

Activity 4: Use a print curve to align a press with an industry specification for tonal match

Background

Contents

A print calibration curve makes the response of a halftone output device condition match either the tonal response or the gray balance of a target device condition.

You can use print calibration curves to align a curve-controlled device with an industry specification. This activity is to create a print calibration curve to align a press with an industry specification for tonal match. Tonal match refers to Tone Value Increase (TVI), also known as dot gain, and uses the calculated Effective Dot Area (EDA) for calibration. Calculations are based on the density measurements of each ink or colorant.




When using a ColorFlow curve for tonal calibration in Prinergy, you can make on-the-fly tonal adjustments.





Tasks

Goal

Create a print calibration curve and define an industry specification as your target. After the curve is created, use the print curve to output a job in Prinergy and make an one-the-fly tonal adjustment.


Task 1: Create a print calibration curve to match an industry specification

1. In ColorFlow, click the **Print Curves** tab.
2. In the **Calibration Curves** section, click the **Add** button .
3. In the **Device** dialog box, add a new device:
 - a. In the **Device Name** box, enter `XX Offset Press` (where XX= your initials).
 - b. From the **Device Type** list, choose **Offset Press-Sheetfed**.
 - c. Click **Create**.
 - d. Drag the device you just created to the viewer window.
4. Click the **Properties** icon .
5. From the **Plate Setup** list, choose the **Kodak Thermal Gold, 20u Staccato, Offset Press Sheetfed** plate that you added in [a previous activity](#). If it doesn't exist, add the plate:
 - a. Click the **Add** button  next to **Plate Setup**.

- b. In the **Plate Type** box, select **Kodak Thermal Gold** or add the value to the list if it doesn't exist.
 - c. In the **Screening** box, select **20u Staccato** or add the value to the list if it doesn't exist.
 - d. In the **Plate Line** box, select **Trendsetter** or add the value to the list if it doesn't exist.
6. From the **Substrate** list, choose **Type 1 or 2 (coated art) 170 g/m²**.
7. Click **OK**.
8. Create a Tint Ramp chart:
 - a. Click the **Measurement** icon 
 - b. In the **Charts** section, click the **Add** button 
 - c. A chart appears in the **Charts** list with a default name.
 - d. From the **Chart Type** list, choose **Tint Ramp**.
 - e. In the **Tint Set** section, click the **Edit** button 
 - f. Click the **Add** button 
 - g. and enter 0 10 25 50 75 90 100.
 - h. Click **OK**.
 - i. From the **Process Ink Set** list, choose **CMYK**.
 - j. Click **Save**.
9. Enter the measurement values. In a real-life situation, you might need to print the chart and measure the chart using a measurement device. For the purpose of this training, you enter the given EDA values:
 - a. Click **Measure**.
 - b. From the **Print Curve** list, choose **Linear (None)**.
 - c. Click **Enter manually**.
 - d. In the **Channel Binding** section, click **C, M, Y, K Same**.
 - e. In the **Tonal Response** section, enter the following EDA values:

Tint in	EDA
0	0
10	12
25	29
50	57
75	82
90	93
100	100

- f. Click **OK**.

10. To review the measurement value:
 - a. Click the **Measurements** tab.
 - b. Select the chart and click **View**.
 - c. Select the **Show Measurements** check box.
You should be able to view and edit the measurement value in the **Tonal Response** section.
 - d. Close the **Device Measurements** dialog box.
11. Define the conversion target to an industry specification:
 - a. Click the **Conversion** icon .
 - b. Select the **Show curves in Prinergy** check box.
 - c. Click the **Process Inks** tab and choose **GRACoL 2006 Coated 1** from the **Target** list.
 - d. From the **Curves Method** list, choose **Tonal Match**.
12. Click **OK**.
A print calibration curve is generated to match the chosen industry standard.
13. In the **Calibration Curves** table list, find the curve and double-click the default curve name and enter `XX new print calibration curve for tonal match (where xx= your initials)`.

Task 2: Output a job using the newly created print calibration curve

1. In Prinergy, create a new job, and name it as `XX tonal match` (where XX = your initials).
2. Refine [Chart_TintRamp_CMYK.pdf](#) with 1stRef-Normz.
3. Output the PDF file using Virtual Proof.LoosePage with the print curve you just created:
 - a. In your **Virtual Proof.LoosePage** Process template dialog box, from the **Output To** list, choose **Virtual Proof**.
 - b. Leave **ColorFlow Color Relationship Management** unchecked.
 - c. Expand the **Calibration & Screening** panel.
 - d. Click the **ColorFlow Current State** radio button.
 - e. Expand the **Print Curve** drop down list and select curve **XX new print calibration curve for tonal match**.
4. Open the generated page in VPS and measure the 10%, 25%, 50%, 75%, and 90% black patch.
Confirm that the plate calibration curve has been applied:
10% measures 15.5; 25% measures 35.9; 50% measures 61.8; 75% measures 84.4; 90% measures 95.5.

Task 3: Make an on-the-fly tonal adjustment in Prinergy

1. In Prinergy, start a final output process using the same process template used in **Task 2**.

2. In the **Start Process** dialog box, click **Tonal Control**.
The **Tonal Control** dialog box appears showing the information from the separations in the surfaces of the job selected for output.
3. From the **Separation** list, select **Black**.
4. The **Curve Channel** list displays the ColorFlow curve channel that has been assigned for the selected separation. From the **Curve Channel** list, choose **Black**.
5. To make tonal adjustments, in the **Tonal Adjustments** section, drag the sliders or enter the desired values directly into the boxes under the sliders. The **Midtone (50%)** control affects the full tonal range. If you adjust the **Midtone (50%)**, the **Quarternote (25%)**, the **3/4 Tone (75%)**, the **Highlight (10%)**, and the **Shadow (90%)** are adjusted according to the value of the **Midtone (50%)**. For the purpose of this training, in the box under the **Midtone (50%)** slider, enter -5 .
6. Click **OK**.
7. After the output is done, open the generated page in VPS and measure the 10%, 25%, 50%, 75%, and 90% black patch.
Confirm that the tonal adjustments you made are applied:
10% measures 14.1; 25% measures 32.5; 50% measures 56.8; 75% measures 81; 90% measures 94.1.

Outcome

You have created a print calibration curve for tonal match and made an on-the-fly tonal adjustment in Prinergy.