

Optimize.

Profile.



CoPrA 3.0
Quick Start Guide

COLOR
Logic

QuickStart Guide for CoPrA 3.0

Copyright © 2014 ColorLogic GmbH.

All rights reserved. Reprinting of this information – in whole or in part – is only permitted with our express, written consent.

ColorLogic GmbH accepts no responsibility whatsoever for the accuracy of the information contained herein, insofar as it relates to details and descriptions of standards and third-party products.

Adobe, Acrobat, Photoshop, Postscript and PDF are registered trademarks of Adobe Systems Inc. Windows, Windows XP, Vista, Windows 7 and Windows 8 are either registered trademarks or trademarks of Microsoft Corporation in the USA and/or other countries. Apple, Macintosh, Power Macintosh, MacOS, MacOSX and ColorSync are trademarks of Apple Computer Inc. in the USA and/or other countries. PANTONE© and other Pantone trademarks are the property of X-Rite Inc. All other trademarks are the property of the respective owners.

3rd Edition, CoPrA Version 3.0, May 2014

Licensing, Privacy Policy and Terms of Service can be found at <http://colorlogic.de/cl/policy/>

01

INSTALLATION

- ▶ System Requirements
- ▶ Computer Based License vs USB Dongle
- ▶ Demo license request
- ▶ Restrictions with demo licenses
- ▶ Purchasing CoPrA
- ▶ Loading a permanent license file
- ▶ CoPrA package options

02

MAIN NAVIGATION PANEL OVERVIEW

- ▶ Overview of Navigation Panel

03

PRINTER PROFILING

- ▶ Loading measurement data
- ▶ Quick start to printer profiling

04

DEVICELINK PROFILING

- ▶ Creating DeviceLink Profiles
- ▶ Create DeviceLink Profiles by Editing
- ▶ SaveInk DeviceLinks

05

COPRA TOOLBOX

- ▶ Using Image Conversion
- ▶ Profile Manager overview
- ▶ Batch Overview window

06

COPRA UTILITIES

- ▶ Ugra UPPCT
- ▶ ColorLogic ColorAnt

Additional Information

Simple operation for color profiling tasks

The ColorLogic philosophy toward color management tools is a simple set of tools with highly powerful options. CoPrA will produce high quality profiles with just a few clicks with simple, easy to use tools. CoPrA can create printer, DeviceLink and SaveInk profiles with Multicolor options for typical day-to-day color management challenges. The simple and quick setup of CoPrA – outlined in this Quick Start Guide – demonstrates the power of ColorLogic's CoPrA.

CoPrA Documentation

ColorLogic's CoPrA offers some of the most intelligent and advanced profiling tools in the industry today. CoPrA's help buttons are represented with the **?** icon, and have detail and up-to-date information.

Automatic Updates

CoPrA includes an automatic update function that can be enabled or disabled by going to **Help>Check for Update**

INSTALLING COPRA



Getting started with CoPrA 3

Installation, requesting demo licenses,
loading licenses and permanent licenses



Installing CoPrA 3 System requirements

Mac OSX

10.5 or later - (Intel only)

Windows:

Windows XP, Vista, Windows 7,
Windows 8

Installers for the respective platform installs the program by default in either the **Applications** folder (Macintosh) or the **Program files (x86)** folder (Windows). Begin installation by double-clicking on the CoPrA installation package.

After accepting the Software License Agreement, select the destination volume and choose between a **Standard Installation** or custom installation. **Standard Installation** installs all components including the UPPCT tool as described below. Custom installation lets you choose to install UPPCT.

UPPCT – CoPrA contains the option of directly measuring test charts for profile creation with the 3rd party software UPPCT, rather than measuring and saving them exclusively via external measuring software and then importing them into CoPrA.

Computer vs USB dongle license

A **computer-based** CoPrA license always refers to a the specific computer on which CoPrA was installed and can be requested for temporary test purposes. Computer licenses are also advantageous if the computer has no USB ports or no space for a USB dongle, i.e. a rack server.

USB dongle licenses are serialized to the CoPrA USB dongle. The CoPrA USB dongle is shipped with the permanent license of CoPrA and permits use of CoPrA on different computers. To be able to assign the license to the USB dongle, the dongle must be connected before starting CoPrA.

Demo license request

CoPrA allows users to request a demo license for 14 days for software evaluation. The restriction of running CoPrA in demo mode is all profiles are encrypted and can be used with ColorLogic applications only.

To request a demo license follow the steps below:

1. Click the **Registration** button located on the lower left hand corner of the Main Navigation Panel.
2. Click on the **Demo license request** tab.

3. Enter all required information.
4. When your location is chosen, CoPrA will show the available dealers for your region. Select a dealer and click **Send direct request**. A demo license file will be automatically sent to the email address supplied in the contact form.
5. Save the license file contained in the email (indicated by the ending ***.lic**) to your system.
6. Under **License details** in the **Registration** window and select the ***.lic** file. After installing the demo license file, the expiration date of the demo license is shown below the **License details**.

Restrictions with Demo licenses and CoPrA

CoPrA demo license gives users a 14 day evaluation period to try **all** the functions of CoPrA within the application. When a profile is generated with CoPrA while running with a demo license, the only restriction is that the profiles generated are encrypted and can only be used within ColorLogic applications. To apply a demo profile to a test image, follow the instructions on using the **Image Conversion** (described on page 22) function located within CoPrA.

If it becomes necessary to decrypt a demo profile during the test period, contact your dealer for instructions.

Purchasing CoPrA

Select from one of our base CoPrA packages (located on page 8). Click on **Buy ColorLogic products** under **License details** or **Demo license request** in the **Registration window**.

A list of contacts will open in your browser, where you can locate a dealer. By selecting the dealer you will be forwarded to the dealers homepage to find his contact details.

Installing a permanent license

A permanent license provided by the individual dealer will be supplied after purchasing CoPrA. The permanent license is available in the form of a computer-based license or a dongle license (see previous section).

After purchasing the software, a **permanent license file (*.lic)** will be sent via email. Load the license file under **License details** in the **Registration** window.

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

Profiles created with the permanently licensed version can be used in all ICC compliant programs that support DeviceLink profiles and device profiles such as ColorLogic's ZePrA Color Server.

› CoPrA 3 Packages and Add-Ons

CoPrA 3 base packages now include more features and the flexibility to add specific modules to changing needs.

CoPrA 3 BASE PACKAGES				
COPRA S	COPRA M	COPRA L	COPRA XL	COPRA XXL
STANDARD FEATURES	Package Features M	Package Features L	Package Features XL	Package Features XXL
RGB, Gray Profiling	Includes all features of S Package	Includes all features of S, M Packages	Includes all features of S, M, L Packages	Includes all features of S, M, L, XL Packages
Profile Manager	CMYK Profiling	DeviceLink Creation & Editing	SaveInk Profiles Create SaveInk DeviceLinks	Edit DeviceLinks up to 16 channels
Simplified Navigation	ColorAnt Analyze & Optimize Measurement data	Generate XML Reports		Multicolor Profiles CMYK + 3 channels

CoPrA 3 ADD-ON MODULES	
COPRA MODULE	OPTIONAL FEATURES
DeviceLink Profile Module	DeviceLinks for Gray, RGB, CMYK
DeviceLink Edit Module	Creates DeviceLink profiles based on Editing for Gray, RGB, CMYK
SaveInk Module	Create SaveInk DeviceLinks
Multicolor Module	Multicolor support for Printer and/or DeviceLink profiling and/or Editing
Multicolor Module With Option for use in ZePrA	Enables Multicolor Support for CoPrA and ZePrA

MAIN PANEL



CoPrA's Main Navigation Panel

Access all of CoPrA 3 functions from one centralized location.



Create Printer Profile



Printer Profiling

Create DeviceLink Profile



DeviceLink



Editing



SaveInk

ToolBox



Image Conversion



Profile Manager



Batch Overview

Registration

Home

Preferences

CoPrA's Redesigned Interface

CoPrA 3's interface has been redesigned to include a navigation panel to quickly access all main profiling functions from one easy-to-use panel. Graphical illustrations display the purpose of each function on the panel.



Printer Profiling

Create printer profiles with a variety of options



Create DeviceLink profiles

Create DeviceLink profiles from standard ICC profiles



Create DeviceLink profiles by Editing

Create DeviceLinks via edit charts



Create SaveInk DeviceLink profiles

Generate SaveInk ink optimizing profiles from CMYK ICC profiles



Image Conversion

Convert images using a variety of profiles



Profile Manager

Manage profiles in one convenient place



Batch Overview

View progress of profile generation, create reports for individual profiles, generate preview profiles, manage profiles



Online Help

Online help is available through clicking any of the **?** located on any of the application windows.

Registration - Home - Preferences

Registration - Access the Registration and license dialog

Home - Return to CoPrA's Home screen

Preferences - Access CoPrA's Preferences, including home page selection, overwriting preview profiles and default report options

PRINTER PROFILING



Getting started with Printer Profiling

How to create a printer profile using
optimized measurement data



03

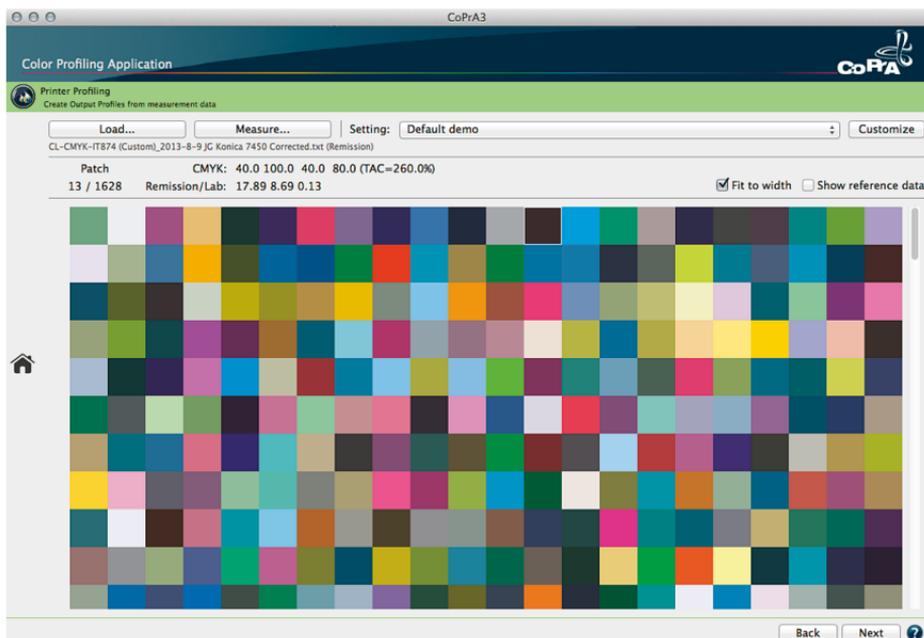
PROFILING

Printer Profiling

CoPrA's profiling functionality is dependent on which base package and modules are purchased (all modules and options are available with a demo license). Depending on the package and modules purchased, CoPrA will profile the following color spaces: Gray, RGB, CMY, CMYK or Multicolor.

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

Creating printer profiles (Fig 3.1) in CoPrA involves loading measurement and reference data and selecting the settings for profile generation. The profiling **Settings** are a special feature of CoPrA and can be saved and re-used or edited. This ensures consistent profiling and increased color quality in production. Once the required profile

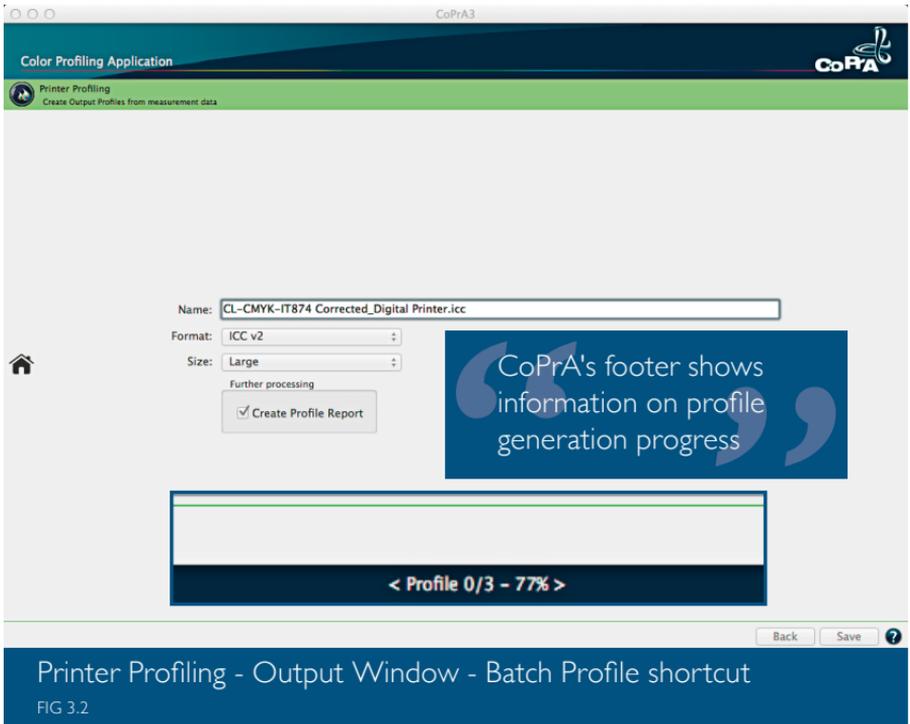


Printer Profiling - Main Window

FIG 3.1

quality is achieved with quality results using a particular set of settings, retrieve these settings to create new profiles based on new measurement data - with no color management

and the ability to set a highlight starting point. The different modes for controlling the black channel permits specific control of the separation characteristics. These options are



expertise. CoPrA includes a number of standard settings (Digital Printing, Inkjet etc.) that are available with the standard installation for output profiling, in addition to the option of creating specialized settings for particular production environments. The additional rendering intents help the user to achieve the very best profile quality according to their needs. Some CoPrA advanced options for profile creation include the ability to adapt a profile to viewing conditions, compensate for optical brightener

complemented by the numerous possibilities for defining exceptions.

Quick Start Procedure

1. Load measurement data by clicking on the **Load** button, dragging and dropping on the window or click the **Measure** button to start the UPPCT tool (instructions on page 26).
2. Use the **Settings** button to select one of CoPrA's predefined settings and click **Next**.

3. If further customization of the profile is necessary, click the **Customize** button to access CoPrA's comprehensive set of options. Help for individual functions is available Online by clicking any of the ? to access Online help.

4. Click **Next**. CoPrA by default names the profile based on the measurement data and setting selected. You may customize the name of the profile (Fig 3.2) Choose the ICC **Format** (V2 or V4), next select the **Size** of the profile (defines grid points in the profile). The option is available to generate a detailed **Profile Report** (Fig 3.3) that contains in-depth information on profile statistics, gamut, gamut volume, gray balance, conversions, hue samples, linearity and dot gain. The number of report pages will vary depending on the type of profile being generated.

5. By clicking the **Save** button and as profile processing begins, either by going back to the

navigation panel and clicking **Batch Overview** to view the processing progress. (**Shortcut:** click on the bottom center to go directly to the **Batch Overview** or keyboard shortcut **cmd 8**).

Profile-Test

2014-04-21

Profile Information

Name	CL-CMYK-IT874 Corrected_Digital Printer.icc
Path	/Users/crosscolor/Library/ColorSync/.../CL-CMYK-IT874 Corrected_Digital Printer.icc
Size	1271100
Version	2.4
Class	ptrr
ColorSpace	CMYK
PCS	Lab
Date	2014-04-21 09:17:08
Rendering	0
Creator	CoLg

1. Profile Statistic

The statistic tests the profile integrity and some profile properties.
 The profile integrity indicates how precise a profile converts between the color spaces. The integrity values show an average and maximum deviations.
 The DCS to PCS statistic shows how precise the profile matches the measurement data and should be very low.
 The black point DCS for RGB profiles should be low or 0/0/0
 The black point DCS for CMYK+ profiles should match the allowed total amount of ink.
 The black point PCS should be dark and approximately neutral.
 The white point DCS should match the device white point.
 The white point PCS should match Lab-White.

Integrity (DCS) perceptual	2.7/22.7 (Avg/Max CMYK)
Integrity (DCS) relative colorimetric	2.8/49.0 (Avg/Max CMYK)
Integrity (DCS) saturation	4.0/25.4 (Avg/Max CMYK)
Integrity (PCS) perceptual	2.9/25.8 (Avg/Max Lab)
Integrity (PCS) relative colorimetric	1.4/7.9 (Avg/Max Lab)
Integrity (PCS) saturation	4.5/34.1 (Avg/Max Lab)
Precision (DCS-to-PCS) absolute colorimetric	0.1/1.3 (Avg/Max Lab)
BlackPoint (PCS-to-DCS) perceptual	54.5 71.2 74.3 100.0 (CMYK) TAC=300.0%
BlackPoint (PCS-to-DCS) relative colorimetric	54.5 71.2 74.3 100.0 (CMYK) TAC=300.0%
BlackPoint (PCS-to-PCS) perceptual	20.94 0.13 0.08 (Lab)
BlackPoint (PCS-to-PCS) relative colorimetric	20.94 0.13 0.08 (Lab)
WhitePoint (PCS-to-DCS) perceptual	0.0 0.0 0.0 0.0 (CMYK)
WhitePoint (PCS-to-DCS) relative colorimetric	0.0 0.0 0.0 0.0 (CMYK)
WhitePoint (DCS-to-PCS) perceptual	100.00 0.00 0.00 (Lab)
WhitePoint (DCS-to-PCS) relative colorimetric	100.00 0.00 0.00 (Lab)
WhitePoint (DCS-to-PCS) absolute colorimetric	94.00 0.02 -2.76 (Lab)

Printer Profiling - Profile Report example

FIG 3.3

DEVICELINK PROFILING



Create DeviceLink

Create DeviceLink from Device Profiles



DeviceLink by Editing

Create DeviceLink profiles by editing



SaveInk DeviceLink

Create DeviceLink profiles for ink saving
or TAC reduction



DeviceLink Profiling

DeviceLink profiles complement the use of "normal" ICC device profiles (device profiles are printer, monitor, and scanner profiles) and are applied to certain tasks in order to achieve substantially better results in terms of quality and printing when converting and adapting colors. DeviceLink profiles specifically avoid many of the weaknesses of color conversion based on ICC device profiles.

CoPrA can create DeviceLink profiles for all combinations of color spaces: Gray, RGB, CMYK, Multicolor. The most important applications are CMYK-to-CMYK, RGB-to-CMYK and CMYK-to-Multicolor. To create DeviceLink profiles, a pre-configured ICC printer profile is required. If there is no ICC printer profile for a printing process or an output device, simply create it in the CoPrA Printer Profiling module.

Quick Start Procedure

1. Load the **Source** and **Target** profile(s).
2. From the **Settings** drop down menu, select the appropriate pre-defined setting for your production task. ColorLogic recommends starting with one of the predefined settings supplied.
3. Click the **Next** button and proceed to or click **Customize**. For more detailed descriptions click the **?** to access CoPrA's Online help.
4. Name the profile and set the ICC **Format**, **Size** of the ICC profile and the option to generate a detailed report or generate a preview profile (useful for visual checking) and click **Save**.
5. To check the progress of profile generation, click to **Batch Overview** by accessing the main panel, or keyboard shortcut **cmd 8**.

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

DeviceLink profiles by editing

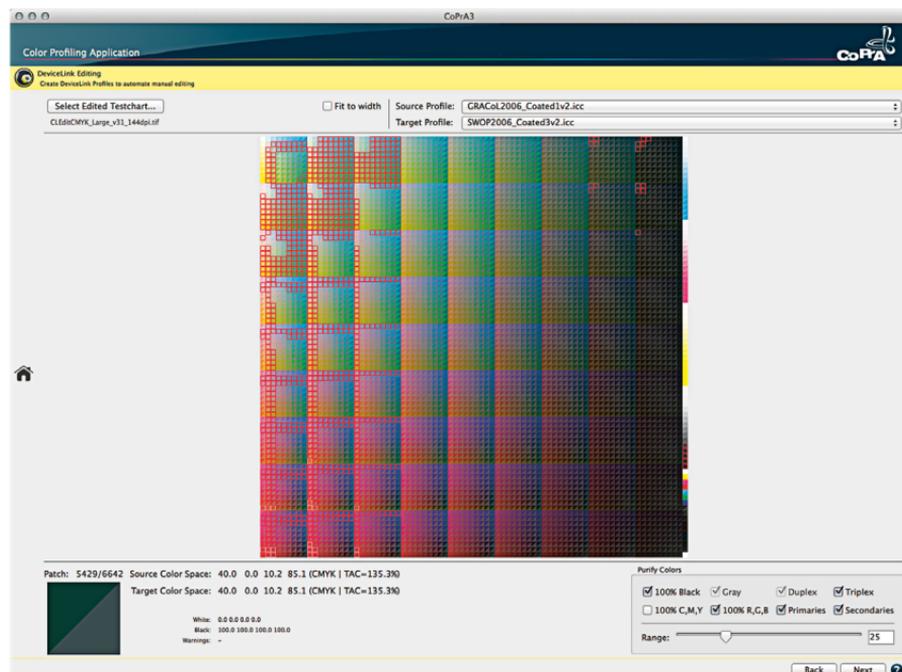
One of the most powerful features of CoPrA is creating DeviceLink profiles with the DeviceLink Editing module. These profiles can e.g be applied in automated fashion in a workflow program that supports DeviceLink profiles (e.g. ZePrA).

Simply open one of the supplied CoPrA **Edit Charts** (for CMYK, RGB or Grayscale) that are installed with CoPrA in an image editing program which have the tools to apply (e.g. Adobe Photoshop) the color corrections required. It is possible to add other image data to the **Edit Charts**. The corrections must be applied globally to the entire **Edit Chart**.

printing, apply gradation curves in the profile rather than in the RIP, create special effects or simply fine-tune an existing DeviceLink profile.

Quick Start Procedure

1. Open one of the ColorLogic edit charts located in **Tools>Open EditTargets** folder



DeviceLink Editing - Main Window

FIG 4.1

Contained in the upper left corner there is a specially designed element that CoPrA will measure. Based on the editing, CoPrA then calculates a new DeviceLink profile. This powerful function can be put to a wide variety of uses: recurring color corrections on different sets of image data, specifically prepare RGB image data for four-color or multicolor

2. Edit the appropriate target in any image editing program (i.e. Photoshop) and save as.

Note: Remember the size and position of the Control Element cannot change.

3. Open the edited chart in the DeviceLink Editing module and apply any of the options available for

Purifying Colors, choosing source and target profiles etc. (details available in the Online help).

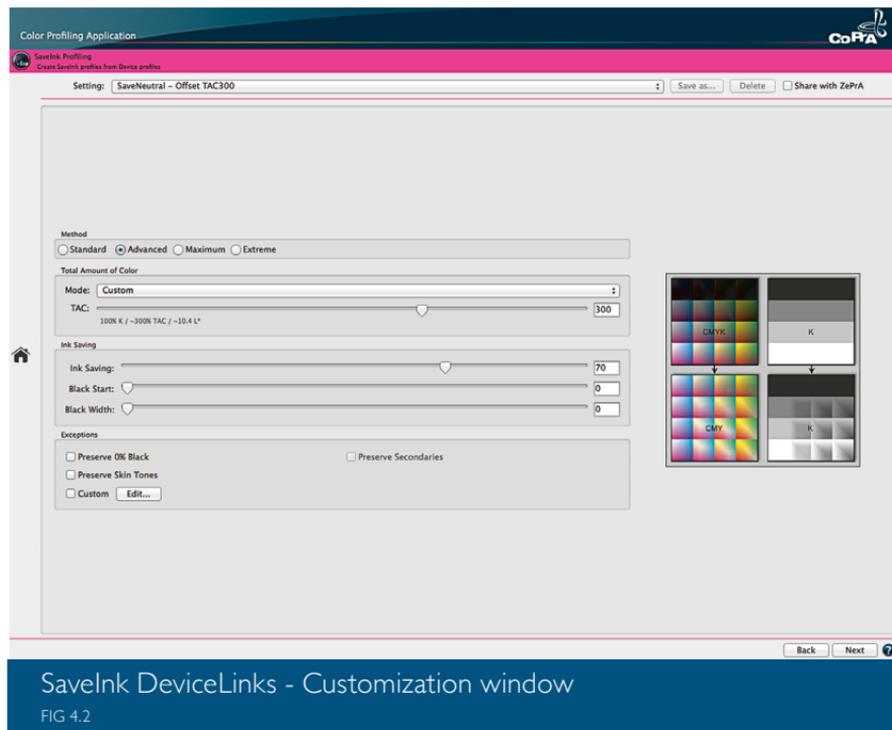
SaveInk DeviceLink Profiles

By optimizing the black composition of the data, SaveInk DeviceLink profiles make it possible to reduce the amount of cyan, magenta and

options available in CoPrA, e.g. color space conversion + SaveInk.

Quick Start Procedure

1. Load the CMYK **Printer Profile** either by selecting in the menu or dragging and dropping onto the menu.
2. Select the **Setting** by using any of the predefined settings in the list.



SaveInk DeviceLinks - Customization window

FIG 4.2

yellow used - without any loss of quality and control the amount of TAC (total area coverage) reduction. Applying this function to a moderate degree enhances the stability of the printing process, while use of a stronger level saves even more ink. Additionally SaveInk functionality can also be combined with the other

For advanced settings click on the **Customize** button (detailed information available via Online help Fig 4.2).

3. Name the profile, choose the ICC **Format** and **Size** of the profile; click the **Profile Report** to create a report.

COPRA TOOLBOX



Image Conversion

Convert images using standard ICC profiles and DeviceLinks



Profile Manager

Manage all types of ICC profiles, analyze and compare profiles



Batch Overview

Overview of all profiling jobs, create reports, create preview profiles



Image Conversion

CoPrA will convert PSD, TIFF and JPEG files (Fig 5.1) with the help of ICC device profiles and DeviceLink

When CoPrA 3.0 has a demo license installed, the application will allow the conversion of images with

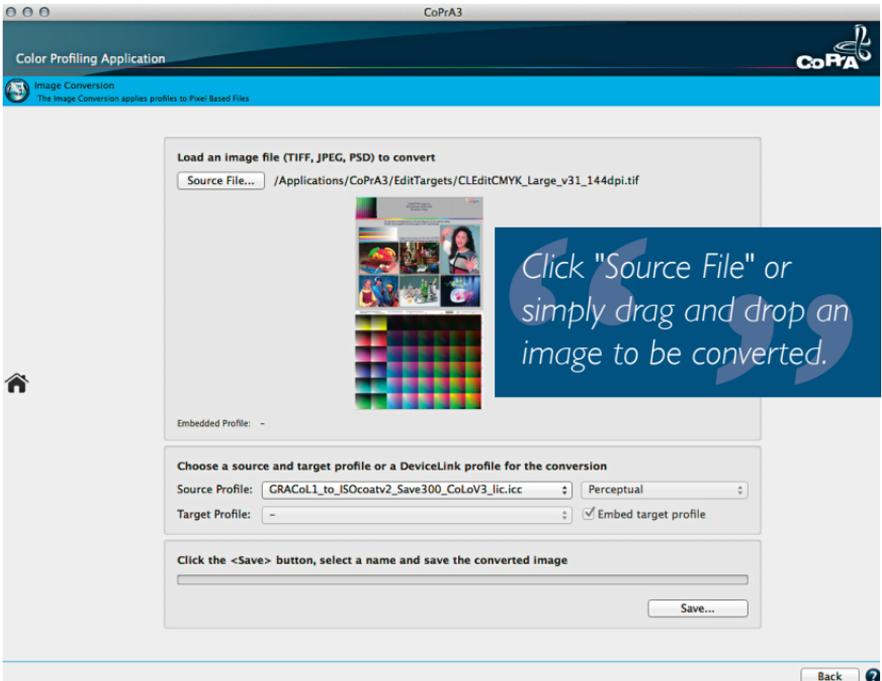


Image Conversion- Main Window

FIG 5.1

profiles. This function is very useful for checking the profile quality on images, since typical application programs often do not support all types of DeviceLink (i.e. RGB to CMYK) or multicolor profiles.

CoPrA demo profiles for further evaluation in other programs (i.e. Photoshop).

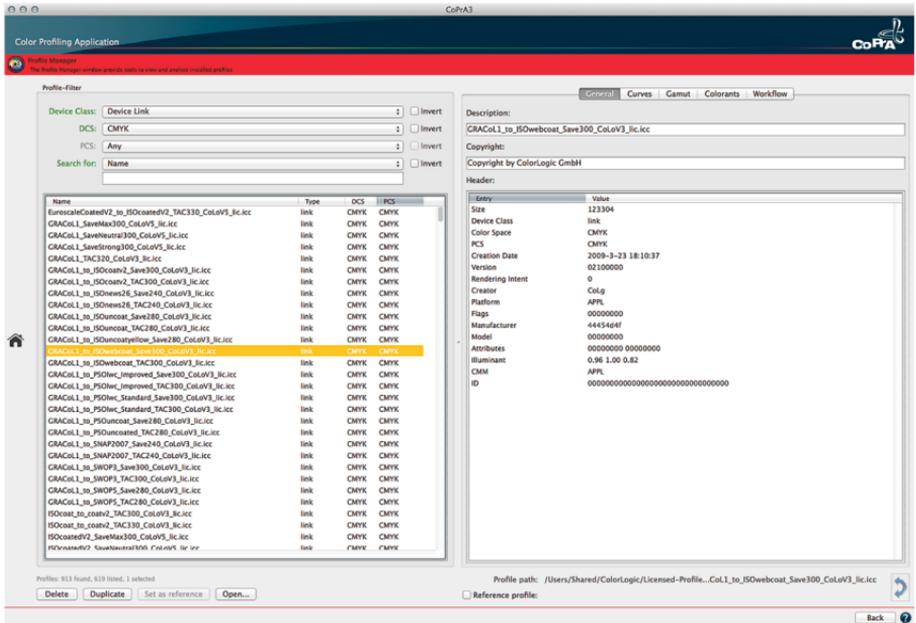
Profile Manager

The Profile Manager tool has been integrated in the CoPrA package.

It allows to directly view, organize, analyze, compare or even adapt profiles after creation within the CoPrA environment (Fig 5.2). The main window in Profile Manager allows users to view the profiles located on a system. The unique ability of

Batch profiling

Batch profiling functions are incorporated in CoPrA allowing power users to create several profiles at once and perform additional functions once profiles have been generated.



Profile Manager - Main Window

FIG 5.2

Profile Manager to display all types of profiles, (including DeviceLink and Multicolor Profiles) is a powerful tool for everyday color management. Profile Manager includes 5 different tabs (**General, Curves, Gamut, Colorants, Workflow**) or verify and check the quality of a profile by means of a profile report.

Note: Detailed information regarding the individual tabs and functions of Profile Manager can be found in CoPrA's Online help.

Some of the advantages of batch profiling:

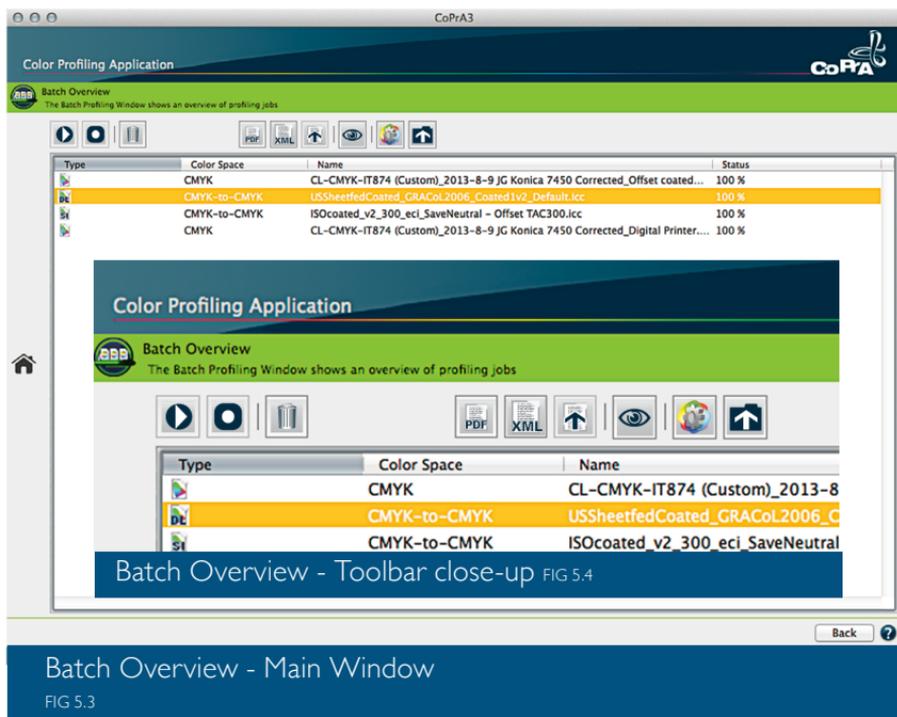
While the first profile is already in the process of being calculated, load new measurement data, prepare the next profile(s) and create variations. All profiles to be calculated are displayed in the **Batch Overview** and are processed one after the other. With batch profiling and calculating numerous profiles successively, it is not necessary to wait until the

calculation of the current profile to be completed before preparing the next profile for calculation.

Located at the top of the **Batch Overview** window is a tool bar that will perform various functions, including: Start, Stop, Deletion of

Quick Start Usage

1. Select any of the already processed profiles in the window.
2. The toolbar (Fig 5.4) will show the available actions that can be performed on the profiles that have been generated.

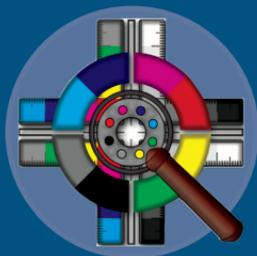


profiles. Direct access to the Profile Manager or revealing the profiles on an individual system can be done directly from the toolbar.

The toolbar also includes the ability to create PDF or XML reports (XML requires CoPrA L package or higher), create preview profiles and access Profile Manager.

3. Select the profile in the main window (by a single click) and choose the function required.

COPRA UTILITIES



Ugra UPPCT

Measure test charts using Ugra UPPCT tool within CoPrA



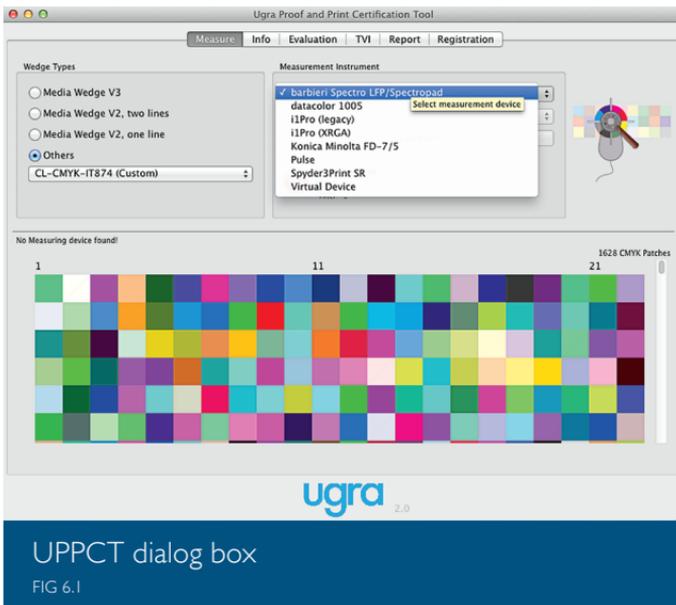
ColorLogic ColorAnt

Optimize measurement data before profiling



Measure test charts with UPPCT

The CoPrA Printer Profiling module has the option of directly measuring test charts for profile creation via the UPPCT software tool (Fig. 6.1) from Swiss Center of Competence for Media and Printing Technology Ugra, rather than measuring and saving data via an external measuring software and then importing the data into CoPrA.



To access the UPPCT tool:

1. From the CoPrA Printer Profile module, click **Measure** and launch UPPCT.
2. Choose the measuring chart from the **Wedges Types** dialog. For custom charts including ColorLogic's test charts, click **Others** and the select the desired chart from the pull down menu.

3. Measure the test chart, using your preferred supported measurement device. When complete, press **Transmit** to copy the data into CoPrA.

ColorLogic ColorAnt Optimize measurement data

When setting up color management during the process, it is unavoidable that one or more of your

color targets may contain redundant, non-matching, or just inaccurate data on the same test chart. Most color charts contain over 1000 test patches, inaccurate and/or erroneous information may be read.

CoPrA packages **M**

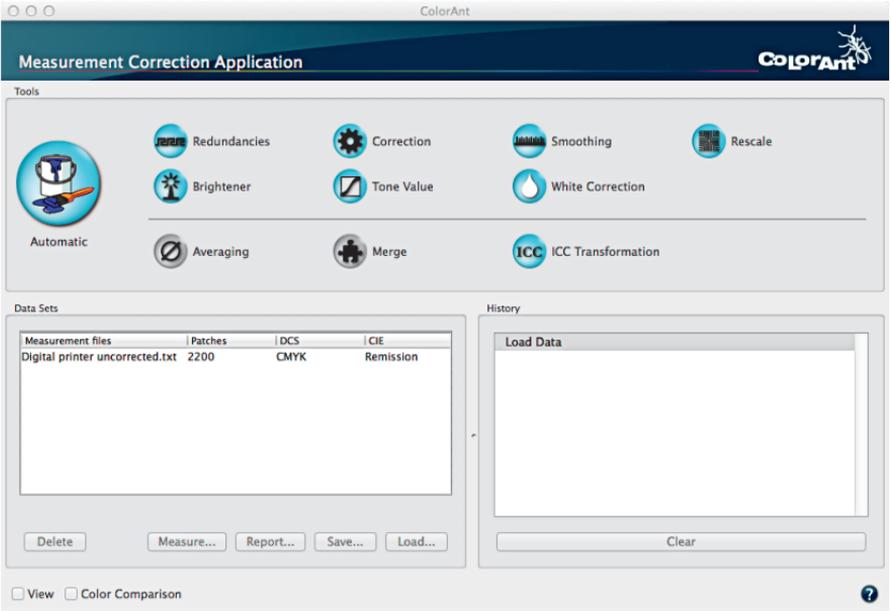
and higher include a license for ColorLogic's ColorAnt (ColorAnt must be installed separately) for optimizing measurement data.

Note: ColorLogic highly recommends optimizing measurement data prior to profiling.

ColorAnt includes both the options to have measurement data checked automatically (Fig 6.2) by clicking **Automatic** or use a variety of

comprehensive tools that include: redundancy checking, optical brightener correction, smoothing, rescaling data to specific test charts, correcting tonal curves, white point correction, averaging, merging

3. After the data has been processed, the results of the processing can be checked if required. Go to **File>Save** to save corrected data.



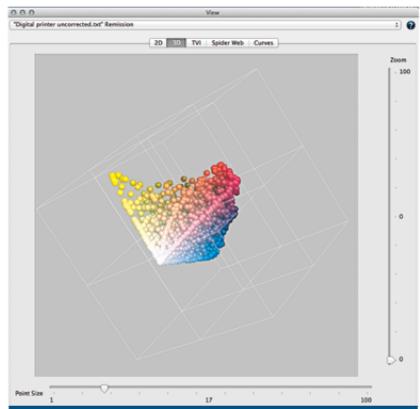
ColorAnt Main Window

FIG 6.2

or transforming via ICC profiles. ColorAnt also includes a full set of analysis tools for viewing and comparing measurement data.

Quick Start Procedure

1. Launch ColorAnt and load existing measurement data by either **File>Open**, or drag and drop measurement data to the left hand side of the main window.
2. To have ColorAnt automatically analyze and correct the measurement data, click the **Automatic** button.



ColorAnt 3D view sample

FIG 6.3

ColorAnt 

CoPRA 

DLS 

ZePRA 

COLOR
Logic

ColorLogic GmbH

www.colorlogic.de
info@colorlogic.de

CROSS  **COLOR**
Inc.

CrossXColor, Inc.

www.crossxcolor.com
info@crossxcolor.com