



ColorCert® Suite 3.5 User Manual

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Introducing ColorCert®

ColorCert is a modular job-based color workflow solution that enables the creation of color specifications and provides a reporting scorecard by applying a grade or score to a job, site or client based on tolerances.

- It enables color standardization for packaging and removes subjectivity in quality control with a simple score
- It can be used to link stakeholders in a complete supply chain or within a single production site
- Its comprehensive reporting capability provides insight into areas of opportunity to identify, evaluate and correct



ColorCert Desktop Solutions

The software installer is the same for all Desktop Solutions; the functionality is linked to the purchased license. The following Desktop solutions are available for ColorCert:

ColorCert Manager: Full Desktop module used to capture all printing quality parameters like target colors and tolerances into jobs to be used by other ColorCert desktop modules for quality control and reporting.

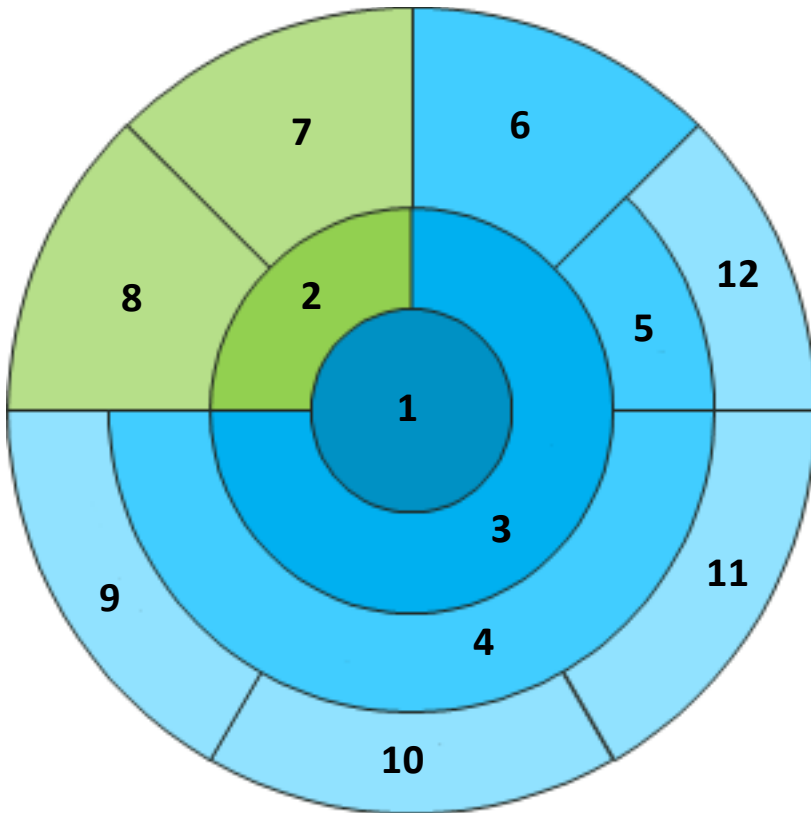
ColorCert Inkroom: Client Desktop module used to evaluate color quality based on jobs created by ColorCert Manager or self-created color standard definitions. Supports file formats such as .CXF and .MIF as input and enables reporting via PDF or Microsoft Excel.

ColorCert Pressroom: Client Desktop module used at press-side for print quality control and reporting. Enables quick job set up based on templates created by ColorCert Manager as well as ability to make quick checks and reports of individual ink colors using the Basic version of the ColorCert Inkroom Tools module included in the main toolbar.

Server Solutions

ColorCert Repository server: Cloud-based portal used to fully manage and deploy color assets across locations and users. Manage access to all ColorCert and many other file formats based on user type, location, brand, workflow stage or other parameters. Full ColorCert Repository functionality is also part of the PantoneLIVE Portal offering.

ColorCert Scorecard server: Cloud-based portal providing at-a-glance view of quality scorecard as part of a print quality control program. Summarize overall quality levels and also consolidate metrics using customizable filters based on plant, machine, customer, work type, or other job parameters.



- 1 Job
- 2 Metadata
- 3 Application
- 4 Profiles
- 5 Rules
- 6 Mediastrip
- 7 Job Details
- 8 Press Setup
- 9 Substrates
- 10 Primaries
- 11 SpotColors
- 12 Quality Levels

Structure of a ColorCert Job and its Assets

Target values for Substrate, Primaries and SpotColors are saved in ColorCert as a Profile, Tolerances are saved as Rules. With both information you automatically have the definition of the Mediastrip. All three components together can be saved as an Application, which can then be used as a template for Job creation with the ColorCert Pressroom Client.

To be able to save a ColorCert Job you need to have an Application and the minimum Job Details, i.e. Job name and Job number. Jobs and all other assets are file based and can be distributed globally. Jobs can contain additional Metadata grouped under Job Details as well as Press Setup.

Installing ColorCert

System Requirements

This section provides the minimum requirements to run the ColorCert modules on your computer, the installation settings, and the supported measurement instruments.

Supported Platforms

- PC: Windows® 7, Windows® 8, Windows® 8.1, Windows® 10
- Mac: Mac OS X 10.10, Mac OS X 10.11, and Mac OS X 10.12

Recommended Computer Specifications

- Free Memory: 512 MB [1024 MB]
- Processor: 1 GHz 32 Bit [2 GHz 64 Bit]
- Display: 1440 x 900 Pixel or higher
- Free Hard Disk Space: 1 GB
- Free Ports: 2 Powered USB ports, 1 or 2 serial ports [depends on device selection]
- Broadband Internet Connection Not required (recommended for online services and databases)

Remote access through TeamViewer®:

- Allow port 80/443 http communication (via proxy)

Access to ColorCert Scorecard Server or ColorCert Repository Server:

- Allow port 80/443 http communication (via proxy)
- Allow access to domain “colorcert.com” (trusted domain)
- Data is encrypted, therefore no https/SSL needed

Operating System

- Allow ColorCert write access to “User/Shared Users” directories or “ProgramData” directory.
- Ensure the following files allow write access:
 - com.nc.ColorCert.Labelprefs
 - com.nc.ColorCert.pref
 - com.nc.ColorCert_Connection.plist
 - DGCPatches.txt
- Provide option (e.g. user account) to install software/patches/drivers
- Provide option (e.g. user account) to adjust software and system settings
- Allow access to jump drives (e.g. USB flash drives)

X-Rite Measuring Instrument Support

- ColorCert: X-Rite Edition supports the following X-Rite instruments:
 - eXact/eXact Scan
 - 530
 - 939
 - SP62/SP64
 - Ci5x/Ci6x
 - SpectroEye
 - In addition to direct instrument support, measurement data from X-Rite IntelliTrax may be used via a drop folder. See specific documentation for setup.

Measurement Devices with Serial/Com Port Connection

If the computer does not provide a com/serial port, use a Tripp-Lite Keyspan USA 19HS serial to USB converter.

Installation

This section describes how to install the application, drivers and other third party software that is required to use ColorCert and its features.

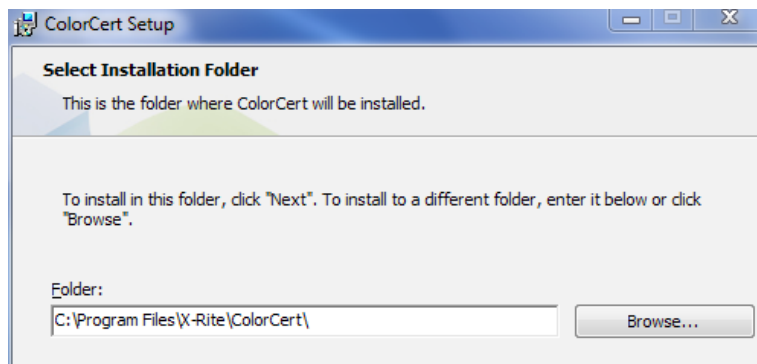
Installing the ColorCert Application

The following example shows the installation on Windows 7. These steps vary slightly on Mac OS. Mac OS does not require a separate installation for the dongle driver.

1. Log into Windows with administrator privileges, or select Run as Administrator during installation.
2. Temporarily turn off any active virus detection software.
3. Download the latest ColorCert release from <http://www.xrite.com/colorcert-support>. Download the PC or Mac installer by clicking the appropriate link. Browse to the location of the downloaded file on your computer and launch the installer for your operating system.
4. The Setup Wizard will launch. Click Next.



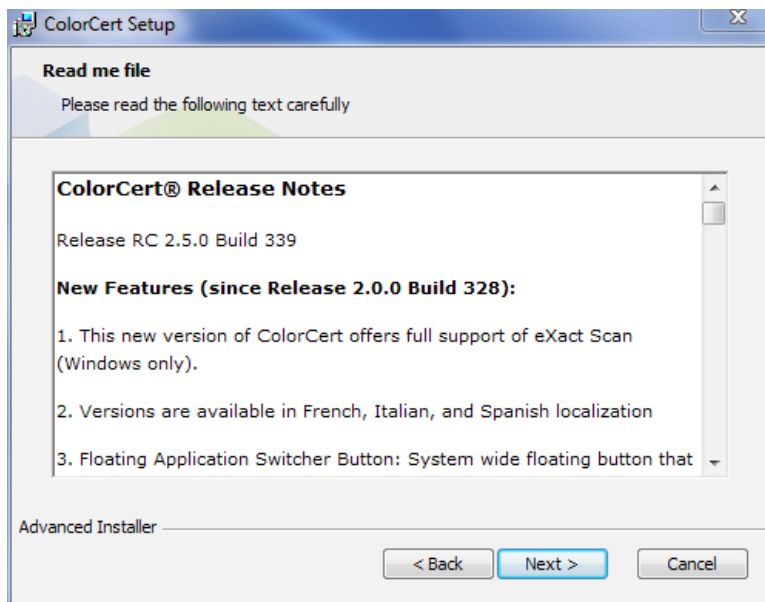
5. Select your Installation Folder. The default destination is C:\Program Files (x86)\X-Rite\ColorCert. Click Next.



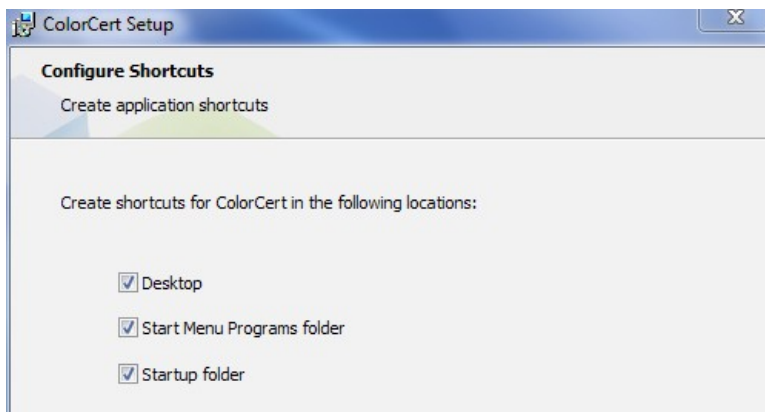
6. Read the End-User License Agreement. Accept the terms and click Next.



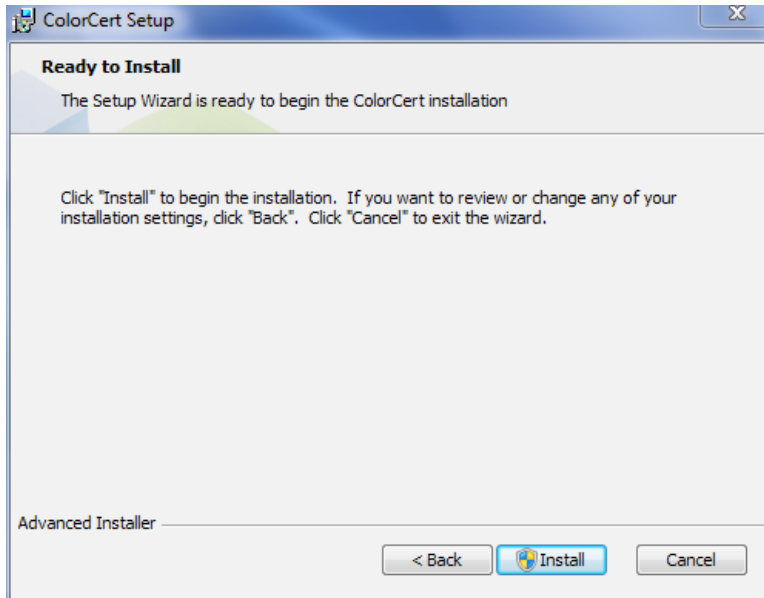
7. Read the System Requirements and click Next.



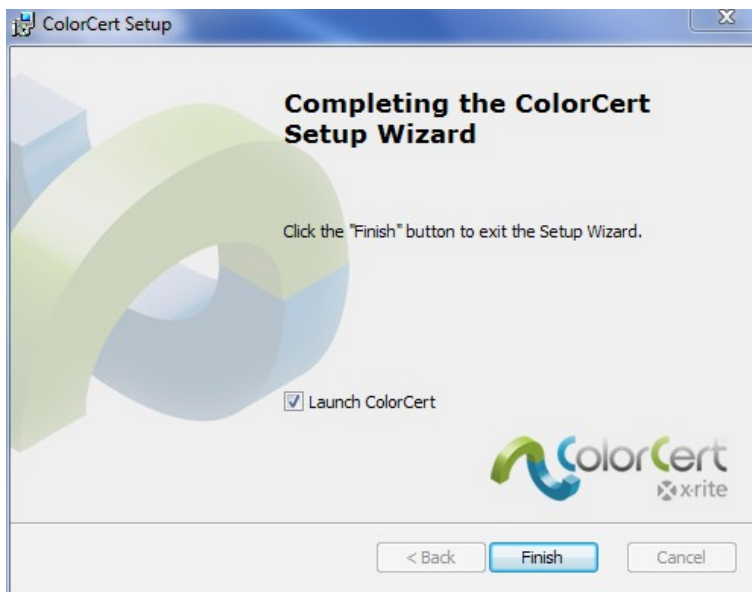
8. Select any shortcuts you do or do not want and click Next.



9. Click Install.



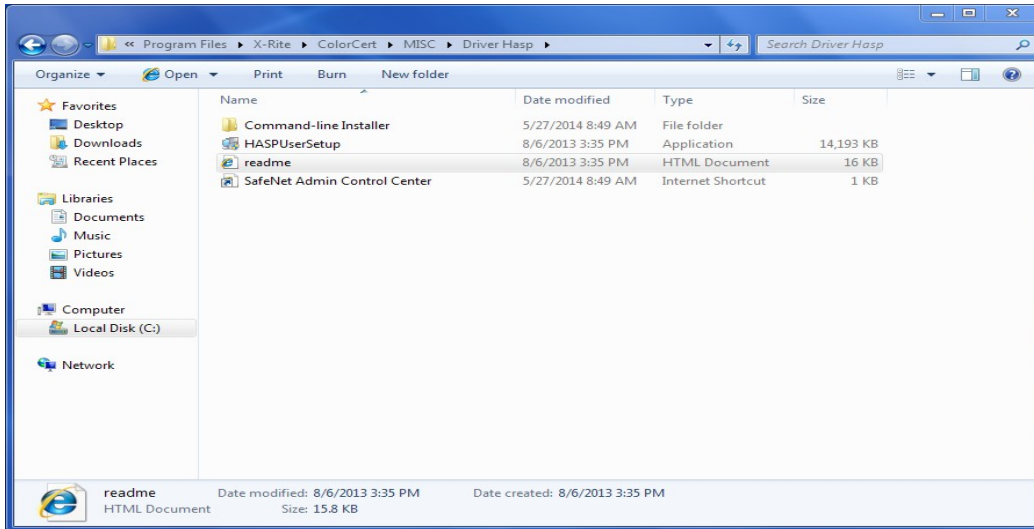
10. After the ColorCert application is finished installing, click Finish. If you are installing ColorCert for the first time, uncheck "Launch ColorCert" before you click Finish.



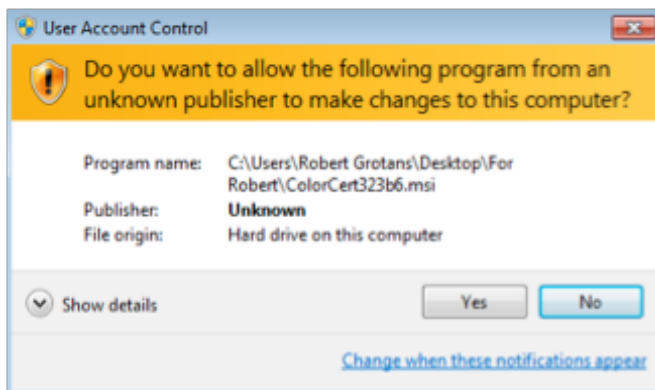
Installing the HASP Dongle Driver

To properly enable the dongle, you must install the software drivers on your system. They will be copied in the system folder, which usually is C:\Windows\System32.

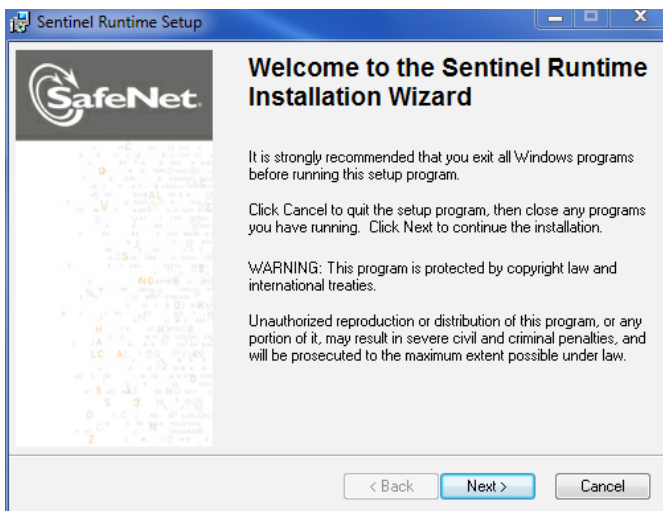
1. Open My Computer and browse to C:\Program Files (x86)\X-Rite\ColorCert\MISC\Driver Hasp.



2. Double-click the application HASPUserSetup.exe. Click Yes if prompted by the Windows User Account Control.



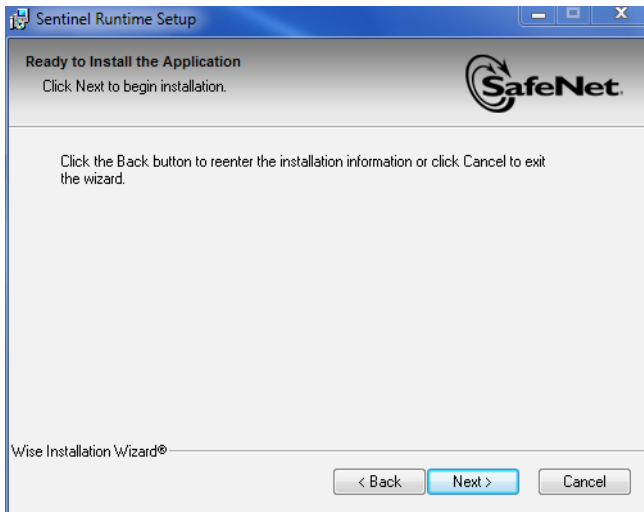
3. The Sentinel Runtime Installation Wizard will be displayed. Click Next.



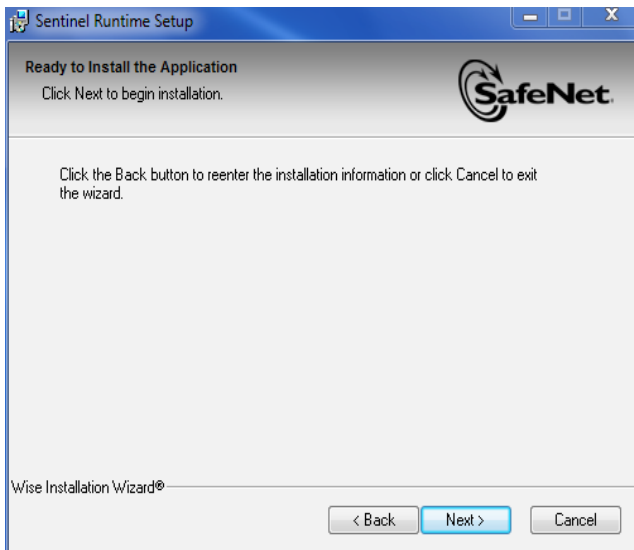
4. Read and accept the License Agreement and click Next.

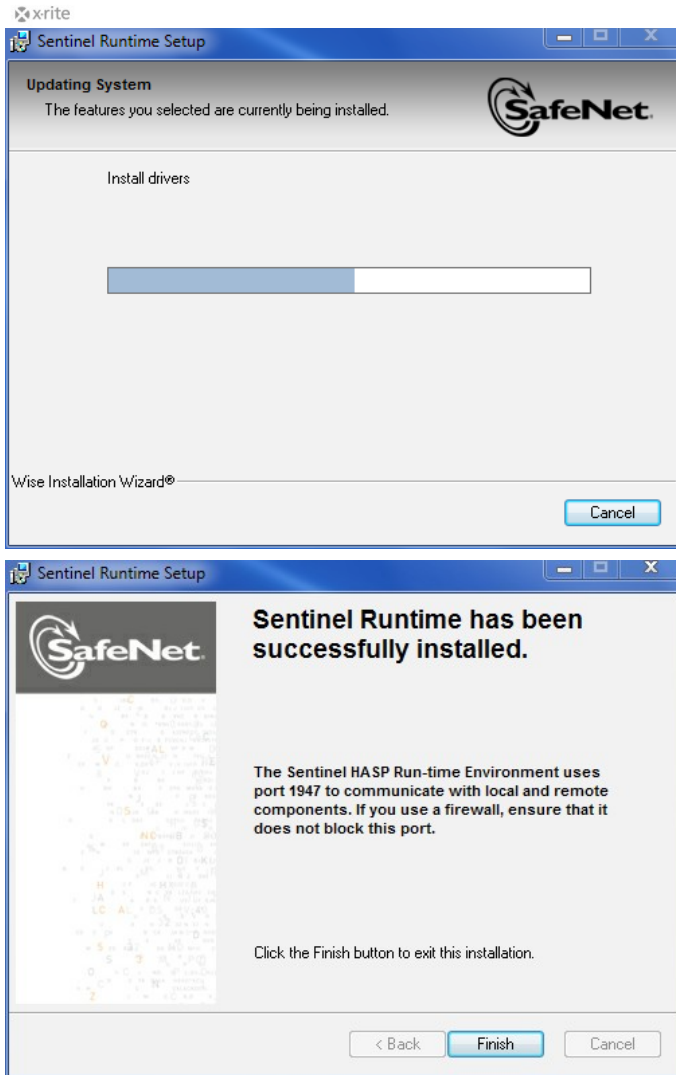


5. Click Next.



6. It may take a few minutes for the driver to install. Press Finish when it is done.





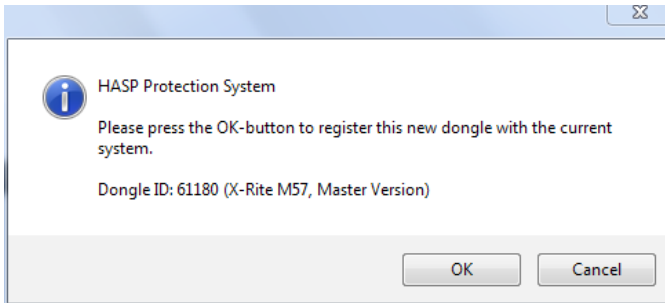
Installing a PDF Reader for Documentation and Reports

If you do not have a pdf reader, such as Adobe® Reader, you must install one. Adobe Reader is available at get.adobe.com/reader.

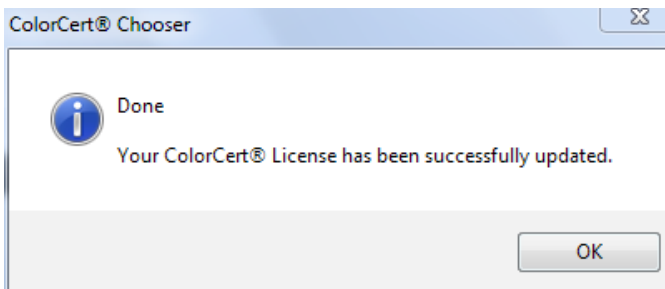
ColorCert License Activation

ColorCert dongle activation is for permanent use on only one computer. The first time you launch ColorCert, you will need to link your license file to your dongle and computer. If you need to move the software to a new computer in the future, contact X-Rite for cost and procedure to permanently move to another system.

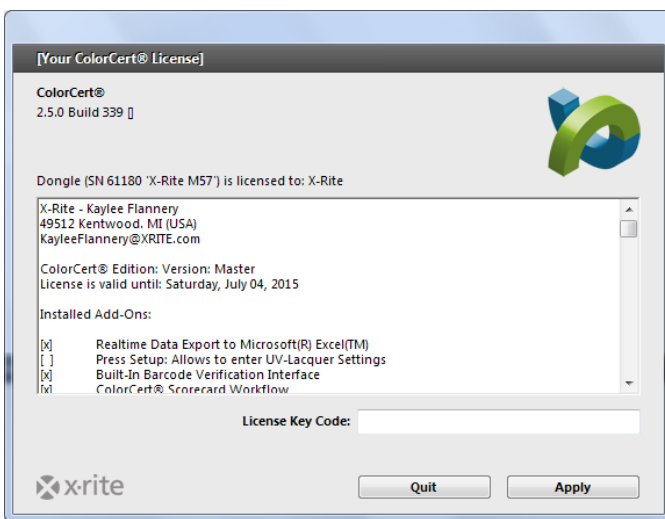
1. Unzip the file that you receive from CC License via email and copy the ColorCert license file to your computer's desktop.
2. Plug the dongle into your USB port.
3. Launch ColorCert.
4. Click OK to register your dongle with the current system.



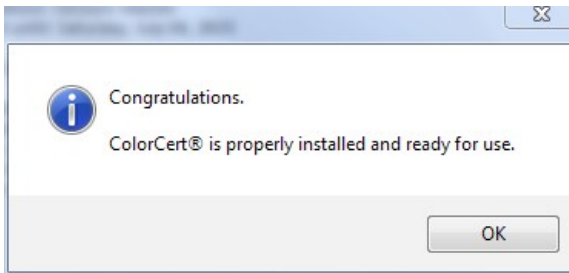
5. Click OK again once the license has been successfully updated.



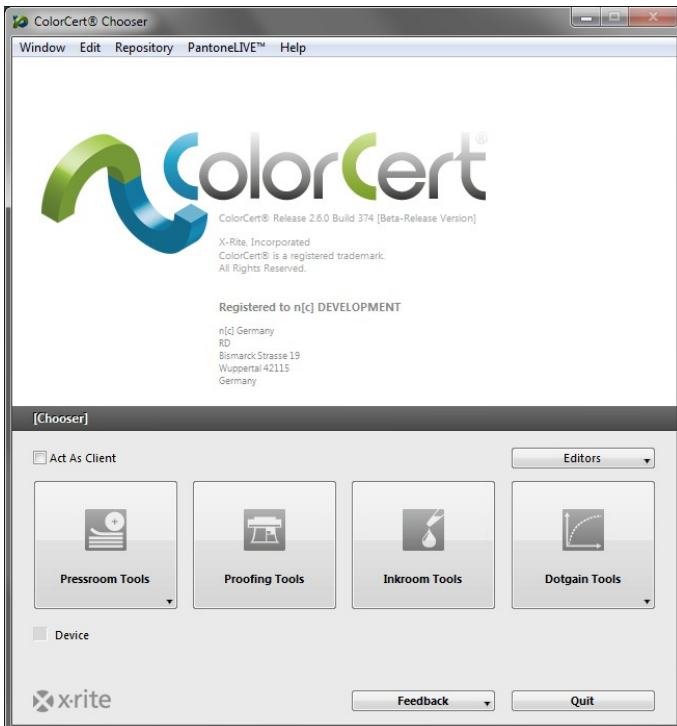
6. Enter the license key you received and click Apply.



7. ColorCert is now ready to be configured for use. Click OK.



8. The application launches with the ColorCert Chooser.



Initial Setup

Next you must review the Preferences for your initial setup. There are a number of items you can set up later, but this section explains how to configure your spectrophotometer.

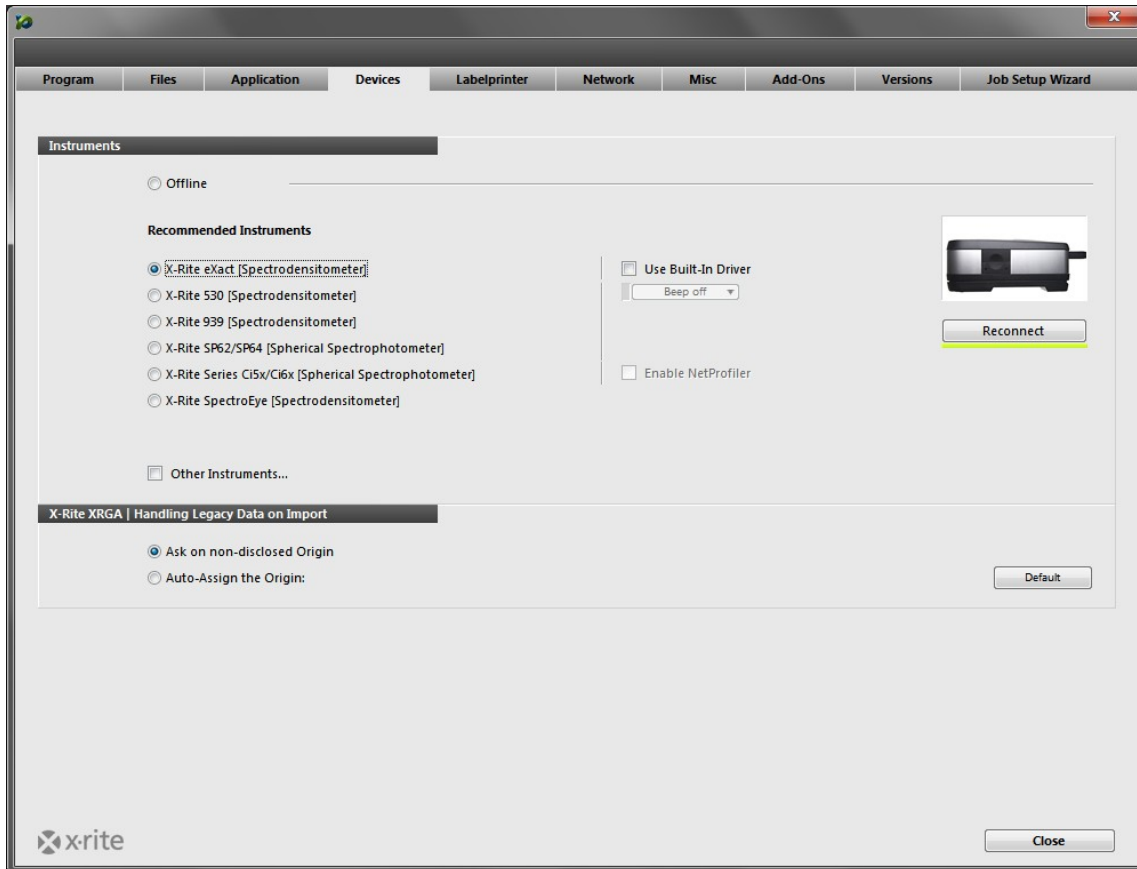
Setting System Preferences

1. Begin by connecting your X-Rite measurement device to your computer.
 - Note that all measurements taken within ColorCert will use your ColorCert settings, not the settings from your measurement device. The only setting that must be made on the instrument is the switch for measurement mode.
 - On the eXact, if this is set to 1, the software will be limited to M1 measurements. If it is set to 0, the software will be able to measure in M0, M2, or M3 modes.



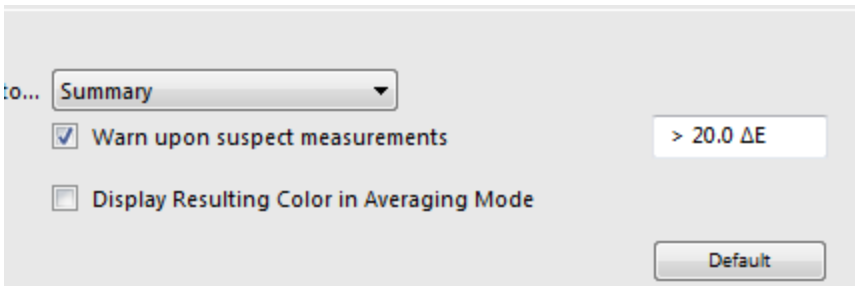
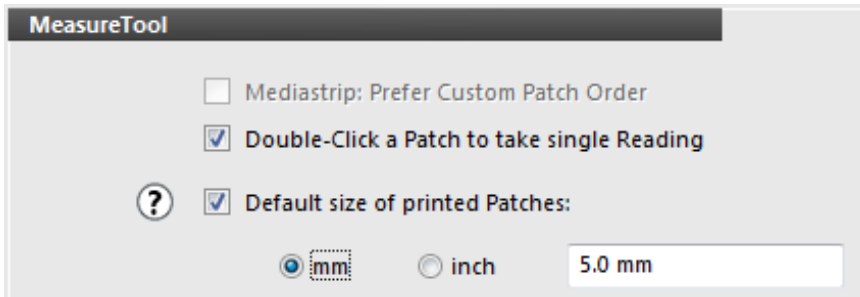
2. When using the Windows version, go to the File menu and select Preferences. On the Mac, go to the ColorCert menu and select Preferences.

3. Select the Devices tab and choose your spectrophotometer from the list.



4. Click the Reconnect button.
5. A dialog box informing you that your device is connected will appear. You should see a green indicator next to the reconnect button indicating that you have a connection. You will see this indicator, along with a button, in other windows of the application where you will use the instrument. If this is red, the instrument has lost connection. You can click the button to reestablish the connection.
 - If there is an error, click OK, then check your connections and try again.
 - If it says that the device was connected, click OK to close the dialog.

6. Select the Workflow tab and enter the default length of your patches under MeasureTool. To follow the step by step guide later in this StartUp Guide, enter a patch size of 5 mm. Please also change Warn upon suspected measurements to 20. This allows you to automatically accept your measurements even with a badly printed copy of the sheet that the step by step guide refers to.



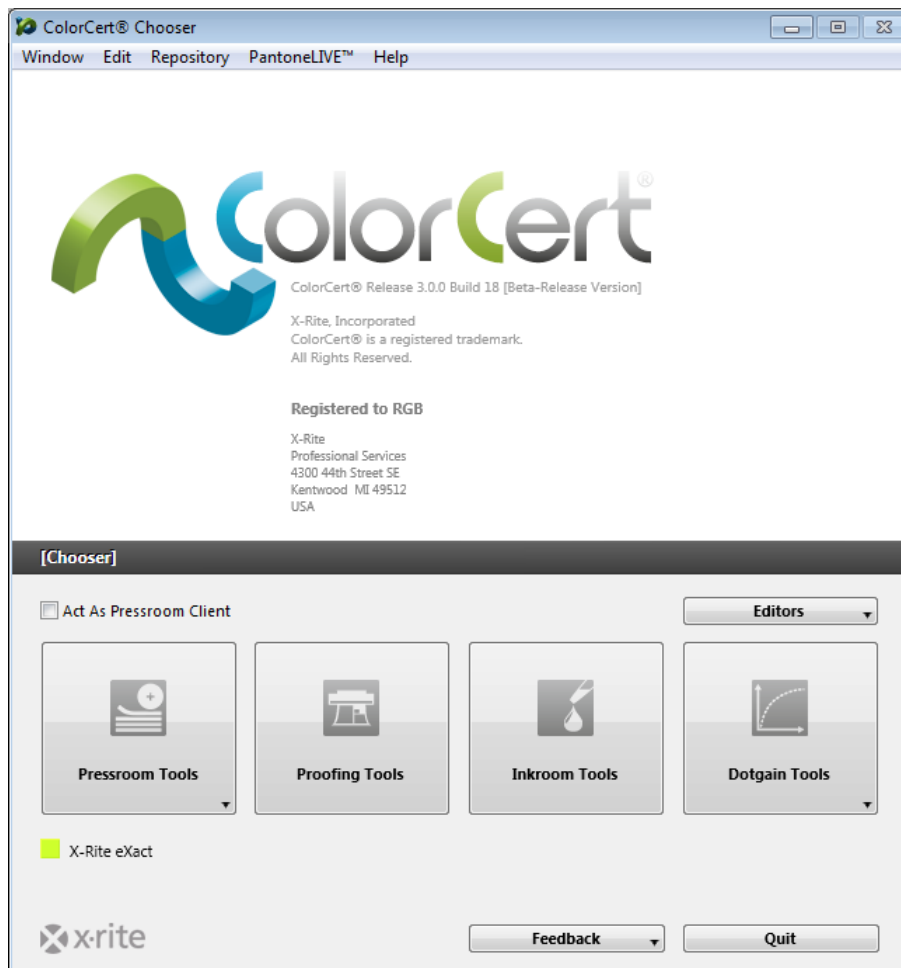
7. Click the Close button. You are done.

ColorCert Software

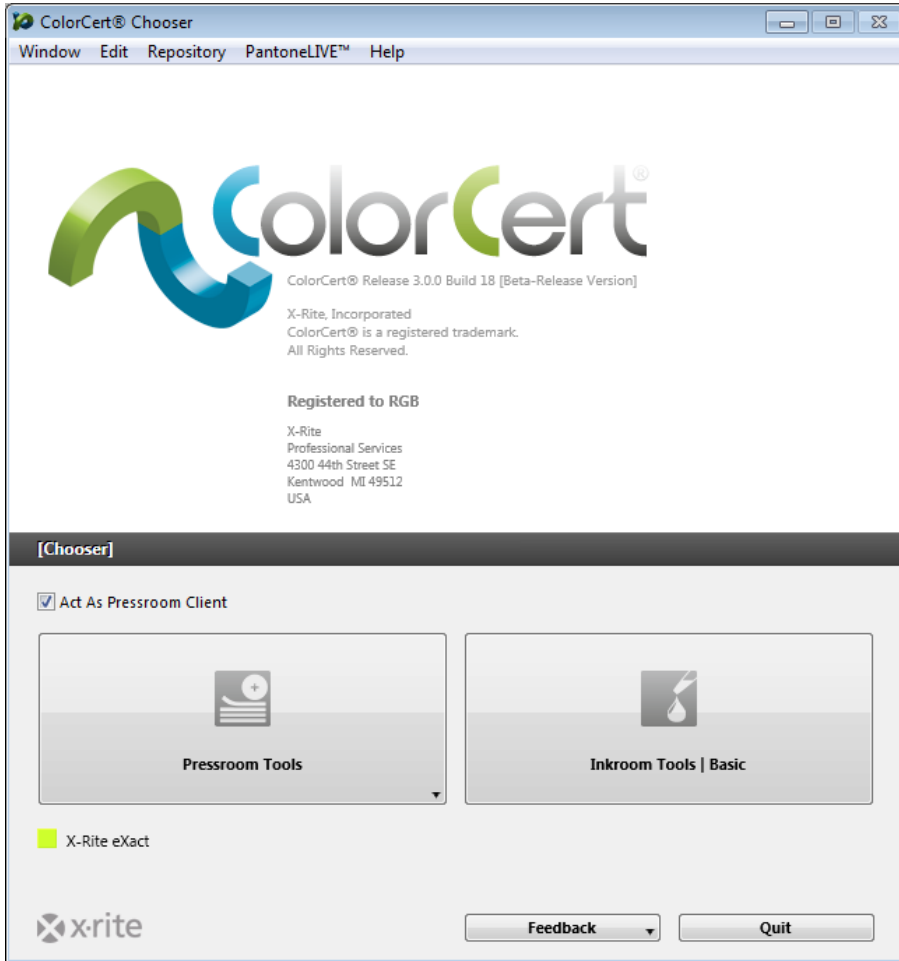
This section discusses the software interface and provides an overview of the tools, their uses and a step by step guide of measuring a sample sheet for an existing job.

The Chooser

The main window is called the Chooser. This will look different based on the license you purchased. The Manager is used to define Jobs, Profiles, Rules, Applications, Substrates, Inks, Tolerances. It includes all available Tools.



The Pressroom Client has access to Pressroom Tools to load existing Jobs to monitor production and generate Scorecards.



Editors

The first step of the process is to create the Profile (color references) and Rules (tolerances). Some colors can also be sorted into Libraries. Use the Editors to define Profiles, Rules and ColorCert Libraries.

Job, Application, Mediastrip

Here you can combine predefined profiles and rules into an application. You can create jobs or build a custom Mediastrip.

Profile Editor

A ColorCert Profile is a set of color references. The color references include Inks, SpotColors, Substrates and Backing Material. A ColorCert Ink includes tint values and may or may not be included in the process builds of a color in the Job. A ColorCert SpotColor defines only a single value of a color that will be used in the Job. It may be the result of a “real ink” such as a formulated PANTONE Ink run at 100%, it may be a single screened tint value of a formulated PANTONE Ink, or it may even be a build of a color from Process Inks. A ColorCert SpotColor simply represents an important Brand Color in the Job, no matter how it is produced. This will be explained in more detail later. Backing Material is used under non-opaque Substrates to help standardize the measurement process for media that is not completely opaque. A Profile also includes information about the measurement and press conditions.

Rules Editor

This editor is used to create Rules that define what will be evaluated or measured and the tolerances that will be used. Different levels of tolerance can be applied to different classifications of importance of inks and SpotColors. Proofing tolerances can be established at a more critical level than the production work. Tolerances can be established for a variety of items including solids, dot gain values, minimum dot, substrate, and visual characteristics.

ColorCert Library Editor

ColorCert Libraries are collections of Ink, SpotColors, Substrates, and/or measured Backing Materials. This is useful for sorting colors for different types of printing. NOTE: PantoneLIVE Colors cannot be stored in ColorCert Libraries.

Pressroom Tools

In the Pressroom Tools you can load individual and multiple Jobs. Jobs can be created in two different ways. Select the Job Setup Wizard from this tool or use Jobs, Applications, Mediastrips from the Editors menu. Use the Jobs to measure and score production work. The completed Jobs can be uploaded automatically to a Scorecard Server.

Proofing Tools are very similar to Pressroom Tools, except you can only open individual Jobs, and you can define narrower tolerances in the Rules for proofing.

Inkroom Tools

For information and troubleshooting ink color and density on press, the Inkroom Tools provide color comparisons of stored or measured standards to the press samples. Feedback includes suggestions on parameters that can be changed on press to fix the problem, or if an ink cannot be adjusted to match, to reformulate it. This tool can be accessed in the Manager version of the Chooser or in the Pressroom Tools (if enabled in the Preferences) with limited functionality.

Dot Gain Tools

Dot Gain Tools are used to calibrate the press or proofer dot gain characteristics. To do this, a printing chart will be generated and run on press or the proofer, then measured to generate a calibration curve. The curve can be exported for use in the platesetter RIP or can be applied to an ICC profile.

Feedback

In the Feedback menu, you can Suggest a Feature, Report a Bug, or Contact a support or sales representative from xrite.com.

Step by Step Guide: An Overview of How ColorCert Works

This section walks you through examples of how ColorCert can be used in a production environment. To follow this step by step guide please download the ColorCert® ColorBasics Sample Data from:

<http://www.xrite.com/colorcert/Library>

The sample data are based on the hardcopy sample sheet called Color Basics for Pressroom that you received with your the eXact device. If you do not have that sheet you can download it from the above location.

NOTE: Please make sure to print the sheet in the correct size. Your print result will vary from the original sheet and your measurements might not stay within the tolerances for this job, but it will help you to follow the steps.

Unzip the file and copy the contents to the folders of the same names in the following directory:

- Mac OSX: Macintosh HD/Users/Shared/ColorCert Data/
- Windows: C:\Users\Public\Documents\ColorCert Data

During production you will need to know how to load a Job and how to measure Samples in the Pressroom Tool. This is possible with the Client as well as with the Manager license.

This step by step guide first shows you the workflow when working with an existing Job. This is the typical operator's task using the Pressroom Client.

The second half of this step by step guide you will show you how to setup Jobs. This function is only available in the Manager version.

Measuring Patch-By-Patch using an existing Job

eXact and other Measurement Devices

1. Connect your X-Rite spectrophotometer.
2. Launch the ColorCert software.
3. Click on Pressroom Tools, and select Load Job.
4. Select the sample Job Color_Basics_Job.ccj.

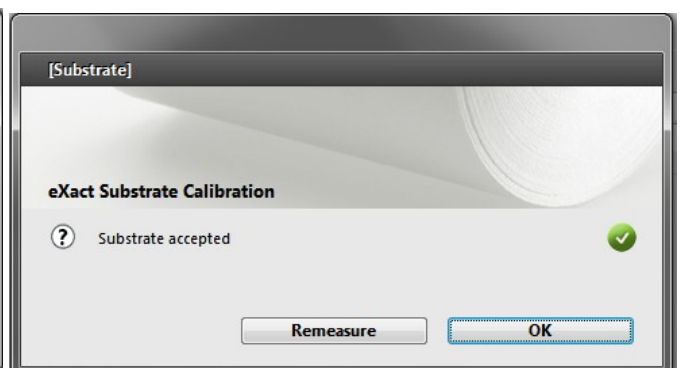
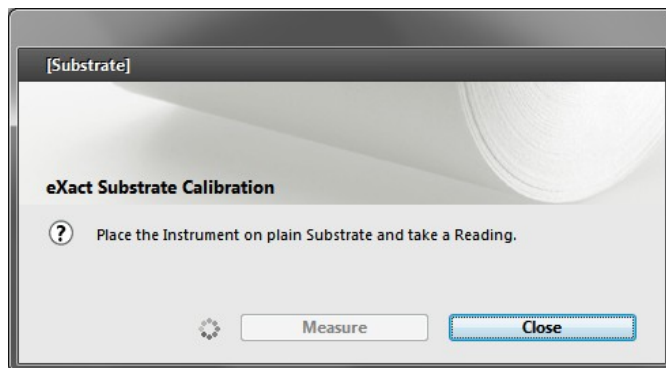
5. This opens the Job Details.



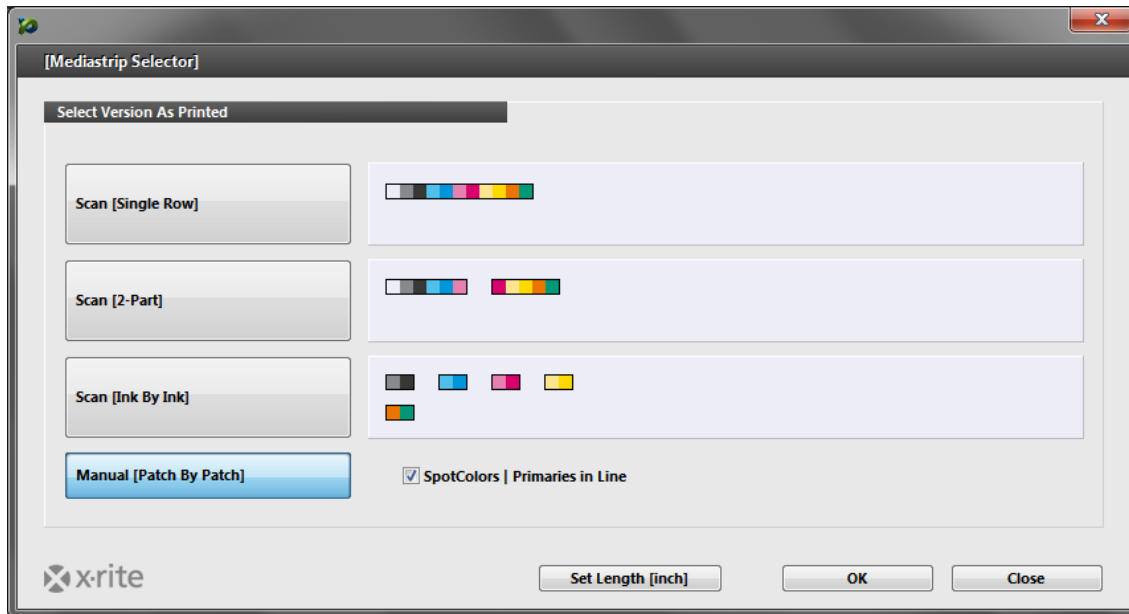
6. Click MeasureTool at the bottom of the window.

NOTE: The X-Rite eXact Scan scans multiple patches on Mediastrips, while all other supported X-Rite instruments measure individual color patches. The following steps may vary depending on which X-Rite device you are using. To complete these steps successfully, follow the instructions for your device. For the eXact Scan, follow the instructions under Scanning a Mediastrip using an existing Job. For the eXact and other device, use the following instructions.

When using an eXact with Scan functionality enabled: A window appears asking for a measurement of the substrate. Use your eXact instrument to measure the Substrate. A message confirms that the Substrate has been accepted.

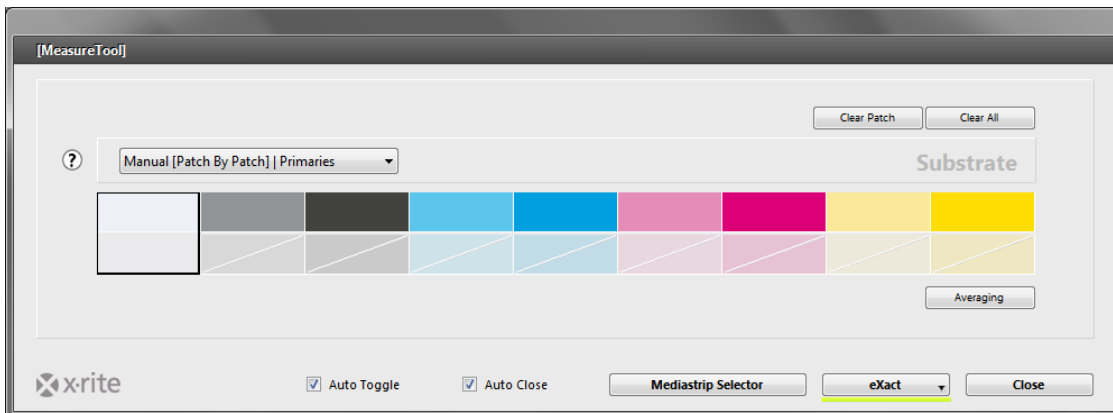


7. The Mediastrip Selector opens. Click Manual [Patch By Patch].



8. Click OK. The MeasureTool opens.

- You can now measure the individual patches as indicated in the MeasureTool.



NOTE: The order in this window does not correspond to the order of patches on the sheet. Since this is not a scan measurement, the patch order does not matter.

Trapping

Trapping. Farbannahme. Trapping. Registrazione. Intercepção.
叠印 . 叠印 . トラッピング

C M Y Y/C Y/M M/C

Color Search

Buscar color. Farbsuche. Recherche de couleur. Ricerca colore. Pesquisar Cor.
色彩搜索 . 色彩搜索 . カラーの検索

Solid Inks and Tone Value

Tintas de colores sólidos y Valor tonal. Vollton und Tonwert.
Encres en aplat et valeur de tonalité. Inchiostri a tinta unita e valore tonale.
Tintas Chapadas e Valor Tonal.
实地油墨和音量 . 實地油墨和音量 . ベタおよびアミ点測定

50 K 50 C 50 M 50 Y 100 K 100 C 100 M 100 Y

25 K 25 C 25 M 25 Y 75 K 75 C 75 M 75 Y

40 K 40 C 40 M 40 Y 80 K 80 C 80 M 80 Y

Color Basics

for Pressroom

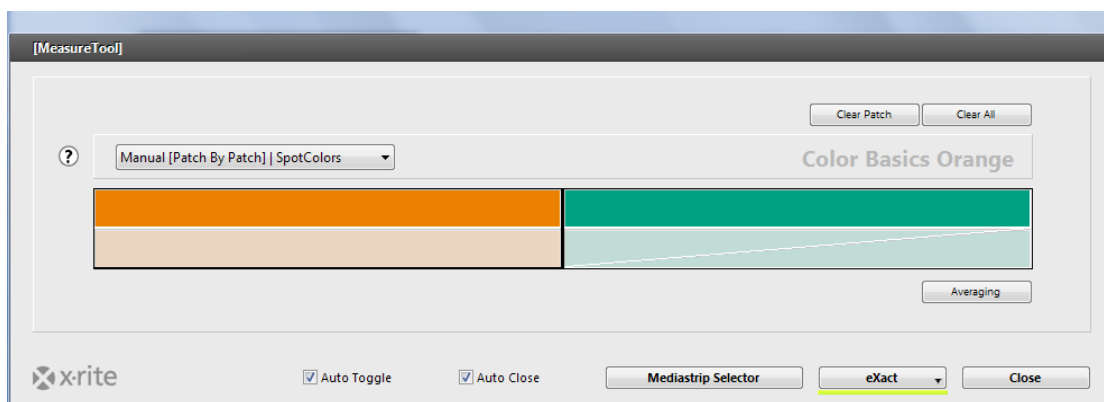
Color Compare

Comparación de colores. Farbvergleich. Comparaison de couleurs. Confronto colori.
Comparação de Cores. 色彩比较 . 最佳匹配 . カラーの比較

Reference	Sample	Sample	Sample
Referencia	Muestra	Muestra	Muestra
Referenz	Probe	Probe	Probe
Référence	Échantillon	Échantillon	Échantillon
Riferimento	Campione	Campione	Campione
Referência	Amostra	Amostra	Amostra
参考	样品	样品	样品
基準色	サンプル色	サンプル色	サンプル色

Densité d'i

- After the primary colors are measured, the next window shows the SpotColors. Locate the orange and green patches on your Color Basics sheet and repeat the process.

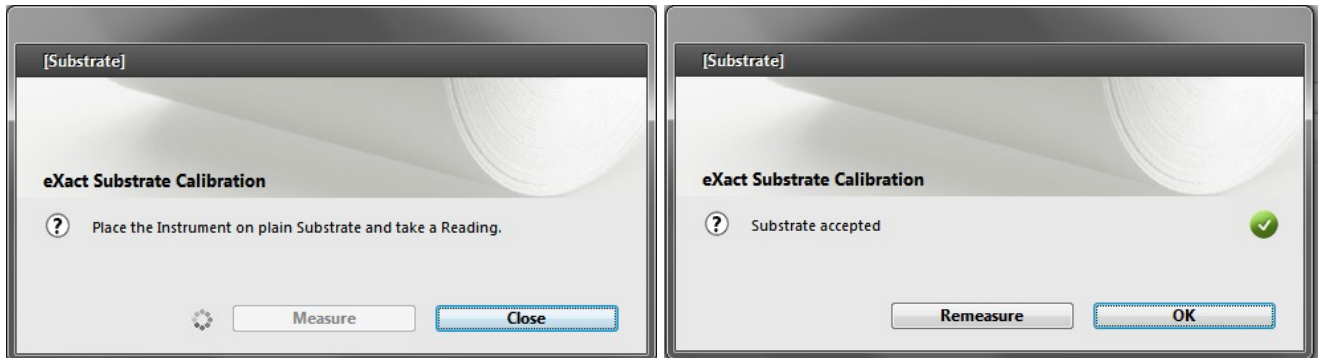


9. Please continue with the section Measurement and Data Review.

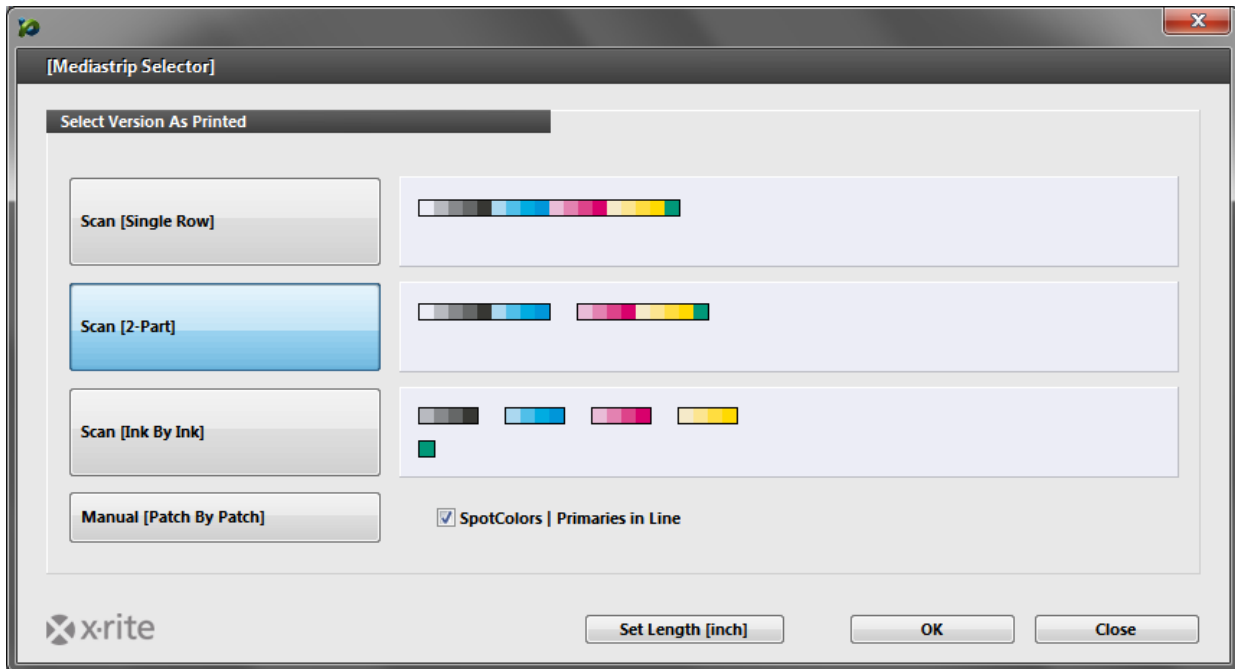
Measuring a Mediastrip using an existing Job

For eXact Scan

1. Connect your X-Rite eXact Scan spectrophotometer.
2. Launch the ColorCert software.
3. Click on Pressroom Tools, and select Load Job.
4. Select the sample Job Color_Basics_Scan_Job.ccj.
5. This opens the Job Details.
6. Click MeasureTool at the bottom of the window. A window appears asking for a measurement of the substrate. Use your eXact instrument to measure the Substrate. A message confirms that the Substrate has been accepted.

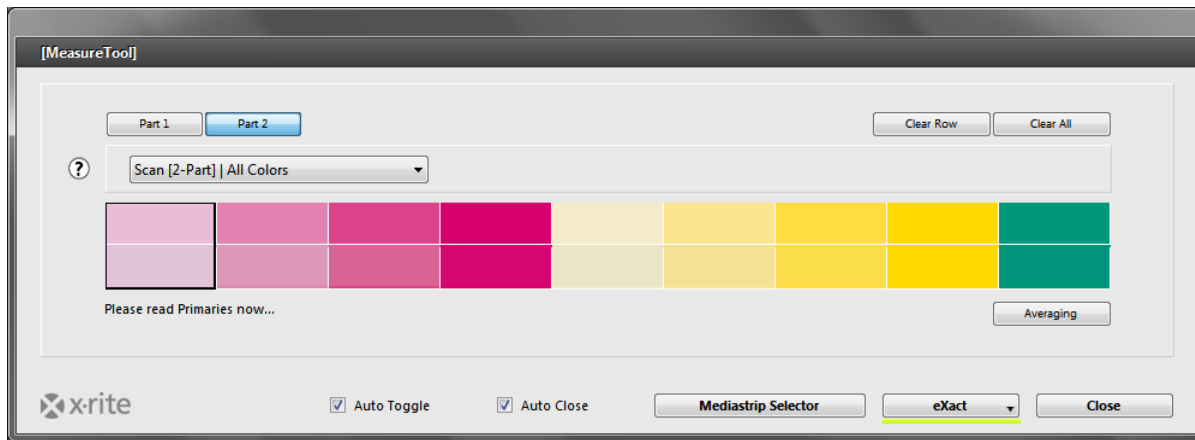
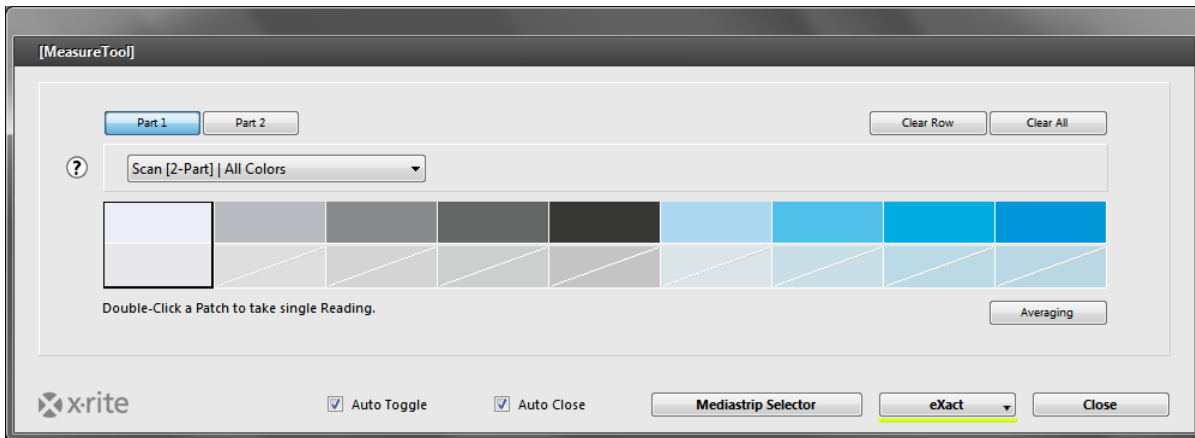


7. The Mediastrip Selector opens. Click Scan [2-Part].



8. Click OK.

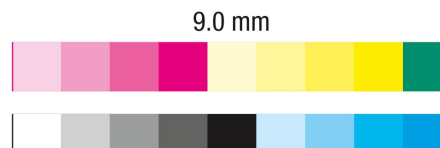
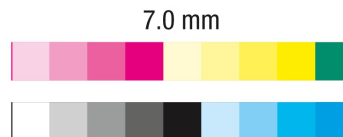
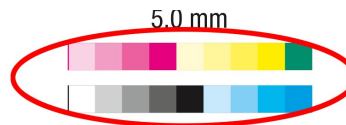
9. The MeasureTool opens. Scan the Mediastrip as indicated in the MeasureTool.



Solid Inks and Tone Value

▷ colores sólidos y Valor tonal. Vollton und Tonwert.
 ▷t valeur de tonalité. Inchiostri a tinta unita e valore tonale.
 Tintas Chapadas e Valor Tonal.
 音量、實地油墨和音量、ベタおよびアミ点測定

50 M	50 Y	100 K	100 C	100 M	100 Y
25 M	25 Y	75 K	75 C	75 M	75 Y
40 M	40 Y	80 K	80 C	80 M	80 Y



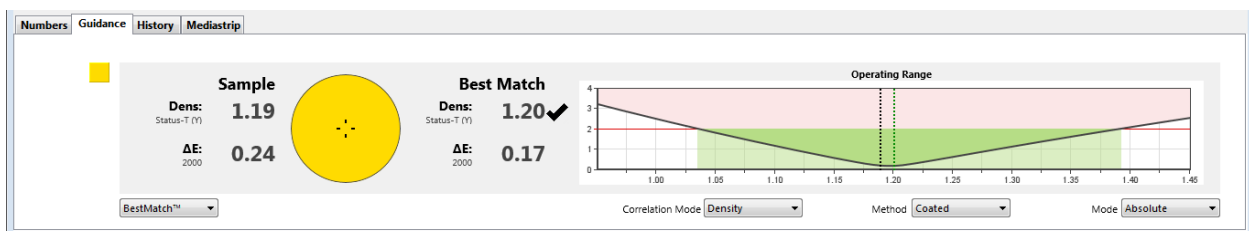
Measurement and Data Review

Once finished, the MeasureTool closes. As you look across the top of the window, items that have a green check mark have been completed successfully. Any items with a red X are areas that have measurements that have failed.

1. Click on the Primaries tab. You will see which primaries passed and which failed. The ΔE indicates the size of the error, and the tolerance shows the amount of error that is acceptable. Select individual colors to view their values. The screenshot below shows the values for yellow.

Unit	Target	Sample	Diff	Tolerance	Result	Method	Diff	Tolerance	Result
L	88.07	88.03	-0.04			$\Delta E00$ (1:1:1)	0.24	3.50	✓
a	-3.92	-3.90	0.02			Δ Density	0.02	± 5.00	
b	102.18	100.86	-1.32			ΔE	[1.32]		
C	102.25	100.93	-1.32						
h	92.19	92.21	0.02						
Strength (SUM)	100%	93%	-7%						
Density	1.21 [Yellow]	1.19 [Yellow]	-0.02						

2. The Numbers tab at the bottom of the window shows numeric details for the selected color. If you are using a Manager license you can temporarily adjust some of the calculations.
3. Select the Guidance tab to display the BestMatch graph. This graph provides the press operator a convenient reference for adjustments. If a color is out of tolerance, the press operator can immediately see if the defined tolerance is achievable with density or strength adjustments alone, or if ink adjustments are required. This saves time and material during make-ready.

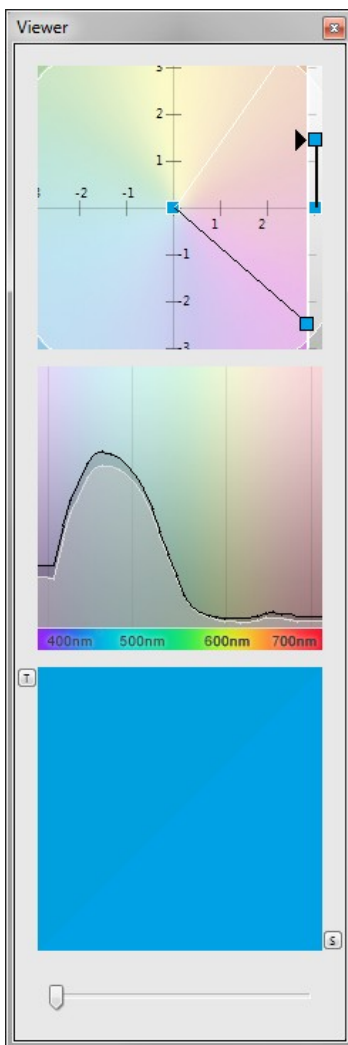


- The Viewer window will show the selected color in the graphs. The top graph shows the target value and the measured value with in L*a*b* Color Space. The second window shows the spectral curve of the measured color. The bottom window shows a relative comparison of the colors. These graphs can help you visualize the difference in the colors to assist in troubleshooting the Job.

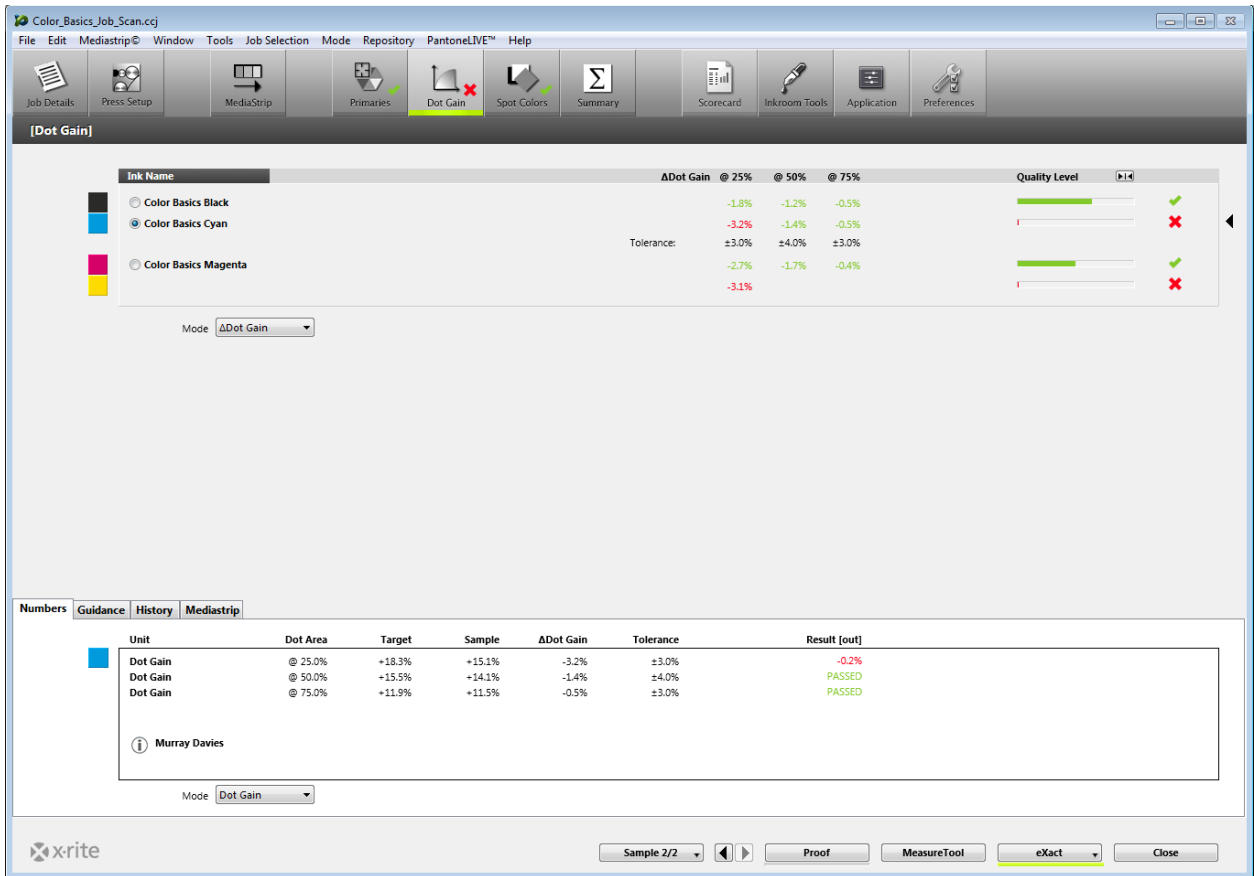
If the curves are very similar in shape but at different levels, you may be able to get a better match by adjusting the density on press. However, if the curves are very different, this may mean that you cannot match the color with any press adjustments.

If your Viewer doesn't open when selecting a color, select File from the menu bar and select Auto Show Color Viewer.

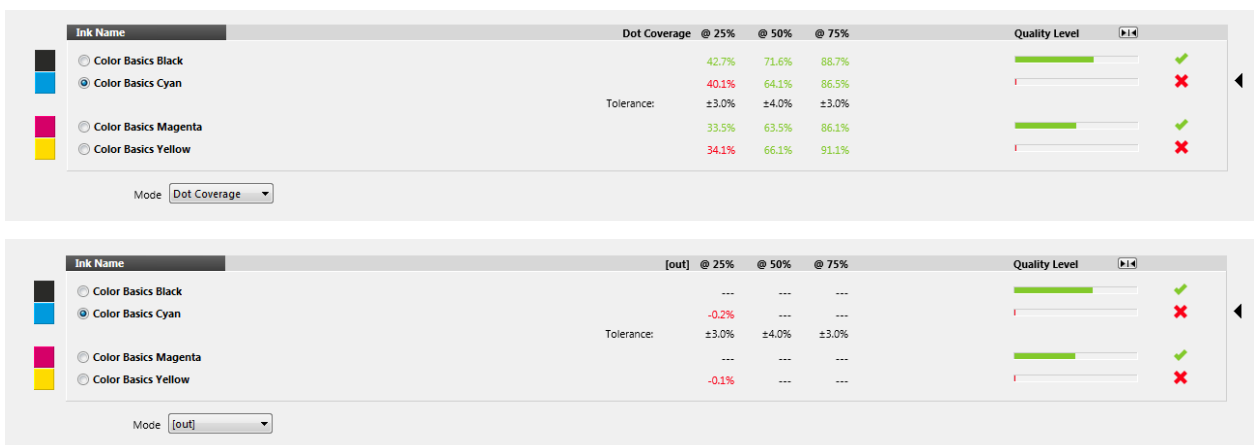
- Click on each of the Primaries in the list and observe the graphs.



6. Click on the DotGain icon.

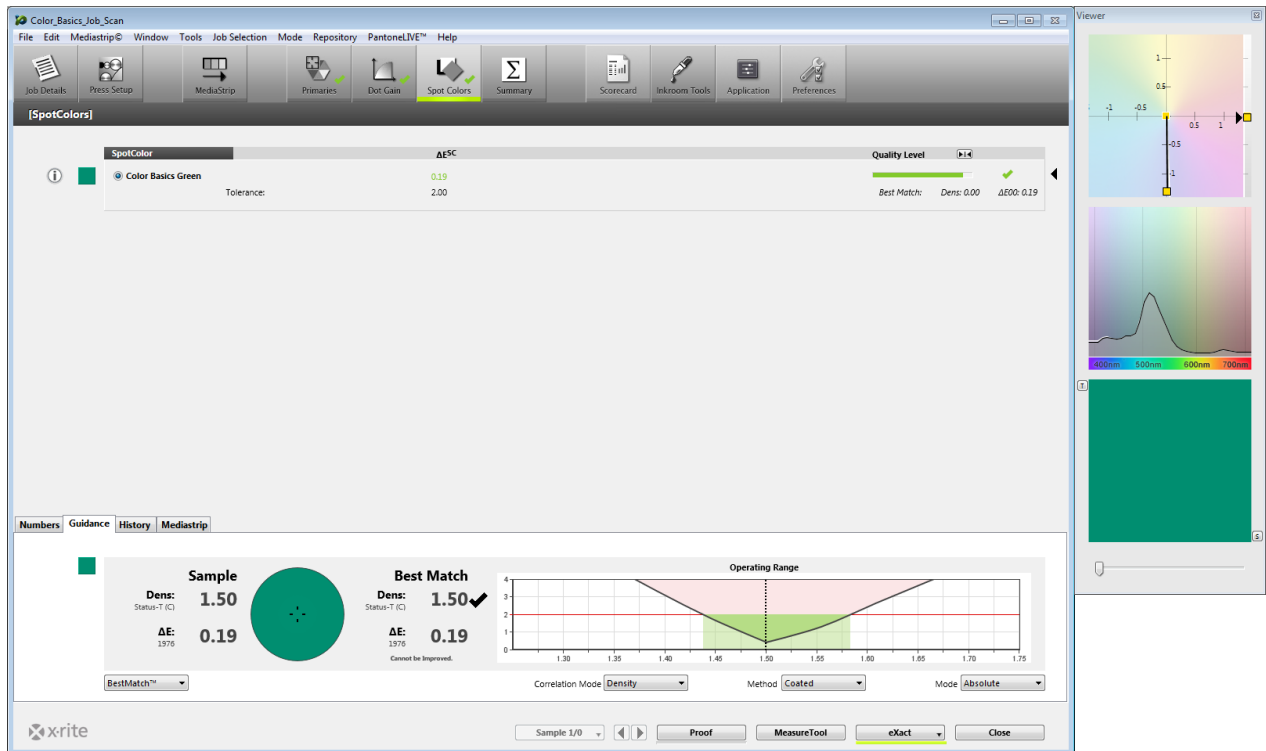


You can see the pass/fail status of the dot gain patches. Use the drop down list Mode to change the mode of the displayed values from delta to absolute Dot Value, or to highlight which results are how far out on the quality level.

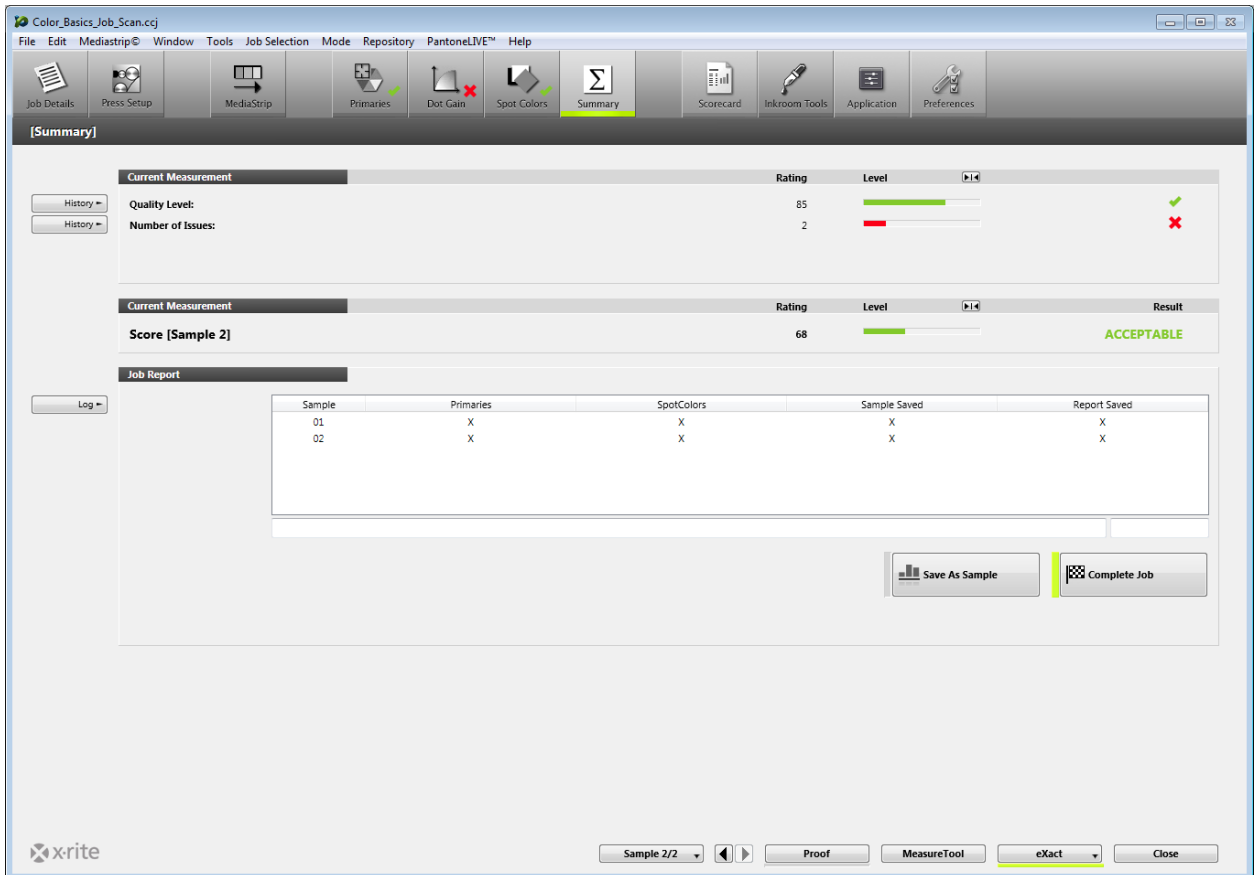


7. Now click the SpotColors tab. This is very similar to the Primaries tab.

NOTE: your window may show orange and red if you have opened the Color Basic Job

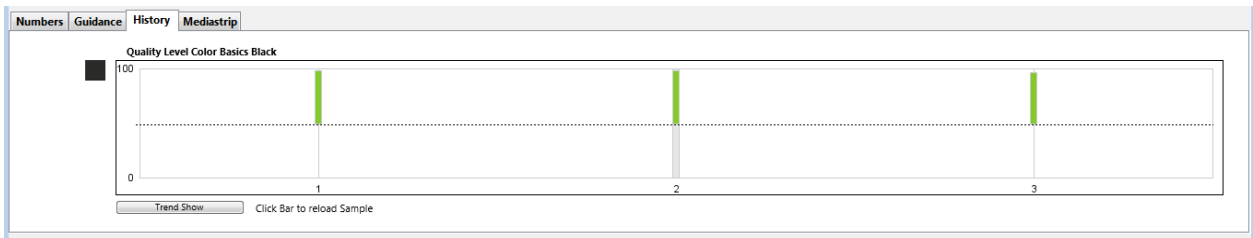


- Click the Summary tab. You will see how well this Job scored, based on the requirements defined in the Rules that were included in the Application that you loaded at the beginning of this step by step guide. The Job Report will include the data from several samples or measurements through a run. Click Save As Sample to add these measurements to the Job Report.



- To continue reading additional measurements simply continue measuring. After each measurement, you can view the results to help improve the production.

10. After you have saved a few sets of measurements as samples, click on the Primaries tab.
11. At the bottom of this page, click on the History tab to see the Quality Level of the selected color in the order the measurements were measured. After selecting a sample number from the bar graphs, all of the displayed measurements will be presented for that sample.



12. You can also use the navigation on the bottom to move between the Samples of each selected color. If you are using a Manager license, you also have access to the Trend Show.
13. You can click through different tabs and colors to see all of the results from that specific saved sample.
14. You can also see the Viewer window changes to show the selected measurement for the selected sample.
15. At any time during the run, you can see your Scorecard results. Click on the Scorecard tab.

Job Quality Levels	Rating	Level	
Primaries:	95	<div style="width: 95%;"></div>	✓
Dot Gain:	79	<div style="width: 79%;"></div>	✓
Spot Colors:	90	<div style="width: 90%;"></div>	✓
Substrate:	72	<div style="width: 72%;"></div>	✓
Quality Level:	84	<div style="width: 84%;"></div>	

Factor	Rating	Level
Rate of Compliance: [Samples 95% in Spec]	0.95	<div style="width: 95%;"></div>

Job Total	Rating	Level	Result
Score:	80	<div style="width: 80%;"></div>	ACCEPTABLE

16. This will show the results of the run. If you would like to see the results of the last sample measured, click on Current Sample. This can be used to see if your current production is conforming against the average of the whole run.
17. The overall score is a calculation using a combination of all measurements rated against the target and the rate of compliance. See separate documentation for more details.
18. After you have completed all measurements and have reviewed your data, return to the Summary tab, and click Complete Job to save all of the data. Depending on how the system is configured, the report will be sent to a printer, and/or an email will be sent.
19. Once you have completed the Job, no other measurements will be accepted in this Job. Close the Job.

This is just one way that ColorCert can be used in Production. Since every workflow varies, you can customize the process to fit your needs. Next we will look at how an Administrator can use ColorCert to set up and oversee the workflow.

Creating ColorCert Standards, Profiles, Rules, and Jobs

This section describes tools that are available when using the ColorCert Manager license to configure the print standards, tolerances and other quality control checks with ColorCert. Although your workflow may vary, this provides a good starting point for developing your own Rules, Standards, and Profiles.

Normally, some of the steps for creating Color Standard target values will require measurement of a customer approved color sample, perhaps a press sheet. If you wish to practice these steps on your own before creating standards to be used in production, you can use the Color Basics for Pressroom sheet that comes with the X-Rite eXact.

In many cases, you can load various files into the application instead of manually entering data. Before continuing, please familiarize yourself with the process of loading different file types from various available locations.

Loading files into ColorCert

PantoneLIVE Cloud database:

If you want to use colors from PantoneLIVE, you first have to setup the PantoneLIVE connection and select a required color pallet, you want to use.

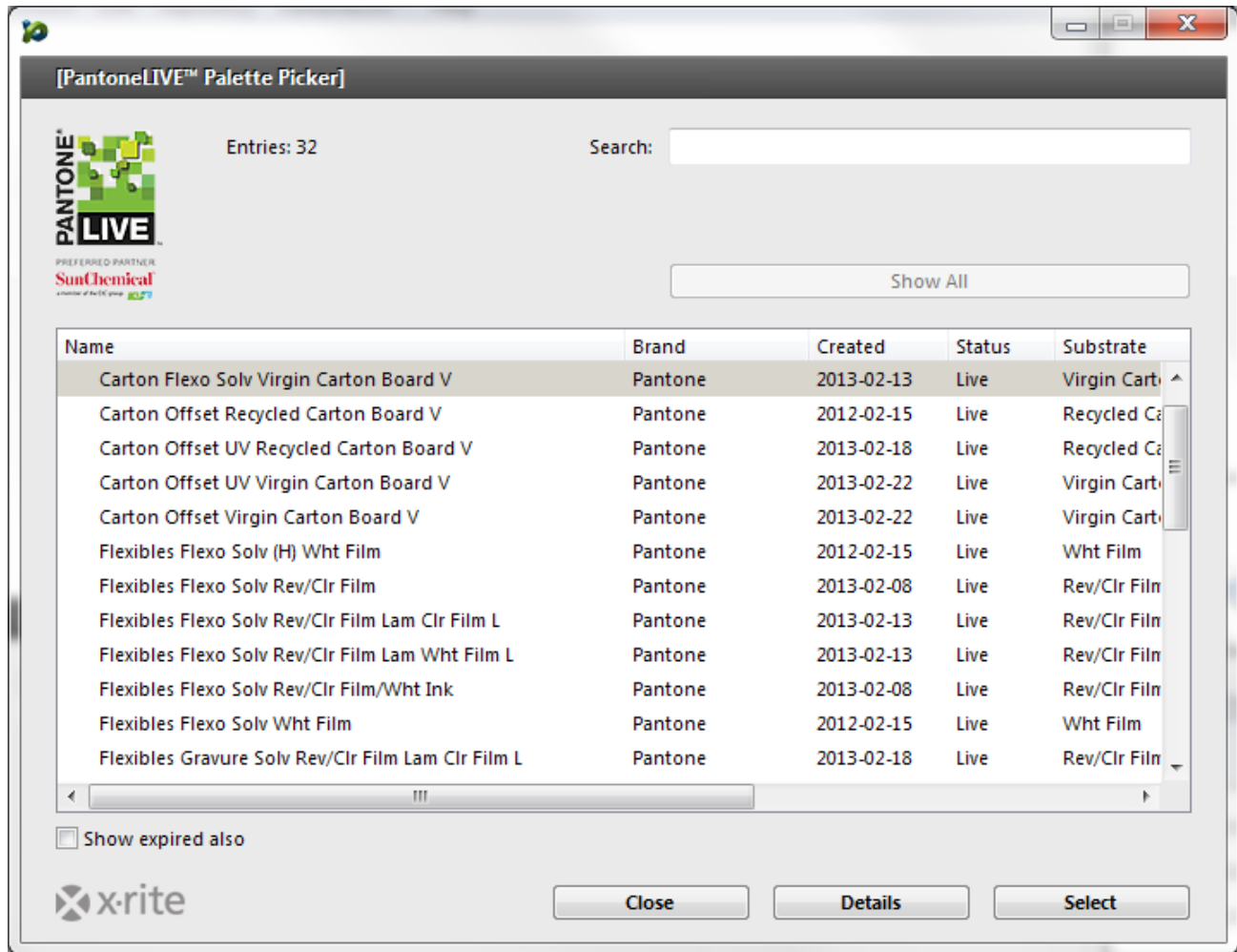
Adding PantoneLIVE login info to ColorCert:

1. In the ColorCert Chooser, select PantoneLIVE from the main menu and then User Login.
2. Enter the following server: <https://ws.pantone.live.com>.
3. Enter your My X-Rite username and password into the appropriate fields.
NOTE: Make sure this is the login that is associated with the ColorCert PantoneLIVE license.
4. Click Log In.

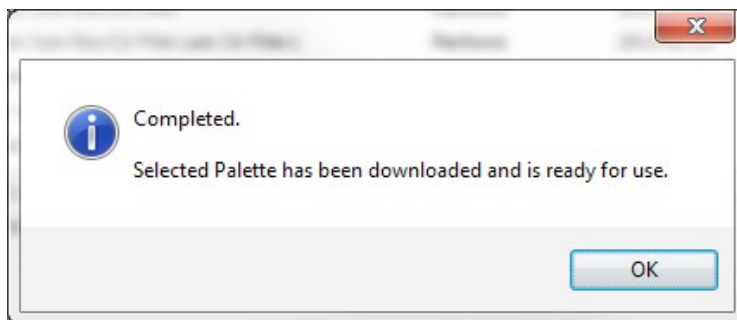
Selecting a PantoneLIVE palette:

1. In the Main Menu, click on Select Palette under the PantoneLIVE menu.
2. You see a list of palettes that you have access to, including any standard PANTONE Fandek palettes and other reference palettes that you are authorized to access.

3. Double-click the required palette for the Substrate that you need, or highlight it and click Select.



4. A dialog will display to let you know that the palette is ready for use. You can close the window, or leave it open if you need it again.



Selecting colors from a library (CxF, MIF, XTF, ColorCert Library, PantoneLIVE):

In the next chapter we will explain how to set up a Profile in ColorCert. On several places you will have the possibility to load colors from a digital library into your profile. This can be from external sources like a CxF, MIF, XTF files or a ColorCert Library that you can navigate to and open or it can be from the preselected PantoneLIVE palette:

- Load from ColorCert Library...
- Load from CxF Library...
- Load from MIF Library...
- Load from XTF Library...
- Load from PantoneLIVE™ ...

Once you have loaded a library from any of the external sources you are able to select a color from the Sample Selector Window like below. You can search after parts of the Color Name or you can use the drop down menus to filter the results. Click on More Options and you will see a lever that helps you to scroll to the relevant color shade or you can select Show Only Gray Shades.

The screenshot shows the [CXF Sample Selector] window. At the top, there is a search bar labeled "Search:". Below it are four dropdown menus for filtering. A checkbox labeled "More Options..." is checked. Below that is a checkbox labeled "Show Gray Shades" which is unchecked, and a color bar with a slider. A "Show All" button is located to the right of the color bar. The main area contains a table with the following columns: Name, Filter, Device Model, Device SN#, Observer, Illumination, and Substrate. The table lists several Pantone colors. At the bottom left, it says "43 colors". At the bottom right, there are "Cancel" and "Select" buttons.

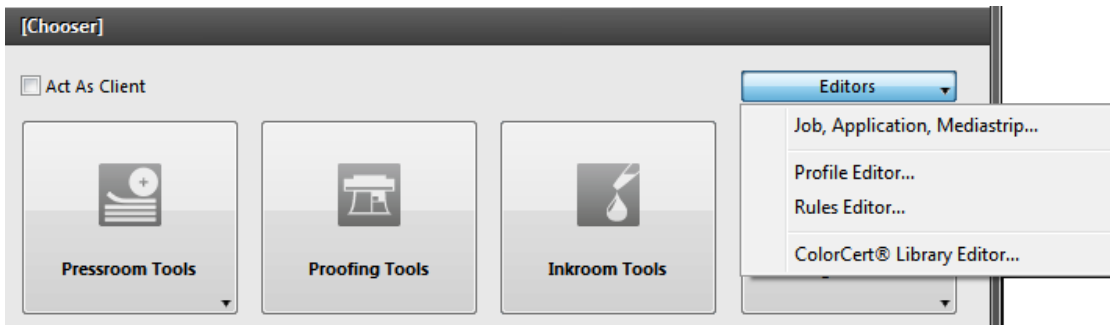
Name	Filter	Device Model	Device SN#	Observer	Illumination	Substrate
PANTONE 802 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate
PANTONE 2404 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate
PANTONE 2408 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate
PANTONE 2409 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate
PANTONE 2410 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate
PANTONE 5615 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate
PANTONE 350 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate
PANTONE 2254 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate
PANTONE 2255 C	[M0] No Filter	SpectroEye		TwoDegree	D50	Substrate

Creating Standards

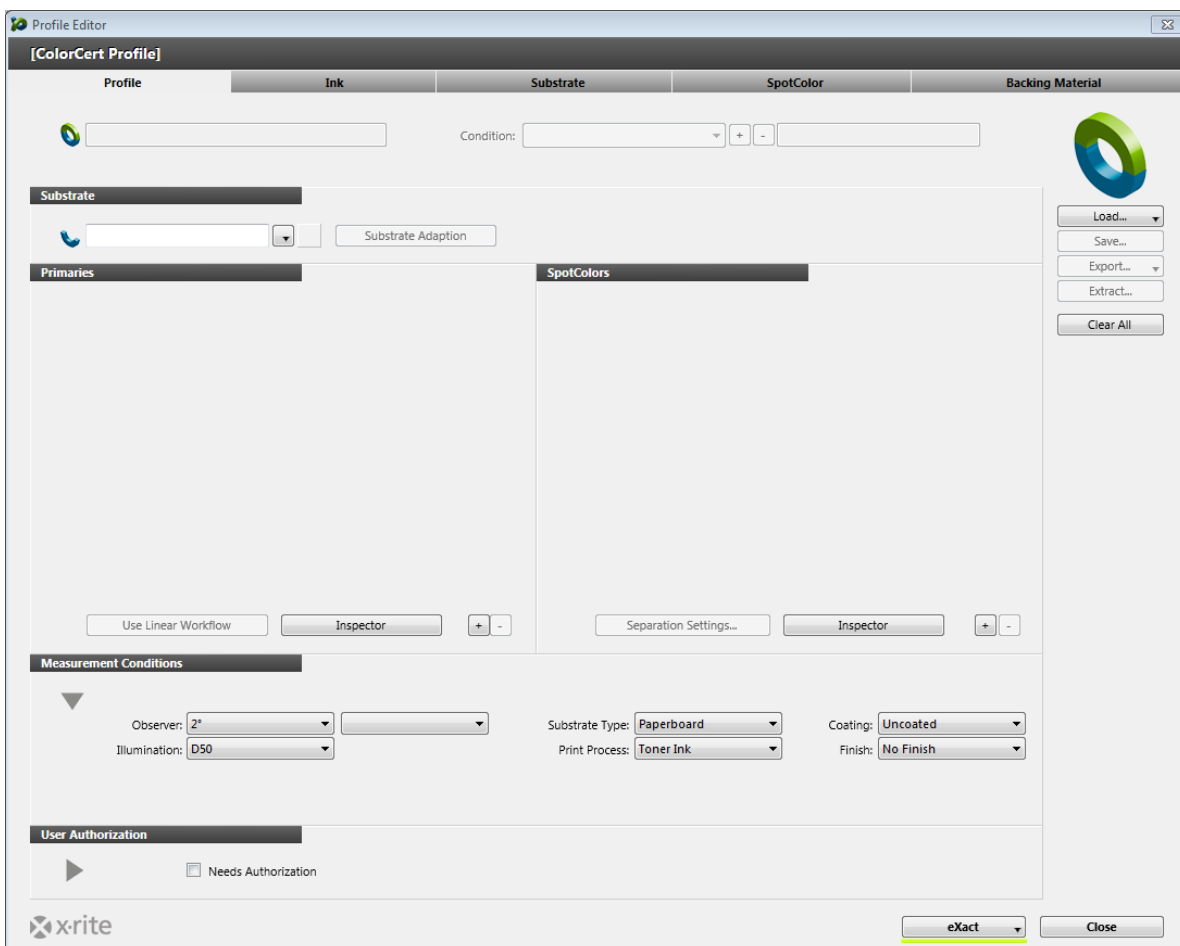
Before you can create a Profile, you need to have color standards. This section will guide you through the steps to measure your standards in ColorCert.

If you have Standards available, for example in CxF or MIF format, or if you are working with data from palettes in PantoneLIVE, you can continue with Building a Profile.

1. From the Chooser, click on Editors, and select Profile Editor.

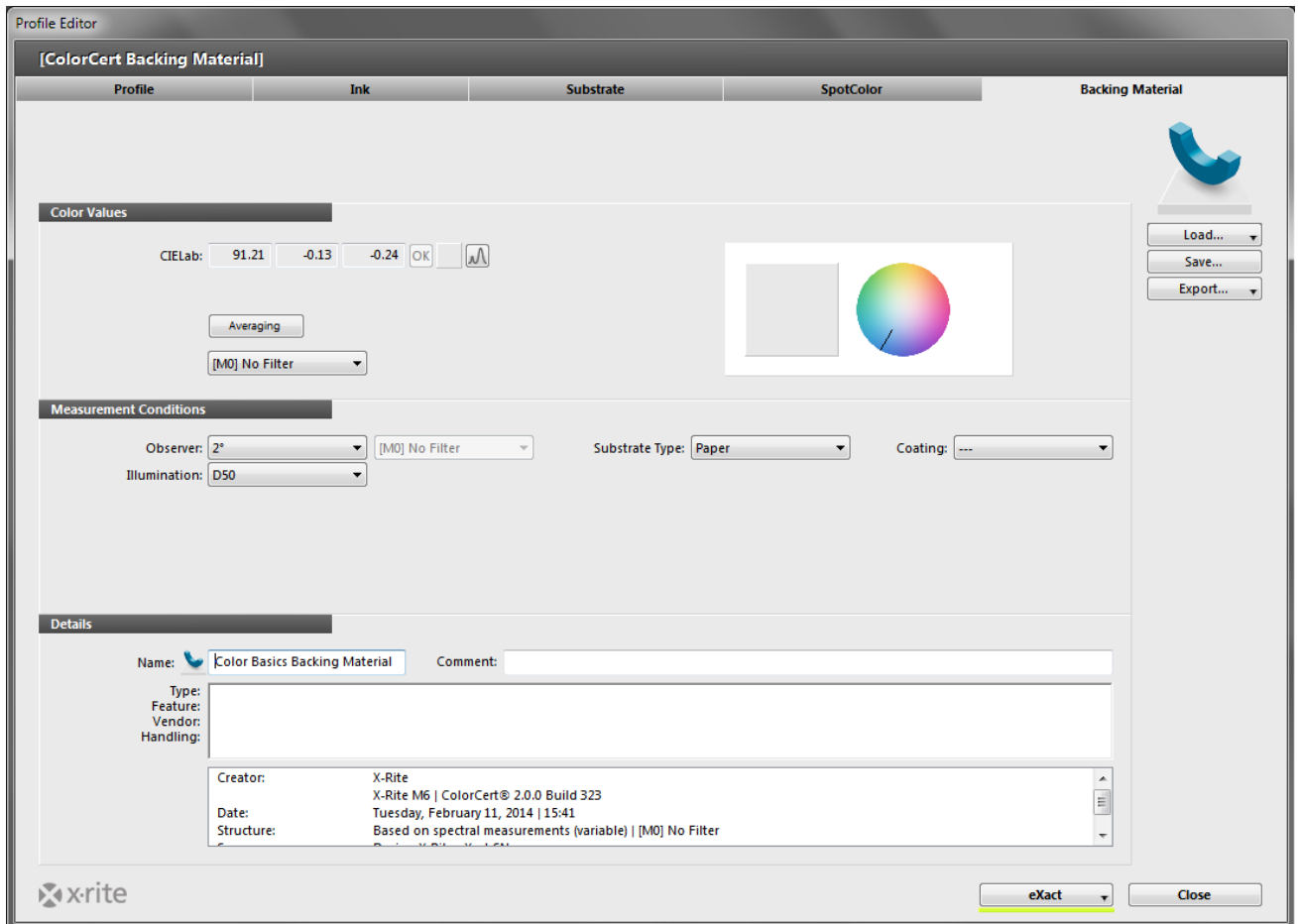


2. The first tab displays an empty Profile. The other tabs are for creating standards for Inks, Substrates, SpotColors that will be used in Profiles, and Backing Materials that will be used in Rules. These colors must be created locally in these tabs. As we go through these standards we will start on the right tab, and work our way left.



Backing Material Tab

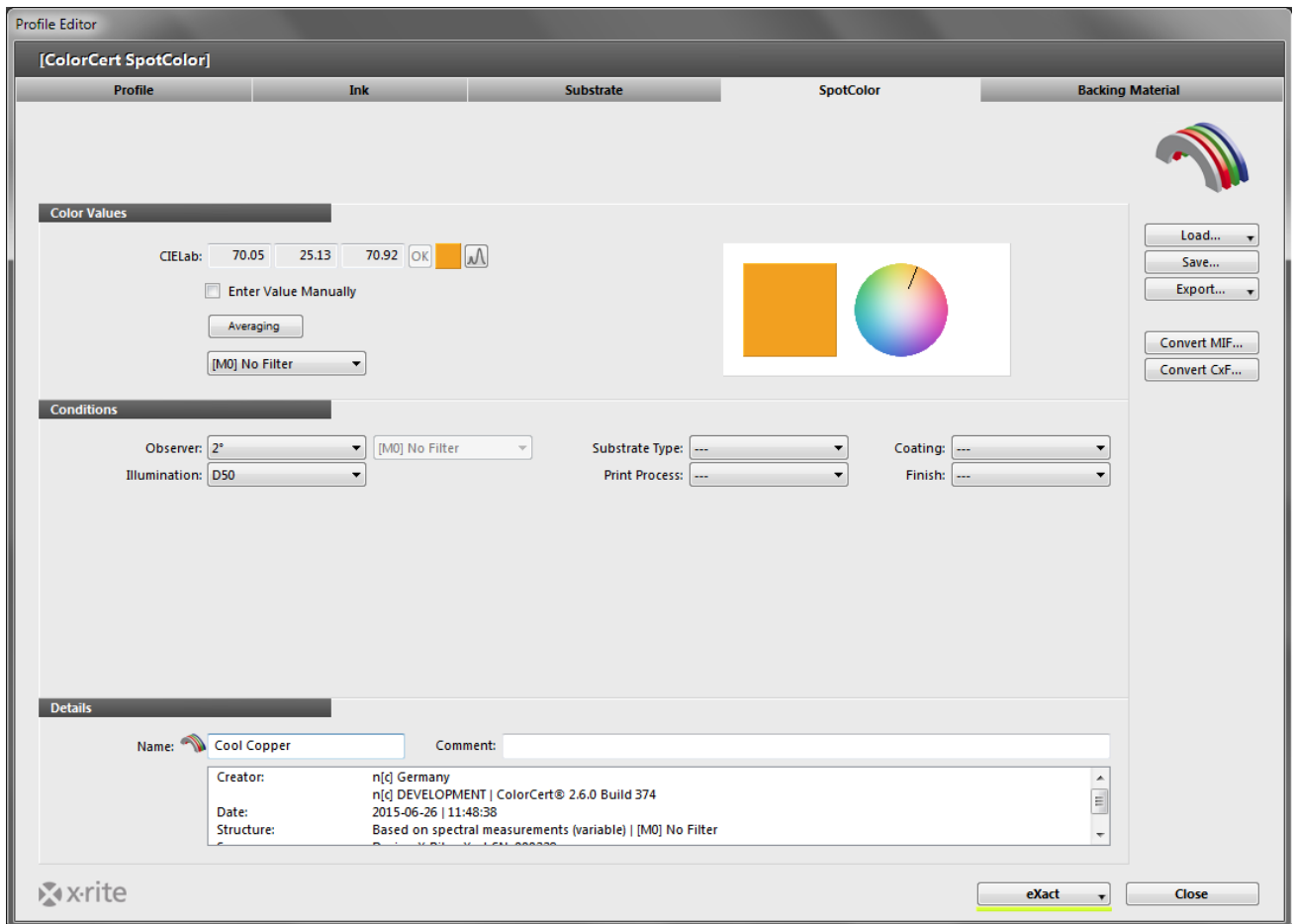
When measuring with a Substrate that is not opaque, the backing material will greatly influence the color readings. In some cases the Brand Owner will specify a backing material to be used. In others, you will need to provide this information. In many cases this will be a specified white backer as defined by ISO 13655. Munsell produces an ISO WHITE BACKING SHEET, part number ISO-N925/M12, for this purpose. Contact your X-Rite dealer for more information.



1. To measure a backing material, select the Backing Material tab.
2. Take a measurement with your spectrophotometer and the values will show up under Color Values. If your instrument supports different measurement conditions, you should select the condition that you are using for your production measurements.
3. While the backing should be uniform in color, you can use the Averaging button to trigger multiple measurements for an averaged value, then use the up and down arrows to select the number of measurements to average.
4. Take the required number of measurement for your averaged reading.
5. Under Measurement Conditions, check the Observer Angle and the Illumination that will be used in production.
6. Optional: Select the appropriate Substrate Type and Coating that will be used.
7. In the Details section, you must add the Name of your backer and any other Comments or information that you require.
8. Use the Save button to store this standard for future use in Rules.
9. Once the backing has been saved, you can create additional backings following the same steps.

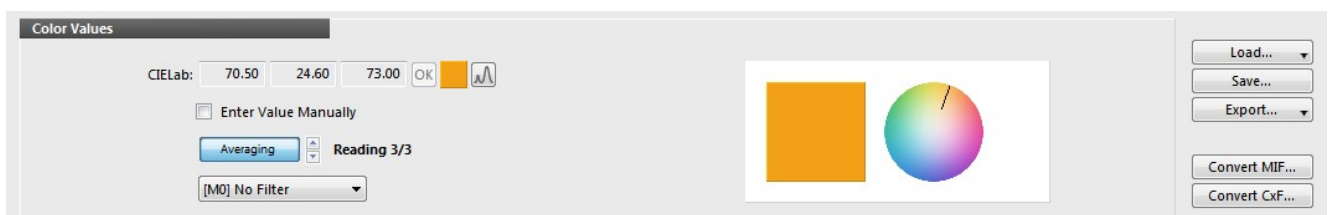
SpotColor Tab

In ColorCert, a SpotColor represents any important Brand Color in the Job, no matter how it is produced. This is a single value of a color that will be used in the Job, such a product package that contains a Brand Logo color. The Brand Owner may only be concerned with the specific color value of this Brand Logo, not whether it is produced with a solid PANTONE Color, or a tint of a PANTONE Color, or Process Colors. It is important is that the printed Logo Color is correct. These SpotColors may also represent build colors, such as red, green, and blue overprints or gray balance patches.



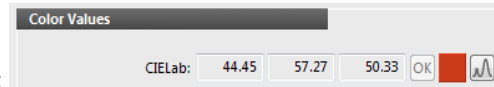
Measure SpotColors

1. Under the Color Values, if your instrument supports different measurement conditions, you should select the condition that you are using for your production measurements.
2. While the physical standard may look uniform in color, you can get better results if you use the Averaging button to trigger multiple measurements for an averaged value, then use the up and down arrows to select the number of measurements to average. Three is recommended.
3. Take the required number of measurement for your averaged reading.

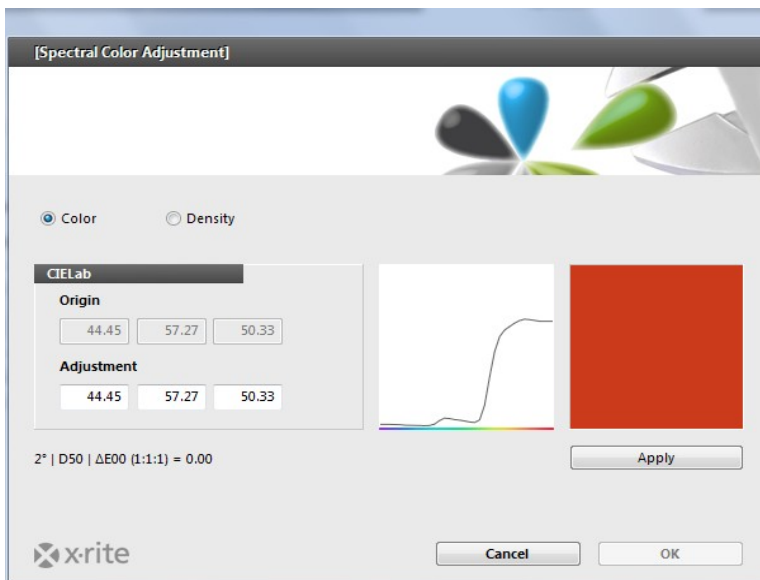


Adjustment of Measured SpotColor

If your measured color is intended to match a standard color and is very close, you can enter adjustments to the color. This will still provide spectral data, but the software will calculate an adjusted theoretical curve. This should only be used for small adjustments in the L*a*b* values because it is not as accurate as spectral data.



1. In the Color Values section, click this button:
2. Key in the specified L*a*b* values.
3. The software will calculate a curve and display a green checkmark. If the values are very different, the calculation will fail to provide a good curve, and the software will display a red exclamation mark.



Manual Entry of SpotColors

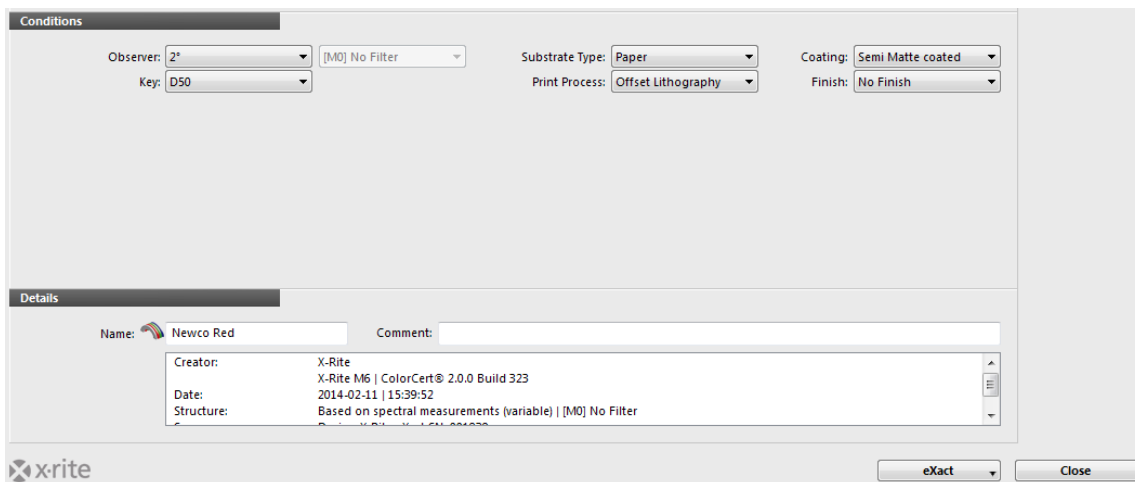
Colors can also be entered in the form of L*a*b* values. This option does not provide any of the benefits of spectral data.

1. Check the box next to Enter Value Manually.
2. Key in the values exactly as they are specified by the Brand Owner.

Saving Colors

Before you save the SpotColors for use in your Profiles, you will need to provide some additional information.

1. Under Measurement Conditions, check the Observer Angle and the Illumination that will be used in production.
2. Optional: Select the appropriate Substrate Type, Print Process, Coating, and the Finish that will be used.
3. In the Details section, add the Name of the SpotColor and any other Comments that you require.
4. Use the Save button to store this SpotColor standard for future use in Profiles.
5. Once your SpotColor has been saved, you can create additional SpotColors if desired.



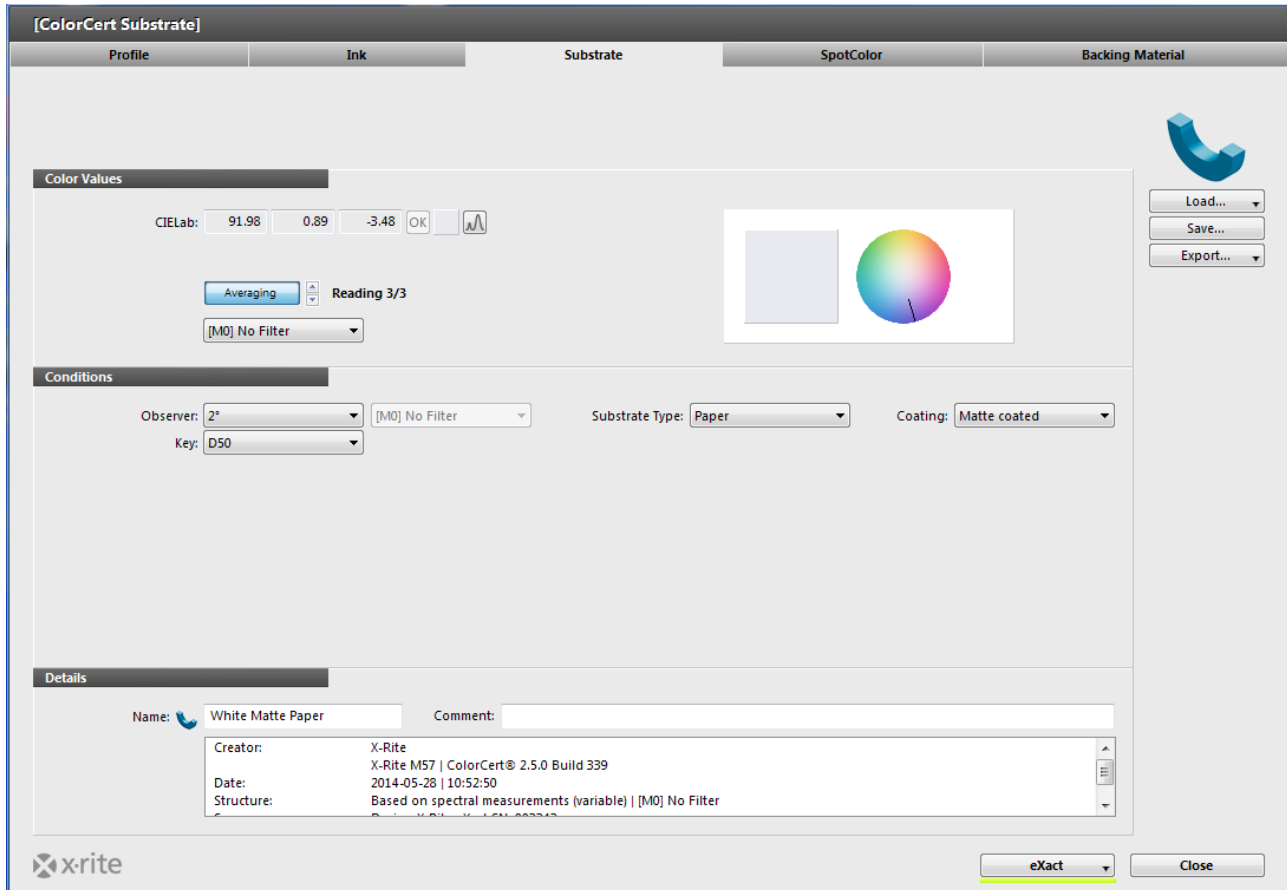
The screenshot shows the 'Conditions' and 'Details' sections of the software interface. The 'Conditions' section includes dropdown menus for Observer (2°), Key (D50), [M0] No Filter, Substrate Type (Paper), Print Process (Offset Lithography), Coating (Semi Matte coated), and Finish (No Finish). The 'Details' section includes a Name field (Newco Red), a Comment field, and a metadata table.

Field	Value
Creator:	X-Rite
Date:	X-Rite M6 ColorCert® 2.0.0 Build 323
Structure:	2014-02-11 15:39:52
	Based on spectral measurements (variable) [M0] No Filter

At the bottom of the interface, there is an 'eXact' dropdown menu and a 'Close' button.

Substrate Tab

The importance of the Substrate Color should not be overlooked. Some say that the Substrate is the fifth color of 4-Color Process Printing, while others call it the first color of printing! The color of the Substrate has an impact on all colors, even solid 100% coverage areas. Most ink is not completely opaque, so the paper color is always affecting the final printed color. Each Substrate sample can vary, in fact on each sample there can be significant variation across the sample.



Measure Substrates

1. Under the Color Values, if your instrument supports different measurement conditions, you should select the condition that you are using for your production measurements.
2. While the Substrate sample may look uniform in color, you can get better results if you use the Averaging button to trigger multiple measurements for an averaged value, then use the up and down arrows to select the number of measurements to average (three is recommended).

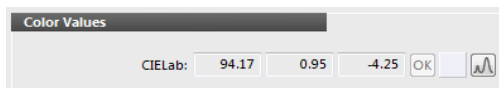
3. Take the required number of measurement for your averaged reading.



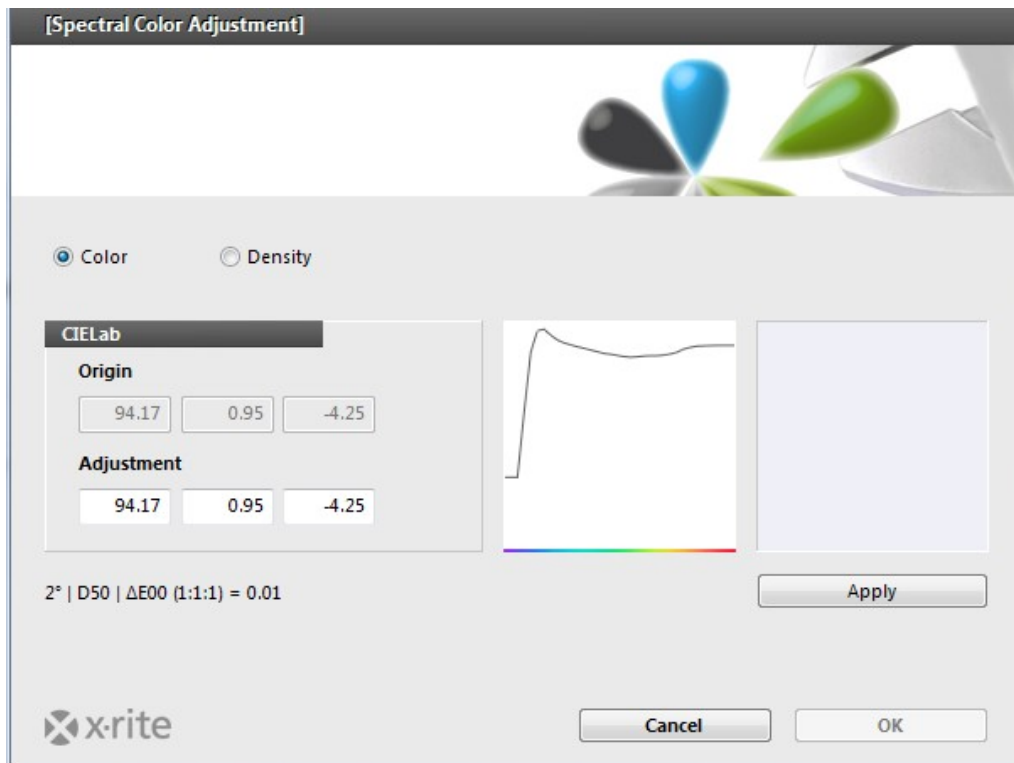
Adjustment of Measured Substrate Color

If your Substrate is intended to match a standard paper color and is very close, you can key in adjustments to the color. This will still provide spectral data, but the software will calculate an adjusted theoretical curve.

1. In the Color Values section to the right of the CIE Lab values, click this button:



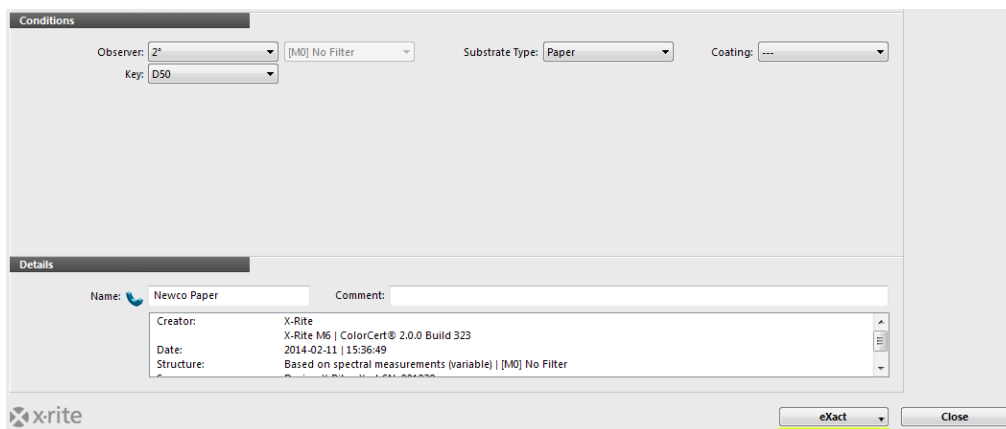
2. Key in the specified Substrate values.
3. The software will calculate a curve and display a green checkmark. If the values are very different, the calculation will fail to provide a good curve, and the software will display a red exclamation mark.



Saving Substrates

Before you save the Substrates for use in your Profiles, you will need to provide some additional information.

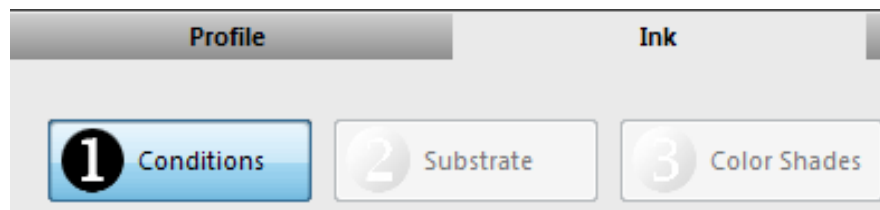
1. Under Measurement Conditions, check the Observer Angle and the Illumination that will be used in production.
2. Optional: Select the appropriate Substrate Type and Coating that will be used.
3. In the Details section, you must add a Name of your Substrate, and any other Comments that you require.
4. Use the Save button to store this Substrate standard for future use in Profiles.
5. Once your Substrate has been saved, you can create additional Substrates if desired.



Ink Tab

A ColorCert Ink includes tint values and may or may not be included in process builds of color in the Job. This is different than a ColorCert SpotColor that only represents one color value. Therefore, you will need to provide more information for an ink. Inks include the solid color and the tint percentage values. These colors can be Process Colors of cyan, magenta, yellow and black. If you also want to check the tints of your SpotColor, you should create it as a ColorCert Ink instead of a ColorCert SpotColor. It is assumed that you have calibrated your printing plates, and that you have good press samples to measure for each of the 25%, 50%, and 75% tint values of each of your colors.

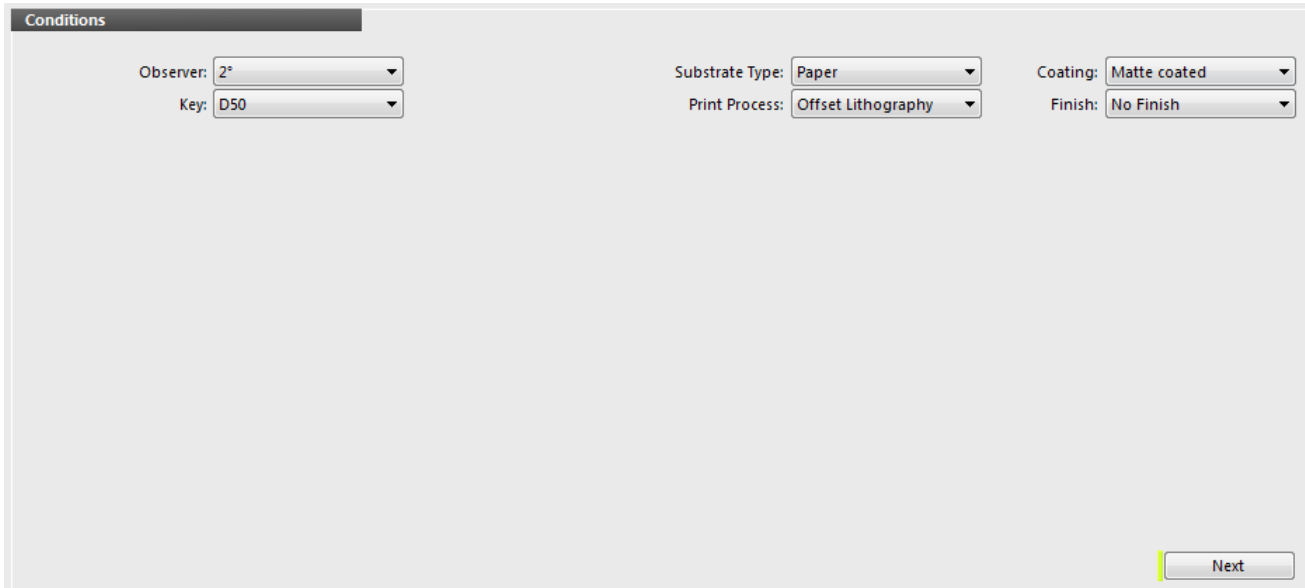
Inks are created in three steps: Define conditions, select the Substrate, and then provide the color shades. These steps are represented by the buttons near the top of the ink window.



Step 1: Conditions

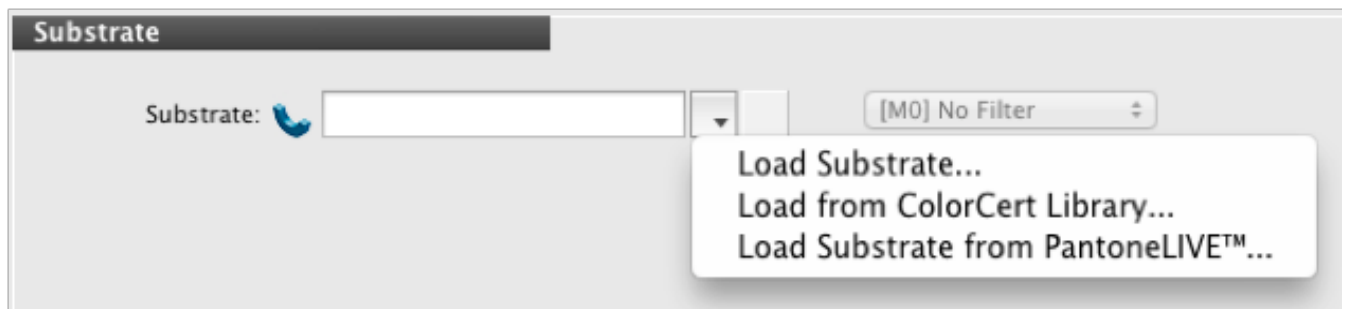
On the first step, you will need to provide some information about your ink.

1. Under Measurement Conditions, check the Observer Angle and the Illumination that will be used in production.
2. Optional: Select the appropriate Substrate Type, Print Process, Coating, and the Finish that will be used.
3. Click Next to go to the next step.



Step 2: Substrate

1. Click on the down arrow button to the right of the Substrate name field.
 - If you want to Load a Substrate from a standard that you have created, the software will take you to the default location for storing your Substrate files. Select your Substrate and click Open.
 - If you wish to Load from ColorCert Library, see the “Load Substrate from Local Libraries” instructions in the “Substrate Tab” section.
 - If you would like to Load a Substrate from PantoneLIVE, see the “Load Substrates from the PantoneLIVE Cloud Database” instructions in the “Substrate Tab” section.



2. After you select your Substrate Color, the software will automatically advance to the next section.

Step 3: Color Shades

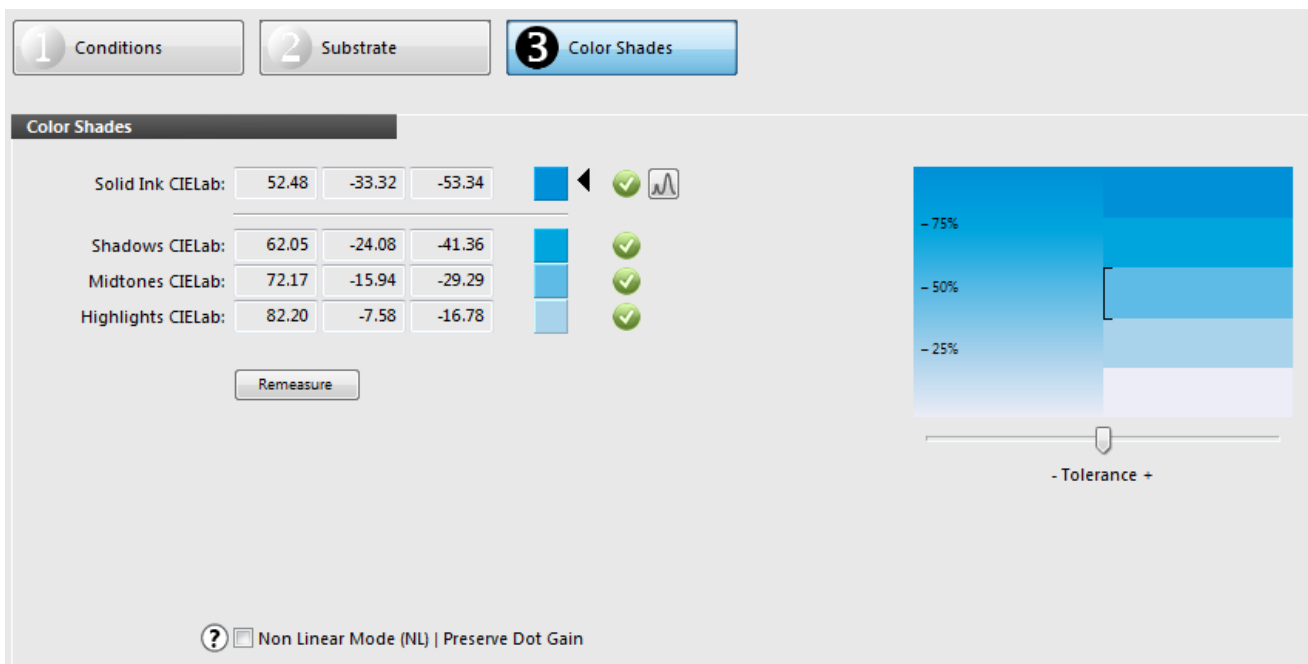
Inks include the solid color and the tint percentage values. There are two different ways to capture the Color Shades for an Ink.

Plate Curve Modes

Linear Mode:

This process assumes you don't have a plate curve for your SpotColor yet and you want to capture the behavior of the color shades from full tone to the substrate. At the end of the process you'll have captured the ideal visually equal distant 75%, 50% and 25% tints as spectral data. This can be captured from a drawdown with a vignette or a color bar with some screen patches. As you take measurements of the sample, the software will alert you if the tint percentage value is too high or too low and will not proceed unless you measure a value that helps to interpolate the correct required shade.

1. Measure the Solid.
2. For the Shadows measure a Tint close to a visual 75% shade. As you measure you will see a colored arrow pointing up or down to indicate that the visually correct 75% shade is darker or lighter.
3. Measure as indicated a tint level higher or lower to allow the Software to interpolate the correct shade.
4. Repeat this with the Midtones and Highlights.
5. In the Details section add a Name of your Ink and any other Comments that you require.
6. Click Save. This will prompt you with the name of the file and the default location to save it. Click Save again.



The screenshot shows the 'Color Shades' section of the software interface. It features three tabs: '1 Conditions', '2 Substrate', and '3 Color Shades'. The 'Color Shades' tab is active and displays the following data:

Category	L1	L2	L3	Visual	Status
Solid Ink CIELab:	52.48	-33.32	-53.34		
Shadows CIELab:	62.05	-24.08	-41.36		
Midtones CIELab:	72.17	-15.94	-29.29		
Highlights CIELab:	82.20	-7.58	-16.78		

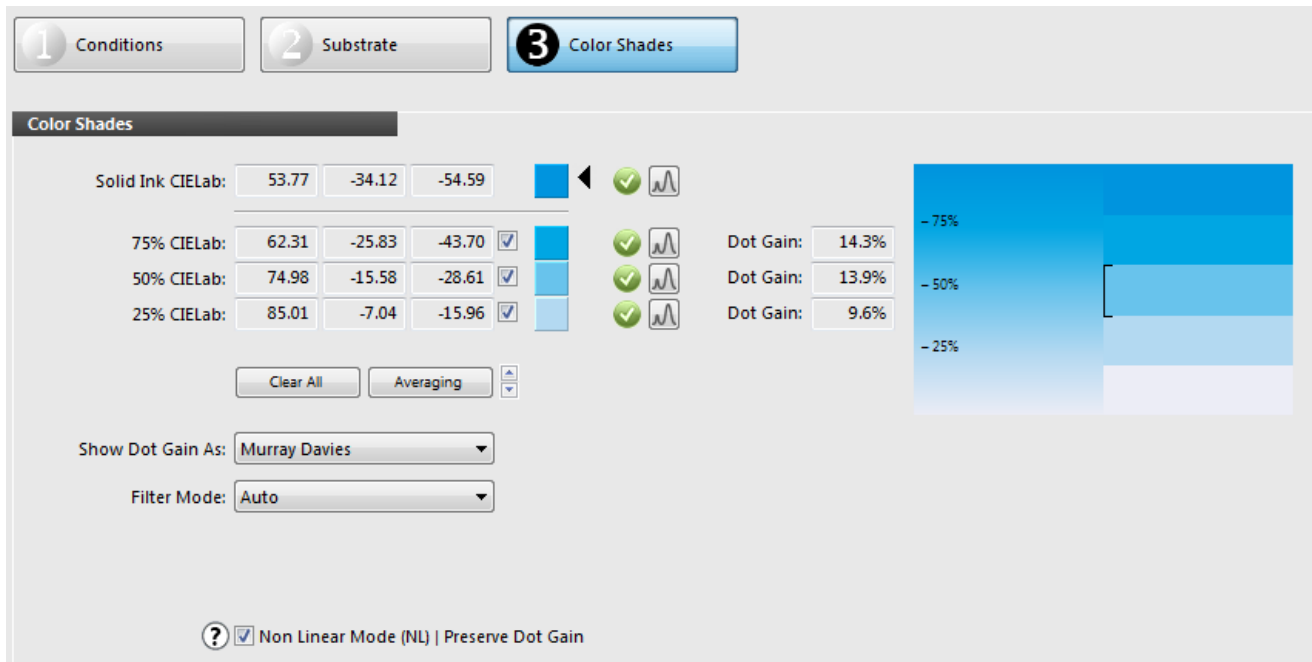
Below the data is a 'Remeasure' button. To the right is a graph showing a color gradient from dark blue to light blue, with labels for -75%, -50%, and -25% tints. A bracket indicates a tolerance range. Below the graph is a '- Tolerance +' slider.

At the bottom left, there is a checkbox labeled '? Non Linear Mode (NL) | Preserve Dot Gain'.

Non-Linear Mode | Preserve Dot Gain:

This process allows you to capture a specific dot gain that you want to replicate on press. This should be captured from an approved fingerprint or print sample with screen values for 75%, 50%, 25%.

1. Put a check in the box marked Non-Linear Mode (NL). This will preserve the dot gain values of the patches and use them as your target values.
2. If you would like to average your measurements from multiple press sheets, click on the Averaging button, and select the number of readings you would like to average.
3. Measure the Solid and Tints in order that they appear on screen. If you are averaging, you will be prompted to take the selected number of readings.
4. Your measured print dot gain values will be displayed to the left of the color preview. This is using the dot gain calculation method that is listed under Show Dot Gain As. You have three choices:
 - Murray Davies: Dot Gain based on density, typically used for CMYK and predefined target dot gain values like ISO or G7. Not recommended for SpotColors.
 - Relative Colorimetric: Dot Gain based on the spectral data with the target to have visually equally stepped shades.
 - ColorCert Relative Colorimetric: based on Relative Colorimetric but with a further improved calculation. If you have 0.0% Dot Gain shown as ColorCert Relative Colorimetric you have the same result as the linear Mode and visually ideally stepped shades.
5. In the Details section add a Name of your Ink and any other Comments that you require.
6. Click Save.



Color Shades

Solid Ink CIELab:	53.77	-34.12	-54.59	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
75% CIELab:	62.31	-25.83	-43.70	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dot Gain: 14.3%
50% CIELab:	74.98	-15.58	-28.61	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dot Gain: 13.9%
25% CIELab:	85.01	-7.04	-15.96	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dot Gain: 9.6%

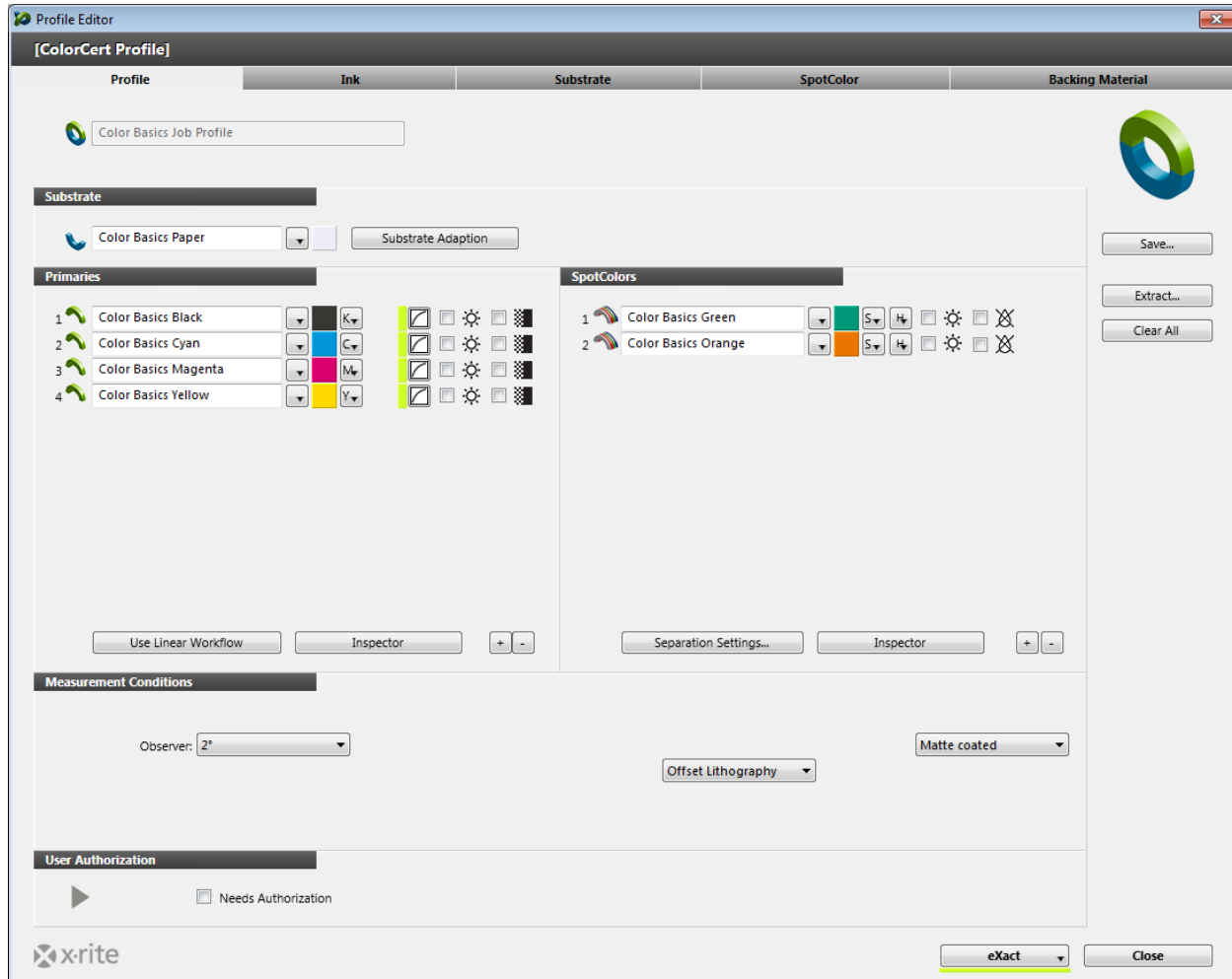
Show Dot Gain As:

Filter Mode:

Non Linear Mode (NL) | Preserve Dot Gain

Creating a Profile

To build your Profile, select the Profile tab. A Profile can be built directly from data in palettes in the PantoneLIVE cloud, or from the standards that you create locally, as described in the previous section “Creating Standards.” As you can see in the screen below, a Profile is made up of standards for Substrate, Primaries and SpotColors, as well as the measurement and print conditions.



Substrate

When you click on the button next to the Substrate name field, you will have three options:

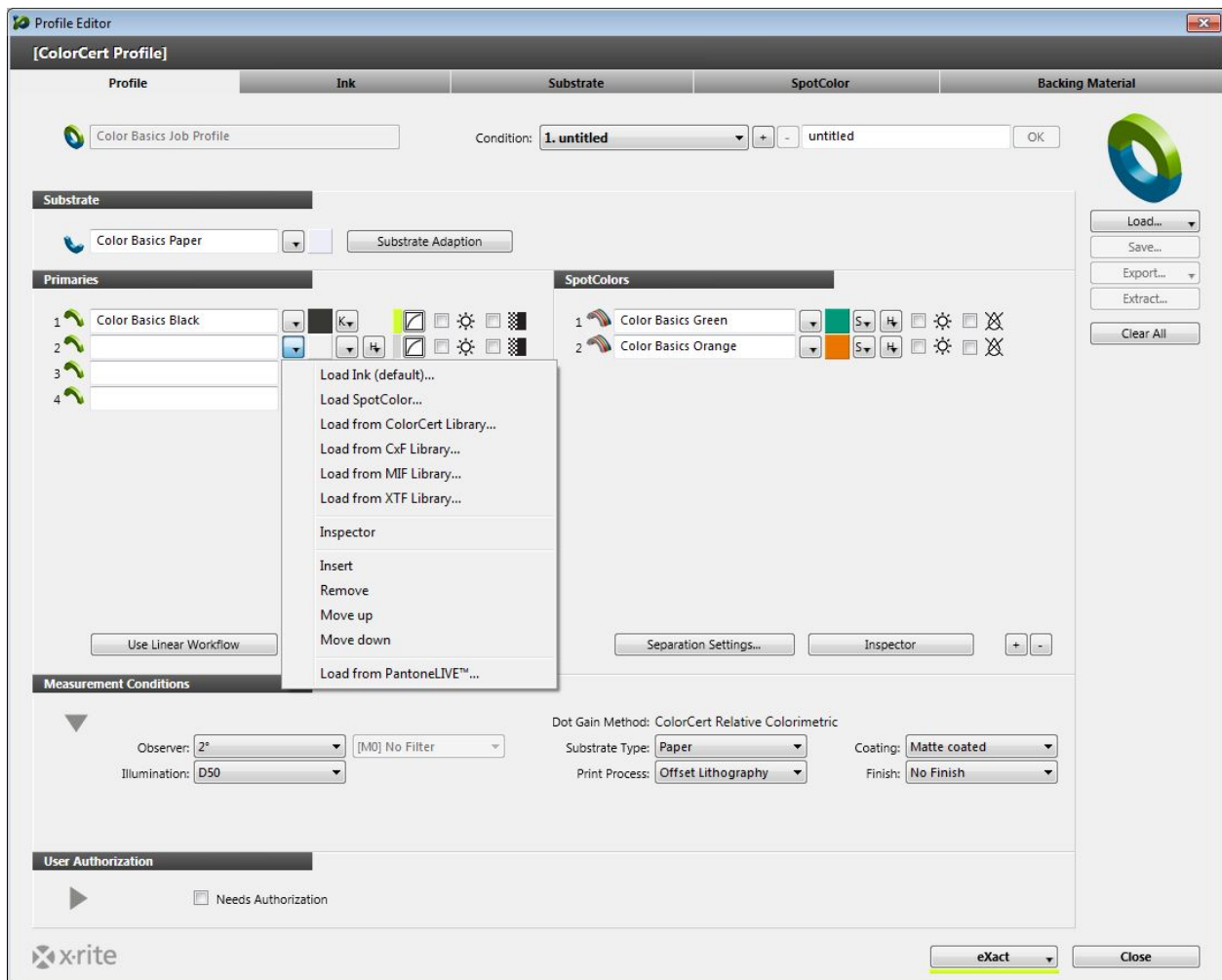
1. Select a Substrate Color that you created and saved in ColorCert.
2. Select a ColorCert library that has a Substrate Color, and navigate to the library file.
3. Select a PantoneLIVE palette to retrieve the Substrate Color.

The different ways are described in the section Loading Files into ColorCert.

Primaries

Primaries are the colors in your production that will be printed with tints. These may be used in Process Color Solid Colors, or simply in Single-Color Tints and Gradients. You can load colors from several sources.

- To set the number of primaries, click the + button near the blank list of Primaries. Each click will add a field to add a primary ink in this Job.
- To remove a color from the list, use the – button.
- For each Primary in the list, click on the button to the right of the Primary name field to see the list of options for loading a Primary Ink.



Load SpotColors and Inks

The different ways of loading color files are described in the section Loading Files into ColorCert.

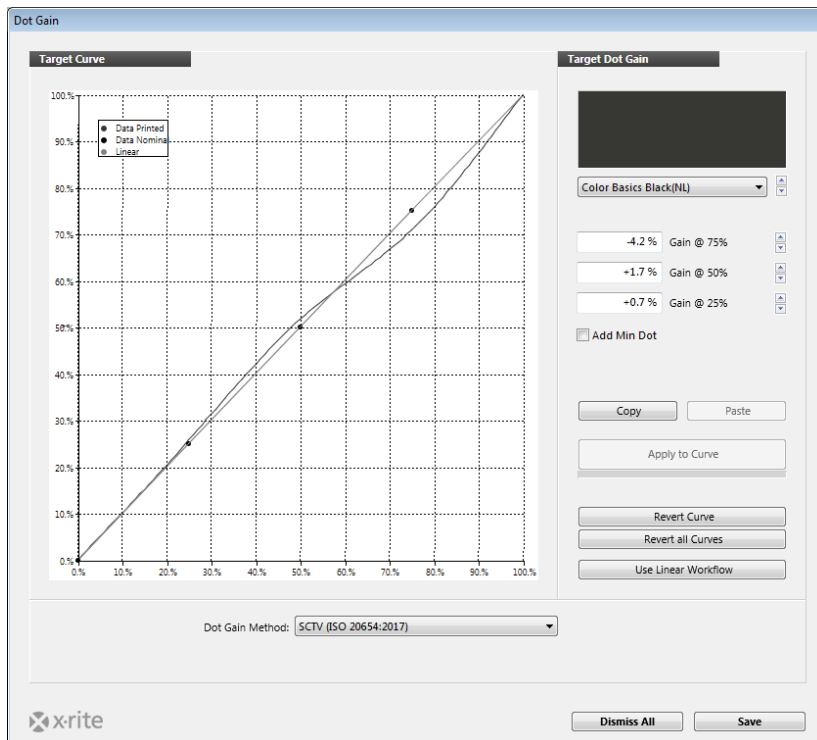
Other Primary Settings

Tolerances for the Black, Cyan, Magenta, and Yellow primary colors are defined in the ColorCert rules. Other primary colors (or CMYK colors in jobs created with ColorCert prior to version 3.0) will have tolerances defined by their priority. Next to the ink colors are drop down lists for Priority (H, M, or L). This setting links these colors to the tolerances defined in the Rules identified as high, medium, or low importance.

- For critical colors that must have the highest importance, you will assign a high priority (H). This has a lower ΔE tolerance number in your Rule. Colors with a medium level (M) of importance will get a higher ΔE number. The lowest priority (L) colors will receive the highest ΔE number.
- In some cases these numbers may come from a print standard, but other times it is a value negotiated between Print Supplier and the Brand Owner.
- You will want to make note of the tolerance values assigned to L, M and H for use in your Profiles that will be used with this set of Rules.

Next to the Priority, you can amend the Dot Gain curves. You can also change the Dot Gain Method here.

- Murray Davies: Dot Gain based on density, typically used for CMYK and predefined target dot gain values like ISO or G7. Not recommended for SpotColors.
- Relative Colorimetric: Dot Gain based on the spectral data with the target to have visually equally stepped shades.
- ColorCert Relative Colorimetric: based on Relative Colorimetric but with a further improved calculation. If you have 0.0% Dot Gain shown as ColorCert Relative Colorimetric you target to have visually ideally stepped shades.
- SCTV (ISO 20654:2017): ISO defined standard for SpotColor tint measurement. This is the preferred method for non CMYK colors.



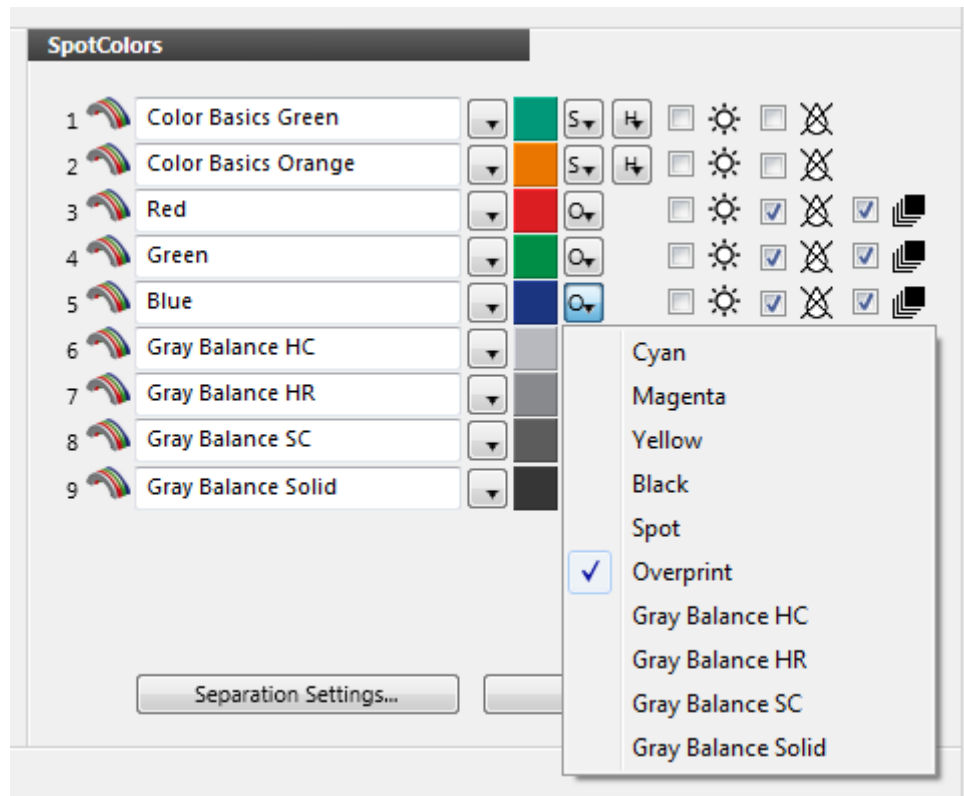
Further icons refer to a secondary lighting condition [2LC], Combo Plate Support [M], and Metallic Ink. These will be discussed in the Rules Section.

SpotColors

SpotColors can be added exactly as you added Substrates and Inks: use the + button to add a field, and the – button to remove one. The difference is that these colors will not include a range of tints and a solid. They can only have one value. Any colors loaded that have tints and solids will only be used as a solid.

ColorCert 3.0 adds several options to define SpotColors:

- As a true SpotColors, a special color printed on press with a unique ink formulation.
- A SpotColors as a build of two or more process colors.
- As an overprint patch (Magenta/Cyan, Yellow/Cyan, or Yellow/Magenta)
- A gray balance patch
- Cyan, Magenta, Yellow, and Black may also be defined as SpotColors. In this case only the solid (no tint values) will be measured and evaluated.



Measurement Conditions

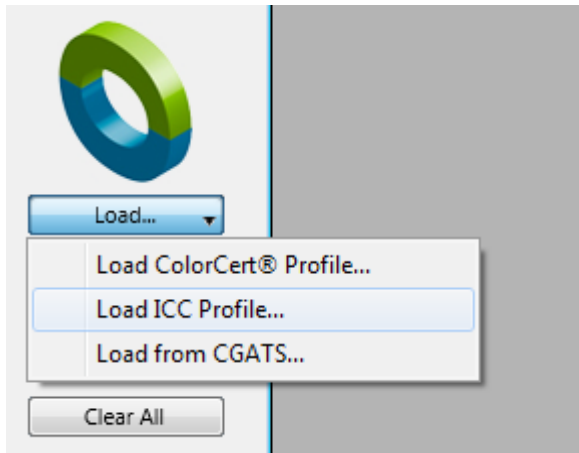
1. Under Measurement Conditions, select the Observer Angle and the Illuminant Observer that will be used in production.
2. Select the appropriate Substrate type, Print Process, Coating, and Finish that will be used. These settings will be used in reports and Scorecards and they will help when setting up Rules.
3. Use the Save button to store this Profile for future use in Jobs.

You can also load existing Profiles using the Load button to edit them and save them with new names as needed, such as adding SpotColors or primaries. Once your Profile is finished click Close.

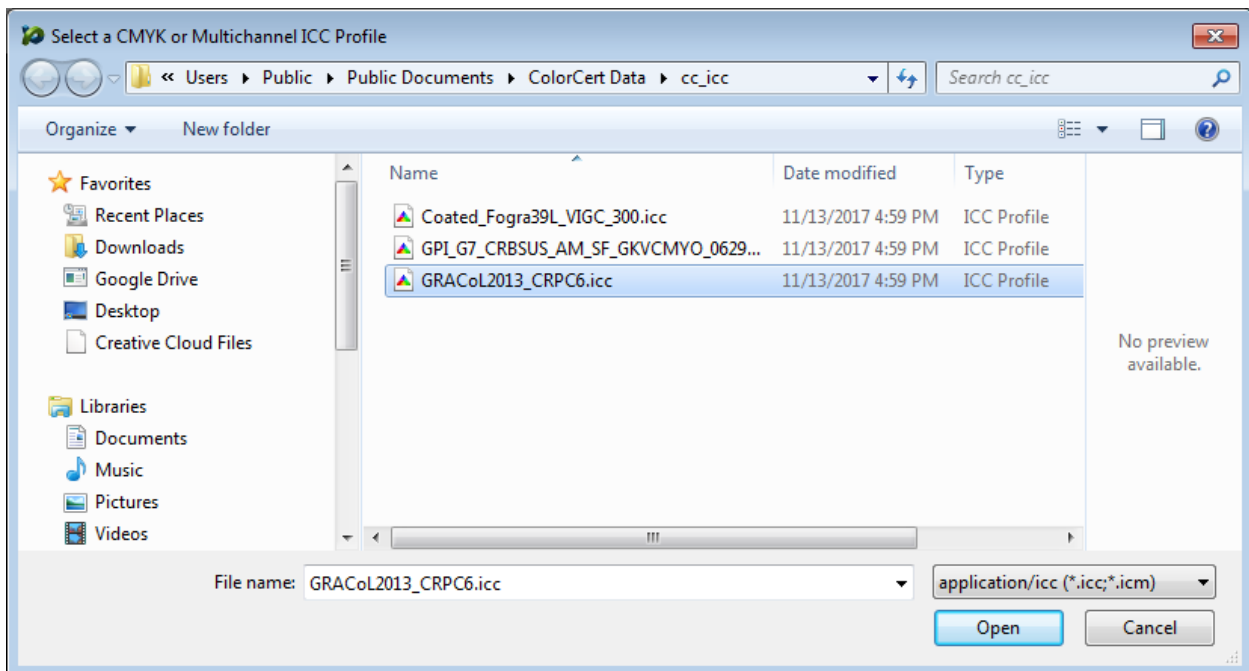
Loading a profile from ICC or CGATS

Instead of creating a profile from scratch, you can use ICC Profiles or IT8/CGATS files as a base for your Profile. Loading an ICC Profile or an IT8 Standard/CGATS file:

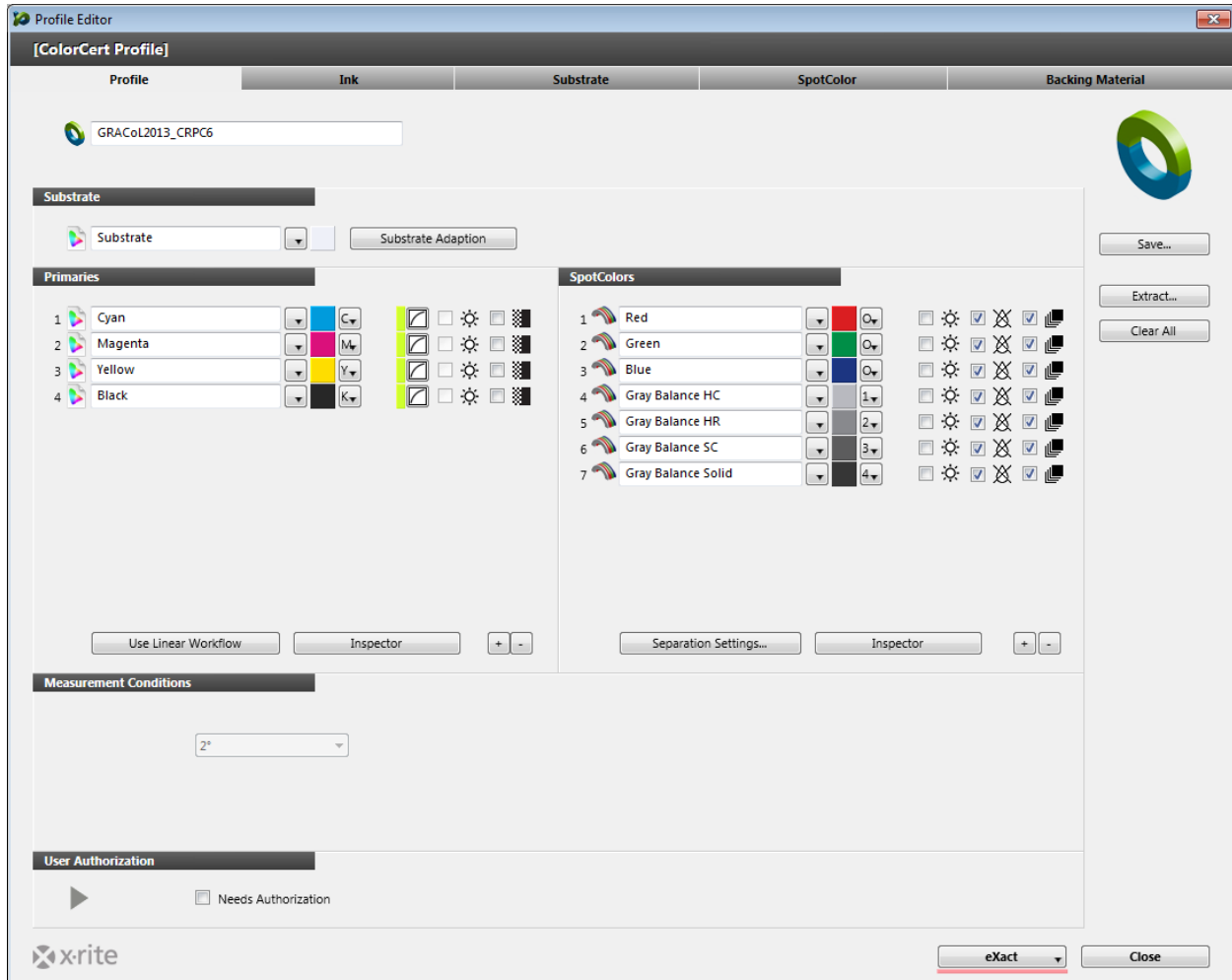
1. After opening the Profile Editor, click on Load and select Load ICC Profile.



2. Browse to the folder containing your ICC Profile, select the profile and click Open.

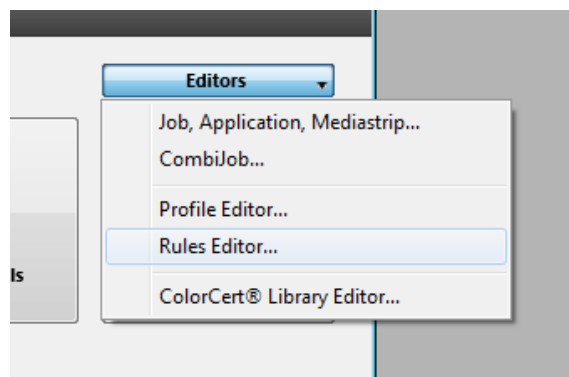


- The ColorCert Profile Editor automatically populates with the selected profile data. The screenshot below shows dot gain curves for the primaries that are loaded as well as overprints and gray balance patches in addition to the Cyan, Magenta, Yellow and Black primary solids. Unnecessary overprint or gray balance patches can easily be deleted. This functionality was added as part of our G7 improvements for release 3.0.



Creating Rules

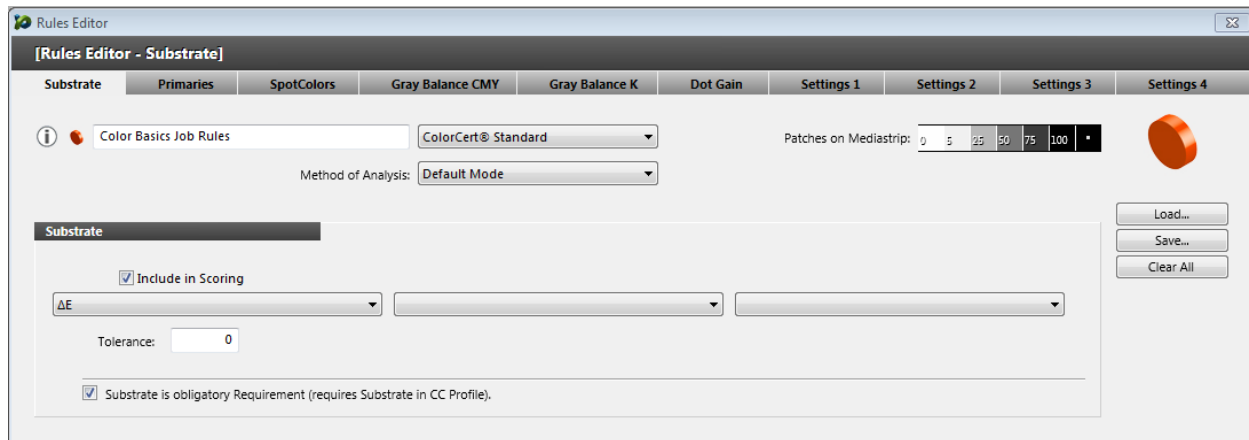
Rules define tolerances for production. In this section we will look at how to create a set of Rules. Launch the Rules Editor from the Editor menu. Let's look at what is found behind each of the tabs.



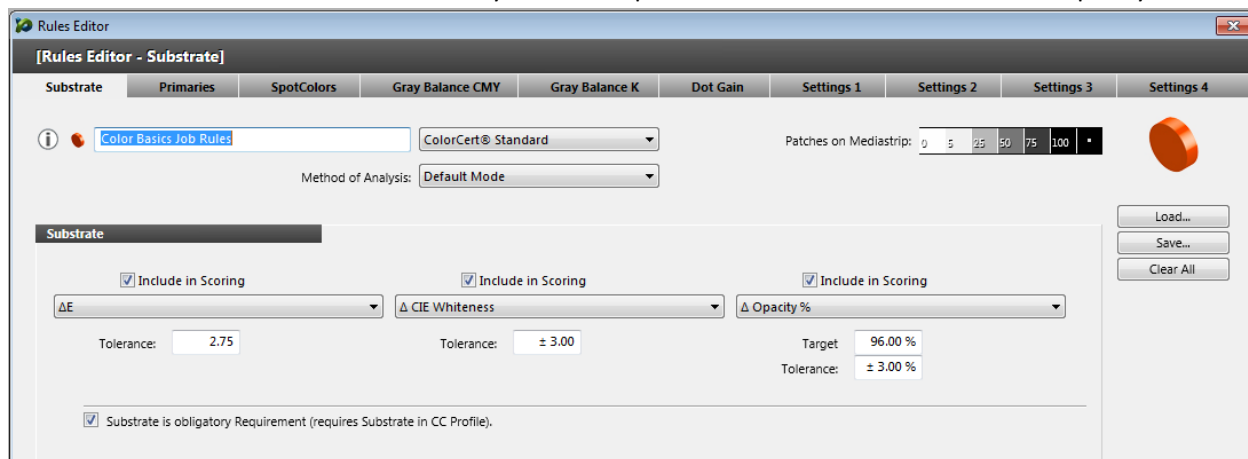
Substrate Tab

The Substrate tab is selected by default.

1. Type in a meaningful name so that operators will be able to recognize the purpose of this set of Rules.
2. In the upper right corner, Patches on Mediastrip will show a preview of the patches that will be produced for a Job using this set of Rules. This will change dynamically as you select patch options in the Rules.

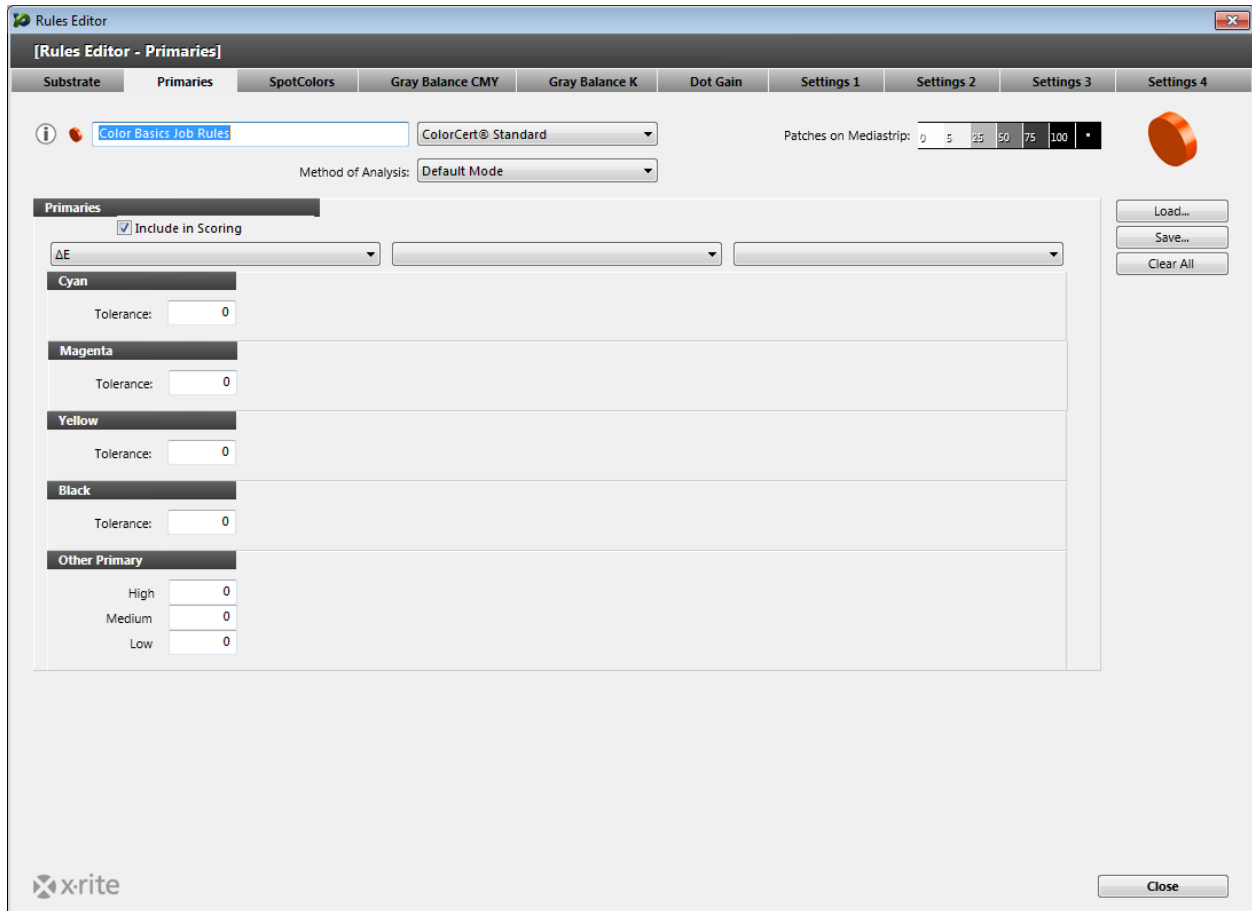


3. A substrate is required for any job that contains measurements of tint values or to use the Best Match function. Uncheck Substrate is obligatory requirement if you do not want to measure the substrate. Uncheck Include in Scoring if you want to include the substrate measurement for analysis, but exclude it from ColorCert scores.
4. You can define up to three different tolerances for a substrate. The default tolerance in the first of the three sections is ΔE . Select your desired tolerance type from the drop-down list. Next, enter a limit in the field Tolerance. The example below uses a tolerance value of 2.75.
5. Add additional tolerances if necessary. The example below uses a Whiteness and an Opacity tolerance in addition.



Primaries Tab

1. Select the Primaries Tab to define tolerances for your primary colors etc.



2. Primaries are the colors in your production that are printed with tints. Cyan, Magenta, Yellow, and Black are special case primary colors and each may be assigned their own tolerance.
3. Other primary colors can be SpotColors printed in solids and tints or Orange, Green, and Violet used in an ECG workflow. You can find related information in the section Dot Gain. You can assign three different tolerance levels (high, medium, or low importance) to those primaries. These levels of importance can be assigned to individual colors in your profile.
 - For critical colors that must have the highest importance, you will assign a lower ΔE tolerance number. Colors with a medium level of importance will get a higher number. The lowest Priority Colors will receive the highest ΔE number.
 - In some cases these numbers may come from a print standard, in other cases it is a value negotiated between Print Supplier and the Brand Owner.

The example below uses both a ΔE 2000 tolerance with a ratio of 1:1:1 (left hand column). This tolerance is included in the ColorCert Scoring. The 4 process colors each have their own tolerance level while the other primaries are assigned High, Medium, and Low limits.

The defined tolerances for density are not included in the scoring. The center column shows the density tolerances and the right column is empty. It is not necessary to use three or even two tolerances. In most cases, just a single tolerance is required.

Rules Editor

[Rules Editor - Primaries]

Substrate Primaries SpotColors Gray Balance CMY Gray Balance K Dot Gain Settings 1 Settings 2 Settings 3 Settings 4

Color Basics Job Rules ColorCert® Standard Patches on Mediastrip: 0 5 25 50 75 100

Method of Analysis: Default Mode

Primaries

Include in Scoring Include in Scoring

$\Delta E00$ 1 1 1 Δ Density

Cyan
Tolerance: 3.50 Tolerance: ± 5.00

Magenta
Tolerance: 3.50 Tolerance: ± 5.00

Yellow
Tolerance: 3.50 Tolerance: ± 5.00

Black
Tolerance: 5.00 Tolerance: ± 5.00

Other Primary

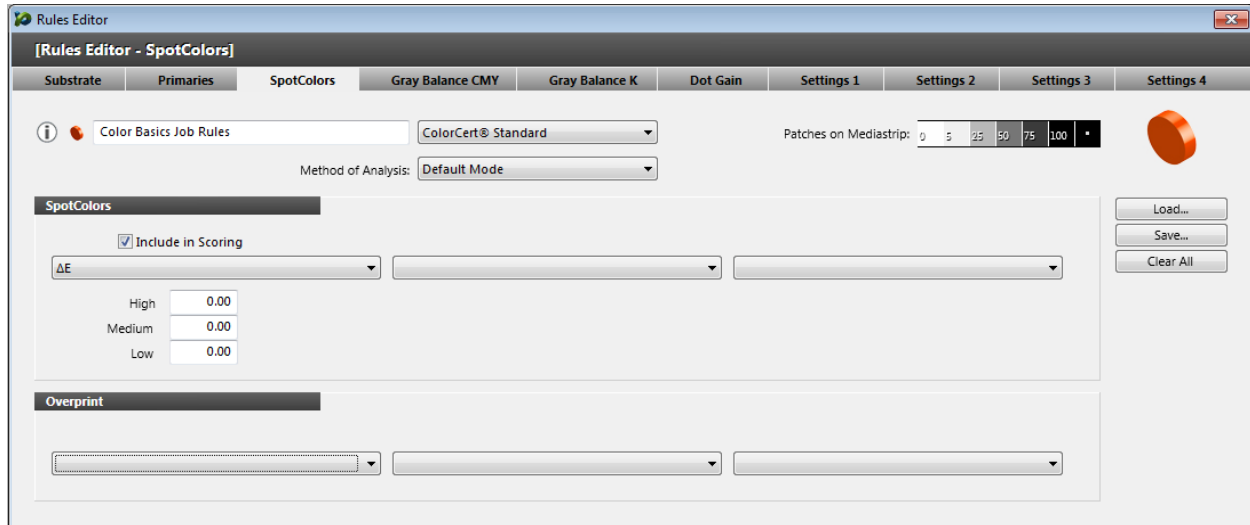
High	2.00	High	± 3.00
Medium	2.75	Medium	± 3.75
Low	3.50	Low	± 4.50

Load...
Save...
Clear All

xrite Close

SpotColors Tab

The SpotColor tab is used to define tolerances for all SpotColors; those special inks for which we will not measure any tints, special build colors that are critical for our customers, as well as overprints and gray balance patches used as part of a G7 workflow.



1. Assign up to 3 different tolerance types to the SpotColors. For each type, three different levels (high, medium, or low importance) should also be assigned. These levels can be assigned to individual colors in your profile. Enter a lower ΔE tolerance number to critical colors to give them the highest importance. Enter a higher value for colors with a medium level of importance and the highest ΔE value to the color with the lowest priority.
2. Tolerances for Overprint Patches are assigned their own tolerances as they are truly a different metric. Overprint patches do not require 3 different tolerance limits, but it is possible to assign them.
3. The screenshot below shows SpotColors with three different tolerances: ΔE 2000 in the left column, Δ Density in the center column, and Δ LCh in the right column. Each of these three tolerance types has three limits for High, Medium, and Low importance. The Density tolerance has been excluded from the scoring (unchecked "Include in Scoring"). The ratio for the ΔE 2000 tolerance was changed from the default 1:1:1 to 1:1:0.5. This provides a tighter tolerance for hue, correlating with settings that were selected for the LCh tolerance.

Rules Editor

[Rules Editor - SpotColors]

Substrate Primaries **SpotColors** Gray Balance CMY Gray Balance K Dot Gain Settings 1 Settings 2 Settings 3 Settings 4

Color Basics Job Rules ColorCert® Standard Patches on Mediastrip: 0 5 25 50 75 100

Method of Analysis: Default Mode

SpotColors

Include in Scoring Include in Scoring Include in Scoring

$\Delta E00$	1	1	0.5	Δ Density	Δ LCh
High	2.00			High	2.00 1.00 0.75*
Medium	2.75			Medium	3.00 2.00 1.50*
Low	3.50			Low	5.00 3.50 2.50*

High ± 3.00
Medium ± 3.75
Low ± 4.50

Overprint

Include in Scoring Include in Scoring

ΔE_{cmc}	1	1	Δ Lab	
Tolerance:	3.00		Tolerance:	3.00 1.50 1.50

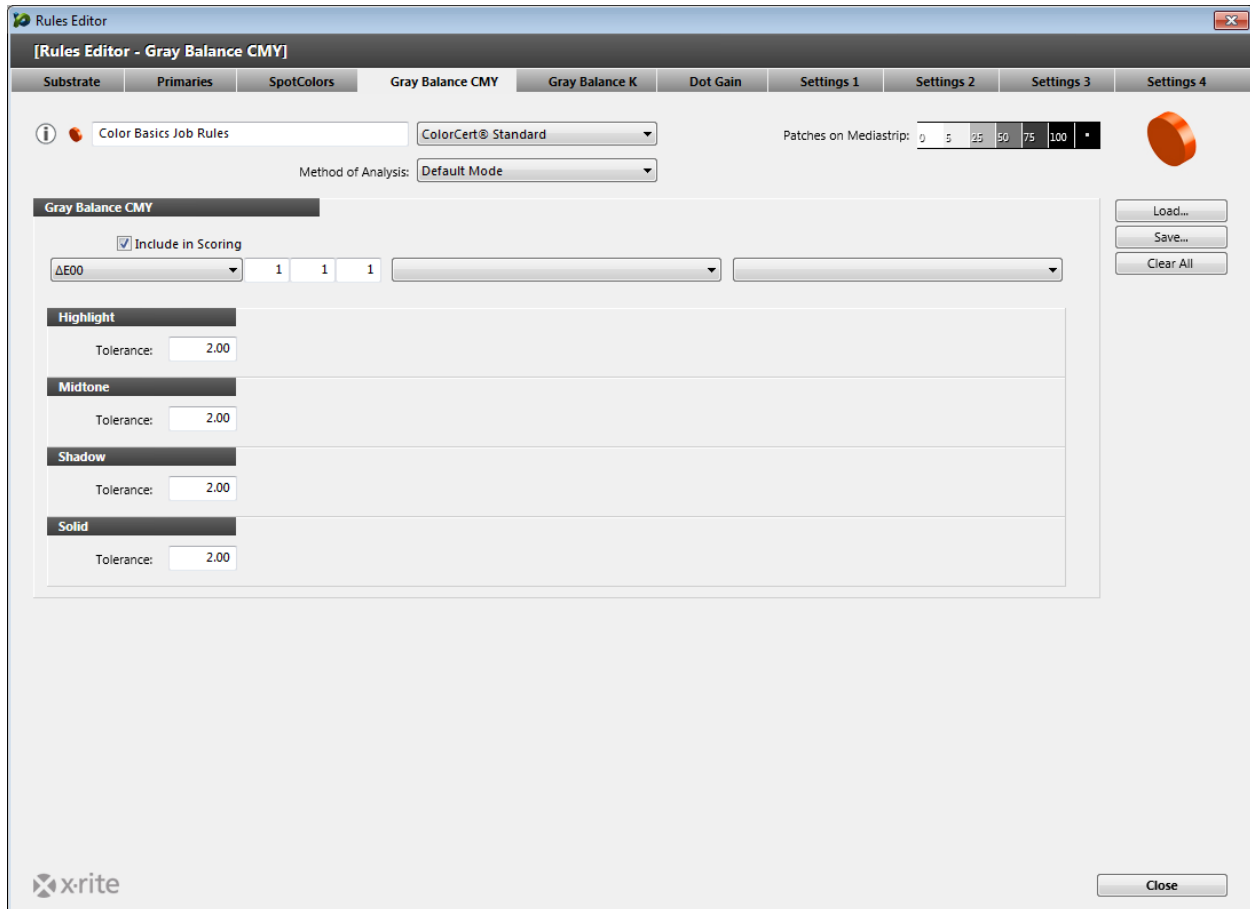
Load...
Save...
Clear All

xrite Close

Gray Balance CMY Tab

Select the Gray Balance CMY tab to define the tolerance for CMY Gray Balance patches. This is a key component of G7 workflows.

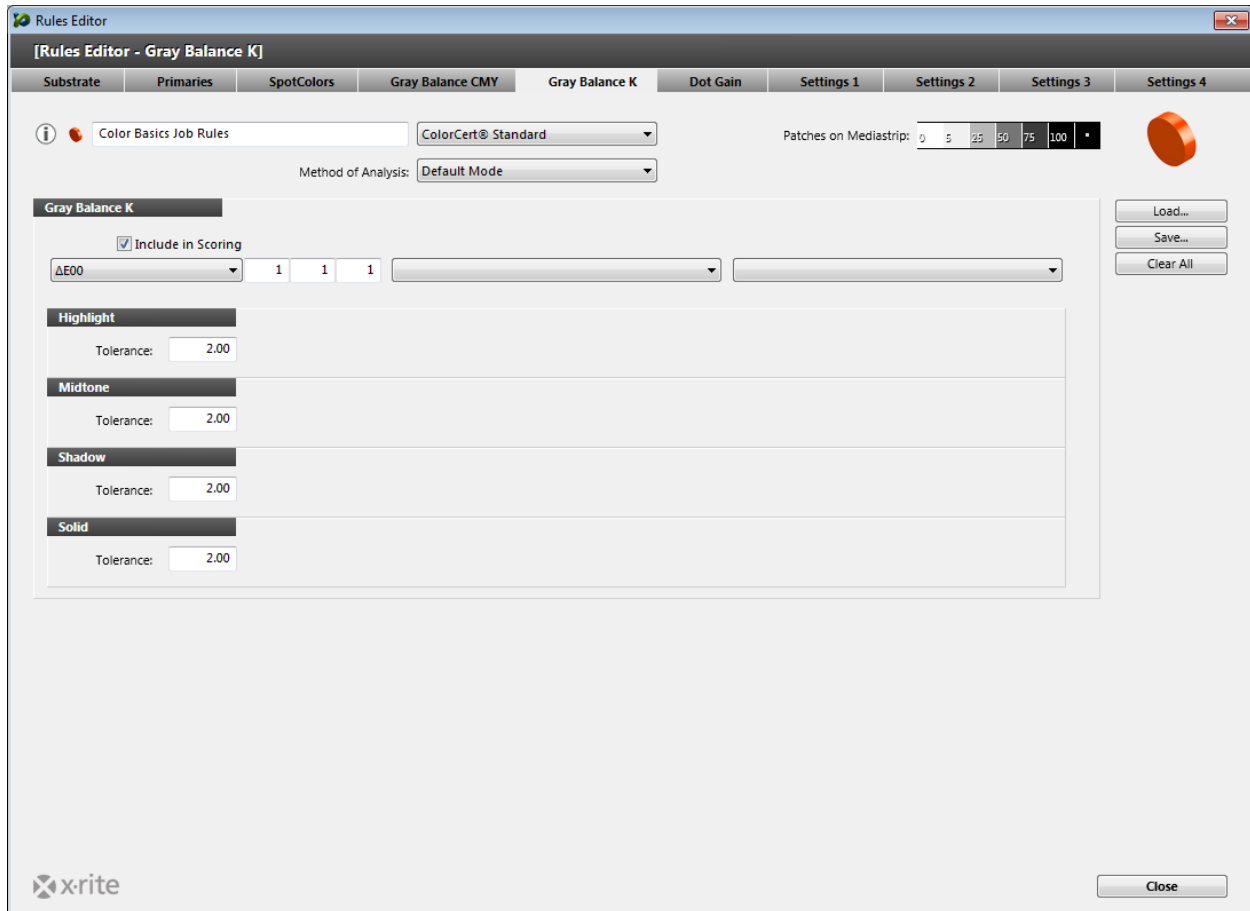
1. Define up to three different tolerance types for this attribute and then define separate limits for Highlight, Midtone, Shadow, and Solid patches. If required, change the ratio for those tolerance types and select if the tolerance should be included in the ColorCert Score.



Gray Balance K Tab

Select the Gray Balance K tab to define the tolerance for the black (K) Gray Balance patches. This is also a key component of G7 workflows.

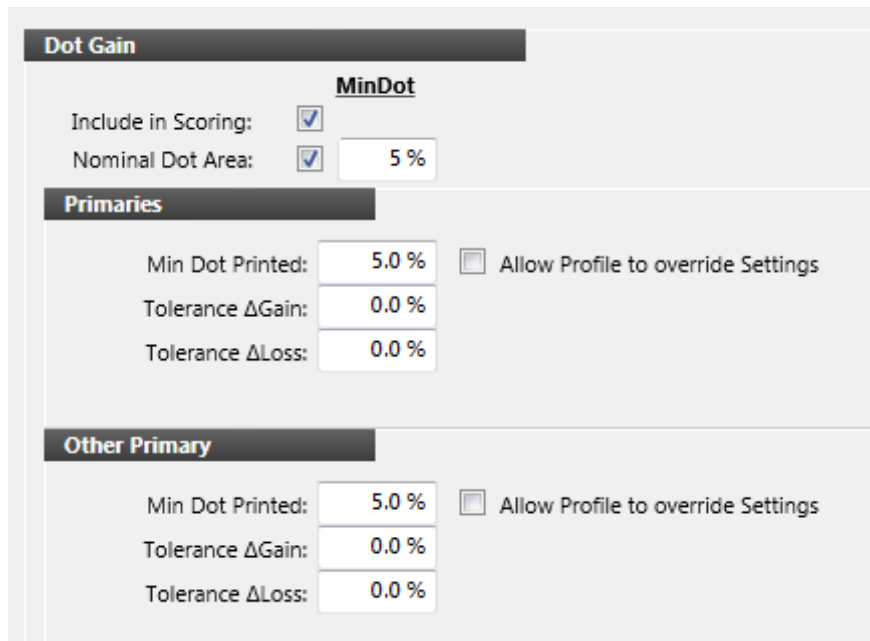
1. The options are the same as the Gray Balance CMY Tab.



Dot Gain Tab

Select the Dot Gain tab to define all tolerances for the tint patches.

1. Define the tolerance for min dot reading (if used) in the left section of the window.
 - Nominal Min Dot is the minimum dot as defined in the digital file used to make the plate.
 - Min Dot Printed is the minimum dot that can be printed well.
 - Tolerance Δ Gain is the % amount of gain that is acceptable in the minimum dot.
 - Tolerance Δ Loss is the % amount of loss that is acceptable in the minimum dot.
2. Define Min Dot tolerances for Primaries (CMYK) and Other Primary. Other Primary includes colors that have a Min Dot other than CMYK, for example a SpotColor that contains a vignette).
3. If the “Allow Profile to override Settings” is selected, and you are using a ColorCert Profile that was built using an ICC Profile, then values from the profile override the target value (Min Dot Printed) defined here in the ColorCert Rules. Note that the value from the ICC Profile may be an interpolated value, which depends on the patch set that was used to create the ICC Profile.



The screenshot shows the 'Dot Gain' configuration window. It is divided into three main sections:

- MinDot:**
 - Include in Scoring:
 - Nominal Dot Area: 5 %
- Primaries:**
 - Min Dot Printed: 5.0 % Allow Profile to override Settings
 - Tolerance Δ Gain: 0.0 %
 - Tolerance Δ Loss: 0.0 %
- Other Primary:**
 - Min Dot Printed: 5.0 % Allow Profile to override Settings
 - Tolerance Δ Gain: 0.0 %
 - Tolerance Δ Loss: 0.0 %

4. In flexographic printing, combo plates are sometimes used to achieve the desired result on press. Select Flexo Combo Plate Support to provide a second set of tolerances for the secondary plate condition as shown below. The second set of tolerances can be entered manually or select Default and define your calculation criteria to automatically calculate them.

Dot Gain

MinDot

Include in Scoring:

Nominal Dot Area:

Primaries

Min Dot Printed: Allow Profile to override Settings

[Combo Plate]:

Tolerance Δ Gain:

[Combo Plate]:

Tolerance Δ Loss:

[Combo Plate]:

Other Primary

Min Dot Printed: Allow Profile to override Settings

[Combo Plate]:

Tolerance Δ Gain:

[Combo Plate]:

Tolerance Δ Loss:

[Combo Plate]:

Flexo Combo Plate Support

Default Added Tolerance:

Method:

5. Dot Gain allows for the tolerancing of the dot gain in the highlights, midtones and shadows. In North America this can be 25%, 50% and 75%; or in many cases, just 50%. In Europe this is often 40% and 80%.
 - Put a check in the boxes next to the print tones that you wish to measure. Notice that the number of patches previewed in the upper right will change with the number of Dot Gain values selected.
 - Make sure the values are set to the percentage that you need to measure, and enter a value that you are willing to accept as your dot gain tolerance for those percentage values.
 - The Dot Gain Methods refer to the methods that are used to calculate the dot gain of the print. Murray-Davies is typically used with 4-Color Process Inks (the primary colors) while SCTV (ISO 20654:2017) or the ColorCert Relative Colorimetric is recommended for other primaries.

	Highlight	Midtone	Shadow
Include in Scoring:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Nominal Dot Area:	<input checked="" type="checkbox"/> 25 %	<input checked="" type="checkbox"/> 50 %	<input checked="" type="checkbox"/> 75 %
Tolerance:	<input type="text" value="± 0.0 %"/>	<input type="text" value="± 0.0 %"/>	<input type="text" value="± 0.0 %"/>
Method:	Murray Davies		
Tolerance:	<input type="text" value="± 0.0 %"/>	<input type="text" value="± 0.0 %"/>	<input type="text" value="± 0.0 %"/>
Method:	SCTV (ISO 20654:2017)		
<input type="checkbox"/> Flexo Combo Plate Support			

6. Select Undertone to determine the undertone color independently from the dot gain. This allows ColorCert to measure and judge undertone colors even if the dot gain values are very incorrect.
- BestMatch Mode: Compare best matching color within whole target tint range.
 - Same Density Mode: Compare color at same target density.
 - Same Lightness Mode: Compare color at same lightness (CIELab L*).
- Same Spot Mode: Compare color at same nominal input (ie: 50% vs. 50%).

Undertones

Check Undertones

Tolerance:

Method:

Mode: Best Match Same Density Same Lightness Same Spot

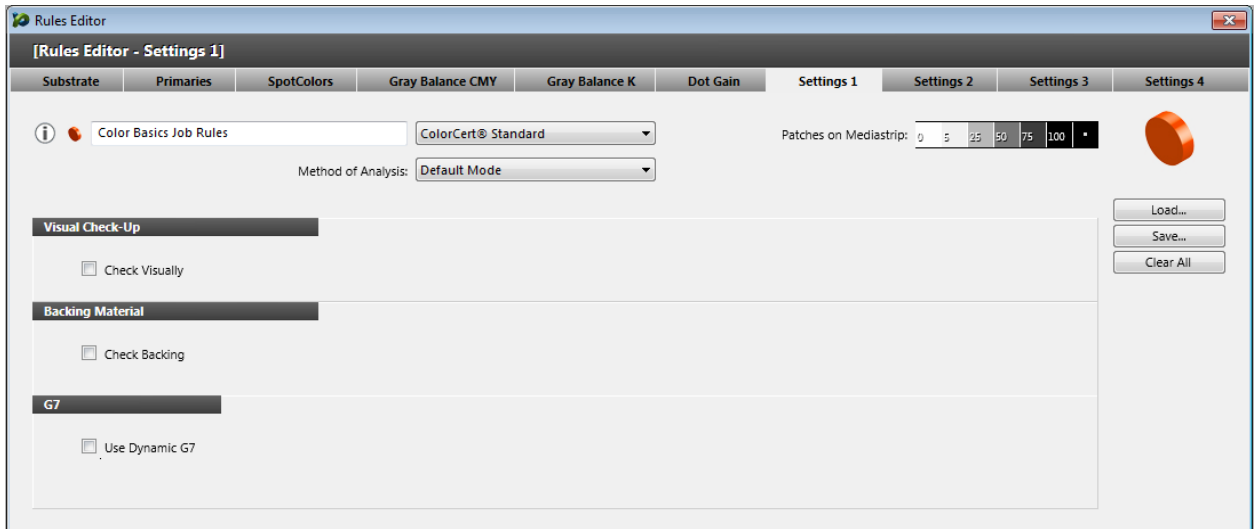
7. Example completed Dot Gain section shown below.

The screenshot shows the 'Rules Editor - Dot Gain' window with the following settings:

- Substrate:** Color Basics Job Rules
- Profile:** ColorCert® Standard
- Patches on Mediastrip:** 0, 5, 25, 50, 75, 100
- Method of Analysis:** Default Mode
- Dot Gain Section:**
 - MinDot:**
 - Include in Scoring:
 - Nominal Dot Area: 5 %
 - Highlight:**
 - Include in Scoring:
 - Nominal Dot Area: 25 %
 - Midtone:**
 - Include in Scoring:
 - Nominal Dot Area: 50 %
 - Shadow:**
 - Include in Scoring:
 - Nominal Dot Area: 75 %
- Primaries:**
 - Min Dot Printed: 8.0 % Allow Profile to override Settings
 - Tolerance ΔGain: 3.0 %
 - Tolerance ΔLoss: 2.0 %
 - Tolerance: ± 2.5 %
 - Method: Murray Davies
- Other Primary:**
 - Min Dot Printed: Allow Profile to override Settings
 - Tolerance ΔGain: 4.0 %
 - Tolerance ΔLoss: 3.0 %
 - Tolerance: ± 3.0 %
 - Method: SCTV (ISO 20654:2017)
- Undertones:**
 - Check Undertones
 - Tolerance: 2.5
 - Mode: Best Match Same Density Same Lightness Same Spot
 - Method: ΔE00 (1:1:1)

Settings 1 Tab

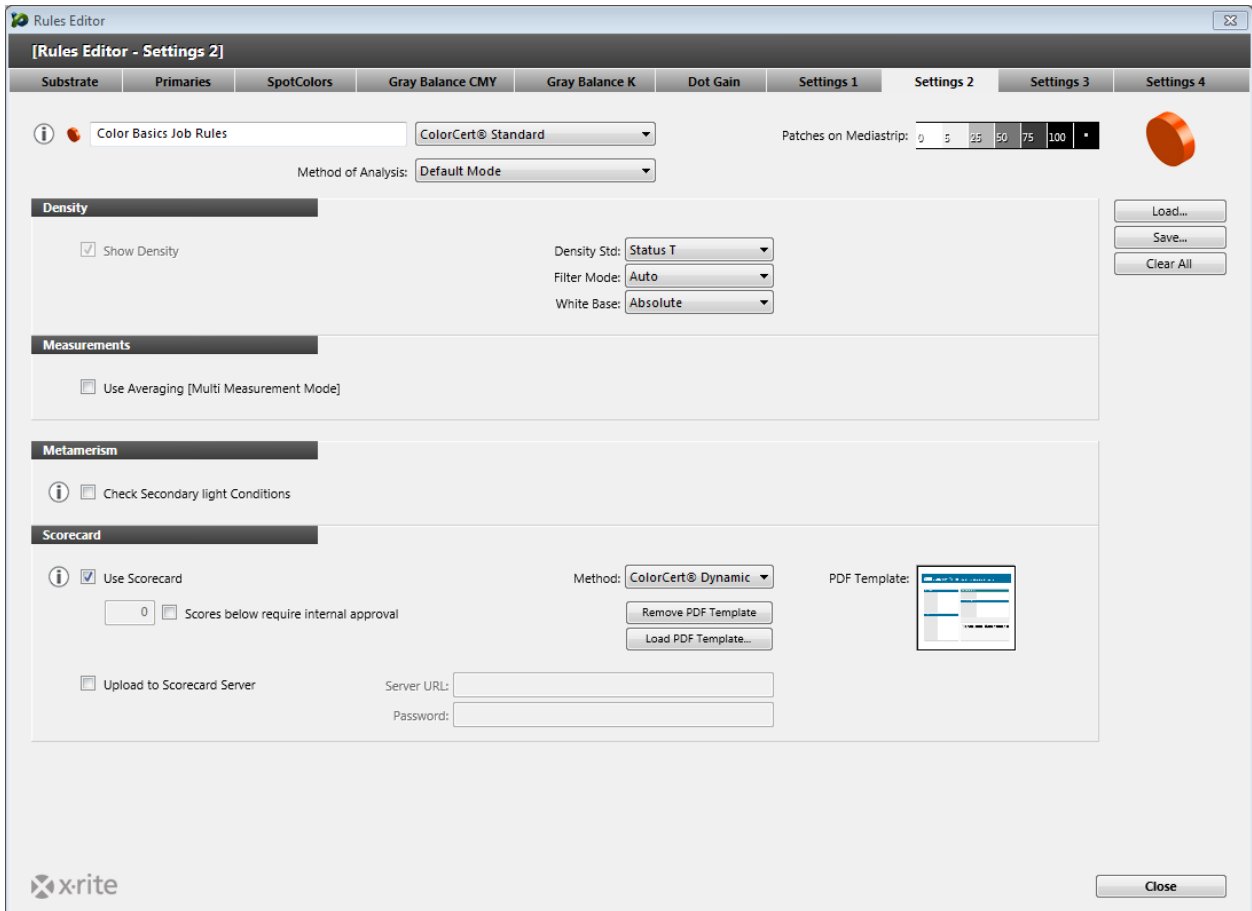
1. Next, click on the Settings 1 tab.



2. Visual Check-up allows you to require visual inspections of print quality with each Measurements. The Verify Barcode Quality selection will require that a barcode quality test be performed with a barcode reader.
3. Check the Backing Material box if you require the Press Operator or QC inspector to measure the backing with each Mediastrip.
4. Select Use Dynamic G7 to dynamically change the target of the gray balance patches based on changes to the substrate.

Settings 2 Tab

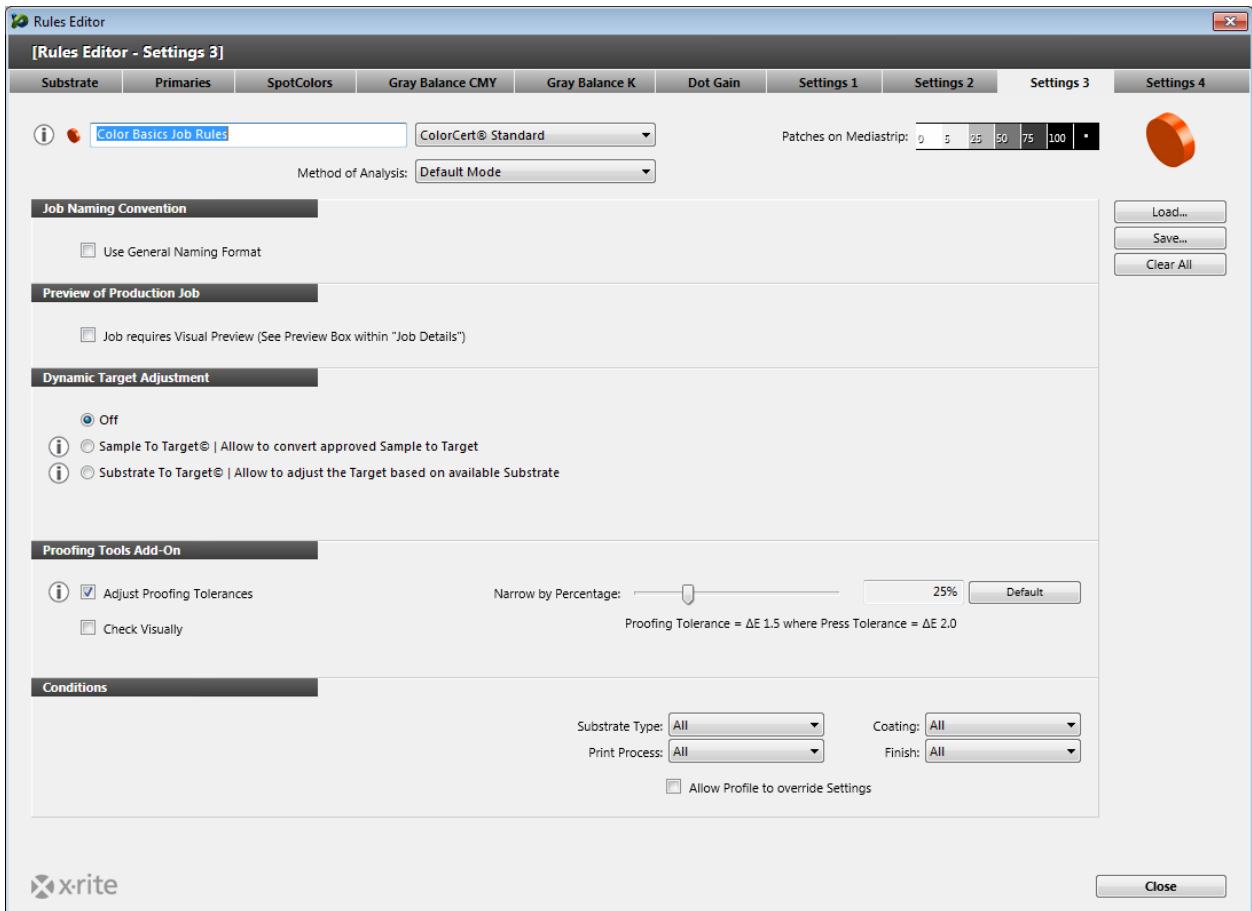
- Next, click on the Settings 2 tab.



- Density. Enter the settings for your densitometer configuration, which are determined by your print specifications. For example in North America, the print specifications require Status T, while in Europe the print specifications use Status E.
- Measurements. If your print conditions are not very uniform, then it may be necessary to measure more than one sample and average the results. This is where you enable this and set the number of measurements to average.
- Metamerism. If you would like to evaluate the color under illuminants in addition to the standard D50, you can select the other illuminants here. This is usually something that a Brand Owner would request to ensure, for example, that the product looks correct under daylight (D50) as well as store light.
- Scorecard. Enable the Scorecard to trigger a print of a summary report of the Job. ColorCert includes a PDF Template of this Scorecard. You can manage the use of the Template with the Load and Remove PDF Template buttons. The default Scorecard Template is located in the Application folder.
 - If you have access to a Scorecard Server, you can enter the URL and Password in this window to set it up.

Settings 3 Tab

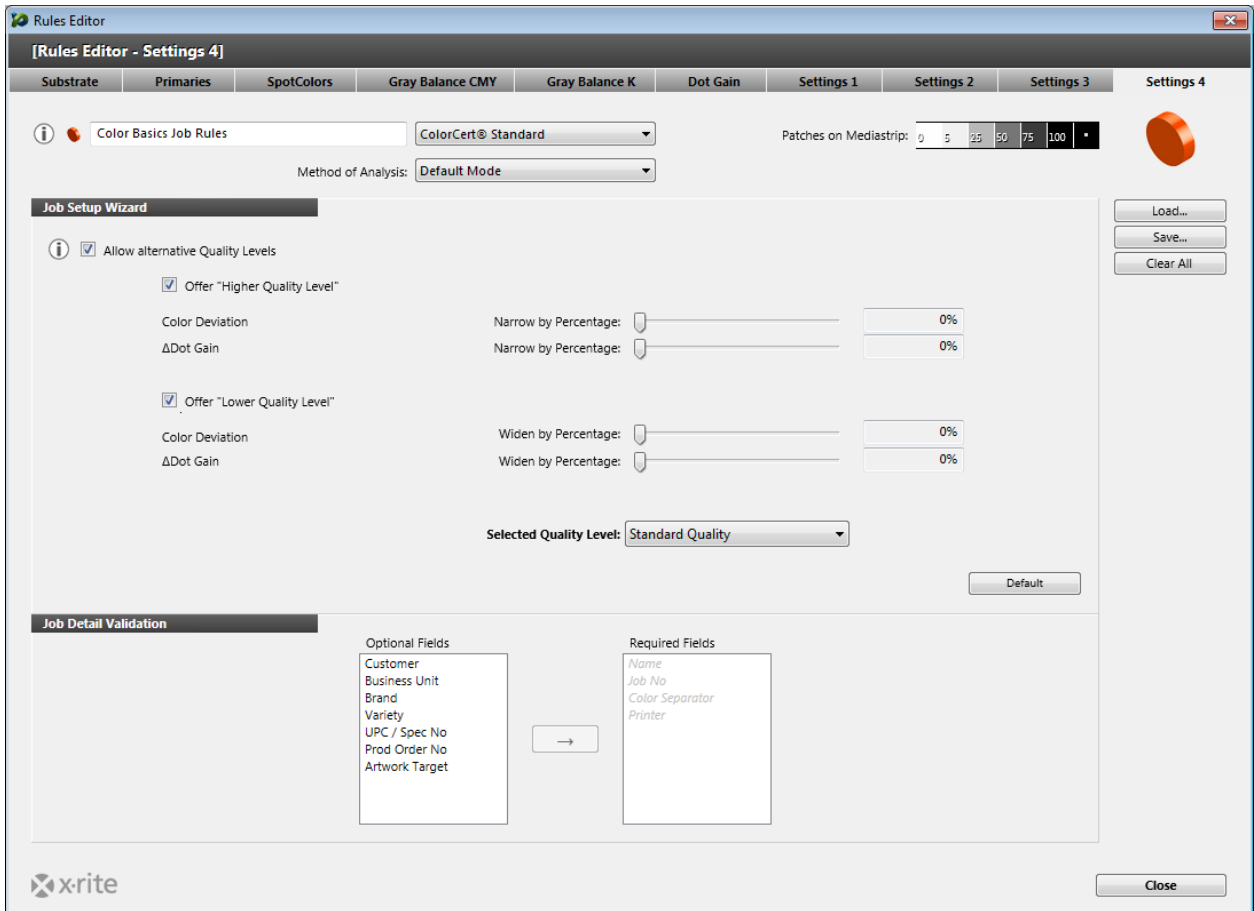
1. Click on the Settings 3 tab.



2. If you want to specify a naming convention based on the job information, you can add a code created out of an existing job. See separate information when creating a job.
3. Preview of Production can be enabled to remind you to add a preview of the printed work (any file that contains the preview of your job) in the Job. This can assist in properly associating the correct ColorCert Job with the associated press run.
4. You can also use a ColorCert job to check the Proof. If you prefer tighter tolerances when checking the Proof, you don't need to create a new Rule, you can just click Adjust Proofing Tolerance and define a percentage. This percentage is then applied to the tolerance values when checking the Proof.
5. Conditions allows the user to limit the use of these Rules to only the selected conditions.

Settings 4 Tab

1. Finally, click on the Settings 4 tab.



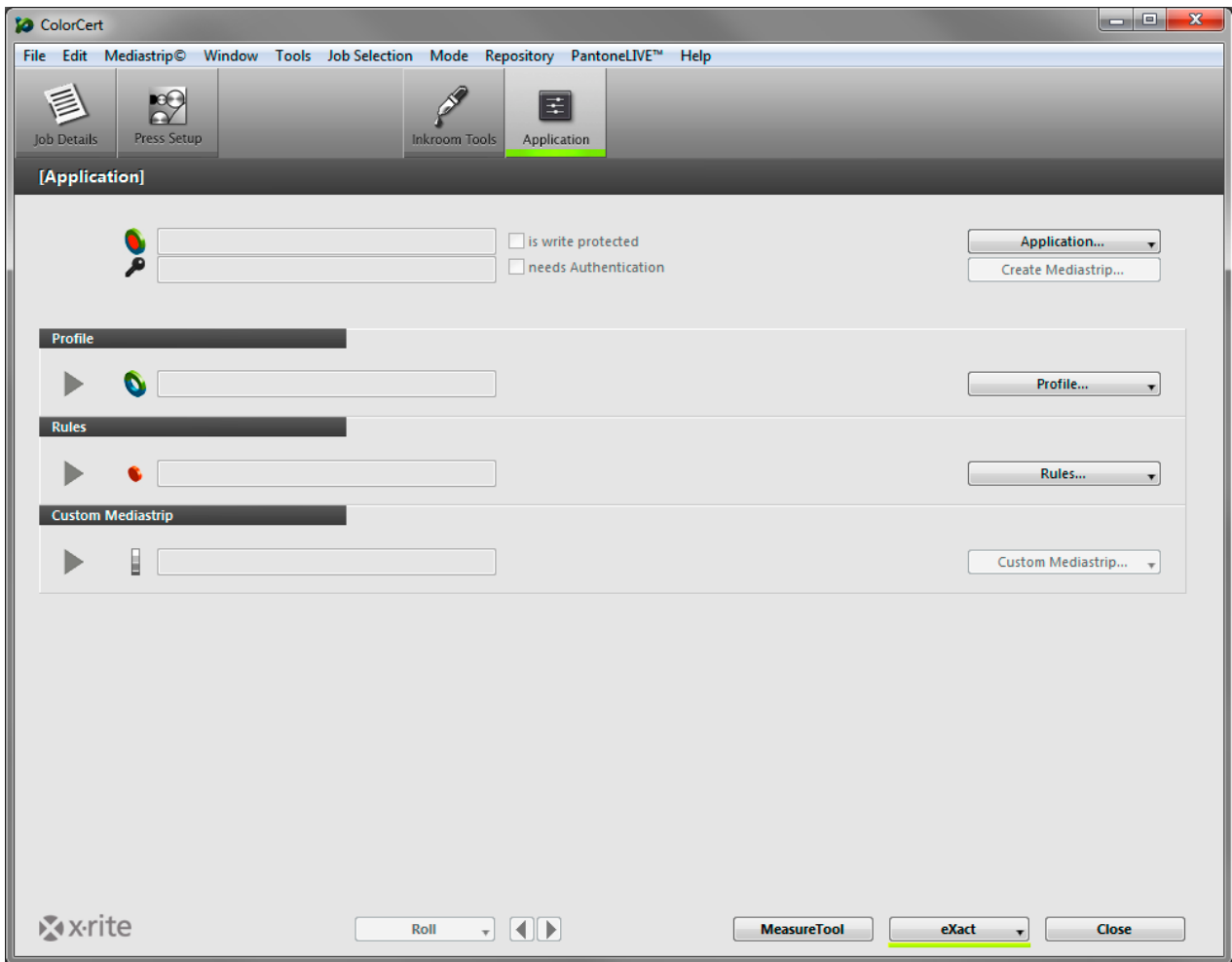
2. Quality Level: These Settings are only required for the Job Setup Wizard. Please find detailed information in the separate Job Setup Wizard document.
3. Job Details Validation: Select attributes that are required for a job using this set of rules. Select an item from the list Optional Fields and click the arrow to the right to move it to the List Required Fields. Name, Job No, Color Separator, and Printer are required by default.
4. When you are finished, click the Save button to save the Rules, then click Close.

Creating a Job

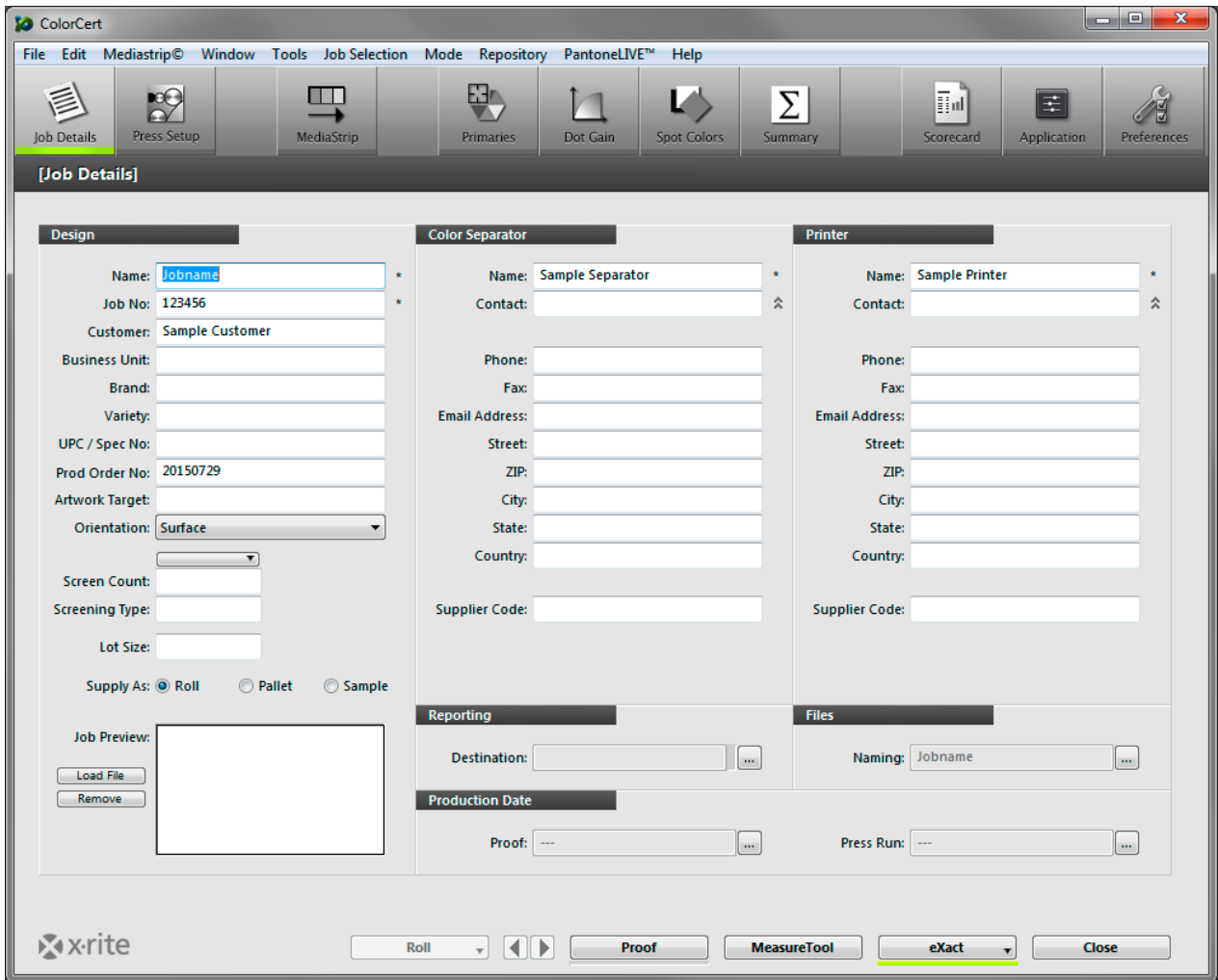
After a Profile and a set of Rules have been created, they can be used in a Job. This section explains how to create a Job. This is only available when using a Manager license, usually for an administrative user from prepress or quality control.

This is used to create a new Empty Job that has no Data, Rules or Profile. With an Empty Job, you can select a Rule and Profile, or an Application file that contains the Job Profile and Rules. Then you can modify any needed settings and fill in certain details about the client or printing conditions. This user can either start measuring the Job, or save the Job for another user to continue later.

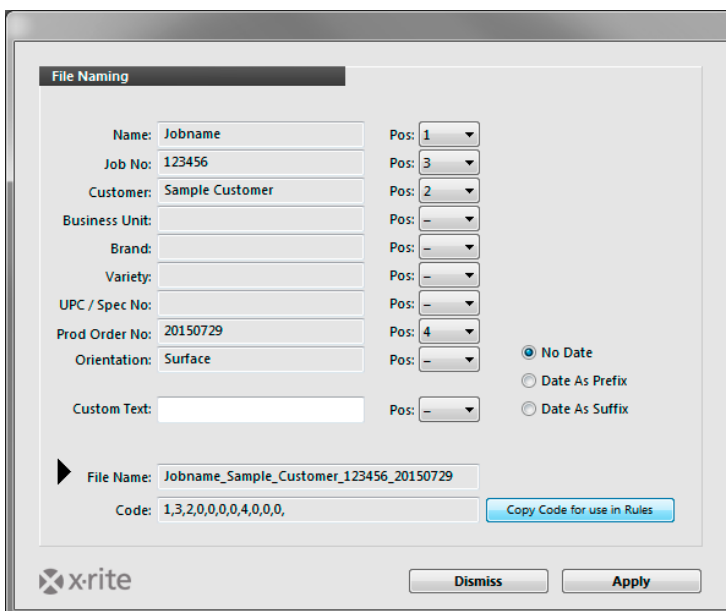
1. In the ColorCert Chooser click Editors and select Job, Application, Mediastrip.



- Click Job Details, and enter necessary information. You must complete all fields marked with an asterisk (*). Other fields are intended to be used as needed in the Design, Color Separator and Printer sections.

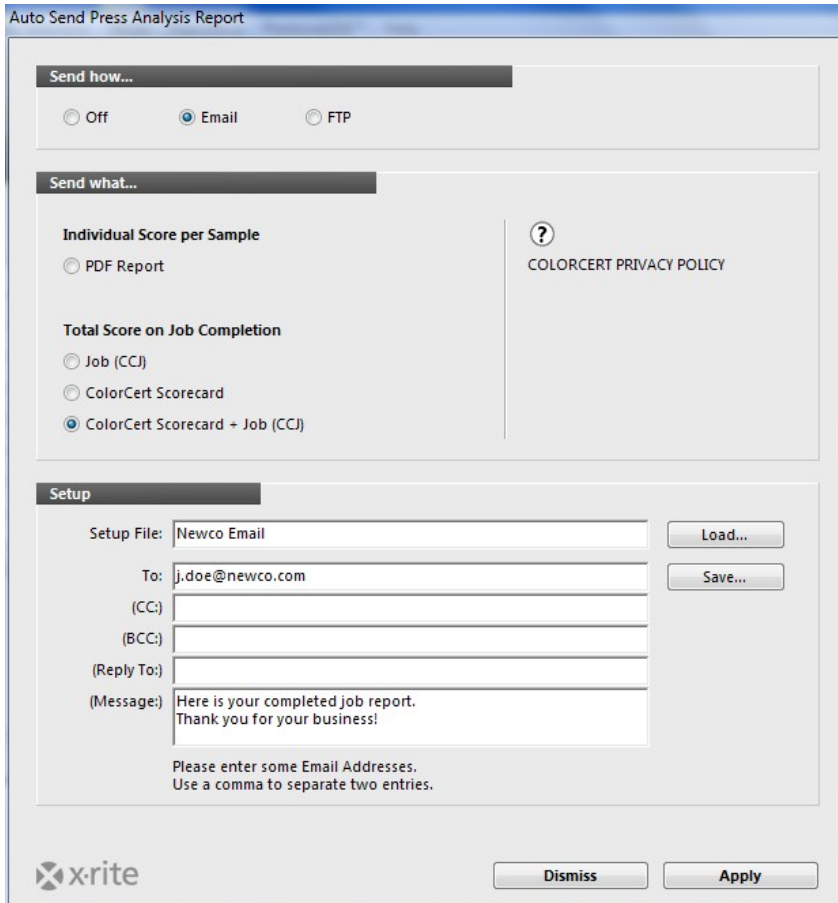


- Optional: Click Naming to define naming Convention.

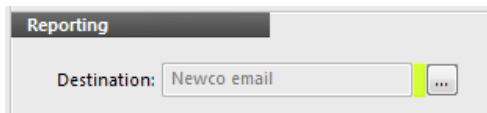


Select the information you want to add to your job name. Use the drop down list with numbers to define the order. Code shows the order of positions and can be entered in the Rules Settings 3 Tab.

4. Optional: Click Reporting to open a window to configure how the report should be formatted and sent. Reports can be sent through email or FTP. They can be formatted as a simple Scorecard, a more detailed CC Job Report, or both.



- Enter a name for the setup and the appropriate email addresses along with a message if you like.



- Click Apply to save and select this setup in the Job.

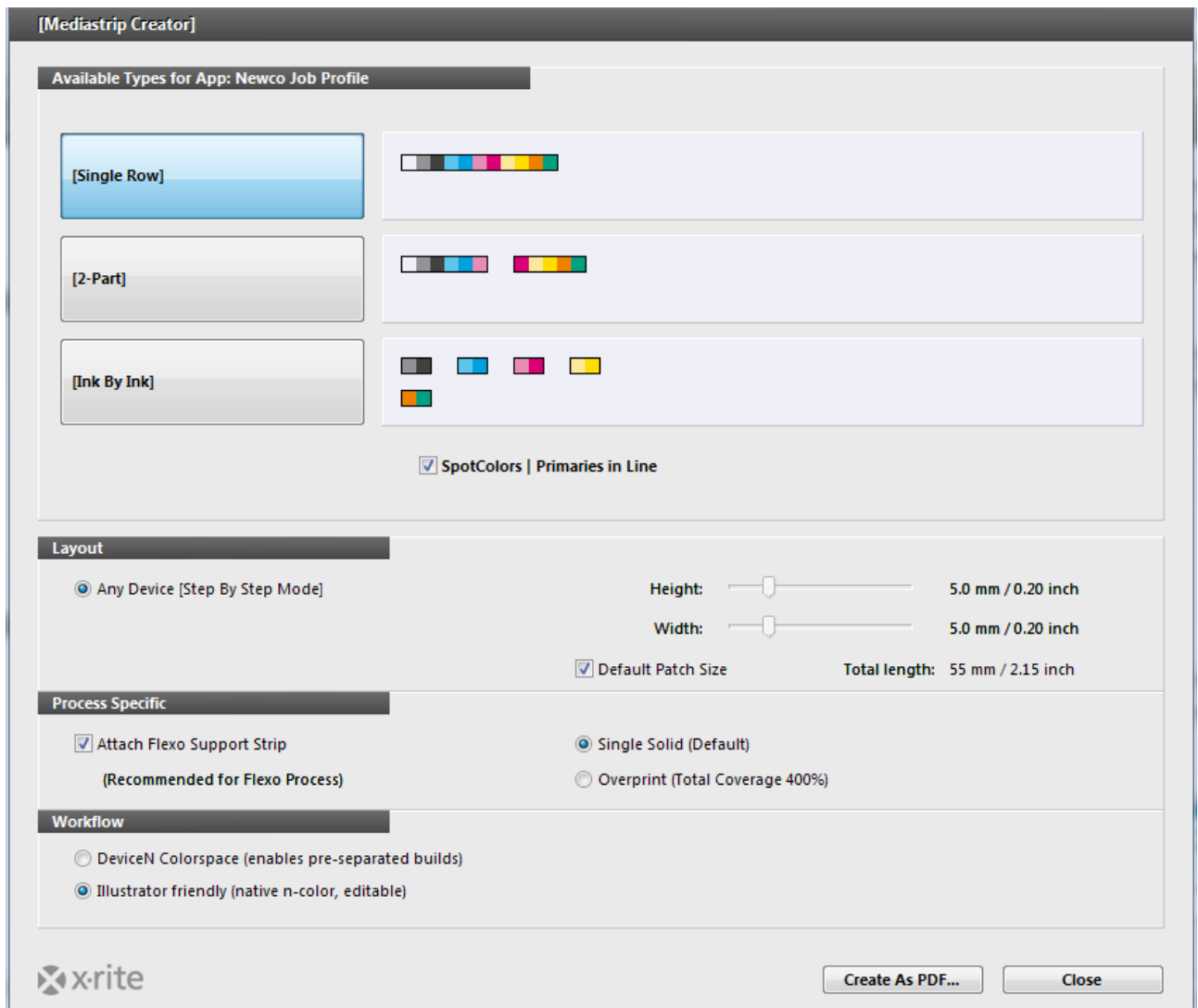
5. Return to the Applications tab.

- Load a ColorCert Profile: opens the default folder for stored Profiles that you have created. To load a ColorCert Profile, select Load ColorCert Profile, and select the Profile that has the colors for this Job.

NOTE: You can also load ICC Profiles or IT8/CGATS files as your Profile.

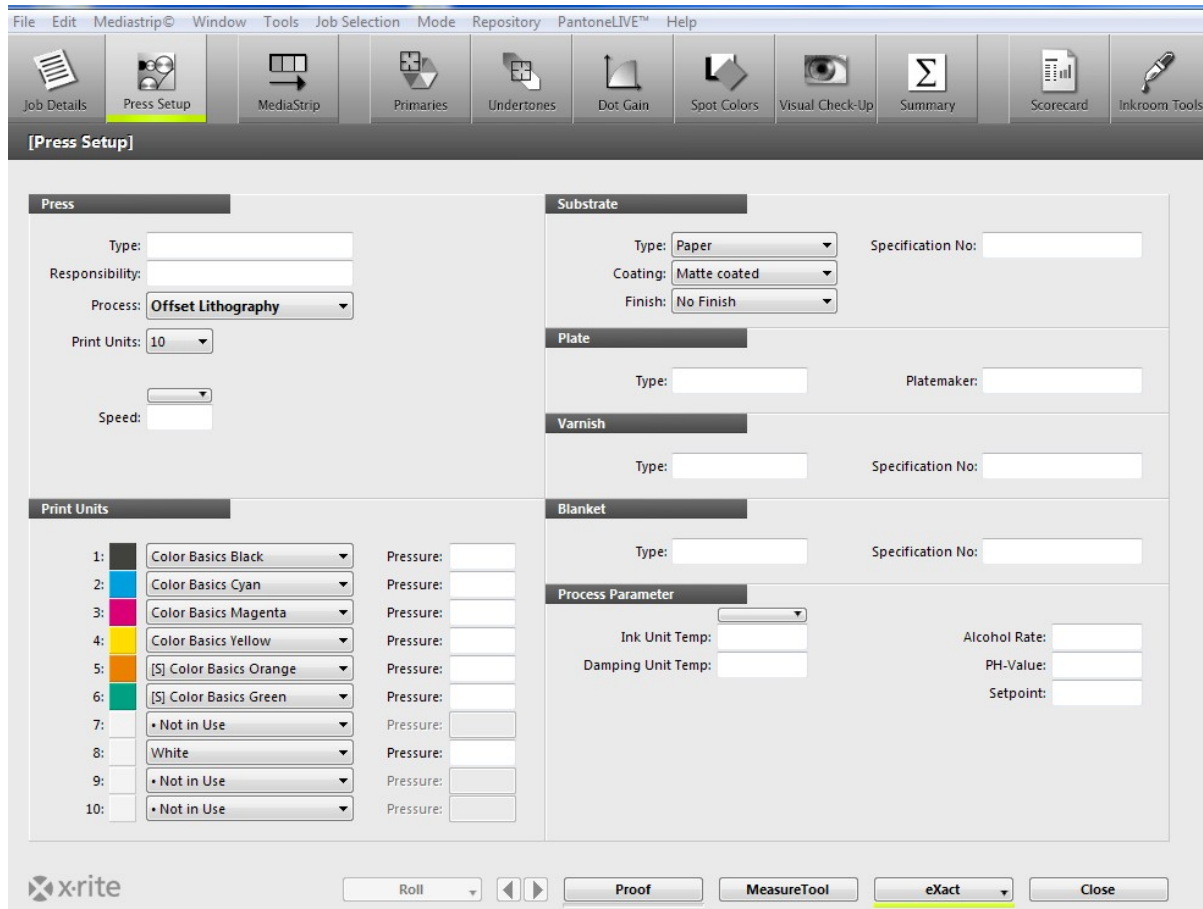
- Load Rules: select the Rules to be used with this Job that you previously created.
- Use the Save Application button to save the combination of the Rule and Profile in one file that can be loaded in the future using the Load Application button.

6. Click on Create Mediastrip to generate a PDF of the color patches in the proper layout for your spectrophotometer.



- Select the target that has the patch arrangement that you require: Single Row, 2-Part, or each patch group by ink color.
 - If you have a check in the box labeled SpotColors Primaries in Line, this will include your SpotColors in the same line as the primaries.
 - If not, the SpotColors will be placed in a separate line.
- Select your device and patch sizes in the Layout section. This will change the format of the patches to conform to your device requirements.
- Process Specific includes an option to Attach Flexo Support Strip to your patches. Selecting this option adds a key line around the control strip to make it easier for reading.
- Workflow provides settings for your Mediastrip file.
 - DeviceN setting will generate the ColorCert Mediastrips as a pre-separated PDF, based on the user-supplied settings. Check with your prepress workflow software for required file separation settings.
 - Illustrator Friendly setting will create ColorCert Mediastrips in an Adobe Illustrator compatible file that is not pre-separated.

- Click on Create As PDF to save a PDF file to the cc_Mediastrips folder inside the Application folder.
 - Open this file in Illustrator to copy and paste the Color Bars into the waste area of the printing plate.
 - Reporting allows the configuration of reports should be formatted and sent. Reports can be sent through email or FTP.
 - If you are only setting up the Job for a future press run, you can save it now by clicking Close. ColorCert will direct you to save the file in the cc_jobs folder in your Applications folder.
7. Press Setup includes all of the press parameters for this press run.



- Press Information can be entered for informational purposes. Each process will change the related fields to match the parameters for that print process.
- Print Units will list all colors that are included in the selected Profile. Users can rearrange ink colors in the print units if needed by clicking on the color next to the unit number and selecting the ink that will be run on that unit.
- All other data is used for informational purposes only.
- After you have entered the required data, click on the MeasureTool button at the bottom of the screen.

Sample G7 Job

1. Connect your X-Rite spectrophotometer.
2. Launch the ColorCert software.
3. Click on Pressroom Tools, and select Load Job.
4. Select the sample Job Color_Basics_G7 Job.ccj.
5. This open the Job Details

Color_Basics_G7_Job_from_ICC.ccj

File Edit Mediastrip Window Tools Job Selection Mode Repository PantoneLIVE™ Help

Job Details Press Setup MediaStrip Primaries Dot Gain Spot Colors Summary Scorecard Inkroom Tools Application Preferences

[Job Details]

Design

Name: Color Basics G7 Job from ICC *
 Job No: 123456 *
 Customer: Sample Customer
 Business Unit:
 Brand:
 Variety:
 UPC / Spec No:
 Prod Order No:
 Artwork Target:
 Orientation: Surface
 Screen Count:
 Screening Type:
 Lot Size:
 Supply As: Roll Pallet Sample

Job Preview:
 Load File
 Remove

Color Separator

Name: Sample Separator *
 Contact: Ima Contact
 Phone:
 Fax:
 Email Address: ima.contact@sampleseparator.com
 Street: Sample Street
 ZIP: 12345
 City: Sampletown
 State:
 Country:
 Supplier Code:

Printer

Name: Sample Printer *
 Contact: Ima Contact
 Phone:
 Fax:
 Email Address: ima.contact@sampleprinter.com
 Street: Sample Street
 ZIP: 12345
 City: Sampletown
 State:
 Country:
 Supplier Code:

Reporting

Destination:

Files

Naming: Color_Basics_G7_Job_from_ICC

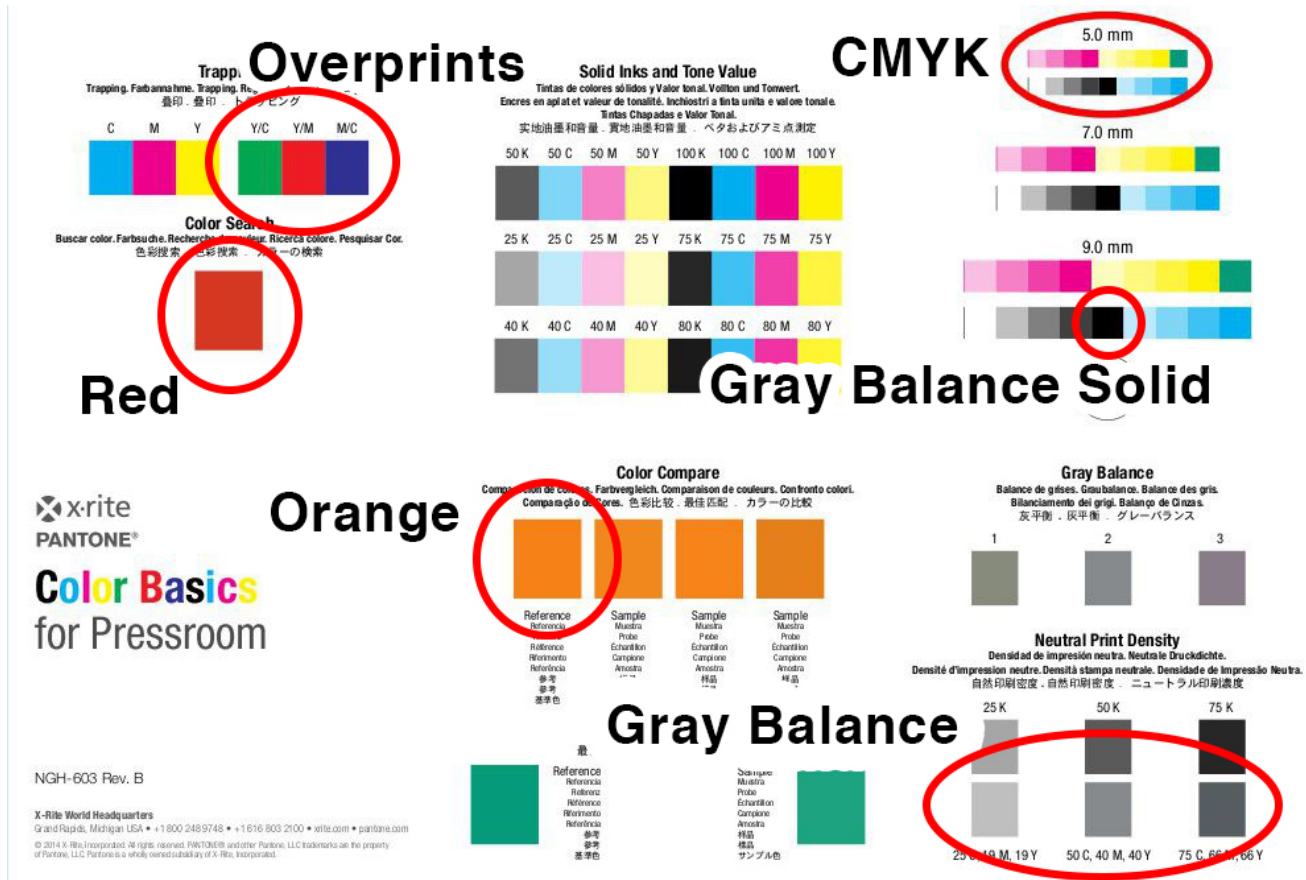
Production Date

Proof: Press Run:

xrite Sample Proof MeasureTool eXact Close

Where to measure

The patch used for the Gray Balance solid is not really a solid gray balance patch. It is sufficient for this sample job but should not be done in production.



G7 Results

The results for your G7 specific measurements are found by clicking on the SpotColors icon after measuring.

The screenshot displays the 'SpotColors' section of the software. It shows the following data:

SpotColor	$\Delta E00$ (1:1:1) ^{SC}	Quality Level
Color Basics Orange	9.24	Fail (Red X)
Color Basics Red	2.64	Fail (Red X)
Tolerance:	2.00	Best Match: Dens: 1.69 $\Delta E00$: 2.42

Overprint	Quality Level
[B] Red (LAB)	Pass
[B] Green (LAB)	Pass
[B] Blue (LAB)	Pass

Gray Balance CMY	$\Delta E00$ (1:1:1)	Quality Level
Average:	4.46	Pass
Maximum:	8.38	Pass

Gray Balance K	$\Delta E00$ (1:1:1)	Quality Level
Average:	1.42	Pass
Maximum:	1.42	Pass

Summary:

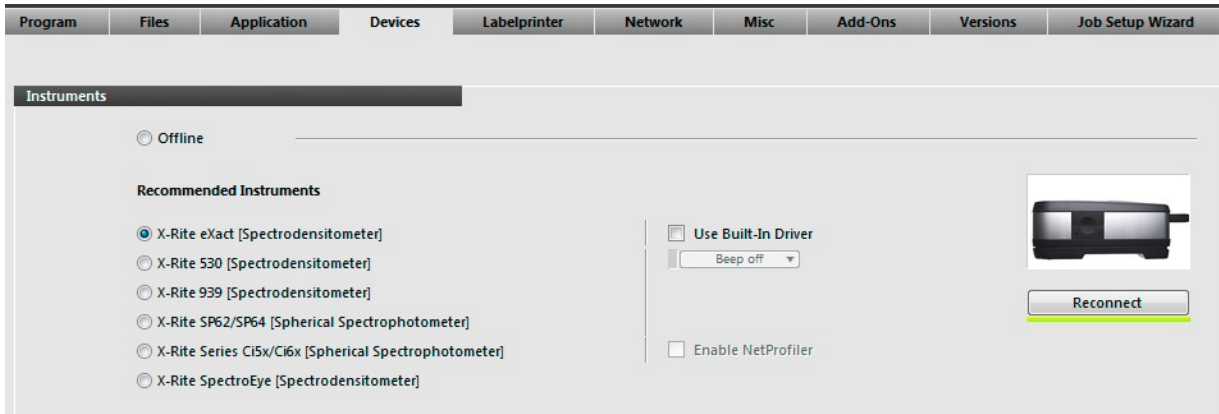
Sample	Dens: 1.64	ΔE : 2.64	Best Match	Dens: 1.69	ΔE : 2.42
Status-T (Y)			Status-T (Y)		

The interface also includes a graph titled 'Operating Range' showing a bell-shaped curve with a red horizontal line at approximately 2.0. Below the graph are dropdown menus for 'Correlation Mode' (Density), 'Method' (Coated), and 'Mode' (Absolute). At the bottom, there are buttons for 'Sample 1/0', 'Proof', 'MeasureTool', 'eXact', and 'Close'.

NetProfiler

Working with X-Rite NetProfiler

To track the NetProfiler status for your device you have to select it in the Preferences of ColorCert under Devices.



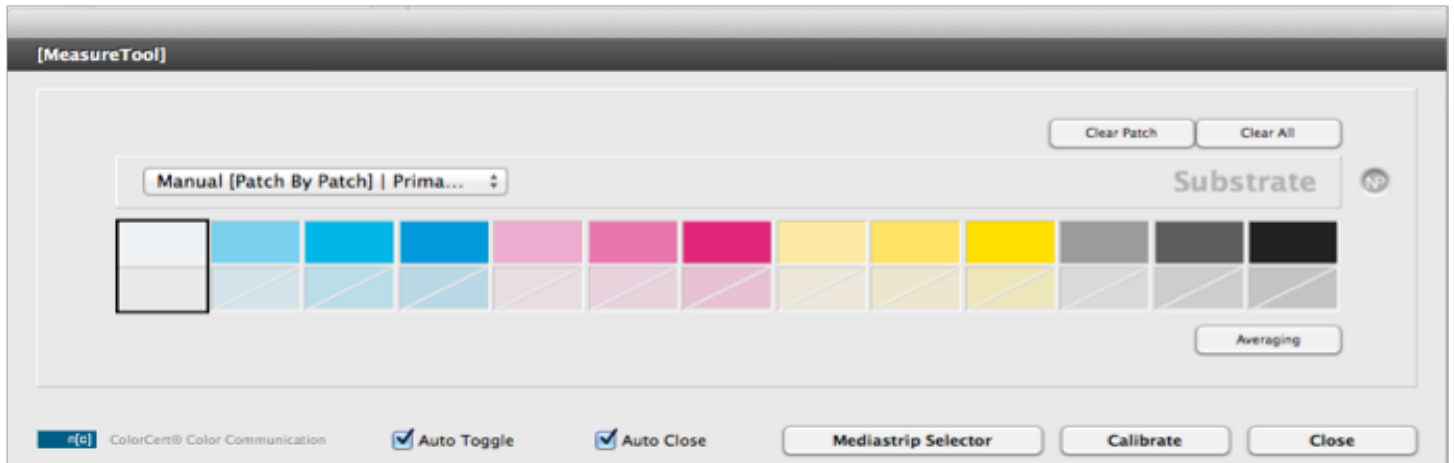
When you connect your device to the software, one of the following icons appear next to the instrument name:



The gray icons mean the device has an active and valid Profile. The red icon means the device is out of specification and needs to be NetProfiled.

These icons can appear in multiple locations in the application. For example, when you initially connect to the device in Preferences/Devices, it appears next to the device name and indicates that NetProfiler is valid on the device and it is alright to continue taking measurements.

Another example is when you begin to take a measurement in a Job, as illustrated below.



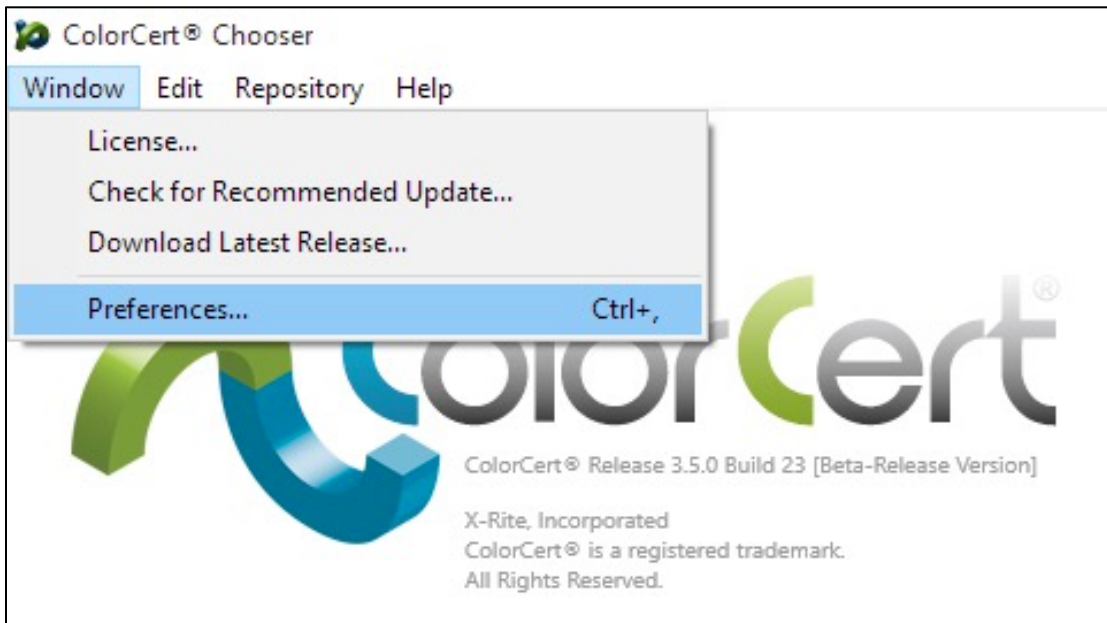
The NetProfiler option cannot be switched On or Off by a user or administrator.

QA Tools Module

The QA Tools module is designed as a stand-alone utility for non job based workflows.

Database setup

Enter database configuration by clicking on Window > Preferences from the ColorCert chooser screen.

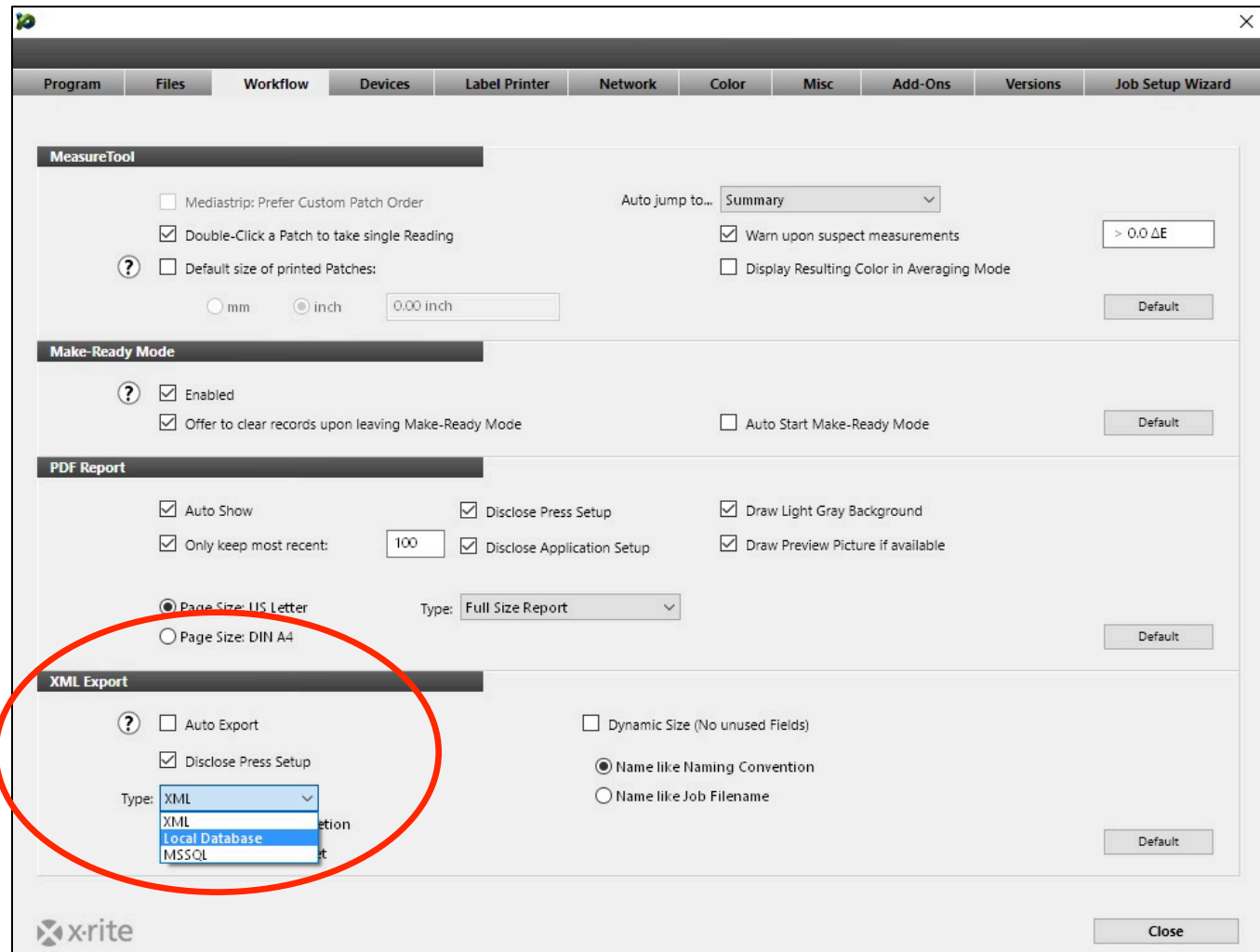


Click the “Workflow” tab.



Local Database Configuration

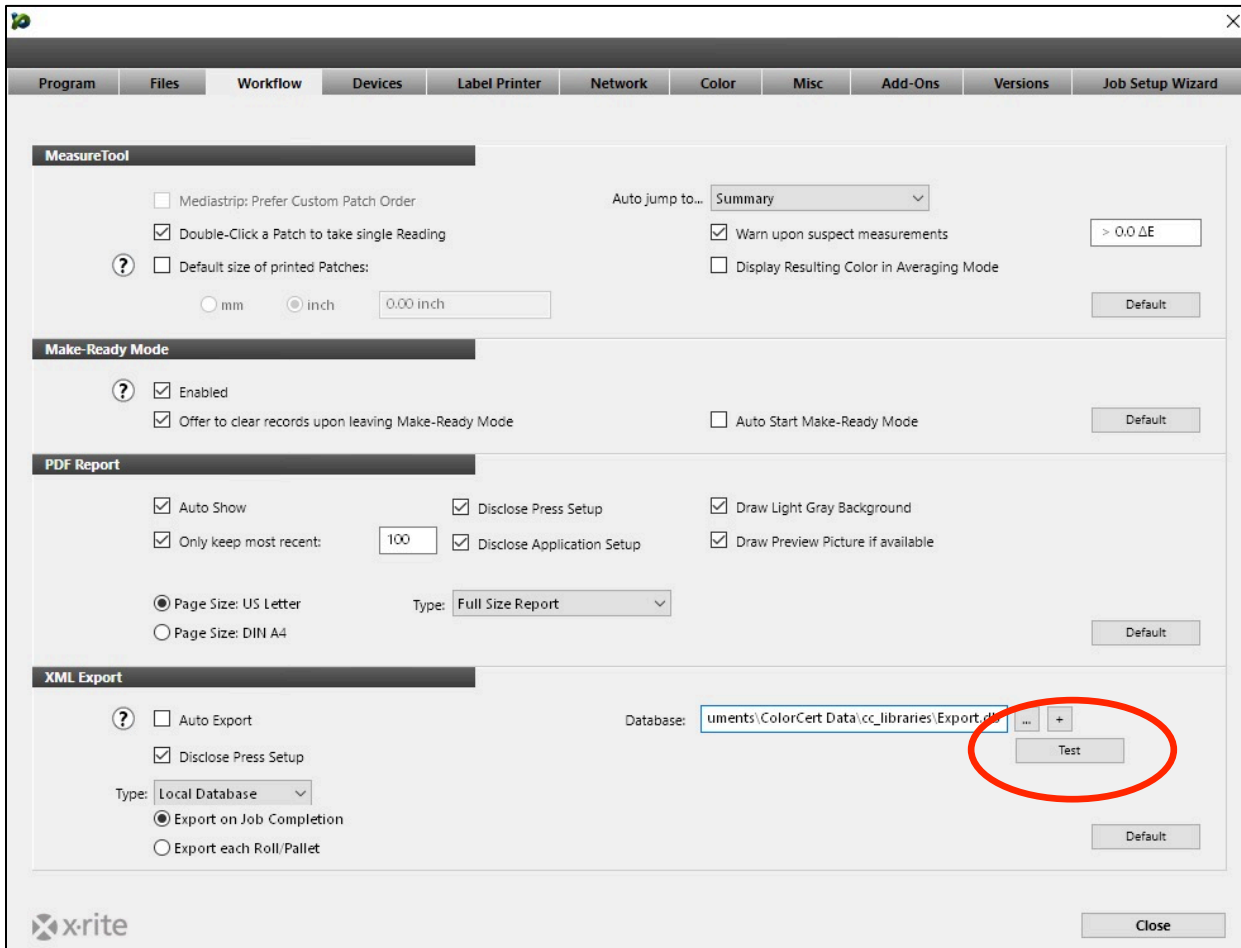
In the XML Export section change the Type to “Local Database”



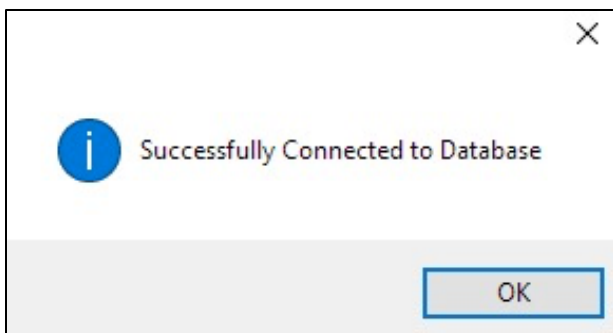
Starting with a new database

ColorCert will automatically create a new database unless you point it to an existing database. This will be the case for new customers. Many new customers may also choose to start over with a clean database.

ColorCert automatically creates a database named “Export.db” in the “ColorCert Data/cc_libraries” folder. To test your connect to this database Click the “Test” button.



You will see a message indicating a successful connection to the database. You may click on the “OK” button to close it.

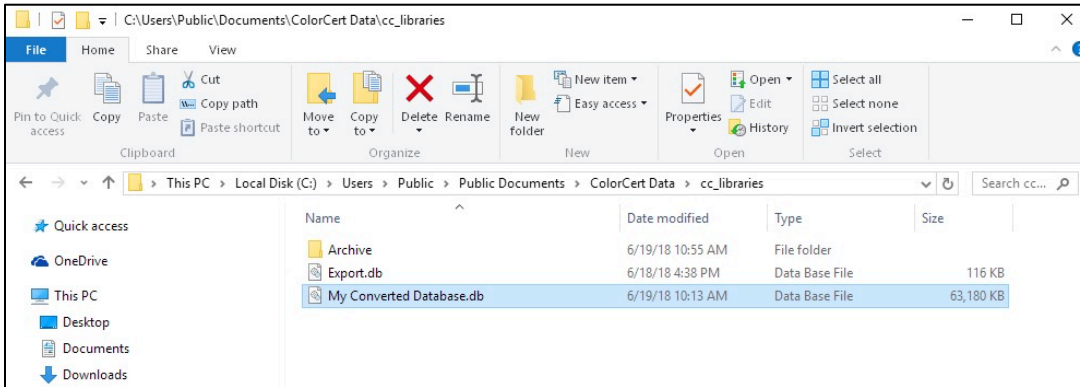


Connecting to an existing (converted) database

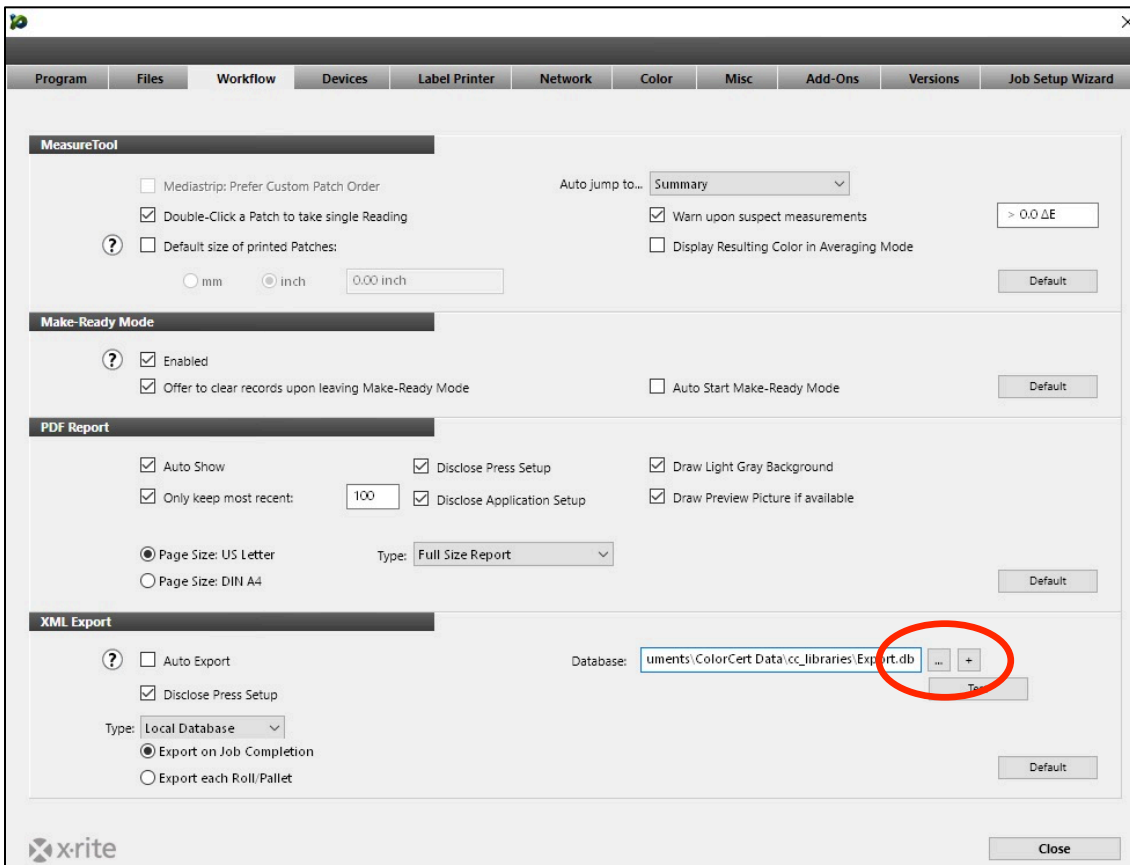
If you are going to use a database that you have converted from an existing X-RiteColor Master database, you will need to begin by placing the converted database in to “ColorCert Data/cc_libraries” folder. The default location for this folder is:

Windows: C:\Users\Public\Documents\ColorCert Data\cc_libraries

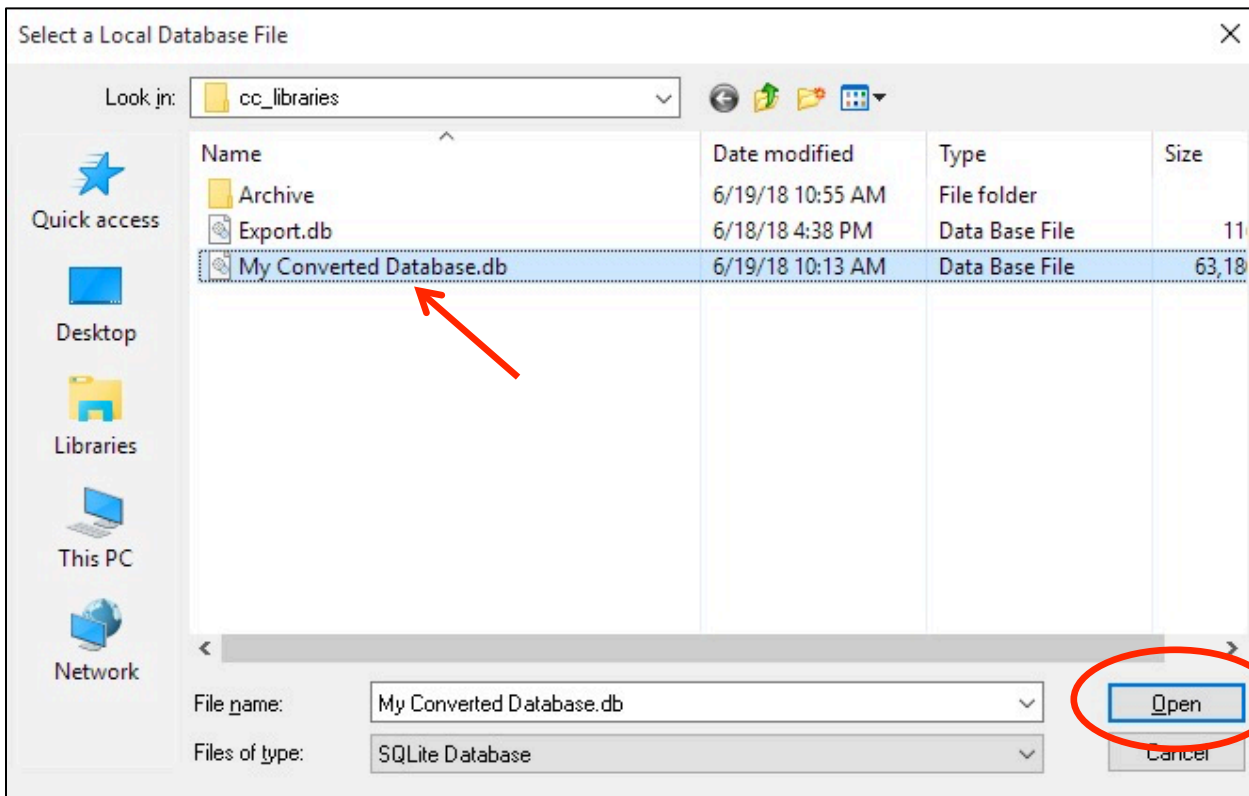
Mac: Macintosh HD/Users/Shared/ColroCert Data/cc_libraries



- Change the XML Export Type to “Local Database” as shown above.
- Click the button with the ellipsis (3 dots) just above the test button.



- Navigate to the cc_libraries folder
- Click on your converted database to highlight it
- Click the “Open” button



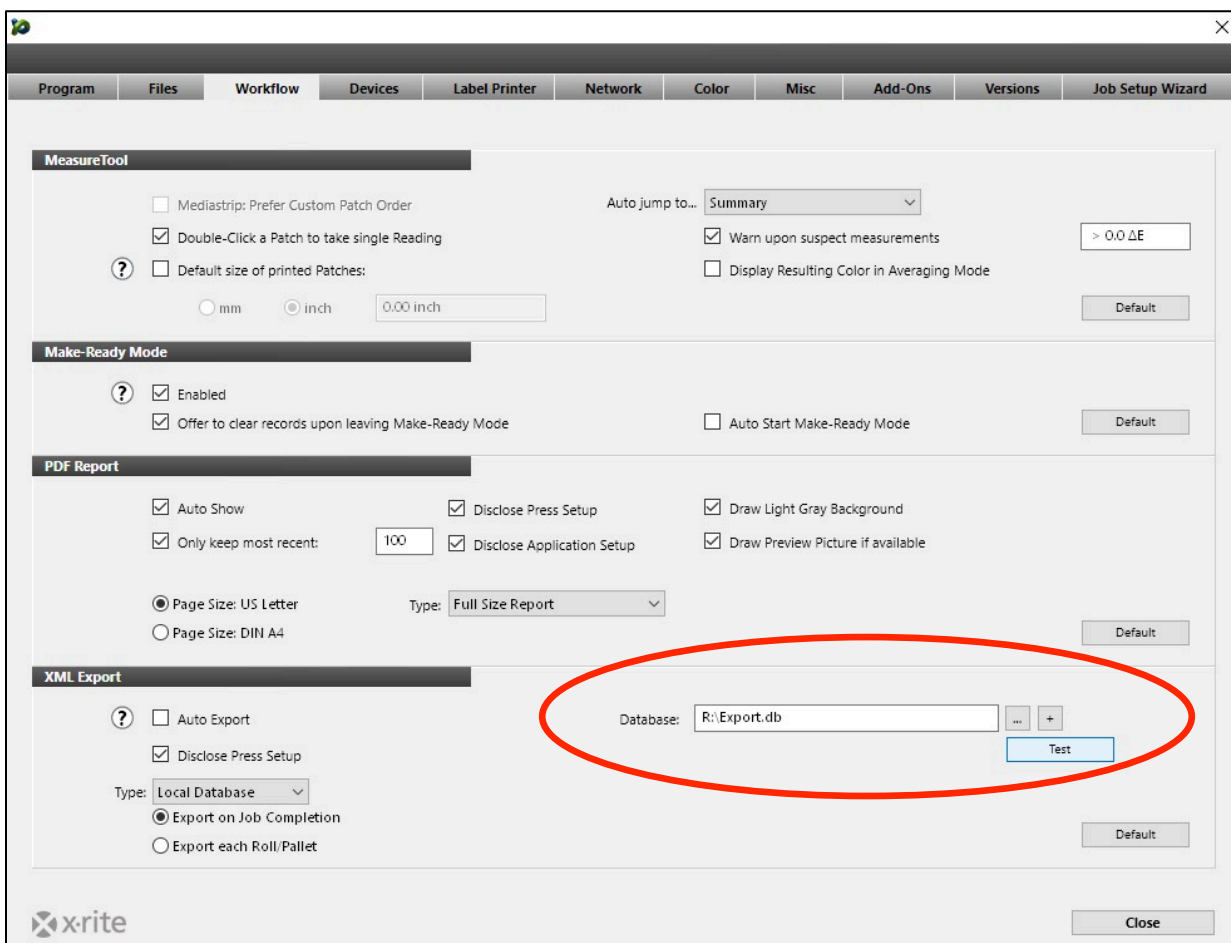
- To test your connect to this database Click the “Test” button

Using a local database on a shared network drive

Please Note: While it is possible to use a SQLite Database on a shared network drive, it should only be considered in those circumstances where just a few workstations will be connected concurrently. Any more than this would require an SQL Server Database on the back end.

You will likely need to ask your IT department to help with this configuration. The following steps assume a knowledge of network configuration and will require knowledge of your network as well as permissions typically granted just to those in IT.

- Create a folder on your local network to contain your database
- Place the database into this folder
- Map this folder on your workstation
- Change the XML Export Type to “Local Database” as shown above.
- Click the button with the ellipsis (3 dots) just above the test button.
- Navigate to the database in the mapped network drive (see image below)
- Click the “Open” button
- To test your connect to this database Click the “Test” button



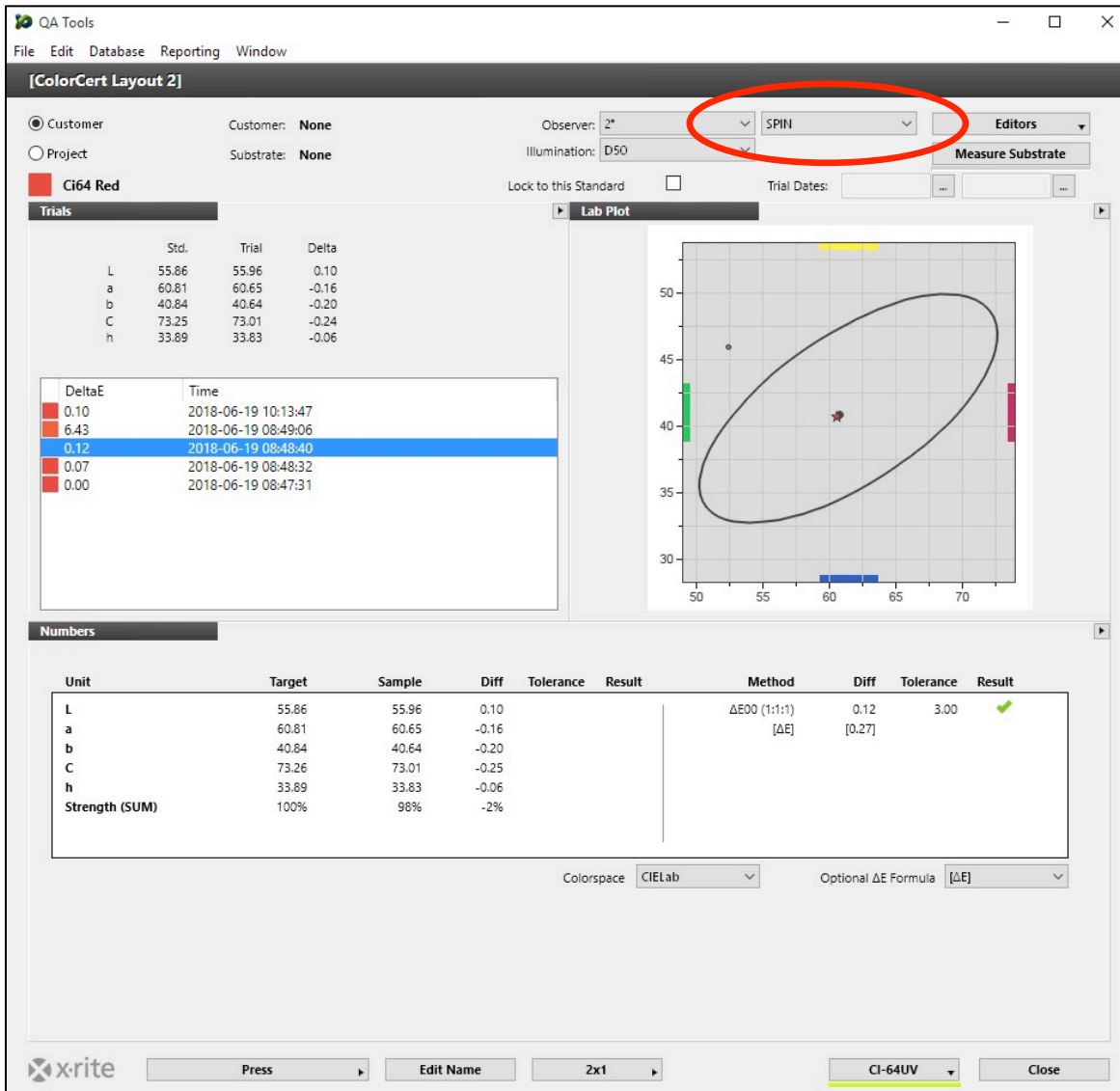
Using an MSSQL database

For deployments of QA Tools in operations that will have more than just a few work stations, QA Tools also supports the use of MSSQL databases. The ColorCert QA Tools solution just needs to point at a dedicated database within your SQL Server.

Instrument Geometries and QA Tools Database

The database that has been developed for use in ColorCert QA Tools supports both single angle (eXact, 530, 939, and SpectroEye) and Spherical (SP62, SP64, Ci5c, Ci6x) spectrophotometers. Legacy products required separate databases for different geometries.

When using a spherical device you will be able to select either Specular Included (SPIN), or Specular Excluded (SPEX) as the measurement mode. When connected to a single angle device the measurement modes are M0, M1, M2, or M3.



QA Tools
File Edit Database Reporting Window

[ColorCert Layout 2]

Customer: None
Project: Substrate: None
Observer: 2° **SPIN** Editors
Illumination: D50 Measure Substrate
Lock to this Standard Trial Dates: ...

Trials

	Std.	Trial	Delta
L	55.86	55.96	0.10
a	60.81	60.65	-0.16
b	40.84	40.64	-0.20
C	73.25	73.01	-0.24
h	33.89	33.83	-0.06

DeltaE Time

0.10	2018-06-19 10:13:47
6.43	2018-06-19 08:49:06
0.12	2018-06-19 08:48:40
0.07	2018-06-19 08:48:32
0.00	2018-06-19 08:47:31

Lab Plot

Numbers

Unit	Target	Sample	Diff	Tolerance	Result	Method	Diff	Tolerance	Result
L	55.86	55.96	0.10			ΔE00 (1:1:1)	0.12	3.00	✓
a	60.81	60.65	-0.16			[ΔE]	[0.27]		
b	40.84	40.64	-0.20						
C	73.26	73.01	-0.25						
h	33.89	33.83	-0.06						
Strength (SUM)	100%	98%	-2%						

Colorspace: CIELab Optional ΔE Formula: [ΔE]

xrite Press Edit Name 2x1 CI-64UV Close

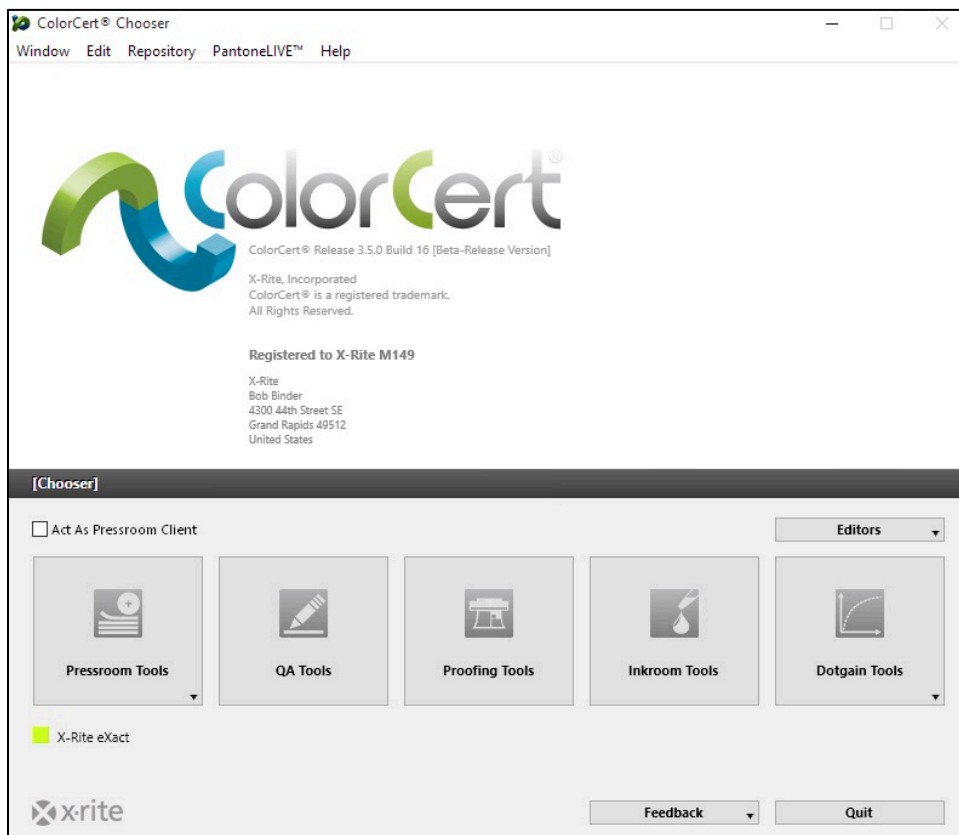
ColorCert QA Tools module

This section discusses the ColorCert QA Tools interface and provides a step by step guide of creating a new standard and measuring a sample.

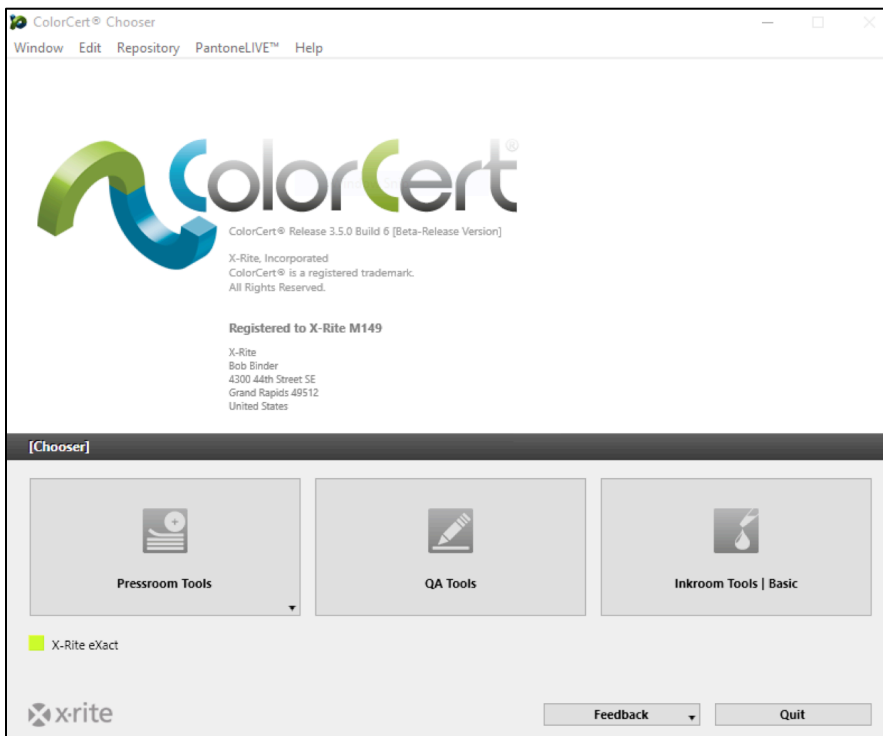
The Chooser

The main window is called the Chooser. This will look different based on the license you purchased.

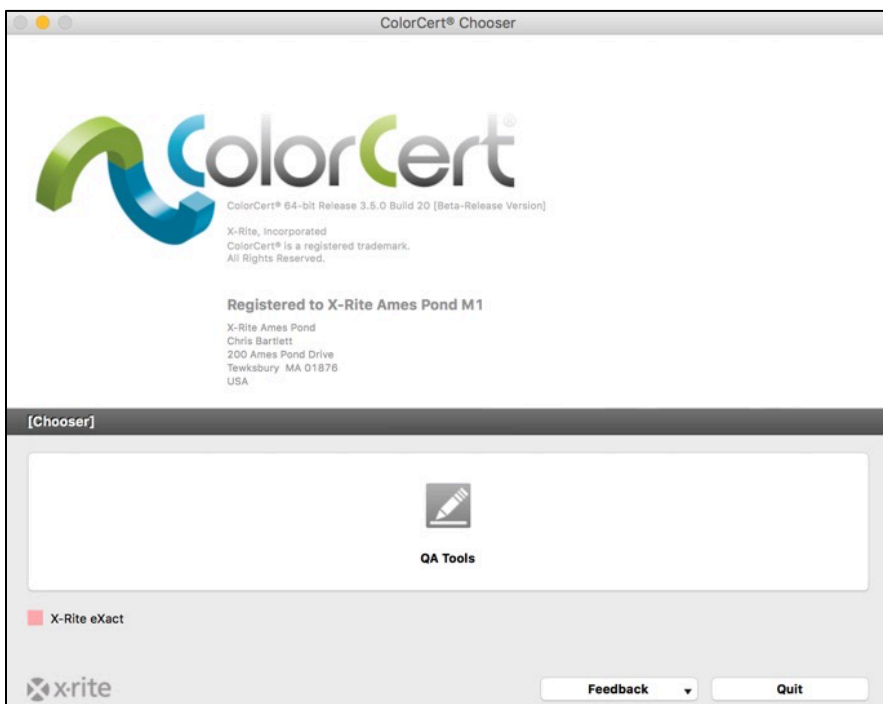
The Manager version of ColorCert is used to define Jobs, Profiles, Rules, Applications, Substrates, Inks, and Tolerances. It includes all available modules including QA Tools.



The Pressroom Client has access to QA tools, as well as Pressroom Tools for job based workflows and Inkroom Tools for quick QC checks which are not saved to the ColorCert database.



The QA Tools version has access to just the QA tools module.



Feedback

From the chooser menu you may also click on the feedback menu. From here you can Suggest a Feature, Report a Bug, or Contact a support or sales representative from xrite.com.

The QA Tools Interface

The top portion of the screen contains options for:

1. Applying filters to limit automatic color selection to a particular Customer or Project
2. Measurements conditions
3. Editor selection button
4. Measure substrate button
5. Date filters
6. Standard lock button

Depending upon your user permissions, you may or may not have access to all of these features.

The screenshot shows the ColorCert QA Tools interface with several callouts:

- 1:** Points to the menu bar (File, Edit, Database, Reporting, Window).
- 2:** Points to the 'Observers' and 'Illumination' dropdown menus.
- 3:** Points to the 'Editors' dropdown menu.
- 4:** Points to the 'Measure Substrate' button.
- 5:** Points to the 'Lock to this Standard' checkbox.
- 6:** Points to the 'Trial Dates' field.

The interface includes the following components:

- Lab View:** A color space plot showing a target point and its deviation.
- Spectrum View:** A graph showing the spectral response of the sample.
- Trials:** A table listing trial data.
- Best Match:** A section showing the current sample's density and Delta E, along with the best match standard's density and Delta E.
- Operating Range:** A graph showing the operating range for the measurement.

Std.	Trial	DeltaE
58.11	58.14	0.03
a	67.11	-0.41
b	65.10	-1.31
C	92.12	-1.19
h	43.24	-0.42

DeltaE	Time
0.42	2018-06-18 11:33:36
0.89	2018-06-18 11:33:31
2.27	2018-06-18 11:33:10
1.30	2018-06-18 11:33:03
1.14	2018-06-18 11:32:57
0.86	2018-06-18 11:32:52
0.61	2018-06-18 11:32:46
1.50	2018-06-18 11:32:40
0.41	2018-06-18 11:32:33
0.39	2018-06-18 11:32:29
0.30	2018-06-18 11:32:23

Best Match

Sample: Dens: 1.44, ΔE: 0.42

Best Match: Dens: 1.46, ΔE: 0.33

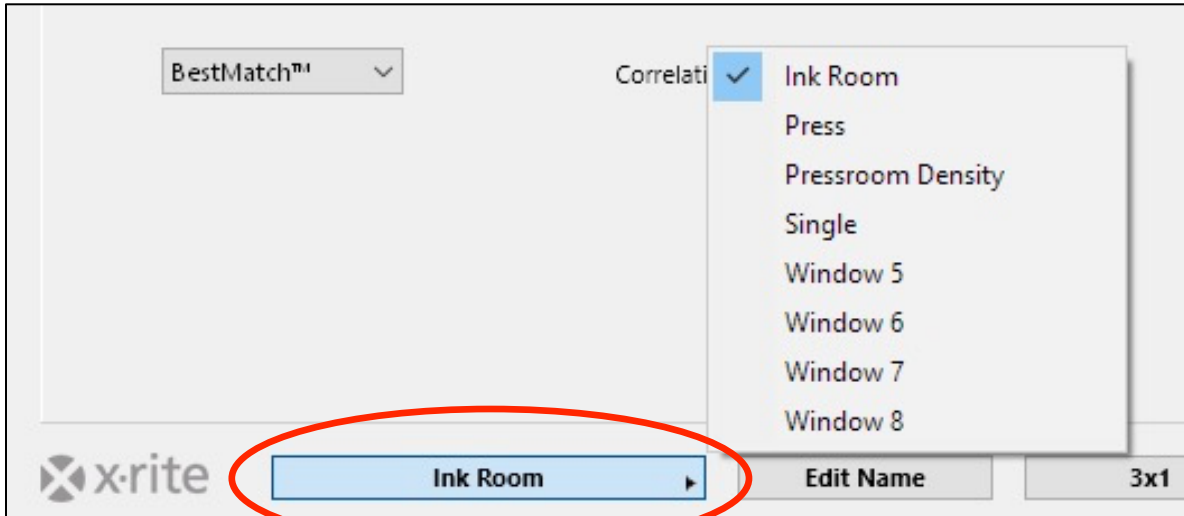
Operating Range: A graph showing the operating range for the measurement.

The bottom portion of the QA Tools window contains a number of user configurable views of the data.

Display Configurations

Near the bottom of the main screen, you will find a button that allows you to change your view of the data being displayed.

There are 4 preconfigured display configurations and 4 blank display configurations for you to create your own custom views of the data. You can change display configurations by clicking the button circled below, and then selecting any of the 8 available display configurations by clicking them in the pick list that appears. Please note that the name of this selection button changes to show the current display configuration selected.



The Ink Room Display Configuration

The “Ink Room” display configuration contains the following data views:

- L*a*b View (plot of standard and currently selected sample on an L*a*b* graph along with the assigned tolerance)
- Spectrum View (spectral curve of standard and currently selected sample)
- Trials (L*a*b* data for standard and trials along with a date and time stamp)
- Best Match (Graphical view of the currently selected sample and it’s correlation to the standard)

QA Tools
— □ ×

File Edit Database Reporting Window

[ColorCert Layout 1]

Customer Project: **None**
 Project Substrate: **None**

Get Set Red

Observer: 2*
 Illumination: A

Lock to this Standard

[MC] No Filter
 Measure Substrate

Trial Dates:

Lab View

Auto Zoom

Spectrum View

Trials

	Std.	Trial	Delta
L	58.11	58.14	0.03
a	67.11	66.70	-0.41
b	63.10	61.79	-1.31
C	92.12	90.93	-1.19
h	43.24	42.81	-0.42

DeltaE	Time
0.42	2018-06-18 11:33:36
0.89	2018-06-18 11:33:31
2.27	2018-06-18 11:33:10
1.30	2018-06-18 11:33:03
1.14	2018-06-18 11:32:57
0.86	2018-06-18 11:32:52
0.61	2018-06-18 11:32:46
1.50	2018-06-18 11:32:40
0.41	2018-06-18 11:32:33
0.39	2018-06-18 11:32:29
0.30	2018-06-18 11:32:23

Best Match

Sample
 Dens: **1.44**
Status-T (Y)
 ΔE: **0.42**
2000

Best Match
 Dens: **1.46** ✓
Status-T (Y)
 ΔE: **0.33**
2000

BestMatch™

Correlation Mode: Density

Method: Coated

Mode: Absolute

Operating Range

Ink Room
Edit Name
3x1
eXact
Close

The Press Display Configuration

The “Press” display configuration contains the following data views:

- L*a*b Plot (Scatter plot of standard and trials on an L*a*b* graph along with the assigned tolerance)
- Visual Color (Visual representation of the standard and current sample)
- Trials (L*a*b* data for standard and trials along with a date and time stamp)
- Best Match (Graphical view of sample and it’s correlation to the standard)

QA Tools
— □ ×

File Edit Database Reporting Window

[ColorCert Layout 2]

Customer Project: **None**
 Project Substrate: **None**

Get Set Red

Lock to this Standard

Observer: 2° [MO] No Filter
 Illumination: A

Editors
Measure Substrate

Trial Dates:

	Std.	Trial	Delta
L	58.11	58.14	0.03
a	67.11	66.70	-0.41
b	63.10	61.79	-1.31
C	92.12	90.93	-1.19
h	43.24	42.81	-0.42

DeltaE	Time
0.42	2018-06-18 11:33:36
0.89	2018-06-18 11:33:31
2.27	2018-06-18 11:33:10
1.30	2018-06-18 11:33:03
1.14	2018-06-18 11:32:57
0.86	2018-06-18 11:32:52
0.61	2018-06-18 11:32:46
1.50	2018-06-18 11:32:40
0.41	2018-06-18 11:32:33
0.39	2018-06-18 11:32:29
0.30	2018-06-18 11:32:23

Lab Plot

Visual Color

Trials

Best Match

Sample

Dens: **1.44**
Status-T (Y)

ΔE: **0.42**
2000

Best Match

Dens: **1.46** ✓
Status-T (Y)

ΔE: **0.33**
2000

BestMatch™

Correlation Mode: Density

Method: Coated

Mode: Absolute

Operating Range

Press
Edit Name
3x1
eXact
Close

The Pressroom Density Display Configuration

The “Ink Room” display configuration contains the following data views:

- L*a*b Plot (Scatter plot of standard and trials on an L*a*b* graph along with the assigned tolerance)
- Density (density graph along with data for all 4 filters)
- Details (Allows operator to enter and view the job number as well as notes and tags to a trial)
- Best Match (Graphical view of sample and it’s correlation to the standard)

QA Tools
File Edit Repository PantoneLIVE™ Database Reporting Window

[ColorCert Layout 3]

Customer Project

Project: **None** Substrate: **None**

PMS 1235 C

Observer: 2* [MO] No Filter

Illumination: D50

Lock to this Standard

Editors

Measure Substrate

Trial Dates: [] []

Lab Plot

Density

Density Standard: Status T

	Std.	Trial	Delta
Cyan	0.07	0.08	0.01
Magenta	0.37	0.40	0.03
Yellow	1.06	1.05	-0.01
Black	0.20	0.22	0.02

Details

Job No: 20180625-032

Notes: Shutting down to wash the blankets

Tags: COATED

Save

Best Match

Sample

Dens: **1.05**
Status-T (Y)

ΔE : **1.72**
2000

Best Match

Dens: **1.00** ↓
Status-T (Y)

ΔE : **1.43**
2000

Operating Range

BestMatch™
Correlation Mode: Density
Method: Coated
Mode: Absolute

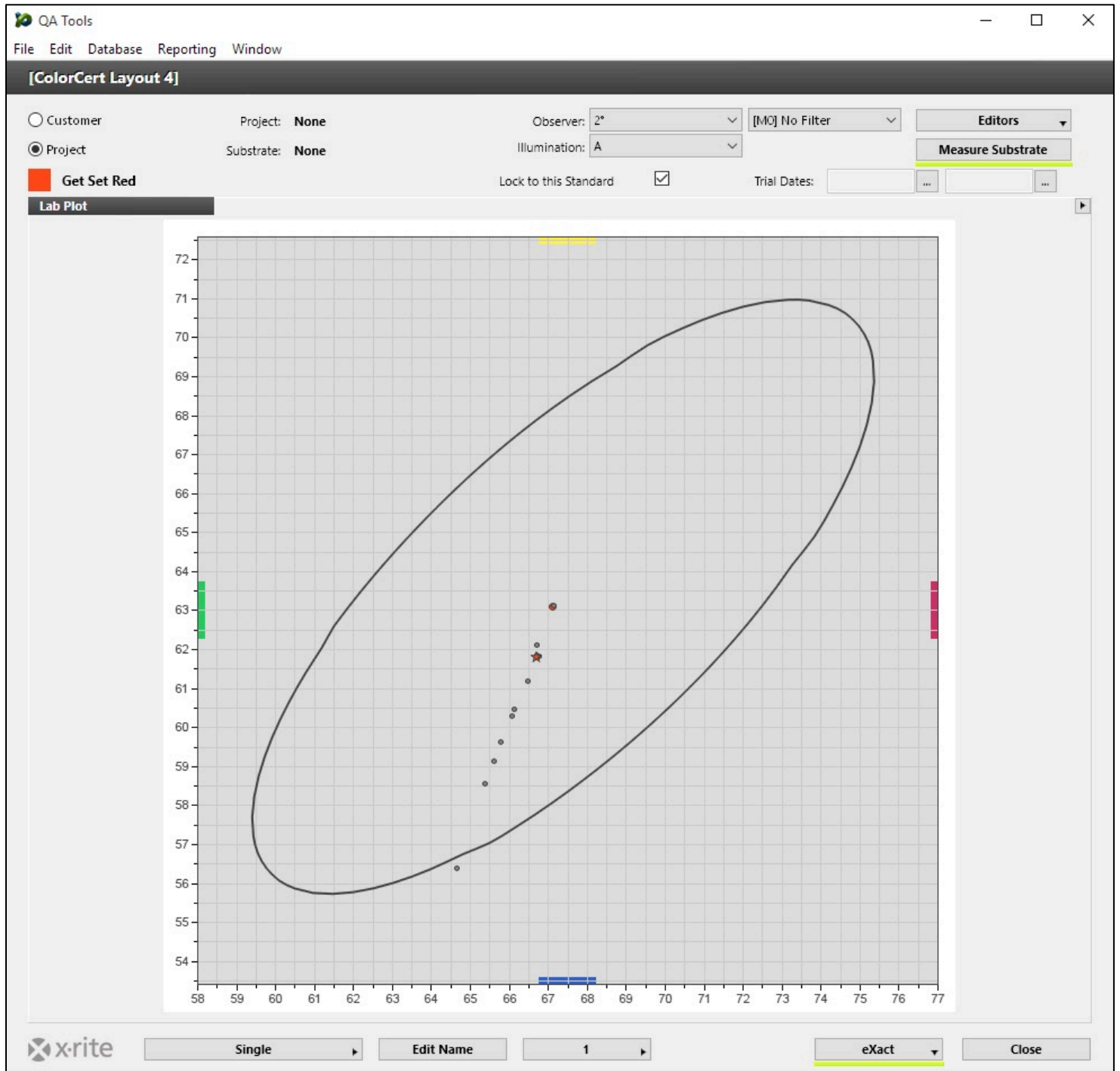
Pressroom Density
Edit Name
3x1

eXact
Close

The Single View Display Configuration

The “Single View” display configuration contains the following data views:

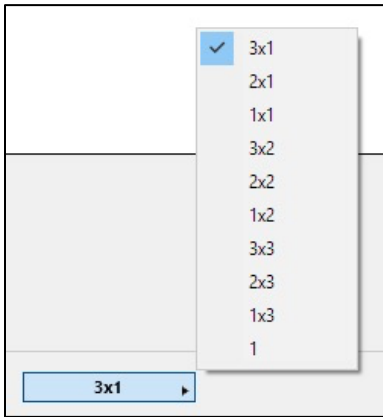
- L*a*b View (plot of standard and sample on an L*a*b* graph along with the assigned tolerance)



Changing the layout

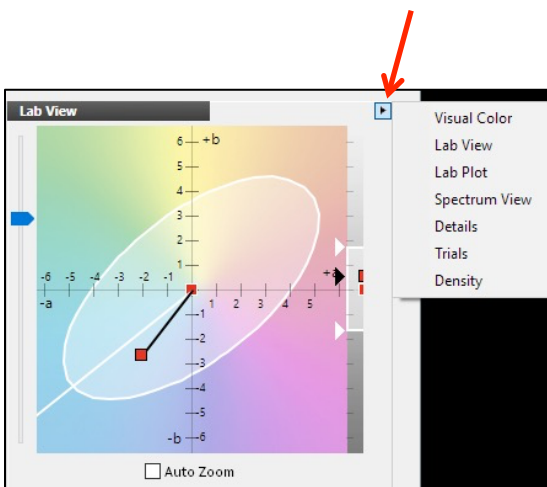
ColorCert allows you to customize all of the 8 standard data configurations, including the 4 built-in configurations. Near the bottom of the main screen, you will find two buttons. One labeled with the word “Window” followed by a number (or a standard configuration name, i.e. “Ink Room), and the second with a number pair (or just the number 1).

The button with the numbers is used to select the number and arrangement of data panels on this screen.

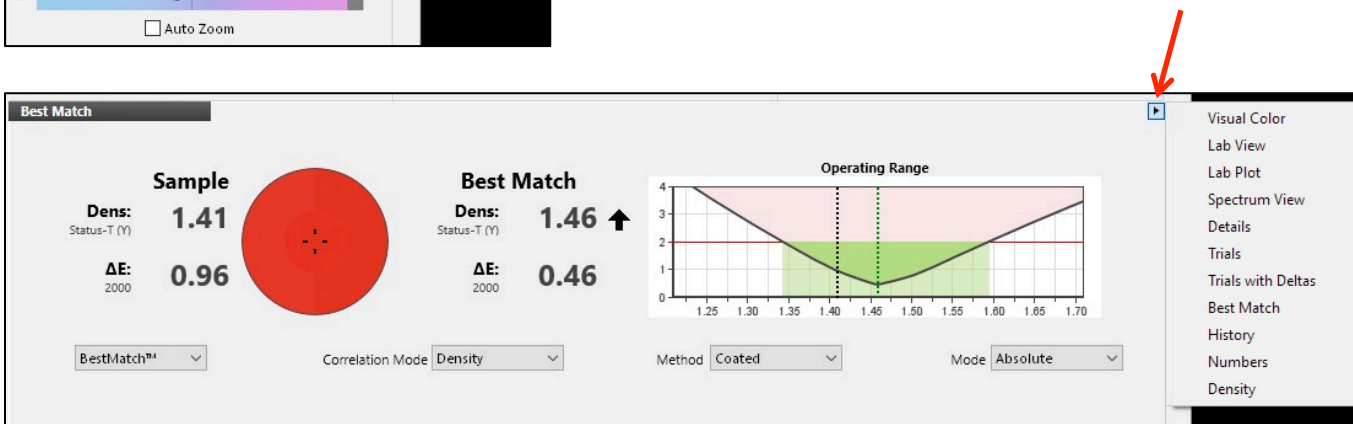


The screen contains two rows of data panels. The first number in the dropdown list refers to the number of panels in the first row and the second number refers to the number of panels in the second row. The example screen shown on the previous page is a 3x1 layout. The last option, number 1, allows you to select a single data panel to fill the entire screen.

Once you have chosen your data panel arrangement, you may select the data to view in each by clicking the arrow icon in the upper right hand corner of each panel.

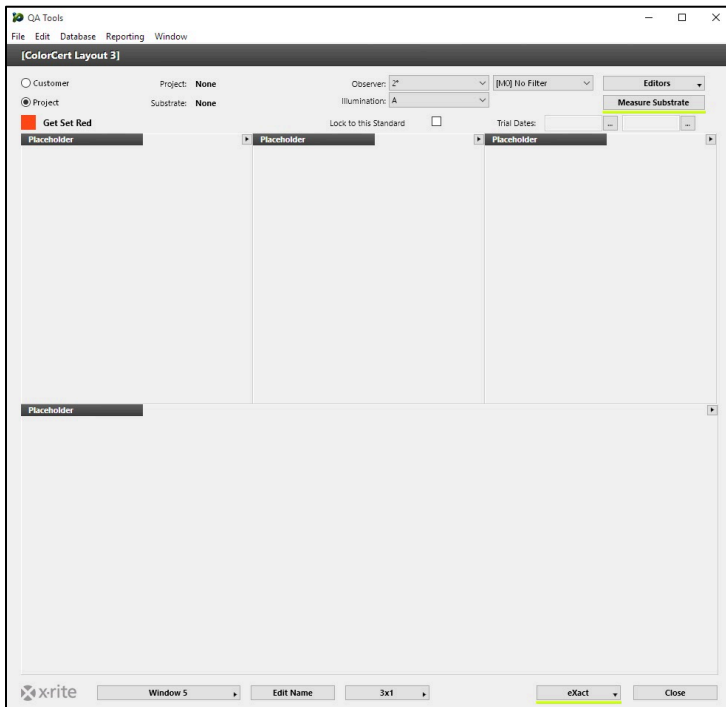


Please note that a few views of the data (such as “Best Match”) are only available in a one data panel across configuration, as shown below. This is to assure the legibility of the data displayed.

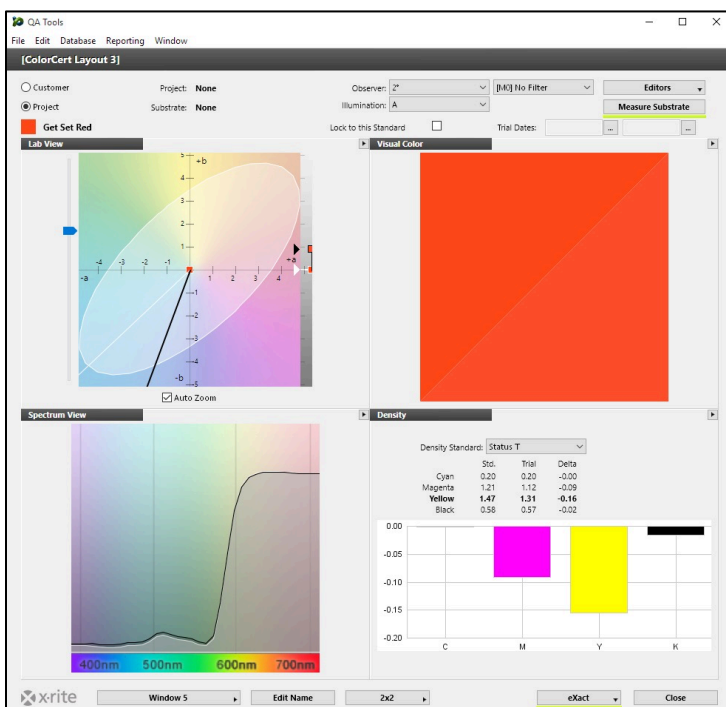


The “Window” button is used to save particular screen layouts. This allows you to quickly recall them during production. You may, for example, wish to save specific layouts for particular customers, or you may have press operators that prefer a unique view of their data.

The first time you open the Window 5, 6, 7, or 8 layouts, you will find place holders.



To create a new custom view simply select a layout configuration using the button with the numbers, then select a view for each data panel. In the example below I selected Window 5, chose a 2x2 layout, and then added 4 graphical data views.



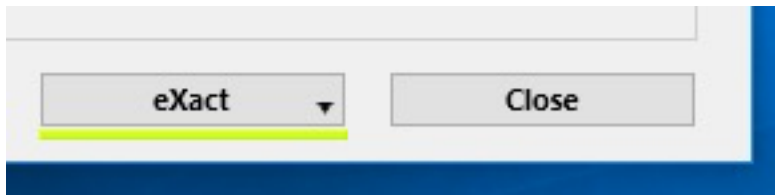
ColorCert QA tools will automatically remember this configuration. At this point you may click on the “Window #” button to return to a previously saved view. Clicking on the “Window #” button and selecting “Window 4” will return you to this particular configuration. There is no particular action required on your part to save a configuration, ColorCert remembers your most recent configurations.

Measuring Trials

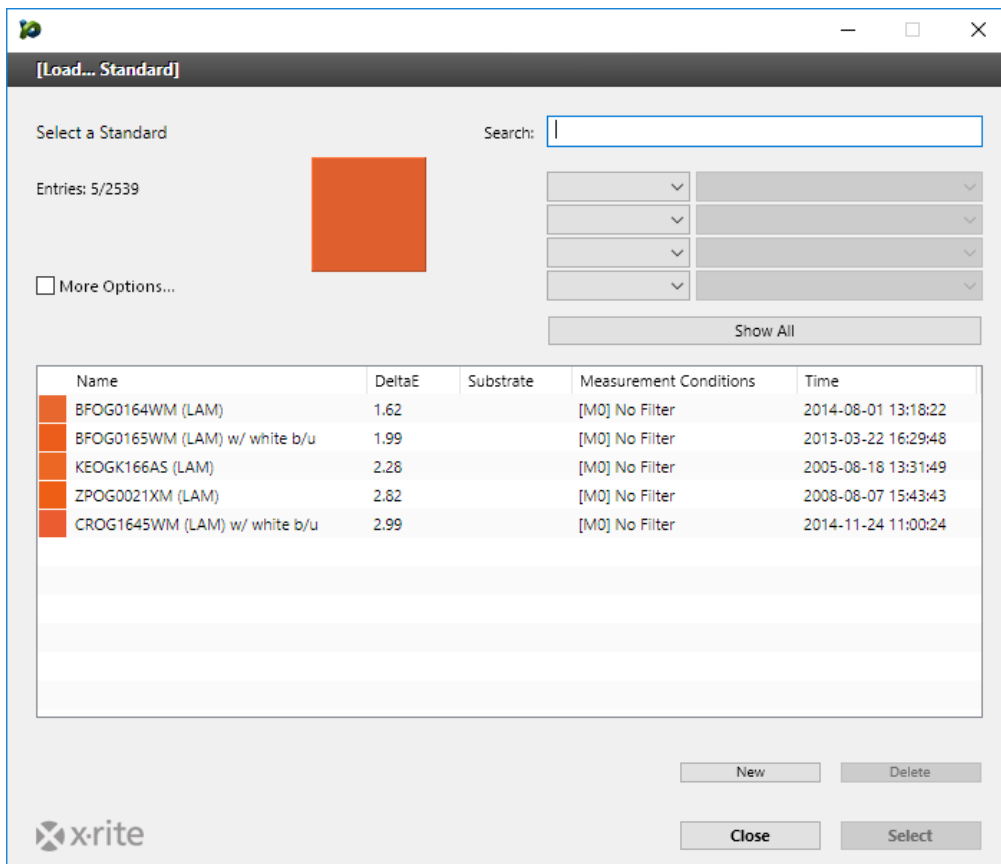
Search and Find

ColorCert QA Tools is able to search the database of color standards and display a list of standards that are very similar in color to the trial measured. You may then select the appropriate color standard.

To use this feature, make sure that your measurement instrument is turned on and that the software has established a connection to the device as indicated by a green line under the instrument button near the bottom of the software window.



Then you simply need to measure something. If ColorCert QA Tools is able to find one or more standards that are very close (as defined within the software settings), it will display a list of these standards. You can double click on any standard in the list to select it.



[Load... Standard]

Select a Standard

Entries: 5/2539

More Options...

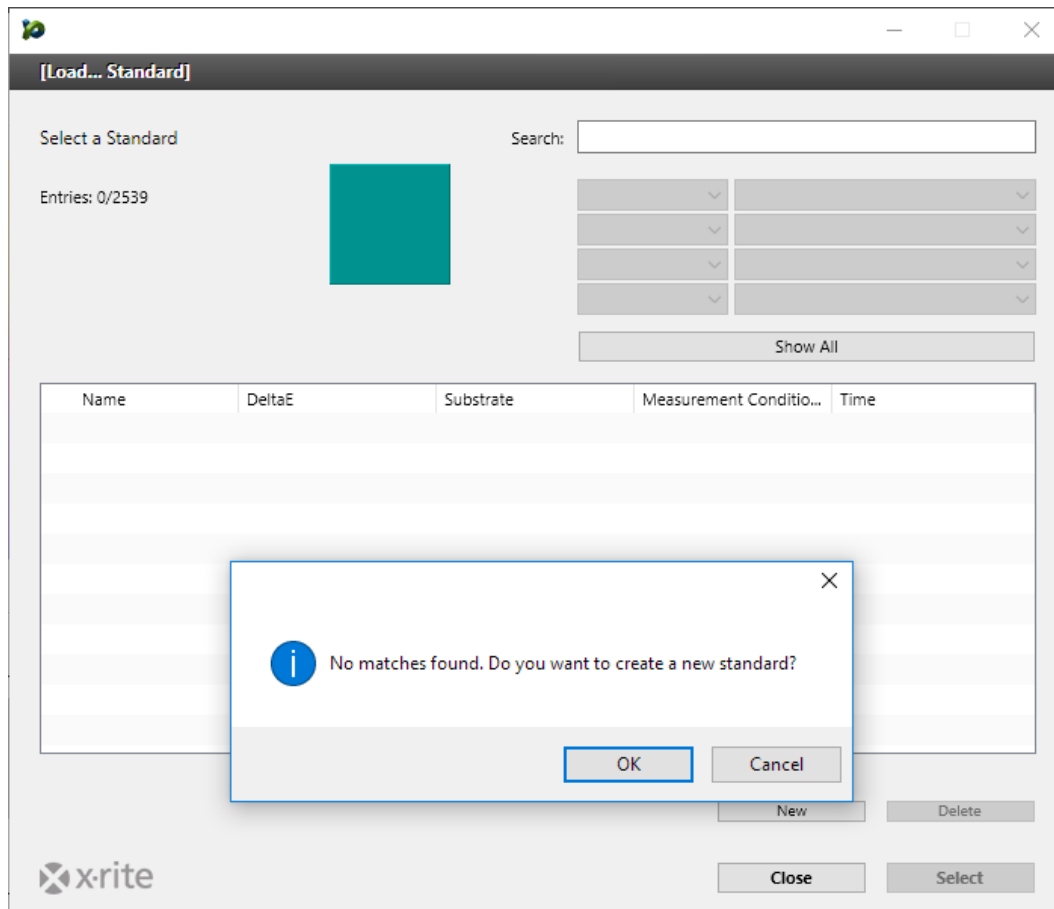
Search:

Name	DeltaE	Substrate	Measurement Conditions	Time
BFOG0164WM (LAM)	1.62		[M0] No Filter	2014-08-01 13:18:22
BFOG0165WM (LAM) w/ white b/u	1.99		[M0] No Filter	2013-03-22 16:29:48
KEOGK166AS (LAM)	2.28		[M0] No Filter	2005-08-18 13:31:49
ZPOG0021XM (LAM)	2.82		[M0] No Filter	2008-08-07 15:43:43
CROG1645WM (LAM) w/ white b/u	2.99		[M0] No Filter	2014-11-24 11:00:24

Buttons: New, Delete, Close, Select

xrite logo

If there are no standards close to what was measured, QA Tools will display a message asking if you would like to create a new standard.



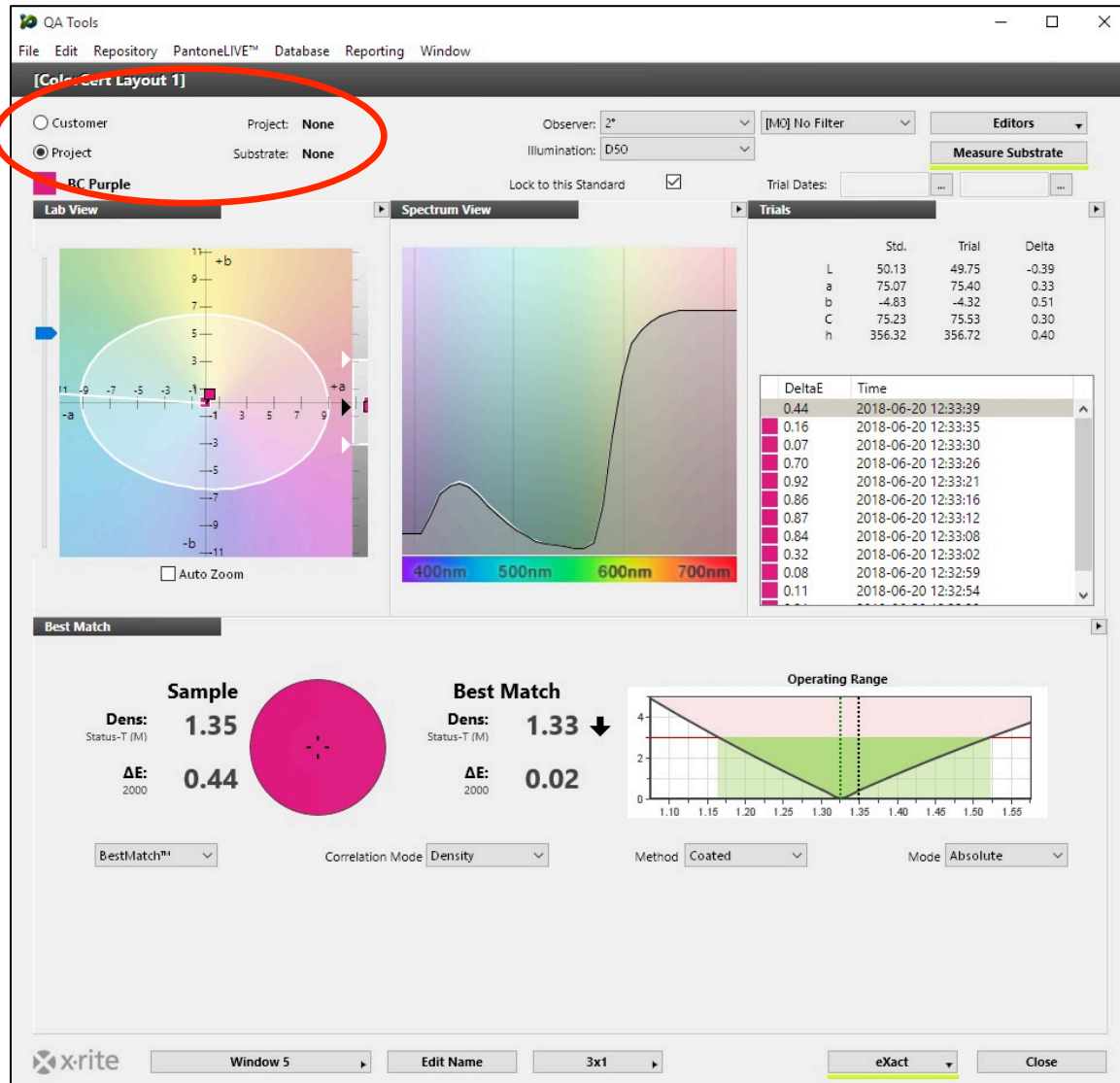
To create a new standard, click the "OK" button and proceed as described in the "creating new standards" section.

Project, Customer, and Substrate Modes

Limiting the color selection

In some cases it is useful to query the entire database when using the search and find function. If you have a relatively large database of colors however, doing so may display a large number of colors from which you may select.

You may find it beneficial to limit the selection of available colors to either a particular customer, project, or those colors associate with a specific substrate. This is done using the filtering selectors.



The screenshot shows the ColorCert QA Tools software interface. The 'Customer' and 'Project' radio buttons are circled in red. The interface displays various views and data:

- Lab View:** A color wheel showing the selected color (BC Purple) and its position on the color space.
- Spectrum View:** A graph showing the spectral power distribution of the color.
- Trials:** A table listing the results of the search, including Delta E and Time.
- Best Match:** A section showing the sample's density (1.35) and Delta E (0.44), and the best match's density (1.33) and Delta E (0.02).

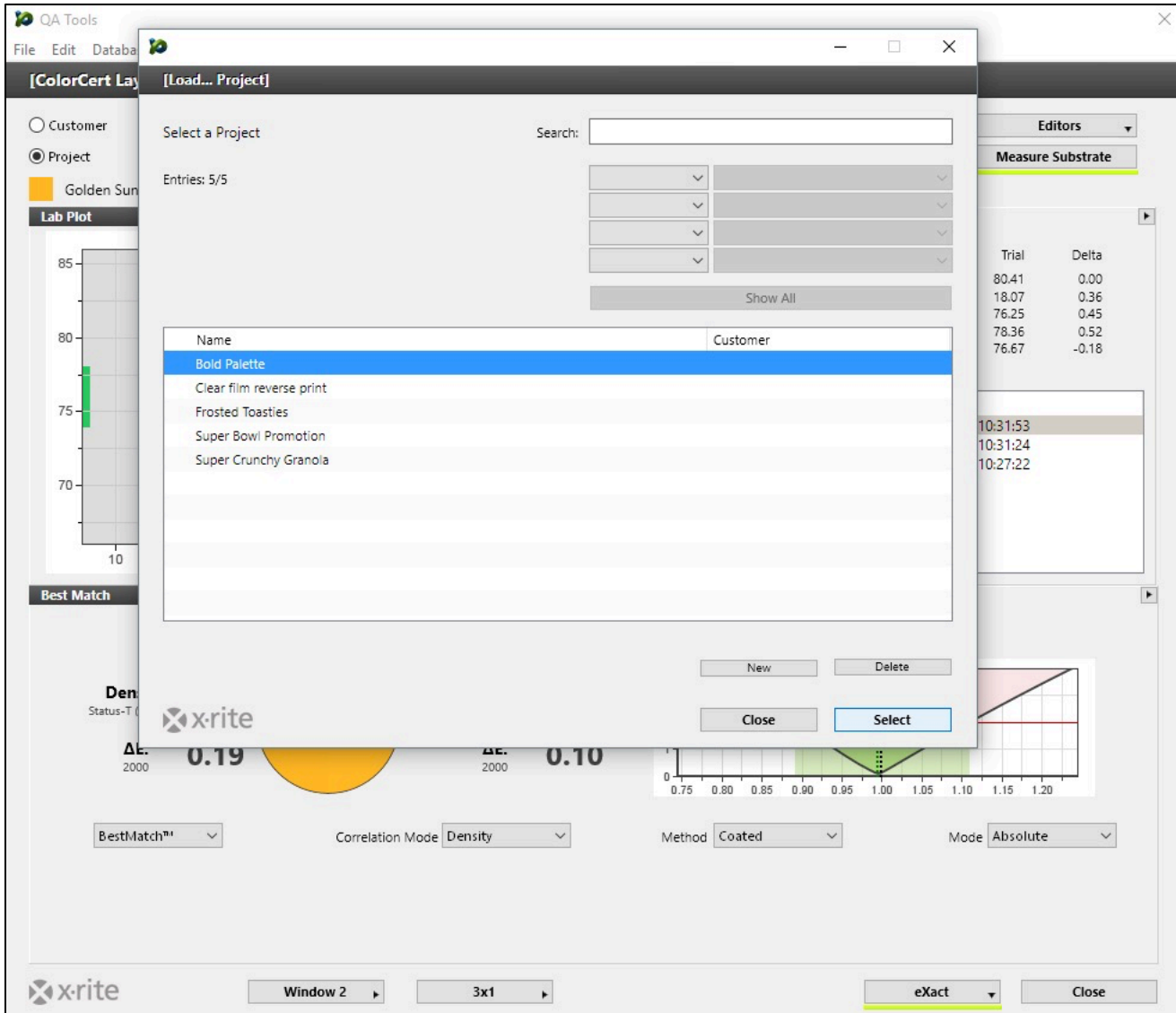
Std.	Trial	Delta	
L	50.13	49.75	-0.39
a	75.07	75.40	0.33
b	-4.83	-4.32	0.51
C	75.23	75.53	0.30
h	356.32	356.72	0.40

DeltaE	Time
0.44	2018-06-20 12:33:39
0.16	2018-06-20 12:33:35
0.07	2018-06-20 12:33:30
0.70	2018-06-20 12:33:26
0.92	2018-06-20 12:33:21
0.86	2018-06-20 12:33:16
0.87	2018-06-20 12:33:12
0.84	2018-06-20 12:33:08
0.32	2018-06-20 12:33:02
0.08	2018-06-20 12:32:59
0.11	2018-06-20 12:32:54

To make a filter selection, click either the Customer or Project radio button. Then click the word “None” to the right of Customer. This will bring up a list from which you may make a selection by double clicking on the desired item.

You may also click the word “None” next to Substrate and select a substrate to search just those colors that are associated with it.

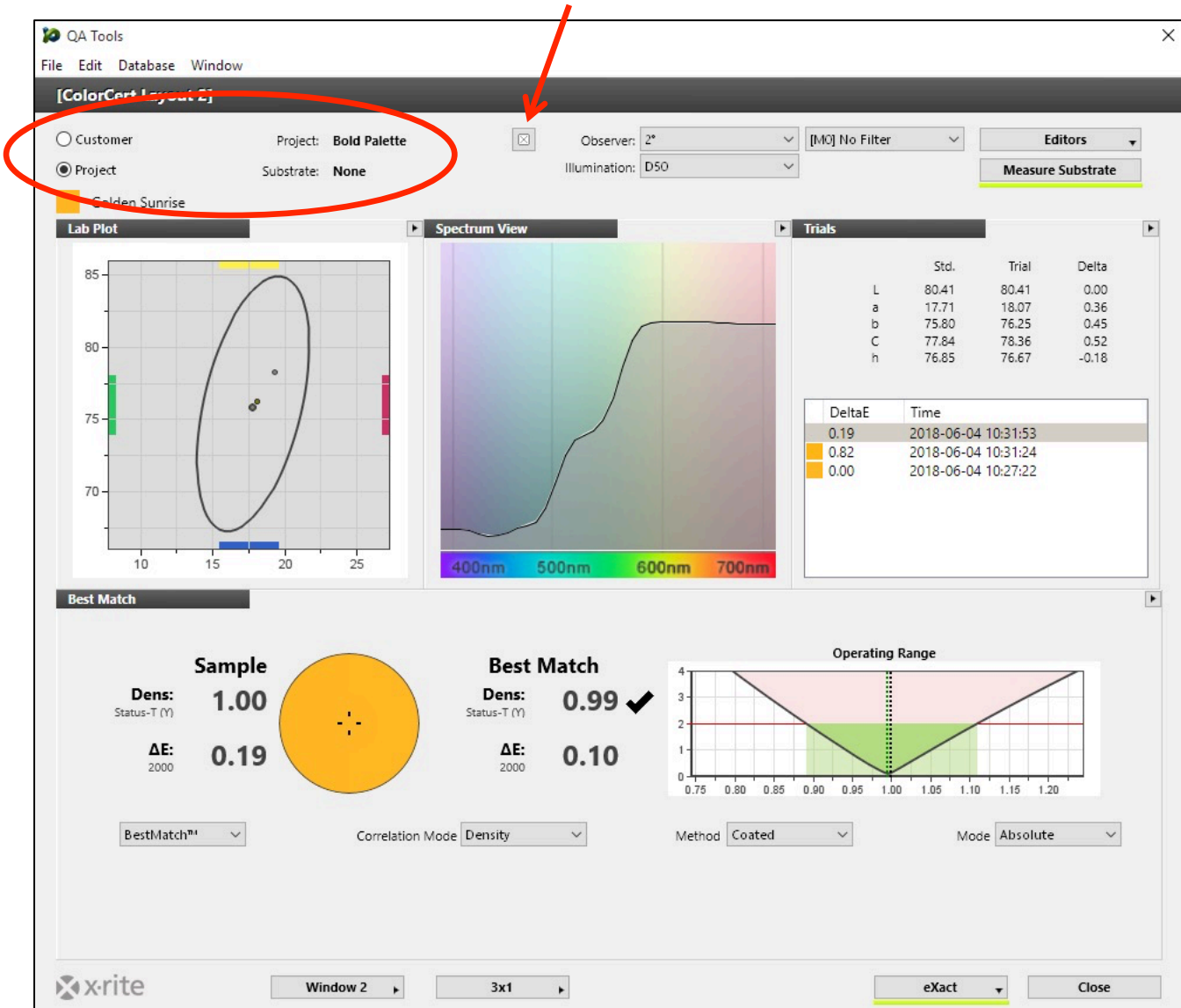
There is a search box near the top of the selection window if needed to help you find what you are looking for.



Once you are in either Project, Customer, or Substrate mode, ColorCert will only search within the selected subset of standards.

You will see either the Project, Customer, or Substrate name displayed to let you know you are in one of these modes.

To exit Project or Customer mode, click the “X” button to the right of the Project, Customer, or Substrate name.



Auto Accept Standard

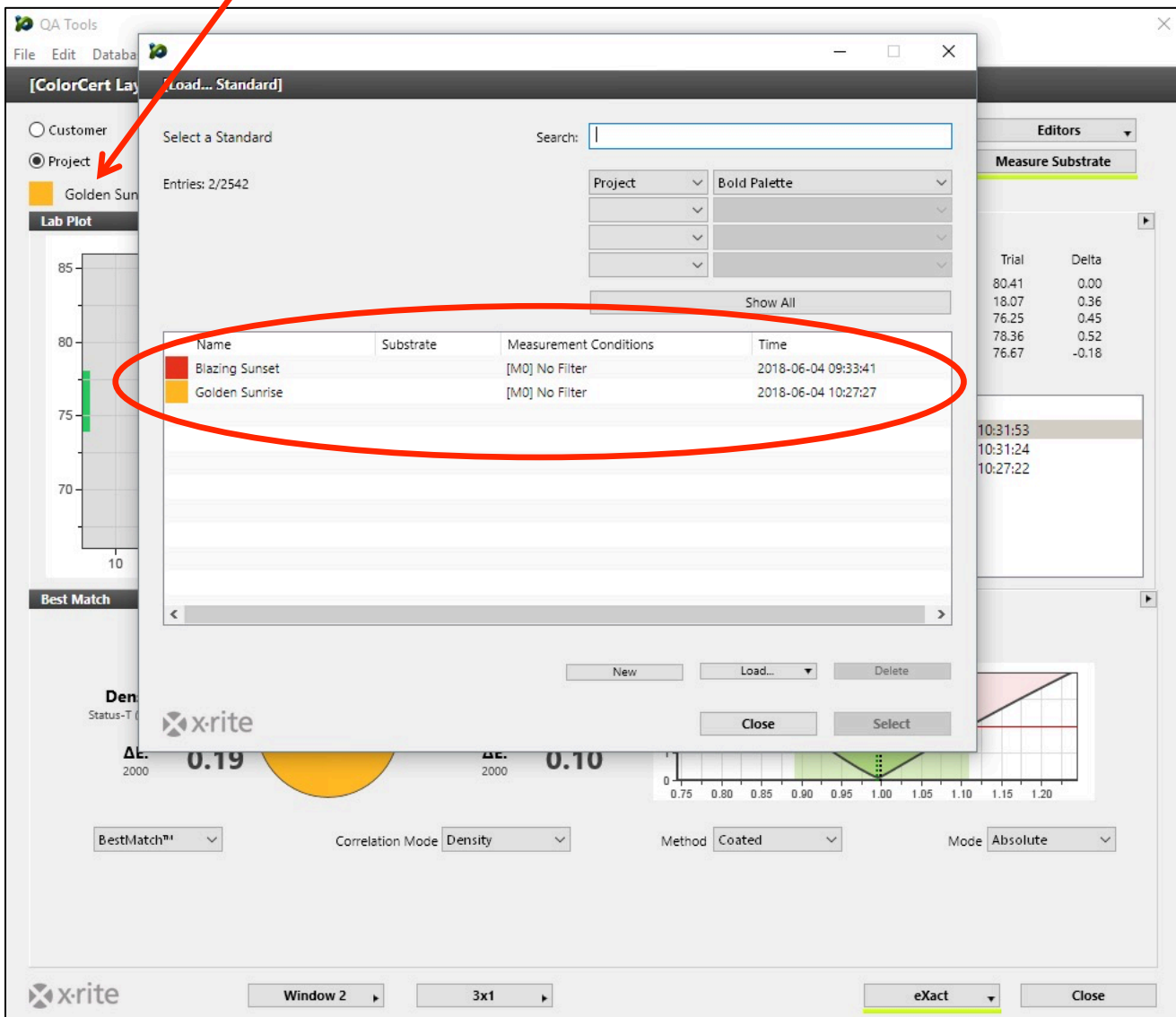
When you are in project mode, ColorCert QA Tools will auto accept the standard that is within the tolerance defined in your default settings. This saves time as there is no need to select the standard from a list.

Manually Selecting Standards

When you are in either Project or Customer mode, you may toggle between colors by double clicking on the color name right below the Customer and Project mode radio buttons. This will bring up a list of colors assigned to the Project or Customer.

The same thing may be done when not in project or customer mode but the list of displayed color standards may be long as all standards in your database will be displayed in the list displayed.

Click on color name here



The screenshot shows the 'Load... Standard' dialog box in the ColorCert QA Tools application. The dialog is titled '[ColorCert Layer] [Load... Standard]'. It features a search bar at the top right, a 'Project' radio button selected, and a table of standards. A red arrow points to the 'Project' radio button, and a red oval highlights the table of standards. The table has the following data:

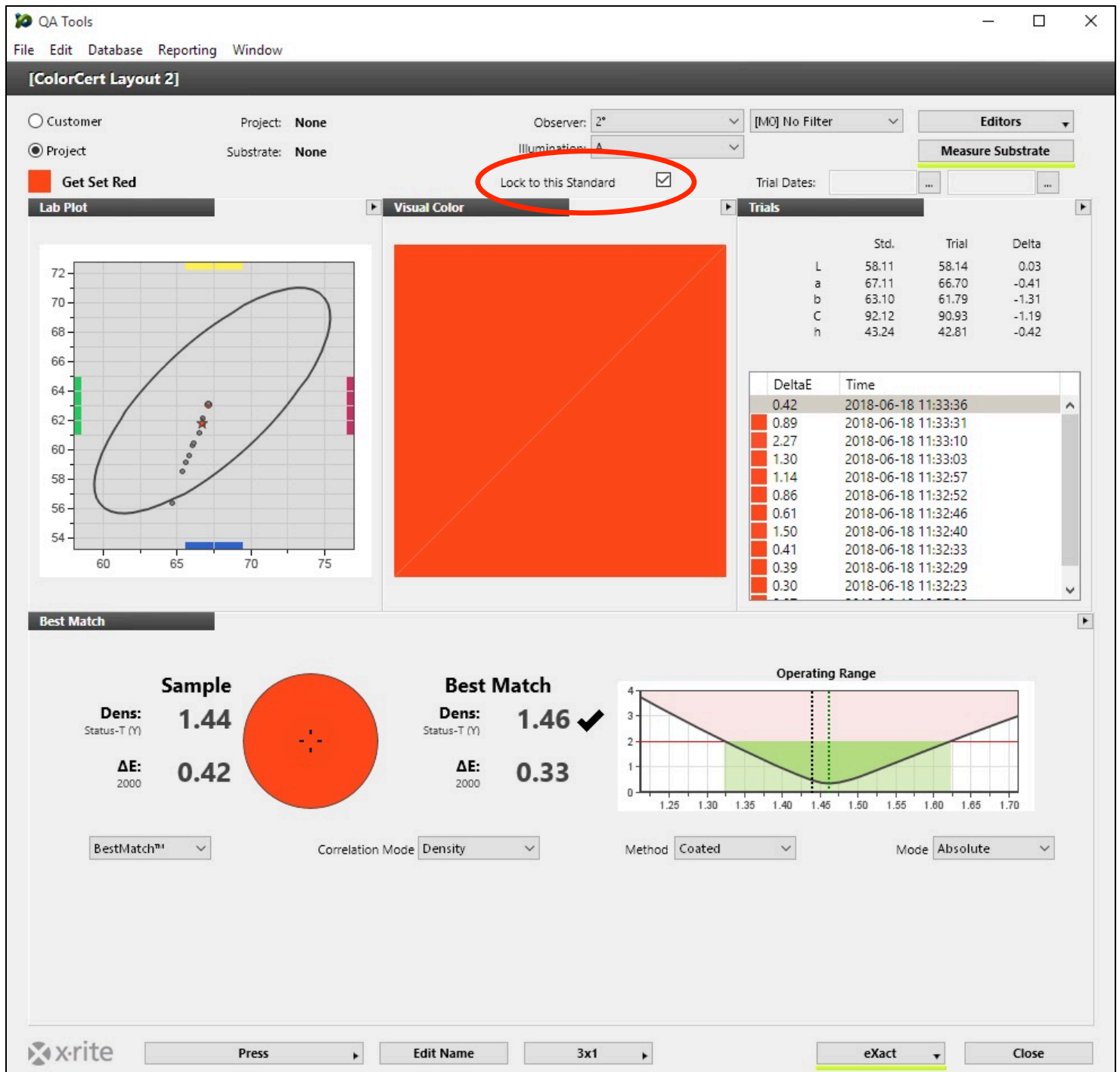
Name	Substrate	Measurement Conditions	Time
Blazing Sunset		[M0] No Filter	2018-06-04 09:33:41
Golden Sunrise		[M0] No Filter	2018-06-04 10:27:27

Below the table are buttons for 'New', 'Load...', 'Delete', 'Close', and 'Select'. The background shows a 'Lab Plot' and 'Best Match' section with a graph and various settings like 'Correlation Mode: Density' and 'Method: Coated'.

Locking the Standard

If you wish to lock the standard so that it does not change, regardless of the trial measured, place a check in the “Lock to this Standard”.

When you are going to be repeatedly measuring the trials associated with the same standard repeatedly it will save you from having to select your standard from a list every time you take a reading.



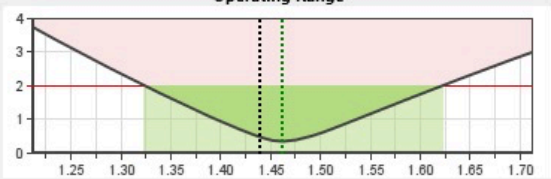
The screenshot shows the ColorCert QA Tools software interface. The 'Get Set Red' standard is selected. The 'Lock to this Standard' checkbox is checked and circled in red. The interface includes a Lab Plot, Visual Color display, Trials table, and Best Match section.

Best Match Section:

Sample	Dens: Status-T (Y)	ΔE: 2000
1.44	1.44	0.42

Best Match	Dens: Status-T (Y)	ΔE: 2000
1.46 ✓	1.46	0.33

Operating Range Graph:



Trials Table:

	Std.	Trial	Delta
L	58.11	58.14	0.03
a	67.11	66.70	-0.41
b	63.10	61.79	-1.31
C	92.12	90.93	-1.19
h	43.24	42.81	-0.42

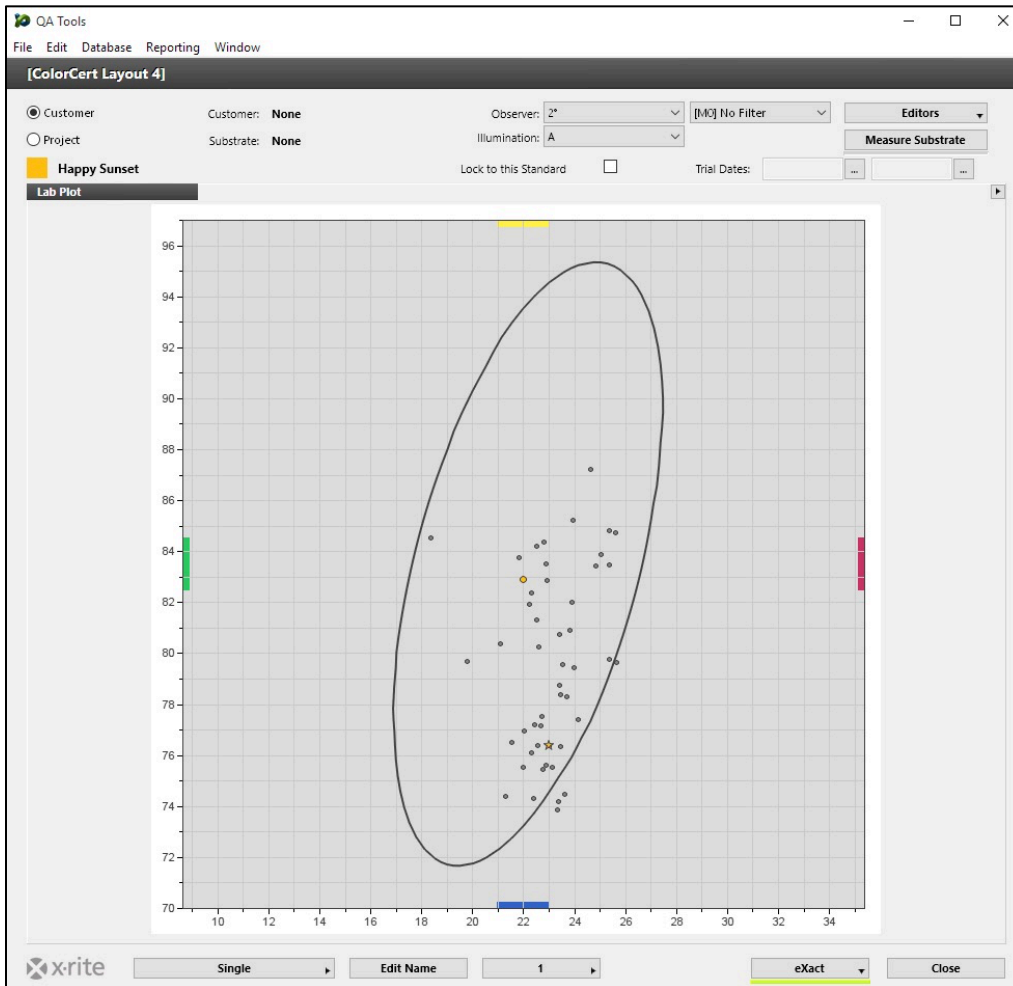
DeltaE	Time
0.42	2018-06-18 11:33:36
0.89	2018-06-18 11:33:31
2.27	2018-06-18 11:33:10
1.30	2018-06-18 11:33:03
1.14	2018-06-18 11:32:57
0.86	2018-06-18 11:32:52
0.61	2018-06-18 11:32:46
1.50	2018-06-18 11:32:40
0.41	2018-06-18 11:32:33
0.39	2018-06-18 11:32:29
0.30	2018-06-18 11:32:23

Limit Trials by Date

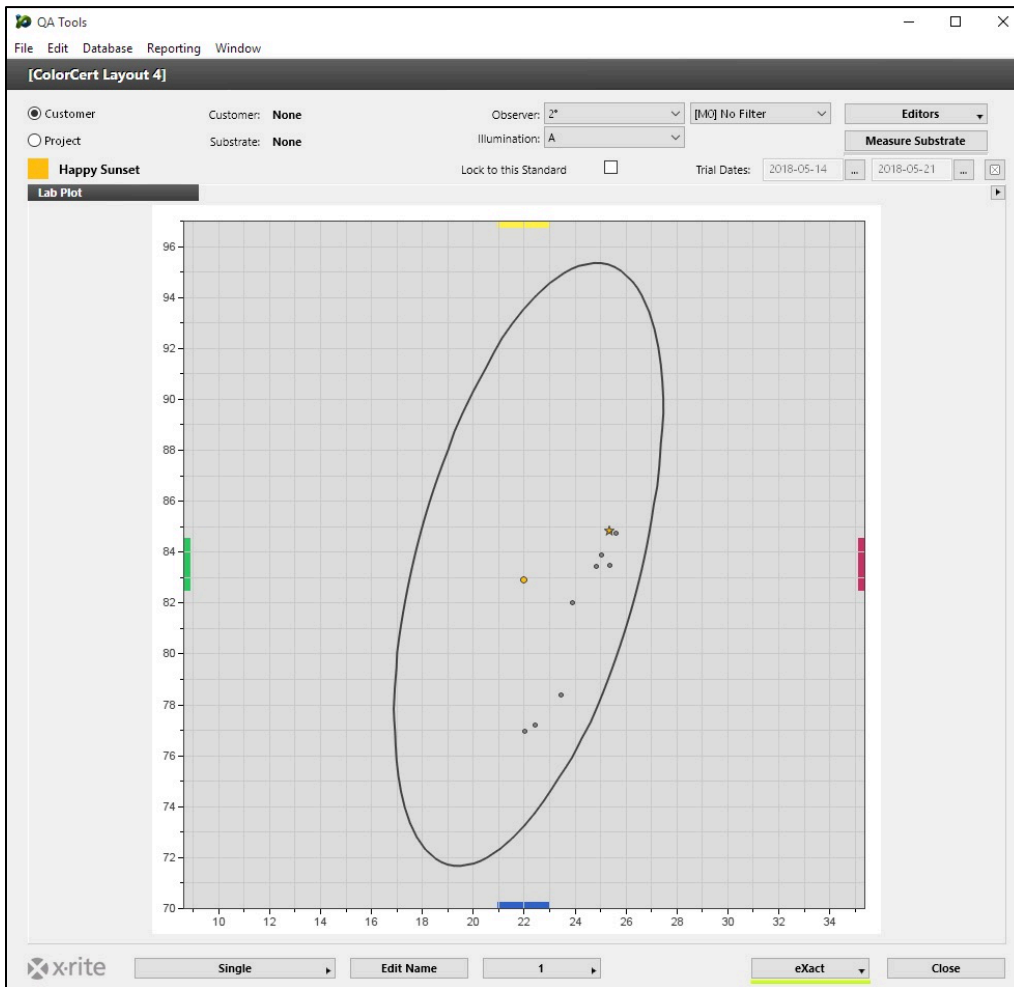
As you continue to measure production you will accumulate a wealth of trial data. It is sometimes beneficial to limit the data being displayed to a particular date range. In some cases you may wish to see just the job you are running today, or you need to review historical data to view a previous run.

This may be done by entering Beginning and Ending dates in the trial dates filter.

The image below shows our scatter plot with no date filter applied.

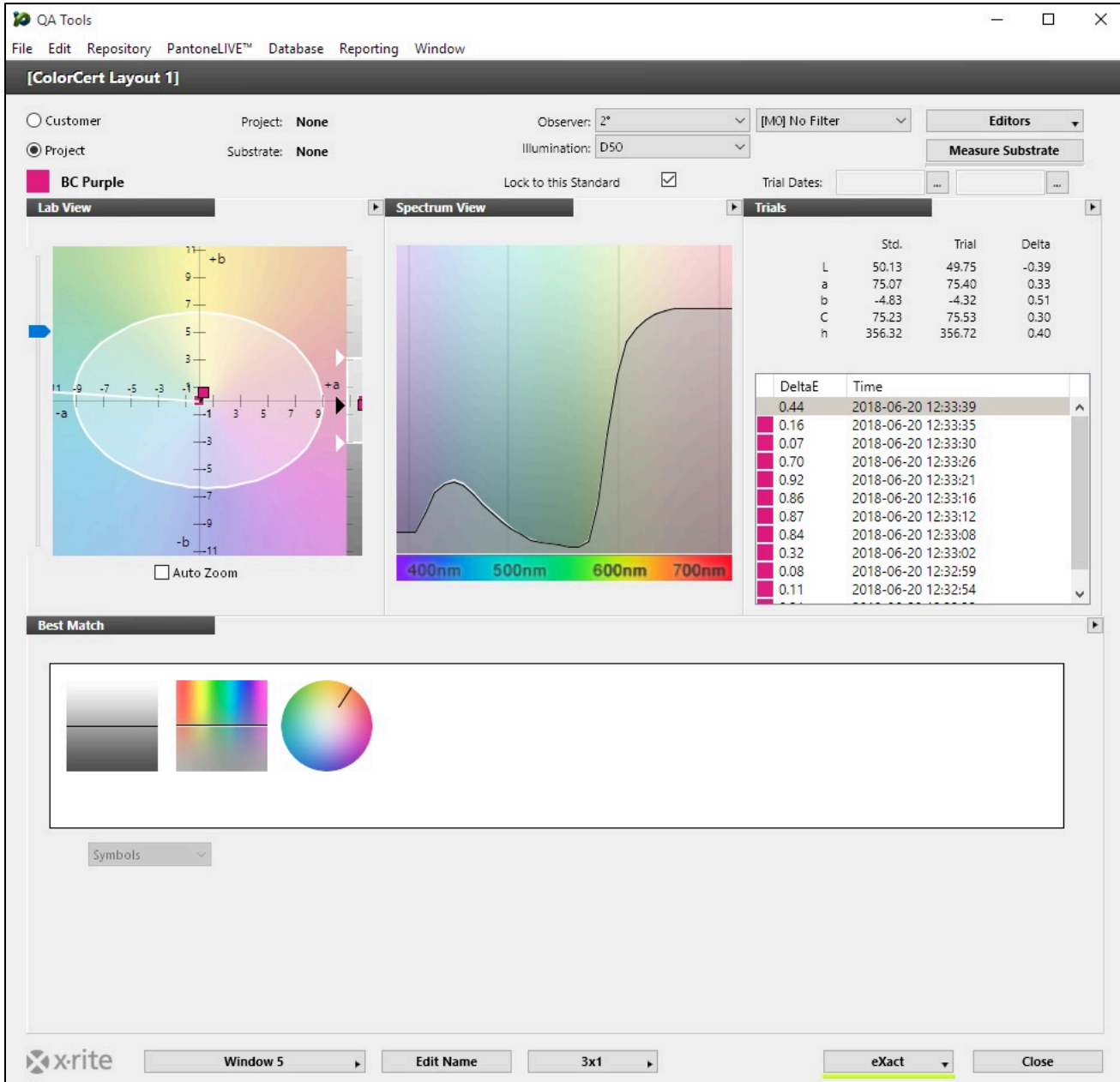


This is the same data with a date filter applied which limits our view to a date range of May 14, 2018 to May 21, 2018.



Substrate Measurements

There are certain metrics that require a substrate measurement to complete the calculation. Examples of this are density in relative (density minus paper) mode, as well as Best Match data. If you take a sample measurement, but do not measure the substrate, these particular attributes will not display.



The screenshot shows the ColorCert QA Tools software interface. At the top, there is a menu bar with 'File', 'Edit', 'Repository', 'PantoneLIVE™', 'Database', 'Reporting', and 'Window'. Below the menu bar, the window title is '[ColorCert Layout 1]'. The interface is divided into several sections:

- Customer/Project Settings:** Includes radio buttons for 'Customer' and 'Project', and fields for 'Project: None' and 'Substrate: None'. It also shows 'Observer: 2°', 'Illumination: D50', and a 'Measure Substrate' button.
- BC Purple Standard:** A color swatch labeled 'BC Purple' with 'Lock to this Standard' checked. 'Trial Dates' are also visible.
- Lab View:** A color space diagram (CIE L*a*b*) showing the position of the measured color. It includes an 'Auto Zoom' checkbox.
- Spectrum View:** A graph showing the spectral power distribution (SPD) curve from 400nm to 700nm.
- Trials:** A table listing measurement trials with columns for 'DeltaE', 'Time', and 'Std.'.

	Std.	Trial	Delta
L	50.13	49.75	-0.39
a	75.07	75.40	0.33
b	-4.83	-4.32	0.51
C	75.23	75.53	0.30
h	356.32	356.72	0.40

DeltaE	Time
0.44	2018-06-20 12:33:39
0.16	2018-06-20 12:33:35
0.07	2018-06-20 12:33:30
0.70	2018-06-20 12:33:26
0.92	2018-06-20 12:33:21
0.86	2018-06-20 12:33:16
0.87	2018-06-20 12:33:12
0.84	2018-06-20 12:33:08
0.32	2018-06-20 12:33:02
0.08	2018-06-20 12:32:59
0.11	2018-06-20 12:32:54
- Best Match:** A section showing three color swatches (a grayscale ramp, a rainbow spectrum, and a color wheel) and a 'Symbols' dropdown menu.

At the bottom of the window, there is a status bar with the xrite logo, 'Window 5', 'Edit Name', '3x1', 'eXact', and 'Close' buttons.

To measure the substrate:

1. Click the Measure Substrate button
2. Perform the measurement when prompted

The missing data will now display.

The screenshot shows the ColorCert QA Tools software interface. At the top, there is a menu bar with 'File', 'Edit', 'Repository', 'PantoneLIVE™', 'Database', 'Reporting', and 'Window'. Below the menu bar, the window title is '[ColorCert Layout 1]'. The main interface is divided into several sections:

- Editors:** A dropdown menu with 'Measure Substrate' highlighted. A red arrow points to this button.
- Lab View:** A color calibration chart showing a color wheel with axes labeled +a, -a, +b, and -b. A white circle is overlaid on the chart.
- Spectrum View:** A graph showing the spectral response of the sample, with a wavelength axis from 400nm to 700nm.
- Trials:** A table showing the results of multiple trials. The table has columns for 'DeltaE', 'Time', and 'Trial'. The data is as follows:

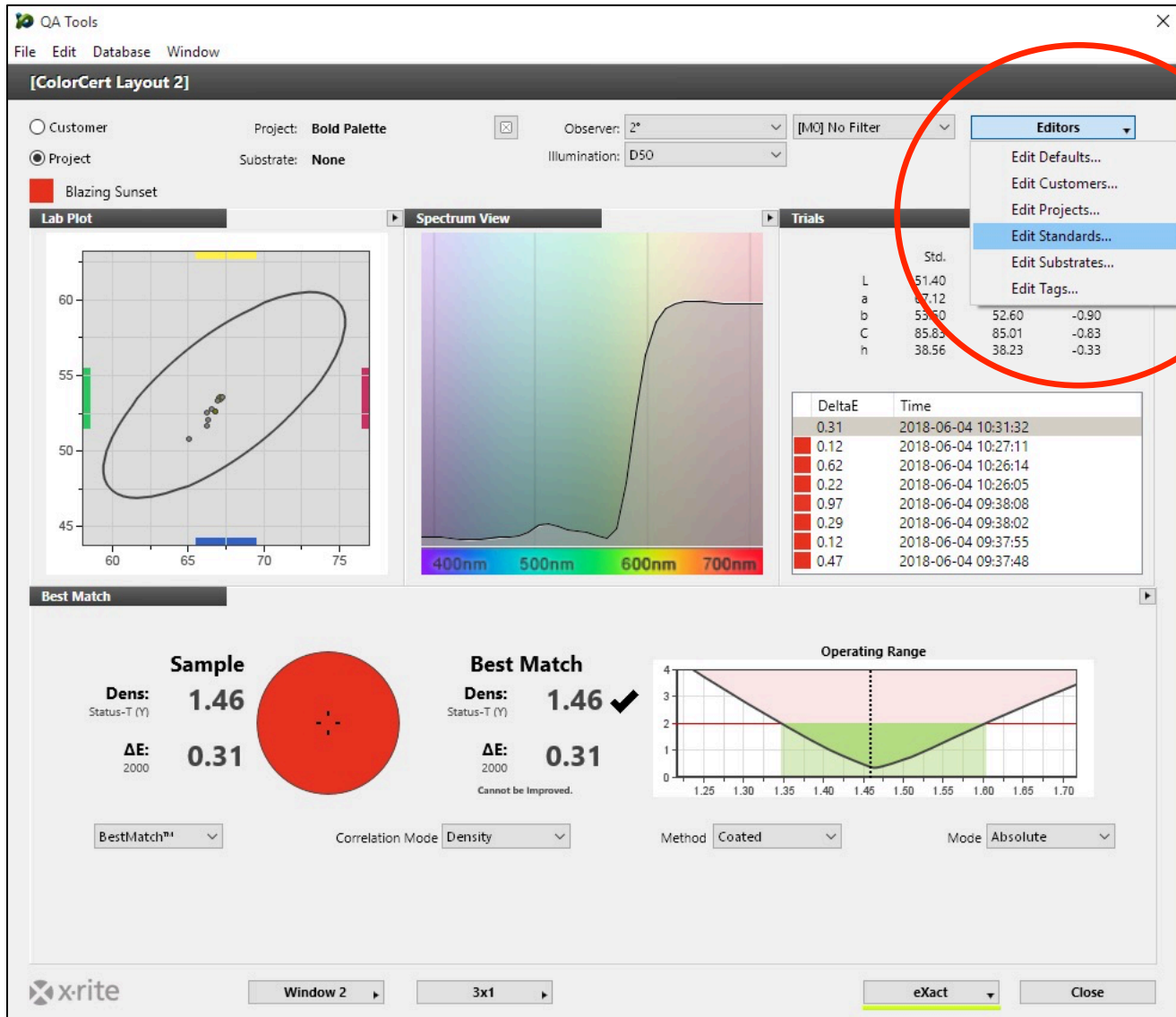
DeltaE	Time	Trial
0.44	2018-06-20 12:33:39	
0.16	2018-06-20 12:33:35	
0.07	2018-06-20 12:33:30	
0.70	2018-06-20 12:33:26	
0.92	2018-06-20 12:33:21	
0.86	2018-06-20 12:33:16	
0.87	2018-06-20 12:33:12	
0.84	2018-06-20 12:33:08	
0.32	2018-06-20 12:33:02	
0.08	2018-06-20 12:32:59	
0.11	2018-06-20 12:32:54	
- Best Match:** A section showing the 'Sample' and 'Best Match' results. The 'Sample' has a density of 1.35 and a DeltaE of 0.44. The 'Best Match' has a density of 1.33 and a DeltaE of 0.02. A 'Best Match' dropdown menu is set to 'Density'. To the right, there is an 'Operating Range' graph showing a density range from 1.10 to 1.55.

At the bottom of the interface, there is a status bar with the Xrite logo, a 'Window 5' dropdown, an 'Edit Name' button, a '3x1' dropdown, an 'eXact' dropdown, and a 'Close' button.

Creating New Color Standards

To create new color standards:

- Click on Editors > Edit Standards...



The screenshot shows the ColorCert QA Tools software interface. The 'Editors' menu is open, and 'Edit Standards...' is highlighted. The interface displays a Lab Plot, Spectrum View, and Trials table.

Editors Menu:

- Edit Defaults...
- Edit Customers...
- Edit Projects...
- Edit Standards...**
- Edit Substrates...
- Edit Tags...

Lab Plot: A scatter plot showing color data points. The x-axis ranges from 60 to 75, and the y-axis ranges from 45 to 60. A large black oval encloses the data points.

Spectrum View: A graph showing the spectral response of the sample. The x-axis is labeled with wavelengths from 400nm to 700nm. The y-axis represents intensity. A red curve shows the spectral response, which is high in the red region and low in the blue region.

Trials Table:

Std.	L	a	b	C	n
	51.40	17.12			
	52.60	-0.90			
	85.83	85.01	-0.83		
	38.56	38.23	-0.33		

Best Match Section:

Sample: Dens: 1.46 (Status-T (Y)), ΔE: 0.31 (2000)

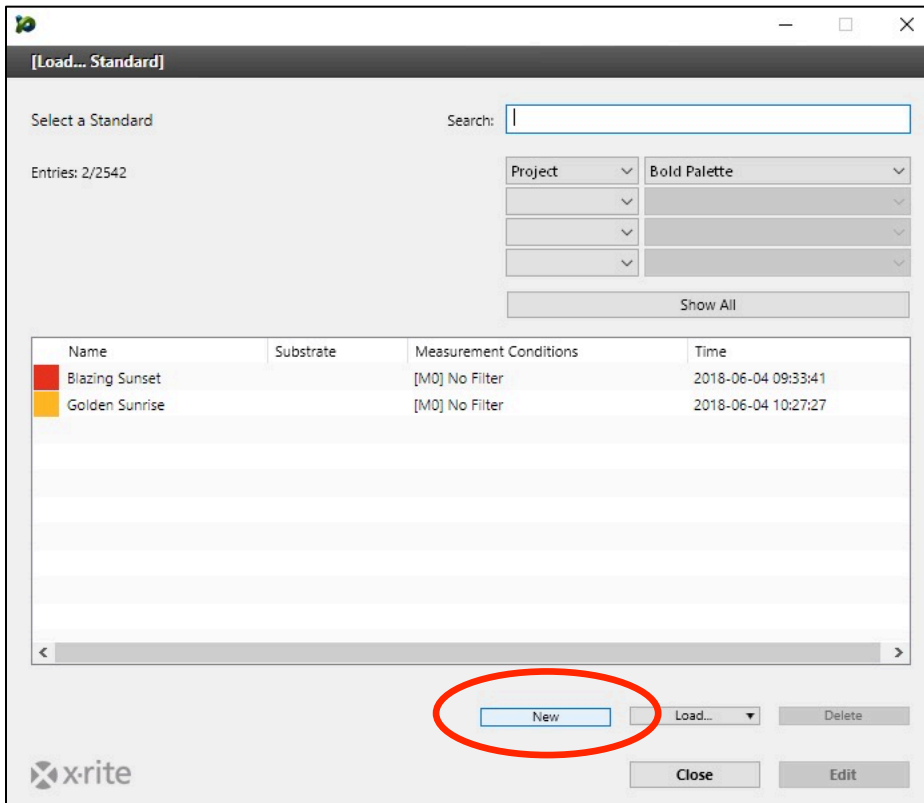
Best Match: Dens: 1.46 (Status-T (Y)) ✓, ΔE: 0.31 (2000). Note: Cannot be Improved.

Operating Range: A graph showing the operating range for density. The x-axis is labeled with density values from 1.25 to 1.70. The y-axis is labeled with values from 0 to 4. A red curve shows the operating range, which is high at the ends and low in the middle. A vertical dashed line is drawn at a density of 1.46.

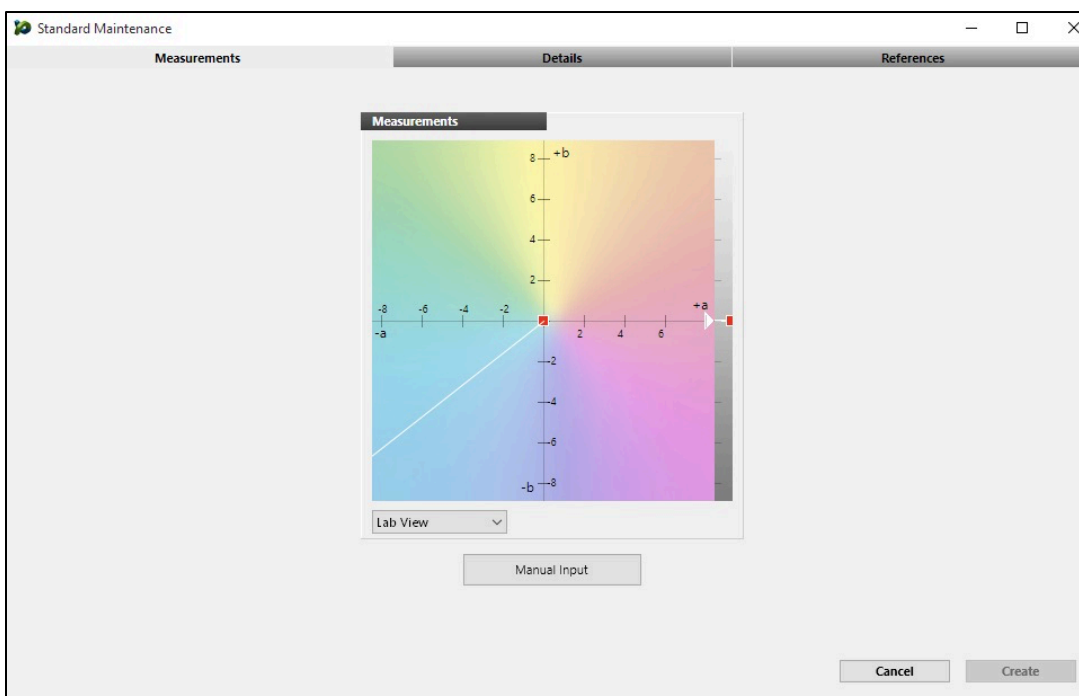
BestMatch™: BestMatch™ (dropdown), Correlation Mode: Density (dropdown), Method: Coated (dropdown), Mode: Absolute (dropdown)

Footer: xrite logo, Window 2, 3x1, eXact, Close

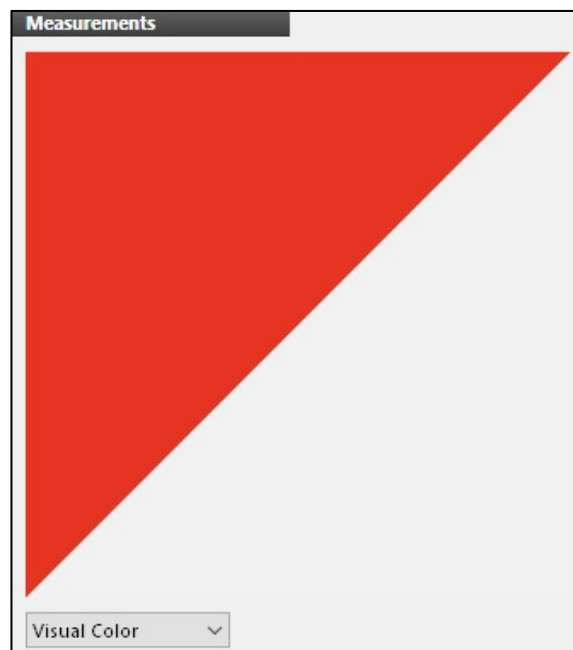
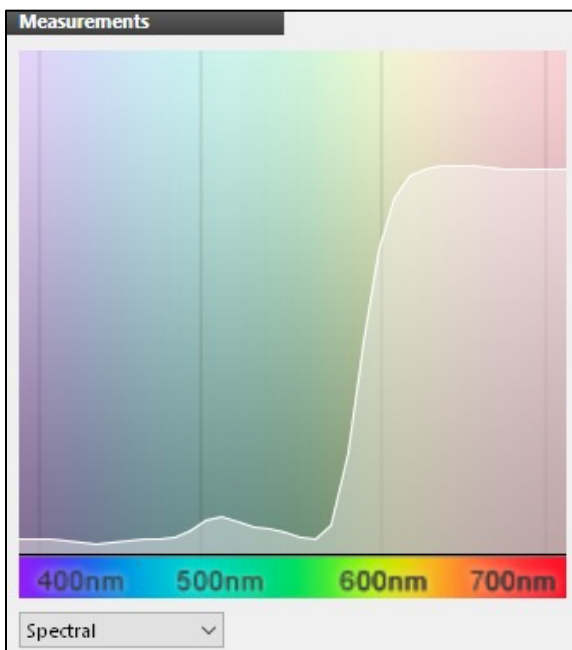
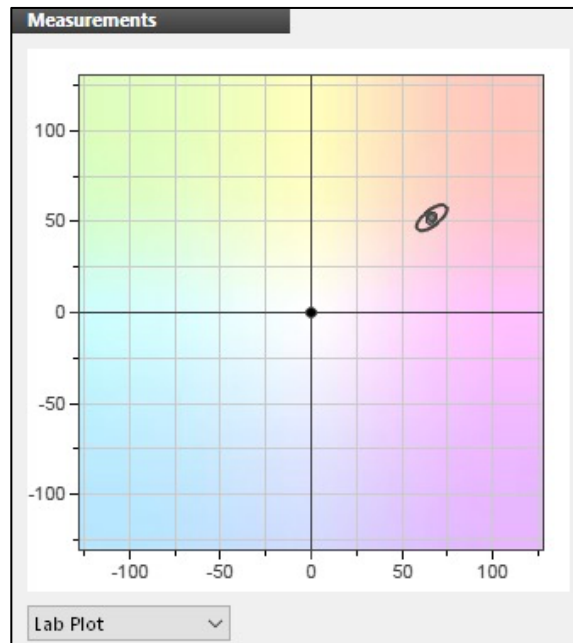
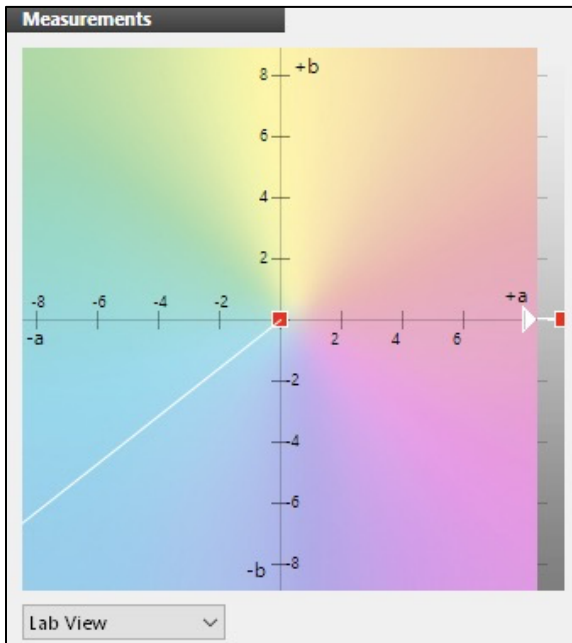
- Click the “New” button.



At the next screen simply use your connected spectrophotometer to measure your standard. You may also click the “Manual Input” button to create standards by entering L*a*b* or spectral data. For information about using PantoneLIVE to create standards, please see the PantoneLIVE section.



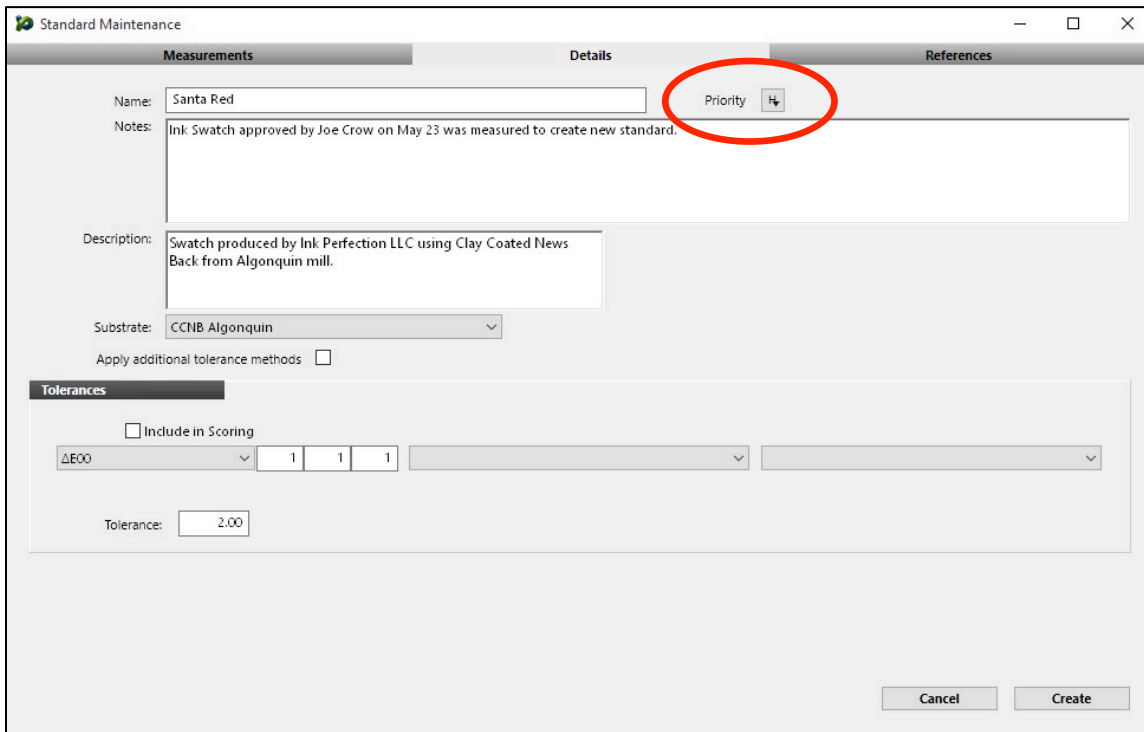
You may click the “Lab View” button to see various views of the standard that you have measured.



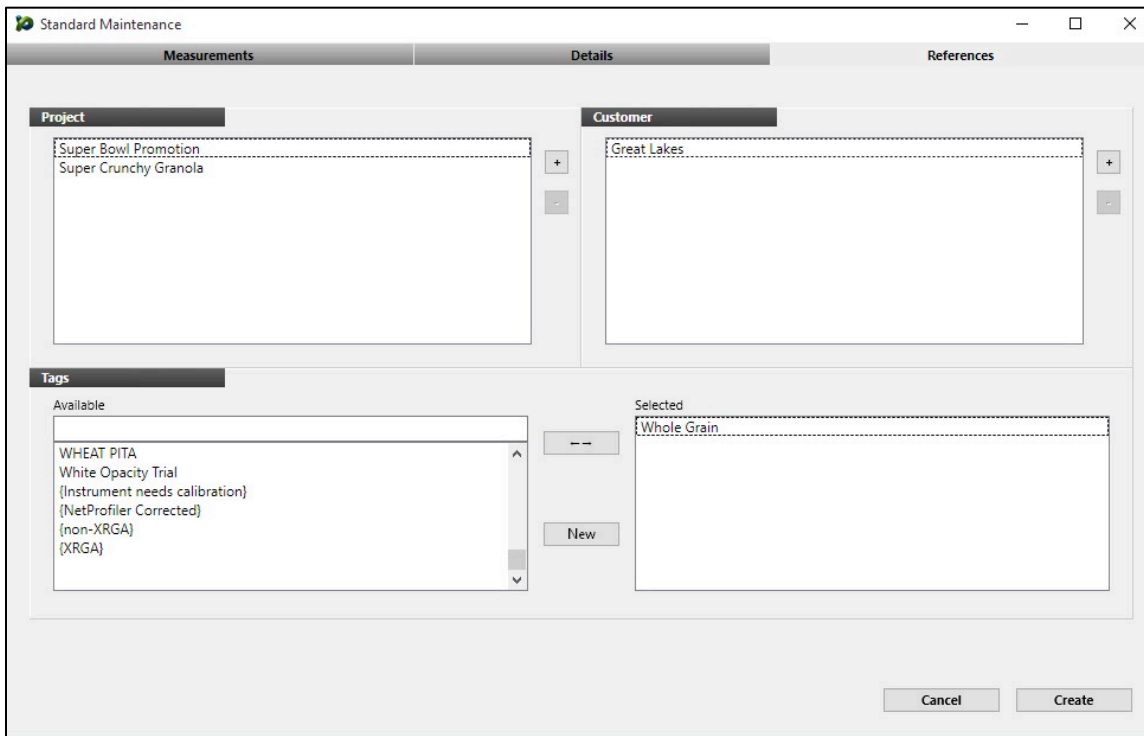
To continue, click the “Details” tab at the top of the screen.

Here we need to create a name for the standard, and define our tolerance by selecting the tolerance method and limits in the tolerance section. You may also add any notes and/or description information that you desire.

The Priority selection is used to identify the standard as a High (H), Medium (M), or Low (L) priority color. This is used when QA Tools defaults to a tolerance assigned to the customer, project, or default settings. For more information see the sections on on settings configuration and tolerance hierarchy.



At the references tab you may choose to assign this standard to one or more projects and/or customers by selecting the plus sign in the appropriate quadrant and making a selection from your available options. You may also add tags by highlighting them in the “Available” column and then moving them to the “Selected” column using the arrow button.

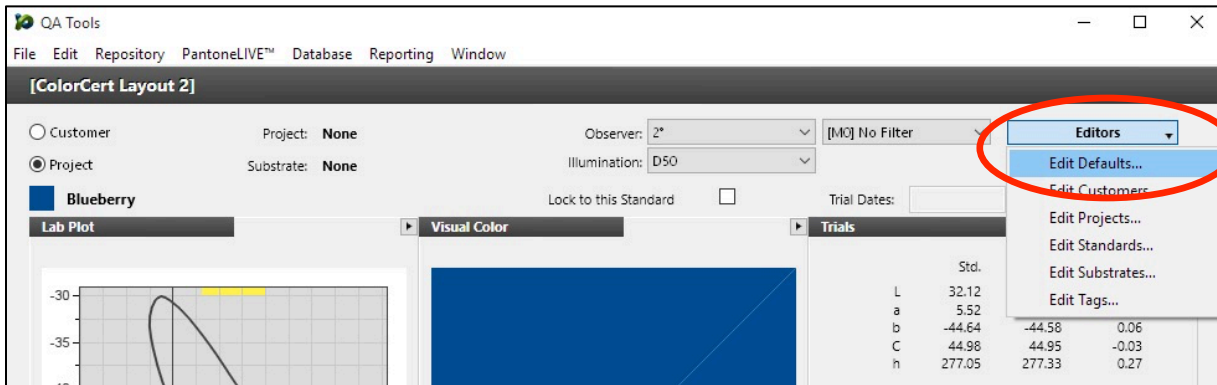


Click the "Create" button to complete the process.

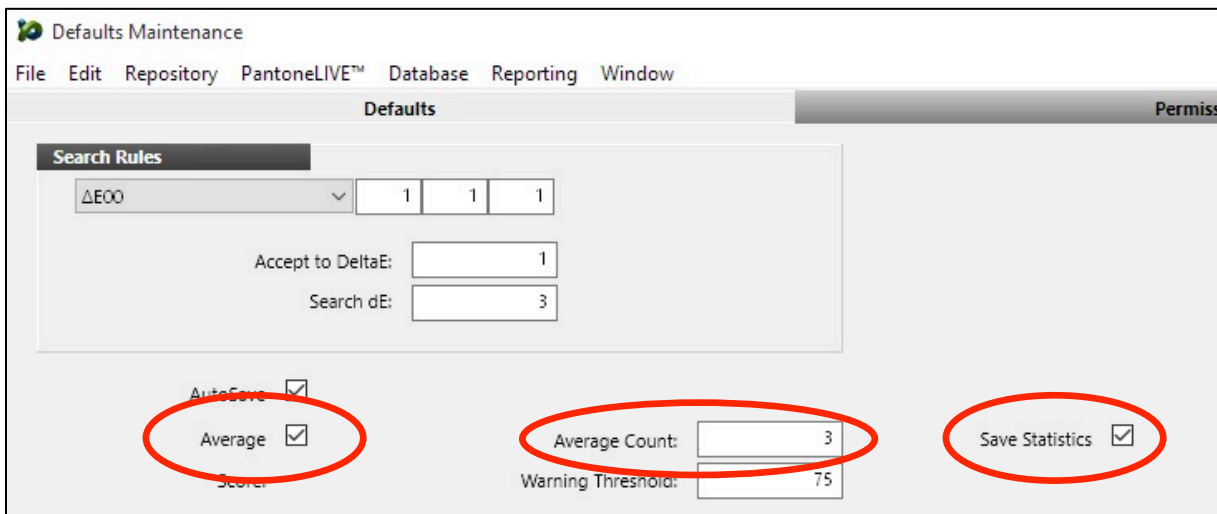
Averaging multiple reading

When creating color standards it is often advantageous to average several readings. This is enabled in the edit defaults section as follows:

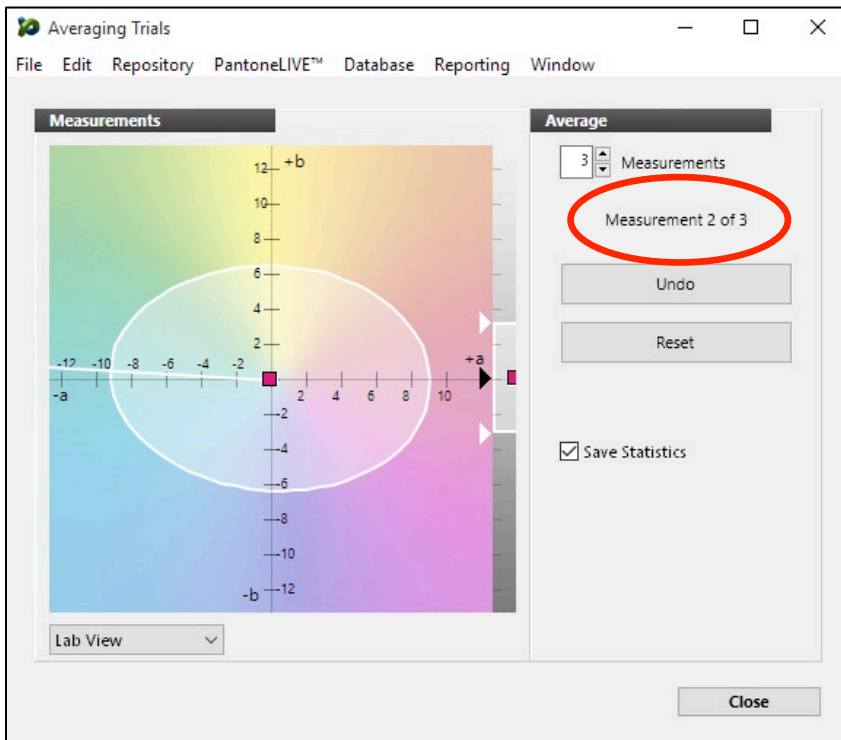
- From the main QA Tools screen click “Editors” then “Edit Defaults”



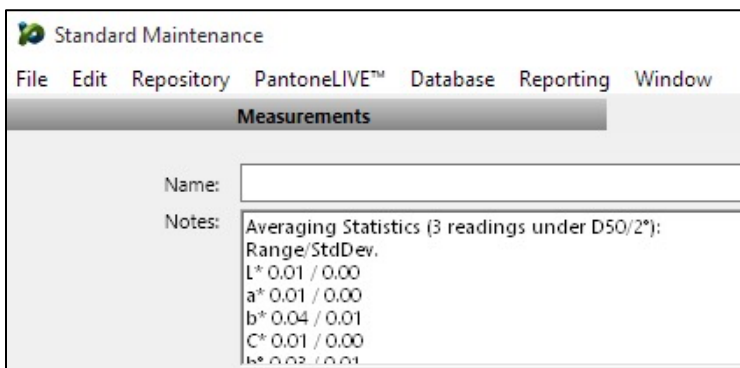
- Place a check in the “Average” checkbox
- In the Defaults Maintenance window enter the desired number of readings into the “Average Count” field
- If you wish to save statistical data regarding the measurements used to create the standard, place a check in the “Save Statistics” checkbox



Now as you measure colors to create a standard QA Tools will indicate how many measurements you have taken and how many are required.



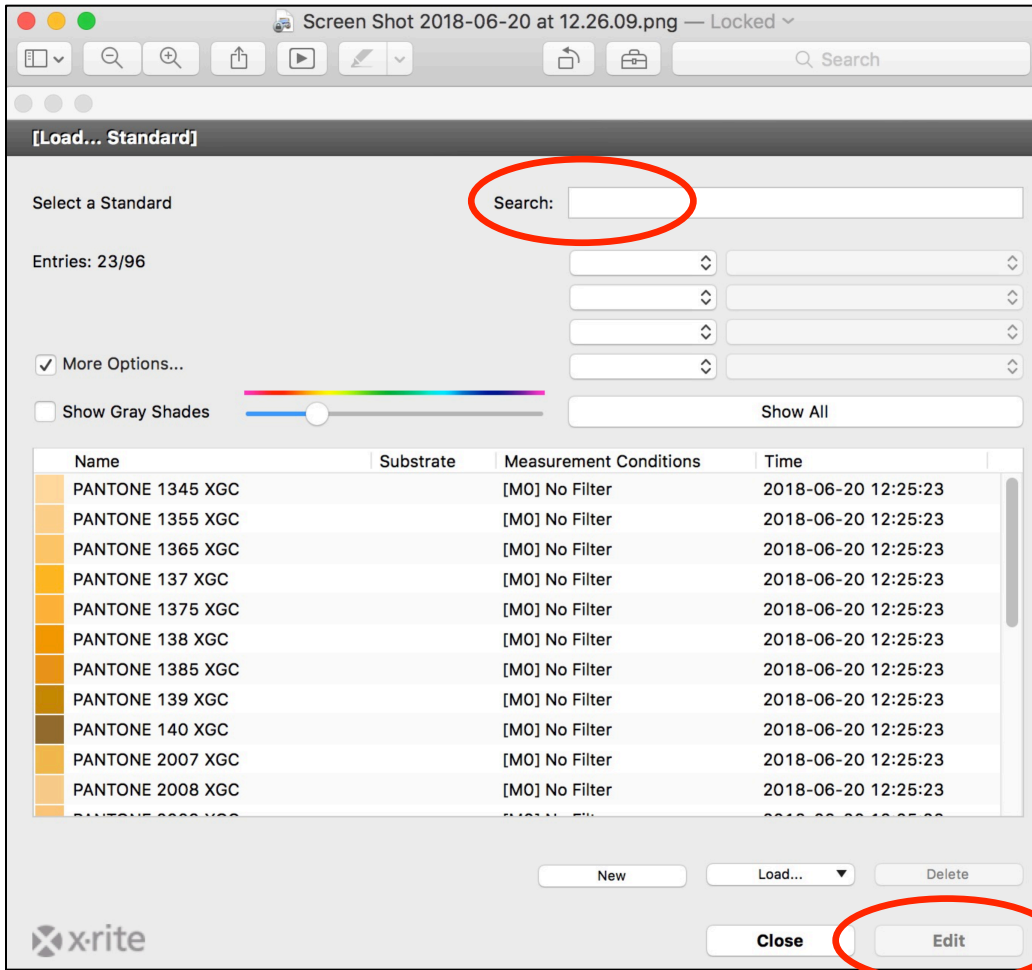
After you have completed your last measurement, data regarding your measurements are added to the notes field associated with this standard.



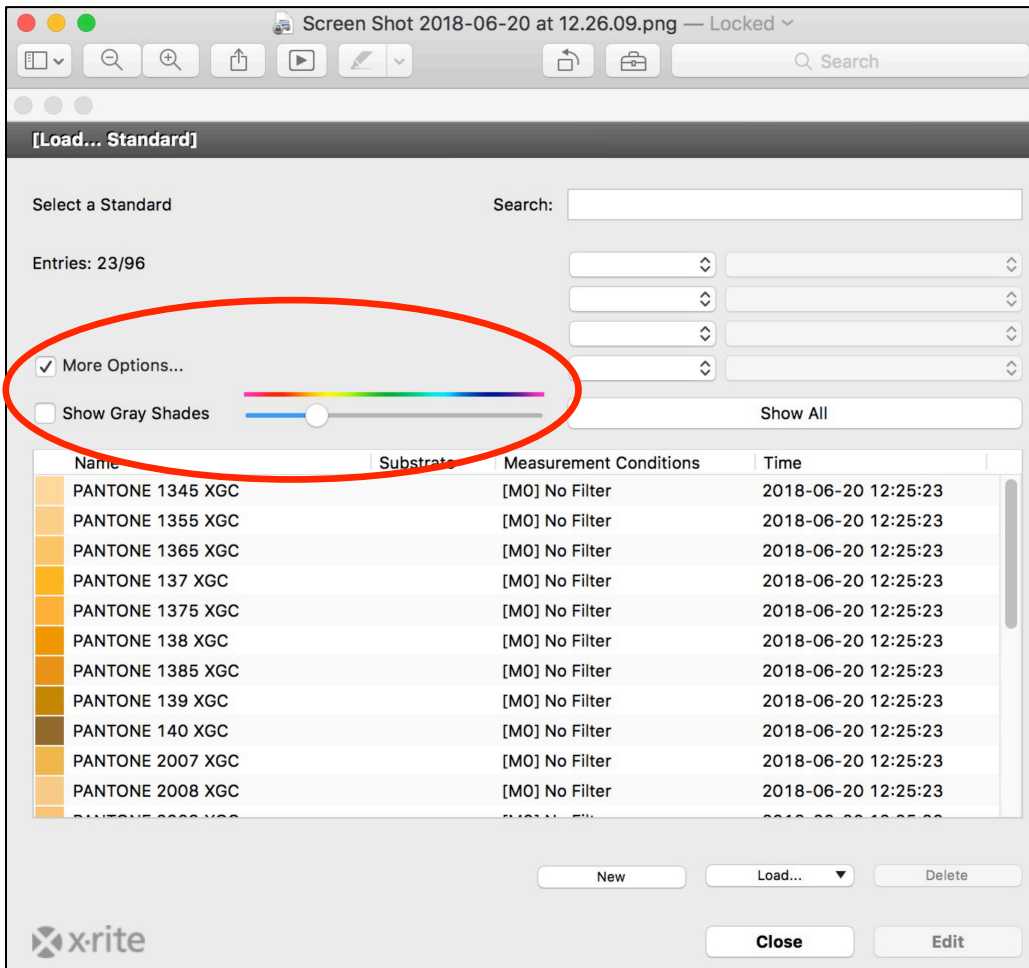
Editing existing color standards

To edit existing color standards:

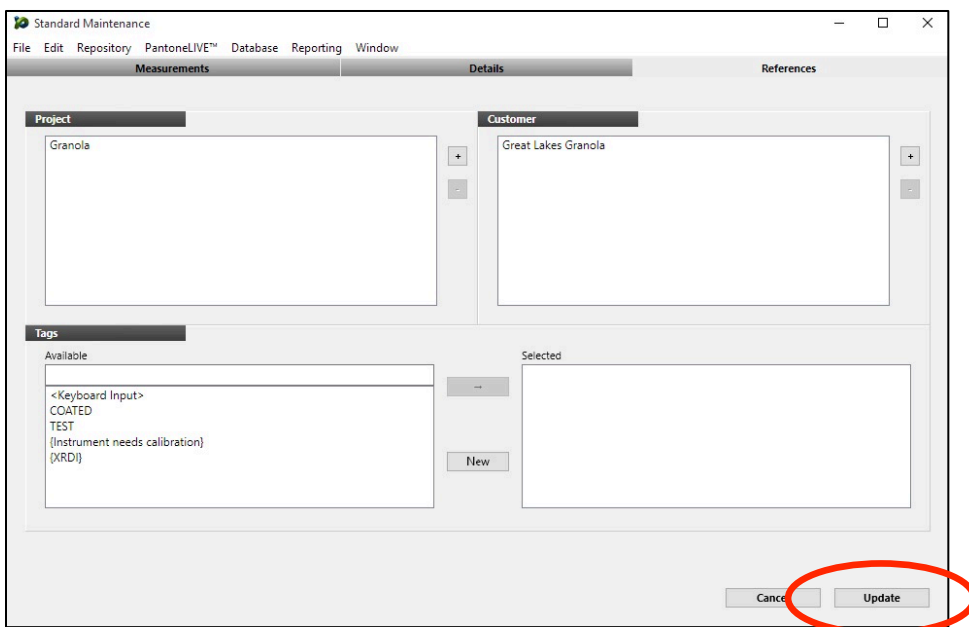
- Click on Editors > Edit Standards...
- Click the name of the color standard you wish to edit
 - You may enter information into the search field to make it easy to find the standard that you are looking for
 - You may also use your instrument to measure a color to find standards which are close
- Click the “Edit” button



You may also click the “More Options” checkbox and use the sliders to search for colors by hue or gray scale.



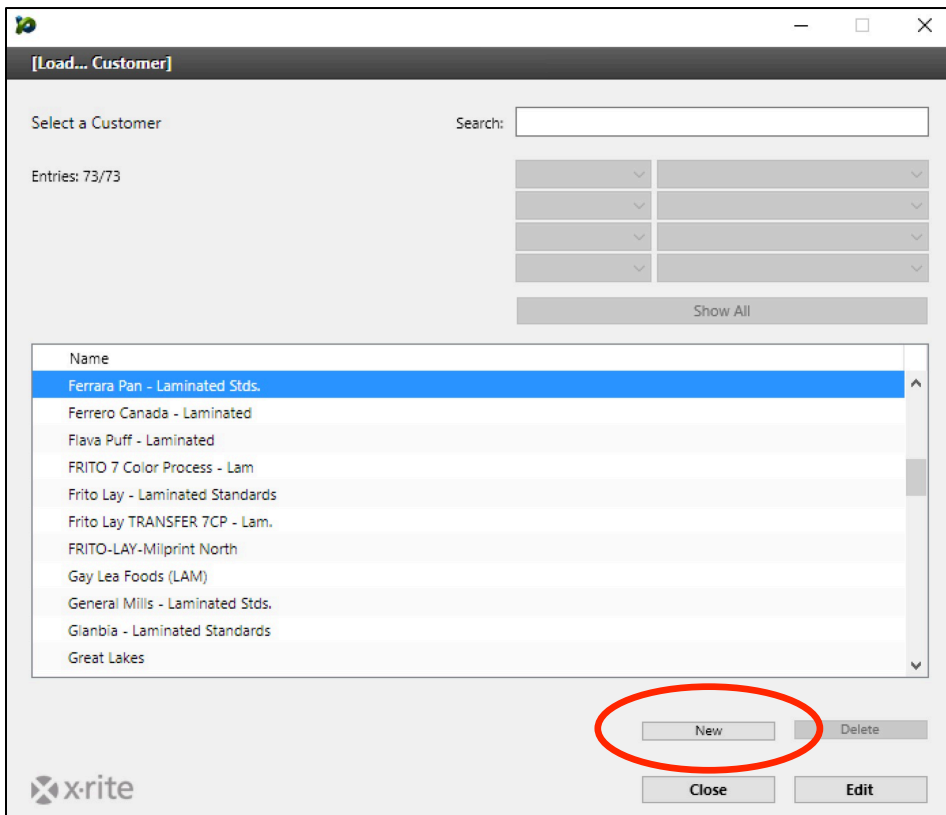
Edit any information that you desire from the Measurements, Details, and/or References tabs and then click the “Update” button.



Creating New Customers

To create new users:

- Click on Editors > Edit Customers...
- Click on the “New” button



You may then enter the customer name and any notes that you would like to associate with this customer. You may also create customer auto search setting for this customer. When finished click the “Create” button.

Customer Maintenance

Customer Standards

Name: My New Customer

Notes: This is our favorite customer.

Search Rules

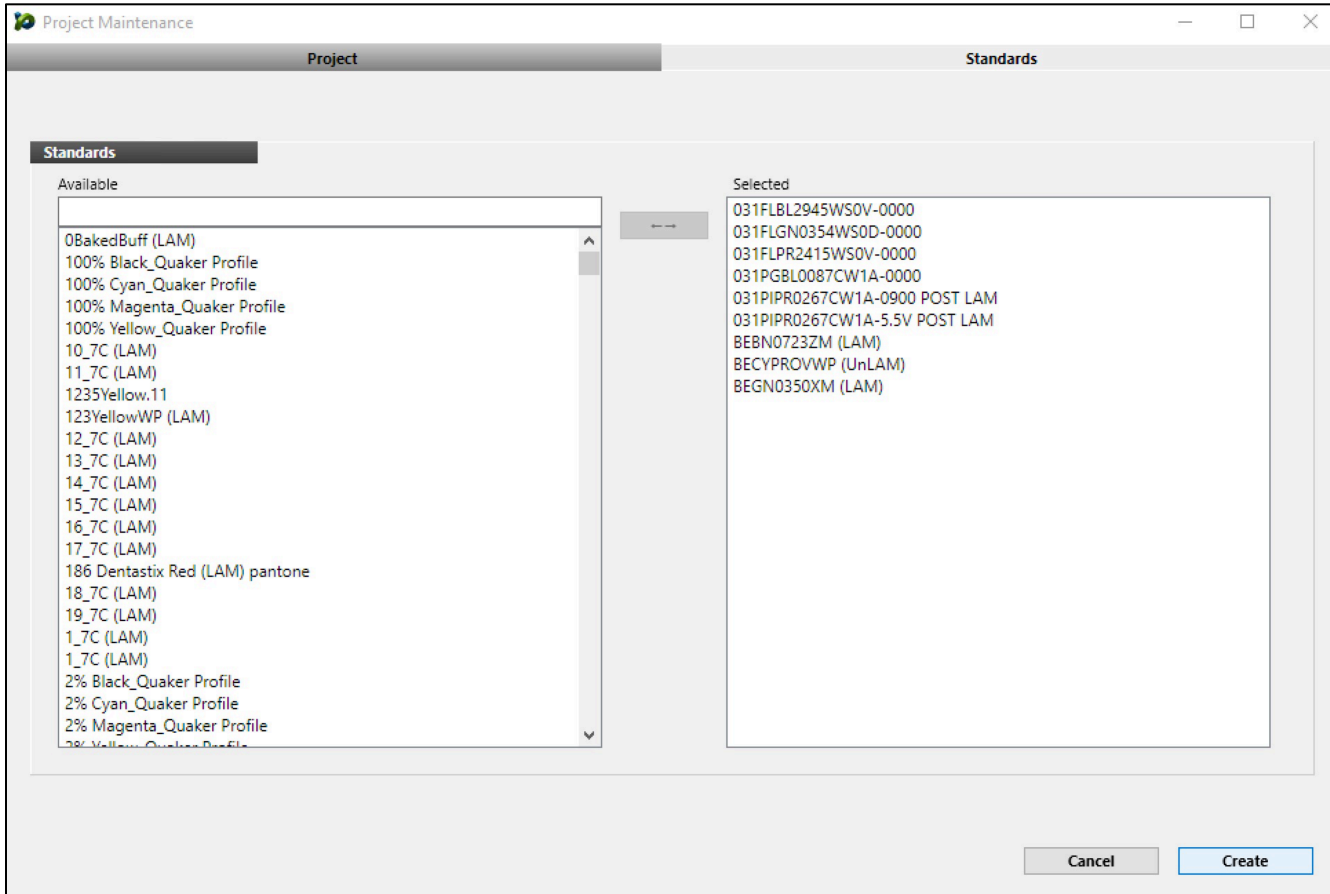
Accept to DeltaE: Search Within Customer

Search dE: AutoSearch

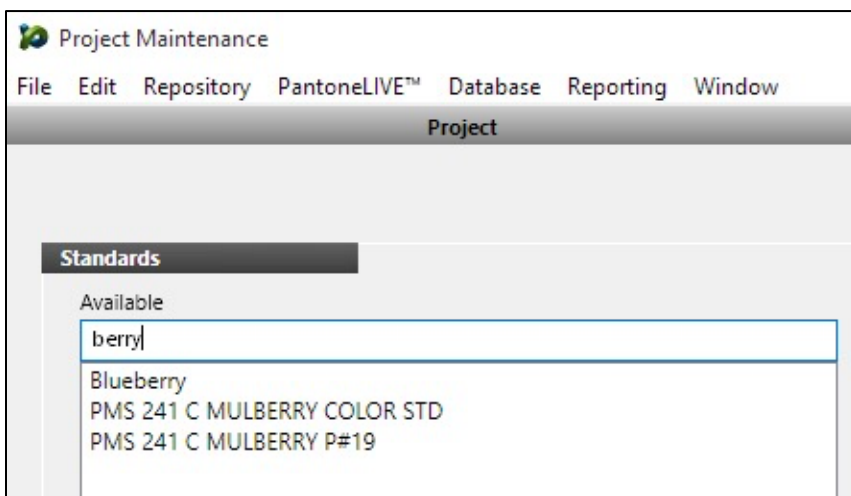
Tolerances

Cancel Create

Here you will assign color standards to this project by clicking on them in the left hand “Available” column so that they are highlighted, and then clicking the arrow button to move them to the “Selected” column. You may remove colors from a project by clicking on them in the right hand “Selected” column so that they are highlighted, and then clicking the arrow button to move them back to the “Available” column. Please note that you may also double click any color to move it from the available column to selected, and vice versa.



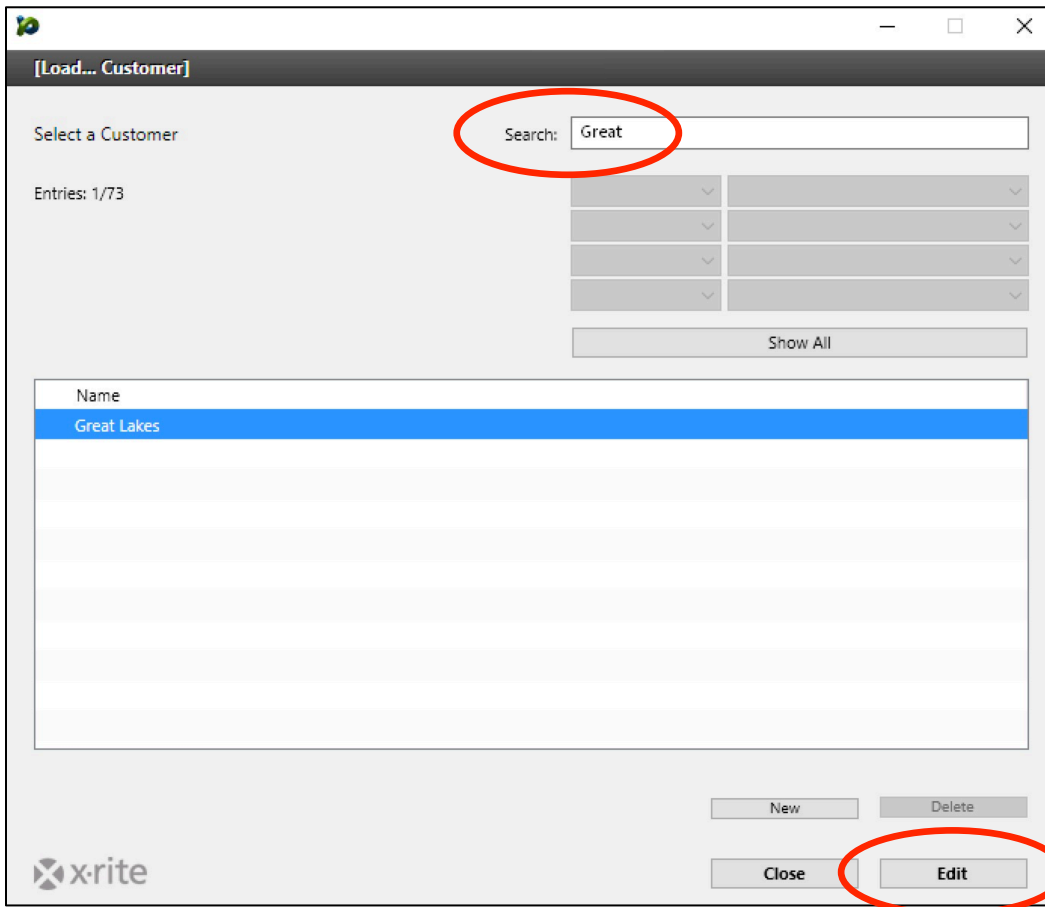
You may also enter data into the search field to help find standards.



Editing existing customers

To edit existing customers:

- Click on Editors > Edit Customers...
- Click the name of the customer you wish to edit
- Click the “Edit” button
 - You may enter information into the search field to make it easy to find the customer that you are looking for

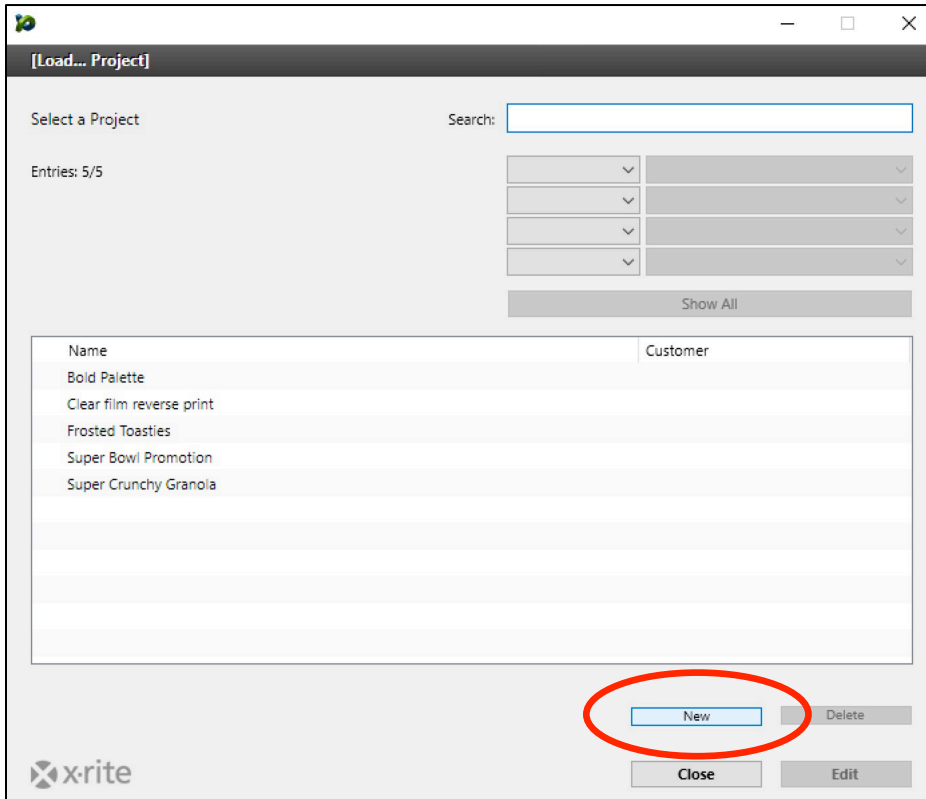


Edit any information that you desire from the Customer, and/or Standards tabs and then click the “Update” button.

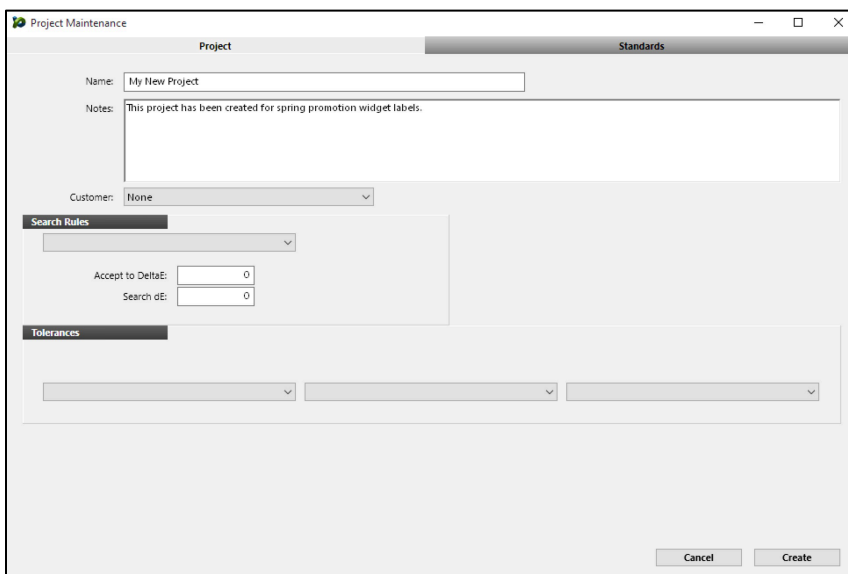
Creating New Projects

To configure user level access:

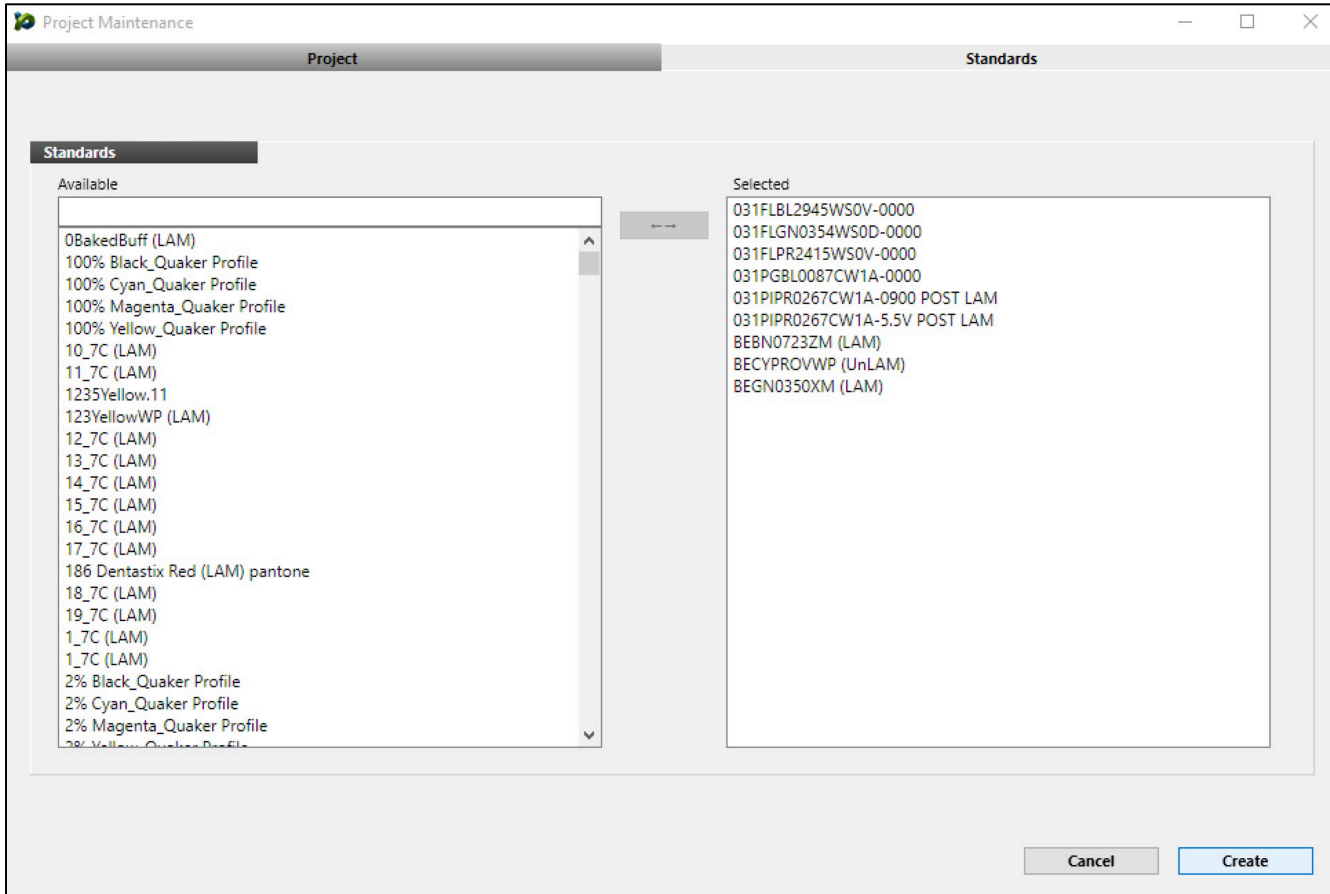
- Click on Editors > Edit Projects...
- Click on the “New” button



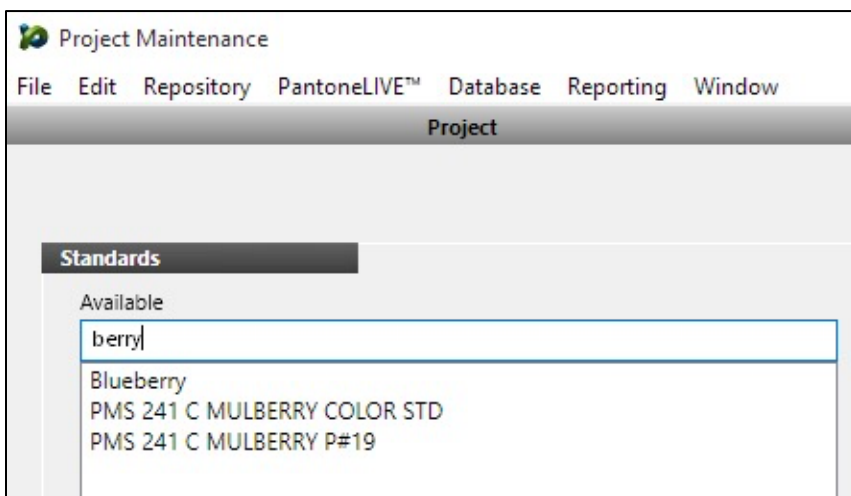
You may then enter the project name and any notes that you would like to associate with this project. You may also create custom auto search setting for this project. When finished click the “Standards” tab.



Here you will assign color standards to this project by clicking on them in the left hand “Available” column so that they are highlighted, and then clicking the arrow button to move them to the “Selected” column. You may remove colors from a project by clicking on them in the right hand “Selected” column so that they are highlighted, and then clicking the arrow button to move them back to the “Available” column. Please note that you may also double click any color to move it from the available column to selected, and vice versa.



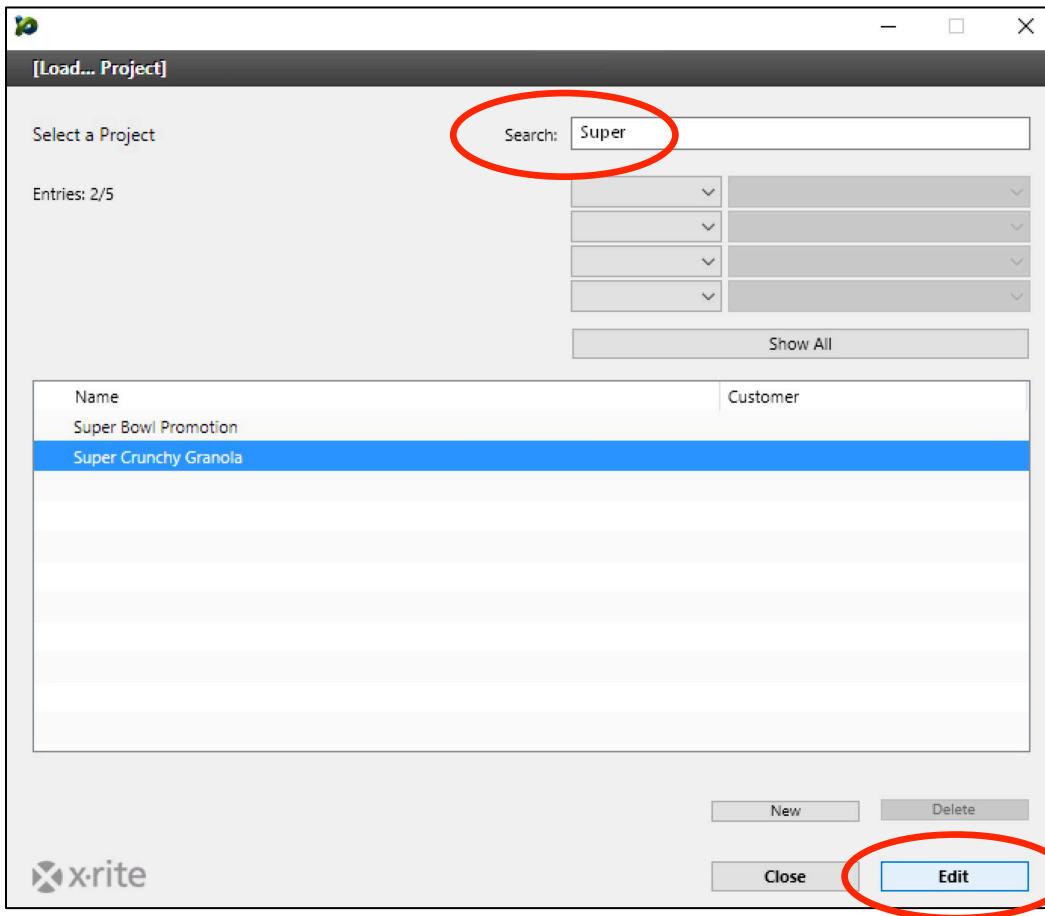
You may also enter data into the search field to help find standards.



Editing existing projects

To edit existing projects:

- Click on Editors > Edit Projects...
- Click the name of the project you wish to edit
- Click the “Edit” button
 - You may enter information into the search field to make it easy to find the project that you are looking for



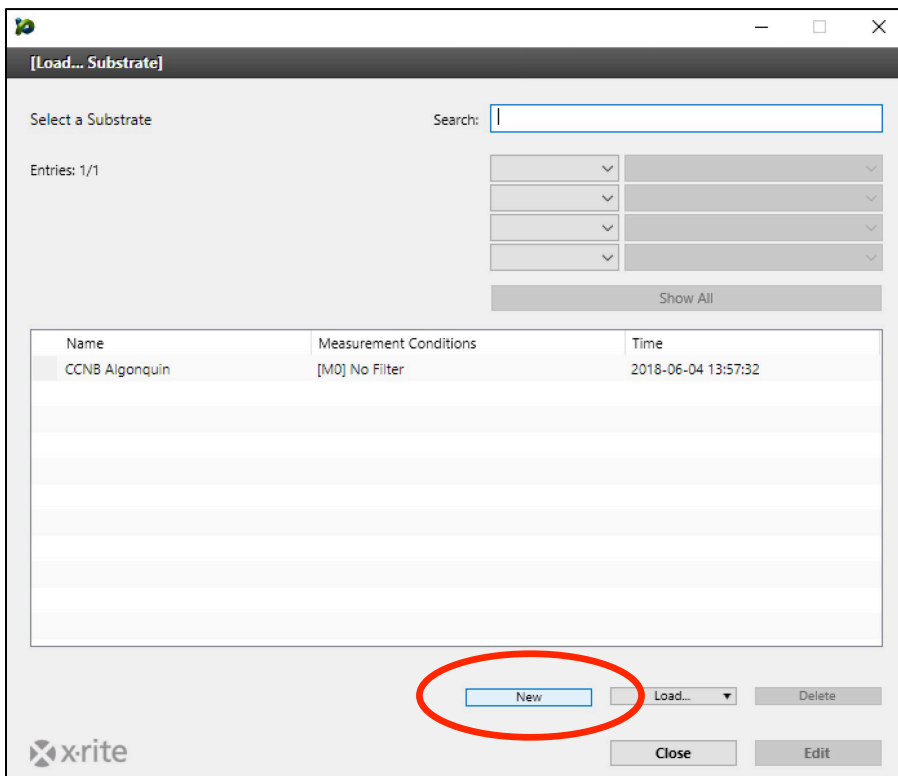
Edit any information that you desire from the Project and/or Standards tabs and then click the “Update” button.

Creating New Substrates

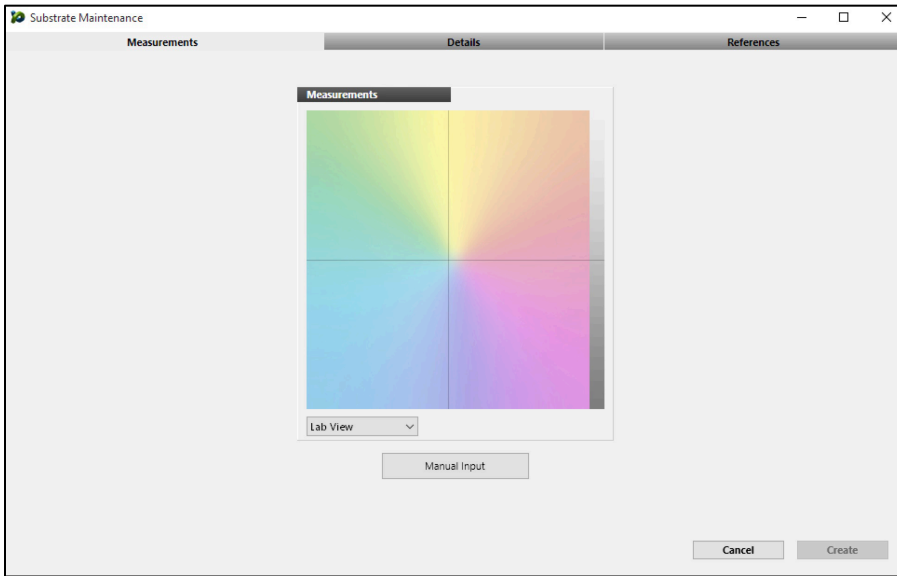
Substrates may be used to filter standards and if you have one selected, you do not need to measure the substrate to view the best match to display. The substrate is “sticky” – so if you have one selected, it will remain selected when you close and re-open the app. When you measure a substrate using the “Measure Substrate” button the measurement will only remain active for the remainder of your current session.

To create new substrates:

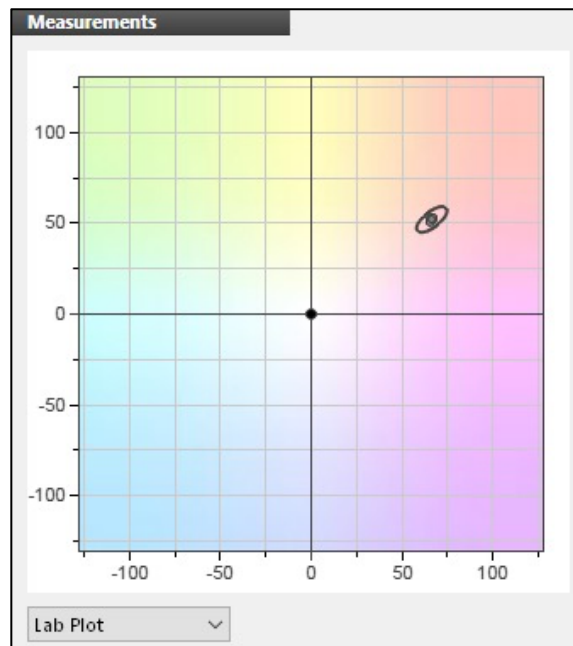
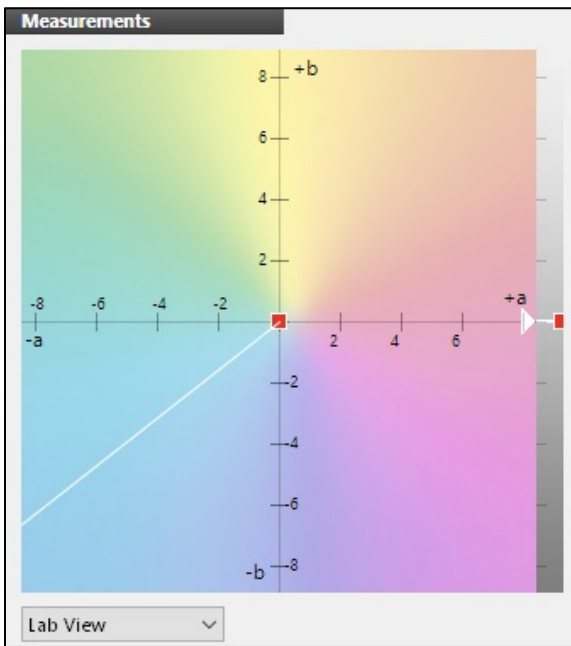
- Click on Editors > Edit Substrates...
- Click on the “New” button

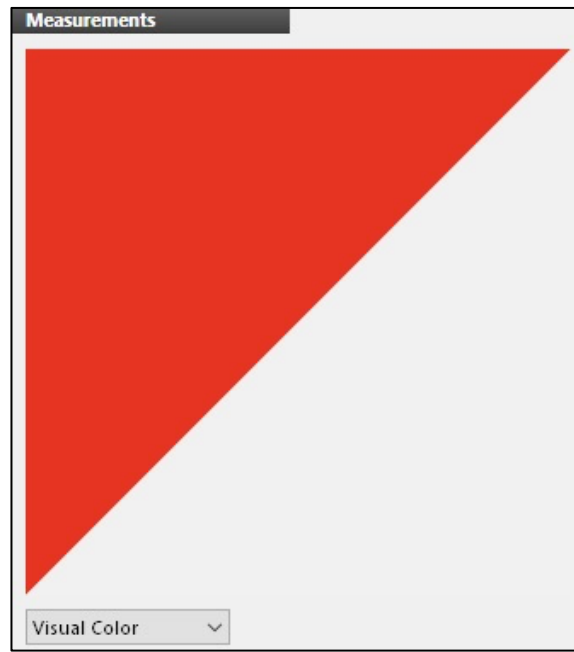
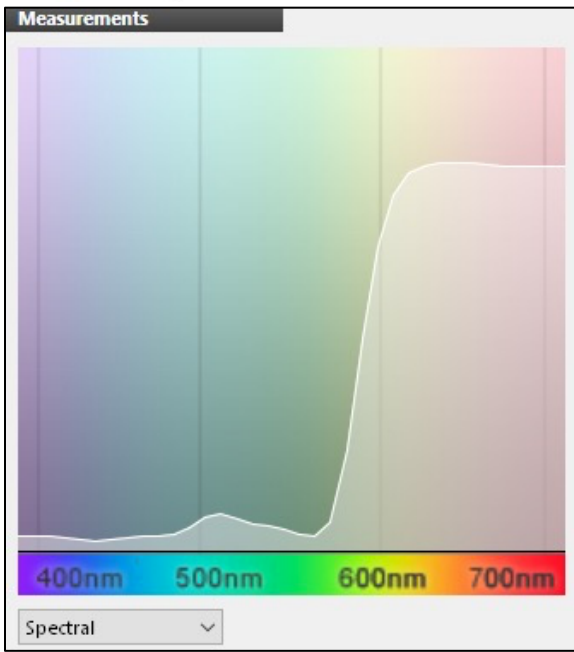


At the next screen simply use your connected spectrophotometer to measure your substrate. You may also click the “Manual Input” button to create standards by entering L*a*b* or spectral data.



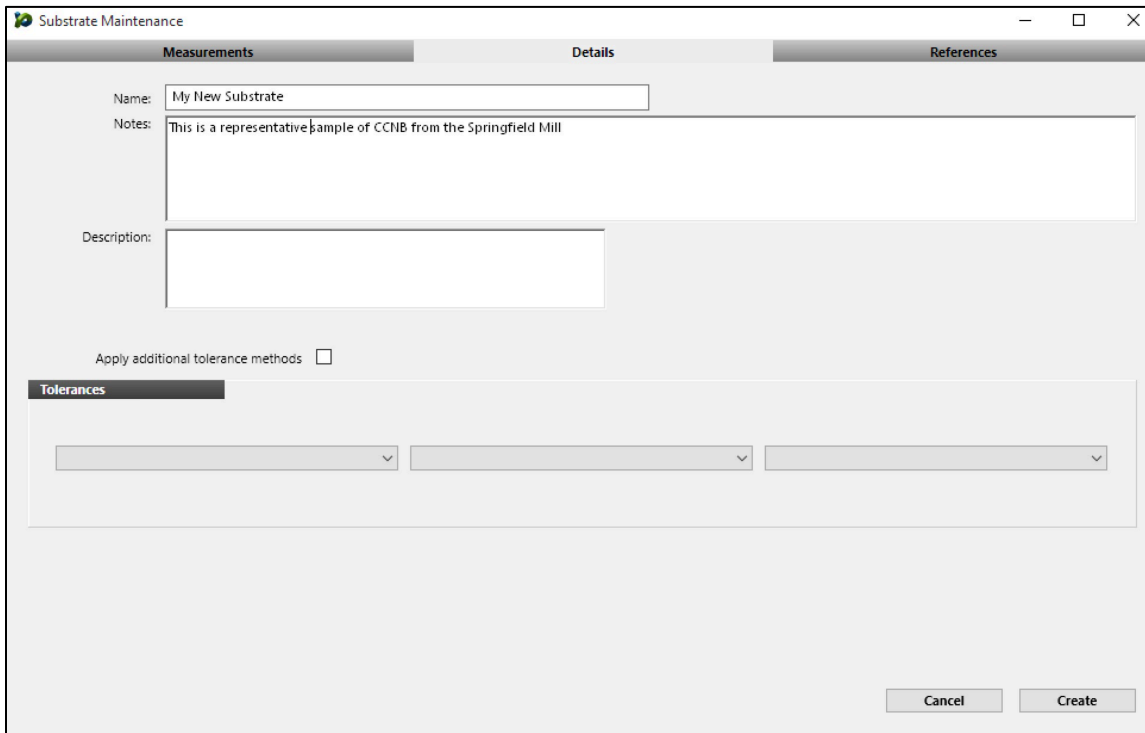
You may click the “Lab View” button to see various views of the standard that you have measured.



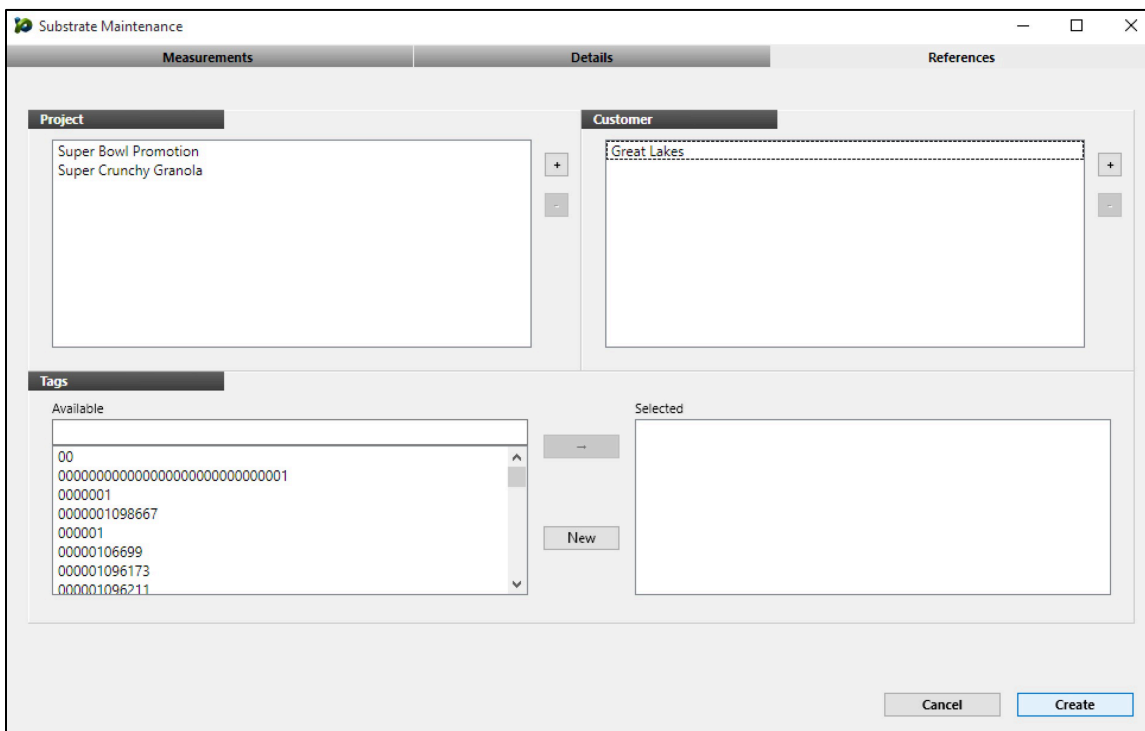


To continue, click the "Details" tab at the top of the screen.

Here we need to create a name for the substrate, and define our tolerance by selecting the tolerance method and limits in the tolerance section. You may also add any notes and/or description information that you desire.



At the references tab you may choose to assign this substrate to one or more projects and/or customers by selecting the plus sign in the appropriate quadrant and making a selection from your available options. You may also add tags by highlighting them in the “Available” column and then moving them to the “Selected” column using the arrow button.

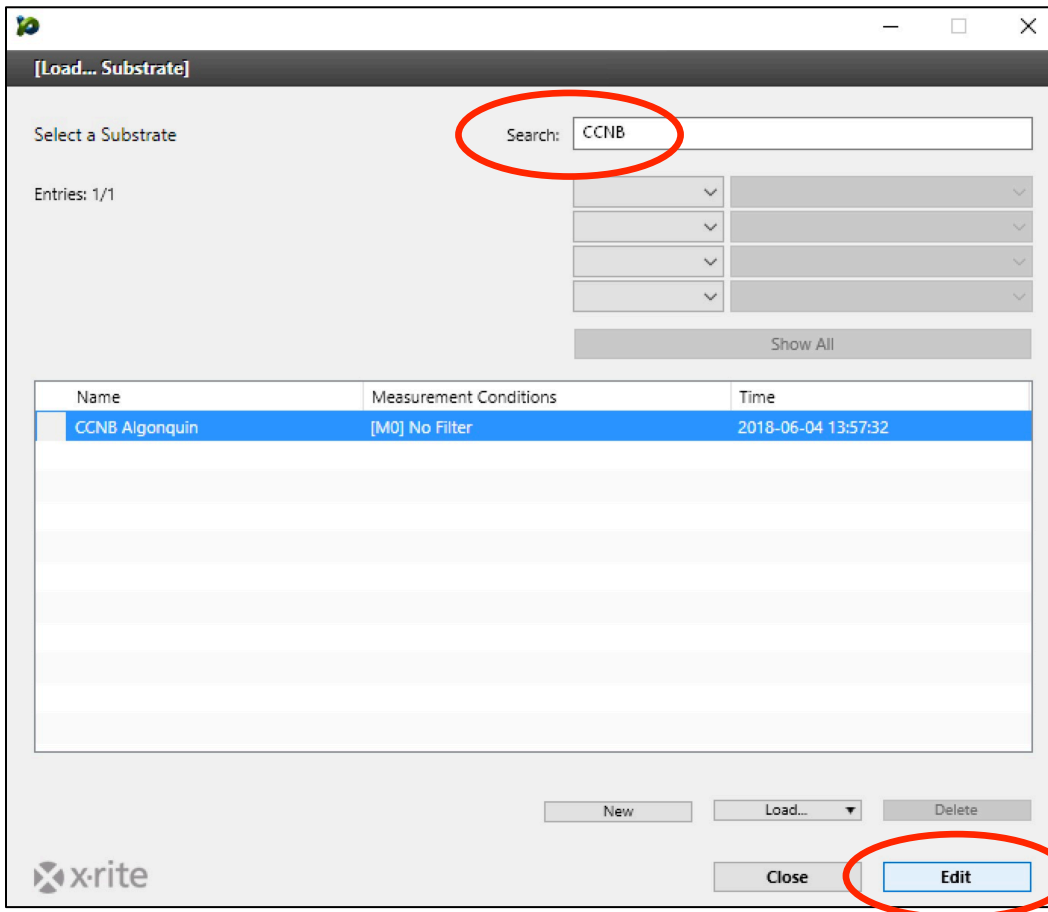


Click the “Create” button to complete the process.

Editing existing substrates

To edit existing substrates:

- Click on Editors > Edit Substrates...
- Click the name of the substrate you wish to edit
- Click the “Edit” button
 - You may enter information into the search field to make it easy to find the substrate that you are looking for

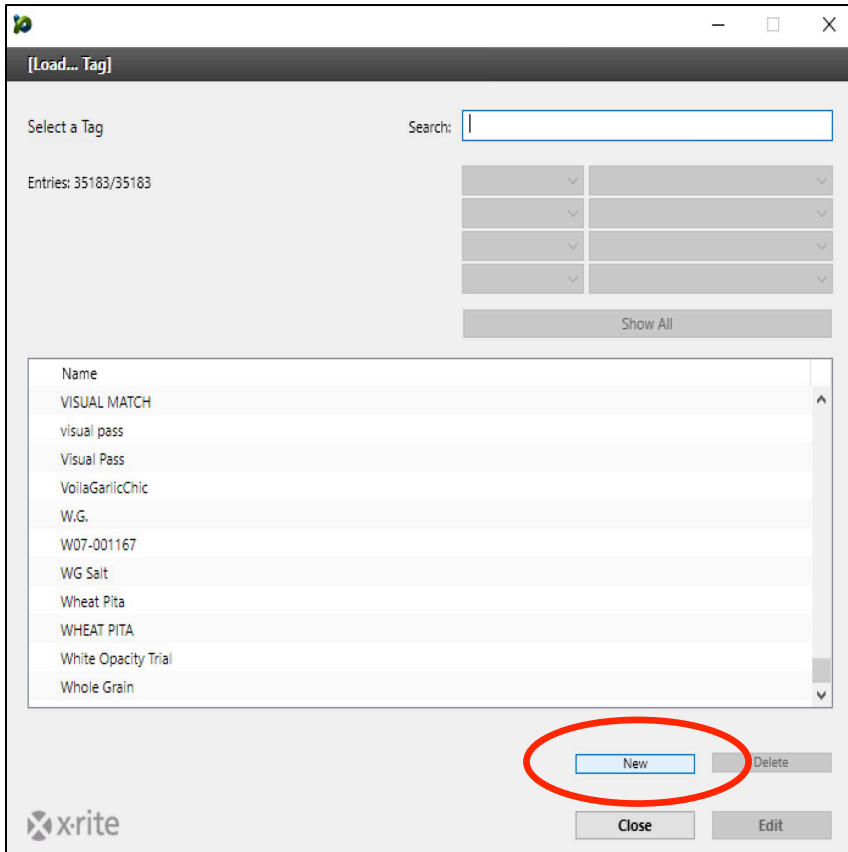


Edit any information that you desire from the Measurements, Details, and/or References tabs and then click the “Update” button.

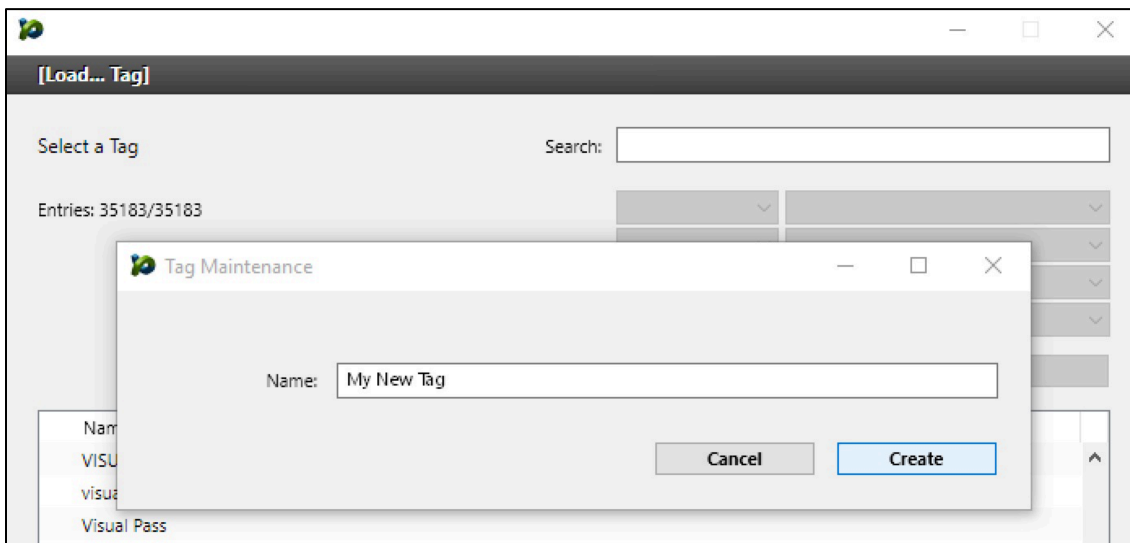
Creating New Tags

To create new tags:

- Click on Editors > Edit Tags...
- Click on the “New” button

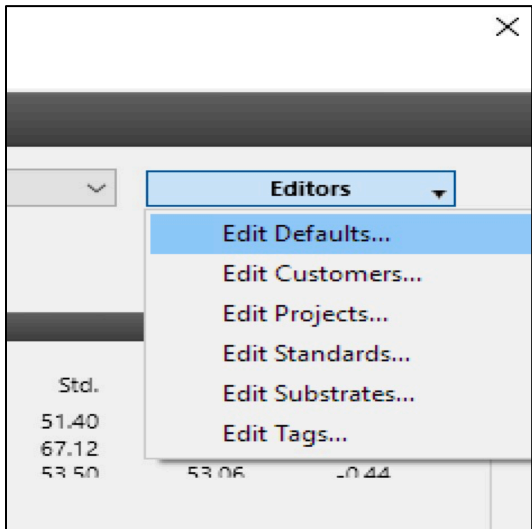


Enter a name for your new tag and then click the “Create” button.



Settings configuration

The settings configurations are found under the “Editors” button in the top right hand corner of the screen. After clicking the “Editors” button, click “Edit Defaults...”.



Permission level settings

ColorCert QA Tools has the ability to have both Admin and user level access. Admin users are required to log into the software and have access to all settings and functions within the software.

Users will only have access to those settings that you define.

By default, all users have admin level access. To configure user level access:

- Click on Editors > Edit Defaults
- Click on the “Permissions” tab

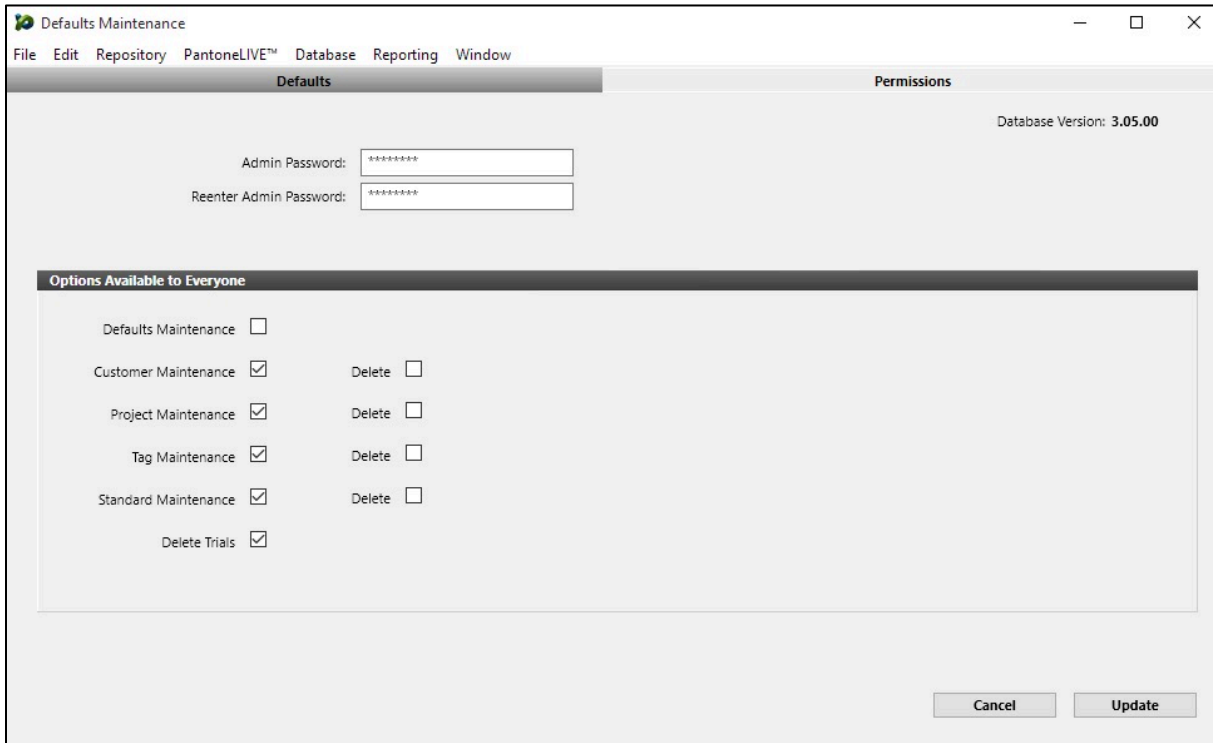
In the window that appears:

- Enter a password for the admin account, you will be required to enter the password into both open data fields
- Place a check into any check boxes for extra permissions that you would like to grant users
- Click the update button

Once you have done this, launching into the QA Tools module will bring you in at the user level.

To enter admin mode, click database in the menu bar, and then click “Admin mode”. You will be prompted to enter your password. To return to user mode, close and re-launch the QA Tools module.

Please keep your password safe, but also remember what you have set it to as you will need this to access functions to which users do not have access.

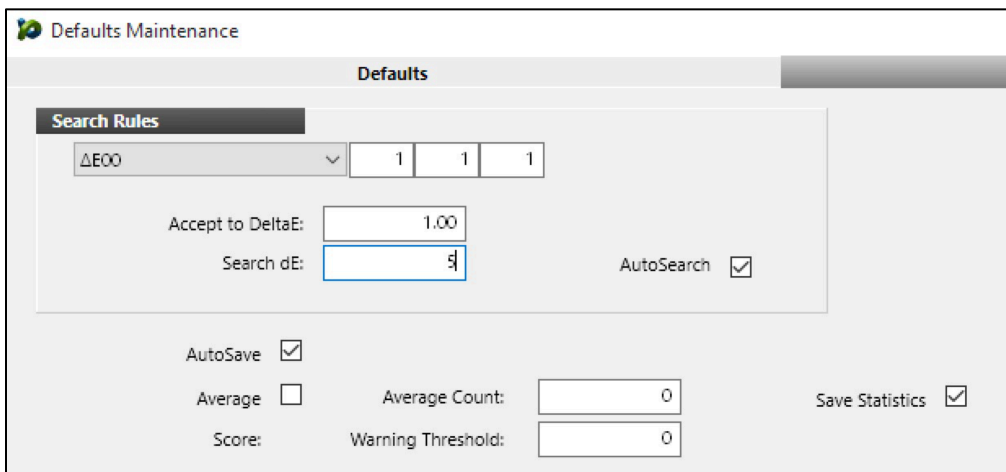


Search Default settings

When measuring colors, ColorCert QA Tools has the ability to search the database, and can auto accept a standard if it falls within a tolerance level that you define, as well as return potential color matches within a tolerance that you define. To configure these tolerance settings:

- Click on Editors > Edit Defaults
- Click on the “Defaults” tab
- Enter updated values (see example below)
- Click the update button

In the example shown below, ColorCert QA Tools will use a Delta E 2000 1:1:1 tolerance type for it searches. It will also display a list of color standards that fall within a tolerance of 5.0 from the measured trial.

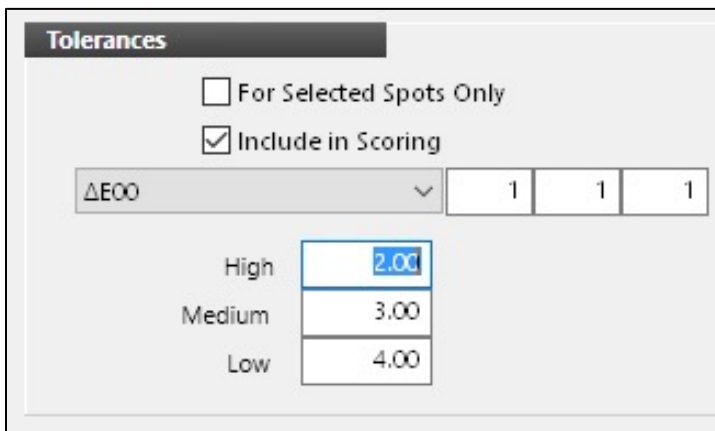


The value entered into the “Accept to DeltaE” field is what triggers the software to look for a different standard when measuring trials. If the Delta E of the measured trial is less than this value, then the software will continue using the same standard as previous readings. If it is outside this value then QA Tools will display a search screen displaying all standards within the “Search dE” range defined. When in project mode, if there is only one standard within the “Search dE” range then QA Tools will automatically switch to that standard. Otherwise the search screen will also appear when in project mode.

Default Tolerance

The tolerance section is used to define the default tolerance used by ColorCert QA Tools. This tolerance is used when there is no tolerance applied to either the color standard, customer or project (see tolerance hierarchy in the next section).

This is done by selecting both a tolerance type and limit using the dropdown pick lists. ColorCert supports the use of three tolerance levels described by priority as high, medium, and low. The tolerance used is selected when creating a new standard, please see the section on creating new standards for details. In the below screen grab the default tolerance is DE2000, with a high priority limit of 2.00, medium of 3.00 and low of 4.00.



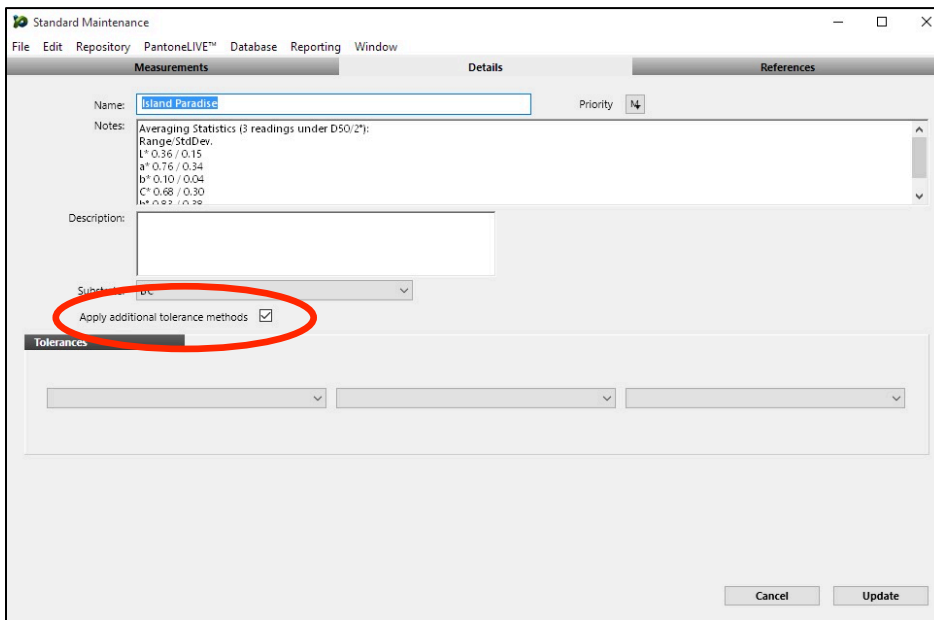
Tolerances	
<input type="checkbox"/>	For Selected Spots Only
<input checked="" type="checkbox"/>	Include in Scoring
ΔE00	1 1 1
High	2.00
Medium	3.00
Low	4.00

Alternate Tolerances

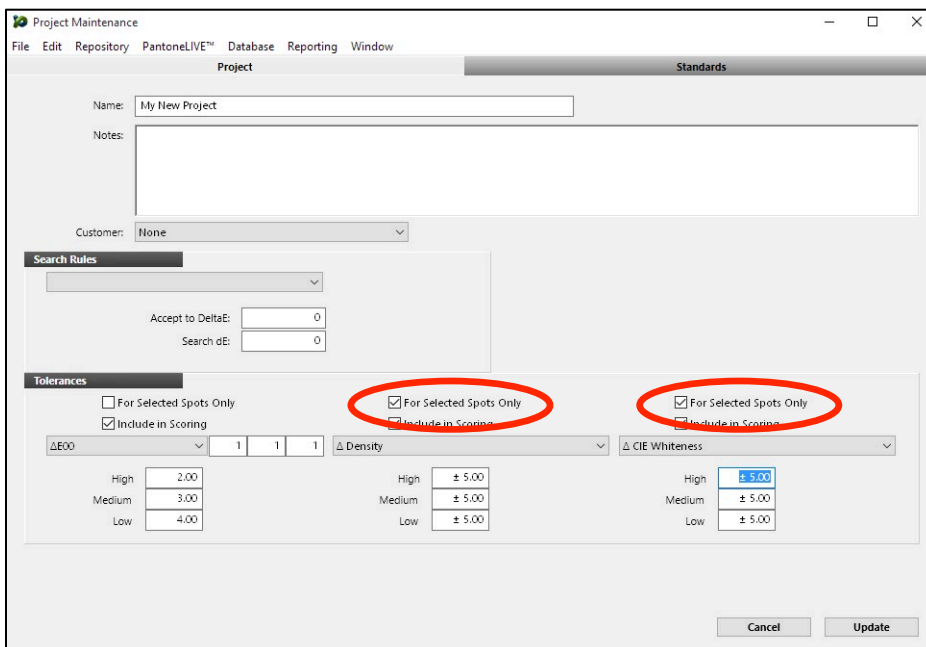
It is possible to apply alternate tolerances to a standard through the use of a project or customer.

To do so:

- Place a check in the “Apply additional tolerance methods” checkbox when creating or editing your standard
 - Note that for this to work, the standard must not have it’s own tolerances, if it does they take effect due to the tolerance hierarchy



- When creating your customer or project you may include up to 3 tolerances. To apply these tolerances to standards that have the additional tolerance methods checked, place a check in the “For Selected Spots Only” check boxes as shown below.



When this standard is assigned to this project, the alternate tolerance information will appear in the Trials with Delta window.

The screenshot shows the ColorCert QA Tools interface. The top panel includes project settings: Project: My New Project, Observer: 2°, Illumination: D50, and Substrate: None. The main area is divided into three sections: Lab View (a color wheel), Density (a table and bar chart for Cyan, Magenta, Yellow, and Black), and Visual Color (a color patch). The bottom section, titled 'Trials', contains a table with columns for date/time, ΔE_{00} (1:1:1)^{SC}, Δ Density^{SC}, Δ CIE Whiteness^{SC}, and Quality Level. A red circle highlights this table.

	ΔE_{00} (1:1:1) ^{SC}	Δ Density ^{SC}	Δ CIE Whiteness ^{SC}	Quality Level
2018-06-20 15:52:06	0.24	0.01	0.64	✓
2018-06-20 15:49:53	0.15	-0.00	0.54	✓
2018-06-20 15:44:55	0.16	-0.00	0.70	✓
2018-06-20 15:44:35	0.24	0.01	0.81	✓
2018-06-20 15:33:20	0.17	-0.00	0.29	✓
2018-06-20 15:32:35	0.16	0.00	0.12	✓
2018-06-20 15:32:11	0.16	0.00	0.08	✓
2018-06-20 15:29:54	0.17	-0.00	0.37	✓
2018-06-20 15:27:35	0.16	-0.00	0.24	✓
2018-06-20 15:26:48	0.16	-0.00	0.22	✓

Tolerance Hierarchy

As there are several places where a tolerance may be assigned, ColorCert QA Tools follows a specific hierarchy when choosing the appropriate tolerance to use. Tolerances will be used in the following order.

1. If the color standard has a tolerance assigned to it, this is the tolerance that will be used. If there is no tolerance assigned to the standard being used, then . . .
2. If the standard is assigned to a customer, and that customer has a tolerance assigned to it, then this is the tolerance that will be used. If neither the standard or the customer have tolerances assigned to them then . . .
3. If the standard is assigned to a project, and that project has a tolerance assigned to it, then this is the tolerance that will be used. If neither the standard, the customer, or the project have tolerances assigned to them then . . .
4. The system default tolerance will be used.

Mass Edit

Should the need arise to make edits to multiple standards, for example we may have a customer that changes the tolerance that we are to use you may do so using the following method:

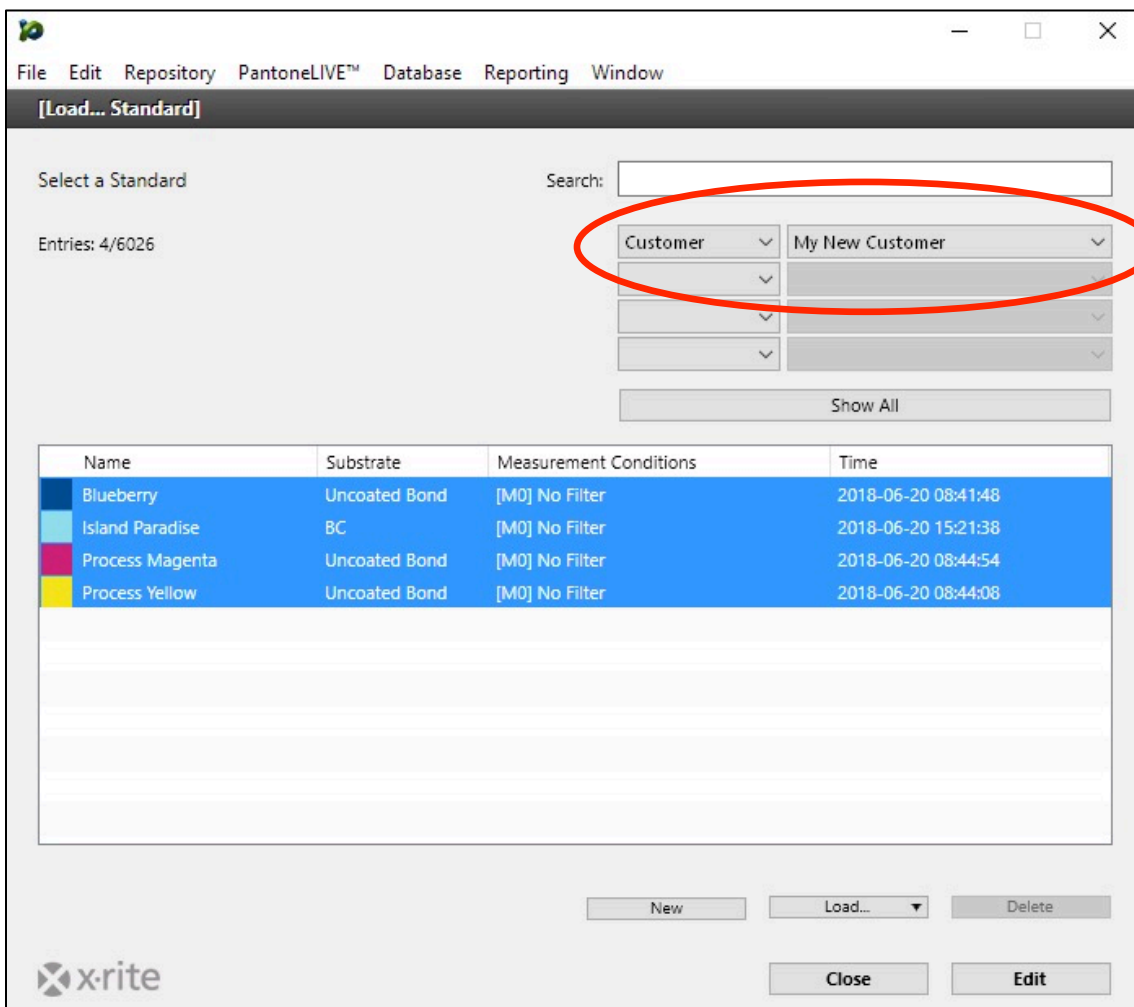
- Click the “Editors” button and then click “Edit Standards”

At this point we can select multiple standards from the list.

- You may click one color then click another color while holding the shift key to select a range of colors, or
- You may press and hold the Control (Ctrl) key to highlight multiple non consecutive colors

You may also use a Customer, Project, Substrate, or Tag as a filter. For our example lets select a customer as shown below

Once we have done so we can quickly select all of the standards by using the methods above, or to quickly grab them all we can highlight one and then enter Ctrl A, this selects them all.



- Click the “Edit” button

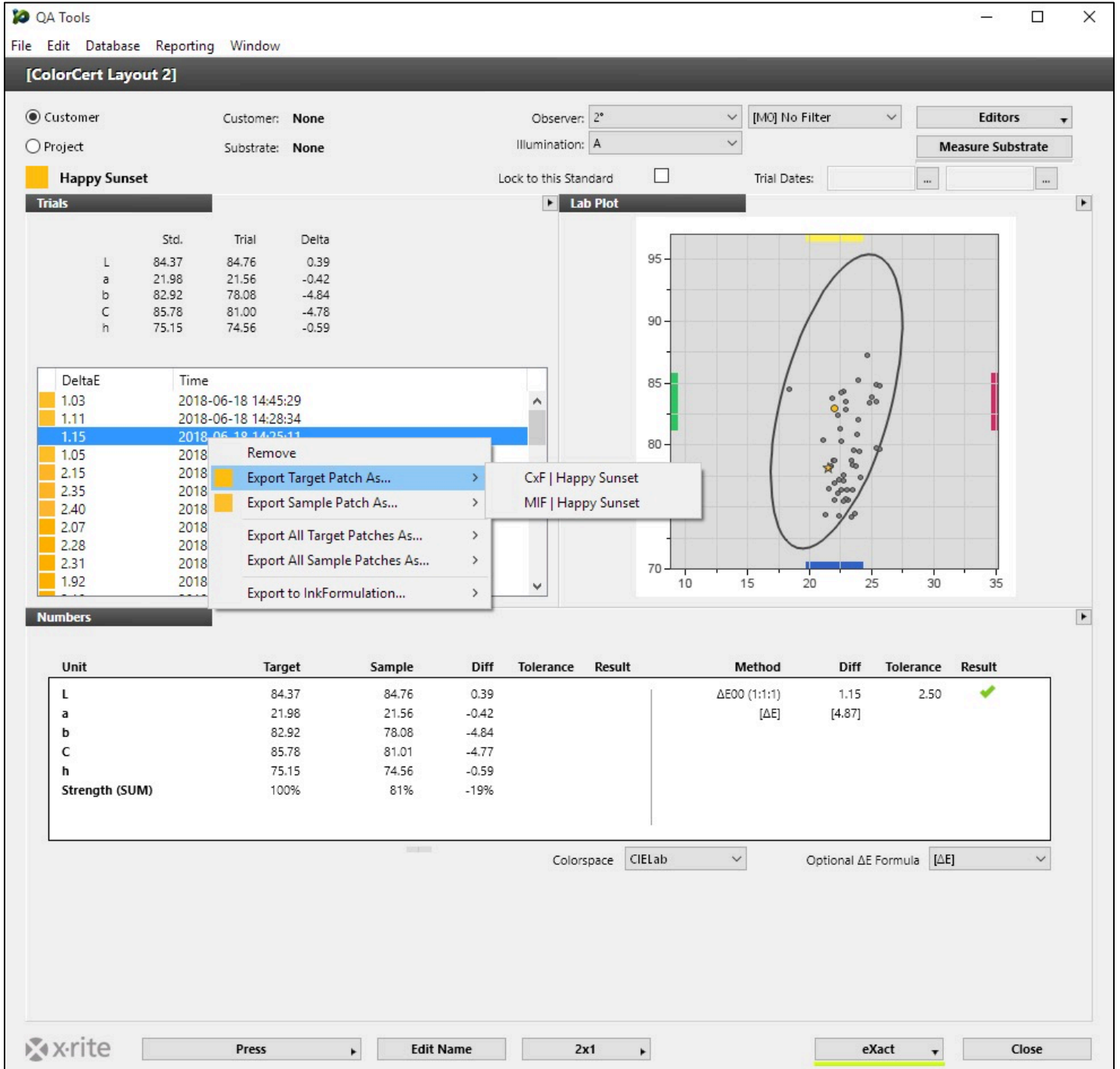
Any edits made at this point will be applied to all of the standards selected.

Exporting Data

Export to a data file

Both target and trial data may easily be exported from ColorCert QA Tools. To do so right click on a trial and then choose your export option.

- Single standards or trials may be exported as either CxF or MIF files
- Sets that include all standards or all trials may be exported as CxF files



The screenshot shows the ColorCert QA Tools interface. At the top, there's a menu bar (File, Edit, Database, Reporting, Window) and a title bar (QA Tools). Below that, the main workspace is titled "[ColorCert Layout 2]".

On the left, there are settings for "Customer" (None) and "Project" (None). The "Happy Sunset" standard is selected. A table of "Trials" is visible, with columns for Std., Trial, and Delta. The trial with Delta 1.15 is highlighted. A context menu is open over this trial, showing options like "Export Target Patch As...", "Export Sample Patch As...", "Export All Target Patches As...", "Export All Sample Patches As...", and "Export to InkFormulation...". A sub-menu is also visible, showing "CxF | Happy Sunset" and "MIF | Happy Sunset".

In the center, there's a "Lab Plot" showing a scatter plot of data points. A yellow oval highlights a cluster of points. The plot has axes ranging from 70 to 95 on the y-axis and 10 to 35 on the x-axis.

At the bottom, there's a "Numbers" section with a table of results. The table has columns for Unit, Target, Sample, Diff, Tolerance, Result, Method, Diff, Tolerance, and Result. The "Strength (SUM)" row shows a result of 81% against a target of 100%.

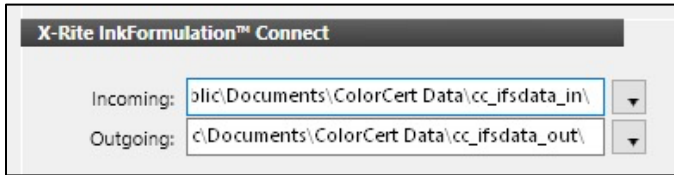
At the very bottom, there's a footer with the xrite logo and several buttons: "Press", "Edit Name", "2x1", "eXact", and "Close".

Unit	Target	Sample	Diff	Tolerance	Result	Method	Diff	Tolerance	Result
L	84.37	84.76	0.39			ΔE_{00} (1:1:1)	1.15	2.50	✓
a	21.98	21.56	-0.42			[ΔE]	[4.87]		
b	82.92	78.08	-4.84						
C	85.78	81.01	-4.77						
h	75.15	74.56	-0.59						
Strength (SUM)	100%	81%	-19%						

Export to InkFormulation

If you are using X-Rite Ink Formulation software (IFS) you may also export directly from QA Tools to IFS by right clicking a sample and choosing “Export to InkFormulation”. Doing so sends both the standard and the sample directly to IFS where an ink technician may make an ink correction if necessary.

To allow this both ColorCert and IFS must have their preferences set to connect to the same folders. In ColorCert this is done at the “Add-Ons” tab within the preferences.



When data is sent to IFS using this function in QA Tools, a notification will appear in the icon bar of IFS alerting the ink technician that there is an issue.

It is also possible for the ink technician to transfer measurement data from IFS directly to ColorCert in a similar manner. This data can then be used to create standards using the “Load from CxF Library” option in the Standards editor.

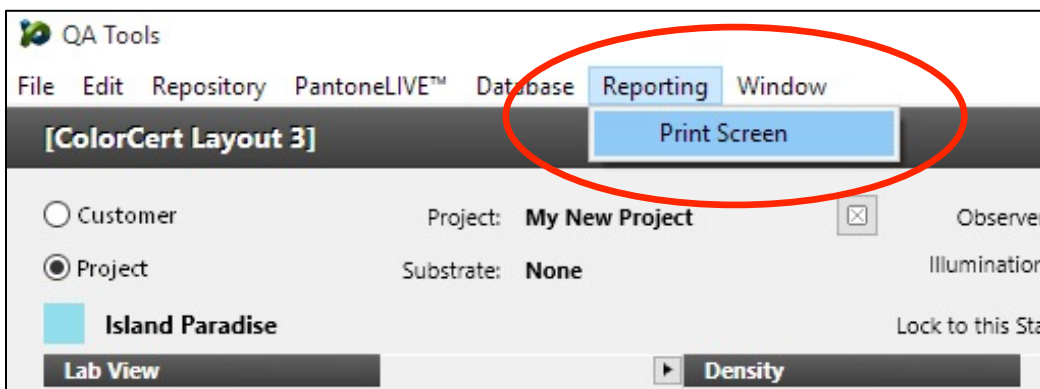
Deleting Trials

Trials may be deleted by right clicking them, and then selecting “Remove”. This is also seen in the image on the previous page.

Reports

Reports may be generated to show exactly what appears on screen. To do so:

- Click on “Reporting” in the menu bar, then click “Print Screen”
- This will create a PDF file of whatever appears on the screen at the time, this may be save as a file or printed as required



PantoneLIVE

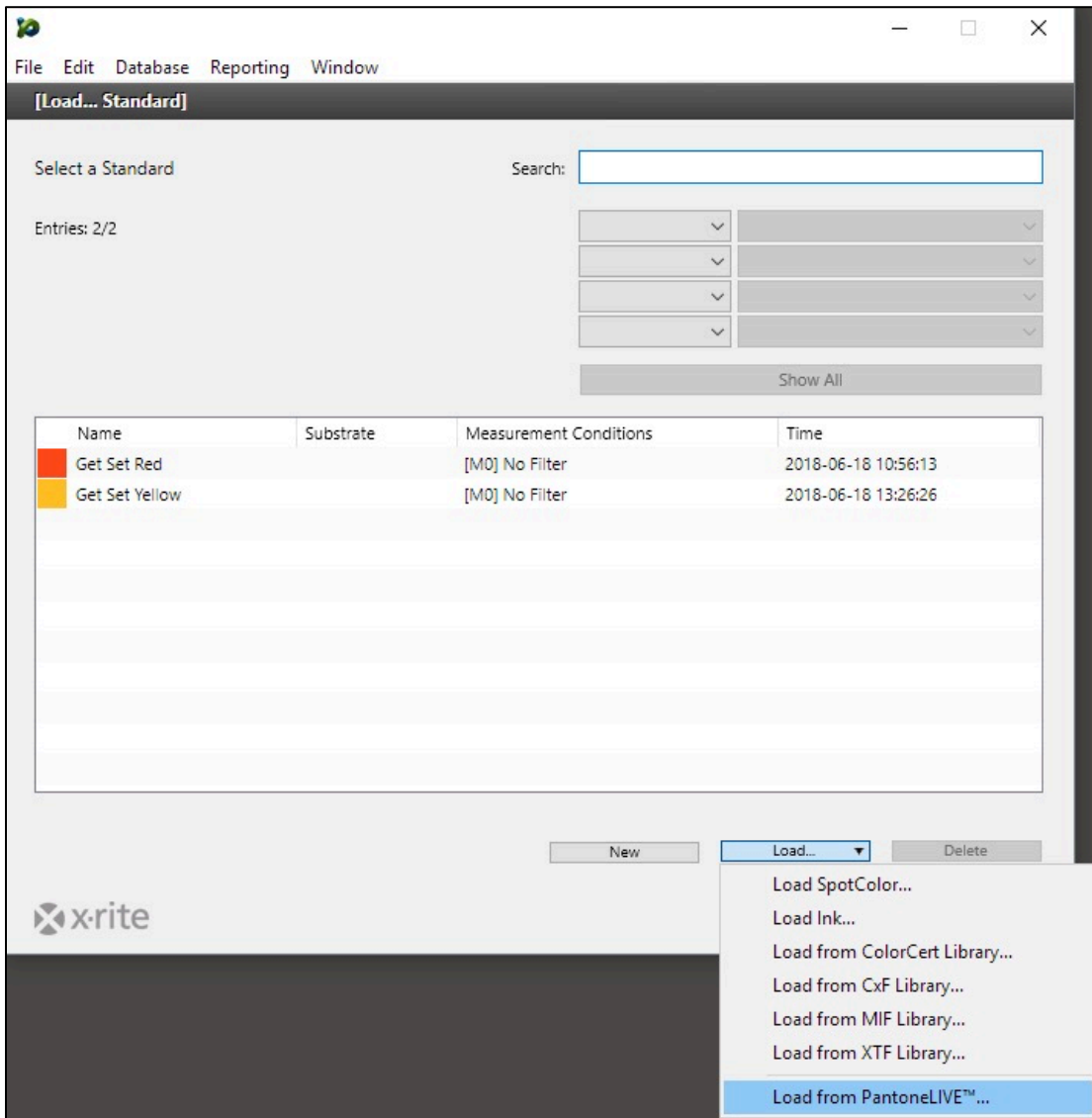
ColorCert QA Tools provides full support for PantoneLIVE workflows. Please note that the use of PantoneLIVE dependent libraries requires an active PantoneLIVE license. Even if standards are created using a valid license, these standards will expire 30 days after your PantoneLIVE license is allowed to expire. Please see your local sales rep for details.

The following PantoneLIVE Libraries are available for your use free of charge without a license:

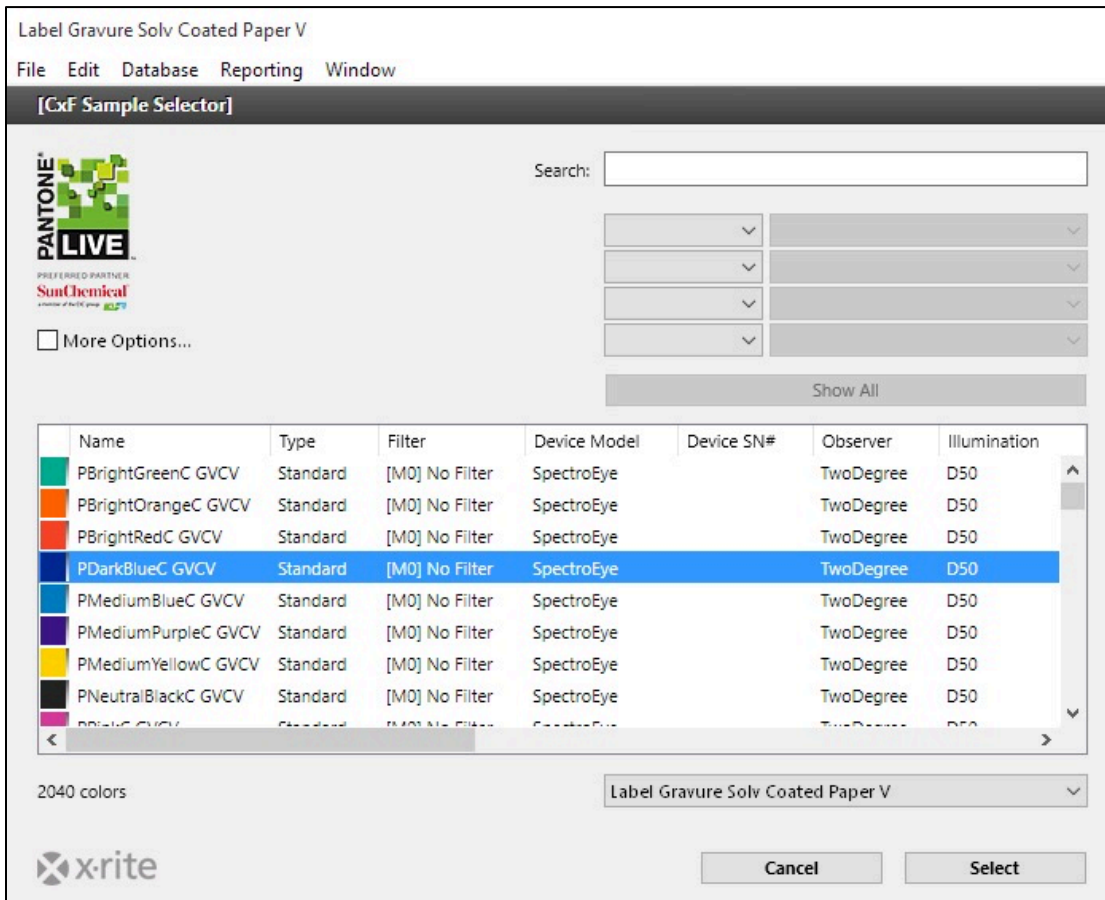
- Extended Gamut Coated M0, M1, M3
- Pastels & Neons Coated M0, M1, M3
- Pastels & Neons Uncoated M0, M1, M3
- Solid Coated V3 M0, M1, M3
- Solid Uncoated V3 M0, M1, M3

To create a new standard using PantoneLIVE:

- Click the “Editors” button and then click “Edit Standards”
- Click “Load” and then Click “Load from PantoneLIVE”



You may then double click any PantoneLIVE color to select it.



From here you may follow the instructions in the “Creating New Color Standards” section to finish the process.

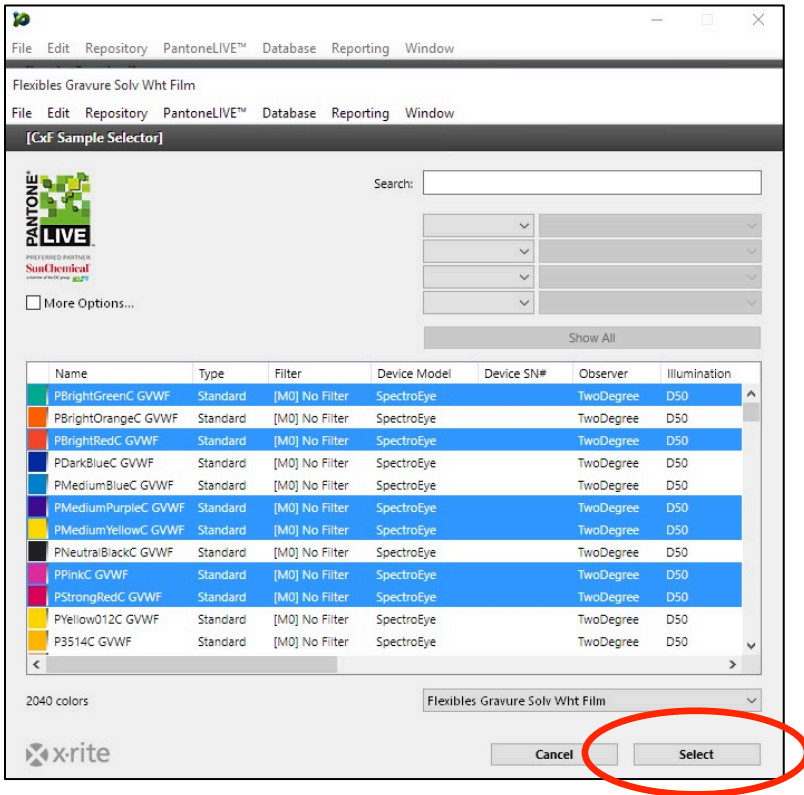
Creating multiple standards

When using PantoneLIVE libraries to create new standards, it is possible to create multiple standards in one operation.

To do so:

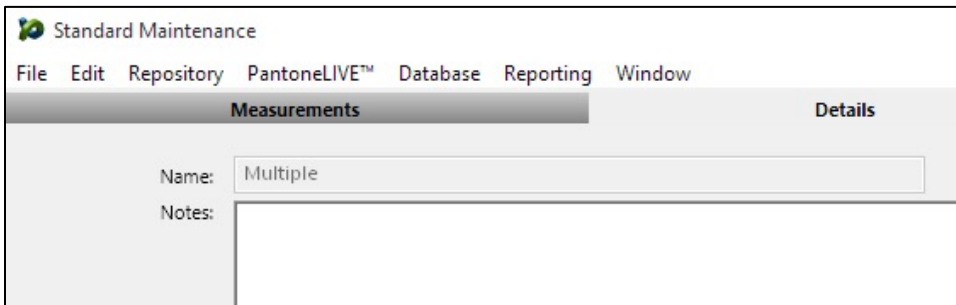
- Click the “Editors” button and then click “Edit Standards”
- Click “Load” and then Click “Load from PantoneLIVE” as shown above.
- Single click any color you wish to use as a standard to highlight it
- You may then click another color while holding the shift key to select a range of PantoneLIVE colors, or
- You may press and hold the Control (Ctrl) key to highlight multiple non consecutive PantoneLIVE colors

In the example below we are creating 6 standards at one time



- Click the Select button to continue

At the details screen the name will simply state multiple, as we are creating multiple standards. The names will be the same as the PantoneLIVE names.



We may assign all of these new standards to a common substrate, tolerance, customer, project, and or tags.

Standard Maintenance

File Edit Repository PantoneLIVE™ Database Reporting Window

Measurements **Details** **References**

Name: Priority:

Notes:

Description:

Substrate:

Apply additional tolerance methods

Tolerances

Include in Scoring

Tolerance:

Standard Maintenance

File Edit Repository PantoneLIVE™ Database Reporting Window

Measurements **Details** **References**

Project **Customer**

Tags

Available

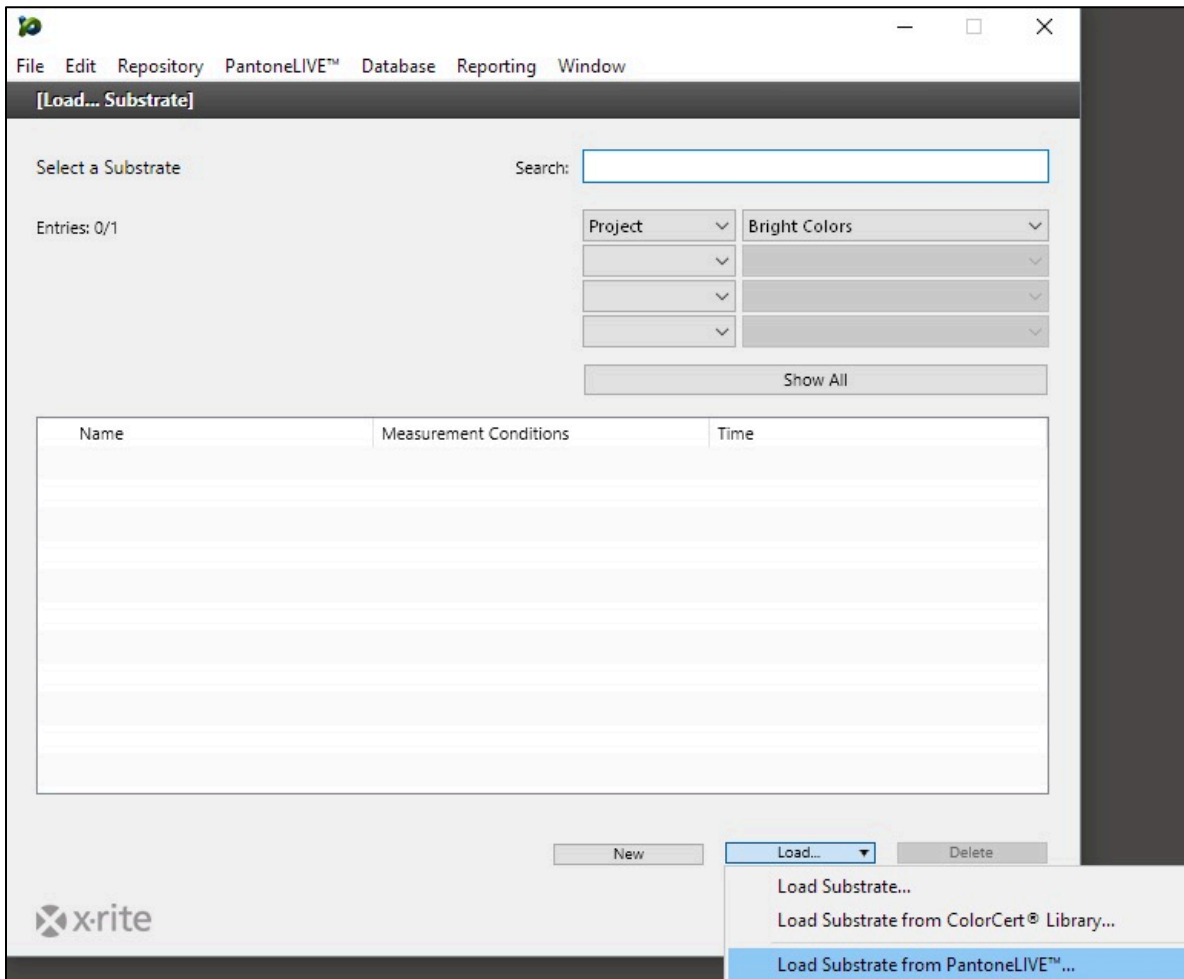
Selected

Adding substrates from PantoneLIVE libraries

Substrates may also be added from PantoneLIVE libraries.

To create a new substrates using PantoneLIVE:

- Click the “Editors” button and then click “Edit Substrates”
- Click “Load” and then Click “Load Substrate from PantoneLIVE”

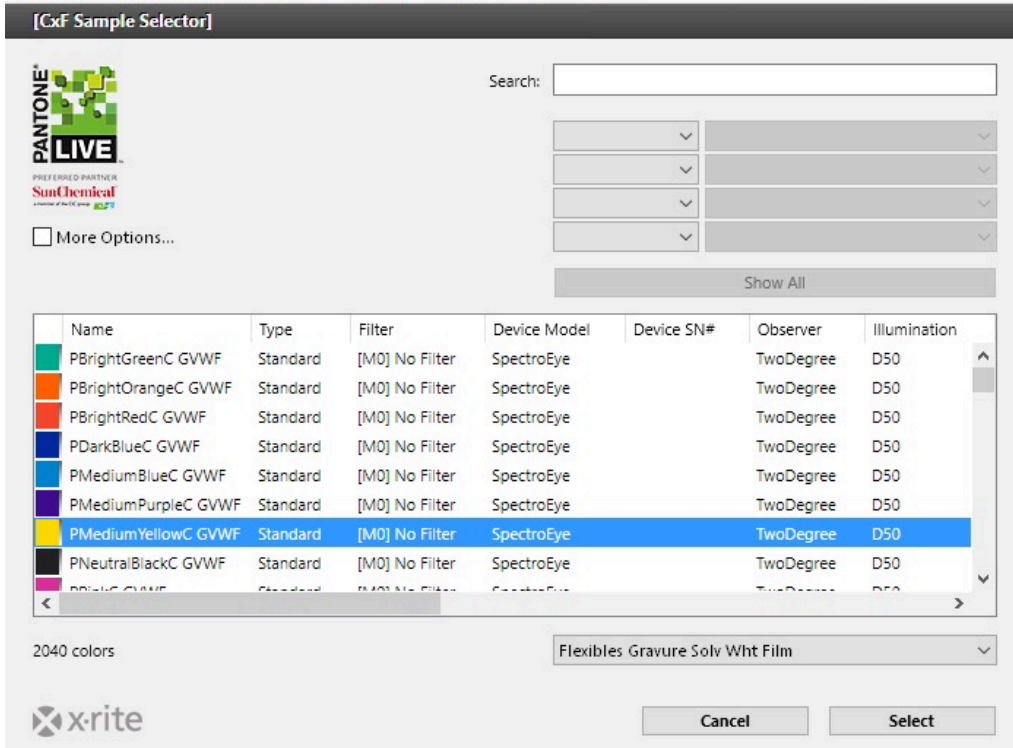


- Select the library from which you wish to use the substrate
- Highlight any color in the library, it does not matter which because QA Tools is only pulling the substrate information which will be the same for all colors in a given library
- Click the “Select” button

Flexibles Gravure Solv Wht Film

File Edit Repository PantoneLIVE™ Database Reporting Window

[CxF Sample Selector]



Search:

More Options...

Show All

Name	Type	Filter	Device Model	Device SN#	Observer	Illumination
PBrightGreenC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50
PBrightOrangeC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50
PBrightRedC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50
PDarkBlueC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50
PMediumBlueC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50
PMediumPurpleC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50
PMediumYellowC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50
PNeutralBlackC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50
PBlackC GVWF	Standard	[M0] No Filter	SpectroEye		TwoDegree	D50

2040 colors

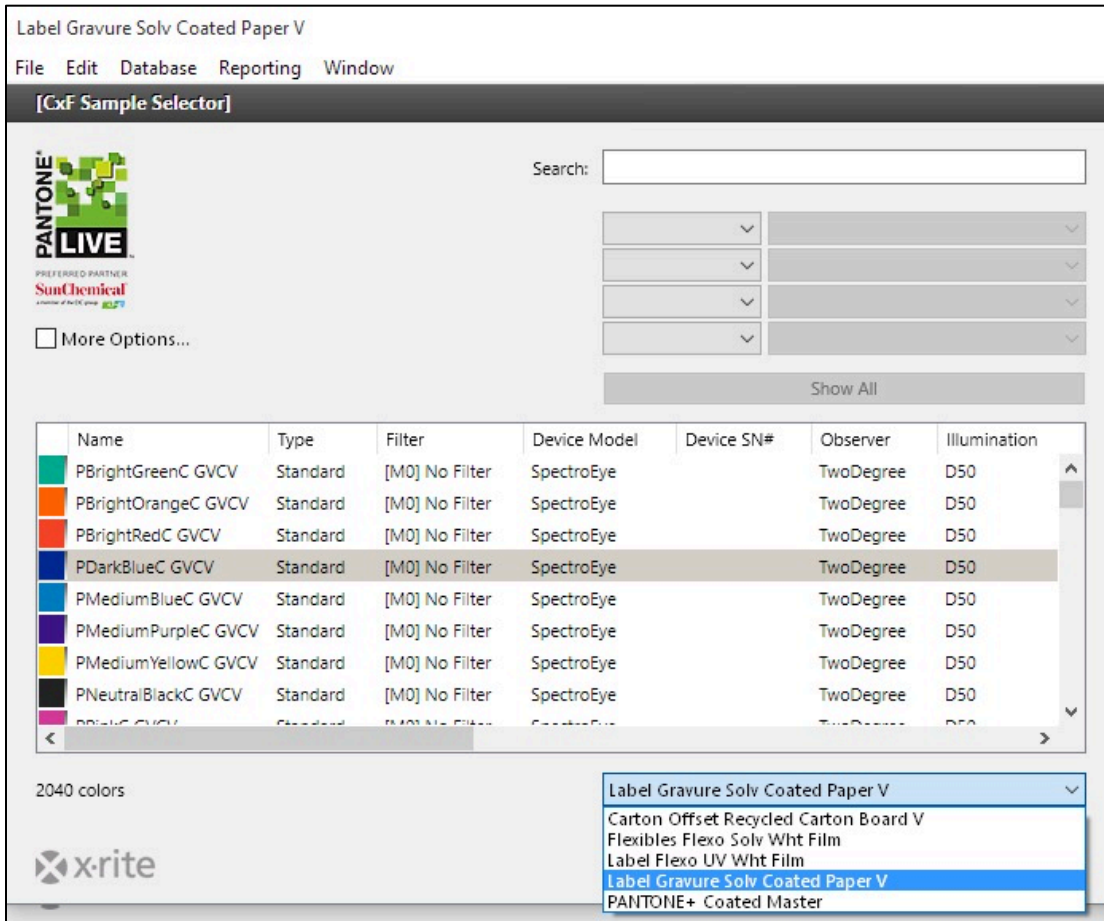
Flexibles Gravure Solv Wht Film

Cancel Select

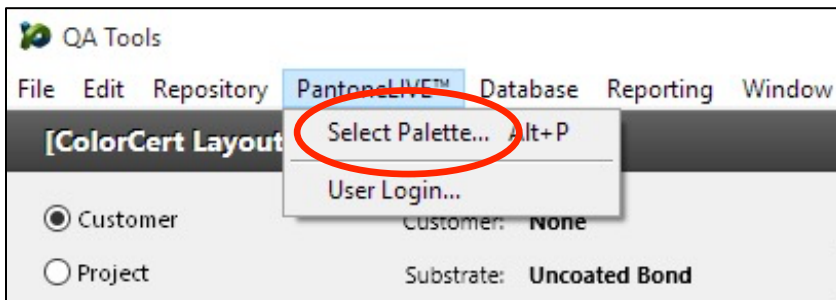
- You may add any notes, descriptions, or tolerances that you wish, and you may assign this substrate to projects and customers as with any other substrate standard
- You cannot change the name because QA Tools will use the name assigned in the PantoneLIVE library
- When you are finished click the Create button

Selecting PantoneLIVE Palettes

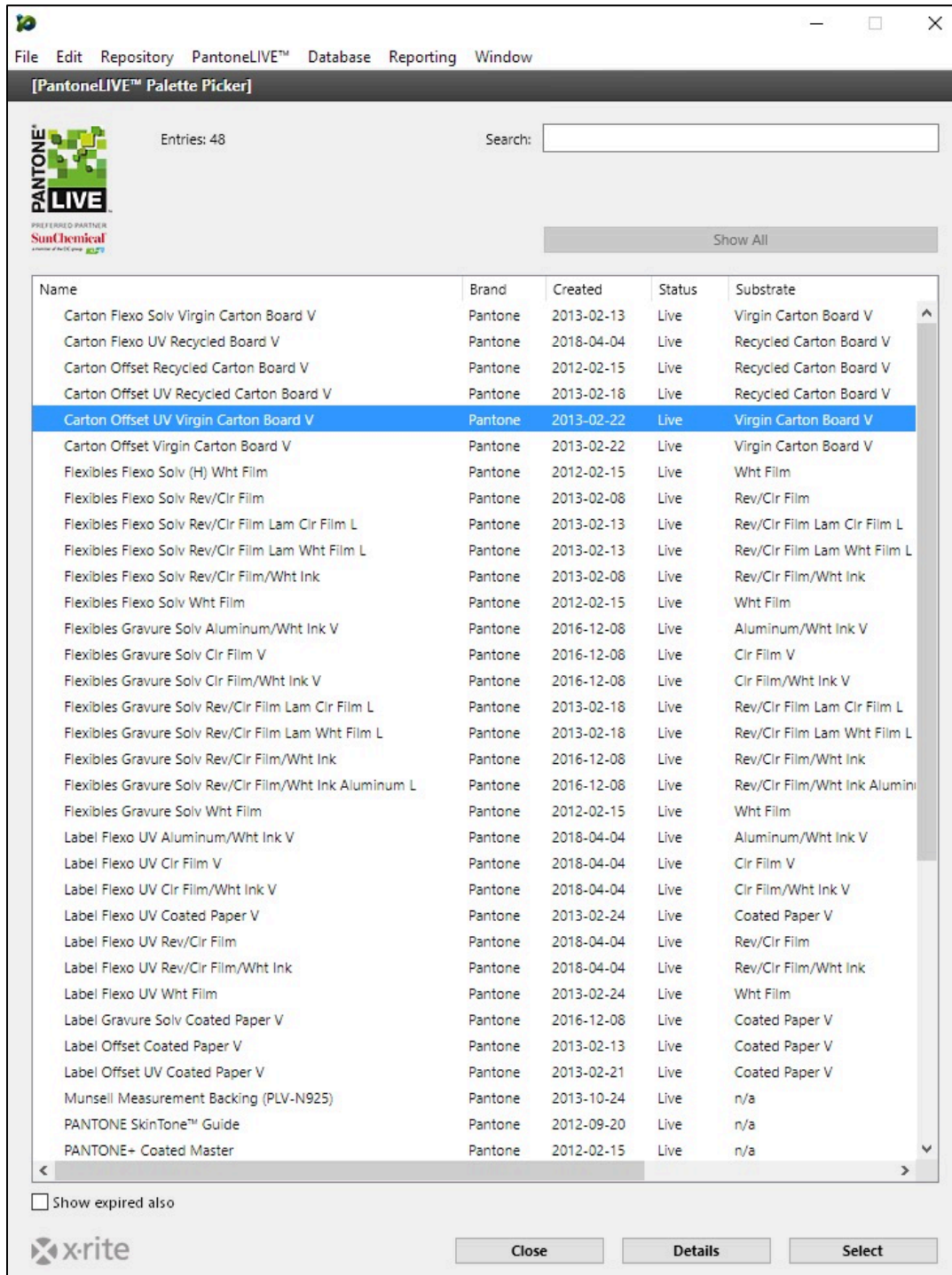
If you need to select a different dependent or master library, simply click on the dropdown list below the color selection. This will display a list of all libraries that you have downloaded for use.



If you need to download additional palettes, you may do so by clicking PantoneLIVE in the menu bar at the top of the screen, and then clicking Select Palette.



This will return a list of all available master and dependent PantoneLIVE libraries.



The screenshot shows the 'PantoneLIVE™ Palette Picker' application window. The title bar includes 'File Edit Repository PantoneLIVE™ Database Reporting Window'. The main area displays a list of 48 entries. A search box is located at the top right, and a 'Show All' button is centered below it. The list table has the following columns: Name, Brand, Created, Status, and Substrate. The entry 'Carton Offset UV Virgin Carton Board V' is highlighted in blue. At the bottom left, there is a checkbox for 'Show expired also'. At the bottom right, there are three buttons: 'Close', 'Details', and 'Select'. The xrite logo is in the bottom left corner.

Name	Brand	Created	Status	Substrate
Carton Flexo Solv Virgin Carton Board V	Pantone	2013-02-13	Live	Virgin Carton Board V
Carton Flexo UV Recycled Board V	Pantone	2018-04-04	Live	Recycled Carton Board V
Carton Offset Recycled Carton Board V	Pantone	2012-02-15	Live	Recycled Carton Board V
Carton Offset UV Recycled Carton Board V	Pantone	2013-02-18	Live	Recycled Carton Board V
Carton Offset UV Virgin Carton Board V	Pantone	2013-02-22	Live	Virgin Carton Board V
Carton Offset Virgin Carton Board V	Pantone	2013-02-22	Live	Virgin Carton Board V
Flexibles Flexo Solv (H) Wht Film	Pantone	2012-02-15	Live	Wht Film
Flexibles Flexo Solv Rev/Clr Film	Pantone	2013-02-08	Live	Rev/Clr Film
Flexibles Flexo Solv Rev/Clr Film Lam Clr Film L	Pantone	2013-02-13	Live	Rev/Clr Film Lam Clr Film L
Flexibles Flexo Solv Rev/Clr Film Lam Wht Film L	Pantone	2013-02-13	Live	Rev/Clr Film Lam Wht Film L
Flexibles Flexo Solv Rev/Clr Film/Wht Ink	Pantone	2013-02-08	Live	Rev/Clr Film/Wht Ink
Flexibles Flexo Solv Wht Film	Pantone	2012-02-15	Live	Wht Film
Flexibles Gravure Solv Aluminum/Wht Ink V	Pantone	2016-12-08	Live	Aluminum/Wht Ink V
Flexibles Gravure Solv Clr Film V	Pantone	2016-12-08	Live	Clr Film V
Flexibles Gravure Solv Clr Film/Wht Ink V	Pantone	2016-12-08	Live	Clr Film/Wht Ink V
Flexibles Gravure Solv Rev/Clr Film Lam Clr Film L	Pantone	2013-02-18	Live	Rev/Clr Film Lam Clr Film L
Flexibles Gravure Solv Rev/Clr Film Lam Wht Film L	Pantone	2013-02-18	Live	Rev/Clr Film Lam Wht Film L
Flexibles Gravure Solv Rev/Clr Film/Wht Ink	Pantone	2016-12-08	Live	Rev/Clr Film/Wht Ink
Flexibles Gravure Solv Rev/Clr Film/Wht Ink Aluminum L	Pantone	2016-12-08	Live	Rev/Clr Film/Wht Ink Aluminum L
Flexibles Gravure Solv Wht Film	Pantone	2012-02-15	Live	Wht Film
Label Flexo UV Aluminum/Wht Ink V	Pantone	2018-04-04	Live	Aluminum/Wht Ink V
Label Flexo UV Clr Film V	Pantone	2018-04-04	Live	Clr Film V
Label Flexo UV Clr Film/Wht Ink V	Pantone	2018-04-04	Live	Clr Film/Wht Ink V
Label Flexo UV Coated Paper V	Pantone	2013-02-24	Live	Coated Paper V
Label Flexo UV Rev/Clr Film	Pantone	2018-04-04	Live	Rev/Clr Film
Label Flexo UV Rev/Clr Film/Wht Ink	Pantone	2018-04-04	Live	Rev/Clr Film/Wht Ink
Label Flexo UV Wht Film	Pantone	2013-02-24	Live	Wht Film
Label Gravure Solv Coated Paper V	Pantone	2016-12-08	Live	Coated Paper V
Label Offset Coated Paper V	Pantone	2013-02-13	Live	Coated Paper V
Label Offset UV Coated Paper V	Pantone	2013-02-21	Live	Coated Paper V
Munsell Measurement Backing (PLV-N925)	Pantone	2013-10-24	Live	n/a
PANTONE SkinTone™ Guide	Pantone	2012-09-20	Live	n/a
PANTONE+ Coated Master	Pantone	2012-02-15	Live	n/a

Getting Help: Remote Assistance

If you require support for your ColorCert application, use the Contact button to locate the support phone number for your region. Your X-Rite support technician may ask to have access to your computer system to diagnose the problems. Team Viewer is installed automatically when you install ColorCert.

- To launch TeamViewerQS go to:
 - Windows: C:\Program Files (x86)\X-Rite\ColorCert\Teamview QS
 - Mac: /Applications/ColorCert/TeamViewer_QS
- To grant remote access to your windows computer, quote the ID that pops up to the ColorCert service engineer.
- You can terminate a session at any time by closing the Teamviewer client application.

Terminology

- PantoneLIVE: A cloud-based spectral color platform that enables sharing of digital standards globally.
- Application: Applications are created by merging Rules and Profiles. These can be saved and reloaded into Jobs.
- Job: Jobs are used during production and QC to measure, monitor and report on the color and print quality of each press run. Jobs are based on the applications that include the targets set in the Profiles, and the tolerances set in the Rules.
- Metadata: Additional Information about the Job, the Separator or Printer as well as Press Setup Details you want to capture in a ColorCert job.
- Rules: Rules define the range of tolerances that are applied to certain types of work. For example, you may have a set of Rules that is used for your shop's general CMYK Process Color work. You may have another set of Rules that contain the specific tolerances and requirements that are defined by a Brand Owner for print production. You may also have different set of Rules designed around the capabilities and expectations of a type of press.
- Profiles: Profiles contain all of the specific colors that will be measured. These can be a set of CMYK Process Colors and a Substrate that is used in general production, or you may have a set of Rules for production of many different Jobs that share the same specific set of Brand Colors on the same Substrate. A set of Rules may also be created for a single specific Job.
- Measurement Condition: Settings for your Spectrophotometer for the Measurement Mode (or Filter) as well as the Illumination and Observer. For Example M0 D50/2°.
- Scorecard: Scorecards are generated from Jobs based on the weighted scores of print quality in several selected areas, as defined by the Rules and Profiles, to generate an overall Job Score. This gives the Production Team, Supervisors, and Brand Owners a simple way to evaluate the overall quality of the Job, and shows areas to focus on for improvement.