

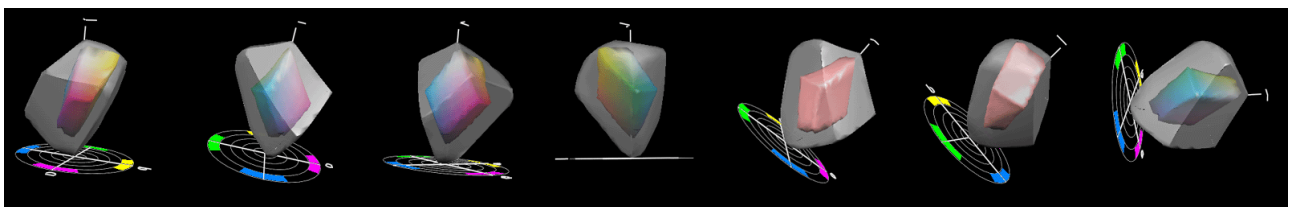
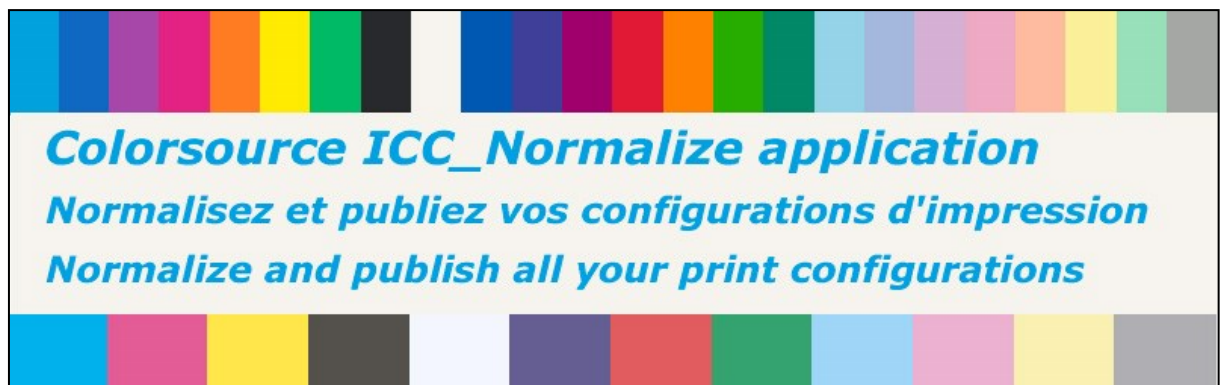


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ICC_Normalize application brief user's Guide

**Creating, normalizing, and communicating
your CMYK or N-Colors printing standards
using ProfileMaker and
free Colorsource ICC_Normalize application.**



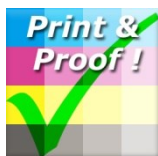
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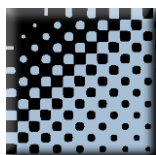


ICC_Normalize

CMYK_Print_&_Proof



PLATE



MagicPress



MagicPrepress



SPOT_Color_Manager



Why do you need ICC_Normalize application?

Colorsource free **ICC_Normalize** application allows you optimizing the standardization process of all the CMYK and N-Colors print standards you need creating for running your repro and/or print business.

Sometimes you do not need using our ICC_Normalize application, because you do not need creating your own print standard:

For classic CMYK publishing applications on standard medias, you do not need creating new print standards because ISO12647-2-3 and 4 print standards offer you a whole set of standard press characterization files (i.e., a whole set of standard CMYK ICC profiles). In this case, Colorsource **MagicPress** and **MagicPrepress** applications allow you very easy and fast press settings for matching any of the existing ISO standards by appropriate printing forms and press adjustments.

But in **ALL OTHER CASES** (~99% of packaging applications, plus most of high-end publishing applications), you DO NEED creating your own print standards, so that you should use our free **ICC_Normalize** application in order to optimize, document, record and communicate your own print standards.

A few examples:

- When using CMYK flexographic printing, ISO12647-6 give you the target solid colors and TVI curves for setting your press, and Colorsource press setting applications allow you setting your press easily. But once this is done, you still need computing your flexographic press CMYK ICC profile and publishing this specific flexographic CMYK print standard.
- For any N-Colors printing configuration with or without a CMYK base, Colorsource press setting software allows you as well setting your press easily for matching any set of target colors and TVI curves. But once this is done, you still need computing and publishing your press N-Colors ICC profile and publishing this new print standard specifications.

Why do you need using ProfileMaker?

If you are a repro or a print house, you need ProfileMaker because it is still the best and most flexible and opened color management software you can use in repro and print industries!

When using non-CMYK inks, not only ProfileMaker can make use of PANTONE inks, but also it can use any kind of non-PANTONE special ink, while more and more modern software are locked and try driving the whole Packaging market to bad proprietary solutions using uselessly expensive and locked measurement instruments.

Without much success, because all ProfileMaker users would never move to these kinds of solutions, and don't need to move because ProfileMaker is a very opened and flexible software! Do not trade in your ProfileMaker software and get trapped!

How to create a new print standard?

A properly made ICC profile characterizing your print configuration and containing your press spectral characterization file, is the best way for documenting any print standard, because this ICC profile contains a large part of the information you need when you need adjusting a press for matching this ICC profile.

Of course, using this ICC profile for repro work is only valid for print runs where the press is set in the same conditions where this ICC profile has been established.

So that before computing any ICC profile characterizing any new print standard, you first need fixing intelligently all your press setting parameters, and then recording, storing and publishing these parameters.

Here again, Colorsource press setting applications not only allow you matching the existing print standards such as ISO 12647-x CMYK standards, but also, they allow you creating your own CMYK or N-Colors print standards when it comes to optimizing your printing forms and press adjustments by:

- Fixing smartly your standard target solid colors, in order to get the best possible color gamut while maintaining high enough print contrast.
- Fixing smartly your standard target TVI curves and compute the appropriate printing forms gravure correction curves.

Of course, if you can properly optimize your press density settings without using the Colorsource dedicated software, our free **ICC_Normalize** applications will still perfectly work for you. But you should really take the time for testing Colorsource press setting applications, because they make your press setting optimization job very easy, fast and accurate, and for a very low cost.

When your press is set properly for matching your target colors and TVI curves, you can retain a few good copies matching your new print standard and then measure spectrally the press characterization CMYK or N-Colors chart on each copy, **and then average a few press characterizations spectral measurement files** using MeasureTool.

You can now compute your press CMYK or N-Colors ICC profile using ProfileMaker, which we will name the **“RAW standard ICC profile”**.

And now is the time for using your free **ICC_Normalize** application.

The role of ICC_Normalize application:

Because you have set your press matching your new standard target TVI curves, your press spectral characterization measurement file, and consequently your **“RAW standard ICC profile”**, should contain exactly these target TVI curves.

But in real world, you will always find small differences between your standard target TVI curves and the TVI curves of your average press spectral characterization file.

This means that your **“RAW standard ICC profile”** does not characterize your press matching your ideal new print standard TVI curves: This RAW ICC profile is describing a press matching the TVI curves found in this profile, which are slightly different from the ideal standard target TVI curves you initially aimed at.

But no problem: Your **ICC_Normalize** application allows you opening your press characterization spectral measurement file, **and then computing the ideal press ICC profile you would have got if your reference test print run would have perfectly matched your target TVI curves.**

This allows you keeping your standard target TVI curves unchanged, and by the way it minimizes the color dispersions of all future production print runs that will aim at your new standard ideal specifications.

ICC_Normalize application allows you as well documenting your new standard with ALL important press configuration details including:

- Customer, media and products information,
- Measurement conditions,
- Target inks colors and spectral data,
- Inks draw down Lab colors at x%
- Target TVI curves,
- Inks superimpositions of interest,
- Inks print sequence (color sequence), screen angles and screening characteristics,
- Spectral data of inks and media for the ink formulation,
- Inks and media spectral data you can use with **SPOT_Color_Manager** application for inks quality control at reception (i.e., BEFORE you install any ink on your press!)
- Typical control bar for press setting and proof and print control.

Many of above data can be easily exported as MeasureTool, Colorlab and ProfileMaker compatible CGATS text files.

These data can as well be exported as a final single Excel sheet that you can store and send by e-mail to all your Partners. This sheet can as well print as a single A4 page. Moreover, its data can be used by simple cut and paste to Colorsource inks quality control and press setting applications for subsequent production print runs that need matching your new standard.

Once you have declared your official standard ideal target TVI curves, you can press the Export button in order to save the text file that will allow you editing the “**RAW press ICC profile**” TVI curves in order they perfectly match the ideal standard target TVI curves you have declared here.

You will find the practical details about how to use this profile normalization text file with ProfileMaker ProfileEditor module in order to produce your **Normalized standard CMYK or N-colors ICC profile** at the end of this document.

Print_standard_Specifications tab:

This is where you should input all the technical details about your new print standard.

You should take the necessary time to input ALL relevant details, because you or your partners will need all these details for any future production run that should match your newly created print standard.

You can use the tab key of your keyboard for fast navigation in the menus.

SPECIFY AND THEN PUBLISH YOUR 7 COLORS PRINT STANDARD:

Customer: **Gambling domestic products** Product: **SuperSoap_2015** Date: **08/04/2014**

Print technology: **Offset** Screening: **Classic AM** (More details about screening to be supplied below)

Print media, reference and vendor: **White_coated_cardboard_450g**

Spectral characterization file of the density calibrated press: **Offset_heptachromie.txt**

Name of the RAW ICC profile: **Heptachromy_white_coated_RAW** Name of the normalized ICC profile: **Heptachromy_white_coated_Normalized**

Measurement conditions:


45/0° geometry measurement. Spectral measurements are mandatory. Lab D50 2° colors. Relative densities without polarizing filter. Do not use XRGGA so called measurement standard.

Print measurement backing: **Self Backing (Recommended)**

Name, reference and vendor of the special backing media: **No special backing required**

Measurement instrument: **Eye-One Pro 2** Spectrophotometer light source: **A (M0) (Recommended)**

Solid inks colors:



These colors are the one held in the ICC profile you have made by measuring your reference test print run. They will keep unchanged when editing your ICC profile TVI curves for matching your ideal standard TVI curves.

Your inks are sorted hereafter by tint angle. The last displayed ink is the darkest one.

Solid inks (100%)		Target colors held in the ICC profile				Status I	Initially aimed colors (For information)		Inks at: 40%				
		Nom de l'encre											
CLR_1	CLR_2	CLR_3	CLR_4	CLR_5	CLR_6	CLR_7	CLR_1	CLR_2	CLR_3	CLR_4	CLR_5	CLR_6	CLR_7
		L	a	b	Relative density			L	a	b	D	%	
		Sun-Cyan_015	59.0	-37.9	-46.0	1.28		CLR_1	80.0	-17.0	-18.9	0.35	59.0%
		Sun-Violet_044	47.6	-46.2	-32.0	1.12		CLR_6	75.8	19.1	-13.0	0.34	59.0%
		Sun-Mag_018	55.1	65.8	-1.9	1.15		CLR_2	77.8	27.8	-1.4	0.34	59.0%
		Sun-Orange_072	70.6	65.9	75.4	1.34		CLR_7	83.6	26.0	26.4	0.36	59.0%
		Sun-Yellow_024	93.2	-6.8	93.0	1.29		CLR_3	95.0	-5.5	40.4	0.35	59.0%
		Sun-Green_hexa	69.5	-65.6	23.4	1.03		CLR_5	84.3	-28.6	11.1	0.33	59.0%
		Black	18.0	-0.5	-0.8	1.61		CLR_4	68.7	-1.0	0.7	0.37	59.0%
Darkest=CLR_4													
MEDIA			96.4	-0.7	3.7	3.8	100.9						

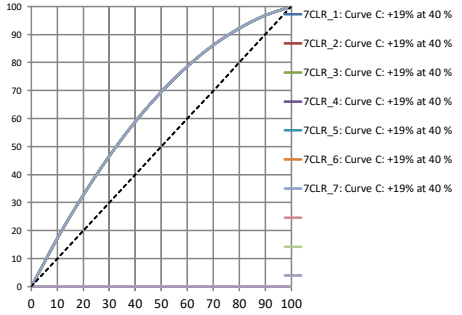
Notes :
These profile contained Lab solid inks colors and spectra will be retained as the final standard target colors.

Press target TVI curves:

These are the arbitrary target TVI curves you have used for producing you reference test print. They have been used with SPOT_Gravure application for computing you printing forms gravure curves.

Mind your press ICC profile will perfectly match these target TVI curves ONLY if you edit it with ProfileEditor using the text file generated in the "ICC_Profile_Normalization" tab.

	7CLR_1	7CLR_2	7CLR_3	7CLR_4	7CLR_5	7CLR_6	7CLR_7
0	0	0	0	0	0	0	0
10	17.3	17.3	17.3	17.3	17.3	17.3	17.3
20	32.8	32.8	32.8	32.8	32.8	32.8	32.8
30	46.7	46.7	46.7	46.7	46.7	46.7	46.7
40	59	59	59	59	59	59	59
50	69.6	69.6	69.6	69.6	69.6	69.6	69.6
60	78.7	78.7	78.7	78.7	78.7	78.7	78.7
70	86.3	86.3	86.3	86.3	86.3	86.3	86.3
80	92.3	92.3	92.3	92.3	92.3	92.3	92.3
90	96.9	96.9	96.9	96.9	96.9	96.9	96.9
100	100	100	100	100	100	100	100





The data in this Excel export can be used directly with Colorsource press setting applications:

FINAL SPECIFICATIONS OF THIS 7 COLORS PRINT STANDARD:

Customer: Gambling domestic products Product: SuperSoap_2015 Date: 08/04/2014

Print technology: Offset Screening: Classic AM (More details about screening to be supplied below)

Print media, reference and vendor: White_coated_cardboard_450g

Spectral characterization file of the density calibrated press: Offset_heptachromie.txt

Name of the RAW ICC profile: Heptachromy_white_coated_RAW

Name of the normalized ICC profile: Heptachromy_white_coated_Normalized

Measurement conditions:

45/0° geometry measurement. Spectral measurements are mandatory. Lab D50 2° colors. Relative densities without polarizing filter. Do not use XRGB so called measurement standard.

Print measurement backing: Self Backing (Recommended)

Name, reference and vendor of the special backing media: No special backing required

Measurement instrument: Eye-One Pro 2

Spectrophotometer light source: A (M0) (Recommended)

Solid inks colors:



http://www.iso12647solution.com/Downloads_and_links.htm

These are the solid colors to be matched by density adjustment for any production print run that should match this print standard. These colors can be copied and pasted to SPOT_Gravure application for matching easily the present standard during subsequent production runs. When printing CMYK or else 4 inks, you can as well use the control bar values generated below as Custom colors for CMYK_100% application.

Your inks are sorted hereafter by tint angle. The last displayed ink is the darkest one.

Solid inks (100%)	Target colors held in the ICC profile	Status I	Initially aimed colors (For information)	Inks at: 40%	D	%
Nom de l'encre	L a b			L a b		
CLR_1	Sun-Cyan_015 59.0 37.9 -46.0	1.28		CLR_1 80.0 -17.0 -18.9	0.35	59.0%
CLR_6	Sun-Violet_044 47.6 46.2 -32.0	1.12		CLR_6 75.8 19.1 -13.0	0.34	59.0%
CLR_2	Sun-Mag_018 55.1 65.8 -1.9	1.15		CLR_2 77.8 27.8 -1.4	0.34	59.0%
CLR_7	Sun-Orange_072 70.6 55.9 75.4	1.34		CLR_7 83.6 26.0 25.4	0.36	59.0%
CLR_3	Sun-Yellow_024 93.2 -6.8 93.0	1.29		CLR_3 95.0 -5.5 40.4	0.35	59.0%
CLR_5	Sun-Green_hexa 69.5 -65.6 23.4	1.03		CLR_5 84.3 -28.6 11.1	0.33	59.0%
Darkest=CLR_4	Black 16.0 -0.5 -0.8	1.61		CLR_4 68.7 -1.0 0.7	0.37	59.0%
MEDIA	L a b c h	96.4 -0.7 3.7 100.9				

Press target TVI curves:

These curves are your press target TVI curves for matching this print standard. They can be used with SPOT_Gravure application for matching the solid inks colors and then computing each printing form gravure correction curve.

	CLR_1	CLR_2	CLR_3	CLR_4	CLR_5	CLR_6	CLR_7
0	0	0	0	0	0	0	0
10	17.3	17.3	17.3	17.3	17.3	17.3	17.3
20	32.8	32.8	32.8	32.8	32.8	32.8	32.8
30	46.7	46.7	46.7	46.7	46.7	46.7	46.7
40	59	59	59	59	59	59	59
50	69.6	69.6	69.6	69.6	69.6	69.6	69.6
60	78.7	78.7	78.7	78.7	78.7	78.7	78.7
70	86.3	86.3	86.3	86.3	86.3	86.3	86.3
80	92.3	92.3	92.3	92.3	92.3	92.3	92.3
90	96.9	96.9	96.9	96.9	96.9	96.9	96.9
100	100	100	100	100	100	100	100

Superimpositions of interest:

Here are the inks superimpositions you should check at press setting: they are the successive superimpositions of you inks sorted by order of tint angles.

D50 2°	L a b
CLR_1+CLR_6	28.9 21.1 -55.8
CLR_6+CLR_2	36.9 58.2 -15.0
CLR_2+CLR_7	51.7 69.2 49.3
CLR_7+CLR_3	71.2 53.3 90.5
CLR_3+CLR_5	65.1 -64.1 60.0
CLR_5+CLR_1	48.5 -72.3 -4.9

ICC profile normalization file: H:\Mes Documents\20140804_7_CLR_STD_for_TVI_normalization_Offset_heptachromie.txt

Inks print sequence and screen angles:

Offset	Print order:	Screen angles	Screening: Classic AM
CLR_1	2	75	
CLR_6	3	90	
CLR_2	4	105	
CLR_7	5	75	
CLR_3	6	90	
CLR_5	1	45	
Darkest=CLR_4	7	45	

Spectral data for the inks formulation:

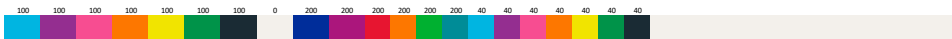
File specifying the inks and media spectral data: H:\Mes Documents\20140804_7_CLR_STD_for_inks_formulation_Offset_heptachromie.txt

Inks quality control at reception:

You will find hereafter the media and solid inks spectral data that SPOT_Color_Manager application needs for controlling you inks quality at reception. This control should be done before mounting your inks on your press, by putting them first at 100% (any reasonable thickness) on your media. SPOT_Color_Manager application with then check all your target solid colors can be matched and will warn you of any problem with the inks formulation such as metamerism.

MEDIA	0.0576	0.2205	0.3843	0.5492	0.7393	0.8807	0.8723	0.8626	0.8638	0.8662	0.872	0.883	0.894	0.902	0.908	0.911	0.912	0.911	0.914	0.914	0.916	0.916	0.916	0.916	0.914	0.915	0.915	0.912	0.91	0.911	0.912	0.914	0.912	0.914	0.912	0.912
Sun-Cyan_015 (CLR_1)	0	0.1034	0.2194	0.3376	0.4659	0.5741	0.6526	0.7059	0.7293	0.7298	0.725	0.71	0.69	0.666	0.656	0.643	0.638	0.633	0.629	0.625	0.621	0.617	0.613	0.609	0.605	0.601	0.597	0.593	0.589	0.585	0.581	0.577	0.573	0.569	0.565	0.561
Sun-Mag_018 (CLR_2)	0.076	0.1211	0.1665	0.2126	0.2673	0.3047	0.2952	0.2725	0.2448	0.2146	0.183	0.155	0.135	0.116	0.096	0.084	0.085	0.086	0.078	0.072	0.069	0.242	0.45	0.669	0.811	0.871	0.884	0.902	0.903	0.91	0.901	0.903	0.904	0.904	0.899	0.893
Sun-Yellow_024 (CLR_3)	0.0461	0.0472	0.0483	0.0495	0.0522	0.0518	0.0519	0.0596	0.0731	0.0866	0.113	0.152	0.369	0.618	0.802	0.875	0.898	0.908	0.91	0.915	0.917	0.92	0.92	0.921	0.922	0.92	0.92	0.918	0.914	0.908	0.909	0.912	0.915	0.916	0.913	0.912
Sun-Black_032 (CLR_4)	0.0174	0.0192	0.021	0.0228	0.0254	0.0264	0.0263	0.0263	0.0265	0.0265	0.0265	0.026	0.026	0.027	0.026	0.026	0.026	0.026	0.025	0.025	0.024	0.024	0.025	0.025	0.024	0.024	0.024	0.025	0.026	0.027	0.028	0.028	0.028	0.028	0.028	
Sun-Green_hexa (CLR_5)	0.0358	0.0549	0.074	0.0932	0.1159	0.1319	0.1447	0.169	0.2038	0.2535	0.34	0.483	0.635	0.713	0.711	0.663	0.593	0.508	0.415	0.331	0.259	0.195	0.143	0.111	0.088	0.095	0.094	0.096	0.105	0.12	0.139	0.158	0.172	0.179	0.182	0.193
Sun-Violet_044 (CLR_6)	0.0627	0.1381	0.2139	0.2906	0.3795	0.4439	0.4328	0.4036	0.3689	0.3288	0.28	0.229	0.186	0.147	0.108	0.082	0.079	0.082	0.076	0.076	0.113	0.202	0.298	0.346	0.337	0.331	0.377	0.469	0.577	0.671	0.74	0.787	0.816	0.832	0.839	0.844
Sun-Orange_072 (CLR_7)	0.056	0.0563	0.0566	0.0569	0.0596	0.0578	0.0559	0.0471	0.0458	0.0461	0.047	0.049	0.053	0.058	0.063	0.072	0.094	0.148	0.262	0.51	0.772	0.884	0.9	0.926	0.938	0.942	0.945	0.946	0.943	0.941	0.945	0.951	0.956	0.959	0.956	0.952

Control bar:



Control bar reference text file: H:\Mes Documents\20140804_7_CLR_STD_control_bar_reference_text_40%_Offset_heptachromie.txt

Control bar target colors measurement file: H:\Mes Documents\20140804_7_CLR_STD_Default_Control_bar_target_colors_40%_Offset_heptachromie.txt

Normalizing your RAW press ICC profile using ICC_Normalize with ProfileEditor application:

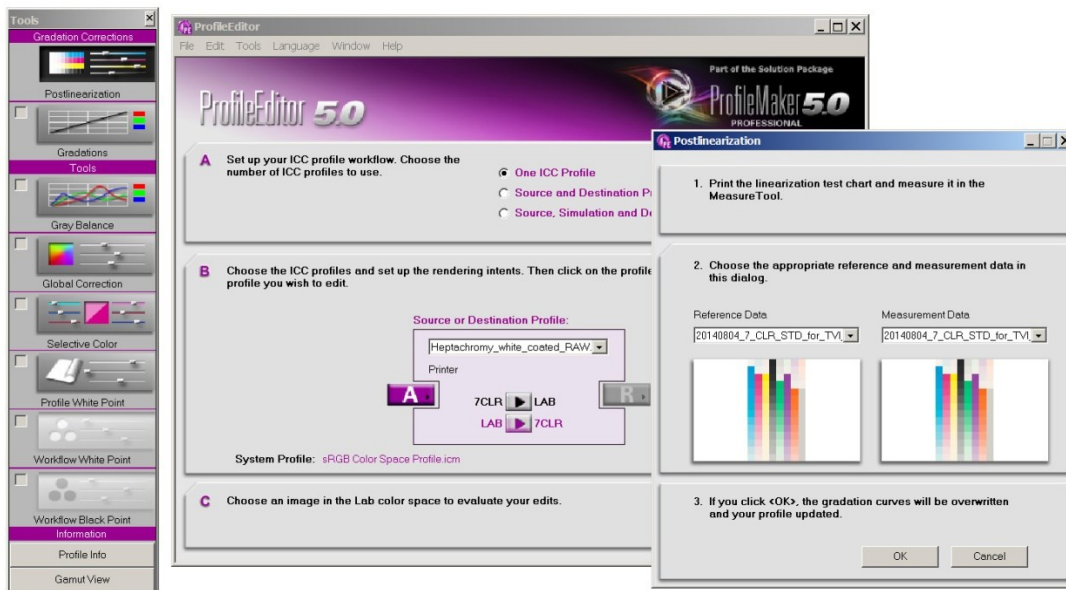
If you open sample press characterization file “Offset_heptachromie.txt” and choose **Curve C** as the common target TVI curve for all 7 inks in the **ICC_Profile_TVI_Normalization** tab, you can export a profile normalization file named: [DATEyyyymmdd]_7_CLR_STD_for_TVI_normalization_Offset_heptachromie.txt

i.e., **20140804_7_CLR_STD_for_TVI_normalization_Offset_heptachromie.txt on August 2014 4th.**

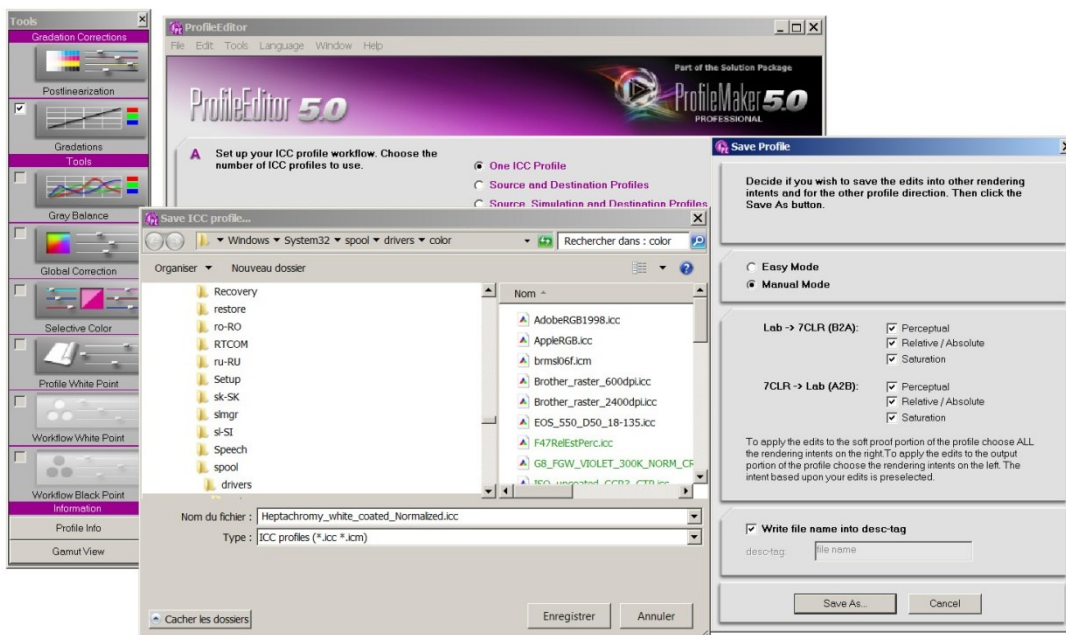
(You can choose a different file name but using default file names is convenient)

For normalizing your **RAW** press ICC profile, open it in ProfileEditor application, click on “A Lab →7CLR” and then on **Gradation Correction** in ProfileEditor toolbar.

Then drag and drop your profile normalization file **TWICE** on the Post linearization window:



Then click OK and then make File/Save As ...ICC profile:



You can now save your normalized ICC profile. Done.

Sample worked examples:

You will find with the software distribution a sample 7 colors press characterization file where TVI curve C was aimed at for all 7 inks.

You will find as well a 6 CLR CMYK + Orange + green file made by measuring a color chart printed in a repro house on a repro test offset press: All six TVI curves are nice, but they are all different because mastering repro test presses TVI curves is not easy. No problem: You can compute the 6 CLR profile and normalize its 6 TVI curves on a same common standard target TVI curve, in order to publish a simple standard with one single target TVI curve for all inks.

Known bugs:

When you export CGATS text files or your Excel print standard specifications using **ICC_Normalize** export buttons, convenient automatic file names are generated and of course you can modify these file names.

When using automatic file names (the most convenient way) **please note that if a file name with same name is already opened, your new file will not be saved, without error message, if a file with same name is already opened.**

So that you should rather open the generated Excel print standard specification file only after your work of specifying your new standard is finished, or close this Excel file if you need to generate it again with modified specifications and same name.

Future:

Of course, many future developments and improvement are possible.

For answering a frequent question, we are not present on any social network, because we consider all major social networks infringe the most basic privacy requirements, steal your personal data, and sell your personal information to Companies who not only spam you but spam as well all your relations on these social networks!

Moreover, it has been proven they ALL have opened your personal data to spying organization such as NSA that are actively contributing to the expansion of terrorism in the world, while wasting billions of dollars that could be much better used for establishing more cooperation and security.

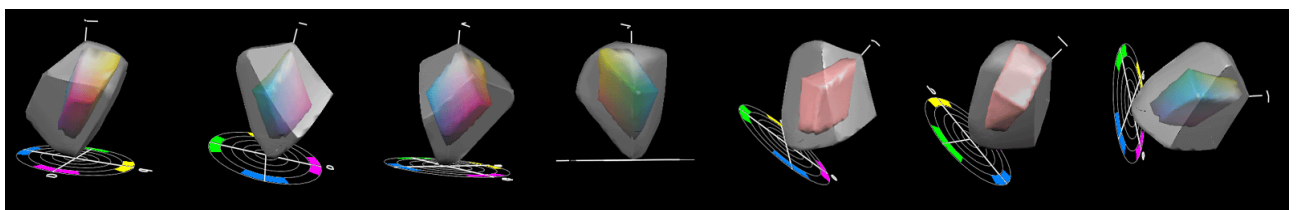
You can contact us so easily by phone or by e-mail! So, we do not see any interest into feeding all these social networks fat shareholders!

Best regards,



Wilfrid Meffre

wme@color-source.net

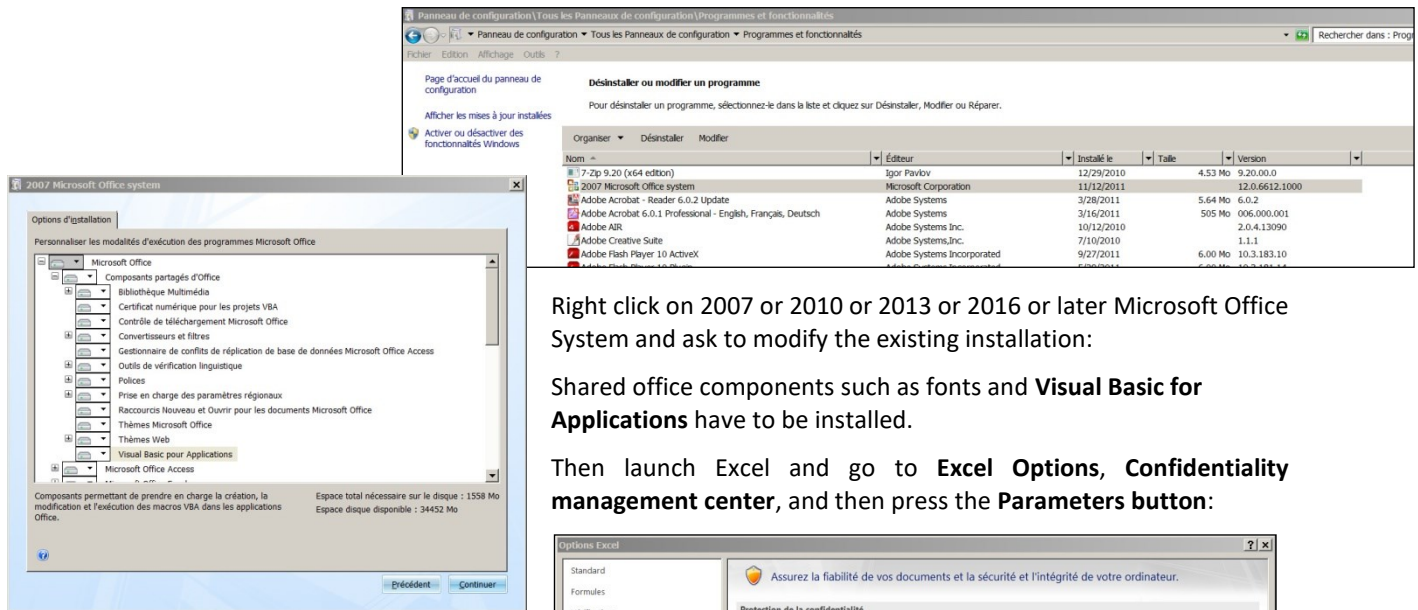


Troubleshooting and FAQs:

Colorsource applications are using Microsoft Excel for computing engine. Use **Microsoft Excel 2007, Excel 2010 or Excel 2013, 2016, 365 or later**.

Please note that Excel (or Microsoft Office) should be installed with appropriate Microsoft Office components including Visual Basic, otherwise the application will not launch.

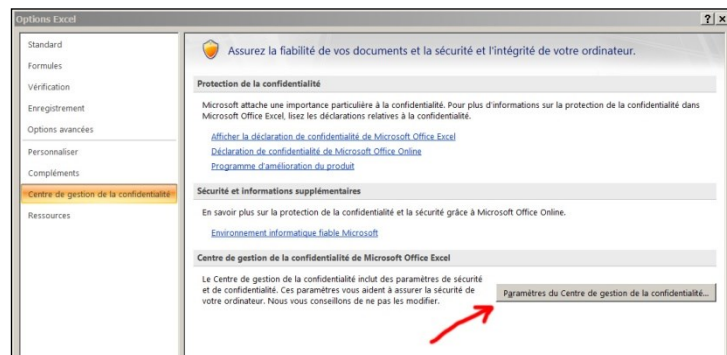
Sometimes optional components of Microsoft Excel (depending on your Excel version and installation kit) **MUST** be installed. If needed go to Windows Control Panel, in the program's installation menu:



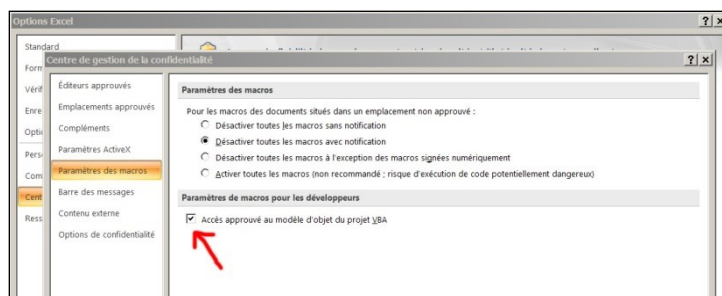
Right click on 2007 or 2010 or 2013 or 2016 or later Microsoft Office System and ask to modify the existing installation:

Shared office components such as fonts and **Visual Basic for Applications** have to be installed.

Then launch Excel and go to **Excel Options, Confidentiality management center**, and then press the **Parameters** button:



You HAVE TO approve the access to object model of VBA project:



Check your Excel version is installed with all most recent Microsoft updates.

For checking Excel is up to date, go to **Excel/Options/Resources** (Excel 2007), or go to **Excel/File/Help** or to **Excel/File/Account** and then press the « **Search for updates** » button.

Finally, if the application does not launch, disable your antivirus: There are no problems with most of the serious antivirus applications (including Windows native protection systems, free antivirus like Avira, AVG etc.) but some rare antivirus applications may prevent the application launching.

Make a test by disabling your antivirus and if necessary, change of antivirus program if your present application is the problem.

The application shows error messages such as “#####” or strange curves in the result display tabs once I have pasted my data:

Check you have opened a **spectral** data, and not Lab data press characterization text file by having erroneously recorded Lab data with MeasureTool or i1Profiler.

Results tabs display too small or too large on my monitor:

Press “Ctrl” key and use the mouse wheel for zooming in or out, and then save your application (“Ctrl s”).

You can as well mask the Excel commands ribbon or use Excel Full screen display mode, and then save your application (“Ctrl s”). You can switch back from full screen display mode by pressing Escape key.

Any other question or suggestions? Please ask!

support@color-source.net

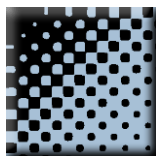


ICC_Normalize

CMYK_Print_&_Proof



PLATE



MagicPress



MagicPrepress



SPOT_Color_Manager



ICC PROFILE CONVERTOR...

