

# DocBees-Reprofiler - Manual

DocBees-Reprofiler enables you to create optimized ICC output and DeviceLink profiles – without having to be a color management expert. As a result, you can easily adapt your current printing conditions to a specified printing standard – an international or in-house standard – in a manner guaranteeing reliable production. Based on a standard profile and a few measurements, you can quickly and simply generate an optimized DocBees-Reprofiler profile that you can apply to your printing data, and also to your soft and digital proof. After applying the profile, the print again demonstrates the best possible match with your selected target. Soft proof and digital proof give a color-accurate simulation of how customer data will be reproduced on your printing press, and digital printing also produces fantastic color results.

Here are a few possible applications:

- ◆ Adaptation to a different paper white
- ◆ Compensation for the TAC limited by the grammage
- ◆ Adaptation due to different overprinting properties when changing substrates
- ◆ Compensation for color shifts resulting from different process colors
- ◆ Creation of in-house standard profiles on the basis of a standard profile
- ◆ Optimization of color output in digital printing

Thanks to professional conversion of the printing data, DocBees-Reprofiler profiles can be used to counteract any change on the press – be it in the substrate, the inks or other parameters. As DocBees-Reprofiler profiles can equally be used for color-accurate rendering on a monitor and on a digital proof, we come full circle. The color-accurate simulations offer the required reliability, both for the customer and for in-house production.



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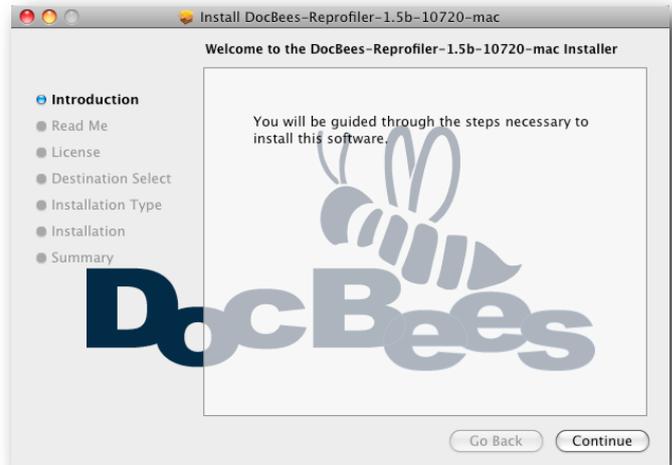
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## INSTALLATION AND SCOPE OF SUPPLY

DocBees-Reprofiler can be purchased as a standalone application. Installing DocBees-Reprofiler is simplicity itself. A double click on the DocBees-Reprofiler installation file starts a familiar routine. At the end of it, DocBees-Reprofiler is saved, e.g. in a sub-folders of your computer's Programs folder, and you can start the application with a double click.

The scope of supply of DocBees-Reprofiler includes various ColorLogic color control strips (RGB and CMYK) (see [ColorLogic color control strips](#)). The color control strips can be found in the program folder of DocBees-Reprofiler. You can also open the folder via the **Help** menu item **Open Color Control Strips folder**.



## ACTIVATION AND REGISTRATION

DocBees-Reprofiler is available in two versions:

1. **Reprofiler Printer** only creates new, optimized ICC output profiles.
2. The full **Reprofiler XL** version additionally creates a DeviceLink profile for converting the printing data of complete PDF files in color servers like ColorLogic [ZePrA](#).

Before purchasing the software, you can test all its functions **without a license key**, but you cannot save any ICC or DeviceLink profiles in this case.

A **demo license** allows you to test all the functions of interest to you for a limited period. If you use a demo license, DocBees-Reprofiler generates encoded ICC output profiles and DeviceLink profiles that can only be tested using ColorLogic products, such as [CoLiPri](#), [CoPrA](#) or [ZePrA](#), and only within the validity period of the demo license. Use in other programs is not possible. With the help of the file conversion function, you can, for example, apply ICC output profiles and DeviceLink profiles to individual PSD, TIFF and JPEG files, and then assess them in an image editing program.

Non-encoded ICC and DeviceLink profiles are created if you purchase a **full license** for DocBees-Reprofiler.

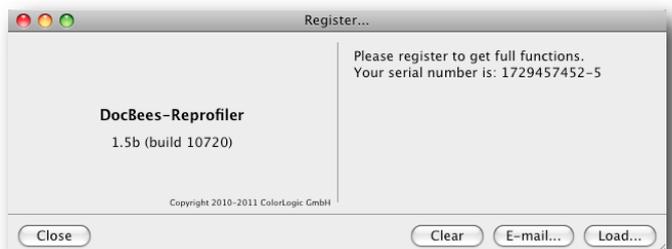
Profiles previously created with the demo version can then no longer be used. You can choose between a computer-based and a dongle-based license to activate the full version.

**Note:** Registration is either computer-based or dongle-based. If you use a computer-based license, you can only use the key on the computer on which DocBees-Reprofiler is installed. If you have a dongle, you can use DocBees-Reprofiler on any computer that you plug the dongle into. You subsequently activate DocBees-Reprofiler by means of the license file.

Once you have received a license file from your dealer, proceed as follows.

### What to do:

1. Go to **Help/Registrar** in the DocBees-Reprofiler menu bar.



2. Then click on **Load...** in the **Register** dialog. This automatically takes you to a selection window, where you can select your personal license key. The corresponding functions are available to you as soon as you have registered.
3. **Close** the **Register** dialog.

**Note:** Your dealer creates a personal license file that activates the modules you have purchased – in conjunction with your e-mail address and the serial number – and is sent back to your e-mail address.

## STRUCTURE AND MODE OF OPERATION OF DOCBEES-REPROFILER

In DocBees-Reprofiler, you can find all the functions in the program window. Only to register do you need to use the **Help** item in the menu bar, as described above.

To be able to apply DocBees-Reprofiler, you need:

1. An ICC profile (printer profile, in-house standard or ISO/PSO profile) that characterizes the original printing process
2. The measurement values of your currently deviating printing conditions

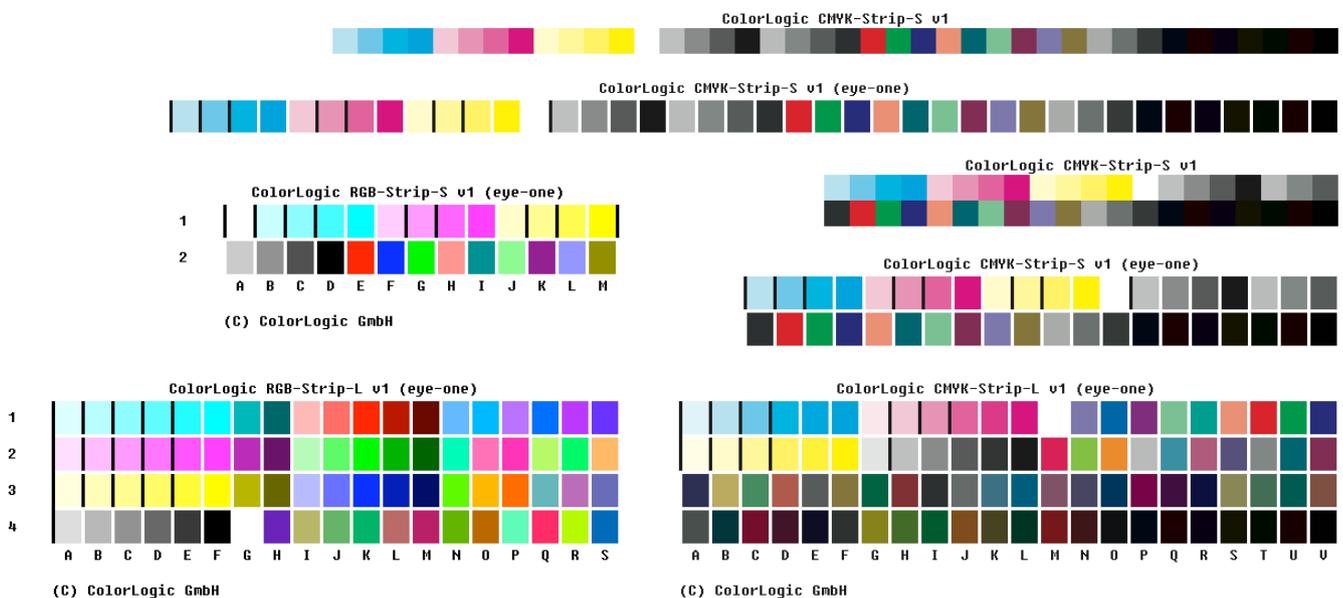
DocBees-Reprofiler guides you step-by-step when creating profiles. The various possible applications are described in the **Use Cases** below.

## COLORLOGIC-COLOR CONTROL STRIPS

Two color control strips for different measuring instruments (X-Rite i1Pro and single-patch measuring instruments) are included in the scope of supply of DocBees-Reprofiler for both CMYK and RGB printing systems.

The DocBees-Reprofiler color control strips should preferably be used for creating optimized profiles. These color control strips include the 100% values in the shadows and for overprinting patches that are important for profile creation.

The strip labeled **small** is available as a one-row and a two-row strip. The one-row strip can easily be integrated in the trim area of your printed sheet. The two-row strip is more suitable for digital printing or inkjet systems. The same applies to the strip labeled **large**, which contains significantly more color patches and is thus more suitable for optimizing relatively large color deviations. We recommend that the ColorLogic strips always be used when optimizing digital printing, since only they ensure accurate determination of the black point of the printing system.



The reference files for measuring the strips are likewise supplied, in the form of text files, and can be used in the measuring tools of the respective measuring instrument manufacturers.

You can find the color control strips in the **ColorLogic Color Control Strips** folder in your DocBees-Reprofler program folder.



## GENERATING A MEASUREMENT FILE

The simplest application in DocBees-Reprofler is adaptation of the paper white for proof simulation (monitor/digital proofer). Although the calculations taking place in the background are highly complex, you only need the L\*a\*b\* value of the paper white of the substrate used to arrive at a visible improvement.

If you want to further optimize your profile, or generate DeviceLink profiles for adapting your printing data, we recommend that you output a color control strip on your current printing system. This color control strip should ideally also include gradations of primary colors, overprinting colors, and possibly dark tertiary colors. DocBees-Reprofler can generate excellent profiles on the basis of just a few measurement data.

**Note:** In principle, you can print and measure not only the ColorLogic color control strips supplied, but also any other color control strip (e.g. Ugra/Fogra, IDEAlliance Media Wedge, ECI GrayControl Strip, ECI bvdn TVI or UGRA UDKS Wedge), provided the device and measurement values are saved in the measurement file.

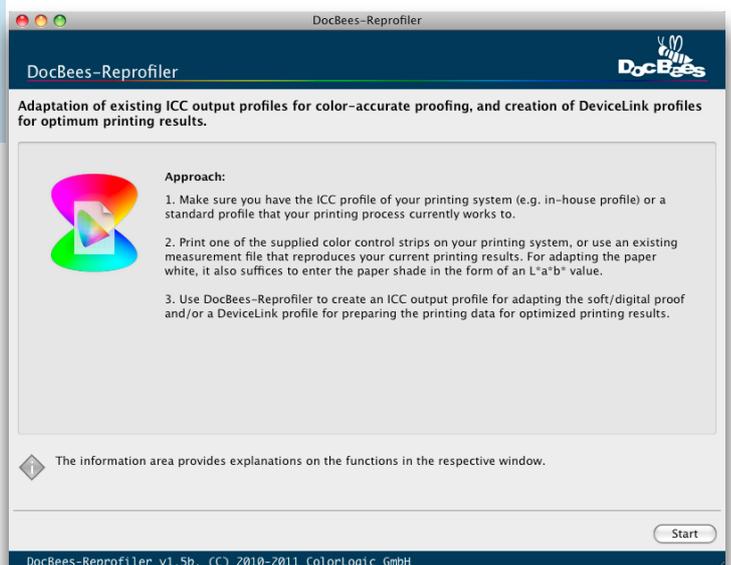
Alternatively, you can use an existing measurement file that reproduces your current printing conditions. The measurement file may not have more than 150 patches.

Once you have printed a color control strip of your choice, you can measure it with the help of a color measuring system (spectrophotometer).

**Note:** Make sure to output the color control strip without color management settings – on your digital printing system, for example – i.e. without simulation of a printing condition. DocBees-Reprofler optimizes the ICC profile of your output profile (= printer profile), not the simulation profile (e.g. ISOcoated\_v2, which is to be simulated on the digital printing system). However, the consequence is that the optimized output profile also optimizes the simulation of any other printing process.

To measure test charts and save the measurement values, you can use the software products shipped with spectrophotometers, or measuring tools from other profiling system manufacturers that save IT8- or CGATS-compliant measurement data.

You should preferably create spectral measurement data, so that the detection and possible correction of brighteners in the paper can be supported.

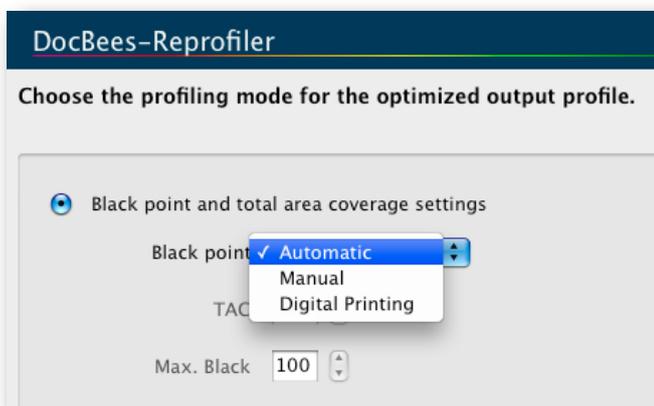


## OPTIMIZATION OPTIONS

DocBees-Reprofler features a number of important options that can be of great benefit for calculating optimized output and DeviceLink profiles. To make it easier for you to choose, we'll now give you a brief description of the advantages these options offer.

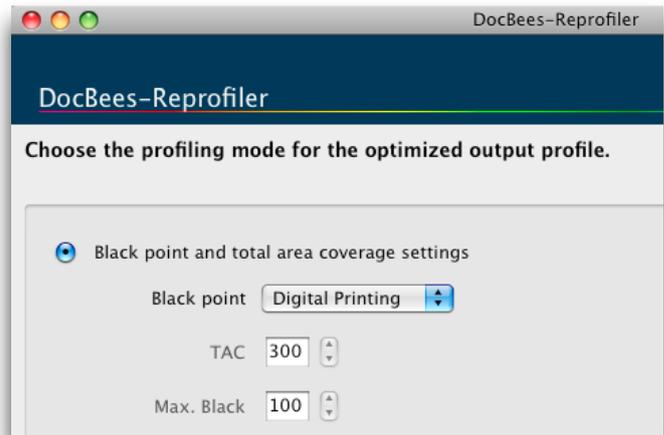
### Black Point

You can define a **Black point** to select the profiling mode. If you choose the **Automatic** option, you need not worry about the separation settings (total area coverage, maximum black, GCR settings), since DocBees-Reprofler adopts them from the standard profile to the best possible degree.



If you want to change the **Total Area Coverage** or the **Max. Black** compared to the standard profile, you can intervene via the **Manual** option. This may be sensible under certain circumstances, e.g. if paper or ink changes on the printing system necessitate adjustment of the values.

The **Digital Printing** option is used to optimize the separation settings for digital printing. Here, too, you can rely on DocBees-Reprofler, which performs intelligent black point calculation on the basis of the measurement data of the ColorLogic CMYK strips. This calculation applies maximum GCR, in order to stabilize printing by using large amounts of black. The maximum black point, which represents the darkest color value in the profile, is kept as neutral as possible.



**Note:** When using the **Digital Printing** option, it is particularly important to apply one of the two ColorLogic CMYK strips, preferably the large strip, since the ColorLogic CMYK strips can accurately determine the black point of the printing system.

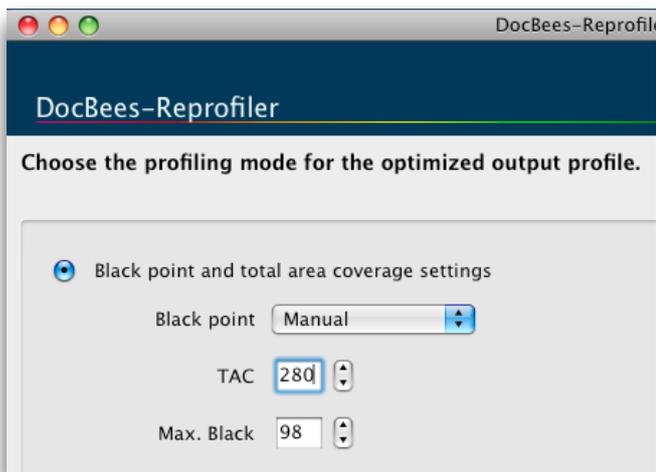
### Total Area Coverage

If you want to change the black point settings manually, you can influence the value for the total area coverage. This can be necessary if, for example, different ink trapping behavior is to be expected during printing when the substrate is changed. While the standard substrate is perhaps easily capable of coping with a total area coverage of 330%, the substrate that is currently used in production, and for which the printing data are to be optimized, behaves differently, meaning that the only way to guarantee technically perfect printing without underinking is to reduce the total area coverage, e.g. to 300%.

**Note:** DocBees-Reprofler optimization does not involve any change between different standards, e.g. between different paper classes or printing processes. If you want to convert your data from one printing standard to another, you need to write DeviceLink profiles that combine the two standards. The ColorLogic CoLiPri and CoPrA programs support generation of these DeviceLink profiles, or you can work with our preconfigured DeviceLink Sets.

**Maximum Black**

The **Max. Black** primarily influences dot touch in the black. As a rule, you can adopt the values of the output or standard profile unchanged. However, if a change of ink or substrate leads to a situation where a greater tone value increase is to be expected in the shadows, for example, it may make sense to reduce the black point accordingly.

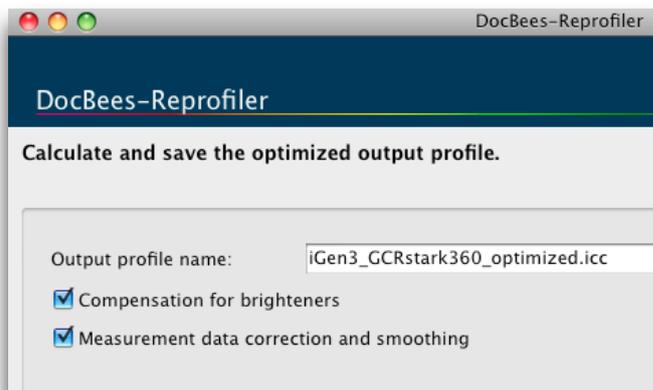


**Compensation for Brighteners**

**Compensation for brighteners** is recommended for bright white papers containing optical brighteners, and presupposes spectral measurements. Compensation for brighteners is performed as soon as DocBees-Reprofil identifies the paper color as being an optical brightener and not a blue-colored paper, for example.

**Measurement data correction and smoothing**

**Measurement data correction** is a highly sophisticated combination of correction and smoothing of the measurement data. The aim is to detect and eliminate measuring errors, and to smooth irregular measurements, but without changing the printing properties in the process.



It makes sense to apply measurement data correction if the ICC profile of your printing standard, to be optimized by means of measurement data in DocBees-Reprofil, is based on non-smoothed measurements.

**Recommendation:** Always apply the function when working with your own profiles or those supplied by manufacturers of digital printing systems, rather than with the ISO profiles (which are already smoothed).

**Note:** It may well be that smoothing affects the accuracy of reproduction of the measurements that we show in the final step of DocBees-Reprofil or in the Report. Nevertheless, the deviation of the measurements is still far better, compared to the non-optimized original output profile.

## USE CASE 1: PAPER WHITE ADAPTATION FOR SOFT UND DIGITAL PROOFING

The most common case: The substrate is changed, and the whiteness of the substrate used does not fit the ISO specifications you work to, or the in-house standards to which your systems are geared. Or the customer supplies an ISO-compliant proof for white coated paper, but material of a different color is used for print production.

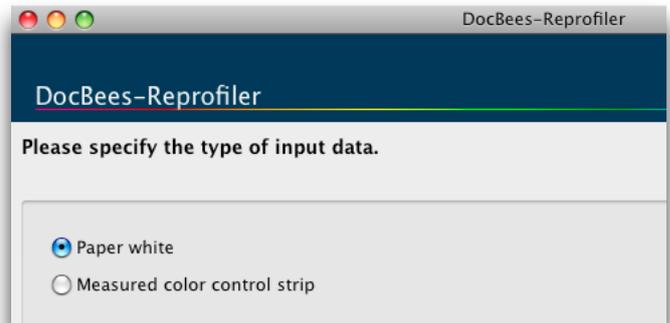
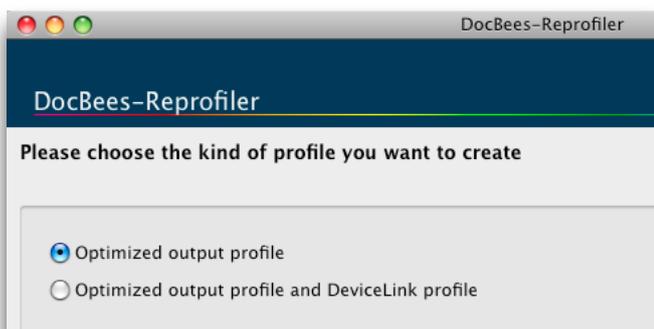
DocBees-Reprofiler enables you to adapt both the soft proof and the digital proof accordingly and/or to 'brush up' your printing data for the new medium (see [Use Case 3](#)). This is the only way to realize speedy press makeready and print handling. A change in the paper white entails a change in all light color values. The color properties of the original output profile are adapted via the measured L\*a\*b\* value or the measurement data. However, a change in the ink trapping behavior brought about by the paper can be determined better with the help of a color control strip printed on the new paper.

Depending on which version of DocBees-Reprofiler you have purchased, you have one or two options for adapting the paper white:

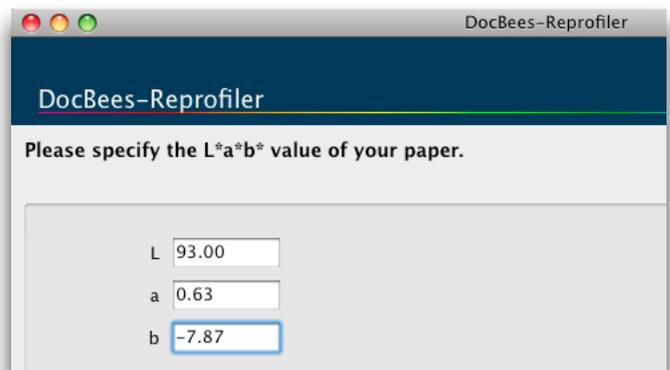
- ◆ 1st option: Creation of an output profile for optimizing the soft/digital proof rendering.
- ◆ 2nd option: Generation of an output profile and a DeviceLink profile for additional optimization of the printing data (see [Use Case 3](#)).

### What to do:

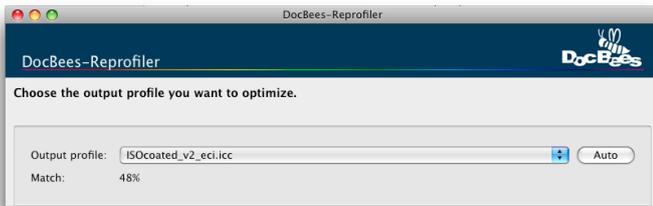
1. Ensure that you have the original output profile and, if necessary, the measurement file of a color control strip (see [Generating a measurement file](#)).
2. Click on **Start** in the starting window of DocBees-Reprofiler.
3. Select **Optimized output profile** and click on **Next**.
4. You now have two options for changing the paper white:



- Choose **Paper white** if you want to adapt the paper color by entering an L\*a\*b\* value. Measure the paper color of your current substrate and enter the measured value, or drag&drop the measurement file onto the window. The paper color is then extracted automatically.



- We recommend that you adapt the paper white by means of a **Measured color control strip** (see [Generating a measurement file](#)). Open the measurement file or drag&drop it onto the window.
5. Click on **Next**. DocBees-Reprofiler automatically reads out the ICC profile that best suits the loaded measurements and demonstrates the greatest accuracy as regards the **Match** with the measurements. Check whether the suggested ICC profile corresponds to your original Output profile to be adapted to a new paper white.

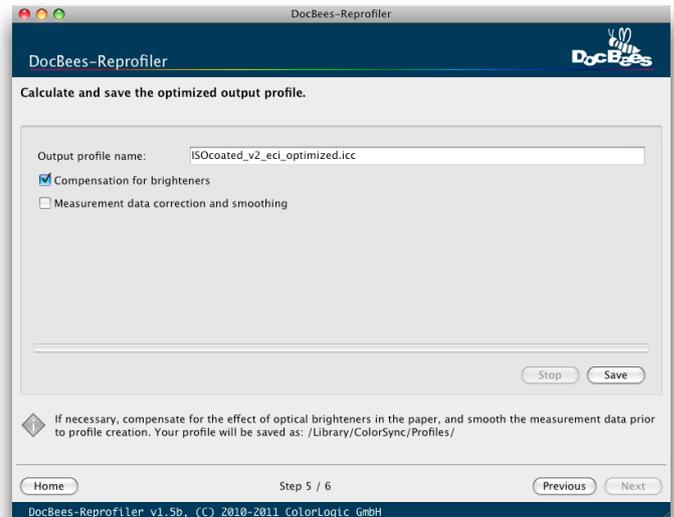


**Note:** If you perform adaptation using a color control strip, you are additionally shown a value in percent that indicates how well the measured strip matches the original output profile. If the **Match** value is high (e.g. 97%), you can dispense with optimization of the profile.

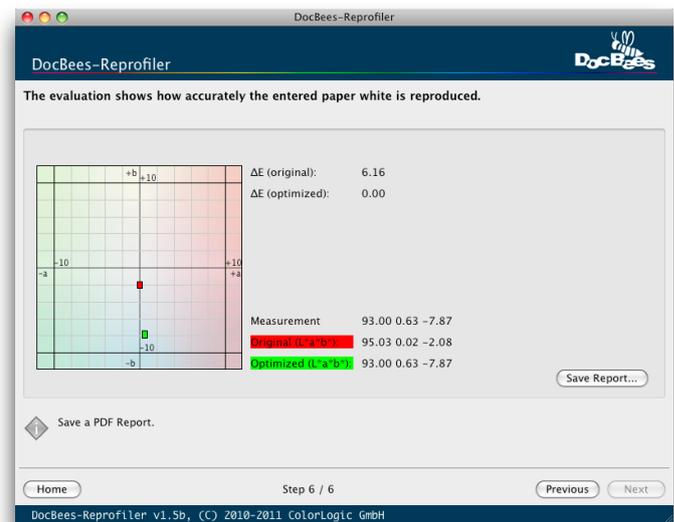
6. Click on **Next** and set the **Black point** to **Automatic** for paper adjustment. The total area coverage (TAC) and the Max. Black are extracted from the previously selected output profile (see [Optimization options](#)).



7. **Next** takes you to the window for calculating and saving the optimized output profile. Give your optimized output profile a name. If you enter nothing, DocBees-Reprofiler adds the word **optimized** to the name of the original output profile. If necessary, activate **Compensation for brighteners** and **Measurement data correction and smoothing** (see [Optimization options](#)).



8. Click on **Save**. Your optimized output profile is saved under the path shown. After calculation of the profile the evaluation page appears.



9. If you want a PDF file from the evaluation of the results, select **Save Report...** (see [DocBees-Reprofiler Report](#)).

Once you have optimized the output profile for your printing condition, you can use it as a simulation profile in your DTP program to display the soft proof, or in the RIP of your digital proofing system. If it is an optimized output profile for a digital printing system, you can use it as the target or paper profile in the RIP of your digital printing system.

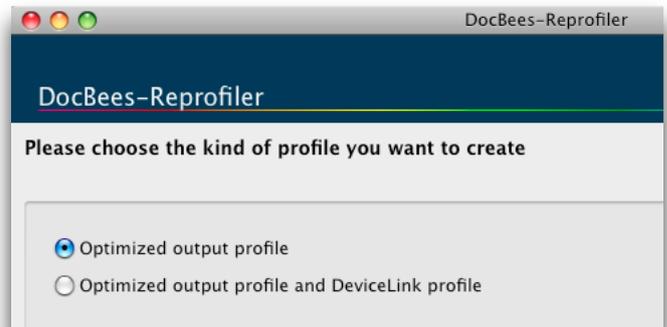
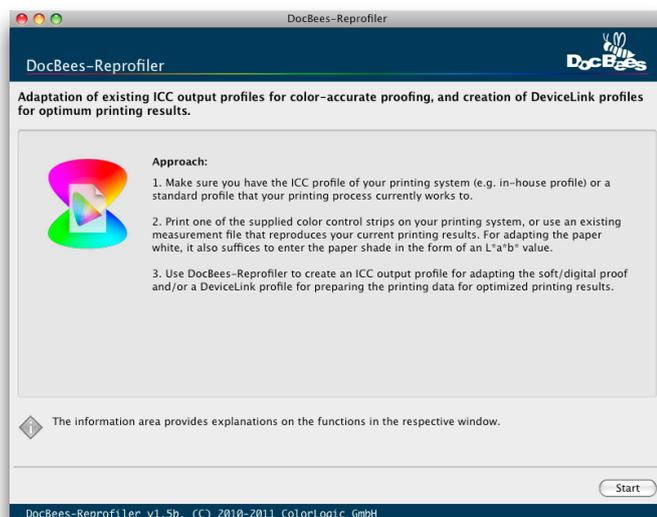
## USE CASE 2: COMPENSATION FOR TONE VALUE INCREASES FOR AN OPTIMIZED SOFT PROOF AND DIGITAL PROOF

With DocBees-Reprofler, you can compensate for tone value increases in order to create an output profile that can be used for improved adaptation of the soft and digital proof rendering to the current printing conditions. Tone value increase optimization is suitable if you only need to make slight corrections in the Cyan, Magenta, Yellow, and Black primary color gradations, and the paper white, and otherwise want to leave your profile exactly the same as the original profile – i.e. if you also want to exactly preserve the gamut mapping and separation of the original profile.

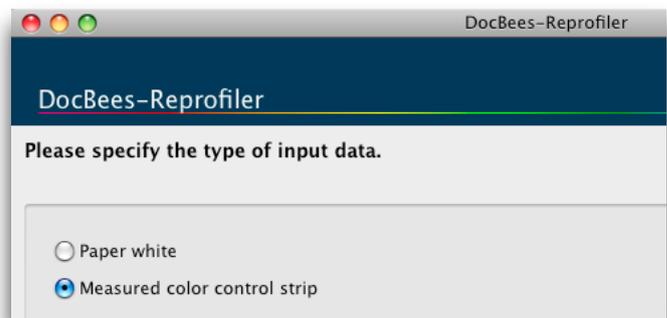
**Note:** As the name suggests, the **Adjust TVI Curves** option is only suitable for adapting the tone value increases. If more extensive changes in the primary and secondary colors need to be compensated for, please follow the recommendations under [Use Case 3](#). This option is not available in the event of pure paper white adaptation, because the measurements are missing.

### What to do:

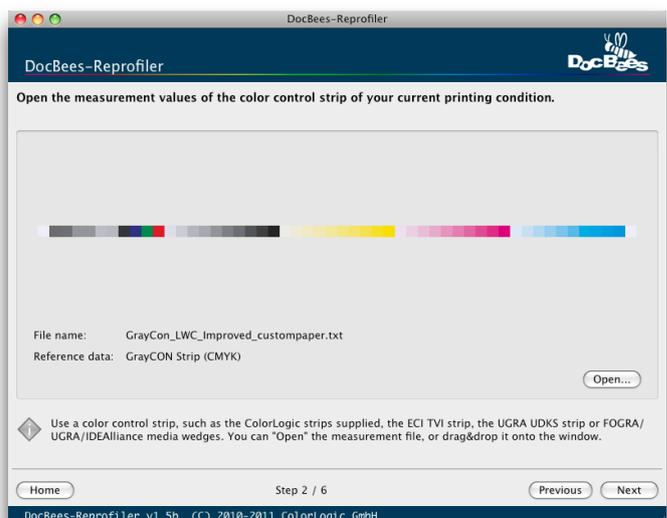
1. Make sure you have the original output profile and the measurement file of a color control strip (see [Generating a measurement file](#)).
2. Click on **Start** in the starting window of DocBees-Reprofler.
3. Select **Optimized output profile** and click on **Next**.



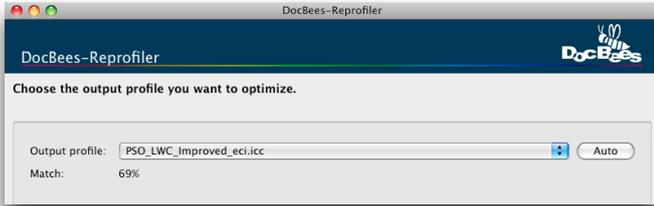
4. Select **Measured color control strip**. Click on **Next**.



5. **Open** the measurement file, or drag&drop it onto the window.



- Click on **Next** and select the original **Output profile** to be adapted. The **Match** value is purely for your information (see [Use Case 1](#)). Click on **Next**.



**Note:** If you perform adaptation using a color control strip, you are additionally shown a value in percent that indicates how well the measured strip matches the original output profile. If the **Match** value is high (e.g. 97%), you can dispense with optimization of the profile.

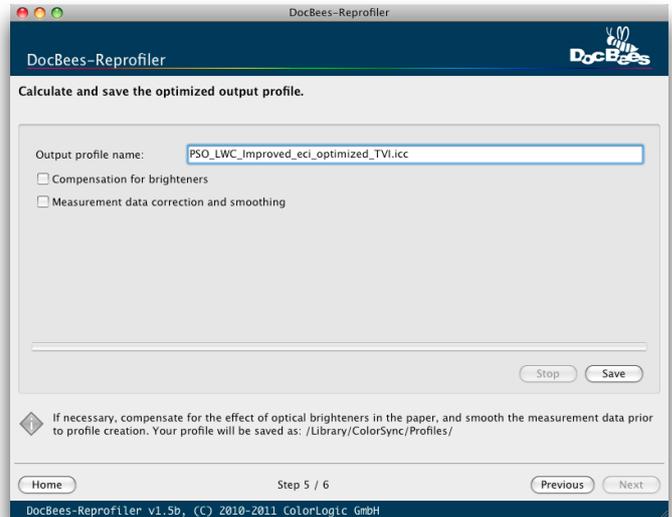
- Select the **Adjust TVI Curves** option to adapt the tone value increase curves.



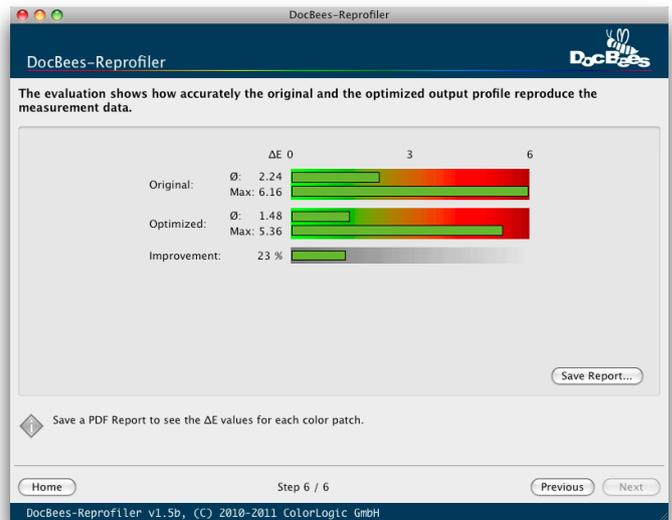
- Next** takes you to the window for calculating and saving the optimized output profile. Give your optimized output profile a name. If you enter nothing, DocBees-Reprofiler adds the word **optimized** to the name of the original output profile.

If necessary, activate **Compensation for brighteners** and **Measurement data correction and smoothing** (see [Optimization options](#)).

- Click on **Save**. Your optimized output profile is saved under the path shown. After calculation of the profile the evaluation page appears.



- If you want an evaluation of the results, select **Save Report...** (see [DocBees-Reprofiler Report](#)).



Finally, the output profile you have generated with DocBees-Reprofiler can either be selected for soft proofing in your DTP program, or saved in the RIP of your digital printing system.

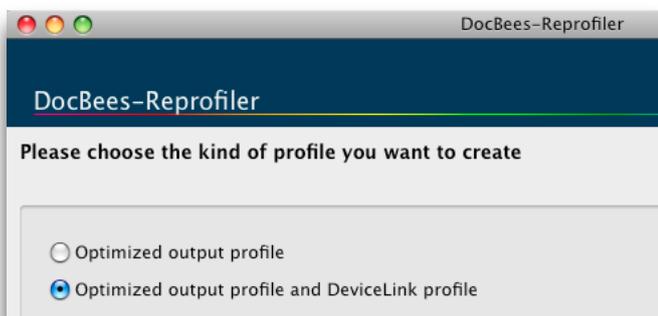
## USE CASE 3: PRINTING DATA ADAPTATION FOR OPTIMIZED PRINTING RESULTS

With the help of the output and DeviceLink profile to be created in the next steps in DocBees-Reprofler, you can achieve not only a better colorimetric match with the printing standard, but also perfectly adapted tone value curves. Above all, the DeviceLink profile improves the visual match with the required printing standard. In other words: your digital proof and your printing process reproduce the required printing standard far better if you convert the colors of the printing data with the DeviceLink profile. Note that DeviceLink conversion does not change the paper white. After all, unlike the situation when proofing, you do not want to print a paper simulation during production printing. In addition, the DeviceLink profile leaves the 100% primary colors unchanged. You can only adjust the primary colors on the press by under-inking or overinking.

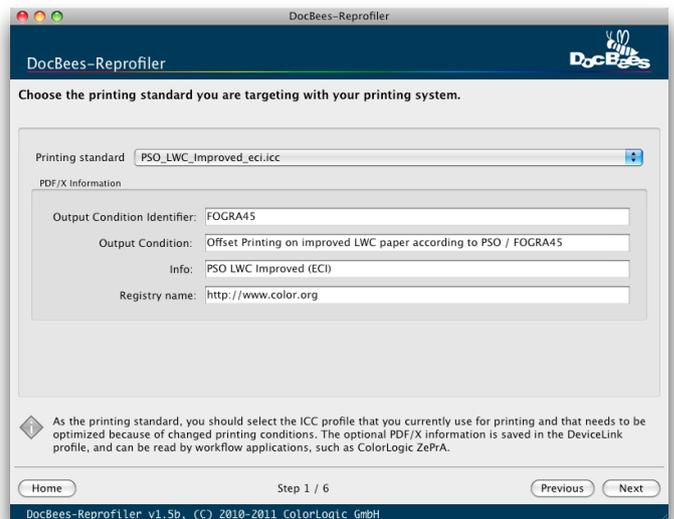
**Note:** You need the Reprofler XL license for the version that calculates not only the output profile, but additionally a DeviceLink profile for converting from the original printing standard profile to your current printing condition (see [Activation and registration](#)).

### What to do:

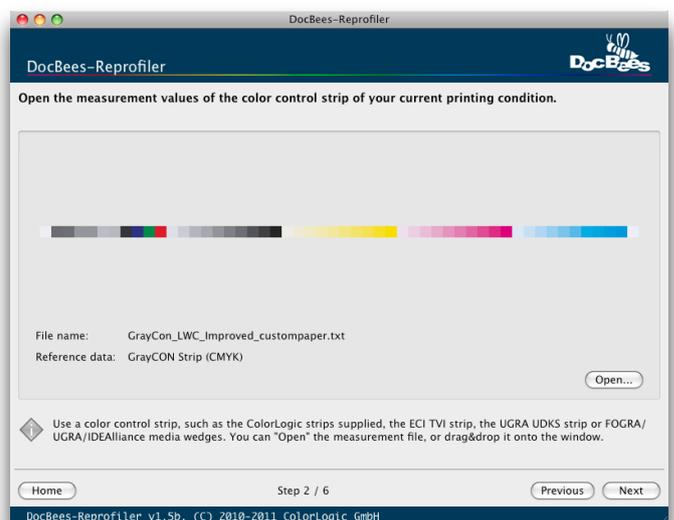
1. Make sure you have the measurement file of a color control strip (see [Generating a measurement file](#)) and the original printing standard profile.
2. Click on **Start** in the DocBees-Reprofler starting window.
3. Select **Optimized output profile and DeviceLink profile**, and click on **Next**.



4. Select the **Printing standard** that you currently print to and that is to be adapted. The optional **PDF/X information** is saved in the DeviceLink profile and can be read by workflow programs like ColorLogic ZePrA. Click on **Next**.

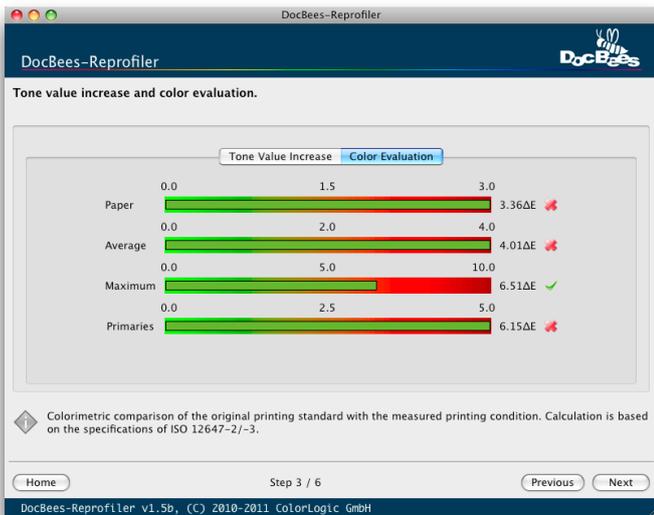
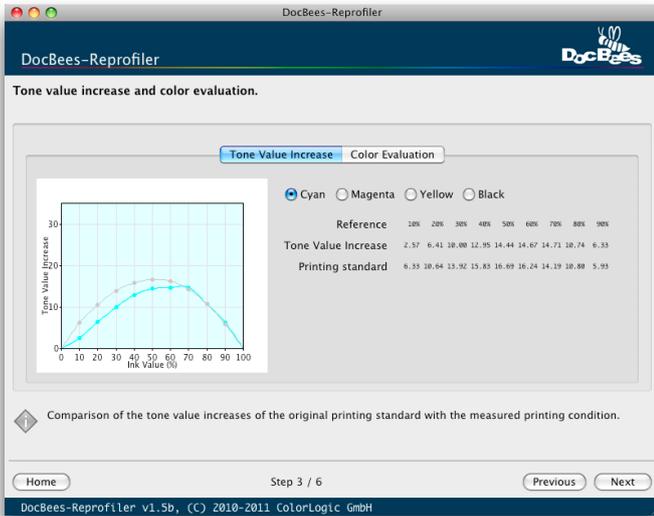


5. **Open** the measurement file, or drag&drop it onto the window. Click on **Next**.

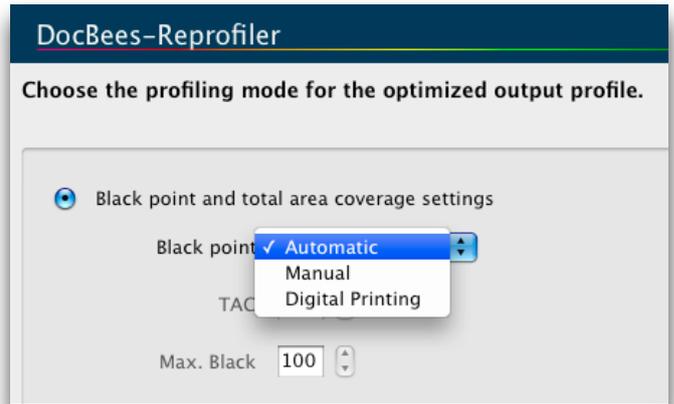


6. This takes you to the **Tone value increase and color evaluation** dialog. This dialog is for information only, and you do not need to make any entries.

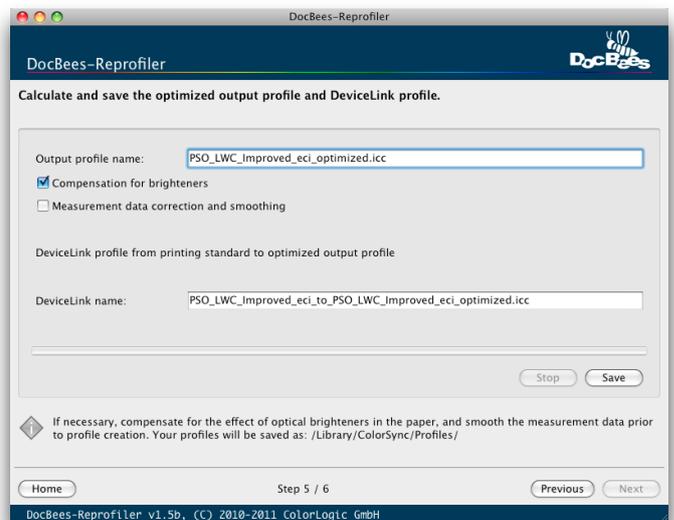
If you do not need the evaluation, click on **Next** to skip the dialog. Otherwise, kindly read the notes under [Comparison of standard profiles and current measurement values](#).



7. For paper adaptation and for optimizing your printing standard, we recommend that you set the **Black point** to **Automatic** (for conventional printing). The **TAC** and the **Max. Black** are extracted from the previously selected output profile, and the separation is preserved. For digital printing, set the black point to **Digital Printing**, so that the TAC and the Max. Black are automatically adjusted for optimized digital printing output. If you want to make **Manual** entries, please read [Optimization options](#). Click on **Next**.



8. This takes you to the window for calculating and saving the optimized output profile and DeviceLink profile. Give your profiles a name. If you enter nothing, the word **optimized** is added to the name of the original output profile. The default DeviceLink name consists of the original standard profile and the optimized output profile. If necessary, activate **Compensation for brighteners** and **Measurement data correction and smoothing** (see [Optimization options](#)).



9. Click on **Save**. Your optimized output profile and DeviceLink profile are saved under the path shown. After calculation of the profiles the evaluation pages appear.

10. If you want an evaluation of the results, select **Save Report...** (see [DocBees-Reprofiler Report](#)).

The output profile you have generated with DocBees-Reprofiler can now be selected for soft proofing in your DTP program, or saved in the RIP of your digital printing system.

To convert data via DeviceLink profiles, you can use ColorLogic CoLiPri or ZePrA, or third-party products that support conversion with ICC DeviceLink profiles.

**Note:** If, before converting data, you want to check whether data conversion with a profile optimized by DocBees-Reprofiler would be helpful or worth while, you can use the soft proof in Adobe Photoshop. To do so, first have your printing data displayed with the original standard profile. Then open the same printing data again, but this time assigning the output profile optimized by DocBees-Reprofiler. If the soft proof reveals clear differences between the two sets of printing data, you should convert the printing data with the DeviceLink profile created in DocBees-Reprofiler in order to preserve the required, original color impression as extensively as possible, despite the differences in the printing conditions.

## USE CASE 4: OPTIMIZATION OF A DIGITAL PRINTING SYSTEM

DocBees-Reprofiler can be used for quick and easy detection and correction of differences in digital printing results. Differences in color rendering can, for example, occur as a result of a change of substrate, the replacement of wear parts, technically induced printing fluctuations, faulty operation of the RIP of the printing system, or the simple use of standard profiles that are not a good match.

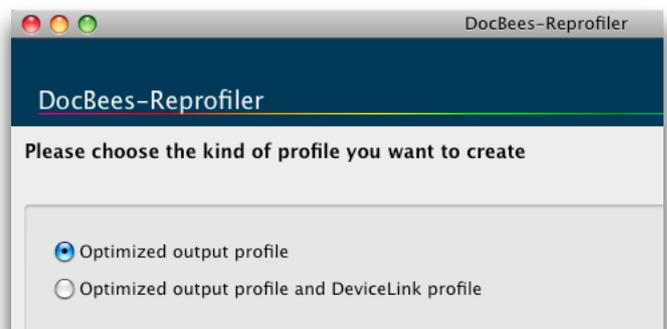
DocBees-Reprofiler makes it easy for you to create optimized output profiles for digital printing.

**Note:** If the rendering on your digital printing system is unsatisfactory from the outset, e.g. when reproducing ISO Coated V2 data, we recommend that you use ColorLogic CoPrA DeviceLink profiles to obtain optimum results.

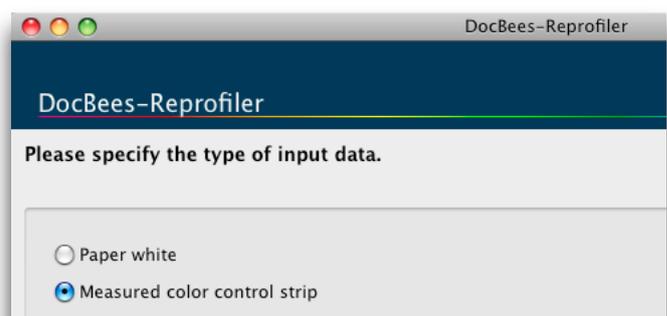
**Note:** Please make sure to use ColorLogic color control strips for digital printing optimization (see [ColorLogic color control strips](#)).

### What to do:

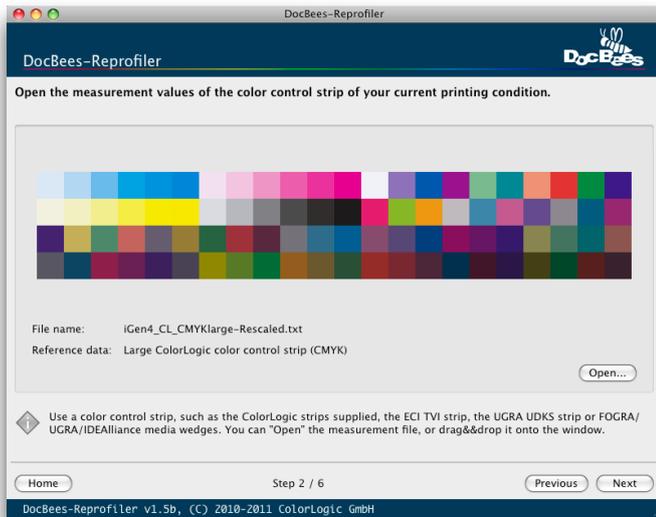
1. Make sure that you have the measurement file of a ColorLogic color control strip (see [Generating a measurement file](#)) and the original output profile.
2. Click on **Start** in the DocBees-Reprofiler starting window..
3. Select **Optimized output profile** and click on **Next**.



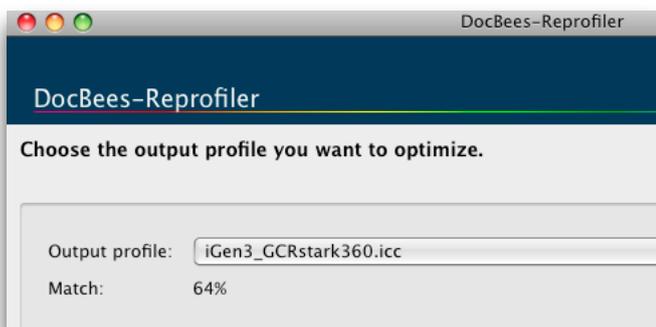
4. Select **Measured color control strip**. Click on **Next**.



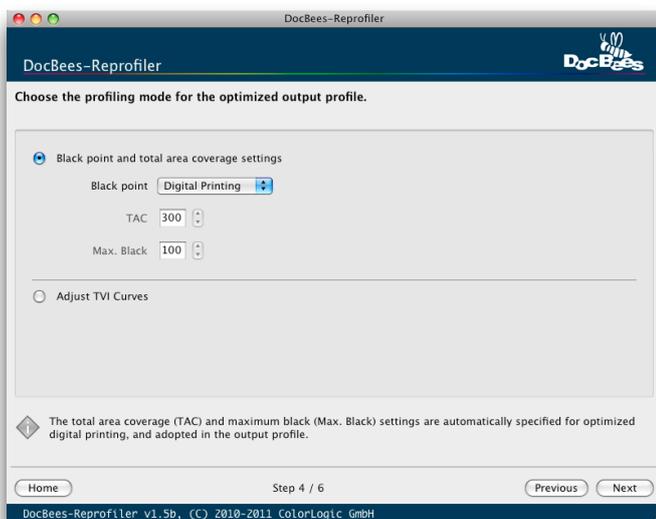
5. **Open** the measurement file, or drag&drop it onto the window.



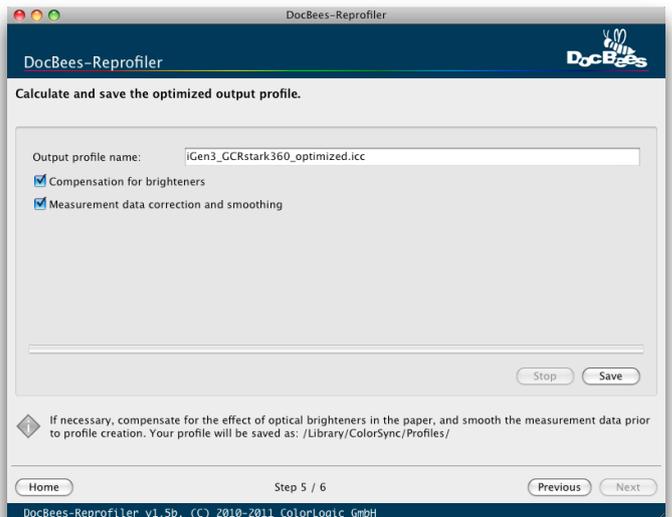
6. Click on **Next** and select the original **Output profile** to be adapted. The **Match** value is purely for your information (see [Use Case 1](#)).



7. Click on **Next**, and set the **Black point** to **Digital Printing** under **Black point and total area coverage settings**. The **TAC** and the **Max. Black** are adjusted for optimized digital printing output (see [Optimization options](#)).



8. **Next** takes you to the window for calculating and saving the optimized output profile. Give your optimized output profile a name. If you enter nothing, DocBees-Reprofiler adds the word **optimized** to the name of the original output profile. Always activate **Compensation for brighteners** and **Measurement data correction and smoothing** (see [Optimization options](#)).



9. Click on **Save**. Your optimized output profile is saved under the path shown. After calculation of the profile the evaluation page appears.



10. If you want an evaluation of the results, select **Save Report...** (see [DocBees-Reprofiler Report](#)).

Finally, the output profile you have generated with DocBees-Reprofiler can now be used in the RIP of your digital printing system as a printer, target or paper profile, depending on the naming convention used in the RIP.

## COMPARISON OF STANDARD PROFILES AND CURRENT MEASUREMENT VALUES

The tone value increase and the color are already evaluated while a DeviceLink profile is being generated. The **Tone value increase and color evaluation** dialog is purely for information purposes and requires no further input.

This evaluation helps you determine whether you have printed within the limits of the defined printing standard. The colorimetric evaluation is based on the limits specified in ISO 12647-2/-3. The evaluation additionally indicates whether you ought to perform further adaptation of the printing characteristic, and particularly whether it makes sense to create a DeviceLink profile for printing data conversion.

Under **Tone Value Increase**, you can click on the respective radio buttons to get a display of the TVI curves and percentages for Cyan, Magenta, Yellow, and Black. The grey curve represents the original printing standard profile, while the colored curve shows your measured, current printing condition.

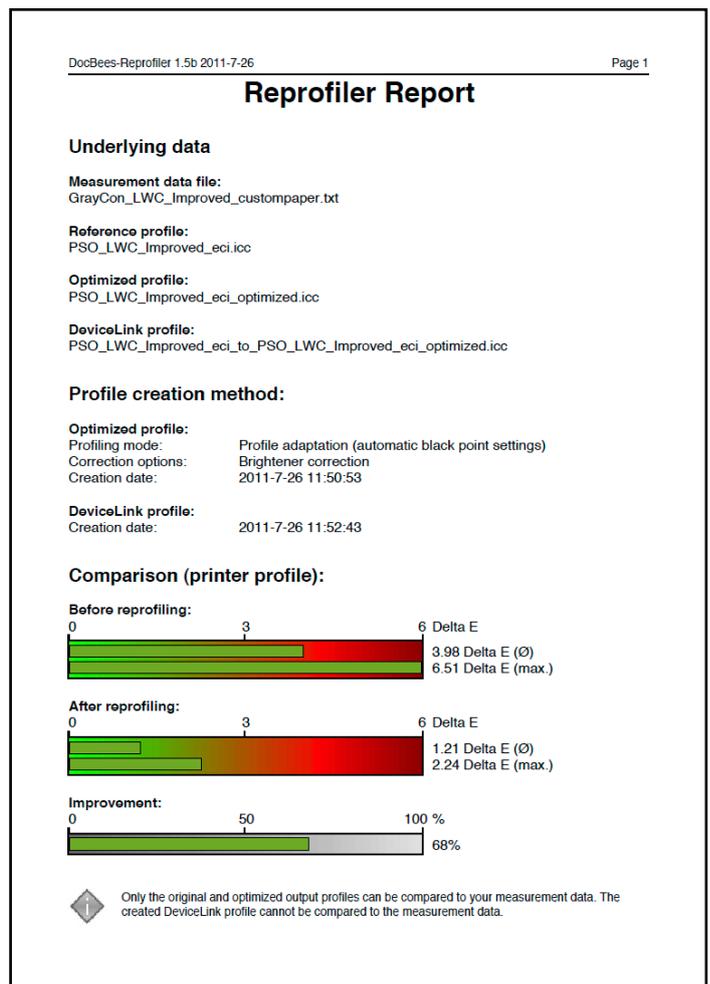
The gradations indicated alongside **Reference** correspond to the values contained in the color control strip. If the grey reference curve of the printing standard and the measured curve are close together, you have achieved a good match between the current tone value increase and the original printing standard. If the curves are not close together, as in the [screenshot on Page 12](#), the DeviceLink profile generated by DocBees-Reprofiler will compensate for these tone value differences. If you leave adjustment of the TVI curves to DocBees-Reprofiler, rather than making a correction in the RIP of the platesetter, you only have to make sure during subsequent production printing that you print in exactly the same way as when printing the color control strip.

**Note:** The TVI curves and percentages are calculated from the XYZ measurements, and do not exactly correspond to the curves and values that would be obtained using a densitometer with polarizing filter. However, since the display is a comparison and the absolute values are unimportant, the curves are nevertheless a good indication of whether your print achieves the TVI curves of the printing standard.

The **Color Evaluation** area is used to compare the currently measured values of the color control strip with the values specified by the original printing standard profile on the basis of the limits defined in

ISO 12647-2/-3, the results being displayed in the form of Delta E values. Based on the Delta E values and their rating with a green check mark or a red cross, you can see whether or not the paper white, the average, the maximum error, and the maximum primary color error are within the limits of the required printing standard.

The deviation before reprofiling of the original standard profile, the deviation after reprofiling, and the resultant percentage improvement are indicated at the end of profile calculation. The evaluation of your color control strip shows the average and maximum Delta E, referred to the measured values of the control strip. The evaluation of a change in paper white shows only the difference in the paper white. All the results described here are also to be found in the optional PDF Report that you can generate.



## DOCBEES-REPROFILER-REPORT

Once profile calculation has been completed, you can additionally click on **Save PDF Report** and then display it. The PDF Report contains not only the general evaluation, but also a detailed list of every single color patch with the Delta E values achieved.

Moreover, the curves and values displayed in the **Tone Value Increase** and **Color Evaluation** area are shown, before and after application of the DeviceLink profile.

The first page of the multi-page PDF Report contains not only information on the **Underlying data** and the **Profile creation method**, but also, under the heading **Comparison (printer profile)**, the statistics displayed in the final DocBees-Reprofiler window (see the screenshot in the section *Comparison of standard profiles and current measurement values*).

The second and third pages of the PDF Report give you a comparison of the **Reference (L\*a\*b\*)** values of your measurement file, the L\*a\*b\* values of the original standard profile (**Original profile (L\*a\*b\*)** column), and the L\*a\*b\* values of the optimized profile (**Optimized profile (L\*a\*b\*)** column).

The **Delta E (orig.)** column contains the color deviations of the measurement values of your current printing condition, together with the L\*a\*b\* values of the original printing standard profile. The darker the gray field behind the Delta E value, the greater the color difference between your current printing condition and the original printing standard profile.

The **Delta E (opt.)** column shows the color differences of the profile optimized with DocBees-Reprofiler, which are far smaller.

In our example, the optimized Reprofiler profile is significantly better matched to the current printing condition and will enable a better soft proof and/or digital proof in terms of color rendering – particularly in the saturated colors. The screenshot shows this very clearly in the evaluation of the two printer profiles on the basis of a ECI GrayCon strip.

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**Measurement data:**

Reference (L*a*b*)	Original profile (L*a*b*)	Optimized profile (L*a*b*)	Delta E (orig.)	Delta E (opt.)
94.35 0.91 -4.27	92.04 0.05 -1.98	94.35 0.91 -2.13	3.36	2.13
45.96 0.46 -2.22	44.49 1.83 -2.51	45.80 0.75 -2.39	2.03	0.37
46.90 -0.20 -3.31	43.63 0.38 -0.72	46.87 -0.20 -2.89	4.21	0.42
62.31 0.60 -3.55	59.39 0.22 -2.11	62.34 0.58 -2.81	3.29	0.74
61.96 0.07 -3.88	58.50 0.30 -1.55	61.88 0.08 -2.99	4.18	0.90
76.72 0.15 -4.11	72.92 -0.28 -3.56	76.68 0.44 -3.02	3.86	1.12
75.35 0.32 -4.37	72.45 0.22 -1.88	75.38 0.32 -2.85	3.82	1.52
22.26 0.32 -3.52	26.82 -3.70 -2.18	22.26 0.32 -3.46	6.23	0.07
24.48 19.07 -45.82	27.71 16.52 -46.50	24.48 19.07 -45.34	4.17	0.47
48.76 -63.40 21.24	50.06 -59.12 25.99	48.76 -63.39 21.43	6.51	0.19
48.49 70.21 45.70	47.97 66.16 44.16	48.49 70.21 45.75	4.36	0.05
88.69 0.72 -4.39	85.64 0.08 -2.02	88.65 0.71 -2.39	3.91	2.00
82.29 0.49 -4.35	79.16 0.14 -2.00	82.18 0.51 -2.64	3.93	1.71
74.00 0.32 -4.28	72.45 0.22 -1.88	75.38 0.32 -2.85	2.86	1.99
68.83 0.15 -4.14	65.67 0.29 -1.76	68.83 0.17 -2.96	3.96	1.18
61.54 0.05 -3.92	58.50 0.30 -1.55	61.88 0.08 -2.99	3.86	1.00
53.36 -0.05 -3.54	51.23 0.31 -1.33	53.48 -0.04 -2.94	3.09	0.61
46.56 -0.09 -3.21	43.63 0.38 -0.72	46.87 -0.20 -2.89	3.87	0.46
35.74 -0.09 -2.36	35.92 0.47 -0.08	36.02 -0.09 -2.20	2.35	0.32
27.04 -0.06 -1.72	28.10 0.72 0.92	26.68 -0.04 -1.59	2.95	0.38
14.46 0.19 0.47	20.01 1.02 2.05	14.46 0.19 0.44	6.15	0.02
93.40 -0.42 2.74	91.52 -1.14 6.44	93.49 -0.32 4.84	4.21	2.10
92.78 -1.34 10.61	90.87 -1.92 14.88	92.84 -1.37 12.49	4.71	1.88
92.33 -2.31 19.30	90.20 -2.39 23.85	92.37 -2.27 20.74	5.03	1.43
91.98 -3.07 28.00	89.60 -2.82 33.07	91.94 -3.06 29.39	5.61	1.39
91.36 -3.83 37.81	88.92 -3.13 42.66	91.38 -3.81 39.07	5.47	1.26
90.71 -4.46 49.37	88.23 -3.26 52.49	90.69 -4.43 49.99	4.16	0.62
90.01 -4.79 59.62	87.55 -3.15 62.25	90.08 -4.76 60.26	3.96	0.65
89.67 -4.88 70.15	86.92 -2.86 72.16	89.63 -4.90 70.71	3.96	0.56
89.03 -4.92 82.62	86.40 -2.43 81.20	89.03 -4.91 82.85	3.89	0.22
88.56 -4.75 92.04	86.03 -2.02 88.99	88.56 -4.75 92.21	4.81	0.17
90.42 6.55 -5.54	87.42 6.69 -3.99	90.37 6.57 -3.42	3.98	2.12
85.97 12.60 -6.39	82.78 13.47 -5.35	85.98 12.64 -4.43	3.47	1.96
81.18 19.41 -7.05	78.05 20.58 -6.40	81.24 19.34 -5.28	3.41	1.78
76.20 26.71 -7.62	73.27 28.05 -7.26	76.20 26.87 -6.06	3.24	1.57
70.87 35.53 -8.28	68.41 36.02 -8.10	70.92 35.39 -6.81	2.51	1.48
65.85 43.72 -8.14	63.61 44.08 -8.56	65.83 43.79 -6.99	2.30	1.15
60.50 53.15 -7.52	58.99 52.22 -8.40	60.50 53.15 -6.60	1.98	0.92
55.46 62.27 -6.51	54.62 60.23 -8.04	55.48 62.37 -5.72	2.68	0.80
51.27 70.76 -5.02	50.98 67.80 -7.22	51.35 70.51 -4.39	4.20	0.67
48.48 76.17 -3.45	47.98 73.00 -6.09	48.42 76.17 -2.70	4.34	0.45
91.48 -1.32 -8.08	88.57 -4.06 -6.90	91.41 -1.88 -5.99	3.81	2.10
87.79 -4.89 -12.54	84.98 -7.64 -11.50	87.80 -4.87 -10.40	4.07	2.14
83.77 -8.24 -17.25	81.32 -11.46 -16.15	83.77 -8.24 -15.20	4.19	2.05
79.49 -11.89 -22.30	77.60 -15.23 -20.75	79.51 -11.89 -20.26	4.15	2.04
75.23 -15.66 -27.38	73.84 -19.08 -25.53	75.22 -15.66 -25.38	4.14	2.00
70.70 -19.57 -32.47	70.06 -22.89 -30.29	70.70 -19.57 -30.54	4.03	1.93
65.48 -24.36 -38.35	66.36 -26.66 -34.69	65.63 -24.30 -36.37	4.41	1.98
61.99 -27.85 -42.57	62.81 -30.28 -38.92	61.95 -28.06 -40.82	4.45	1.76
58.34 -32.16 -46.94	59.77 -33.83 -42.60	58.37 -32.06 -45.11	4.87	1.83
55.29 -35.14 -50.50	56.99 -37.00 -45.96	55.29 -35.14 -48.76	5.19	1.74
94.44 0.82 -4.37	92.04 0.05 -1.98	94.35 0.91 -2.13	3.47	2.24

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**Comparison of your measurements with print standard profile**

Category	DeltaE	Limit	Result
Paper (dE)	3.36	3.00	NOT OK
Average (dE)	4.01	4.00	NOT OK
Maximum (dE)	6.51	10.00	OK
Primary colours (dE)	6.15	5.00	NOT OK

The deltaE (1976) limits used in this evaluation are in accordance to ISO 12647-2:3

**Comparison of dot gain curves (TVI)**

**Cyan**

Ink Value	10%	20%	30%	40%	50%	60%	70%	80%	90%
Dot Gain	2.6	6.4	10.6	13.9	14.4	14.1	14.7	10.7	6.3
Optimum	6.3	10.6	13.9	15.8	16.7	16.2	14.2	10.8	5.9

**Magenta**

Ink Value	10%	20%	30%	40%	50%	60%	70%	80%	90%
Dot Gain	2.9	6.3	9.6	12.0	13.9	13.9	13.2	10.9	6.6
Optimum	5.5	9.8	13.0	15.0	16.0	15.7	14.0	11.0	6.1

**Yellow**

Ink Value	10%	20%	30%	40%	50%	60%	70%	80%	90%
Dot Gain	4.1	7.3	9.9	11.0	12.4	13.7	12.3	9.2	6.0
Optimum	5.7	10.1	13.8	15.9	17.0	16.7	14.8	11.5	6.5

**Black**

Ink Value	10%	20%	30%	40%	50%	60%	70%	80%	90%
Dot Gain	4.9	10.0	14.2	15.7	16.1	16.8	13.2	11.6	6.1
Optimum	7.4	12.9	16.9	19.0	19.8	18.8	16.4	12.3	6.8

Dot gain calculation is based on colorimetric measurement data.

This page shows if your measured printing condition fits to the desired print standard profile. Note that the TVI curves are calculated from the XYZ values of the print standard profile and the measurement data. The values and curves can differ from those obtained using a densitometer.

The next page of the PDF Report shows the colorimetric evaluation and the comparison of the tone value increases of your current printing condition, compared to the original standard profile. This corresponds to Step 3 in the DocBees-Reprofiller program.

On the last page of the PDF Report, the optimized DeviceLink profile is applied to the CMYK data of your current color control strip and compared to the original printing standard.

As you can clearly see when comparing the two pages, the DeviceLink profile makes for a perfect match of the tone value increase curves. Similarly, the average error (see the **Average (dE)** line in the table) and maximum error **Maximum (dE)** are lower in the colorimetric evaluation, indicating a better color match between your printing condition and the required printing standard.

**Note:** The DeviceLink profile does not compensate for the deviations in the primary colors and the paper white. Please note that color control strips containing mainly primary color gradations and only few tertiary colors (e.g. the ECI GrayControl Strip) are less suitable for evaluation than strips containing more tertiary colors.

It is for this reason that ColorLogic strips and the Ugra/Fogra Media Wedge V3 also show greatly improved average errors.

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**Comparison of DeviceLink and optimized profile to print standard**

Category	DeltaE	Limit	Result
Paper (dE)	2.47	3.00	OK
Average (dE)	2.64	4.00	OK
Maximum (dE)	6.13	10.00	OK
Primary colours (dE)	6.13	5.00	NOT OK

The deltaE (1976) limits used in this evaluation are in accordance to ISO 12647-2:3

**Comparison of dot gain curves (TVI)**

**Cyan**

Ink Value	10%	20%	30%	40%	50%	60%	70%	80%	90%
Dot Gain	6.0	10.6	13.8	15.9	16.5	16.1	14.8	10.9	6.2
Optimum	6.3	10.6	13.9	15.8	16.7	16.2	14.2	10.8	5.9

**Magenta**

Ink Value	10%	20%	30%	40%	50%	60%	70%	80%	90%
Dot Gain	5.3	9.7	12.9	15.0	16.1	15.4	14.0	11.2	6.5
Optimum	5.5	9.8	13.0	15.0	16.0	15.7	14.0	11.0	6.1

**Yellow**

Ink Value	10%	20%	30%	40%	50%	60%	70%	80%	90%
Dot Gain	5.6	10.2	13.7	15.7	16.9	16.9	14.7	11.1	6.7
Optimum	5.7	10.1	13.8	15.9	17.0	16.7	14.8	11.5	6.5

**Black**

Ink Value	10%	20%	30%	40%	50%	60%	70%	80%	90%
Dot Gain	7.2	12.9	16.9	18.9	19.9	18.7	15.6	12.4	6.5
Optimum	7.4	12.9	16.9	19.0	19.8	18.8	16.4	12.3	6.8

Dot gain calculation is based on colorimetric measurement data.

The colorimetric aim values and dot gain curves of the desired print standard profile are compared to the values you would get when applying the DeviceLink and optimized output profile. The dot gain curves shall be very close to each other.