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# Onyx<sup>®</sup> White Paper Quick Calibration

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# Quick Calibration

## Purpose and Benefits

This white paper explains how to calibrate a media, specifically an uncoated vinyl media on a solvent printer, without ICC profiles. This works best with a CMYK workflow (CMYK images).

### Pros:

- Quicker media setup (doesn't require printing or reading large ICC profile swatches)
- Does not require ICC Profile Generator
- Achieve full-saturation color output

### Cons:

- No automatic spot-color matching
- Cannot apply ICC profiles (or rendering intents like PosterColor®)
- Cannot color-proof across devices
- No color-consistency across media or print devices

Creating profiles with brilliant color for the sign market can often be accomplished without ICC profiles. This white paper steps you through each step of the Quick Calibration process:

1. Create a New Media.
2. Set your Ink Restrictions.
3. Create a Linearization.
4. Set your Ink Limits.
5. Create a Quick Set.

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## Create a New Media

To create a new media, use the following steps:

1. Within Media Manager, select Create from the Media menu.
2. Enter the Media Configuration name.
3. Enter the Media Name.
4. Click *Printer Options* to set the specific options for that media.
5. Click *Color Setup* to open the Color Setup for Media dialog.
6. Within this dialog, use the Ink Configuration and Primary Color Setup drop-down menus to select the appropriate ink configuration. The Primary Color Setup must match the actual ink setup of your printer.
7. Within the Color Setup for Media dialog, click *Ink Restrictions* and continue onto the next section of this document to set your Ink Restrictions.

## Set Your Ink Restrictions

Once you create a new media, you need to set your Ink Restrictions. Setting your ink restrictions requires three main steps:

1. Determine your Dark Ink Restriction values.
2. If necessary, determine your VarDot slider setting.
3. Determine your Light Ink Restriction values.

These steps are explained in detail on the following pages.

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## Dark Ink Restrictions

Use the following steps to Determine your Dark Ink Restriction Values:

1. Within the Ink Restriction dialog, highlight the appropriate resolution. Set all dark inks to 100% and all light inks to 0%.
2. Click *OK* to close this dialog (if you've just created a new media, click *OK* to close all dialogs and save your new media. Do not close Media Manager.).
3. Within RIP-Queue, print the VarDot – Ink Restrictions.pdf (located in the Onyx60 > Samples folder) using a Quick Set with All Profiles Off.

Once you've printed the swatch, examine the one and two-color combinations for bleed or graininess. Note the percentage at which the swatch displays the desired one and two-color combinations, ensuring that there is no bleeding or puddling.

<p><b>Note:</b> While it is acceptable to have a slight amount of bleed in three or four-color combinations, it is imperative that the one and two-color combinations do not display bleeding or puddling.</p>
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4. Within Media Manager, select Ink Restrictions from the Media menu to open the Ink Restriction dialog.
5. Enter the desired number as your Dark Ink Restriction values.
6. Click *OK* to close the dialog.

## VarDot Slider

Next, determine your VarDot Slider setting:

1. Examine the original VarDot – Ink Restrictions.pdf (with all Dark Ink set to 100%, and all Light Ink set to 0%).
2. If you notice vertical banding, your VarDot slider set too low. Move the VarDot slider further to the right.
3. If you notice graininess, your VarDot slider is set too high. Move the slider further to the left.
4. Move the slider in increments of 3 and reprint the VarDot – Ink Restriction.pdf (without changing any other settings) to verify that you have set the slider appropriately.

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## **Light Ink Restrictions**

Finally, determine your Light Ink Restriction settings by using the following steps:

1. Within Media Manager, select Ink Restrictions from the Media menu. This opens the Ink Restriction dialog.
2. Within the Ink Restriction dialog, highlight the appropriate resolution.
3. Set all Light Ink values to 100% (even if the Dark Ink values are lower than 100%).
4. Click *OK* to close the dialog.
5. Within RIP-Queue, print the Light Ink Restrictions.pdf using a Quick Set with All Profiles Off.

Examine the two groups of patches located to the far left of the swatch to determine your Light Ink Restriction values. Review these patches for bleed – focusing on the midtones as that is where the printer places the maximum amount of light ink on the media.

6. Within Media Manager, select Ink Restrictions from the Media menu to open the Ink Restriction dialog.
7. Highlight the appropriate resolution and set the desired Light Ink Restriction values.
8. Click *OK* to close the dialog and save your settings.

Continue to the next section to complete a Linearization for the Quick Calibration process.

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## Linearization

Now that you have set your Ink Restriction values and your VarDot slider, create a Linearization using the following steps:

1. Within Media Manager, click the *Add New Profile* icon located on the toolbar. This opens the New Profile dialog.
2. Within the New Profile dialog, highlight Add a New Profile and click *Next*.
3. Next, highlight Linearization Table and click *Next* twice.
4. Click *Print Swatch* to open the Print Swatch dialog.
5. Use the drop-down menu to select another color device, or click *Setup* to modify your print settings.
6. Click *Print*.
7. Once you have printed the Linearization swatch, click *Next*.
8. Click *Build Profile* to open the Build Profile – Linearization Table dialog.
9. Within the Build Profile – Linearization Table dialog, click *Read Swatch*. Use your Color Measurement Device to read the swatch values into the software, and click *OK*.
10. Once you have read the swatch values into the software, click *Build* to open the Add Media Model dialog.
11. Within the Add Media Model dialog, use the radio buttons to select the Advanced Grayscale media model.
12. Click *Next* to print and read in the Advanced Grayscale swatch.
13. Once you read in the swatch, click *Build* to open the Tweak Linearization dialog.
14. Within the Tweak Linearization dialog, set the Scale to 100%.
15. Finally, set each NFactor to 2.0.

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## Ink Limiting

This step applies to the three- and four-color combinations. Single inks, for the most part, should not need limiting here.

1. Within Media Manager, click the *Add New Profile* icon located on the toolbar. This opens the New Profile dialog.
2. Within the Add Profile dialog, choose Create a New Profile and click *Next*.
3. Highlight Ink Limit Table and click *Next* twice.
4. On the Add Profile dialog click *Print Swatch*.
5. On the Print Swatch Ink Limit Table dialog, verify the print settings and click *Print*. Click *Setup* if you wish to modify the print settings.
6. Once the Ink Limit swatch completes printing, click *Next*.
7. Click *Build Profile* to open the Edit Ink Limit dialog.
8. Review the Ink Limit swatch. Once you determine the column that provides the best coverage without artefacting, enter that number into the Ink Limit field on the Edit Ink Limit dialog.
9. Once you set your options within the Edit Ink Limit dialog, click *OK*.

**Note:** You should not set your Ink Limit below 3.3. If you are unable to reduce bleeding with an ink limit of 3.3, you must restart the Quick Calibration process at the Ink Restriction step and lower your Ink Restriction values.

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## Quick Set

The final step in the Quick Calibration process is to create the proper Quick Set. This allows you to print an image without having to turn Black Generation Profiles on and off depending on whether you've got an RGB or CMYK image. This Quick Set contains two main functions:

1. All Profiles Off
2. Black Generation Table (for RGB images only)

**Warning!** Creating a Quick Set requires that you shut down the server. Shutting down the server stops any processing or printing. Be sure that you are not in the middle of a job when you begin this process.

To create the appropriate Quick Set, use the following steps:

1. Within RIP-Queue, highlight the appropriate printer and click *Configure Printer*.
2. When prompted to shut down the server, click *Yes* to open the Configure Printer dialog.
3. Within the Quick Sets tab, click *New* to open the Edit Quick Set dialog.
4. Enter a descriptive name for the Quick Set. It is best to indicate in the name what settings the Quick Set contains.
5. Within the Media Section, clear the Get Media and Page Size from Printer check box.
6. Use the Media Configuration Name and Media Name drop-down menus to select the appropriate media.
7. Within the Mode section of the Quick Set dialog, use the Color Management drop-down menu to select All ICC Profiles Off.
8. Click *Change Profiles* to open the ICC Profile Setup dialog.
9. On the Profiles tab, verify that each of the CMYK and RGB drop-down menus indicate No Profile Selected.
10. Select the Output tab and continue to the next section to create the Black Generation Profile.

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The Black Generation Profile allows you to print RGB Images without losing depth in the black areas of your image. To create the Black Generation Profile:

1. On the Output tab of the ICC Profile Setup dialog, click *Advanced Black Generation*.
2. Within the Advanced Black Generation dialog, use the RGB Image GCR drop-down menu to select Custom. This opens the Edit GCR dialog.
3. Within the Edit GCR dialog, click *Traditional*.
4. Click *Yes* to continue.
5. Set the Black Start to 75 using the spin-box. Note: if you print and this is not acceptable, return to this dialog and change the value to 50. If there is still an issue, change to 25.
6. Click *OK* to return to the Advanced Black Generation dialog.
7. Next, use the RGB Vector drop-down menu to select Custom and repeat steps 3 through 6.
8. Once you have configured both the RGB Image and RGB Vector GCR settings, click *OK* to return to the ICC Profile Setup.
9. Click *OK* in the ICC Profile Setup dialog to save your changes and return to the Edit Quick Set dialog.
10. Within the Edit Quick Set dialog, click *OK* to save your changes and return to the Configure Printer dialog.
11. Click *OK* to exit the Configure Printer dialog.