

Accelerated Light Fading Test Results

*HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy*

Sample # AaI_20080502_SN002
220 Megalux-hours complete

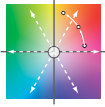
Conservation Display Rating *	
Lower Exposure Limit (Megalux hours)	Upper Exposure limit (Megalux hours)
4	6

* 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_20080502_SN002Lf.pdf Rev: October 3, 2012
Test Print Prepared by: Aardenburg Imaging & Archives

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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

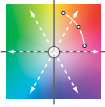
The magnitude and visual appearance of fading depends not only on the chosen printing system but the chosen image as well. In other words, different images are comprised of different colors, and the fading relationships between those colors dictate how the image will look as it fades. The sample print 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: HP8750
Ink: HP OEM ink (tricolor, blue, gray)
Paper: HP Advanced Photo Paper, Glossy

Sample #: AaI_20080502_SN002
Test Print Prepared by: AaI&A
Membership category: n.a



Test Image: AaI_StandardColorSet(v2)forSRGB.tif
RIP/Driver settings: CS2/ HP OEM, Quality = Best, Application managed color
Media Setting: other photo paper
Printed: May 03, 2007
Original print colors measured on: May 09, 2008
Test started on: May 10, 2008

AaI_StandardColorSet(v2)forSRGB.tif

Profile: AaI_HP8750_AdvHpPhPaper(1a).icc **Rendering Intent:** Perceptual
Profile type: custom
Profile Creation Software: Gretag/Macbeth Profilemaker 5.0.8

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)	95.0	95.1	-0.9	-1.3	-3.1	-1.6
(1) ΔL^* , Δa^* , Δb^* respectively	0.1		0.4		1.5	
(1) Calculated differences, especially for Δb^* , indicate the role and magnitude of fluorescence on original paper color						
Maximum Printed black (UV included)	L* = 8.7		a* = -0.1		b* = -9.8	

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: 11,509 Lux
Average Temperature: 23.1°C over full test duration, 24.5°C during light exposure
Average Relative humidity: 58.1%RH full test period, 58.8%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:

* 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.

** OBAs in paper core and verso of print, not in image receiver coating.

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.



Original Print Colors
(measured before light exposure)



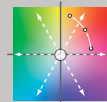
Colors at Zero Megalux-hours of Light Exposure
(same as original print colors)

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

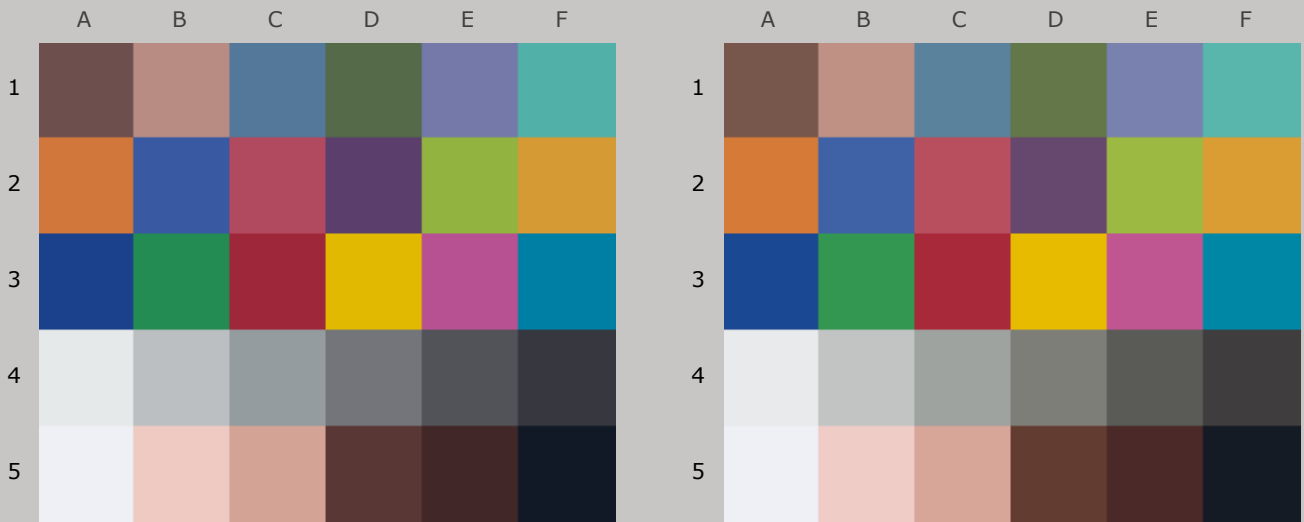
Original Print Colors as Measured and at Start of Test

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	100	0.0	36.9		12.5		6.4	
B1	light Skin	100	0.0	62.2		15.6		11.9	
C1	blue sky	100	0.0	48.5		-6.0		-23.4	
D1	foliage	100	0.0	42.5		-12.7		15.5	
E1	blue flower	100	0.0	51.9		7.1		-27.3	
F1	bluish green	100	0.0	66.2		-31.0		-4.9	
A2	orange	100	0.0	59.4		32.6		48.0	
B2	purplish blue	100	0.0	38.5		7.1		-44.0	
C2	moderate red	100	0.0	46.3		44.0		10.2	
D2	purple	100	0.0	31.2		19.8		-22.2	
E2	yellow green	100	0.0	68.7		-23.7		52.6	
F2	orange yellow	100	0.0	68.2		16.6		58.7	
A3	blue	100	0.0	28.2		9.8		-47.4	
B3	green	100	0.0	51.3		-40.8		22.3	
C3	red	100	0.0	36.8		49.8		19.8	
D3	yellow	100	0.0	76.7		5.4		78.1	
E3	magenta	100	0.0	49.8		47.6		-14.6	
F3	cyan	100	0.0	48.7		-21.9		-28.8	
A4	white	100	0.0	92.1		-0.6		-0.9	
B4	neutral 8	100	0.0	77.3		-0.8		-1.6	
C4	neutral 6.5	100	0.0	64.0		-1.8		-2.7	
D4	neutral 5	100	0.0	49.1		0.0		-2.7	
E4	neutral 3.5	100	0.0	35.2		0.2		-3.9	
F4	black	100	0.0	23.3		0.6		-5.1	
A5	paper white	100	0.0	94.8		-0.4		-3.0	
B5	skin highlight L*=89	100	0.0	84.4		11.5		8.6	
C5	skin highlight L*=75	100	0.0	71.2		17.2		13.8	
D5	skin shadow L*=25	100	0.0	27.0		14.8		8.5	
E5	skin shadow L*=11	100	0.0	19.3		12.6		3.9	
F5	Max Black	100	0.0	8.7		-0.1		-9.8	

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	100	100	0.0
Average Score for the Worst 10% (3 lowest scoring patches)	100	100	0.0



84.1_{color} / 89.5_{tone}



Original Print Colors
(measured before light exposure)

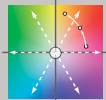
Colors after 10 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

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	63.8	6.4	36.9	40.0	12.5	13.2	6.4	12.0
B1	light Skin	93.1	2.7	62.2	64.2	15.6	15.9	11.9	13.7
C1	blue sky	81.7	6.1	48.5	52.1	-6.0	-8.9	-23.4	-19.4
D1	foliage	64.6	9.0	42.5	47.4	-12.7	-14.0	15.5	23.0
E1	blue flower	91.4	3.9	51.9	54.5	7.1	5.4	-27.3	-24.9
F1	bluish green	99.5	2.1	66.2	68.2	-31.0	-30.8	-4.9	-4.2
A2	orange	96.0	3.2	59.4	60.9	32.6	32.9	48.0	50.8
B2	purplish blue	92.2	5.0	38.5	41.6	7.1	4.0	-44.0	-41.5
C2	moderate red	95.2	3.4	46.3	48.4	44.0	44.3	10.2	12.8
D2	purple	85.7	6.0	31.2	34.9	19.8	19.2	-22.2	-17.5
E2	yellow green	96.2	3.9	68.7	71.5	-23.7	-22.9	52.6	55.2
F2	orange yellow	97.0	2.7	68.2	69.6	16.6	17.0	58.7	61.0
A3	blue	94.8	4.0	28.2	30.8	9.8	7.4	-47.4	-45.5
B3	green	88.8	7.2	51.3	55.7	-40.8	-42.5	22.3	27.7
C3	red	93.1	4.6	36.8	38.7	49.8	51.8	19.8	23.5
D3	yellow	97.5	2.7	76.7	77.9	5.4	5.8	78.1	80.5
E3	magenta	96.5	3.0	49.8	51.9	47.6	47.5	-14.6	-12.4
F3	cyan	90.5	4.9	48.7	51.6	-21.9	-24.7	-28.8	-26.0
A4	white	100.0	0.6	92.1	92.6	-0.6	-0.4	-0.9	-0.7
B4	neutral 8	91.5	1.9	77.3	78.7	-0.8	-0.5	-1.6	-0.3
C4	neutral 6.5	66.5	4.5	64.0	66.6	-1.8	-2.3	-2.7	0.9
D4	neutral 5	47.4	6.4	49.1	52.4	0.0	-0.9	-2.7	2.8
E4	neutral 3.5	39.4	7.1	35.2	38.6	0.2	-0.7	-3.9	2.3
F4	black	50.6	5.8	23.3	25.9	0.6	0.6	-5.1	0.1
A5	paper white	100.0	0.4	94.8	95.0	-0.4	-0.5	-3.0	-2.7
B5	skin highlight L*=89	96.3	1.2	84.4	84.9	11.5	11.9	8.6	7.6
C5	skin highlight L*=75	99.3	1.4	71.2	72.4	17.2	17.8	13.8	13.6
D5	skin shadow L*=25	69.9	6.2	27.0	29.7	14.8	16.7	8.5	13.8
E5	skin shadow L*=11	62.5	5.7	19.3	21.1	12.6	15.6	3.9	8.5
F5	Max Black	82.4	2.4	8.7	9.5	-0.1	-0.1	-9.8	-7.6

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	84.1	89.5	4.2
Average Score for the Worst 10% (3 lowest scoring patches)	45.8	77.4	7.8



82.7_{color} / 86.6_{tone}



Original Print Colors
(measured before light exposure)



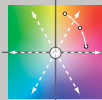
Colors after 20 Megalux-hours
light exposure

*HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy*

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

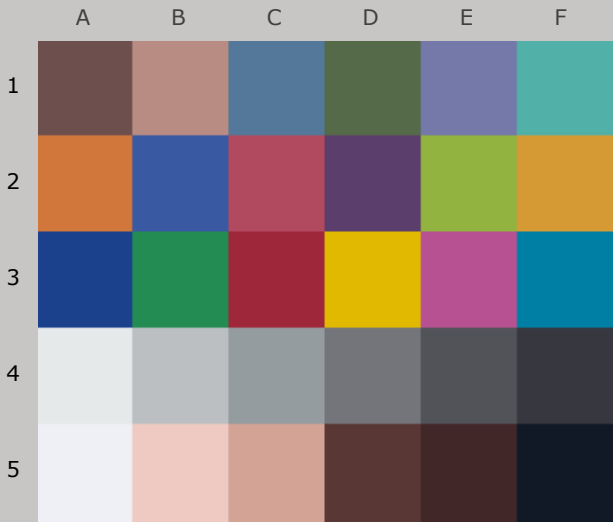
Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	61.9	7.3	36.9	41.2	12.5	12.8	6.4	12.3
B1	light Skin	95.1	2.9	62.2	64.7	15.6	16.3	11.9	13.2
C1	blue sky	78.0	7.7	48.5	53.6	-6.0	-10.0	-23.4	-19.1
D1	foliage	64.7	9.7	42.5	48.6	-12.7	-13.6	15.5	23.0
E1	blue flower	88.5	5.4	51.9	55.8	7.1	4.4	-27.3	-24.7
F1	bluish green	99.4	2.7	66.2	68.8	-31.0	-30.3	-4.9	-4.8
A2	orange	96.9	3.1	59.4	61.5	32.6	33.0	48.0	50.3
B2	purplish blue	85.0	8.7	38.5	43.5	7.1	0.8	-44.0	-40.6
C2	moderate red	95.9	3.9	46.3	49.4	44.0	44.3	10.2	12.5
D2	purple	84.7	7.4	31.2	36.6	19.8	18.8	-22.2	-17.3
E2	yellow green	97.3	4.1	68.7	72.3	-23.7	-22.6	52.6	54.3
F2	orange yellow	98.3	2.4	68.2	70.1	16.6	17.0	58.7	60.2
A3	blue	89.8	7.1	28.2	32.8	9.8	4.8	-47.4	-45.1
B3	green	89.8	7.7	51.3	56.9	-40.8	-42.6	22.3	27.2
C3	red	91.3	6.2	36.8	40.1	49.8	52.7	19.8	24.2
D3	yellow	98.2	2.6	76.7	78.5	5.4	5.8	78.1	80.0
E3	magenta	97.1	3.3	49.8	52.5	47.6	47.5	-14.6	-12.7
F3	cyan	88.6	6.1	48.7	52.8	-21.9	-25.6	-28.8	-26.0
A4	white	100.0	0.6	92.1	92.5	-0.6	-0.3	-0.9	-0.7
B4	neutral 8	92.7	1.9	77.3	78.8	-0.8	-0.1	-1.6	-0.6
C4	neutral 6.5	70.0	4.4	64.0	66.9	-1.8	-1.8	-2.7	0.6
D4	neutral 5	49.0	6.6	49.1	52.9	0.0	-0.9	-2.7	2.6
E4	neutral 3.5	35.9	7.8	35.2	39.4	0.2	-1.1	-3.9	2.6
F4	black	44.1	6.8	23.3	26.8	0.6	-0.2	-5.1	0.7
A5	paper white	100.0	0.5	94.8	94.9	-0.4	-0.5	-3.0	-2.5
B5	skin highlight L*=89	93.5	1.5	84.4	84.9	11.5	11.9	8.6	7.2
C5	skin highlight L*=75	96.2	1.9	71.2	72.6	17.2	18.0	13.8	12.7
D5	skin shadow L*=25	67.0	7.3	27.0	30.9	14.8	16.2	8.5	14.4
E5	skin shadow L*=11	53.9	7.2	19.3	22.2	12.6	15.9	3.9	9.7
F5	Max Black	78.7	2.9	8.7	9.9	-0.1	-0.3	-9.8	-7.2

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	82.7	86.6	4.9
Average Score for the Worst 10% (3 lowest scoring patches)	43.0	74.0	8.8

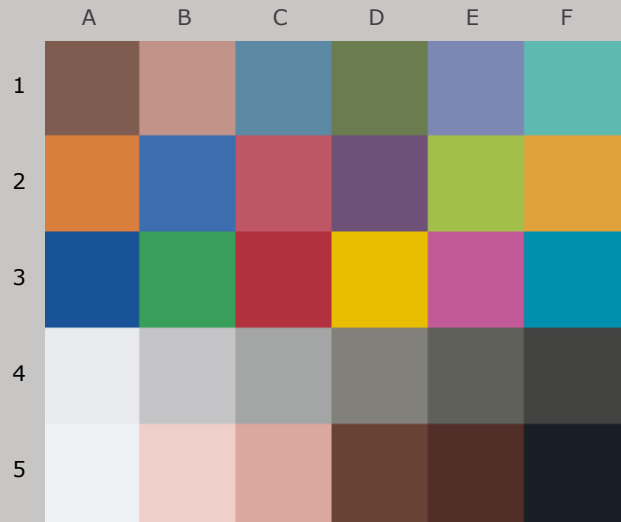


AARDENBURG IMAGING
& ARCHIVES

81.0_{color} / 84.4_{tone}



Original Print Colors
(measured before light exposure)



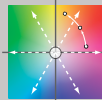
Colors after 30 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

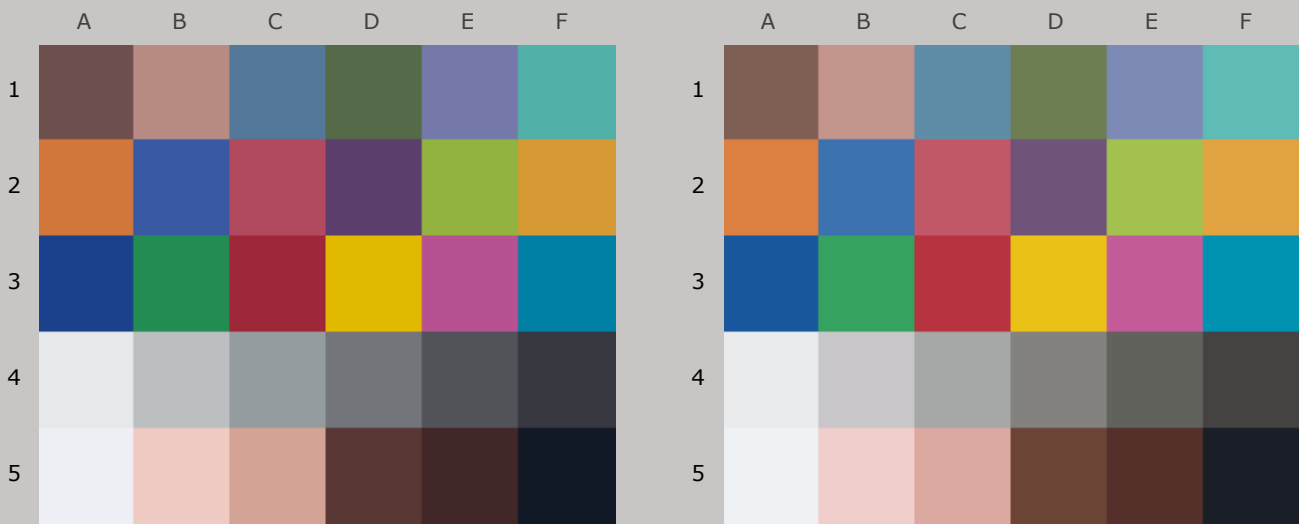
30 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	59.6	8.3	36.9	42.4	12.5	12.8	6.4	12.6
B1	light Skin	95.5	3.5	62.2	65.4	15.6	16.6	11.9	12.8
C1	blue sky	75.8	9.0	48.5	54.9	-6.0	-10.6	-23.4	-19.0
D1	foliage	65.3	10.3	42.5	49.7	-12.7	-13.0	15.5	23.0
E1	blue flower	86.6	6.5	51.9	56.8	7.1	3.8	-27.3	-24.5
F1	bluish green	98.3	3.5	66.2	69.6	-31.0	-30.0	-4.9	-5.0
A2	orange	97.1	3.6	59.4	62.4	32.6	33.0	48.0	50.1
B2	purplish blue	80.1	11.5	38.5	45.2	7.1	-1.3	-44.0	-39.9
C2	moderate red	95.8	4.9	46.3	50.5	44.0	44.5	10.2	12.5
D2	purple	83.3	9.1	31.2	38.4	19.8	18.6	-22.2	-16.9
E2	yellow green	97.6	5.0	68.7	73.3	-23.7	-22.6	52.6	54.1
F2	orange yellow	99.0	3.0	68.2	71.0	16.6	17.0	58.7	59.8
A3	blue	84.5	10.3	28.2	34.7	9.8	2.3	-47.4	-44.5
B3	green	89.5	8.9	51.3	58.4	-40.8	-43.2	22.3	27.1
C3	red	88.9	8.2	36.8	41.8	49.8	53.4	19.8	25.2
D3	yellow	98.6	3.0	76.7	79.3	5.4	5.6	78.1	79.7
E3	magenta	97.5	4.0	49.8	53.4	47.6	47.7	-14.6	-12.8
F3	cyan	87.0	7.4	48.7	54.0	-21.9	-26.3	-28.8	-26.0
A4	white	100.0	0.9	92.1	92.9	-0.6	-0.3	-0.9	-0.7
B4	neutral 8	90.4	2.6	77.3	79.5	-0.8	0.3	-1.6	-0.7
C4	neutral 6.5	71.5	5.0	64.0	67.8	-1.8	-1.2	-2.7	0.4
D4	neutral 5	49.1	7.1	49.1	53.8	0.0	-0.5	-2.7	2.7
E4	neutral 3.5	32.6	8.7	35.2	40.5	0.2	-1.0	-3.9	2.9
F4	black	38.6	7.8	23.3	27.8	0.6	-0.4	-5.1	1.2
A5	paper white	99.1	0.7	94.8	95.2	-0.4	-0.5	-3.0	-2.4
B5	skin highlight L*=89	91.9	1.9	84.4	85.4	11.5	11.8	8.6	6.9
C5	skin highlight L*=75	94.4	2.7	71.2	73.4	17.2	18.2	13.8	12.4
D5	skin shadow L*=25	61.5	8.9	27.0	32.4	14.8	16.2	8.5	15.4
E5	skin shadow L*=11	45.2	8.8	19.3	23.5	12.6	16.3	3.9	10.7
F5	Max Black	76.2	3.3	8.7	10.5	-0.1	-0.2	-9.8	-7.0

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	81.0	84.4	5.9
Average Score for the Worst 10% (3 lowest scoring patches)	38.8	71.9	10.7



80.9_{color} / 82.2_{tone}



Original Print Colors
(measured before light exposure)

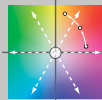
Colors after 40 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

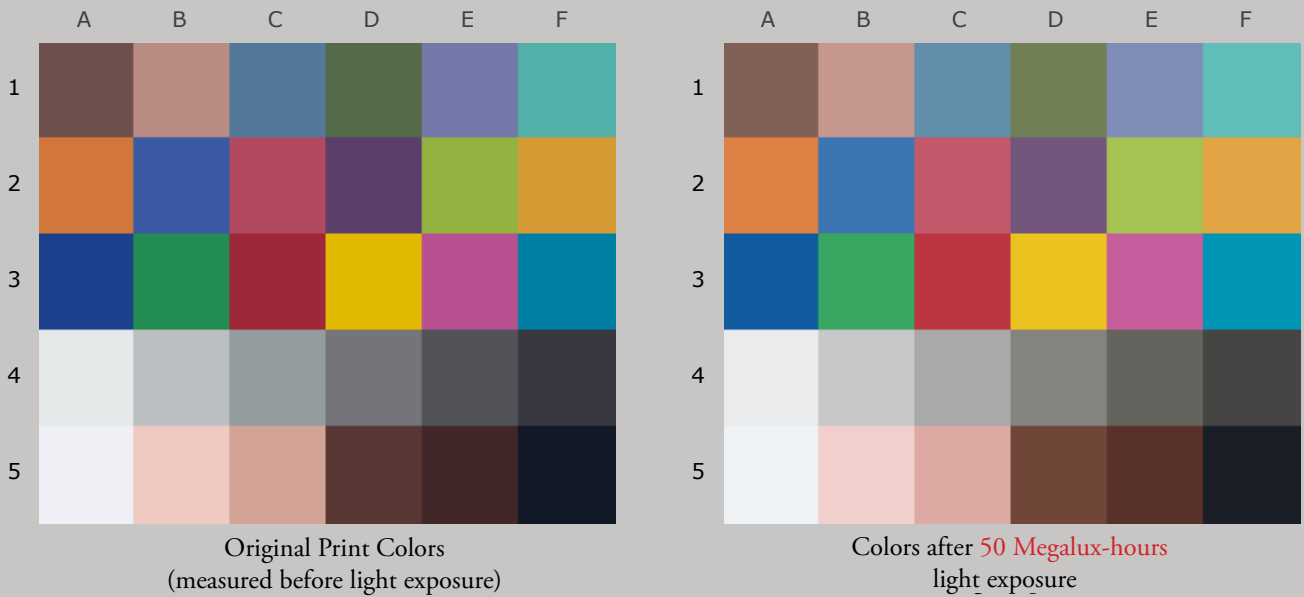
40 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	62.2	8.6	36.9	43.2	12.5	13.0	6.4	12.2
B1	light Skin	96.7	4.0	62.2	66.0	15.6	16.7	11.9	12.1
C1	blue sky	74.5	10.0	48.5	55.9	-6.0	-11.1	-23.4	-19.1
D1	foliage	69.1	10.4	42.5	50.5	-12.7	-12.7	15.5	22.2
E1	blue flower	85.3	7.4	51.9	57.7	7.1	3.2	-27.3	-24.6
F1	bluish green	97.8	4.3	66.2	70.4	-31.0	-30.1	-4.9	-5.6
A2	orange	99.0	3.7	59.4	63.0	32.6	32.9	48.0	49.1
B2	purplish blue	76.6	13.5	38.5	46.4	7.1	-2.8	-44.0	-39.4
C2	moderate red	97.1	5.3	46.3	51.3	44.0	44.5	10.2	11.9
D2	purple	82.3	10.3	31.2	39.7	19.8	18.0	-22.2	-16.7
E2	yellow green	99.2	5.5	68.7	74.1	-23.7	-22.9	52.6	53.1
F2	orange yellow	100.0	3.3	68.2	71.6	16.6	16.7	58.7	58.6
A3	blue	81.4	12.3	28.2	35.9	9.8	0.8	-47.4	-44.2
B3	green	89.9	9.8	51.3	59.6	-40.8	-43.9	22.3	26.4
C3	red	88.0	9.4	36.8	43.1	49.8	53.7	19.8	25.6
D3	yellow	100.0	3.2	76.7	79.9	5.4	5.2	78.1	78.5
E3	magenta	98.3	4.3	49.8	53.9	47.6	47.7	-14.6	-13.3
F3	cyan	85.8	8.4	48.7	55.0	-21.9	-26.9	-28.8	-26.1
A4	white	100.0	1.0	92.1	93.0	-0.6	-0.3	-0.9	-0.8
B4	neutral 8	89.5	3.0	77.3	79.9	-0.8	0.6	-1.6	-1.1
C4	neutral 6.5	74.2	5.4	64.0	68.6	-1.8	-0.9	-2.7	0.1
D4	neutral 5	52.9	7.3	49.1	54.4	0.0	-0.2	-2.7	2.3
E4	neutral 3.5	35.1	8.9	35.2	41.1	0.2	-0.8	-3.9	2.7
F4	black	39.4	8.1	23.3	28.5	0.6	-0.4	-5.1	1.1
A5	paper white	99.3	0.8	94.8	95.3	-0.4	-0.5	-3.0	-2.4
B5	skin highlight L*=89	88.4	2.5	84.4	85.6	11.5	11.8	8.6	6.4
C5	skin highlight L*=75	91.1	3.5	71.2	73.8	17.2	18.2	13.8	11.6
D5	skin shadow L*=25	60.0	9.8	27.0	33.4	14.8	16.3	8.5	15.6
E5	skin shadow L*=11	38.5	10.0	19.3	24.4	12.6	16.9	3.9	11.4
F5	Max Black	75.4	3.6	8.7	10.9	-0.1	0.0	-9.8	-6.9

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	80.9	82.2	6.6
Average Score for the Worst 10% (3 lowest scoring patches)	37.7	68.8	12.1



79.9_{color} / 80.1_{tone}



**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

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	63.5	9.1	36.9	44.0	12.5	13.4	6.4	12.0
B1	light Skin	95.0	4.6	62.2	66.6	15.6	17.0	11.9	11.3
C1	blue sky	73.7	10.8	48.5	56.8	-6.0	-11.5	-23.4	-19.3
D1	foliage	71.6	10.8	42.5	51.4	-12.7	-12.3	15.5	21.7
E1	blue flower	83.8	8.3	51.9	58.5	7.1	2.7	-27.3	-24.7
F1	bluish green	96.3	5.1	66.2	71.0	-31.0	-29.9	-4.9	-6.1
A2	orange	100.0	4.1	59.4	63.6	32.6	32.7	48.0	48.0
B2	purplish blue	73.8	15.1	38.5	47.5	7.1	-4.0	-44.0	-39.1
C2	moderate red	98.3	5.9	46.3	52.0	44.0	44.6	10.2	11.3
D2	purple	81.8	11.5	31.2	41.0	19.8	17.5	-22.2	-16.8
E2	yellow green	99.3	6.4	68.7	75.0	-23.7	-22.9	52.6	52.1
F2	orange yellow	98.6	4.2	68.2	72.2	16.6	16.5	58.7	57.3
A3	blue	77.8	14.5	28.2	37.3	9.8	-0.9	-47.4	-43.9
B3	green	90.0	10.7	51.3	60.7	-40.8	-44.3	22.3	26.1
C3	red	87.1	10.7	36.8	44.5	49.8	53.9	19.8	26.0
D3	yellow	99.7	3.8	76.7	80.4	5.4	5.0	78.1	77.5
E3	magenta	98.9	4.8	49.8	54.5	47.6	47.8	-14.6	-13.6
F3	cyan	84.5	9.4	48.7	55.9	-21.9	-27.4	-28.8	-26.1
A4	white	100.0	1.1	92.1	93.1	-0.6	-0.2	-0.9	-0.9
B4	neutral 8	87.0	3.4	77.3	80.2	-0.8	0.9	-1.6	-1.4
C4	neutral 6.5	75.7	6.0	64.0	69.3	-1.8	-0.4	-2.7	-0.3
D4	neutral 5	55.8	7.6	49.1	55.1	0.0	0.3	-2.7	2.0
E4	neutral 3.5	36.0	9.4	35.2	41.8	0.2	-0.4	-3.9	2.7
F4	black	38.1	8.8	23.3	29.3	0.6	-0.2	-5.1	1.2
A5	paper white	98.7	0.8	94.8	95.3	-0.4	-0.6	-3.0	-2.4
B5	skin highlight L*=89	84.0	3.1	84.4	85.8	11.5	11.7	8.6	5.8
C5	skin highlight L*=75	87.9	4.3	71.2	74.2	17.2	18.3	13.8	10.8
D5	skin shadow L*=25	56.4	11.0	27.0	34.5	14.8	16.8	8.5	16.1
E5	skin shadow L*=11	28.1	11.7	19.3	25.5	12.6	17.9	3.9	12.4
F5	Max Black	74.7	3.8	8.7	11.1	-0.1	0.2	-9.8	-6.8

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	79.9	80.1	7.4
Average Score for the Worst 10% (3 lowest scoring patches)	34.1	66.0	13.8



78.1_{color} / 78.7_{tone}



Original Print Colors
(measured before light exposure)



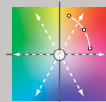
Colors after 60 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

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	59.2	9.8	36.9	44.4	12.5	13.4	6.4	12.6
B1	light Skin	96.2	4.8	62.2	66.9	15.6	16.9	11.9	11.7
C1	blue sky	72.2	11.5	48.5	57.4	-6.0	-11.8	-23.4	-19.0
D1	foliage	68.8	11.5	42.5	51.9	-12.7	-12.1	15.5	22.2
E1	blue flower	82.2	9.0	51.9	59.0	7.1	2.3	-27.3	-24.5
F1	bluish green	96.4	5.4	66.2	71.3	-31.0	-29.8	-4.9	-5.9
A2	orange	99.5	4.6	59.4	64.0	32.6	32.2	48.0	48.7
B2	purplish blue	71.3	16.5	38.5	48.3	7.1	-5.0	-44.0	-38.6
C2	moderate red	97.0	6.6	46.3	52.6	44.0	44.2	10.2	12.0
D2	purple	79.2	12.7	31.2	41.9	19.8	16.9	-22.2	-16.2
E2	yellow green	98.7	6.8	68.7	75.4	-23.7	-22.6	52.6	53.2
F2	orange yellow	100.0	4.4	68.2	72.6	16.6	16.2	58.7	58.4
A3	blue	74.1	16.6	28.2	38.4	9.8	-2.6	-47.4	-43.2
B3	green	88.5	11.6	51.3	61.4	-40.8	-44.3	22.3	26.9
C3	red	84.9	12.3	36.8	45.5	49.8	53.5	19.8	27.6
D3	yellow	100.0	4.0	76.7	80.8	5.4	4.9	78.1	78.3
E3	magenta	98.6	5.1	49.8	54.8	47.6	47.6	-14.6	-13.4
F3	cyan	83.6	10.1	48.7	56.4	-21.9	-27.7	-28.8	-25.9
A4	white	100.0	1.1	92.1	93.1	-0.6	-0.2	-0.9	-0.9
B4	neutral 8	85.2	3.6	77.3	80.4	-0.8	1.1	-1.6	-1.4
C4	neutral 6.5	73.6	6.2	64.0	69.5	-1.8	-0.1	-2.7	-0.2
D4	neutral 5	53.2	7.9	49.1	55.3	0.0	0.7	-2.7	2.3
E4	neutral 3.5	33.1	9.7	35.2	42.1	0.2	-0.1	-3.9	3.0
F4	black	34.5	9.2	23.3	29.5	0.6	0.0	-5.1	1.6
A5	paper white	97.8	0.9	94.8	95.3	-0.4	-0.6	-3.0	-2.3
B5	skin highlight L*=89	84.4	3.1	84.4	85.9	11.5	11.6	8.6	5.8
C5	skin highlight L*=75	89.4	4.3	71.2	74.5	17.2	18.1	13.8	11.1
D5	skin shadow L*=25	50.1	12.3	27.0	35.3	14.8	16.8	8.5	17.3
E5	skin shadow L*=11	19.4	13.1	19.3	26.2	12.6	18.2	3.9	13.6
F5	Max Black	73.2	4.0	8.7	11.2	-0.1	0.3	-9.8	-6.7

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	78.1	78.7	8.0
Average Score for the Worst 10% (3 lowest scoring patches)	29.0	64.4	15.4



76.7_{color} / 77.0_{tone}



Original Print Colors
(measured before light exposure)



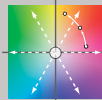
Colors after 70 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

70 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	55.7	10.6	36.9	45.0	12.5	13.6	6.4	13.1
B1	light Skin	96.2	5.2	62.2	67.3	15.6	16.9	11.9	11.7
C1	blue sky	71.5	12.1	48.5	58.1	-6.0	-11.9	-23.4	-19.0
D1	foliage	66.1	12.4	42.5	52.5	-12.7	-11.7	15.5	22.8
E1	blue flower	80.9	9.7	51.9	59.6	7.1	2.0	-27.3	-24.3
F1	bluish green	95.5	5.8	66.2	71.7	-31.0	-29.4	-4.9	-6.0
A2	orange	98.1	5.3	59.4	64.5	32.6	31.9	48.0	49.5
B2	purplish blue	69.1	17.7	38.5	49.1	7.1	-5.9	-44.0	-38.2
C2	moderate red	96.5	7.2	46.3	53.2	44.0	44.0	10.2	12.2
D2	purple	77.7	13.8	31.2	42.9	19.8	16.3	-22.2	-16.0
E2	yellow green	97.4	7.5	68.7	75.9	-23.7	-22.1	52.6	53.8
F2	orange yellow	99.7	4.9	68.2	73.1	16.6	16.0	58.7	59.0
A3	blue	70.9	18.5	28.2	39.5	9.8	-4.0	-47.4	-42.6
B3	green	87.7	12.4	51.3	62.0	-40.8	-43.9	22.3	27.6
C3	red	83.4	13.6	36.8	46.6	49.8	53.2	19.8	28.6
D3	yellow	99.6	4.3	76.7	81.0	5.4	5.1	78.1	78.9
E3	magenta	98.5	5.4	49.8	55.1	47.6	47.6	-14.6	-13.3
F3	cyan	83.1	10.7	48.7	57.1	-21.9	-27.9	-28.8	-26.0
A4	white	100.0	1.1	92.1	93.1	-0.6	-0.2	-0.9	-1.0
B4	neutral 8	83.0	3.9	77.3	80.5	-0.8	1.3	-1.6	-1.6
C4	neutral 6.5	73.8	6.5	64.0	69.8	-1.8	0.2	-2.7	-0.5
D4	neutral 5	55.2	8.0	49.1	55.5	0.0	1.2	-2.7	2.0
E4	neutral 3.5	33.8	10.0	35.2	42.5	0.2	0.5	-3.9	2.9
F4	black	32.8	9.6	23.3	29.9	0.6	0.3	-5.1	1.8
A5	paper white	97.0	0.9	94.8	95.3	-0.4	-0.6	-3.0	-2.2
B5	skin highlight L*=89	83.3	3.4	84.4	86.1	11.5	11.5	8.6	5.7
C5	skin highlight L*=75	89.2	4.6	71.2	74.9	17.2	17.9	13.8	11.0
D5	skin shadow L*=25	44.5	13.5	27.0	36.1	14.8	17.0	8.5	18.2
E5	skin shadow L*=11	8.7	14.7	19.3	27.1	12.6	18.8	3.9	14.9
F5	Max Black	72.3	4.0	8.7	11.1	-0.1	0.5	-9.8	-6.6

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	76.7	77.0	8.6
Average Score for the Worst 10% (3 lowest scoring patches)	25.1	62.9	17.0



74.5_{color} / 75.6_{tone}



Original Print Colors
(measured before light exposure)



Colors after 80 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

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

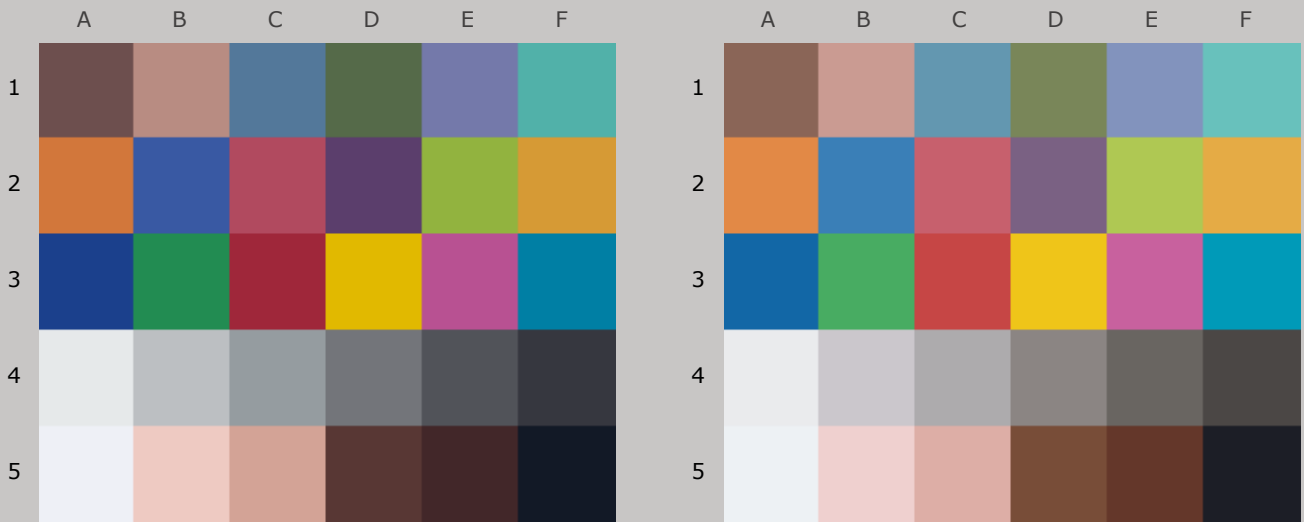
Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	50.9	11.4	36.9	45.6	12.5	13.8	6.4	13.7
B1	light Skin	96.8	5.7	62.2	67.8	15.6	16.8	11.9	11.9
C1	blue sky	69.9	12.9	48.5	58.7	-6.0	-12.2	-23.4	-18.7
D1	foliage	62.4	13.4	42.5	53.2	-12.7	-11.4	15.5	23.5
E1	blue flower	79.1	10.5	51.9	60.2	7.1	1.6	-27.3	-24.0
F1	bluish green	95.2	6.3	66.2	72.2	-31.0	-29.3	-4.9	-5.9
A2	orange	96.5	6.3	59.4	65.2	32.6	31.5	48.0	50.3
B2	purplish blue	67.2	18.9	38.5	49.8	7.1	-6.6	-44.0	-37.7
C2	moderate red	95.0	8.0	46.3	53.8	44.0	43.7	10.2	12.9
D2	purple	75.6	14.9	31.2	43.9	19.8	15.9	-22.2	-15.5
E2	yellow green	95.9	8.2	68.7	76.4	-23.7	-21.6	52.6	54.5
F2	orange yellow	98.6	5.5	68.2	73.6	16.6	15.8	58.7	59.7
A3	blue	68.4	20.0	28.2	40.5	9.8	-5.1	-47.4	-42.0
B3	green	86.1	13.3	51.3	62.6	-40.8	-43.5	22.3	28.7
C3	red	81.1	15.2	36.8	47.6	49.8	52.6	19.8	30.1
D3	yellow	98.8	4.8	76.7	81.3	5.4	5.2	78.1	79.6
E3	magenta	98.0	5.8	49.8	55.4	47.6	47.5	-14.6	-13.1
F3	cyan	82.4	11.2	48.7	57.5	-21.9	-28.1	-28.8	-25.8
A4	white	99.9	1.2	92.1	93.1	-0.6	-0.1	-0.9	-1.0
B4	neutral 8	81.3	4.0	77.3	80.7	-0.8	1.5	-1.6	-1.7
C4	neutral 6.5	71.8	6.8	64.0	70.0	-1.8	0.5	-2.7	-0.5
D4	neutral 5	52.5	8.4	49.1	55.8	0.0	1.6	-2.7	2.1
E4	neutral 3.5	30.3	10.4	35.2	42.7	0.2	0.9	-3.9	3.2
F4	black	28.9	10.0	23.3	30.2	0.6	0.6	-5.1	2.2
A5	paper white	95.9	1.0	94.8	95.2	-0.4	-0.6	-3.0	-2.1
B5	skin highlight L*=89	81.4	3.6	84.4	86.2	11.5	11.4	8.6	5.4
C5	skin highlight L*=75	89.5	4.7	71.2	75.0	17.2	17.7	13.8	11.0
D5	skin shadow L*=25	38.0	14.8	27.0	36.8	14.8	17.1	8.5	19.3
E5	skin shadow L*=11	-1.3	16.3	19.3	27.9	12.6	19.3	3.9	16.1
F5	Max Black	70.4	4.2	8.7	11.3	-0.1	0.6	-9.8	-6.5

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	74.5	75.6	9.3
Average Score for the Worst 10% (3 lowest scoring patches)	19.3	62.0	18.4



AARDENBURG IMAGING
& ARCHIVES

73.6_{color} / 74.1_{tone}



Original Print Colors
(measured before light exposure)

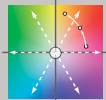
Colors after 90 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

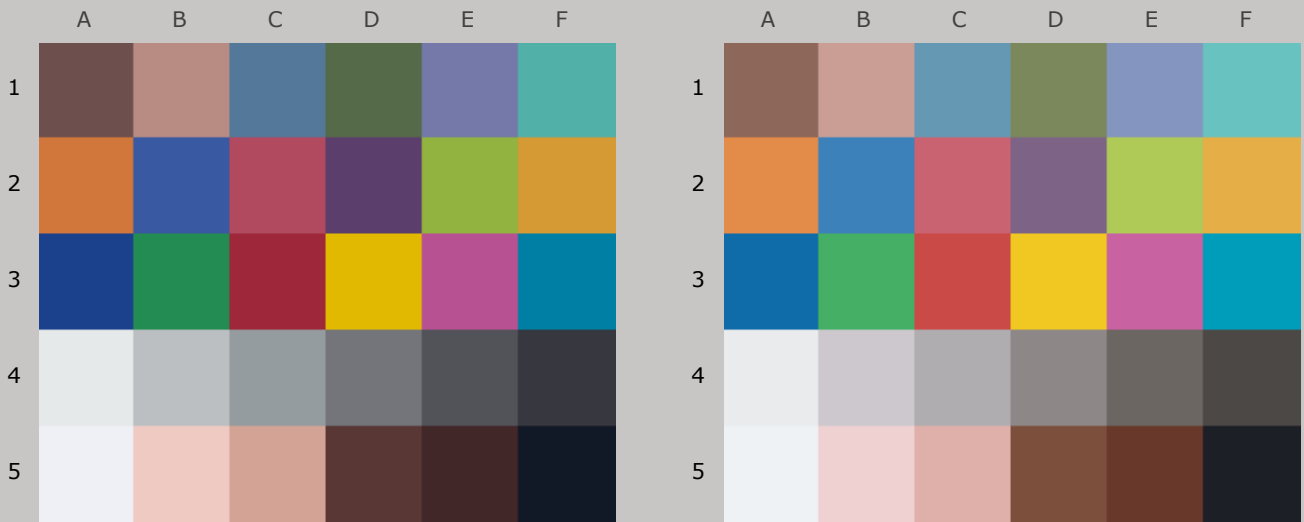
90 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	51.0	11.9	36.9	46.2	12.5	13.8	6.4	13.7
B1	light Skin	97.8	6.1	62.2	68.3	15.6	16.5	11.9	11.6
C1	blue sky	68.2	13.7	48.5	59.5	-6.0	-12.7	-23.4	-18.6
D1	foliage	62.3	14.0	42.5	54.0	-12.7	-11.4	15.5	23.5
E1	blue flower	77.2	11.2	51.9	60.7	7.1	1.1	-27.3	-23.8
F1	bluish green	94.1	6.8	66.2	72.6	-31.0	-29.1	-4.9	-6.2
A2	orange	96.1	6.8	59.4	65.7	32.6	30.6	48.0	50.0
B2	purplish blue	64.8	20.2	38.5	50.6	7.1	-7.6	-44.0	-37.3
C2	moderate red	95.2	8.4	46.3	54.3	44.0	43.3	10.2	12.7
D2	purple	73.6	16.0	31.2	44.8	19.8	15.2	-22.2	-15.3
E2	yellow green	96.2	8.6	68.7	76.9	-23.7	-21.5	52.6	54.1
F2	orange yellow	97.9	6.2	68.2	74.2	16.6	15.0	58.7	59.4
A3	blue	65.3	21.8	28.2	41.5	9.8	-6.5	-47.4	-41.5
B3	green	86.4	13.7	51.3	63.1	-40.8	-43.5	22.3	28.5
C3	red	80.7	16.1	36.8	48.6	49.8	51.9	19.8	30.5
D3	yellow	99.2	5.0	76.7	81.6	5.4	4.8	78.1	79.1
E3	magenta	98.2	5.9	49.8	55.6	47.6	47.4	-14.6	-13.2
F3	cyan	81.7	11.8	48.7	58.1	-21.9	-28.4	-28.8	-25.7
A4	white	99.2	1.1	92.1	93.0	-0.6	-0.1	-0.9	-1.1
B4	neutral 8	79.6	4.2	77.3	80.7	-0.8	1.6	-1.6	-2.0
C4	neutral 6.5	72.3	7.0	64.0	70.2	-1.8	0.7	-2.7	-0.7
D4	neutral 5	53.7	8.5	49.1	56.0	0.0	1.9	-2.7	1.9
E4	neutral 3.5	31.1	10.6	35.2	43.1	0.2	1.3	-3.9	3.1
F4	black	28.9	10.2	23.3	30.5	0.6	0.9	-5.1	2.2
A5	paper white	95.9	0.9	94.8	95.1	-0.4	-0.6	-3.0	-2.1
B5	skin highlight L*=89	77.5	4.1	84.4	86.2	11.5	11.2	8.6	4.8
C5	skin highlight L*=75	87.5	5.2	71.2	75.3	17.2	17.4	13.8	10.6
D5	skin shadow L*=25	36.0	15.5	27.0	37.5	14.8	17.1	8.5	19.6
E5	skin shadow L*=11	-7.7	17.4	19.3	28.7	12.6	19.6	3.9	16.9
F5	Max Black	68.8	4.4	8.7	11.4	-0.1	0.9	-9.8	-6.4

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	73.6	74.1	9.8
Average Score for the Worst 10% (3 lowest scoring patches)	17.4	60.0	19.8



73.2_{color} / 72.5_{tone}



Original Print Colors
(measured before light exposure)

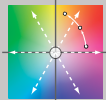
Colors after 100 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

100 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	53.0	12.3	36.9	47.0	12.5	13.9	6.4	13.4
B1	light Skin	96.7	6.8	62.2	68.9	15.6	16.4	11.9	11.0
C1	blue sky	67.6	14.4	48.5	60.2	-6.0	-12.9	-23.4	-18.7
D1	foliage	64.5	14.5	42.5	54.9	-12.7	-11.4	15.5	23.0
E1	blue flower	75.9	12.0	51.9	61.5	7.1	0.7	-27.3	-23.8
F1	bluish green	92.8	7.4	66.2	73.1	-31.0	-28.9	-4.9	-6.6
A2	orange	95.3	7.8	59.4	66.6	32.6	29.6	48.0	49.3
B2	purplish blue	63.2	21.3	38.5	51.4	7.1	-8.3	-44.0	-37.0
C2	moderate red	96.3	9.0	46.3	55.1	44.0	42.9	10.2	12.1
D2	purple	72.7	17.1	31.2	45.9	19.8	14.7	-22.2	-15.3
E2	yellow green	97.0	9.2	68.7	77.6	-23.7	-21.5	52.6	53.2
F2	orange yellow	96.7	7.3	68.2	75.1	16.6	14.1	58.7	58.7
A3	blue	63.1	23.3	28.2	42.6	9.8	-7.5	-47.4	-41.1
B3	green	87.9	14.1	51.3	64.0	-40.8	-43.7	22.3	27.7
C3	red	81.1	16.7	36.8	49.7	49.8	51.4	19.8	30.3
D3	yellow	99.0	5.8	76.7	82.4	5.4	4.1	78.1	78.3
E3	magenta	98.9	6.4	49.8	56.2	47.6	47.2	-14.6	-13.6
F3	cyan	81.1	12.4	48.7	58.8	-21.9	-28.6	-28.8	-25.8
A4	white	98.9	1.2	92.1	93.1	-0.6	-0.1	-0.9	-1.2
B4	neutral 8	77.8	4.6	77.3	81.1	-0.8	1.7	-1.6	-2.1
C4	neutral 6.5	72.7	7.6	64.0	70.9	-1.8	0.8	-2.7	-1.0
D4	neutral 5	55.6	9.0	49.1	56.7	0.0	2.3	-2.7	1.5
E4	neutral 3.5	34.4	10.9	35.2	43.7	0.2	1.6	-3.9	2.7
F4	black	30.9	10.6	23.3	31.2	0.6	1.2	-5.1	1.9
A5	paper white	94.9	1.1	94.8	95.2	-0.4	-0.6	-3.0	-2.0
B5	skin highlight L*=89	73.7	4.7	84.4	86.5	11.5	11.1	8.6	4.3
C5	skin highlight L*=75	84.5	6.1	71.2	76.0	17.2	17.2	13.8	9.9
D5	skin shadow L*=25	35.4	16.3	27.0	38.6	14.8	17.1	8.5	19.7
E5	skin shadow L*=11	-12.5	18.5	19.3	29.7	12.6	19.7	3.9	17.6
F5	Max Black	68.2	4.7	8.7	11.8	-0.1	0.9	-9.8	-6.3

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	73.2	72.5	10.4
Average Score for the Worst 10% (3 lowest scoring patches)	17.6	58.0	21.0



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72.1_{color} / 70.7_{tone}



Original Print Colors
(measured before light exposure)



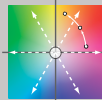
Colors after 110 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

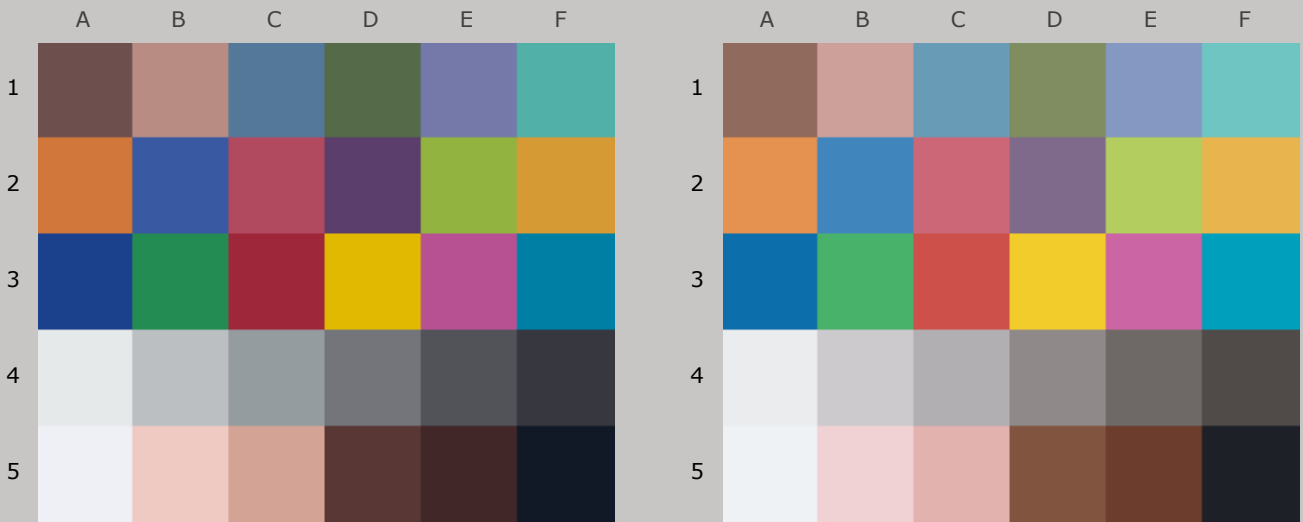
110 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	54.0	13.0	36.9	47.9	12.5	14.1	6.4	13.2
B1	light Skin	94.6	7.6	62.2	69.7	15.6	16.1	11.9	10.4
C1	blue sky	66.4	15.2	48.5	61.0	-6.0	-13.2	-23.4	-18.7
D1	foliage	66.5	15.1	42.5	55.9	-12.7	-11.4	15.5	22.6
E1	blue flower	74.4	12.8	51.9	62.1	7.1	0.2	-27.3	-23.7
F1	bluish green	91.7	8.1	66.2	73.6	-31.0	-28.7	-4.9	-7.0
A2	orange	93.7	9.1	59.4	67.5	32.6	28.4	48.0	48.5
B2	purplish blue	61.4	22.4	38.5	52.3	7.1	-8.9	-44.0	-36.6
C2	moderate red	96.5	9.7	46.3	55.8	44.0	42.5	10.2	11.6
D2	purple	71.0	18.3	31.2	47.0	19.8	14.1	-22.2	-15.1
E2	yellow green	96.9	9.9	68.7	78.3	-23.7	-21.5	52.6	51.9
F2	orange yellow	94.6	8.6	68.2	76.0	16.6	13.0	58.7	57.7
A3	blue	61.2	24.6	28.2	43.5	9.8	-8.3	-47.4	-40.7
B3	green	88.9	14.6	51.3	64.8	-40.8	-43.7	22.3	27.1
C3	red	80.9	17.6	36.8	50.8	49.8	50.8	19.8	30.5
D3	yellow	97.7	6.7	76.7	83.0	5.4	3.3	78.1	77.2
E3	magenta	99.3	6.9	49.8	56.6	47.6	47.2	-14.6	-13.8
F3	cyan	80.3	13.2	48.7	59.5	-21.9	-28.9	-28.8	-25.7
A4	white	98.5	1.4	92.1	93.3	-0.6	-0.1	-0.9	-1.2
B4	neutral 8	76.3	5.0	77.3	81.5	-0.8	1.9	-1.6	-2.3
C4	neutral 6.5	72.2	8.2	64.0	71.6	-1.8	1.0	-2.7	-1.2
D4	neutral 5	55.5	9.5	49.1	57.3	0.0	2.6	-2.7	1.3
E4	neutral 3.5	33.7	11.4	35.2	44.3	0.2	2.0	-3.9	2.6
F4	black	30.3	11.0	23.3	31.7	0.6	1.6	-5.1	2.0
A5	paper white	93.9	1.2	94.8	95.3	-0.4	-0.6	-3.0	-1.9
B5	skin highlight L*=89	69.9	5.3	84.4	86.7	11.5	11.1	8.6	3.8
C5	skin highlight L*=75	81.6	7.0	71.2	76.5	17.2	16.9	13.8	9.3
D5	skin shadow L*=25	33.1	17.3	27.0	39.6	14.8	17.2	8.5	20.1
E5	skin shadow L*=11	-19.7	19.9	19.3	30.7	12.6	20.1	3.9	18.5
F5	Max Black	67.2	5.0	8.7	12.0	-0.1	1.2	-9.8	-6.3

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	72.1	70.7	11.2
Average Score for the Worst 10% (3 lowest scoring patches)	14.6	55.9	22.3



70.9_{color} / 69.2_{tone}



Original Print Colors
(measured before light exposure)

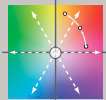
Colors after 120 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

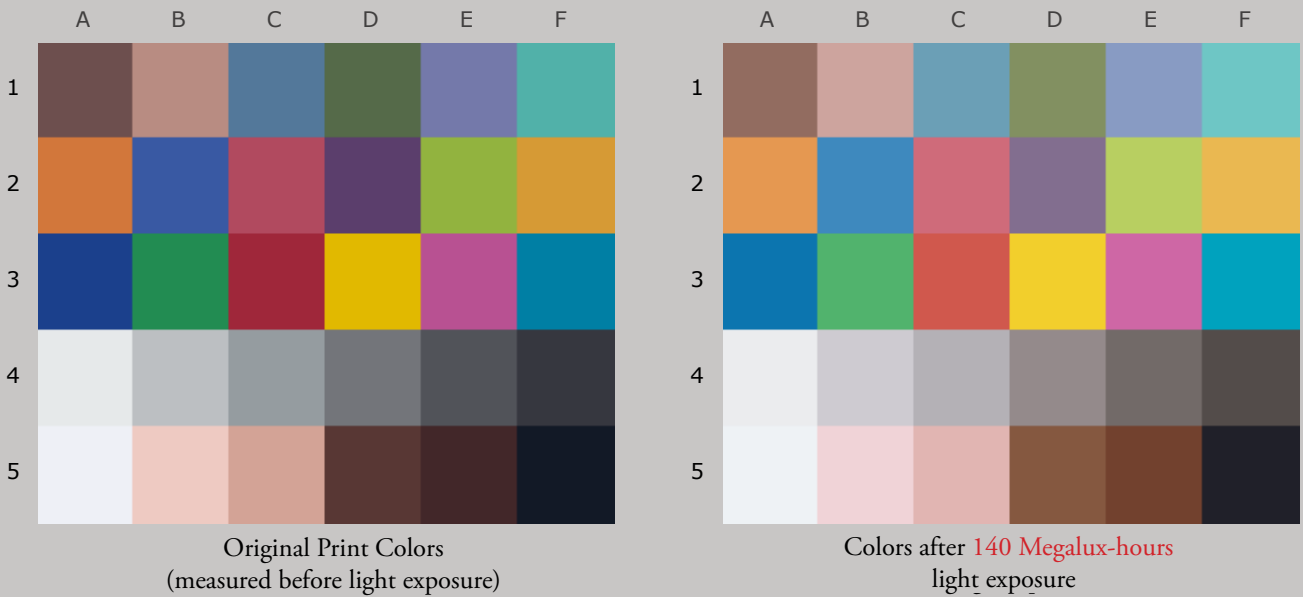
120 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	54.2	13.5	36.9	48.4	12.5	14.3	6.4	13.2
B1	light Skin	91.9	8.3	62.2	70.2	15.6	16.1	11.9	9.8
C1	blue sky	65.8	15.7	48.5	61.6	-6.0	-13.4	-23.4	-18.6
D1	foliage	67.5	15.6	42.5	56.5	-12.7	-11.2	15.5	22.4
E1	blue flower	73.5	13.3	51.9	62.5	7.1	0.0	-27.3	-23.6
F1	bluish green	90.1	8.5	66.2	74.0	-31.0	-28.4	-4.9	-7.3
A2	orange	92.1	10.2	59.4	68.3	32.6	27.5	48.0	48.4
B2	purplish blue	59.9	23.3	38.5	52.9	7.1	-9.5	-44.0	-36.2
C2	moderate red	96.2	10.4	46.3	56.4	44.0	42.1	10.2	11.4
D2	purple	69.7	19.2	31.2	47.8	19.8	13.7	-22.2	-14.9
E2	yellow green	96.0	10.5	68.7	78.8	-23.7	-21.2	52.6	51.2
F2	orange yellow	93.4	9.6	68.2	76.7	16.6	12.3	58.7	57.5
A3	blue	58.9	26.0	28.2	44.4	9.8	-9.3	-47.4	-40.2
B3	green	90.0	14.9	51.3	65.3	-40.8	-43.6	22.3	26.6
C3	red	80.7	18.5	36.8	51.8	49.8	50.2	19.8	30.7
D3	yellow	96.9	7.4	76.7	83.6	5.4	2.8	78.1	76.7
E3	magenta	99.4	7.2	49.8	57.0	47.6	47.1	-14.6	-13.9
F3	cyan	79.9	13.6	48.7	59.9	-21.9	-29.0	-28.8	-25.6
A4	white	97.6	1.4	92.1	93.3	-0.6	0.0	-0.9	-1.3
B4	neutral 8	73.7	5.2	77.3	81.5	-0.8	2.1	-1.6	-2.4
C4	neutral 6.5	71.1	8.5	64.0	71.8	-1.8	1.2	-2.7	-1.4
D4	neutral 5	55.0	9.8	49.1	57.6	0.0	3.0	-2.7	1.1
E4	neutral 3.5	34.3	11.6	35.2	44.6	0.2	2.4	-3.9	2.5
F4	black	29.8	11.4	23.3	32.1	0.6	1.9	-5.1	2.0
A5	paper white	93.6	1.2	94.8	95.3	-0.4	-0.6	-3.0	-1.9
B5	skin highlight L*=89	65.8	5.9	84.4	86.8	11.5	11.1	8.6	3.2
C5	skin highlight L*=75	78.4	7.8	71.2	77.0	17.2	16.8	13.8	8.6
D5	skin shadow L*=25	31.6	18.1	27.0	40.4	14.8	17.2	8.5	20.4
E5	skin shadow L*=11	-24.8	20.9	19.3	31.5	12.6	20.1	3.9	19.2
F5	Max Black	66.1	5.2	8.7	12.2	-0.1	1.3	-9.8	-6.2

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	70.9	69.2	11.8
Average Score for the Worst 10% (3 lowest scoring patches)	12.2	54.5	23.4



68.5_{color} / 66.5_{tone}



**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

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

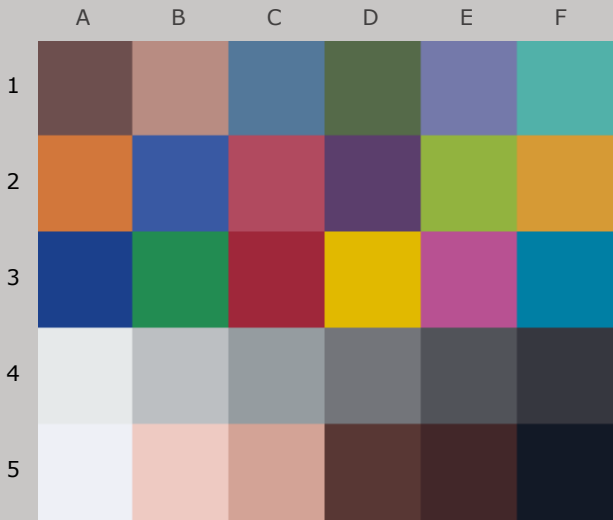
Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	54.4	14.5	36.9	49.6	12.5	14.0	6.4	13.2
B1	light Skin	89.2	9.2	62.2	71.1	15.6	15.5	11.9	9.2
C1	blue sky	65.1	16.6	48.5	62.5	-6.0	-13.5	-23.4	-18.5
D1	foliage	66.3	16.7	42.5	57.6	-12.7	-10.9	15.5	22.5
E1	blue flower	71.4	14.4	51.9	63.4	7.1	-0.5	-27.3	-23.3
F1	bluish green	87.4	9.4	66.2	74.5	-31.0	-27.6	-4.9	-7.7
A2	orange	88.2	12.7	59.4	69.8	32.6	25.3	48.0	48.9
B2	purplish blue	56.7	25.1	38.5	54.0	7.1	-10.7	-44.0	-35.4
C2	moderate red	93.6	11.9	46.3	57.6	44.0	40.8	10.2	11.4
D2	purple	66.3	21.1	31.2	49.5	19.8	12.6	-22.2	-14.6
E2	yellow green	93.9	11.5	68.7	79.5	-23.7	-20.2	52.6	50.7
F2	orange yellow	90.9	11.5	68.2	78.0	16.6	10.7	58.7	57.6
A3	blue	54.5	28.8	28.2	46.1	9.8	-11.1	-47.4	-39.0
B3	green	90.7	15.4	51.3	66.0	-40.8	-42.1	22.3	26.9
C3	red	79.4	20.3	36.8	53.5	49.8	48.2	19.8	31.2
D3	yellow	96.4	8.1	76.7	84.2	5.4	2.4	78.1	76.6
E3	magenta	98.5	7.8	49.8	57.5	47.6	46.6	-14.6	-13.8
F3	cyan	80.2	14.2	48.7	60.7	-21.9	-28.9	-28.8	-25.5
A4	white	97.1	1.4	92.1	93.3	-0.6	0.1	-0.9	-1.3
B4	neutral 8	70.9	5.7	77.3	81.9	-0.8	2.2	-1.6	-2.8
C4	neutral 6.5	69.6	9.1	64.0	72.5	-1.8	1.5	-2.7	-2.0
D4	neutral 5	55.3	10.4	49.1	58.3	0.0	3.6	-2.7	0.5
E4	neutral 3.5	35.2	12.2	35.2	45.4	0.2	3.2	-3.9	2.0
F4	black	29.3	12.0	23.3	32.9	0.6	2.6	-5.1	1.8
A5	paper white	90.8	1.4	94.8	95.2	-0.4	-0.7	-3.0	-1.6
B5	skin highlight L*=89	60.4	6.7	84.4	87.0	11.5	11.1	8.6	2.4
C5	skin highlight L*=75	74.4	8.7	71.2	77.5	17.2	16.3	13.8	7.8
D5	skin shadow L*=25	25.4	20.0	27.0	42.0	14.8	16.9	8.5	21.5
E5	skin shadow L*=11	-38.9	23.4	19.3	33.3	12.6	20.3	3.9	21.1
F5	Max Black	62.8	5.7	8.7	12.6	-0.1	1.7	-9.8	-6.1

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	68.5	66.5	12.9
Average Score for the Worst 10% (3 lowest scoring patches)	5.3	50.8	25.8



AARDENBURG IMAGING & ARCHIVES

65.1_{color} / 63.1_{tone}



Original Print Colors
(measured before light exposure)



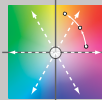
Colors after 160 Megalux-hours
light exposure

*HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy*

160 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	55.5	15.8	36.9	51.2	12.5	13.7	6.4	13.1
B1	light Skin	85.7	10.7	62.2	72.4	15.6	14.8	11.9	8.7
C1	blue sky	58.6	18.8	48.5	64.0	-6.0	-14.8	-23.4	-17.6
D1	foliage	68.5	18.3	42.5	59.5	-12.7	-11.5	15.5	22.2
E1	blue flower	64.6	16.5	51.9	64.7	7.1	-2.0	-27.3	-22.1
F1	bluish green	88.1	10.2	66.2	75.5	-31.0	-27.7	-4.9	-7.4
A2	orange	82.7	16.4	59.4	72.0	32.6	22.1	48.0	47.8
B2	purplish blue	50.4	28.3	38.5	55.6	7.1	-13.0	-44.0	-33.8
C2	moderate red	90.6	13.7	46.3	59.2	44.0	39.3	10.2	10.8
D2	purple	58.8	24.1	31.2	51.7	19.8	10.4	-22.2	-13.6
E2	yellow green	92.1	13.2	68.7	80.9	-23.7	-20.8	52.6	48.4
F2	orange yellow	85.8	14.9	68.2	80.0	16.6	7.8	58.7	56.2
A3	blue	47.2	32.8	28.2	48.2	9.8	-14.3	-47.4	-37.3
B3	green	92.4	16.7	51.3	67.5	-40.8	-43.0	22.3	25.6
C3	red	79.7	21.7	36.8	55.3	49.8	46.5	19.8	30.7
D3	yellow	92.4	10.9	76.7	85.6	5.4	0.2	78.1	74.4
E3	magenta	96.9	8.9	49.8	58.5	47.6	45.9	-14.6	-13.4
F3	cyan	75.3	16.3	48.7	62.0	-21.9	-30.2	-28.8	-24.3
A4	white	91.5	1.8	92.1	93.3	-0.6	-0.2	-0.9	0.3
B4	neutral 8	74.9	6.0	77.3	82.5	-0.8	2.1	-1.6	-1.7
C4	neutral 6.5	69.3	10.2	64.0	73.6	-1.8	1.3	-2.7	-1.2
D4	neutral 5	52.1	11.6	49.1	59.5	0.0	3.6	-2.7	0.9
E4	neutral 3.5	32.0	13.5	35.2	46.7	0.2	3.1	-3.9	2.4
F4	black	25.9	13.2	23.3	34.1	0.6	2.6	-5.1	2.2
A5	paper white	71.0	3.3	94.8	95.2	-0.4	-0.9	-3.0	0.3
B5	skin highlight L*=89	62.6	6.6	84.4	87.4	11.5	10.7	8.6	2.8
C5	skin highlight L*=75	72.2	9.9	71.2	78.6	17.2	15.5	13.8	7.4
D5	skin shadow L*=25	23.7	21.7	27.0	44.0	14.8	16.2	8.5	21.9
E5	skin shadow L*=11	-47.2	25.5	19.3	35.2	12.6	19.9	3.9	22.5
F5	Max Black	60.1	6.2	8.7	13.1	-0.1	1.8	-9.8	-5.8

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	65.1	63.1	14.6
Average Score for the Worst 10% (3 lowest scoring patches)	0.8	46.5	28.9



AARDENBURG IMAGING
& ARCHIVES

64.2_{color} / 60.9_{tone}



Original Print Colors
(measured before light exposure)



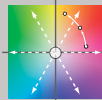
Colors after 180 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

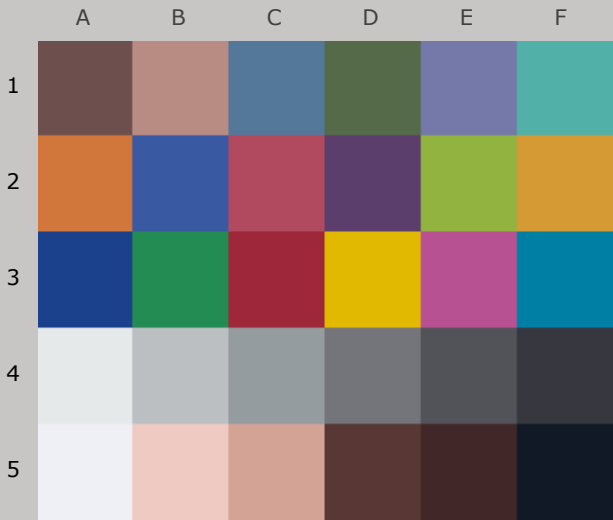
180 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	60.6	16.6	36.9	52.4	12.5	13.7	6.4	12.3
B1	light Skin	76.4	12.3	62.2	73.4	15.6	14.7	11.9	6.8
C1	blue sky	60.6	19.2	48.5	64.9	-6.0	-14.6	-23.4	-18.3
D1	foliage	73.3	19.1	42.5	60.7	-12.7	-11.2	15.5	21.2
E1	blue flower	65.3	17.1	51.9	65.5	7.1	-2.1	-27.3	-22.6
F1	bluish green	82.9	11.5	66.2	76.1	-31.0	-26.8	-4.9	-8.9
A2	orange	78.8	19.1	59.4	73.6	32.6	19.8	48.0	46.7
B2	purplish blue	49.8	29.2	38.5	56.7	7.1	-13.4	-44.0	-33.9
C2	moderate red	88.6	15.2	46.3	60.3	44.0	38.4	10.2	9.2
D2	purple	58.5	25.4	31.2	53.1	19.8	9.8	-22.2	-14.1
E2	yellow green	87.8	14.9	68.7	81.6	-23.7	-20.1	52.6	45.9
F2	orange yellow	82.4	17.3	68.2	81.4	16.6	6.3	58.7	54.4
A3	blue	45.2	34.5	28.2	49.6	9.8	-15.3	-47.4	-37.1
B3	green	95.8	17.1	51.3	68.3	-40.8	-42.1	22.3	24.3
C3	red	80.4	22.8	36.8	56.8	49.8	45.2	19.8	29.8
D3	yellow	89.9	12.9	76.7	86.5	5.4	-0.8	78.1	72.3
E3	magenta	97.0	9.5	49.8	59.1	47.6	45.6	-14.6	-14.4
F3	cyan	77.5	16.5	48.7	62.8	-21.9	-29.7	-28.8	-25.0
A4	white	97.0	1.7	92.1	93.5	-0.6	0.1	-0.9	-1.2
B4	neutral 8	68.0	6.7	77.3	82.9	-0.8	2.4	-1.6	-3.0
C4	neutral 6.5	68.3	10.8	64.0	74.2	-1.8	1.7	-2.7	-2.5
D4	neutral 5	54.5	12.0	49.1	60.1	0.0	4.1	-2.7	-0.1
E4	neutral 3.5	36.2	13.9	35.2	47.4	0.2	3.8	-3.9	1.6
F4	black	28.3	13.6	23.3	34.8	0.6	3.2	-5.1	1.7
A5	paper white	86.7	1.8	94.8	95.3	-0.4	-0.7	-3.0	-1.2
B5	skin highlight L*=89	47.8	8.6	84.4	87.5	11.5	11.0	8.6	0.6
C5	skin highlight L*=75	62.4	11.8	71.2	79.1	17.2	15.5	13.8	5.2
D5	skin shadow L*=25	23.7	22.6	27.0	45.1	14.8	16.2	8.5	21.9
E5	skin shadow L*=11	-55.6	27.3	19.3	36.7	12.6	19.9	3.9	23.7
F5	Max Black	57.7	6.6	8.7	13.5	-0.1	2.1	-9.8	-5.7

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	64.2	60.9	15.6
Average Score for the Worst 10% (3 lowest scoring patches)	-1.2	43.7	30.3



62.1_{color} / 58.4_{tone}



Original Print Colors
(measured before light exposure)



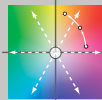
Colors after 200 Megalux-hours
light exposure

**HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy**

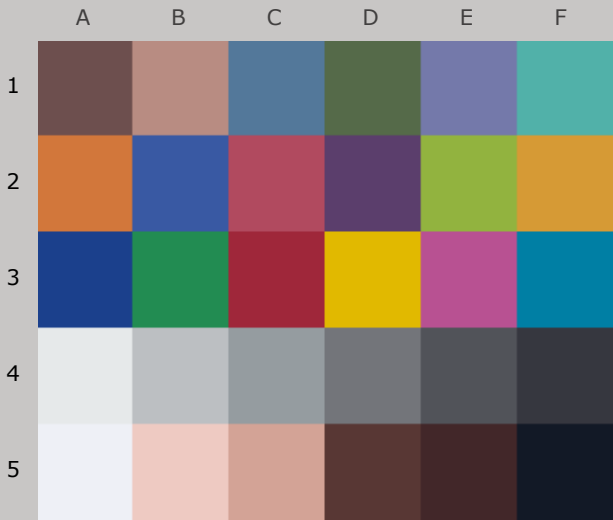
200 Mlux-hrs Light Exposure (i.e., after) Compared to Original Print Colors (i.e., before)

Column/row	Color Patch	I*Color	ΔE	L*		a*		b*	
				Before	After	Before	After	Before	After
A1	dark Skin	62.2	17.6	36.9	53.5	12.5	13.2	6.4	12.2
B1	light Skin	71.3	13.2	62.2	73.9	15.6	14.3	11.9	5.9
C1	blue sky	60.5	19.9	48.5	65.7	-6.0	-14.7	-23.4	-18.4
D1	foliage	74.0	20.1	42.5	61.8	-12.7	-11.1	15.5	21.0
E1	blue flower	63.5	18.0	51.9	66.3	7.1	-2.6	-27.3	-22.4
F1	bluish green	80.0	12.4	66.2	76.6	-31.0	-26.1	-4.9	-9.5
A2	orange	74.2	22.2	59.4	75.3	32.6	17.2	48.0	46.4
B2	purplish blue	47.3	30.8	38.5	57.8	7.1	-14.4	-44.0	-33.3
C2	moderate red	85.5	16.8	46.3	61.5	44.0	37.0	10.2	8.8
D2	purple	55.1	27.1	31.2	54.4	19.8	8.6	-22.2	-14.1
E2	yellow green	84.7	16.4	68.7	82.2	-23.7	-19.6	52.6	44.2
F2	orange yellow	78.9	19.6	68.2	82.6	16.6	4.5	58.7	53.2
A3	blue	41.6	36.8	28.2	51.1	9.8	-16.8	-47.4	-36.3
B3	green	97.7	17.6	51.3	68.8	-40.8	-41.1	22.3	23.8
C3	red	78.9	24.4	36.8	58.1	49.8	43.2	19.8	29.6
D3	yellow	87.2	14.7	76.7	87.1	5.4	-1.6	78.1	70.3
E3	magenta	95.7	10.3	49.8	59.8	47.6	44.9	-14.6	-14.5
F3	cyan	77.6	17.1	48.7	63.6	-21.9	-29.7	-28.8	-25.1
A4	white	96.6	1.7	92.1	93.5	-0.6	0.1	-0.9	-1.4
B4	neutral 8	65.4	7.1	77.3	83.3	-0.8	2.5	-1.6	-3.4
C4	neutral 6.5	66.6	11.5	64.0	74.9	-1.8	1.9	-2.7	-3.2
D4	neutral 5	56.0	12.8	49.1	60.9	0.0	4.4	-2.7	-0.9
E4	neutral 3.5	38.5	14.5	35.2	48.2	0.2	4.0	-3.9	1.1
F4	black	28.2	14.3	23.3	35.5	0.6	3.4	-5.1	1.7
A5	paper white	86.3	1.9	94.8	95.2	-0.4	-0.7	-3.0	-1.2
B5	skin highlight L*=89	42.2	9.3	84.4	87.6	11.5	10.9	8.6	-0.2
C5	skin highlight L*=75	57.1	13.0	71.2	79.6	17.2	15.2	13.8	4.0
D5	skin shadow L*=25	20.3	24.4	27.0	46.9	14.8	15.3	8.5	22.5
E5	skin shadow L*=11	-66.1	29.4	19.3	38.4	12.6	19.4	3.9	25.3
F5	Max Black	55.9	6.9	8.7	13.7	-0.1	2.3	-9.8	-5.6

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	62.1	58.4	16.7
Average Score for the Worst 10% (3 lowest scoring patches)	-5.9	40.7	32.3



60.3_{color} / 56.1_{tone}



Original Print Colors
(measured before light exposure)



Colors after 220 Megalux-hours
light exposure

*HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy*

220 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	70.2	18.7	36.9	55.0	12.5	13.4	6.4	11.0
B1	light Skin	62.8	15.0	62.2	75.0	15.6	14.3	11.9	4.2
C1	blue sky	59.5	21.1	48.5	66.9	-6.0	-15.0	-23.4	-18.5
D1	foliage	82.8	20.9	42.5	63.1	-12.7	-10.9	15.5	19.0
E1	blue flower	61.6	19.2	51.9	67.4	7.1	-3.1	-27.3	-22.3
F1	bluish green	77.0	13.6	66.2	77.4	-31.0	-25.6	-4.9	-10.4
A2	orange	69.8	25.1	59.4	76.9	32.6	15.2	48.0	43.2
B2	purplish blue	44.9	32.3	38.5	58.9	7.1	-15.3	-44.0	-32.7
C2	moderate red	82.5	18.5	46.3	62.7	44.0	36.3	10.2	6.6
D2	purple	52.7	28.9	31.2	56.1	19.8	7.7	-22.2	-14.1
E2	yellow green	77.9	19.6	68.7	83.2	-23.7	-19.4	52.6	40.0
F2	orange yellow	73.7	22.8	68.2	84.0	16.6	3.1	58.7	49.2
A3	blue	38.7	38.7	28.2	52.5	9.8	-18.0	-47.4	-35.6
B3	green	98.2	18.7	51.3	69.9	-40.8	-40.9	22.3	20.9
C3	red	80.6	25.3	36.8	59.6	49.8	42.0	19.8	27.5
D3	yellow	81.5	18.8	76.7	88.2	5.4	-3.0	78.1	65.7
E3	magenta	94.7	11.3	49.8	60.7	47.6	44.5	-14.6	-15.0
F3	cyan	77.1	18.1	48.7	64.5	-21.9	-29.8	-28.8	-25.0
A4	white	95.0	2.0	92.1	93.8	-0.6	0.1	-0.9	-1.5
B4	neutral 8	63.2	7.9	77.3	84.1	-0.8	2.7	-1.6	-3.5
C4	neutral 6.5	63.2	12.6	64.0	76.0	-1.8	2.2	-2.7	-3.5
D4	neutral 5	51.9	13.9	49.1	62.0	0.0	4.9	-2.7	-1.2
E4	neutral 3.5	37.4	15.6	35.2	49.4	0.2	4.6	-3.9	0.8
F4	black	28.7	15.1	23.3	36.5	0.6	3.9	-5.1	1.4
A5	paper white	86.8	1.8	94.8	95.4	-0.4	-0.7	-3.0	-1.2
B5	skin highlight L*=89	35.3	10.4	84.4	88.0	11.5	10.9	8.6	-1.2
C5	skin highlight L*=75	49.6	14.7	71.2	80.3	17.2	15.3	13.8	2.4
D5	skin shadow L*=25	25.2	25.3	27.0	48.5	14.8	15.3	8.5	21.7
E5	skin shadow L*=11	-68.2	30.8	19.3	40.1	12.6	19.3	3.9	25.6
F5	Max Black	53.7	7.5	8.7	14.3	-0.1	2.5	-9.8	-5.5

Summary Results	I*Color	I*tone	ΔE
Average Score for all patches	60.3	56.1	18.1
Average Score for the Worst 10% (3 lowest scoring patches)	-4.8	37.7	33.9



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Original Print Colors
(measured before light exposure)



Test Complete

No further updates

***HP8750, HP OEM Ink (tricolor, blue, gray),
HP Advanced Photo Paper, Glossy***



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