

QuadToneProfiler-QuickCurve-DN

Instructions for Native macOS Application

Installation Instructions

Install the QuadToneProfiler application by opening the downloaded .dmg and dragging the QuadToneProfiler-QuickCurve-DN Folder to the Applications folder.

Intalling QuadToneRIP and the Quad Printer

If not already done, install the latest version of QuadToneRIP, DataTool, and Print Tool from www.QuadToneRIP.com/downloads

Create a new QuadToneRIP profiles folder for the QuadToneProfiler-QuickCurve-DN curves

- Open the QuadToneRIP application folder
- Open the Profiles folder and find the folder for your printer model and duplicate it.
- Change the name to (printer model)-QCDN and add it as a shortcut to your Finder sidebar (optional, but recommended)
- Open the duplicated/renamed folder and delete all .txt\, .qidf and .quad files but keep the install.command file
- Change name of the install.command file to install(name of renamed folder).command
- Run the install command to create a new Quad(name of folder) printer
- Navigate to the newly created quad printer folder and add it as a shortcut to your Finder sidebar (MacintoshHDLibraryPrintersqtrQuadtone)

Find your needed blocking density

- Open the QuadToneProfiler-QuickCurve-DN resources folder and find the QCDN-Blocking-Density-Curve-8-ink.quad or QCDN-Blocking-Density-Curve-10-ink.quad file (choose the one for the number of inks in you printer).
 - This is a special .quad file that will produce the final ink values for all the inks included in the last step of the scale when a specific ink limit is selected in the QuadToneProfiler-QuickCurve-DN software. This .quad curve should never be used for actual printing.
- Option+ drag that .quad curve to the profiles folder you created in the previous step and re-run the install command.
- Open the 21-step QTP-QC Blocking Density Target.tif from the resources folder in

PrintTool and arrange it near to top of the page (1" from the top is fine)

- Open the paper and print settings and choose the QuadToneRIP print driver options and select the blocking density test as Curve 1.
- Set the printer to the highest resolution, unidirectional printing, and leave the advanced options unchecked.
- Print the image on the transparency material with no color management and dry with forced hot air (there might be a little haze on the last few steps that might not clear completely, but don't worry too much about those).
- Print the blocking density test with your predetermined exposure and processing times to produce a deep rich black and maximum Dmax. I would also recommend printing slightly longer than what it takes to get a good Dmax as to leave a little latitude in the final print to darken or lighten as needed and still be sure to have a rich black.
- Thoroughly process and dry the print and find the first patch that produces a clean white. If there is any doubt that there is some slight density choose the patch with the next higher negative density (the next lighter patch in the print). Write this number down and open the QuadToneProfiler-QuickCurve-DN software.

QuadToneProfiler-QuickCurve-DN for macOS

Making the starter curve

Initial Printer and Process Settings

- Choose your printer model and the generic starter curve from the dropdown menus (future updates will have additional pre-linearized process curves to choose from)
 - The graph will update after making a selection showing the ink values for the starter curve settings.

Process Notes

- Enter any relevant notes about your process, chemistry and contrast mix, paper and exposure time.

Main Blocking Density

- Look at your notes for the patch value that produces the first clean white patch and move the Main Blocking Density slider so that the number readout matches that patch number. That is the density of the PK ink, but the slider also increases all the other inks at the highlight end of the scale in the print. You will see the ink values on the right side of the graph increase as the slider is moved to the right.

Yellow Blocking Density

- If the first blocking density test shows that you need a value higher than 65, increase the slider for the yellow density to a value between 15-30.

Total Ink Load Slider

- The total ink load slider will increase the ink values by an even percentage, and is meant for processes that need extra shadow and midtone density in the negative to produce smooth tonal increases without blocking up.
- Do not change this value yet. If you find that after measuring your first linearization target that the resulting print is much too dark in the shadows and midtones you can increase this slider and then bring the Main Blocking Density slider back down to the required highlight blocking density.

Saving the Starter Curve

- Press the button to save the starter curve, which will open a standard save dialog window.
- Click on the Quad(printerModel-QCDN) folder in the sidebar to quickly get to the save location for your printer.
- File Naming: Like all QTR curve, they must start with a letter, and can only contain letters, numbers, dashes, and underscores (any other characters will prevent the quad file from installing).
 - Name the starter curve with the ink limit settings and standard exposure time (you can enter these values into the notes input, but they will not be visible in the curve dropdown menu of the Finder).
 - I recommend something like this: QTP-DN-K55-Y9-T0-9min
 - You do not need to include the .quad extension. The save function will do that for you.
- Run the install.command in the profiles folder for your printer.

Printing the Linearization Target

- Open PrintTool and then Open Image...
- Select the 21 step target negative target from the Resources folder if you will be using a flatbed scanner to read the patch values.
- Select either the 21 or 51 step negative target (or both targets) from the Resources folder if you will be reading with an i1Pro, SpyderPrint, or ColorMunki
 - These images are already negatives with black borders that will help measuring with

an i1 Pro in strip mode

- Click the Paper and Print Options button and go to the QuadToneRIP print dialog window.
- Select the starter curve from the Curve 1 drop down menu and make sure all other printer settings are the same as when you printed the blocking density test.
 - (Hint: select Last Used Settings from the presets dropdown, and then only change the Curve 1 setting to the new Starter Curve)
- Print the negative and dry completely and then print with your standard exposure and processing time. (Or the same as what was used to print the blocking density test)

Linearization

This version only supports 21 or 51 step measurement targets. Future versions will support 21, 51, 86, 101, and 128 step targets, and will have a built in measurement smoothing function. Best results are obtained by measuring a 51-step target three times and using the Roy Harrington's Data Tool with a smoothing setting of 1 or 2. Oversmoothing a 21-step target will result in slightly lighter than expected highlights.

You will need the Lab L* values saved as a text file for the linearization process. The easiest way to get these is to use the new QTR-Data Tool to average and smooth the input values (if needed).

See the additional information about different measurement workflows for your device or for using a flatbed scanner.

Load the Measured Values

- Once you have your measurements in a separate text file, open the Linearization Tab of the QuadToneProfiler-QuickCurve-DN app and press the Load Measurement Data button (or command+m).
- Navigate to your saved measurement data file and open it. If it is a valid measurement file you will see the graph above the manual curve control load with the measured densities graphed as the red line.
 - The top left of the graph are the print highlights (densest part of the negative, and the far right side of the quad curve graph)
 - The bottom right of the measurement graph is the print shadow densities (the lighter negative values represented as far left side of quad curve graph)
- The linear values are shown with the black line, and the target output densities are mapped to the green line.

Load the Quad File to Linearize

After loading the measurement file, press the button to load the .quad file to linearize.

- Select the quad file that was used to print the loaded measurement data.
- The final linearized values can be targeted to the default linear lab L* values or to a manual output curve.

Manual Output Curve

- The manual output curve has default input points for the highlights, midtowns, and shadows, and the output values are calculated by adjusting the sliders. The actual output values are calculated based on the input and the slider position, and are not directly editable.
- Adjust the manual output curve by moving the highlight, midtone, and shadow sliders as you would a Lightroom parametric curve. You will see the green line change to represent the output target values.
- If you the output values are higher than the dmin or lower than the dmax they will be clipped to those values—you do not want to do this...
- Reset to the linear L* output by pressing the button on the measurement data graph.

Process Notes

The process notes field is automatically populated by any notes in the loaded quad file.

- The process notes are editable and will be saved to the linearized quad file. It is a good idea to enter the name of the measurement file used for the linearization into the notes field as well.

Adjusting the Starter Curve

- If you find the starter curve print much darker than the linear line you can go back to the Curve Setup tab and adjust the Total Ink Load slider to increase the ink load of the LLK and LK inks in the shadow and midtown range of the starter curve.
- This slider will also increase the main blocking density and yellow blocking density. You will need to go back to the top slider and drag it to the left to lower the main blocking density to the original value found in the first blocking density step.

Save, Install, and test the Linearized Quad File

- Save the linearized quad file directly to the Quad(printer) or the QuadToneRIPProfiles(Printer Model) folder in the finder sidebar, and run the install

command in the profiles folder.

- Print a 21 or 51 step target along with a torture test image to make sure there is no banding the in circular gradients.
- Measure the linearized output values and save the measurements.
- Open the measurement file in Data Tool to check linearity.
 - Use a smoothing value of 1 or 2 depending on how noisy the original data is.
 - If the output is too far out of the expected range you can save the smoothed values and open them in the QuadToneProfiler-QuickCurve-DN Linearization tab.

Second Linearization

- Go to the Linearization tab and open the second measurement file. You will see the graphs populate, and you can better judge if the the curve needs a second round of linearization.
- Open the quad curve that was used to print the measured target and add any additional process curve information
- Save the second linearization with something like "-v2" at the end of the file name.
- You can do a second torture test but the real test will be with one of your own images.

Happy Printing!!!

#QTP