

SUITE PROFILER

1.2.0



QUICK START

GUIDE

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SuiteProfiler Documentation

SuiteProfiler is supported by 2 documents:

- SuiteProfiler User Guide is a "learn by reading" reference document
- SuiteProfiler Quick Start Guide is a "learn by doing" document

This document is the SuiteProfiler Quick Start Guide.

Introduction to SuiteProfiler

SuiteProfiler is a simple and powerful Mac application that allows you to create a Suite of custom color-accurate ICC Profiles, aka Color Map Profiles.

A Suite of Color Map Profiles supplements the profiling environment of an existing full color ICC Profile. This empowers you with the tools to easily profile and present any digital image in a variety of ways without image editing.

Each Color Map Profile is derived from a user defined Color Map. A Color Map specifies how Luminance Input is mapped to Color Output. A Color Map Profile prints or converts an image using the color mapping defined by the Color Map.

Color Map Profiles can be applied to both color and grayscale digital images in any system and application environment which supports color profiling.

In SuiteProfiler:

- You design a device independent Color Map
- You preview the effects of the Color Map on your image
- You export a device dependent Color Map Profile derived from the Color Map
- You can create a Suite of Color Map Profiles from a variety of Color Maps

Results:

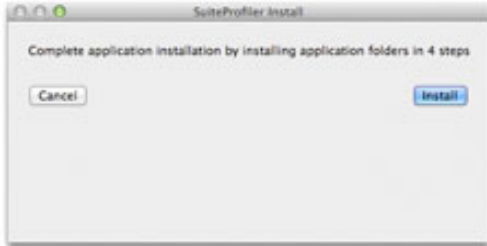
- You have a Suite of Color Map Profiles for a unique profiling environment (e.g. printer, ink and paper combination)
- You use the Color Map Profiles to soft proof and print images in any imaging application that supports profiling (e.g. Adobe Photoshop)

Example:

- You create a Suite of metallic-looking Color Maps for copper, bronze, and silver
- You preview the effects of the Color Maps on your own images
- You export a Suite of three metallic-looking Color Map Profiles for printing on Epson Glossy Paper using an Epson Printer
- You use the Color Map Profiles in Adobe Photoshop to soft proof and print metallic renditions of any of your color or grayscale images

SuiteProfiler Installation

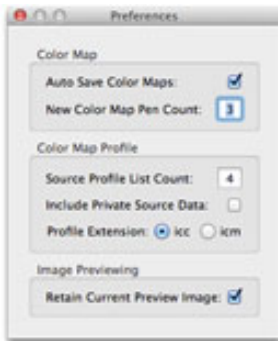
- ⇒ **Launch "SuiteProfiler" from the "/Applications" folder**
 - the SuiteProfiler Install Panel appears



- ⇒ **Click the "Install" button, follow the instructions until "Finish"**
 - you will create the SuiteProfiler Library folder and 3 subfolders
 - each subfolder will be installed with SuiteProfiler sample files
 - complete App installation by clicking the "Finish" button

SuiteProfiler Preferences

- ⇒ **Perform "SuiteProfiler > Preferences..." menu item**



- ⇒ **Review Color Map Preferences**
 - specifies if Color Map documents are auto saved
 - specifies the Pen count for New Color Map documents
- ⇒ **Review Color Map Profile Preferences**
 - specifies the maximum Source Profile pulldown list count
 - specifies if Color Map Profiles include private data in the Source Profile
 - specifies the file extension used when Color Map Profiles are exported
- ⇒ **Review Image Previewing Preferences**
 - specifies if the current Image is retained across App launches

SuiteProfiler Image Previewing

⇒ Review Image Preview Panel

- image previewing applies the current Color Map to the Image
- the Image is automatically updated with Color Map changes
- the Panel's title displays the Image name and Color Map name
- a new Color Map is a neutral gray scale and previews as such

⇒ Perform "Preview > Show Image" menu item

- the Image is presented in Image mode
- automatic image previewing is disabled

⇒ Perform "Preview > Show Image Preview" menu item

- the Image is presented in Preview Mode
- automatic image previewing is enabled
- image previewing changes with the current Color Map



⇒ Click the Preview Image

- clicking the image toggles between Image and Preview modes
- the Image is not auto updated in Image mode
- click the Image again to return to Preview mode

⇒ Perform "Preview > Load Preview Image" menu item

- select a bitmap image of your own to show in the Preview Panel
- your image may be RGB or Grayscale, 8 or 16 bit color data
- click the "Load" button
- your image will be retained by SuiteProfiler for future previewing

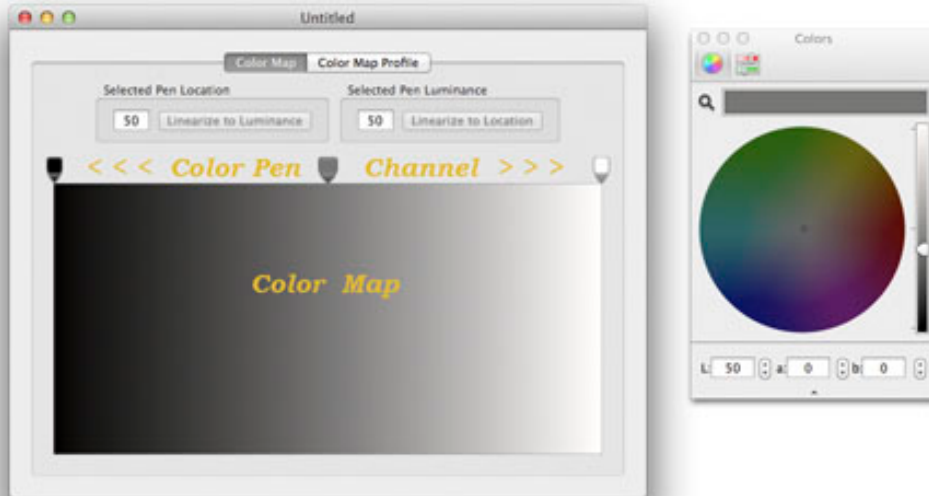
⇒ Perform "Preview > Revert to Default Preview Image" menu item

- the default image is returned to the Preview Panel for previewing

SuiteProfiler Color Map Tab

⇒ Review the Color Map Tab

- there are 3 Color Pens in the horizontal Color Pen Channel
- the center Pen is the Selected Pen (displayed as a "fat" pen)
- the Color Map (below the Pen Channel) is defined by the Color Pens
- the "Selected Pen Location" box displays the current Location
- the "Selected Pen Luminance" box displays the current Luminance



⇒ Review the "Linearize to Location" and "Linearize to Luminance" buttons

- both "Linearize to" buttons are disabled because the Selected Pen's Luminance of 50 is linearized at Location 50
- if the "Linearize to" buttons are enabled for the Selected Pen, the Pen's Luminance is not linearized at that Location
- a Color Pen is linearized when it's Luminance falls on a straight line between the Luminance values of the 2 end point Color Pens
- a linearized Color Map means the Pens define a linear Luminance scale
- using the "Linearize to" buttons is optional

⇒ Review the Colors Panel

- the Colors Panel reflects the Selected Pen's Color data
- the 2 buttons in the upper left corner select the current Color Picker (the HSB Color Wheel, or the RGB and HSB Color Sliders)
- the Color Wheel reflects the HSB colorspace visually
- the Color Scales reflect RGB or HSB colorspace data
- the text fields display Lab colorspace data

Edit Selected Pen

⇨ Move Selected Pen

- enter Shift-Left-Arrow keys twice to move Selected Pen to Location 30
- alternatively click and drag the Center Pen to the left to Location 30
- the "Linearize to Location" and "Linearize to Luminance" buttons are enabled

⇨ Update Selected Pen Color

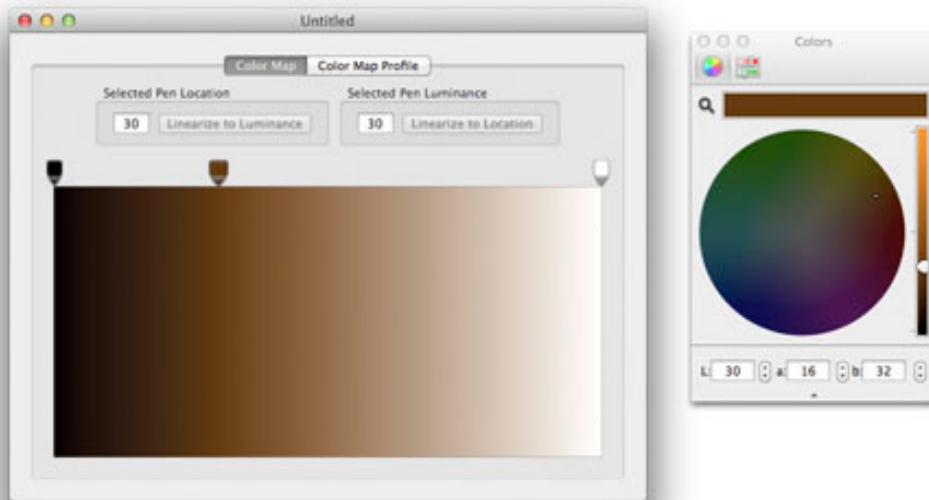
- in the Colors Panel, click on a brown color in the Color Wheel
- the Selected Pen's Color and the Color Map are updated

⇨ Edit Selected Pen Color Values

- in the Colors Panel, enter 16 for the "a:" field and hit the "return" key
- click and hold on the "b:" stepper arrows to adjust the value to 32

⇨ Linearize the Selected Pen Luminance

- click the "Linearize to Location" button in "Selected Pen Luminance" box
- the Selected Pen's Luminance is updated to 30
- both "Linearize to" buttons are disabled because the Pen's Luminance is linearized at the current Location within the Color Map scale



⇨ Move Selected Pen

- click and drag the Selected Pen left and right in the Color Pen Channel
- do not drag the Pen downward over the Color Map
- the Color Map and Preview Panel are updated with changes

⇨ Return Selected Pen to Previous Location

- click the "Linearize to Luminance" button in "Selected Pen Location" box

Add New Pen

⇒ Perform "Pen > Add New Pen" menu item

- adds and selects a new Pen at Location 65
- the Pen's Color is derived from the Color Map
- notice that the new Pen is added to the mid point of the largest gap between existing Pens
- notice that the "Linearize to" buttons are disabled

⇒ Perform "Pen > Invert Pen Color" menu item

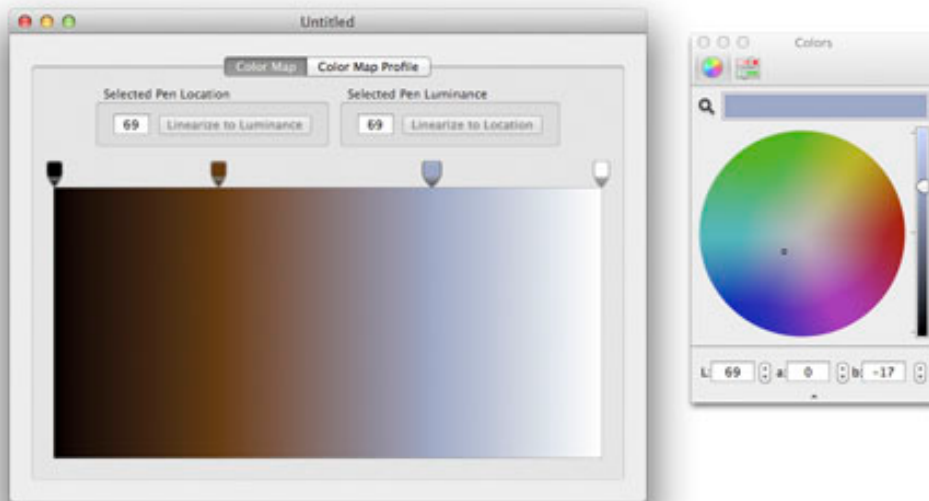
- Pen Color values are inverted, the Luminance stays the same

⇒ Edit Selected Pen Color Values

- in the Colors Panel, enter 69 for the "L:" field and hit the "return" key
- click and hold on the "a:" stepper up arrow to adjust the value to 0

⇒ Linearize the Selected Pen Location

- click the "Linearize to Luminance" button in "Selected Pen Location" box
- the Selected Pen is moved to Location 69
- both "Linearize to" buttons are disabled because the Pen's Luminance is linearized at the current Location within the Color Map scale



⇒ Click to Select a Color Pen

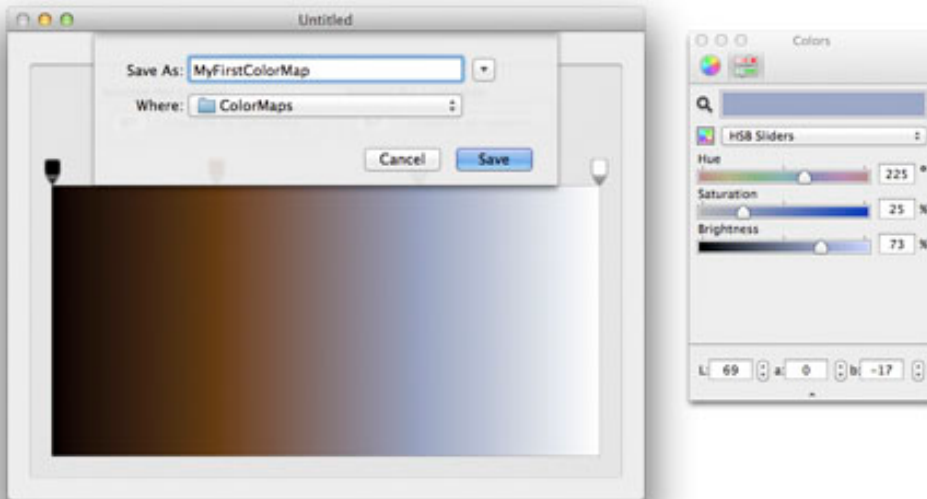
- notice that the Selected Pen appears as a "fat" pen
- notice that the "Linearize to" buttons are disabled indicating that the Pen's Luminance is linearized at that Location
- notice that the Colors Panel displays the Selected Pen's Color

⇒ Enter the "Tab" Key to Select the Next Pen

- enter the "Shift-Tab" keys to select the previous Pen

Save Color Map

- ⇒ **Click the Slider Color Picker button in the Colors Panel**
 - it is the right picker button in the upper left corner of the panel
 - select the "HSB Sliders" to see the HSB values
 - you can also select the "RGB Sliders" here
- ⇒ **Perform "File > Save Color Map As..." menu item**
 - edit "Untitled" to "MyFirstColorMap"
 - click the "Save" button
 - the Color Map is saved in the App Color Maps folder:
"~/Library/SuiteProfiler/ColorMaps"

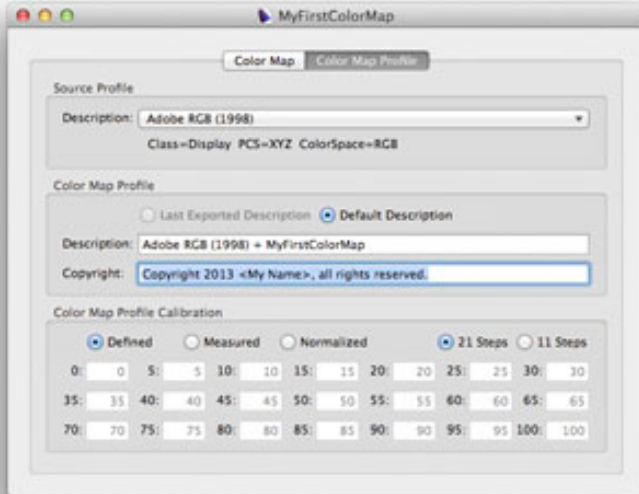


Delete Color Pen & Undo

- ⇒ **Drag the Selected Pen downward over the Color Map**
 - the disappearing cursor (puff of smoke) appears
 - the Color Map displays as if the Selected Pen is deleted
- ⇒ **Release the mouse button (when the disappearing cursor is present)**
 - the Selected Pen is deleted
 - Pen is also deleted via the "Pen > Delete Selected Pen" menu item
- ⇒ **Perform "Edit -> Undo Delete Pen" menu item**
 - the deleted Pen is returned and selected
 - the Color Map is returned to the previous state
 - the Colors Panel displays the Selected Pen's Color

SuiteProfiler Color Map Profile Tab

⇒ Select the "Color Map Profile" Tab



⇒ Review the Source Profile Box

- the "Description:" pulldown maintains a list of Source Profiles
- the initial Source Profile is set to the "Adobe RGB (1998)" Display Profile
- select Source Profiles via the "**File > Select Source Profile...**" menu item
- for now use "Adobe RGB (1998)" as the Source Profile

⇒ Review the Color Map Profile Box

- the "Description:" field is both the Color Map Profile name and file name
- the "Copyright:" field is the Color Map Profile copyright information
- both fields are included in the exported Color Map Profile

⇒ Review the Color Map Profile Calibration Box

- the "Defined" data displays the Luminance values defined by the Color Map at Locations ranging from 0 to 100
- the "Measured" fields are used to enter the measured Luminance values of a displayed or printed scale of Lab values
- the "Normalized" data displays the Measured data normalized to the range of Luminance values defined by the Color Map
- Color Map Profile Calibration is explained later
- for now leave the "Defined" radio button selected

⇒ Read "**Color Map Profiles For RIP Printing**" in this Guide

- this is important when you select Source Profiles used for RIP printing

Color Map Profile Text Fields

⇒ Review "Description:" in the Color Map Profile Box

- the naming convention is the Source Profile Description + Color Map Name
- so the description is set to "Adobe RGB (1998) + MyFirstColorMap.icc"
- the "Default Description:" radio button is selected
- the description text field is non-editable
- the description is editable in the Color Map Profile Export Panel

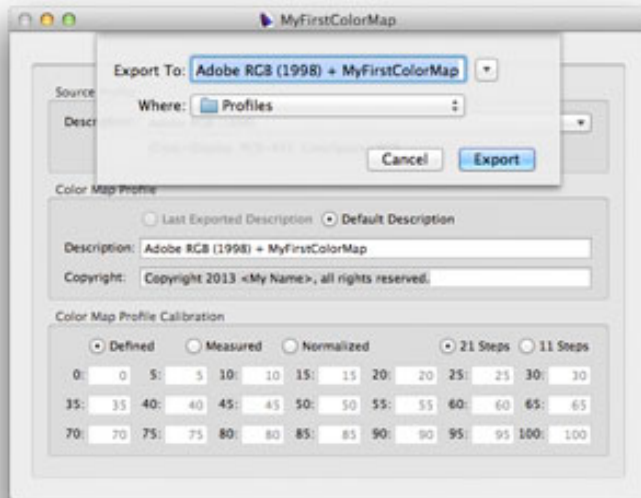
⇒ Edit "Copyright:" in the Color Map Profile Box

- change "<My Name>" text to your name
- or change the text to your personal copyright information

Export Color Map Profile

⇒ Perform "File > Export Color Map Profile..." menu item

- the "Export As:" field is "Adobe RGB (1998) + MyFirstColorMap.icc"
- do not edit this name
- click the "Export" button
- the Color Map Profile is exported to the default profiles folder:
"~/Library/ColorSync/Profiles"



⇒ Review Exported Profile Description

- the "Last Exported Description" radio button is selected
- the Color Map Profile "Description:" field is set to the name used in the "Export As:" field Export Panel
- click the "Default Description" radio button to set "Description:" to the original default (in this case, it is the same)

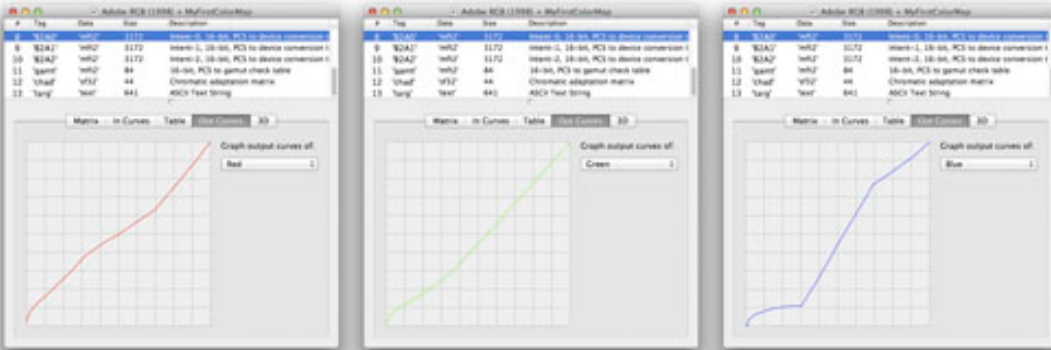
Examine Color Map Profile

⇒ Perform "Preview > View Profile in ColorSync Utility" menu item

- the last exported Color Map Profile is opened in Apple's ColorSync Utility
- the Color Map Profile is an ICC Profile

⇒ Click the 'B2A0' profile tag

- view RGB color scale derived from the Color Map and the Source Profile
- click the "Graph output curves of:" pulldown to select each color channel



⇒ Click the 'targ' profile tag

- the XML data documents the Color Map and Source Profile that were used to create this Color Map Profile
- the "<Gradient Data>" tag contains the Color Map Pen definitions
- the "<Source Profile Data>" tag contains profile header information of the Source Profile

#	Tag	Data	Size	Description
8	'B2A0'	'mft2'	3172	Intent-0, 16-bit, PCS to device conversion 1
9	'B2A1'	'mft2'	3172	Intent-1, 16-bit, PCS to device conversion 1
10	'B2A2'	'mft2'	3172	Intent-2, 16-bit, PCS to device conversion 1
11	'gamt'	'mft2'	84	16-bit, PCS to gamut check table
12	'chad'	'f32'	44	Chromatic adaptation matrix
13	'targ'	'text'	641	ASCII Text String

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<SUITE PROFILER>
  <Gradient Data>
    <PointUniform>1</PointUniform>
    <PointCount>4</PointCount>
    <Point00>0 0 0 0 0 0 0</Point00>
    <Point01>300000 0 300000 0 160000 0 320000 0 0</Point01>
    <Point02>690000 0 690000 0 0 0 -170000 0 1</Point02>
    <Point03>1000000 0 1000000 0 0 0 0 0</Point03>
  </Gradient Data>
  <Source Profile Data>
    <Source Description>Adobe RGB (1998)</Source Description>
    <Source Class>Display</Source Class>
    <Source CS>RGB</Source CS>
    <Source PCS>XYZ</Source PCS>
  </Source Profile Data>
</SUITE PROFILER>
  
```

Congratulations!

⇒ You just created a Color Map Profile

- this profile is used in the same profiling environment as the Source Profile
- this profile is an ICC Profile and can be used in any Application on any Operating System which supports color profiling
- if the Source Profile is a Printer Profile, this can be used to print images
- if the Source Profile is a Display Profile, this can be used to convert images in an image editing Application

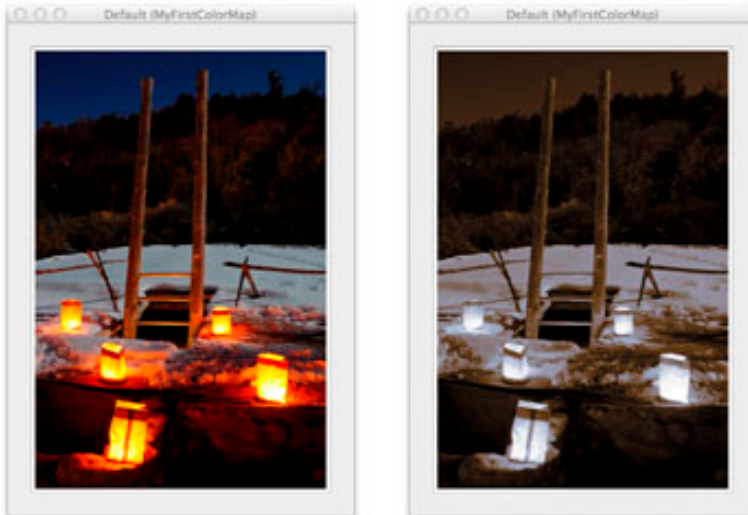
⇒ Launch an Application which Supports Image Profiling

- "Adobe RGB (1998) + MyFirstColorMap" is the Color Map Profile you exported to your "~/Library/ColorSync/Profiles" folder
- Soft Proof an image using your Color Map Profile (e.g. in Adobe Photoshop perform "View > Proof Setup > Custom...")
- do not print the image with this Color Map Profile, "Adobe RGB (1998)" is a Display Profile not a Printer Profile
- convert an image using your Color Map Profile (e.g. in Adobe Photoshop perform "Edit > Convert To Profile")

Revisit Image Previewing

⇒ Review Image Preview Panel

- image previewing reflects the current Color Map
- the Preview Panel displays the Image name and Color Map name



⇒ Review "MyFirstColorMap" Color Map

- this Color Map was created as a learning exercise
- edit "MyFirstColorMap" to match your own visual aesthetics

Color Map Profiles For RIP Printing

⇒ Read This Page

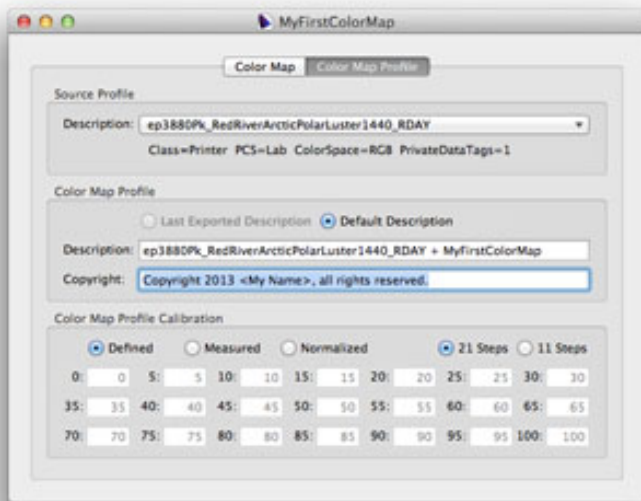
- for Color Map Profile creation for RIP printing environments
- optional for Color Map Profile creation for standard Driver software

⇒ Read "RIP Printing Support For Color Map Profiles" in the User Guide

- this outlines the details for printing images using RIP software

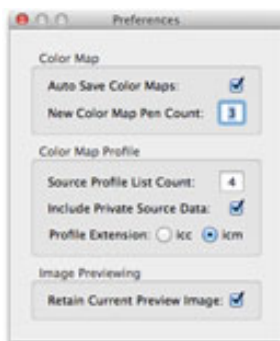
⇒ Perform "File > Select Source Profile..."

- select a Source Profile used for RIP printing (e.g. an ImagePrint Profile)
- the Source Profile Box displays the "PrivateDataTags" count
- this indicates there is private data embedded in the Source Profile



⇒ Perform "SuiteProfiler > Preferences..." menu item

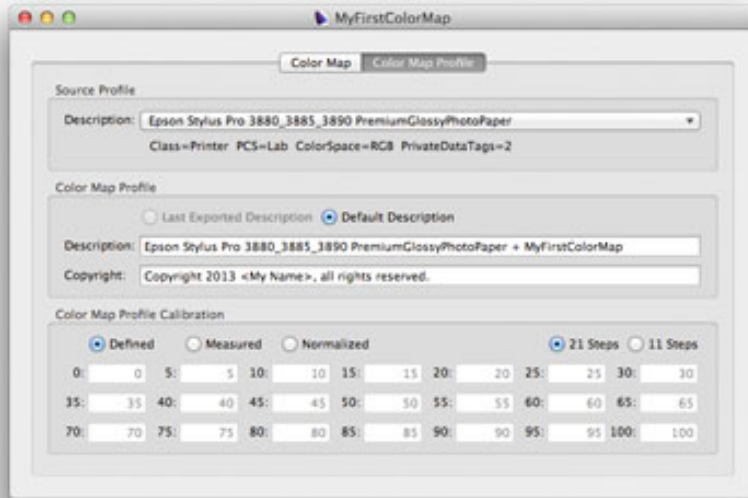
- check the "Include Private Source Data:" Preference to include the Source Profile's private data in the exported Color Map Profiles
- this guarantees valid Color Map Profiles for RIP printing environments
- read "SuiteProfiler Preferences" in the User Guide for details



SuiteProfiler Color Map Profile Calibration

⇒ Perform "File > Select Source Profile..." menu item

- select an RGB or CMYK Printer Profile you commonly use for printing
- click the "Select" button
- Source Profile and Color Map Profile "Description:" fields are updated



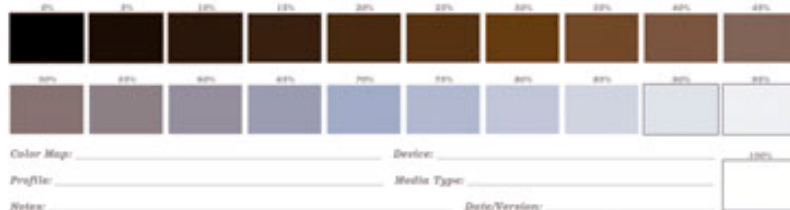
⇒ Perform "File > Export Color Map Profile..." menu item

- click the "Export" button

Print Lab Scale With Color Map Profile

⇒ Print 21 Step Lab Color Scale in an image printing Application (e.g. Adobe Photoshop)

- open "~/Library/SuiteProfiler/Scales/LabScale21.png"
- print the scale image using the Color Map Profile (use the printer and paper supported by the Printer Source Profile)



⇒ Measure the 21 Printed Color Samples

- use a reflective densitometer to measure the Luminance values
- can measure Density values, which will be converted to Luminance

Enter Color Map Profile Calibration Data

⇒ Enter Measured Luminance Data

- select the "Measured" radio button
- "Description:" is suffixed by the "^" indicating a calibrated profile
- enter the measured Luminance values in the fields corresponding to the Locations in the printed Lab scale

The screenshot shows the 'MyFirstColorMap' application window. The 'Color Map Profile Calibration' section has three radio buttons: 'Defined', 'Measured', and 'Normalized'. The 'Measured' radio button is selected. Below the radio buttons is a grid of 21 input fields for luminance values. The values are: 0: 5.95, 5: 10.32, 10: 13.23, 15: 16.69, 20: 20.25, 25: 23.88, 30: 27.31, 35: 33.27, 40: 39.06, 45: 43.97, 50: 49.11, 55: 53.55, 60: 57.88, 65: 62.25, 70: 67.16, 75: 72.08, 80: 77.04, 85: 81.95, 90: 86.37, 95: 91.29, 100: 96.17.

⇒ View Normalized Luminance Data

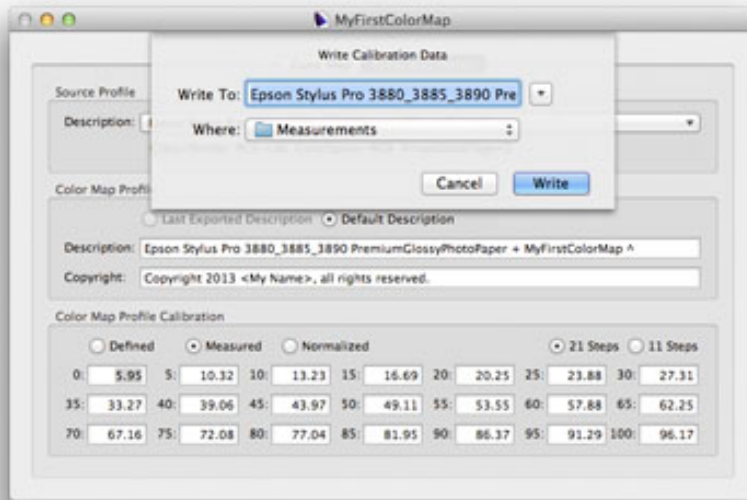
- select the "Normalized" radio button
- the "Measured" data is normalized to the Color Map Luminance range
- compare these to the values displayed by the "Defined" radio button
- the difference will be corrected in the exported calibrated Profile

The screenshot shows the 'MyFirstColorMap' application window. The 'Color Map Profile Calibration' section has three radio buttons: 'Defined', 'Measured', and 'Normalized'. The 'Normalized' radio button is selected. Below the radio buttons is a grid of 21 input fields for luminance values. The values are: 0: 0, 5: 4.84, 10: 8.07, 15: 11.9, 20: 15.85, 25: 19.87, 30: 23.68, 35: 30.28, 40: 36.7, 45: 42.14, 50: 47.84, 55: 52.76, 60: 57.56, 65: 62.4, 70: 67.85, 75: 73.3, 80: 78.8, 85: 84.24, 90: 89.14, 95: 94.59, 100: 100.

Save Color Map Profile Calibration Data

⇒ Perform "File > Write Calibration Data..." menu item

- the default name is "Adobe RGB (1998) + MyFirstColorMap.txt"
- click the "Write" button
- the data is saved in the App Measurements folder:
"~/Library/SuiteProfiler/Measurements"
- the "File > Read Calibration Data..." menu item reads saved calibration data into the "Measured" text fields



Export Calibrated Color Map Profile For Printing

⇒ Perform "File > Export Color Map Profile..." menu item

- click the "Export" button
- the calibrated Color Map Profile is exported to the default profiles folder:
"~/Library/ColorSync/Profiles"

⇒ Use this Color Map Profile to Print an image of your own

- the Luminance scale of this Color Map Profile will print accurately
- use this Profile in the same profiling environment as the Source Profile

Congratulations Again!

⇒ You just created a Calibrated Color Map Profile for Printing

- you can use this Color Map Profile to Soft Proof and Print an image of your own knowing it will print accurately