basICColor *demon*

Reference Manual

Content

Chapter 1

Preface

1. Preface

With the purchase of *basICColor demon* you have received a product that will allow you to use ICC-DeviceLink and Abstract profiles.

Colormanagement systems transform color data from source to destination. This is done by using a special intermediate color space which connects source space with the destination space. By doing this transformation, some source specific informations, like the printed true black-only text, may be lost.

DeviceLink profiles are direct connections of source and destination data, without the need of using an intermediate space. In DeviceLink profiles therefore special needs of a workflow can be taken into account. In the example above, this would be preserving the true black-only text.

Abstract profiles are profiles that are inserted between a „normal“ profile conversion. The effect of Abstract profiles can mostly be compared to using a filter. With them, pictures can e.g. be colorized or decreased in tonal range.

The use of DeviceLink or Abstract profiles is not possible in most user applications. Only specialized RIP- or workflow-systems allow the use of DeviceLink or Abstract profiles.

basICColor demon will allow the direct use of DeviceLink or Abstract profiles in a lot of user applications, because it installs itself as a standard CMM into the host colormanagement system.

The only requirement of the user application is that it uses the system color management, and that the user can select the color management module (CMM, engine) to be used.

Chapter 2

Installation And Licensing

2. Installation and Licensing

2.1. Minimum System Requirements

Apple Computer

- Apple® with G4 / G5 processors
- Mac OS X (10.4.11 or higher)
- minimum 256 MB available system memory (RAM)

- Apple® with Intel® processors
- Mac OS X (10.4.11 or higher)
- minimum 512 MB available system memory (RAM)

Windows®

- Intel® Pentium® III or 4 processor
- Windows® XP with SP2 or Windows® Vista
- minimum 512 MB available system memory (RAM)

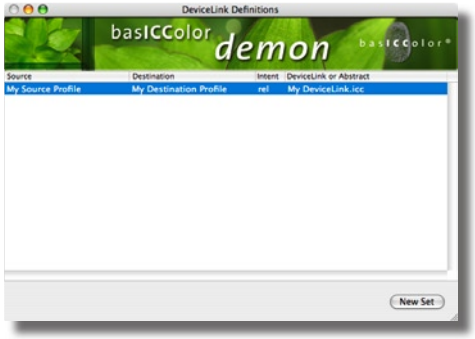
All Systems

- Minimum 100 MB free hard disk space
- CD-ROM drive (for installation)
- Colormonitor with a minimum resolution of 1024 x 768pixels and a color-depth of 24-bit (16,7 million colors)

Knowledge requirements:
These instructions assume familiarity with the basic operation of the Mac OS X on Apple Macintoshes or Windows XP or Vista on PC operating systems.

Documentation:
This documentation describes the use of *basICColor demon* on Mac OS X and Windows. Mostly the Mac OS X version will be covered here, where the screenshots come from as well.

If the usage differs to Windows, notes will point out this differences.



Information:
With the installation *basICColor demon* a series of predefined DeviceLink sets will be installed.

These sets will not be shown in the screenshots in this manual for a better demonstration.

Depending on the sort of license you have for *basICColor demon*, the amount of pre defined sets will differ.

2.2. Installation

1.) Turn on the computer on which you wish to install and use the software.

2.) Put the *basICColor* CD into the CD-ROM drive.

- **Mac:** The *basICColor*-volume with all *basICColor* products will appear on your desctop.

- **PC:** If the *basICColor* CD-ROM does not appear automatically, go to "My Computer" and select the CD-ROM drive.

3.) Begin the installation by double-clicking the *basICColor demon* Installer. Follow the instructions on screen.

4.) Once *basICColor demon* has been successfully installed, you can launch it for the first time.

5.) Start *basICColor demon* by double-clicking the program-icon.

Note: 14-Days-Demo-License

The basICColor GmbH provides you the ability to tryout *basICColor demon* for 14 days. The software can be used fully functional.
A 14-days demo license is available through the *basICColor* license server (http://license.basiccolor.de) and is bound to one computer.

2.3. Product registration and licensing

Licensing and unlocking *basICColor demon* software is linked to an individual computer. You will receive an individual license file (.lic-file) that allows you to "unlock" and use the software on the computer on which it was installed.

The first time you start *basICColor demon*, the "Licensing" window will pop up.

You have the option of testing the fully functional software without any obligation for **14 days** or of immediately requesting your **permanent** license file if you have purchased *basICColor demon*.

a) If your computer is directly connected to the internet, simply click the <License...> button.

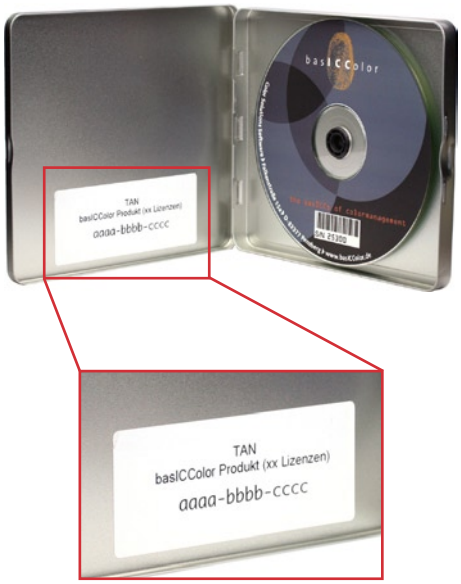
b) If your computer is not connected directly to the Internet, use a different computer to access ***license.basiccolor.de*** and click on <Licensing>. Follow the instructions on the screen.

c) If you do not have an Internet connection at all, use the <Fax Form...> button to open a PDF document. Fill it out and fax it to the fax number you find on the form.

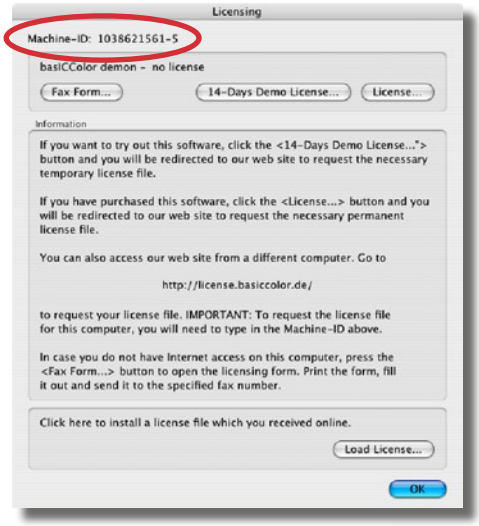
If you have never registered on the *basICColor* web site, you will need to complete the registration information in order to open your personal *basICColor* account. Your registered **e-mail** address and **password** will allow you to log on to the *basICColor* web site to request license files and to download *basICColor demon* software updates.

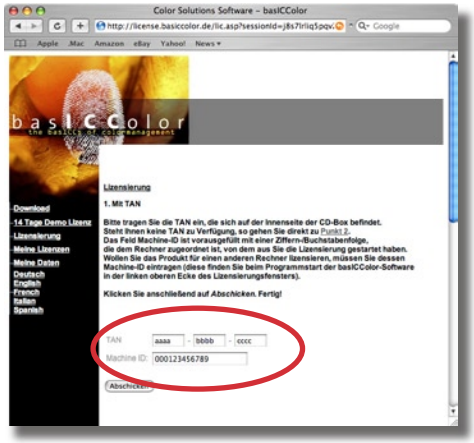
Once you are logged in you still have the option of selecting either the 14-days demo license file or the permanent software license file. Before making your selection please note:

- **TAN ...** TransActionNumber. There should be a sticker on the *basICColor* CD-ROM cover with a TAN . Alternatively or you will receive a TAN from your dealer. Once you have entered this number in the corresponding field and submitted the online form, you will be automatically directed to the area of the web site where you can download your individual license file. If your *basICColor* CD-ROM cover does not have a TAN or if you don't have a CD or don't have a TAN, then go to the <licensing without a TAN> section on the licensing web site. Your licensing request will be processed and after all technical and commercial requirements have been met, you will get access to your individual license file.



On the inside of the CD-box you can find the TAN.





For licensing your copy of basICColor demon a TAN and the machine-ID of your computer will be required.

- **Machine ID...** The number entered in this field must match the number displayed in the *basICColor demon* Licensing window topmost left since this is the number that will be used in generating your individual license file.

- **Product...** Please select *basICColor demon* from the pull-down menu if it is not selected already.

Fill out all the required information (indicated with an *) and submit the form. You will either be linked directly to the web site where you can immediately download your individual license file, or you will receive a message indicating that your request requires further verification and that you will receive an e-mail notification when your individual license file is available.

Important: Store your license file carefully! It is your key to unlock the *basICColor demon* software. You will also need this file for future software updates. This security method replaces the need for a hardware dongle. If you should lose it, you can retrieve it from the licensing server at any time again by logging into our web-site from within the application and going to the <My Licences> section.

As soon as you have received your license file (**basICColor_demon.lic**) click on the button <Load License...> and install the license file to the application. Now the application is unlocked and ready to use.

Restart the software.

Your license file (**basICColor_demon.lic**) is valid for all software updates and reinstallation of *basICColor demon* on that particular computer. If you wish to install *basICColor demon* on additional computers, you need to obtain a new individual license file for each one. Additional licenses can be purchased from your *basICColor* dealer or directly from *basICColor GmbH*. If you purchase a new computer on which you would like to install *basICColor demon*, you have to obtain a new permanent license file. Go to the <Licensing -> 2. Without a TAN> section on the licensing web site. Please fill in all fields (product, purchased from, CD-S/N, Machine-ID) and select <hardware replacement> from the pull-down menu.
As an alternative to using our online portal, you can also contact *basICColor GmbH* (support@basICColor.de) directly.

You can check the state of your license in the *basICColor demon* <Help->License> window. The License window appears and shows the state of your license in the top left corner.

Chapter 3

Quick-Start

3. Quick-Start

In this chapter the basic creation and handling with *basICColor demon* will be explained.

3.1 Creating sets

A color transformation (profile conversion) consists of the definition of a source where the data is coming from, a destination, where the data should be transformed to, and a conversion strategy (rendering intent, priority).

With *basICColor demon*, you assign such a conversion to a DeviceLink or Abstract profile that will be used for this conversion.

The main window

The main window of *basICColor demon* lists assignments you made, in the following called „sets“.

Use the button <New set> to open the edit dialog to make such assignments.

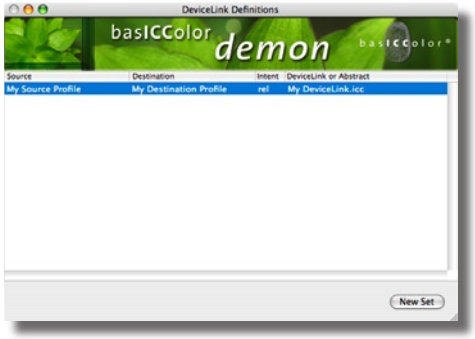
Definitions

The topmost menu is for selecting the source profile that describes where your data is coming from. In our example, a profile called „My Source Profile“ is selected.

The menu below defines the destination profile that describes the colors of the device where your data should be transformed to. In our example this is „My Destination Profile“.

The rendering intent is the conversion strategy that is used for the color transform. There are different conversion strategies, as photographs need a different approach than graphics or a proof.

Beside the four standard rendering intents, ALL can be chosen. If this is selected, every combination of source and destination profile will be replaced by the DeviceLink profile, regardless of the rendering intent.

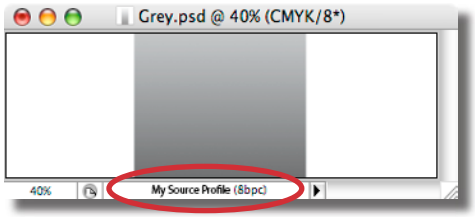


In the last menu the DeviceLink profile is defined which is used as the replacement of the combination described above.

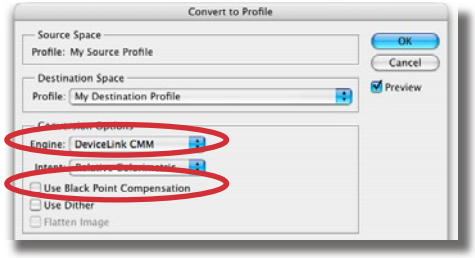
A click on the button <Add> closes the dialog and saves the set, which can be seen as a new list entry in the main window.

3.2 Usage in Adobe Photoshop

We used the two profiles „My Source Profile“ and „My Destination Profile“ as an example in the last chapter and defined that conversion to be replaced by DeviceLink conversion.



- Open an image in Adobe Photoshop that is in the source color space.
- Call the dialog <Convert to Profile>
- Your source profile will be shown topmost as the first entry („My Source Profile“).
- Select your destination profile to where you want to convert your picture to. („My Destination Profile“).
- Select the <DeviceLink CMM> for the Engine to be used.
- Select the Intent that you had assigned to the conversion source-destination in *basICColor demon*.



IMPORTANT: deselect the <Use Black Point Compensation>.

Close the dialog by clicking the <OK>button. Your image will be converted by using the DeviceLink or Abstract profile you defined in *basICColor demon*.

Chapter 4

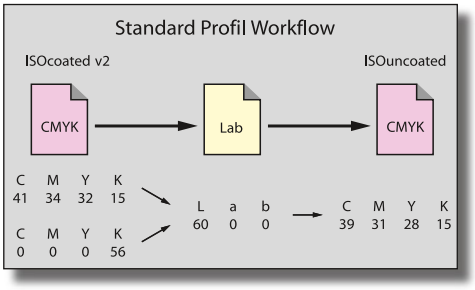
DeviceLink and Abstract Profiles

4. DeviceLink und Abstract Profiles

4.1 DeviceLink Profiles

Sometimes a workflow requires that data material must be converted to the same color space.

An example is the repurposing of CMYK layouts that were originally created for offset printing on gloss- or matte-coated paper (ISOcoated v2), but now should be used for printing on uncoated paper (ISOuncoated).

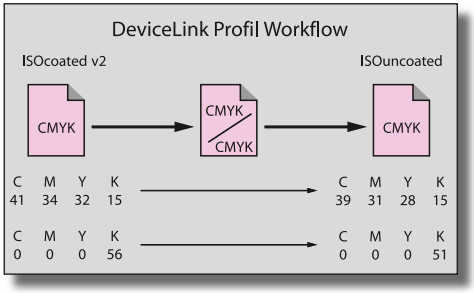


The graphics on the left is an example of the color values two grey patches might have which are visually the same. One grey patch might be in an image (topmost values), and one might occur in text that has been created as black-only (K-only) printing (lower values).

If a normal ICC-profile conversion from ISOcoated v2 to ISOuncoated is used here, the color values are first converted to the neutral profile connection space PCS (in this example Lab), then converted to the final CMYK destination space.

As you can see, a completely new separation is taking place, both grey patches result in the same CMYK values.

While the new separation is not critical for the grey patches contained in the image, the text part is built of all four printing colors now as well. If the print production process has any registration problems, the text might render unreadable.



The graphic on the left is an example for the situation where a specially DeviceLink profile is used instead of a normal two-profile conversion. It was created with the option to preserve the black-only colors.

There is no intermediate conversion taking place, thus the black text remains black-only. Solely the tonal value has been decreased to match the brightness on the new media.

One other big benefit of DeviceLink profiles are the optimized routines that come to play when a DeviceLink is created. „Normal“ ICC-profiles must be created universally, that means they must cover the whole big L*a*b* color space.

When creating DeviceLinks, the source is a known and much smaller colorspace. In the destination space not reproducable colors must be compressed more less, thus resulting in a color conversion with more details and less artefacts.

4.2 Abstract Profiles

Abstract profiles accomplish color corrections in the neutral profile connection space PCS.

By using them, color casts between different output devices can be corrected, or images can be toned cold or warm automatically.

Also imaginable is to use an Abstract profile for devive simulation. If someone created an abstract profile for ISOcoated v2 (L*a*b -> CMYK -> L*a*b*), using it intermediate is like a proof.

If a photographer uses this Abstract profile before converting his ECI-RGB images to his printer, he would achieve a print that looks very similar to a print on a professional press system..

Chapter 5

Advanced Topics

5. Advanced Topics

basICColor demon consists of two components, which will be described in the next paragraphs:

- the *basICColor demon* main program
- the DeviceLink CMM

This system enables the replacement of standard color conversions between two ICC profiles by a high quality conversion with a DeviceLink profile in certain applications.

5.1 DeviceLink CMM

The DeviceLink CMM is an Apple Mac OS X ColorSync compliant color management module (CMM) that can be used in all software applications that allow the selection of CMMs for color conversions.

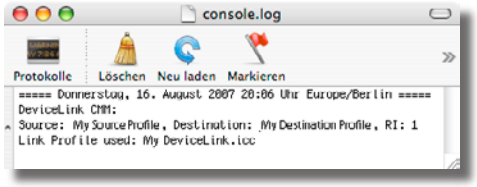
The DeviceLink CMM does not compute the color conversions itself, but relies on system installed robust and approved CMMs.

By default, the Adobe CMM will be used:

www.adobe.com/support/downloads/detail.jsp?ftpID=3617

Alternative CMMs can be used, for example the Apple CMM as well as any other CMM available on the market.

If, when called, the DeviceLink CMM finds a pre-defined combination of source and destination profile and rendering intent (in the following called „set"), it replaces this transformation by a transformation with a DeviceLink profile.



Successful conversions can be verified in the <console> application in the <console.log>.

Remark: Some applications block or delay the logging of the DeviceLink CMM to the console!

If it does not find that combination of source and destination profile and rendering intent, a „standard" profile conversion will take place.

The DeviceLink CMM is compliant with ICC-profiles of version 2 as well as version 4.

5.2 *basICColor demon*

basICColor demon is an application to configure (profile conversion) sets that will be used by the DeviceLink CMM.

A set created by *basICColor demon* consists of the allocation of source profile and destination profile and the corresponding rendering intent. Such a color conversion will be replaced by the DeviceLink CMM by a user-defined DeviceLink conversion., or the selected Abstract profile will be inserted.

A preference dialog <*basICColor demon*->Preferences> lets the user choose the preferred CMM that will be used for internal color conversions.

The use of Black Point Compensation for „normal“ conversions can be switched on or off here as well.

New sets are created by using the button <New set> in the main window.

In the edit dialog, the user chooses, from top to bottom, the source profile, the destination profile and the rendering intent for which the replacement by a DeviceLink profile should take place, or between the Abstract profile will be inserted.

The source profile menu can be filtered to selected color spaces by enabling the option <Restrict view to...>.

The destination profile menu can be restricted to profiles with the same color space as the selected source profile by enabling the option <Restrict view to same space as source profile>.

The rendering intent menu defines for which source-destination profile combinations the replacement by a DeviceLink profile or insertion of an Abstract profile will take place. Besides the four standard rendering intents perceptual, relative colorimetric, saturation and absolute colorimetric another rendering intent, <ALL>, can be chosen.

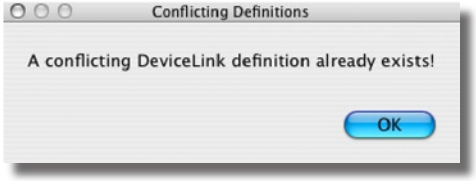
If this is the case, every combination of source and destination profile will be replaced by the DeviceLink profile, or an Abstract profile will be inserted, regardless of the rendering intent.

With the menu DeviceLink or Abstract profile the ICC profile is defined which is used as the replacement of the combination described above.

The option <Restrict to same rendering intent as selected> filters the menu in such a way that only DeviceLink profiles created for the selected rendering intent are shown.

A <double-click> on an entry in the main window opens the set in the edit mode, enabling you to modify an existing set.

Use the <delete> key for deleting a combination (set) which is marked in the main window.



The creation as well as the modification of sets will be checked for plausibility. If a set is created or modified, and another set with a similar and conflicting setting already exists, an alert will be shown, the new set will not be created or modified, and in the main window the similar set will be marked.

Example:

- There is an existing set ISOcoated - ISOcoated_v2 - relative colorimetric.
- You try to create a set ISOcoated - ISOcoated_v2 - ALL (rendering intents).

The new set is in conflict with the existing one, an alert will be shown. (ALL includes relative colorimetric).

Delete the existing set or modify it instead of adding another one.

This measure aims at keeping the database of sets small, thus enabling faster processing.

5.3 Black Point Compensation

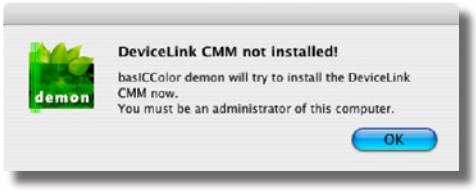
Black Point Compensation must remain switched off in the user-application as otherwise the conversion will be split into two subsequently performed conversions for which the Lab color space is used as an intermediate color space (1st: source profile - Lab und 2nd: Lab - destination profile).

If this is the case, the DeviceLink CMM cannot recognize the source-destination combination. A standard color conversion will be carried out, and all advantages of the use of DeviceLink or Abstract profiles will be lost.

Besides this, Black Point Compensation has usually already been computed when the DeviceLink profile was created and is therefore useless in most cases.

If Black Point Compensation was switched on in the preference dialog of *basICColor demon*, it will of course be used for standard (non DeviceLink or Abstract) conversions.

If you want to do standard color conversions, you can use Black Point Compensation as usual. You can choose alternative CMMs as well, no advantages or disadvantages will arise of it.



5.4 Administrator-Rights

basICColor demon as well as the DeviceLink CMM respect different user rights available on the computer to install / to use.

This means:

On first launch of *basICColor demon* the DeviceLink CMM will only be installed into /Library/ColorSync/CMMs/ if the user has administrator rights on this computer.

The dialog on the left will usually be shown if you try to install the components without having sufficiant user-rights.

basICColor demon only shows DeviceLink profiles of the location /Library/ColorSync/Profiles/.

The DeviceLink CMM will only use profiles of the location /Library/ColorSync/Profiles/.

Sets created by others than administrators will not be saved.

By this it is to be prevented that unauthorized users of a computer destroy color settings and system workflows.

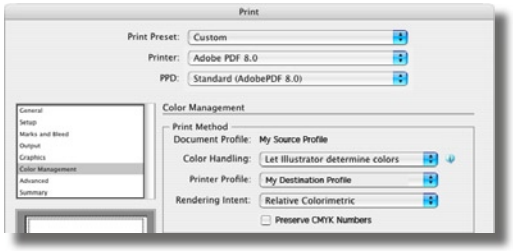
5.5 Usage in Adobe Illustrator

In Adobe Illustrator you have to select the DeviceLink CMM in the main color settings as engine.

- Select <Relative Colorimetric> as the Intent, as this rendering intent is the best for working with graphics.
- ***IMPORTANT: switch off <Use Black Point Compensation>***

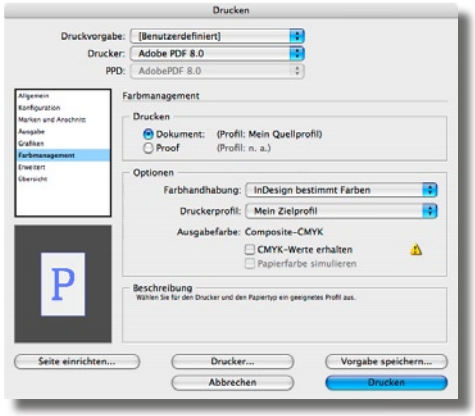
In the printing dialog you can find all relevant color settings under the category <Color Management>.

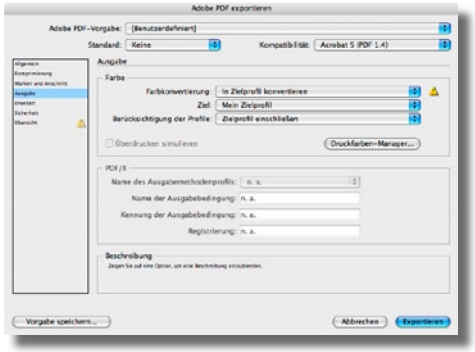
- Select <Let Illustrator determine colors> under color handling.
- Select your destination profile for the Printer Profile
- Choose <Relative Colorimetric> for the Rendering Intent.
- IMPORTANT: switch off <Preserve CMYK Numbers> if available in your Illustrator version.



If you have set up your source profile (Document Profile) - Destination Profile - Relative Colorimetric in *basICColor demon*, the conversion will take place with your assigned DeviceLink profile.

Notice: most Illustrator versions ignore the settings for the rendering intent in the printing dialog. Instead, the intent chosen in the color settings is used.





5.6 Usage in Adobe InDesign

In Adobe InDesign the color settings have to be chosen like in Adobe Illustrator.

DeviceLink or Abstract profiles can be used with *basICColor demon* for printing as well as for exporting.

Choose <Color Management> on the left in the printing dialog.

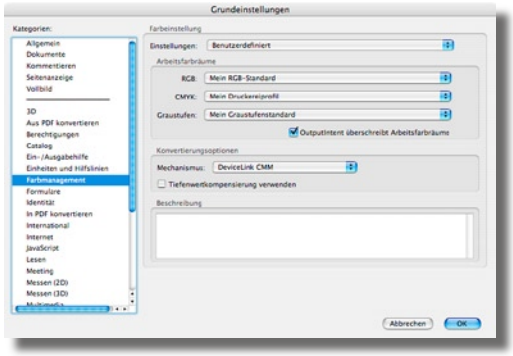
- Select <Document> under printing.
- Choose <Let InDesign determine colors>
- Select your destination profile for the printer.
- ***IMPORTANT: switch off <Use Black Point Compensation> and switch off <Preserve CMYK Numbers>.***

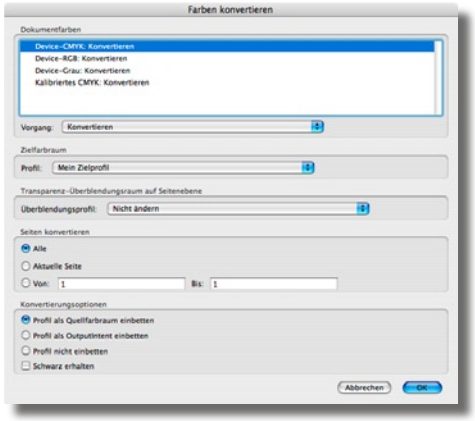
Select <Output> on the left of the PDF export dialog.

- Choose <Convert to destination profile> under color conversion.
- Choose your destination profile as destination.
- Select the option <Embed destination profile>.

Notice: The <Convert to profile> option in Adobe InDesign does not work as expected. This is not basICColor demons fault, but an InDesign issue.

The color management in Adobe InDesign CS3 or CS4 was very buggy at the time this manual was written. Please look for product updates of Adobe InDesign at a regular basis to resolve this issues.





5.7 Usage in Adobe Acrobat 8

You can find the color settings of Adobe Acrobat in the settings dialog in the category Color Management.

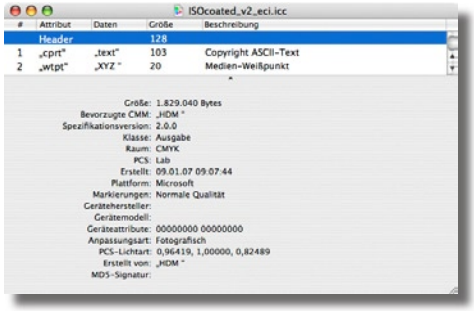
Choose your standard profiles as you need it in your workflow.

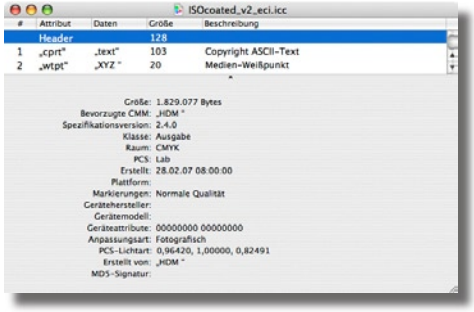
- Switch on the option <Output Intent overrides working spaces> in order to honour embedded profiles in PDF documents.
- Choose the DeviceLink CMM under the Conversion Options ->Engine.

- ***IMPORTANT: switch off <Use black point compensation>.***

You can convert colors in PDF documents by choosing Advanced->Print Production->Convert colors.

- Select the entry for the color type you want to convert.
- Choose <Convert> and select your destination profile.
- Select <Embed destination profile as source profile>





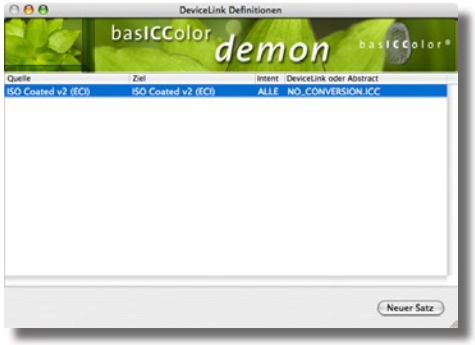
5.9 Suppressing color conversions

Sometimes it might be useful to suppress color conversions between color spaces that are quite similar. For example, there are many different ICC-profiles for the same process standard available that share the same data set.

But also with supposed equal ICC profiles, color conversions can happen. In February 2007, the European Color Initiative (ECI) released a newer version of ISO Coated v2 (ECI) that only differs from the version of January same year in the profile version.

Adobe applications determine the difference of ICC profiles not only by their internal name, but also by their version (they use that approach to only display the most current profile if more than on profile with the same name is installed in the system). So it is possible that the Adobe applications perform unwanted color conversions between these profiles. A new separation might occur in this case, which is not wanted.

While these color conversions might be obvious in Photoshop (the content of the channels changes), a user might not notice that conversions taking place in Illustrator or InDesign.



With *basICColor demon*, you now can suppress such unwanted color conversions. *basICColor demon* installes a DeviceLink profile „NO_CONVERSION.icc“, that internally does not alter the color data:

- Create a new set.
- Select source and destination, for which you would like to supress the conversion.
  Remark: If you want to solve the ISO coated v2 (ECI) problem, select ISO coated v2 (ECI) for source and destination.
- Select ALL Rendering intents.
- Select „NO_CONVERSION“ as DeviceLink profile.

Color conversions now will not take place for the selected profiles.

5.9 Addendum

The author of this software is trying to contact other software vendors in order to convince them of the benefits of DeviceLink technology and *basICColor demon*.

If there should be any news or any changes in existing programs that influence the colaboration with *basICColor demon*, you will find the latest information under *www.basICColor.de*

Kapitel 6

Product Information basICColor demon

6. Product Information basICColor demon

Software-Author: Rolf Gierling

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Any mention of names in samples or screenshots is for educational purposes only - a relation to existing organisations is not intended.

Author: Rolf Gierling
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