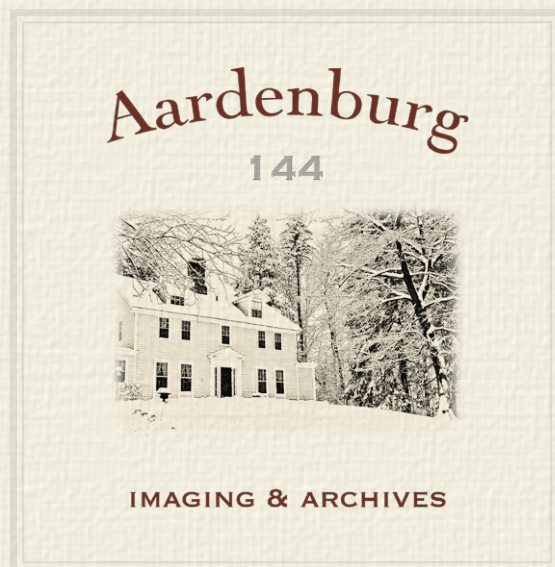




Accelerated Light Fading Test Results

*Epson R1800 Printer, MIS R800/R1800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

Sample # AaI_20071008_SN007

100 Megalux-hours completed

Conservation Display Rating *	
Lower Exposure Limit (Megalux hours)	Upper Exposure limit (Megalux hours)
5	9

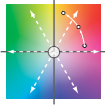
* Please read document **AaI_2009_0118_TA-01.pdf**, “An Overview of the AaI&A Conservation Display Ratings”, located on the Documents page of the AaI&A website for an explanation of the conservation display ratings.

Document #: AaI_20071008_SN007Lf.pdf Rev: June 12, 2009

Test Print Prepared by: AaI&A Member, category: Amateur

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About this Report

This report contains light fastness information about a single 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 2). 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 the Test Results



AaI_StandardColorSet(v2)forSRGB.tif

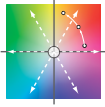
The magnitude and visual appearance of fading depends not only on the chosen printing system but the chosen image as well. In other words, different images are comprised of different colors, and the fading relationships between those colors dictate how the image will look as it fades. The sample print 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 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 presentation of the target images simulates looking at the light-exposed print along side a perfect duplicate of the unexposed original print. The “Before/After” Layer mode takes advantage of Adobe Reader Layer technology. Toggle the “Before/After” layer on and off using the layers feature of Adobe Reader to directly switch between the light exposed print colors and the initial print colors for the image located on the right side of each page. 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, ΔE .*** Note that ΔE values lose perceptual scaling significance when they become large (e.g., > 15). Also, the ΔE 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. It was a major reason behind the development of the I* metric.



Sample Description

Printer: Epson R1800

Ink: MIS Associates (www.inksupply.com) R800/R1800 Ultrachrome Equivalent

Paper: Epson Premium Luster Photo Paper*

Sample #: AaI_20071008_SN007

Test Print Submission Category: Amateur



AaI_StandardColorSet(v2)forSRGB.tif

Test Image: AaI_StandardColorSet(v1)_forARGB.tif

RIP/Driver settings: Qimage and Epson driver set to "Color Controls" with no compensation, "Best photo", High speed- off. Gloss optimizer (MIS ink) "on"

Media Setting: "Premium Luster Photo Paper"

Original print colors measured on: January 08, 2008

Printed: August 20, 2007

Test started on: January 10, 2008

Profile: MIS1800_Eps_PremLuster_PP.icc **Rendering Intent:** Relative Colorimetric with BPC

Profile type: custom

Profile Creation Software: Profile Prism

Paper White Color (UV–included versus UV–excluded) and Maximum Printed Black						
Optical Brighteners present? yes	L*		a*		b*	
	UV inc	UV exc	UV inc	UV exc	UV inc	UV exc
Maximum Paper White (no colorants printed)	93.8	93.8	-0.4	-0.8	-3.1	-1.9
(1) ΔL*, Δa*, Δb* respectively	0.0		0.4		1.2	
(1) Calculated differences, especially for Δb*, indicate the role and magnitude of fluorescence on original paper color						
Maximum Printed black (UV included)	L* =13.1		a* = -0.4		b* = -3.5	

Light Source: Phillips Colortone F40T12/C50

Filter/Glazing: Sample framed under Glass**

Light Exposure Cycle: 8 hours on, 4 hours off, twice per 24 hours

Average Illuminance during "on" cycle: 12,908 Lux

Average Temperature: 23.2°C over full test duration, 24.5°C during light exposure

Average Relative humidity: 58.8% RH full test period, 59.5% RH during light exposure

CIELAB measurements: D50 2° observer, Xrite Gretag/Macbeth Spectrolino/Spectroscan

Replicates/Compare to:

No Replicates are available at this time.

Notes/Comments:

* Epson has recently renamed this paper “Epson Ultra Premium Photo Paper Luster” However, the formulation appears to have remained unchanged.

** The Phillips Colortone F40T12/C50 fluorescent light source and ordinary glass picture frame glazing yields UVA content and overall spectral power similar to natural 5000°K daylight entering a window and then striking a print that has been framed by **standard acrylic glazing** rather than ordinary glass. Other light sources and/or different glazing options may yield greater or lesser fade rates (generally, a 2-5x increase in fade rate for direct sunlight compared to UV-excluded sources at the same Lux level). The spectral quality of the light can also affect individual colors differently.

November 10, 2008 – 60 Megalux-hours: Most skin tone and all neutral patches with the exception of maximum black have reached false color status.

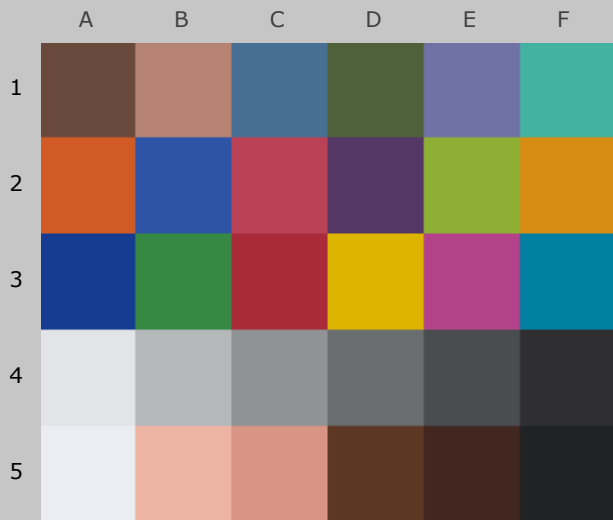
June 5, 2008 - 30 Megalux-hours: The worst performing 10% of the image colors (patches B4, C4, and D4) have exceeded the zero percent I* color accuracy boundary. Negative numbers in an I* color analysis indicate false color information now exists in the image. In this particular test print, the gray patches have lost their neutral gray qualities in favor of a distinct bluish tint and are therefore falsely colored.

April 16, 2008 - 20 Megalux-hours: Loss of yellow colorant continues. Yellow colorant contributes little to image contrast so tonal retention (I*tone) remains high while color accuracy (I* color) is declining significantly.

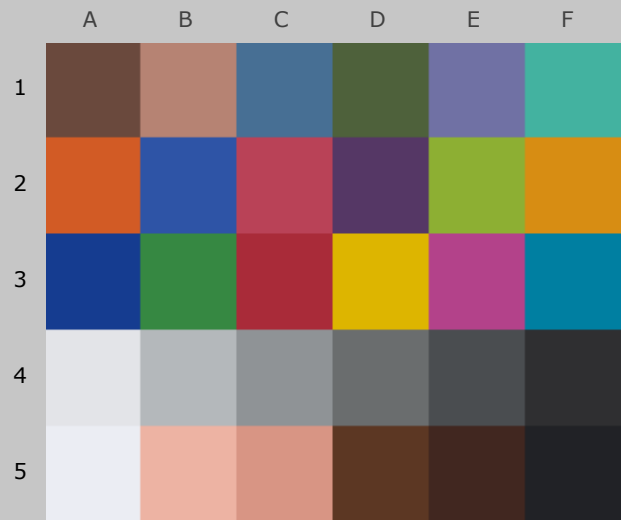
March 17, 2008 - 10 Megalux-hours: Loss of yellow colorant is causing colors to shift towards blue color balance. This fading is most affecting color accuracy in the low chroma colors, especially skin tones and neutrals. However, print colors generally remain in good to excellent condition.

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	11.42	114	228	342	457	571	685	799	913	1027	1142
50 Lux 12 hours per day	“Museum Standard” display condition	4.57	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).	1.90	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.	1.00	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.	0.51	5	10	15	20	25	30	35	41	46	51
2000 Lux 12 hours per day	Commercial Gallery. Also, critical color evaluation standards call for 2000 lux and a D50 illumination source.	0.114	1.1	2.3	3.4	4.6	5.7	6.8	8.0	9.1	10.3	11.4
5000 Lux 12 hours per day	E.g., Sunlight through a window striking print at an angle.	0.046	0.5	0.9	1.4	1.8	2.3	2.7	3.2	3.7	4.1	4.6
10,000 Lux 12 hours per day	South-facing window in U.S.A. , e.g., storefront display with photos directly facing window.	0.023	0.2	0.5	0.7	0.9	1.1	1.4	1.6	1.8	2.1	2.3
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 has cited this exposure condition and 90% confidence limit as a rationale for estimating print fading times of traditional color photo materials in typical home display environments. For recent light fading claims regarding its line of pigment-based inkjet printers, Kodak has 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) has standardized its light fastness ratings on 450 lux for 12 hours per day in order to estimate the years on display necessary to reach “noticeable” fading. This average light exposure condition, an assumed 75°F/60%RH temperature and humidity level, and WIR’s visually weighted densitometric endpoint criteria set V3.0 has become a de facto industry standard for most predictive light fading estimates in the absence of a published International Standards Organization (ISO) test standard.												

100_{color}/100_{tone}



Original Print Colors
(measured before light exposure)



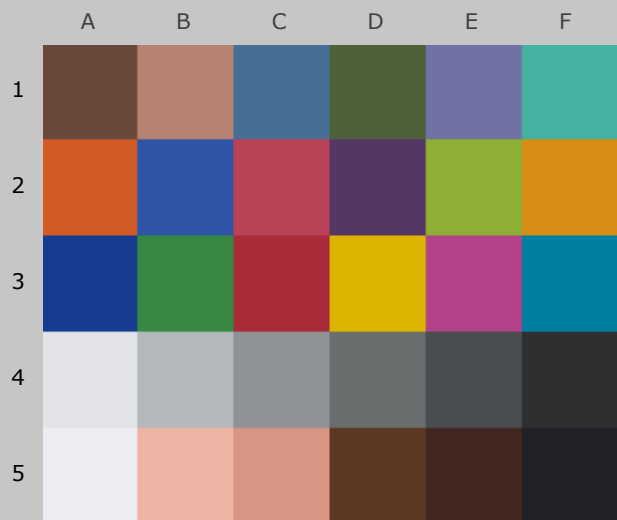
Colors at *Zero Megalux-hours* of Light Exposure
(same as original print colors)

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

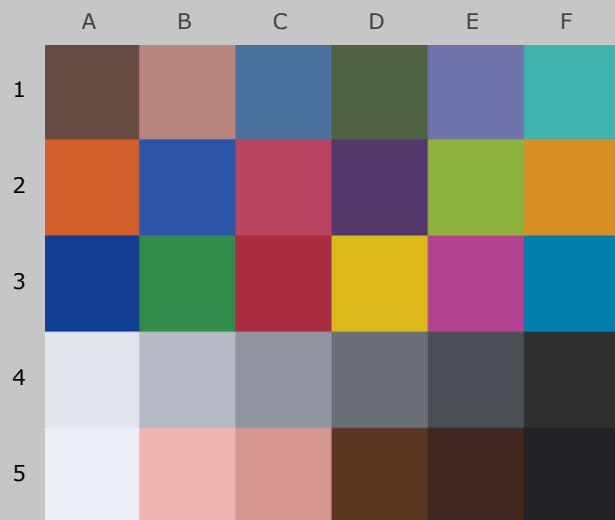
Original Print Colors as Measured and at Start of Test

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	100	0.0	34.4		12.7		13.0	
B1	light Skin	100	0.0	59.6		19.0		17.0	
C1	blue sky	100	0.0	45.3		-6.1		-24.7	
D1	foliage	100	0.0	38.7		-12.8		18.9	
E1	blue flower	100	0.0	49.2		8.5		-28.2	
F1	bluish green	100	0.0	66.1		-35.7		-0.5	
A2	orange	100	0.0	54.0		45.6		53.2	
B2	purplish blue	100	0.0	36.3		9.0		-49.4	
C2	moderate red	100	0.0	45.8		49.8		14.9	
D2	purple	100	0.0	28.4		20.9		-22.4	
E2	yellow green	100	0.0	67.3		-24.8		56.1	
F2	orange yellow	100	0.0	65.3		23.1		66.5	
A3	blue	100	0.0	26.9		12.6		-51.1	
B3	green	100	0.0	50.6		-38.5		29.6	
C3	red	100	0.0	39.3		51.9		24.3	
D3	yellow	100	0.0	75.5		4.8		78.3	
E3	magenta	100	0.0	46.2		51.5		-16.2	
F3	cyan	100	0.0	47.0		-31.0		-29.7	
A4	white	100	0.0	90.5		-0.4		-2.1	
B4	neutral 8	100	0.0	74.6		-0.9		-1.7	
C4	neutral 6.5	100	0.0	60.7		-0.9		-2.2	
D4	neutral 5	100	0.0	46.0		-0.7		-0.6	
E4	neutral 3.5	100	0.0	32.6		-0.6		-1.7	
F4	black	100	0.0	19.4		0.4		-1.4	
A5	paper white	100	0.0	93.7		-0.1		-3.1	
B5	skin highlight L*=89	100	0.0	78.0		20.5		16.6	
C5	skin highlight L*=75	100	0.0	68.1		23.5		20.0	
D5	skin shadow L*=25	100	0.0	27.3		15.2		20.2	
E5	skin shadow L*=11	100	0.0	18.8		12.2		10.1	
F5	Max Black	100	0.0	13.2		-0.4		-3.5	
Summary Results		I*Color	I*tone	ΔE	 AARDENBURG IMAGING & ARCHIVES				
Average Score for all patches		100	100	0.0					
Average Score for the Worst 10% (3 lowest scoring patches)		100	100	0.0					

88.7_{color} / 98.1_{tone}



Original Print Colors
(measured before light exposure)



Colors after 10 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

10 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	87.3	2.8	34.4	34.8	12.7	12.3	13.0	10.2
B1	light Skin	80.6	5.5	59.6	60.3	19.0	18.8	17.0	11.6
C1	blue sky	88.7	3.5	45.3	45.9	-6.1	-5.3	-24.7	-28.0
D1	foliage	89.5	2.9	38.7	39.2	-12.8	-13.4	18.9	16.0
E1	blue flower	93.5	2.5	49.2	49.7	8.5	8.9	-28.2	-30.6
F1	bluish green	85.8	5.6	66.1	66.7	-35.7	-34.5	-0.5	-6.0
A2	orange	96.3	3.1	54.0	54.4	45.6	44.4	53.2	50.4
B2	purplish blue	99.2	1.0	36.3	36.7	9.0	9.2	-49.4	-50.3
C2	moderate red	92.3	4.5	45.8	46.1	49.8	49.5	14.9	10.4
D2	purple	93.3	2.6	28.4	28.8	20.9	21.3	-22.4	-24.9
E2	yellow green	93.6	4.5	67.3	68.1	-24.8	-25.7	56.1	51.7
F2	orange yellow	95.8	3.6	65.3	66.0	23.1	21.5	66.5	63.4
A3	blue	99.0	1.1	26.9	27.4	12.6	12.9	-51.1	-52.0
B3	green	93.0	4.0	50.6	51.4	-38.5	-39.0	29.6	25.7
C3	red	94.1	3.9	39.3	39.5	51.9	51.6	24.3	20.4
D3	yellow	95.1	4.4	75.5	76.3	4.8	3.3	78.3	74.2
E3	magenta	95.3	3.1	46.2	46.7	51.5	51.7	-16.2	-19.2
F3	cyan	93.1	3.5	47.0	47.7	-31.0	-29.5	-29.7	-32.8
A4	white	88.2	1.7	90.5	90.9	-0.4	-0.2	-2.1	-3.7
B4	neutral 8	59.7	4.4	74.6	75.3	-0.9	-0.4	-1.7	-6.0
C4	neutral 6.5	55.0	4.8	60.7	61.5	-0.9	-0.4	-2.2	-6.9
D4	neutral 5	56.6	4.7	46.0	46.8	-0.7	-0.5	-0.6	-5.2
E4	neutral 3.5	78.4	2.6	32.6	33.2	-0.6	-0.6	-1.7	-4.2
F4	black	98.0	0.7	19.4	19.7	0.4	0.4	-1.4	-2.1
A5	paper white	99.2	0.7	93.7	94.1	-0.1	0.0	-3.1	-3.7
B5	skin highlight L*=89	80.8	5.6	78.0	78.7	20.5	20.4	16.6	11.1
C5	skin highlight L*=75	82.0	6.1	68.1	68.8	23.5	23.3	20.0	13.9
D5	skin shadow L*=25	99.0	0.8	27.3	27.6	15.2	14.8	20.2	19.6
E5	skin shadow L*=11	100.0	0.1	18.8	18.8	12.2	12.2	10.1	9.9
F5	Max Black	100.0	0.1	13.2	13.2	-0.4	-0.5	-3.5	-3.4

Summary Results

I*Color

I*tone

ΔE

Average Score for all patches

88.7

98.1

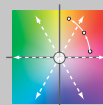
3.1

Average Score for the Worst 10%
(3 lowest scoring patches)

57.1

96.2

5.8



AARDENBURG IMAGING
& ARCHIVES

75.0_{color} / 96.8_{tone}



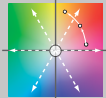
Original Print Colors
(measured before light exposure)



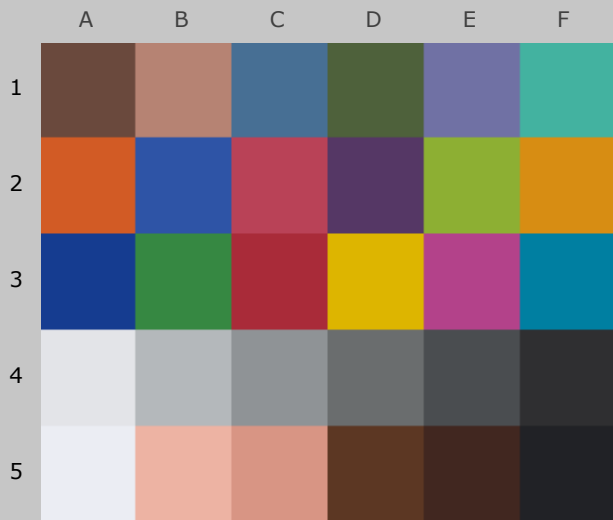
Colors after 20 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

20 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	68.1	6.3	34.4	35.3	12.7	12.5	13.0	6.7
B1	light Skin	57.6	11.4	59.6	60.8	19.0	19.5	17.0	5.7
C1	blue sky	74.6	7.0	45.3	46.3	-6.1	-3.9	-24.7	-31.4
D1	foliage	74.3	6.4	38.7	39.6	-12.8	-13.2	18.9	12.5
E1	blue flower	85.1	5.0	49.2	50.1	8.5	9.8	-28.2	-32.9
F1	bluish green	70.1	11.2	66.1	67.2	-35.7	-32.7	-0.5	-11.3
A2	orange	91.5	6.5	54.0	54.8	45.6	44.1	53.2	47.0
B2	purplish blue	97.5	1.9	36.3	37.0	9.0	9.7	-49.4	-51.0
C2	moderate red	84.1	8.8	45.8	46.4	49.8	49.9	14.9	6.1
D2	purple	84.2	5.4	28.4	29.1	20.9	22.2	-22.4	-27.5
E2	yellow green	85.2	9.7	67.3	68.7	-24.8	-26.1	56.1	46.6
F2	orange yellow	90.3	7.4	65.3	66.4	23.1	20.9	66.5	59.6
A3	blue	97.0	2.2	26.9	27.7	12.6	13.5	-51.1	-52.9
B3	green	84.2	8.3	50.6	51.9	-38.5	-38.9	29.6	21.4
C3	red	87.9	7.5	39.3	39.7	51.9	51.9	24.3	16.9
D3	yellow	89.2	9.1	75.5	76.9	4.8	2.6	78.3	69.6
E3	magenta	91.2	5.3	46.2	46.9	51.5	52.3	-16.2	-21.4
F3	cyan	84.5	7.2	47.0	48.0	-31.0	-27.6	-29.7	-35.9
A4	white	79.4	2.5	90.5	91.0	-0.4	0.1	-2.1	-4.5
B4	neutral 8	18.1	8.3	74.6	75.6	-0.9	0.6	-1.7	-9.8
C4	neutral 6.5	2.0	9.9	60.7	62.0	-0.9	0.9	-2.2	-11.8
D4	neutral 5	1.3	9.9	46.0	47.2	-0.7	0.7	-0.6	-10.3
E4	neutral 3.5	48.1	5.5	32.6	33.5	-0.6	0.0	-1.7	-7.1
F4	black	89.6	1.5	19.4	19.8	0.4	0.5	-1.4	-2.9
A5	paper white	100.0	0.6	93.7	94.2	-0.1	0.0	-3.1	-3.3
B5	skin highlight L*=89	58.9	11.4	78.0	79.2	20.5	21.3	16.6	5.3
C5	skin highlight L*=75	62.2	12.2	68.1	69.3	23.5	24.2	20.0	7.9
D5	skin shadow L*=25	94.9	1.9	27.3	27.9	15.2	14.7	20.2	18.5
E5	skin shadow L*=11	99.4	0.6	18.8	18.9	12.2	12.3	10.1	9.5
F5	Max Black	100.0	0.3	13.2	13.3	-0.4	-0.5	-3.5	-3.3
Summary Results		I*Color	I*tone	 AARDENBURG IMAGING & ARCHIVES					
Average Score for all patches		75.0	96.8						
Average Score for the Worst 10% (3 lowest scoring patches)		7.1	94.2						

59.5_{color} / 95.7_{tone}



Original Print Colors
(measured before light exposure)



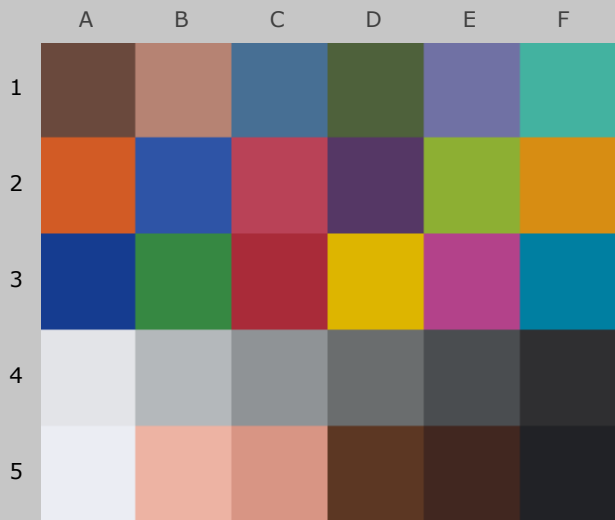
Colors after 30 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

30 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	46.2	10.3	34.4	35.6	12.7	13.0	13.0	2.7
B1	light Skin	32.2	17.9	59.6	61.2	19.0	20.8	17.0	-0.7
C1	blue sky	59.6	10.9	45.3	46.6	-6.1	-2.1	-24.7	-34.8
D1	foliage	56.6	10.5	38.7	40.0	-12.8	-12.8	18.9	8.5
E1	blue flower	76.3	7.6	49.2	50.3	8.5	11.0	-28.2	-35.2
F1	bluish green	54.3	16.8	66.1	67.5	-35.7	-30.6	-0.5	-16.5
A2	orange	85.0	11.1	54.0	55.1	45.6	44.0	53.2	42.3
B2	purplish blue	95.4	2.9	36.3	37.1	9.0	10.4	-49.4	-51.9
C2	moderate red	74.6	13.7	45.8	46.6	49.8	50.8	14.9	1.2
D2	purple	72.9	8.8	28.4	29.4	20.9	23.6	-22.4	-30.7
E2	yellow green	75.0	16.0	67.3	69.2	-24.8	-26.0	56.1	40.3
F2	orange yellow	82.8	12.7	65.3	66.9	23.1	20.4	66.5	54.2
A3	blue	94.7	3.4	26.9	27.8	12.6	14.3	-51.1	-53.9
B3	green	74.1	13.2	50.6	52.3	-38.5	-38.3	29.6	16.5
C3	red	80.1	11.9	39.3	39.9	51.9	52.4	24.3	12.4
D3	yellow	81.1	15.4	75.5	77.4	4.8	2.1	78.3	63.2
E3	magenta	87.0	7.6	46.2	47.1	51.5	53.0	-16.2	-23.5
F3	cyan	76.0	10.9	47.0	48.3	-31.0	-25.5	-29.7	-39.0
A4	white	70.6	3.3	90.5	91.0	-0.4	0.4	-2.1	-5.3
B4	neutral 8	-25.1	12.4	74.6	75.9	-0.9	1.9	-1.7	-13.7
C4	neutral 6.5	-54.0	15.2	60.7	62.3	-0.9	2.6	-2.2	-16.9
D4	neutral 5	-60.4	15.8	46.0	47.6	-0.7	2.5	-0.6	-16.0
E4	neutral 3.5	11.5	9.0	32.6	33.8	-0.6	0.9	-1.7	-10.5
F4	black	79.3	2.5	19.4	19.9	0.4	0.8	-1.4	-3.8
A5	paper white	100.0	0.5	93.7	94.2	-0.1	0.0	-3.1	-3.2
B5	skin highlight L*=89	35.3	17.6	78.0	79.5	20.5	22.7	16.6	-0.8
C5	skin highlight L*=75	40.2	19.0	68.1	69.6	23.5	25.5	20.0	1.2
D5	skin shadow L*=25	89.1	3.3	27.3	27.9	15.2	14.8	20.2	17.0
E5	skin shadow L*=11	95.8	1.2	18.8	19.0	12.2	12.4	10.1	8.9
F5	Max Black	100.0	0.3	13.2	13.3	-0.4	-0.5	-3.5	-3.3
Summary Results		I*Color	I*tone	 AARDENBURG IMAGING & ARCHIVES					
Average Score for all patches		59.5	95.7						
Average Score for the Worst 10% (3 lowest scoring patches)		-46.5	92.2						

45.3_{color} / 94.6_{tone}



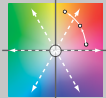
Original Print Colors
(measured before light exposure)



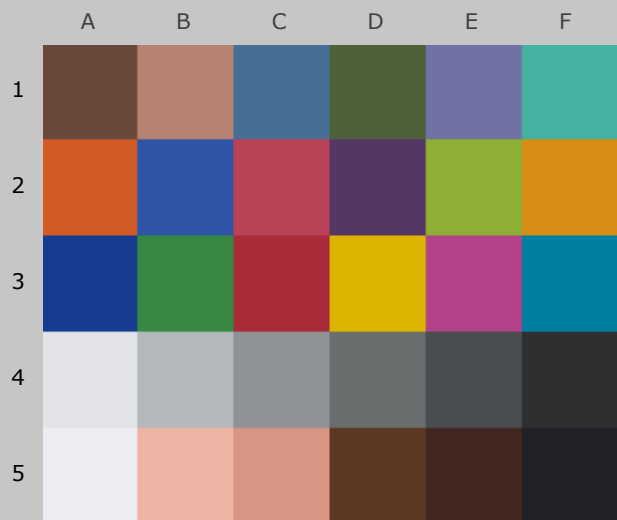
Colors after 40 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

40 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	22.6	14.6	34.4	35.8	12.7	13.6	13.0	-1.5
B1	light Skin	7.5	24.2	59.6	61.3	19.0	22.4	17.0	-6.9
C1	blue sky	46.8	14.1	45.3	46.7	-6.1	-0.6	-24.7	-37.7
D1	foliage	37.8	14.8	38.7	40.1	-12.8	-12.1	18.9	4.2
E1	blue flower	68.8	9.8	49.2	50.4	8.5	12.0	-28.2	-37.3
F1	bluish green	40.5	21.8	66.1	67.7	-35.7	-28.6	-0.5	-21.1
A2	orange	77.1	16.6	54.0	55.2	45.6	44.2	53.2	36.7
B2	purplish blue	93.9	3.7	36.3	37.2	9.0	10.9	-49.4	-52.4
C2	moderate red	66.0	18.2	45.8	46.7	49.8	51.6	14.9	-3.2
D2	purple	62.2	12.1	28.4	29.6	20.9	24.8	-22.4	-33.8
E2	yellow green	63.9	22.7	67.3	69.6	-24.8	-25.5	56.1	33.5
F2	orange yellow	73.4	19.3	65.3	67.1	23.1	20.4	66.5	47.5
A3	blue	93.0	4.3	26.9	28.0	12.6	14.8	-51.1	-54.6
B3	green	63.7	18.2	50.6	52.6	-38.5	-37.4	29.6	11.5
C3	red	72.1	16.5	39.3	39.9	51.9	53.0	24.3	7.8
D3	yellow	71.3	23.1	75.5	77.7	4.8	2.1	78.3	55.4
E3	magenta	84.3	9.0	46.2	47.1	51.5	53.5	-16.2	-24.9
F3	cyan	69.1	13.8	47.0	48.4	-31.0	-23.8	-29.7	-41.4
A4	white	69.0	3.5	90.5	90.9	-0.4	0.6	-2.1	-5.4
B4	neutral 8	-57.9	15.5	74.6	75.9	-0.9	3.0	-1.7	-16.7
C4	neutral 6.5	-103.5	19.9	60.7	62.4	-0.9	4.2	-2.2	-21.3
D4	neutral 5	-116.8	21.2	46.0	47.8	-0.7	4.3	-0.6	-21.0
E4	neutral 3.5	-23.4	12.3	32.6	33.8	-0.6	1.9	-1.7	-13.7
F4	black	69.8	3.4	19.4	19.9	0.4	1.0	-1.4	-4.7
A5	paper white	100.0	0.6	93.7	94.0	-0.1	-0.1	-3.1	-2.6
B5	skin highlight L*=89	16.1	22.7	78.0	79.5	20.5	24.0	16.6	-5.7
C5	skin highlight L*=75	20.6	25.1	68.1	69.6	23.5	27.0	20.0	-4.8
D5	skin shadow L*=25	82.1	5.1	27.3	27.9	15.2	14.8	20.2	15.2
E5	skin shadow L*=11	91.0	1.9	18.8	18.9	12.2	12.5	10.1	8.2
F5	Max Black	98.8	0.7	13.2	12.9	-0.4	-0.4	-3.5	-2.9
Summary Results		I*Color	I*tone	 AARDENBURG IMAGING & ARCHIVES					
Average Score for all patches		45.3	94.6						
Average Score for the Worst 10% (3 lowest scoring patches)		-92.7	89.7						

32.5_{color} / 93.7_{tone}



Original Print Colors
(measured before light exposure)



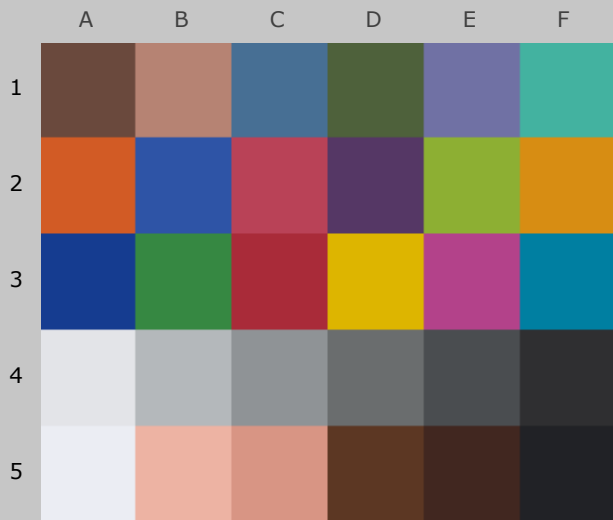
Colors after 50 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

50 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	-0.8	18.8	34.4	36.0	12.7	14.5	13.0	-5.7
B1	light Skin	-12.6	29.3	59.6	61.8	19.0	23.8	17.0	-11.8
C1	blue sky	34.2	17.3	45.3	46.9	-6.1	1.1	-24.7	-40.4
D1	foliage	18.7	19.1	38.7	40.4	-12.8	-11.1	18.9	-0.1
E1	blue flower	61.7	11.9	49.2	50.6	8.5	13.1	-28.2	-39.0
F1	bluish green	27.3	26.5	66.1	68.0	-35.7	-26.5	-0.5	-25.3
A2	orange	69.8	21.7	54.0	55.4	45.6	44.4	53.2	31.6
B2	purplish blue	92.4	4.5	36.3	37.3	9.0	11.4	-49.4	-53.0
C2	moderate red	58.8	21.9	45.8	47.0	49.8	52.4	14.9	-6.9
D2	purple	52.1	15.2	28.4	29.8	20.9	26.2	-22.4	-36.6
E2	yellow green	52.7	29.6	67.3	70.1	-24.8	-24.7	56.1	26.6
F2	orange yellow	64.1	25.9	65.3	67.6	23.1	20.4	66.5	40.9
A3	blue	90.9	5.4	26.9	28.0	12.6	15.6	-51.1	-55.4
B3	green	53.6	23.2	50.6	53.1	-38.5	-36.3	29.6	6.7
C3	red	65.2	20.5	39.3	40.1	51.9	53.6	24.3	3.9
D3	yellow	61.2	31.1	75.5	78.3	4.8	2.2	78.3	47.5
E3	magenta	82.2	10.2	46.2	47.3	51.5	54.0	-16.2	-26.0
F3	cyan	62.4	16.7	47.0	48.7	-31.0	-22.1	-29.7	-43.7
A4	white	66.5	3.7	90.5	91.1	-0.4	0.7	-2.1	-5.6
B4	neutral 8	-82.1	17.9	74.6	76.2	-0.9	3.9	-1.7	-18.8
C4	neutral 6.5	-146.2	24.0	60.7	62.8	-0.9	5.8	-2.2	-25.1
D4	neutral 5	-167.9	26.0	46.0	48.2	-0.7	6.1	-0.6	-25.6
E4	neutral 3.5	-56.7	15.5	32.6	34.2	-0.6	3.0	-1.7	-16.6
F4	black	60.8	4.3	19.4	20.1	0.4	1.3	-1.4	-5.5
A5	paper white	100.0	0.7	93.7	94.2	-0.1	0.0	-3.1	-2.6
B5	skin highlight L*=89	3.1	26.1	78.0	79.8	20.5	25.0	16.6	-9.0
C5	skin highlight L*=75	4.1	30.2	68.1	70.1	23.5	28.2	20.0	-9.7
D5	skin shadow L*=25	73.8	7.2	27.3	28.1	15.2	14.9	20.2	13.1
E5	skin shadow L*=11	84.8	2.9	18.8	19.1	12.2	12.6	10.1	7.2
F5	Max Black	100.0	0.5	13.2	13.3	-0.4	-0.4	-3.5	-3.0
Summary Results		I*Color	I*tone	 AARDENBURG IMAGING & ARCHIVES					
Average Score for all patches		32.5	93.7						
Average Score for the Worst 10% (3 lowest scoring patches)		-132.1	87.5						

22.3_{color} / 92.9_{tone}



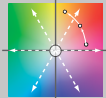
Original Print Colors
(measured before light exposure)



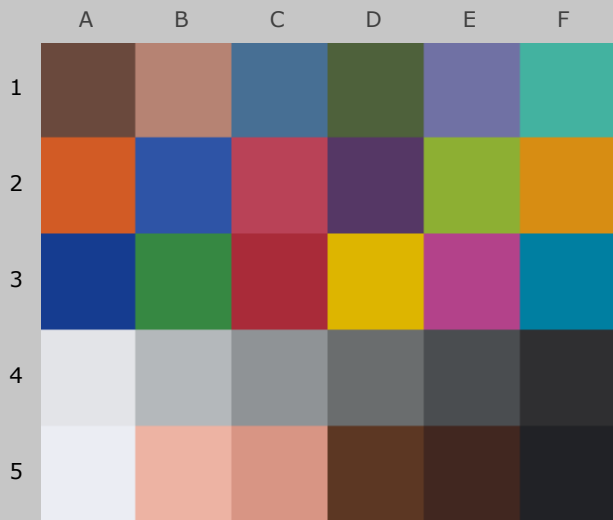
Colors after 60 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

60 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	-23.5	23.0	34.4	36.4	12.7	15.5	13.0	-9.7
B1	light Skin	-29.2	33.6	59.6	62.1	19.0	25.1	17.0	-15.9
C1	blue sky	25.4	19.6	45.3	47.3	-6.1	2.4	-24.7	-42.3
D1	foliage	0.0	23.4	38.7	40.9	-12.8	-10.0	18.9	-4.3
E1	blue flower	57.9	13.0	49.2	50.9	8.5	13.8	-28.2	-40.0
F1	bluish green	18.3	29.7	66.1	68.3	-35.7	-24.8	-0.5	-28.1
A2	orange	62.3	26.9	54.0	55.8	45.6	44.7	53.2	26.3
B2	purplish blue	91.7	4.9	36.3	37.6	9.0	11.7	-49.4	-53.2
C2	moderate red	53.2	24.8	45.8	47.3	49.8	53.0	14.9	-9.7
D2	purple	44.2	17.7	28.4	30.2	20.9	27.3	-22.4	-38.7
E2	yellow green	41.2	36.7	67.3	70.6	-24.8	-23.5	56.1	19.5
F2	orange yellow	54.3	32.8	65.3	68.0	23.1	21.0	66.5	33.9
A3	blue	89.9	6.0	26.9	28.3	12.6	15.9	-51.1	-55.8
B3	green	43.3	28.2	50.6	53.5	-38.5	-34.9	29.6	1.8
C3	red	59.3	23.9	39.3	40.5	51.9	54.1	24.3	0.6
D3	yellow	50.8	39.2	75.5	78.8	4.8	2.9	78.3	39.3
E3	magenta	81.2	10.7	46.2	47.6	51.5	54.2	-16.2	-26.4
F3	cyan	57.3	18.9	47.0	49.0	-31.0	-20.6	-29.7	-45.4
A4	white	70.8	3.3	90.5	91.2	-0.4	0.7	-2.1	-5.2
B4	neutral 8	-91.1	18.7	74.6	76.3	-0.9	4.4	-1.7	-19.6
C4	neutral 6.5	-175.0	26.7	60.7	63.1	-0.9	7.0	-2.2	-27.6
D4	neutral 5	-210.7	30.1	46.0	48.6	-0.7	7.8	-0.6	-29.3
E4	neutral 3.5	-85.2	18.2	32.6	34.5	-0.6	4.1	-1.7	-19.2
F4	black	52.9	5.1	19.4	20.4	0.4	1.6	-1.4	-6.2
A5	paper white	94.6	1.2	93.7	94.3	-0.1	-0.1	-3.1	-2.1
B5	skin highlight L*=89	-2.3	27.5	78.0	80.0	20.5	25.5	16.6	-10.4
C5	skin highlight L*=75	-6.3	33.4	68.1	70.4	23.5	29.2	20.0	-12.8
D5	skin shadow L*=25	65.0	9.4	27.3	28.5	15.2	15.0	20.2	10.9
E5	skin shadow L*=11	78.8	3.9	18.8	19.5	12.2	12.6	10.1	6.2
F5	Max Black	99.8	0.8	13.2	13.8	-0.4	-0.4	-3.5	-3.0
Summary Results		I*Color	I*tone	 AARDENBURG IMAGING & ARCHIVES					
Average Score for all patches		22.3	92.9						
Average Score for the Worst 10% (3 lowest scoring patches)		-158.9	86.3						

13.0_{color} / 92.1_{tone}



Original Print Colors
(measured before light exposure)



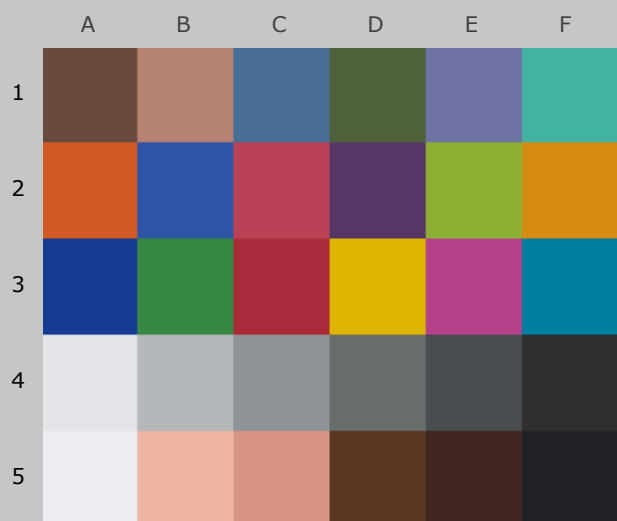
Colors after 70 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

70 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

				L*		a*		b*	
Column/row	Color Patch	I*Color	ΔE	Before	After	Before	After	Before	After
A1	dark Skin	-47.5	27.3	34.4	36.7	12.7	16.7	13.0	-14.0
B1	light Skin	-42.8	37.1	59.6	62.4	19.0	26.3	17.0	-19.2
C1	blue sky	17.7	21.6	45.3	47.5	-6.1	3.6	-24.7	-43.9
D1	foliage	-20.1	28.0	38.7	41.3	-12.8	-8.6	18.9	-8.7
E1	blue flower	55.3	13.8	49.2	51.1	8.5	14.3	-28.2	-40.6
F1	bluish green	12.4	31.8	66.1	68.4	-35.7	-23.6	-0.5	-29.9
A2	orange	54.4	32.5	54.0	56.1	45.6	45.3	53.2	20.8
B2	purplish blue	91.0	5.2	36.3	37.7	9.0	12.1	-49.4	-53.4
C2	moderate red	48.0	27.5	45.8	47.5	49.8	53.8	14.9	-12.3
D2	purple	36.1	20.2	28.4	30.4	20.9	28.6	-22.4	-40.9
E2	yellow green	28.9	44.2	67.3	71.0	-24.8	-21.9	56.1	12.1
F2	orange yellow	43.7	40.2	65.3	68.4	23.1	21.8	66.5	26.4
A3	blue	88.6	6.7	26.9	28.4	12.6	16.5	-51.1	-56.3
B3	green	32.0	33.7	50.6	53.8	-38.5	-33.1	29.6	-3.5
C3	red	53.6	27.1	39.3	40.7	51.9	54.8	24.3	-2.7
D3	yellow	39.5	48.1	75.5	79.2	4.8	4.0	78.3	30.3
E3	magenta	80.5	11.1	46.2	47.7	51.5	54.6	-16.2	-26.7
F3	cyan	52.8	20.8	47.0	49.1	-31.0	-19.4	-29.7	-46.8
A4	white	76.9	2.8	90.5	91.2	-0.4	0.7	-2.1	-4.6
B4	neutral 8	-91.3	18.8	74.6	76.5	-0.9	4.5	-1.7	-19.5
C4	neutral 6.5	-194.5	28.6	60.7	63.3	-0.9	7.9	-2.2	-29.3
D4	neutral 5	-251.4	34.0	46.0	48.9	-0.7	9.6	-0.6	-32.8
E4	neutral 3.5	-114.1	20.9	32.6	34.7	-0.6	5.2	-1.7	-21.7
F4	black	44.3	5.9	19.4	20.4	0.4	1.8	-1.4	-7.0
A5	paper white	88.1	1.7	93.7	94.3	-0.1	-0.1	-3.1	-1.5
B5	skin highlight L*=89	-3.5	27.9	78.0	80.2	20.5	25.7	16.6	-10.7
C5	skin highlight L*=75	-13.5	35.6	68.1	70.5	23.5	30.0	20.0	-15.0
D5	skin shadow L*=25	55.2	11.9	27.3	28.7	15.2	15.3	20.2	8.4
E5	skin shadow L*=11	72.7	4.9	18.8	19.4	12.2	12.8	10.1	5.3
F5	Max Black	97.4	0.8	13.2	13.4	-0.4	-0.3	-3.5	-2.7
Summary Results		I*Color	I*tone	ΔE	 AARDENBURG IMAGING & ARCHIVES				
Average Score for all patches		13.0	92.1	22.4					
Average Score for the Worst 10% (3 lowest scoring patches)		-186.7	85.0	44.2					

4.3_{color} / 91.4_{tone}



Original Print Colors
(measured before light exposure)



Colors after 80 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

80 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	-69.6	31.3	34.4	37.0	12.7	17.9	13.0	-17.8
B1	light Skin	-54.4	40.0	59.6	62.5	19.0	27.3	17.0	-22.0
C1	blue sky	10.6	23.4	45.3	47.6	-6.1	4.7	-24.7	-45.4
D1	foliage	-39.5	32.4	38.7	41.5	-12.8	-7.1	18.9	-12.9
E1	blue flower	52.4	14.7	49.2	51.2	8.5	14.9	-28.2	-41.3
F1	bluish green	7.5	33.6	66.1	68.5	-35.7	-22.7	-0.5	-31.4
A2	orange	46.6	38.0	54.0	56.3	45.6	45.8	53.2	15.3
B2	purplish blue	90.0	5.7	36.3	37.8	9.0	12.5	-49.4	-53.7
C2	moderate red	43.3	30.0	45.8	47.6	49.8	54.4	14.9	-14.8
D2	purple	28.8	22.4	28.4	30.6	20.9	29.6	-22.4	-42.9
E2	yellow green	16.6	51.8	67.3	71.4	-24.8	-20.0	56.1	4.7
F2	orange yellow	32.8	47.9	65.3	68.7	23.1	22.7	66.5	18.7
A3	blue	87.1	7.5	26.9	28.5	12.6	17.0	-51.1	-56.9
B3	green	20.8	39.1	50.6	54.1	-38.5	-31.2	29.6	-8.6
C3	red	48.3	30.2	39.3	40.7	51.9	55.3	24.3	-5.6
D3	yellow	28.1	57.0	75.5	79.6	4.8	5.3	78.3	21.4
E3	magenta	79.5	11.7	46.2	47.8	51.5	54.8	-16.2	-27.3
F3	cyan	48.6	22.6	47.0	49.2	-31.0	-18.2	-29.7	-48.2
A4	white	73.4	3.1	90.5	91.3	-0.4	0.8	-2.1	-4.9
B4	neutral 8	-96.5	19.3	74.6	76.5	-0.9	4.7	-1.7	-20.0
C4	neutral 6.5	-210.6	30.1	60.7	63.4	-0.9	8.6	-2.2	-30.6
D4	neutral 5	-287.5	37.4	46.0	49.1	-0.7	11.2	-0.6	-35.9
E4	neutral 3.5	-141.2	23.5	32.6	34.9	-0.6	6.3	-1.7	-24.1
F4	black	36.0	6.7	19.4	20.5	0.4	2.1	-1.4	-7.8
A5	paper white	91.5	1.5	93.7	94.3	-0.1	0.0	-3.1	-1.8
B5	skin highlight L*=89	-5.9	28.5	78.0	80.2	20.5	25.8	16.6	-11.3
C5	skin highlight L*=75	-19.4	37.4	68.1	70.6	23.5	30.5	20.0	-16.7
D5	skin shadow L*=25	45.8	14.3	27.3	28.8	15.2	15.5	20.2	6.0
E5	skin shadow L*=11	66.0	5.9	18.8	19.6	12.2	12.9	10.1	4.2
F5	Max Black	98.5	0.7	13.2	13.5	-0.4	-0.3	-3.5	-2.8

Summary Results

I*Color

I*tone

ΔE

Average Score for all patches

4.3

91.4

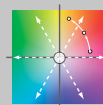
24.9

Average Score for the Worst 10%
(3 lowest scoring patches)

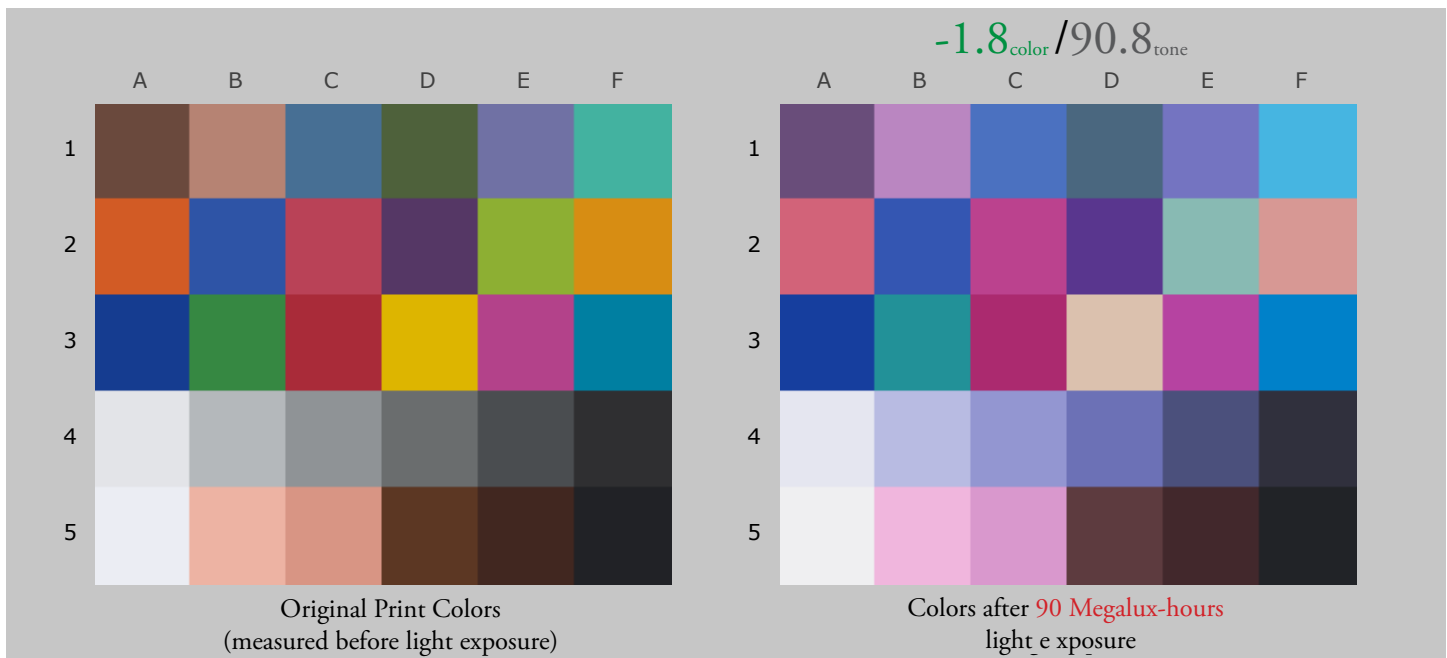
-213.1

83.4

52.2



AARDENBURG IMAGING
& ARCHIVES

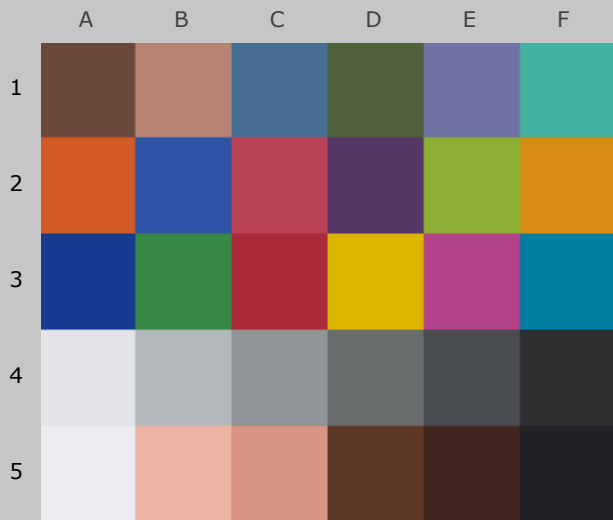


*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

90 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	-88.5	34.7	34.4	37.2	12.7	19.1	13.0	-21.1
B1	light Skin	-60.4	41.6	59.6	62.7	19.0	28.0	17.0	-23.4
C1	blue sky	7.0	24.3	45.3	47.7	-6.1	5.2	-24.7	-46.1
D1	foliage	-56.8	36.4	38.7	41.8	-12.8	-5.6	18.9	-16.7
E1	blue flower	51.9	14.8	49.2	51.3	8.5	15.1	-28.2	-41.3
F1	bluish green	6.1	34.1	66.1	68.6	-35.7	-22.3	-0.5	-31.8
A2	orange	39.6	42.9	54.0	56.6	45.6	46.4	53.2	10.4
B2	purplish blue	89.8	5.9	36.3	37.9	9.0	12.6	-49.4	-53.8
C2	moderate red	39.9	31.8	45.8	47.7	49.8	54.9	14.9	-16.4
D2	purple	23.2	24.1	28.4	30.7	20.9	30.6	-22.4	-44.3
E2	yellow green	5.7	58.5	67.3	71.7	-24.8	-18.0	56.1	-1.9
F2	orange yellow	22.7	55.1	65.3	69.1	23.1	23.9	66.5	11.6
A3	blue	86.3	7.9	26.9	28.6	12.6	17.3	-51.1	-57.1
B3	green	10.5	44.1	50.6	54.5	-38.5	-29.2	29.6	-13.4
C3	red	44.1	32.6	39.3	40.9	51.9	55.9	24.3	-8.0
D3	yellow	17.8	65.1	75.5	80.0	4.8	6.9	78.3	13.4
E3	magenta	79.3	11.8	46.2	47.9	51.5	55.0	-16.2	-27.3
F3	cyan	46.5	23.5	47.0	49.3	-31.0	-17.6	-29.7	-48.9
A4	white	77.0	2.8	90.5	91.3	-0.4	0.8	-2.1	-4.5
B4	neutral 8	-94.1	19.0	74.6	76.6	-0.9	4.8	-1.7	-19.7
C4	neutral 6.5	-215.4	30.6	60.7	63.5	-0.9	8.9	-2.2	-31.0
D4	neutral 5	-311.7	39.7	46.0	49.3	-0.7	12.3	-0.6	-38.0
E4	neutral 3.5	-162.0	25.5	32.6	35.1	-0.6	7.2	-1.7	-25.9
F4	black	30.5	7.2	19.4	20.5	0.4	2.3	-1.4	-8.3
A5	paper white	87.8	1.8	93.7	94.4	-0.1	0.0	-3.1	-1.5
B5	skin highlight L*=89	-5.1	28.3	78.0	80.3	20.5	25.9	16.6	-11.1
C5	skin highlight L*=75	-21.5	38.1	68.1	70.7	23.5	30.8	20.0	-17.3
D5	skin shadow L*=25	37.0	16.5	27.3	29.0	15.2	15.9	20.2	3.8
E5	skin shadow L*=11	61.0	6.7	18.8	19.6	12.2	13.1	10.1	3.4
F5	Max Black	98.9	0.8	13.2	13.6	-0.4	-0.3	-3.5	-2.9
Summary Results		I*Color	I*tone	 AARDENBURG IMAGING & ARCHIVES					
Average Score for all patches		-1.8	90.8						
Average Score for the Worst 10% (3 lowest scoring patches)		-229.7	82.2						

-1.8_{color}/90.8_{tone}



Original Print Colors
(measured before light exposure)



Colors after 100 Megalux-hours
light exposure

*Epson R1800 Printer, MIS R800 Ultrachrome Equivalent Ink,
Epson Premium Luster Photo Paper*

100 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

				L*		a*		b*	
Column/row	Color Patch	I*Color	ΔE	Before	After	Before	After	Before	After
A1	dark Skin	-107.6	38.2	34.4	37.3	12.7	20.4	13.0	-24.3
B1	light Skin	-64.2	42.5	59.6	62.8	19.0	28.5	17.0	-24.3
C1	blue sky	4.8	24.9	45.3	47.7	-6.1	5.6	-24.7	-46.5
D1	foliage	-74.2	40.3	38.7	41.9	-12.8	-4.0	18.9	-20.4
E1	blue flower	51.9	14.8	49.2	51.3	8.5	15.2	-28.2	-41.2
F1	bluish green	5.5	34.3	66.1	68.6	-35.7	-22.1	-0.5	-32.0
A2	orange	32.7	47.7	54.0	56.7	45.6	47.4	53.2	5.6
B2	purplish blue	89.6	5.9	36.3	37.8	9.0	12.8	-49.4	-53.8
C2	moderate red	36.9	33.4	45.8	47.8	49.8	55.6	14.9	-17.9
D2	purple	17.7	25.8	28.4	30.6	20.9	31.6	-22.4	-45.7
E2	yellow green	-4.9	64.9	67.3	72.0	-24.8	-15.9	56.1	-8.1
F2	orange yellow	12.7	62.1	65.3	69.3	23.1	25.4	66.5	4.6
A3	blue	85.3	8.3	26.9	28.4	12.6	17.7	-51.1	-57.5
B3	green	-0.1	49.3	50.6	54.7	-38.5	-27.0	29.6	-18.1
C3	red	39.9	35.0	39.3	40.9	51.9	56.6	24.3	-10.3
D3	yellow	7.9	72.9	75.5	80.4	4.8	8.7	78.3	5.7
E3	magenta	79.1	11.9	46.2	47.9	51.5	55.3	-16.2	-27.3
F3	cyan	45.1	24.1	47.0	49.3	-31.0	-17.2	-29.7	-49.3
A4	white	80.6	2.5	90.5	91.4	-0.4	0.7	-2.1	-4.2
B4	neutral 8	-91.1	18.8	74.6	76.6	-0.9	4.7	-1.7	-19.5
C4	neutral 6.5	-217.2	30.8	60.7	63.5	-0.9	9.1	-2.2	-31.1
D4	neutral 5	-332.1	41.7	46.0	49.3	-0.7	13.4	-0.6	-39.6
E4	neutral 3.5	-182.2	27.4	32.6	35.0	-0.6	8.1	-1.7	-27.6
F4	black	23.2	7.8	19.4	20.3	0.4	2.5	-1.4	-8.9
A5	paper white	83.8	2.2	93.7	94.4	-0.1	0.0	-3.1	-1.1
B5	skin highlight L*=89	-3.9	28.0	78.0	80.3	20.5	25.9	16.6	-10.7
C5	skin highlight L*=75	-22.4	38.4	68.1	70.8	23.5	31.0	20.0	-17.6
D5	skin shadow L*=25	28.0	18.8	27.3	29.0	15.2	16.4	20.2	1.6
E5	skin shadow L*=11	55.3	7.6	18.8	19.4	12.2	13.4	10.1	2.6
F5	Max Black	99.9	0.6	13.2	13.4	-0.4	-0.4	-3.5	-3.0
Summary Results		I*Color	I*tone	ΔE	 AARDENBURG IMAGING & ARCHIVES				
Average Score for all patches		-7.3	90.3	28.7					
Average Score for the Worst 10% (3 lowest scoring patches)		-243.8	80.6	66.7					



AARDENBURG IMAGING
& ARCHIVES