-2.4	-2.9	0.9	-1.8
D4	neutral 5	90.7	2.3	51.6	53.5	-1.1	-1.6	1.3	-0.1
E4	neutral 3.5	98.6	2.4	39.9	42.2	-1.1	-1.4	-0.2	-0.7
F4	black	100.0	1.9	27.3	29.2	-1.3	-1.4	-0.1	-0.3
A5	paper white	95.9	0.9	95.0	95.2	0.1	-0.1	0.5	1.3
B5	Skin highlight L*=88	75.2	5.2	84.3	85.6	11.2	10.0	14.4	9.5
C5	Skin highlight L* =75	86.8	4.2	72.3	74.1	17.1	15.4	18.4	15.0
D5	Skin shadow L*=28	94.5	2.9	31.6	34.1	11.7	11.1	11.8	10.5
E5	Skin shadow L*=13	100.0	2.0	22.3	24.3	8.7	8.5	9.9	9.5
F5	Maximum Black	100.0	1.0	11.7	12.7	0.3	0.3	0.6	0.5
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>60 Megalux hours</b>				
Average Score for all patches		90.0	93.5	3.6					
Worst 10% (3 lowest scoring patches)		69.7	90.8	5.5					

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	90.4	3.1	41.4	43.8	9.4	8.9	11.4	9.6
B1	Light Skin	82.9	4.8	63.7	66.0	14.6	13.1	16.2	12.3
C1	Blue sky	87.7	3.7	50.7	53.2	-6.1	-6.1	-17.2	-19.9
D1	Foliage	89.3	3.3	45.0	46.5	-11.7	-11.6	18.7	15.9
E1	blue flower	91.1	3.5	54.5	57.0	5.4	4.7	-20.3	-22.6
F1	bluish green	80.8	6.6	68.2	69.4	-31.2	-29.9	1.8	-4.6
A1	orange	91.5	5.7	61.3	63.2	31.1	28.3	48.3	43.7
B2	purplish blue	96.0	3.6	42.1	45.1	4.7	3.0	-37.6	-36.5
C2	moderate red	92.8	4.5	50.8	53.3	41.4	38.8	13.1	10.5
D2	purple	94.0	4.1	34.1	37.6	16.9	15.0	-18.1	-17.7
E2	yellow green	92.0	5.1	70.2	71.4	-22.5	-23.4	50.5	45.6
F2	orange yellow	92.2	5.5	69.5	71.2	16.6	14.1	58.7	54.1
A3	blue	91.0	5.5	33.6	37.1	7.9	4.8	-41.3	-38.3
B3	green	91.2	4.7	54.8	56.6	-34.4	-34.2	27.1	22.8
C3	red	92.2	5.1	43.5	46.2	45.0	42.2	20.6	17.4
D3	yellow	93.8	5.0	78.1	79.4	3.2	1.2	70.2	65.8
E3	magenta	89.5	6.1	51.5	54.5	43.3	39.1	-13.9	-10.7
F3	cyan	87.7	4.8	52.5	54.6	-22.0	-21.0	-22.0	-26.2
A4	white	70.7	3.3	92.4	92.8	-1.2	-0.5	3.4	0.2
B4	neutral 8	55.7	4.9	78.1	79.3	-2.5	-2.4	2.5	-2.2
C4	neutral 6.5	71.5	3.6	65.6	67.2	-2.4	-2.8	0.9	-2.3
D4	neutral 5	88.8	2.5	51.6	53.6	-1.1	-1.5	1.3	-0.3
E4	neutral 3.5	97.2	2.5	39.9	42.3	-1.1	-1.4	-0.2	-0.9
F4	black	100.0	1.9	27.3	29.2	-1.3	-1.3	-0.1	-0.4
A5	paper white	96.3	0.9	95.0	95.2	0.1	-0.1	0.5	1.3
B5	Skin highlight L*=88	71.3	5.9	84.3	85.7	11.2	10.0	14.4	8.8
C5	Skin highlight L* =75	84.5	4.8	72.3	74.2	17.1	15.3	18.4	14.4
D5	Skin shadow L*=28	93.0	3.2	31.6	34.3	11.7	11.1	11.8	10.3
E5	Skin shadow L*=13	100.0	1.9	22.3	24.2	8.7	8.6	9.9	9.5
F5	Maximum Black	100.0	1.2	11.7	12.9	0.3	0.3	0.6	0.4
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>70 Megalux hours</b>				
Average Score for all patches		88.5	92.9	4.0					
Worst 10% (3 lowest scoring patches)		65.9	89.9	6.2					

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*

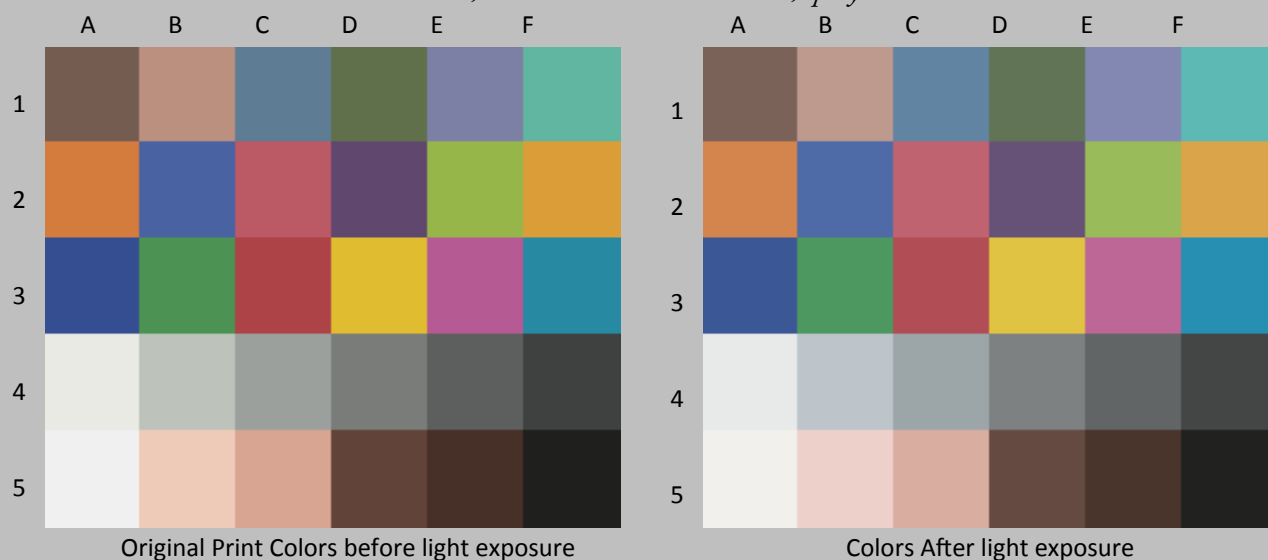


Original Print Colors before light exposure

Colors After light exposure

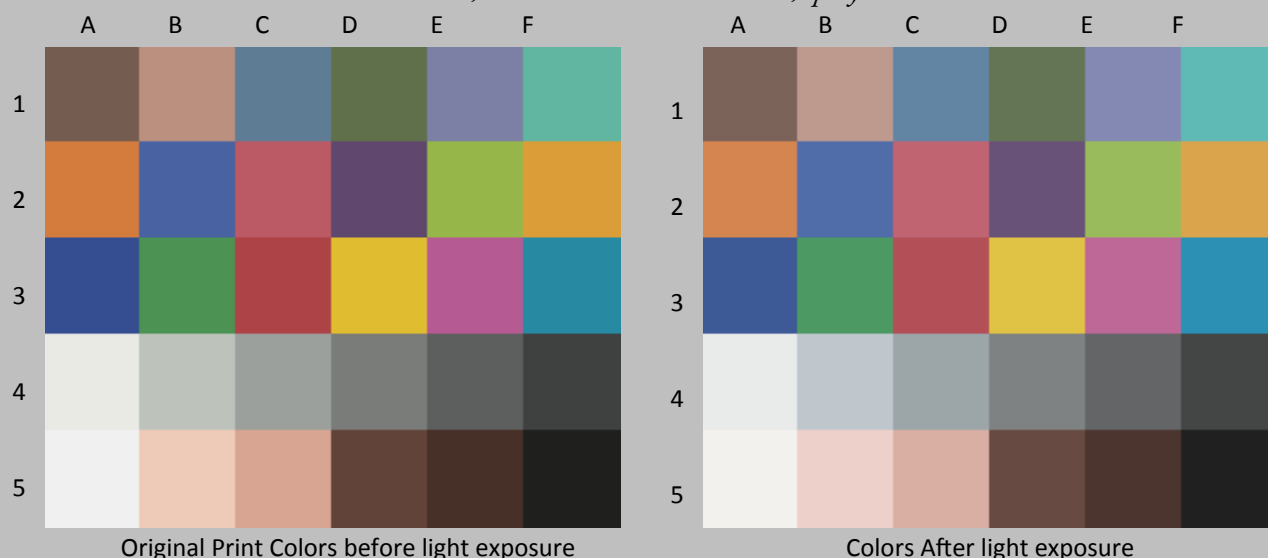
Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	89.1	3.3	41.4	43.9	9.4	8.9	11.4	9.4
B1	Light Skin	81.1	5.2	63.7	66.1	14.6	13.1	16.2	11.8
C1	Blue sky	86.2	4.0	50.7	53.4	-6.1	-6.1	-17.2	-20.2
D1	Foliage	88.0	3.6	45.0	46.7	-11.7	-11.5	18.7	15.6
E1	blue flower	90.2	3.7	54.5	57.2	5.4	4.7	-20.3	-22.8
F1	bluish green	78.5	7.3	68.2	69.5	-31.2	-29.8	1.8	-5.3
A1	orange	90.4	6.4	61.3	63.3	31.1	28.1	48.3	43.0
B2	purplish blue	95.3	4.0	42.1	45.4	4.7	2.9	-37.6	-36.2
C2	moderate red	92.0	4.9	50.8	53.5	41.4	38.6	13.1	10.2
D2	purple	93.7	4.3	34.1	37.9	16.9	14.9	-18.1	-17.8
E2	yellow green	90.9	5.7	70.2	71.6	-22.5	-23.4	50.5	45.0
F2	orange yellow	91.1	6.2	69.5	71.2	16.6	13.9	58.7	53.4
A3	blue	90.3	5.9	33.6	37.3	7.9	4.7	-41.3	-38.0
B3	green	90.0	5.3	54.8	56.8	-34.4	-34.2	27.1	22.2
C3	red	91.4	5.6	43.5	46.5	45.0	42.0	20.6	16.9
D3	yellow	93.3	5.4	78.1	79.6	3.2	1.0	70.2	65.5
E3	magenta	88.9	6.4	51.5	54.7	43.3	39.0	-13.9	-10.5
F3	cyan	86.2	5.3	52.5	54.8	-22.0	-20.9	-22.0	-26.6
A4	white	71.6	3.2	92.4	92.7	-1.2	-0.5	3.4	0.2
B4	neutral 8	51.2	5.3	78.1	79.4	-2.5	-2.4	2.5	-2.6
C4	neutral 6.5	68.4	3.9	65.6	67.4	-2.4	-2.9	0.9	-2.6
D4	neutral 5	87.2	2.8	51.6	53.8	-1.1	-1.5	1.3	-0.4
E4	neutral 3.5	96.5	2.6	39.9	42.4	-1.1	-1.4	-0.2	-1.0
F4	black	100.0	2.1	27.3	29.4	-1.3	-1.3	-0.1	-0.4
A5	paper white	95.1	1.0	95.0	95.2	0.1	-0.2	0.5	1.4
B5	Skin highlight L*=88	67.4	6.6	84.3	85.7	11.2	9.9	14.4	8.1
C5	Skin highlight L* =75	82.3	5.4	72.3	74.4	17.1	15.2	18.4	13.8
D5	Skin shadow L*=28	92.3	3.3	31.6	34.4	11.7	11.2	11.8	10.1
E5	Skin shadow L*=13	99.3	2.3	22.3	24.5	8.7	8.6	9.9	9.3
F5	Maximum Black	100.0	1.1	11.7	12.9	0.3	0.3	0.6	0.5
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>80 Megalux hours</b>				
Average Score for all patches		87.3	92.4	4.4					
Worst 10% (3 lowest scoring patches)		62.3	89.1	6.8					

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	88.0	3.5	41.4	44.0	9.4	9.0	11.4	9.2
B1	Light Skin	79.3	5.6	63.7	66.2	14.6	13.1	16.2	11.4
C1	Blue sky	84.0	4.4	50.7	53.4	-6.1	-6.0	-17.2	-20.6
D1	Foliage	86.8	3.8	45.0	46.6	-11.7	-11.6	18.7	15.3
E1	blue flower	88.6	4.0	54.5	57.3	5.4	4.8	-20.3	-23.1
F1	bluish green	75.7	8.2	68.2	69.6	-31.2	-29.7	1.8	-6.1
A1	orange	90.0	6.6	61.3	63.3	31.1	28.3	48.3	42.7
B2	purplish blue	95.2	4.0	42.1	45.3	4.7	2.7	-37.6	-36.3
C2	moderate red	91.8	5.0	50.8	53.6	41.4	38.7	13.1	10.0
D2	purple	94.2	4.3	34.1	37.9	16.9	15.0	-18.1	-17.8
E2	yellow green	90.5	5.9	70.2	71.6	-22.5	-23.5	50.5	44.8
F2	orange yellow	90.5	6.6	69.5	71.3	16.6	13.9	58.7	53.0
A3	blue	89.6	6.2	33.6	37.4	7.9	4.5	-41.3	-37.8
B3	green	88.8	5.8	54.8	56.9	-34.4	-34.2	27.1	21.7
C3	red	90.8	5.9	43.5	46.6	45.0	42.0	20.6	16.6
D3	yellow	92.5	6.0	78.1	79.6	3.2	0.9	70.2	64.9
E3	magenta	88.4	6.6	51.5	54.8	43.3	38.9	-13.9	-10.2
F3	cyan	84.8	5.7	52.5	54.8	-22.0	-20.7	-22.0	-27.0
A4	white	72.7	3.1	92.4	92.7	-1.2	-0.6	3.4	0.3
B4	neutral 8	46.5	5.7	78.1	79.4	-2.5	-2.3	2.5	-3.1
C4	neutral 6.5	65.1	4.2	65.6	67.4	-2.4	-2.9	0.9	-2.9
D4	neutral 5	85.6	2.8	51.6	53.8	-1.1	-1.5	1.3	-0.6
E4	neutral 3.5	96.3	2.5	39.9	42.3	-1.1	-1.4	-0.2	-1.0
F4	black	100.0	2.0	27.3	29.2	-1.3	-1.4	-0.1	-0.4
A5	paper white	93.3	1.1	95.0	95.0	0.1	-0.2	0.5	1.6
B5	Skin highlight L*=88	63.6	7.3	84.3	85.8	11.2	9.8	14.4	7.4
C5	Skin highlight L* =75	80.0	5.9	72.3	74.4	17.1	15.1	18.4	13.2
D5	Skin shadow L*=28	92.5	3.1	31.6	34.2	11.7	11.2	11.8	10.1
E5	Skin shadow L*=13	98.8	2.2	22.3	24.4	8.7	8.6	9.9	9.3
F5	Maximum Black	100.0	0.9	11.7	12.7	0.3	0.3	0.6	0.6
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>90 Megalux hours</b>				
Average Score for all patches		86.1	92.3	4.6					
Worst 10% (3 lowest scoring patches)		58.4	88.9	7.4					

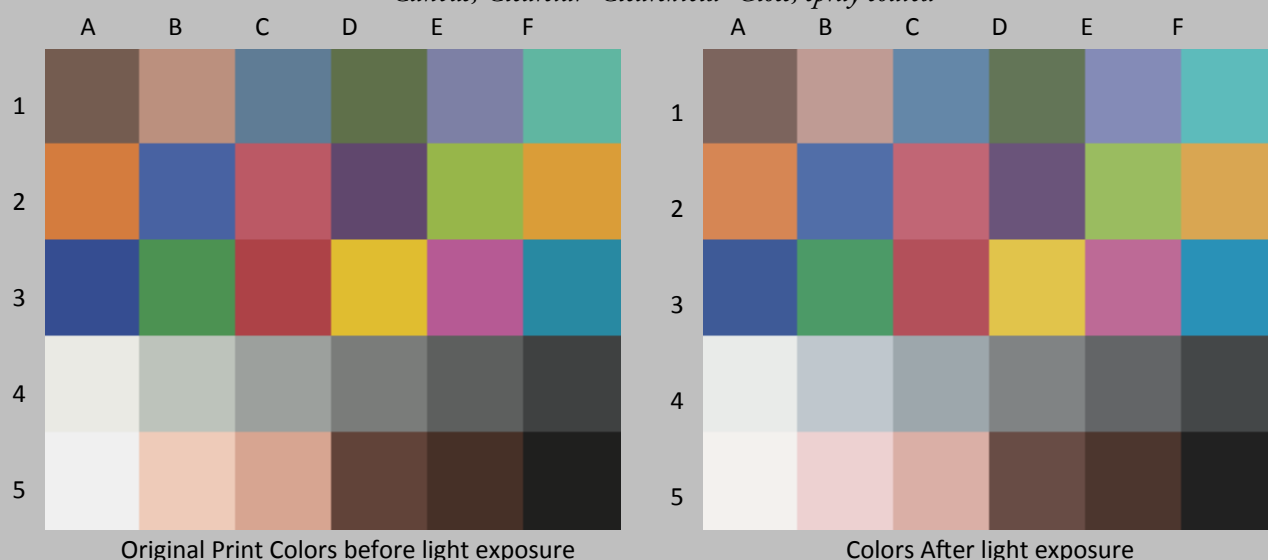
*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	85.4	4.0	41.4	44.4	9.4	8.8	11.4	8.9
B1	Light Skin	76.5	6.2	63.7	66.4	14.6	13.1	16.2	10.8
C1	Blue sky	82.4	4.8	50.7	53.8	-6.1	-6.0	-17.2	-20.9
D1	Foliage	85.1	4.2	45.0	46.9	-11.7	-11.4	18.7	14.9
E1	blue flower	87.8	4.4	54.5	57.7	5.4	4.8	-20.3	-23.3
F1	bluish green	73.0	9.1	68.2	69.8	-31.2	-29.1	1.8	-6.9
A1	orange	88.5	7.5	61.3	63.6	31.1	27.8	48.3	42.0
B2	purplish blue	94.1	4.6	42.1	45.8	4.7	2.6	-37.6	-35.9
C2	moderate red	90.8	5.5	50.8	54.0	41.4	38.5	13.1	9.6
D2	purple	93.8	4.8	34.1	38.5	16.9	14.9	-18.1	-17.8
E2	yellow green	88.7	7.0	70.2	71.8	-22.5	-23.4	50.5	43.8
F2	orange yellow	89.4	7.3	69.5	71.5	16.6	13.7	58.7	52.3
A3	blue	88.5	6.8	33.6	37.9	7.9	4.2	-41.3	-37.4
B3	green	87.3	6.5	54.8	57.1	-34.4	-34.1	27.1	21.1
C3	red	90.4	6.3	43.5	46.9	45.0	42.0	20.6	16.3
D3	yellow	91.5	6.7	78.1	79.8	3.2	0.8	70.2	64.2
E3	magenta	87.6	7.1	51.5	55.1	43.3	38.6	-13.9	-10.0
F3	cyan	83.1	6.3	52.5	55.1	-22.0	-20.4	-22.0	-27.5
A4	white	73.2	3.1	92.4	92.8	-1.2	-0.6	3.4	0.4
B4	neutral 8	40.5	6.3	78.1	79.5	-2.5	-2.2	2.5	-3.6
C4	neutral 6.5	60.1	4.7	65.6	67.6	-2.4	-2.8	0.9	-3.4
D4	neutral 5	83.2	3.2	51.6	54.1	-1.1	-1.5	1.3	-0.8
E4	neutral 3.5	94.8	2.9	39.9	42.7	-1.1	-1.4	-0.2	-1.1
F4	black	100.0	2.4	27.3	29.6	-1.3	-1.4	-0.1	-0.4
A5	paper white	93.0	1.2	95.0	95.1	0.1	-0.2	0.5	1.6
B5	Skin highlight L*=88	59.1	8.1	84.3	86.0	11.2	9.8	14.4	6.5
C5	Skin highlight L* =75	77.2	6.7	72.3	74.8	17.1	15.1	18.4	12.5
D5	Skin shadow L*=28	90.2	3.8	31.6	34.7	11.7	11.1	11.8	9.8
E5	Skin shadow L*=13	98.5	2.4	22.3	24.6	8.7	8.6	9.9	9.2
F5	Maximum Black	100.0	0.5	11.7	12.2	0.3	0.3	0.6	0.4
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>100 Megalux hours</b>				
Average Score for all patches		84.5	91.3	5.2					
Worst 10% (3 lowest scoring patches)		53.3	87.2	8.2					

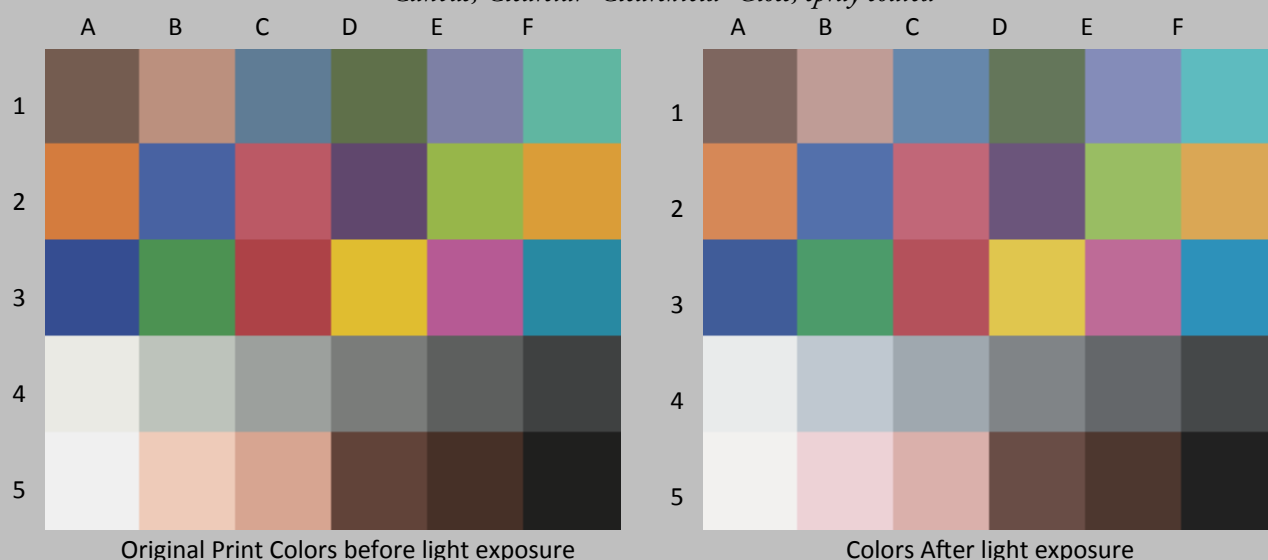


*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



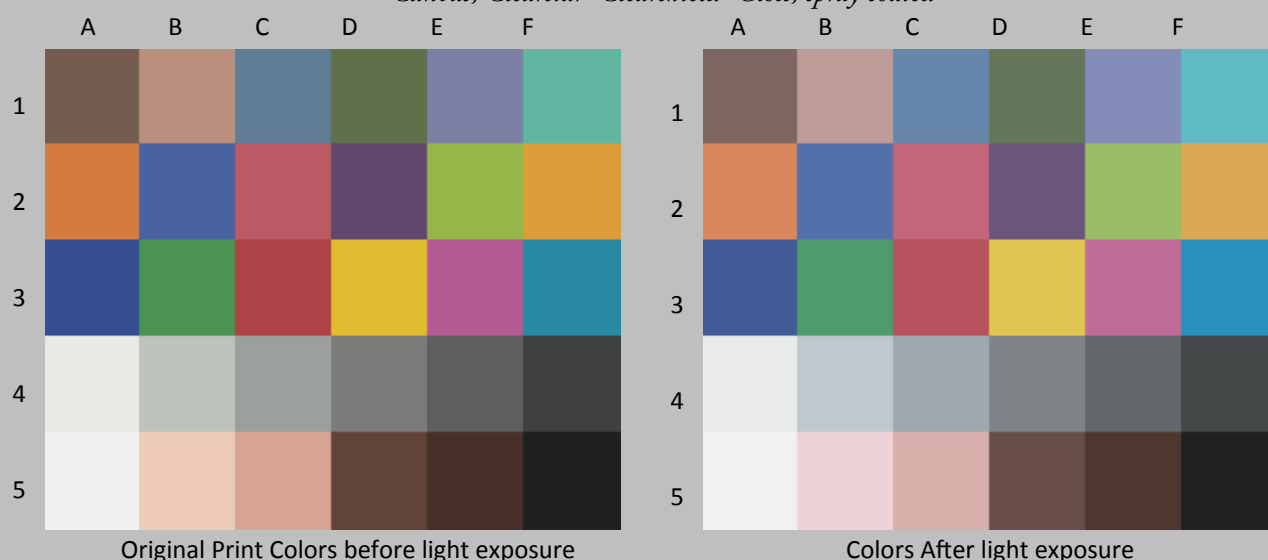
Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	81.7	4.7	41.4	44.8	9.4	8.9	11.4	8.3
B1	Light Skin	70.3	7.7	63.7	66.9	14.6	13.1	16.2	9.4
C1	Blue sky	78.0	5.8	50.7	54.3	-6.1	-5.8	-17.2	-21.7
D1	Foliage	80.7	5.3	45.0	47.2	-11.7	-11.3	18.7	14.0
E1	blue flower	86.0	5.1	54.5	58.3	5.4	4.8	-20.3	-23.7
F1	bluish green	65.3	11.5	68.2	70.1	-31.2	-28.7	1.8	-9.3
A1	orange	85.9	9.0	61.3	64.0	31.1	27.7	48.3	40.4
B2	purplish blue	92.5	5.4	42.1	46.3	4.7	2.1	-37.6	-35.5
C2	moderate red	89.0	6.5	50.8	54.5	41.4	38.5	13.1	8.7
D2	purple	94.1	5.5	34.1	39.2	16.9	15.0	-18.1	-17.9
E2	yellow green	85.4	8.8	70.2	72.2	-22.5	-23.3	50.5	41.9
F2	orange yellow	86.2	9.2	69.5	71.9	16.6	13.4	58.7	50.4
A3	blue	86.2	8.0	33.6	38.6	7.9	3.7	-41.3	-36.6
B3	green	83.1	8.3	54.8	57.5	-34.4	-33.9	27.1	19.3
C3	red	88.6	7.3	43.5	47.4	45.0	41.9	20.6	15.4
D3	yellow	88.7	8.7	78.1	80.1	3.2	0.5	70.2	62.2
E3	magenta	85.9	8.0	51.5	55.7	43.3	38.2	-13.9	-9.3
F3	cyan	79.0	7.7	52.5	55.6	-22.0	-19.9	-22.0	-28.7
A4	white	77.0	2.7	92.4	92.8	-1.2	-0.7	3.4	0.7
B4	neutral 8	32.3	7.1	78.1	79.8	-2.5	-2.1	2.5	-4.4
C4	neutral 6.5	50.5	5.7	65.6	67.9	-2.4	-2.8	0.9	-4.3
D4	neutral 5	78.4	3.8	51.6	54.4	-1.1	-1.5	1.3	-1.3
E4	neutral 3.5	92.7	3.2	39.9	42.9	-1.1	-1.4	-0.2	-1.4
F4	black	100.0	2.6	27.3	29.9	-1.3	-1.3	-0.1	-0.5
A5	paper white	88.6	1.6	95.0	95.1	0.1	-0.4	0.5	2.0
B5	Skin highlight L*=88	47.7	10.2	84.3	86.3	11.2	9.8	14.4	4.5
C5	Skin highlight L* =75	70.0	8.5	72.3	75.2	17.1	14.8	18.4	10.7
D5	Skin shadow L*=28	86.9	4.6	31.6	35.3	11.7	11.1	11.8	9.2
E5	Skin shadow L*=13	96.4	3.0	22.3	25.1	8.7	8.6	9.9	8.9
F5	Maximum Black	100.0	1.1	11.7	12.8	0.3	0.2	0.6	0.4
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>120 Megalux hours</b>				
Average Score for all patches		80.9	89.9	6.2					
Worst 10% (3 lowest scoring patches)		43.5	85.3	10.3					

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



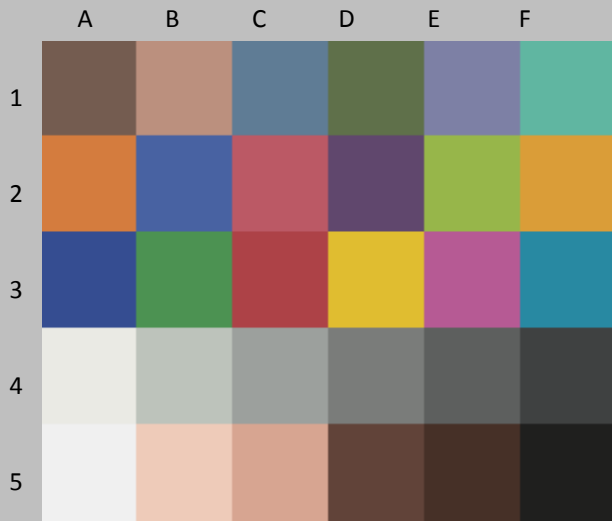
Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	77.9	5.5	41.4	45.4	9.4	8.9	11.4	7.7
B1	Light Skin	64.1	9.1	63.7	67.3	14.6	13.1	16.2	8.0
C1	Blue sky	71.6	7.0	50.7	54.8	-6.1	-5.2	-17.2	-22.8
D1	Foliage	77.0	6.2	45.0	47.6	-11.7	-11.2	18.7	13.2
E1	blue flower	81.6	6.0	54.5	58.7	5.4	5.3	-20.3	-24.7
F1	bluish green	58.2	13.7	68.2	70.4	-31.2	-27.9	1.8	-11.4
A1	orange	83.8	10.3	61.3	64.4	31.1	27.4	48.3	39.2
B2	purplish blue	92.7	5.8	42.1	46.9	4.7	2.2	-37.6	-35.5
C2	moderate red	87.5	7.2	50.8	54.9	41.4	38.5	13.1	7.9
D2	purple	94.7	5.8	34.1	39.6	16.9	15.1	-18.1	-18.3
E2	yellow green	83.0	10.2	70.2	72.5	-22.5	-23.5	50.5	40.6
F2	orange yellow	84.6	10.3	69.5	72.3	16.6	13.2	58.7	49.4
A3	blue	86.2	8.4	33.6	39.1	7.9	3.7	-41.3	-36.6
B3	green	80.3	9.7	54.8	57.9	-34.4	-33.7	27.1	18.0
C3	red	87.4	8.0	43.5	47.9	45.0	41.9	20.6	14.7
D3	yellow	87.3	9.7	78.1	80.4	3.2	0.3	70.2	61.2
E3	magenta	85.8	8.4	51.5	56.2	43.3	38.1	-13.9	-9.3
F3	cyan	73.7	9.4	52.5	56.0	-22.0	-19.3	-22.0	-30.2
A4	white	70.4	3.4	92.4	92.9	-1.2	-0.6	3.4	0.1
B4	neutral 8	22.1	8.1	78.1	80.0	-2.5	-1.8	2.5	-5.4
C4	neutral 6.5	38.5	6.9	65.6	68.4	-2.4	-2.4	0.9	-5.5
D4	neutral 5	72.1	4.5	51.6	54.9	-1.1	-1.4	1.3	-1.9
E4	neutral 3.5	89.4	3.9	39.9	43.5	-1.1	-1.3	-0.2	-1.7
F4	black	98.9	3.1	27.3	30.3	-1.3	-1.3	-0.1	-0.7
A5	paper white	95.0	1.0	95.0	95.2	0.1	-0.2	0.5	1.4
B5	Skin highlight L*=88	36.4	12.3	84.3	86.6	11.2	10.2	14.4	2.3
C5	Skin highlight L* =75	64.3	10.0	72.3	75.6	17.1	15.0	18.4	9.1
D5	Skin shadow L*=28	84.7	5.1	31.6	35.7	11.7	11.1	11.8	8.8
E5	Skin shadow L*=13	95.1	3.3	22.3	25.3	8.7	8.6	9.9	8.8
F5	Maximum Black	100.0	1.3	11.7	13.0	0.3	0.4	0.6	0.3
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>140 Megalux hours</b>				
Average Score for all patches		77.5	89.0	7.1					
Worst 10% (3 lowest scoring patches)		32.3	84.2	12.1					

*Epson Stylus Pro 9800, Epson OEM (K3 Ultrachrome), IJ Technologies Premium Edition Water Resistant Canvas, Clearstar Clearshield® Gloss, spray coated*



Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin	75.2	5.8	41.4	45.5	9.4	9.1	11.4	7.3
B1	Light Skin	59.6	10.0	63.7	67.5	14.6	13.2	16.2	7.0
C1	Blue sky	67.7	7.7	50.7	55.0	-6.1	-5.1	-17.2	-23.5
D1	Foliage	74.0	6.8	45.0	47.7	-11.7	-11.1	18.7	12.5
E1	blue flower	80.4	6.3	54.5	58.8	5.4	5.4	-20.3	-24.9
F1	bluish green	52.4	15.5	68.2	70.4	-31.2	-27.4	1.8	-13.1
A1	orange	82.6	11.0	61.3	64.6	31.1	27.6	48.3	38.4
B2	purplish blue	92.3	6.0	42.1	47.0	4.7	2.1	-37.6	-35.4
C2	moderate red	86.2	7.8	50.8	55.1	41.4	38.6	13.1	7.3
D2	purple	95.1	6.0	34.1	39.9	16.9	15.2	-18.1	-18.4
E2	yellow green	81.0	11.3	70.2	72.6	-22.5	-23.5	50.5	39.5
F2	orange yellow	82.6	11.5	69.5	72.4	16.6	13.1	58.7	48.2
A3	blue	85.3	8.8	33.6	39.3	7.9	3.6	-41.3	-36.2
B3	green	77.1	11.0	54.8	58.1	-34.4	-33.5	27.1	16.6
C3	red	86.4	8.6	43.5	48.1	45.0	42.0	20.6	14.1
D3	yellow	85.3	11.1	78.1	80.5	3.2	0.1	70.2	59.9
E3	magenta	85.3	8.7	51.5	56.3	43.3	38.0	-13.9	-9.1
F3	cyan	70.7	10.3	52.5	56.1	-22.0	-18.9	-22.0	-31.1
A4	white	70.9	3.3	92.4	92.8	-1.2	-0.7	3.4	0.1
B4	neutral 8	20.2	8.3	78.1	79.9	-2.5	-1.9	2.5	-5.5
C4	neutral 6.5	31.8	7.5	65.6	68.4	-2.4	-2.3	0.9	-6.1
D4	neutral 5	68.8	4.8	51.6	54.9	-1.1	-1.3	1.3	-2.2
E4	neutral 3.5	88.1	3.9	39.9	43.5	-1.1	-1.3	-0.2	-1.8
F4	black	98.4	3.2	27.3	30.4	-1.3	-1.3	-0.1	-0.7
A5	paper white	94.5	1.0	95.0	95.2	0.1	-0.2	0.5	1.5
B5	Skin highlight L*=88	28.6	13.7	84.3	86.7	11.2	10.3	14.4	0.9
C5	Skin highlight L* =75	59.4	11.2	72.3	75.7	17.1	15.0	18.4	7.9
D5	Skin shadow L*=28	82.1	5.5	31.6	35.8	11.7	11.2	11.8	8.4
E5	Skin shadow L*=13	93.9	3.4	22.3	25.4	8.7	8.7	9.9	8.6
F5	Maximum Black	100.0	1.3	11.7	13.0	0.3	0.3	0.6	0.3
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>160 Megalux hours</b>				
Average Score for all patches		75.2	88.5	7.7					
Worst 10% (3 lowest scoring patches)		26.8	83.5	13.6					

*The 180 Megalux hour Update will be posted on approximately OCT 05, 2014.*



Original Print Colors before light exposure



Colors After light exposure

Patch #	Description	I* Color	$\Delta E$	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	Dark Skin			41.4		9.4		11.4	
B1	Light Skin			63.7		14.6		16.2	
C1	Blue sky			50.7		-6.1		-17.2	
D1	Foliage			45.0		-11.7		18.7	
E1	blue flower			54.5		5.4		-20.3	
F1	bluish green			68.2		-31.2		1.8	
A1	orange			61.3		31.1		48.3	
B2	purplish blue			42.1		4.7		-37.6	
C2	moderate red			50.8		41.4		13.1	
D2	purple			34.1		16.9		-18.1	
E2	yellow green			70.2		-22.5		50.5	
F2	orange yellow			69.5		16.6		58.7	
A3	blue			33.6		7.9		-41.3	
B3	green			54.8		-34.4		27.1	
C3	red			43.5		45.0		20.6	
D3	yellow			78.1		3.2		70.2	
E3	magenta			51.5		43.3		-13.9	
F3	cyan			52.5		-22.0		-22.0	
A4	white			92.4		-1.2		3.4	
B4	neutral 8			78.1		-2.5		2.5	
C4	neutral 6.5			65.6		-2.4		0.9	
D4	neutral 5			51.6		-1.1		1.3	
E4	neutral 3.5			39.9		-1.1		-0.2	
F4	black			27.3		-1.3		-0.1	
A5	paper white			95.0		0.1		0.5	
B5	Skin highlight L*=88			84.3		11.2		14.4	
C5	Skin highlight L* =75			72.3		17.1		18.4	
D5	Skin shadow L*=28			31.6		11.7		11.8	
E5	Skin shadow L*=13			22.3		8.7		9.9	
F5	Maximum Black			11.7		0.3		0.6	
<b>Summary Results</b>		I* Color	I* tone	$\Delta E$	<b>180 Megalux hours</b>				
Average Score for all patches									
Worst 10% (3 lowest scoring patches)									