HOWTO

HowTo Be G7® with Caldera RIP

Caldera RIP Version 11
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*EasyMedia is named ProfileExpert in the TextilePro interface.

Introduction

G7® is a methodology developed by **IDEAlliance** (idealliance.org) for controlling color reproduction through neutral color calibration.

The full description is available as an ANSI Technical Report: CGATS TR015. Available on http://www.npes.org/

What is G7®?

G7® Grayscale

G7® stands for **Grayscale + 7** colors that are the four classical primary colors in the printing processes, plus the three secondaries:

Primaries	Secondaries
Cyan	Red (Magenta + Yellow)
Magenta	Green (Cyan + Yellow)
Yellow	Blue (Cyan + Magenta)
Black	

It has been described first for the **IDEAlliance GRACoL®** standard (General Requirements and Applications for Commercial Offset Lithography) and consists of a method to calibrate CMY triplets as a neutral gray gradient and to specify a common response of CMY and K gradients in terms of density.

Reaching these two conditions are known as G7® Grayscale.

GRACoL® and SWOP®

With expectations on primary and secondary colors on the rise, you can use a **G7®** color space standard, like **GRACoL®** or **SWOP®**.

Summary

To summarize, **G7®** describes the methodology while **G7® Grayscale** is the state of a process conformed to the **G7®** methodology. **GRACoL®** and **SWOP®** are standards that verify **G7® Grayscale** conformity and conditions in the primary and secondary colors.

G7® in Inkjet Printing

G7® is process-agnostic. This means that anyone can apply the **G7® method** to any print process.
In inkjet printing, there is currently no published standard that describes how the primaries and secondaries must be. Because of that, many use a standard made for offset printing, such as **GRACoL®**.

SWOP® is less often used. It carries lower color expectations in terms of saturation.

Moreover, in inkjet printing, ICC profiles are widely used to control color reproduction so profiles for **GRACoL®** and **SWOP®** are also available in **Caldera RIP**.

If you need to conform to G7®, the easiest and fastest way to do so is to properly use G7® profiles in your workflow.

Sometimes, unfortunately, a configuration (the combination of a printer, a media, and various print parameters) does not reach the **SWOP®** or **GRACoL®** color specifications. In that case, you can apply a **G7®** calibration and conform to the **G7® Grayscale** expectations. You will not use ICC profiles, and therefore lose the benefits for spot color reproduction and generic workflows. (cf. Grayscale procedure)
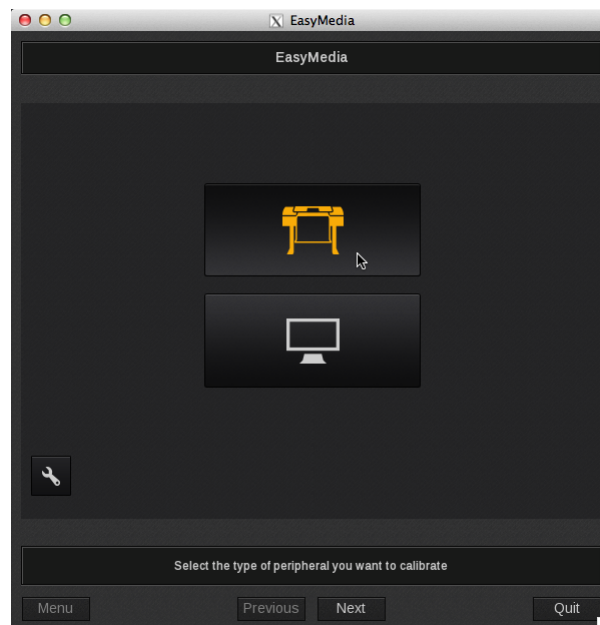
Caldera G7® Procedures

GRACoL®

As explained in the previous paragraph, if you use ICC profiles, there is a good chance that you already conform to **GRACoL®**.
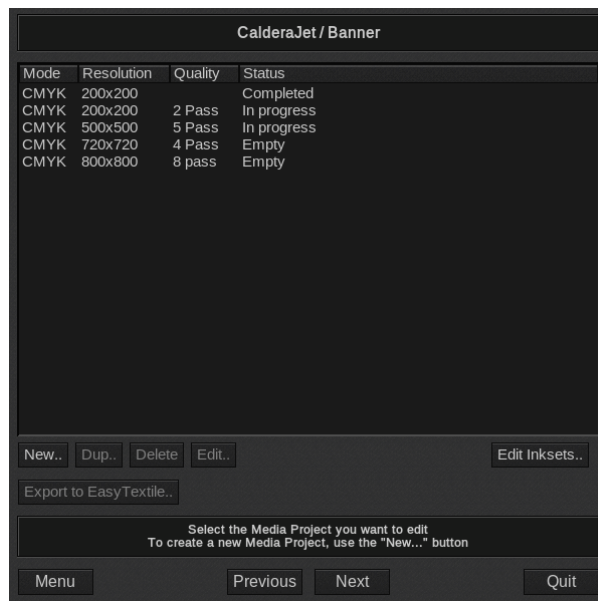Here are the steps you need to follow to create an ICC profile:
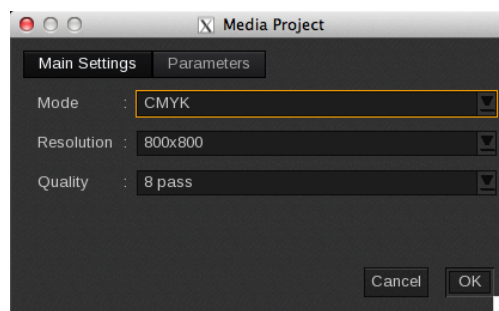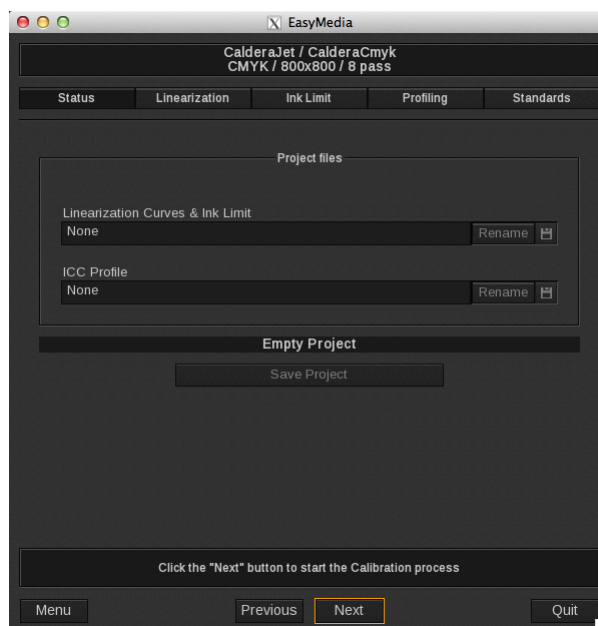
1. Launch **EasyMedia**[*]

2. Select your printer and media

3. Create a new project: choose a **mode,** a **resolution** and a **quality.**

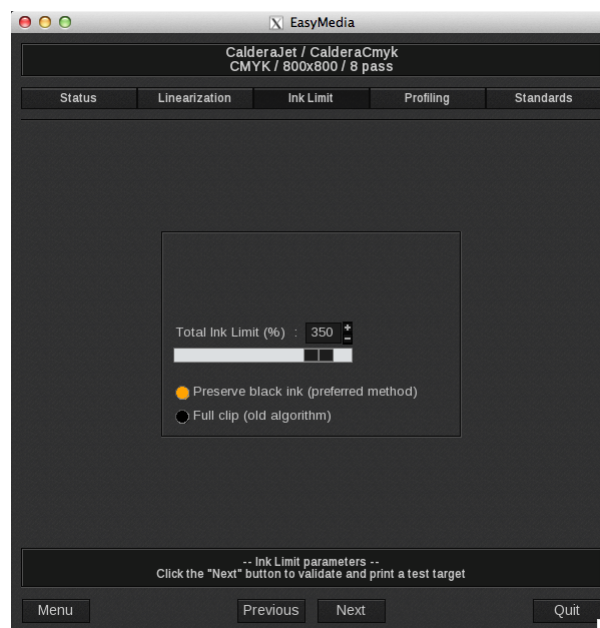**4.** Click on **Next** to start the profile creation process.

5. Click on *Next*. If you have light inks, the first step is **transitions**. Otherwise you start with the **linearization**.
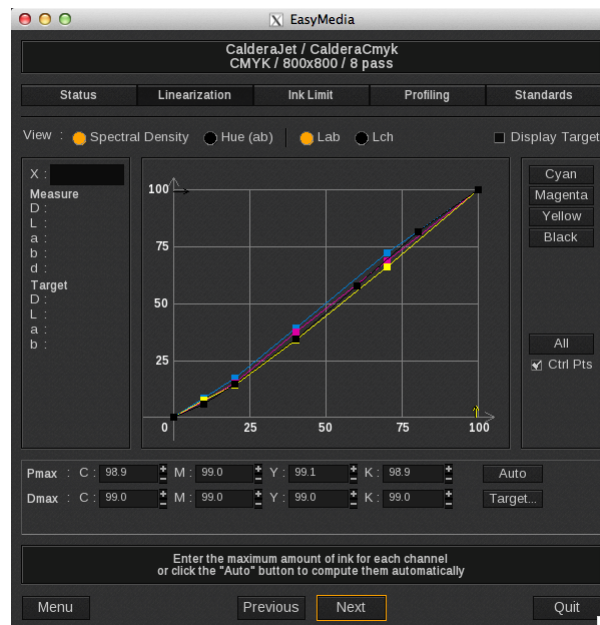
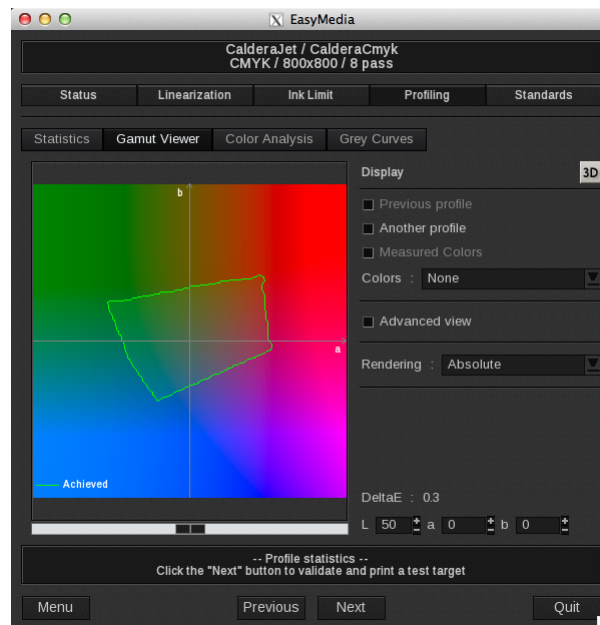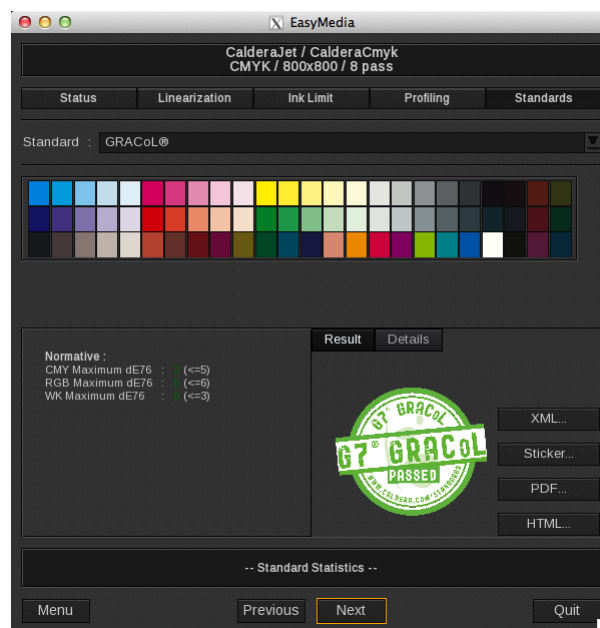6. Once the linearization is done, you will set the **ink limit**.

7. The next step is to build the **ICC profile**.

8. Finally, proceed with the **GRACoL®** verification using **P**rint**S**tandard**V**erifier:

9. Do not forget to save your profile before closing **E**asy**M**edia*.

For further information, please refer to the following user manuals:

- **E**asy**M**edia* (for steps 1 to 7 and step 9 and details about **E**asy**M**edia*)
- *HowTo check Print Standards* (for step 8 and details about **P**rint**S**tandard**V**erifier)

G7® Grayscale

If you fail to reach **GRACoL®** specifications, you can try the following procedure to reach **G7®Grayscale**.

1. Clone your media and add *G7 Grayscale* at its end to recognize it. Don't forget to accept the duplication of the profiles as well.
2. In **EasyMedia**[*], go back to linearization and perform a **G7® linearization**.
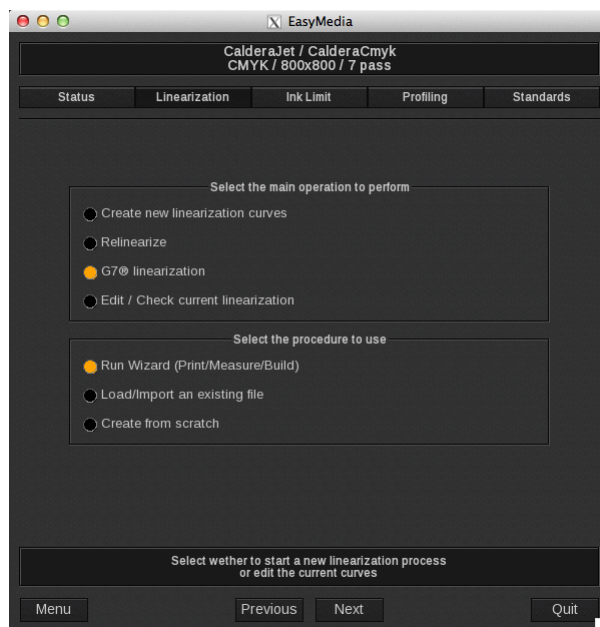
3. Check that you are **G7® Grayscale** using **PrintStandardVerifier** (Standards tab).
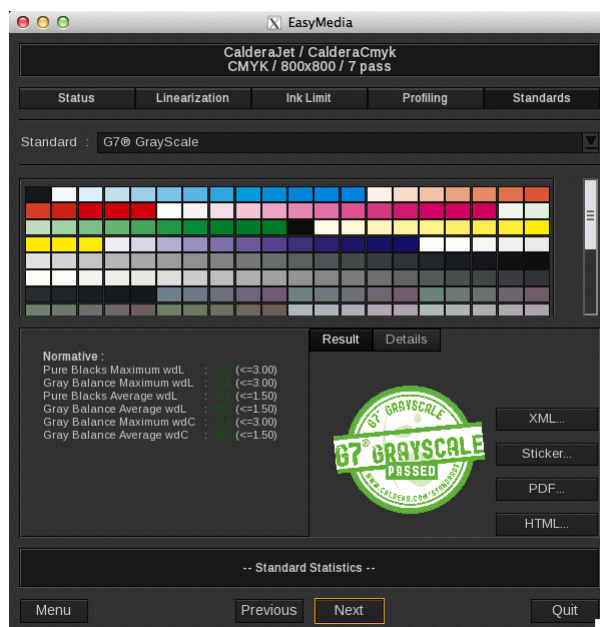
It is important to note that doing a normal linearization before a **G7® linearization** will help you pass the standard so a **G7® linearization** will be done by default on top of the previous linearization if it is available in the project.

Warning: If you want to use the **G7 linearization,** be sure to deselect ICC in your print client (cf. "G7® in the print Workflow" on page 9).

Caldera G7® Extreme

IDEAlliance describes **G7® Extreme** as being **G7® Grayscale**, **GRACoL®** and **SWOP®** compliant. To give your printer all the chances to reach the Extreme standards, do a **G7® linearization** then compute the ICC profile using the **G7® linearization**.

Checking

To ease the procedure and for more efficiency, **PrintStandardVerifier** allows you to check those different standards at the same time. You will then be able to select all the G7 standards and print and measure a target per standard in a batch workflow.

The process is very simple:

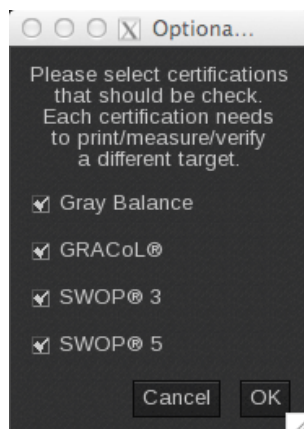1. Open **EasyMedia**[*], select your **printer**, **media** and **profile**.
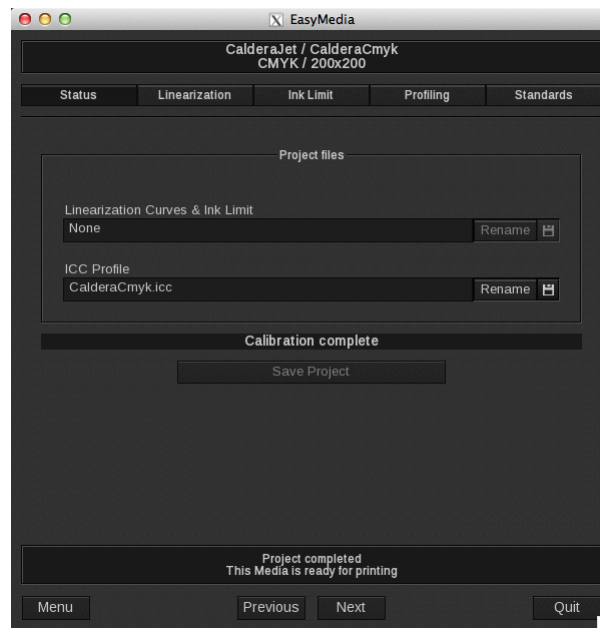
2. Go to the <u>Standards</u> tab, start the compliance control then select **G7®:2013** in the **Standard** category.
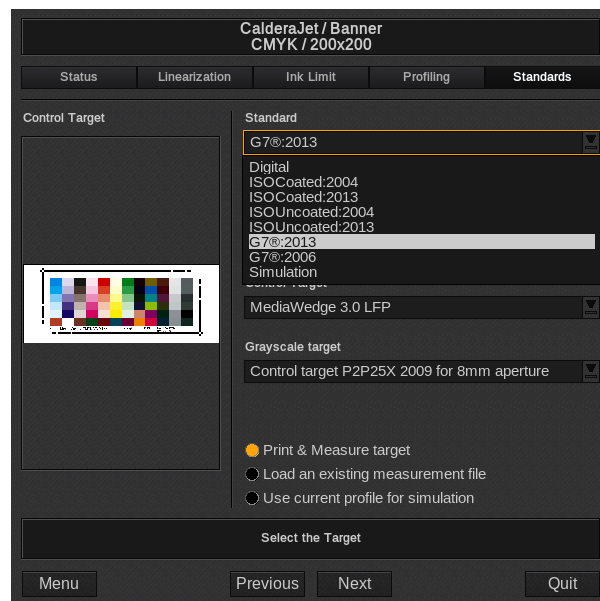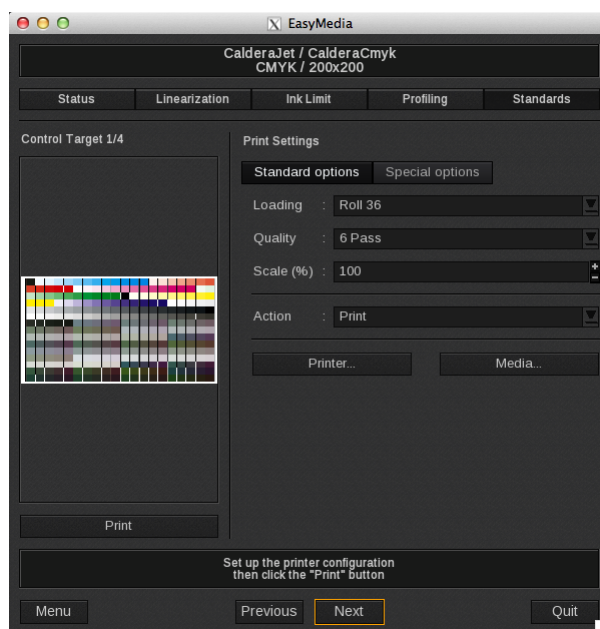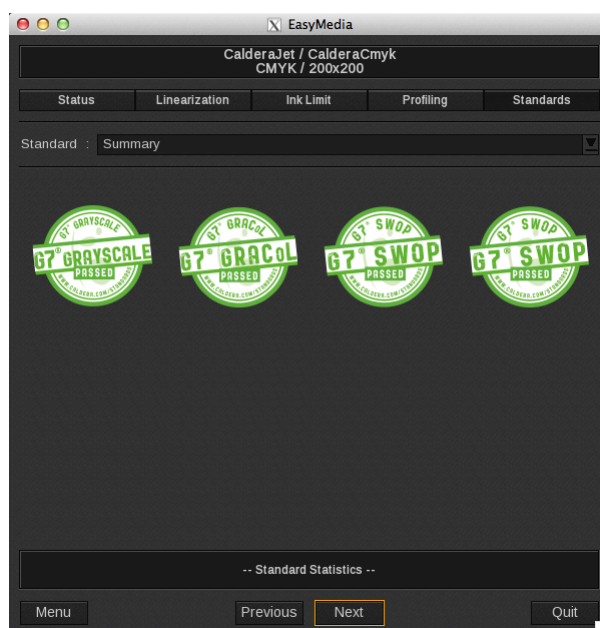
3. When you click the **Next** button, the following pop-up shows. Select the four standards.

4. Print the four targets and measure them in the same order.

5. Finally, see if your printing process is <u>**G7® Extreme**</u> compliant.

G7® in the print Workflow

If you want to verify that you are actually using the G7® linearization/profile, you can set it either globally (for all your printers), or individually for the current printer (in the Print module).

Using G7® linearization curves

If you made a G7® **linearization** without computing the ICC profile again (Grayscale procedure for example), you'll need to disable color management and use the G7® **linearization**. Follow this instructions:

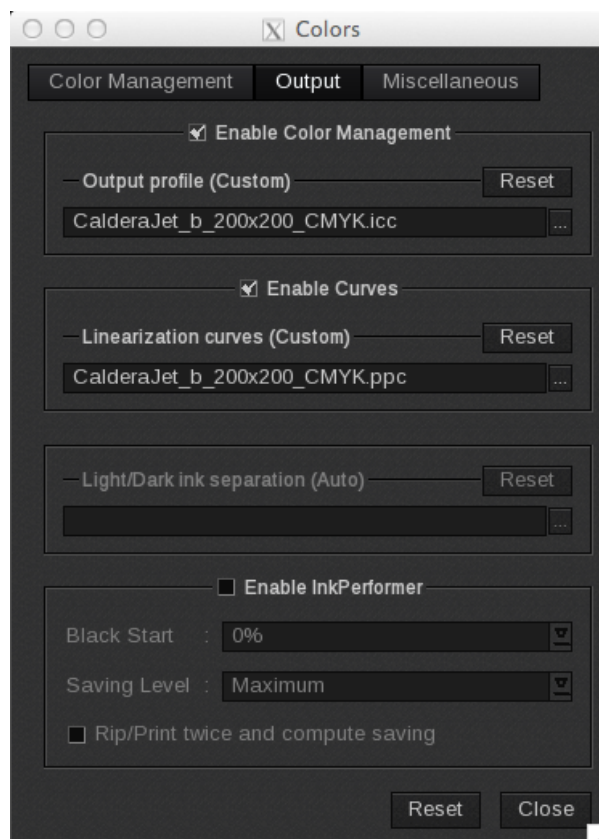1. Open the Print module: double click on the printer in the ApplicationBar.
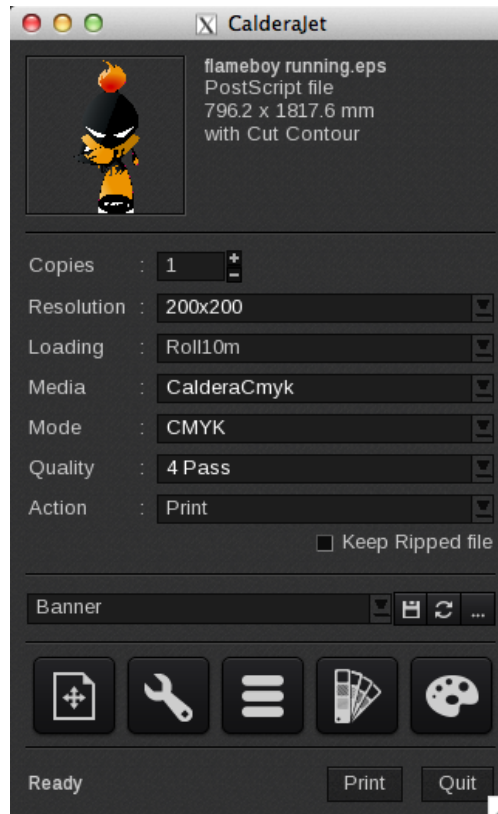
2. Click on the fifth button to open the *Color Management* window.
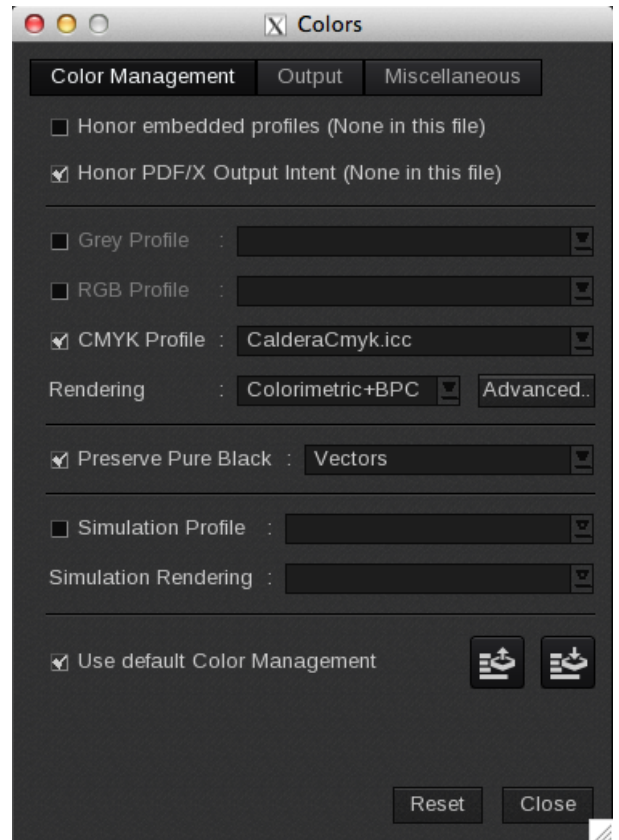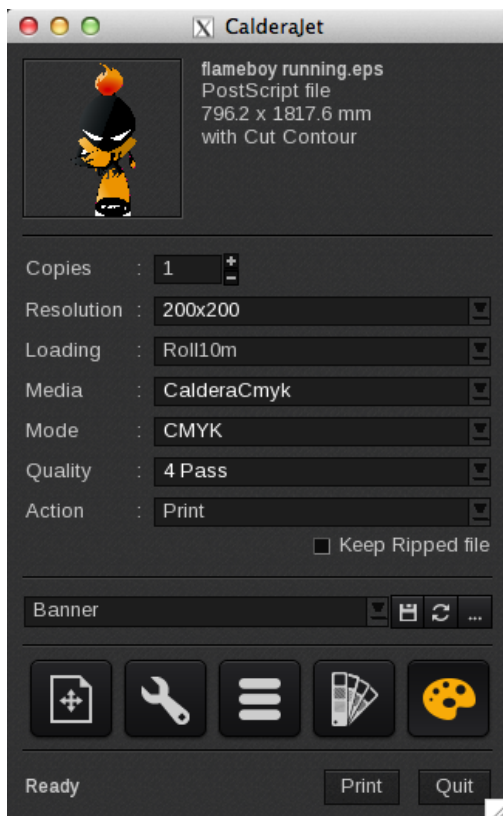
3. Go to the <u>Output</u> tab and check that **Enable Curves** is activated.
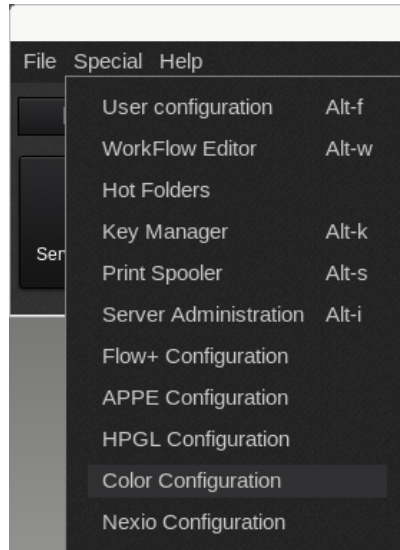
Using G7® ICC profiles

You can change the global profiles and the simulation profile globally or only for a specific printer.
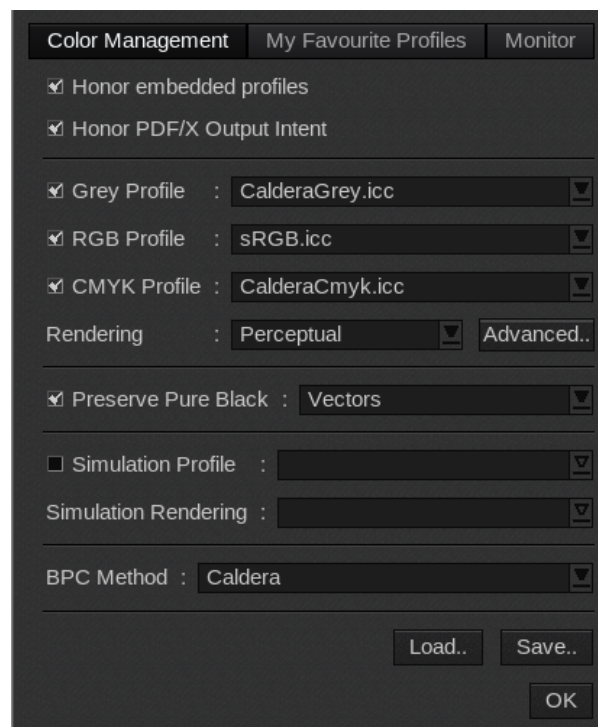
How to globally change the color configuration

To open the previous window, follow these steps:

1. In the **A**pplication**B**ar, click on **Special** then on **Color Configuration**.
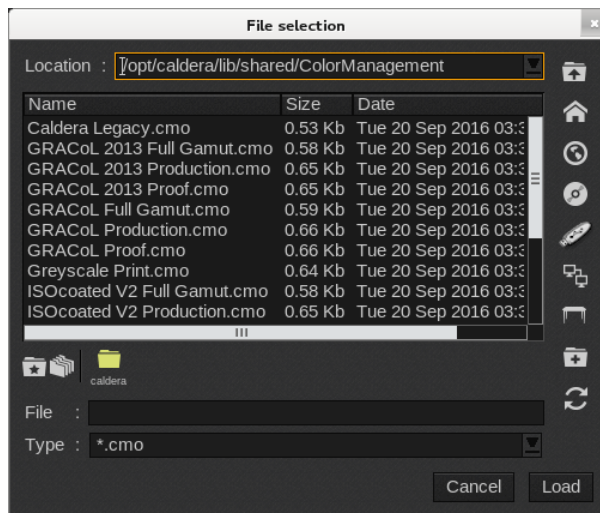

2. This will open the new *Color Configuration* window.

3. Click the *Load* button and select one of the **GRACoL** configurations:
   - **GRACoL Full Gamut**: if the file is not **GRACoL**, no simulation is done, the printer's full gamut is used.
   - **GRACoL Production**: if the file is not **GRACoL**, a simulation is done with a Colorimetric+BPC rendering to look like **GRACoL**.
   - **GRACoL Proof**: if the file is not **GRACoL**, a simulation is done with absolute rendering.

Choose the normal or 2013 version accordingly to your media and measurement option: M0 for the normal one and M1 for the 2013 version.
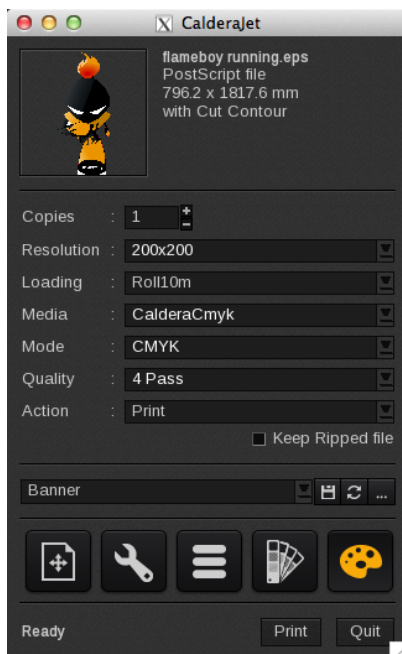
4. Do not forget to save the new configuration before closing the window.

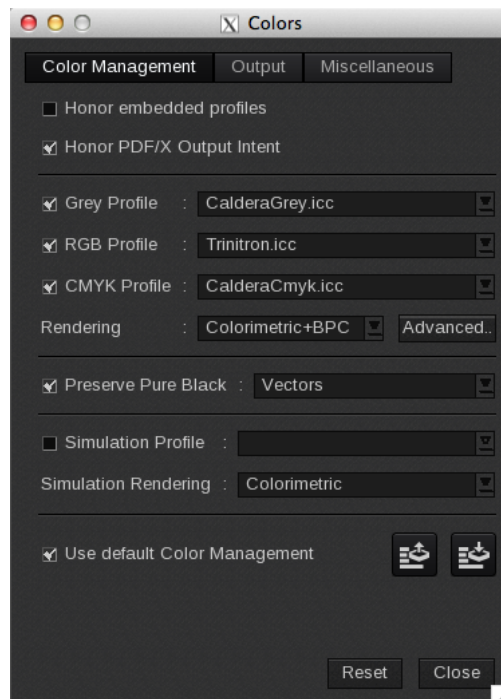## *How to change the color configuration in the print module*

Please follow these steps:
1. Double click on the printer in the **A**pplication**B**ar to open the **P**rint module.
2. Click on the *Color Management* button.

3. This opens the *Colors* window dedicated to your printer. Uncheck the **Use default Color Management** checkbox.

4. Click the Load button and select one of the **GRACoL** configurations:
    - **GRACoL Full Gamut**: if the file is not **GRACoL**, no simulation is done, the printer's full gamut is used.
    - **GRACoL Production**: if the file is not **GRACoL**, a simulation is done with a Colorimetric+BPC rendering to look like **GRACoL**.
    - **GRACoL Proof**: if the file is not **GRACoL**, a simulation is done with absolute rendering.

Choose the normal or 2013 version accordingly to your media and measurement option: M0 for the normal one and M1 for the 2013 version.
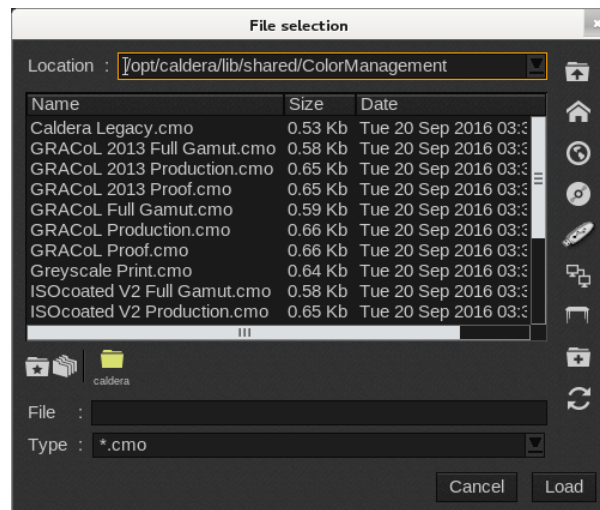
5. Finally, close the window and use your **Print** module as usual.