

11. Colour true - Calibration - ColorMunki

For the assessment and presentation of a design at the monitor and as a hard copy print or for presentation to customers, the so-called “colour true” to the original colour plays a decisive role.

SPECTRUM 4.0 provides two different possibilities for you to optimise colour presentation in your media:

11.1 Simple colour optimisation (without ColorMunki)

The SPECTRUM 4.0 full version contains a “SPECTRUM calibration kit” for optimising colour representation at the monitor.

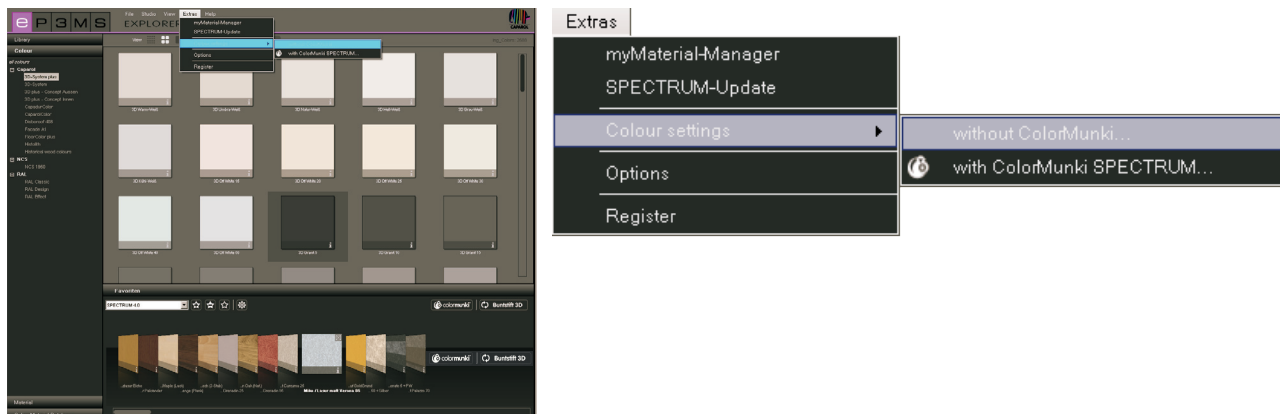


The calibration kit has 15 original samples of the Caparol 3D system that are used as comparative samples for monitor presentation. Brightness and saturation as well as the individual colour channels can be adjusted independently of one another.

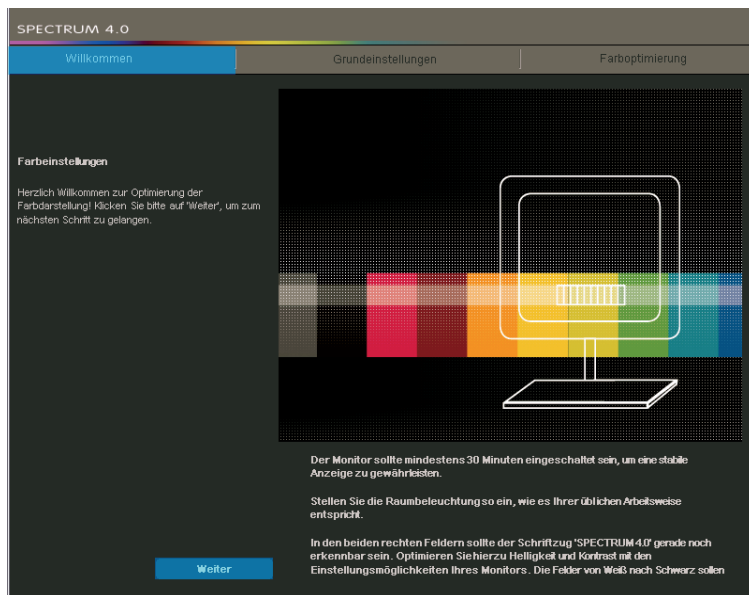
11.1.1 Calibration

In the program’s main navigation, click “Extras”>“Colour settings”>“without ColorMunki...”.

Note: The monitor should be switched on for at least 30 minutes for calibration in order to guarantee a stable display.



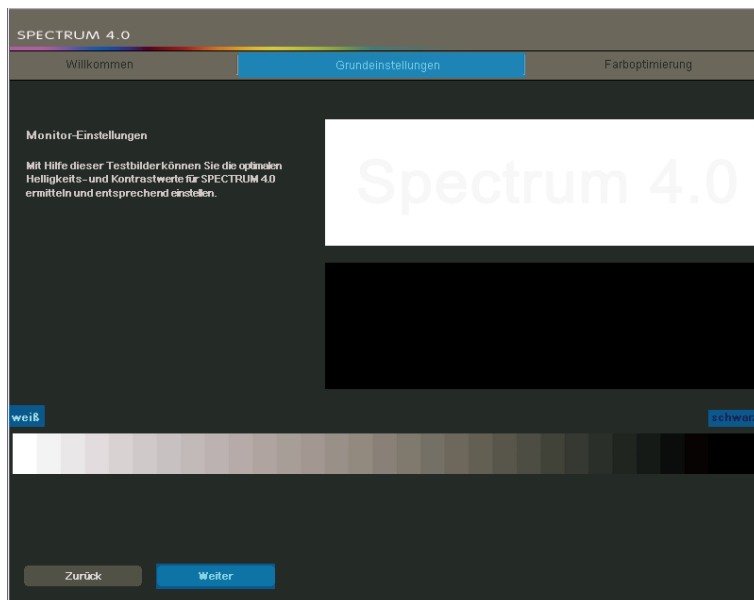
The following dialogue opens:



Click the "Next" button to reach the monitor settings.

Basic settings

Here you can check the contrast of your monitor on the basis of the two test images (white-black). The lettering "SPECTRUM 4.0" should be legible in both fields. In addition, a "harmonious" even progression from white to black should be visible at the lower gradient bar.



Click "Next" to reach the colour settings.

Colour optimisation

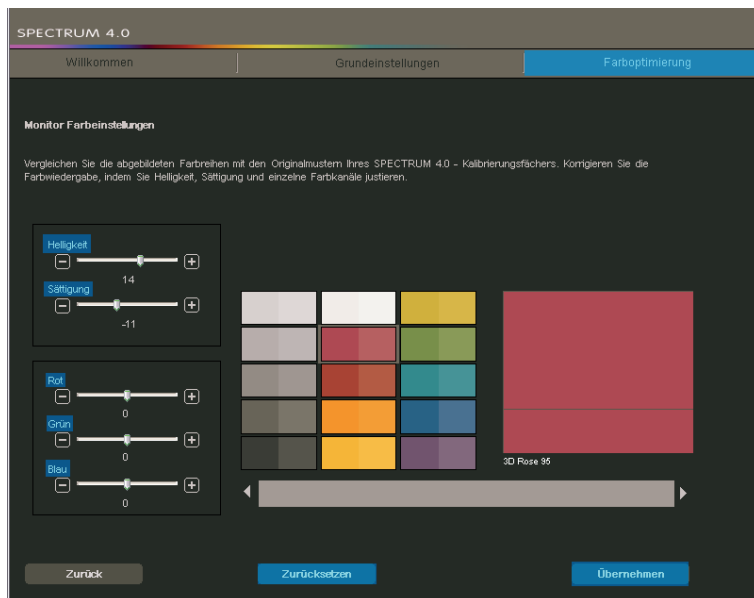
Compare the displayed colour bars with the originals in your SPECTRUM 4.0 calibration kit. Correct the display by adjusting the brightness, saturation and individual colour channels.

You can work with the trackbars “Brightness” and “Saturation” as well as the colour trackbars for the colour channels “Red”, “Green” and “Blue”. When you move a trackbar, the change affects all the colours displayed. You see the change in the right-hand half of the respective colour field, the left-hand side remains as it was for purposes of comparison.

Note: Only correct the colour channels if the grey hues shown appear reddish, bluish or yellowish. After correction the grey hues should be as neutral as possible - without any colour cast.

Also compare colour hues with the original samples in the calibration kit that comes with the SPECTRUM 4.0 program.

If you would like to accept your corrections to calibrate your monitor, click “Apply”. To reset your previous settings and/or calibrate again, click “Reset”.



Note: The setting changes carried out here only have an affect within the SPECTRUM 4.0 program.

11.2 Calibration with ColorMunki

The ColorMunki and SPECTRUM 4.0 can be used to create high-quality profiles for terminals such as monitors (displays) or printers, thus reducing material and time loss. The spectral photometer ColorMunki from the market leader X-Rite improves colour reproduction in SPECTRUM 4.0 from the word go, and optimises the colour representation of variants and presentation documents.



The SPECTRUM 4.0 ColorMunki version includes the spectral photometer X-Rite ColorMunki PHOTO for optimised colour representation on your monitor and printer.

After connection of the ColorMunki supplied, you can calibrate both monitor and printer and import colour hues directly into the software.

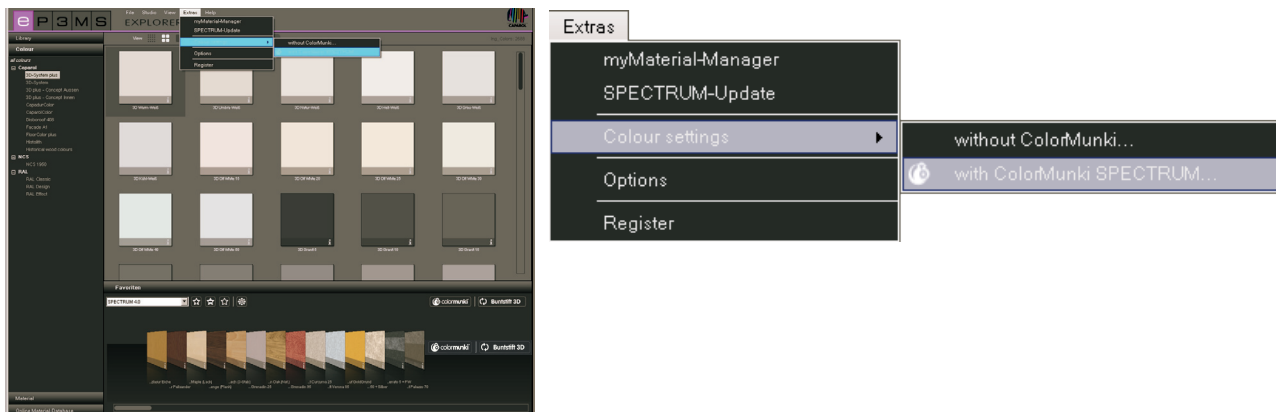
11.2.1 Activate and register the ColorMunki

To calibrate SPECTRUM 4.0, connect the ColorMunki to a functional USB slot on your PC. Install the driver required for use of the ColorMunki from the CD provided.

Note: When installing the ColorMunki, make sure you carry out the initial installation as a user with administration rights.

11.2.2 Display profiling

First of all, connect the ColorMunki to a functional USB port on your PC. In the program's main navigation, click "Extras">"Colour settings">"with ColorMunki SPECTRUM..."



If the ColorMunki has been connected correctly and is active, the following dialogue opens:

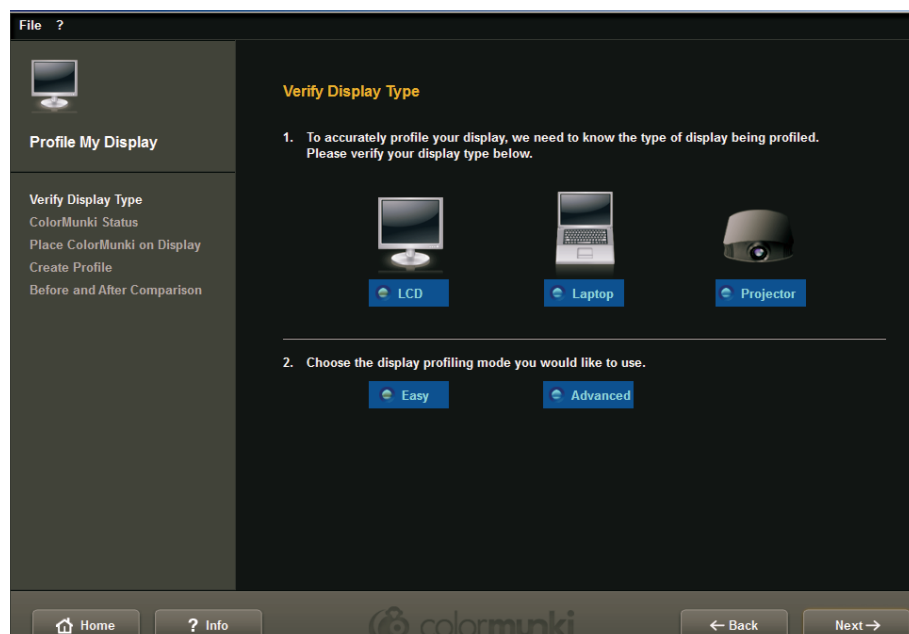


Click the “Profile my display” to select it. You are now guided through the individual steps necessary for profiling.

Select display type

First, click the “type of display” you would like to profile. You have the choice between LCD, laptop or projector.

Then in the next step decide whether you would like to carry out “Easy” or “Advanced” profiling.



Easy profiling

Easy profiling accesses basic settings that trigger standard profiling of the display. This setting is suitable if you do not want to include any special settings for ambient light and luminance in the profile.

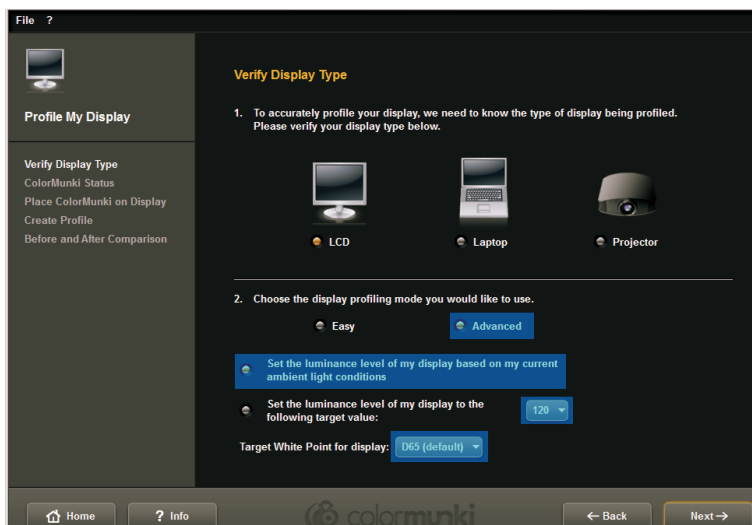
Advanced profiling

When advanced profiling is selected, you can measure the ambient light or set the luminance for your profiling manually. In addition, you can define different types of light in the white spot area.

Choose “Set display luminance for the ambient light” if you do not require any special settings for luminance. If you wish to set luminance manually, select “Set display luminance to this reference value” and then set the required luminance between 80 and 140 Candela in the field on the right.

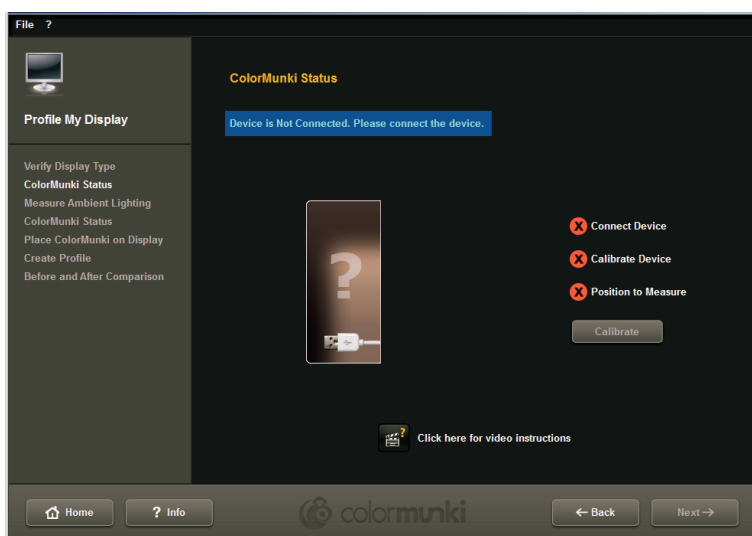
Depending on your requirements you can specify the white spot between D50, D55, D65 (standard) and native.

Then click on the “Next” button to continue profiling.



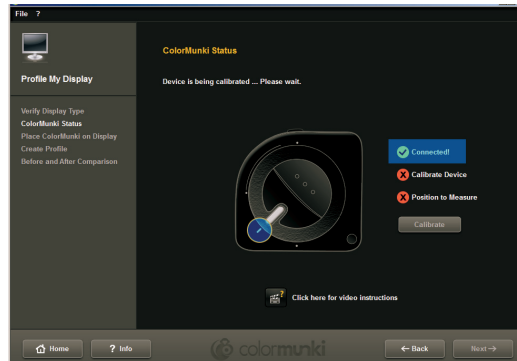
ColorMunki status

In the following “ColorMunki status” dialogue SPECTRUM 4.0 checks whether your ColorMunki is ready for a profile to be created. If the ColorMunki has not been connected to the PC correctly, the following dialogue appears:

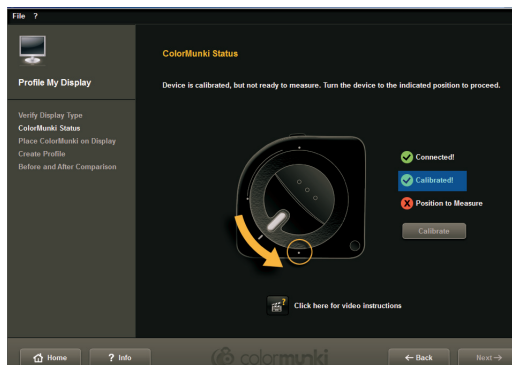


Check the connection or connect the ColorMunki to the PC using the cable provided. As soon as the ColorMunki has been connected correctly, a picture of the ColorMunki will appear with a green tick next to the ColorMunki image with status “Connected”.

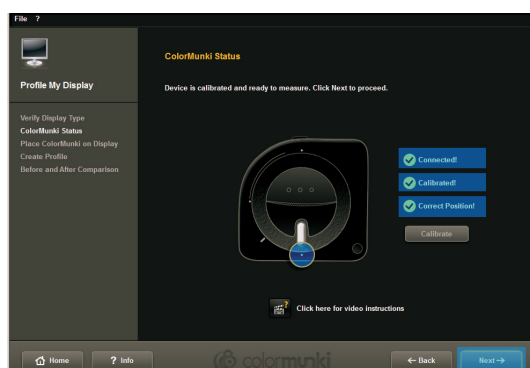
If the ColorMunki wheel is not in the right position for profiling the monitor, the ColorMunki image shows an orange arrow that points to where the wheel should be moved to.



If the ColorMunki has been connected correctly and the ColorMunki wheel brought into the right position, click “Calibrate” to start calibrating the monitor. If the calibration has been carried out correctly, a green tick will appear next to “calibrated”.



Then move the ColorMunki to the measuring position shown in the graphic. When you have set the position correctly, a third green tick will appear indicating the correct position. Then click “Next”.



Note: If you should need further information about this dialogue, you can watch the related video instructions (provided you have an Internet connection).

Fix ColorMunki to the display

In this dialogue, SPECTRUM 4.0 shows you where ColorMunki must be placed on the display.

To avoid incident light, place the ColorMunki in the sleeve provided by the manufacturer first. Then fix the ColorMunki in the position shown with the aid of the weight, so that the ColorMunki remains on the display. Click “Next”.

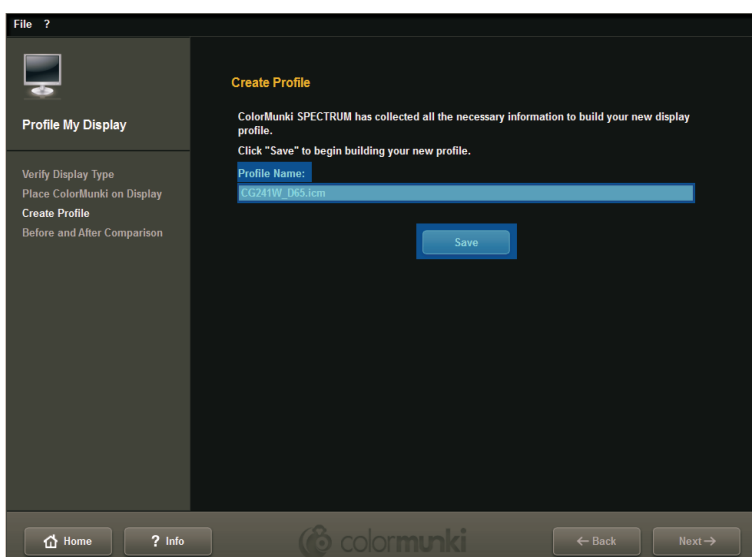


Note: If you should need further information about this dialogue, you can watch the related video instructions.

The software now outputs a series of coloured hues in different brightness to the display; these are read by the ColorMunki.

Create profile

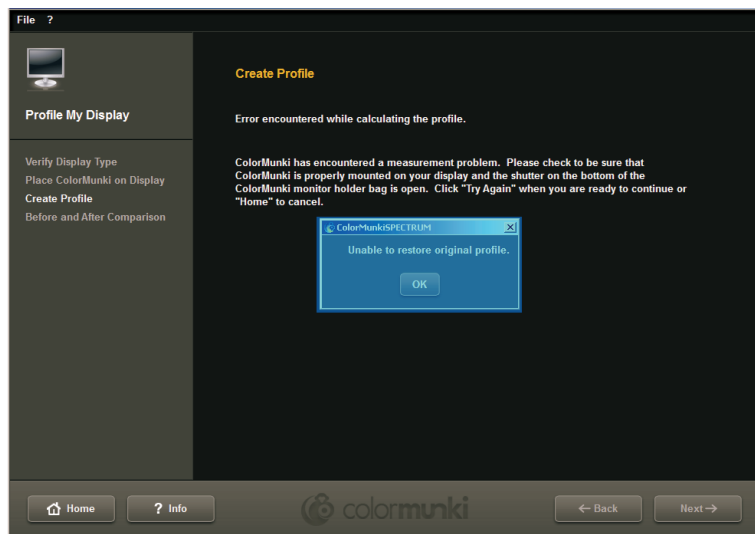
After the series of colours has been imported, the “Create profile” dialogue opens. Here, the profile created can be saved on your PC under the suggested profile name or a name you choose yourself. To do this, click “Save”.



After this, you can create a “reminder date” for the new profile. Then click “Next”.

Note: If the system has not been able to carry out the profiling process properly, the profile created cannot be saved and you will receive a message that profiling has failed. Make sure that you have the necessary

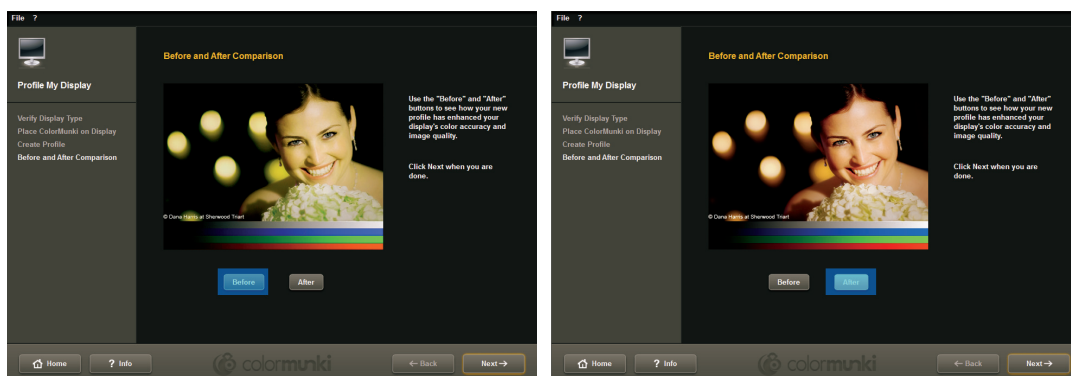
administration and writing rights on this PC and repeat the procedure.



Comparison before/after

Here you can see the change compared with the display's original profile.

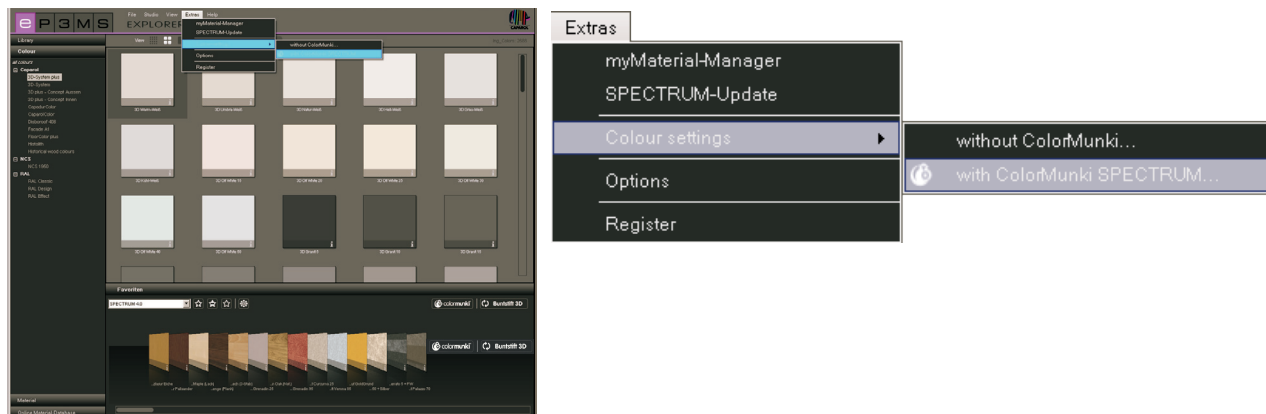
Click "Next" and you will be back in the start dialogue of the ColorMunki menu.



Note: The profile created for your display using ColorMunki can be viewed, activated or deactivated in your PC's properties under "Settings">"Advanced">"Colour management".

11.2.3 Printer profiling

First of all, connect the ColorMunki to a functional USB port on your PC. In the program's main navigation, click "Extras">"Colour settings">"with ColorMunki SPECTRUM..."



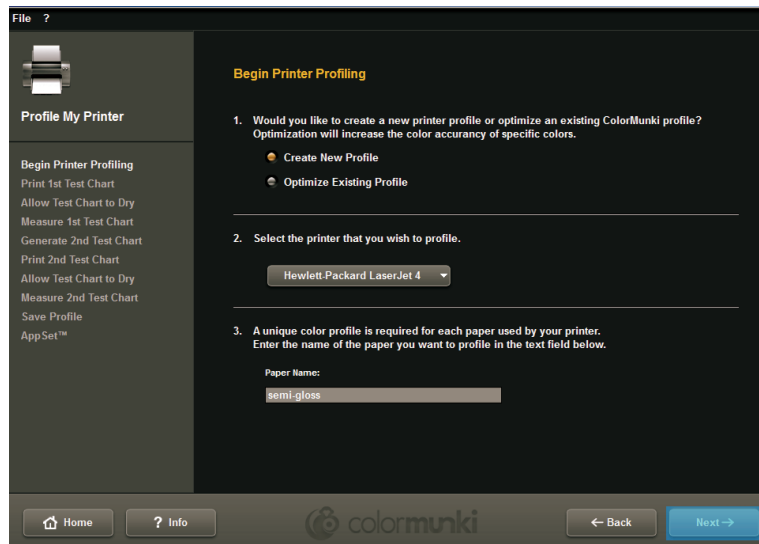
If the ColorMunki has been connected correctly and is functional, the following dialogue opens:



Click the "Profile my printer" to select it. You will now be guided step-by-step through the profiling procedure.

Start printer profiling

When you start printer profiling, choose first whether you would like to create a new profile for a printer or optimise the existing profile for your printer. In the next step, select the printer you would like to profile. Then specify the type of paper you use with the printer being profiled.

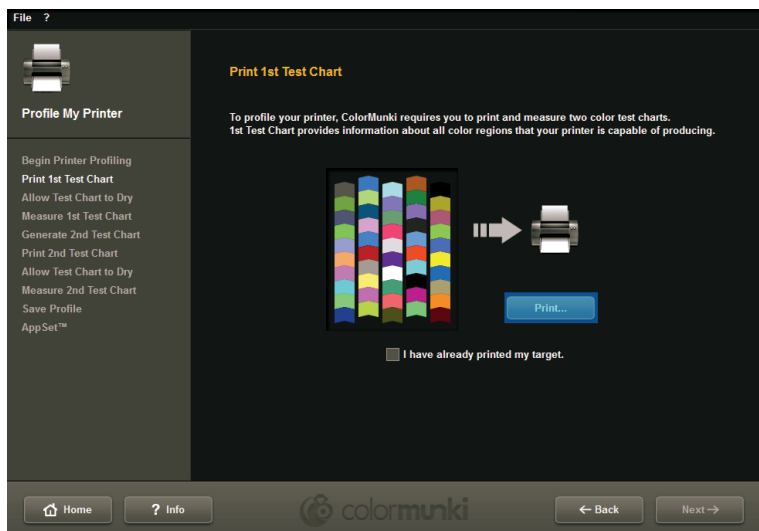


Note: A separate profile must be set up for each individual printer and each type of paper you use with the respective printer in order to guarantee colour trueness during profile creation.

Then click “Next” to print so-called “Targets” (target sheets with colour field compositions for importing) for your ColorMunki.

Print first target

Click “Print” to print the first target, or select “I have already printed my target” if this is the case.



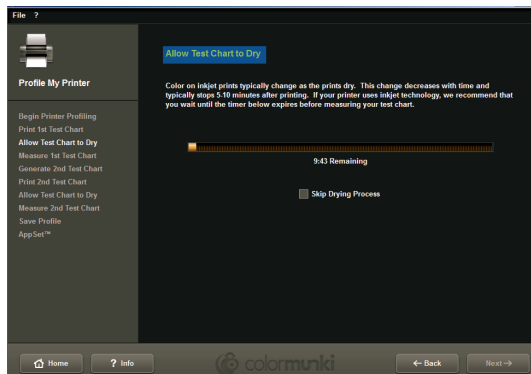
Heed the notes shown before you open the print dialogue and then click “Next”. Click the respective settings in your print dialogue, select the required printer and then click “OK” to print the first target.

Click “Next” as soon as the target has been printed.

Allow the target to dry

In the next dialogue the drying time required for the target is shown in a countdown. Please wait until the timer has expired before you starting measuring the target.

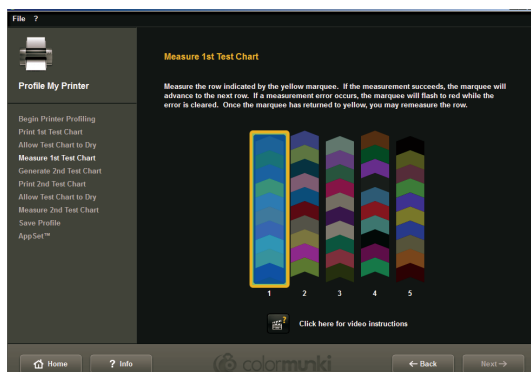
Note: If you have a target that is already dry, you can skip the drying process by clicking “Skip drying process”. Then click on the “Next” button to continue measuring.



Measure first target

Now measure the first target by applying the ColorMunki at the bottom end of the first line (before the first colour field). Click the function button for the ColorMunki and move the line from bottom to top as straight as possible with the button pressed. Only release the button when the ColorMunki is no longer over the colour field. If the line has been measured correctly, the yellow frame in the display dialogue moves to the next line.

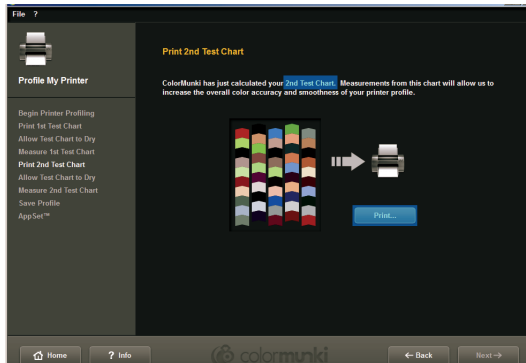
If the line has been measured incorrectly, it will have a red frame round it. You can only measure again when the frame appears green.



When you have measured all five lines correctly, click “Next”. The second target is then created for you.

Second target

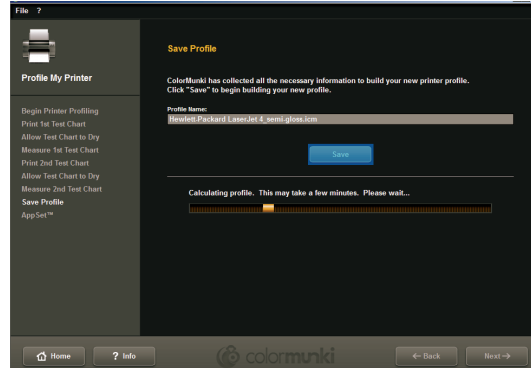
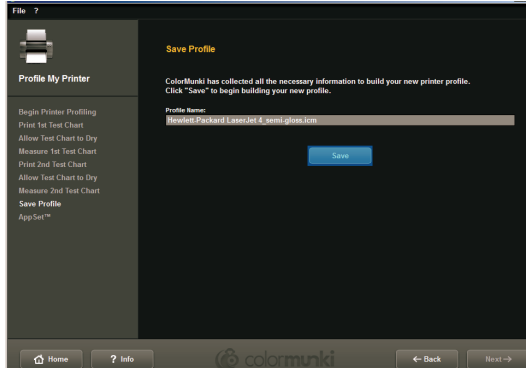
Proceed with printing, drying and measuring the second target exactly as with the first one. The second target cannot be skipped like the first one, since it is only being created by the current measuring values.



Save profile

After the series of colours has been imported, the “Create profile” dialogue opens. Here, you can save the new profile created on your PC under the suggested profile name or a name you choose yourself. To do this, click “Save”. The program now calculates the profile for your printer. After this, you can create a reminder date for the new profile. Then click “Next”.

Note: If the system has not been able to carry out the profiling process properly, the profile created cannot be saved and you will receive a message that profiling has failed. Make sure that you have the necessary administration and writing rights on this PC and repeat the procedure.

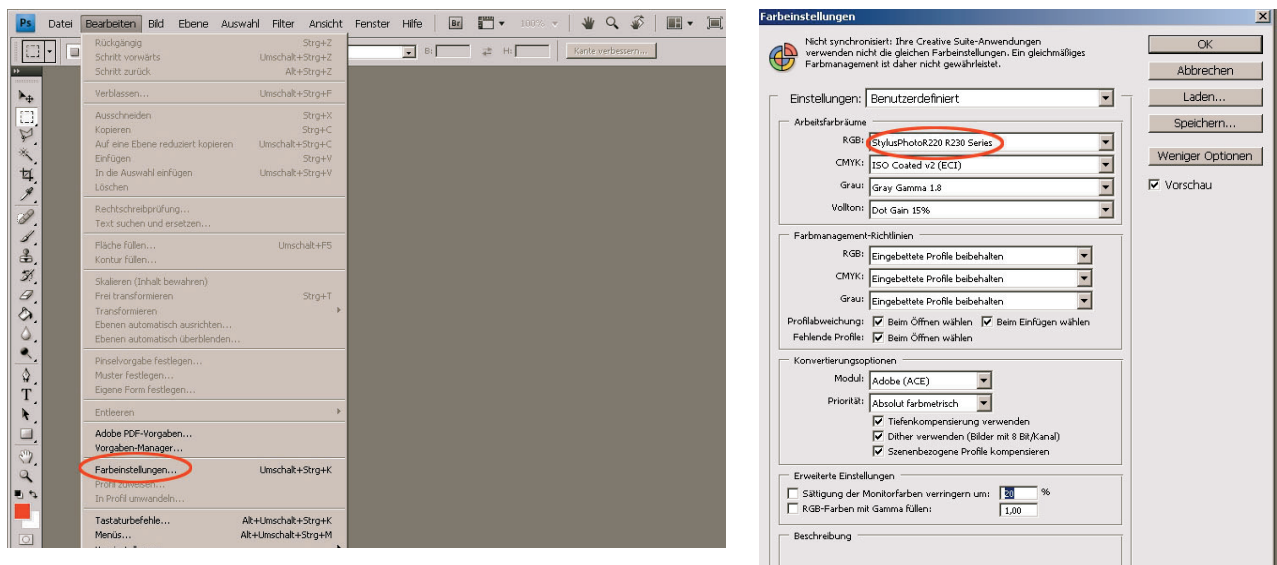


AppSet

With this function, X-Rite offers automatic import of your printer profile to other programs such as Adobe Creative Suite, CorelDRAW or QuarkXPress. To guarantee the reliable correct colour profile import for other programs, we recommend the method shown below on the basis of Adobe Photoshop CS4 rather than using the AppSet function.

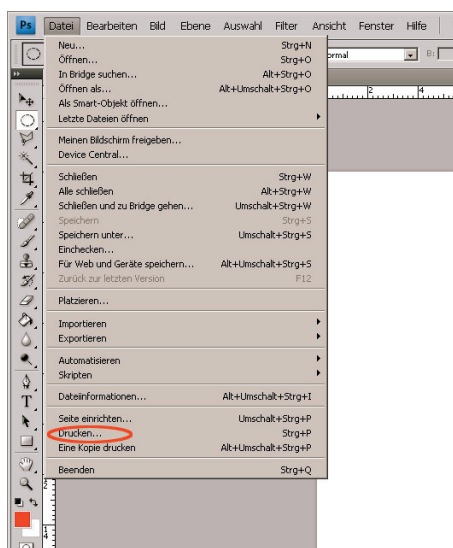
Print settings for Adobe Photoshop CS4 using one of the profiles created with ColorMunki

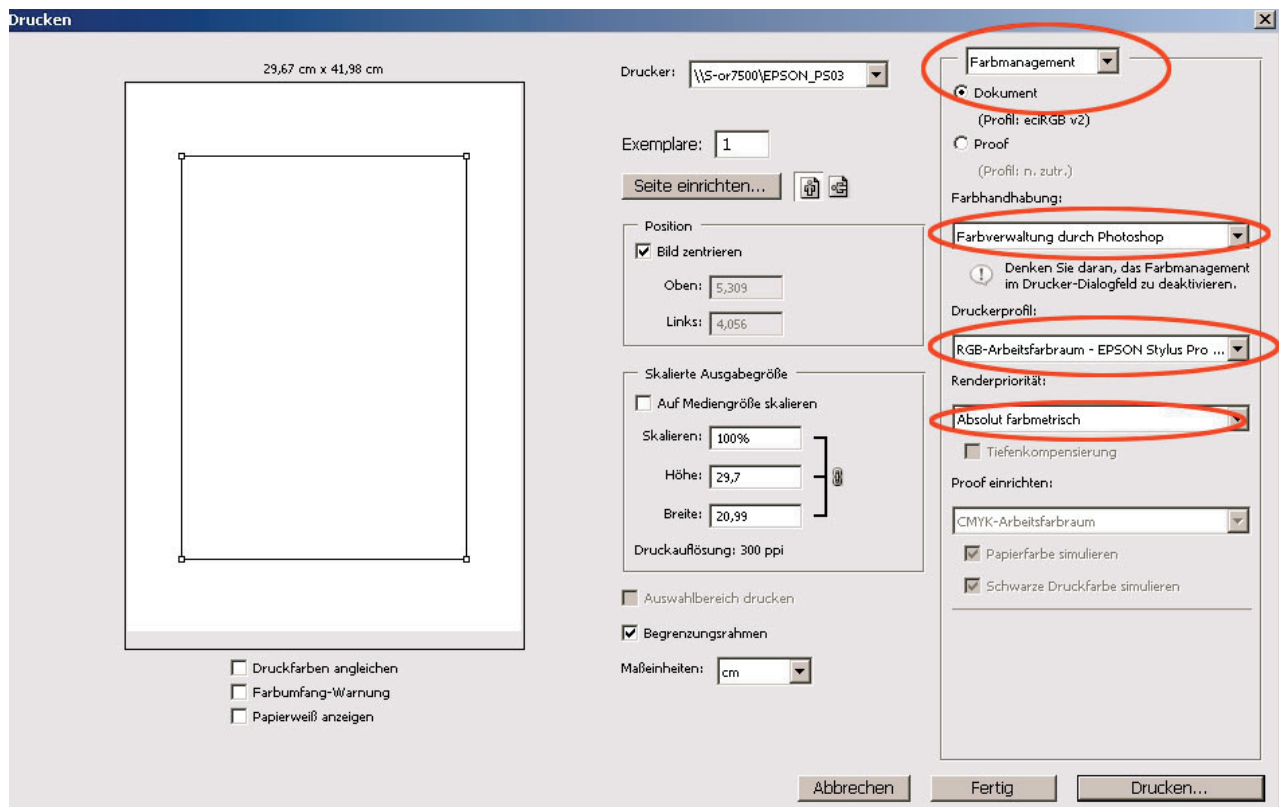
Choose “Edit”>“Colour settings” in the main menu of Photoshop CS4. In the “Colour settings” menu window that subsequently opens, choose the profile you have created with ColorMunki for the “Workspace colours>RGB workspace colour” area and confirm the changed settings by clicking “OK”.



Then open the Photoshop print dialogue by clicking “File”>“Print” in the main menu and carry out the following settings in the dialogue that opens:

1. Colour handling: “Colour management through Photoshop”
2. Printer profile: Choose the ICC profile created with the ColorMunki that you selected before in the colour settings window.
3. Render priority: “Absolutely colourmetric”



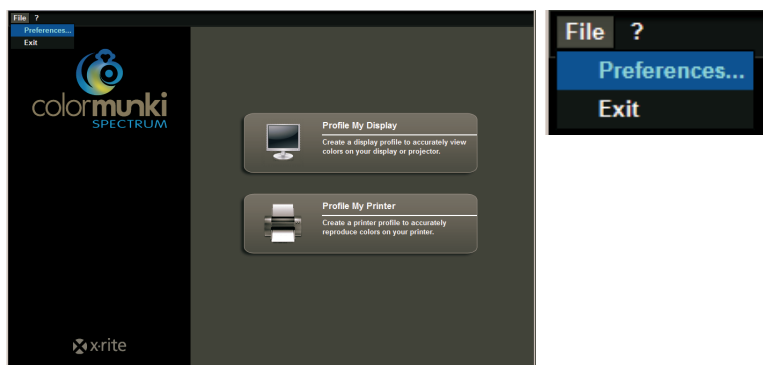


Note: Do not forget to deactivate the colour management in the printer dialogue window.

11.2.4 ColorMunki menu

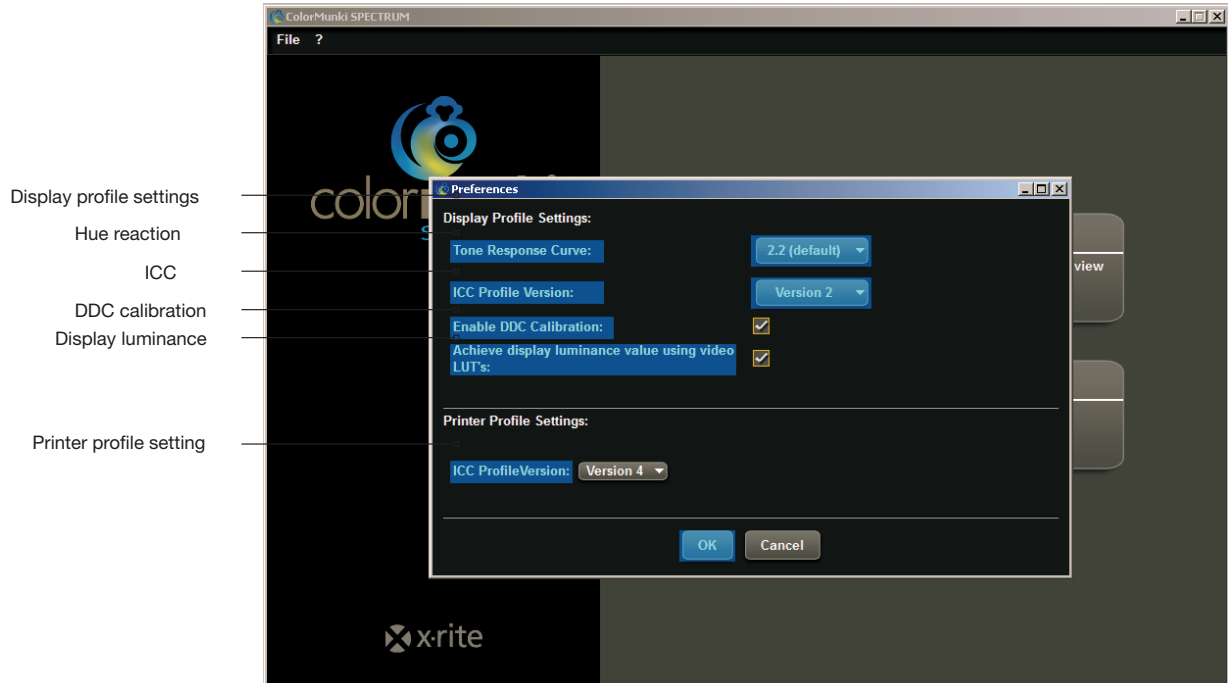
File

Under “File”>“Settings” you will find options for display and printer profile settings that you can change manually here.



Display profile settings

In the display profile settings area you can set the hue reaction curve (default setting 2.2) and the ICC profile version, as well as deactivate the DDC calibration and display luminance setting through LUT.



Printer profile settings

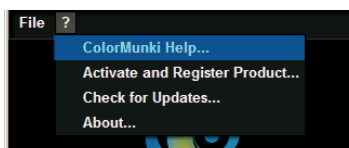
In the printer profile settings you can change the ICC profile version from Version 4 (default setting for Windows Vista or Windows 7) to Version 2 (for Windows XP).

If you would really like to import the changed settings, click “OK”.

Close

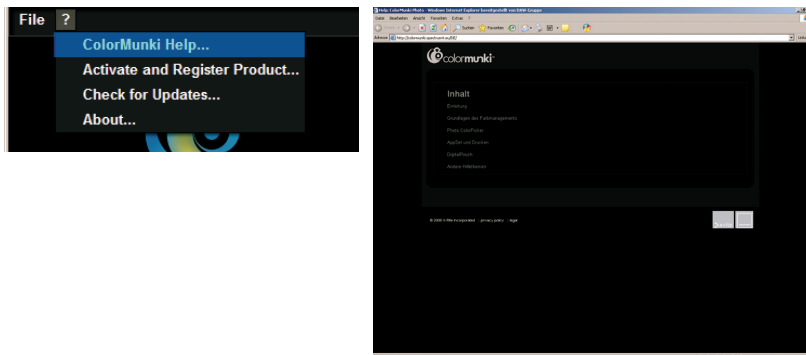
To close the ColorMunki colour settings dialogue select “File”>“Close”.

Help



ColorMunki help...

The ColorMunki help accesses the ColorMunki support page via the Internet. The user's manual with all kinds of information related to the ColorMunki can be found there.



Activate and register product...

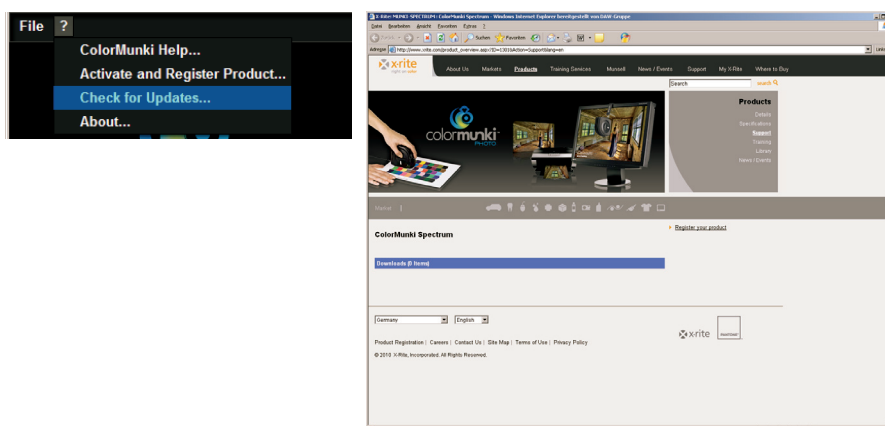
You can use this function to install the ColorMunki software on your current computer and register your ColorMunki to receive the latest information about updates and new products. To do this, connect your ColorMunki to your current PC and click “Activate”. Then you can carry out registration. For this, the software will direct you to the product registration page of the manufacturer, X-Rite. Follow the instructions and register your spectral photometer as required (you can work with ColorMunki without it being registered).



Note: You can activate your ColorMunki Spectrum on a total of three different computers.

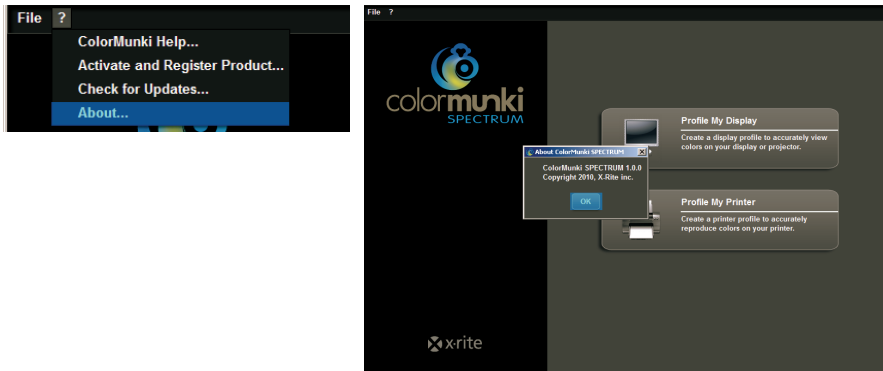
Look for updates...

You can use this function to get your ColorMunki up-to-date. You can load the latest update to your ColorMunki conveniently via the link to the update page for X-Rite ColorMunki PHOTO.



Info...

The “Info” shows you the current software version your ColorMunki is equipped with.



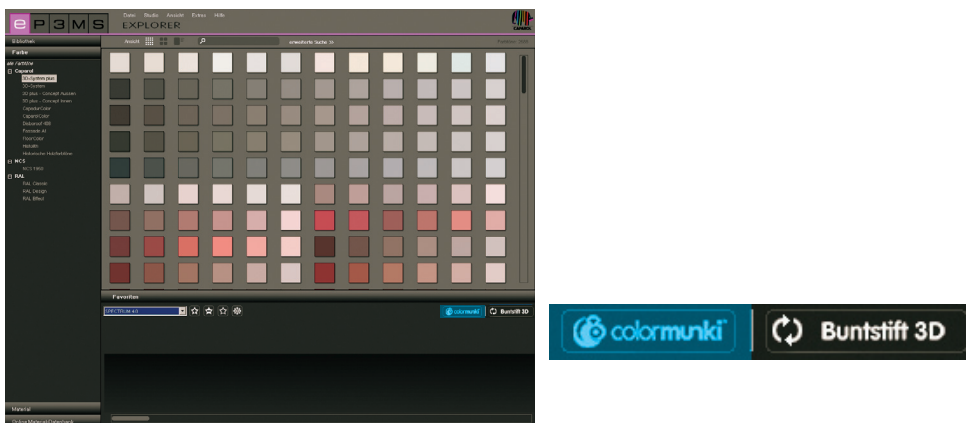
11.2.5 Import of colour hues to SPECTRUM 4.0

You have two different possibilities of importing colour hues to SPECTRUM 4.0:

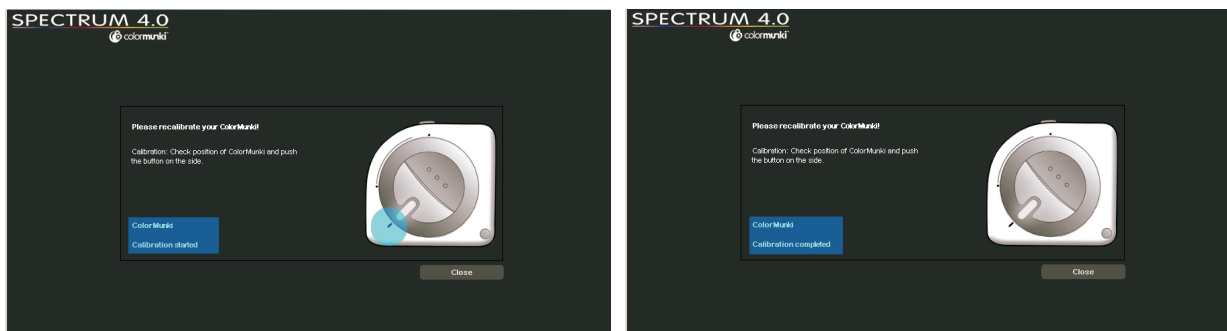
ColorMunki - import with EXPLORER

You can import colour hues via the “Favourites” tab in the EXPLORER, add these directly to a set of favourites and be shown the “composition” of the colour hue.

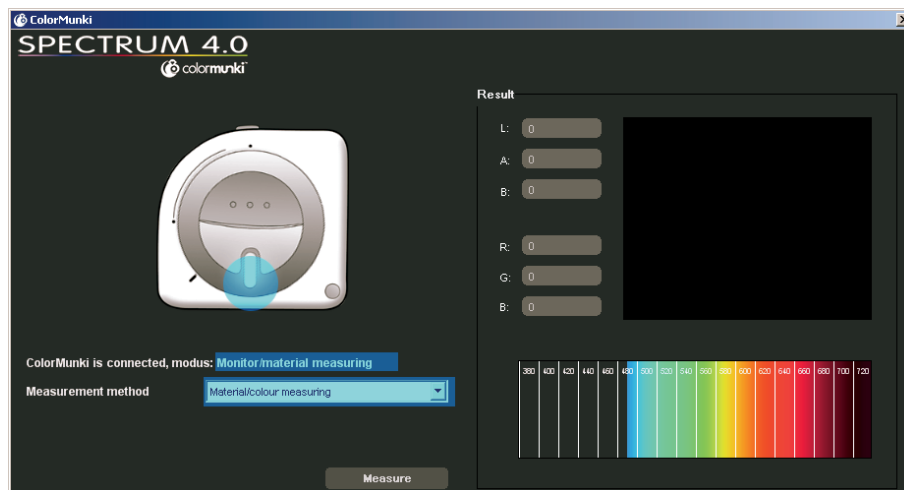
First, make sure the ColorMunki is connected to a functional USB port on your PC. Then click the “ColorMunki” button in the right-hand area of the “Favourites” tab in the EXPLORER. A dialogue window opens with instructions to guide you through the measuring process.



Note: If you have not calibrated ColorMunki yet, the dialogue will jump to calibration mode. Follow the instructions on the screen for calibration, set the ColorMunki wheel to the calibration position and press the rotating wheel at the side. Calibration is then started. Click “Close” as soon as calibration has been completed (see display in the window).



To measure the colour hue, set the ColorMunki wheel in the measuring position shown on the display first. In the next step, choose whether you would like to “Measure materials/colours” or “Measure display/ beamer”. Place the ColorMunki with its measuring sensor on the colour to be imported and press the ColorMunki wheel or click the “Measure” button on your display.



The “Measuring result” field then shows the imported values for LAB and RGB as well as a representation and the spectral composition of the imported colour. In addition, a window is opened where you can give the imported colour a name or take over the default assignment with date and time as the colour name. Click “OK” to save the imported colour. This is automatically saved in the current set of favourites selected.

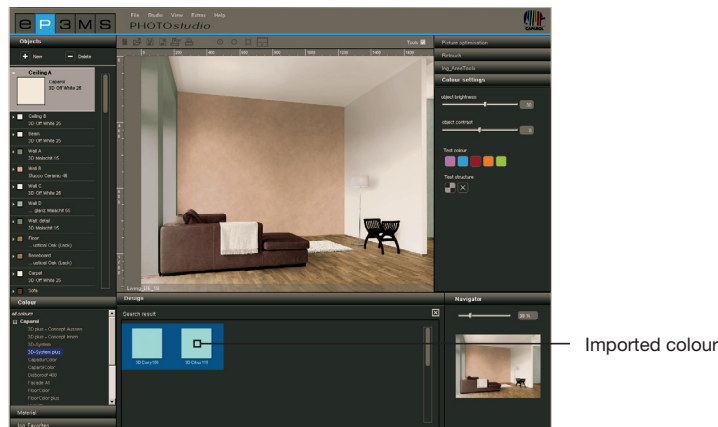


ColorMunki - import with PHOTostudio

You can also import colours with the ColorMunki and display similar colours from the Caparol colour collection 3D-System plus via the PHOTostudio “Design” tab.

First, make sure the ColorMunki is connected to a functional USB port on your PC. Then set the ColorMunki wheel to the measuring position (wheel marking facing down). Place the ColorMunki with its measuring sensor on the colour to be imported and press the ColorMunki wheel. The colour is imported.

Now, the colours of the colour collection 3D-System plus nearest to the imported colour are displayed in the “Design” tab.



Note: If the program does not find a matching colour in the 3D-System plus collection, the system browses the “CaparolColor” system for similar colours.

Buntstift 3D - interface between Buntstift 3D and SPECTRUM 4.0

If you own the new Caparol Buntstift 3D you can synchronise the colour-measuring instrument with the software from SPECTRUM 4.0 update version “4.00.01” onwards. With this interface, you can use all the colours imported with your Buntstift 3D for design in SPECTRUM 4.0.

Synchronisation of Buntstift 3D with your PC

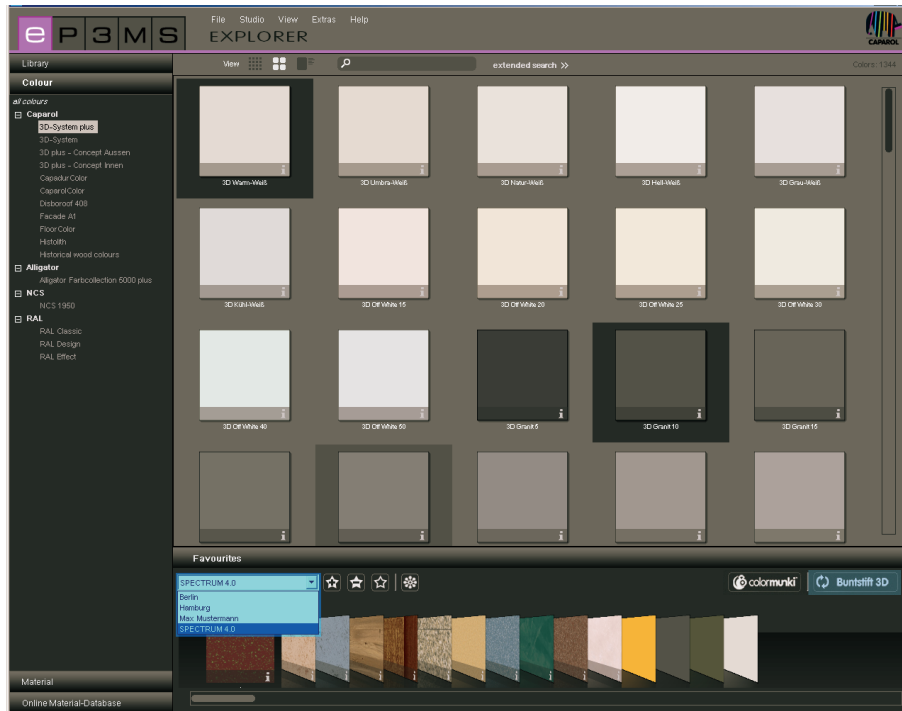
Before you use Buntstift 3D with SPECTRUM 4.0 make sure that you have synchronised the colour-measuring instrument with an Internet-capable computer. Use the software DVD supplied with the Buntstift 3D program for this.

1. Install the software that is on the “CAPSURE Sync” DVD provided
2. Connect Buntstift 3D to your computer using the USB cable provided
3. Before you start the CAPSURE Sync program for the first time, make sure the computer is connected with the Internet
4. Start the X-Rite CAPSURE Sync program via “Start”>“Programs”>“X-Rite”>“CAPSURE Sync” and then click the “Synchronise” button
5. Your Buntstift 3D program is now updated with the latest colour kit data from the Internet

Synchronisation of Buntstift 3D with SPECTRUM 4.0

With the aid of the interface between Buntstift 3D and SPECTRUM 4.0, all the colour samples produced by Buntstift 3D can be imported to a set of favourites in your EXPLORER and then used for design in SPECTRUM 4.0.

1. Connect Buntstift 3D to the computer
2. Select the “EXPLORER” in SPECTRUM 4.0
3. Click the “Buntstift 3D” button (at the top right in the favourites tab)
4. All the colours measured are now copied from Buntstift 3D to the current set of favourites chosen (we recommend creating a new set of favourites first, see chapter 4.3 “Favourites tab”)



Note: If the “Buntstift 3D” button is not shown in your EXPLORER, make sure that SPECTRUM 4.0 is installed with at least update version 4.00.01 on your computer (see chapter 3.2.5 “Help” to find out how to check the version of your SPECTRUM 4.0 software).