



Verifying and Optimizing a Profile in KODAK Proofing Software in KPS 10

When do you need Verify a Profile?

- After creating a custom media configuration
- Anytime to check for accuracy of the proof's color match
- To verify for G7 compliance



For information on Creating Custom Media Configurations for KPS MPI Software: https://workflowhelp.kodak.com/display/MPI82/Startup+Assistance+for+Custom+Media+Configurations





How long does it take?









Verifying a profile can take approximately 1 hour, depending on the type of spectrophotometer you have.

If you are using a printer with an inline spectrophotometer, all the steps can be performed remotely.

If you are using an offline spectrophotometer, additional active participation is required to measure charts.

When verifying a profile, a special Color Bar containing a profile chart (TC1617 – includes press grays) will be printed for measurement.

For all supported spectrophotometers, the profile chart is 1 page.





How do I prepare?







To prepare:

- Create a custom Media Configuration and Proofer Profile using KPS v8.5 or higher.
- Create a custom ICC DVL with your custom Media Configuration and Proofer Profile. The best color performance can be achieved by using an ICC DVL. You can also use Profile Pairs; but this will not yield the best color performance. (See the Instructions below, "Creating DeviceLink Profiles in KPS")
- It is best to verify the color of your new Media Configuration + DVL immediately after creating it. You can also verify the color, at any time in the future.
- If you are verifying the color of an existing Media Configuration, you will need to do the following first:
 - Load the proper media into the printer, ensuring that you have enough media to complete the process—including calibration.
 - Ensure that you have an adequate supply of ink.
 - Run a nozzle check test, and clean if needed.
 - If your printer has been idle for a long time or is newly installed; it is recommended to "warm-up" the printer first. Run a series of fully inked proofs for a day or two; perform normal head cleaning cleaning cycles at the start and end of each day, and as needed. If nozzle performance is intermittent; continue the "warm-up" for another day.







1. Media – choose the right Media

- Color of Media
 - 1. Paper color should be close as possible to the target white point.
 - 2. Check paper manuf. for compatibility with your color target. Best results with Epson Media on Epson Proofer.
 - 3. Choose the right Measurement Condition some color targets/media require a specific measurement condition.
- 2. Color Gamut requirements. Check paper manuf. for compatibility with your color target. Best results with Epson Media on Epson Proofer.

2. Media Configuration Settings tips

- 30min drying time for all prints is ideal.
- 2. Total Ink Limit should not be set too high (most Semi-Matte media types are never higher than 1.0, for P75/P95 usually not higher than 0.8)
- 3. Paper Feed use the new method in KPS v8.5 or higher.
- 4. For Optimum color results create a new custom Media Configuration. Kodak Factory Media Configs are not for color-critical work.

3. Spectrophotometer tips

- 1. White calibration tile should be clean.
- 2. Spectrophotometers that require hand measurement can be frustrating and inconsistent. Recommend using an inline Spectrophotometer.
- 3. Inline devices
 - 1. Use the White backing strip supplied by the Manufacturer.
 - 2. Ensure Matching white tile installed (White tile serial number must match the Spectro serial number).

4. Printer checklist:

- 1. All nozzles should be firing/printing on a nozzle check pattern.
- 2. Inkjet Printers that sit unused for long periods of time should be "warmed-up" first. (see "How Do I Prepare" slide).
- 3. Stable Ink color might shift after changing cartridges
- Newly installed printers must completely change out all of the installer ink kit (1 or 2 full days of printing).

5. Check the prints

I. Ensure that all prints are not showing banding of any kind. Color patches should have consistent color across the patch.





Where are the Profiles located in KPS?





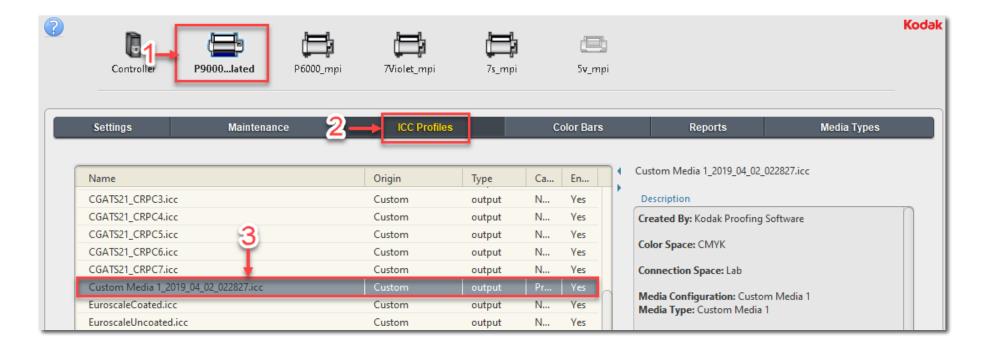


To locate the Profiles in KPS

Go to the **Kodak Proofer Administrator**

- 1. Select your Proofer by its name on top
- 2. Select the "ICC Profiles" Tab
- 3. The Profiles will be in the list.

Note: All Profiles created by KPS are automatically signed for Certified Process for Color Confirmation





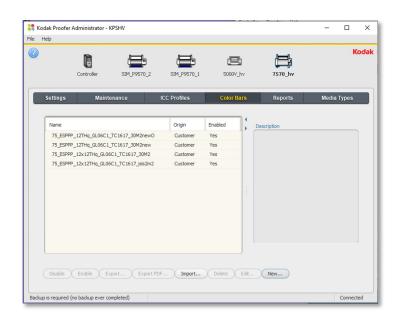
Profile Verification - Introduction

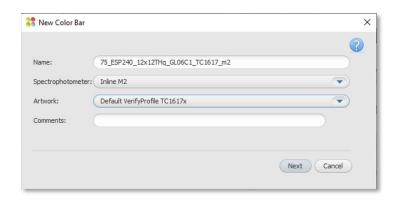
- This presentation uses an Epson printer equipped with the SpectroProofer inline spectrophotometer option (which can be an automated process) as an example. The steps are similar for other printers.
- Recommend Creating a Custom Media Config + ICC DVL using KPS v8.5 or higher.
- KPS v10.0 or higher also uses the latest Kodak ICC profile Gray Balance correction technology, for color target data sets that contain extra gray balance information (G7TVI).

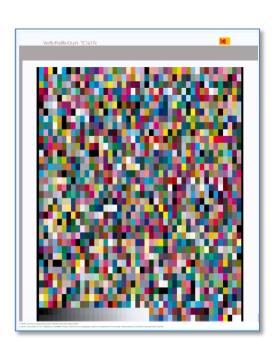


Introduction

- The basic steps are:
 - Create the Profile Verification chart (Color Bar= VerifyProfileTC1617x)
 - Export the color bar
 - Create a new Layout to use the Profile Verification Color Bar
 - Output the color bar using the new layout
 - Measure the color bar

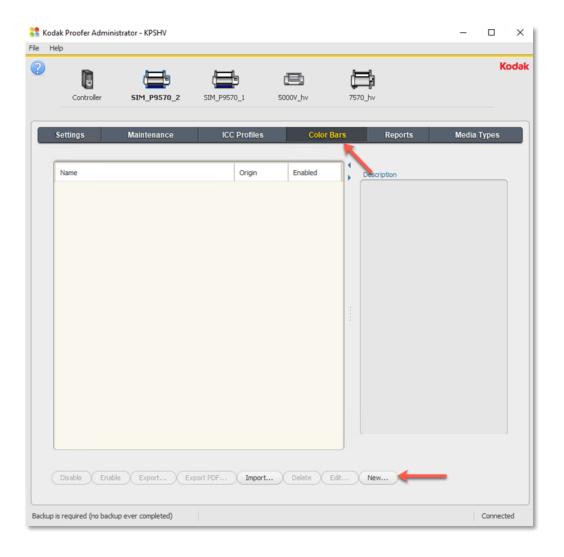








Step 1 - Create a Custom Color Bar



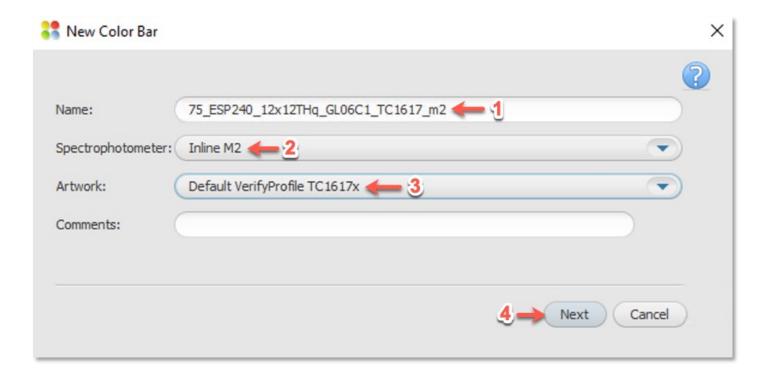
- Launch the KPS Administrator and Click on the Color Bars Tab.
- Select your Proofer by its name on top
- Click on **New** to create a new Color Bar

Note: The Color Bar for the Profile Verification must be created from the "*Default VerifyProfile TC 1617x*" Artwork





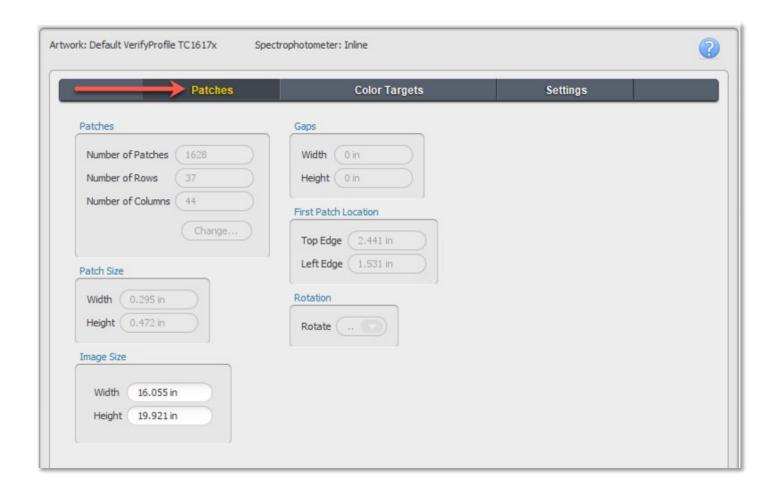
Step 2: Name the new Custom Color Bar



- **1. Name:** Enter a name that describes the color bar
- **2. Spectrophotometer:** Select the Spectrophotometer plus the measurement condition
- 3. Artwork: Select the "Default VerifyProfileTC1617x" Artwork
 Note: You must select this Artwork
- 4. Click Next



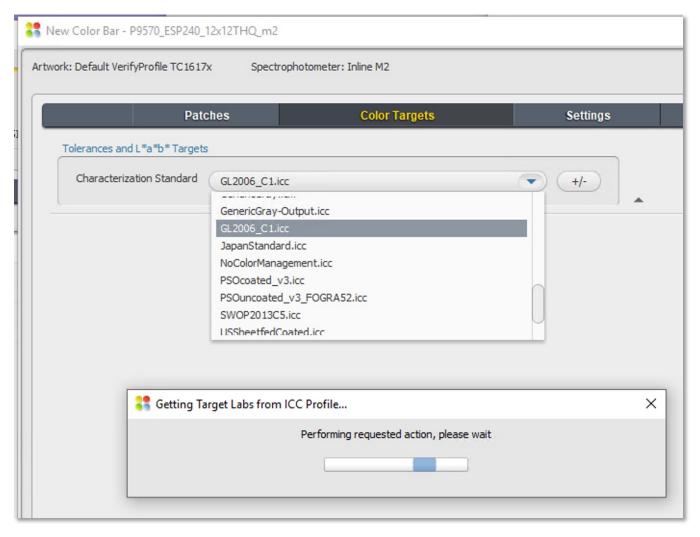
Step 3: Color Bar – Patches Tab



- Leave the default Image Size settings
- Click on the Color Targets
 Tab



Step 4: Color Bar – Color Targets



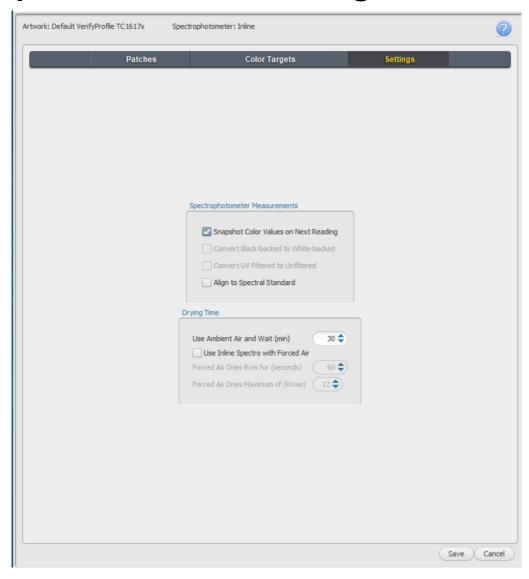
 Characterization Standard: The Target ICC Profile you are looking for may already be in the list.

Note: If you require a different one, you can import the profile as follows:

- 1. In the KPS Administrator
- 2. Select your proofer name
- 3. Select the ICC Profiles Tab
- 4. Click the **Import** button



Step 5: Color Bar – Settings Tab

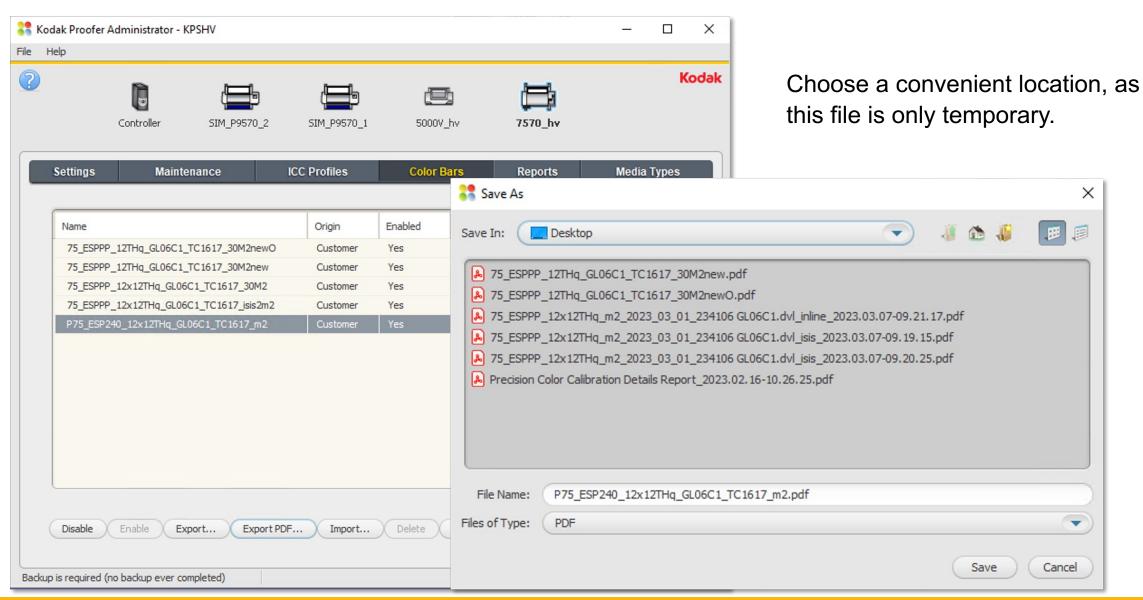


- Leave the default settings
- Click Save

Note: The settings are not applicable to the Profile Verification process.

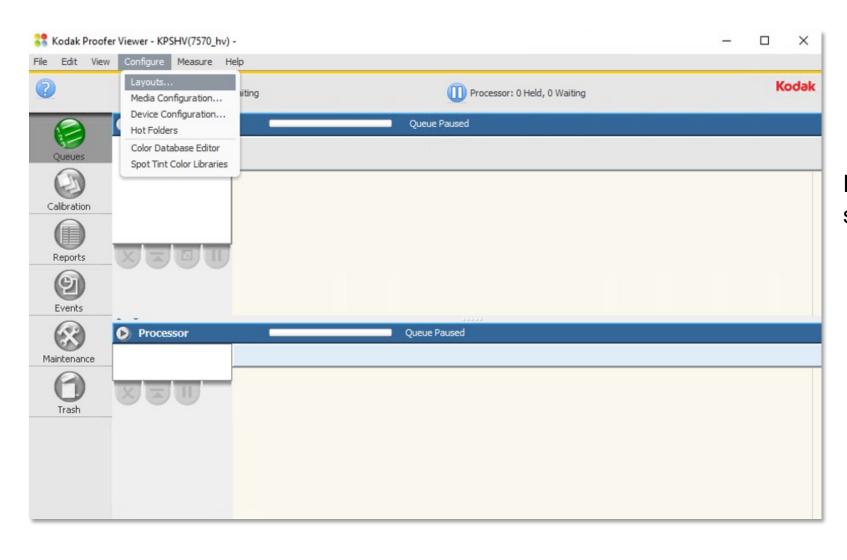


Step 6: Export the new Color Bar





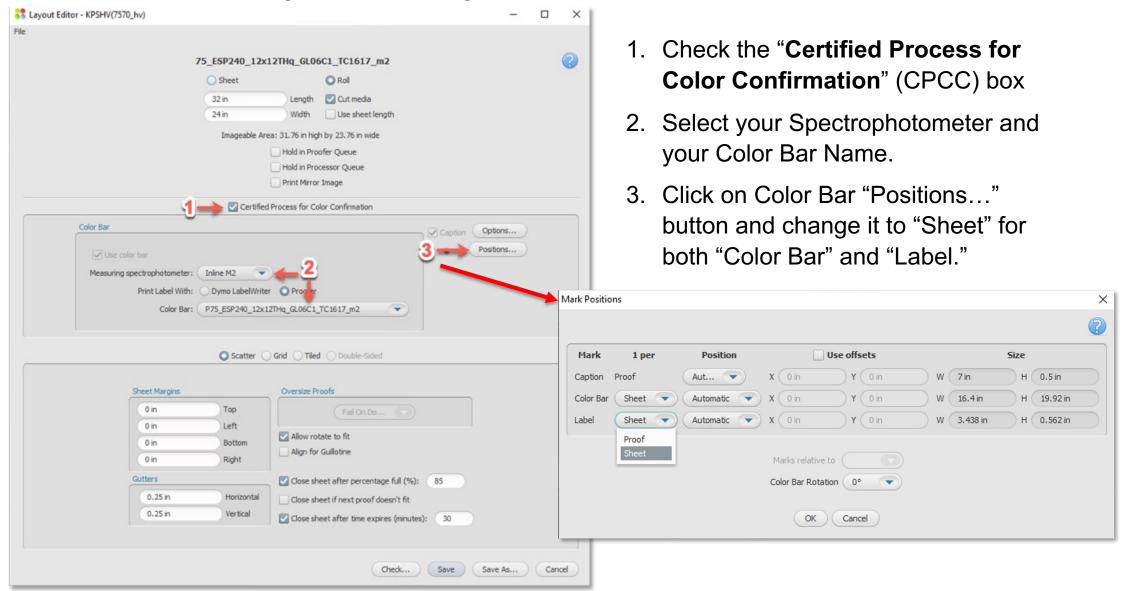
Create a new Layout to use the new Profile Verification Color Bar



From the **Configure** drop down, select **Layouts**



Step 1: Create a Layout to use your new Profile Verification Color Bar





Process the Profile Verification Color Bar through your Workflow

Two methods:

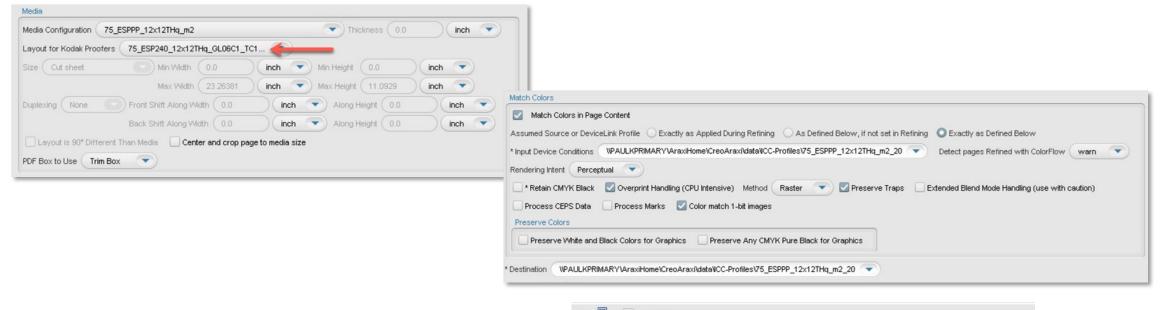
- 1 Kodak Prinergy Workflow
- 2 KPS "Open Connect" Hot Folder Workflow



Method 1 – Prinergy Workflow

Create a new process template in Prinergy to process your new Profile Verification Color Bar

- **Layout:** Choose the newly created Layout from the previous step (slide 19)
- **ColorConvert:** Use the proofer profile and DVL profiles



Note: In the Marks section, make sure the Extra Margins for Marks and Bleed are all set to 0.0.

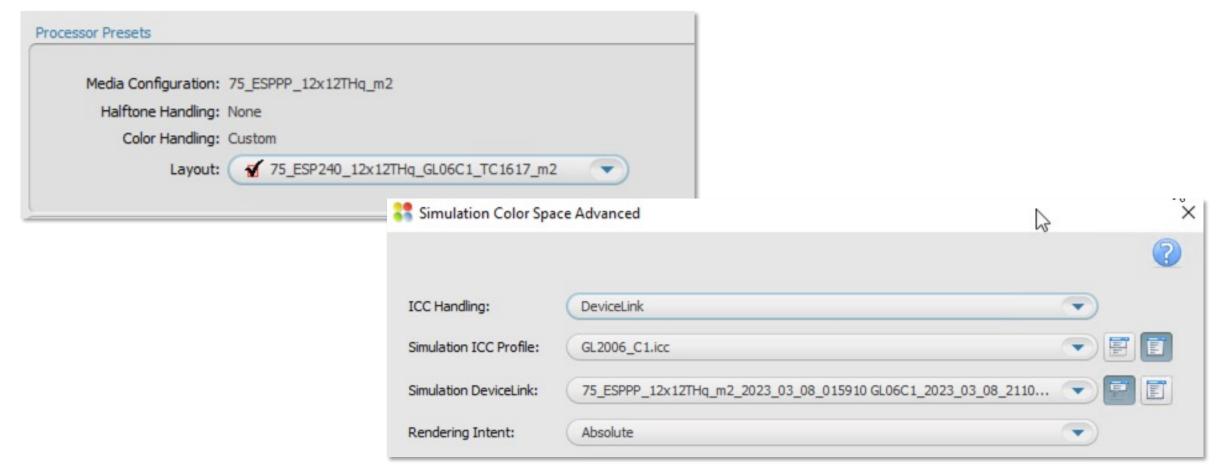




Method 2 - Open Connect

Create a new Hot Folder in KPS to use your new Profile Verification Color Bar

- **Layout**: Choose the newly created Layout from the previous step (slide 19)
- **ICC Settings**: Use the proofer profile and DVL profiles





Step 2: Process the Profile Verification Color Bar through your Workflow

This step can be done using either the Kodak Prinergy Workflow or the KPS "Open Connect" Hot Folder Workflow.

In this step your DVL is applied to your new Profile Verification Color Bar.

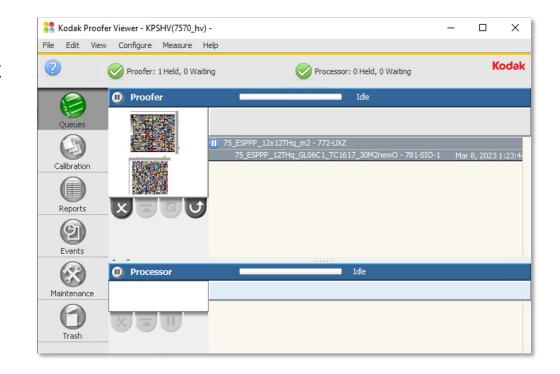
Note:

The Profile Verification Color Bar must be the first file sent to the Layout you have created earlier.

You do NOT need to print and measure this image for the following reasons:

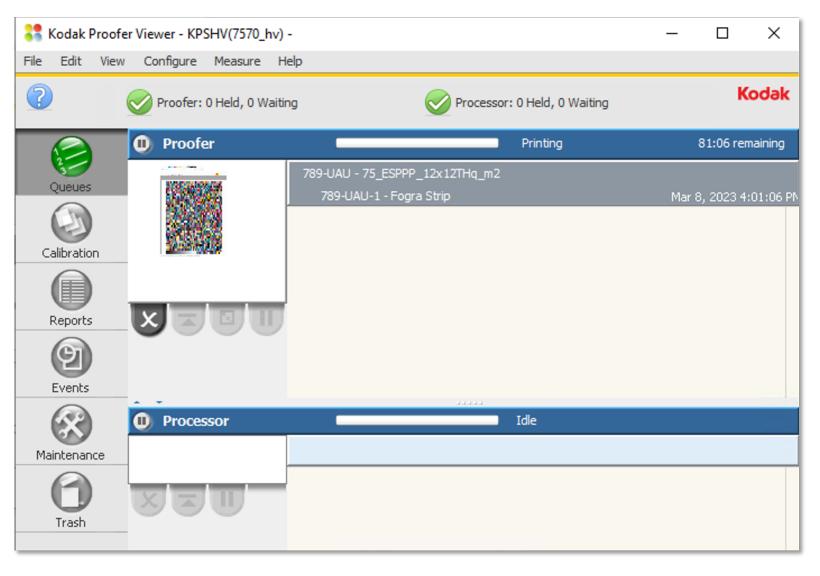
- The page is too long for the Inline Spectro
- To save ink and paper for the Off-line Spectro

After it is completed, it will automatically be in the "paused" state. Then you can delete it and proceed to Step 3 - Print the Profile Verification Color Bar.





Step 3: Print the Profile Verification Color Bar



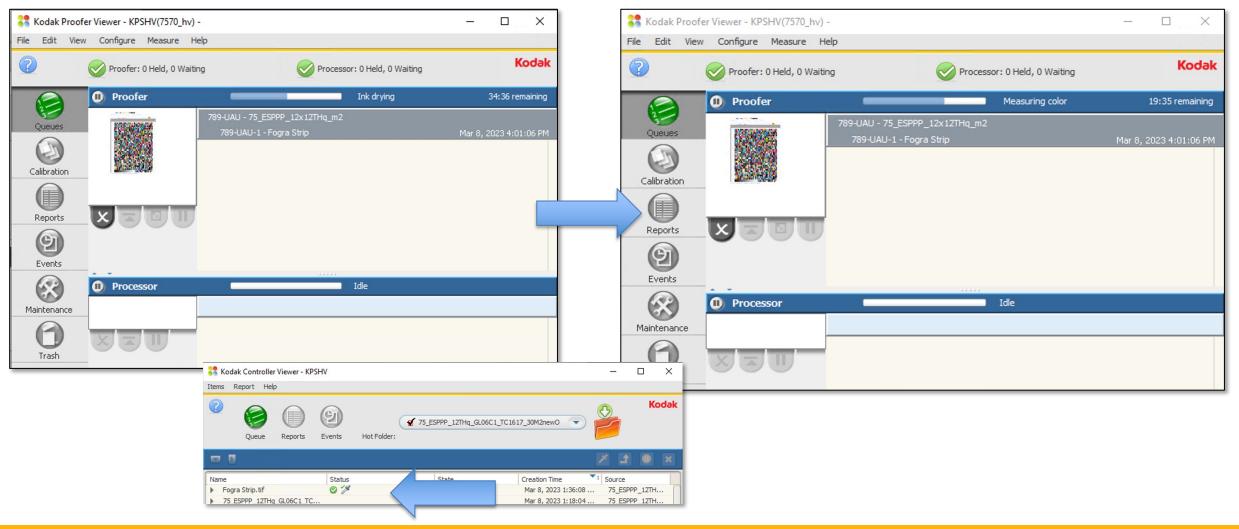
You can now Print the Color Bar using any image (recommend using a very small one to save media).

It will be convenient to save this small image for this purpose somewhere on your KPS Controller; to be used every time you want to Verify the Color of your custom setup.



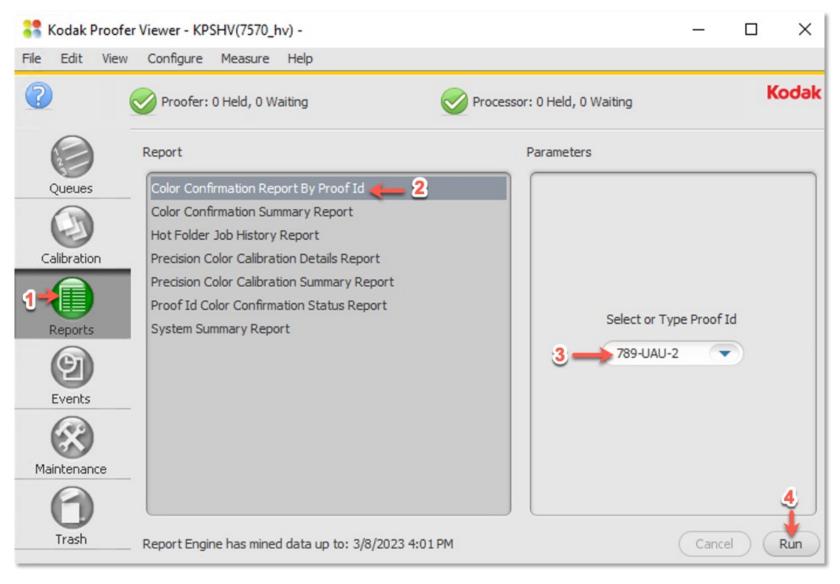
Step 4: Dry then Measure the Profile Verification Color Bar

This can be done automatically using your inline spectrophotometer, or manually with an offline device.





Step 5: Create a CPCC Color Report for Profile Verification

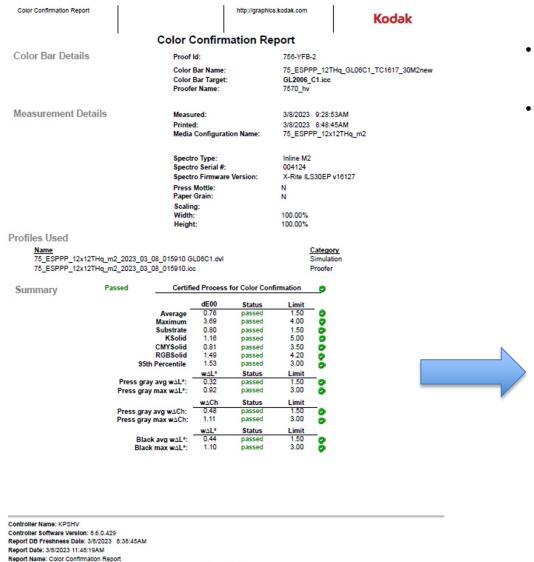


In the KPS Proofer Viewer:

- 1. Click the "**Reports**" Tab
- 2. Select "Color Confirmation Report By Proof Id,"
- 3. Select the Proof ID for your Profile Verification Chart (should be the first one in the list),
- 4. Click "Run".



Step 5: The CPCC Color Report for Profile Verification

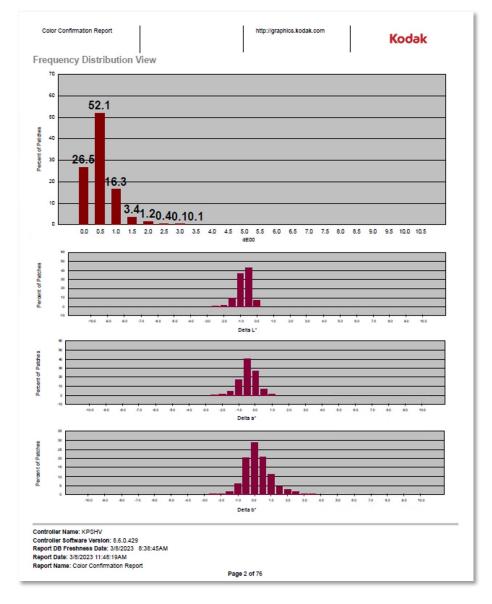


- The Report can be opened using various free tools including the Microsoft Edge application or Acrobat Reader.
- The CPCC/Profile Verification report contains all the necessary parameters to send to GraCoL for color certification. Note that all parameters must pass in order to be certified.

Summary	Passed Certific	Certified Process for Color Confirmation			
		dE00	Status	Limit	
	Average	0.76	passed	1.50	- ₹
	Maximum	3.69	passed	4.00	2
	Substrate	0.80	passed	1.50	0
	KSolid	1.16	passed	5.00	2
	CMYSolid	0.81	passed	3.50	0
	RGBSolid	1.49	passed	4.20	0
	95th Percentile	1.53	passed	3.00	ē
		w\(L^* \)	Status	Limit	
	Press gray avg w∆L*:	0.32	passed	1.50	_ 0
	Press gray max w∆L*:	0.92	passed	3.00	2
		w∆Ch	Status	Limit	
	Press gray avg w∆Ch:	0.48	passed	1.50	_
	Press gray max w∆Ch:	1.11	passed	3.00	2
		w\(L^* \)	Status	Limit	
	Black avg w∆L*:	0.44	passed	1.50	_
	Black max w∆L*:	1.10	passed	3.00	ē

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Step 5: Create a CPCC Color Report for Profile Verification



Some useful data

- The histograms are a useful tool to analyze the performance of your Media Config + profile performance.
- The histogram on the top is showing that 26.6% of the colors are between 0 and 0.5 dE00, 52.1% of the colors are between 0.5 and 1.0 dE00, etc.
- If you add them up....
 (26.6 + 52.1 + 16.3) = 95% of the colors are less than 1.0 dE00.



Troubleshooting

What to do if your custom color setup does not achieve the results you are looking for?





Here are the most common areas of trouble...

1. Media Quality

- 1. Color of Media
 - 1. White point should be close to that of the target white point.
 - 2. White Point not compatible with Media type. check paper manuf. For compatibility. Best results with Epson Media on Epson Proofer.
 - 3. Proper measurement Condition some color targets/media requires a specific measurement condition.
- 2. Color Gamut not compatible with Media type. check paper manuf. For compatibility. Best results with Epson Media on Epson Proofer.

2. Improper Media Configuration Settings

- 1. TIL too low or too high (most Semi-Matte media types are never higher than 1.0, for P75/P95 never higher than 0.8)
- 2. Paper Feed try choosing again with the new chart in KPS v8.5 or higher; and re-create the custom Media Config + profiles.
- 3. For Best color results create a new custom Media Configuration. Kodak Factory Media Configs are not for color-critical work.

3. Spectrophotometer issues

- 1. Difficulty with hand measuring devices
- Inline devices
 - 1. Use White backing strip supplied by the manufacturer.
 - Ensure Matching white tile installed (White tile serial number must match the Spectro serial number).

4. Printer performance

- 1. If your Inkjet Printer has been unused for a long period of time it should be "warmed-up" before creating your custom Media Config + Profiles (see "How Do I Prepare" slide).
- 2. Partially clogged printer head(s) may cause inconsistencies, leading to higher color differences.
- 3. Recently changed ink cartridge(s) might cause the color to shift during the setup process.
- Newly installed printers must completely change out all of the installer ink kit (1 or 2 full days of printing).





Optimizing DeviceLink Profiles in KPS

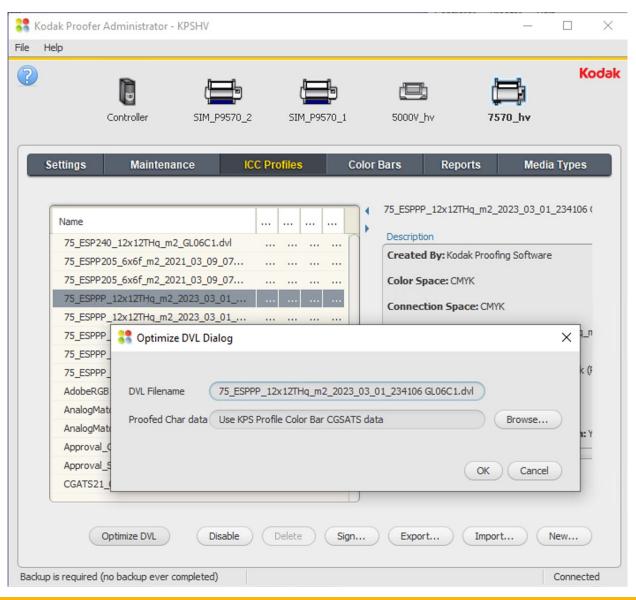
* Requires a KPS Commercial or Packaging license

Under normal conditions, an optimized DVL is not necessary. The best performance will be achieved by creating a good profile from the start. It is recommended to follow the troubleshooting instructions first, to create the best ICC DVL.





Optimizing a Kodak ICC DVL.



You can use your Profile Verification measurement data to optimize a Kodak ICC DVL (this algorithm only works with ICC DVLs created by Kodak Software).

If you measured your Profile Verification chart using Kodak ColorFlow Software you can export your measurement data and select it, using the "Browse…" button.

In the example shown the KPS measurement data is automatically selected. KPS can Optimize your DVL with one click of the "OK" button. The optimized DVL will appear in the profiles list, with a new date on the end of the name.

You will need to repeat the Profile Verification procedure to verify the color performance of the new Optimized DVL.



Creating DeviceLink Profiles in KPS

* Requires a KPS Commercial or Packaging license

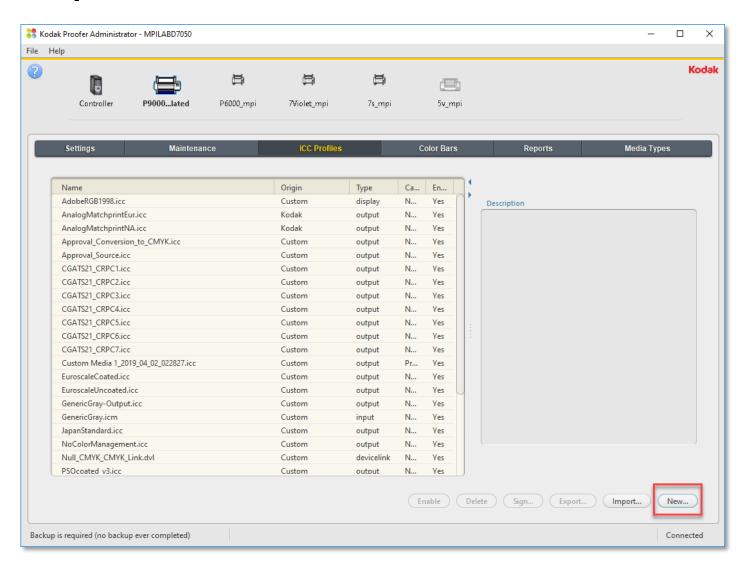
ICC DeviceLink profiles are a powerful application of the mathematics of device profiles. They effectively combine two device profiles to create a one-way link with a single rendering intent, and can be used to align color on different output devices.

A DeviceLink uses a color lookup table to transform CMYK input values in the source color space to CMYK output values in the destination color space.





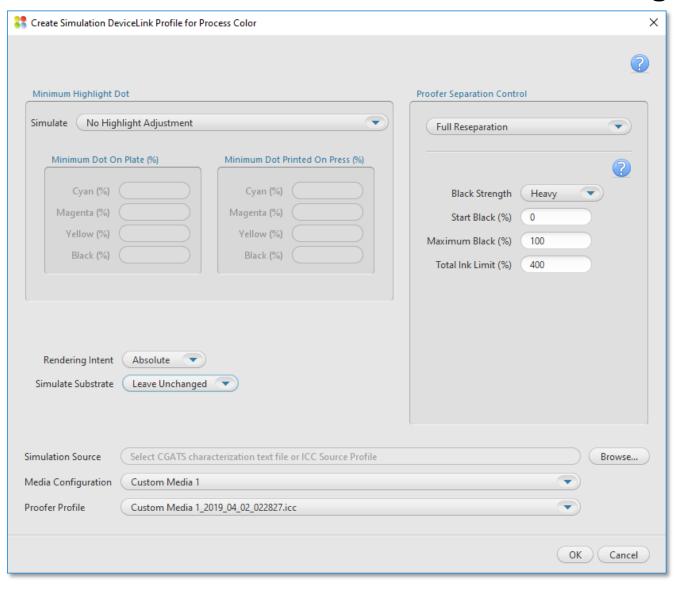
Step 1: Create new DeviceLink Profile



Launch the Kodak Proofer Administrator:

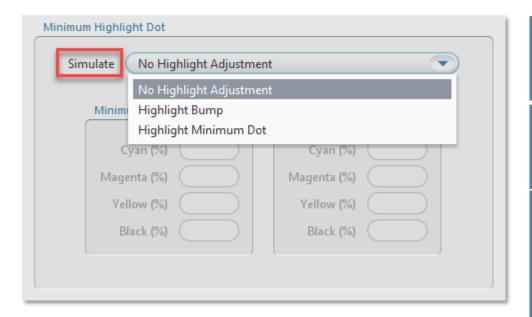
- 1. Select the Proofer
- Select the ICC Profiles Tab
- 3. Click on New

Step 1: Create Simulation DeviceLink Profile Dialogue Box





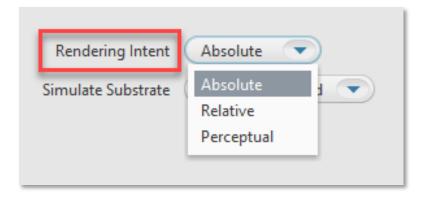
Step 1: Simulate



Simulate option	Press characterization data
No Highlight Bump	Select characterization data that reflects a press run without flexographic highlight dot adjustments.
Highlight Bump	Select characterization data that reflects a flexographic press run with plates imaged for a highlight bump. For the best results, the characterization data should reflect the number(s) that you type in the Minimum Dot on Plate (%) area in the Cyan, Magenta, Yellow, and Black boxes. For example, type 8.0 in the Minimum Dot on Plate (%) boxes when you are using the sample characterization file named IT874_Highlight_Bump_8.cgt.
Highlight Minimum Dot	Select characterization data that reflects a flexographic press run with plates imaged for a highlight minimum dot. For the best results, the characterization data should reflect the number(s) that you type in the Minimum Dot on Plate (%) area in the Cyan, Magenta, Yellow, and Black boxes.



Step 1: Rendering Intent



Defines how to transform the file. Rendering intents are available only when **ICC Handling** is set to **ICC Profiles**. Select one of the following options:

Relative—transforms colors without simulating a paper tint. The **Relative** rendering intent clips out-of-gamut colors.

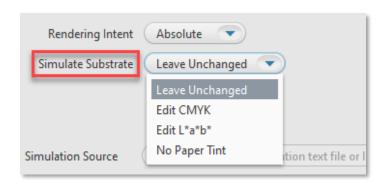
Absolute—transforms colors and simulates a paper tint. The **Absolute** rendering intent compresses out-of-gamut colors and maps them to the edge of the gamut. This setting is recommended for all Certified Process for Color Confirmation work.

Perceptual—transforms colors without simulating a paper tint. The Perceptual rendering intent compresses all colors to map them to the smaller color space.

Use Perceptual for imposition media.



Step 1: Simulate Substrate

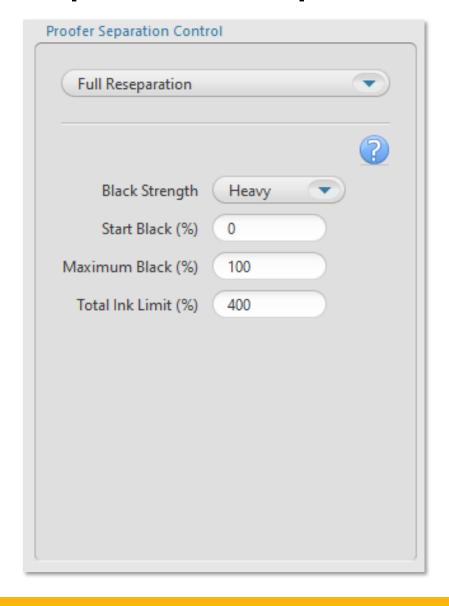


When the **Rendering Intent** list displays **Absolute**, you can choose to define a substrate in the inkjet proofer color space (not the press color space). The software will override the substrate definition in the characterization data with the new substrate definition.

- Leave Unchanged: turns off the override, and uses the substrate definition in the characterization data.
- Edit CMYK: lets you define the substrate in CMYK tint percentages. Type a percentage from 0 to 100. Changes will be spread to colors near the white point.
- Edit L*a*b*: lets you define the substrate in L*a*b* color space. In the L* box, type a number from 0 to 100. In the a* box and the b* box, type a number from -128 to 127. Changes will be spread to colors near the white.
- No Paper Tint: Sets the White Point CMYK value to zero; while leaving all other colors around the white point unaltered.



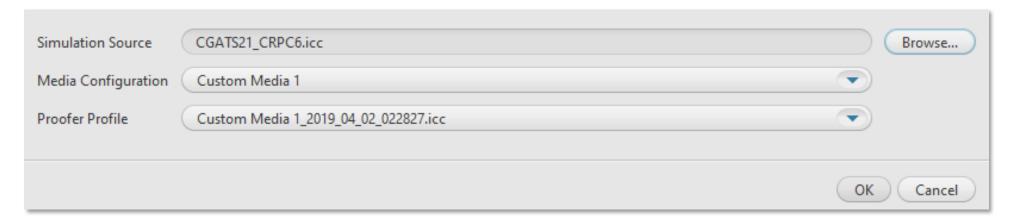
Step 1: Proofer Separation Control



- plack Strength: To specify the relative quantity of black vs cyan, magenta, and yellow used to generate the neutral gray component of colors. As you increase the strength, colors can contain more black.
- Start Black: Specify the start point on the neutral axis for black ink. For example, if you set the start point value to 20%, tones less than 20% will print with CMY inks only
- Max Black: Specify the maximum allowable percentage of black ink used in the black separation
- Total Ink Limit: Specify the maximum sum of tint values of all the inks



Step 1: Simulation Source, Media Configuration and Proofer Profile



Simulation Source: Select an ICC Source Profile or a CGATS5 File of spectrophotometer measurements of the IT8.7/4 chart printed on the press or proofer that you want to simulate.

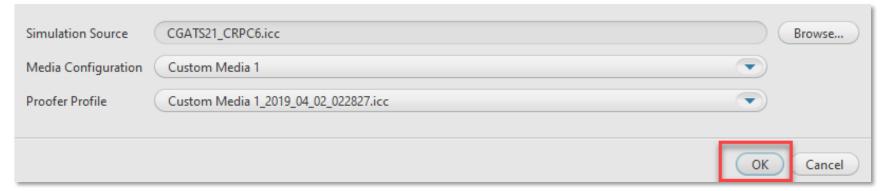
Note: The supplied CGATS files are located in the Proofer Client > Docs folder (D:\Program Files\Kodak\Proofer Client 10.x.x.x\Docs)

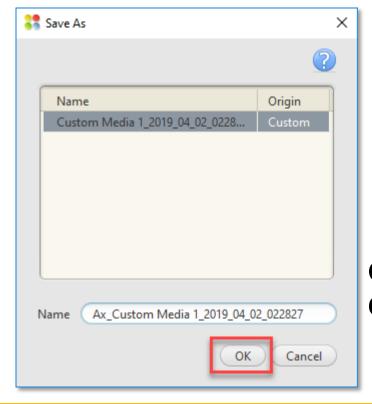
Media Configuration: Select a media configuration to use with the DeviceLink

Proofer Profile: Select proofer profile on which to base the DeviceLink



Click OK to Save the Settings





Give a name to the DeviceLink Profile and Click OK to Create the DeviceLink Profile



The DeviceLink Profile will appear in the ICC Profiles List and it will be signed for Certified Process for Color Confirmation

