Aardenburg
144

IMAGING & ARCHIVES

Tested System:
ID#:206

Printer: Epson Stylus Pro 3880

Inks/Colorants: Epson OEM UltraChrome K3™ with Vivid Magenta

Media: Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric

Coating(s): no additional coating

Sample #: AaI_20100913_SN019

Testing Status: 160 Megalux hours total light exposure
Testing Is ongoing, next update on approximately OCT 05, 2014

Conservation Display Rating (CDR)

Lower limit: 87 Megalux hours (for weakest 10% of the color patches)
Upper limit: 116 Megalux hours (for average of all the color patches)

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

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

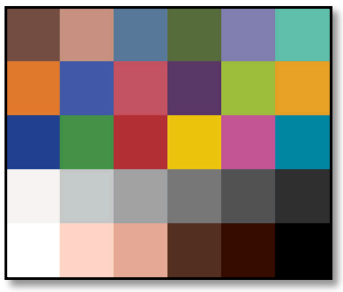
http://www.aardenburg-imaging.com

Aardenburg Imaging & Archives

About this Report

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

Understanding this Report



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

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

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

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

3) Color changes are also reported using the classic color difference model, 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. Properly tracking changes in image contrast was a major reason behind the development of the I* metric.

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

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

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

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

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

Sample Description

Sample # **AaI_20100913_SN019** **Batch #:** I1a
Printer: Epson Stylus Pro 3880
Ink: Epson OEM UltraChrome K3™ with Vivid Magenta
Media: Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric
Coating(s): no additional coating

Test Print Prepared by: AaI&A
Printed: September 16, 2010
Initial Print colors measured September 19, 2010
Test Started: September 19, 2010

Test Image: AaI_StandardColorSet(v2)forSRGB.tif
RIP?Driver settings: CS5/InDesign, Epson OEM driver ver 6.6./Mac OS 10.6.4, 2880dpi, high speed = 0n, finest details, no color adjustment (NCA)

Media Setting Velvet Fine Art

Profile: AaI_Ep3880_Kernow Marazion.icc **Rendering intent:** perceptual
Profile type: custom

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

Optical Brighteners Present? *no*	**L***		**a***		**b***	
	UV inc	UV exc	UV inc	UV exc	UV inc	UV exc
Media Whitepoint Color	95.1	95.2	-0.1	-0.1	0.9	1.1
	UV-inc/UV-exc ΔL*, Δa*, Δb* respectively					
	0.1		0.0		0.2	
	Calculated differences, especially for Δb, indicate the role and magnitude of fluorescence on original paper color*					
Maximum Printed Black	**L***	**a***	**b***	Optical Density (Dmax)		
	26.4	1.5	2.7	1.31		

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

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

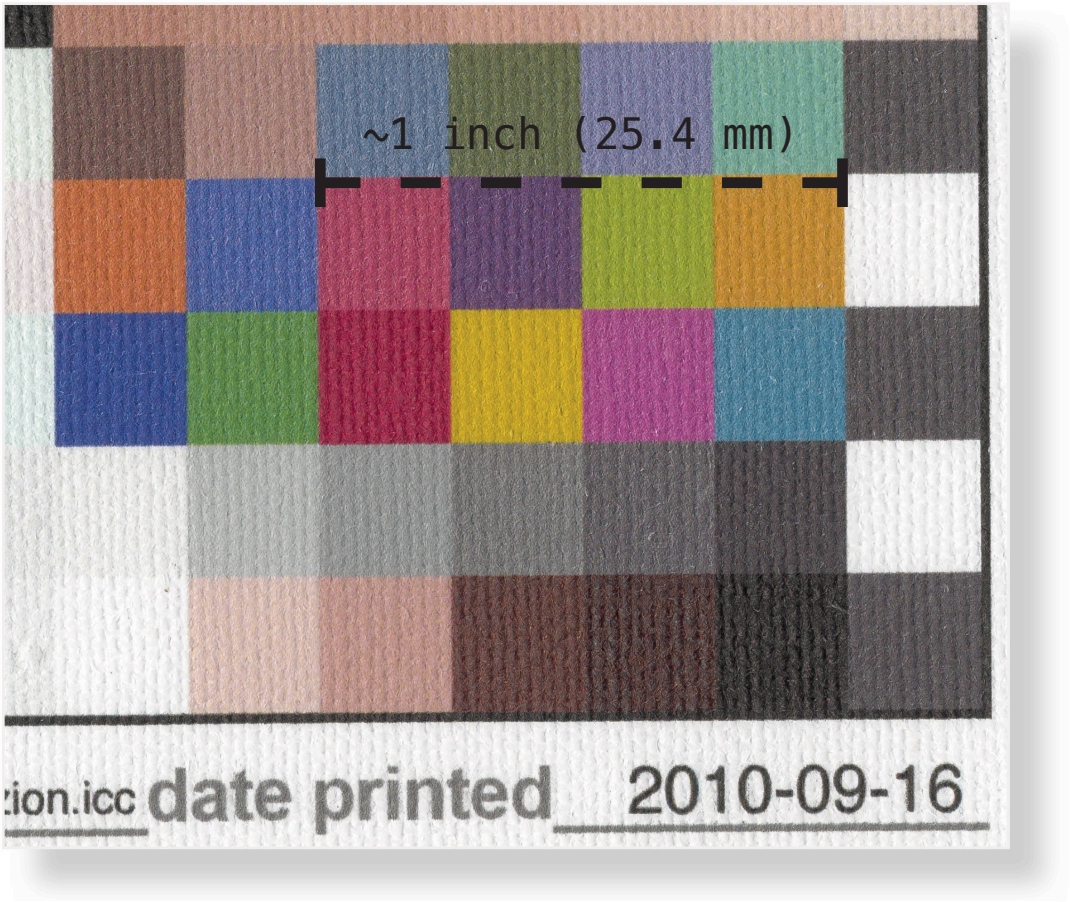
Description by Kernow Coatings Ltd for Marazion Fine Art

Marazion Fine Art is a 260gsm 100% Cotton fabric, impregnated to UK 'Schedule 3' furniture grade fire retardance. This means it is impingement-resistant, so that, for instance, it should not burn from a lighted cigarette falling on it. Why does that matter? Because this could be used to make cushions, curtains, blinds, wallcoverings, bags and other similar furnishing or craft items.

This specially treated product renders it practical for both home and public space use. From nurseries/ playrooms to theatres, hotels and restaurants, this fabric can customise and decorate in a truly unique manner, walls and surfaces to bring a individual touch to the home or a workplace/public space, while retaining its strong resilience to water, dirt and fire damage

Notes/Comments:

The Epson Stylus Pro 3880 was used by AaI&A staff to prepare this test sample. It does not have a roll feed option and would therefore not be a typical choice for use with the Kernow Coating Ltd line of fabrics, whereas the other printers in the popular x880 series of Epson professional printers (Epson stylus pro 4880, 7880, and 9880) are ideal for this type of material. Because the Epson K3VM ink set is common to all x880 series of printers these test results should fairly represent the type of lightfastness that can be achieved using any Epson x880 series printer/OEM driver configurations.



Surface texture of Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric. Printed with Epson Stylus Pro 3880 and Epson OEM UltraChrome K3™ with Vivid Magenta ink set.

2011-03-24: Kernow Coatings Ltd markets the Marazion Fine Art 260gsm 100% Cotton fabric and other inkjet printable fabrics under the tradename: "The Kernewek Range of Fine Fabrics".

The website is:: http://kernewekfinefabrics.com.

Contact information is:

Kernow Coatings Ltd.
Kernick Rd., Penryn, Cornwall TR10 9DQ
Phone: +44(0)1326 373147
Fax: +44(0)1326 376614
e-mail: kc@sensitisers.com

Notes/Comments:

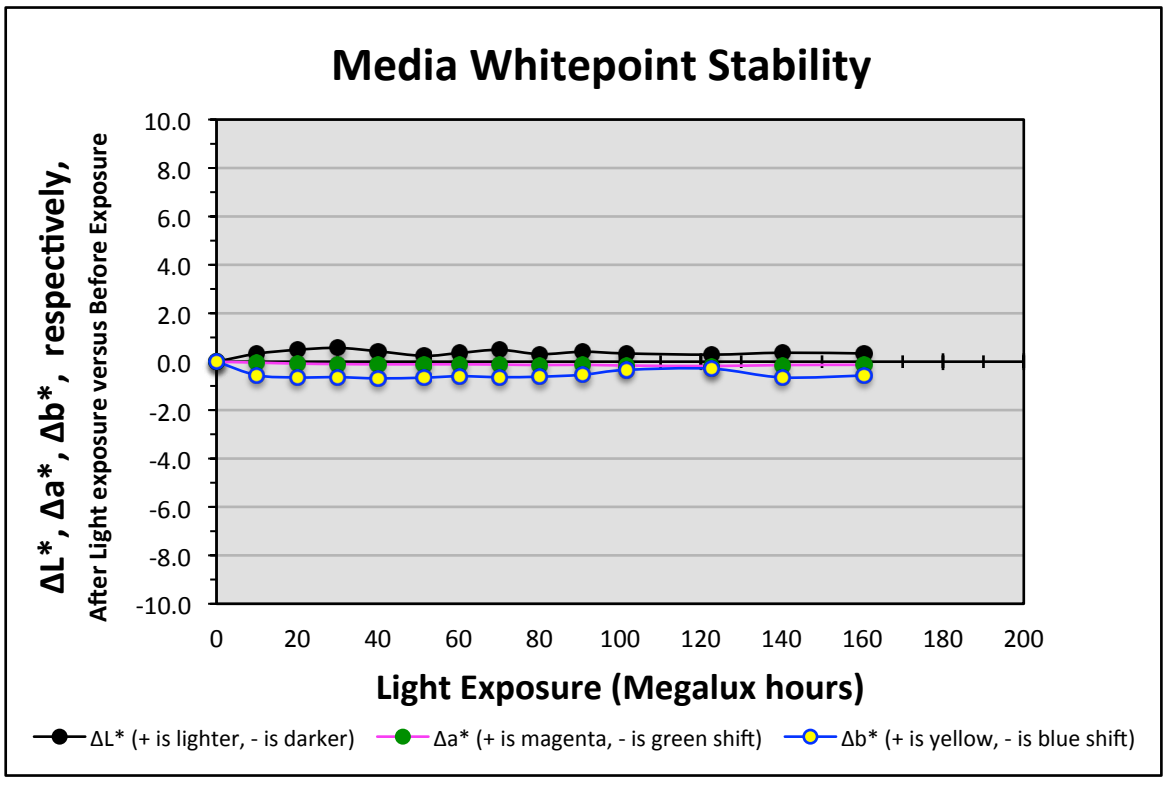
In the United States, the Kernewek line of fine fabrics is available from:
FreeStyle Photographic Supplies, Inc
800 292-6137
http://www.FreestylePhoto.biz

However, Freestyle has renamed the Kernewek line of Fine Fabrics as the "Arista Americana Collection". The renaming key is as follows:

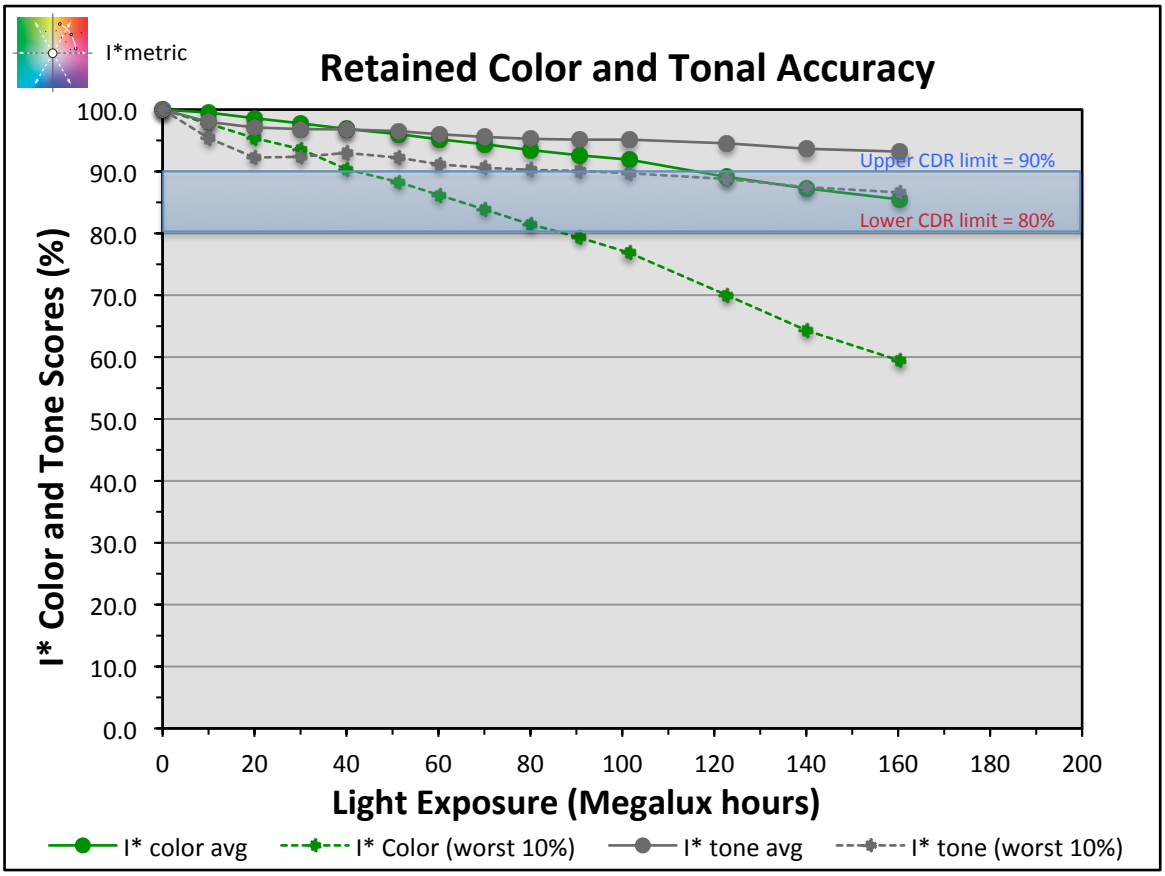
Kernewek	**Arista Americana**
St Ive's 400gsm =	Monument Valley 400gsm
Newlyn 260gsm =	Yosemite 260gsm
Tresco Design 160gsm =	Rushmore 160gsm
Marazion 260gsm =	Sedona 260gsm
Tintagel 140gsm =	Yellowstone 140gsm

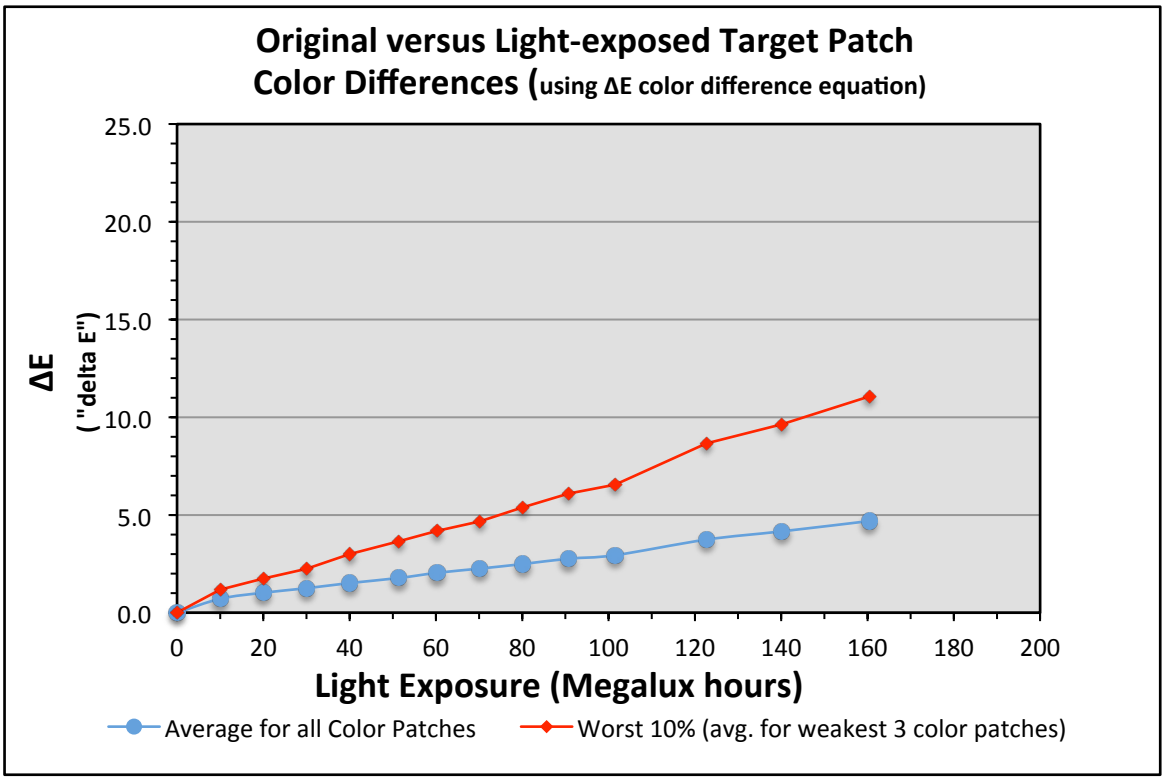
Graphs:

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



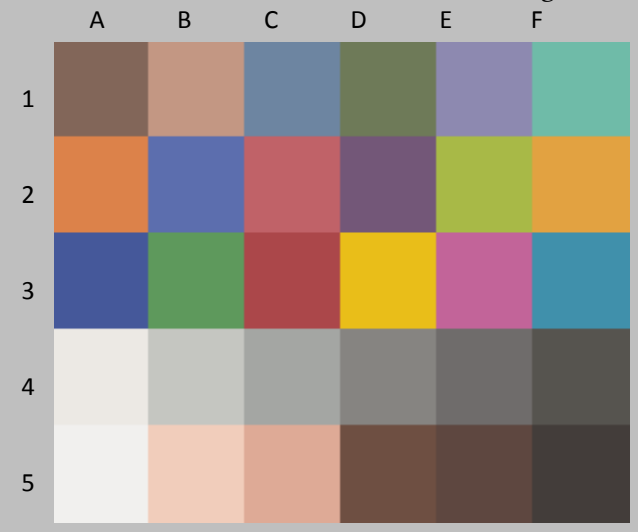
Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



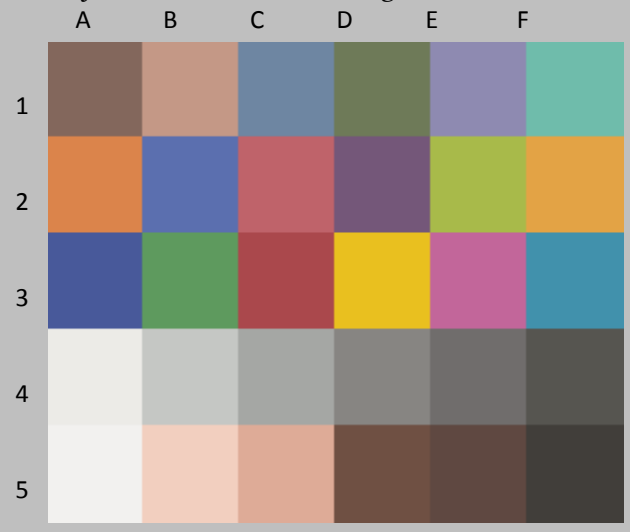


Values:

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



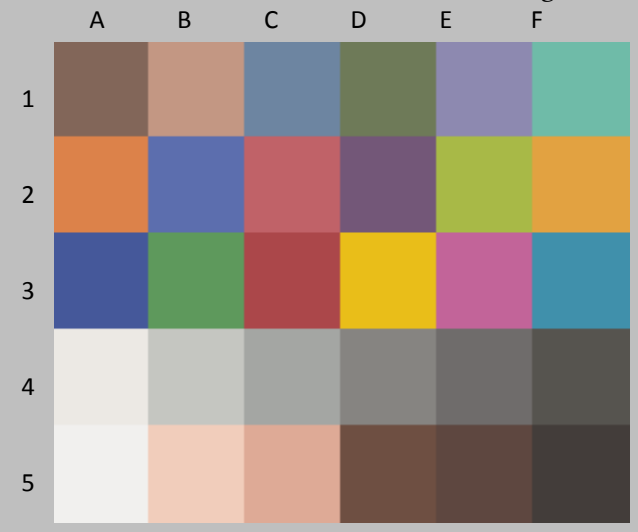
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	98.5	0.9	45.7	46.2	9.9	9.6	11.9	11.2
B1	Light Skin	99.4	0.8	66.2	66.7	15.4	15.1	16.8	16.2
C1	Blue sky	100.0	0.6	54.3	54.9	-4.0	-4.2	-17.6	-17.8
D1	Foliage	99.9	0.6	49.2	49.6	-9.0	-9.0	17.2	16.7
E1	blue flower	100.0	0.6	58.3	58.9	7.8	7.5	-20.3	-20.3
F1	bluish green	99.0	0.9	70.7	71.1	-27.9	-27.9	1.9	1.1
A1	orange	99.1	1.1	63.5	63.9	31.6	31.0	45.5	44.6
B2	purplish blue	99.8	0.7	47.2	47.5	6.6	6.1	-37.0	-36.9
C2	moderate red	99.5	0.7	53.4	53.5	38.6	38.4	14.7	14.1
D2	purple	100.0	0.5	40.7	41.1	17.1	16.8	-14.1	-14.2
E2	yellow green	99.1	1.1	72.3	72.7	-18.3	-18.4	53.8	52.7
F2	orange yellow	99.4	1.0	71.7	72.2	18.5	17.9	58.1	57.4
A3	blue	99.5	0.8	38.4	38.8	8.2	7.6	-38.8	-38.5
B3	green	99.2	0.9	58.2	58.6	-29.9	-30.0	26.2	25.4
C3	red	99.7	0.7	44.3	44.2	41.8	41.4	19.8	19.3
D3	yellow	99.6	0.9	79.2	79.6	6.0	5.3	76.9	76.4
E3	magenta	99.9	0.7	55.3	55.7	42.5	42.0	-11.0	-10.8
F3	cyan	100.0	0.5	55.8	56.2	-18.6	-18.7	-21.9	-22.1
A4	white	99.5	0.6	92.6	92.9	0.4	0.3	2.5	2.0
B4	neutral 8	100.0	0.6	79.7	80.1	-0.7	-0.8	1.6	1.2
C4	neutral 6.5	100.0	0.5	67.8	68.3	-0.6	-0.6	1.0	0.8
D4	neutral 5	100.0	0.5	55.3	55.7	0.4	0.3	2.1	1.8
E4	neutral 3.5	100.0	0.8	45.7	46.4	0.7	0.7	1.4	1.0
F4	black	100.0	0.6	35.6	36.2	0.4	0.4	2.8	2.6
A5	paper white	99.4	0.7	95.1	95.4	0.3	0.3	1.2	0.6
B5	Skin highlight L*=88	96.6	1.2	85.3	85.8	11.5	10.9	14.0	13.0
C5	Skin highlight L* =75	98.1	1.2	74.0	74.6	17.8	17.2	18.4	17.6
D5	Skin shadow L*=28	100.0	0.3	36.8	37.1	11.9	11.8	12.8	12.7
E5	Skin shadow L*=13	100.0	0.3	32.5	32.8	8.8	8.8	8.4	8.4
F5	Maximum Black	100.0	0.2	26.4	26.3	1.5	1.4	2.7	2.8

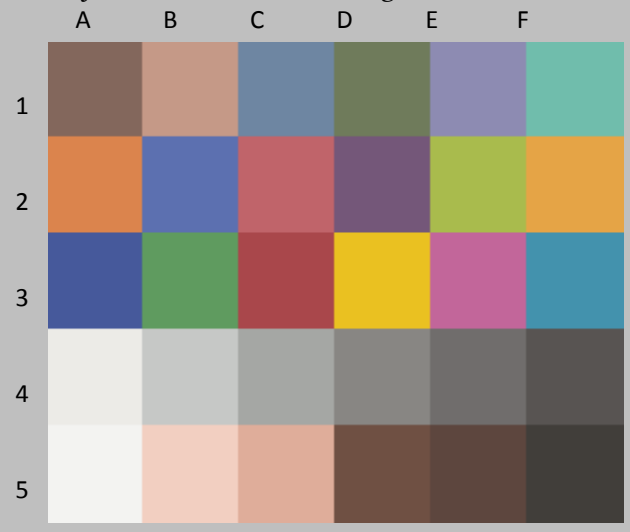
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	99.5	98.0	0.7
Worst 10% (3 lowest scoring patches)	97.7	95.4	1.2

10 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



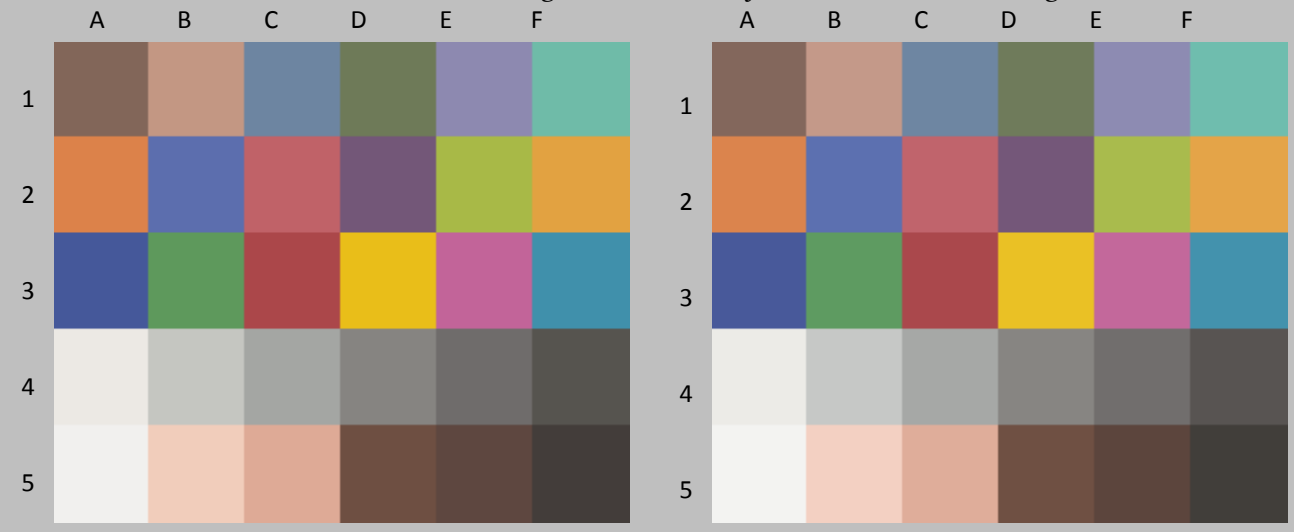
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	96.6	1.2	45.7	46.3	9.9	9.7	11.9	10.8
B1	Light Skin	97.9	1.2	66.2	66.9	15.4	15.1	16.8	15.8
C1	Blue sky	100.0	0.8	54.3	55.0	-4.0	-4.3	-17.6	-17.9
D1	Foliage	96.9	1.2	49.2	49.8	-9.0	-9.0	17.2	16.1
E1	blue flower	100.0	0.8	58.3	59.0	7.8	7.4	-20.3	-20.3
F1	bluish green	97.4	1.4	70.7	71.2	-27.9	-27.8	1.9	0.7
A1	orange	98.1	1.6	63.5	64.0	31.6	30.9	45.5	44.1
B2	purplish blue	99.6	0.8	47.2	47.7	6.6	6.0	-37.0	-36.8
C2	moderate red	98.9	1.0	53.4	53.7	38.6	38.4	14.7	13.8
D2	purple	100.0	0.5	40.7	41.2	17.1	16.9	-14.1	-14.3
E2	yellow green	98.3	1.6	72.3	73.0	-18.3	-18.4	53.8	52.3
F2	orange yellow	98.5	1.6	71.7	72.4	18.5	17.7	58.1	56.9
A3	blue	99.6	0.7	38.4	38.8	8.2	7.6	-38.8	-38.5
B3	green	98.0	1.4	58.2	58.7	-29.9	-30.0	26.2	25.0
C3	red	99.1	1.0	44.3	44.0	41.8	41.3	19.8	19.1
D3	yellow	98.8	1.5	79.2	79.9	6.0	5.1	76.9	75.8
E3	magenta	99.5	0.9	55.3	55.9	42.5	41.9	-11.0	-10.7
F3	cyan	100.0	0.6	55.8	56.3	-18.6	-18.7	-21.9	-22.2
A4	white	98.2	0.8	92.6	93.1	0.4	0.3	2.5	1.8
B4	neutral 8	100.0	0.8	79.7	80.3	-0.7	-0.8	1.6	1.2
C4	neutral 6.5	100.0	0.7	67.8	68.4	-0.6	-0.7	1.0	0.7
D4	neutral 5	100.0	0.7	55.3	55.9	0.4	0.4	2.1	1.7
E4	neutral 3.5	97.9	1.0	45.7	46.4	0.7	0.8	1.4	0.7
F4	black	98.0	0.8	35.6	36.1	0.4	0.6	2.8	2.2
A5	paper white	98.4	0.8	95.1	95.5	0.3	0.2	1.2	0.5
B5	Skin highlight L*=88	93.6	1.8	85.3	86.0	11.5	10.8	14.0	12.5
C5	Skin highlight L* =75	95.9	1.8	74.0	74.9	17.8	17.1	18.4	17.0
D5	Skin shadow L*=28	100.0	0.3	36.8	37.1	11.9	11.9	12.8	12.7
E5	Skin shadow L*=13	99.2	0.8	32.5	32.0	8.8	9.2	8.4	8.8
F5	Maximum Black	100.0	0.3	26.4	26.1	1.5	1.4	2.7	2.7

Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	98.6	97.1	1.0
Worst 10% (3 lowest scoring patches)	95.4	92.2	1.7

20 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure

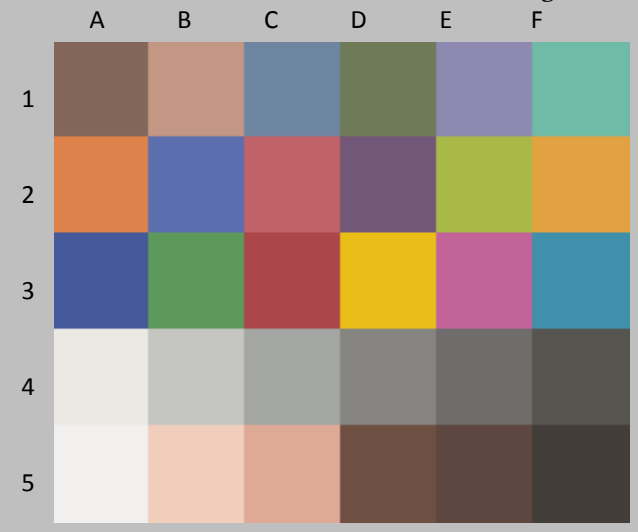
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	94.6	1.5	45.7	46.4	9.9	9.8	11.9	10.5
B1	Light Skin	96.4	1.6	66.2	67.0	15.4	15.1	16.8	15.5
C1	Blue sky	100.0	0.8	54.3	55.1	-4.0	-4.3	-17.6	-17.8
D1	Foliage	95.3	1.5	49.2	49.8	-9.0	-8.9	17.2	15.8
E1	blue flower	100.0	0.9	58.3	59.1	7.8	7.4	-20.3	-20.3
F1	bluish green	95.2	1.9	70.7	71.2	-27.9	-27.7	1.9	0.1
A1	orange	97.1	2.2	63.5	64.1	31.6	30.8	45.5	43.5
B2	purplish blue	99.4	0.9	47.2	47.7	6.6	6.0	-37.0	-36.8
C2	moderate red	98.0	1.4	53.4	53.7	38.6	38.4	14.7	13.4
D2	purple	100.0	0.7	40.7	41.3	17.1	16.9	-14.1	-14.4
E2	yellow green	97.0	2.3	72.3	73.0	-18.3	-18.5	53.8	51.6
F2	orange yellow	97.4	2.2	71.7	72.5	18.5	17.5	58.1	56.2
A3	blue	99.5	0.8	38.4	38.8	8.2	7.6	-38.8	-38.5
B3	green	96.4	2.0	58.2	58.7	-29.9	-29.9	26.2	24.3
C3	red	98.6	1.2	44.3	44.2	41.8	41.2	19.8	18.8
D3	yellow	98.4	1.9	79.2	79.9	6.0	5.0	76.9	75.5
E3	magenta	99.3	1.1	55.3	56.0	42.5	41.8	-11.0	-10.7
F3	cyan	100.0	0.7	55.8	56.3	-18.6	-18.9	-21.9	-22.3
A4	white	97.1	0.9	92.6	93.1	0.4	0.3	2.5	1.7
B4	neutral 8	100.0	0.8	79.7	80.3	-0.7	-0.8	1.6	1.2
C4	neutral 6.5	100.0	0.7	67.8	68.5	-0.6	-0.7	1.0	0.7
D4	neutral 5	99.4	0.7	55.3	55.8	0.4	0.4	2.1	1.5
E4	neutral 3.5	96.4	1.1	45.7	46.5	0.7	0.8	1.4	0.6
F4	black	95.9	1.0	35.6	36.2	0.4	0.7	2.8	2.0
A5	paper white	98.4	0.9	95.1	95.6	0.3	0.2	1.2	0.6
B5	Skin highlight L*=88	91.8	2.2	85.3	86.2	11.5	10.7	14.0	12.1
C5	Skin highlight L* =75	94.5	2.1	74.0	74.9	17.8	17.2	18.4	16.6
D5	Skin shadow L*=28	100.0	0.3	36.8	37.1	11.9	12.1	12.8	12.6
E5	Skin shadow L*=13	97.3	1.0	32.5	31.9	8.8	9.3	8.4	9.0
F5	Maximum Black	100.0	0.2	26.4	26.2	1.5	1.5	2.7	2.8

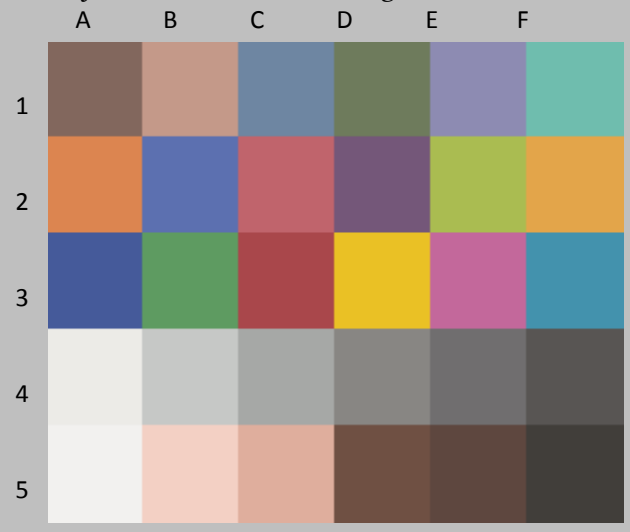
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	97.8	96.9	1.3
Worst 10% (3 lowest scoring patches)	93.6	92.4	2.2

30 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



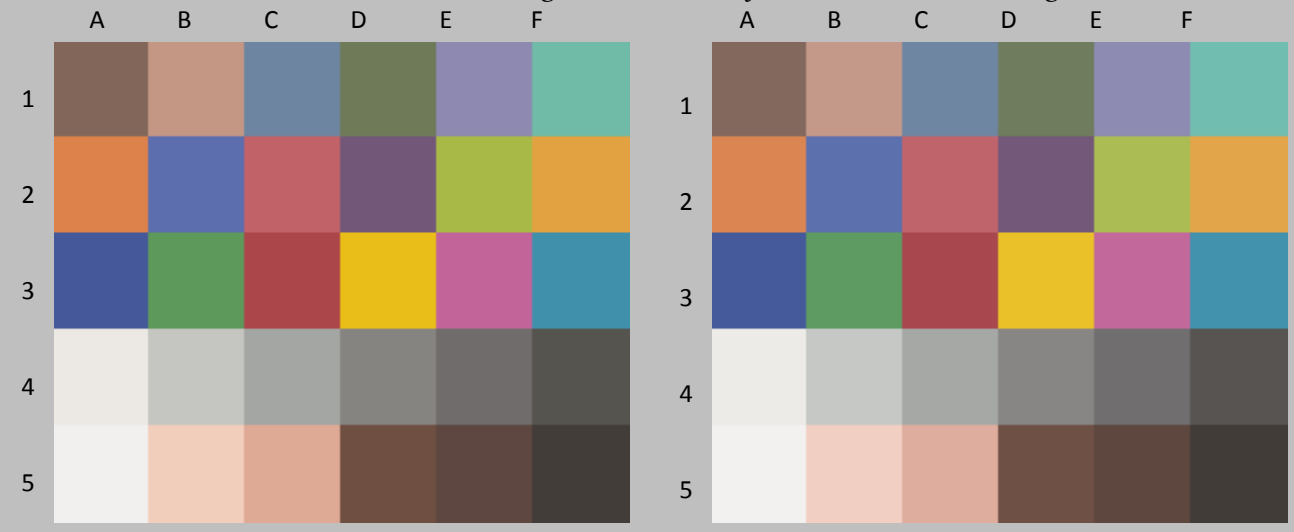
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	92.1	1.9	45.7	46.5	9.9	9.9	11.9	10.1
B1	Light Skin	94.8	1.9	66.2	67.0	15.4	15.0	16.8	15.1
C1	Blue sky	100.0	0.8	54.3	55.1	-4.0	-4.5	-17.6	-17.7
D1	Foliage	93.5	1.9	49.2	50.0	-9.0	-8.9	17.2	15.5
E1	blue flower	99.6	1.1	58.3	59.2	7.8	7.3	-20.3	-20.1
F1	bluish green	93.7	2.3	70.7	71.3	-27.9	-27.6	1.9	-0.3
A1	orange	95.9	2.9	63.5	64.1	31.6	30.6	45.5	42.9
B2	purplish blue	98.7	1.2	47.2	47.8	6.6	5.7	-37.0	-36.6
C2	moderate red	97.3	1.7	53.4	53.8	38.6	38.3	14.7	13.1
D2	purple	100.0	0.7	40.7	41.3	17.1	16.9	-14.1	-14.4
E2	yellow green	95.7	3.0	72.3	73.1	-18.3	-18.4	53.8	50.8
F2	orange yellow	96.1	3.0	71.7	72.5	18.5	17.3	58.1	55.5
A3	blue	98.3	1.3	38.4	39.0	8.2	7.2	-38.8	-38.1
B3	green	94.9	2.6	58.2	58.9	-29.9	-29.9	26.2	23.7
C3	red	98.1	1.4	44.3	44.1	41.8	41.3	19.8	18.5
D3	yellow	97.6	2.5	79.2	80.0	6.0	4.7	76.9	74.9
E3	magenta	99.2	1.1	55.3	56.0	42.5	41.7	-11.0	-10.6
F3	cyan	100.0	0.7	55.8	56.5	-18.6	-18.8	-21.9	-22.0
A4	white	96.9	0.9	92.6	93.0	0.4	0.3	2.5	1.7
B4	neutral 8	100.0	0.8	79.7	80.3	-0.7	-0.9	1.6	1.2
C4	neutral 6.5	100.0	0.7	67.8	68.5	-0.6	-0.7	1.0	0.8
D4	neutral 5	99.3	0.9	55.3	56.0	0.4	0.4	2.1	1.5
E4	neutral 3.5	93.5	1.4	45.7	46.6	0.7	1.0	1.4	0.3
F4	black	94.5	1.2	35.6	36.3	0.4	0.7	2.8	1.9
A5	paper white	97.9	0.8	95.1	95.5	0.3	0.2	1.2	0.5
B5	Skin highlight L*=88	87.0	3.0	85.3	86.2	11.5	10.6	14.0	11.2
C5	Skin highlight L* =75	91.8	2.8	74.0	75.1	17.8	17.0	18.4	15.9
D5	Skin shadow L*=28	100.0	0.4	36.8	37.2	11.9	12.0	12.8	12.6
E5	Skin shadow L*=13	100.0	0.4	32.5	32.5	8.8	9.2	8.4	8.6
F5	Maximum Black	100.0	0.3	26.4	26.2	1.5	1.5	2.7	2.8

Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	96.9	96.8	1.5
Worst 10% (3 lowest scoring patches)	90.3	93.0	3.0

40 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure

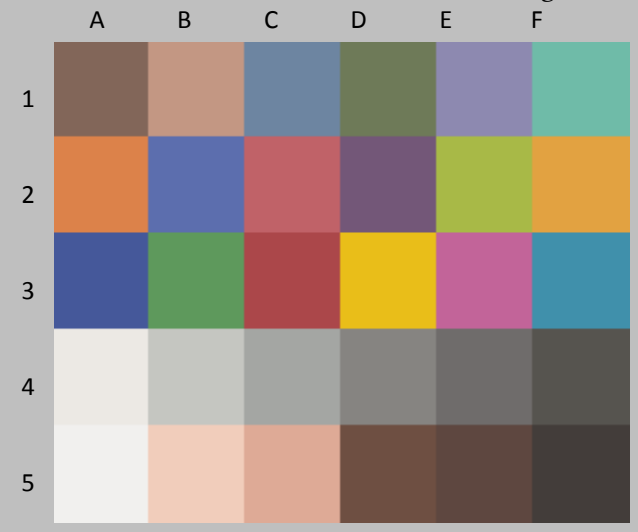
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	90.7	2.1	45.7	46.7	9.9	9.7	11.9	9.9
B1	Light Skin	92.6	2.4	66.2	67.1	15.4	15.1	16.8	14.6
C1	Blue sky	100.0	0.8	54.3	55.1	-4.0	-4.5	-17.6	-17.7
D1	Foliage	91.1	2.4	49.2	50.0	-9.0	-8.8	17.2	15.0
E1	blue flower	99.2	1.2	58.3	59.3	7.8	7.2	-20.3	-20.0
F1	bluish green	91.4	3.0	70.7	71.4	-27.9	-27.3	1.9	-1.0
A1	orange	94.6	3.6	63.5	64.3	31.6	30.5	45.5	42.1
B2	purplish blue	97.9	1.5	47.2	47.9	6.6	5.6	-37.0	-36.3
C2	moderate red	96.3	2.1	53.4	53.8	38.6	38.3	14.7	12.7
D2	purple	99.7	0.8	40.7	41.3	17.1	16.9	-14.1	-14.7
E2	yellow green	94.7	3.6	72.3	73.2	-18.3	-18.4	53.8	50.2
F2	orange yellow	94.9	3.7	71.7	72.6	18.5	17.2	58.1	54.7
A3	blue	98.2	1.4	38.4	39.0	8.2	7.2	-38.8	-38.1
B3	green	92.9	3.4	58.2	58.9	-29.9	-29.7	26.2	22.9
C3	red	97.9	1.5	44.3	44.0	41.8	41.5	19.8	18.4
D3	yellow	96.9	3.0	79.2	80.0	6.0	4.6	76.9	74.3
E3	magenta	99.1	1.1	55.3	55.9	42.5	41.7	-11.0	-10.5
F3	cyan	100.0	0.7	55.8	56.4	-18.6	-18.8	-21.9	-22.1
A4	white	96.8	0.8	92.6	92.8	0.4	0.3	2.5	1.7
B4	neutral 8	100.0	0.7	79.7	80.3	-0.7	-0.9	1.6	1.2
C4	neutral 6.5	100.0	0.8	67.8	68.6	-0.6	-0.7	1.0	0.8
D4	neutral 5	98.4	1.0	55.3	56.1	0.4	0.5	2.1	1.5
E4	neutral 3.5	93.0	1.4	45.7	46.6	0.7	0.9	1.4	0.3
F4	black	92.1	1.4	35.6	36.2	0.4	0.7	2.8	1.6
A5	paper white	98.2	0.7	95.1	95.3	0.3	0.2	1.2	0.5
B5	Skin highlight L*=88	84.1	3.4	85.3	86.0	11.5	10.6	14.0	10.7
C5	Skin highlight L* =75	90.0	3.2	74.0	75.0	17.8	16.9	18.4	15.5
D5	Skin shadow L*=28	100.0	0.5	36.8	37.1	11.9	12.0	12.8	12.4
E5	Skin shadow L*=13	99.9	0.5	32.5	32.4	8.8	9.2	8.4	8.6
F5	Maximum Black	100.0	0.5	26.4	26.0	1.5	1.5	2.7	2.8

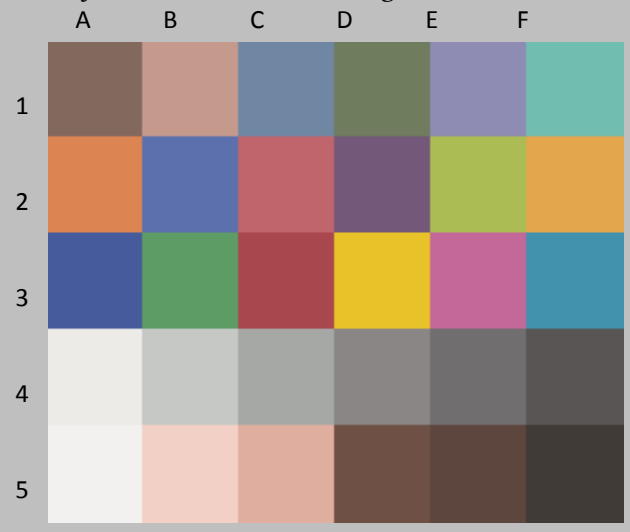
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	96.0	96.5	1.8
Worst 10% (3 lowest scoring patches)	88.3	92.2	3.7

50 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



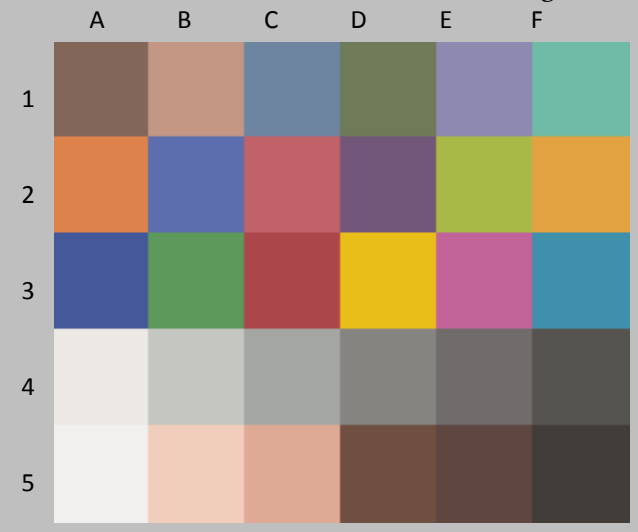
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	88.5	2.4	45.7	46.6	9.9	10.0	11.9	9.6
B1	Light Skin	91.2	2.7	66.2	67.3	15.4	15.2	16.8	14.3
C1	Blue sky	100.0	1.0	54.3	55.3	-4.0	-4.4	-17.6	-17.6
D1	Foliage	89.8	2.6	49.2	50.0	-9.0	-8.8	17.2	14.7
E1	blue flower	99.0	1.3	58.3	59.4	7.8	7.2	-20.3	-20.0
F1	bluish green	90.0	3.4	70.7	71.5	-27.9	-27.2	1.9	-1.3
A1	orange	93.8	4.0	63.5	64.3	31.6	30.5	45.5	41.7
B2	purplish blue	98.2	1.4	47.2	47.9	6.6	5.6	-37.0	-36.4
C2	moderate red	95.8	2.3	53.4	54.0	38.6	38.5	14.7	12.5
D2	purple	99.4	0.9	40.7	41.4	17.1	17.0	-14.1	-14.7
E2	yellow green	93.4	4.4	72.3	73.3	-18.3	-18.4	53.8	49.5
F2	orange yellow	94.2	4.2	71.7	72.8	18.5	17.1	58.1	54.3
A3	blue	98.0	1.4	38.4	39.0	8.2	7.1	-38.8	-38.0
B3	green	91.7	3.9	58.2	59.0	-29.9	-29.6	26.2	22.5
C3	red	97.4	1.8	44.3	44.0	41.8	41.4	19.8	18.1
D3	yellow	96.3	3.4	79.2	80.2	6.0	4.4	76.9	74.0
E3	magenta	98.9	1.3	55.3	56.1	42.5	41.7	-11.0	-10.4
F3	cyan	100.0	0.8	55.8	56.5	-18.6	-18.8	-21.9	-22.2
A4	white	96.3	0.9	92.6	93.0	0.4	0.3	2.5	1.7
B4	neutral 8	100.0	0.9	79.7	80.5	-0.7	-0.9	1.6	1.2
C4	neutral 6.5	100.0	0.9	67.8	68.7	-0.6	-0.7	1.0	0.8
D4	neutral 5	97.4	1.2	55.3	56.2	0.4	0.5	2.1	1.4
E4	neutral 3.5	90.2	1.7	45.7	46.7	0.7	1.0	1.4	0.0
F4	black	88.3	1.8	35.6	36.4	0.4	0.9	2.8	1.3
A5	paper white	98.8	0.7	95.1	95.4	0.3	0.2	1.2	0.6
B5	Skin highlight L*=88	81.7	3.9	85.3	86.2	11.5	10.6	14.0	10.3
C5	Skin highlight L* =75	89.0	3.5	74.0	75.2	17.8	17.0	18.4	15.2
D5	Skin shadow L*=28	99.7	0.7	36.8	37.2	11.9	12.1	12.8	12.3
E5	Skin shadow L*=13	98.4	0.8	32.5	32.1	8.8	9.4	8.4	8.7
F5	Maximum Black	100.0	0.9	26.4	25.5	1.5	1.5	2.7	2.7

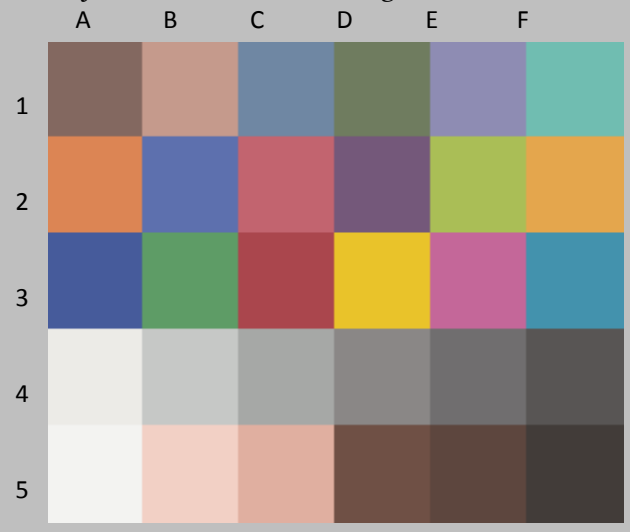
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	95.2	96.0	2.0
Worst 10% (3 lowest scoring patches)	86.2	91.1	4.2

60 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



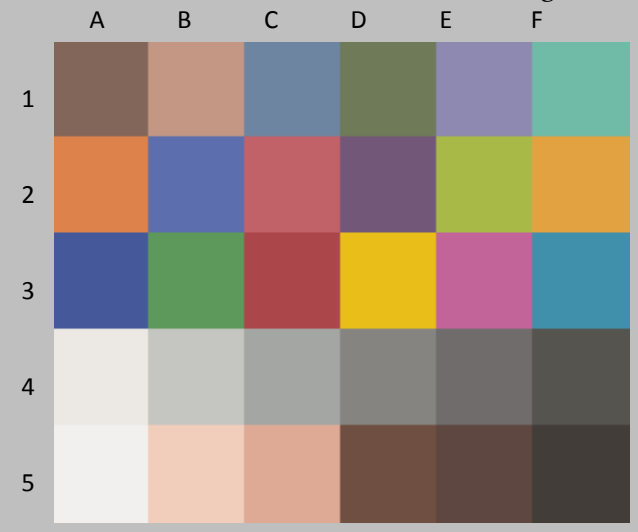
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	86.5	2.7	45.7	46.6	9.9	9.9	11.9	9.3
B1	Light Skin	90.0	3.0	66.2	67.4	15.4	15.2	16.8	14.0
C1	Blue sky	100.0	1.1	54.3	55.3	-4.0	-4.5	-17.6	-17.9
D1	Foliage	88.1	3.0	49.2	50.2	-9.0	-8.6	17.2	14.4
E1	blue flower	99.0	1.5	58.3	59.6	7.8	7.3	-20.3	-19.9
F1	bluish green	88.3	3.9	70.7	71.5	-27.9	-27.1	1.9	-1.8
A1	orange	93.1	4.4	63.5	64.5	31.6	30.5	45.5	41.3
B2	purplish blue	98.3	1.4	47.2	48.0	6.6	5.6	-37.0	-36.5
C2	moderate red	95.1	2.6	53.4	54.0	38.6	38.5	14.7	12.2
D2	purple	98.7	1.0	40.7	41.3	17.1	17.2	-14.1	-14.9
E2	yellow green	92.8	4.8	72.3	73.6	-18.3	-18.4	53.8	49.2
F2	orange yellow	93.4	4.7	71.7	72.8	18.5	17.0	58.1	53.8
A3	blue	97.8	1.5	38.4	39.1	8.2	7.1	-38.8	-38.0
B3	green	90.4	4.4	58.2	59.1	-29.9	-29.6	26.2	22.0
C3	red	97.2	1.8	44.3	44.0	41.8	41.5	19.8	18.0
D3	yellow	96.0	3.7	79.2	80.4	6.0	4.3	76.9	73.8
E3	magenta	99.2	1.3	55.3	56.2	42.5	41.8	-11.0	-10.5
F3	cyan	100.0	0.9	55.8	56.6	-18.6	-18.8	-21.9	-22.2
A4	white	95.4	1.1	92.6	93.1	0.4	0.3	2.5	1.6
B4	neutral 8	100.0	1.0	79.7	80.5	-0.7	-0.9	1.6	1.2
C4	neutral 6.5	100.0	1.0	67.8	68.8	-0.6	-0.7	1.0	0.8
D4	neutral 5	96.2	1.3	55.3	56.3	0.4	0.5	2.1	1.3
E4	neutral 3.5	87.9	1.9	45.7	46.8	0.7	1.1	1.4	-0.2
F4	black	87.1	1.9	35.6	36.4	0.4	0.9	2.8	1.2
A5	paper white	98.4	0.8	95.1	95.5	0.3	0.2	1.2	0.6
B5	Skin highlight L*=88	78.6	4.5	85.3	86.5	11.5	10.5	14.0	9.7
C5	Skin highlight L* =75	86.5	4.2	74.0	75.5	17.8	16.9	18.4	14.5
D5	Skin shadow L*=28	99.6	0.7	36.8	37.2	11.9	12.1	12.8	12.2
E5	Skin shadow L*=13	98.4	0.8	32.5	32.2	8.8	9.4	8.4	8.7
F5	Maximum Black	100.0	0.7	26.4	25.7	1.5	1.6	2.7	2.7

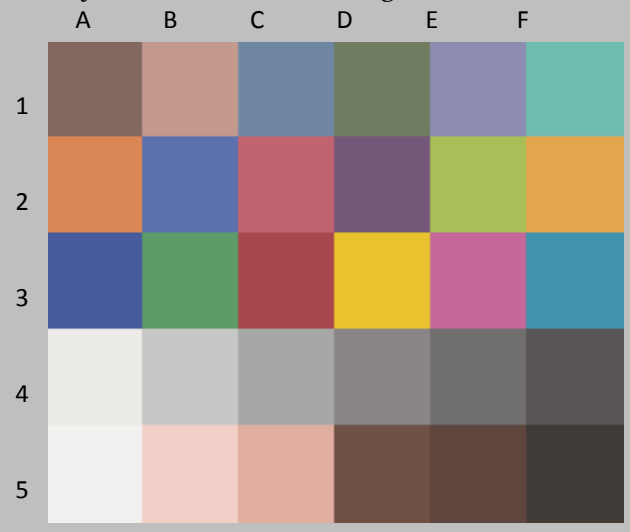
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	94.4	95.6	2.3
Worst 10% (3 lowest scoring patches)	83.9	90.6	4.7

70 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



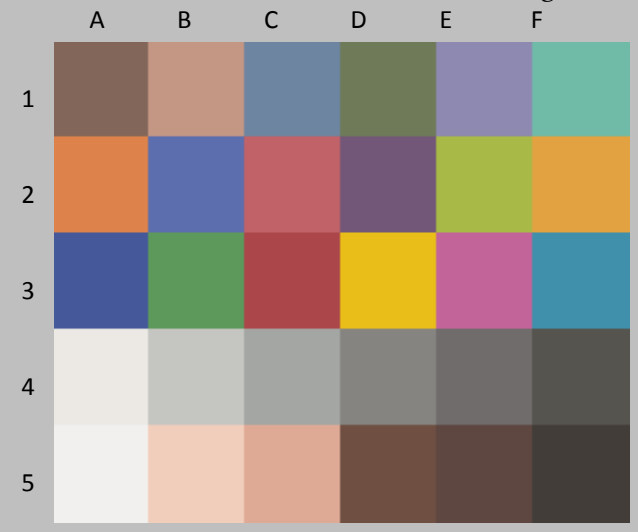
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	84.3	3.1	45.7	46.7	9.9	10.0	11.9	8.9
B1	Light Skin	87.8	3.5	66.2	67.5	15.4	15.3	16.8	13.5
C1	Blue sky	100.0	1.0	54.3	55.2	-4.0	-4.5	-17.6	-17.8
D1	Foliage	86.2	3.3	49.2	50.2	-9.0	-8.6	17.2	14.1
E1	blue flower	98.6	1.5	58.3	59.6	7.8	7.2	-20.3	-19.8
F1	bluish green	87.2	4.2	70.7	71.6	-27.9	-27.0	1.9	-2.1
A1	orange	91.7	5.2	63.5	64.6	31.6	30.3	45.5	40.5
B2	purplish blue	98.1	1.4	47.2	47.9	6.6	5.6	-37.0	-36.4
C2	moderate red	94.3	2.9	53.4	54.1	38.6	38.6	14.7	11.9
D2	purple	98.2	1.1	40.7	41.3	17.1	17.2	-14.1	-15.0
E2	yellow green	91.4	5.5	72.3	73.6	-18.3	-18.3	53.8	48.4
F2	orange yellow	92.2	5.4	71.7	73.0	18.5	16.9	58.1	53.0
A3	blue	97.3	1.7	38.4	39.1	8.2	6.9	-38.8	-37.9
B3	green	89.3	4.9	58.2	59.1	-29.9	-29.6	26.2	21.5
C3	red	96.4	2.2	44.3	44.0	41.8	41.4	19.8	17.7
D3	yellow	95.1	4.4	79.2	80.3	6.0	4.1	76.9	73.1
E3	magenta	98.9	1.4	55.3	56.3	42.5	41.7	-11.0	-10.4
F3	cyan	100.0	0.8	55.8	56.5	-18.6	-18.9	-21.9	-22.1
A4	white	95.0	1.0	92.6	93.0	0.4	0.3	2.5	1.5
B4	neutral 8	100.0	0.9	79.7	80.5	-0.7	-0.9	1.6	1.2
C4	neutral 6.5	100.0	0.9	67.8	68.7	-0.6	-0.8	1.0	0.8
D4	neutral 5	95.6	1.3	55.3	56.2	0.4	0.5	2.1	1.2
E4	neutral 3.5	85.8	2.1	45.7	46.8	0.7	1.1	1.4	-0.4
F4	black	84.3	2.1	35.6	36.3	0.4	0.9	2.8	0.9
A5	paper white	98.6	0.7	95.1	95.4	0.3	0.2	1.2	0.6
B5	Skin highlight L*=88	75.8	5.0	85.3	86.4	11.5	10.6	14.0	9.2
C5	Skin highlight L* =75	85.4	4.5	74.0	75.4	17.8	17.0	18.4	14.2
D5	Skin shadow L*=28	99.1	0.8	36.8	37.2	11.9	12.2	12.8	12.2
E5	Skin shadow L*=13	96.9	0.9	32.5	32.2	8.8	9.6	8.4	8.7
F5	Maximum Black	100.0	0.8	26.4	25.6	1.5	1.6	2.7	2.6

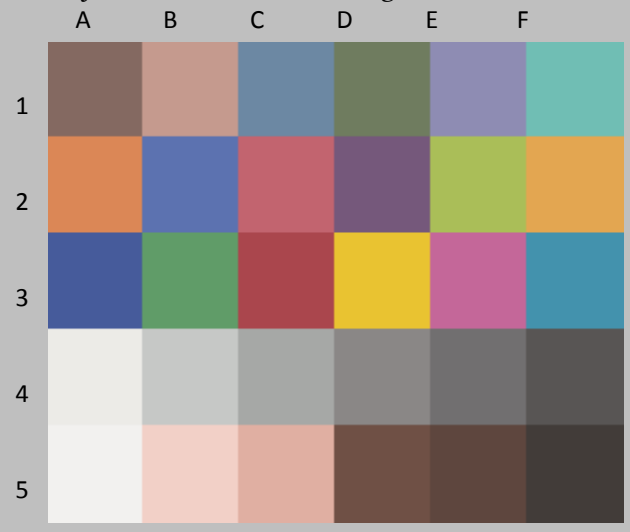
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	93.4	95.3	2.5
Worst 10% (3 lowest scoring patches)	81.4	90.3	5.4

80 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



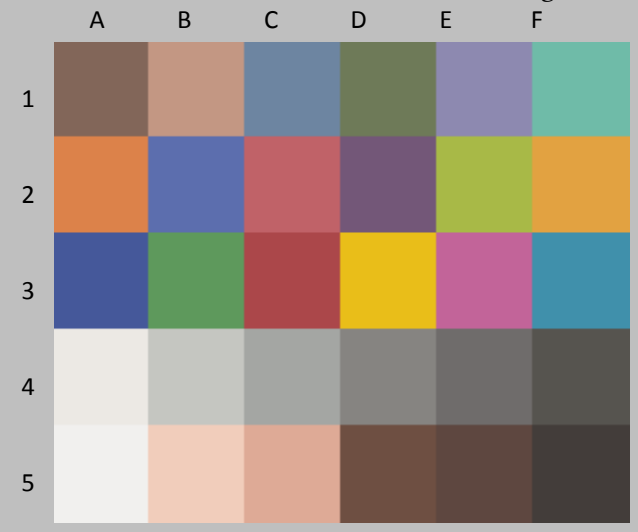
Colors After light exposure

				L*		a*		b*	
Patch #	Description	I* Color	ΔE	Before	After	Before	After	Before	After
A1	Dark Skin	82.5	3.4	45.7	46.9	9.9	10.1	11.9	8.7
B1	Light Skin	86.3	3.8	66.2	67.5	15.4	15.2	16.8	13.2
C1	Blue sky	99.9	1.1	54.3	55.3	-4.0	-4.6	-17.6	-17.6
D1	Foliage	84.3	3.7	49.2	50.4	-9.0	-8.6	17.2	13.7
E1	blue flower	98.0	1.6	58.3	59.6	7.8	7.2	-20.3	-19.7
F1	bluish green	85.2	4.7	70.7	71.7	-27.9	-26.8	1.9	-2.6
A1	orange	90.5	5.9	63.5	64.7	31.6	30.4	45.5	39.9
B2	purplish blue	97.3	1.8	47.2	48.2	6.6	5.4	-37.0	-36.1
C2	moderate red	93.5	3.3	53.4	54.2	38.6	38.5	14.7	11.5
D2	purple	97.8	1.3	40.7	41.5	17.1	17.2	-14.1	-15.1
E2	yellow green	90.1	6.3	72.3	73.7	-18.3	-18.3	53.8	47.6
F2	orange yellow	91.0	6.1	71.7	73.0	18.5	16.9	58.1	52.3
A3	blue	97.0	1.8	38.4	39.2	8.2	6.8	-38.8	-37.8
B3	green	87.5	5.6	58.2	59.3	-29.9	-29.4	26.2	20.8
C3	red	96.5	2.2	44.3	44.1	41.8	41.6	19.8	17.7
D3	yellow	94.4	5.0	79.2	80.4	6.0	4.1	76.9	72.5
E3	magenta	98.6	1.5	55.3	56.3	42.5	41.6	-11.0	-10.3
F3	cyan	100.0	0.9	55.8	56.7	-18.6	-18.8	-21.9	-21.9
A4	white	94.8	1.1	92.6	93.1	0.4	0.3	2.5	1.5
B4	neutral 8	100.0	0.9	79.7	80.4	-0.7	-0.9	1.6	1.2
C4	neutral 6.5	100.0	1.0	67.8	68.8	-0.6	-0.8	1.0	0.8
D4	neutral 5	95.2	1.4	55.3	56.4	0.4	0.5	2.1	1.2
E4	neutral 3.5	84.7	2.3	45.7	47.0	0.7	1.1	1.4	-0.5
F4	black	82.3	2.3	35.6	36.4	0.4	1.0	2.8	0.8
A5	paper white	99.4	0.7	95.1	95.5	0.3	0.2	1.2	0.7
B5	Skin highlight L*=88	73.2	5.5	85.3	86.5	11.5	10.6	14.0	8.7
C5	Skin highlight L* =75	82.7	5.2	74.0	75.6	17.8	16.9	18.4	13.6
D5	Skin shadow L*=28	97.9	1.0	36.8	37.3	11.9	12.2	12.8	11.9
E5	Skin shadow L*=13	97.4	0.9	32.5	32.2	8.8	9.6	8.4	8.6
F5	Maximum Black	100.0	0.7	26.4	25.7	1.5	1.6	2.7	2.7

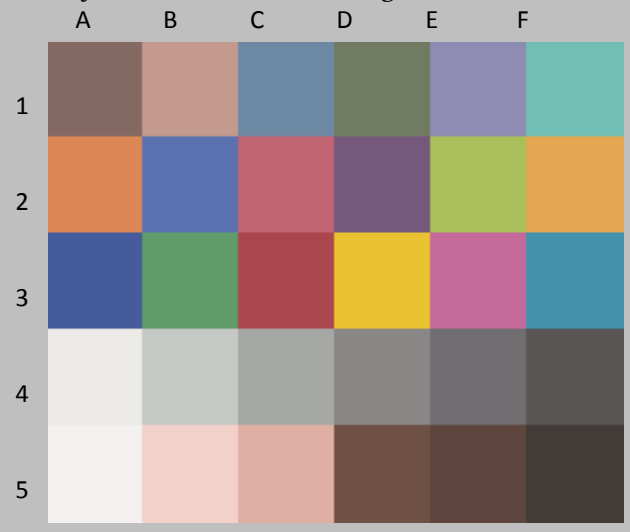
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	92.6	95.1	2.8
Worst 10% (3 lowest scoring patches)	79.3	90.1	6.1

90 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



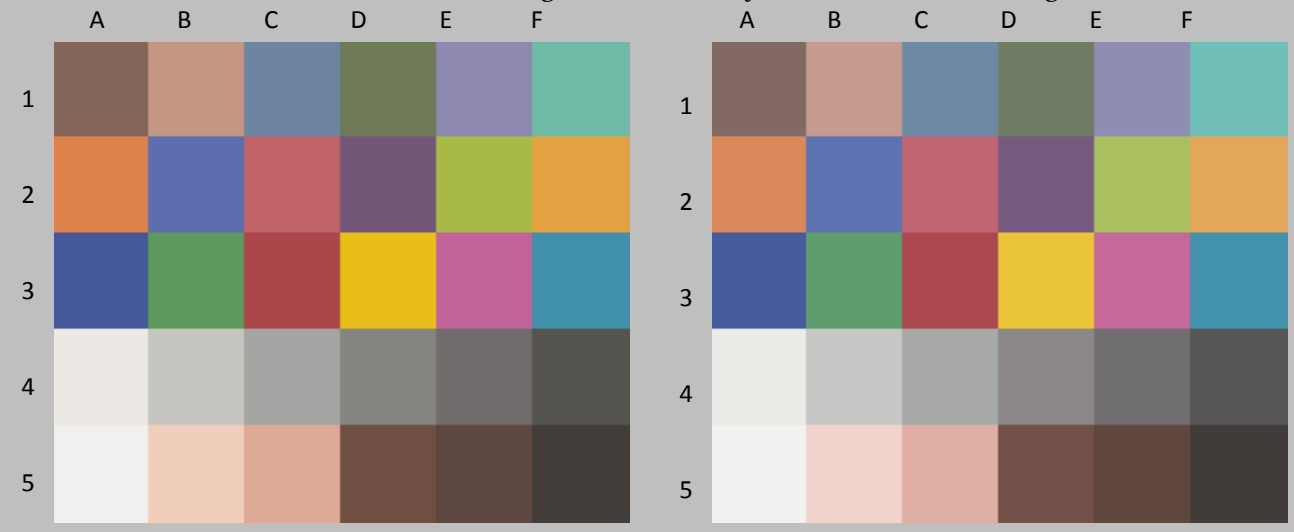
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	80.1	3.8	45.7	46.9	9.9	10.1	11.9	8.3
B1	Light Skin	84.9	4.2	66.2	67.6	15.4	15.2	16.8	12.8
C1	Blue sky	99.5	1.2	54.3	55.4	-4.0	-4.6	-17.6	-17.5
D1	Foliage	82.6	4.0	49.2	50.3	-9.0	-8.5	17.2	13.4
E1	blue flower	97.7	1.7	58.3	59.7	7.8	7.1	-20.3	-19.6
F1	bluish green	83.6	5.2	70.7	71.7	-27.9	-26.7	1.9	-3.1
A1	orange	89.9	6.2	63.5	64.7	31.6	30.4	45.5	39.5
B2	purplish blue	96.9	2.0	47.2	48.2	6.6	5.3	-37.0	-36.0
C2	moderate red	92.9	3.5	53.4	54.2	38.6	38.7	14.7	11.3
D2	purple	97.0	1.4	40.7	41.5	17.1	17.2	-14.1	-15.3
E2	yellow green	89.1	6.8	72.3	73.8	-18.3	-18.2	53.8	47.1
F2	orange yellow	90.2	6.6	71.7	73.1	18.5	16.9	58.1	51.8
A3	blue	97.0	1.9	38.4	39.3	8.2	6.8	-38.8	-37.8
B3	green	86.7	5.9	58.2	59.4	-29.9	-29.4	26.2	20.5
C3	red	96.2	2.3	44.3	44.1	41.8	41.8	19.8	17.5
D3	yellow	93.9	5.4	79.2	80.5	6.0	4.1	76.9	72.1
E3	magenta	98.9	1.4	55.3	56.3	42.5	41.8	-11.0	-10.3
F3	cyan	100.0	0.9	55.8	56.6	-18.6	-19.0	-21.9	-22.0
A4	white	97.5	0.8	92.6	93.0	0.4	0.3	2.5	1.8
B4	neutral 8	100.0	0.9	79.7	80.5	-0.7	-0.9	1.6	1.3
C4	neutral 6.5	100.0	1.0	67.8	68.8	-0.6	-0.8	1.0	0.9
D4	neutral 5	95.2	1.4	55.3	56.4	0.4	0.5	2.1	1.2
E4	neutral 3.5	82.1	2.5	45.7	46.8	0.7	1.2	1.4	-0.7
F4	black	79.5	2.6	35.6	36.5	0.4	1.1	2.8	0.5
A5	paper white	100.0	0.5	95.1	95.4	0.3	0.2	1.2	0.9
B5	Skin highlight L*=88	71.1	5.9	85.3	86.5	11.5	10.6	14.0	8.3
C5	Skin highlight L* =75	81.6	5.4	74.0	75.6	17.8	16.9	18.4	13.3
D5	Skin shadow L*=28	98.0	1.0	36.8	37.2	11.9	12.3	12.8	12.0
E5	Skin shadow L*=13	95.7	1.1	32.5	32.2	8.8	9.8	8.4	8.7
F5	Maximum Black	100.0	0.7	26.4	25.7	1.5	1.6	2.7	2.7

Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	91.9	95.1	2.9
Worst 10% (3 lowest scoring patches)	76.9	89.7	6.6

100 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure

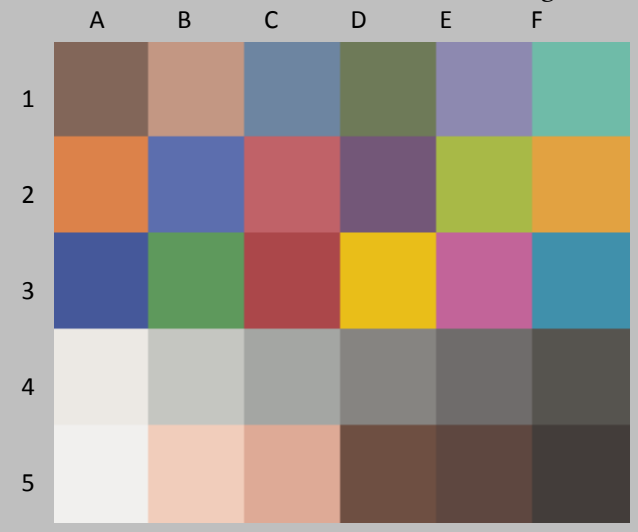
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	74.2	4.7	45.7	47.1	9.9	10.4	11.9	7.4
B1	Light Skin	80.1	5.3	66.2	67.8	15.4	15.2	16.8	11.7
C1	Blue sky	99.0	1.4	54.3	55.5	-4.0	-4.7	-17.6	-17.4
D1	Foliage	76.5	5.2	49.2	50.5	-9.0	-8.3	17.2	12.2
E1	blue flower	96.3	2.1	58.3	60.0	7.8	7.0	-20.3	-19.3
F1	bluish green	77.7	6.8	70.7	71.9	-27.9	-26.1	1.9	-4.6
A1	orange	86.5	8.1	63.5	64.8	31.6	30.4	45.5	37.6
B2	purplish blue	95.8	2.5	47.2	48.5	6.6	5.1	-37.0	-35.5
C2	moderate red	90.6	4.5	53.4	54.4	38.6	38.8	14.7	10.4
D2	purple	95.7	1.8	40.7	41.8	17.1	17.3	-14.1	-15.6
E2	yellow green	85.3	9.0	72.3	74.0	-18.3	-18.0	53.8	44.9
F2	orange yellow	86.4	8.9	71.7	73.3	18.5	16.7	58.1	49.5
A3	blue	96.5	2.1	38.4	39.3	8.2	6.7	-38.8	-37.6
B3	green	81.2	8.1	58.2	59.6	-29.9	-28.8	26.2	18.4
C3	red	94.8	2.9	44.3	44.1	41.8	42.0	19.8	16.9
D3	yellow	91.4	7.3	79.2	80.7	6.0	3.9	76.9	70.1
E3	magenta	98.1	1.8	55.3	56.5	42.5	41.7	-11.0	-9.9
F3	cyan	100.0	1.1	55.8	56.8	-18.6	-19.0	-21.9	-21.9
A4	white	97.0	0.8	92.6	93.0	0.4	0.3	2.5	1.7
B4	neutral 8	100.0	1.0	79.7	80.6	-0.7	-1.0	1.6	1.3
C4	neutral 6.5	100.0	1.1	67.8	68.9	-0.6	-0.8	1.0	0.9
D4	neutral 5	92.1	1.7	55.3	56.5	0.4	0.6	2.1	0.9
E4	neutral 3.5	76.2	3.1	45.7	47.0	0.7	1.4	1.4	-1.3
F4	black	72.1	3.3	35.6	36.6	0.4	1.4	2.8	-0.1
A5	paper white	100.0	0.4	95.1	95.3	0.3	0.1	1.2	0.9
B5	Skin highlight L*=88	63.7	7.2	85.3	86.6	11.5	10.7	14.0	6.9
C5	Skin highlight L* =75	76.3	6.8	74.0	75.7	17.8	17.0	18.4	11.9
D5	Skin shadow L*=28	94.3	1.6	36.8	37.2	11.9	12.6	12.8	11.4
E5	Skin shadow L*=13	95.3	1.1	32.5	32.4	8.8	9.9	8.4	8.6
F5	Maximum Black	100.0	0.8	26.4	25.7	1.5	1.6	2.7	2.5

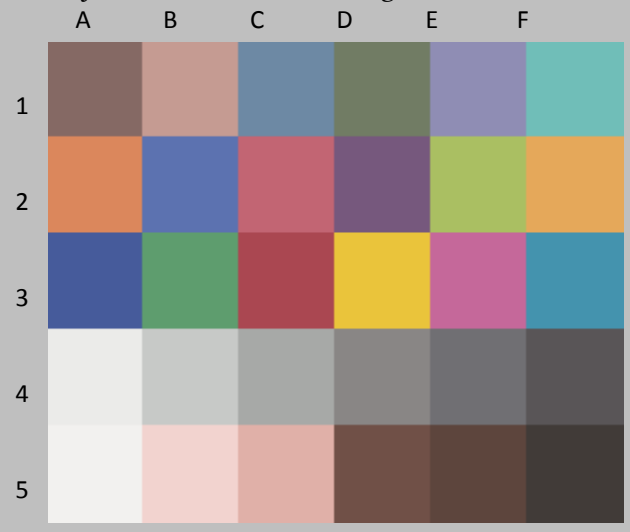
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	89.1	94.5	3.7
Worst 10% (3 lowest scoring patches)	70.0	88.8	8.7

120 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure



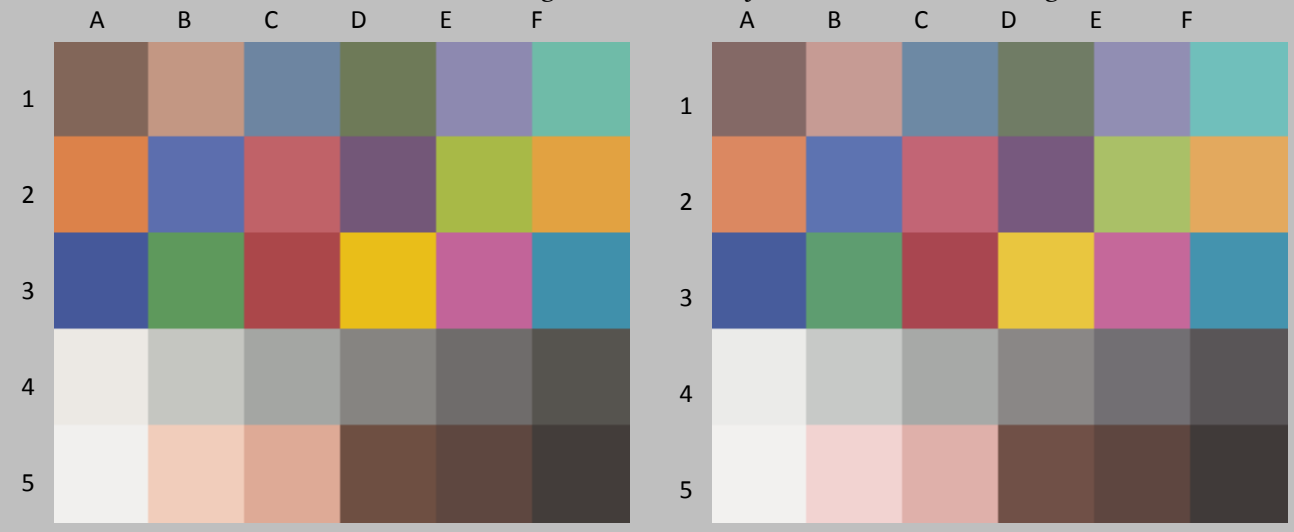
Colors After light exposure

				L*		a*		b*	
Patch #	Description	I* Color	ΔE	Before	After	Before	After	Before	After
A1	Dark Skin	70.3	5.3	45.7	47.1	9.9	10.6	11.9	6.8
B1	Light Skin	76.4	6.1	66.2	67.9	15.4	15.4	16.8	10.9
C1	Blue sky	99.9	1.4	54.3	55.6	-4.0	-4.6	-17.6	-17.6
D1	Foliage	74.0	5.7	49.2	50.6	-9.0	-8.2	17.2	11.7
E1	blue flower	97.8	1.9	58.3	60.0	7.8	7.2	-20.3	-19.6
F1	bluish green	74.6	7.7	70.7	71.9	-27.9	-25.9	1.9	-5.5
A1	orange	85.1	8.9	63.5	64.9	31.6	30.5	45.5	36.8
B2	purplish blue	97.6	1.7	47.2	48.2	6.6	5.4	-37.0	-36.3
C2	moderate red	89.0	5.1	53.4	54.4	38.6	39.0	14.7	9.7
D2	purple	93.5	2.2	40.7	41.7	17.1	17.5	-14.1	-16.0
E2	yellow green	83.3	10.1	72.3	74.0	-18.3	-18.1	53.8	43.8
F2	orange yellow	84.8	9.9	71.7	73.5	18.5	16.6	58.1	48.5
A3	blue	97.3	1.8	38.4	39.3	8.2	6.9	-38.8	-37.9
B3	green	80.0	8.6	58.2	59.6	-29.9	-29.0	26.2	17.8
C3	red	93.9	3.3	44.3	44.2	41.8	41.9	19.8	16.5
D3	yellow	90.5	8.0	79.2	80.9	6.0	3.5	76.9	69.4
E3	magenta	99.0	1.6	55.3	56.6	42.5	41.9	-11.0	-10.3
F3	cyan	99.4	1.1	55.8	56.7	-18.6	-19.1	-21.9	-22.3
A4	white	92.2	1.3	92.6	93.0	0.4	0.4	2.5	1.3
B4	neutral 8	100.0	1.1	79.7	80.7	-0.7	-0.9	1.6	1.2
C4	neutral 6.5	100.0	1.1	67.8	68.9	-0.6	-0.8	1.0	0.8
D4	neutral 5	89.4	1.8	55.3	56.3	0.4	0.7	2.1	0.6
E4	neutral 3.5	70.6	3.6	45.7	47.1	0.7	1.4	1.4	-1.8
F4	black	65.6	3.9	35.6	36.6	0.4	1.7	2.8	-0.7
A5	paper white	98.3	0.8	95.1	95.4	0.3	0.2	1.2	0.5
B5	Skin highlight L*=88	57.1	8.4	85.3	86.9	11.5	10.8	14.0	5.7
C5	Skin highlight L* =75	72.2	7.9	74.0	75.9	17.8	17.3	18.4	10.8
D5	Skin shadow L*=28	93.4	1.7	36.8	37.2	11.9	12.8	12.8	11.3
E5	Skin shadow L*=13	92.4	1.6	32.5	31.7	8.8	10.2	8.4	8.8
F5	Maximum Black	100.0	1.1	26.4	25.3	1.5	1.7	2.7	2.6

Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	87.3	93.7	4.2
Worst 10% (3 lowest scoring patches)	64.3	87.5	9.6

140 Megalux hours

Epson Stylus Pro 3880, Epson OEM UltraChrome K3™ with Vivid Magenta, Kernow Coatings Ltd – Marazion Fine Art 260gsm 100% Cotton fabric, no additional coating



Original Print Colors before light exposure

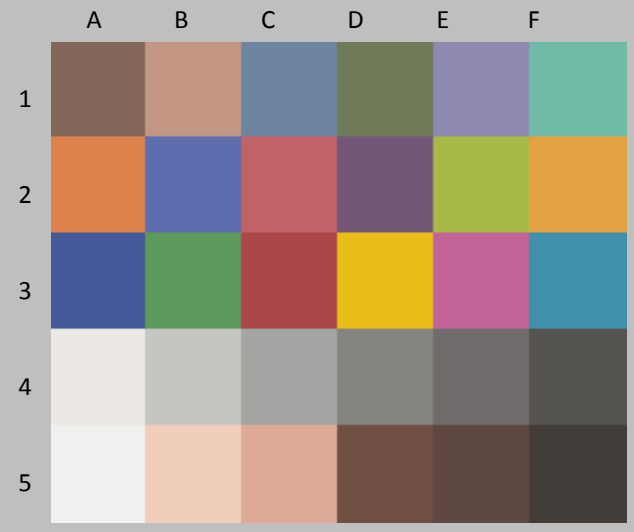
Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin	65.6	6.0	45.7	47.1	9.9	10.7	11.9	6.1
B1	Light Skin	73.0	6.9	66.2	68.0	15.4	15.6	16.8	10.1
C1	Blue sky	99.5	1.4	54.3	55.6	-4.0	-4.6	-17.6	-17.6
D1	Foliage	69.9	6.5	49.2	50.7	-9.0	-8.0	17.2	10.9
E1	blue flower	96.5	2.3	58.3	60.2	7.8	7.2	-20.3	-19.2
F1	bluish green	71.3	8.6	70.7	72.0	-27.9	-25.6	1.9	-6.3
A1	orange	82.4	10.4	63.5	65.1	31.6	30.4	45.5	35.3
B2	purplish blue	96.5	2.3	47.2	48.6	6.6	5.2	-37.0	-35.8
C2	moderate red	87.5	5.8	53.4	54.6	38.6	39.1	14.7	9.1
D2	purple	93.2	2.3	40.7	41.9	17.1	17.6	-14.1	-16.1
E2	yellow green	80.9	11.6	72.3	74.3	-18.3	-17.9	53.8	42.4
F2	orange yellow	82.6	11.3	71.7	73.6	18.5	16.5	58.1	47.1
A3	blue	96.7	2.1	38.4	39.5	8.2	6.7	-38.8	-37.7
B3	green	76.7	9.9	58.2	59.8	-29.9	-28.8	26.2	16.5
C3	red	93.0	3.7	44.3	44.1	41.8	42.1	19.8	16.1
D3	yellow	88.8	9.3	79.2	81.0	6.0	3.5	76.9	68.2
E3	magenta	98.9	1.7	55.3	56.6	42.5	41.9	-11.0	-10.2
F3	cyan	100.0	1.1	55.8	56.8	-18.6	-18.9	-21.9	-21.9
A4	white	91.7	1.4	92.6	93.0	0.4	0.4	2.5	1.2
B4	neutral 8	99.9	1.1	79.7	80.7	-0.7	-0.9	1.6	1.1
C4	neutral 6.5	100.0	1.2	67.8	69.0	-0.6	-0.8	1.0	0.9
D4	neutral 5	88.0	2.1	55.3	56.6	0.4	0.8	2.1	0.5
E4	neutral 3.5	67.2	3.9	45.7	47.2	0.7	1.6	1.4	-2.1
F4	black	60.6	4.4	35.6	36.6	0.4	1.6	2.8	-1.2
A5	paper white	99.1	0.7	95.1	95.4	0.3	0.2	1.2	0.6
B5	Skin highlight L*=88	52.0	9.3	85.3	86.9	11.5	10.9	14.0	4.8
C5	Skin highlight L* =75	68.7	8.8	74.0	76.1	17.8	17.2	18.4	9.9
D5	Skin shadow L*=28	91.4	2.1	36.8	37.3	11.9	12.8	12.8	10.9
E5	Skin shadow L*=13	92.7	1.5	32.5	32.0	8.8	10.2	8.4	8.4
F5	Maximum Black	100.0	1.4	26.4	25.1	1.5	1.7	2.7	2.5

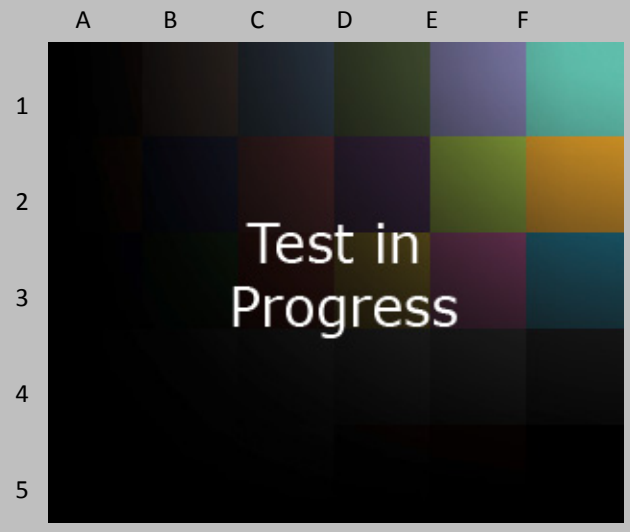
Summary Results	I* Color	I* tone	ΔE
Average Score for all patches	85.5	93.2	4.7
Worst 10% (3 lowest scoring patches)	59.4	86.6	11.1

160 Megalux hours

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



Original Print Colors before light exposure



Colors After light exposure

Patch #	Description	I* Color	ΔE	L* Before	L* After	a* Before	a* After	b* Before	b* After
A1	Dark Skin			45.7		9.9		11.9	
B1	Light Skin			66.2		15.4		16.8	
C1	Blue sky			54.3		-4.0		-17.6	
D1	Foliage			49.2		-9.0		17.2	
E1	blue flower			58.3		7.8		-20.3	
F1	bluish green			70.7		-27.9		1.9	
A1	orange			63.5		31.6		45.5	
B2	purplish blue			47.2		6.6		-37.0	
C2	moderate red			53.4		38.6		14.7	
D2	purple			40.7		17.1		-14.1	
E2	yellow green			72.3		-18.3		53.8	
F2	orange yellow			71.7		18.5		58.1	
A3	blue			38.4		8.2		-38.8	
B3	green			58.2		-29.9		26.2	
C3	red			44.3		41.8		19.8	
D3	yellow			79.2		6.0		76.9	
E3	magenta			55.3		42.5		-11.0	
F3	cyan			55.8		-18.6		-21.9	
A4	white			92.6		0.4		2.5	
B4	neutral 8			79.7		-0.7		1.6	
C4	neutral 6.5			67.8		-0.6		1.0	
D4	neutral 5			55.3		0.4		2.1	
E4	neutral 3.5			45.7		0.7		1.4	
F4	black			35.6		0.4		2.8	
A5	paper white			95.1		0.3		1.2	
B5	Skin highlight L*=88			85.3		11.5		14.0	
C5	Skin highlight L* =75			74.0		17.8		18.4	
D5	Skin shadow L*=28			36.8		11.9		12.8	
E5	Skin shadow L*=13			32.5		8.8		8.4	
F5	Maximum Black			26.4		1.5		2.7	

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

180 Megalux hours