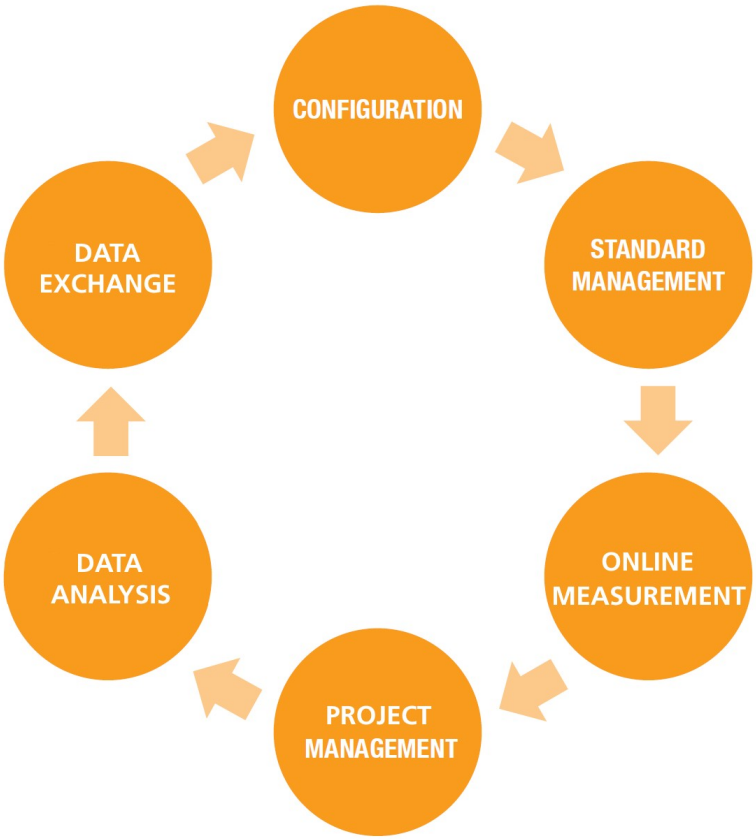
BYK



smart-lab for color2view

Step-by-Step Guide

A member of ALTANA

Table of Contents

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System Description

1.1 Software Overview

The software smart-lab offers intuitive online measurement with instant data display combined with open and flexible data analysis for quality control in the laboratory.

Software Modules

1	**Standard Management**	Definition of color standards with pass / fail limits: Measurement of master panels or import of digital standards.
2	**smart-lab Measurement Module**	Online measurements / data transfer for offline measurements and analysis of the measurement data.
3	**Instrument Management**	Preparation of the instrument by sending the selected color standards to the instrument.
4	**Configuration**	General settings such as UI language, database selection and automatic data backup.

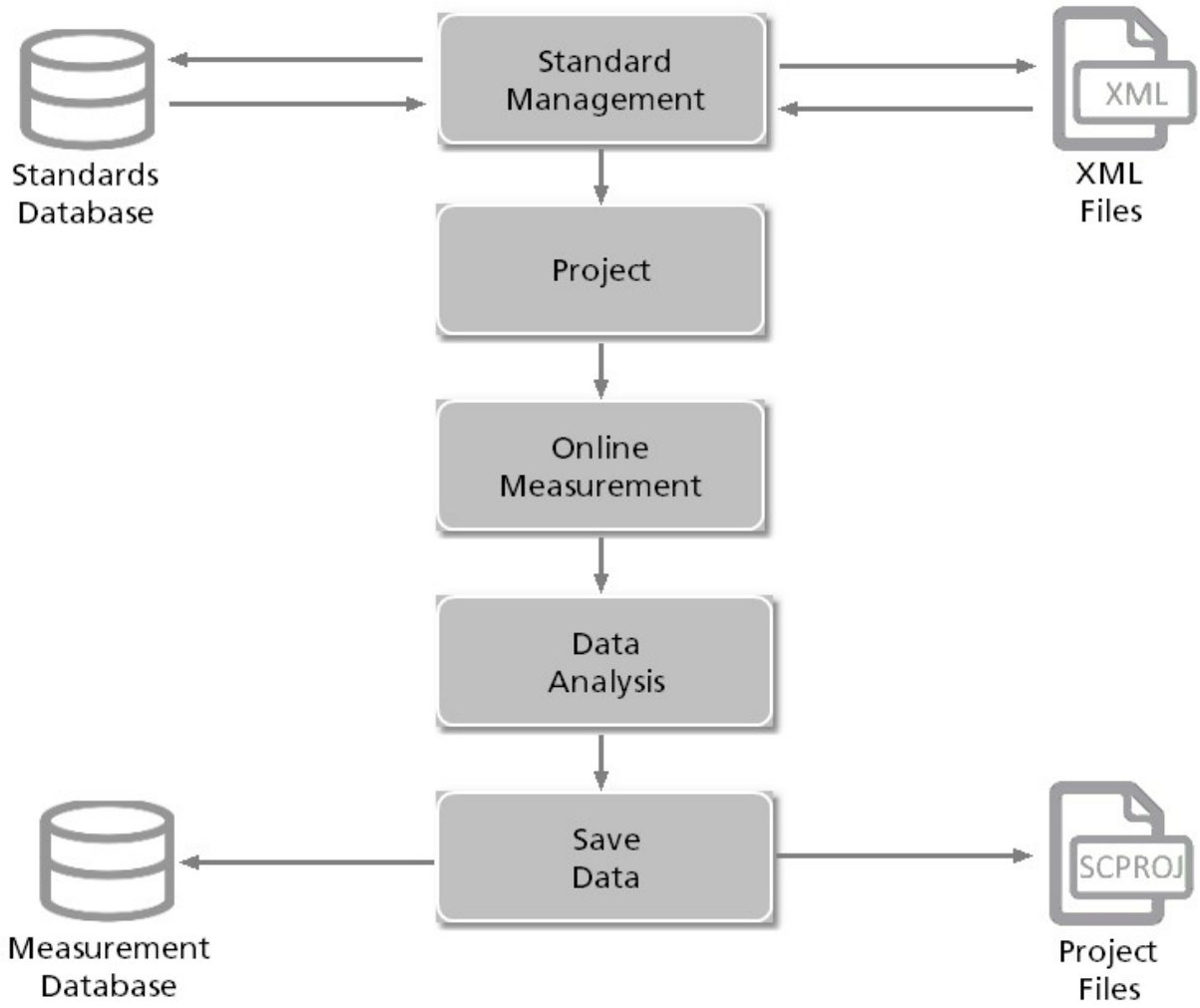
General Information

5	**Software Version**	Will be up to date after download and installation. Please check in regular intervals if an update is available on our website. Usually updates take place twice a year.
6	**About / License**	With installation a 30 days trial period starts. Afterwards the software is to be licensed. It also allows to return licenses in order to change over to a new PC.
7	**User Group**	If user groups have been defined, a log-in with specific user rights (module access) is possible, see "Configuration" > "User groups".

1.2 Data Management

In smart-lab measurement data are managed based on so-called "projects". Projects contain measurement data of the master standard as well as test series and samples:

- Standards are ideally defined with their limits before they are used in a project or sent to the instrument. Details see section "Standard Management" (Link 12).
- Measurement data can be created directly within a project if the instrument is connected to the software. Details see section "Online Measurement" (Link 20).



2

Software Installation

2.1 Requirements

The target machine has to fulfill following requirements:

- Operating system: Windows® 10 1607 or later
- Hardware: i5 2.5 GHz; i9 recommended, or equivalent (x86 & x64 architecture only)
- Memory: 8 GB RAM, 32 GB recommended
- Free hard-disk capacity: 4 GB during installation
- Monitor resolution: 1920 x 1080 pixel; 4K recommended
- Interface: free USB-port

Latest details see "smart-chart installation guide" in the download archive.

2.2 Installation

Download and installation

1. Download the ZIP file per instrument:
   - https://www.byk-instruments.com/en/software
2. Extract the complete archive on your hard drive into a new folder.
3. In the extracted folder, right mouse click on the file “install.exe” and select the option “Run as administrator”.
4. Follow the setup instructions on the screen.

NOTICE

During installation full administrator rights are necessary.

2.3 License

After download and installation, the software can be used for **30 days** free trial. Thereafter, you need to decide and register for the required software package. The standard delivery includes two licenses for the selected software package:

- smart-lab Color or
- smart-process Color

License activation

- Before activating the license, make sure to have a reliable internet connection.
- Start smart-chart and click on "About / License" in the upper left corner of the screen.
- The license window opens and shows the license agreement.
- Connect the instrument with the computer and click on the "License" tab.
- Select the desired software by clicking on the appropriate "Validate License" button.
- In case a license is available, the button "Import Online License" appears. Click on this button, fill in the registration form and click on "Register".
- The activation of the license is shown in the upper "License Information" field.

License transfer

If smart-chart is to be transferred to another computer, the license needs to be returned from the actual computer and activated on the new computer.

- Before returning the license, make sure to have a reliable internet connection.
- Start smart-chart and click on "About / License" in the upper left corner of the screen.
- The license window opens and shows the license agreement.
- Find the respective software license in the upper "License Information" field and click on the "Return License" button.
- A confirmation is shown that the license was successfully returned.

NOTICE

In case your computer has no internet connection, refer to file "Activate and return smart-chart license" in folder "C:\Program Files(x86)\BYKWARE\smart-chart3\Documentation".

3

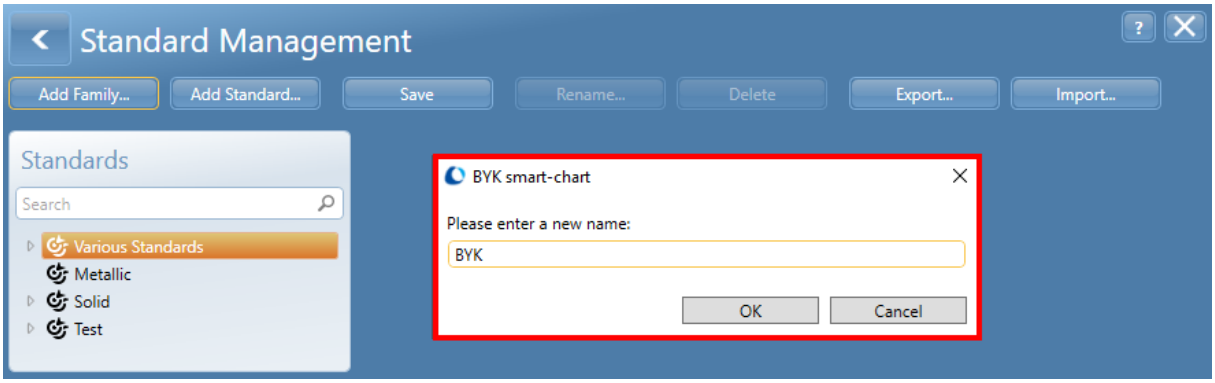
Standard Management

Measurement settings for color standards, including pass/fail tolerances, are defined in the module "Standard Management". Color standards can also be measured online here.

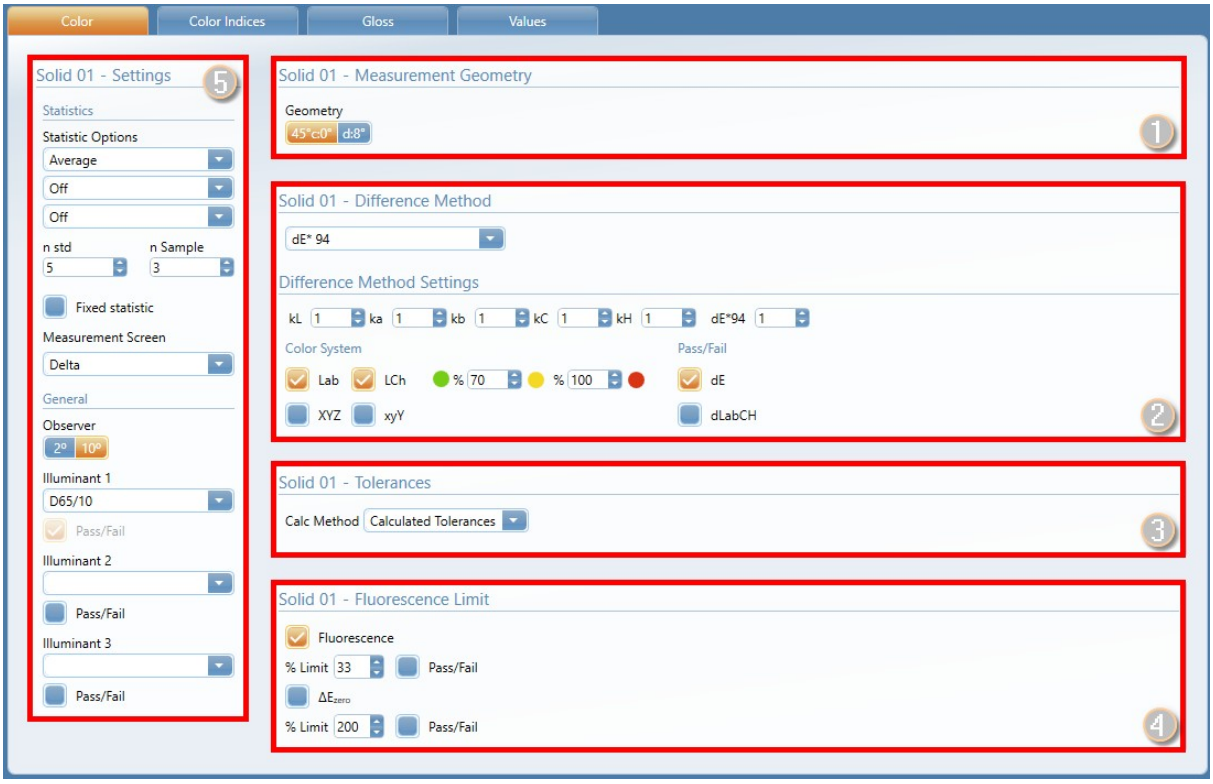
3.1 Define Color Families

A color family determines the common measurement settings. These settings are **automatically inherited** by all standards within the family.

1. Select the instrument to be used: "spectro2guide/color2view". Afterwards select "Add Family" and input a name.

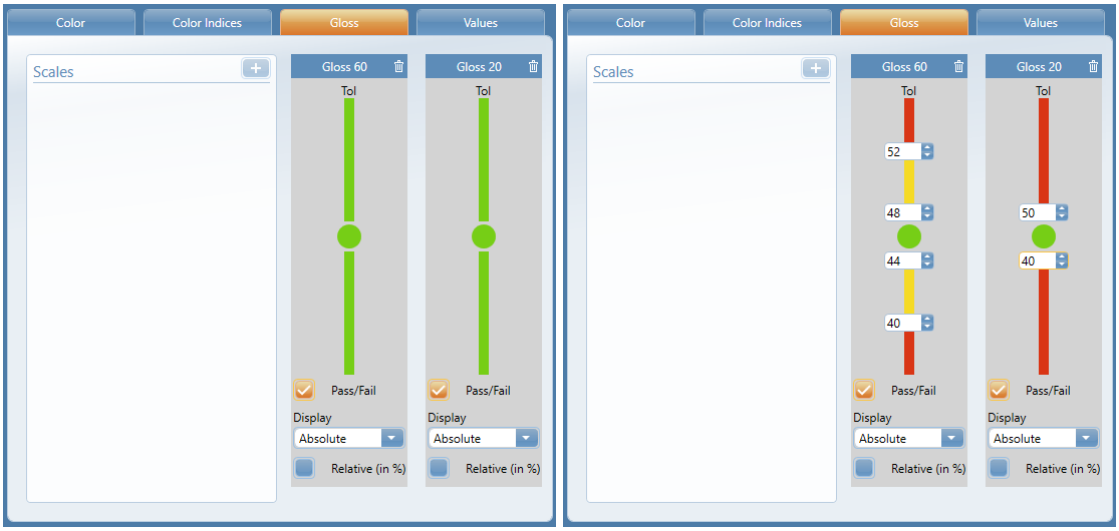


2. Select the tab "Color" to define following settings.



1	**Measurement Geometry**	45°c:0°
2	**Difference Method**	Color equation (e.g. dE*, dE*94) Tolerance settings
3	**Tolerances**	Calculated or manual; symmetric or asymmetric
4	**Fluorescence Limit**	Settings for dE_{FI} and dE_{zero}
5	**General Settings**	Statistic Options, Measurement Screen, Observer, Illuminants

3. Select the tab "Gloss" and add 20° and/or 60° gloss as a measurement parameter by clicking the icon "Plus (+)".



- To set Pass/Fail limits, move the mouse to the gray area of the graph. By clicking on the small plus in the red box, input fields appear in which the limit for pass/warning and fail can be entered.
- To define the "Display" settings choose from drop-down list: Absolute, Delta, Absolute + Delta.

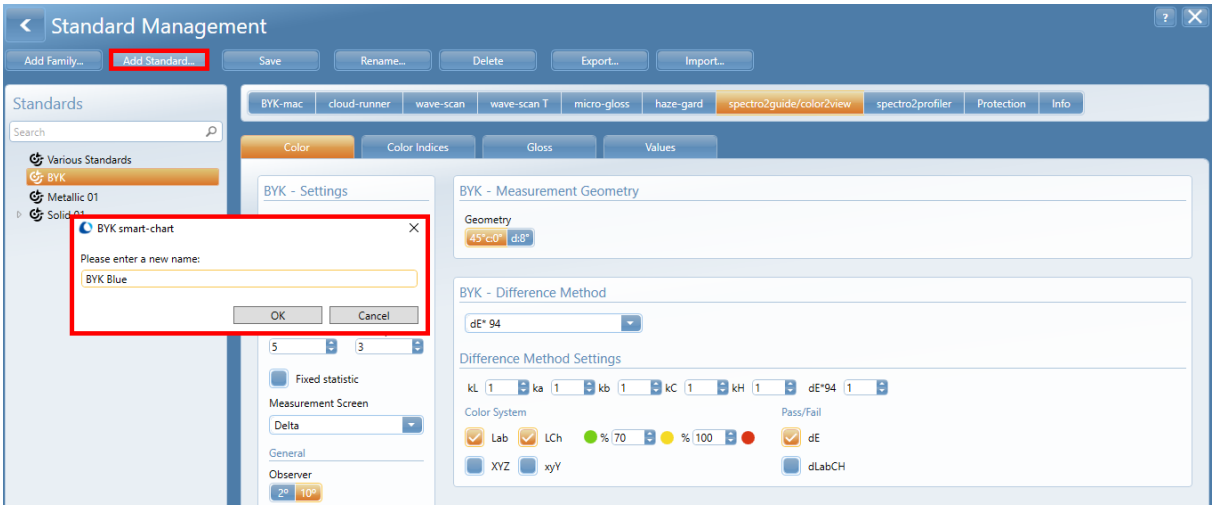
4. Select the tab "Color Indices" and choose scales to be measured from the list, if required.

Click the icon "Plus (+)" to add the required scales.

3.2 Add Color Standards

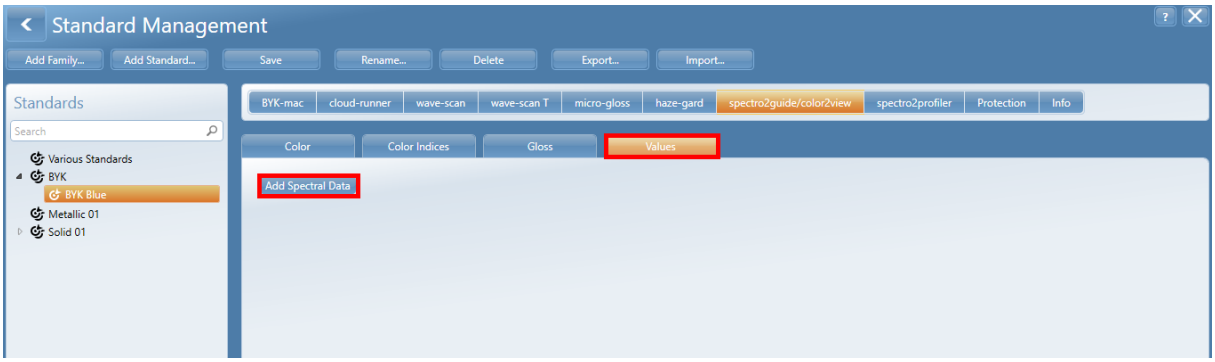
After creating the color family the various color standards within the family can be defined:

1. Select "Add Standard" and input a name.

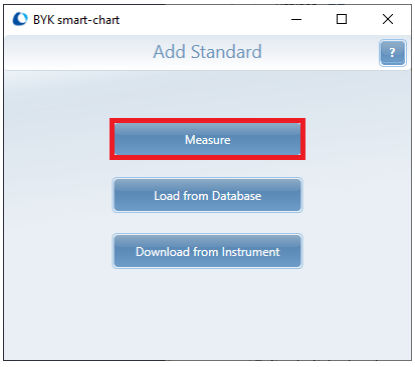


2. To add the spectral data for the new color standard: Connect instrument with computer.

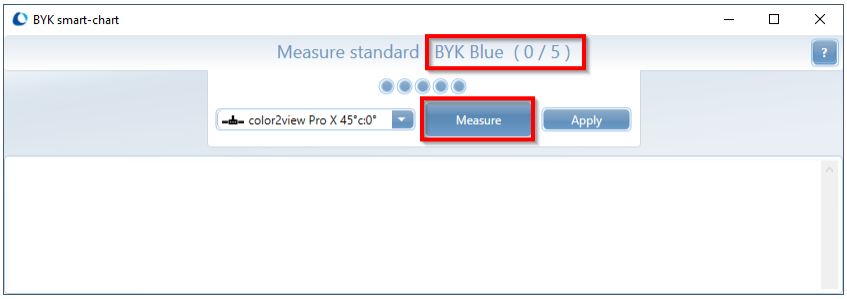
3. Select tab "Values" and click on "Add Spectral Data".



4. Select "Measure".

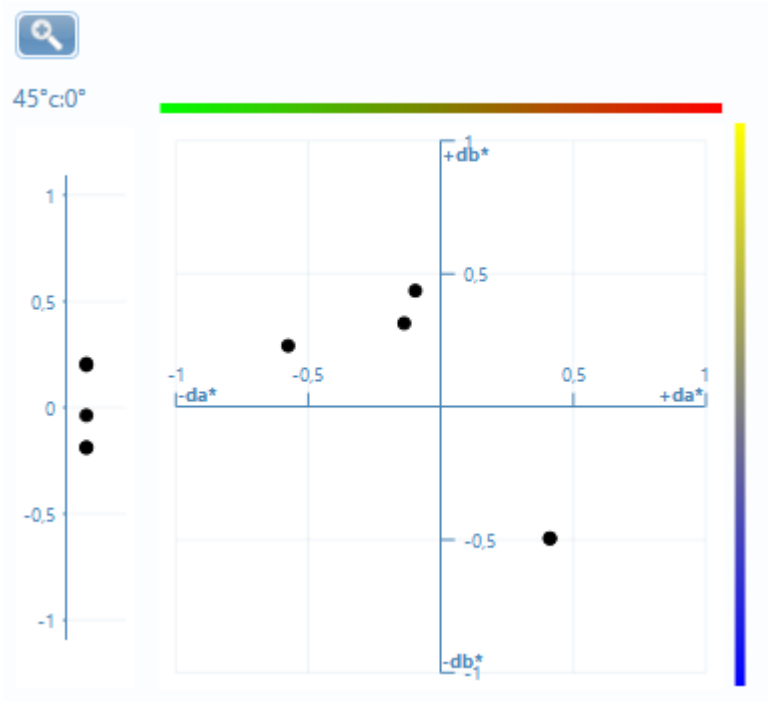


5. Place the color standard on instrument and start taking measurements by pressing either the "Operate" button on the instrument or the "Measure" button in the software. An average of 5 individual measurements on different spots is recommended.



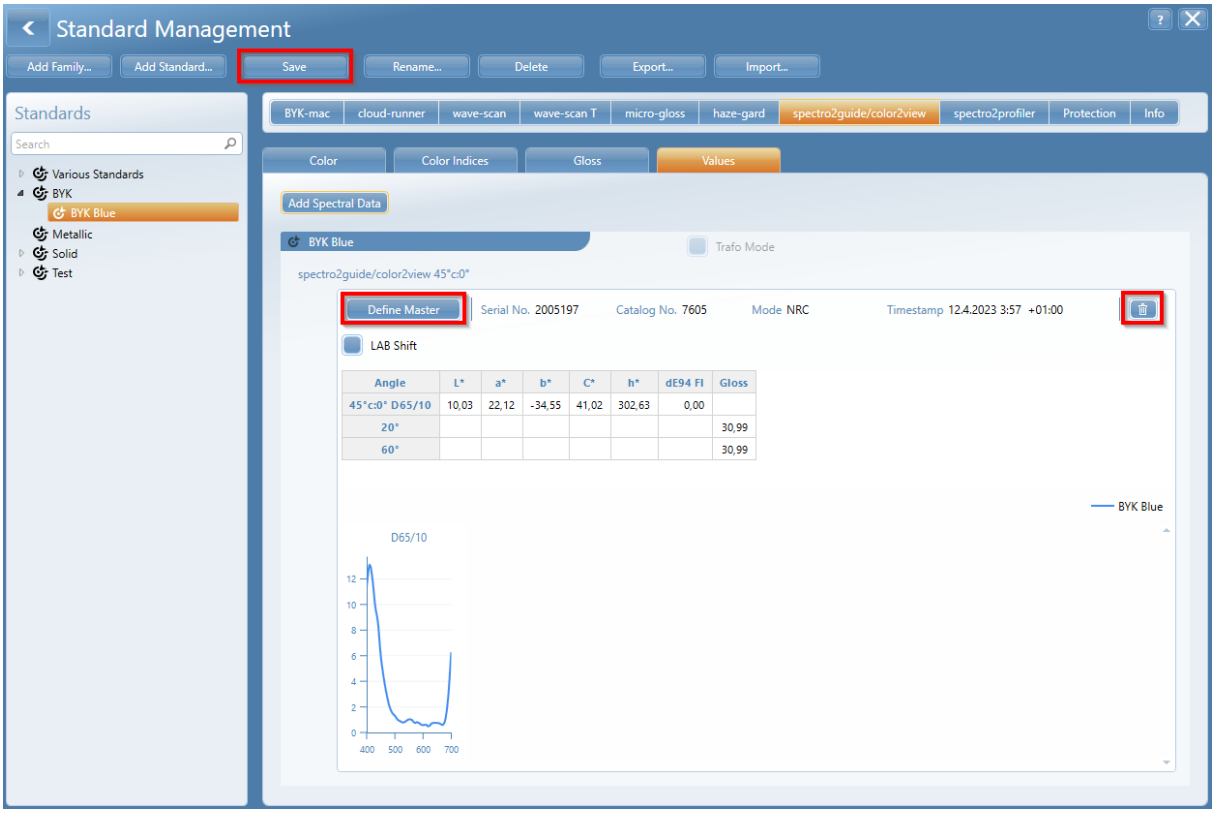
6. The data in the table are the colorimetric data of the last measurement.

7. In the graph below the table, all individual measurements are shown in comparison to the mean value.



8. Outliers can be eliminated by highlighting the measurement in the graph with the mouse and using "Delete" on the keyboard.

9. With "Apply" the measurements are accepted and the software returns to the main window of "Standard Management".



10. To delete spectral data again, the icon "Trashcan" can be used.

11. Click the button "Define Master" to use this standard as a digital master standard. This allows the standard to be distributed to other facilities and suppliers and loading it to their respective instrument.

12. Click the button "Save" to save the standard in the standard DB.

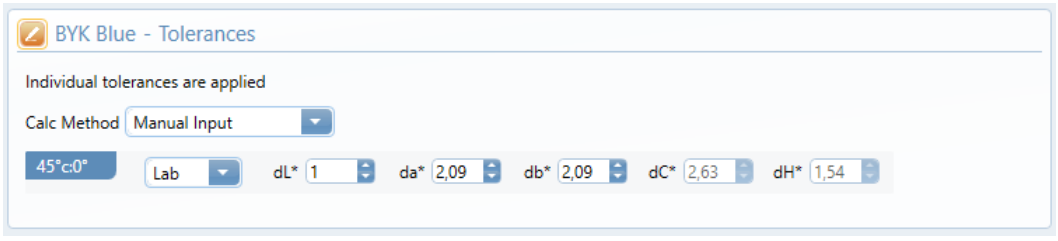
NOTICE

It is advised to save any change in the spectral data as a new digital standard.

3.3 Set Tolerance Values

The common settings are automatically inherited by the color family can be changed individually for each color standard:

1. Go back to the tab "Color".



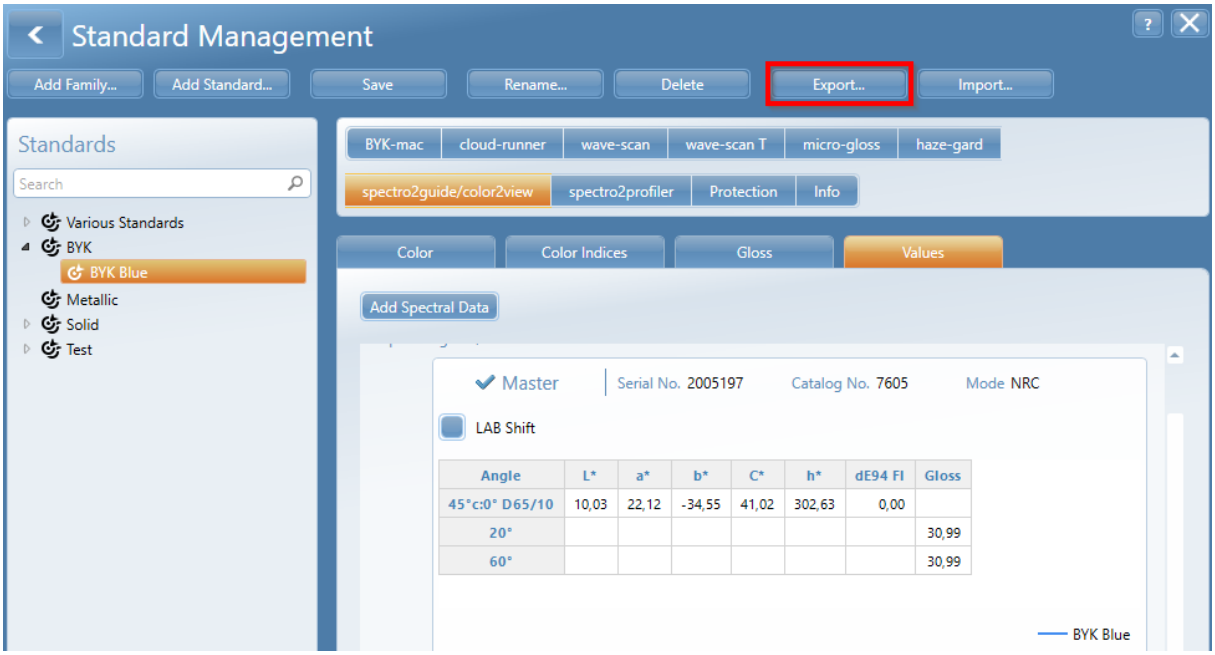
2. Click on the icon"Edit" to unlock the color standard from the family and enter individual tolerances. The input options depend on the selected color equation.

3.4 Export/Import Digital Standards

Digital standards are saved as XML files and can be distributed by email or network drive.

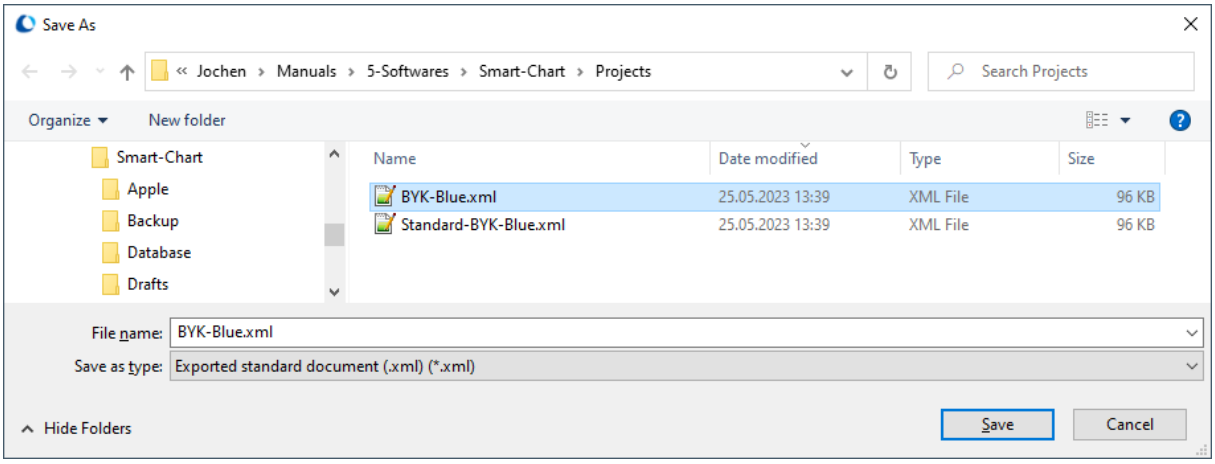
Export Digital Standard

Complete color families or individual standards can be exported as digital standards.



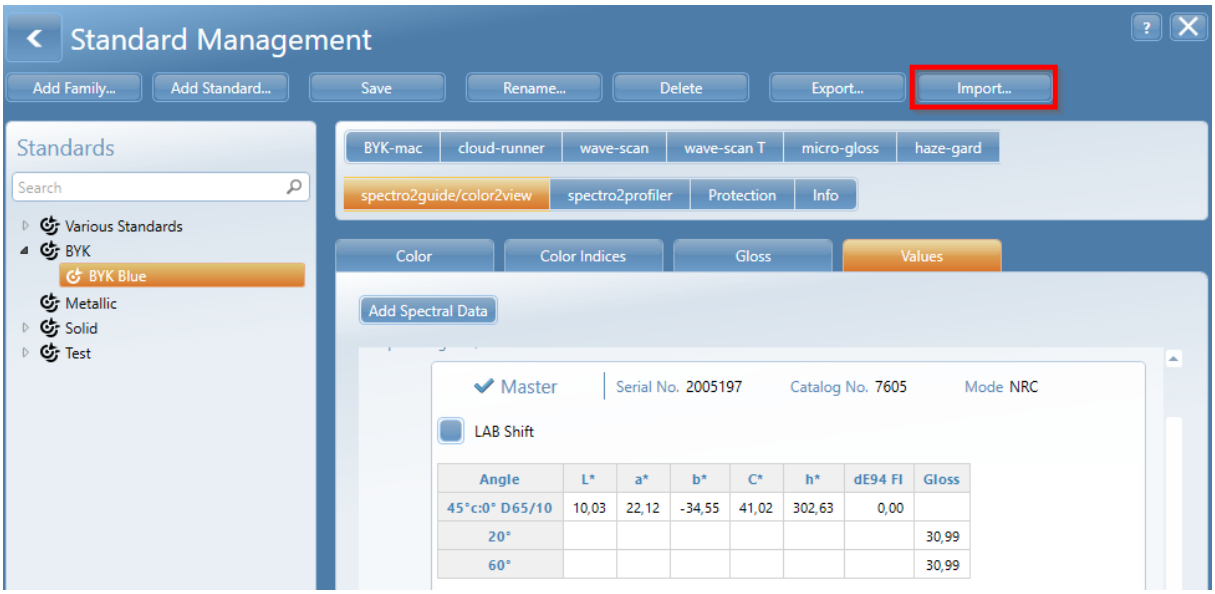
To export digital standards:

1. Select the appropriate color family or standard.
2. Click on the button "Export", the file selection dialog opens.



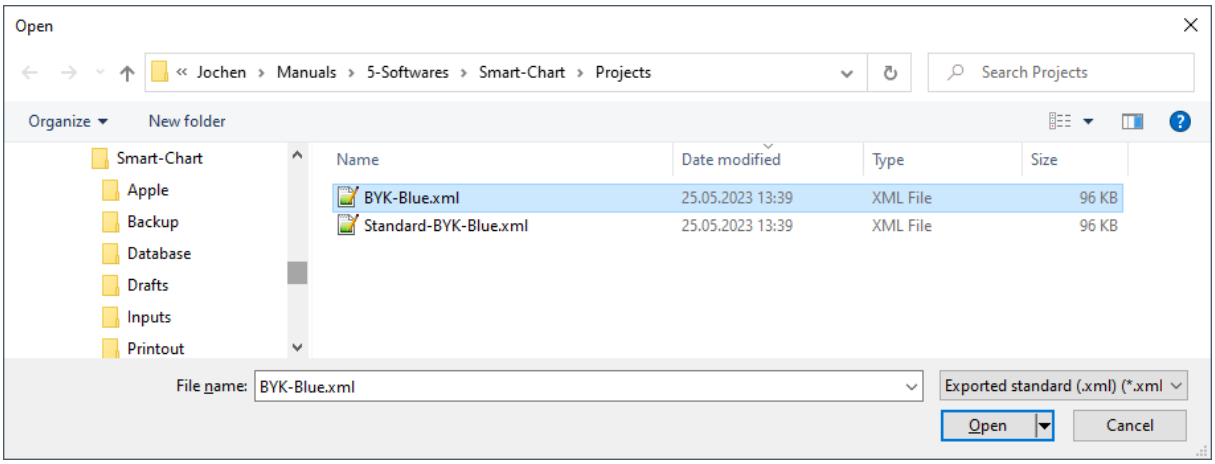
3. Select target directory, enter the file name and click on "Save".

Import Digital Standard



To import digital standards:

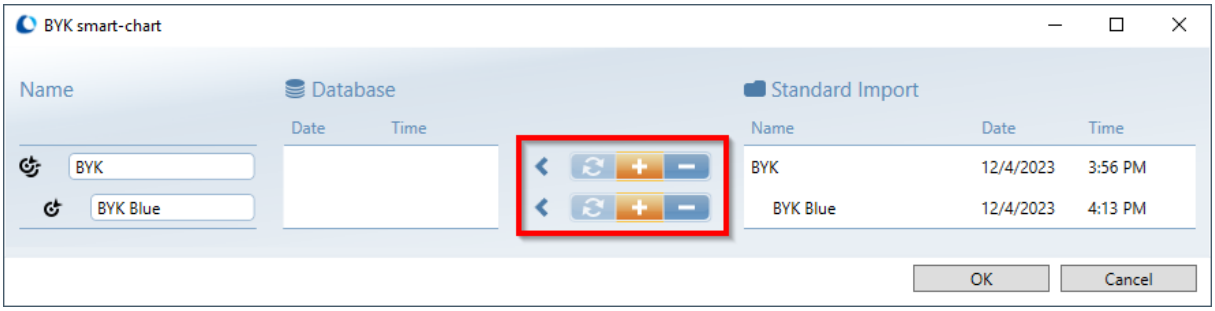
1. Click on the button "Import"; the file selection dialog opens.



2. Select the required file on your computer and click on "Open".

3. A dialog opens to set specific import options for families and standards:

- Double arrow: Will be updated in database.
- Plus symbol (+): Will be created in database.
- Minus symbol (-): Will be excluded from import.



5. Click on the symbol "Plus (+)" and on "OK" to start the import.

6. The imported standard is automatically assigned to the correct family. If this family does not exist yet, it will be created automatically.

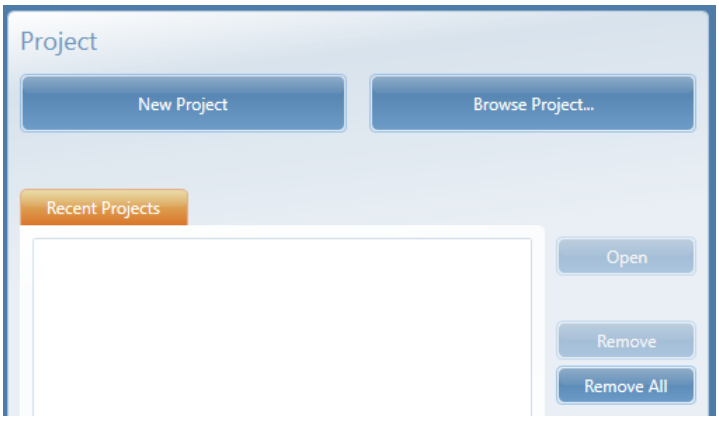
4

Online Measurements

Connect instrument to PC and measure standards / samples online. Measured data is instantly displayed in the project for direct data analysis.

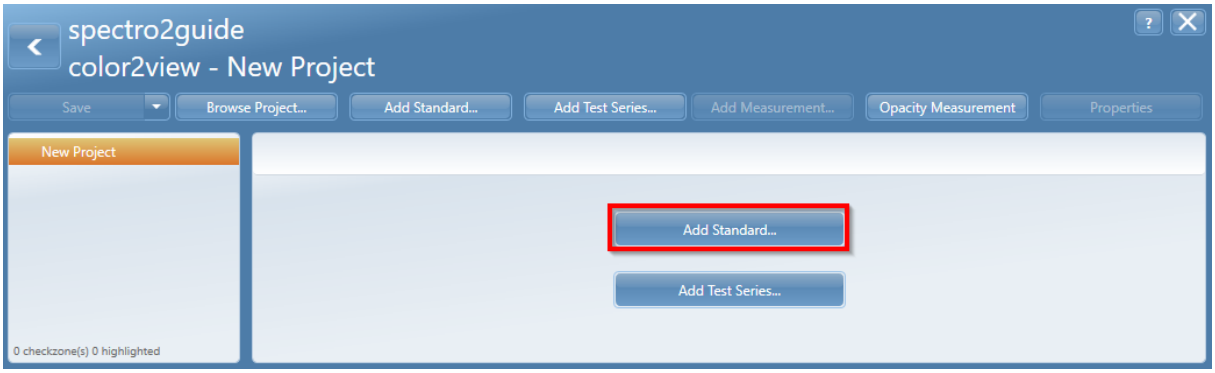
4.1 Create new Project

Measurement data are managed in so-called "project files". In the list box, the recently used projects are displayed.



- "New Project": To create a project from scratch
- "Browse Project": Search for project file on PC and open it.
- "Open Project": To open an existing project.
- "Remove": Remove selected project from list of recent projects.
- "Remove all": Remove complete list of recent projects.

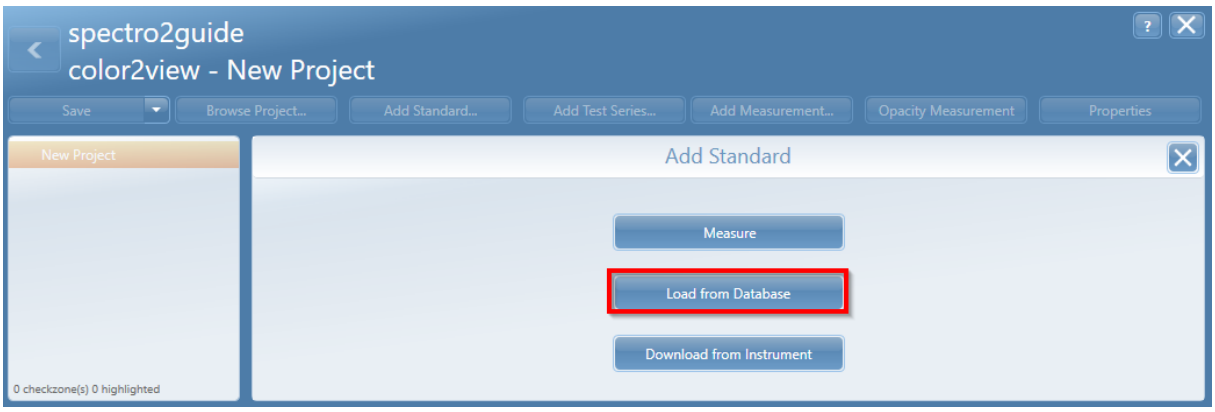
1. Click on "New Project" to create a project from scratch.



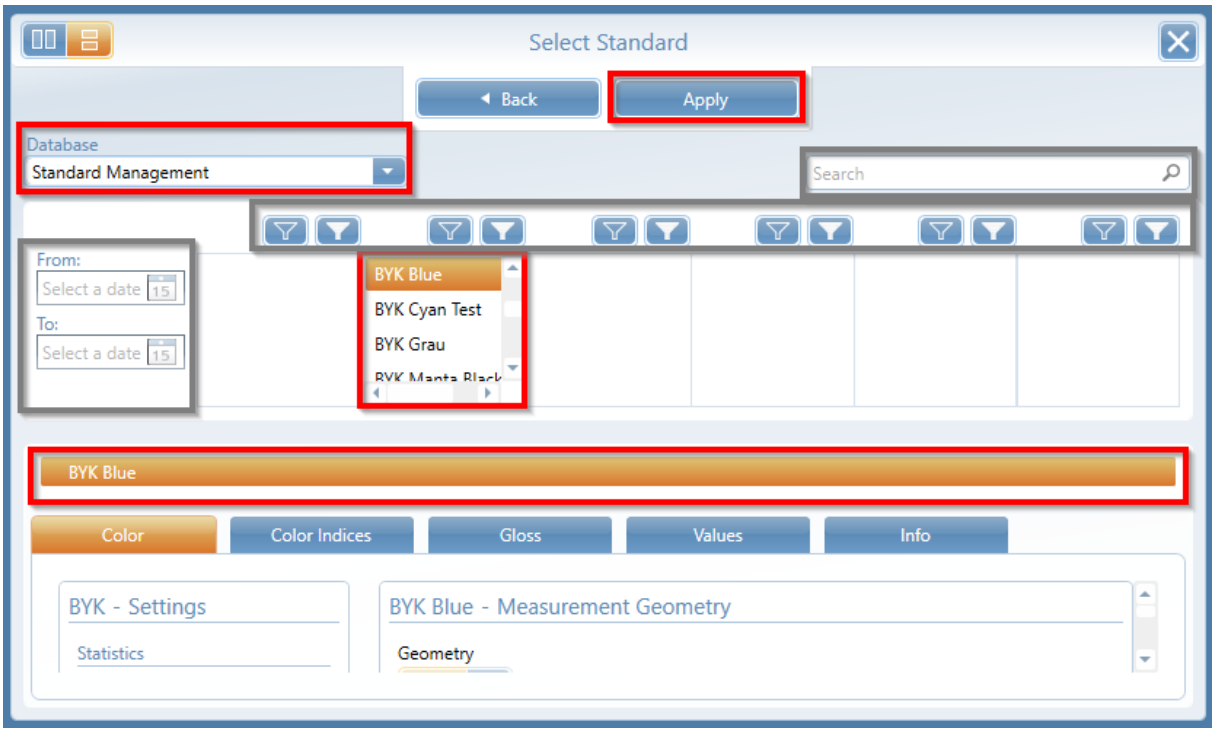
2. For a difference measurement (comparison sample to standard) click on "Add standard".

4.2 Load Standard from Database

1. Click on "Load from Database".



2. To select a standard from database perform following steps.

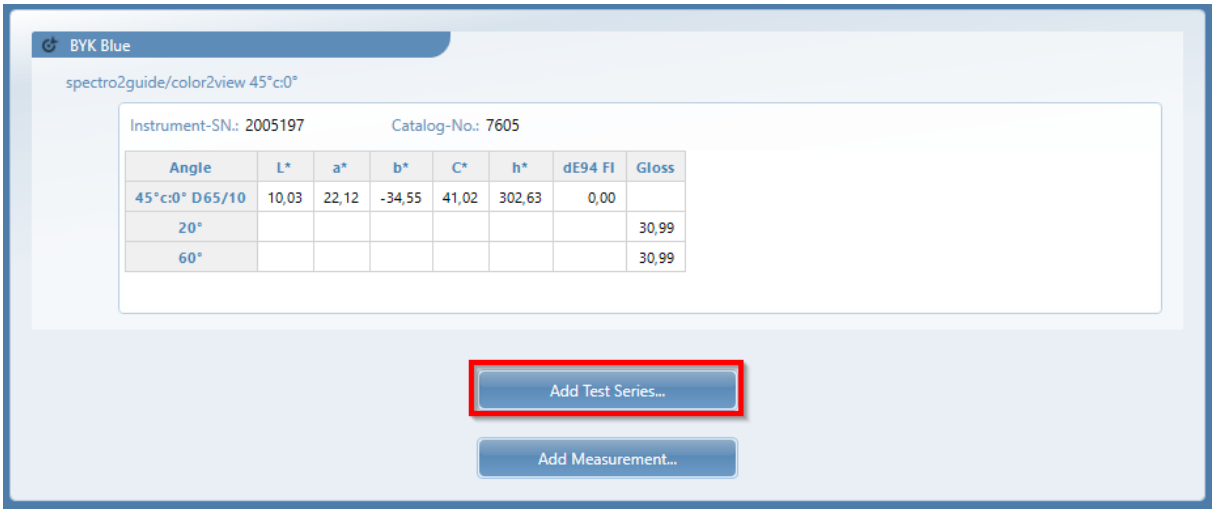


- "Database": Keep default entry "Standard Management" or select the required one from the list.
- List of standards: Click the required standard from the list in the middle. The selected standard appears in the selection box below. Highlight this standard and confirm with "Apply".

NOTICE

To simplify the selection of the standard use the "search" or "filter" or "time interval" function - marked gray in the example above.

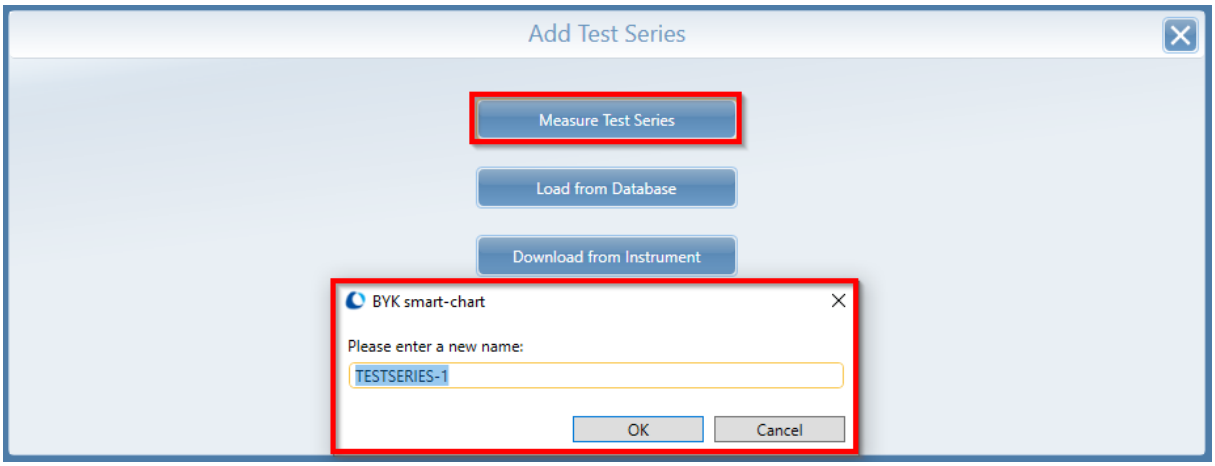
4. Once a selection has been made, the button "Apply" becomes active. Click the button to add the standard to the project.



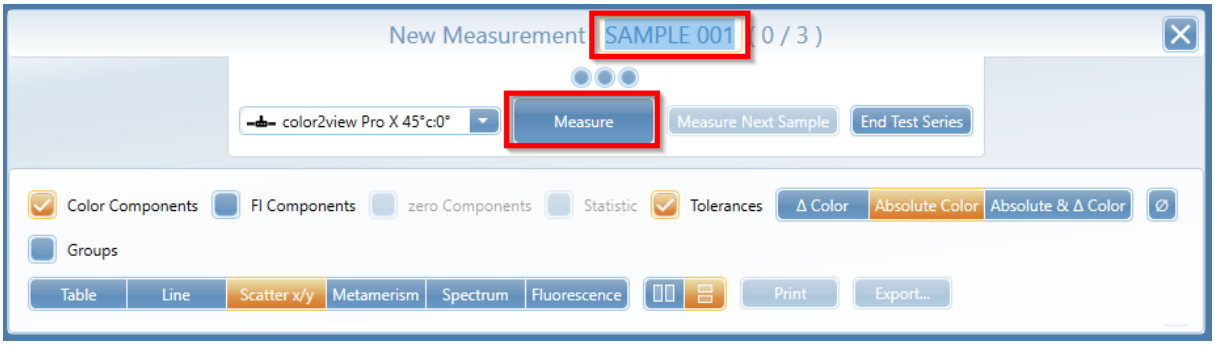
4.3 Measure in Online Mode

Next step is adding test series to the project. A test series includes a number of sample measurements.

1. Click on "Add Test Series".



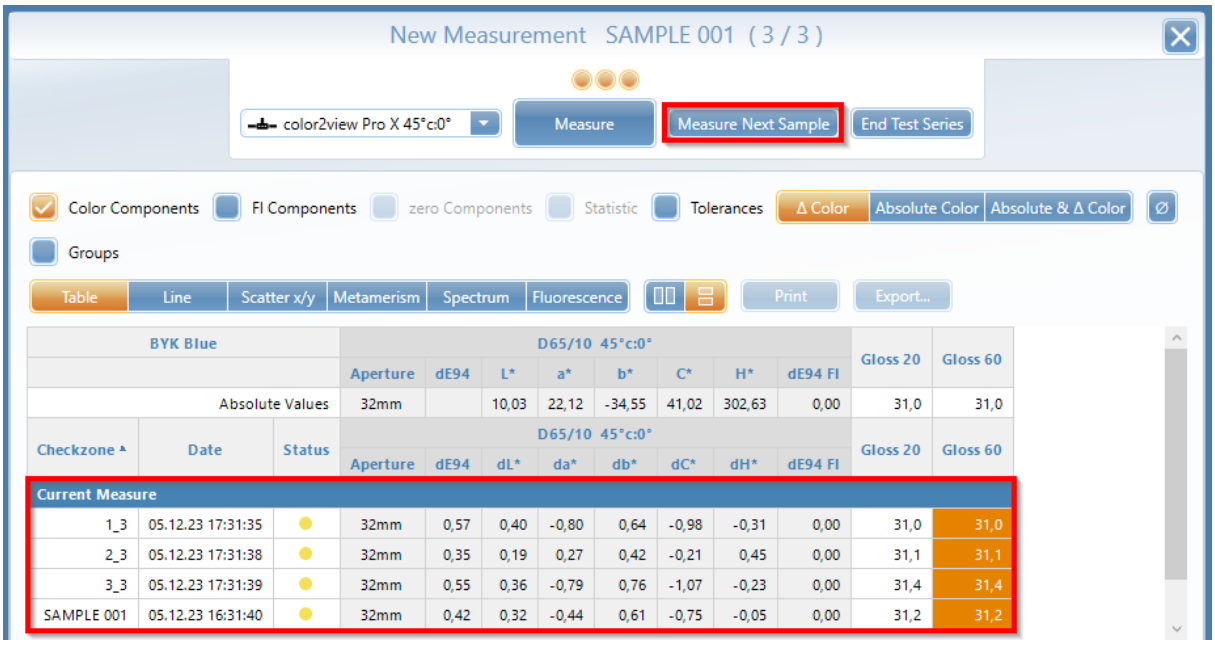
2. Click on "Measure Test Series" and enter a name. The dialog "New Measurement" opens. Samples can be renamed by clicking on the proposed name.



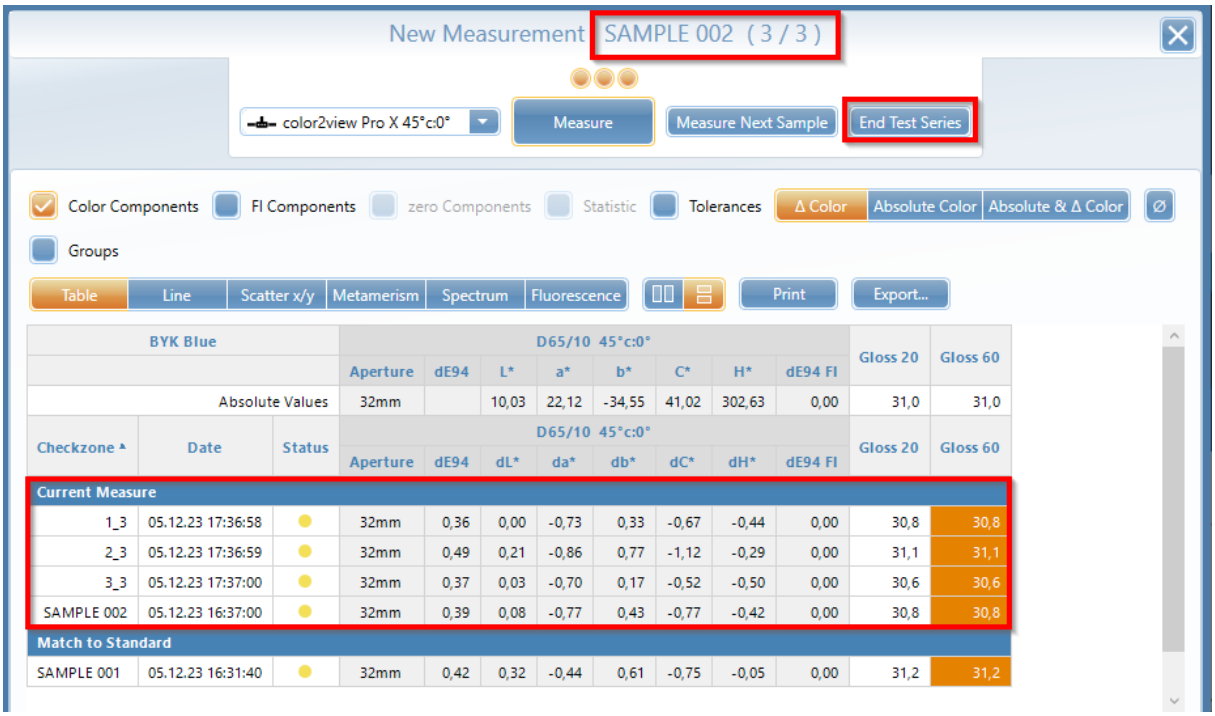
3. Place the 1st sample on the instrument connected to your PC on and click on button "Measure".

4. Perform the required number of measurements on different spots on the sample.

5. The measurement results are shown in the table as "Current Measure".



6. Click on button "Measure Next Sample" and proceed with measurements on the 2nd sample.



7. The project can be expanded with more samples at any time, see "Expand & Change a Project" (Link 40).

8. Click on "End Test Series" to finish your measurements.

9. Click on "Save" and save the results into new project file.

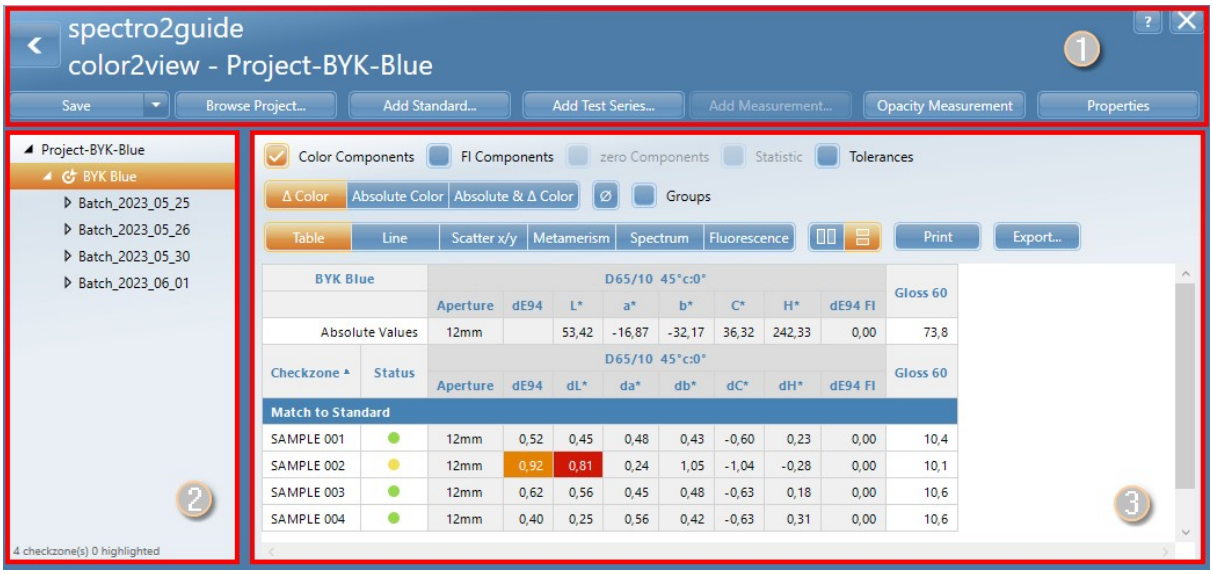
The new project has been created. You can now start with the "Data Analysis" (Link 25).

5

Standard Data Analysis

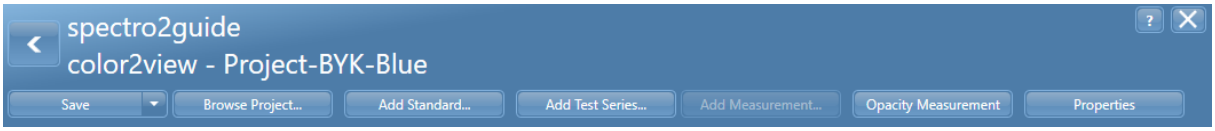
5.1 Screen Layout

Projects are displayed in smart-lab in a window with three panes.



Ribbon (1)

The buttons in the ribbon allow the file handling, the addition of further measurement data to the project and the change of settings.

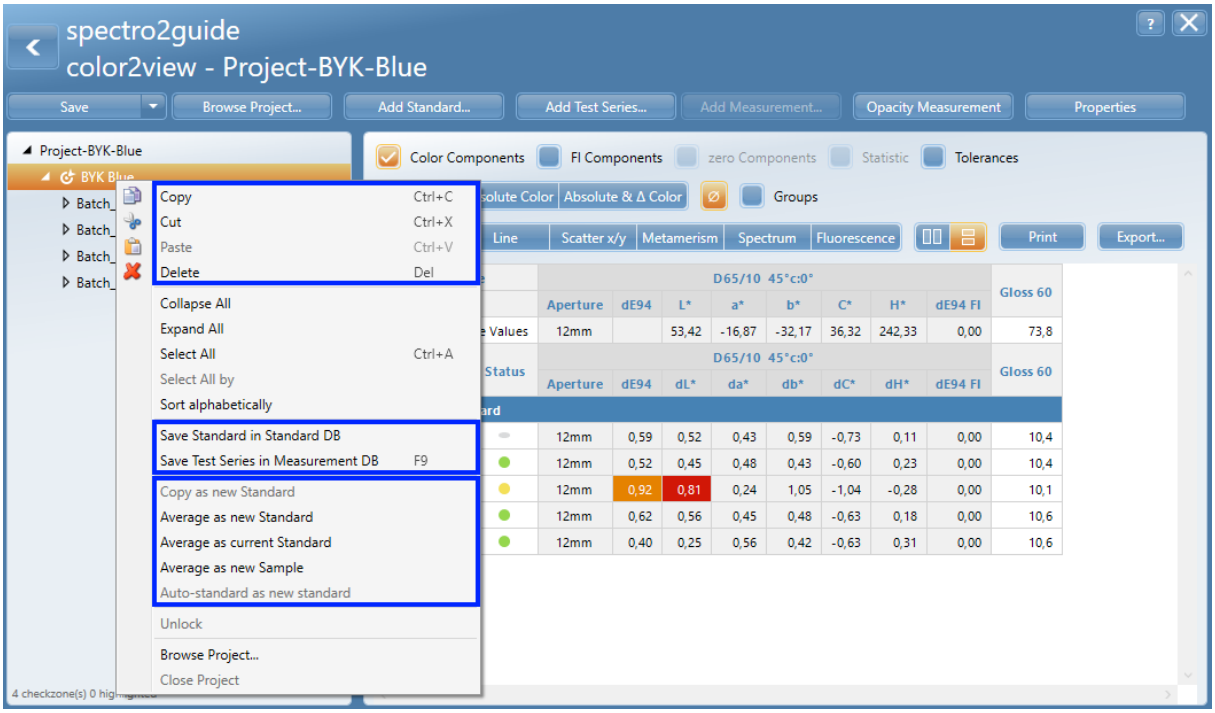


Save (project file)	Save all modifications to the current project (file). Save as new project (file). Save test series in measurement DB.
Browse Project (file)	Several projects can be opened and edited at the same time.
Add Measurement, Test Series or Standard	An existing project can be extended with additional data.
Properties	View / edit details for selected object, e.g. change name or edit settings.

For "Opacity Measurement" see "Special Indices Analysis" > "Opacity" (Link 33).

Navigation Tree (2)

Measurement data are arranged in a tree structure starting with the name of the project, the selected standard, associated test series and the measured samples.



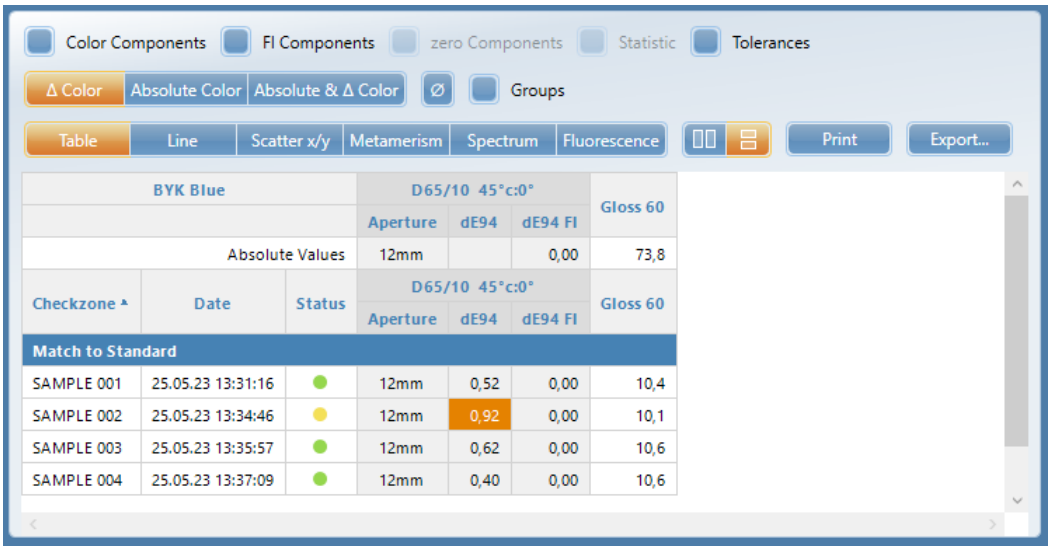
Highlighting measurement data in the navigation tree and a right mouse click opens the context menu. Depending on which measurement data have been selected, functions in the context menu are grayed out.

Copy, Cut, Paste, Delete	Use these options to manage your measurement data - analog to the file operations in the Windows Explorer.
Save data in database(s)	Store standards and measurement data in database for backup and data sharing.

For the operations on samples and standards see "Expand & Change a Project" (Link 40).

Content Section (3)

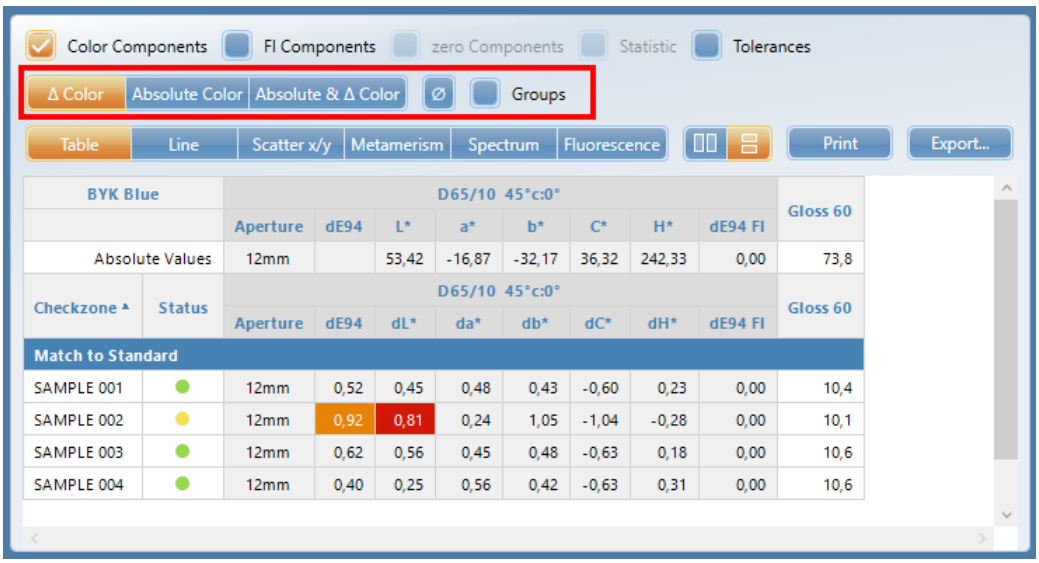
The content section allows the display and analysis of the measurement data based on different predefined graphs.



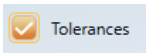
The details can be found in the following sections.

5.2 Data Table

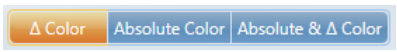
The data table shows the numerical measurement values.



In the upper part the absolute values of the standard are displayed - along with their tolerance values as defined. The display of the tolerance values can be toggled with the option:



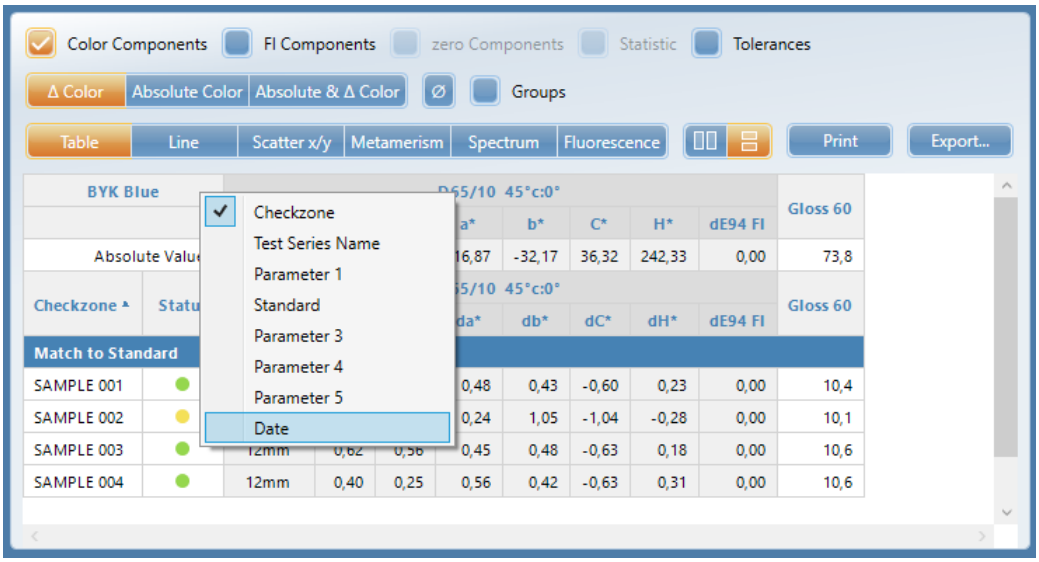
In the lower part the differences between samples and standard are displayed. Measurement results can be displayed:



A traffic light symbol is assigned to each measurement. Values out of tolerance are highlighted in yellow or red according to their pass / fail definition.

By clicking on the column header of the table:

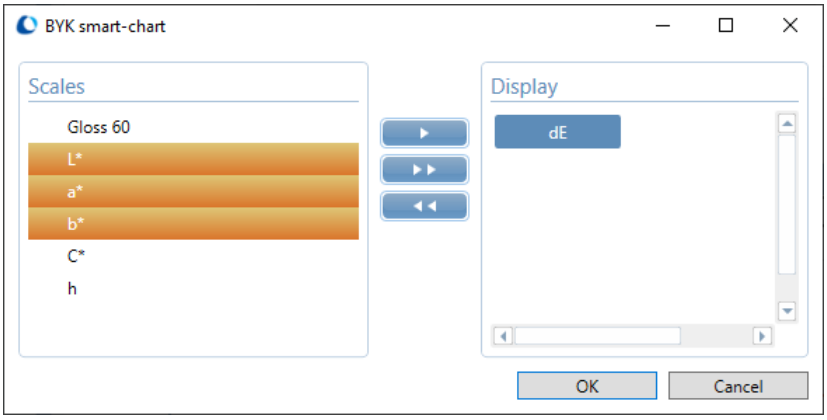
- with left mouse the sorting can be changed (ascending or descending);
- with right mouse parameters shown in the table can be activated and deactivated.



5.3 Line Graph

Clicking on the "Line" button displays line graphs including the tolerances as defined in "Standard Management".

The scales to be shown can be selected by clicking the button "Graph".



Scales can be moved to be displayed:

- Select the required scales by using the arrow buttons.
- The order of the scales can be changed by using left mouse click and drag & drop.
- Individual scales can be deselected with the waste bin icon which appears during mouse rollover.

NOTICE

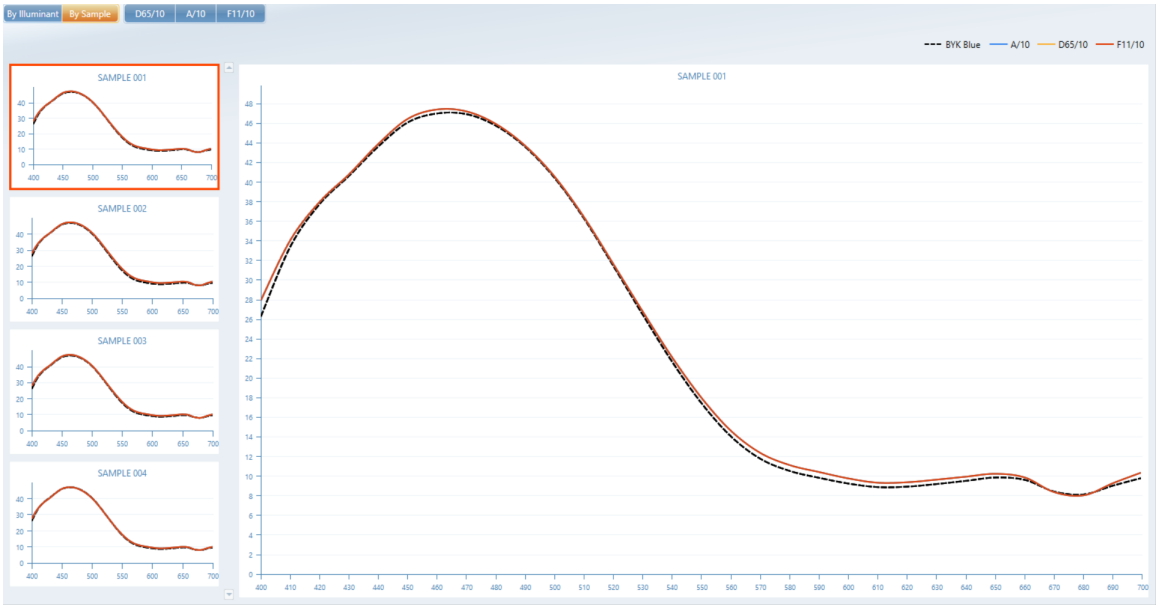
- Zoom in to a specific area by holding the right mouse and draw a yellow rectangle; zoom out by a double click with the left mouse button.
- With "Ctrl" plus mouse wheel you can change the "resolution", i.e. pull values apart (if there are many).
- If you mark a value in the table, it will also be marked in the graph (X-axis).

5.4 Spectrum

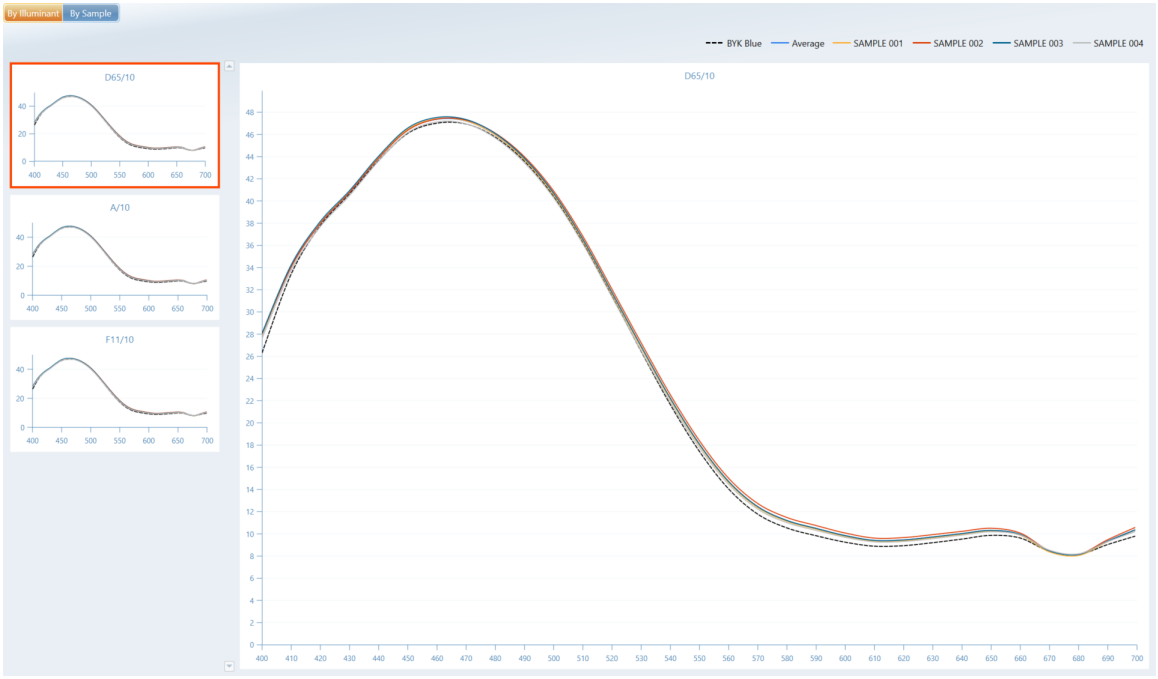
Clicking on the button "Spectrum" displays the spectral curve of standard and sample. The display can be switched between:

- "By Sample"
- "By Illuminant"

By sample: Standard and each sample are displayed separately.



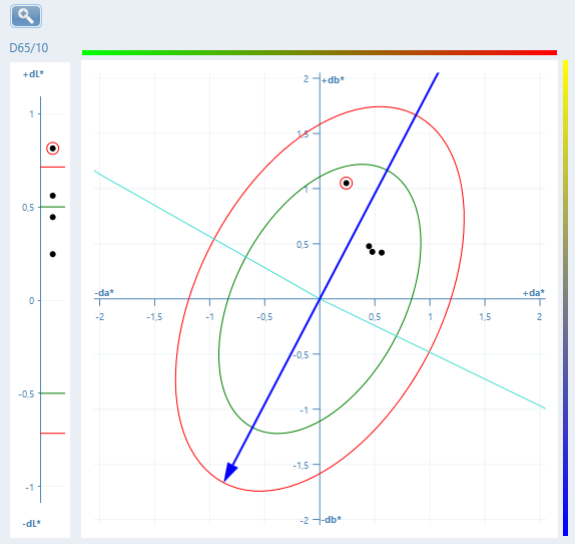
By illuminant: Standard and all samples are displayed for each standard illuminant separately.



The above view is obtained by using the magnifying glass.

5.5 Scatter

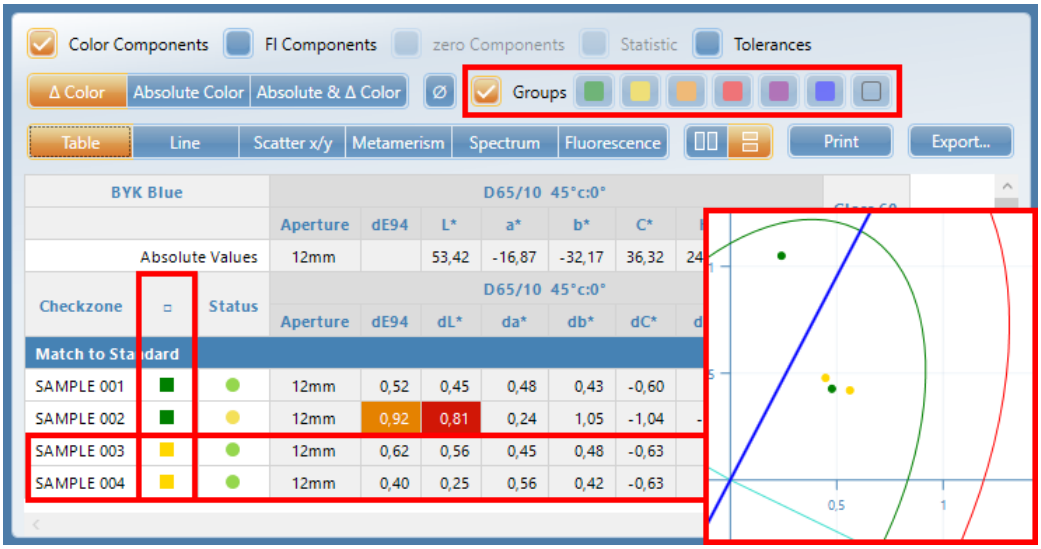
Clicking on "Scatter x/y" displays the CIELAB graph including the tolerances as defined in Standard Management. The light blue arc indicates the chrome, the dark blue arrow the hue direction of the standard.



Selecting a sample in the data table automatically borders the respective dot in the graph.

5.6 Grouping

The "Group" function makes it easier to visually distinguish between different tests or batches in the graph.



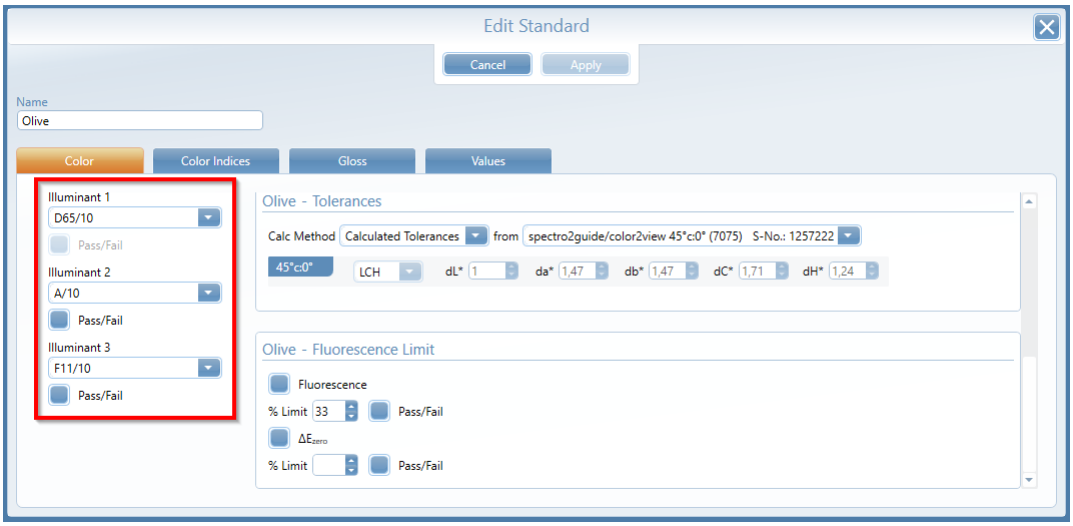
1. Activate function "Groups".
2. Select samples in the table that should belong to one group.
3. Select one of the colors shown beside the function "Group". A new column showing the group color is added to the table.
4. Continue accordingly for additional groups.

6

Special Indices Analysis

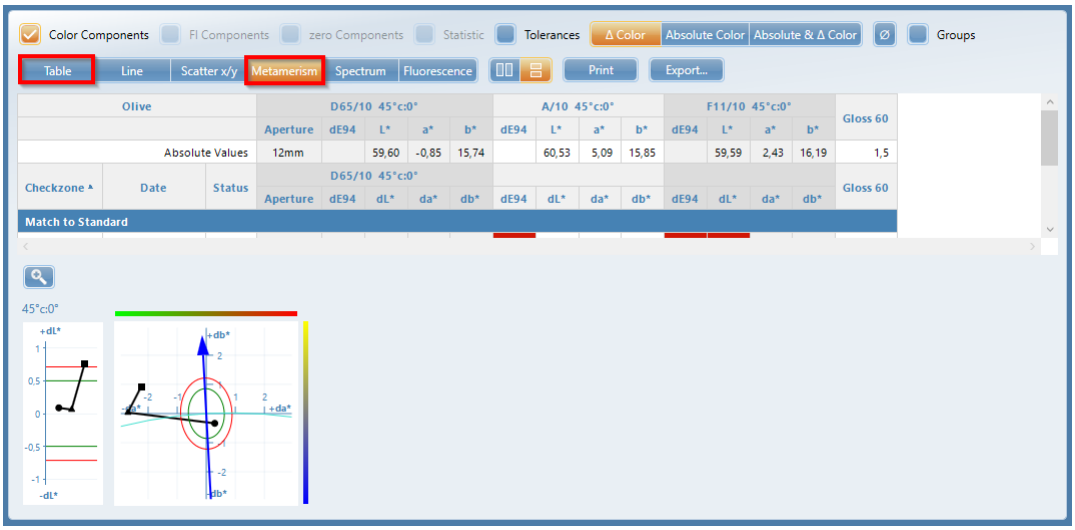
6.1 Metamerism

Colors may match under one light source (e.g., daylight), but not under another (e.g., tungsten). This phenomenon is called "Metamerism" and is caused by spectral curves that cross each other. Thus, the match of standard and sample needs to be verified under different standard illuminants - the kind of light likely to be found where the product is sold or used.



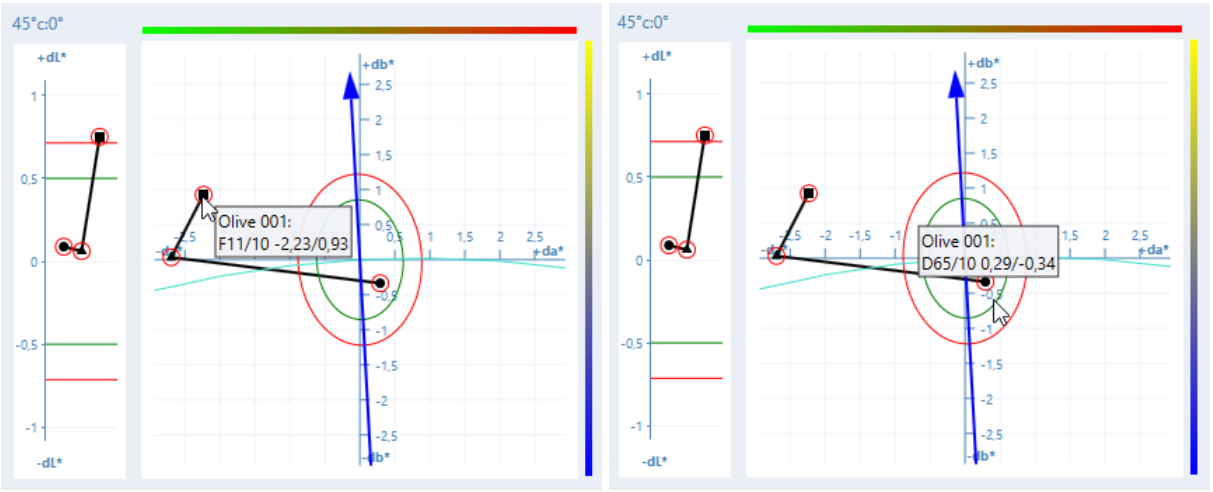
Standard illuminants defined in the "Standard Management" (Link 13) are automatically used when the corresponding standard is loaded in a project or on the instrument.

For graphical evaluation the option "Table" combined with the "Metamerism" graph is recommended.



The table shows the delta L*, a*, b* values as well as the selected color equation per standard illuminant.

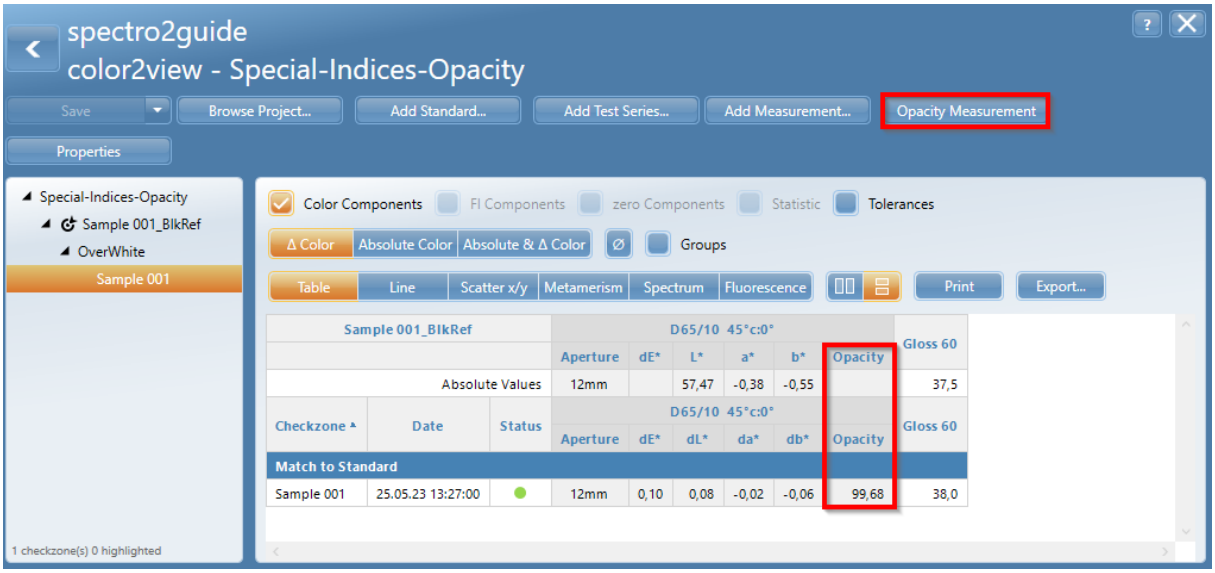
In the metamerism graph, the visually perceivable color difference of one sample under the defined standard illuminants is shown.



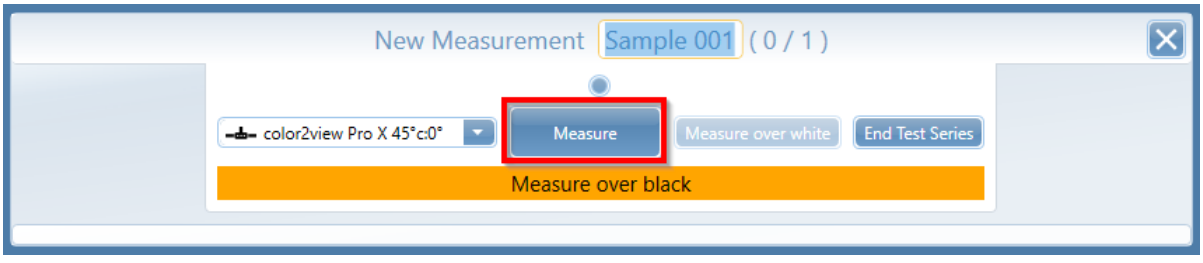
A mouse rollover shows the standard illuminant.

6.2 Opacity

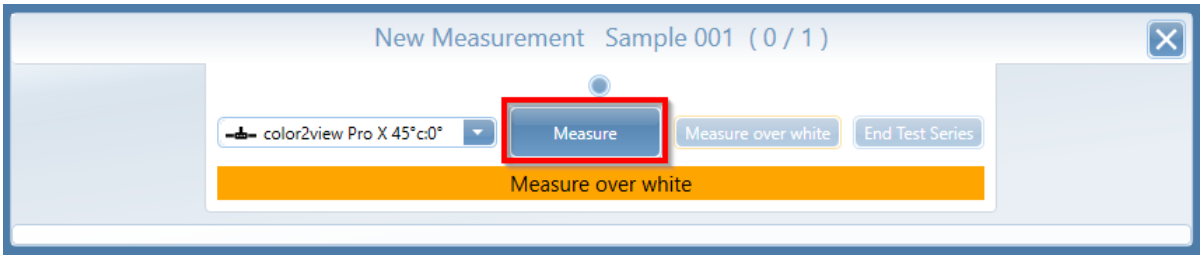
Opacity is a measure for the hiding power of a coating. It is calculated directly with the formula for the contrast ratio. Thus, a sample needs to be measured over a defined black and a white background. The result is the contrast ratio in percentage.



Click the button "Opacity Measurement" to activate the "Opacity" mode. You will be guided by smart-lab through the measurement procedure.



1. Place the part of the sample that is located on the black background on the instrument's aperture and click the button "Measure".



2. Place the part of the sample that is located on the white background on the instrument's aperture on and click the button "Measure".

3. Measurement result is shown in the table in the new column "Opactiy".

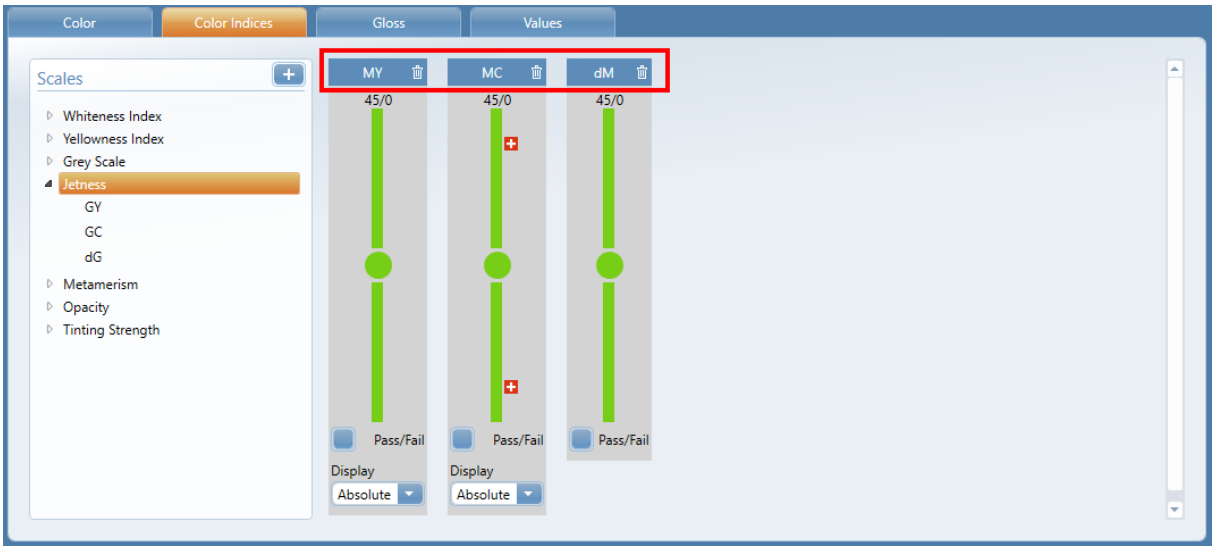
If a standard is defined in "Standard Management" including the indices for "Opacity" (Link 13), the instrument automatically switches to the “Opacity Mode” when the standard is loaded in a project or sent to the instrument.

6.3 Jetness

The color2view **Pro** can also measure jetness: Deep black results from the nearly complete absorption of visible light. L*a*b* values are not suitable for quality control of deepest black, as values become extremely small and are hardly differentiable. Thus, special indices were defined for the determination of deepest black:

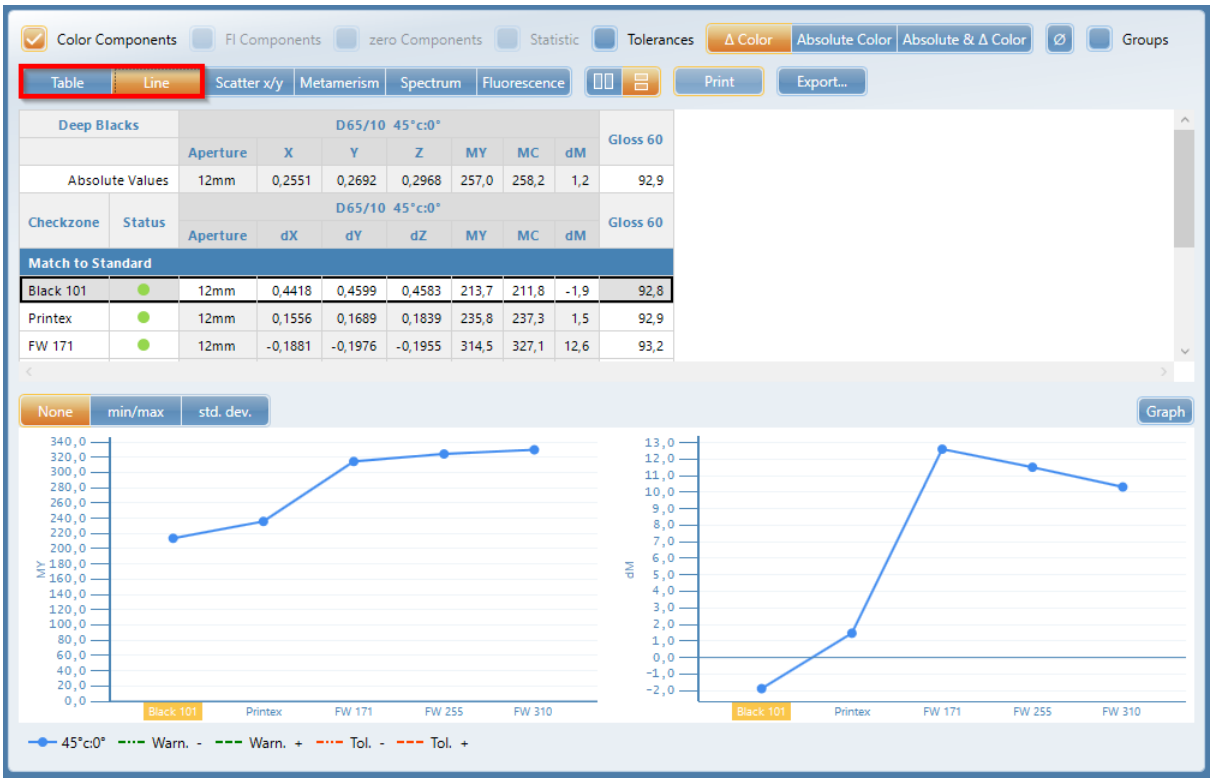
- **M_Y**: Blackness determines the lightness of black without colored undertone.
- **M_C**: Jetness determines the color depending black value.
- **dM**: Undertone determines the absolute contribution of hue.

By activating the "Jetness" indices (M_Y, M_C, dM) the color2view **Pro** changes to a special mode with increased accuracy for deep black samples.

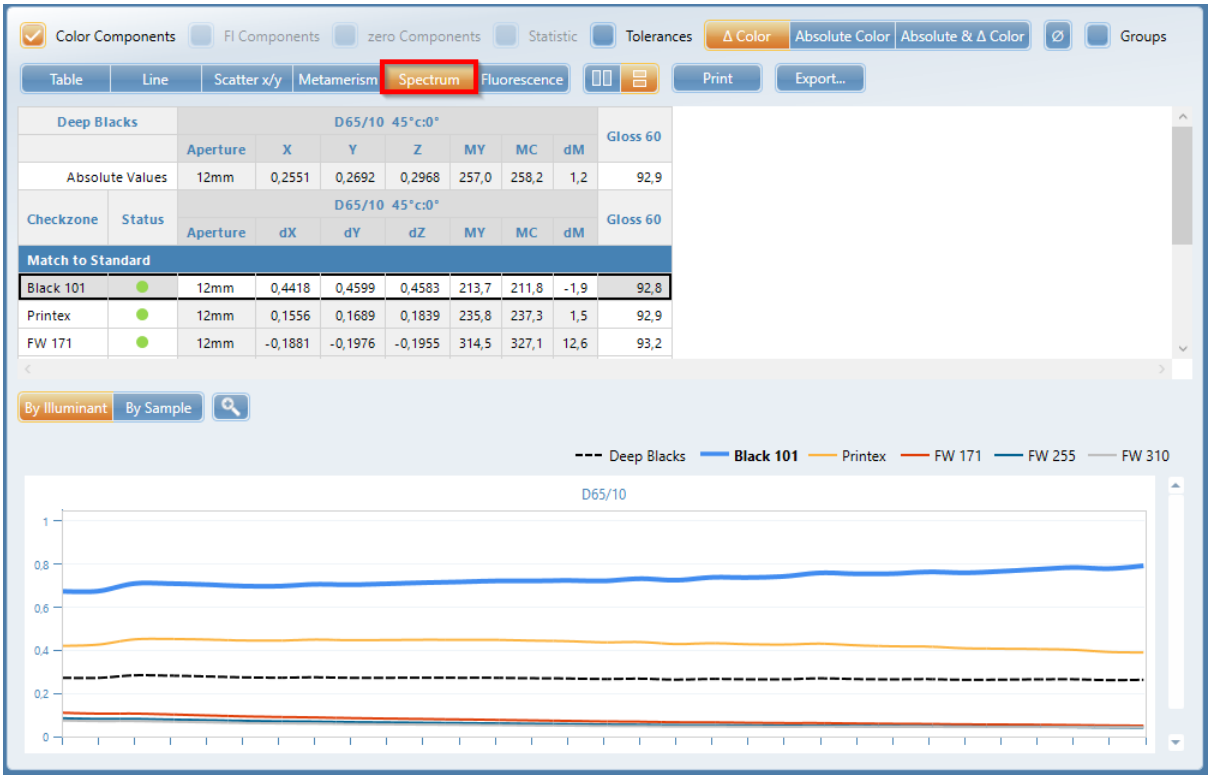


If a standard is defined in "Standard Management" including the "Jetness" indices for deepest black (Link 13), the color2view **Pro** automatically switches to the special “Jetness Mode” when the standard is called up in a project or sent to the instrument.

For graphical evaluation the option "Table" combined with the "Line Graph" is recommended.



Alternatively the option "Table" may also be be combined with the option "Spectrum".



Zoom with mouse and scroll-wheel. Unzoom with douple-click. Change scale with right mouse click (yellow rectangle).

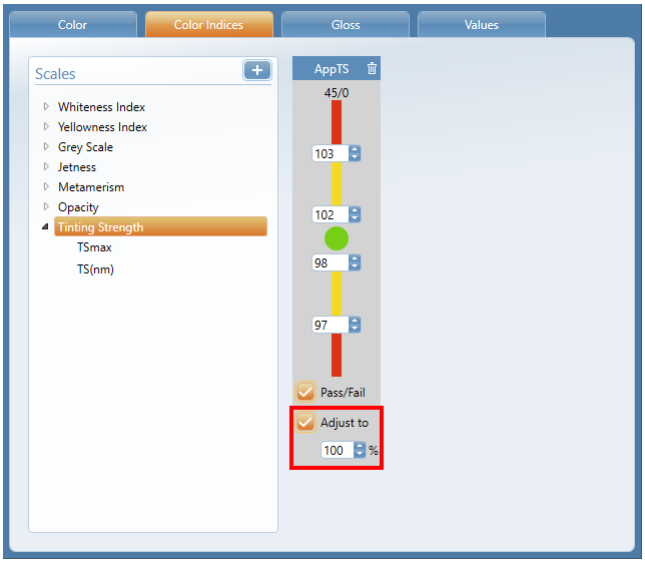
6.4 Tinting Strength

Tinting strength is defined as a pigments ability to change the color of an otherwise colorless material. Tinting strength indices are used to compare the ratio of the sample strength in relation to the standard.

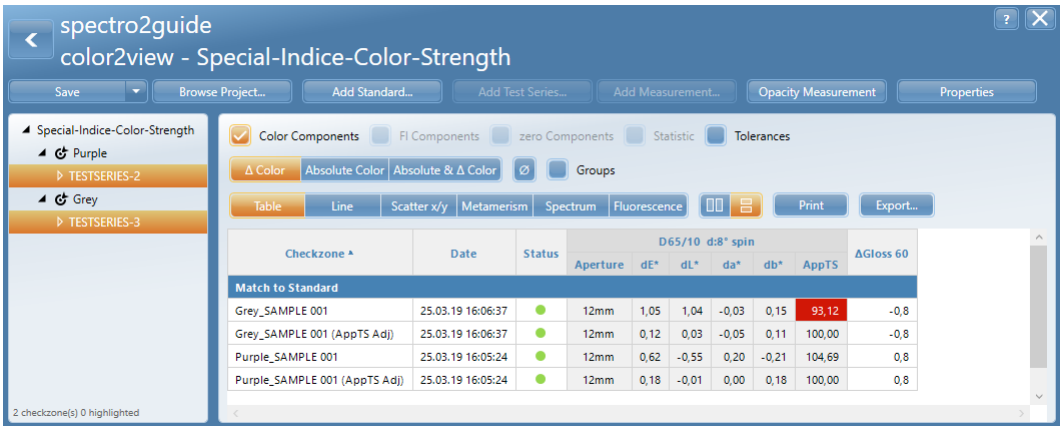
The procedure is based on the dilution with a defined white paint (e.g. mixture 20/80). Draw-downs are then made on opacity charts at complete hiding. Measurements are to be taken on the white part of the test chart.

In "Standard Management" on the tab "Color Indices" activate the tinting strength indices by using the icon "Plus (+)". The index "Apparent Strength (AppTS)" is recommended for all systems that are not mono pigmented, as it catches differences at all wavelengths.

In addition, it is recommended to activate the option “Adjust to 100%“ by clicking on the appropriate check-box. With this function, the sample is theoretically corrected so that its strength corresponds to the standard (i.e. 100 %). This theoretical spectral curve is then used to calculate color difference data compared to the standard. Strength-adjusted data is useful to determine if correcting strength will result in a hue shift.



If the batch has a tinting strength < 100%, it means that it is weaker and more colorant is needed to achieve the required color shade (see e.g. the sample "Grey"). If the batch has a tinting strength > 100%, it means it is stronger and adjustment needs to be done with the binder (see e.g. the sample "Purple").



6.5 Fluorescence

Fluorescent pigments have been around for decades, but proper quality control has been a challenge - primarily because of the lack of suitable instrumentation.

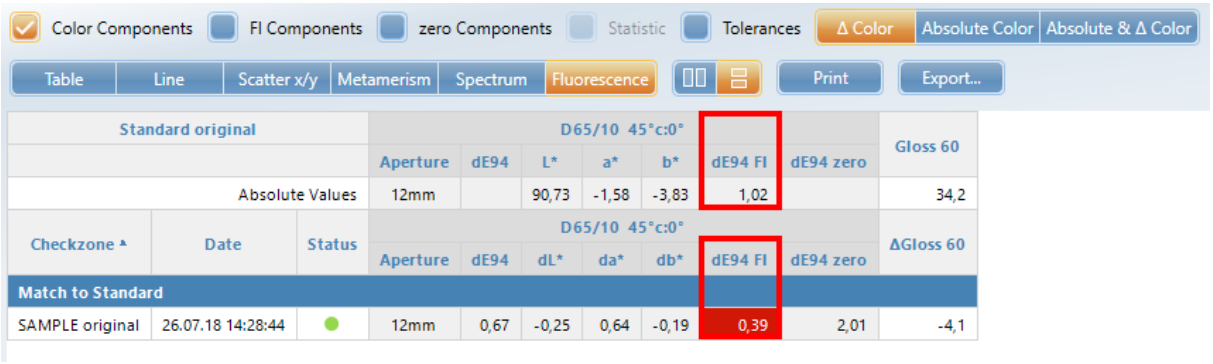
Standard spectrophotometers do not provide accurate measurement results as the excitation of the fluorescent pigments varies depending on the built-in light source. The color2view combines a traditional spectrophotometer with a fluorimeter. In addition to a white LED, **18** monochromatic LEDs (**300 - 760 nm**) are built-in to sequentially illuminate the fluorescent material at a specific wavelength (excitation). As a result, the shifted light (emission) is detected per LED. Thus, the color2view is able to separate reflection from fluorescent components and then apply corrections for the specific standard illuminant.

Click on the button “Fluorescence” to open the “Fluorescence Slider” for professional analysis of fluorescent material. On top of the “Fluorescence Slider” you can toggle through the different monochromatic LEDs. The graph shows the shifted fluorescent energy (emission) for the chosen excitation wavelength.

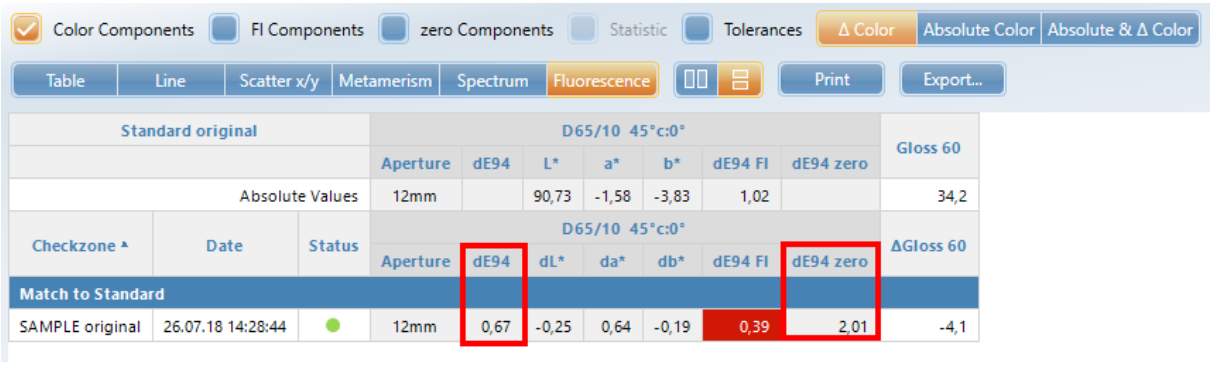
In the example shown, a fluorescent standard (left) and sample (right) are compared. The selected excitation wavelength is 485 nm. The emission for both, standard and sample, ranges from 510 to 700 nm with peak at 520 nm.

However, both curves show different characteristics. While the emission of the sample drops off with a steep slope after the peak at 520 nm, the standard exhibits another broad maximum in the 600 - 700 nm range. In this case, the formulation of standard and sample differs regarding the fluorescent ingredients.

Fluorescent pigments are in general not long-term stable and will decay over time when exposed to daylight. Based on the results achieved by the spectrophotometer and fluorimeter, the color2view can predict how much the color impression of a material will change over time due to fluorescence decay. Two proprietary calculations, ΔE FL and ΔEzero, are predicting the color change with total color difference as well as individual color component deltas ΔLabCh.

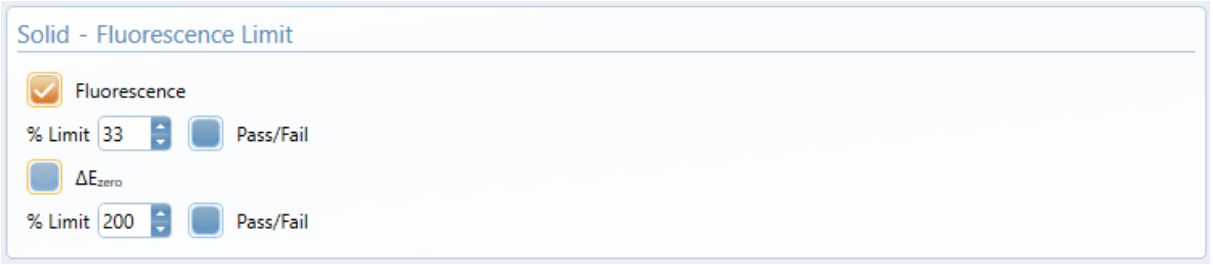


The ΔE FL index indicates whether the standard and the sample contain fluorescence and, if so, how much. This index is calculated based on the selected color difference formula (e.g. ΔE 94) to predict how much standard or sample will change after all fluorescence has decayed. The higher the ΔE FL, the higher the proportion of fluorescent light and in the example shown the standard (ΔE FL = 1.02) will change more obvious than the sample (ΔE FL = 0.39).



ΔEzero predicts the future color harmony between standard and sample when all the fluorescent components of both materials have decayed. By comparing ΔE and ΔEzero, a realistic estimation ca be made if the color harmony in the future will be equal, better, or worth than the current. In the example shown, the color harmony will decline significantly as the ΔEzero = 2.01 > ΔE94 = 0.67.

Both indices can be activated in the standard management. Select the tab "Color" to define settings and tolerances.



7

Project Management

For maximum flexibility all selected parameters / indices can be changed or additional ones can be added at any time. Current projects can easily be expanded by additional sample measurements to existing test series or by adding additional test series.

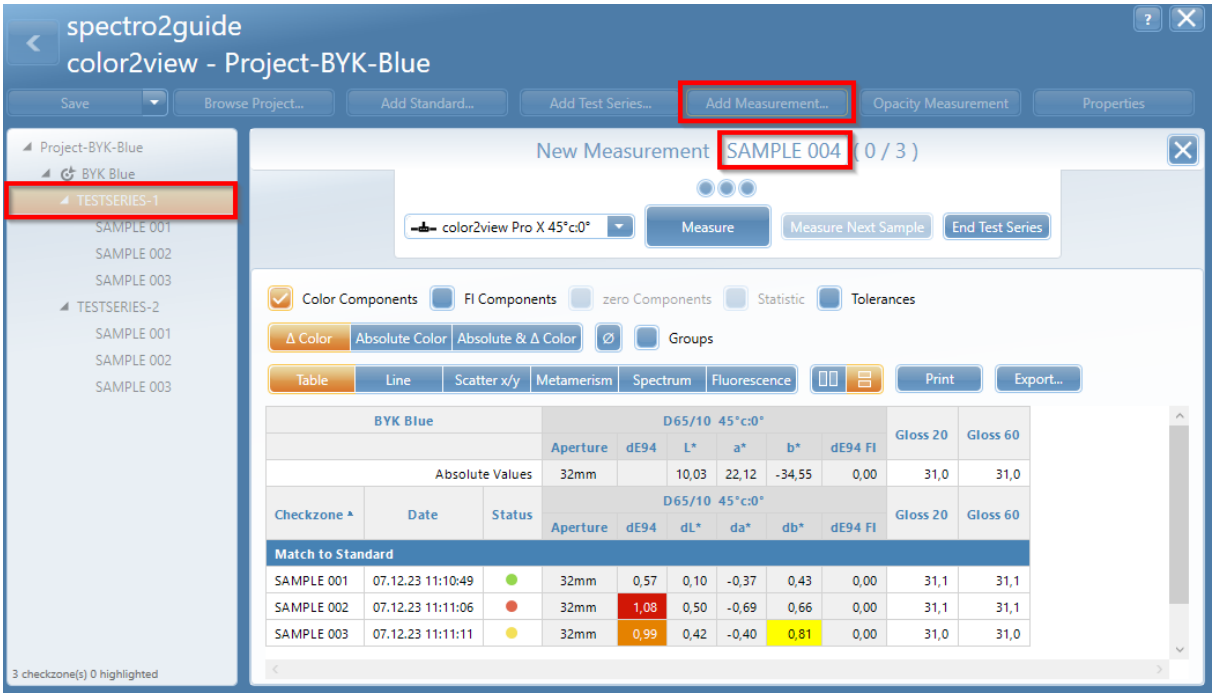
7.1 Expand & Change a Project

Add Measurements

Add Samples to existing Test Series

Highlight existing test series which shall be extended by additional sample measurements:

1. Click on button "Add Measurement".

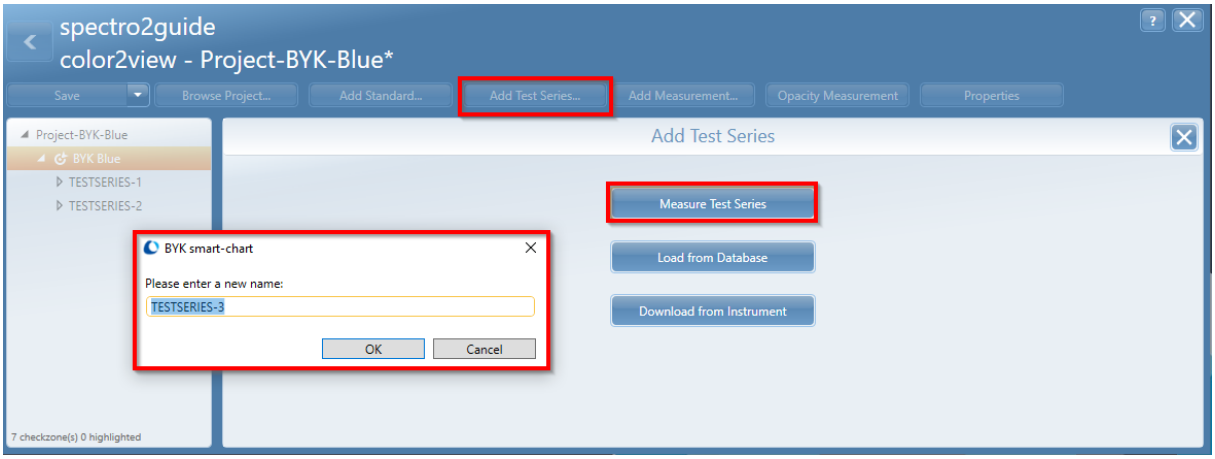


2. Perform the required readings on the new sample.
3. Click on "Measure Next Sample" to continue or on "End test Series" to finish.
4. Optional: Rename the new sample by clicking into the name field.

Add new Test Series

Highlight standard which shall be extended by an additional test series:

1. Click on button "Add Test Series".
2. Click on "Measure Test Series".



3. Enter a name and click on "OK".

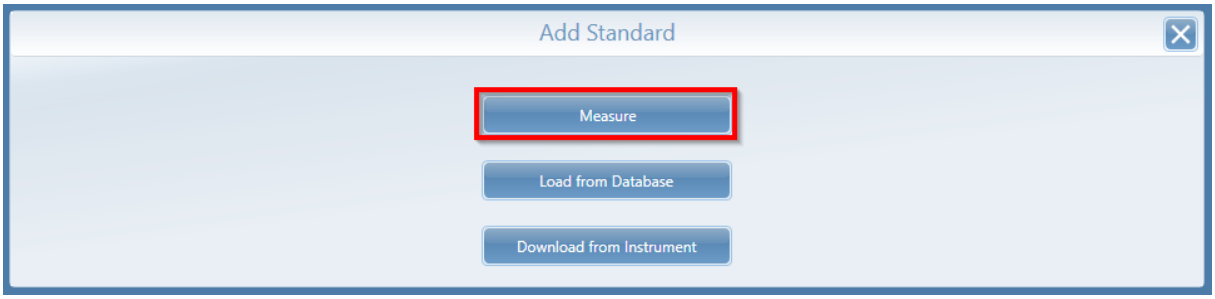
4. Perform the required readings on the first sample.

5. Click on "Measure Next Sample" to continue or on "End test Series" to finish.

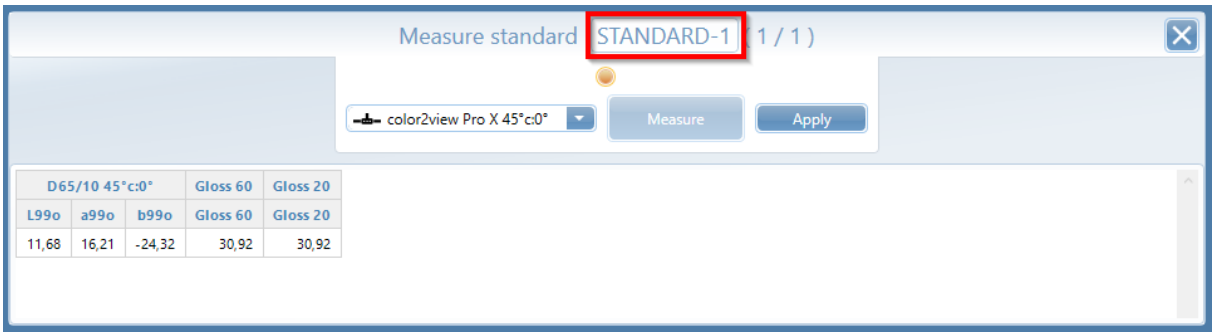
Add new Standard

An existing project can be extended with additional standards:

1. Click on button "Add Standard" and measure it or load an existing standard from the standard database or download it from the instrument.



2. Enter a name for the new standard and measure it.



3. Click on the button "Apply" to save the new standard in the project.

IMPORTANT!

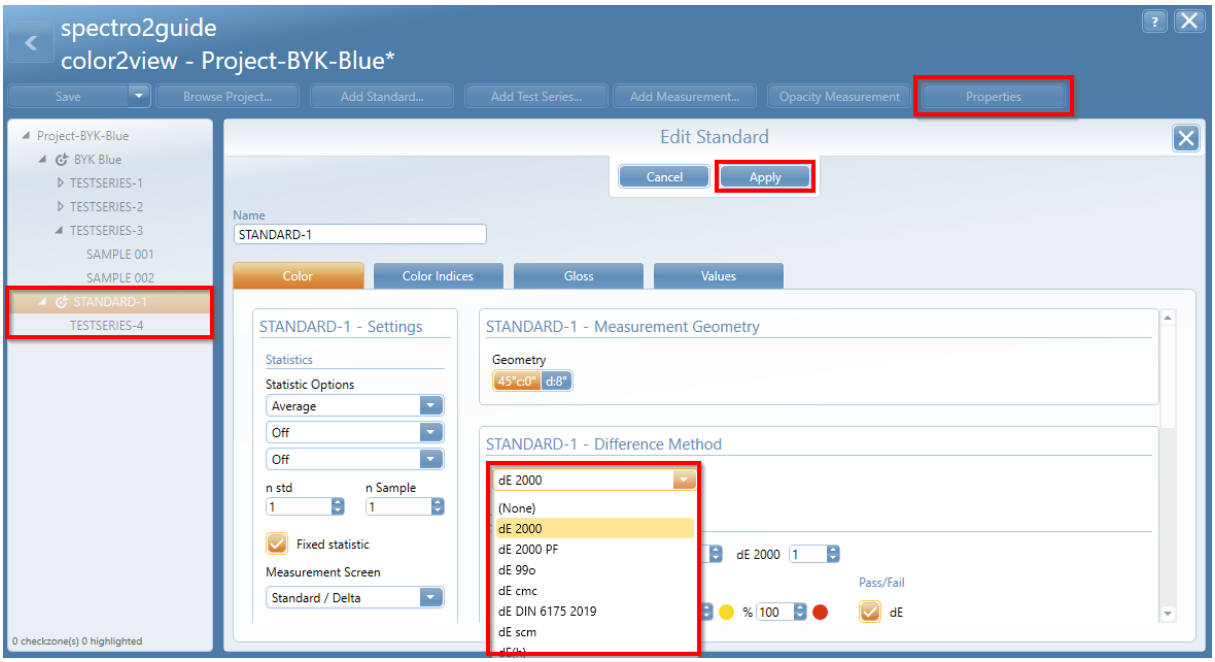
Additional standards and measurements can make a project complex. It is recommended to save new standard(s) in a separate project.

Change selected Parameters

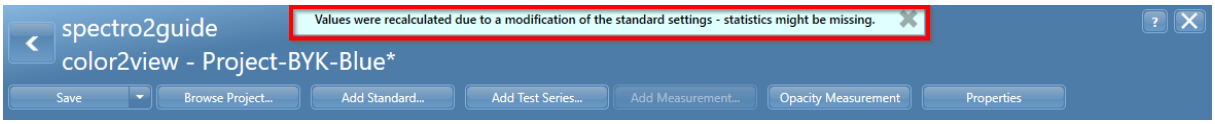
All defined settings (e.g. illumination, observer, color indices, color equation, tolerances, etc.) can be easily changed or edited. Select the standard in the navigation tree and click on the button "Properties".

Change Difference Method

Select the tab "Color" and apply the required changes.



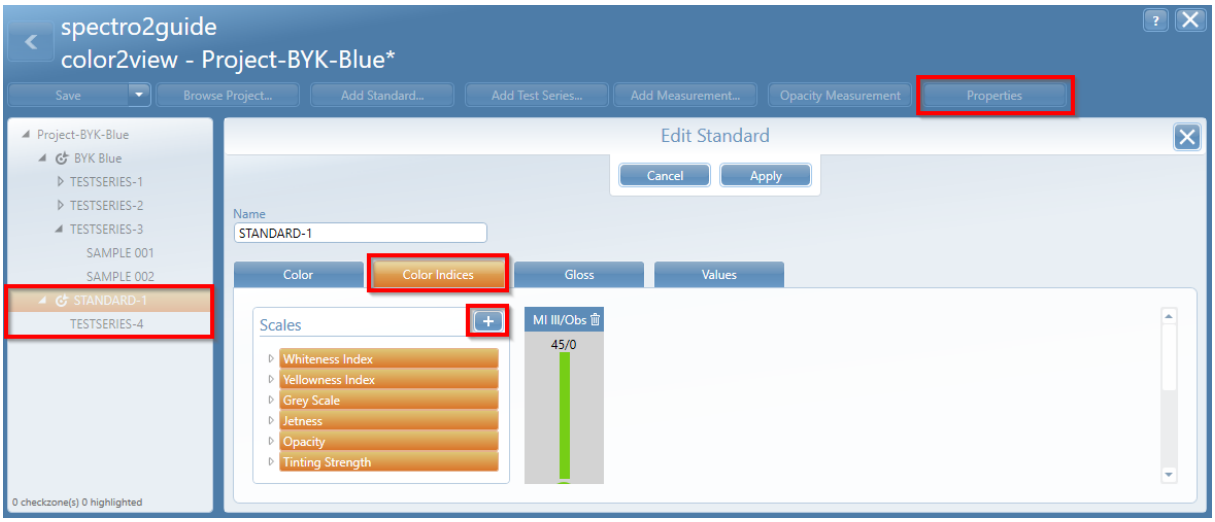
The values are recalculated according to the selected difference method. A note appears at the top of the screen.



Confirm the message by clicking on the small gray cross.

Add Color Indices

To add additional indices select the tab "Color Indices" in the content section. Highlight the required index and add it using the "Plus" button.



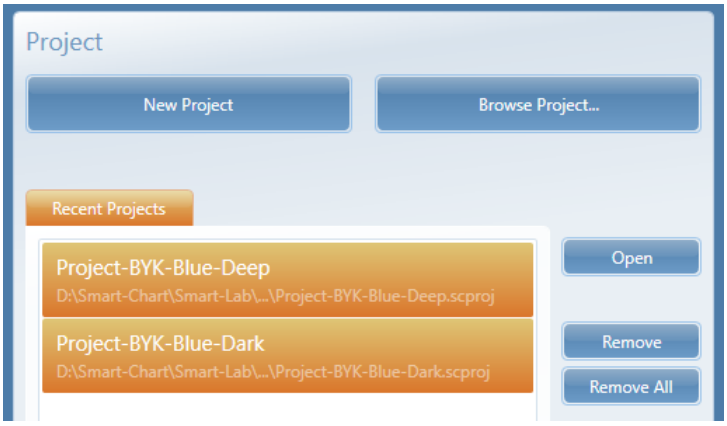
After each change click on button "Apply" and use the button "Save" in the ribbon to save your modifications in the project.

7.2 Compare Projects

Projects can be compared by opening several projects at the same time or by adding another project to an open one.

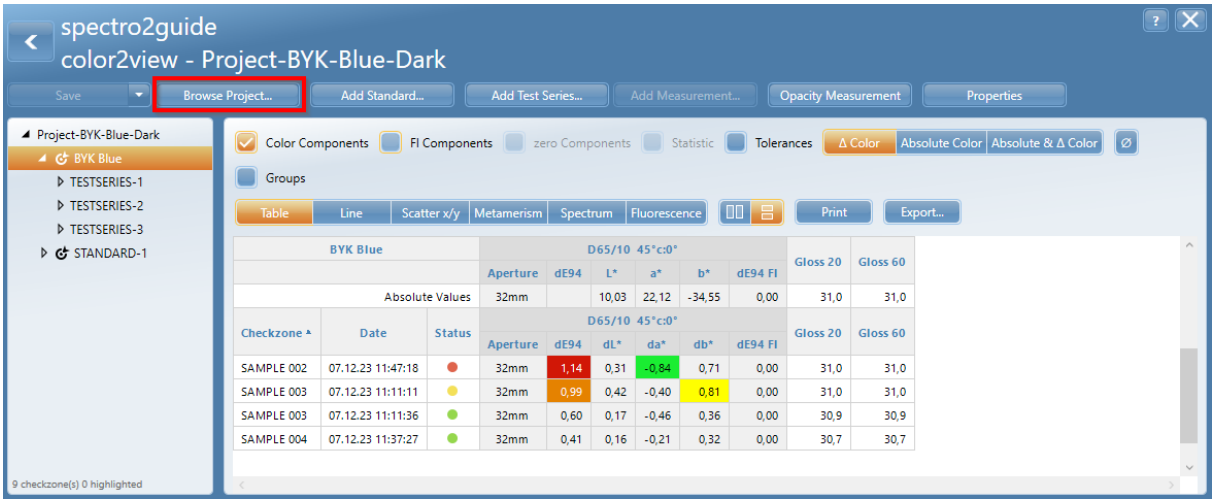
Open several Projects

In the project list box select the desired projects and click on "Open".

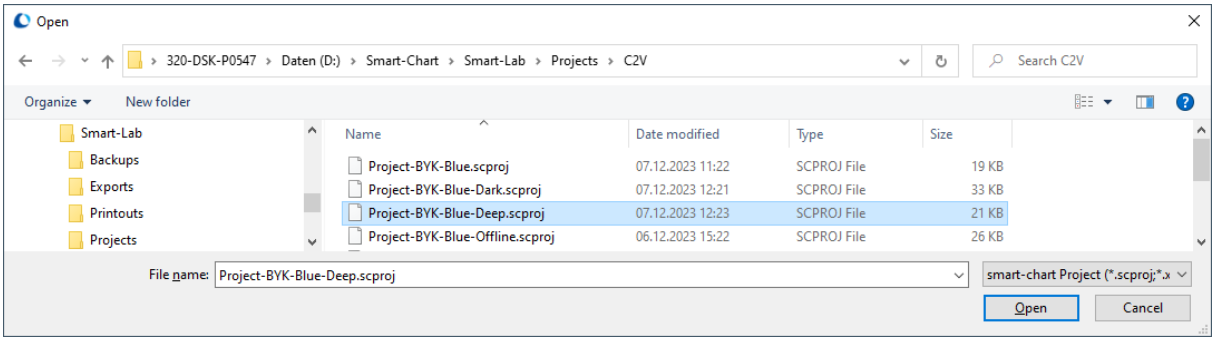


Open additional Project

1. Within a project click the button "Browse Project" to open a 2nd project.

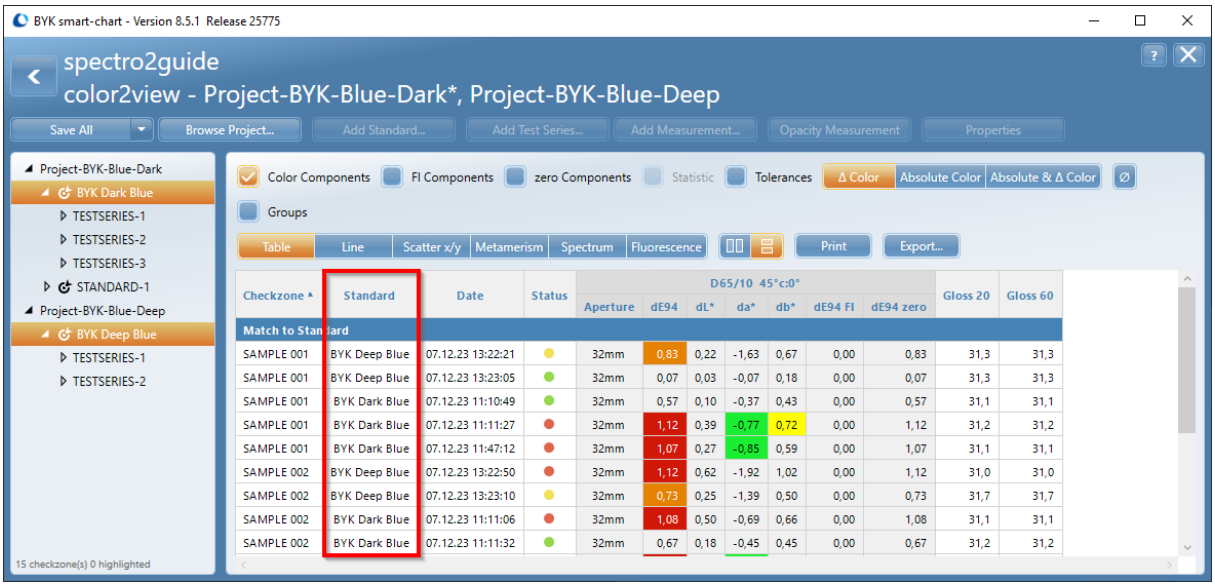


2. Navigate to the file for the project to be compared, select it and click on "Open".



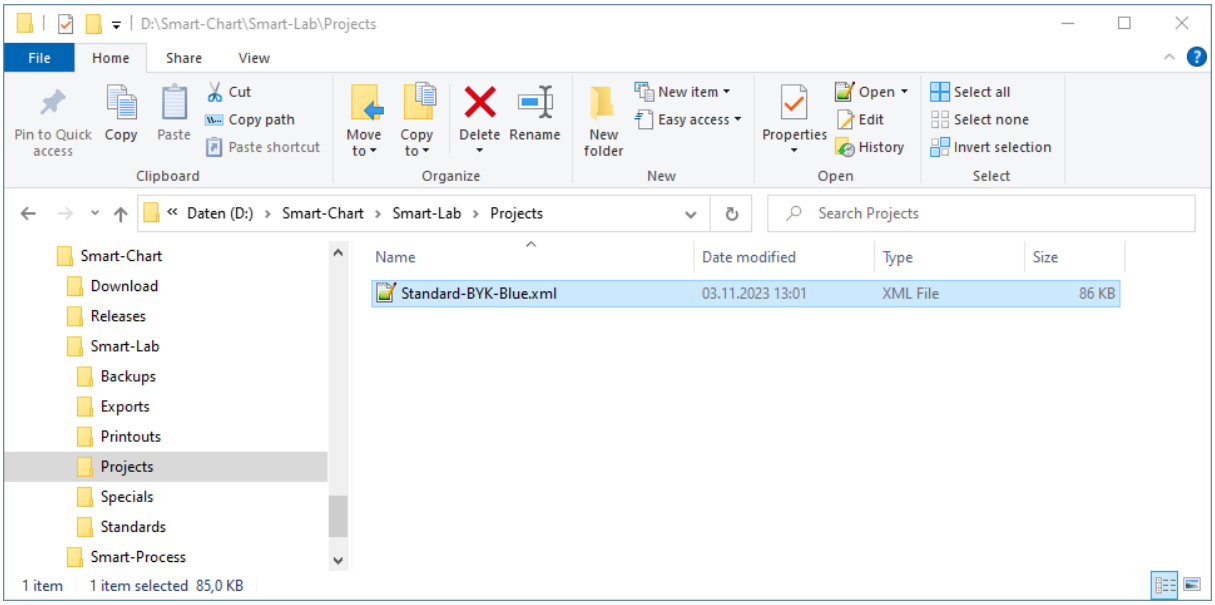
Compare Project Data

The measurement data in all open projects is displayed. To identify samples it is recommended to add the column "Standard" to the table.



7.3 Share Project Files

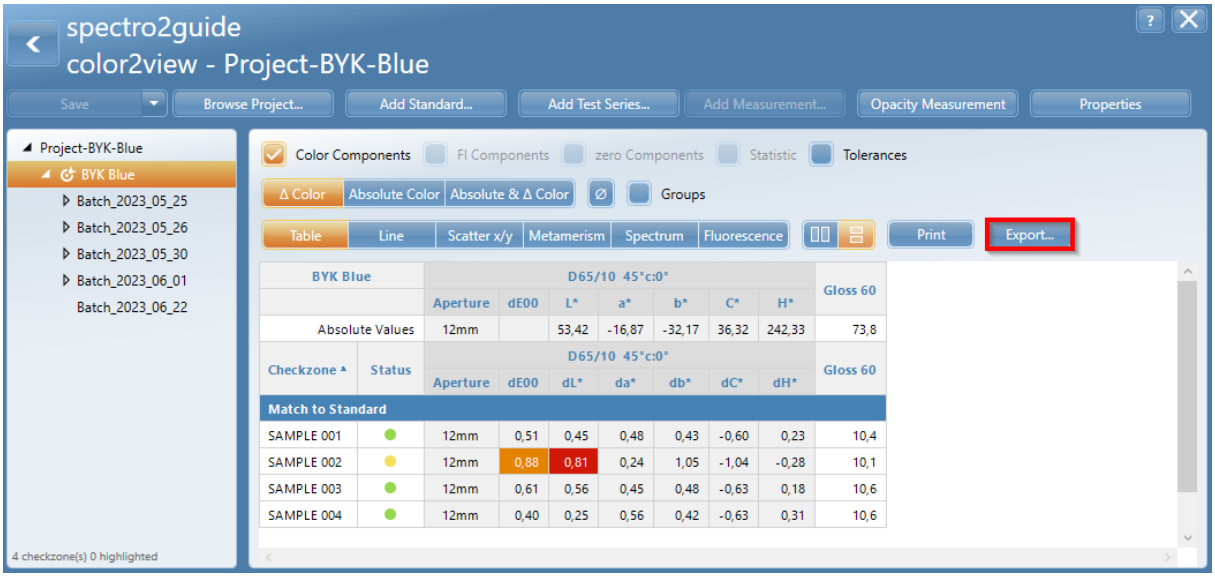
The project file(s) can easily be shared, e.g. by email or via a file share.



On the target system the file can be opened in smart-lab in the usual way.

7.4 Export to Excel

Click the button "Export" to export the selected measurement data to MS Excel.

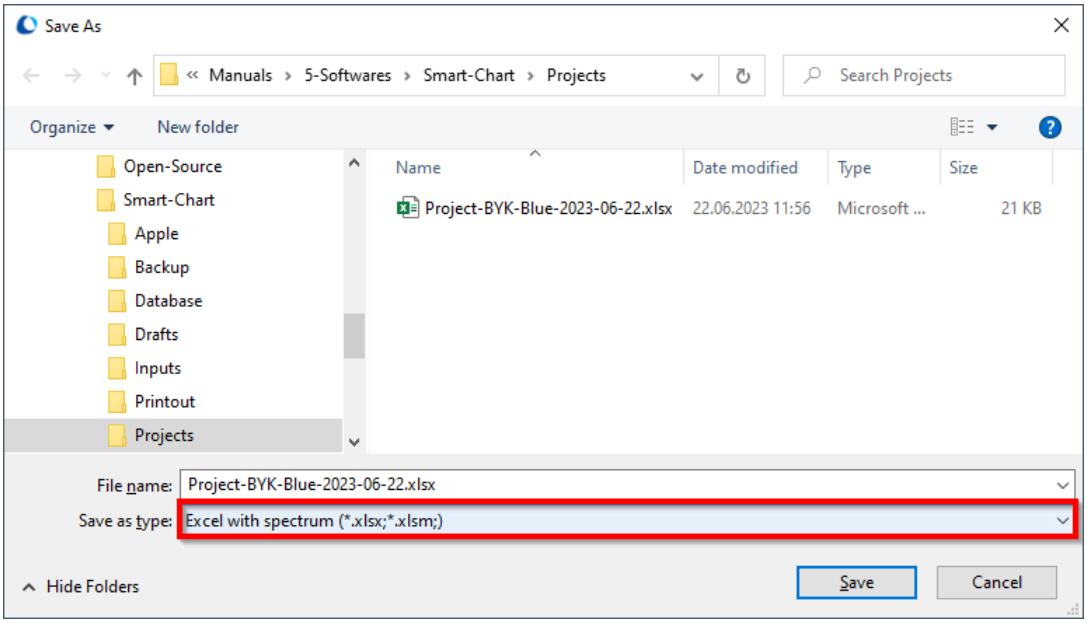


BYK Blue		D65/10 45°c:0°						Gloss 60
		Aperture	dE00	L*	a*	b*	C*	H*	
Absolute Values		12mm		53,42	-16,87	-32,17	36,32	242,33	73,8
Checkzone	Status	D65/10 45°c:0°						Gloss 60
		Aperture	dE00	dL*	da*	db*	dC*	dH*	
Match to Standard									
SAMPLE 001		12mm	0,51	0,45	0,48	0,43	-0,60	0,23	10,4
SAMPLE 002		12mm	0,88	0,81	0,24	1,05	-1,04	-0,28	10,1
SAMPLE 003		12mm	0,61	0,56	0,45	0,48	-0,63	0,18	10,6
SAMPLE 004		12mm	0,40	0,25	0,56	0,42	-0,63	0,31	10,6

Type in a name and select a folder for export; the data is exported and the file is opened in MS Excel. The Excel file can be modified, saved and shared.

	A	H	I	J	K	L	M	N	O	P
1							11.22.2022			
2	Pale Gray 2						D65/10	45°c:0°		
3				Aperture	dEcmc	L*	a*	b*	dEcmc Fl	dEcmc zero
4		Absolute Values		12mm		80,52	-1,29	2,68	0,00	
5							D65/10	45°c:0°		
6	Checkzone	Date	Status	Aperture	dEcmc	dL*	da*	db*	dEcmc Fl	dEcmc zero
7	Match to Standard									
8	Average	30.03.2023 15:14		12mm	0,35	0,85	0,01	0,13	0,00	0,35
9	Left Door	22.11.2022 10:22	Pass	12mm	0,39	0,89	0,02	0,17	0,00	0,39
10	Lower Drawer	22.11.2022 10:22	Pass	12mm	0,33	0,86	0,01	0,09	0,00	0,33
11	Right Door	22.11.2022 10:22	Pass	12mm	0,38	0,87	0,01	0,16	0,00	0,38
12	Upper Drawer	22.11.2022 10:22	Pass	12mm	0,32	0,80	0,00	0,10	0,00	0,32

If measurement **and** spectral data are to be exported, select file type "Excel with spectrum".

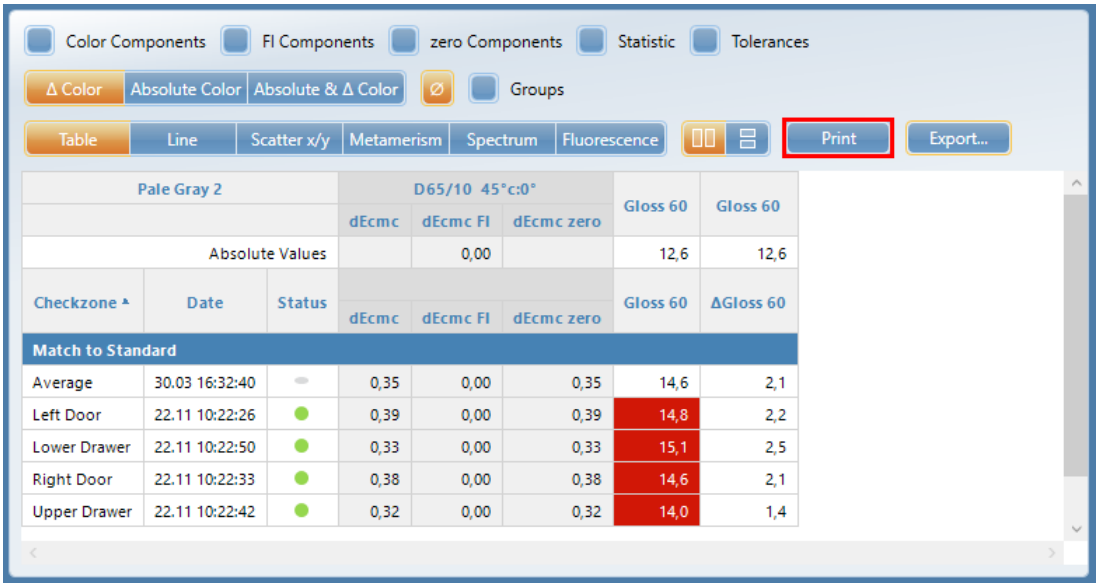


Selecting this file type creates an additional tab "Spectral data" in the export file.

7.5 Print Report

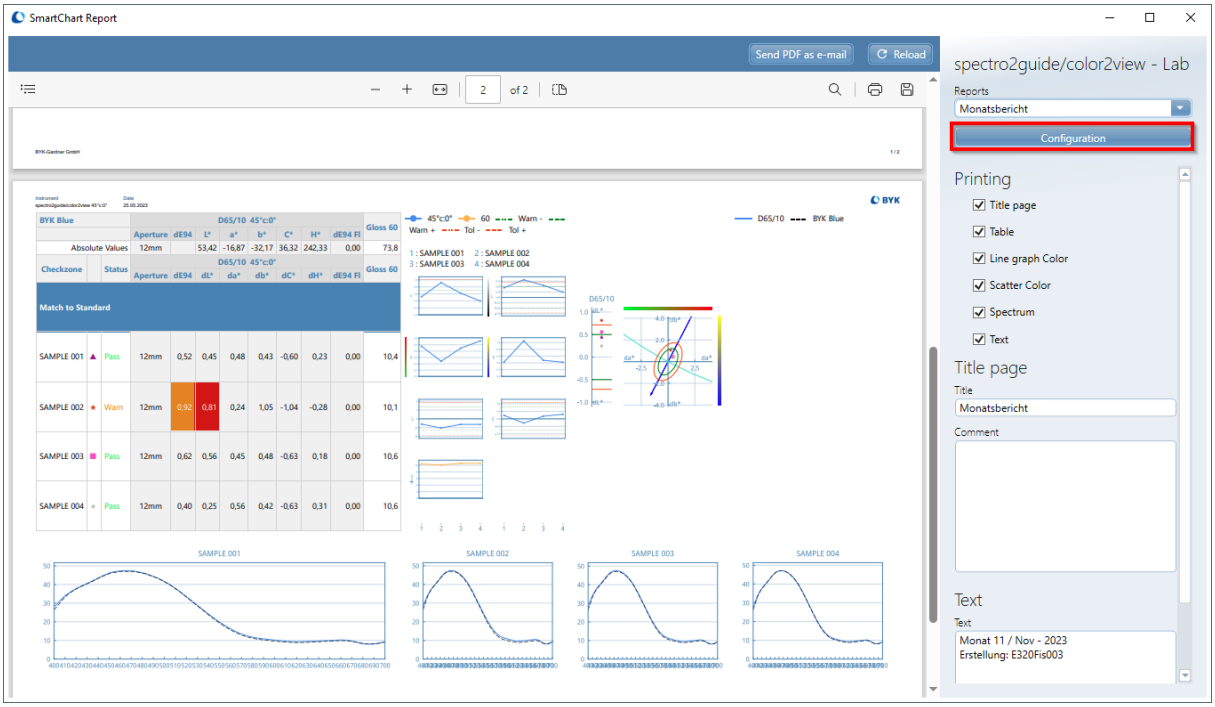
It is also possible to create a PDF file or print out of the selected measurement data:

1. Click the button "Print" to open the report module.



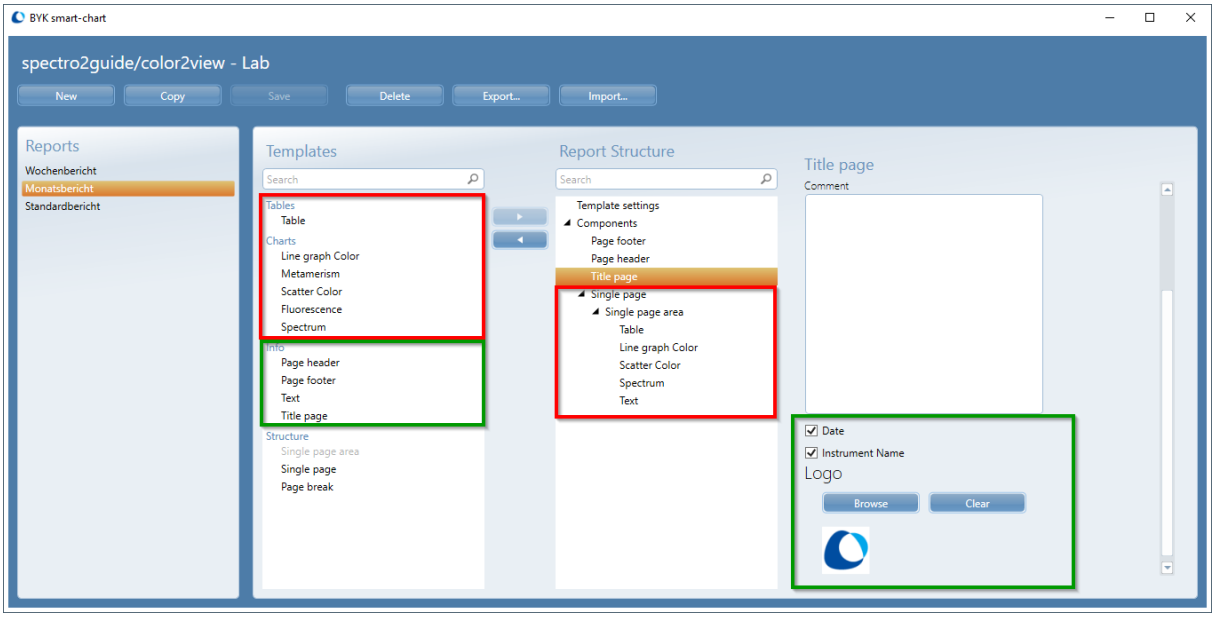
Pale Gray 2			D65/10 45°c:0°			Gloss 60	Gloss 60
			dEcmc	dEcmc FI	dEcmc zero		
Absolute Values				0,00		12,6	12,6
Checkzone	Date	Status	dEcmc	dEcmc FI	dEcmc zero	Gloss 60	ΔGloss 60
Match to Standard							
Average	30.03 16:32:40		0,35	0,00	0,35	14,6	2,1
Left Door	22.11 10:22:26		0,39	0,00	0,39	14,8	2,2
Lower Drawer	22.11 10:22:50		0,33	0,00	0,33	15,1	2,5
Right Door	22.11 10:22:33		0,38	0,00	0,38	14,6	2,1
Upper Drawer	22.11 10:22:42		0,32	0,00	0,32	14,0	1,4

2. On the right side the report content and layout can be controlled according to the options specified by the button "Configuration".



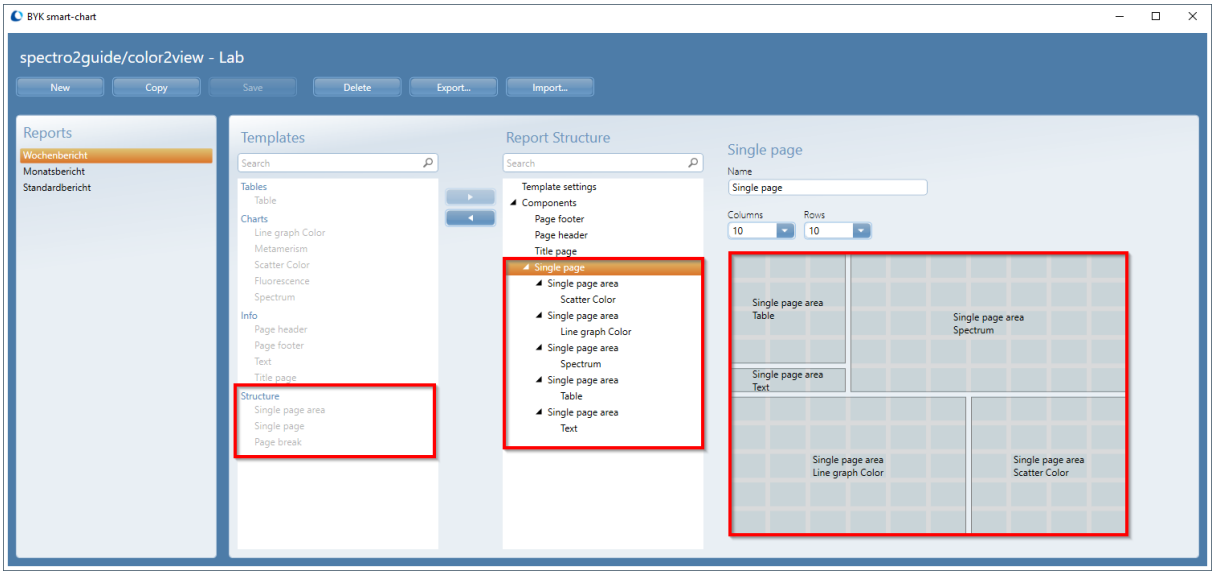
3. By clicking on "Configuration" different report templates for specific applications / customers can be configured and saved.

4. It is possible to enable specific content to be printed (e.g. the line graph), to change the logo in header and/or title page and much more.



5. It is also possible to use the structure element "Single page area" to print all selected content to just one page.

6. With "Single page area", the landing areas for the individual contents can also be moved on the page and adjusted in size.



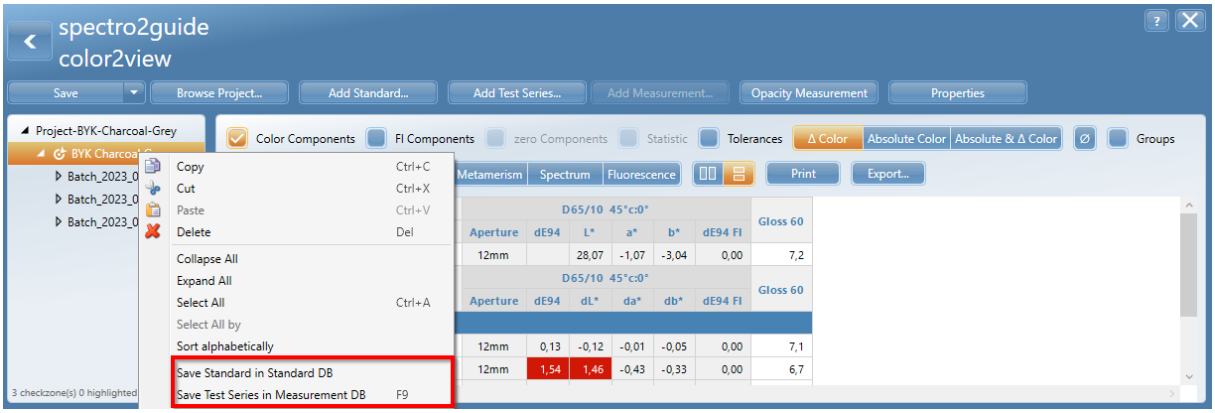
The desired elements can be dragged and dropped to their target position in the structure. The landing areas can also be edited using drag & drop.

7.6 Save to Database

The button "Save" in the ribbon saves all data in the project file. It is also recommend to save the data to the databases in regular intervals:

- Save the standard in the standard DB
- Save the measured data in the measurement DB

These options are available in the context menu for the standard.

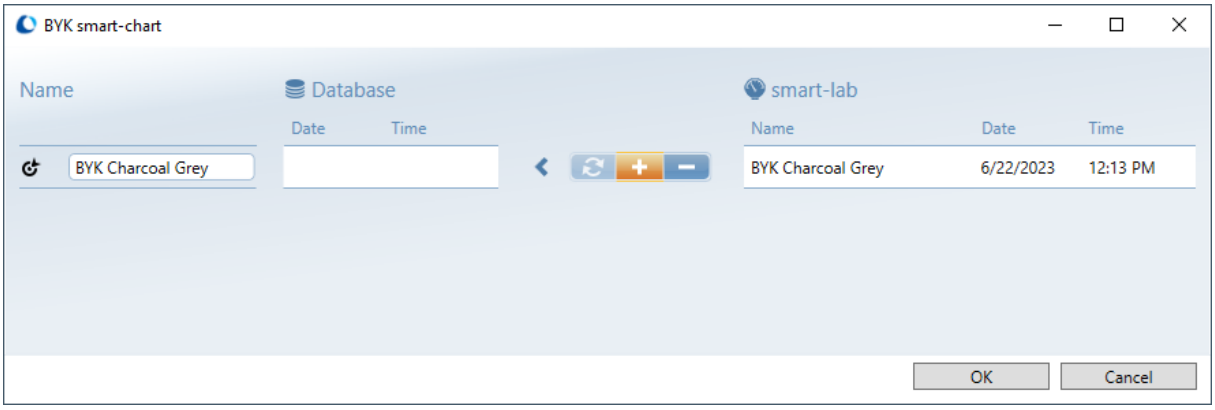


Details on database handling can be found in section "Configuration" (Link 52).

Save Standard

To save a color standard in the standard DB:

1. On standard select "Save Standard in Standard DB" from menu to open the import dialog.



2. Click on "OK" to save the standard in the standard DB.

3. It will be saved in the color family "Various Standards".

The local standard DB is located in "C:\ProgramData\BYK\smart-chart 3.0\bykmainDB_3". If the local DB is used, no selection is required.

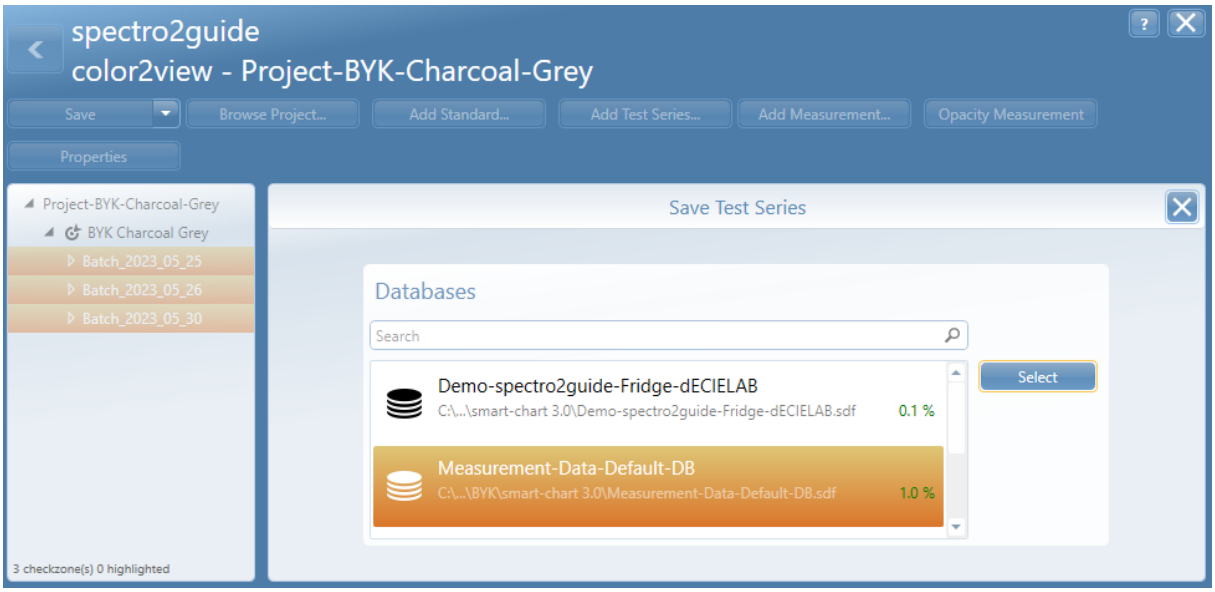
NOTICE

If an existing standard has been edited or changed, it is to be saved in the standard DB under a new name.

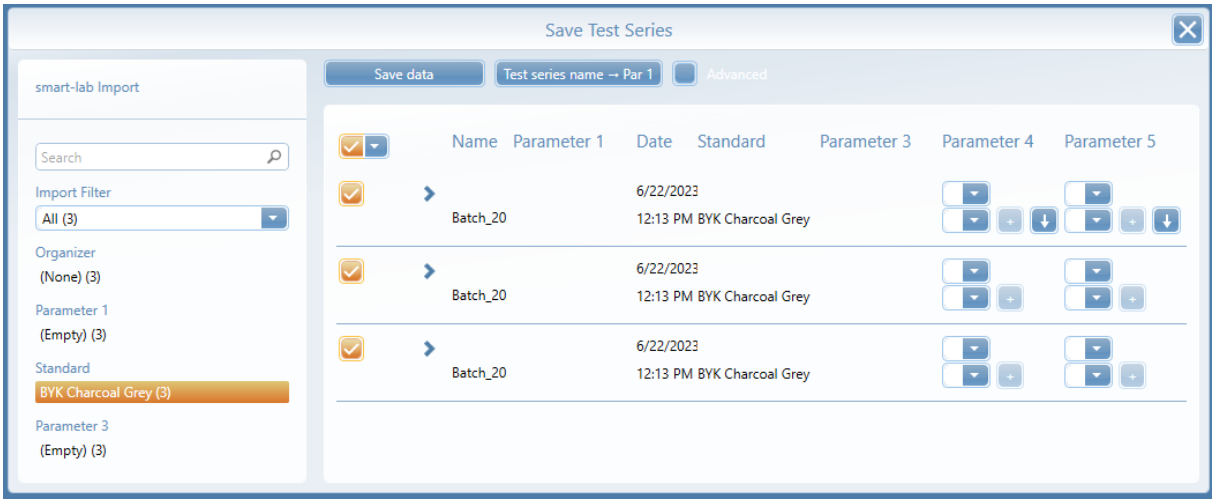
Save Measurements

To save measured data in the measurement DB:

1. Select option "Save Test Series in Measurement DB" from context menu.



2. Select a database file and click on "Select" to open the required database.

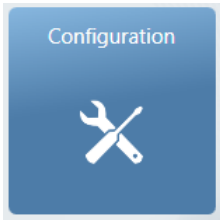


3. Mark the test series to be saved and click on button "Save data".

The default measurements DB is located in "C:\ProgramData\BYK\smart-chart 3.0\Measurement-Data".

8

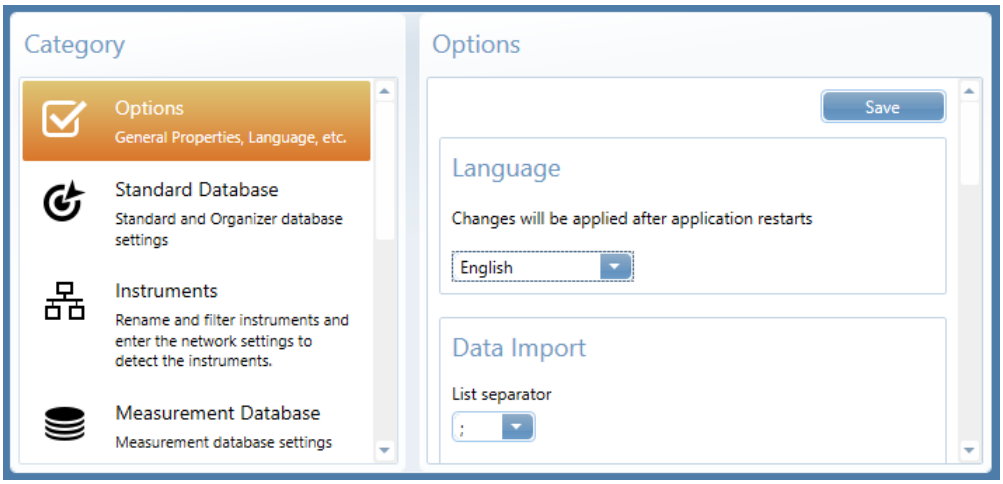
Configuration



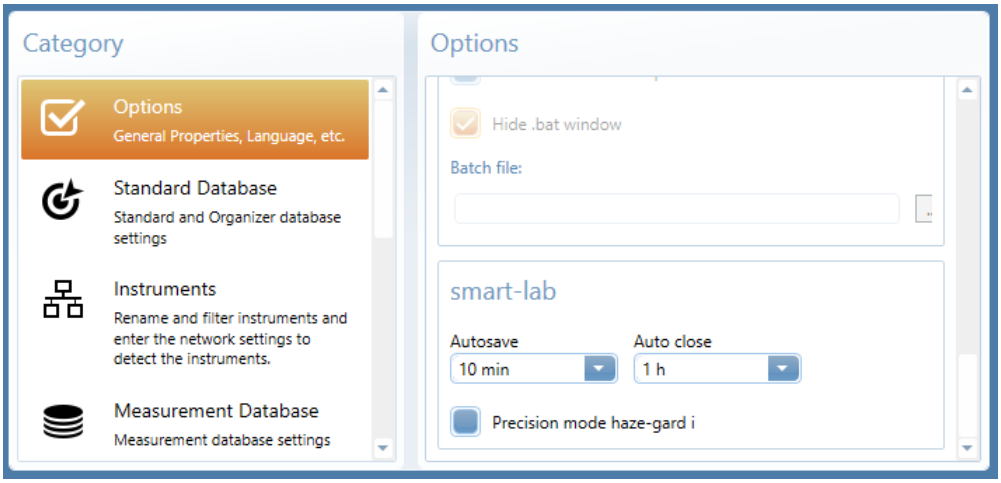
Define general program options and configure the measurement database.

8.1 General Options

Select the "Language" of the user interface in smart-chart and restart the application to apply your selection.



Switch options "Autosave" and / or "Auto close" for smart-lab on or off and define their time interval.

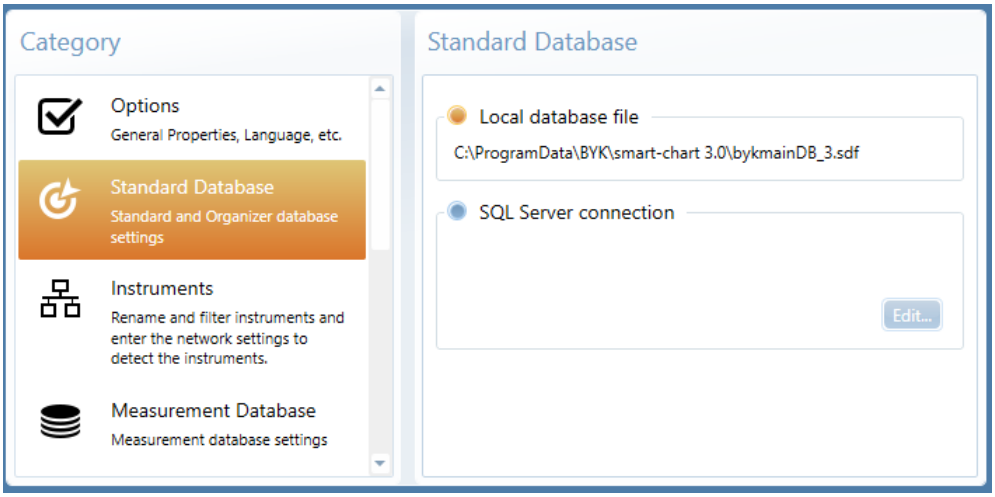


Using these options you can save your work automatically in regular intervals.

8.2 Standard Database

Define standard database:

- Select "Standard Database".
- Select "Local database file".
- Alternatively select "SQL Server connection".



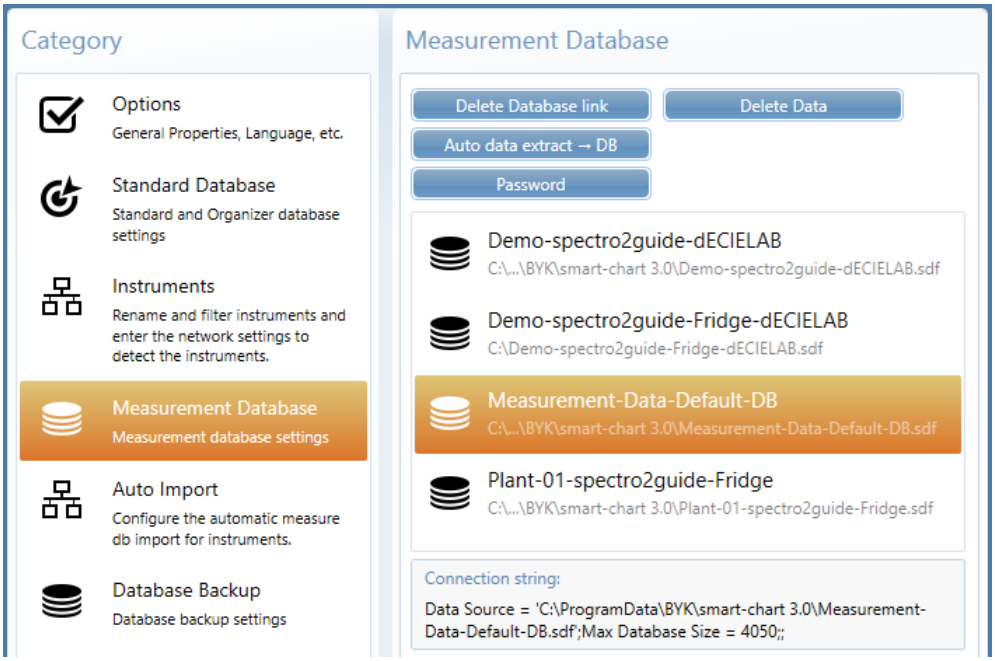
NOTICE

The "Local database file" is created in "C:\ProgramData\BYK\smart-chart 3.0\bykmainDB_3". This path can not be changed. If the standard database remains on a server in the network use option "SQL Server connection" for configuration.

8.3 Measurement Database

Define measurement database:

- Select "Measurement Database".
- To create new DB, select "Add database" and enter a name for the new file.
- To use an existing DB, select "Link existing database" and navigate to the file.



NOTICE

As default, the measurement database is created in "C:\ProgramData\BYK\smart-chart 3.0\Measurement-Data".

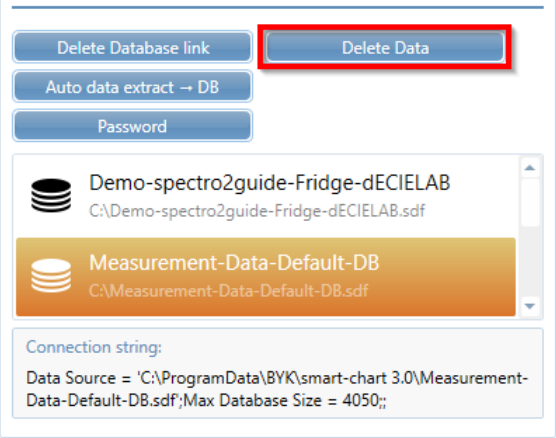
8.4 Delete Measurements

NOTICE

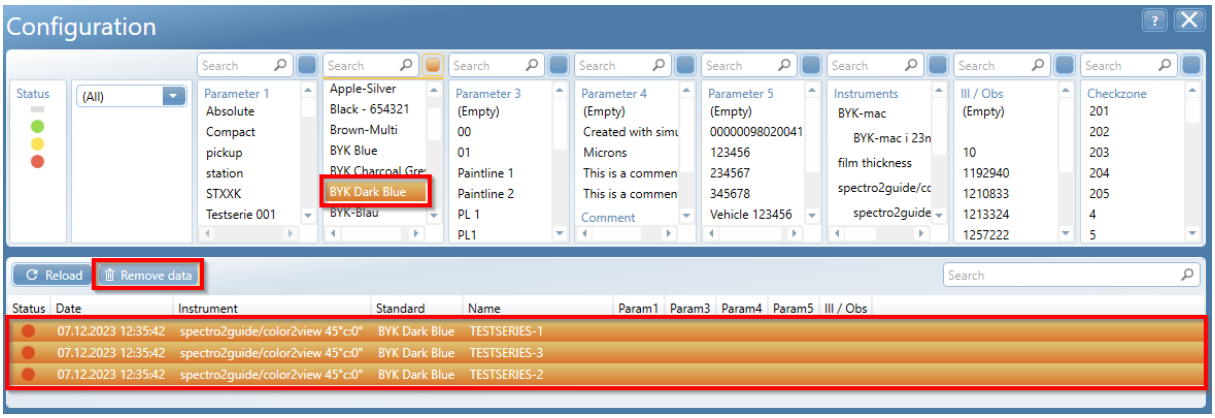
It is recommended to create a backup of the database file before deletion of data.

Test series not required anymore can be deleted from the database:

- Select "Measurement Database".
- Select the required measurement database.
- Select "Delete Data".



The database is opened for the deletion of test series. This dialog is similar the module "Data Analysis".



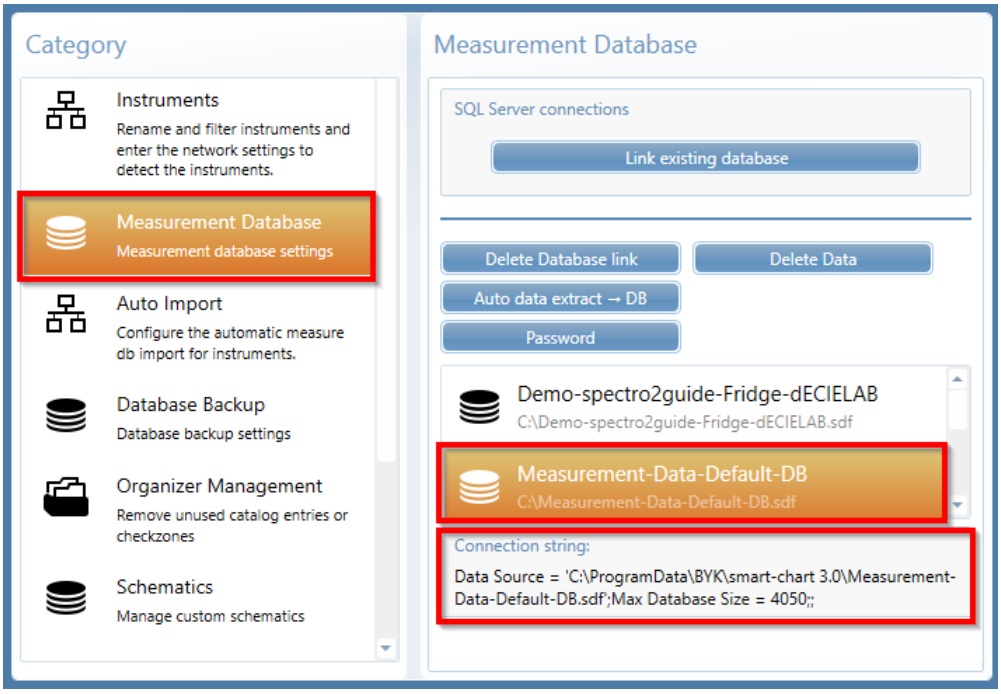
To delete specific test series:

- Define the filter criteria on the top.
- Select "Reload" to apply the filter criteria.
- Select the test series to be deleted with "Ctrl" and/or "Shift".
- Select "Remove data" to delete the selected datasets.

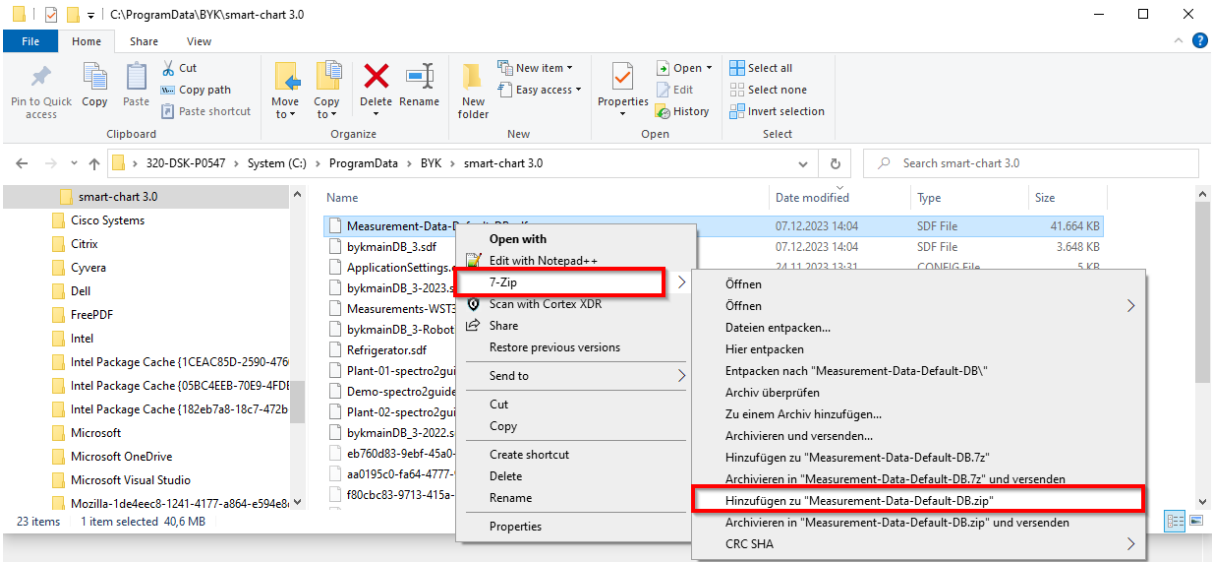
8.5 Share Database

To share the complete measurement database:

- Under "Category", select "Measurement Database".
- All measurement databases are shown on the right side.
- Select the one you want to share.
- The folder were it is stored is displayed at the bottom as "Connection String - Data Source".



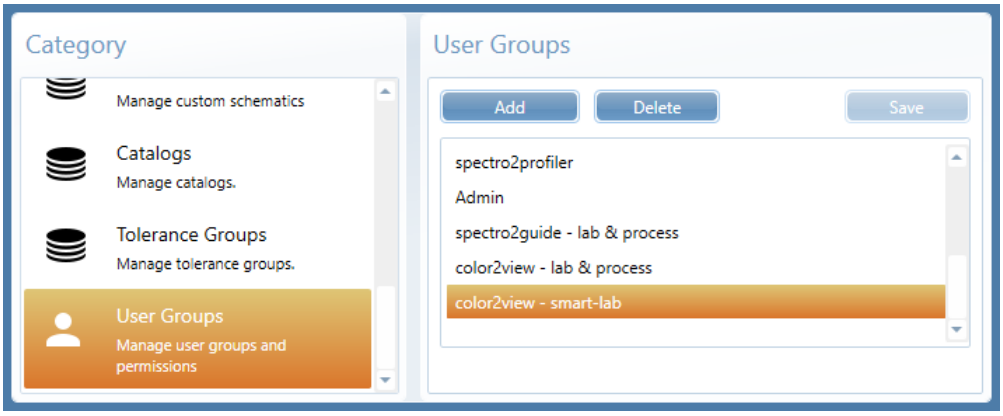
Close smart-chart, open Windows Explorer and navigate to the appropriate folder and create a ZIP archive of the *.sdf database file to make sure it can be sent safely by email.



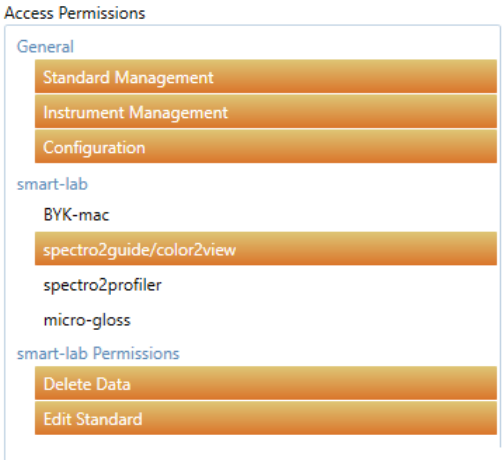
The example above shows how to quickly create ZIP archives with "7-Zip".

8.6 User Groups

Using the option "User groups" smart-chart can be limited to have only required functions assigned.



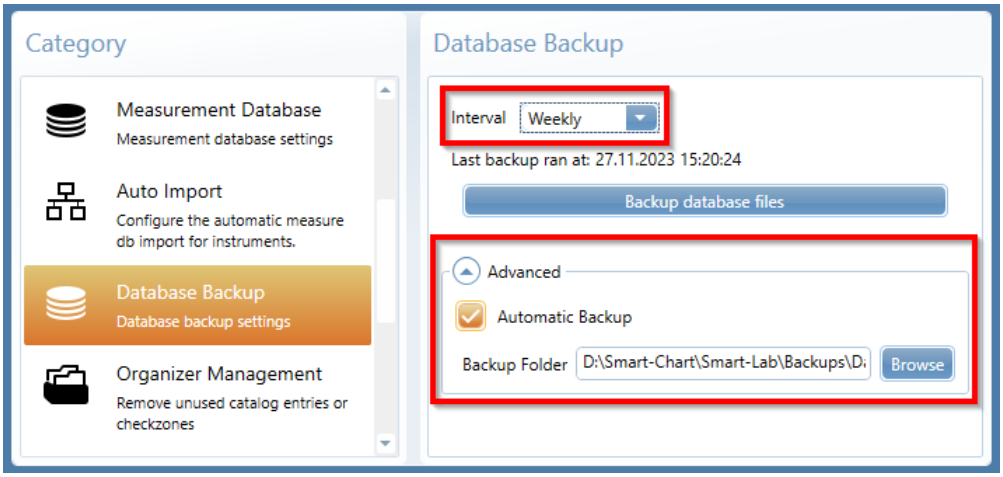
A user with administration right can assign selected "Access Permissions" to specific user groups.



These user groups will be displayed during start-up for login.

8.7 Data Backup

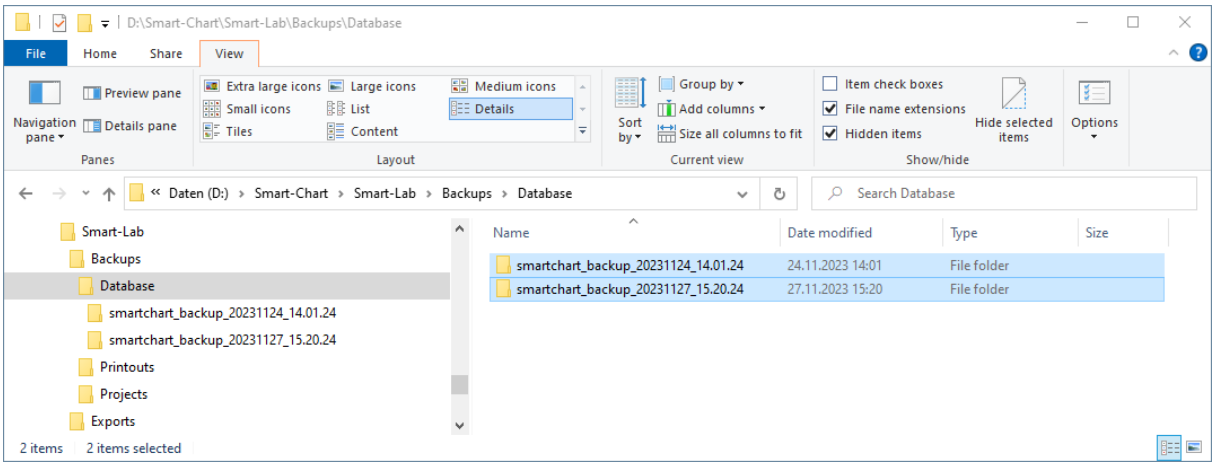
Backup of measurement data is very important to avoid any data loss. Running the back up at least once a week is recommended. In module "Configuration" an automatic backup procedure can be defined.



To backup the complete database:

- Under "Category", select "Database Backup".
- For the backup interval select "Weekly".
- Use the "Arrow down" in front of "Advanced" to activate "Automatic Backup" and the "Browse" button so select a backup folder on your computer.
- A folder with the name shown below is created:
  - The name includes date and time of the backup.
  - The standard database as well as all linked measurement databases are saved.

The backup is automatically done when smart-chart is terminated.



Save all backup files on a second place, e.g. on a network drive, an external hard disk or a USB flash drive.

Notes

Notes

A member of ALTANA

Download your manuals from:
https://www.byk-instruments.com/p/7600

Download your software from:
https://www.byk-instruments.com/software#color2view

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