



OPTIMIZE.
PROFILE.

CoPRA
COLOR PROFILING

CoPRA 
Quick Start Guide **6**

COLOR
Logic

Color Focused. Technology Driven.

Quick Start Guide for CoPrA 6

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Introduction

Thank you for choosing CoPrA.

CoPrA, the ultimate profiling solution

The ColorLogic color management philosophy is a simple set of tools with highly powerful options. CoPrA creates printer, DeviceLink and SaveInk profiles with Multicolor options for typical day-to-day color management challenges with a few clicks. The clear and concise structure of CoPrA is explained in the following Quick Start documentation.

CoPrA's Online Help

The question mark **?** (bottom right in all program windows) opens the online help. This is context-sensitive, so if you click **?** in the **Editing** tool, the **Editing** online help page opens. The online help contains more detailed information about the various functions of this application.

Automatic Updates

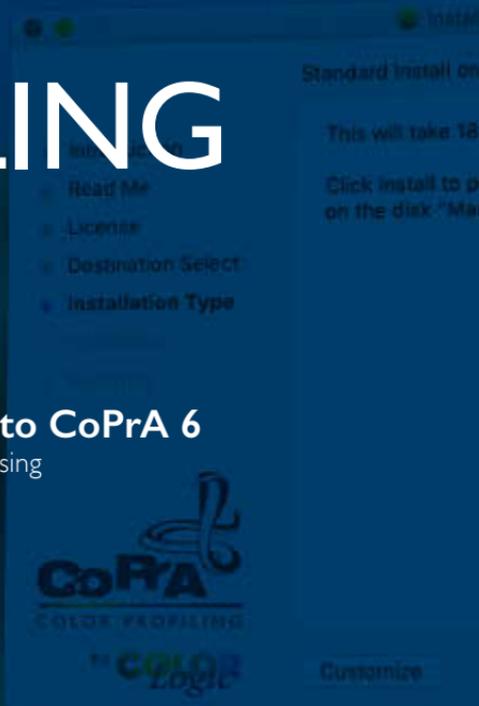
CoPrA can automatically search for new versions of the application at program start. Activate or deactivate the automatic update check under **Help > Check for Update**.

Your ColorLogic team

INSTALLING COPRA



Introduction to CoPrA 6
Installation and licensing



System requirements

macOS:

10.9 or higher; CoPrA and **Measure Tool** run in 64-bit mode

Windows:

Windows XP, Vista, Windows 7, Windows 8, Windows 10; CoPrA runs in 64-bit mode, ColorAnt and **Measure Tool** run in 32-bit mode

Installation

Begin installation by double-clicking on the installation package. The default installation directory for the application is either in the folder **Applications** (macOS) or **Programs** (Windows).

After accepting the Software License Agreement, select the destination volume and choose between a **Standard Installation** or a **Custom Installation**. Standard Installation installs all components (e.g. **ColorAnt** or the **Measure Tool**).

The integration of ColorAnt (or ColorAnt's **Measure Tool** with CoPrA Basic) allows to measure test charts for profile creation from within CoPrA.

Computer vs dongle license

Computer-based licenses are tied to the computer on which the software (CoPrA, ZePrA or ColorAnt) is installed. This is useful for temporary test purposes. Computer-based licenses are also required if the computer lacks a USB port or space for a USB dongle, i.e., a rack server.

USB dongle licenses are serialized to the dongle. The USB dongle communicates with the appropriate software license and enables the software to be used on different computers. To assign the license to the USB dongle, it must be connected to the computer before starting the software.

Demo Licenses

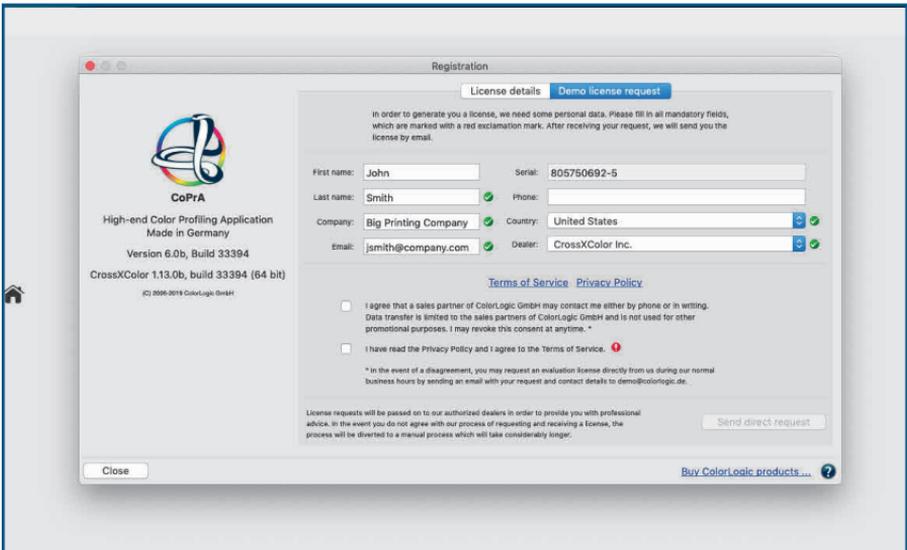
ColorLogic offers 14-day trial licenses for the applications CoPrA, ZePrA and ColorAnt, allowing the user to evaluate the software features and performance.

Requesting a Demo License

1. Click on **Registration** in the lower left corner of the sidebar:

be sent to the specified email address within a few minutes.

5. Save the license file (*.lic) contained in the email on the targeted computer that CoPrA is installed.
6. **Load** the license file in the tab **License details** under **Registration** to activate the respective application.



CoPrA - Requesting a Demo License

FIG 1.1

2. Click on the tab **Demo license request**.
3. Enter all the required information (Fig 1.1).
4. After selecting the country, the software shows a list of available dealers in that region. Select a dealer and click on **Send direct request**. The demo license will

The expiration date of demo licenses is shown under **License details** on the lower right of the application window after activation.

Restrictions with Demo Licenses

All profiles created with a demo license in CoPrA are encrypted and can only be used correctly in ColorLogic applications.

All files converted with a demo license in ZePrA are watermark protected. If it becomes necessary to test ZePrA within a workflow without the watermark during the test period, contact your dealer for instructions.

Purchasing ColorLogic Products

Please contact a dealer in your region. The dealer list is available under <https://colorlogic.de/en/contact/>.

Alternatively, start the demo version of the application you would like to purchase. Click on **Buy ColorLogic products** in the bottom right corner of the **Registration** window.

Installing a Permanent License

A permanent license will be provided by your dealer after purchasing the application. Load the license file (*.lic) in the tab **License details** under **Registration** to activate the application.

After installing the permanent license file, the licensed modules are displayed under **License details**.

MAIN WINDOW



CoPrA's Sidebar
Fast access to all modules



Printer Profiling

New Printer Profile Update Profile

DeviceLink Profiling

DeviceLink Editing SaveInk

Iterate Linearization Recalculate

ToolBox

Image Conversion Profile Manager Batch Overview

Registration Home Preferences

CoPrA's Sidebar

The sidebar provides quick access to all modules. Move the mouse over the **Home** icon on the left and select the appropriate module.



New Printer Profile

Create printer profiles



Update Profile

Update profiles using optimized measurement data



DeviceLink

Create DeviceLink profiles from standard ICC profiles



Editing

Create DeviceLinks using individually modified test charts



SaveInk

Create ink saving DeviceLink profiles



Iterate

Improve existing DeviceLink profiles



Linearization

Optimize primary color gradations



Recalculate

Recalculate DeviceLink profiles with a different profile



Image Conversion

Convert image files for profile evaluations



Profile Manager

Manage profiles in one convenient place



Batch Overview

Monitor and manage profiling jobs or reports

Registration - Home - Preferences

Registration - Activate CoPrA and manage licences

Home - Return to CoPrA's Home screen

Preferences - Define start page, profile location, report settings

› CoPrA 6 Packages and Add-Ons

CoPrA 6 packages now include more features and the flexibility to add specific modules to changing needs.

CoPrA 6 PACKAGES				
COPRA BASIC	COPRA M	COPRA L	COPRA XL	COPRA XXL
STANDARD FEATURES	Package Features M	Package Features L	Package Features XL	Package Features XXL
RGB, Gray, CMYK Profiles with presets	Includes all features of Basic Package	Includes all features of Basic and M Packages	Includes all features of Basic, M, L Packages	Includes all features of S, M, L, XL Packages
Profile updating with presets	Create profiles with custom settings	DeviceLink Creation	SaveInk Profiles Create SaveInk DeviceLinks	Edit DeviceLinks with up to 15 channels
Profile Manager PDF reporting	ColorAnt M Analyze & Optimize Measurement data	DeviceLink Editing & Iteration		Multicolor Profiles Create and update profiles & DeviceLinks
		DeviceLink Linearization & Recalculation		ColorAnt L Analyze & Optimize Measurement data

CoPrA 6 ADD-ON MODULES

COPRA MODULE	FEATURES
DeviceLink Profiling	DeviceLinks, Iteration and Recalculation for Gray, RGB, CMYK
DeviceLink Editing	Creates DeviceLink profiles based on Editing for Gray, RGB, CMYK
SaveInk	Create SaveInk DeviceLinks
Multicolor	Multicolor support for Printer and/or DeviceLink profiling and/or Editing
Multicolor Flexible	Enables Multicolor Support for CoPrA and ZePrA

PRINTER PROFILING



New Printer Profile

Create new high-quality printer profiles from optimized measurement data



Update Profile

Update current profiles with optimized measurement data



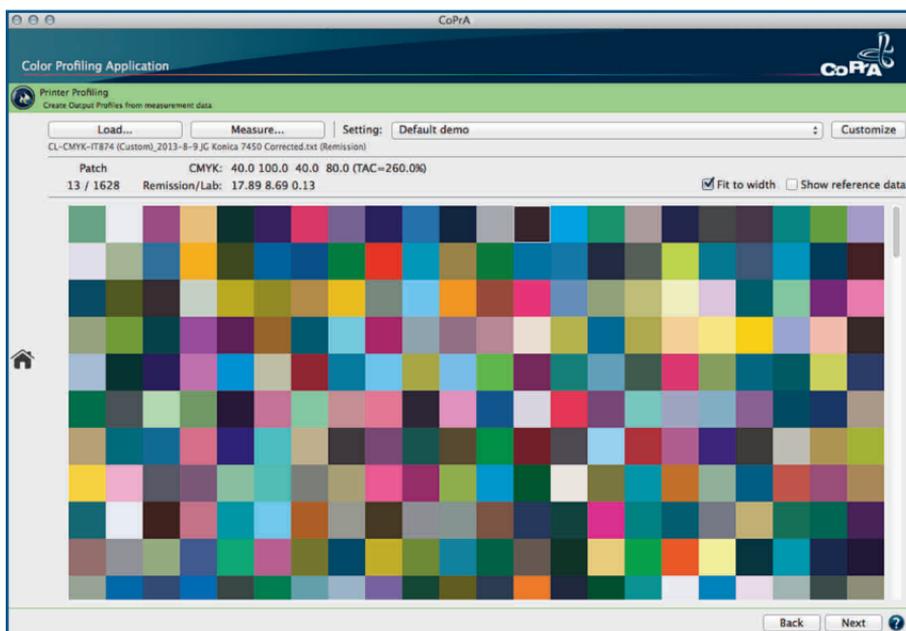
03

PROFILING

New Printer Profile

Depending on the CoPrA package, different profiling functions are

printer profile. There are two ways to obtain measurement data for creating a printer-specific ICC profile:



Measurement data for printer profiling

FIG 3.1

available. It's possible to test all functions with a demo license. With the appropriate modules create profiles for the color spaces Gray, RGB, CMY, CMYK or Multicolor.

A test chart with various color patches of the corresponding color space is required as a basis for each

1. Measure and optimize a test chart with an appropriate software (e.g., ColorAnt) and load the measured values into CoPrA.

2. Create the measured values directly in CoPrA using the integrated **Measure Tool**.

ColorAnt has the advantage that measurement errors, printing errors or other artifacts (e.g., inhomogeneities) can be eliminated. By analyzing and optimizing the measurement data, the profile quality is increased, which in turn, leads to improved production reliability.

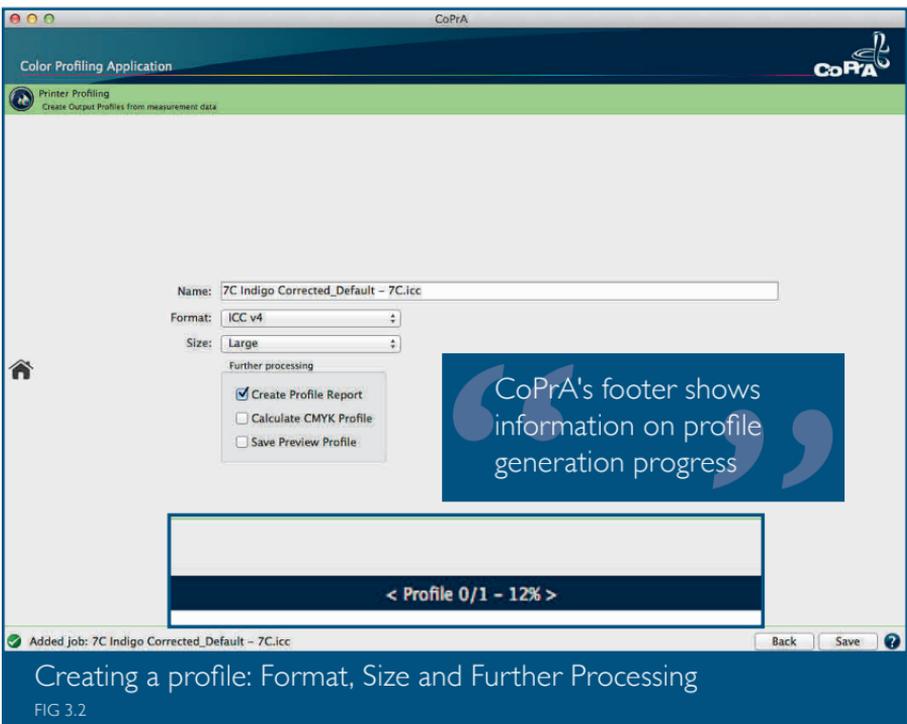
Note: For most CMYK printing processes we recommend the test chart IT8.7/4. For RGB printers we

To create printer profiles, load the measurement data and reference data and select a setting for profile creation (Fig. 3.1).

Drag and Drop measurement data directly into the window or onto the Load button.

CoPrA includes a large number of standard settings for common printing processes (e.g., digital printing).

Under **Customize**, further settings can be configured, e.g., settings for **Color Generation** or for determining the first printed tone.



Creating a profile: Format, Size and Further Processing

FIG 3.2

recommend test charts with patches (900 and more). For Multicolor printing processes, either use the test charts and reference files supplied with CoPrA, or create them with ColorAnt.

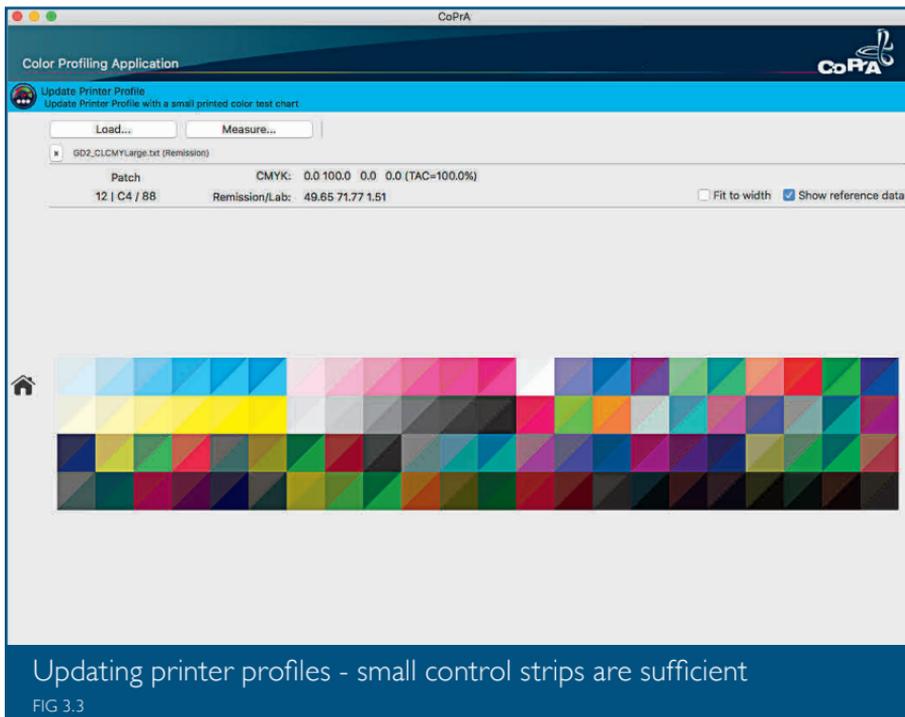
The various options for defining the black point and the gray axis allow precise control of the separation properties.

Procedure:

1. Load the measurement data (alternatively via drag and drop).
2. Select a setting for the used printing process.
3. Optionally: Click **Customize** to set **Perceptual Rendering**, **Measurement Processing**, and **Highlights** settings.

can be generated automatically. This report contains detailed information about the profile, color range, gray balance, saturation, linearity and also conversions of sample data.

5. Create the new profile by clicking **Save**. The progress can then be followed either in the footer or in the Batch Overview.



Detailed information can be found in our online help, which can be accessed via the ?.

4. Click **Next** and specify a **Name** for the new profile. CoPrA automatically suggests a profile name based on the measurement data and settings (Fig. 3.2). Select the ICC profile **Format** (V2 or V4) and the profile **Size** (defines the number of points in the profile). Optionally, a profile report

Update Profile

CoPrA 6 has an innovative method to update ICC output profiles without printing extensive test charts and defining profile settings. With a small test chart or control strip, an existing printer profile can easily be adapted to changed printing conditions.

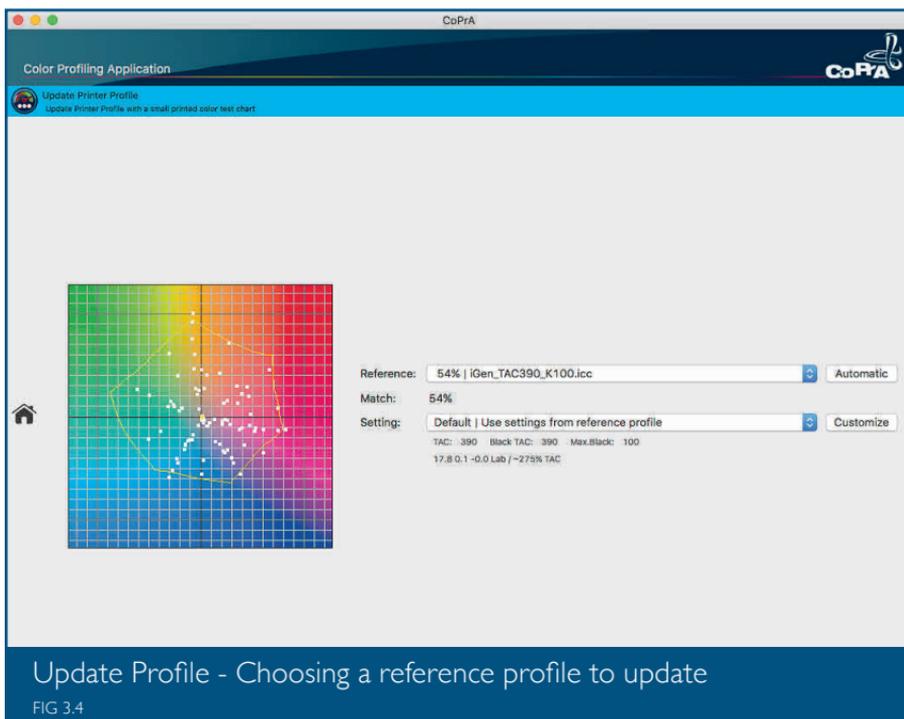
Procedure:

1. Print a small Reprofiler test chart (or control strip) on the printer to be updated and measure it (e.g., with ColorAnt). The test chart can also be measured directly in CoPrA by opening the **Measure Tool** by clicking the **Measure** button.

4. Select the profile to be updated from the drop-down menu (Fig. 3.4). For more information, see our online help.

5. Click **Next**, name the updated profile and select **Size** and **Format**.

Directly create a profile report (optional), a profile comparison



2. **Load** the measurement data, alternatively by drag and drop (Fig. 3.3).

3. Click **Next**. CoPrA automatically searches for the profile that best matches your measurement data and displays it in the drop-down menu.

report (to see the differences between the original and updated profile) or a correction DeviceLink.

DEVICELINK PROFILING



DeviceLink

Create DeviceLinks from ICC profiles



Editing

Use individually modified test charts



SaveInk

Create SaveInk DeviceLinks



Iteration

Improve existing DeviceLink profiles



Linerization

Optimize primary color gradations



Recalculate

Recalculate with a different profile



DeviceLink

DeviceLinks have some advantages over standard device profiles: DeviceLinks perform a direct conversion between input and output color spaces. Color values or color combinations can be protected or individually customized and will only be altered where necessary.

DeviceLinks compensate for many weak points of conversions using ICC output profiles. For example, the DeviceLink allows preservation of the black channel so that text is printed with black ink rather than using four inks.

Ink can be saved (SaveInk) and the result can be adapted to the paper white.

Proofing: Iterated DeviceLinks also provide a substantially increased proof quality.

CoPrA allows DeviceLinks to be created for all combinations of color spaces: Gray, RGB, CMYK and Multicolor.

Use one of the predefined settings as a starting point to create DeviceLink profiles

ICC printer profiles are required to create DeviceLink profiles. Create these easily in CoPrA (using the **New Printer Profile** tool).

Procedure:

1. Define the **Source Profile** and the **Target Profile**.
2. Select a **Setting** for the printing method used. The names of the settings are based on typical printing tasks. Optionally: Click **Customize** to modify the selected setting.
3. Click **Next**.
4. **Name** the profile and select the **Size** and **Format** of the ICC profile. You can also create a profile report or a preview profile.
5. Create the new profile by clicking on **Save**.

Editing

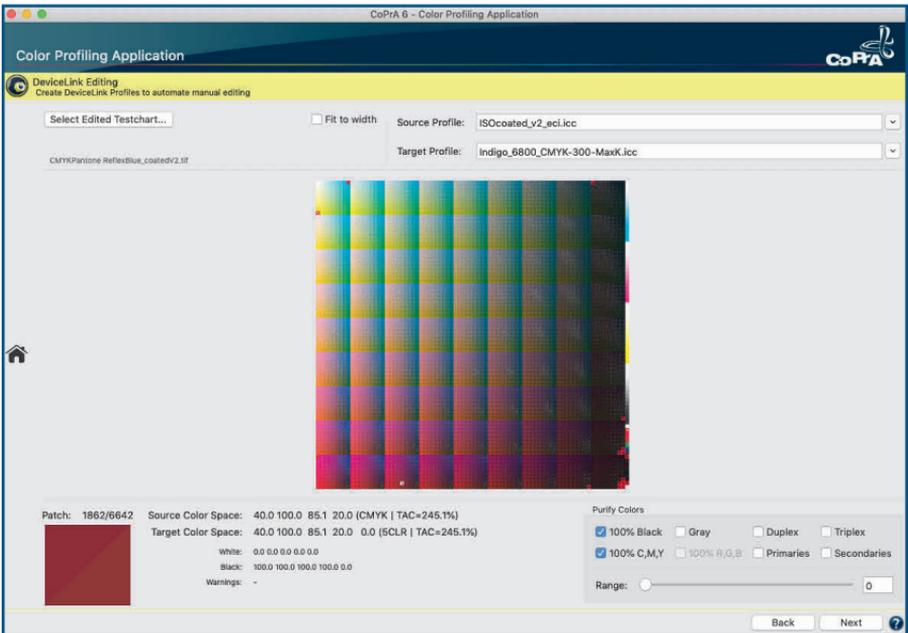
Allows customized DeviceLink profiles to be created from individually modified test charts (EditTargets). This opens up a multitude of possibilities, e.g., for recurring retouching work on similar image data, or to automatically include color corrections in profile data.

These profiles can then be used automatically on color servers such as ColorLogic ZePrA.

Open one of the supplied EditTargets (for CMYK, RGB or Grayscale) in an image editing program (such as Adobe Photoshop) and make any desired color corrections. Add other images to the chart to customize it. The patch in the upper left corner

Source Profile must then be specified manually. If no profile is included, source and target profiles can be assigned manually.

The assignment of profiles also has the advantage that the color patches are displayed in with an accurate preview in CoPrA. Another advantage is that this profile information is stored in the PSID tag of the profile



Data of an edited test chart (EditTarget)

FIG 4.1

cannot be covered, as CoPrA will read the patch to create the DeviceLink.

Open the corrected EditTarget in the **Editing** tool, either via drag and drop or via the **Select Edited Testchart** button. If a profile is included in the loaded EditTarget, it is automatically selected as the **Target Profile**. The

and an intelligent workflow solution, e.g., ZePrA, can automatically create configurations from it.

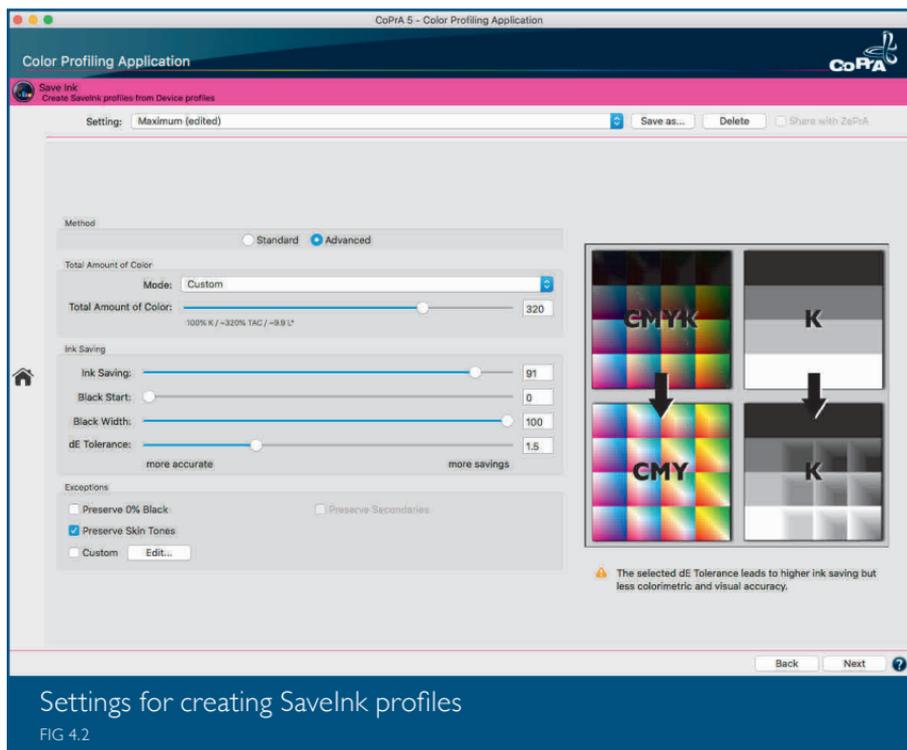
Evaluate the edits for each color patch. The original unedited EditTarget serves as a reference. For each color patch the original color

value is located in the upper left half of the diagonally divided color patch, and the edited color value in the lower right half. Move the mouse pointer over the chart and the color patches are displayed together with further color information and a difference display in brackets (color space and TAC value). The adapted DeviceLink profile can then be created.

Note: Never change the size and position of the control elements (patches) in the upper left corner. Do not save the image as a JPEG file.

3. Open the customized EditTarget in the CoPrA **Editing** tool and activate additional options if necessary, e.g., for keeping colors pure.

4. **Name** the profile and select the **Size** and **Format** of the ICC profile.



Procedure:

1. Open one of the supplied EditTargets (in the menu **Tools** > **Open EditTargets** folder).
2. Modify the EditTarget in an image editing program until it meets requirements and then save it.

5. Create the new profile by clicking on **Save**.

SaveInk

SaveInk profiles use fewer combinations of Cyan, Magenta and Yellow and more Black ink. The modified black structure allows to save ink - without sacrificing quality and at the same time control the overall ink application. CoPrA 6 adds the ability to apply ink saving to Multicolor profiles.

A moderate **SaveInk** setting primarily stabilizes the printing process.

A stronger setting further reduces the amount of colorants. The **SaveInk** function can also be combined with other functions in CoPrA, such as **SaveInk** with a color space change or **SaveInk** for Multicolor profiles.

Procedure:

1. Load the CMYK **Printer Profile** from the drop-down menu.
2. Select a **Setting** for the desired ink saving. Optionally: Click on **Customize** to modify the selected Setting (Fig. 4.2).
3. Click **Next**.
4. **Name** the profile and select the **Size** and **Format** of the ICC profile. You can also (optional) create a profile report or embed profiles.
5. Create the new profile by clicking on **Save**.

Iterate

An existing DeviceLink profile can be optimized based on measured color values by using a custom test chart (can be created with ColorAnt/**Custom Chart**).

The iteration calculates a new DeviceLink profile based on the original DeviceLink profile and the measured values.

The new profile can be reinserted for iteration until the desired result is achieved.

Procedure:

1. Select **Iterate** in the sidebar.
2. Select the DeviceLink you would like to iterate from the drop-down menu. Make sure that both the source and target profiles used in the DeviceLink are available in the ICC profile folder of your operating system.
3. Convert the test chart to be used for iteration with the DeviceLink profile and print it on the printer using the same settings as for the profiling test chart for this printer. The test chart can be converted using CoPrA's **Image Conversion** tool.
4. Measure the printed test chart in ColorAnt, save the measurement data and open it in CoPrA's **Iterate** tool.
5. Click **Save** to calculate the new DeviceLink profile.

Note: The newly created DeviceLink will have a more accurate color rendering for most in-gamut colors compared to the original DeviceLink profile.

Linearization

Optimizes the tone values of primary gradation ramps for any printer and color combination. The goal of

Linearization is to produce adequate differences from white to 100% of primary inks, smooth gradation curves and adjust primary colors to a defined, reproducible condition.

Procedure:

1. Print primary ramps on an uncalibrated output device with no color management.
2. Measure the test chart and optimize the measurement data with 0 appropriate software (e.g., ColorAnt) and load the measured values into CoPrA; or create the measured values directly in CoPrA using the integrated **Measure Tool**.
3. Click **Customize** and choose one of the default **Settings** and **Calculation Methods**.
4. Click **Next** and set the profile settings. Generate a Profile Report to get details on the profile.

Recalculate

The **Recalculate** tool can be used to recalculate current DeviceLinks with a new source or target profile. This is particularly useful if the **Update Profile** tool was used to create an optimized printer profile from a reference profile and then all DeviceLinks that contain the reference profile are to be recalculated with the optimized profile.

Procedure:

1. Load a CMYK printer profile from the **Current profile** drop-down menu.

2. Select the ICC profile to replace the current profile from the **Recalculate with** menu.
3. Under **Saving Options** define whether to **Create new profiles** (DeviceLink profiles) or **Overwrite existing profiles**.
4. Define the names of the new DeviceLinks and the backup copies in the **Template** text field.
5. Use the checkboxes to select the DeviceLinks to be recalculated. With the settings **All**, **None** and **Invert** you can activate or deactivate checkboxes all at once.
6. **Start** activates the recalculation of the DeviceLinks.

TOOLS



Image Conversion

Convert image files for profile evaluations



Profile Manager

Manage profiles in one convenient place



Batch Overview

Monitor and manage profiling jobs



Image Conversion

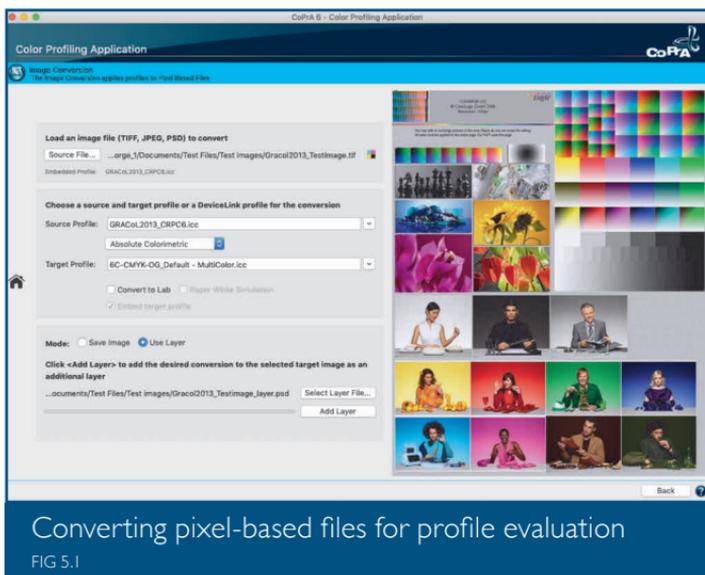
The **Image Conversion** converts pixel-based files for profile evaluations, e.g., to find the profile settings that produce the best color reproduction, or when evaluating a demo version of CoPrA. It is also useful for testing the profile quality within CoPrA on images, since typical

further evaluation in other programs (e.g., Photoshop). File formats supported are PSD, TIFF and JPEG files that can be converted using ICC device profiles or DeviceLink profiles.

Profile Manager

The **Profile Manager** allows to manage, organize, analyze, compare and customize

profiles without leaving the CoPrA working environment (Fig. 5.2). The main window displays the profiles available on the computer. The **Profile Manager** can handle all profile types, including DeviceLink and Multicolor profiles.



applications often do not support all types of DeviceLinks (e.g., RGB to CMYK) or Multicolor profiles.

When testing a demo version of CoPrA, file conversion allows images to be converted with CoPrA demo profiles (encrypted profiles) for

The six tabs (**General, Curves, Gamut, Colorants, Workflow, Notes**) gives access to all essential functions. Quickly and comprehensively check the quality of your profiles by creating a profile report (right click).

Batch Overview

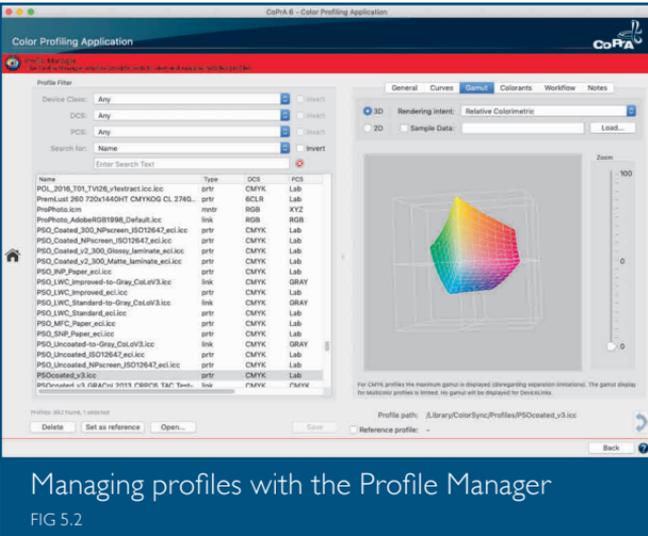
Batch processing allows profiles to be calculated and other profiles to be prepared in parallel.

profile can be created. All profiles that are processed appear in the **Batch Overview** window and are processed one after another. Waiting until the previous profile has been calculated is not necessary.

Profiles automatically appear in the **Batch Overview** when the creation of one or more profiles is started, for example, when recalculating DeviceLink profiles.

In the upper left area of the **Batch Overview** window

there are three buttons allowing to start and stop the calculation of profiles or to remove profiles from the view (Fig. 5.3).

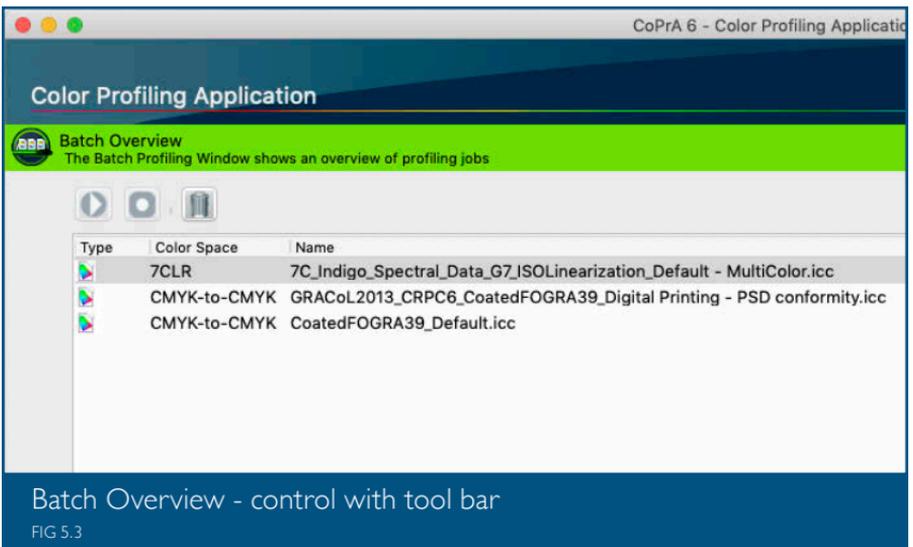


Managing profiles with the Profile Manager

FIG 5.2

Advantages of batch profiling:

While a profile is being calculated the next measurement data can be loaded, profile settings can be defined, or different variants of a



Batch Overview - control with tool bar

FIG 5.3



About **ColorLogic**

We are an independent, technology driven company that creates strong and productive relationships between our partners, clients and team. We believe that it doesn't matter where or how color needs to be expressed, start with the best technology available.



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