

KB182041469: Imaging Engine - How to convert Nexus OptiRange to Imaging Engine Tone Range Correction

Description

Before Imaging Engine 16, we had a workaround to convert the OptiRange settings via CurvePilot. See

Content by label

There is no content with the specified labels



Imaging Engine 16 allows to specify tone range corrections directly from the Imaging Engine ticket in a similar way as OptiRange. These options are available in the **Corrections** tab, by specifying **Minimum and Maximum Correction**.



OptiRange - from 'Digital File', 'Film' or 'Plate'

In Nexus OptiRange, you can adjust the Minimum and/or Maximum dot on 'Digital File', 'Film' or 'Plate'. We only support 'Digital File'.

In case 'From Plate' is selected on OptiRange, OptiRange will reverse-compensate the mindot value first through the used plate curve. So in this case you will have to redo/rethink the calibration. Check on your plate what the Minimum dot is and measure on the digital file.

Comparison of OptiRange in Nexus and Range Corrections in Imaging Engine

Nexus OptiRange	Description	Imaging Engine Range Corrections	Parameter difference
Mindot (%)	Minimum dot or lowest allowed gray level in the output file.	Minimum Dot (%)	Identical
Sysval (Mindot)	System value of lowest allowed tone value in the input file	Minimum Job Tone (%)	Convert from 8bit CT step to % Tone = Sysval * 100 / 255
Action (Mindot)	Specifies how the output between 0% and Sysval should be handled Possible options are: 'Drop': Drop output to 0% 'Hold': keep output to Mindot	How to handle	Drop = 'Drop to 0%' Hold = 'Hold Mindot'
Maxdot (%)	Maximum dot or highest allowed gray level in the output file	Maximum Dot (%)	Identical
Sysval (Maxdot)	System value of highest allowed tone value in the input file	Maximum Job Tone (%)	Convert from 8bit CT step to % Tone = Sysval * 100 / 255 Find the calculations in this doc: Nexus SYSVAL to IE percentage
Action (Maxdot)	Specifies how the output between Sysval and 100% should be handled Possible options are: 'Solid': Keep output to 100% 'Hold': keep output to Maxdot	How to handle	Solid = 'Raise to Solid' Hold = 'Hold Maxdot'

Procedure

How to check OptiRange settings in Nexus

On Nexus, the effect of using **OptiRange** (combined with other curves or not) can be viewed by doing the following:

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Case Number	

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1. With the **Change Symphony Control** option, set a curve for **Prepress** and/or **Press**, use **OptiRange**.
2. To see the results, click the **Curve** icon next to the separation (see arrow in the screenshot given below),
3. You then get the window shown on the right in the screenshot below. Select **OptiRange** in the **Symphony Curve** drop-down menu, to get the results only for **OptiRange**.
The values on the right can then be compared with the results from **Preview Combined Curves** in Curve Pilot.

? Unknown Attachment

In the above example, the following OptiRange settings are used:

Mindot = 3.0%

Sysval = 003

Action = Hold

Converting OptiRange options to Imaging Engine Tone Range Correction options

The optiRange options can be converted as explained in the table [Comparison of OptiRange in Nexus and Range Corrections on Imaging Engine](#)

In the above example, this directly translates to:

Minimum Dot = 3%

Minimum Input Tone = $3 * 100 / 256 = 1.17\%$

How to handle input tone = Hold Mindot

The 'Minimum Tone' must be set accurately: a wrong or rounded value can result in considerably different behavior in output compared to Nexus output

The next chapters explain why and how.

Effect of none accurate translation from OptiRange 'Sysval' to Imaging Engine 'Minimal Tone'

'Sysval' on Nexus OptiRange is expressed as 'CT' steps, referring to the number of levels of 8-bit images and tints.

'Minimal Tone' used in Imaging Engine expose ticket 'Range Correction' or 'Keep0% to' used as DGC curve option is referring to input tone values, expressed in percentages.

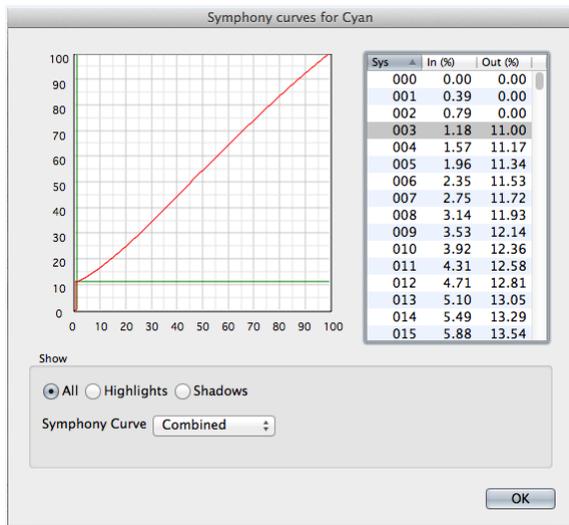
To have the same output on Imaging Engine, we must convert Sysval to an accurate Minimum Tone value, keeping into account the tones where one CT changes into another.

In the below example, we use the following values:

Sysval=3

Mindot=11%

At the 3rd CT step = at a tone of 1.176%, the curve will adjust output to Mindot%
At 2nd CT step and below, output will be dropped to 0%



Sysval = 3 converts to a tone of 1.176%

It is critical to copy this exact tone value as 'Minimum Tone' or 'Keep 0%' value. Rounding this number can result in considerably different output.

As example, we investigate what happens if we use the rounded value of 1.2% as 'Minimum Tone' or 'Keep 0%' of our curve.

In the RIP the effect of using such curve is that also CT steps of 3 will be dropped to 0%. That is because a CT step of 3 is equivalent to a tone of 1.176%, and the Minimum Tone was set at 1.2%
 Only at the 4th CT step (at 1.57%) the RIP will start to generate output, and the gray level or screen% for this 4th CT step will be higher than the Minimum Dot.

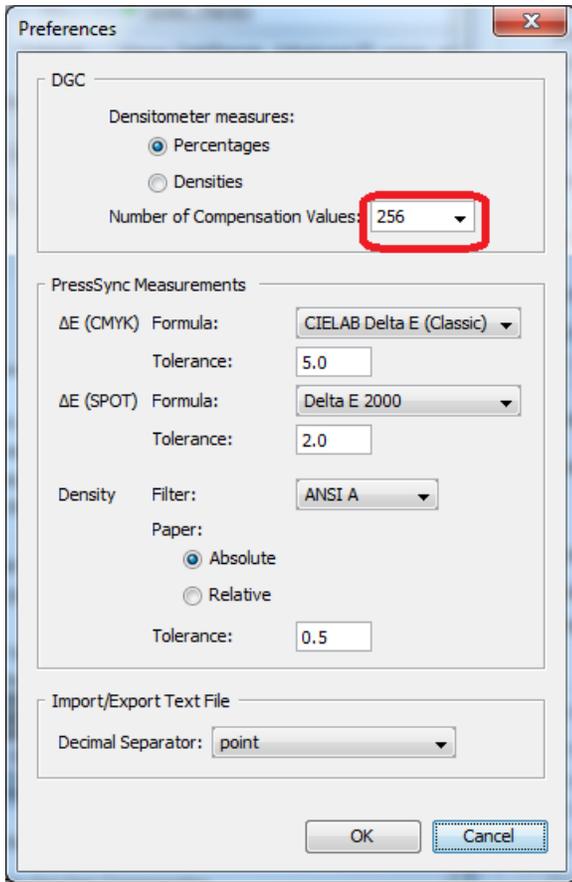
Conclusion: you will get a different result in Nexus.

You can preview this behavior in CurvePilot, via the 'Preview Combined Curves' tool.

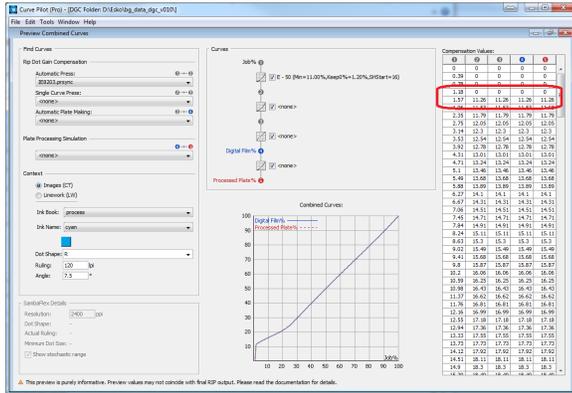
In this tool, you must set the 'numbers of compensation values' to 256 to see the real effect of the curve on the output.

See screenshot below.

(CurvePilot: Menu 'Edit' > Preferences)



As you can see below, the 'Compensated Values' show that 1.18% input tone (3rd CT step) is dropped to 0%. And the next available input tone 1.57% (4th CT step) is compensated to 11.26% which is higher than Mindot set at 11%.



Translating Sysval accurately and how to verify

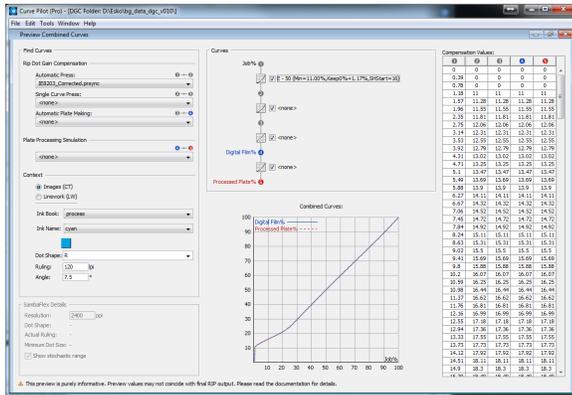
We repeat the above example, with the following OptiRange settings:

Sysval=3

Mindot=11%

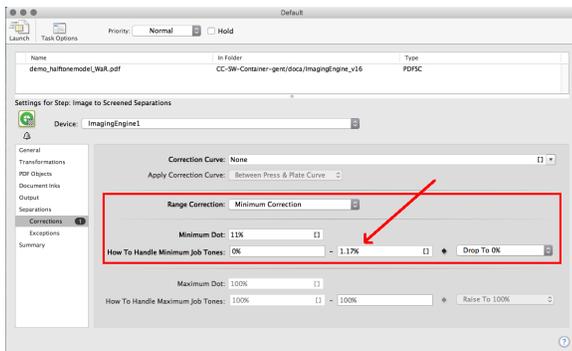
The 'Minimum Dot' Correction or 'Keep 0%' to value should be set in such a way that CT level 3 uses a gray level of 11% in the output

In the Compensation Values Table we see that at an input tone of 1.18% (3rd CT step), the output is exactly 11%, equals to Mindot.



Conclusion

For Sysval 003 - we set the Minimum Dot in the ticket to 1,17% - see screenshot below.



To do the calculation for other SYSVAL values:

- Calculate first to which CT step the Sysval corresponds. You can find the CT step tone value in Curve Pilot if you set the tone steps in **Preferences to 256**.
- Set your minimum tone range just a little lower than the CT step.