What is new in CoPrA 12?

New Features

DeviceLink/Printer Profiling

- Multicolor profile quality improvements:
  - Larger gamut in several cases
  - Improved: ***Generate Separations with sparse Inks***
  - Improved profile precision and quality
- Optimized ***Black Generation*** option ***MaxK*** now uses more black
- New option ***Use all Multicolor channels where possible***
- New ***Highlights Clipping*** option

Printer Profiling

- Measurement of ambient light (emission) directly from CoPrA
- Enhanced ***Gray Balance*** adjustments for a* values

DeviceLink Profiling

- New ***Rendering*** mode **Paper White/OBA Match** to improve visual consistency for colored and brightened papers
- New **Highlights** option **- Auto – based on Profiles**

Update Profile

- New ***Correction DeviceLink*** presets

SaveInk

- Information on ink savings in the GUI before profile creation

Batch Overview

- Creation of log files from the ***Batch Overview*** content

Linearization

- Linearization curves can now be saved in ***Text*** and ***CGATS*** formats

General

- Modernized and streamlined licensing management

DeviceLink/Printer Profiling

Improved Multicolor Generation

The improved ***Color Generation*** optimizes color reproduction in the Multicolor modes ***Strong***, ***Smooth***, and ***Generate Separations with sparse inks***:

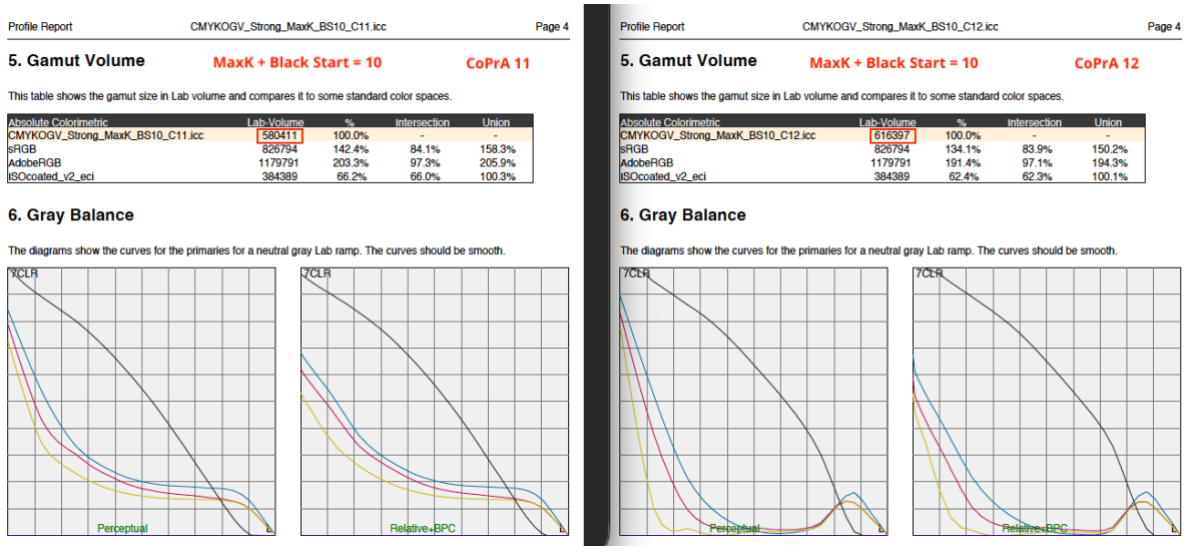
- **Larger gamut in several cases:** The optimized Multicolor Generation achieves a larger gamut in several cases when using Multicolor Modes ***Strong***, ***Smooth***, and ***Generate Separations with sparse inks***.

- **Improved: *Generate Separations with sparse Inks***
  The Multicolor mode "Generate Separations with sparse inks" improves for multicolor printer profiles and DeviceLink profiles the use of gamut-extending colors and reduces the number of channels used, depending on the data and color set. At the same time, the use of gamut-extending colors (such as Orange, Green, Violett, etc.) is largely avoided in the gray balance and near-neutral tones.

- **Improved profile precision and quality**
  The size of the ***Look Up Tables*** (LUTs) for 6-, 7-, and 8-color profiles has been increased and harmonized, enabling better profile accuracy, quality and gamut volume across different profile color spaces.
  This results in larger profile sizes and longer calculation times for the "***Medium***," "***Large***," and "***Very Large***" profile sizes, especially for 8CLR profiles.

Optimized *Black Generation* option *MaxK* now uses more black

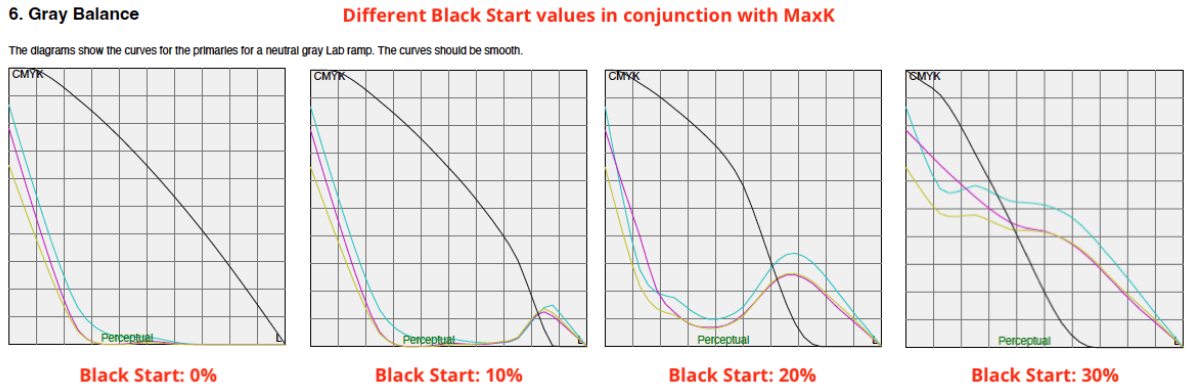
The **MaxK** black generation mode (which forms the basis for the ***Generate separations with sparse inks*** multicolor mode) has been improved by generating separations using the maximum amount of black and minimum amount of CMY.



This not only results in a lower total ink volume for the ***Gray Balance*** due to the improved distribution of black versus CMY, but can also lead to a larger color gamut and more pure colors.

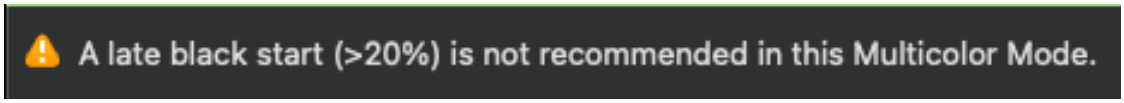
It is also possible to set the **Black Start** in conjunction with **MaxK**.

But keep in mind that this leads to strange but understandable curves as can be seen in the screenshot below. If the black start is not zero only CMY can be used to build the gray balance hence there is lots of CMY up to the black start. Only after the back start value the CMY will go down to a ***MaxK*** separation again leading to the buckles you see in the screenshot. This works reasonable for low ***Black Start*** values up to 15-20%.



Note: Using a late ***Black Start*** is not recommended in combination with ***Generate separations with sparse inks***. If a late black start (e.g. 20% and higher) is required it is recommended to switch to a different ***Black Generation*** mode (e.g. ***GCR***), as this conflicts with a ***MaxK*** setting.

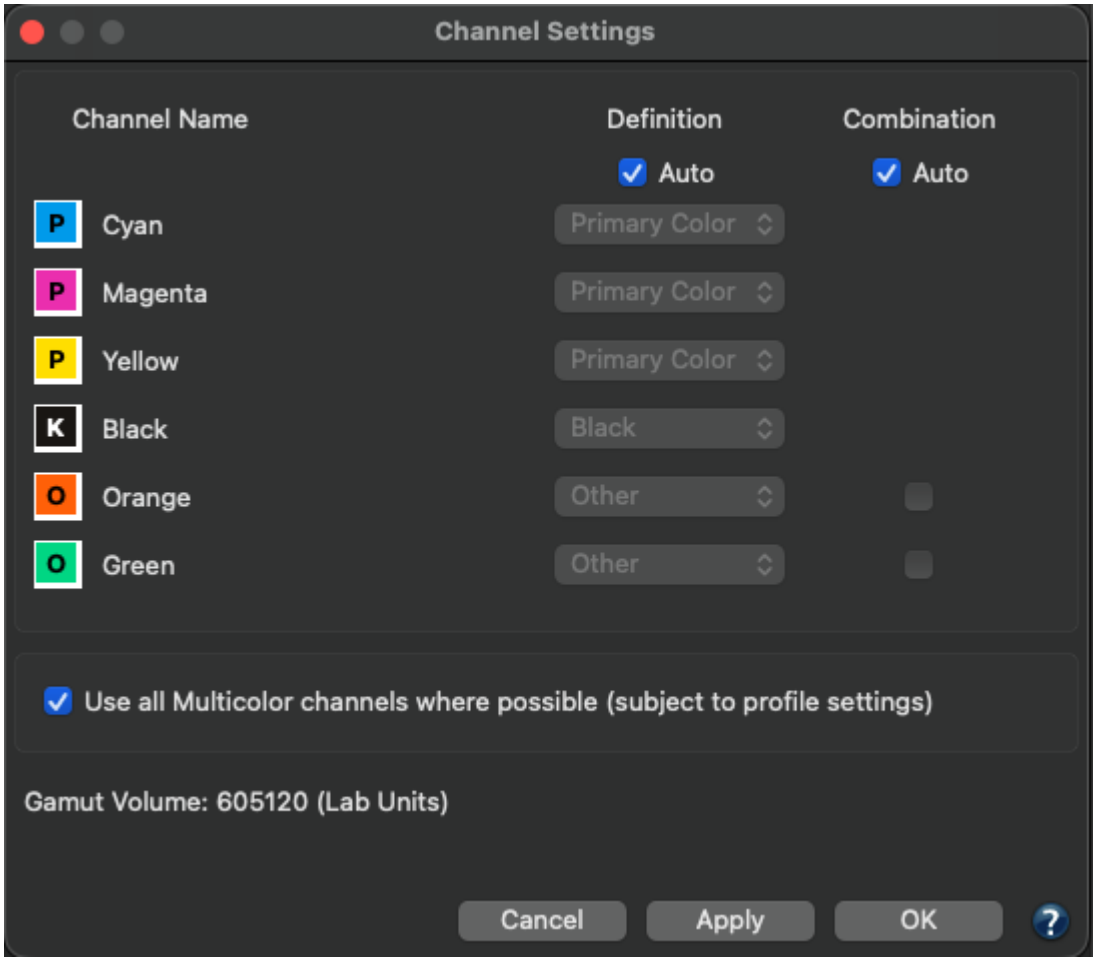
That is why a warning is displayed in CoPrA.



Use all Multicolor channels where possible

CoPrA typically uses the channels in multicolor profiles that produce the widest possible color gamut. In this process, secondary colors—such as “magenta + yellow”—are replaced with “orange.” However, if the additional channel is not a color-space-expanding orange or red and the channel cannot be used for channel combination, then CoPrA does not use this channel in the profile.

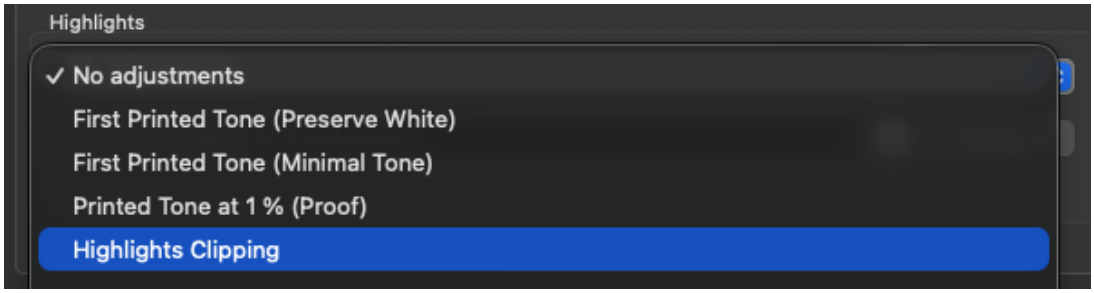
The option ***Use all Multicolor channels, if possible*** allows the use of all Multicolor channels (according to the profile settings), even if the above-mentioned conditions may not be met.



This may result in profiles with a smaller color gamut or breaks in gradients. Therefore, profiles should first be generated without this option and, if necessary, evaluated in the ***Profile Report***.

New Highlights Clipping option

Highlights Clipping refers to a controlled adjustment of the tone value distribution in the highlights (i.e., the brightest areas of the image) to meet the specific requirements of the flexographic printing process. In flexographic printing, very fine screen dots - especially below the first printable percentage value (e.g., < 3%) - often cannot be reproduced stably or at all. These tone values are therefore deliberately clipped, i.e., removed from the print image or smoothed.



The aim of this measure is to avoid printing problems such as missing halftone dots, uneven gradations, or disruptive artifacts. By controlling the cut-off, you can ensure that only the tone values that can actually be printed are reproduced—without any unpredictable losses or compromises in quality.

Typical applications are found in prepress, for example in tone curve adjustment or in the rendering of images for flexographic printing. Here, for example, the area between 0% and the first printing percentage value is replaced by a gentle tone adjustment (tone compression).

Example: To ensure clean gradations in the highlights, a controlled tone value cut-off was implemented at 2%. As a result, printing only begins at the stable printable screen dot at 3%, without any unwanted loss of detail.

The calculated profile can be used for both proofing and separation (Production).

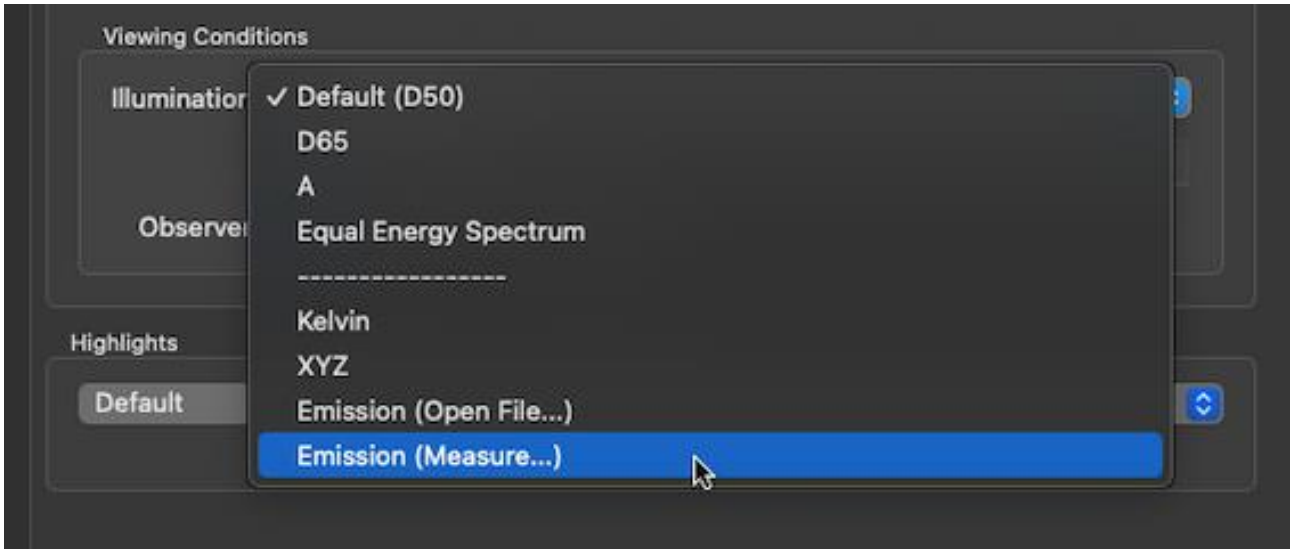
Printer Profiling

Measurement of ambient (emission) light directly from CoPrA

So far, CoPrA's ***Emission*** option has used spectral emission light measurements, where CoPrA extracts the white point from the file and uses this info to create a printer profile.

In CoPrA 12, the ***Emission*** option has been expanded to provide the ability to conduct direct measurements from within CoPrA using the ***Measurement Tool*** in ***Ambient Light Measurement*** mode. This mode allows the spectral emission of a

light source to be measured as a single color patch.



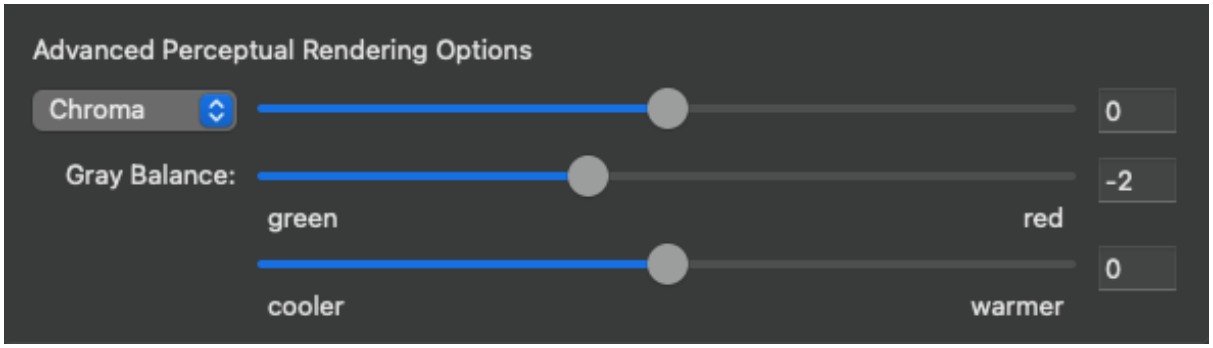
In CoPrA 12, there are now two ***Emission*** options:

Emission (Open File...): Use an existing measurement file with spectral emission values (as a CxF or text file) for a specific light source. The data can be loaded or imported using drag & drop.

Emission (Measure...): Opens the ***Measure Tool*** in ***Ambient Light Measurement*** mode. The ambient light can be measured directly from within the tool using supported devices (e.g., X-Rite i1Pro, Konica-Minolta FD-7 or Myiro 1). For more information, see the ***Measure Tool*** help.

Enhanced Gray Balance adjustments for a* values

The **Gray Balance** option has been expanded and now allows adjustments toward green (negative a* values) or red (positive a* values).



This can be done separately or in combination with the existing method towards cooler (negative b* values) or warmer gray (positive b* values).

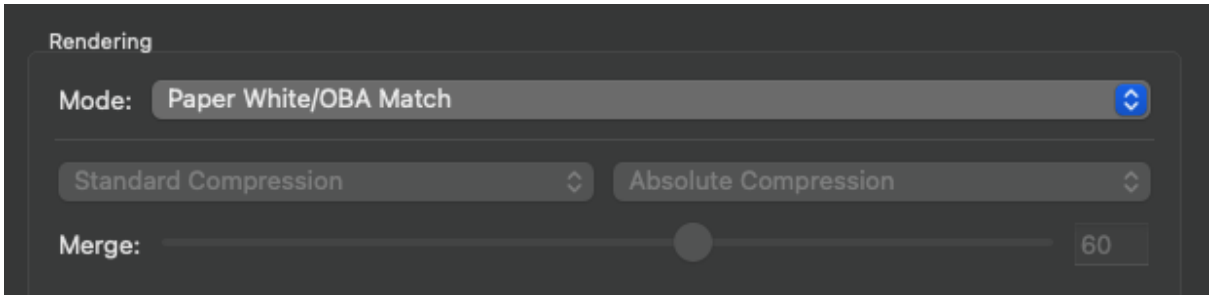
The results of these adjustments can also be found in the ***Profile Report*** in section 2. ***Color Generation*** as a* b* values.

Gray Balance (a* b*)	-2 0

DeviceLink Profiling

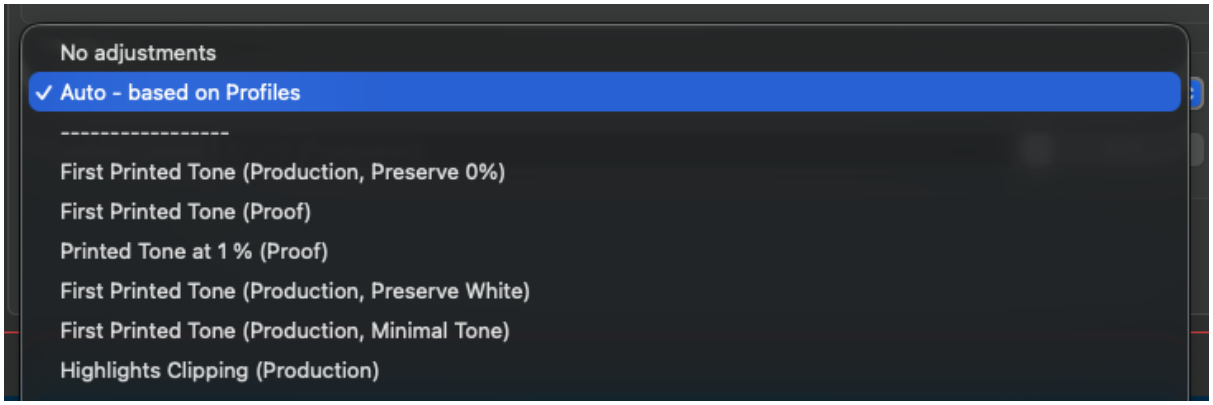
New Rendering Mode Paper White/OBA Match to improve visual consistency for colored and brightened papers

The feature ***Paper White/OBA Match*** optimizes print results when there are significant differences between the paper white of the source and target media. It ensures significantly improved visual consistency, especially with strongly brightened papers. More precise adjustment to papers with high proportions of optical brighteners results in more harmonious and natural color reproduction—even with demanding print jobs.

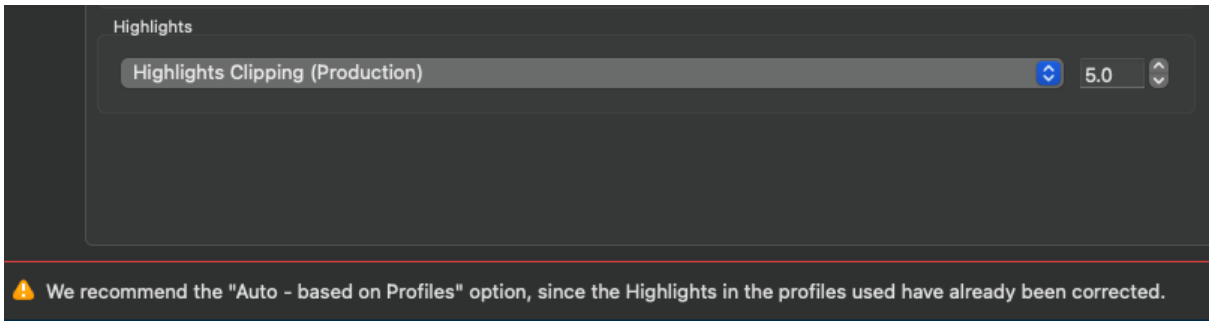


New Highlights option *Auto – based on Profiles*

The new Highlights option ***Auto - based on Profiles*** simplifies the use of **Highlights** in the DeviceLink profile. This option applies the settings from the source or target profile in the DeviceLink. This ensures that the correct settings and values are used.



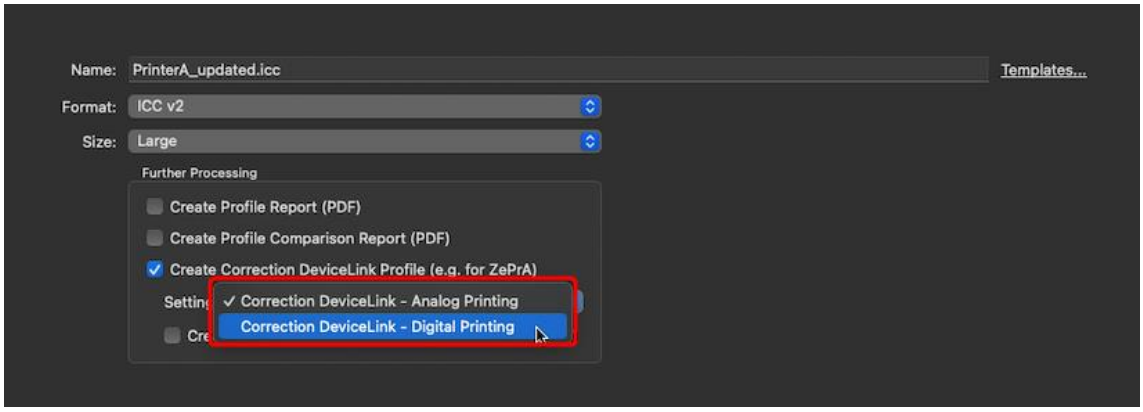
Note: When selecting a ***Highlights*** option, a recommendation is displayed when a ***Highlights*** option has already been applied to one of the selected profiles. This is to prevent corrections to the highlights from being applied twice.



Update Profile/DeviceLink

New Correction DeviceLink presets

Two new presets are now available for creating ***Correction DeviceLink*** profiles (e.g., for ZePrA). The presets are available in both the ***Update Profile*** and the ***DeviceLink*** tool.

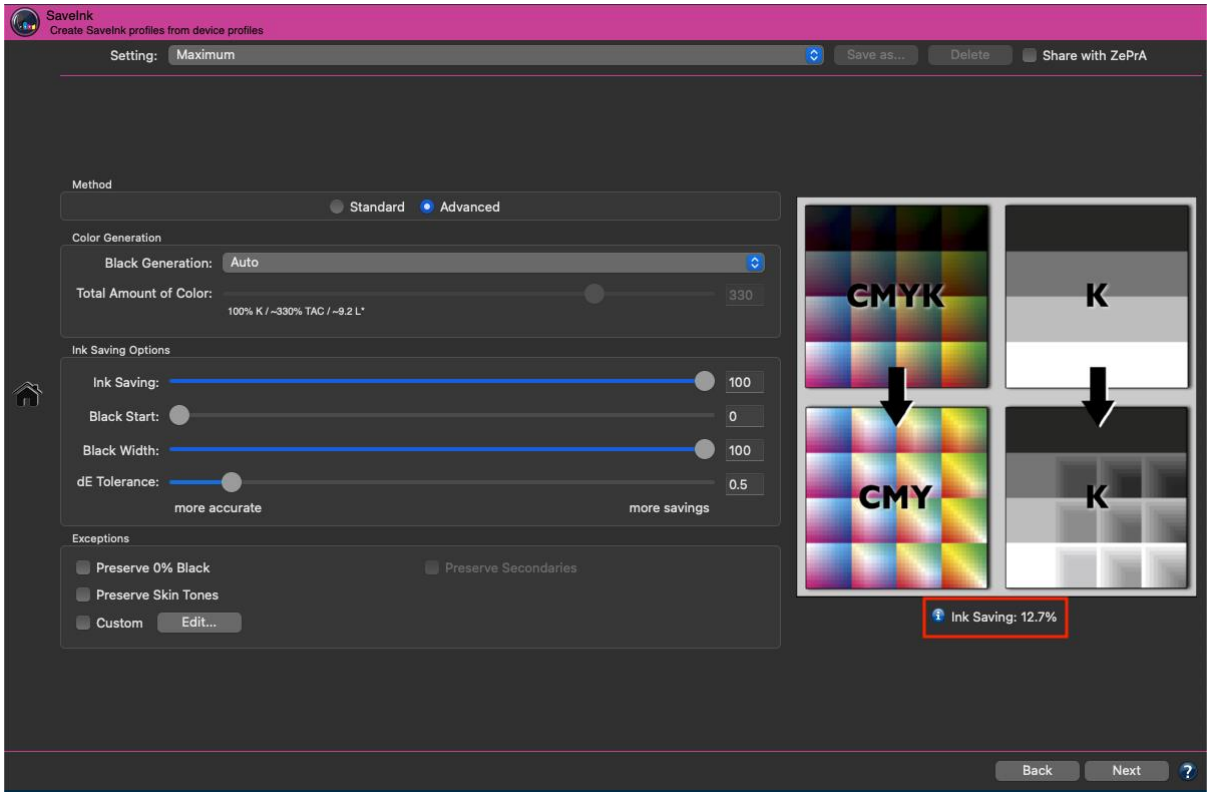


The new presets ***Correction DeviceLink - Analog Printing*** and ***Correction DeviceLink - Digital Printing*** feature optimized ***Exceptions*** and separation settings for their respective application areas, which improve their quality and thus lead to better print results. The preset used is also listed in the corresponding report.

SaveInk

Information on ink savings in the GUI before profile creation

When adjusting the ***SaveInk*** settings, the amount of ink saved is now displayed directly in the GUI beneath the graphic on the right. When settings are changed or reapplied, the amount of ink saved is immediately recalculated, ensuring that the updated savings information is instantly available and can be considered before creating the profile.



This real-time feedback greatly enhances the ability to fine-tune ***SaveInk*** settings, making it easier to identify the most effective configuration.

The savings displayed refer to a ***Small*** profile and may differ slightly for other profile sizes.

Batch Overview

Creating log files containing the information of the *Batch Overview*

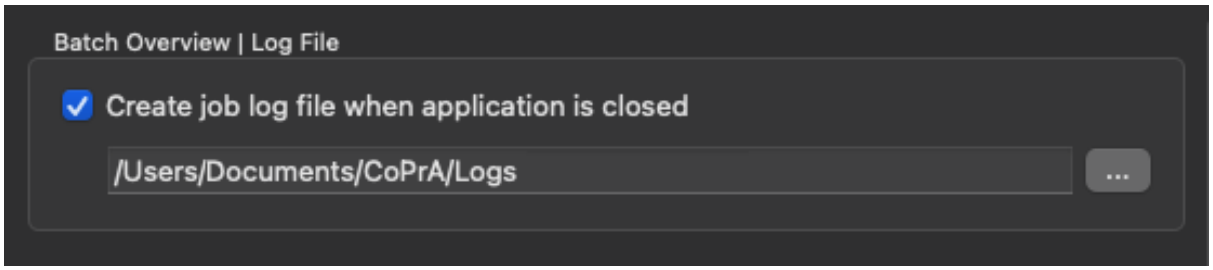
The ***Batch Overview*** provides a list of all tasks that are currently being processed. The list is automatically updated when tasks are started, e.g., new profiles that are being created are automatically displayed when profile creation begins. All tasks in this list are processed sequentially.

Now, the content of the task list can automatically be stored as a csv-log file when closing CoPrA.

batchjoblog-20250725T165056

Index	Created	Type	Name	Status	Progress
'1'	2025-07-25T08:53:39	CMYKB_A		Job finished	100 %
'1.1'	2025-07-25T08:53:39	Printer Profile | 5CLR	CMYKB_A.icc	Profile created	100 %
'1.2'	2025-07-25T08:53:39	ProfileReport	CMYKB_A_ProfileReport.pdf	Profile report created	100 %
'2'	2025-07-25T08:54:07	CMYKOGV_B		Job finished	100 %
'2.1'	2025-07-25T08:54:07	Printer Profile | 7CLR	CMYKOGV_B.icc	Profile created	100 %
'2.2'	2025-07-25T09:14:41	MulticolorVariants | CMYK+	6 Profiles	Multicolor profile variants created	100 %
'2.3'	2025-07-25T09:15:00	ProfileReport	CMYKOGV_B_ProfileReport.pdf	Profile report created	100 %
'2.4'	2025-07-25T09:15:14	MulticolorVariantsReport | CMYK+	6 Files	Multicolor profile variant reports created	100 %
'2.5'	2025-07-25T09:17:24	ProfileReport	CMYKOGV_B_ProfileReport.xml	Profile report created	100 %
'3'	2025-07-25T08:55:10	PrinterA_updated_C		Job finished	100 %
'3.1'	2025-07-25T08:55:10	Printer Profile | CMYK	PrinterA_updated_C.icc	Profile created	100 %
'3.2'	2025-07-25T08:55:10	ProfileCorrectionDL | CMYK - CMYK	ISOCoated-TO-PrinterA_updated_C.icc	Profile created	100 %
'3.3'	2025-07-25T08:55:10	CorrectionDLComparisonReport	ISOCoated-TO-PrinterA_updated_C_ProfileComparison.pdf	Correction DeviceLink comparison report created	100 %

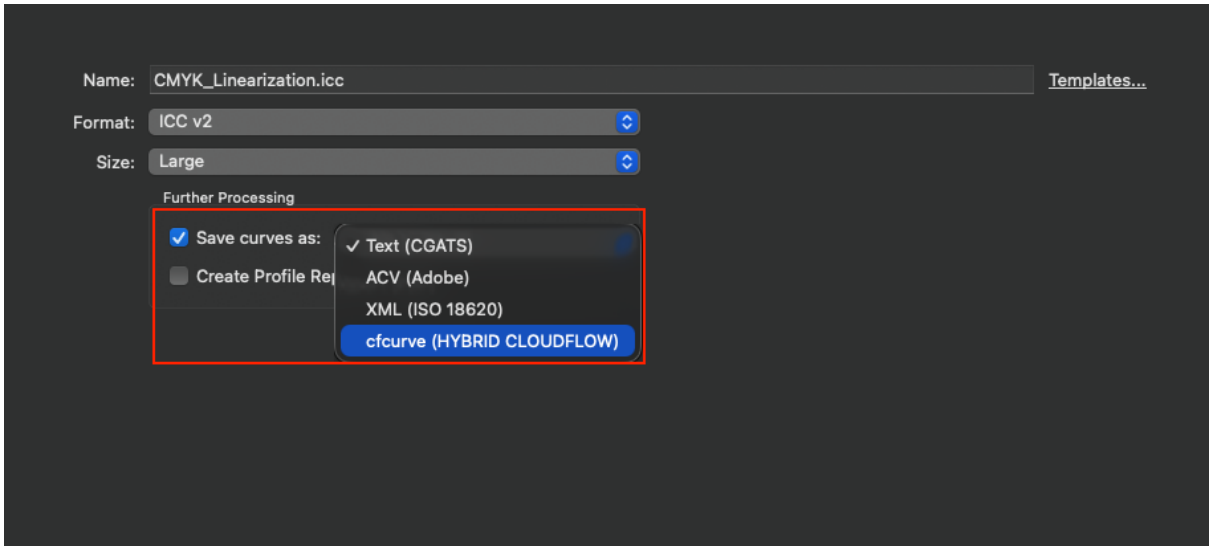
The path for the log files can be specified in the ***Preferences*** window, and automatic creation of log files can be enabled or disabled.



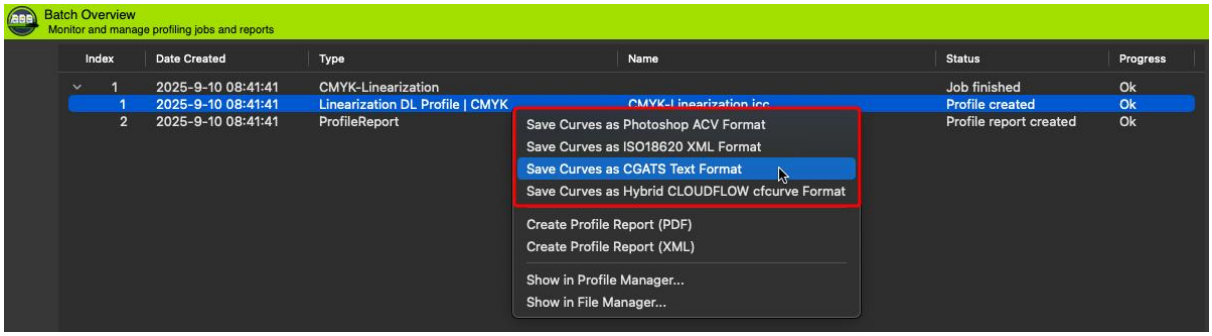
Linearization

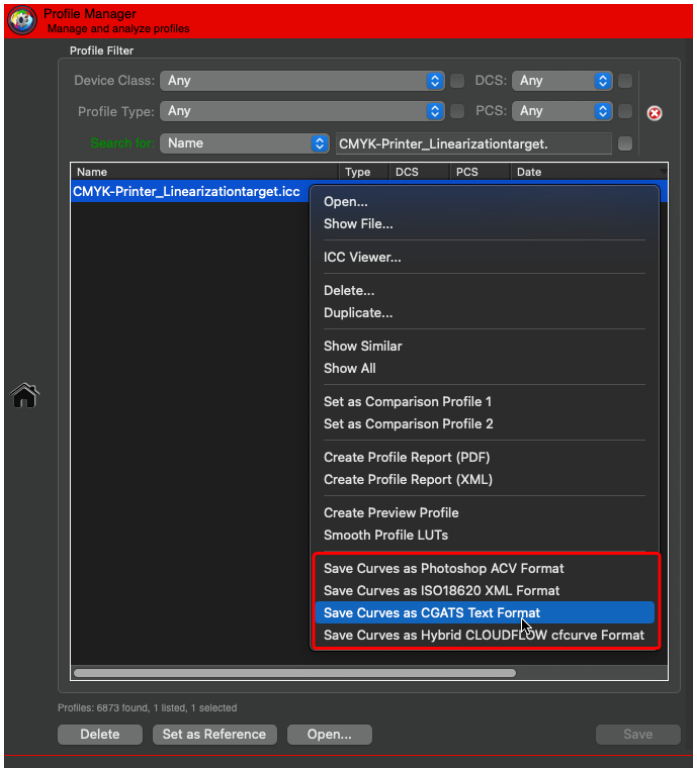
Linearization curves can now be saved in *Text* and *CGATS* formats

In addition to the curve formats ***ACV*** (Adobe Photoshop) and ***XML (ISO18620:2016)***, linearization curves can now also be saved as CGATS-compatible ASCII ***Text*** or in JSON-based ***cfcurve*** format for the HYBRID CLOUDFLOW application.



In addition, the curves can also be saved within the ***Batch Overview*** or the ***Profile Manager***, if required.





General

Modernized and streamlined licensing management

From now on, ColorLogic products will be using the secure and well-proven Hybrid Software Group licensing system, which is also used in Hybrid Software GmbH products such as PACKZ and iC3D and is utilized by thousands of users worldwide. In addition to modern and secure encryption technology, this change offers other advantages as well:

- Only a single license key is required. The license key is linked to a user ID, not to a computer or hardware, and can be used on any system (Windows and macOS).
- Easier computer switching. When switching to a computer you no longer need to request new licenses, as the previous hardware- or dongle-based serial numbers are no longer used. Simply deactivate the license on the current computer, transfer it to another computer, and reactivate it there.
- This new licensing system is Internet-based. An Internet connection is required to activate or deactivate a license, but after activation the

software can be used offline. This significantly reduces administrative efforts and increases flexibility when switching computers.

- Simplified update process. Previously, a new license was required for each new major release, but now you automatically receive all updates as long as your **Software Maintenance Contract** remains active.
- Includes the new ***Activation Manager*** application which allows you to manage all your license keys.

To use the new licensing technology, you must initially log in to the Hybrid Software Group ***Data Center***. There, you will find all the software products you have licensed (under ***My Licenses***), as well as the latest versions available for download (under ***My Products***).

Improvements and Bug Fixes

General

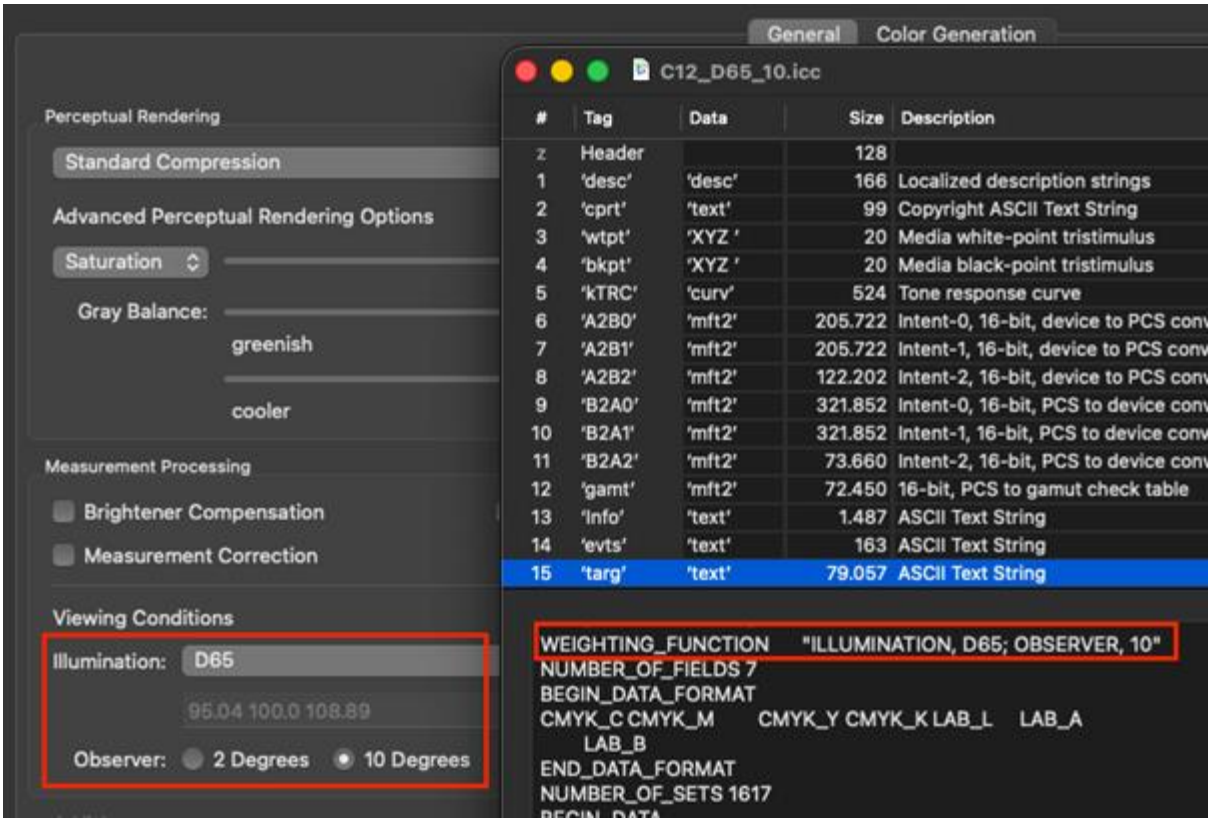
- Enhanced ***Test charts***: The predefined test charts have been reorganized, updated, supplemented and are now available for both the X-Rite i1Pro series and the Barbieri Spectro LFP. Additionally, new test charts for linearization have been included. Most test charts are available for the CMY, Gray, RGB, and CMYK color spaces. For Multicolor color spaces, test charts can be created using **ColorAnt**.

Preferences

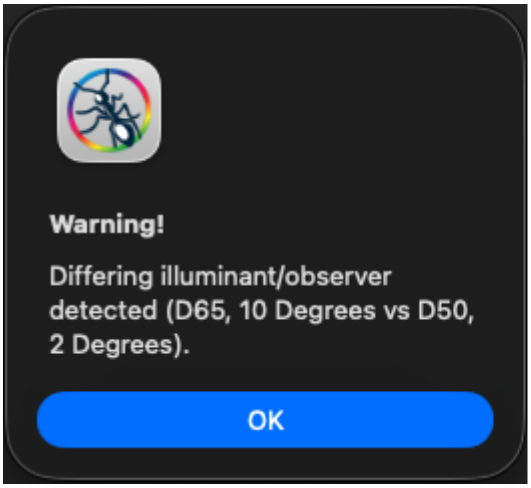
- For CoPrA SP licenses, the ***Custom Profile Folder*** is no longer supported in order to avoid conflicts that can arise when ***Multicolor Profile Variants*** and the main profile are written to different folders (Ticket #264857)

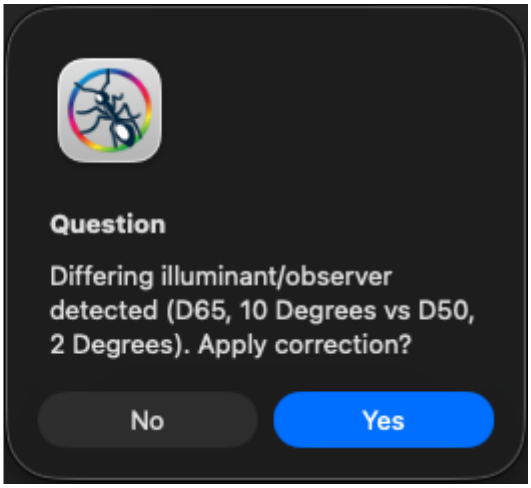
Printer Profiling

- ***Profile Report***: Fixed an issue where the profile report did not take colorant information into account and displayed incorrect TVI curves and K-channels for profiles with custom channel order.
- When spectral data are used, the target ***Illumination*** and the ***Observer*** are written into the profile's **"targ"** tag table as WEIGHTING_FUNCTION when they deviate from D50/2°



This is helpful because ColorAnt 12 checks the settings under ***Viewing Conditions*** in the ***Evaluate*** tool and displays either a **Warning!** or a **Question** to correct any differences between the measurement data and the ***Comparison Data Set*** or **Profile**.



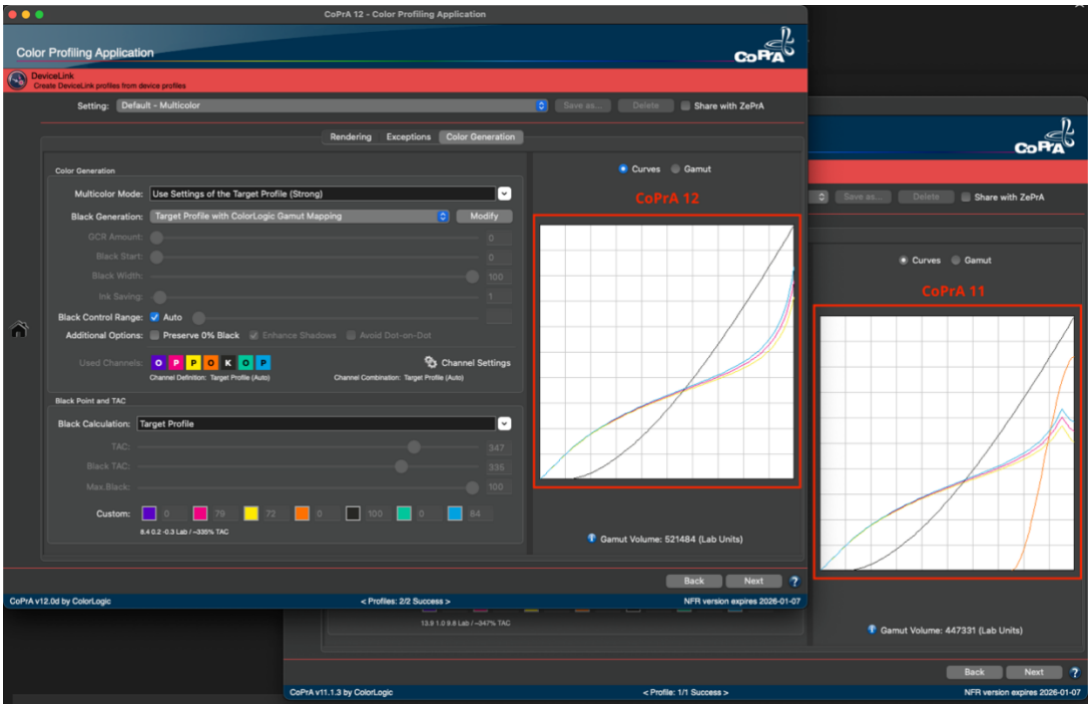


This information about discrepancies is also displayed in the ***Evaluation*** report and on the ***Label***.

- The detection of the TAC from profiles has been improved. As a result, the TAC in the profile report may differ compared to previous versions.

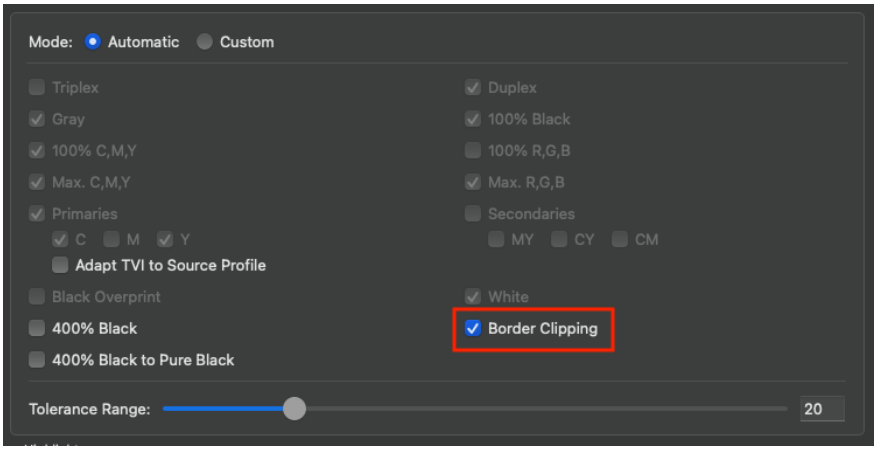
DeviceLink Profiling

- Fixed a problem when using a Multicolor target profile with custom channel order in conjunction with gray balance.



In gray balance, gamut-extending colors were used in addition to CMYK, resulting in deviating gray balance curves, black point and smaller gamut volume. This problem did not occur if the setting ***Automatic Channel Settings with TAC from target profile*** was used.

- Improved ***Border Clipping***: The ***Border Clipping*** option in the ***Exception*** tab has been improved, so that the percentage values between 0.5% and zero will be set to 0% and values between 98% and 100% will be rounded



up to 100%. This results in pure tones which no longer need to be screened in printing.

DeviceLink/Printer Profiling

- **Additional *Colorant Information* in the *Profile Report***

In addition to the color information in Lab (relative colorimetric), the Lab values have been added in absolute colorimetric, so that the absolute color values are immediately visible.

1. Colorants Info

Name	Definition	Lab (relative)	Lab (absolute)
Cyan	Primary Color	58 / -39 / -50	55 / -37 / -50
Magenta	Primary Color	51 / 77 / -2	48 / 74 / -3
Yellow	Primary Color	94 / -5 / 98	89 / -5 / 93
Black	Black	17 / 0 / 1	16 / 0 / -0
Channel Definition	Auto		

This allows for better comparability with other applications, such as ColorAnt, where the absolute color values are displayed.

1. Colorants Info

Input Colorants	Definition	Lab (relative)	Lab (absolute)
Cyan	Primary Color	58 / -39 / -50	55 / -37 / -50
Magenta	Primary Color	51 / 77 / -2	48 / 74 / -3
Yellow	Primary Color	94 / -5 / 98	89 / -5 / 93
Black	Black	17 / -0 / 1	16 / -0 / 0

Output Colorants	Definition	Lab (relative)	Lab (absolute)
Cyan	Primary Color	70 / -28 / -37	59 / -24 / -27
Magenta	Primary Color	66 / 54 / -4	56 / 48 / 1
Yellow	Primary Color	94 / -3 / 67	80 / -1 / 62
Black	Black	44 / 1 / 2	37 / 1 / 4
Channel Definition	Manual		

This applies to both the ***Printer Profile Report*** and the ***DeviceLink Profile Report***.

Update Profiling

- **Extended Reports**: The ***Profile Comparison Report*** and the ***DeviceLink Correction Comparison Report*** now also provide information on ***G7 Correction***, if this option is used in the updated profile.

- A problem has been fixed where the ***Save*/*Next*** button was disabled by the ***Batch Overview***. When navigating back from the ***Batch Overview*** window dialog, it was not possible to calculate additional profiles without changing the settings.

Linearization

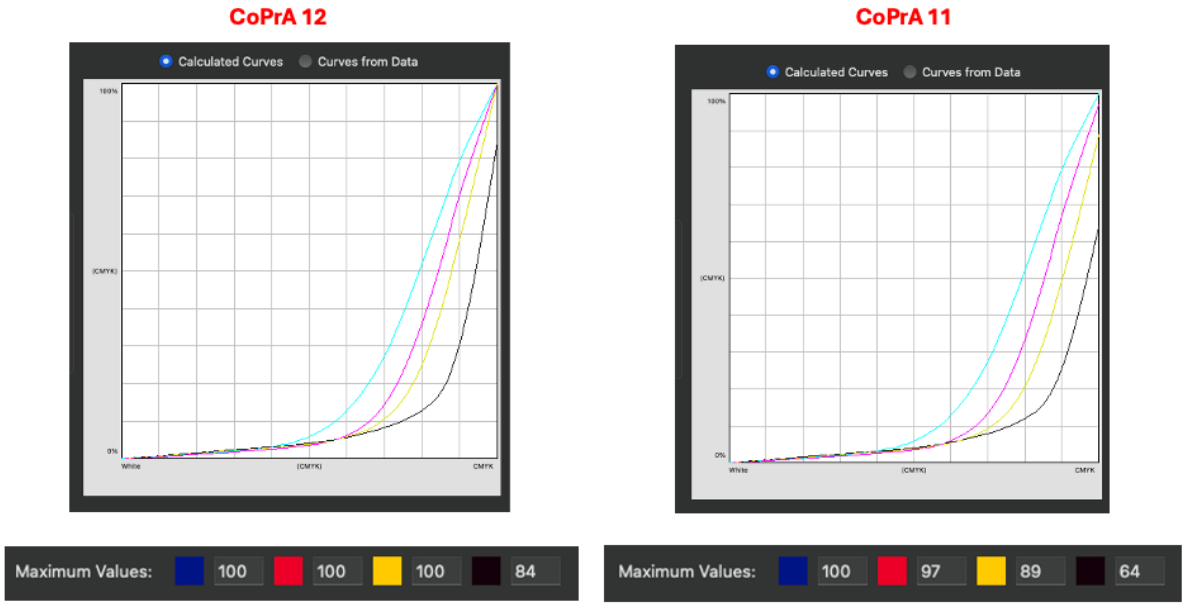
- **Improved *Profile Report* with additional input values**
  The table showing the corrected input values for each process color has been supplemented with additional information. Instead of 12 input values as in CoPrA 11, 21 input values are now displayed. This provides more detailed information about the linearization curves.

Linearization Profile Report CMYK-Printer_Linearizationtarget_5%.icc Page 3

The table shows the corrected input values for each process color.

Input				
0.0	0.0	0.0	0.0	0.0
5.0	0.7	0.3	0.3	0.4
10.0	1.5	0.7	0.7	0.9
15.0	2.4	1.1	1.1	1.4
20.0	3.3	1.6	1.5	2.0
25.0	4.4	2.3	2.1	2.8
30.0	5.7	3.1	2.6	3.7
35.0	7.2	4.0	3.3	4.8
40.0	8.9	5.2	4.1	6.1
45.0	11.0	6.6	5.0	7.5
50.0	13.5	8.4	6.1	9.2
55.0	16.3	10.8	7.4	11.2
60.0	19.6	13.8	9.0	13.5
65.0	23.4	17.9	10.9	16.1
70.0	28.1	23.4	13.3	19.4
75.0	33.8	31.0	16.7	23.2
80.0	40.8	40.6	22.0	27.8
85.0	49.7	52.5	30.7	33.5
90.0	62.1	66.6	45.2	41.5
95.0	78.9	82.7	67.3	52.5
100.0	98.3	100.0	93.7	65.4

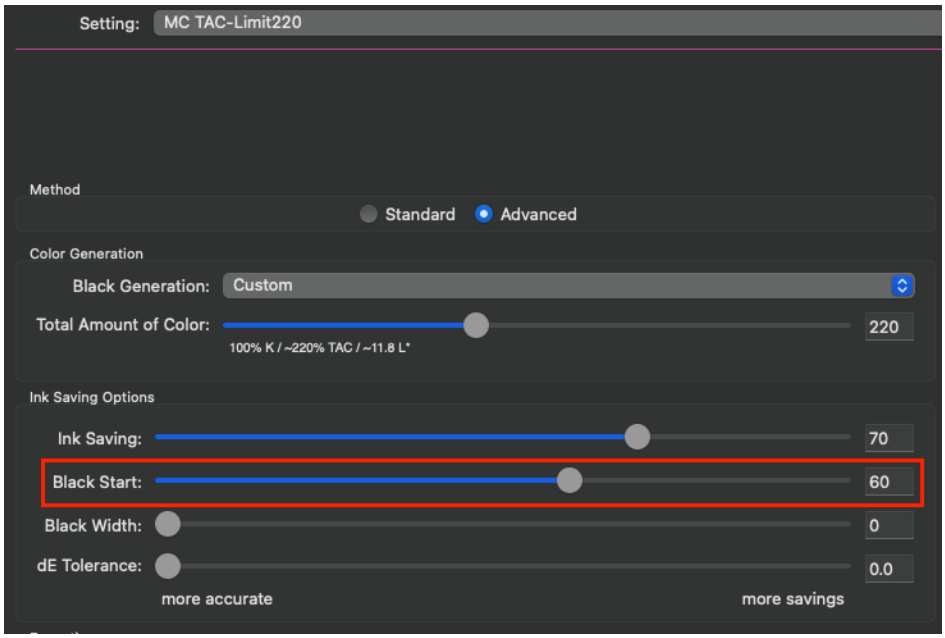
- **Improved *Automatic Ink Limitation***
  The automatic calculation of the ink limit in the linearization has been improved so that it slightly higher values are now calculated automatically.



It is still possible to enter the limit value for each channel manually.

SaveInk

- To improve the comparability of CMYK and Multicolor ink savings, the ***Black Start*** values for the Multicolor TAC limit settings ***220*** and ***300*** were increased from ***55***% to ***60***%. As a result, the ***Ink Saving Options*** for the CMYK and Multicolor TAC limit settings 220 and 300 are now identical and comparable.



Batch Overview

- Fixed an issue where incorrect color space information was displayed for Correction DeviceLink job tasks. Instead of the job type ***ProfileCorrectionDL I NoSpace***, the correct color space is now displayed (e.g., ***ProfileCorrectionDL I CMYK – CMYK***).

Recalculation

- Active threads are now limited to 75% of CPU capacity to prevent overloading the system during profile calculations.