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PostScript Color Management for OKI C9600



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1. Introduction

It is assumed that the reader has a printer OKI C 9600 or a similar machine, the OKI manuals and at least some basic knowledge about color management (CMS).

CMS by ICC profiles for OKI C9600 can be done host based or printer based. Printer based CMS is executed by the PostScript interpreter in the printer.

Printing PDFs by Acrobat (version 5.0) with host based CMS resulted in serious errors:

- Black text and line art is printed by rich black CMYK. 1.
- Grayscale images are printed by rich black CMYK. 2.
- CMYK components are not directly printed as defined in the PDF. 3.

This can be checked by printer test pages [1], [2]. All components are going through the ICC profile, which destroys the black generation. Even EPS components are affected.

The only solution is printer based PostScript CMS, which retains all features of PDFs, e.g. for the printer test pages (mainly pages 4,5 and 9).

The printer can apply one of three factory profiles. These are not perfect. They should be replaced by custom profiles. The factory profiles are built-in, but for tests they should be downloaded to the harddisk of the printer, like the custom profiles.

The access to these profiles is not defined by file names but by numbers.

A complete parameter set for a PageMaker printer style for PostScript CMS is shown.

Chapter 9 for printing by InDesign CS2 was added in May 2008.

An odd font problem for MathType MT-Symbol / MT-Extra was solved (the fonts could not be downloaded to the printer).

Title graphic by GMB ProfileEditor.

Settings for Acrobat

Edit / Preferences / General / Page Display (since version 6) Custom Resolution 72 dpi and use zoom 100% for screenshots

Edit / Preferences / General / Color Management (full version only) sRGB EuroscaleCoated or ISOCoated or SWOP GrayGamma 2.2

2. Downloading profiles



Copy from the CD 1 the factory profiles into the windows profile folder if required (left). Copy Profile Assistent opiccast.exe into a new folder.

Make *Custom* ICC profiles by third party software.

Run opiccast.exe and download the necessary profiles to the printer harddisk.

Be sure to assign in future the same number to the same profile. Otherwise they are autonumbered.

Example below:

RGB:	AdobeRGB(98)
CMYK Sim.:	ISO Coated
Printer 1:	Custom 1
Printer 2:	Custom 2
Printer 3:	Custom 3

Profile Assistant		×
	Profile Assista	nt
Selected HDD Available:	C9600 on 169.254.85.13 9505 MB	Change Printer
Profiles on Printer — Type of Profile to	Display	
RGB Source	e 🔽 Printer ulation 🔽 Linked	





l 9 Objekter	

3. Setting PostScript color management

Eigenschaften von OKI C9600(PS) Net	<u>? ×</u>
Allgemein Details Farbverwaltung State Auftragsoptionen Farbe Geräteoptione	us Freigabe Schriftart Einrichten n PostScript <mark>1</mark> Fragen Sie Oki
Earbmodus C Automatisch	
C Office-Farbe	Optionen
🕵 📀 Graphic Pro	Optionen
🔀 🤉 🤅 Keine Farbanpa	issung
Graustufen	
Tonersparmodus	
	Erweitert
OKI	Far <u>b</u> muster Standard
Camebia Dee	21 21



4

Check mode Graphic Pro.

Check ICC Color Management. This means printer based PostScript CMS.

Choose RGB input profile:

- sRGB As standard available
- Adobe RGB(98)
 Has to be downloaded

Choose CMYK profile:

- None For proof printing:
- Euroscale Coated As standard available
- ISO-Coated Has to be downloaded

Choose printer profile:

- Custom 1 - 3

Choose rendering intent:

- Perceptual As shown in example
- Relative Colorimetric This is mostly recommen ded for all applications

Choose black generation:

- Composite Black CMYK Standard
- K-only Black Pure gray, no color shift

Check

HECK

- Blacktext+lineart K-only

About rendering intents: Printer 3 (*Custom* 3) was optimized for Perceptual. For proof printing use Relative Colorimetric or Absolute Colorimetric. Absolute will put yellow ink on blue-ish paper.

4. Settings for Acrobat

Choose Advanced.

Choose Printer / PostScript Color Management.

ndom Holo	Print	<u>.</u>	×
	4 Printer	×	1
	Name: OKI C9600(PS) Net	<u>P</u> roperties	
1441	J: Status: Standarddrucker; Bereit	🗖 Reverse pages	
	Type: OKLC9600(PS)	🗖 Print as jmage	AC N 15 4
J 6.8 1	Where: OKILPR00	Fint to file	36.5 -16.1 J 29.8 8.2
K 13.2 2	Print Range	Copies and Adjustments	13.3 15.1 11.4 -10.8 K
18.9	Alle 17 Seiten C Selected pages/graphic	Number of <u>c</u> opies: 1 🛨	6.9 11.5 3.3 12.0
-2.4	C Pages from 1 to 17	Shink oversized pages to paper size	-4.0 -1.2
1		Fixed small pages to paper size	21 22
93.1 86.8 8	2. Print: Even and Odd Pages 🔽	Auto-rotate and center pages	7.9 5.9 5.2 0.0 0.0 0.0
0.0 0.0	o. Commen <u>t</u> s		0.0 0.0 0.0
	PostScript Options	Preview ⊯ 209.55-4	
		⊼ [anonanana]	na L=50
CieLab-Va PostScript	Al Print Method: Larguage Level 3		ber 27 2004
1 obtoonp	☐ Optimize for Speed	296.69	
	Color Managed: On printer		
- 1	2	Units: Milimetere Zoom: 70.5%	21 22
A	Divising Time L Advanced	OK 1 Canad	
В —	Print Settings		×
C			C
D	C Automatic Ourseless D	C Fort due	D
E			-
		Tile Marks: None	-
P.	Hich End Features		
G	Emit Halftones	ICC colors as Device colors	G
Н	Emit Transfer Functions	· Overprint Preview	н
	Emit Undercolor Removal/Black Generation Apply	Working Color Spaces X	
	Choo	se Output Tray by PDF page size	



5.1 PageMaker printer style



This chapter shows the installation of a PageMaker printer style.

Important features (sources of errors) are marked by magenta.

Copy OK9600b2.ppd into the folder PageMaker\...\PPD4

Drucken: Date	i de la constante de la constan	×
Drucker: OKI	C9600(PS) Net an OKILPR00	Drucken
PPD: OKI	C9600(PS) OK9600b2.ppd Sortiert	Abbrechen
ropien: ∎ ⊂Seiten −−−−	Probedruck	Datei
⊙ <u>A</u> lle	Druc <u>k</u> en: Beide Seiten 💌	<u>P</u> apier
C Umfang:	1 Doppejseitendruck	Op <u>t</u> ionen
☐ "Ni <u>c</u> ht-druc	ckend" ignorieren 🔽 Leere <u>S</u> eiten drucken	<u>F</u> arbe
Buch	ateien im Buch drucken	<u>M</u> erkmale
Mit Papiere	sinstellungen jeder Datei	Zurück



5.2 PageMaker printer style

Drucken: Optionen		X
TIFFs/Bilder		Dursten
<u>B</u> ilddaten senden:	Normal	
D <u>a</u> tenkodierung:	ASCII-Bilddaten senden	Abbrechen
PostScript		<u>D</u> atei
Mjt ladbaren Zeichens	sätzen: PostScript und TrueType	Papier
Mit PostScript-Fehl	lerinfo	Optionen
Als PostScript-Date	st St	uc <u>h</u> en <u>F</u> arbe
O <u>N</u> ormal OEP <u>S</u>	<mark>□ Einzeln</mark> □ Zusätzl. Druckerweiterung	<u>M</u> erkmale
C F <u>u</u> r Druckvorstul	ie	Zurück

Drucken: Farbe		×
Probezusammenstellung	🗖 Spiegelbildlich	Drucken
⊙ F <u>a</u> rbe	☐ Negativ	Abbrechen
C Farben sc <u>h</u> warz drucken	EPS_Farben erhalten	
C Farbausz <u>üg</u> e	<u>C</u> MS einrichten	<u>D</u> atei
Auf Drucker er <u>s</u> tellen	Aļle Farben	<u>P</u> apier
x Prozeß Cyan	▲ <u>K</u> eine Farbe	Optionen
x Prozeß Gelb	Alle als Proz <u>e</u> ß	Farbe
Rot	Unbenutzte löschen	Merkmale
🗹 Djese Farbe drucken		
<u>R</u> aster: Vorgabe	Freguenz: 121,0 Ipi	<u>Z</u> urück
Volgabe	<u>W</u> inkel: 45,0 ∗	

- OKI C9600(PS)		-	Drucken
Druckervorgaben	_		Abbrechen
Job Spool:			<u>D</u> atei
Job Type:			<u>P</u> apier
Druckervorgaben			Optionen
Tray Switch:			<u>F</u> arbe
Punch:			<u>M</u> erkmale
Druckervorgaben	•	-1	Zurück

5.3 PageMaker printer style

Drucken: Merkmale	×
OKI C9600(PS)	Drucken
Druckervorgaben	Abbrechen
Bind Position:	
Druckervorgaben	<u>D</u> atei
Output Bin:	<u>P</u> apier
Druckervorgaben Use 'Face-Up' for thick stock	Op <u>t</u> ionen
Multipurpose tray is handled as manual feed:	Farbe
Druckervorgaben Use 'Manual' for thick stock	
Media Type:	<u>M</u> erkmale
Medium Heavy (106 - 120 g/m2)	<u>Z</u> urück

OKI C9600(PS)	^	Drucken
Media Check:	,	
Druckervorgaben		Abbrecher
Pure Black Text/Graphics:		Datai
On 💌		
Black Finish:		<u>P</u> apier
Composite Black (CMYK)		Op <u>t</u> ionen
Rendering Intent:	_	<u>F</u> arbe
Relative Colorimetric		
Printer Output Profile:		<u>M</u> erkmale
Printer 2	1 .	7

Drucken: Merkmale		×
OKI C9600(PS) Simulation Target Profile:	-	Drucken
None		Abbrechen
CMYK Link Profile:		<u>D</u> atei
CMYK Input Profile:		<u>P</u> apier
EuroScale Source for proof, otherwise None		Op <u>t</u> ionen
CMYK Profile Type:		<u>F</u> arbe
CMYK Input Profile		Merkmale
RGB Profile:		
sRGB	_	Zurück

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For proof printing use the source CMYK profile

- Euroscale Coated
- ISO Coated

For printer tests use - None This will show CMY wedges printed by pure inks.

5.4 PageMaker printer style

Drucken: Merkmale		×
OKI C9600(PS) Preserve Black:	1	Drucken
Druckervorgaben		Abbrechen
Colour Match Precision: Quality		<u>D</u> atei
Colour Matching Task:		<u>P</u> apier
ICC Profile Colour Matching		Op <u>t</u> ionen
Black Finish:		<u>F</u> arbe
Composite Black (CMYK)		k (a di se a la
CMYK Ink Simulation:		
None	•	<u>Z</u> urück

Drucken: Merkmale		×
OKI C9600(PS) Colour Match Using:	_	Drucken
Monitor (6500K) - Auto		Abbrechen
Separations:		<u>D</u> atei
Use Optimized Greyscale halftones: Yes		<u>P</u> apier Op <u>t</u> ionen
Toner Saving: Off		<u>F</u> arbe
Black Overprint: On		

- OKI C9600(PS)		Drucken
Always use printer halftone:		Abbrechen
Colour Mode:		<u>D</u> atei
Adjust ultra fine lines:		<u>P</u> apier
Yes		Op <u>t</u> ionen
Page Rotate: Normal		<u>F</u> arbe
Collate:		<u>M</u> erkmale
Druckervorgaben	-	Zurück

5.5 PageMaker printer style

Drucken: Merkmale	×
OKI C9600(PS)	Drucken
	Abbrechen
Quality:	
Photo (Multilevel)	<u>D</u> ater
2-Sided Printing:	<u>P</u> apier
Druckervorgaben Choose here Duplex	Optionen
Memory Configuration:	
512 MB	
Punch Unit:	<u>M</u> erkmale
Not Installed	Zurück

OKI C9600(PS)			Drucken
Punch Unit:			Didditoit
Not Installed	•		Abbrechen
Finisher Unit:			Datai
Not Installed	•		Datei
Hard Disk:			<u>P</u> apier
Installed	_		Optionen
Duplex:			<u>F</u> arbe
Installed	<u> </u>		
Available Trays:			<u>M</u> erkmale
1 (Standard)	•	Ţ	Zurück

6. Proof printing

Left: Offset print Middle: OKI C9600 print Right: Mutoh 6100 inkjet print

The CMYK input profile (chapter 3) is in this case ISO Coated.

The three samples were simultaneously scanned by 600 dpi/48bit, placed in Photoshop using the scanner profile, converted to sRGB, descreened by Gaussian blur, downsampled for 144 dpi, sharpened by USM and converted to 24 bit. No manual color corrections were applied. 144 dpi means synchronized pixels for zoom 200% in Acrobat.

The visual match between the three printed samples is fairly good, but because of different papers and printing modes the scanner profile is not accurately valid. Especially the scan of the Mutoh inkjet proof looks far too blue-ish in the face.

The background of the spectrophotometer top left is in all prints near to neutral (numbers rounded).

Offset: Lab = 90/-1/-3OKI: Lab = 90/-1/-3Mutoh: Lab = 90/0/0

This shows once more that scanner calibration is highly doubtful. A scanner calibration is valid if the target and the samples were made exactly by the same process.







Spektrophotometer für die Drucker-Kalibrierung





Spektrophotometer für die Drucker-Kalibrierung

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Spektrophotometer für die Drucker-Kalibrierung

7.1 MathType 4 / MT-Symbol / MT-Extra

📥 C: \psfonts		🖉 Adobe Type Manager
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Zuriick Vor	wärts Aufwärts	Schriften Einstellungen
Adresse 🗀 C:\psfonts	<u> </u>	🖉 Kaufmann, Italic
🖪 Hvopfb 🛛 🖉 I	cwpfb 🛛 🗖 Ngbo	<i>d</i> Machine
🙋 Hvukpfb 🛛 🙋 I	cwcpfb 🛛 🙋 Ngo	A Madrone
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lcbcipfb	khpfb 🛛 🕰 ovbit	📿 MT Symbol, Italic
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<u>T</u> ext	Helvetica 💌	
Fun <u>k</u> tion:	Helvetica 💌	□ □ <u>Ü</u> bernehmen
<u>V</u> ariable:	Helvetica 💌	
Griech, Kleinbuchstaben:	MT Symbo	
Griech. <u>G</u> roßbuchstaben:	MT Symbo 💌	Für neue Formeln
Sym <u>p</u> ol:	MT Symbo 💌	
Veklor- <u>M</u> atrix:	Helvetica 💌	
Zaht	Helvetica 💌	
Extra Mat <u>h</u> :	MT Extra	ГГ
Benutzer <u>1</u> :	Courier New 💌	
Benutzer <u>2</u> :	Times New Roman 💌	
Eigenschaften von OKI	C9600(PS) Net	?×
Auftragsoptionen F Allgemein Details	arbe Geräteoptionen Po Farbverwaltung Status Fre	ostScript (Fragen Sie Oki) eigabe Schriftart Eimichtem
TrueType-Schriftarte	en durch <u>D</u> ruckerschriftarten ersetze	en

If MathType MT-Symbol or MT-Extra cannot be downloaded to the printer:

1. Delete *TrueType* MT-Symbol and MT- Extra in the Windows font folder.

2. Install *Type 1* MT-Symbol and MT- Extra from the Math-Type font folder into the Post-Script folder C:\psfonts.

3. Search FontInfo.ini in the MathType font folder and add these lines (cyan).

```
; FontInfo.ini:
```

[Font1]

. . .

Na	me	=	MT-Symbol
En	coding	=	Symbol
PS	Name1	=	P,MT-SymbolP
PS	Name2	=	I,MT-SymbolI
PS	Name3	=	B,MT-SymbolB

```
[Font2]
```

```
Name = MT-Extra
Encoding = MTExtra
PSName1 = P,MT-ExtraP
```

4. Re-boot.

5. Use MT-Symbol in Math-Type for Greek characters. This is now PostScript Type 1.

6. Use MT-Extra for Extra Math (e.g. for $\dot{x}, \ddot{y}, \triangleq$).

7. Save formula as EPS with TIFF preview and place in application program.



(falls möglich)

General font handling:

Do not use printer fonts.
 Sent TrueType as outlines.

7.2 MathType 5 / Symbol

In MathType 5 everything is different. MT-Symbol is no more used. Instead of MT-Symbol plain Symbol is recommended.

efine Style	\$					×
0	<u>S</u> imple	⊙ A <u>d</u> va	nced			OK
Style	Font		Chara Bo	icter Id	Style Italic	Cancel
<u>T</u> ext	Helvetica		• r			
Fun <u>c</u> tion	Helvetica		• 1			Apply
<u>V</u> ariable	Helvetica		- -			Eastern cattings
<u>L</u> .C. Greek	Symbol		• I			Factory settings
U.C. <u>G</u> reek	Symbol		•			✓ Use for new equations
Sym <u>b</u> ol	Symbol		. .			oquations
Vector- <u>M</u> atri	ix Helvetica		-	7		
<u>N</u> umber	Helvetica		• r			
<u>E</u> xtra Math	Euclid Extr	ra	• r			
User <u>1</u>	Helvetica		• r		☑	
User <u>2</u>	Times Nev	w Roman	- -			

This is no problem for new docs, but how can we handle old docs with MT-Symbol ?

Do not add anything to the manufacturer's file FontInfo.ini.

- 1. Convert all formulas to Symbol as above. This is really annoying.
- If MT-Symbol is still installed in C:\psfonts, then we can distill old docs as usual. The warning 'either embedded in the EPS or not installed' can be ignored. The PDF is correct and will be printed correctly.

It is not possible to print such an old doc directly by PageMaker - formulas are arbled.

8.1 Printing the calibration target



Color Management

Source Space: Document: © <u>D</u> ocument: Untagged	I CMYK	
Proof: C Proof Setup: ISO Co	ated	
Print Space:		
Print Space: Pro <u>f</u> ile: Same As Source	_	
Print Space: Profile: Same As Source Intent: Relative Colorimetric	•	
Print Space: Profile: Same As Source Intent: Relative Colorimetric Use Black Point Com	▼ ▼ pensation	

9.1 Printing by InDesign CS2 / General

The test image is a version of the GretagMacbeth ColorChecker (Registered Trademarks). Based on available CIELab data, a synthetical EPS version [6] was programmed by PostScript, loaded in Photoshop in mode Lab and converted into the CMYK space ISOCoated. By Soft Proofing and Gamut Warning it could be shown that the doc is entirely in gamut for ISOCoated. Color 18 is just a little out of gamut for sRGB. This is the EPS version, the CMYK version looks alike:



Photoshop, InDesign, Illustrator and Acrobat were synchronized for these settings: RGB=sRGB, CMYK=ISOCoated, Gray=BlackInk-ISOCoated, Spot=DotGain20%.

The CMYK version was placed in InDesign CS2 (called ID). It is important to assign ISOCoated explicitly. There seems to be no assignment just by defining the master color spaces. InDesign ignores Gray settings. Grayscales are shown as device gray. If the monitor is calibrated for Gamma=2.2, then only Grayscales with Gama=2.2 are shown correctly. This is here not relevant because the test image is defined in CMYK by ISOCoated.

The next images are scans from prints. Because the prints are screened, they were scanned with 600dpi, 24 bits, without corrections (,raw'). In Photoshop the scanner profile was assigned. The image was filtered by Gaussian blur until the dots were almost not perceivable, then downsampled for 300ppi. This PDF doc can contain further downsampling to 144ppi or 72ppi.

Scanner profiles are valid only for images which were created by the same process as the target (a photographic target). Therefore the scanner calibration is of limited value.

9.2 Printing by ID CS2 / Document / Host based

The first mode is ,Document' with host based color management.

In the upper illustration the image was selected in order to assign ISOCoated. CMYK profiles are (here) generally not embedded, therefore one global assignment - even without selecting an image - should be sufficient.





All settings are combined in a print preset, here called ,OKI-A4-quer' (landscape). Mode is ,Document'. ID knows the source color space ISOCoated, otherwise we have Profile: N/A. CMS is host based: ,Let InDesign Determine Colors'. A printer output profile is chosen, here oki-cfull-23042008.icc .

ISOCoated CMYK numbers are not preserved but converted into OKI numbers. These settings should disable any CMS in the printer. For safety CMS was disabled manually (no difference could be observed).

9.3 Printing by ID CS2 / Document / Host based

This is the scan of the print in sRGB. There is no choice of a rendering intent in ID. The output profile default is Perceptual. The quality is not convincing. Number 19 is too red, number 22 too green. Altogether the print is too dark.



9.4 Printing by ID CS2 / Document / Printer/PostScript

CMS by printer based PostScript fails entirely. The colors are chaotic. Chapter 3 shows the settings for the printer. But it is necessary to define the output profile in ID as well. A conflict could not be identified - the result is just wrong.

9.5 Printing by ID CS2 / Proof / Host based

Mode ,Proof' applies always the rendering intent AbsCol. The upper scan in sRGB shows the version ,Without Simulate Paper Color'. This is probably the same as RelCol. The lower scan shows the version ,With Simulate Paper Color'. Plain paper is tinted yellowish by printing (see bottom edge). ISOCoated has paper white at Lab=95.6/+0.5/-3.5. The paper Neusiedler Color-Copy has white at Lab=93.5/+2.5/-9.7. The yellow area has Lab=91.1/-1.2/4.1. This yellowish tint is far too strong. The value b* should be -3.5. The proofing quality is not convincing.



CMS by ID CS2 / Mode Proof / Don't simulate paper white

+	_				+
1	2	3	4	5	6
Lab sRGB 37.99 115.52 13.56 80.92 14.06 67.37	Lab sRGB 65.71 198.57 18.13 147.21 17.81 128.68	Lab sRGB 49.93 90.59 -4.88 122.38 -21.93 155.79	Lab sRGB 43.14 89.72 -13.10 107.65 21.91 64.38	Lab sRGB 55.11 129.55 8.84 127.99 -25.40 176.08	Lab sRGB 70.72 92.40 -33.40 189.92 -0.20 172.02
7	8	9	10	11	12
Lab sRGB 62.66 224.27 36.07 123.73 57.10 46.69	Lab sRGB 40.02 67.88 10.41 91.23 -45.96 170.18	Lab sRGB 51.12 198.32 48.24 81.92 16.25 97.05	Lab sRGB 30.33 93.64 22.98 58.00 -21.59 105.60	Lab sRGB 72.53 158.73 -23.71 188.97 57.26 62.82	Lab sRGB 71.94 230.42 19.36 161.62 67.86 39.25
13	14	15	16	17	18
Lab sRGB 28.78 35.37 14.18 63.33 -50.30 147.11	Lab sRGB 55.26 66.89 -38.34 148.92 31.37 74.12	Lab sRGB 42.10 179.91 53.38 48.66 28.19 56.96	Lab sRGB 81.73 238.29 4.04 198.44 79.82 19.71	Lab sRGB 51.94 193.07 49.99 83.98 14.57 150.57	Lab sRGB 51.04 0.00 -28.63 136.21 -28.64 169.71
19	20	21	22	23	24
Lab sRGB 96.54 244.95 -0.43 245.22 1.19 242.69	Lab sRGB 81.26 200.35 -0.64 202.22 -0.34 202.41	Lab sPGB 66.77 160.70 -0.73 162.85 -0.50 163.27	Lab sRGB 50.87 120.66 -0.15 121.20 -0.27 121.56	Lab sRGB 35.66 82.44 -0.42 84.11 -1.23 85.79	Lab sRGB 20.46 48.66 -0.08 49.36 -0.97 50.71
+ GMB ColorCh	necker (TM) / Terr	plate CIELab by	G.Hoffmann / Dec	cember 30 2006	
CMS by ID CS2 / Mode Pro	of / Simulate paper whit	0			

9.6 Printing by Acrobat / Printer/PostScript

These prints were made by Acrobat with printer based PostScript CMS. The upper scan in sRGB shows the version for RelCol. The lower scan shows the version for AbsCol. Plain paper is tinted yellowish by printing. ISOCoated has paper white at Lab=95.6/+0.5/-3.5. Paper Neusiedler ColorCopy has white at Lab=93.5/+2.5/-9.7. The yellow area has Lab=93.1/-0.1/-0.3. This yellowish tint is too strong. Perhaps CMS tries to neutralize the paper instead of simulating ISOCoated reference paper. The upper version by RelCol is already convincing.



Acrobat PDF / CMS by Printer/PostScript / Mode RelCol

+					+
1	2	3	4	5	6
Lab sRGB 37.99 115.52 13.56 80.92 14.06 67.37	Lab sRGB 65.71 198.57 18.13 147.21 17.81 128.68	Lab sRGB 49.93 90.59 -4.88 122.38 -21.93 155.79	Lab sRGB 43.14 89.72 -13.10 107.65 21.91 64.38	Lab sRGB 55.11 129.55 8.84 127.99 -25.40 176.08	Lab sRGB 70.72 92.40 -33.40 189.92 -0.20 172.02
7	8	9	10	11	12
Lab sRGB 62.66 224.27 36.07 123.73 57.10 46.69	Lab sRGB 40.02 67.88 10.41 91.23 -45.96 170.18	Lab sRGB 51.12 198.32 48.24 81.92 16.25 97.05	Lab sRGB 30.33 93.64 22.98 58.00 -21.59 105.60	Lab sRGB 72.53 158.73 -23.71 188.97 57.26 62.82	Lab sRGB 71.94 230.42 19.36 161.62 67.86 39.25
13	14	15	16	17	18
Lab sRGB	Lab sRGB	Lab sRGB	Lab sPGB	Lab and	Lab sBGB
28.78 35.37 14.18 63.33 -50.30 147.11	55.26 66.89 -38.34 148.92 31.37 74.12	42.10 179.91 53.38 48.66 28.19 56.96	81.73 238.29 4.04 198.44 79.82 19.71	51.94 193.07 49.99 83.98 -14.57 150.57	51.04 0.00 -28.63 136.21 -28.64 169.71
28.78 35.37 14.18 63.33 -50.30 147.11	55.26 66.89 38.34 148.92 31.37 74.12 20	42.10 179.91 53.38 48.66 28.19 56.96	81.73 238.29 4.04 198.44 79.82 19.71	51.94 193.07 49.99 83.98 -14.57 150.57 23	51.04 0.00 -28.63 136.21 -28.64 169.71 24
28.78 35.37 14.18 63.33 -50.30 147.11 19 Lab sRGB 96.54 244.95 -0.43 245.22 1.19 242.69	55.26 66.89 38.34 148.92 31.37 74.12 20 Lab sRGB 81.26 200.35 -0.64 202.22 -0.34 202.41	42.10 179.91 53.38 48.66 28.19 56.96 21 Lab sRGB 66.77 160.70 -0.73 162.85 -0.50 163.27	Lab SHGB 4.04 198.44 79.82 19.71 22 19.71 Lab sRGB 50.87 120.68 -0.15 121.20 -0.27 121.56	23 Lab sRGB 35.66 82.44 -0.42 84.11 -1.23 85.79	24 Lab sRGB 20.46 48.66 -0.08 49.36 -0.97 50.71
28.78 35.37 14.18 63.33 -50.30 147.11 19 Lab sRGB 96.54 244.95 -0.43 245.22 1.19 242.69 GMB ColorC	55.26 66.89 -38.34 148.92 31.37 74.12 20 Lab sRGB 81.26 200.35 -0.64 202.22 -0.34 202.41 hecker (TM) / Ten	42.10 179.91 53.38 48.66 28.19 56.96 21 Lab sRGB 66.77 160.70 -0.73 162.85 -0.50 163.27 nplate CIELab by	222 Lab sRGB 50.87 120.68 -0.15 121.20 -0.27 121.56 G.Hoffmann / Dec	23 Lab sRGB 35.66 82.44 -0.42 84.11 -1.23 85.79 cember 30 2006	24 Lab sRGB 20.46 48.66 -0.08 49.36 -0.97 50.71 +

9.7 Printing by RIP / RIP/PostScript

This print has nothing to do with OKI or ID, besides the fact that the PDF was made by ID with unchanged color numbers. The RIP ColorGate ProductionServer uses an accurately defined output profile with rendering intent AbsCol for the large format inkjet Mutoh RJ6100. ISOCoated has paper white at Lab=95.6/+0.5/-3.5. The proofing paper Rauch 190S has white at Lab=96.1/+0.3/-0.6. The printable white paper area has Lab=96.1/+0.3/-0.5. There is no correction by putting blue ink onto in order to achieve the ISOCoated value b*=-3.5. It seems, the program tries to neutralize, which leads to no ink because the paper is almost neutral.

The proofing quality is rather good. Actual proofs are compliant with FOGRA specifications (FOGRA Medienkeil). This paper looks under D50 somewhat yellowish though b* is negative.

The color numbers in the top row are Lab values as measured by DTP-22 on the print.

			1.12		
40.6 +12.1 +11.5	63.8 +17.4 +14.8	51.3 -06.5 -21.2	45.5 -13.5 +19.7	55.0 +07.8 -24.0	69.8 -28.2 -00.8
1	2	3	4	5	6
Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB
37.99 115.52	65.71 198.57	49.93 90.59	43.14 89.72	55.11 129.55	70.72 92.40
13.56 80.92	18.13 147.21	-4.88 122.38	-13.10 107.65	8.84 127.99	-33.40 189.92
14.06 67.37	17.81 128.68	-21.93 155.79	21.91 64.38	-25.40 176.08	-0.20 172.02
62.6 +32.7 +52.0	40.8 +06.5 -39.7	51.2 +43.4 +10.9	34.1 +19.5 -21.5	71.1 -20.9 +51.1	70.6 +16.4 +60.3
7	8	9	10	11	12
Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB
62.66 224.27	40.02 67.88	51.12 198.32	30.33 93.64	72.53 158.73	71.94 230.42
36.07 123.73	10.41 91.23	48.24 81.92	22.98 58.00	-23.71 188.97	19.36 161.62
57.10 46.69	-45.96 170.18	16.25 97.05	-21.59 105.60	57.26 62.82	67.86 39.25
33.6 +10.7 -45.1	55.5 -36.2 +28.5	43.9 +48.4 +20.9	79.7 +03.1 +72.3	51.5 +44.5 -16.0	52.0 -26.6 -25.7
13	14	15	16	17	18
Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB
28.78 35.37	55.26 66.89	42.10 179.91	81.73 238.29	51.94 193.07	51.04 0.00
14.18 63.33	-38.34 148.92	53.38 48.66	4.04 198.44	49.99 83.98	-28.63 136.21
-50.30 147.11	31.37 74.12	28.19 56.96	79.82 19.71	-14.57 150.57	-28.64 169.71
93.5 +00.1 +00.3 19	78.1 +00.5 -01.0 20	65.3 -00.2 -02.29 21	51.7 +00.6 -00.8 22	39.1 +00.2 -01.5 23	25.0 -00.9 -00.9 24
Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB	Lab sRGB
96.54 244.95	81.26 200.35	66.77 160.70	50.87 120.68	35.66 82.44	20.46 48.66
-0.43 245.22	-0.64 202.22	-0.73 162.85	-0.15 121.20	-0.42 84.11	-0.08 49.36
1.19 242.69	-0.34 202.41	-0.50 163.27	-0.27 121.56	-1.23 85.79	-0.97 50.71

GMB ColorChecker (TM) / Template CIELab by G.Hoffmann / December 30 2006

10. References

- [1] Printer test pages / preview
 330 kBytes
 http://docs-hoffmann.de/a3gencolortest.pdf
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 2100 kBytes
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- [5] G.Hoffmann Camera Calibration with informations about ColorChecker http://docs-hoffmann.de/camcal17122006.pdf
- [6] G.Hoffmann Lab-version of ColorChecker as EPS http://docs-hoffmann.de/cc-lab.txt Rename *.txt by *.eps
- [7] G.Hoffmann sRGB-version of ColorChecker as EPS http://docs-hoffmann.de/cc-srgb.txt Rename *.txt by *.eps

GretagMacbeth and ColorChecker are Registered Trademarks The EPS files were programmed by the author, based on original Lab data by GMB [5] The sRGB-values were calculated according to rules which are valid in Photoshop The GMB RGB-values are slightly different The EPS files are not authorized by GMB



http://docs-hoffmann.de/oki-ps-28082005.pdf

Gernot Hoffmann August 08 / 2005 — February 07 / 2013 Website Load Browser / Click here