



colorWorkbench

Version 25.2

Online color measurement software

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2. color Workbench main features

Main features

- Themes support
- Multi-monitor support
- Available in English, German and Czech language
- Supports touch mode
- Autostart with Windows log on
- Can be started minimized and remote controlled
- Configurable admin mode
- Optional login with user name/password
- Support for Microsoft SQL Server 2008 R2, SQL Server 2012, SQL Server 2014, SQL Server 2016, SQL Server 2016 Express, SQL Azure
- Support for PostgreSQL 7, PostgreSQL 8, PostgreSQL 9, PostgreSQL 10 database
- Support for MySQL Server 4.1, MySQL Server 5.0, MySQL Server 5.1, MySQL Server 5.7 database
- Support for SQL server backups (only for locally installed Microsoft SQL server)
- Customizable ProductID, ExtraID and ItemID: Fields can be renamed, input required and can be configured to a special format (Number, Date, time, Regular expression)
- Six customizable extra fields which can be renamed and calculate values with a user-defined formula
- Ten renameable fields for plug ins
- Multiple status for runs configurable
- Configurable permissions for non-admin users
- Status, ExtraID, ProductID, ItemID and all Extra fields can be set to new values, while a run is active
- Additional run data can be scanned with a barcode scanner. barcode settings are configurable
- Data exchange with OPC UA server

Color scales and indices

- Illuminants: A, C, D50, D55, D65, D75, F02, F07, F11, TL84 in 2° and 10° observer
- Color scales: CIELab, CIELCh, XYZ, Hunter Lab
- Indices and deltas: dE*, dE, dE 2000, dE CMC, YI E313, WI E313, Shade sorting

Hardware and connection support

- Support for Hunter SpectraTrend HT
- Support for Hunter Vista / Vista OL
- Support for Hunter UltraScan VIS
- Support for multiple Hunter SpectraTrend HT units with or without averaging
- SpectraTrend HT easy standardization via display
- Supports Wago-750 Modbus Coupler with various modules
- Supports Adam-5000 I/O system with various modules
- Length counter mode
- Plugin support for extending functionality
- TCP remote connection
- Custom TCP data
- Support for Optris CT infrared thermometer

Standards

- Unlimited standards
- Warning and alarm tolerances

- Time readings, piece readings, length counter readings
- STHT simple standard measurement via display
- Templates for new standards
- Standards can be grouped
- Favorite group for standards
- Standards can be measured, averaged from an existing run or entered as CIE Lab values or spectral values

Views

- Customizable color data table
- Customizable trend plot with up to 4 different color scale axis
- Customizable info panel and instrument panel
- Customizable color plot
- Customizable 3D shade plot
- Color data table, trend plot, color plot, instrument view and shade plot can be individually docked

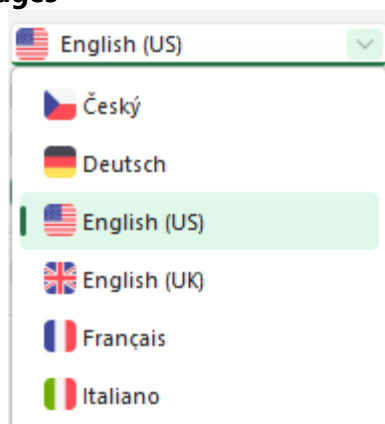
Reports and run management

- Run list with a run rating and a summary
- 3 built-in reports: Summary, trend plot and table report
- Standardization interval notification
- Auto export for a report and measurements data table after a run is finished
- Fully customizable reports module
- Configurable Excel export
- Runs can be merged
- Alert email when a completed run is under a configurable rating level
- Runs can be continued
- Event log for events and green tiel test results

Run options

- Color data table can be exported while a run is active
- Finished runs are rated (zero to five stars)
- Finished runs can have a marker and can be renamed
- Finished runs can be viewed, exported to various formats, including all available reports and to colorLab

Languages



3. Setup

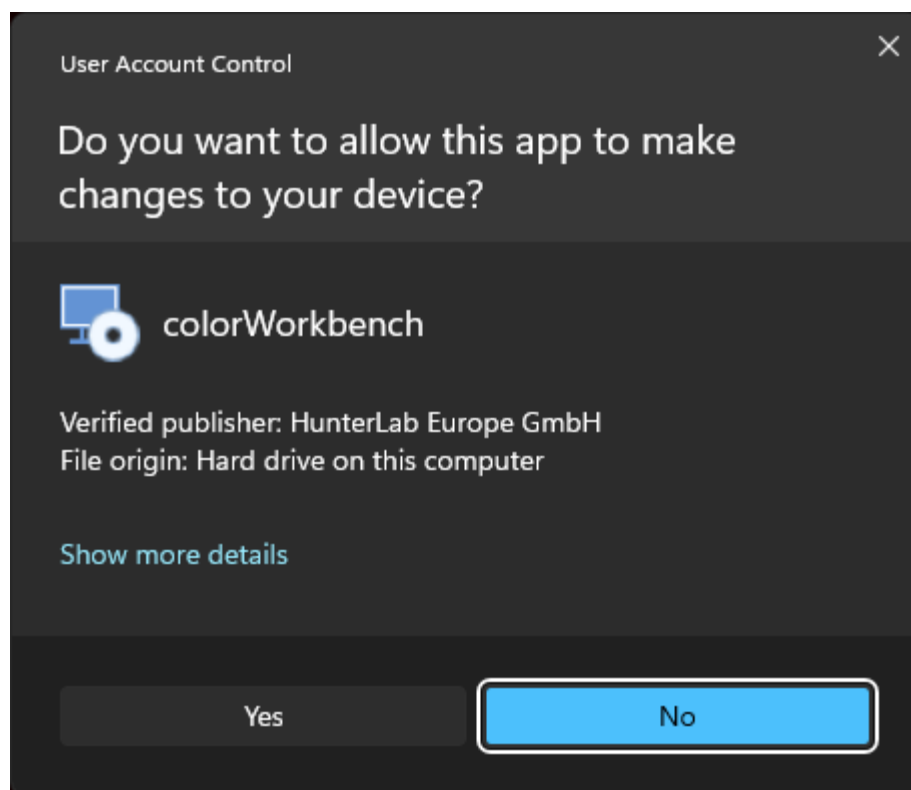
System requirements

- Intel Core i5 2GHz or better
- 8GB Ram (16GB recommended)
- 500MB hard disk space
- Windows 7 / 8.1 / 10 / 11
- .NET Framework 4.8 (included in Setup)
- Screen resolution > 1366x768 (1920x1080 recommended)
- Ethernet port for STHT
- If desired, Microsoft SQL-Server 2008 R2 or newer
- Serial port for Adam-5000 (USB-Serial adapter supported)
- Admin privileges for installation

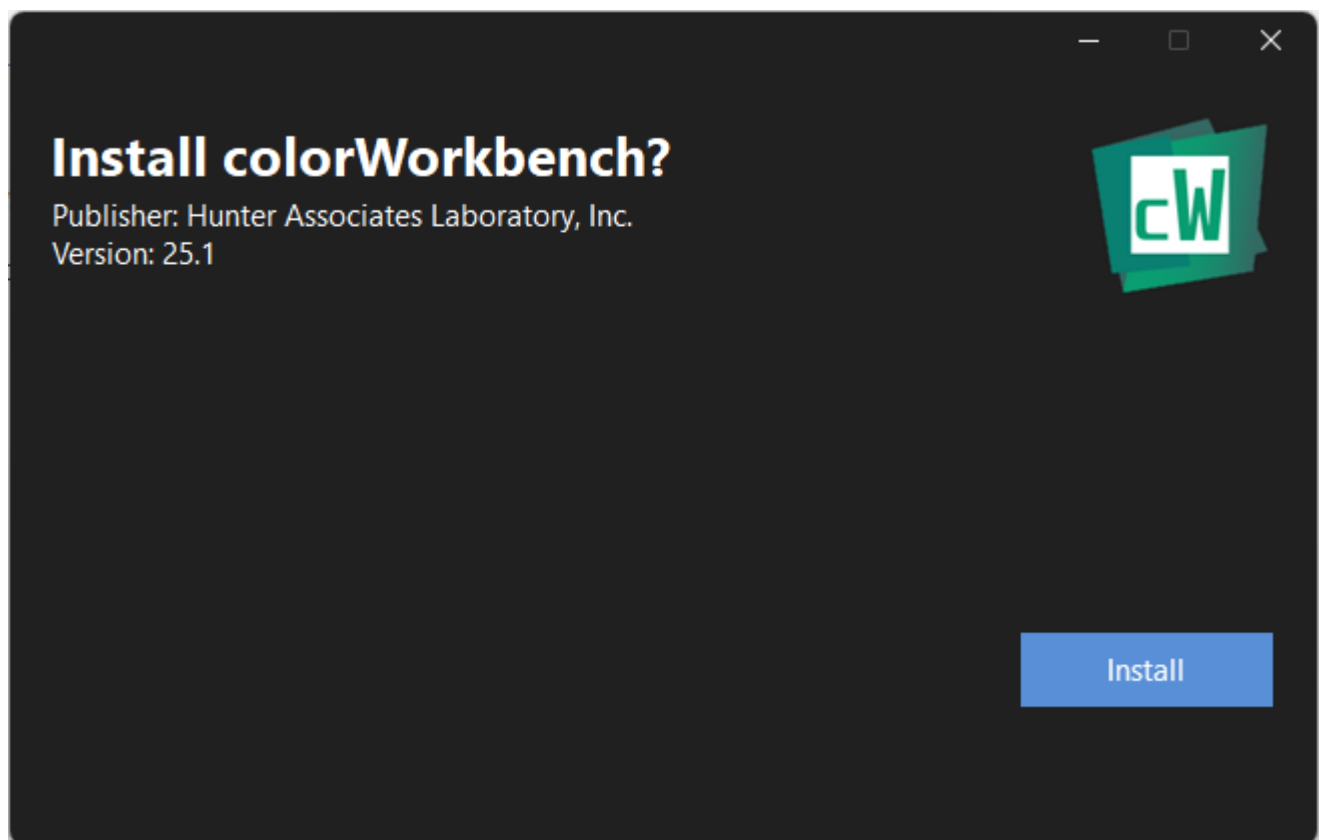
Installation on a Windows Terminal Server or in a virtual machine is neither supported nor tested.

Installation

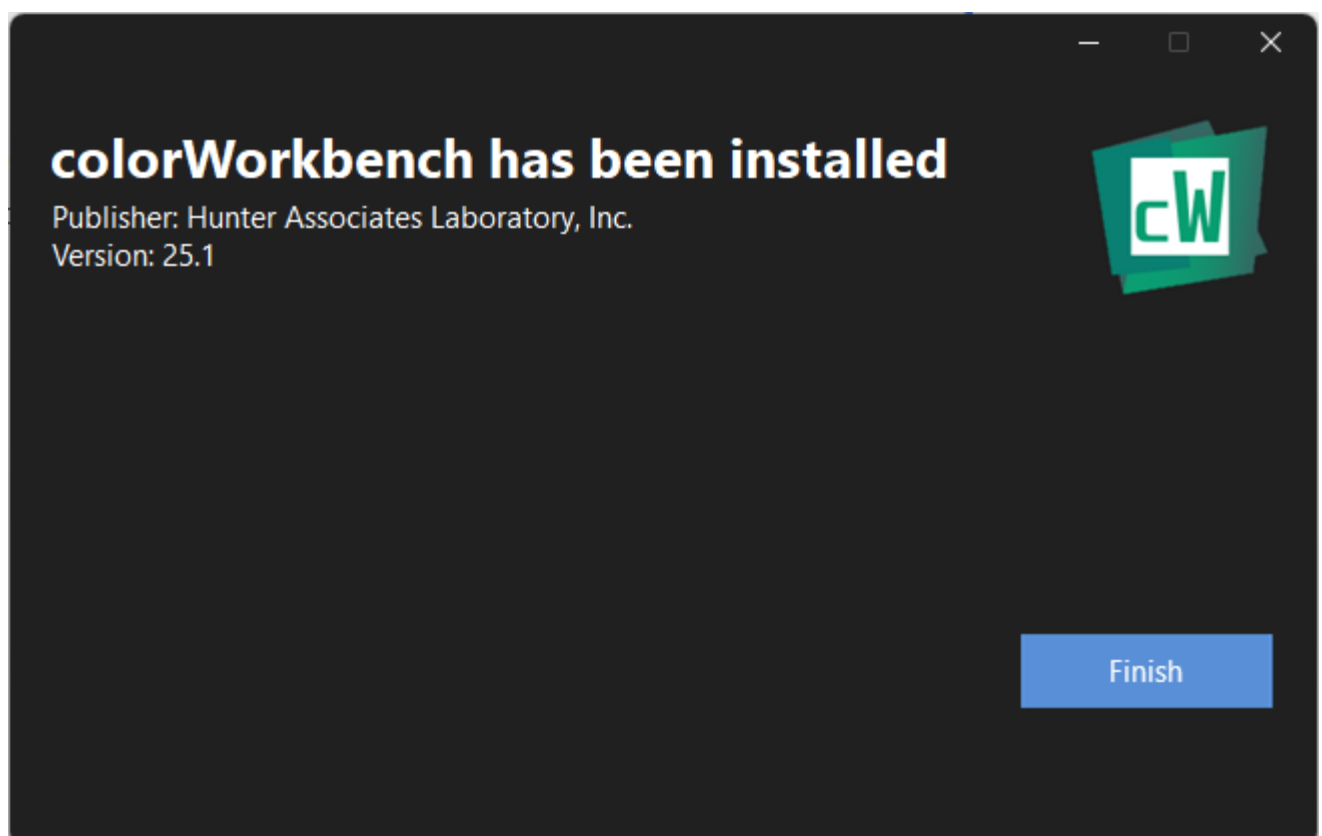
Open the installer by double click Then, click **Yes**:



Then proceed by clicking **Install**.



When installation is completed click ***Finish***

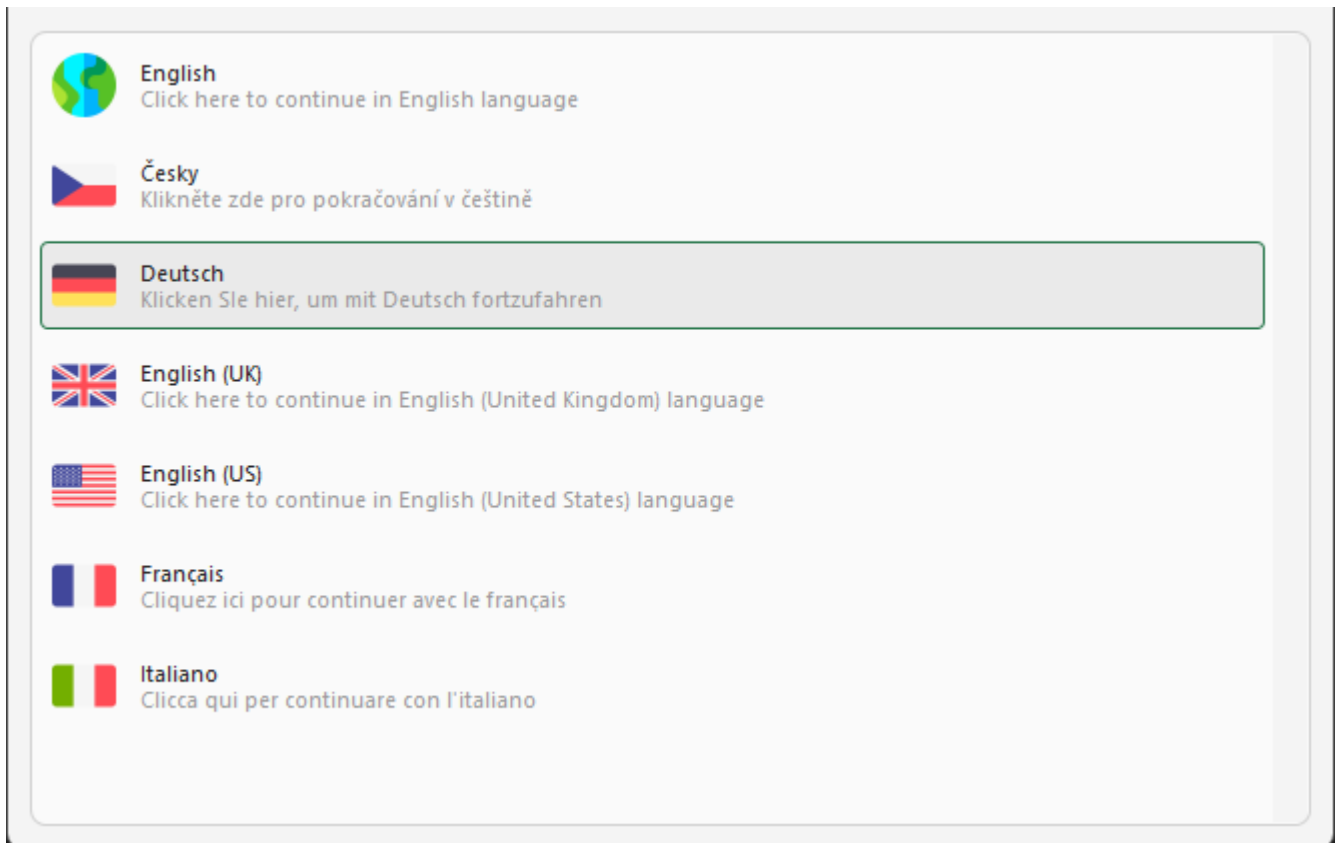


The ***colorWorkbench*** icon appears on your desktop.



Double click to open and do the first settings:

In the first window select your language.



In the next window the license file is demanded.

If you don't have a license, you can continue and will have limited functions of the software.

 Load license

License info

Customer	HunterLab
Support	Hunter Associates Laboratory, Inc.
Mail	support@hunterlab.com
Phone	703.471.6870
License type	Customer license
Valid for version	Version 50.x or older

Next

- You can continue with the Demo License and leading to a 30 day trial.
- Click on **Load license** to open the file structure of your computer.
- Browse to the license file and activate it by **double click**.
- Then your **license information** will be displayed:

 Load license

License info

Customer	HLE universal cL cW mV V50 (3 Seats)
Support	Hunterlab Europe GmbH
Mail	support@hunterlab.de
Phone	+49 (0) 8841 9464
License type	Customer license
Valid for version	Version 50.x or older

Next

The first line should show your company name.

Then you can set your **data connection**. There are several options:

The screenshot shows a software interface for setting up a database connection. At the top, there are three tabs: 'New database' (active), 'Test connection', and 'Database information'. Below the tabs, the 'Scenario, database type and connection' section has a 'Type' dropdown menu currently set to 'SQLite'. Underneath, the 'Database for measurements' section contains two input fields: 'Database' with the path 'C:\Hunterlab\colorWorkbench\Database\CWData.db' and 'Password' with a placeholder text 'Please enter a password'. A 'Next' button is located at the bottom right of the dialog.

SQLite

colorWorkbench uses SQLite for data storage by default. This means, you don't have to install any database server and you can start measuring very fast.

Although SQLite is easier to use and doesn't require any additional resources, there are some software functions you can't use:

- Share settings between multiple systems
- The use of multiView is not possible

If you are using SQLite as data storage, the default database is stored in this path:

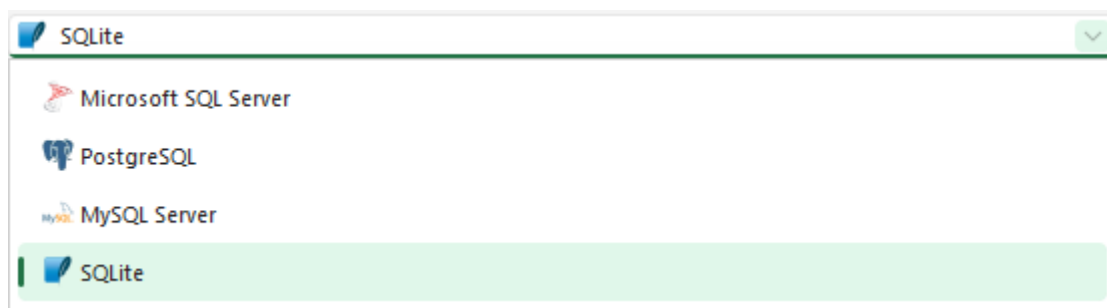
C:\Hunterlab Europe\colorWorkbench\Database

The default database has no password set. Due to limitation in SQLite, you can't add a password later, only at database creation.

Microsoft SQL Server, Postgre SQL or My SQL Server

However, in some cases, the database will not be the best solution for you.

Depending on your needs, you might want to choose Microsoft SQL Server, Postgre SQL or My SQL Server as your preferred database system. Please select from the drop down menu:

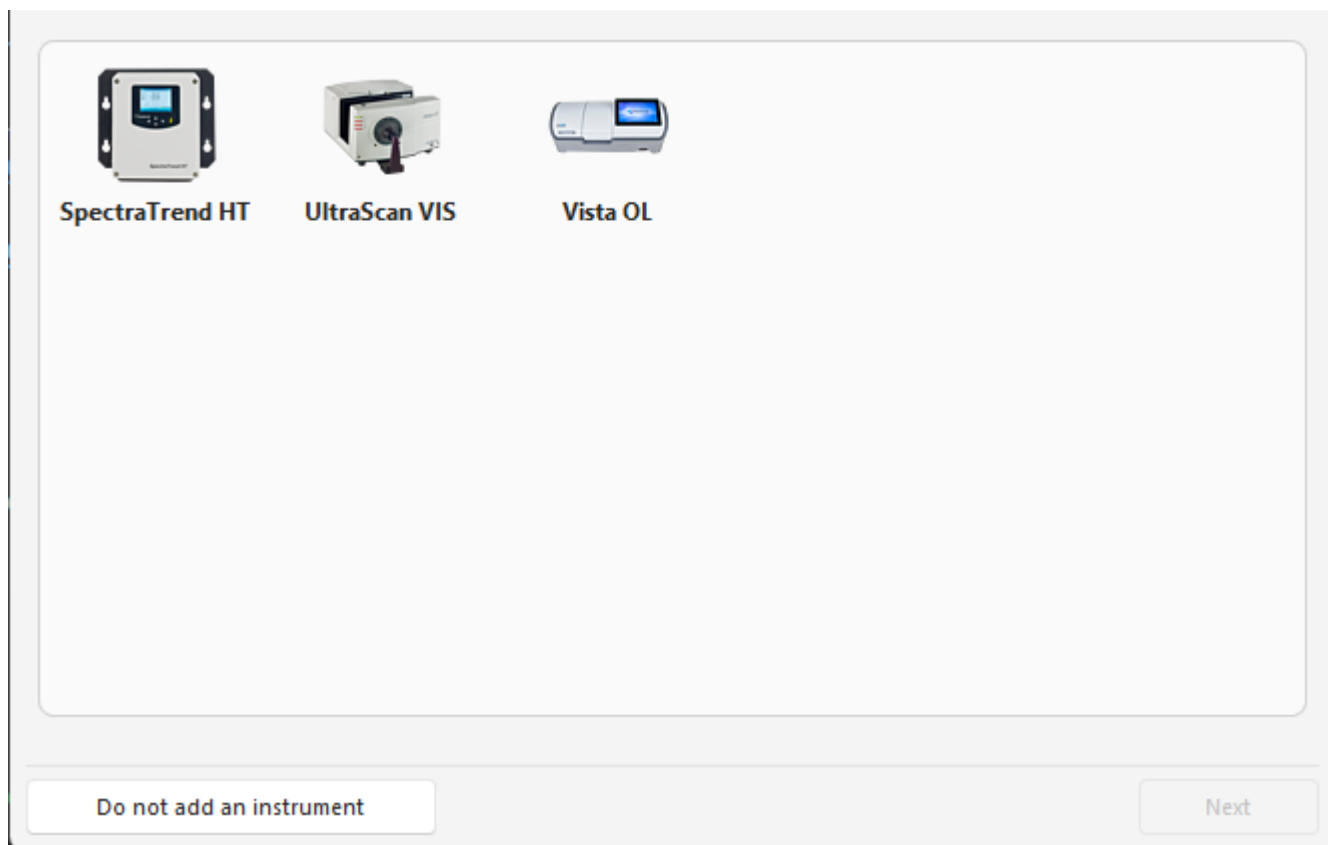


Your IT Administrator can enter the needed information and credentials:

With Microsoft SQL Server the internal security settings can be used by checking the according box.

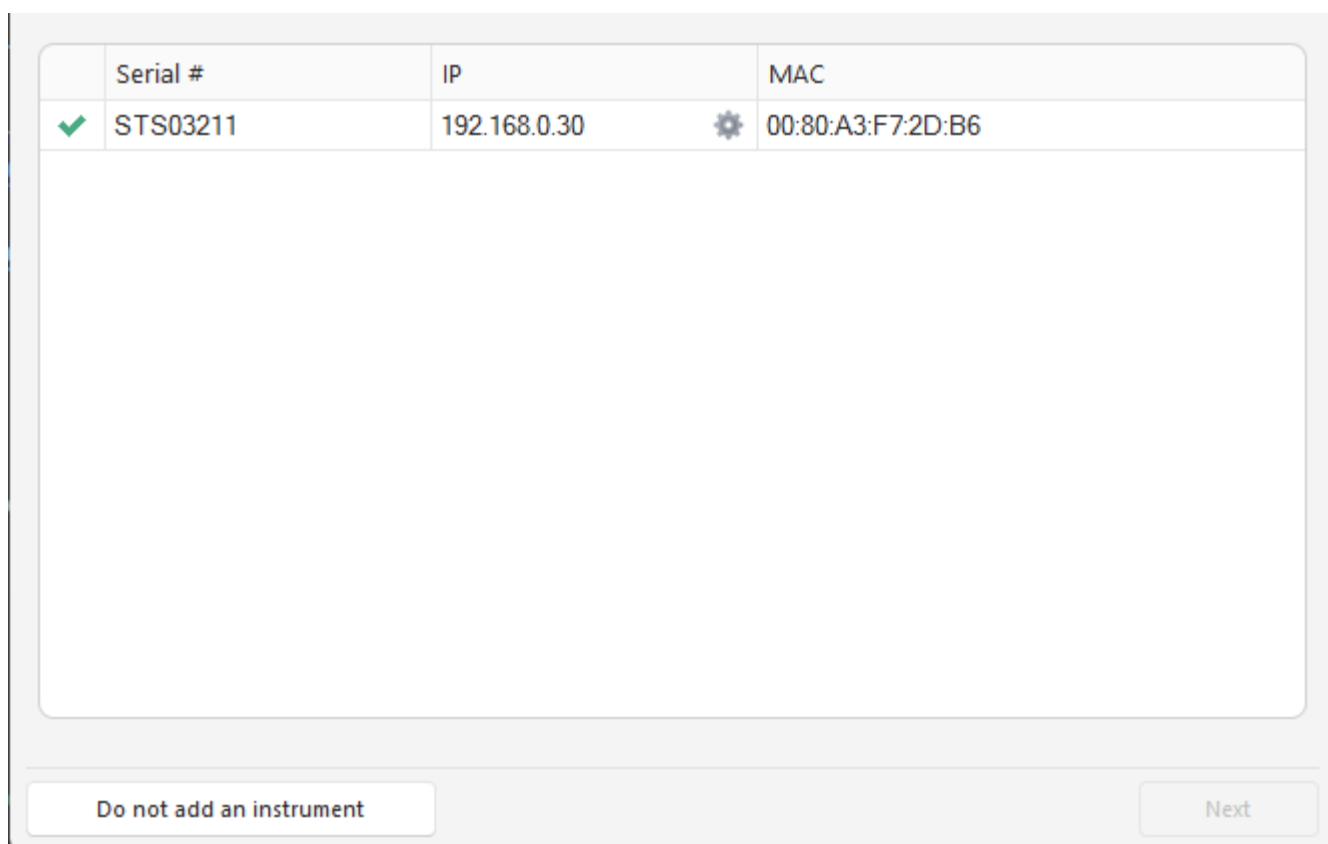
Finally click on **done** to save the settings.

Several HunterLab instrument types are displayed. Select your device by **double click**:



When adding a SpectraTrend HT, the software tries to locate all instruments in your local network. If no instrument is found, **please use the Lantronix DeviceInstaller** to search for your instrument in the network.

A **list of** all instruments of this type available in the network will be shown:



Select the instrument by **double click**.

Information about the selected instrument will be displayed:

Instrument	SpectraTrend HT
Geometry	0°/30° Geometry
Serial #	STS03211
Spectral range	400nm - 700nm
Resolution	10nm
Connection	Ethernet (192.168.0.30)



Available tests	Green test, EasyCal Tile Test
Available modes	Reflectance

Do not add an instrument

Next

Click on next to get a **summary** of the settings:

Database for measurements	
Type	SQLite
Database	C:\Hunterlab\colorWorkbench\Database\CWData.db
Instrument	
Instrument	SpectraTrend HT (Interface: 192.168.0.30)
Serial #	STS03211

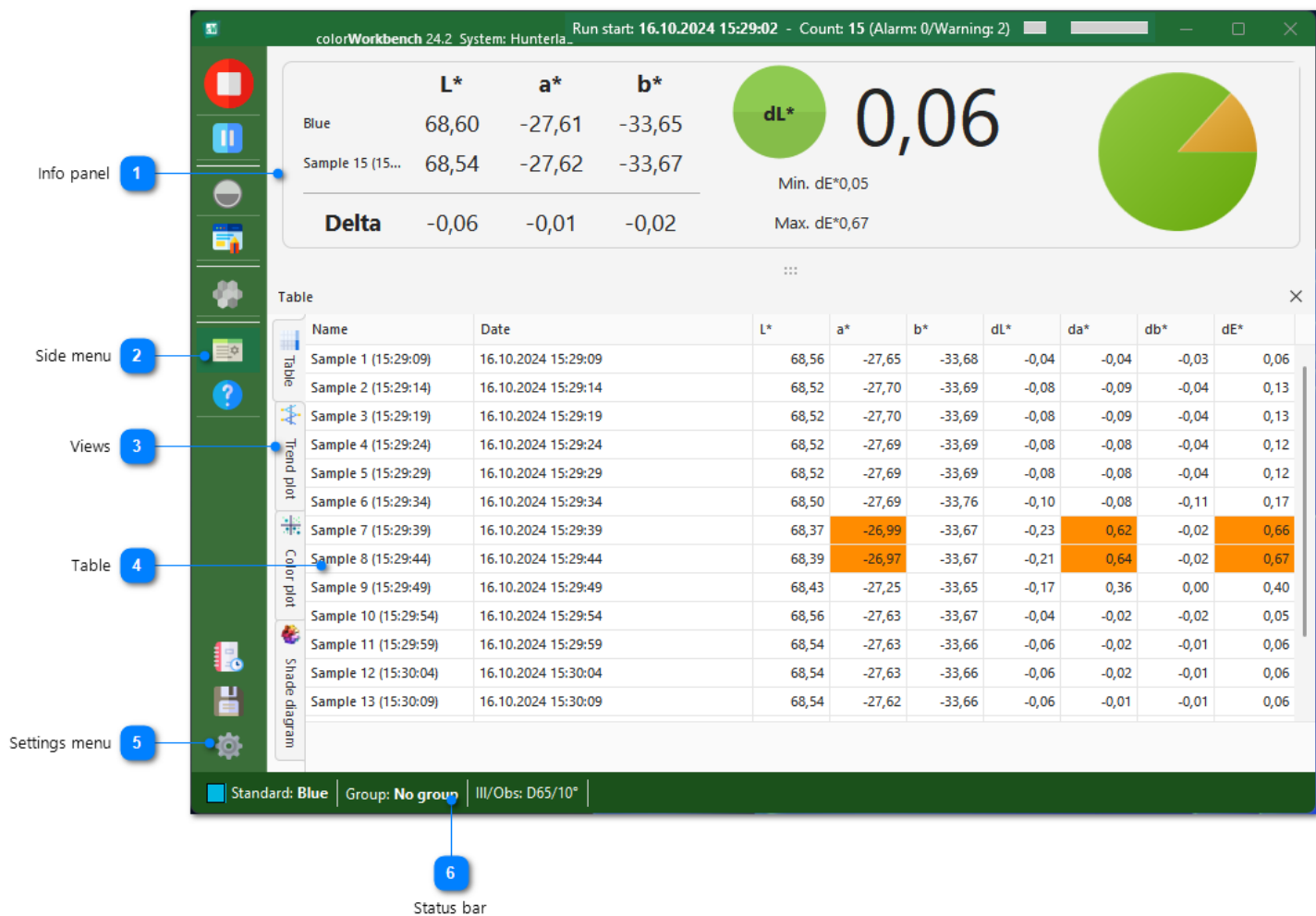
Save & Close

If you have multiple instruments, you can add further sensors in the software at the [device settings](#).

After clicking **Save and Close**, the installation is finished and the software surface opens to start measurements.

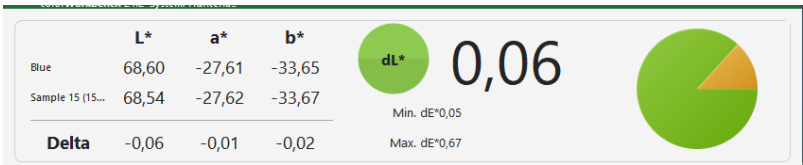
4. Application layout

The application has 5 main parts:



1 Info panel

Info panel with last measurement and some statistics



2 Side menu

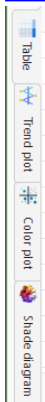
The [main menu](#)



3

Views

Tabs for selection of views. Table, Color plot and Trend plot can be selected or arranged. [See customizing](#)



4

Table

Selected view is here the color data table

Name	Date	L*	a*	b*	dL*	da*	db*	dE*
Sample 1 (15:29:09)	16.10.2024 15:29:09	68,56	-27,65	-33,68	-0,04	-0,04	-0,03	0,06
Sample 2 (15:29:14)	16.10.2024 15:29:14	68,52	-27,70	-33,69	-0,08	-0,09	-0,04	0,13
Sample 3 (15:29:19)	16.10.2024 15:29:19	68,52	-27,70	-33,69	-0,08	-0,09	-0,04	0,13
Sample 4 (15:29:24)	16.10.2024 15:29:24	68,52	-27,69	-33,69	-0,08	-0,08	-0,04	0,12
Sample 5 (15:29:29)	16.10.2024 15:29:29	68,52	-27,69	-33,69	-0,08	-0,08	-0,04	0,12
Sample 6 (15:29:34)	16.10.2024 15:29:34	68,50	-27,69	-33,76	-0,10	-0,08	-0,11	0,17
Sample 7 (15:29:39)	16.10.2024 15:29:39	68,37	-26,99	-33,67	-0,23	0,62	-0,02	0,66
Sample 8 (15:29:44)	16.10.2024 15:29:44	68,39	-26,97	-33,67	-0,21	0,64	-0,02	0,67
Sample 9 (15:29:49)	16.10.2024 15:29:49	68,43	-27,25	-33,65	-0,17	0,36	0,00	0,40
Sample 10 (15:29:54)	16.10.2024 15:29:54	68,56	-27,63	-33,67	-0,04	-0,02	-0,02	0,05
Sample 11 (15:29:59)	16.10.2024 15:29:59	68,54	-27,63	-33,66	-0,06	-0,02	-0,01	0,06
Sample 12 (15:30:04)	16.10.2024 15:30:04	68,54	-27,63	-33,66	-0,06	-0,02	-0,01	0,06
Sample 13 (15:30:09)	16.10.2024 15:30:09	68,54	-27,62	-33,66	-0,06	-0,01	-0,01	0,06

5

Settings menu

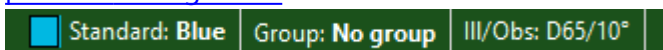
Opens the [general settings](#) pop-up menu.



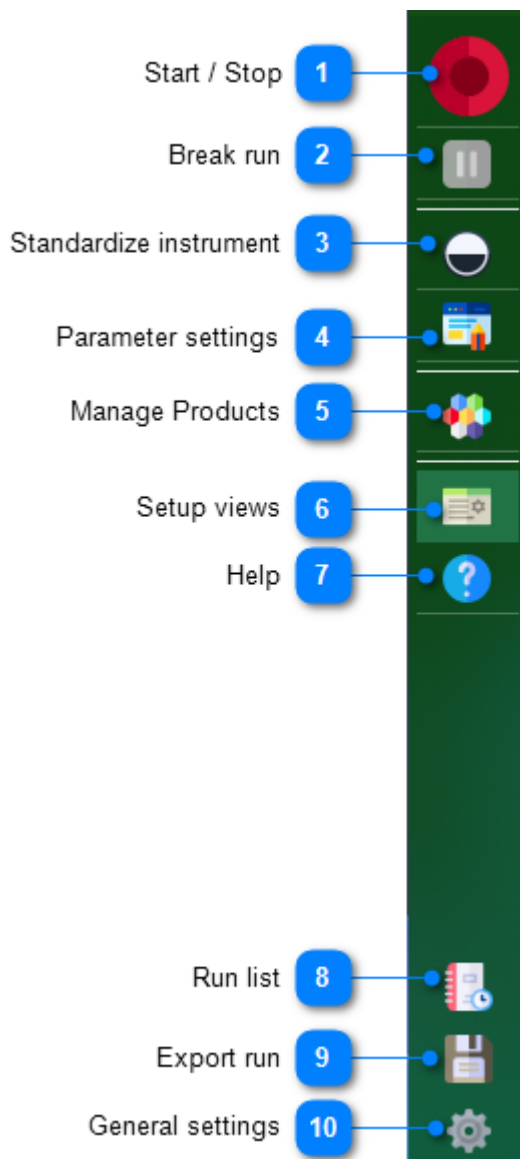
6

Status bar

The status bar displays information about the selected product. These properties can be set an the [product management](#).



4.1. Side menu



1 Start / Stop

[Starts or stops a run.](#)



<-- will change to -->



2 Break run

Breaks a run - you can restart it by clicking on Start again.



3 Standardize instrument

[Standardizes the instrument](#)(s). The software will prompt for instrument standards to be measured. The readings can either be done by the software or directly at the sensor. This allows the instrument to deliver stable values over a very long period.



4 Parameter settings

Set [Parameters](#) **during the run**. Status, names, IDs and extra fields can be set at the start of a run but can be changed during the run here.



5 Manage Products

Opens the window to [add and edit products](#).



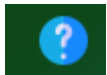
6 Setup views

[Customize views](#) of table, trend plot, color plot, info panel and Shade diagram.



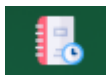
7 Help

If you are reading this, you already found out.



8 Run list

Opens a [list of all runs](#) to select a run for display of all data.



9 Export run

[Saves the table of the actual run](#) (data up to the moment of export) as a file. The file format can be chosen as Excel, PDF or CSV.



10 General settings

Opens the [General settings](#) window for software and instrument



4.2. Status bar

The status bar at the bottom of the screen displays information about the selected standard and some basic measurement settings.

Status bar:



1 Standard info

Displays the name of the selected standard and a color preview

 Standard: Blue

2

Product Group

The group the product is assigned to. A group can be edited in the [general settings](#) and a product can be assigned to the group at the .

Group: Favourites

3

Illuminant

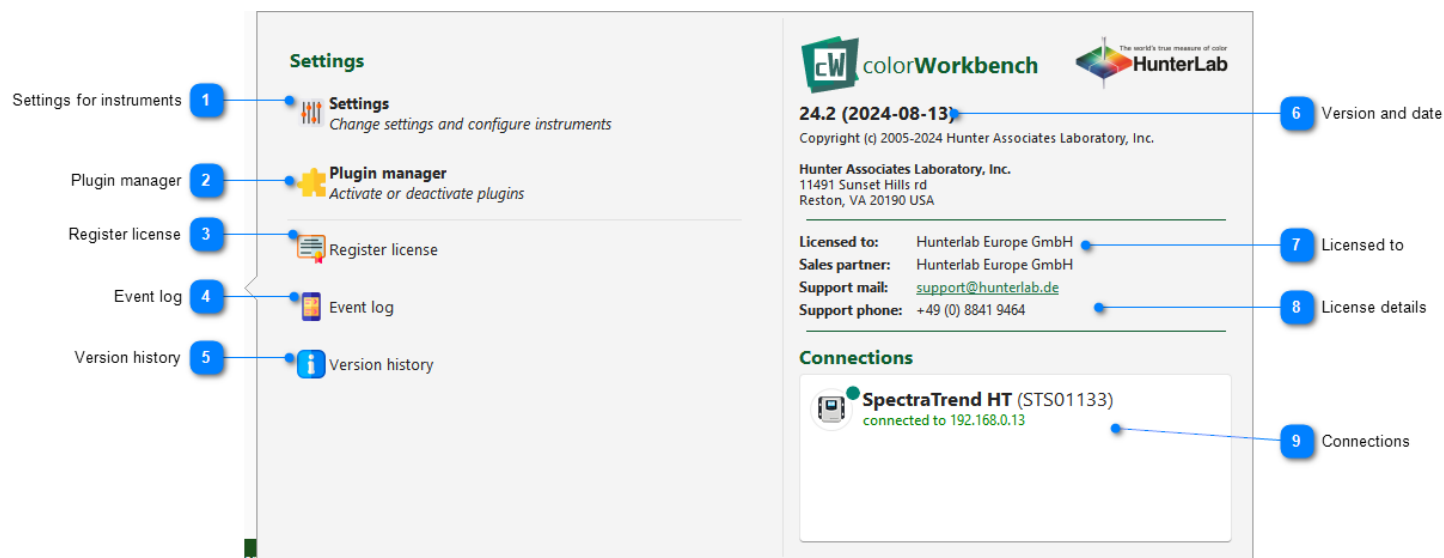
The selected illuminant/observer combination. This can be set in the [Start settings](#)

Ill/Obs: D65/10°

5. General settings

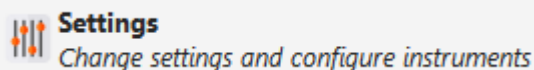
Navigation: *Side menu* > 

By the cog wheel at the bottom of the the side menu you reach the **Settings window**:



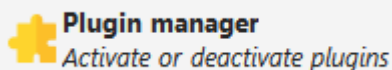
1 Settings for instruments

Opens window for general settings for the connection and configuration of instruments and software



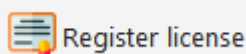
2 Plugin manager

Activation of plugins by drag and drop



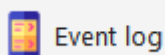
3 Register license

Opens window to activate license file to change from demo version to full functionality



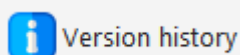
4 Event log

Select by tabs: Display of **Events** (Errors) and **Green check tests** done so far. Including option to export the list as Excel or PDF file.



5 Version history

Displays version info and the software update history. Opens a window with a list of newly resolved issues by this version



6 Version and date

Number and date of release of the actual installed version of colorWorkbench

7

Licensed to

Name of the customer - your company should be displayed here

8

License details

Name, support mail and phone of your local sales partner

9

Connections

Displays active instruments, and further software or modules by corresponding icons

5.1. License management

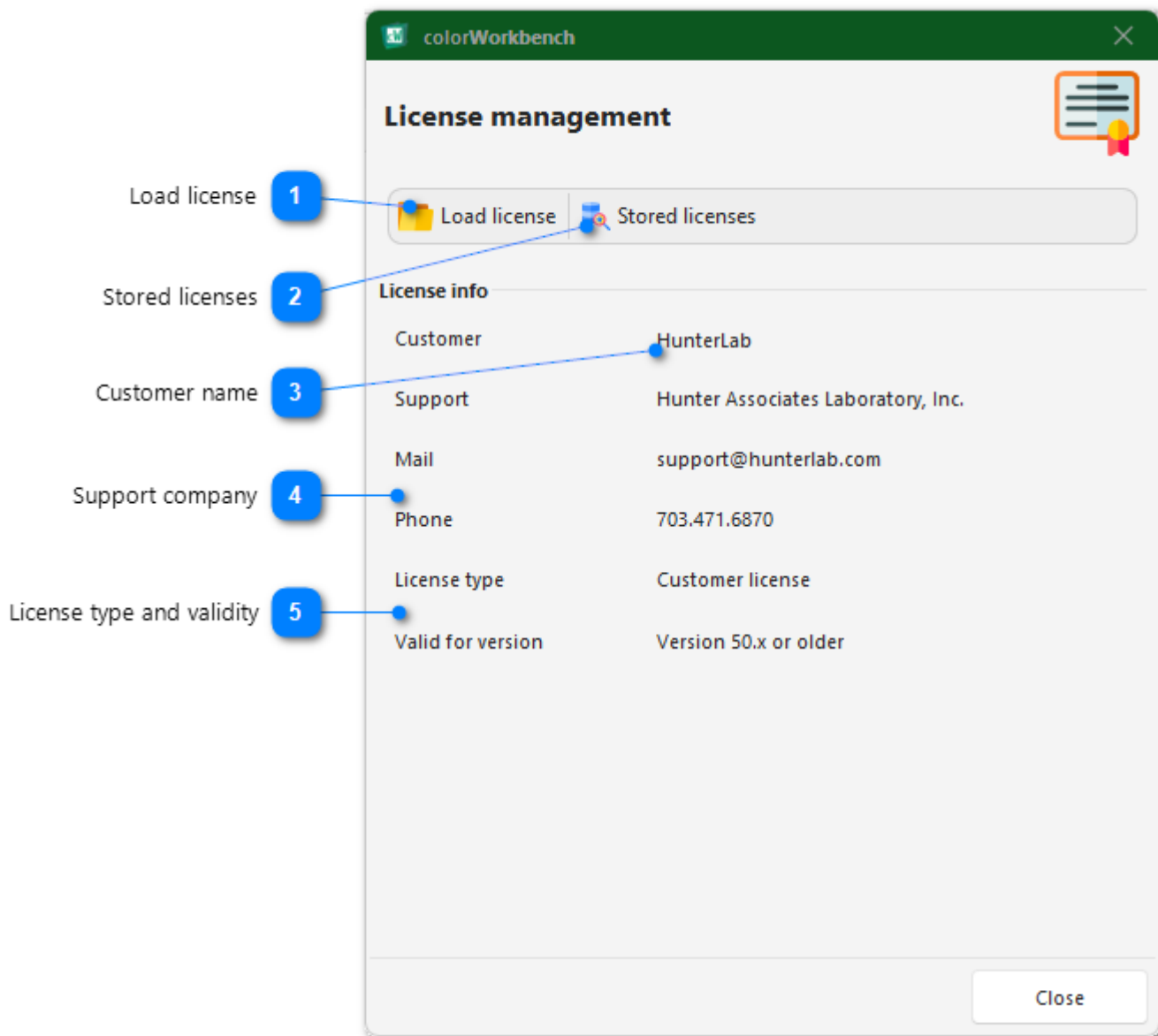
Navigation: Side menu >  >  Register license (only active, if logged in or no password set)

The license management window can be opened in the settings menu after you have logged in:

If no license is read in, colorWorkbench is in a demo mode of 30 days unique usage.

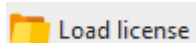
After that period, a license file is needed in order to use the software.

A license is restricted to instruments by serial numbers.



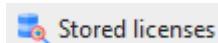
1 Load license

Opens a file dialog. Select your license file, that was provided with your installation package. Subsequently your license information will be displayed. A license is also stored in the database. If you change the license later, you can reload an older one.



2 Stored licenses

Load a previously stored license from the database



3 Customer name

The name of the customer. This should be your company name

4 Support company

Name, mail and phone of your local sales partner

5 License type and validity

Shows information about license type (e.g. Customer or Distributor license) and the version. A license file will always work with older versions, but not with newer versions. If you have a license file for version 25.x, this file will also work for versions 24.x and older, but not for version 26.x

5.2. Plugins

Navigation: Side menu >  >  **Plugin manager** *Activate or deactivate plugins* *(only active, if logged in)*

Plugins can extend the functionality of colorWorkbench.

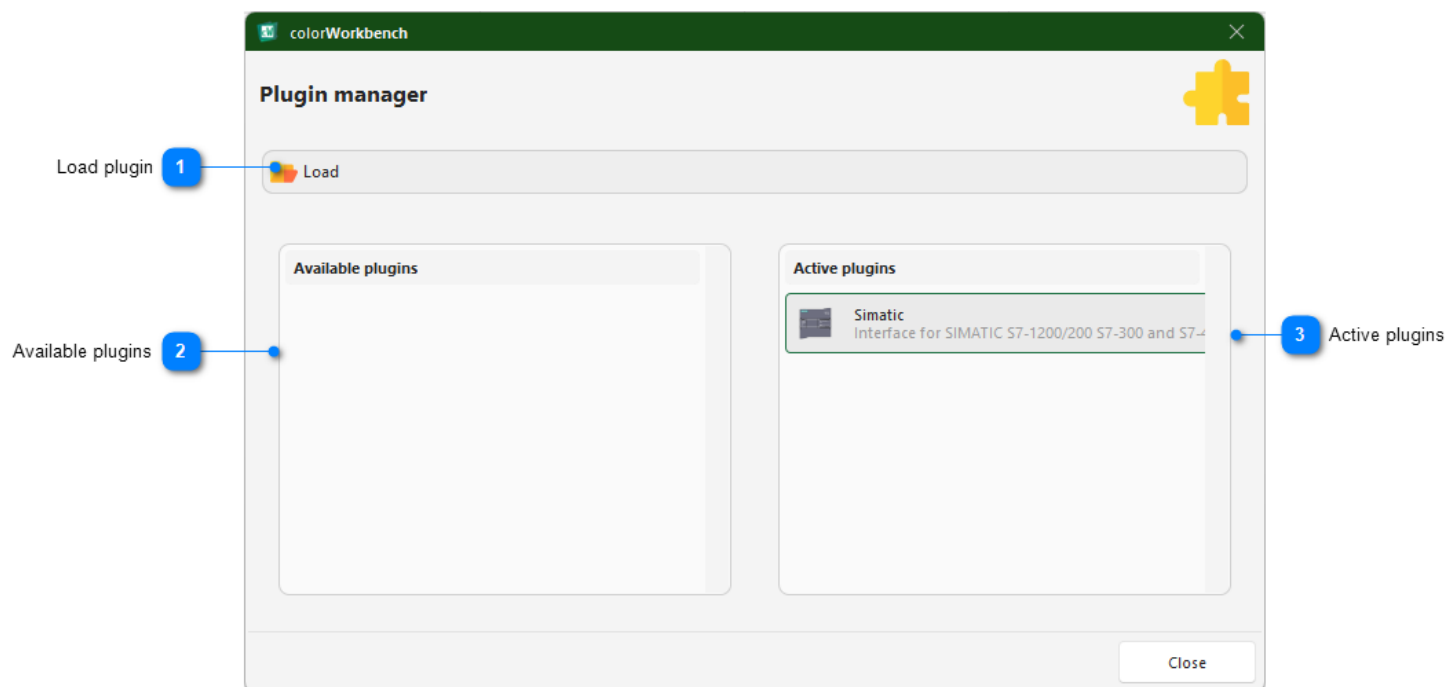
There are plugins available for

- Gloss measurement
- Opacity measurement
- IR temperature measurement
- Distance measurement
- Simatic-S7 PLC communication
- Storing calculated values in the database

For more information, ask your local sales partner!

Plugin management

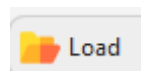
You can drag and drop plugins from one list to the other activate or deactivate them:



1

Load plugin

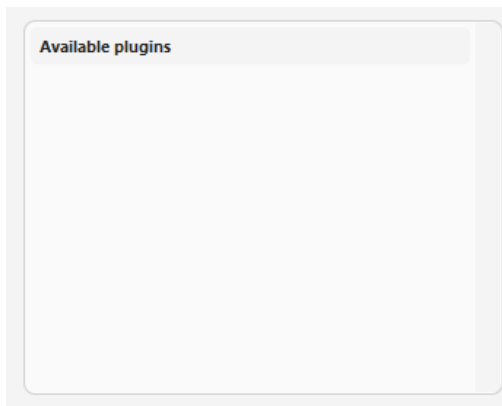
Load a new plugin by a zip-file you got with the respective device



2

Available plugins

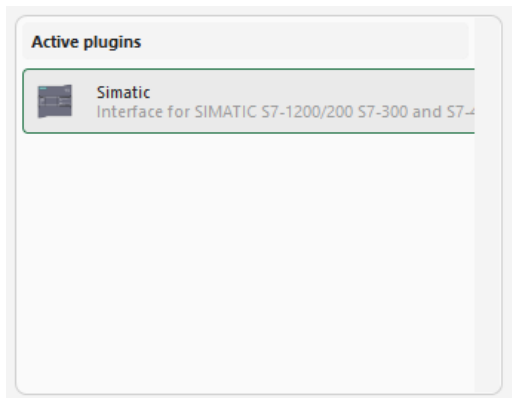
All available plugins stored in the folder **C:\Hunterlab\colorWorkbench\Plugins\Inactive**



3

Active plugins

Active plugins list. Active plugins are located in the folder
C:\Hunterlab\colorWorkbench\Plugins



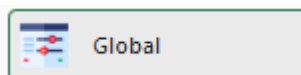
5.3. Settings

Navigation: *Side menu* >  >  **Settings** *(active, if logged in or no password set)*

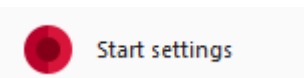
In the left column you find:



- Global**
[Global settings](#) for language, local system, login, standardization reminder and debug logs.



- Start settings**
[Start settings](#) for illuminant, observer, color scale, differences, name templates, etc. including list of wild-cards



- Data connection**
All [database settings](#)



- Field names**
Optional [customization of fields](#) in the color data table including names formulas and barcode settings



5

Formulas

Option to create and insert [formulas](#) to be calculated by measured values.



Formulas

6

Reports/Exports

Settings to automatically create and save [reports and export](#) files after each run



Reports/Export

7

Groups/Status

Edition and display of [standard groups](#) and states



Groups/Status

8

IO System

Settings for an external [IO system](#)



IO System

9

Temperature

[Connection of thermometer](#) via COM port



Temperature

10

OPC Client

Write description here...



OPC Client

11

Device Settings

[Connect instruments](#) and define instrument settings here



Device settings

12

Permissions

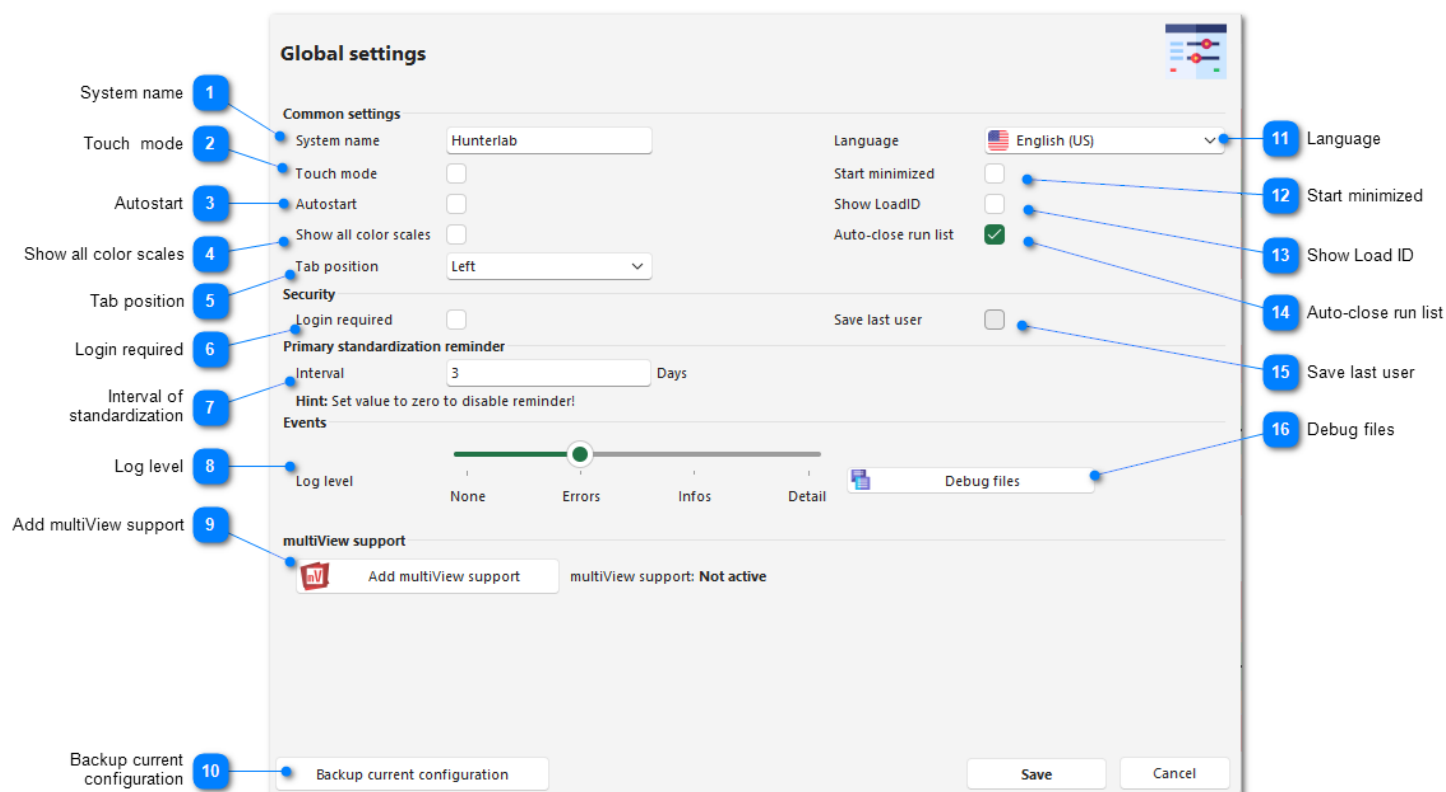
There are three basic settings for permissions:

- 1) If nothing is set here, all users have all permissions.
- 2) Set a password for admin, and edit [permissions for normal users](#) below. Then only the administrator can log in to change the settings and other functions are partly restricted for other users.
- 3) When "Login required" is activated at [Global settings](#) the display on the right side of the window changes to [user group management](#).



Permissions

5.3.1. Global settings



1 System name

Enter the name of your system/working station - important for use of multiView support

System name Hunterlab

2 Touch mode

Enables touch mode if available for your screen

Touch mode ☐

3 Autostart

Will start colorWorkbench at booting your computer

Autostart ☐

4 Show all color scales

If not selected, only the scale, chosen at [Start settings](#) is available for the color data table. If selected, all common scales are selectable to customize the color data table.

Show all color scales ☐

5 Tab position

Select, where the tabs for the views are to be positioned

Tab position Left

6 Login required

Demands Windows user login at launching of colorWorkbench as set in [User group management](#).

Do not enable, if no permissions are set - no access possible then

Login required ☐

7

Interval of standardization

Sets interval for standardization reminder - disabled, if set to zero. Default for STHT is 7 days

Interval Days

8

Log level

Details of log level, according to the selected level

Log level

None
Errors
Infos
Detail

9

Add multiView support

Only visible if no SQLite installation is selected. Activate **multiView** support to be able to open measurement runs and live data of this colorWorkbench installation in multiView



Add multiView support

multiView support: **Not active**

10

Backup current configuration

Click to create a backup of the current configuration. Will be suggested to be restored during opening the software in case of deletion or damage of configuration

Backup current configuration

11

Language

Choose your working language

Language

English (US)
▼

12

Start minimized

If enabled, the software will not show a window at startup, but displays a symbol in the task bar

Start minimized ☐

13

Show Load ID

If you have a traditionally defined ID for a certain standard, you can assign it at [Product management/Extra fields](#). If this box is checked, this ID will automatically be shown when a run is started

Show LoadID ☐

14

Auto-close run list

If enabled, the run list will be automatically closed, when a run is selected for export or view. Leave this option unchecked to keep the list opened

Auto-close run list ☒

15

Save last user

If enabled, the last logged in user is shown in the login window at next startup. This is only applicable, when *login required* on the left side is active

Save last user ☐

16

Debug files

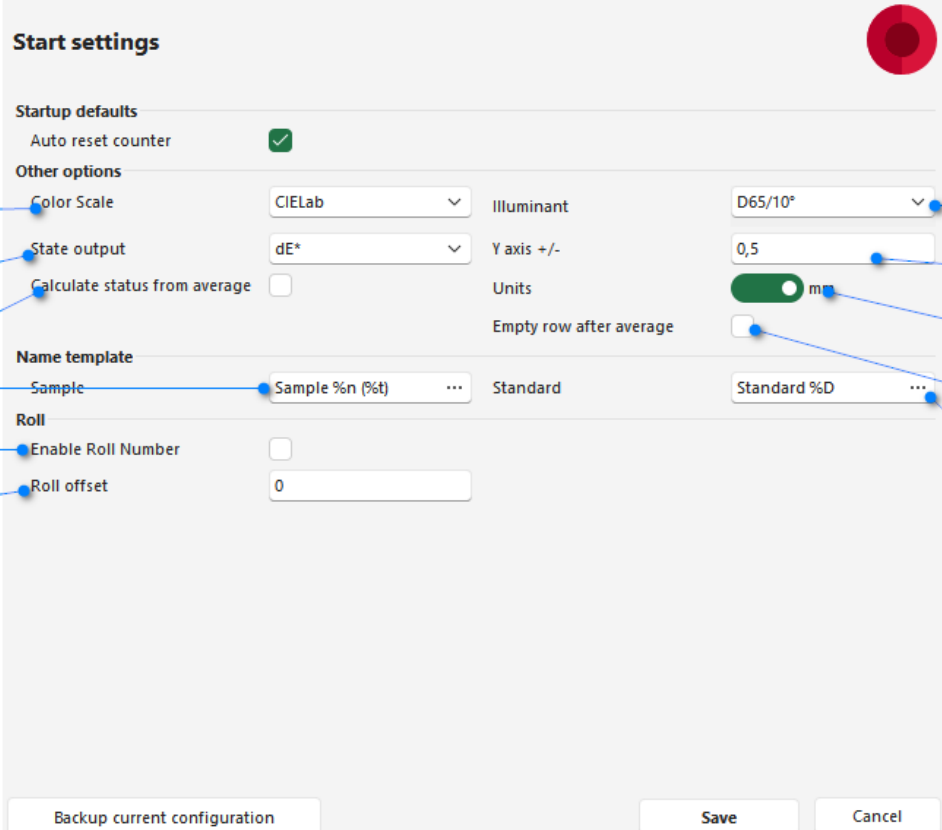
Displays the debug files referring to the *log level*, set on the left. If "None" is chosen, obviously no log files are displayed

5.3.2. Start settings

Navigation: Side menu >  >

 Settings >

 Start settings



Start settings

Startup defaults

Auto reset counter ☒

Other options

Color Scale **1** Color Scale CIELab Illuminant **7** Illuminant D65/10°

State output **2** State output dE* Y axis +/- **8** Y axis +/- 0,5

Average **3** Calculate status from average ☐ Units **9** Units mm

Sample name **4** Name template Sample %n (%t) Standard **10** Empty row after average ☐ Standard name **11** Standard name Standard %D

Enable Roll Number **5** Enable Roll Number ☐

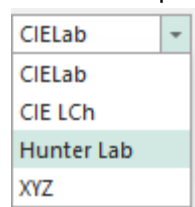
Roll offset **6** Roll offset 0

Buttons: Backup current configuration, Save, Cancel

1

Color Scale

Select a preferred color scale to be used for entering and displaying standard values in various windows/reports



CIE Lab
CIE LCh
Hunter Lab
XYZ

2

State output

Set the value on which the calculation for OK/warn/alarm is done. The entry $dL^*/da^*/db^*$ means that the warning/alarm is active if only one value of the three exceeds the [tolerances](#), that are set for a standard. If a [stack light](#) is connected to the SpectraTrend, the warning/alarm corresponds to the current value set here, that is also shown on the instrument's display.

If you want to refer to single values by separate stack lights, you need a [Adam-5000](#) device.

3

Average

If several instruments are connected, the status for the stack light will be calculated by the average value of all instruments.

Calculate status from average ☐

4

Sample name

Definition of automatically created sample name in the color data table. You can use [wild-cards](#) to create sample names

Sample %n (%t) ...

5

Enable Roll Number

Write description here...

Enable Roll Number ☐

6

Roll offset

Write description here...

Roll offset

7

Illuminant

Sets the system's default illuminant and observer

Illuminant

8

Y axis +/-

Setting for the **trend plot**: value to be added to max/min tolerance for y-axis in trend plot. For example set to 1,0 with a standard value of 16 and a tolerance of +/- 3,0 will show y-axis from 12 to 20.

Y axis +/-

9

Units

Set your longitudinal scale to mm or inch

Units ☒ mm

10

Empty row after average

If multiple sensors are connected, an empty row will be shown in the color data table after display of the average values.

Empty row after average ☐

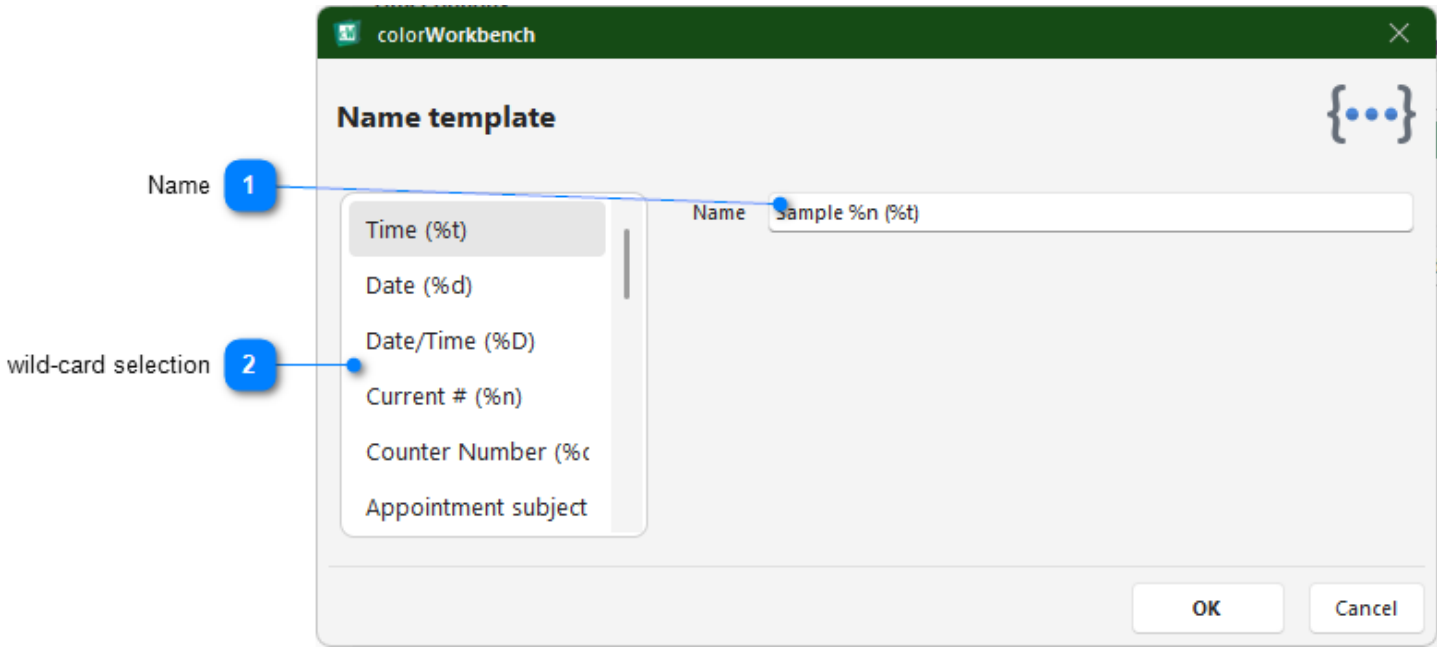
11

Standard name

Definition of automatically created standard name in the color data table. Optionally you can include [wild-cards](#).

Wild-cards

by clicking on the three dots in the sample/standard input boxes, a new windows is opened:



- 1

Name

The name template. You can enter fixed text (like "Sample") in combination with any wild-card(s)

Sample %n (%t)
- 2

wild-card selection

Add a wild-card by double-clicking on its entry in the list. The wild-card will be added at the end of the name template. If you need any whitespaces, you have to add them manually

Time (%t)

Date (%d)

Date/Time (%D)

Current # (%n)

Counter Number (%c)

Appointment subject

5.3.3. Database settings

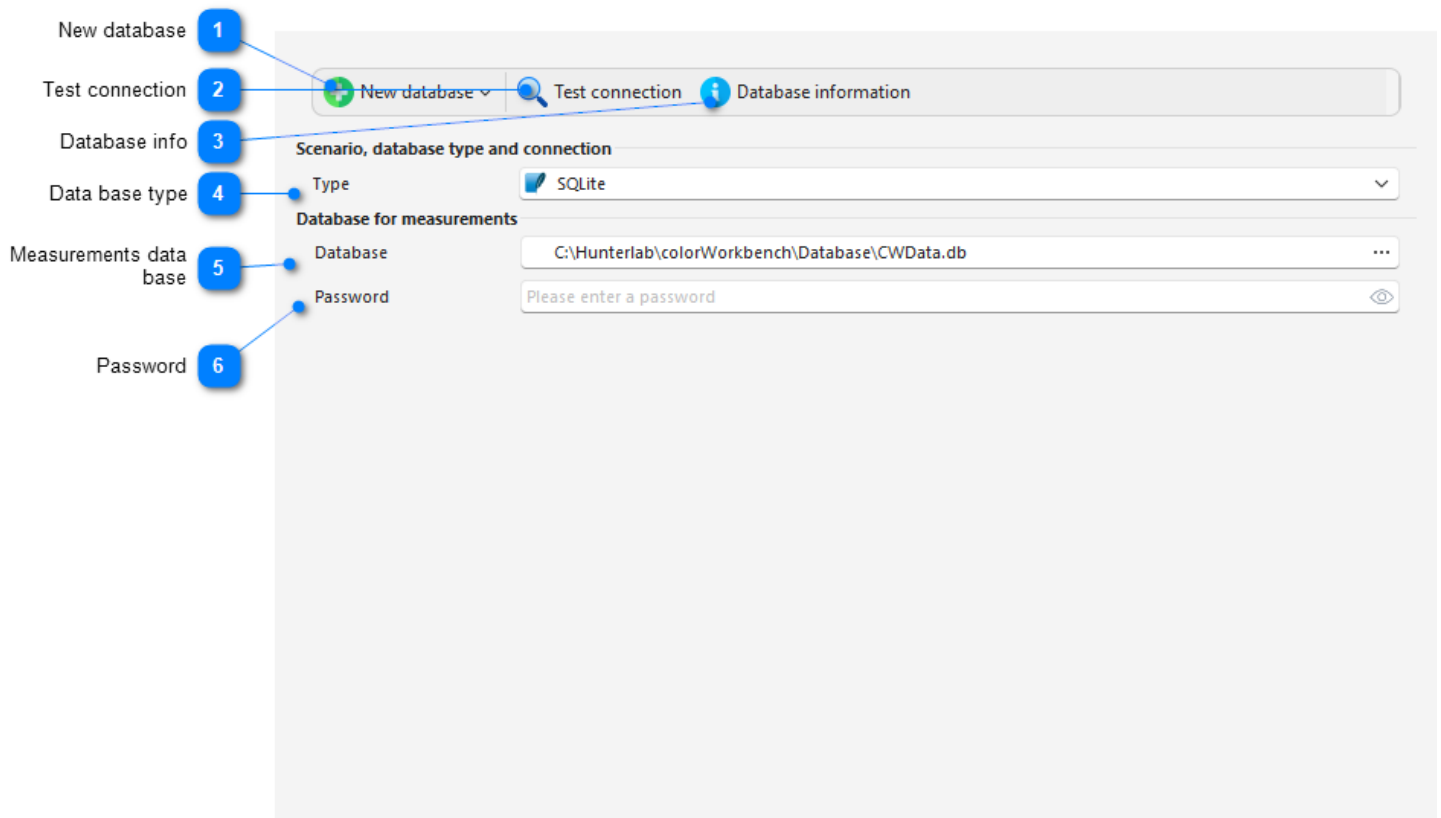
Navigation: Side menu >  >  Settings >  Data connection

[See here](#) for a display of scenarios with standalone or shared databases.

Two settings are displayed here:

- [SQLite Server](#) for a local database
- [Microsoft SQL Server](#) for shared databases (PostgreSQL and MySQL Server are similar)

SQLite Server (default setting)

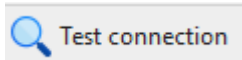


1 New database

Opens the file structure to select a path, and creates a new database there

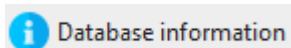
2 Test connection

After having entered your credentials and the server name you should test if the connection is working



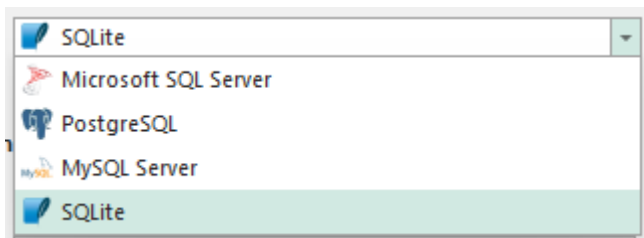
3 Database info

Show information about the selected database



4 Data base type

Select your server type from the drop down menu. The window changes e.g. for a [Microsoft SQL Server](#).



5 Measurements data base

Display of the selected data base for your measurements. This path is set as default.

6

Password

Only active with a shared database. Adds the system to the shared database. This is needed when multiple systems are used with multiView. The current support state is also displayed

Password

Please enter a password

Microsoft SQL Server with shared settings (similar for PostgreSQL and MySQL Server)

The screenshot shows the 'Scenario, database type and connection' window. It has two main sections: 'Database for measurements' and 'Shared database'. The 'Database for measurements' section includes fields for 'Servername', 'Database', 'Username', and 'Password', along with a checkbox for 'Int. security'. The 'Shared database' section includes a checkbox for 'Use different SQL Server', and fields for 'Servername', 'Database', 'Username', and 'Password', along with a checkbox for 'Int. security'. Numbered callouts point to the following elements:

- 1: Scenario (toggle switch)
- 2: Database type (dropdown menu)
- 3: Server name (text input)
- 4: Integrated security (measurements DB) (checkbox)
- 5: Username (measurements DB) (text input)
- 6: Different SQL Server for shared database (checkbox)
- 7: Server name (shared DB) (text input)
- 8: Integrated security (shared DB) (checkbox)
- 9: Username (shared DB) (text input)
- 10: Database for measurements (dropdown menu)
- 11: Password (measurements DB) (password input)
- 12: Shared database name (dropdown menu)
- 13: Password (shared DB) (password input)

1

Scenario

Select between Standalone and network installation with shared settings

Scenario

Network installation with shared settings

2

Database type

Select your server type from the drop-down menu. The window changes e.g. for a [SQLite](#) Database.

The screenshot shows a dropdown menu for selecting the database type. The options are: SQLite, Microsoft SQL Server, PostgreSQL, MySQL Server, and SQLite. The 'SQLite' option is currently selected.

3

Server name

Enter the server name and (if necessary) the instance name

Servername

Please enter a server name

4

Integrated security (measurements DB)

Only available for Microsoft SQL Server. Select, if integrated security is used (login with your windows credentials)

Int. security

☐

5

Username (measurements DB)

Enter the SQL user name for this colorWorkbench installation here to log onto the selected database.

Username

Please enter a username

6

Different SQL Server for shared database

Opens the file structure to select a path, and creates a new database for shared measurements

Note: This requires permissions on the SQL server (to create database and tables and alter permissions)

Use different SQL Server ☐

7

Server name (shared DB)

Enter the server name and (if necessary) the instance name for the shared database

Servername

8

Integrated security (shared DB)

Only available for Microsoft SQL Server. Select, if integrated security is used (login with your windows credentials)

Int. security ☐

9

Username (shared DB)

Enter the SQL user name for the shared database to log onto the selected database

Username

Please enter a username

10

Database for measurements

Select a database for the measurements

Database

Please select a database



11

Password (measurements DB)

Enter the SQL password for the database

Password

Please enter a password



12

Shared database name

Select a database for the shared settings and runs

Database

Please select a database



13

Password (shared DB)

Enter the SQL password for the database

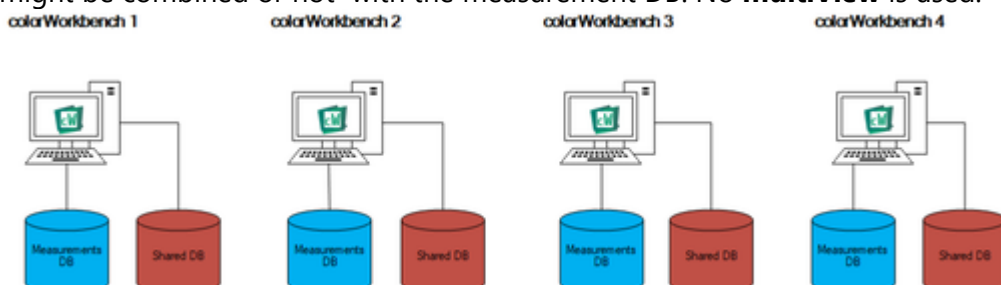
Password

Please enter a password

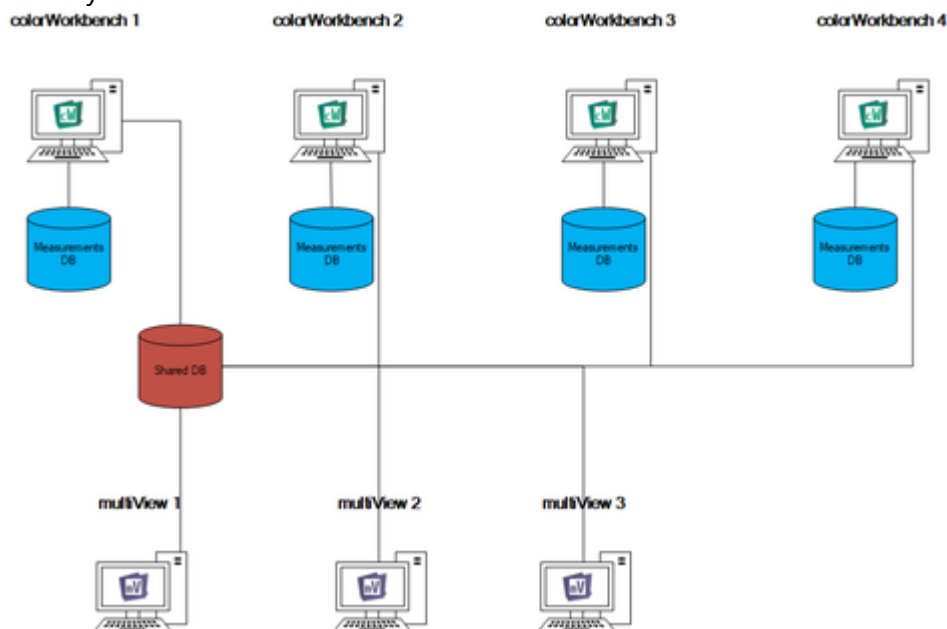


There are several scenarios how to use databases with colorWorkbench optionally in combination with multiView:

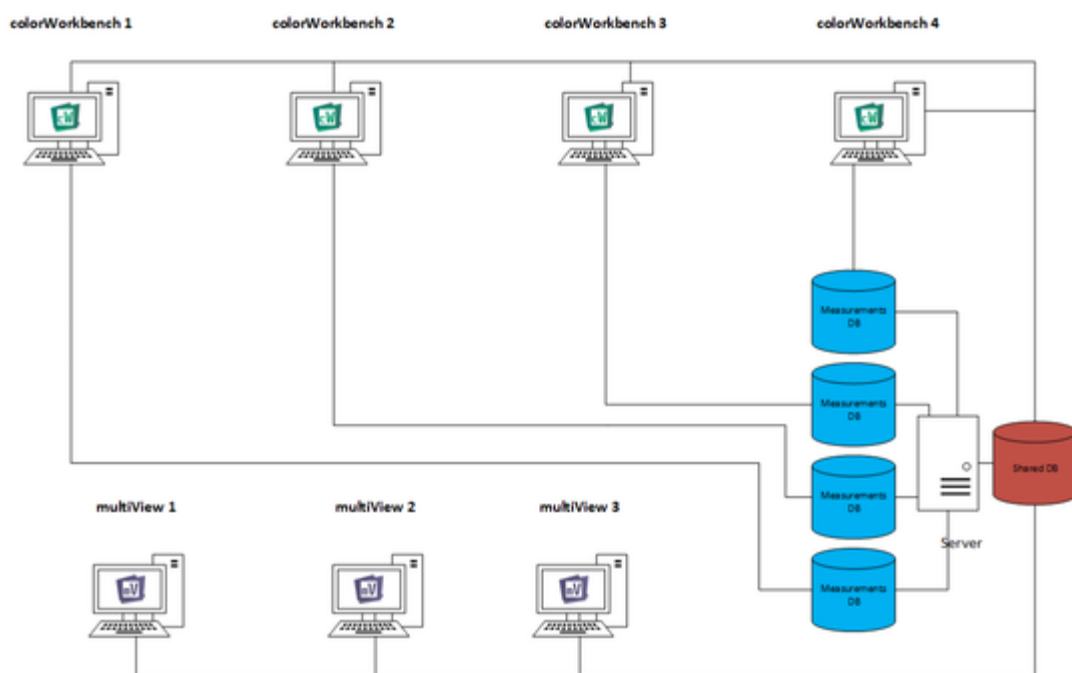
1. Isolated stations for one or more installations of **colorWorkbench**. Shared DB would be the settings DB and might be combined or not with the measurement DB. No **multiView** is used.



2. Measurement DBs at each installation of **colorWorkbench** and a shared DB at one of the stations which is used by all installations of **colorWorkbench** and can be used from all installations of **multiView**.



3. Measurement DBs and a shared DB with the settings on an extra server which is used by all installations of **colorWorkbench** and all installations of **multiView**.



5.3.4. Field names

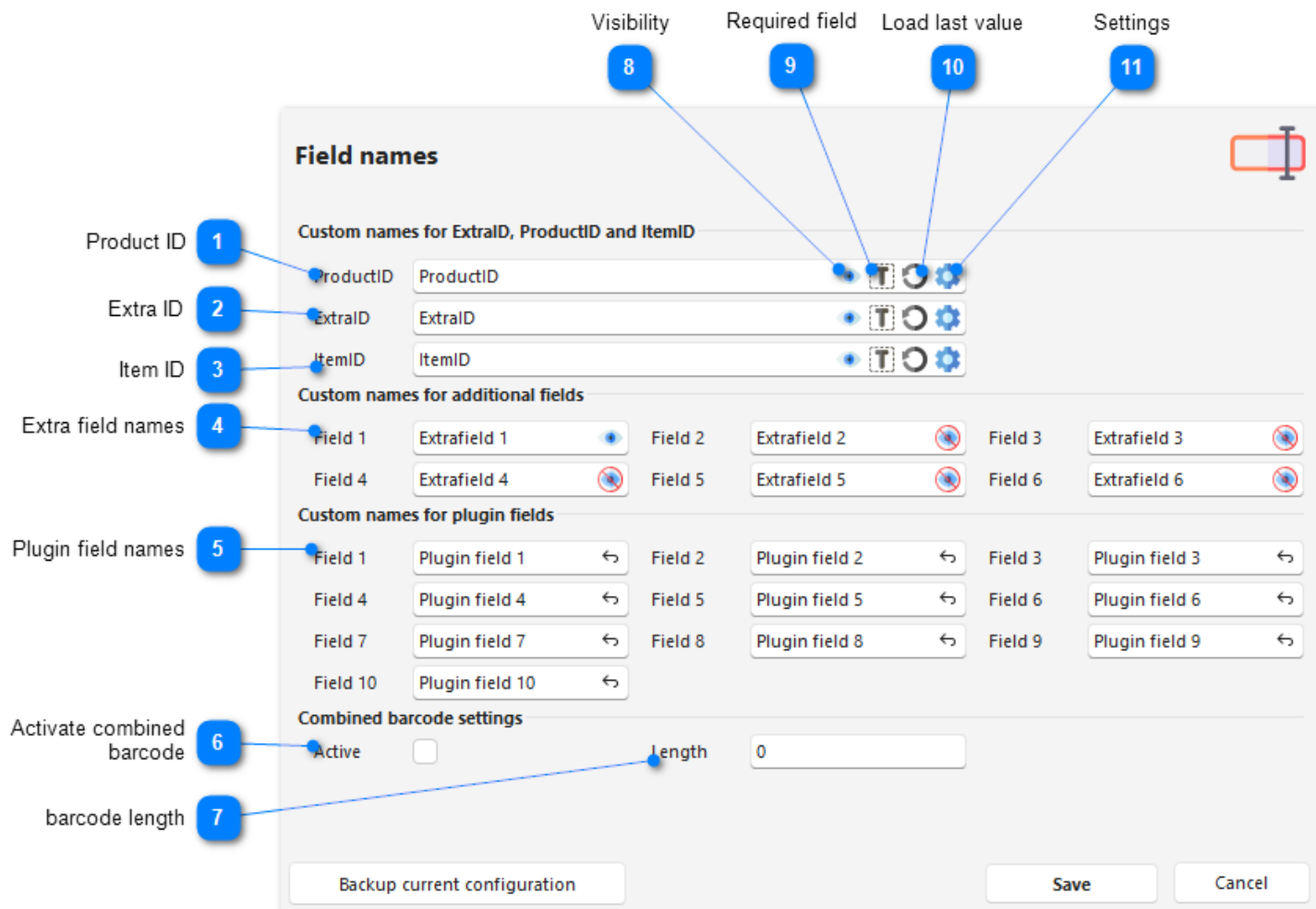
Navigation: Side menu >  >  Settings >  Field names

There is a pop up window at each start of a run where information for the product can be entered in special

fields.

In this window, those fields can be named and customized.

A field will only be displayed in the start window if it is set to "visible" ().



- Product ID**
Enter a name for the Product ID field. And configure field and input format via the symbols



ProductID ProductID

- Extra ID**
Enter a name for the Extra ID field. And configure field and input format via the symbols



ExtraID ExtraID

- Item ID**
Enter a name for the Item ID field. And configure field and input format via the symbols



ItemID ItemID

- Extra field names**
Enter a custom name for further extra fields. And set it to be displayed via the  -Symbol.

Field 1 Extrafield 1 

- Plugin field names**
If there is a plugin instrument, a field is referring to it. E. g. gloss, when you install a gloss-meter. Enter a custom names for the plugin field.

Field 1

Plugin field 1



- 6 Activate combined barcode**
If checked, you can scan a combined barcode (a barcode that contains different field infos)

Active

☐

7 barcode length

Enter the length of the combined barcode

Length

0

8 Visibility

Field is only displayed in the start window, if set to **visible**

9 Required field

If enabled (red), the user has to enter a value for this field at run start



10 Load last value

If enabled (red) the value of the last run is entered automatically



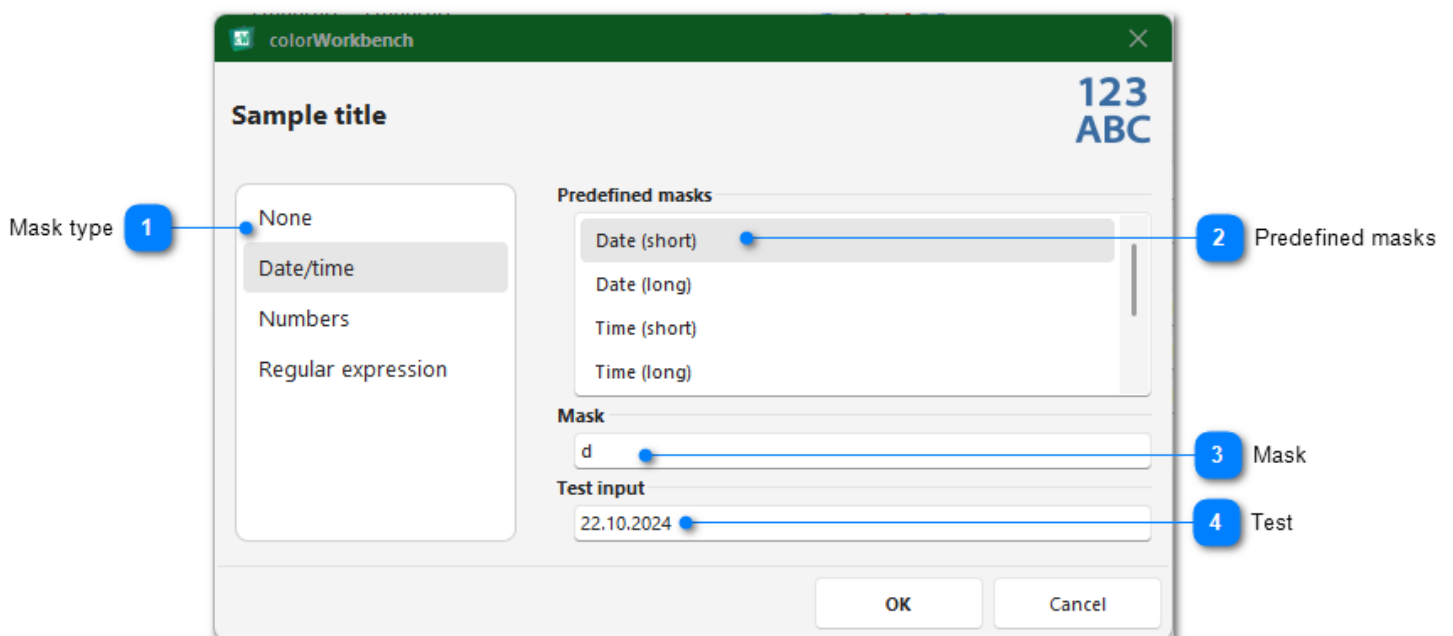
11 Settings

[Customize a predefined format](#) for the entry

Customize automatic Sample title

You can customize a format for a filled in information at *Product ID*, *Extra ID* or *Item ID* by defining data by date, numbers, etc..

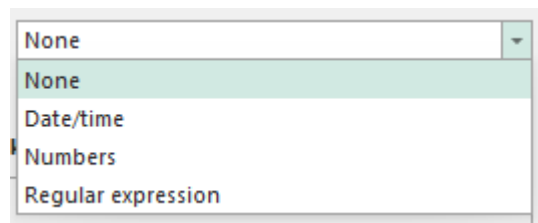
Click on the  symbol:



1

Mask type

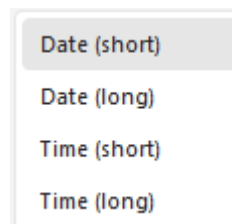
Select the mask type in the drop down menu. This way only data of this kind can be entered at the field.



2

Predefined masks

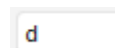
Select among the predefined masks and the right mask code is entered in the below line.



3

Mask

The code letter defines a mask type. The [predefined masks](#) above are very helpful. There are some more examples for [numbers](#) and [dates](#), online.



4

Test

After having chosen a mask, you can enter a number or name and test if the display corresponds to your settings. To switch to a next entry for data use the space key.

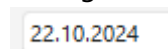


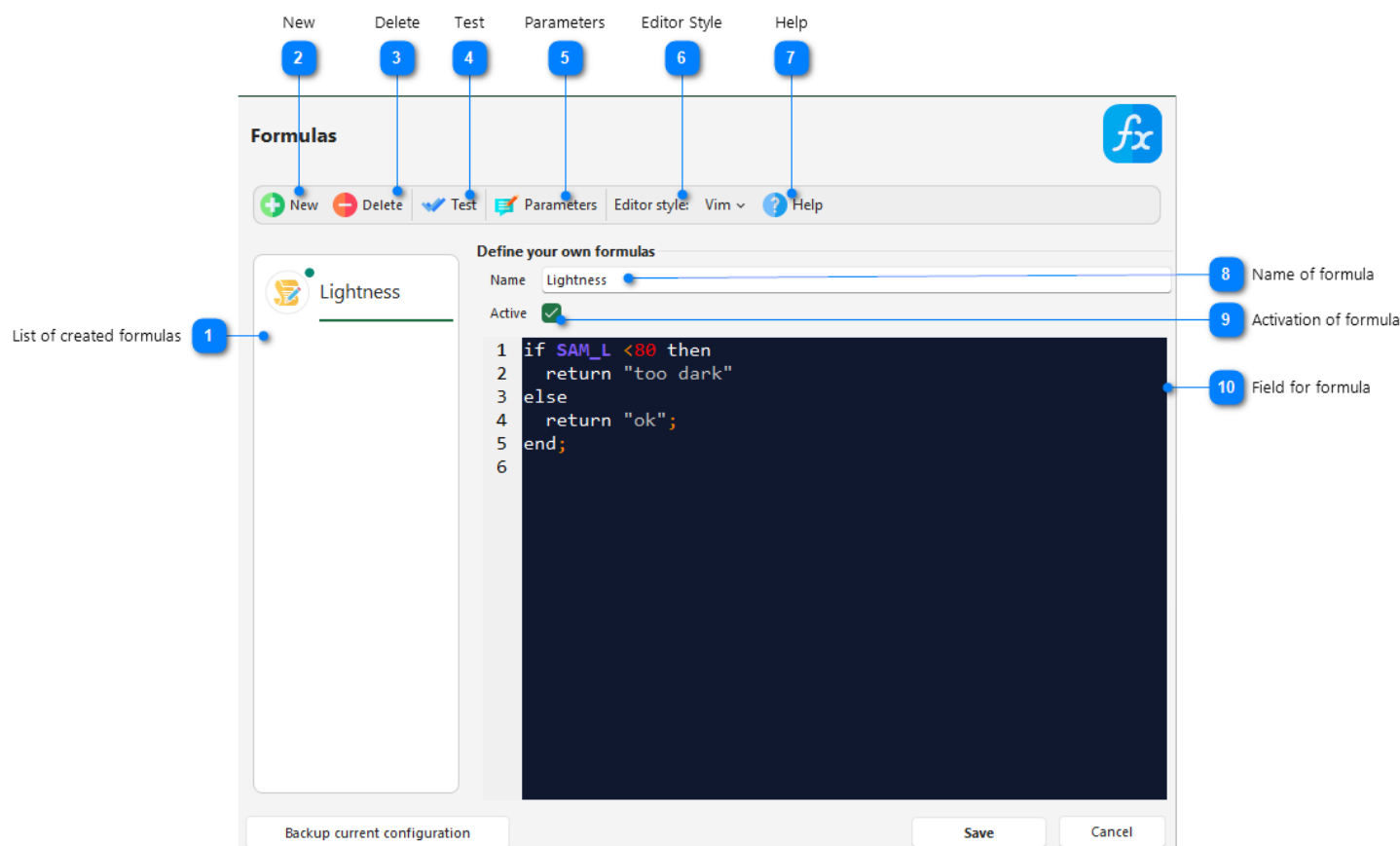
Table of some predefined masks

	Predefined Mask	Key	Input	Output	Explication
Date/time	Date(short)	d	2023-07-10 13:45:43	07/10/2023	
	Date (long)	D	2023-07-10 13:45:43	Monday, 10 July, 2023	
	Time(short)	t	2023-07-10 13:45:43	1:45 PM	
	Time(long)	T	2023-07-10 13:45:43	1:45:43 PM	
	Date/Time	G	2023-07-10 13:45:43	07/10/2023 1:45:43 PM	
Numbers	Decimal	d3	89	089	
	Fixed point	f2	3.4899	3.48	
	Numbers	n	1234,56	1.234,56	
Regular expression	Only chars	\p{L}+	KRgl67	KRgl	Only letters
	Only upper chars	\p{Lu}+	KRgl67	KRGL	Only capital letter
	Only lower chars	\p{Li}+	KRgl67	krgl	Only lowercase

5.3.5. Formulas

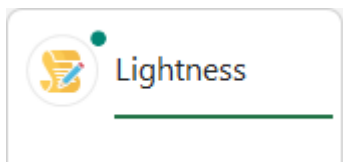
Navigation: Side menu >  >  Settings >  Formulas

Here you can create customized formulas based on measured values. The formula names can then be selected in the [table layout](#) to display the results in the color data table.



1 List of created formulas

All formulas created so far - active or not - are displayed in this list



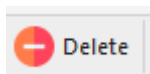
2 New

Creates a new formula. Enter a name and the formula itself. How to do that, see at **Help**.



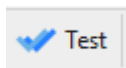
3 Delete

Deletes the selected formula



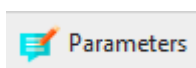
4 Test

After having entered a formula use the **Test** button to check that the formula has no syntax errors. Errors are displayed.



5 Parameters

Parameters can be customized here.



6

Editor Style

Change the editor style according to your wishes.

Editor style: Vim ▾

7

Help

Read this help file to get familiar how to create formulas.

? Help

8

Name of formula

Enter a name for your formula

Name Lightness

9

Activation of formula

Check to activate the selected formula

Active ☒

10

Field for formula

Enter the syntax of your formula here.

```
1 if SAM_L < 80 then
2   return "too dark"
3 else
4   return "ok";
5 end;
6
```

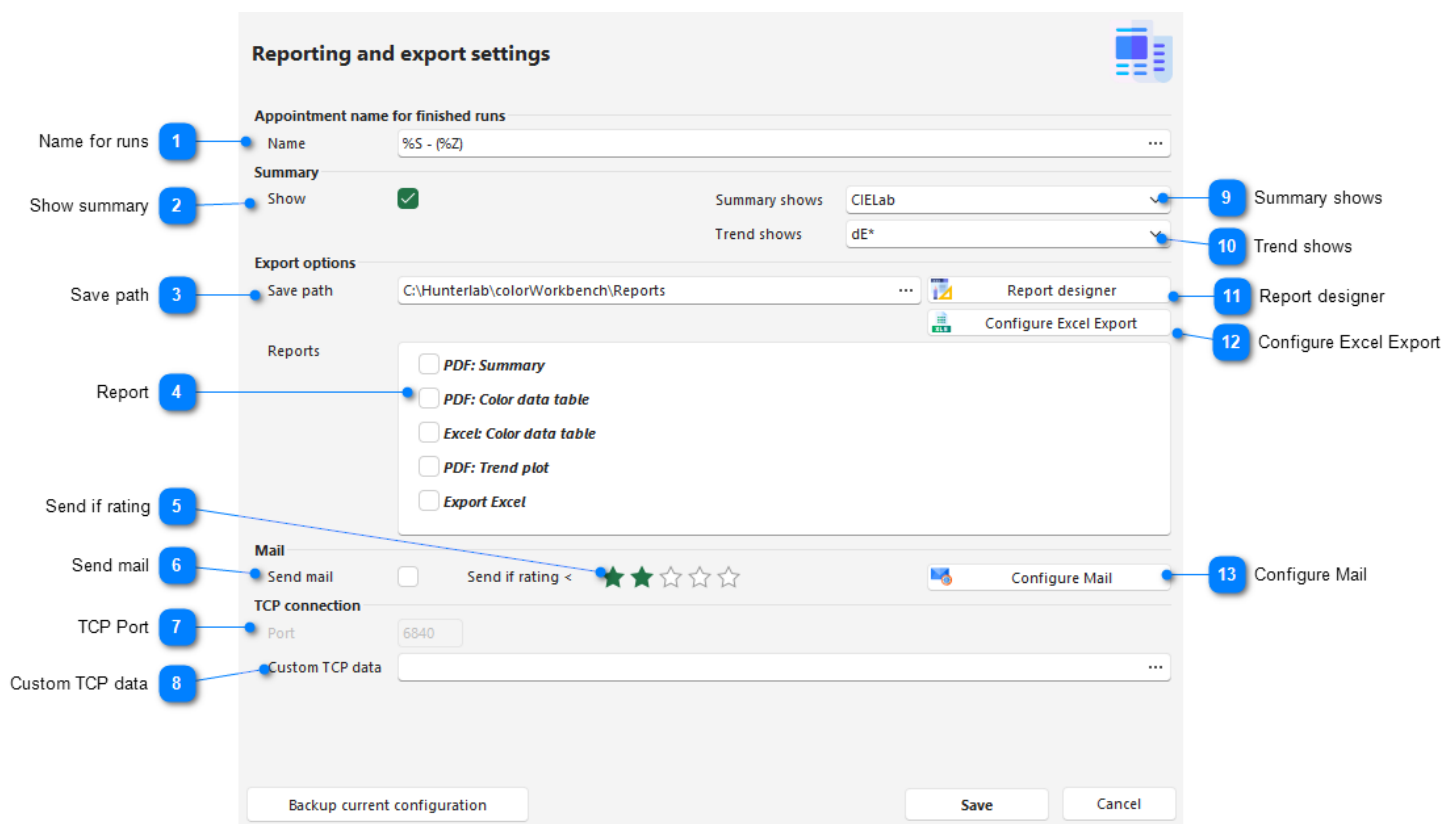
5.3.6. Reports/Export

Navigation: [Side menu](#) >  >  Settings >  Reports/Export

The option "Show summary" is checked by default. That means a summary is shown after each run. You can print or export the 3 built-in reports **Summary**, **Color data table** and **Trend plot**.

Configure here if you want to

- **automatically export** a file after each run (#3)
- create and export a **customized report** (#12)
- **send a mail** if the rating of a job is worse than a certain rating (#6 ff)
- set up a **TCP connection** (#8)



1 Name for runs

Set a default name scheme for the automatic export files of a run. Click on "... " to add wild-cards. For details, see [below](#).

Only if you add a wild-card, that changes with every run (e.g. time or number), a new report will be created after every run.

Note:

If no actual date is added, the name keeps the same and the report it will be overwritten by each new run.

Name ...

2 Show summary

If enabled, a [summary report](#) with basic statistical information and the option to show or export one of the predefined reports is displayed each time after a run has finished

Show ☒

3 Save path

To set an export path click on "... " to browse your computer. This path refers to

- Automatic exports (If one or several report designs are selected below) which are exported to the path **each time after a run has finished**.
- Single reports created by the [export button](#)  in the [side menu](#)

Save path ...

4 Report

There are three preset PDF-report designs, and one Excel report, which will be automatically exported after every run, when selected here. Further reports can be customized by the [report designer](#)



5

Send if rating

Select number of stars. If a completed run is below this rating, an email is sent to the specified recipient(s) (see #13)



6

Send mail

Activates the email function. A mail will be sent, if the rating of a completed run is below the specified rating

Send mail ☐

7

TCP Port

Define a port for TCP export here

Port 6840

8

Custom TCP data

Click on the three points at the right to configure a TCP string. See [below](#)

Custom TCP data

9

Summary shows

Select the color scale or plugin value to be shown in the summary.

Summary shows CIELab

10

Trend shows

Select a difference like dE^* or a plugin field for the trend plot in the summary report

Trend shows

 dE^*

11

Report designer

Opens the report configuration window. See [below](#). Generally a report is created for you by our [service team](#) when the instrument is installed. There is no manual for the report editor, but you can explore it yourself. All designed reports are added to the list at #4 and can be exported after each run.



Report designer

12

Configure Excel Export

Configuration for an automatic Excel Export, similar to [table layout](#)



Configure Excel Export

13

Configure Mail

Configures the Email settings for the emails sent if the rating is lower than set at #5. See [below](#)



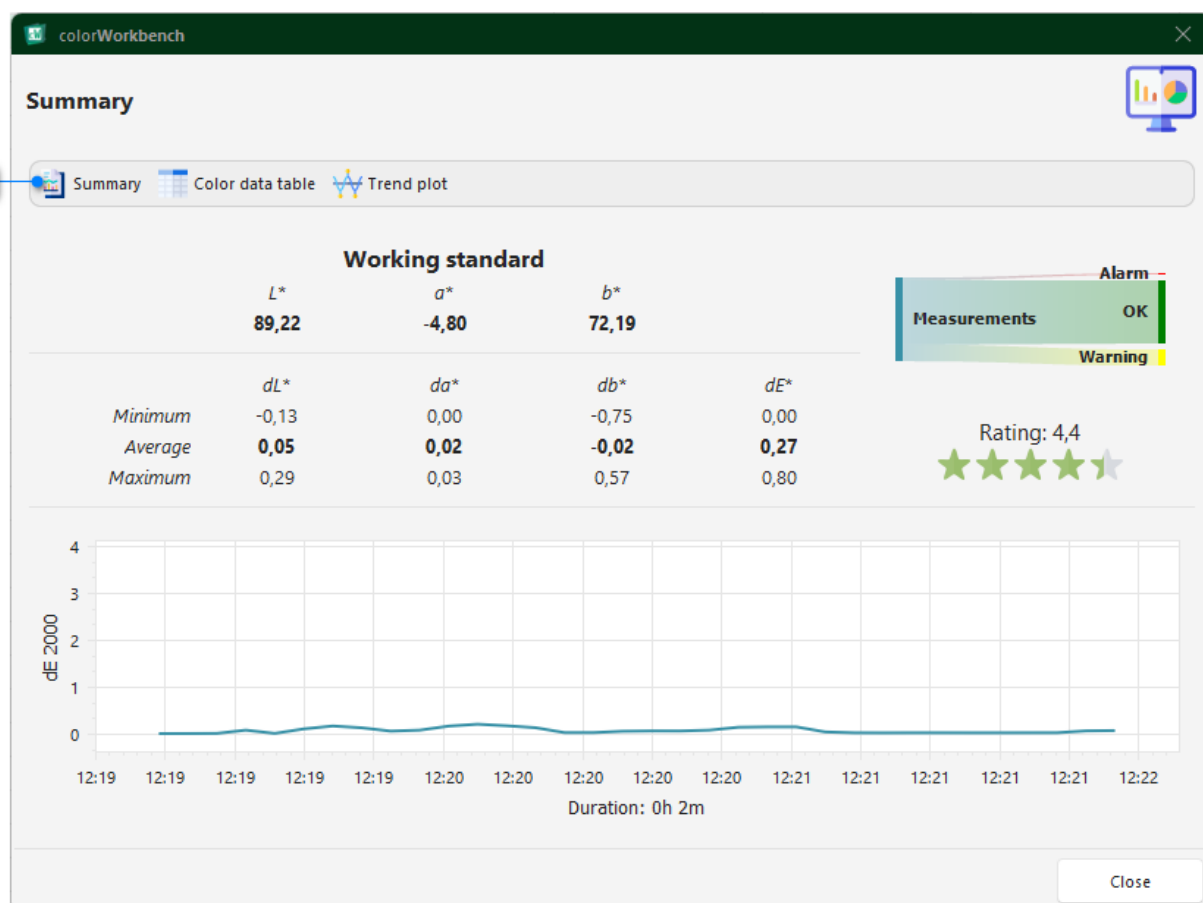
Configure Mail

Summary

The summary gives short statistical overview of the run and the option to open one of the [preset reports](#) to be edited and saved or printed.

Selection of report

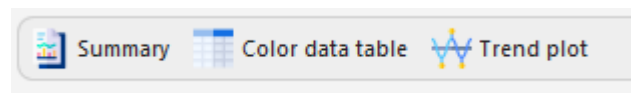
1



1

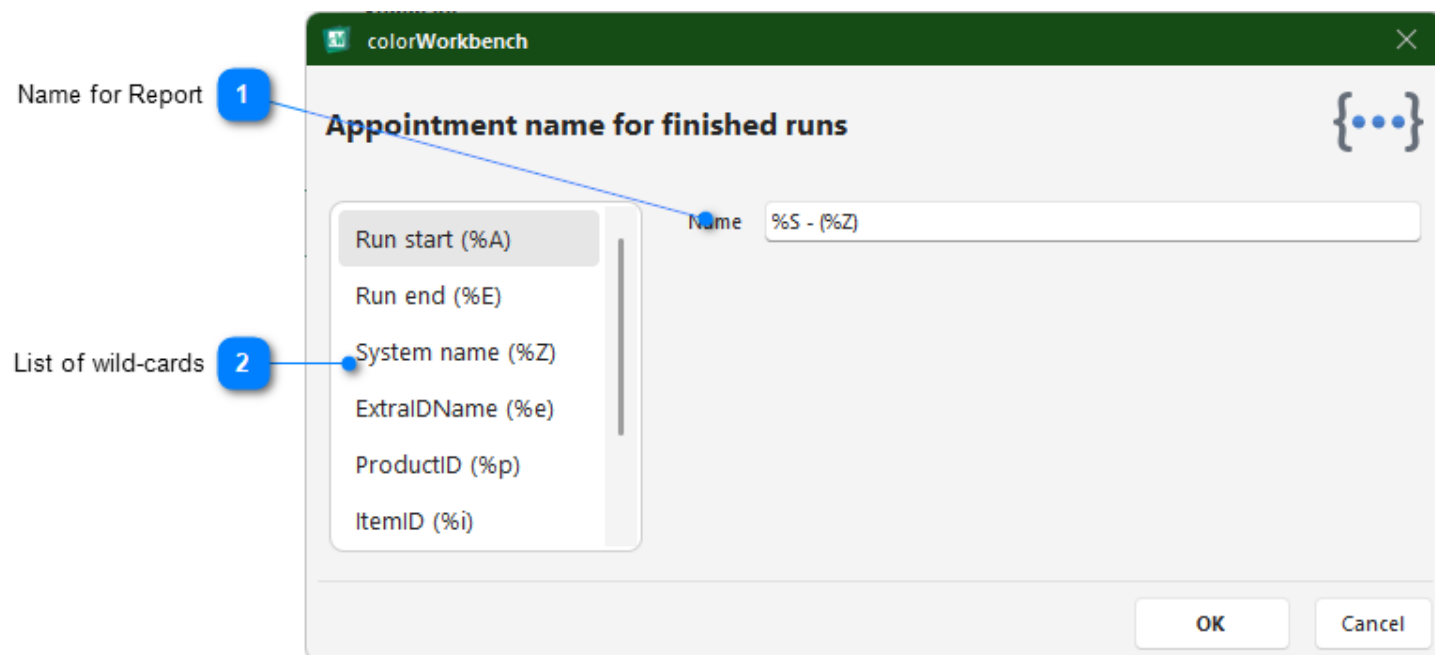
Selection of report

By these buttons the respective of the [three reports](#) is shown, and can be edited to be saved or printed.



Configure run names

Set a default name scheme for the automatic export files of a run.



1

Name for Report

Insert written name and optionally click on an entry in the list to insert current time, ExtraID, etc. For example: Report %d will name the report as "Report" with the actual date.

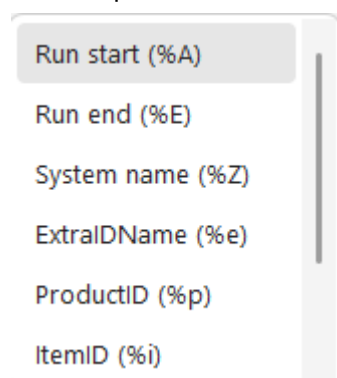
Note: If no actual date is added, the name keeps the same and the report it will be overwritten after each new run.

Name %S - (%Z)

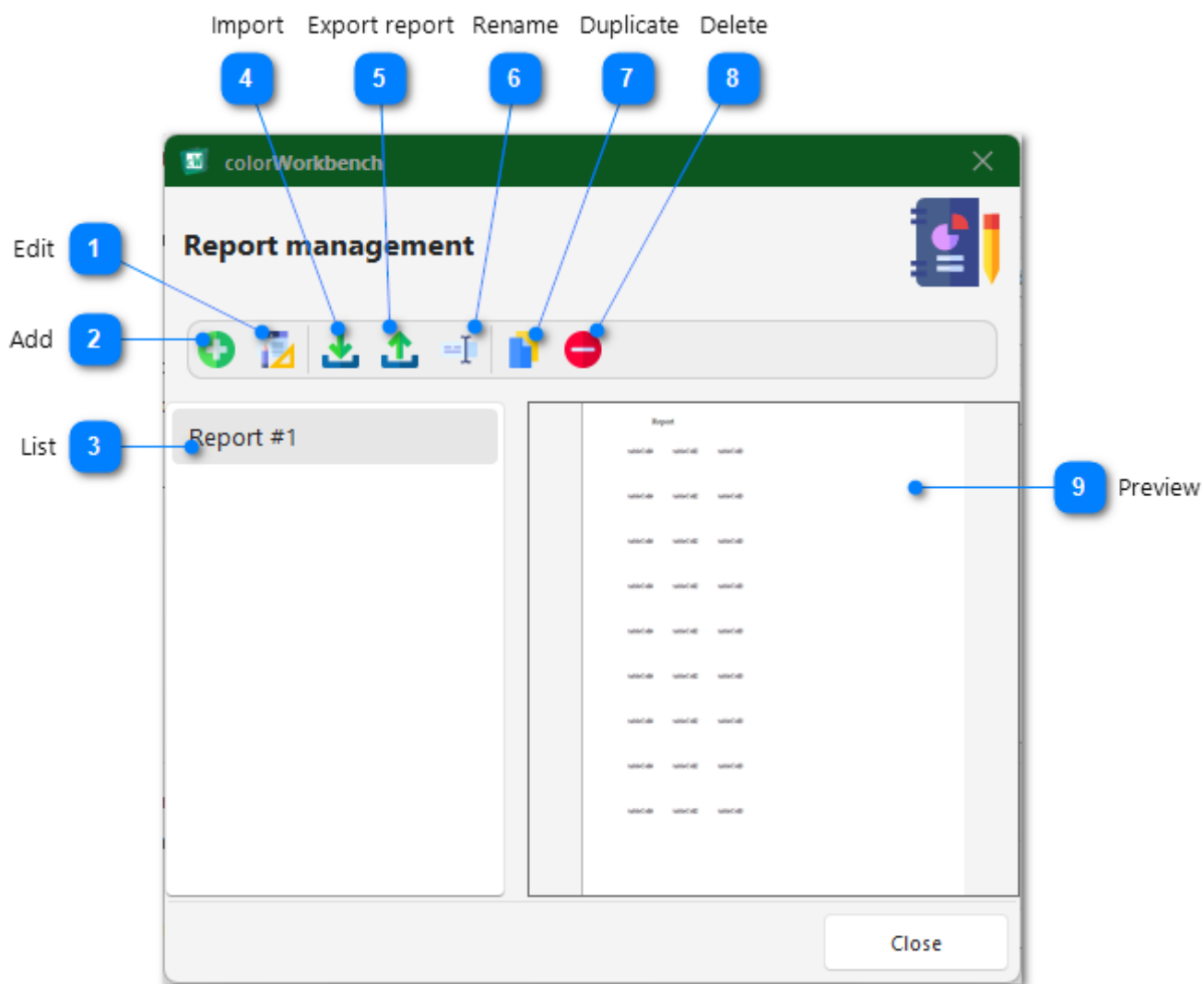
2

List of wild-cards

List of optional wild-cards to add actual data to a report name. Double click to add an entry.



Manage reports (Button: Report Designer)



1 Edit

Edit the selected report



2 Add

Add a new report. For designing a new report there is an integrated software which has to be explored on it's own.



3 List

A list of available/edited reports

Report #1

4 Import

Import a report from a file



5

Export report

Export the selected report to a file



6

Rename

Rename the selected report



7

Duplicate

Duplicate the selected the report



8

Delete

Delete the selected report



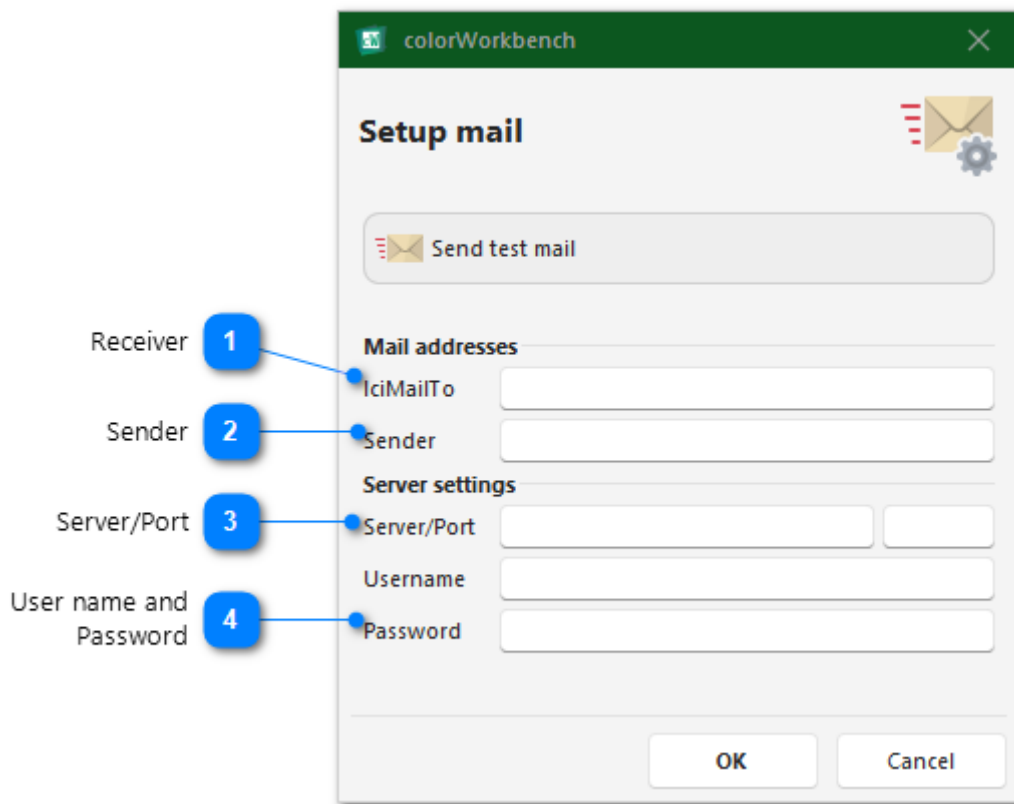
9

Preview

A preview of the selected report

***Configure email settings***

To use this feature your administrator would have to create a custom email account for colorWorkbench including a username and password.



1

Receiver

The receiver's address(es). Add multiple emails possible with a ; in between

IciMailTo

2

Sender

The sender's email address (colorWorkbench account) - has to be set by your administrator.

Sender

3

Server/Port

The mail server's name and port. You will need to specify an SMTP server here. The software will send the emails with SSL enabled

Server/Port

4

User name and Password

The firm's IT-specialist has to create an email account for colorWorkbench which shall send the emails. The according credentials are to be filled in here.

Username

Password

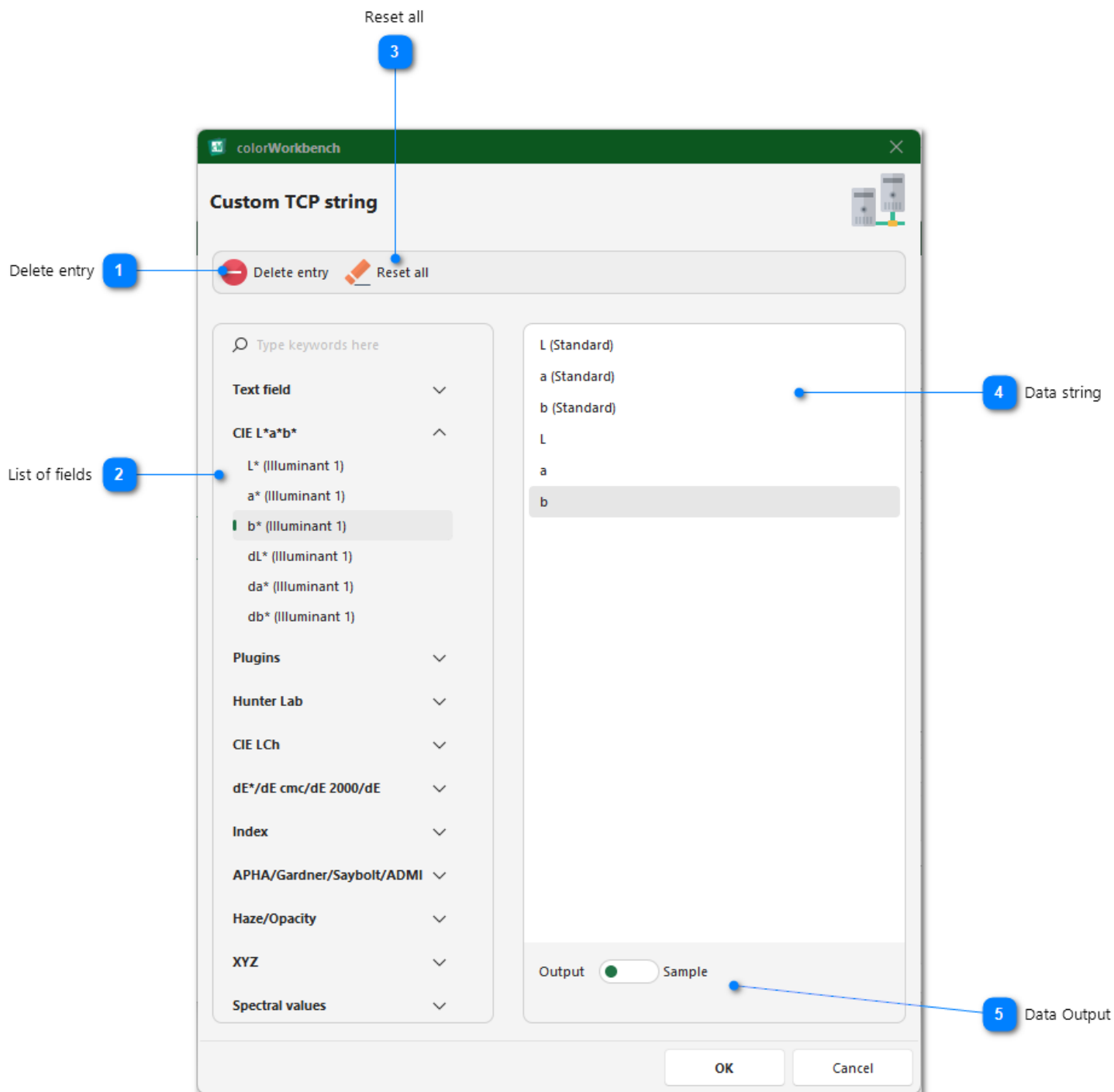
Custom TCP data

Click on the three points at the right of the TCP connection field to configure a TCP string.

Ask our [service team](#) to get an example for a TCP connection.

Some TCP-commands are found [here](#).

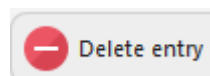
Open the drop down menus in the left column to see all data fields.



1

Delete entry

Deletes the selected entry from the list



2

List of fields

List of available data fields. To add a field, double click it. It will then be added to the list on the right side.

🔍 Type keywords here

Text field ▼

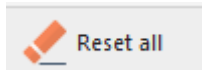
CIE L*a*b* ^

- L* (Illuminant 1)
- a* (Illuminant 1)
- b* (Illuminant 1)**
- dL* (Illuminant 1)
- da* (Illuminant 1)
- db* (Illuminant 1)

3

Reset all

Resets all entries in the list



4

Data string

This is your custom configured TCP data string

L (Standard)

a (Standard)

b (Standard)

L

a

b

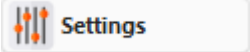
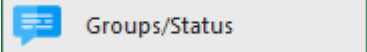
5

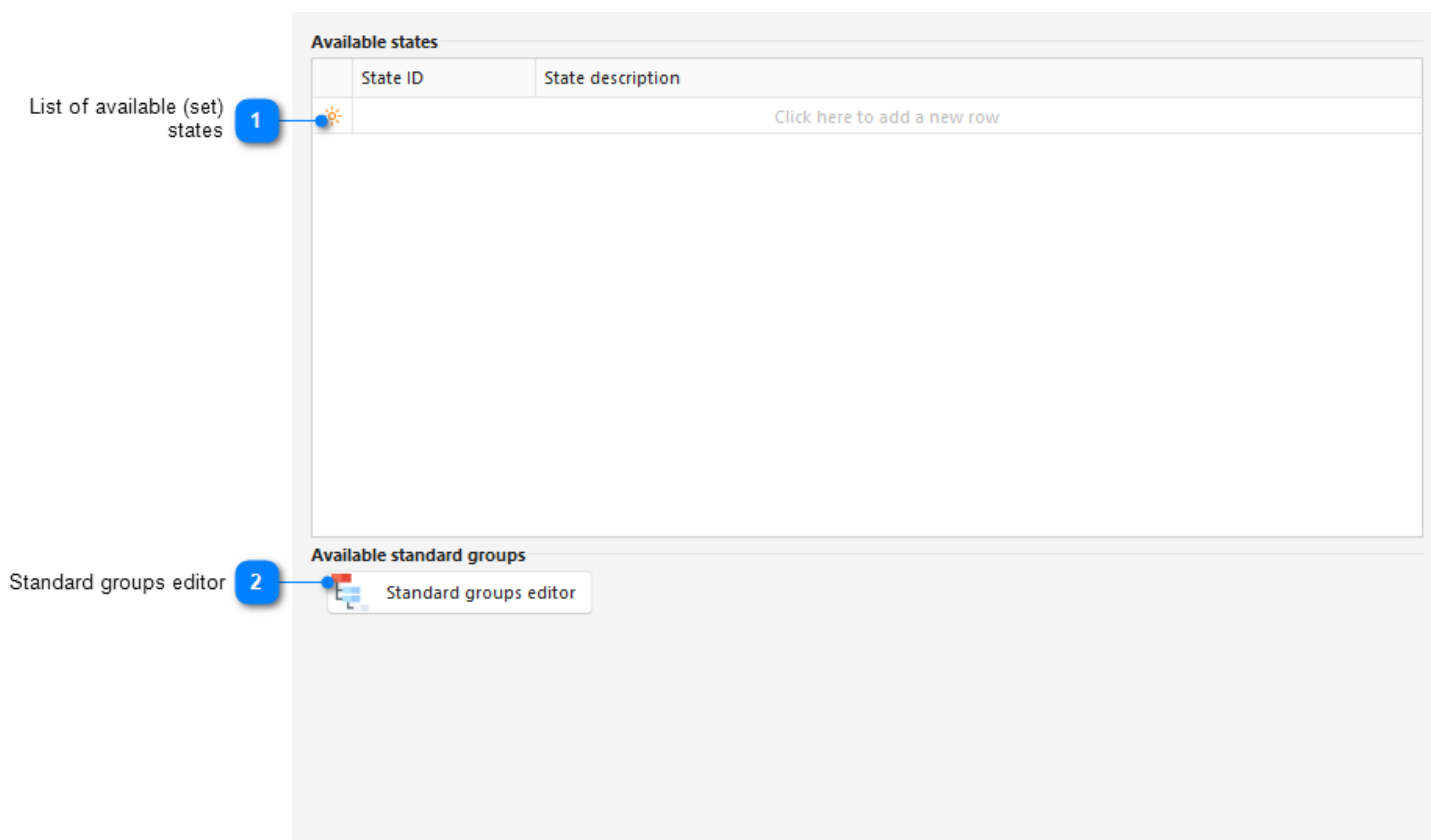
Data Output

If you wish to export Standard data set the slider to "Standard". The respective value in list will show "Standard" in brackets then. Otherwise sampe values are exported.

Output ☒ Sample

5.3.7. Groups/Status

Navigation: Side menu >  >  Settings >  Groups/Status



1

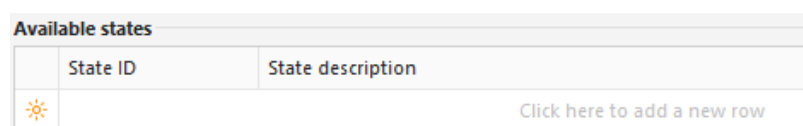
List of available (set) states

The status serves to discern different sample types, different points in production, different suppliers, etc.

In the first line you can enter a new status: Type an ID number and a description in the top line and press "enter". The State ID number helps to sort the entries.

Double-click to rename an existing status.

At run start or during a run the corresponding [status can be selected](#) and displayed in the color data table.

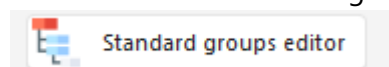


2

Standard groups editor

Standard groups can be defined renamed or deleted. See [here](#).

Standards can then be assigned to a group in the [product manager](#).



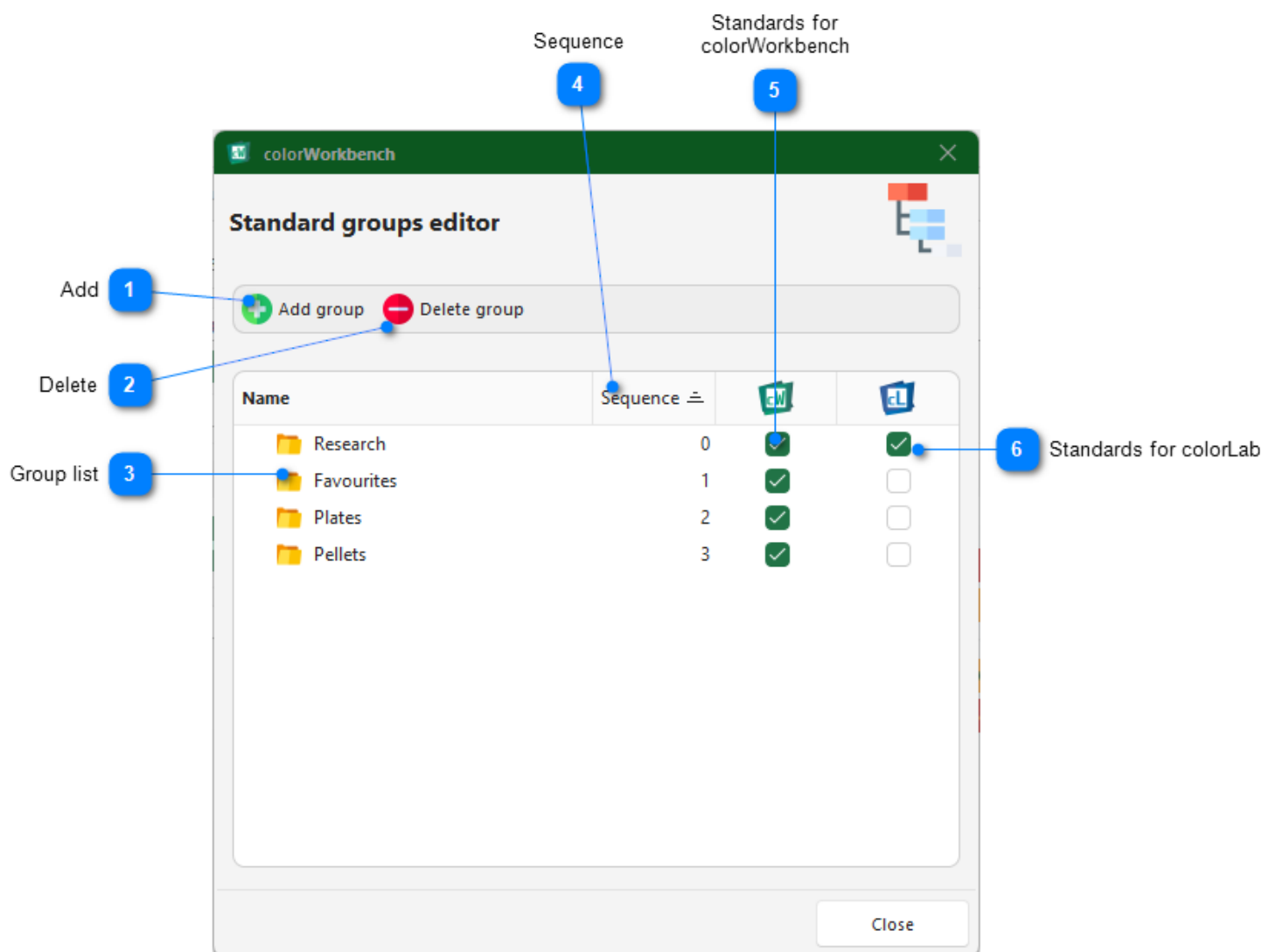
Standard groups editor

Navigation: Side menu >  >  **Settings**
Change settings and configure instruments >

 **Groups/Status** >  **Standard groups editor**

Navigation: Side menu >  >  **Standard groups editor**

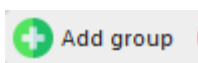
When groups are set, a standard can be assigned to a group in the [Product manager](#) list by drag and drop or at [Extra fields](#)



1

Add

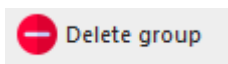
Adds a new group. Groups can be renamed by clicking on their entry in the list.



2

Delete

Deletes the selected group. Standards that were assigned to that group will be assigned to "ungrouped standards" then.



3

Group list

The list of available groups. Groups can be renamed by clicking on their entry in the list.

- Research
- Favourites
- Plates
- Pellets

4 Sequence

A number can be assigned to each group and the groups will be sorted by sequence number

Sequence ▾

0

1

2

3

5 Standards for colorWorkbench

Check the box, if you want access to this standard group from colorWorkbench.

☒

☒

☒

☒

6 Standards for colorLab

If you are working with further HunterLab Europe software. Check box, if you want access to this standard group from the additional software.

☒

☐

☐

☐

5.3.8. IO System

Navigation: Side menu >  >  Settings >  IO System

IO Type 1

Active 2

Wheel circumference 3

Output unit 4

IO System

Options

Length counter options

Active ☒

Wheel circumference 30cm/12" ▾

Output unit Meter ▾

Type WAGO 750 ▾

Length counter mode ☐

Impulses to pause 5

Poll rate (ms) 500

Hint: Defines the impulses until a run is paused when no counter movement is detected. To calculate the interval in seconds, the polling interval has to be multiplied with this impulse value.
Eg. 500ms * 5 impulses = 2.5 seconds

5 Poll rate

6 Length counter mode

7 Impulses to pause

1 IO Type

Select your IO system here. You can choose between Adam-5000 and Wago-750

- The Adam-5000 setup is described [here](#)
- The Wago-750 setup is described [here](#)

Type

WAGO 750

2

Active

Enables the IO system to read and write values

Active



3

Wheel circumference

Currently, only a wheel circumference of 12" or 30cm is supported. If you need a different wheel circumference, please contact support!

Wheel circumference

30cm/12"



4

Output unit

Select your preferred unit

Output unit

Meter



5

Poll rate

The poll interval for the IO system (default 500ms)

Poll rate (ms)

500

6

Length counter mode

Activates the length counter mode. If activated, it is possible to add a column in the table, named *length counter*.

Length counter mode



7

Impulses to pause

When no counter movement for **X** impulse is detected, the run will be paused.

Impulses to pause

5

5.3.8.1. Adam-5000

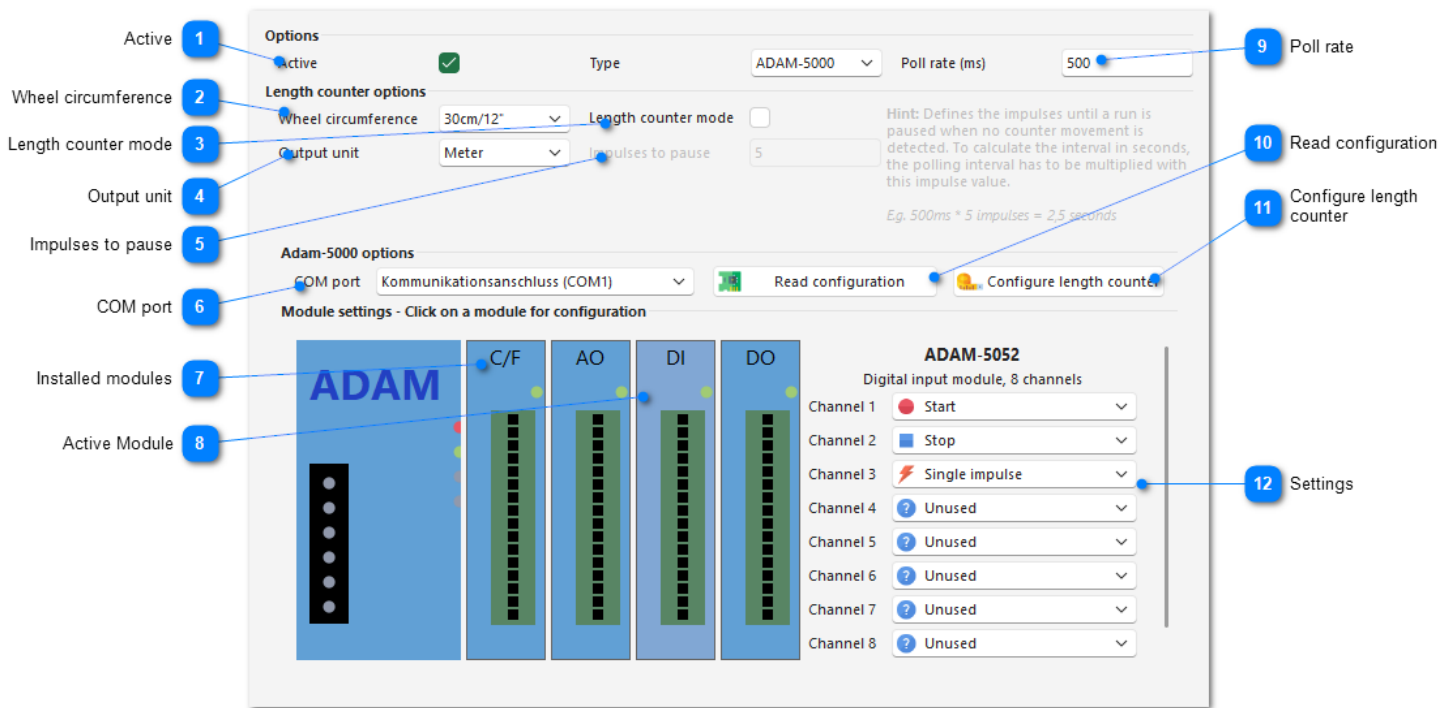
Navigation: Side menu >



Settings



IO System



1 Active

Enables the Adam 5000 to read and write values

Active ☒

2 Wheel circumference

Currently, only a wheel circumference of 12" or 30cm is supported. If you need a different wheel circumference, please contact support!

Wheel circumference 30cm/12"

3 Length counter mode

Activates the length counter mode. If activated, it is possible to add a column in the table, named *length counter*.

Length counter mode ☐

4 Output unit

Select your preferred unit: Meter or Yard

Output unit Meter

5 Impulses to pause

When no counter movement for **X** impulse is detected, the run will be paused.

Impulses to pause 5

6 COM port

Select the COM port to which the ADAM is connected

COM port Kommunikationsanschluss (COM1)

7 Installed modules

Select among modules for settings. The currently selected module will be shown in a lighter blue than the other modules

C/F AO DI DO

8

Active Module

If a module is selected by click, it appears in light blue and the name and a short description for the selected module is displayed on the right. Now you can assign various actions to the channels.



9

Poll rate

The poll interval for the Adam module (default 500ms)

Poll rate (ms)

500

10

Read configuration

Reads the module setup from the Adam system. This has to be done only at initial setup or if configuration has changed



Read configuration

11

Configure length counter

Opens window to configure length counter



Configure length counter

12

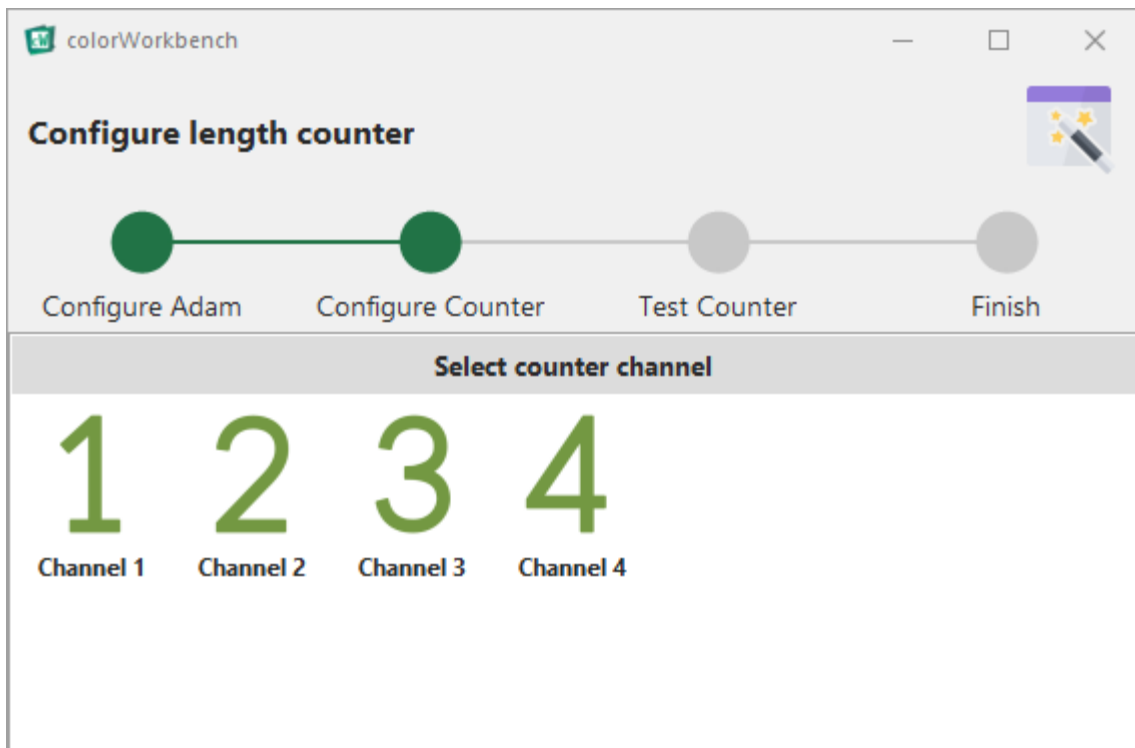
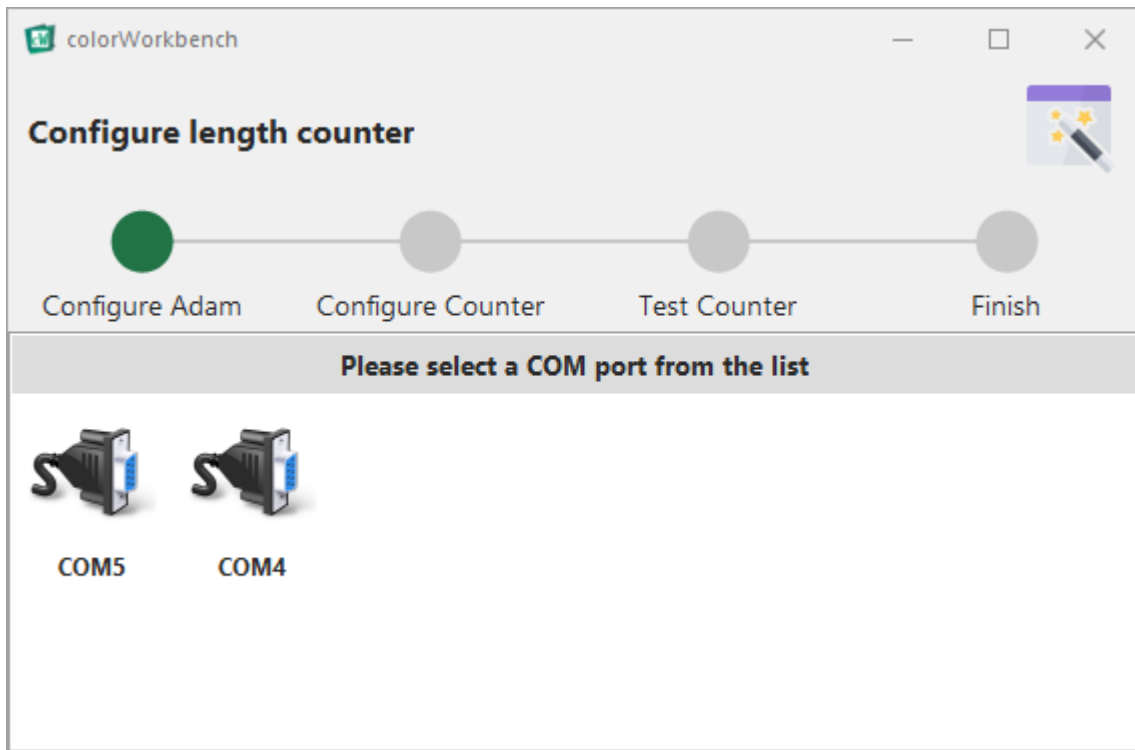
Settings

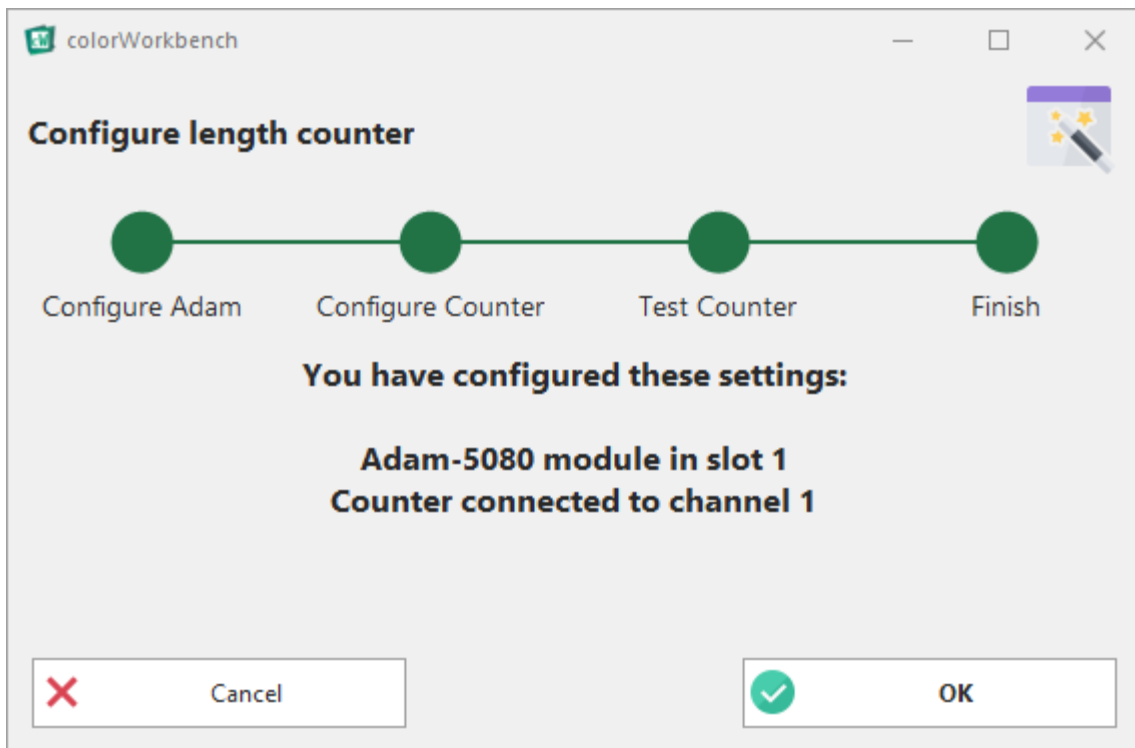
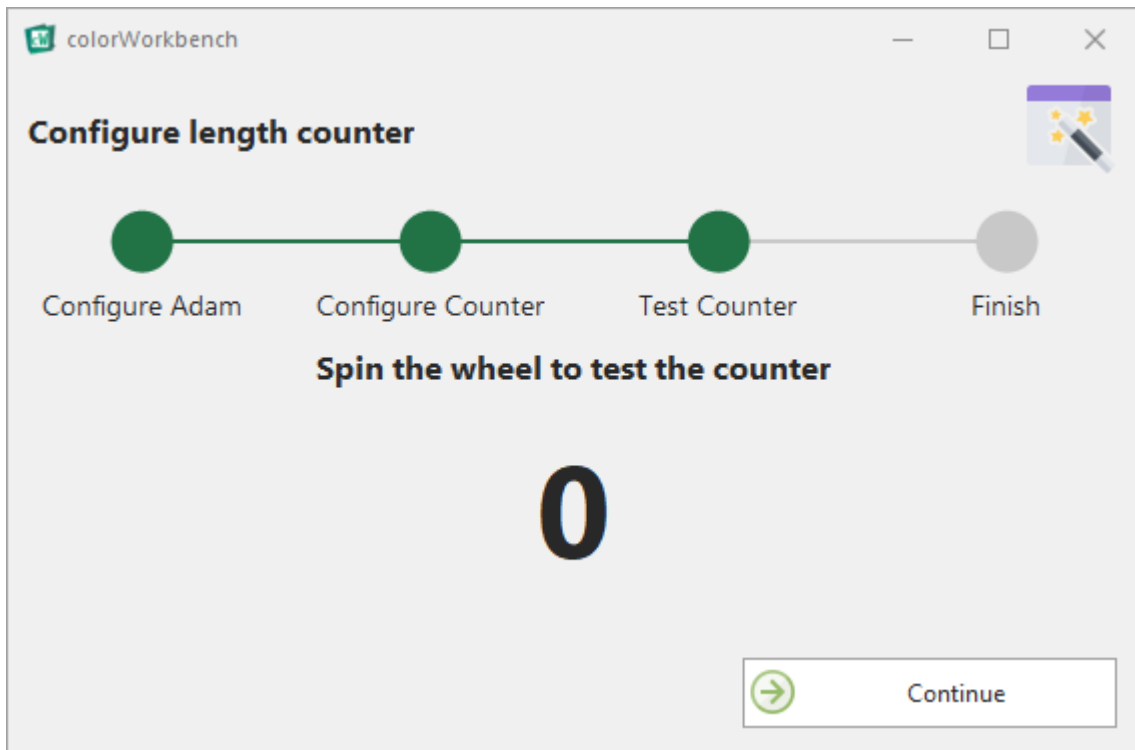
Settings for the module. For the counter module, the Channels 1-4 can be assigned to the Extra fields

Digital input module, 8 channels	
Channel 1	 Start
Channel 2	 Stop
Channel 3	 Single impulse
Channel 4	 Unused

Configure length counter

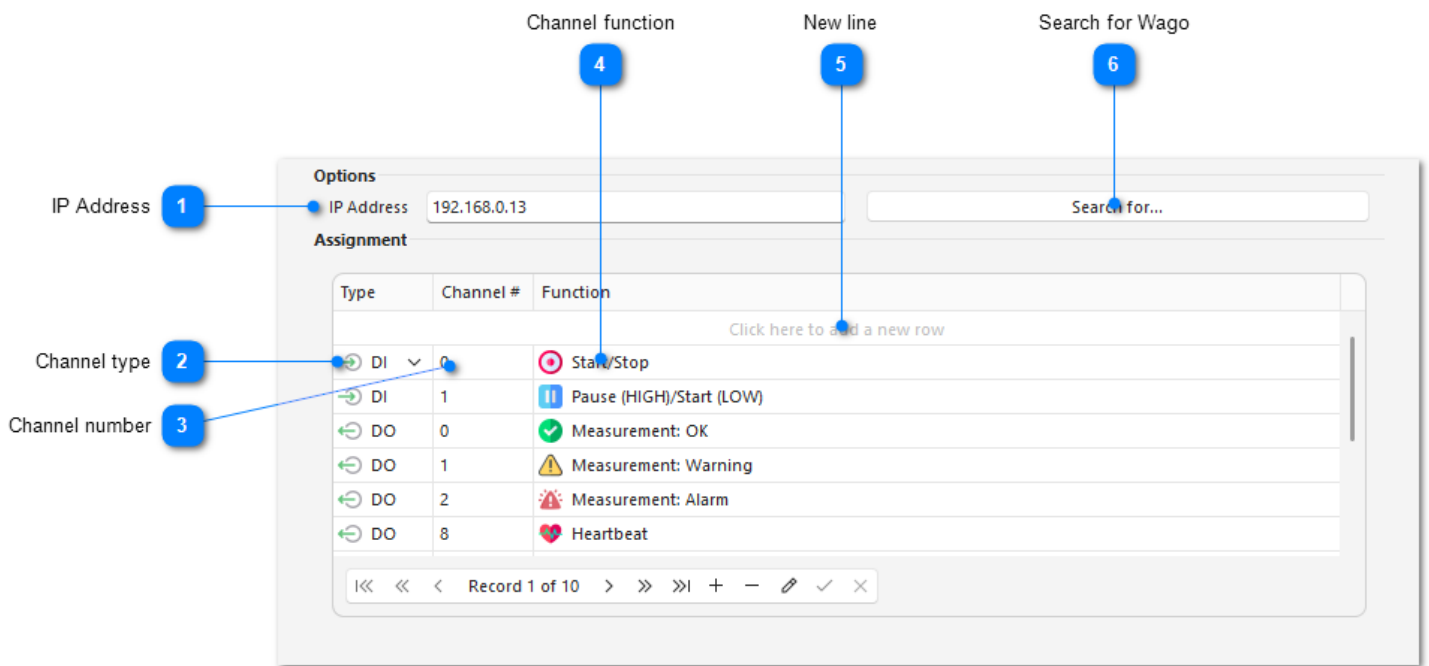
You can set the com port and the channel, spin the wheel to test the counter and review the length counter connection:





5.3.8.2. Wago-750

Navigation: Side menu >  >  Settings >  IO System



1 IP Address

Enter the IP address of your Wago-750 unit here

IP Address 192.168.0.13

2 Channel type

Select the type of the channel you want to configure. Currently, You can select between DI (Digital Input), DO (Digital output) and AO (Analog output). A configuration of the counter or thermocouple module is not necessary. These values will be read from the Wago if the modules are present

DI

3 Channel number

Select the channel number for the function. The numbers are derived from the Modbus mapping. Already used channels are removed from the dropdown list. In order to update the list correctly, you have to click into the next line to update the calculation of the already used channels

0

4 Channel function

Select a channel function. Depending on the channel type, the options vary

Start/Stop

5 New line

Click here to add a new line to the configuration table

Click here to add a new row

6 Search for Wago

Click to search in the network for the Wago 750 unit

Search for...

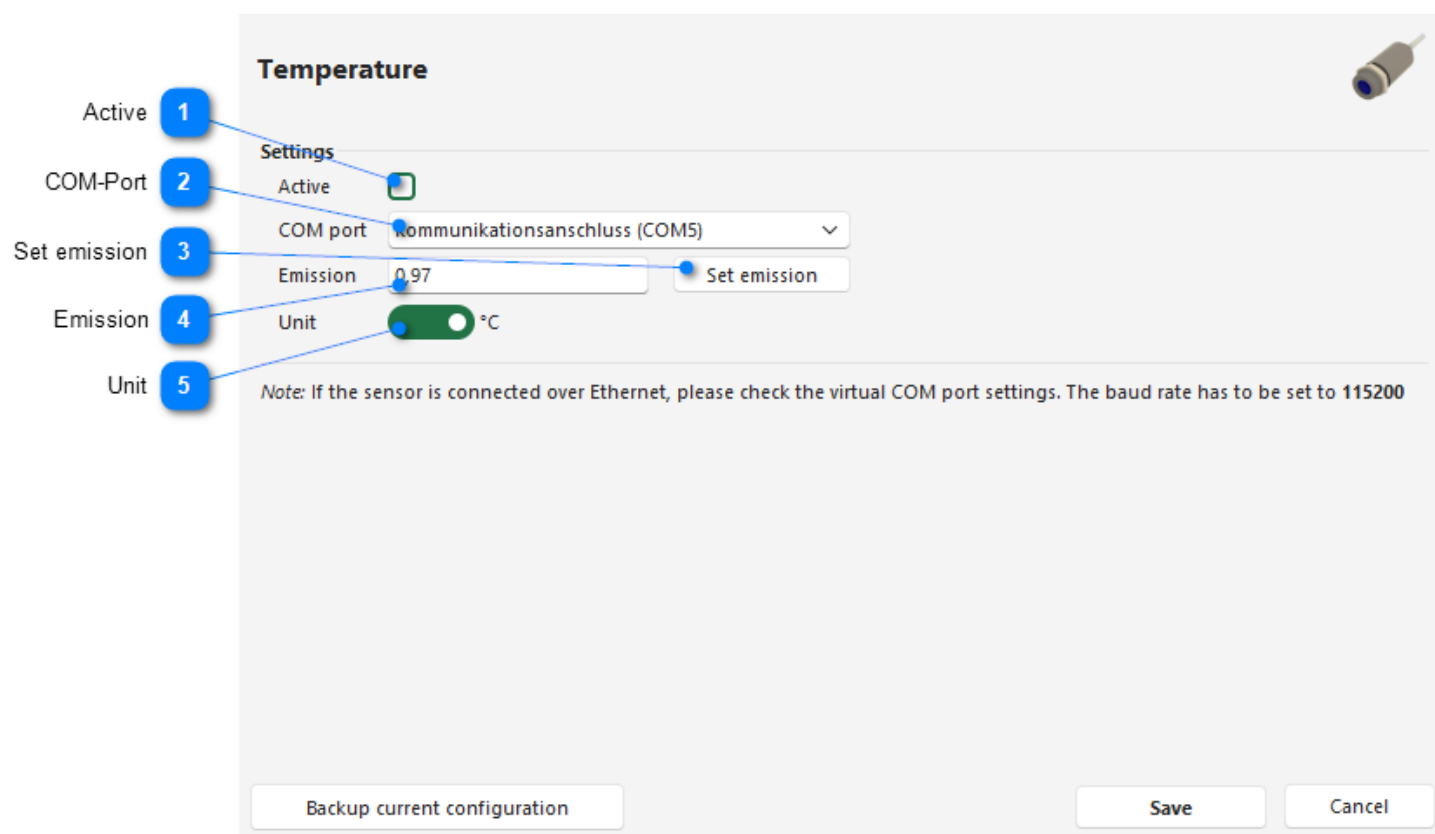
5.3.9. Temperature

Navigation: Side menu >  >  Settings >  Temperature

If a thermometer is connected, the temperature measurement can be activated.

Look into the device manager of your computer to find out the COM-port and into the manual of the thermometer to set the right emission factor for your material.

If a temperature measurement is activated, a column for temperature can be added in the [color data](#) table - to be found under "Text field".



1 Active

Enables the measurement of temperature

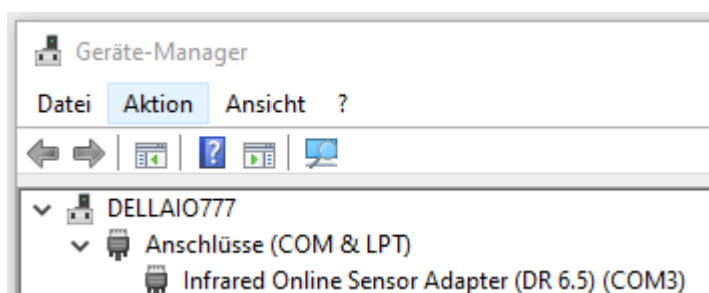


2 COM-Port

Select the COM port where the thermometer is connected. (Open the device installer of your computer to find out.)

Kommunikationsanschluss (COM5)

< --



3 Set emission

Send entered emission to instrument

Set emission

4

Emission

According to the measured material, different emission factors are suitable. See manual of thermometer. Mostly 0,97 is apt. Then click on **Set emissions** to send this factor to the instrument.

5

Unit

Select Unit °C or °F



5.3.10. OPC Client

Navigation: Side menu >  >  Settings >  OPC Client

You can exchange data with an OPC UA Server.

When an OPC UA server address is entered, the software tries to connect to the OPC server.

Status messages are shown in the status bar in the main window.

 Connected to OPC Server opc.tcp://DevSupport:53530/OPCUA/SimulationServer

You can read up to 6 values from the OPC server and store them for measurements in the ExtraFields 1-6.

You can also send data to the OPC server. There is no limitation in the amount of values to be sent.

Server settings

Server name **1**

Username and password **2** Password

Extrafields to read from OP server **3**

Fields to read from OPC Server

Extrafield 1 Extrafield 2

Extrafield 3

Extrafield 4

Extrafield 5

Extrafield 6

Fields to be written to the OPC Server

Sent data field list **4**

Field name	Node ID
L*	ns=3;i=1009
a*	ns=3;i=1010
b*	ns=3;i=1011

Add new field to send **5** 

1

Server name

Enter the server address for the OPC UA server

Servername

2

Username and password

Enter username and password for accessing the OPC server

Username Password

3

Extrafields to read from OP server

Each node entered here will be read from the OPC server and stored into the Extra field for a measurement.

Note: If you have renamed the Extrafields, the names shown here might be different

Extrafield 1 Extrafield 2
 Extrafield 3 Extrafield 4
 Extrafield 5 Extrafield 6

4

Sent data field list

Enter all data you want to be written into the OPC server.

Select a value in column 'Field name' and enter the NodeID.

	Field name	Node ID
▷	L*	ns=3;i=1009
	a*	ns=3;i=1010
	b*	ns=3;i=1011
☀		

5

Add new field to send

Enter new entries here. To add the line, hit 'Enter' key after typing the Node ID

☀

5.3.11. Device settings

Navigation: Side menu >

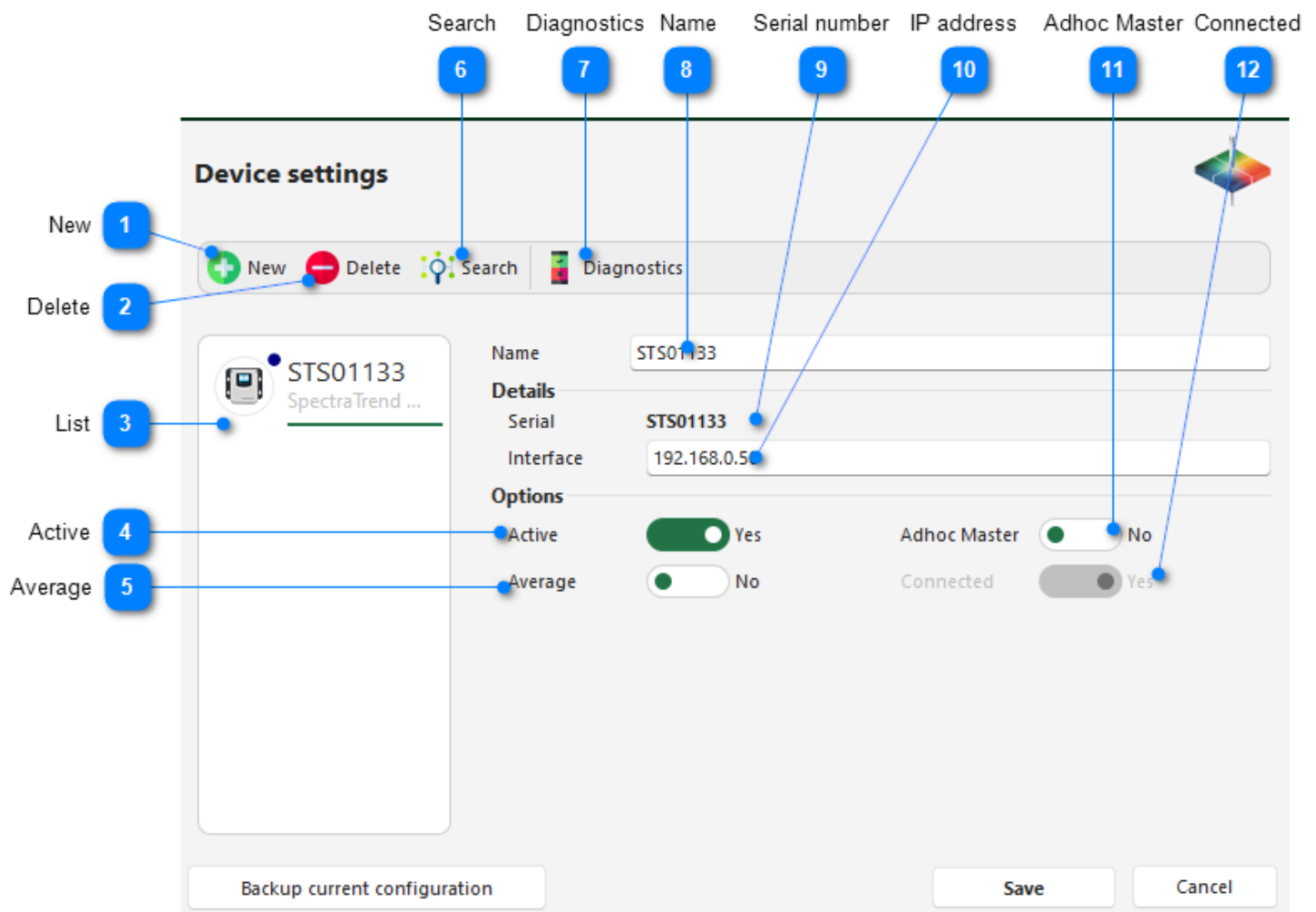


Settings



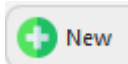
Device settings

Add or edit instruments on this page:



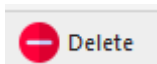
1 New

Add a new instrument. [See here](#)



2 Delete

Removes the selected instrument from the list. You can reconnect it by clicking on **New**



3 List

List of all available instruments connected so far. A golden circle around the image indicates an active [Adhoc Master](#)



4 Active

Activates the instrument at opening of the software



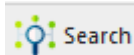
5 Average

Only applicable, if you have more than one instrument in a production line. If selected, the average value of all instruments where **Average** is selected in a production line will be displayed.

Average ☒ No

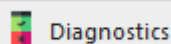
6 Search

If the IP of the instrument has changed and colorWorkbench is not able to find it anymore, you can search for the instrument and automatically change the IP address to the new one



7 Diagnostics

Starts some diagnostic functions. Used for our technical support



8 Name

You can enter a name for the instrument, e.g. a position, which will be displayed for it

Name STS01133

9 Serial number

Displays the serial number of the instrument

Serial STS01133

10 IP address

The instrument's IP address

Interface 192.168.0.50

11 Adhoc Master

Defines an Adhoc Master. The Adhoc Master instrument is used for measuring an adhoc standard. This is only in effect, if you have multiple instruments. When no Adhoc Master is defined, colorWorkbench uses the first instrument that reports a spectrum. An active Adhoc Master is shown with a golden circle in the instruments list

Adhoc Master ☒ No

12 Connected

A flag, if the instrument was connected successfully at startup (Greyed out as not changeable)

Connected ☐ Yes

Add a new instrument

Click on "New" and follow the four steps:

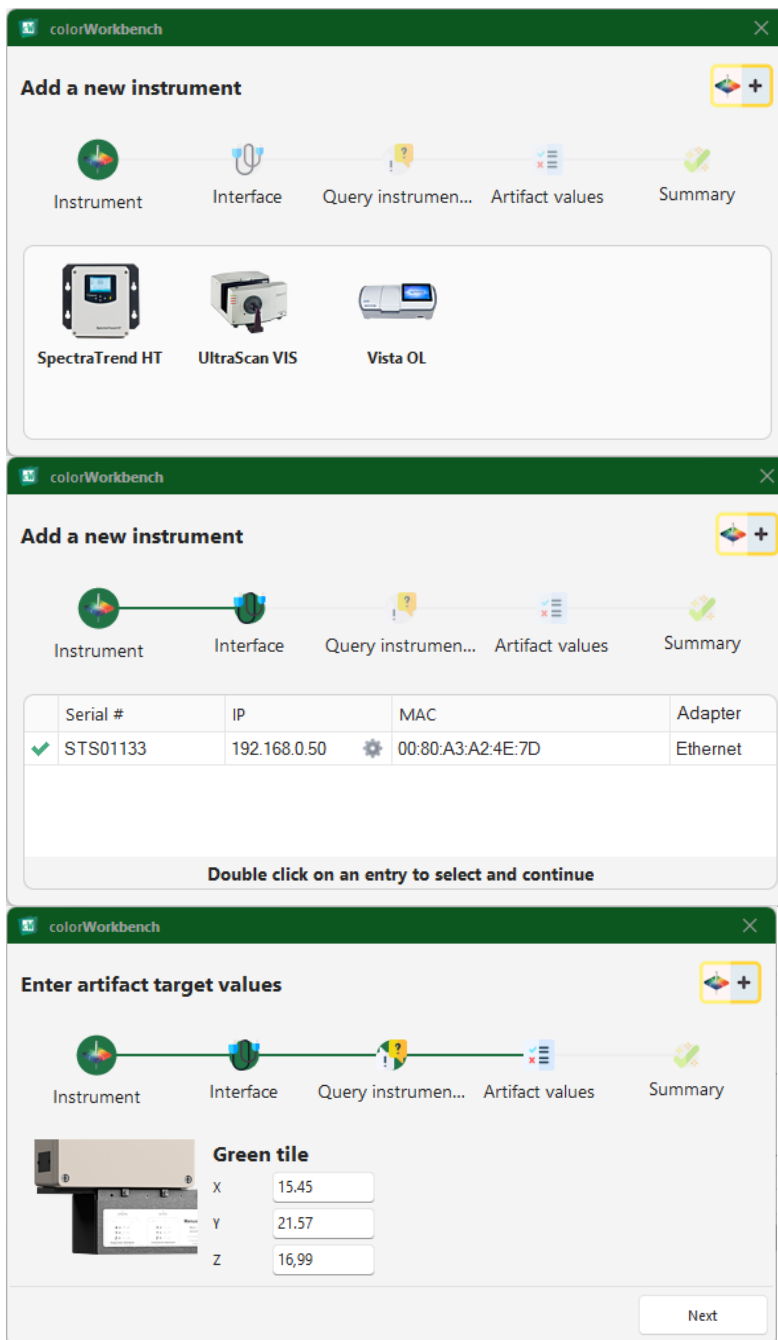
1. **Instrument:** Select the type of HunterLab instrument by click. A search of all these instruments connected to your network will be conducted.

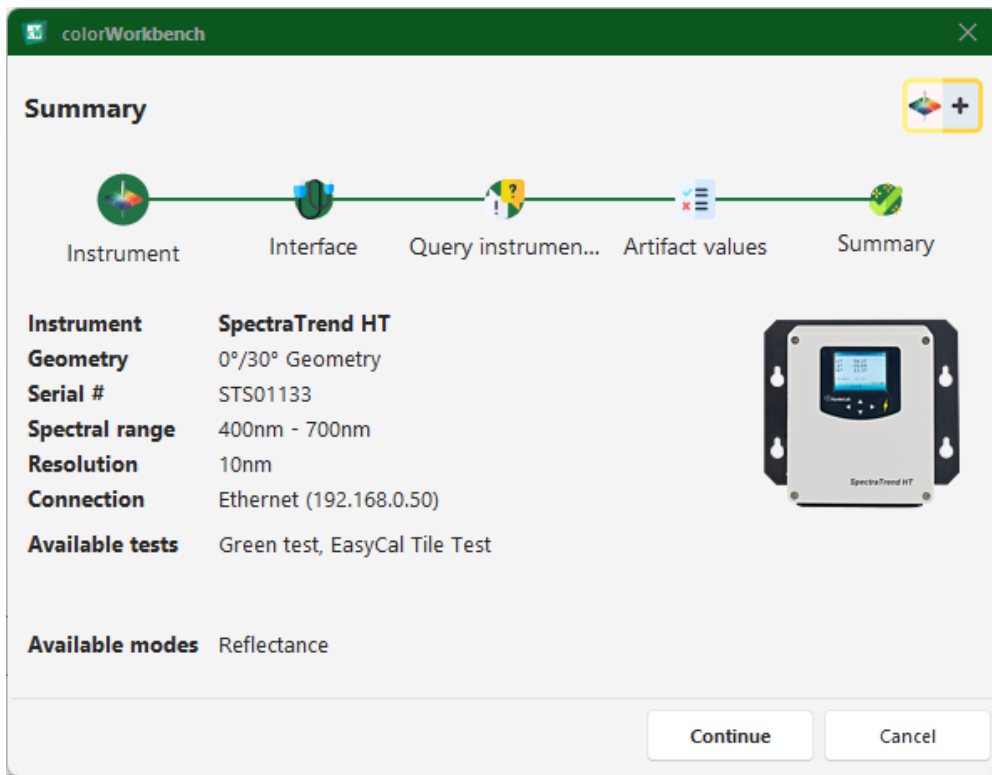
2. **Interface:** A list of all instruments of the selected type, that are connected appears. At the cog wheel  at the IP address you can set a customized [IP address](#). Select the right instrument serial number In the list by double click. If an entry has not the  symbol, it is not reachable for the software. It's possible, that the instrument is connected to another network segment or is set to another address range. The instrument should always use the same IP address!

3. **Enter green tile target values:** After selecting the instrument by double-clicking the entry, enter the green

tile values printed on the calibration slide and click **Next**.

4. **Summary:** The instrument specifications are displayed. Click **Continue** and the connection is established.





Summary

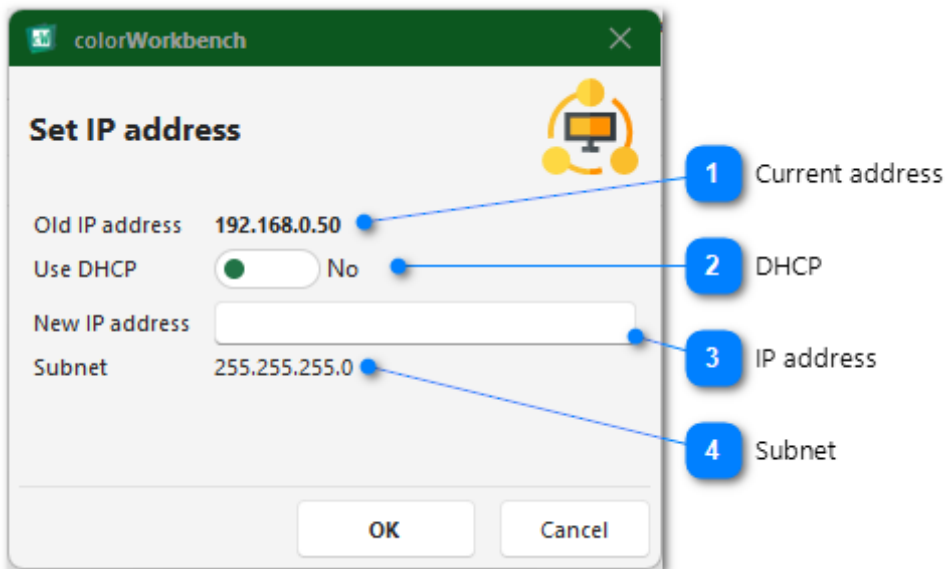
Instrument Interface Query instrumen... Artifact values Summary

Instrument	SpectraTrend HT
Geometry	0°/30° Geometry
Serial #	STS01133
Spectral range	400nm - 700nm
Resolution	10nm
Connection	Ethernet (192.168.0.50)
Available tests	Green test, EasyCal Tile Test
Available modes	Reflectance

Continue Cancel

Edit IP address

You can set a fixed IP-Address for your instrument at step 2 of **Add a new instrument** by the cog wheel  -Symbol:



Set IP address

Old IP address 192.168.0.50

Use DHCP ☒ No

New IP address

Subnet 255.255.255.0

OK Cancel

1 Current address

2 DHCP

3 IP address

4 Subnet

1 Current address

The instrument's current IP address

Old IP address 192.168.0.50

2 DHCP

Use DHCP (instrument will automatically receive an IP address from an available DHCP server).

Note: If you use DHCP and the instrument is switched off for a while, the IP address of the instrument might have been assigned to another network device meanwhile and the software can't find the instrument. Then you would have to search for the instrument again.

Use DHCP ☐ No

3 IP address

Enter an IP address, set for the instrument, manually.

New IP address

4 Subnet

The subnet mask is calculated automatically based on your IP address entry

Subnet 255.255.255.0

5.3.12. Permissions

Navigation: Side menu >  >  Settings >  Permissions

Depending on the selection at [Global settings](#) / Security

Login required ☐ [not selected](#) or Login required ☒ [selected](#)

there are **different windows displayed**:

1. Admin and User rights (Login required ☐)

1 Password

2 Auto-log-off

3 Run and device options

4 Standards

6 Customize views

9 User Events

14 Delete values

15 Reporting

1 Password

If no password is entered, everyone can open the software with admin rights.
Enter the password for the admin mode and set user permissions below.

Password

2

Auto-log-off

If enabled, admin mode will be canceled after 5 minutes

Auto-logoff admin ☒ On

3

Run and device options

Allows the normal user to edit parameters during a run, to standardize and to dock the windows differently

Edit parameters ☒ Yes

Allow docking ☒ No

Allow standardize ☒ Yes

4

Standards

Allows the normal user to add a new standard, to edit it, and its tolerances and to delete a standard

Add ☒ No

Edit tolerances ☒ No

Edit ☒ No

Delete ☒ No

Change standard ☒ No

6

Customize views

Allows the normal user to customize the corresponding views

Customize table ☒ Yes

Customize diagrams ☒ Yes

Customize Infopanel ☒ Yes

9

User Events

Enables events during a run. The normal user can double-click into the diagram area and a custom event is generated. If custom user text is enabled, the normal user can also enter some text for this event.

Events active ☒ Yes

Custom user text ☒ No

14

Delete values

Allows the normal user to delete values when a run is active. This will only clear the measurements table and diagrams, but it will not delete any values from the database!

Delete values ☒ Yes

15

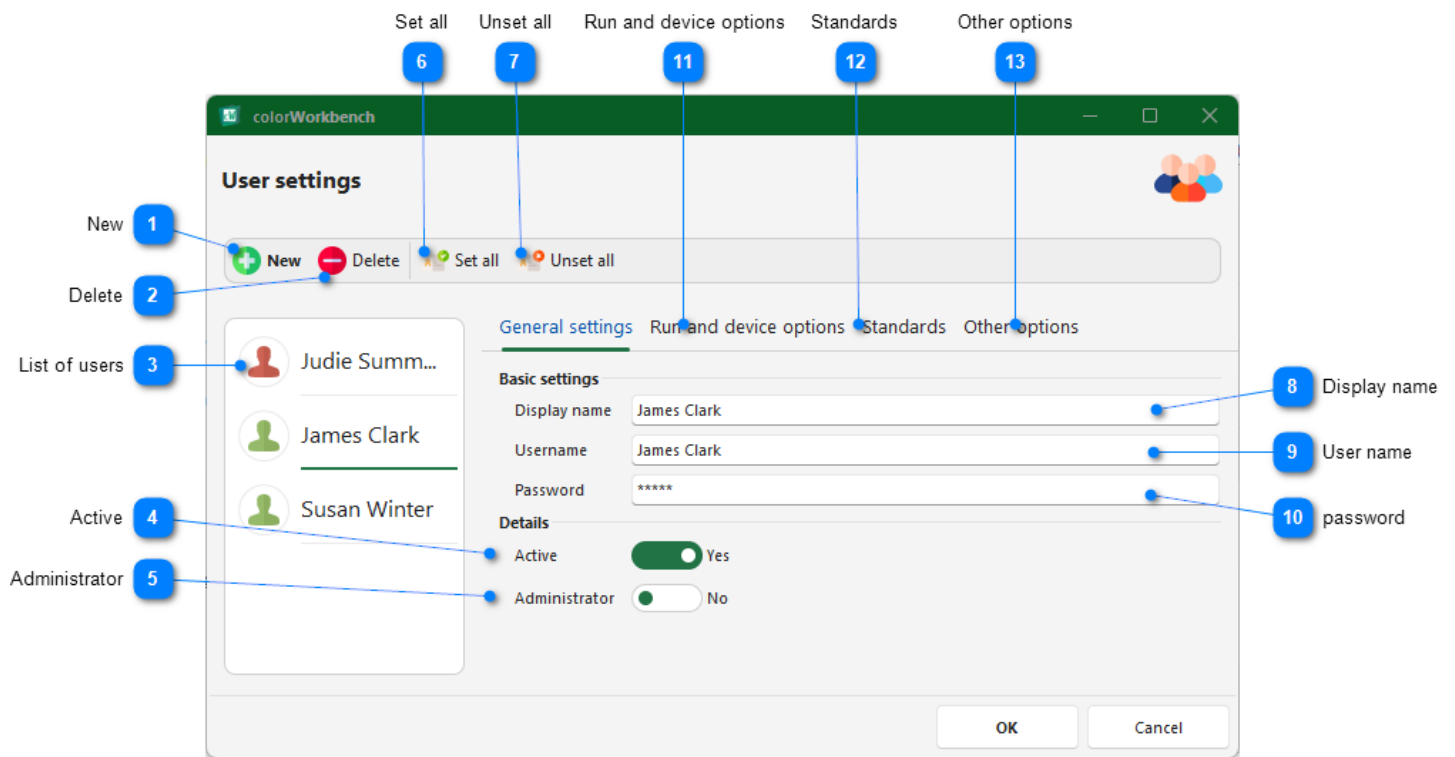
Reporting

Allows the normal user to use the reporting functions

Allow reporting ☒ Yes

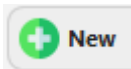
2. User groups management (Login required ☒)

Tab 1: General settings



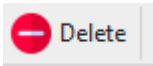
1 New

Add a new user



2 Delete

Delete the selected user



3 List of users

List of all users registered. Administrators are displayed in red, normal users in green.



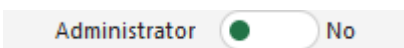
4 Active

Select if user is active or not



5 Administrator

Select if a user has administrator rights. **Only Administrators have access to the general setting.**



6 Set all

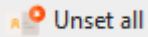
Valid for the right three Tabs: Selects all rights of the active tab



7

Unset all

Valid for the right three Tabs: Un-set all rights of the active tab



8

Display name

Choose a display name for user this could be the working place as well, like "Station No 2".

9

User name

Choose a user name

10

password

Enter password for user

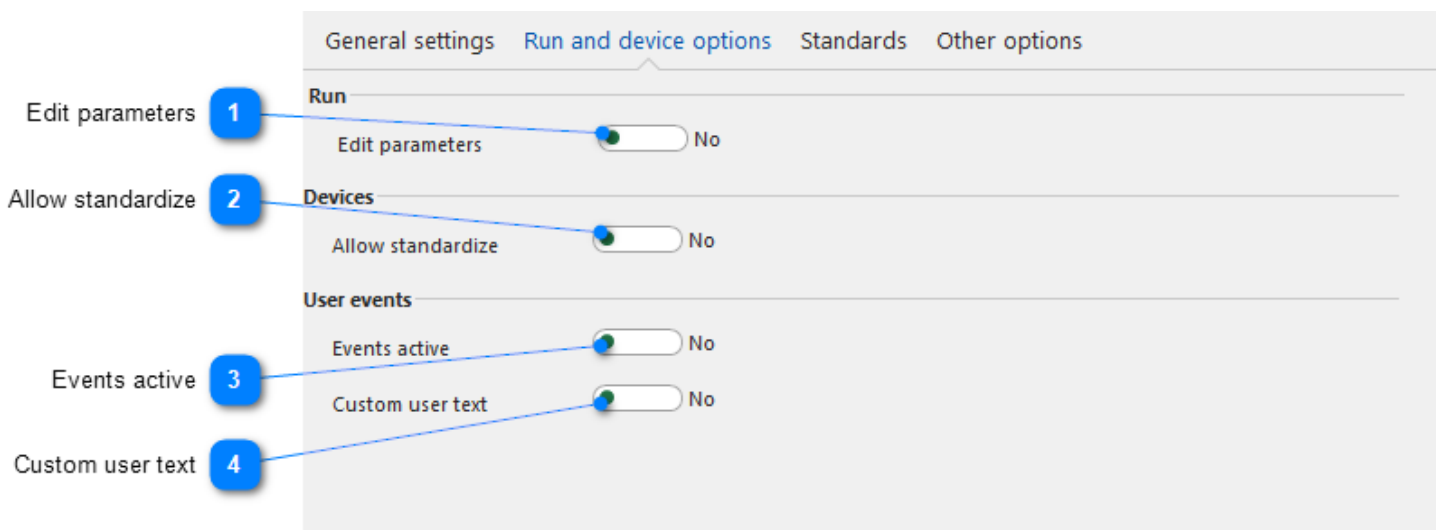
11

Run and device options
[Tab 2](#)

12

Standards
[Tab 3](#)

13

Other options
[Tab 4](#)
Tab 2: Run and device options


General settings **Run and device options** Standards Other options

Run

Edit parameters ☒ No

Devices

Allow standardize ☒ No

User events

Events active ☒ No

Custom user text ☒ No

1

Edit parameters

Enables the user to edit parameters like status, name, IDs and extra fields during a run by the icon on the left toolbar of the main screen 

☒ No

2

Allow standardize

Enables the user to standardize the instrument

☒ No

-
- 3 Events active**
Enables the user to add an event by a double click at a certain point during the run. This could for example mark the change of a batch.
-

- 4 Custom user text**
Enables the user to add text to the added event

☒ No

Tab 3: Standards

General settings Run and device options **Standards** Other options

Standards

Add **1** ☒ No

Edit **2** ☒ No

Delete **3** ☒ No

Edit parameters **4** ☒ No

-
- 1 Add**
Enables the user to add a standard

☒ No

- 2 Edit**
Enables the user to edit a standard. This should always be active if "Add" is active, but can also be selected alone, to allow editing of existing standards.

☒ No

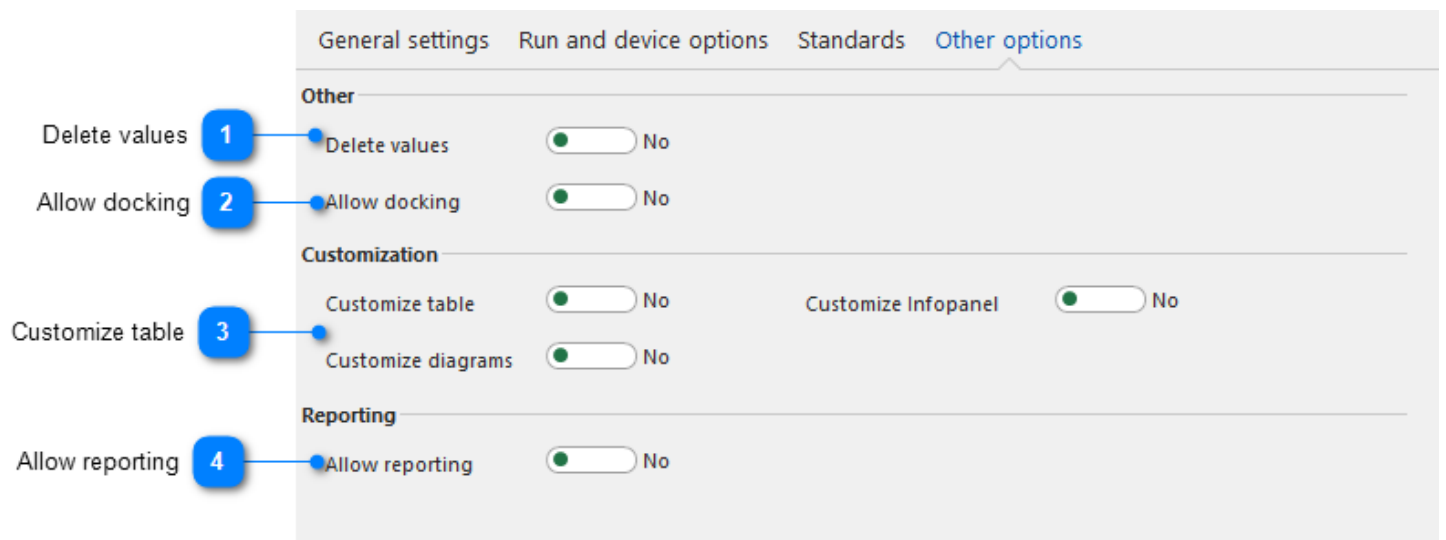
- 3 Delete**
Enables the user to delete a standard. This standard will also be deleted in the data base and cannot be restored.

☒ No

- 4 Edit parameters**
Enables the user to edit parameters of the standard

☒ No

Tab 4: Other options



1 Delete values

Enables the user to delete measured values

Delete values ☒ No

2 Allow docking

Enables the user to undock, dock and resize windows with different views

Allow docking ☒ No

3 Customize table

Enables the user to customize the respective views

Customize table ☒ No Customize Infopanel ☒ No
Customize diagrams ☒ No

4 Allow reporting

Enables the user to design a report

Allow reporting ☒ No

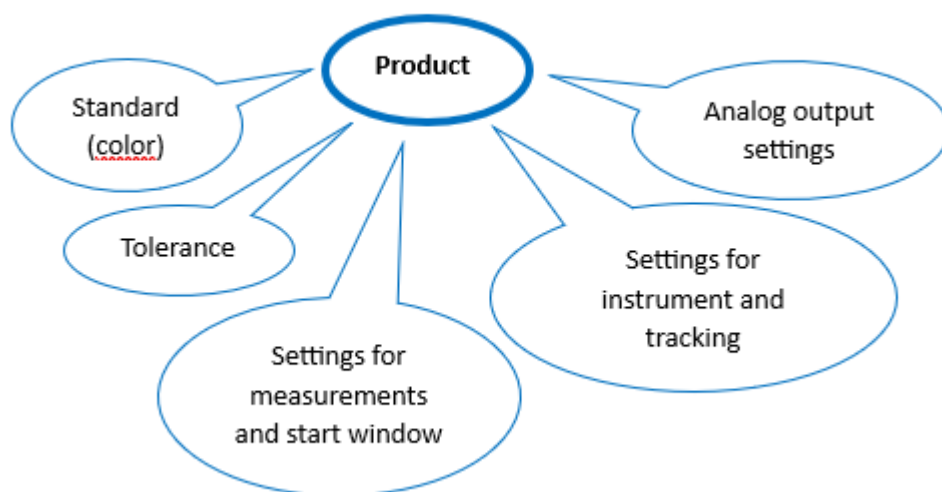
6. Product management

Navigation: Side menu >



Products are used as a reference point to production measurements.

A **product** is a **standard color** together with **tolerances** and a **measurement mode**



In the Product Management, you can add (=edit) a [new product](#) or manage and modify existing ones.

There are **two types** of standards:

- **Working standards with actual standard color**

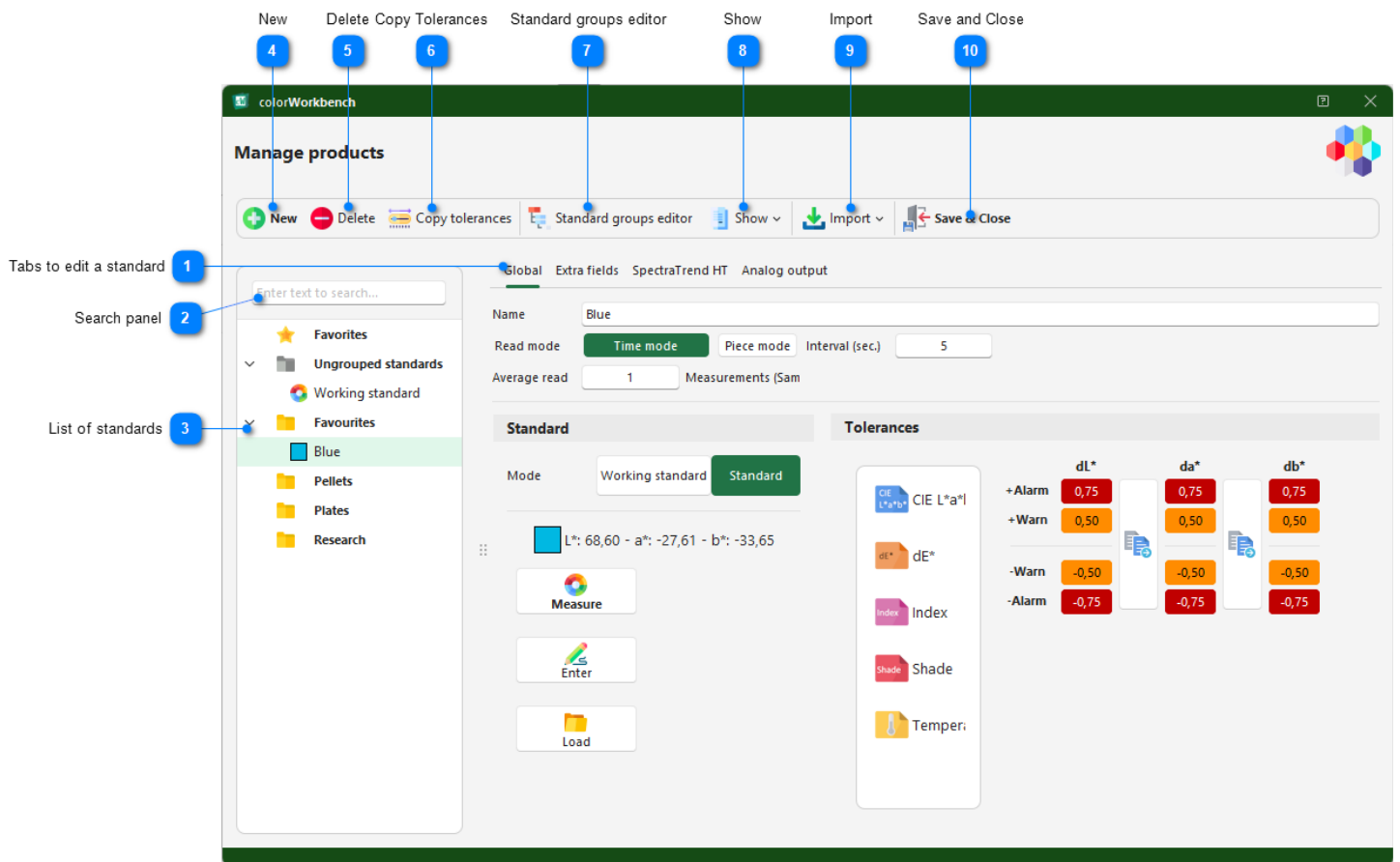
The first measurement of a run is used as standard color (but only for this run) as all other settings are customized in advance.

- **Standards with a set standard color**

The color values of the standard are measured, entered or loaded beforehand and saved together with the remaining settings. It is also possible to do a hitch (shifting the color by a certain factor or addition) for a standard and to activate a temperature compensation.

In order to manage your products, click on **Manage products**  in the left tool bar. If admin rights are set, there will be a button displayed to log in for the settings.

Note: Always make sure to close the window by  **to save your settings!**



1 Tabs to edit a standard

Open the tabs to set kind and color of the standard at [Global](#), to customize [Tolerances](#) and [Extra fields](#), to define measurement settings at [SpectraTrend settings](#), and to set possible [Analog outputs](#) for your selected standard

Global Extra fields SpectraTrend HT Analog output

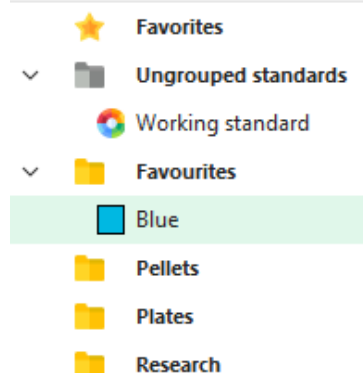
2 Search panel

Search for a standard name in the active standard list. (A list of deleted standards can be shown in the "Show" dropdown menu)

Enter text to search...

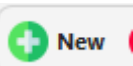
3 List of standards

The list of all available standards. You can setup a new group at [Groups/Status](#). To change the group for a certain standard go to the tab [Extra fields](#), standards can be regrouped in this list by drag and drop.



4 New

Adds a [new standard](#) to the database



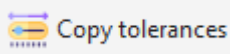
5 Delete

Deletes the selected standard. The standard is not really deleted, it is set to invisible. So, all runs that were measured with this standard can be still opened, but the standard is not available for new runs. You can open a list of all deleted standards in the "[Show](#)" menu.



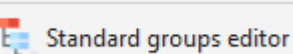
6 Copy Tolerances

While editing a standard, select a standard from the list that appears when you click on this button. The tolerances of the selected standard will be transferred to the standard you are editing.



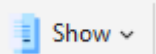
7 Standard groups editor

At the [standard group](#) editor you can create, rename and delete groups for your standards.



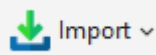
8 Show

[Options](#) to show a **standard list** to identify the **Load ID**, to reactivate **deleted standards** and to see the **history** of a selected standard.



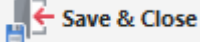
9 Import

If you have data stored in an EasyMatch QC database or EasyMatch OL CT product setups, you can [import](#) them to colorWorkbench.

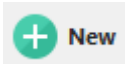


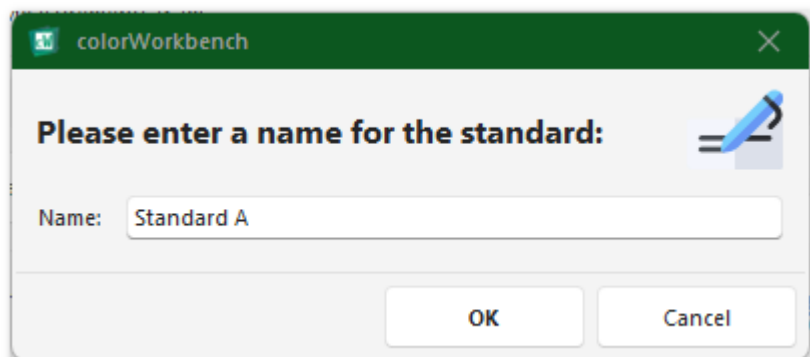
10 Save and Close

Closes the standard management window. All changes are saved then. **If you close the window by the x-icon, changes are not saved!**



Add/Edit standards

To add a new standard, click on New  and enter a name for the standard:



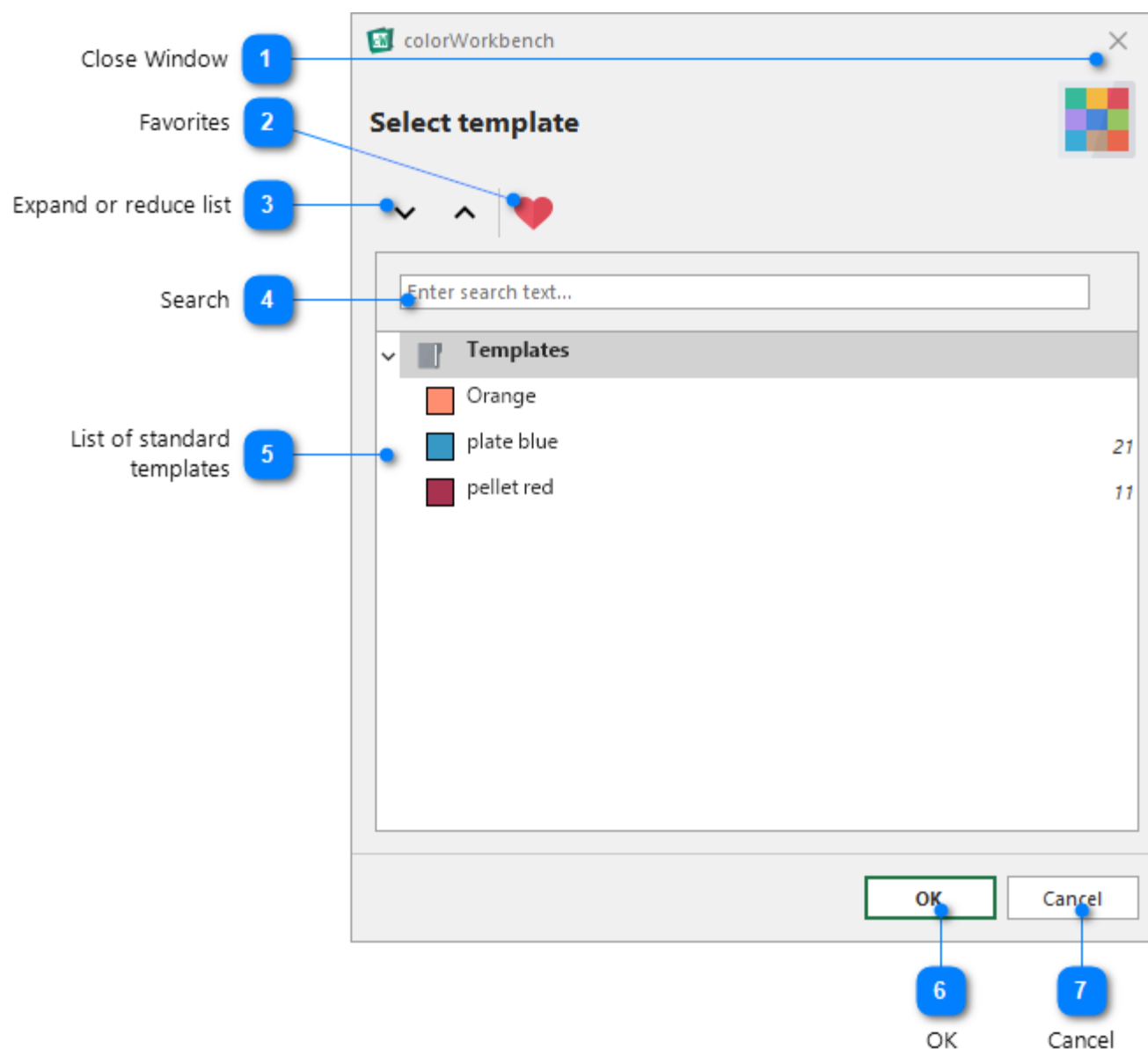
That's all! A new standard is created with the **default settings** (ad-hoc measurement, 5 seconds interval, actual date). Now you can change or specify all settings at the different Tabs.

If one or several standards are [specified as templates](#) at the "[Extra fields](#)" tab beforehand, a template window opens:

Select template

After selecting "create a new standard" you can select a template if you did [define templates](#) beforehand. When a template is selected by double click all the settings are retrieved from the selected template and can be modified for the new standard.

If you don't want to use a template, just close the window by the "x".



1

Close Window

Closes the window and opens the standard manager to edit the whole standard with the average value as standard.



2

FavoritesSelect the template folder *favorites*

3

Expand or reduce list

Expand or reduce the list, if the templates are stored in different folders



4

Search

Search a template by name

5

List of standard templates

List of all standards which are defined as templates

Templates		
	Orange	
	plate blue	21
	pellet red	11

6

OKGo back to the *Global* window for further settings with the selected template applied to the new standard.

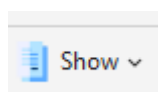
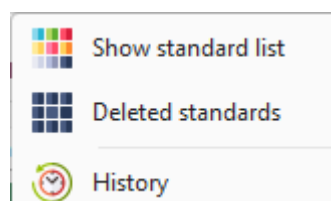
7

CancelGo back to the *Global* window for further settings with no applied template

6.1. Show products Lists

Navigation: Side menu >

>

**Select among**

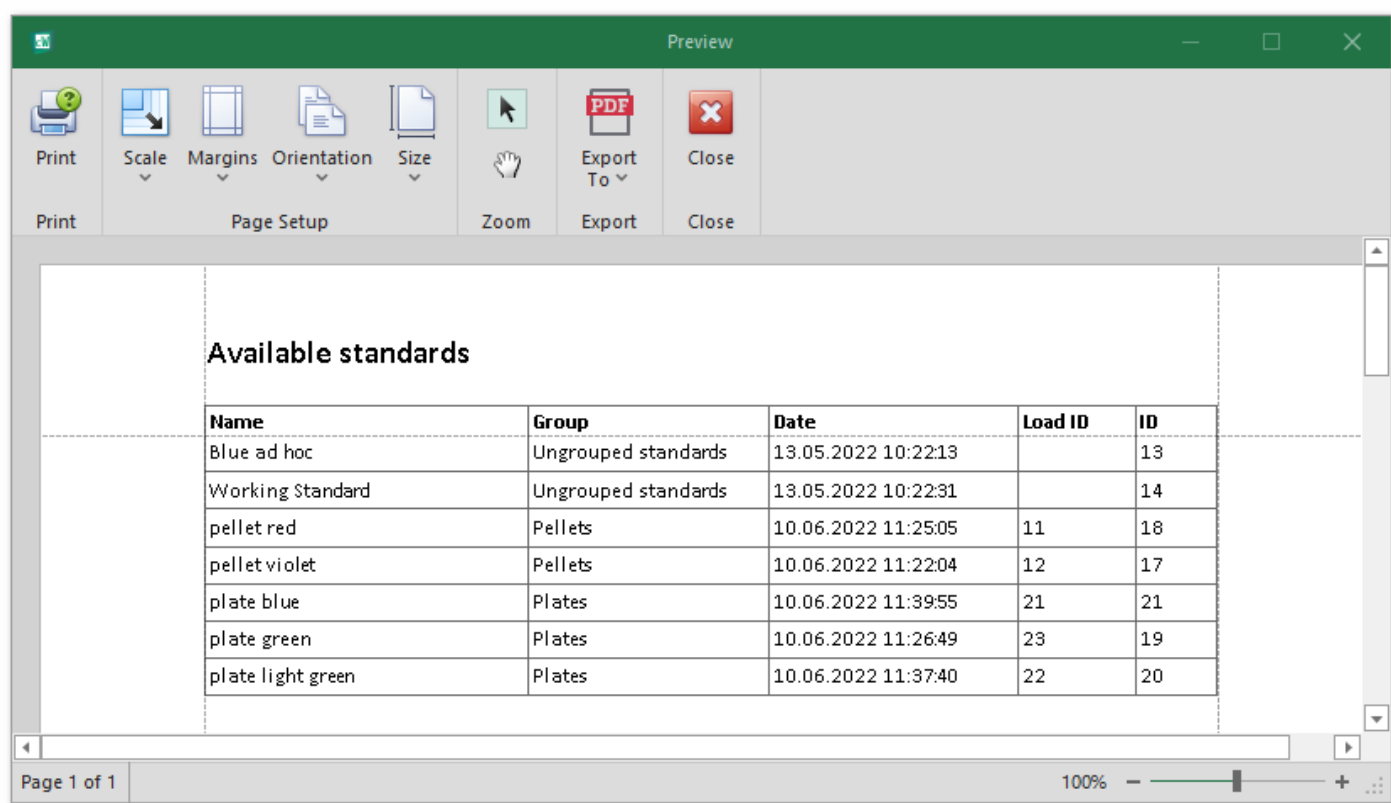
[Show standard list](#): List of available standards to print or export

[Deleted standards](#): List of deleted standards to recover

[History](#): List of modifications for the selected standard with option to add a memo

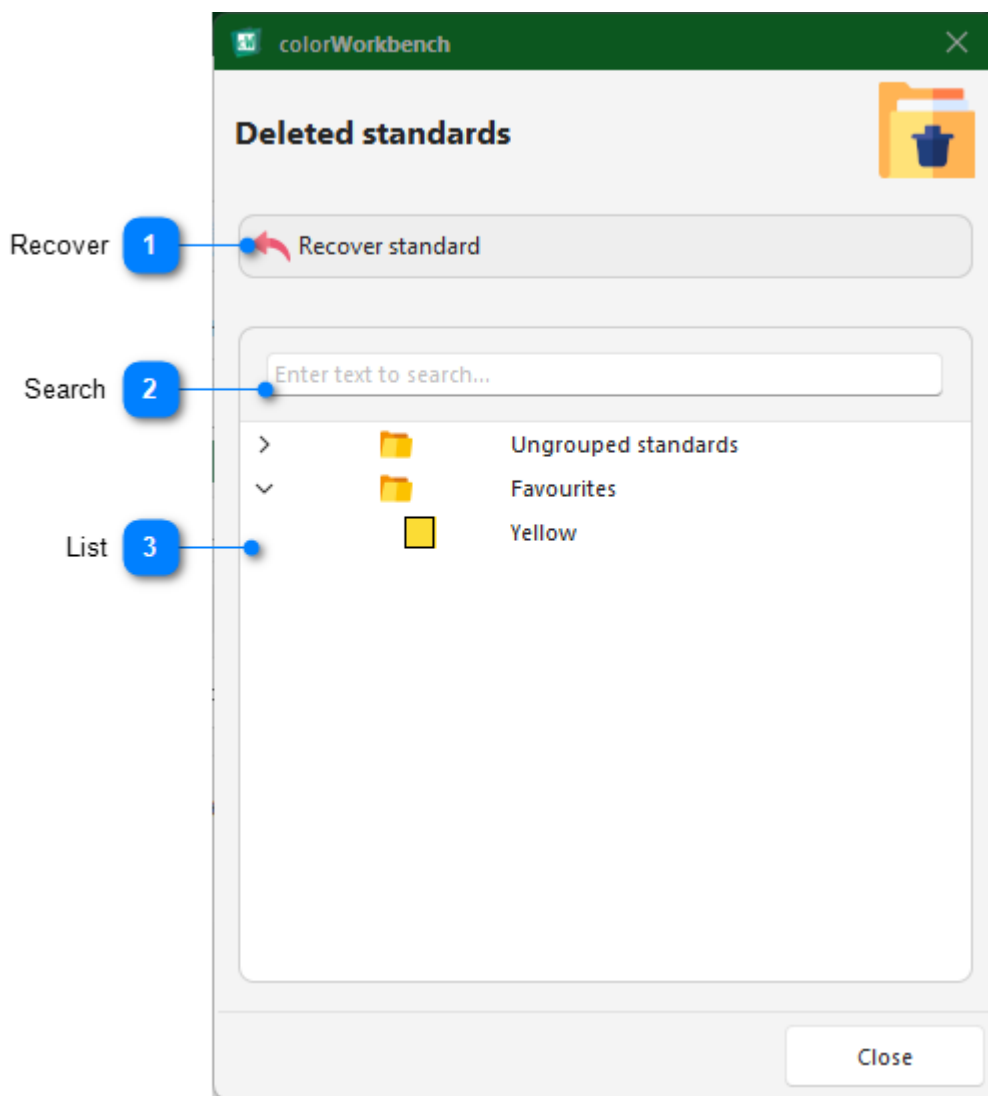
Standard list

All standards are listed with group, date/time [Load ID](#) (assigned by yourself) for printing and export and ID (automatically assigned by the data base server).



Name	Group	Date	Load ID	ID
Blue ad hoc	Ungrouped standards	13.05.2022 10:22:13		13
Working Standard	Ungrouped standards	13.05.2022 10:22:31		14
pellet red	Pellets	10.06.2022 11:25:05	11	18
pellet violet	Pellets	10.06.2022 11:22:04	12	17
plate blue	Plates	10.06.2022 11:39:55	21	21
plate green	Plates	10.06.2022 11:26:49	23	19
plate light green	Plates	10.06.2022 11:37:40	22	20

Recover deleted standards



1

Recover

Recovers the selected standard in the respective group

 Recover standard

2

Search

Search a deleted standard by name

Enter text to search...

3

List

List of all deleted standards

>  Ungrouped standards
 v  Favourites
 Yellow

History and memo

The history shows every change **of the selected standard**. By double click on the line in the memo column, you can add a comment to the respective change.

colorWorkbench

History



Date	Old value	New value	Memo
22.11.2024 12:43	ValueZ=0,00	ValueZ=101,77	
22.11.2024 12:43	ValueY=0,00	ValueY=93,30	
22.11.2024 12:43	ValueX=0,00	ValueX=88,37	
22.11.2024 12:43	StandardID=-1	StandardID=15	
22.11.2024 12:42	Analog4High=20,00	Analog4High=0,00	
22.11.2024 12:42	Analog4Low=4,00	Analog4Low=0,00	
22.11.2024 12:42	Analog3High=20,00	Analog3High=0,00	
22.11.2024 12:42	Analog3Low=4,00	Analog3Low=0,00	
22.11.2024 12:42	Analog2High=20,00	Analog2High=0,00	
22.11.2024 12:42	Analog2Low=4,00	Analog2Low=0,00	
22.11.2024 12:42	Analog1High=20,00	Analog1High=0,00	
22.11.2024 12:42	Analog1Low=4,00	Analog1Low=0,00	
22.11.2024 12:42	Block3=5	Block3=3	
22.11.2024 12:42	Block2=5	Block2=3	
22.11.2024 12:42	Block1=5	Block1=3	
22.11.2024 12:42	LoadID=	LoadID=0	
22.11.2024 12:42	ItemID=	ItemID=	
22.11.2024 12:42	ProductID=	ProductID=	
22.11.2024 12:42	ExtralID=	ExtralID=	

Close

6.2. Import Standards

Navigation: Side menu >

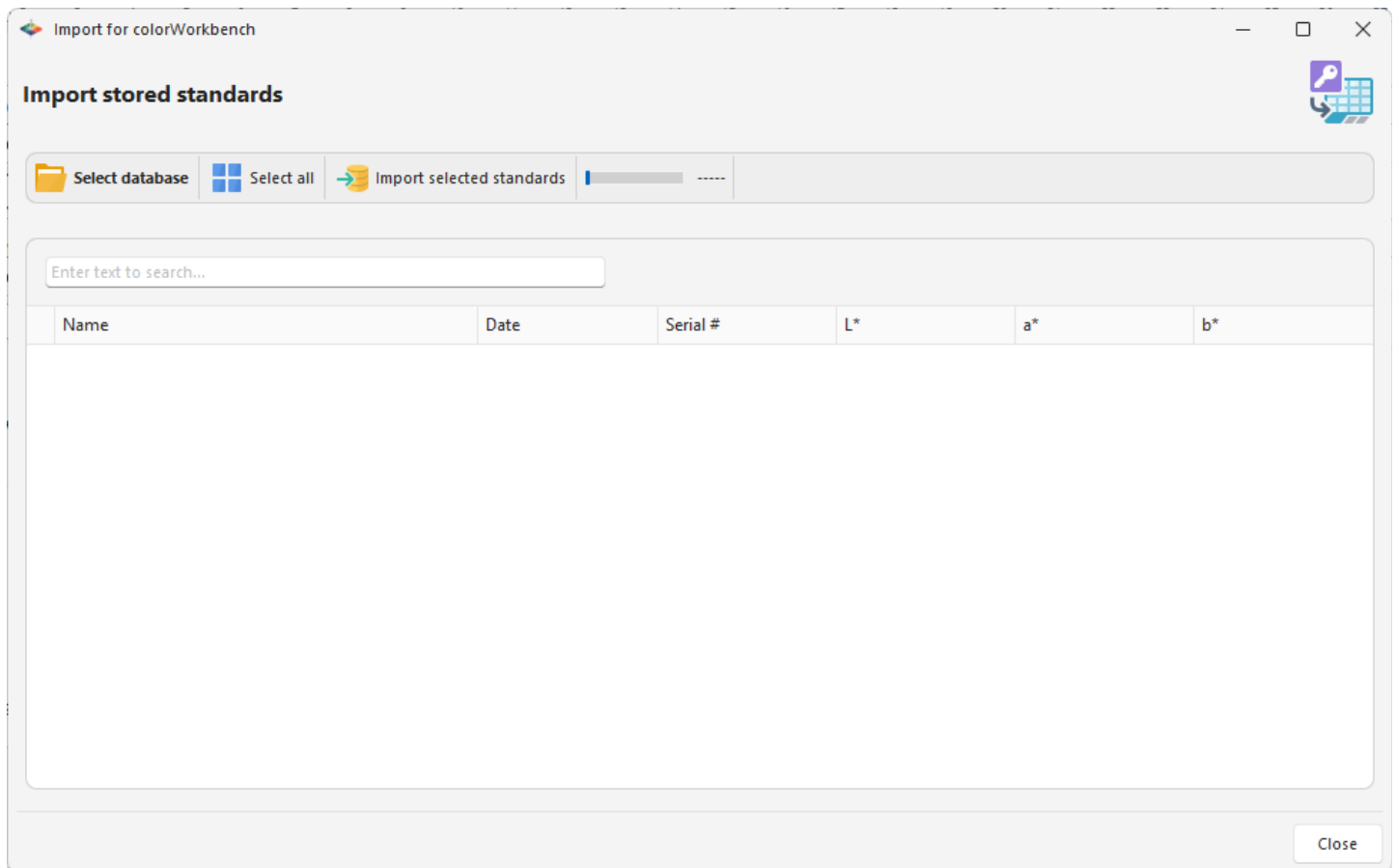


There are two options:

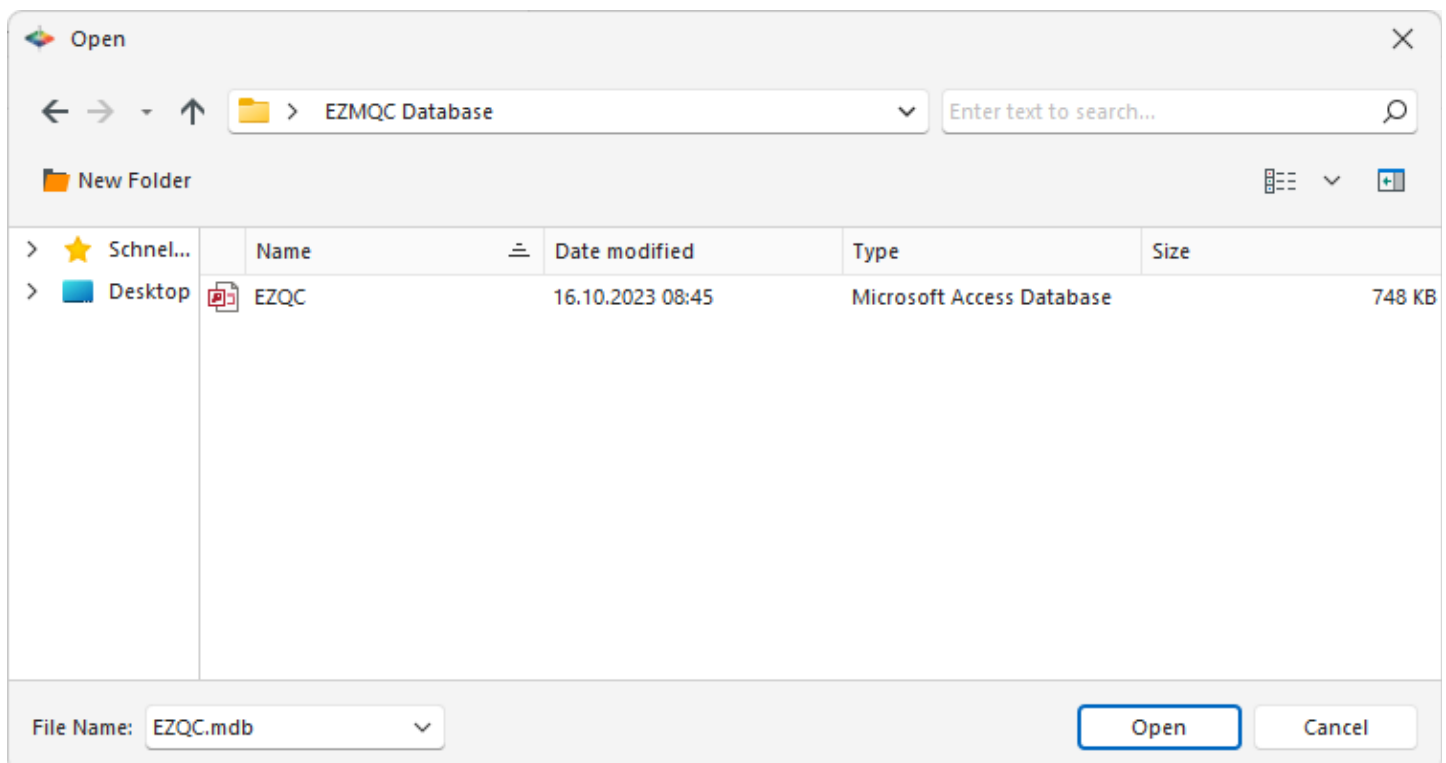
- a) Import from EZMQC Database
- b) Import from [EZM OL CT standards](#)

a) from EZMQC database

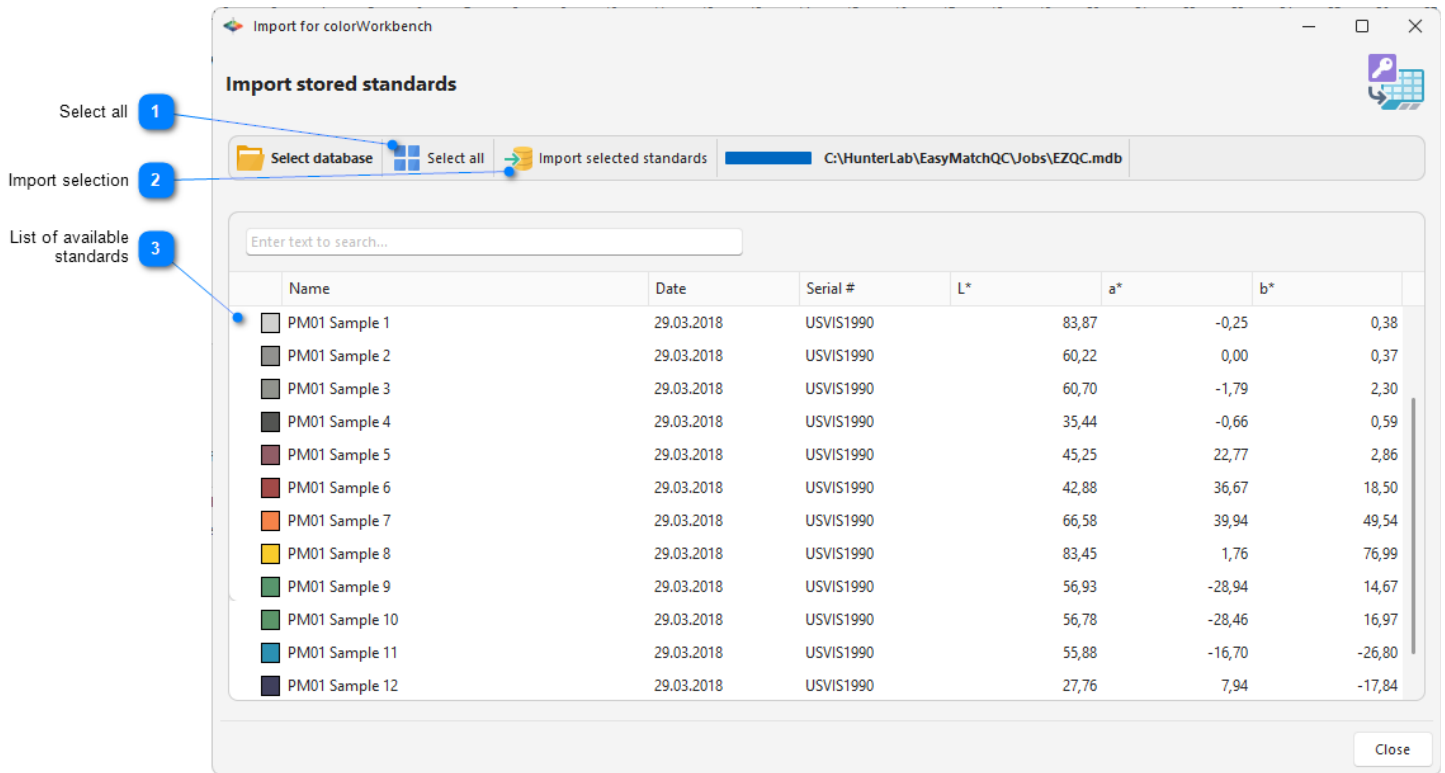
Select this option and the import tool is launched and a hint with the supported instruments is shown. Click OK to continue.



Click on **Select database** and go to your EZMQC database in the file requester dialog. Doubleclick to select:



Then all standards stored in the database are shown in the list:



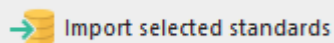
1 Select all

Selects all standards in the list. if you don't want to select all standards, you can select entry by clicking on them. Top select multiple items, use SHIFT key for a range or CTRL key for selecting specific entries



2 Import selection

This will start the import of the selected standards to colorWorkbench



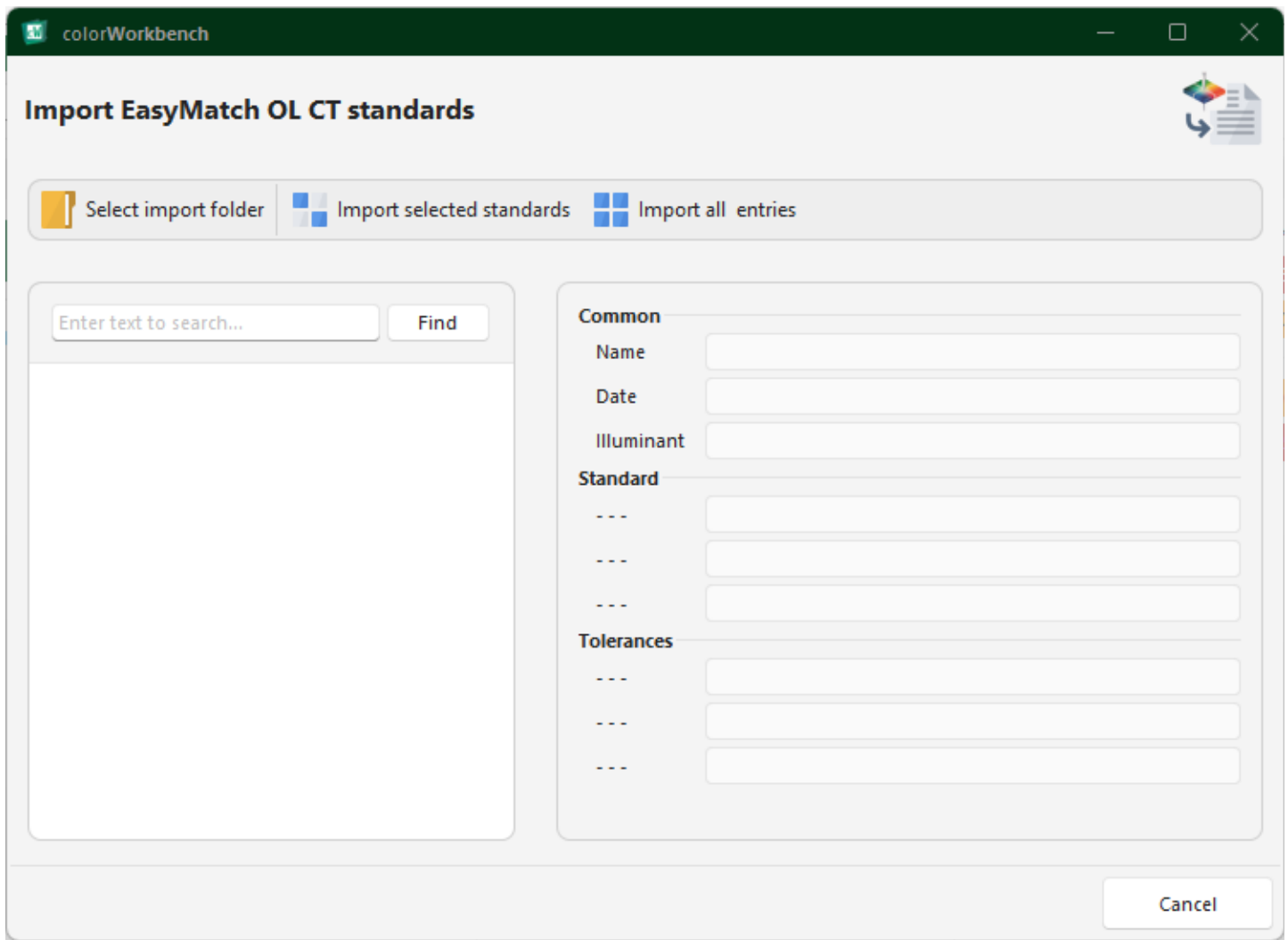
3 List of available standards

A list of available standards for import

☐	PM01 Sample 1	29.03.2018	USVIS1990
☐	PM01 Sample 2	29.03.2018	USVIS1990
☐	PM01 Sample 3	29.03.2018	USVIS1990

b) from EZM OL CT Standards

Select this option and a dialog window opens:



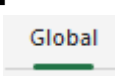
Search for the EZM OL job folder by  **Select import folder** in your file structure and select it by doubleclick.

Mark one standard and on the right side you can see all information about it.

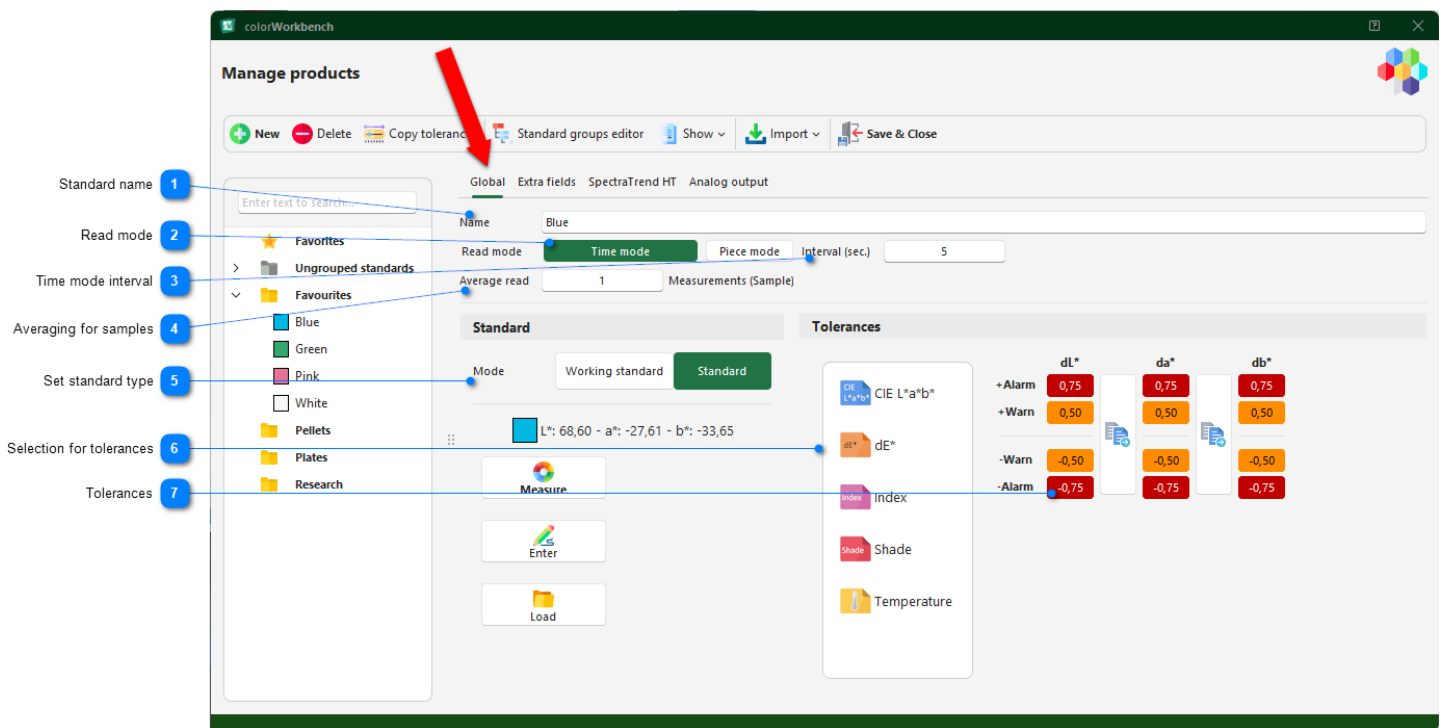
Then either import all standards by  **Import all entries**

Or select several standards and import them by  **Import selected standards**

6.3. Global standard properties

Navigation: *Side menu* >  > 

In the Global tab you set the measurement interval, change the name of the standard, set a standard type and define the measurement settings for the sample readings:



1 Standard name

The name for the standard can be set or changed. It will be displayed when selecting a standard at the start of a run and can be displayed in the table.

Name

2 Read mode

Select *Time mode* or *Piece mode*.

Time mode: Set an interval (**5**) how often readings shall be averaged to a measurement value.

Piece mode: SpectraTrend HT: The instrument is detecting a new sample and starts reading corresponding to the additional settings in the corresponding tab.

Other instruments: For other instruments, you need an [Adam 5000 system](#)

☒ Time mode ☐ Piece mode ☐ Interval

3 Time mode interval

Set an interval for how often readings shall be averaged to a measurement value.

Interval (sec.)

4 Averaging for samples

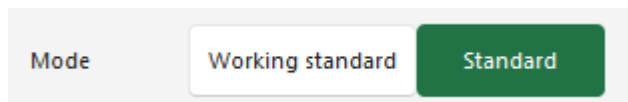
Enter the amount of measurements for how often readings shall be averaged and displayed as measurement values. This is only valid for samples.

(If 5 sec. is set as interval, average read of 3 means measurements of 15 sec.)

Average read Measurements (Sample)

5 Set standard type

Select the way of setting the standard color values. [See here](#).

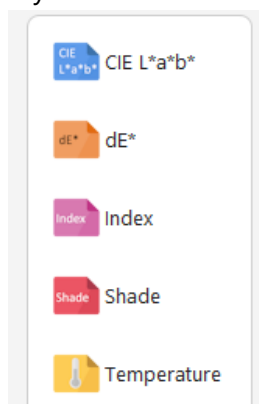


6

Selection for tolerances

Switch by the buttons from entering tolerances for a certain **color scale**, to **dEs** with factors, tolerances for indices **WI** or **YI** or to **shade sorting**.

If you want to see more color scales, select "show all color scales" at the [global settings](#).



7

Tolerances

Set limits for warning and alarm, affecting the display in the table, the trend plot and the dash board: Red display for exceeding the alarm values, orange display for exceeding the warn values. Make sure to enter a **minus sign for negative limits**.

A connected stack light will refer to these limits but only for the *state output value(s)*, selected at the [start settings](#).



Set standard color

There are five ways to set a standard color:

1. [Working standard](#) (Standard color is retrieved by the first measurement of a run)
2. [Define color](#)
 - 2.1. [Measure a color](#) (Measure a physical sample beneath the sensor as standard)
 - 2.2. Enter
 - a) [color values](#) or

b) [a hitch](#) to a measured standard color

c) [spectral values](#)

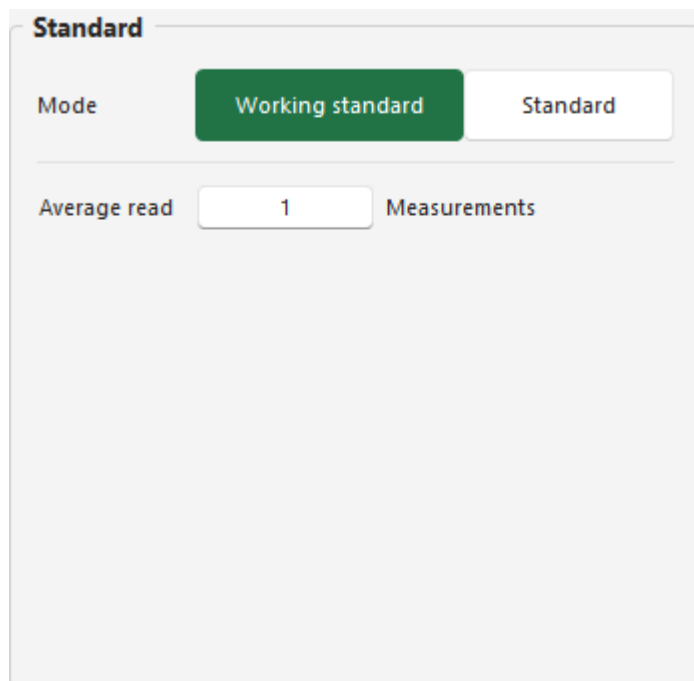
2.3. [Load a saved standard](#) (... of all previous measurements)

3. [Average measurements](#) of a previous run

Depending on the selection of the mode, there are two different windows:

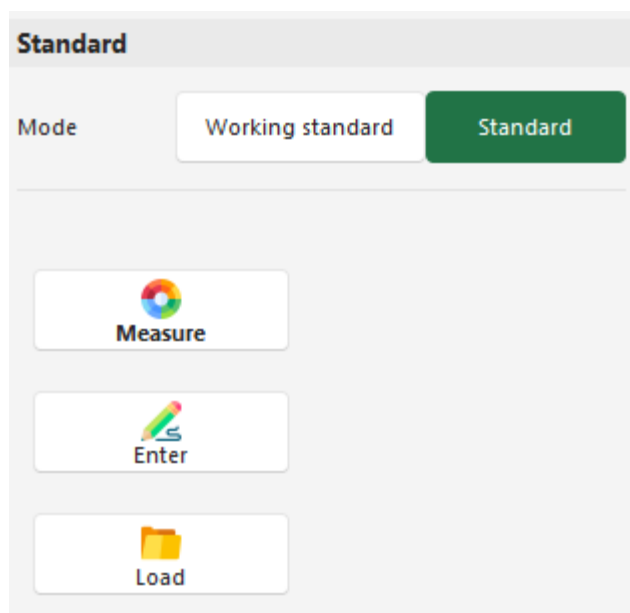
1. Working standard

For the **Working standard** you just set the number of measurements (=time intervals) to be averaged for the standard values.



The screenshot shows a window titled "Standard". Under the "Mode" label, there are two buttons: "Working standard" (highlighted in green) and "Standard". Below this, there is a label "Average read" followed by a text input field containing the number "1", and then the word "Measurements".

2. Standard (=preset color)



The screenshot shows a window titled "Standard". Under the "Mode" label, there are two buttons: "Working standard" and "Standard" (highlighted in green). Below this, there are three buttons stacked vertically: "Measure" (with a color wheel icon), "Enter" (with a pencil icon), and "Load" (with a folder icon).

For the preset **Standard** there are **four different options**:

2.1.



This button is used to measure the color of a physical standard.

A single measurement can be done or a measurement run can be made and the average of all displayed measurements can be set as the standard color.

All or single measurements of the list can be deleted before averaging.

The screenshot shows the 'colorWorkbench' window titled 'Measure new standard'. It features a toolbar at the top with buttons: Start (4), Single read (5), Standardize (6), Delete (7), Export (8), Use values (9), and Close (10). Below the toolbar are three tabs: Color data (1), Spectral values, and Spectral plot. The 'Color data' tab is active, displaying a table of measurements (2) with columns L*, a*, b*, Extra 6, and Distance. The table contains six rows of data. To the right of the table, the 'Average' values (11) are displayed: L* 90,41, a* -4,93, and b* 70,76. At the bottom left, the 'Illuminant/Observer' is set to 'D65/10°' (3). A 'Use values' button with a green checkmark is located at the bottom right of the table area.

L*	a*	b*	Extra 6	Distance
90,23	-4,92	71,17		82
90,23	-4,92	71,18		82
90,23	-4,92	71,18		82
90,23	-4,92	71,19		82
90,61	-4,94	70,41		82
90,93	-4,96	69,51		81

Average
L* 90,41
a* -4,93
b* 70,76

Illuminant/Observer: D65/10°

1

Tabs

Select to show color data (defined at [Start settings](#)) spectral values or the spectral plot of the measurements

Color data Spectral values Spectral plot

2

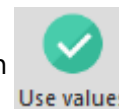
List of measurements

List of all measurements taken for the standard color. Can be shown as spectral values and spectral plot as well.

Delete measurements, you don't want to be used to average the standard color.

The spectral values are averaged and stored as the standard color when you click on

values



Use

Color data:

Color data	Spectral values		
X	Y	Z	
79,77	85,00	91,33	
79,77	85,00	91,33	
79,76	84,99	91,31	
79,77	85,00	91,32	
79,77	85,00	91,34	

Spectral values

Color data	Spectral values										
400nm	410nm	420nm	430nm	440nm	450nm	460nm	470nm	480nm	490nm	500nm	
0,72432267...	0,79209595...	0,83530843...	0,84738433...	0,85232239...	0,85321348...	0,85732197...	0,85943430...	0,86082643...	0,86163401...	0,86263817...	
0,72416472...	0,79188179...	0,83524757...	0,84733420...	0,85203528...	0,85291671...	0,85727304...	0,85942506...	0,86074167...	0,86155563...	0,86249053...	
0,72411012...	0,79178315...	0,83516710...	0,84725707...	0,85187220...	0,85280996...	0,85717493...	0,85930085...	0,86065572...	0,86151921...	0,86244630...	
0,72432690...	0,79200577...	0,83525031...	0,84730637...	0,85216706...	0,85302132...	0,85723662...	0,85932618...	0,86072123...	0,86156427...	0,86249357...	
0,72424161...	0,79202878...	0,83532327...	0,84736007...	0,85225754...	0,85315674...	0,85729479...	0,85937142...	0,86072313...	0,86157608...	0,86257642...	

3

Illuminant/Observer

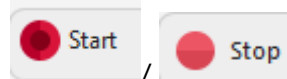
Illuminant and Observer set at the [start settings](#) are displayed.

Ill/Obs: D65/10°

4

Start

Starts and stops a run. The settings for the run (interval, distance) are taken from the current standard settings. The run can be restarted to complete the list by further measurements. Make sure, that the physical standard is positioned under the sensor.

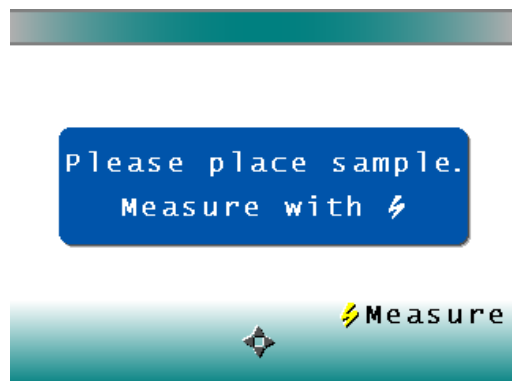


5

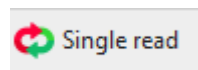
Single read

Sets the SpectraTrend to a single run mode. Click on it, then head over to the instruments display and control each measurement. Useful if you have only smaller samples for standard measurement or if you need to position the standard by hand.

STHT's display will show a message and you can measure by pressing the Flash button on the sensor:



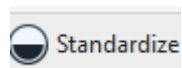
After a reading was taken, the message will appear again until you click on *Use values* or *Close* in the software.



6

Standardize

The instrument should be standardized before measuring a standard. See: [Standardization](#)



7

Delete

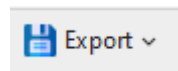
Select measurements by mouse to be deleted



8

Export

All displayed values can be exported as an Excel Pdf or Csv file.



9

Use values

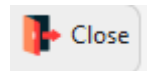
The average of all listed measurements is used as standard color



10

Close

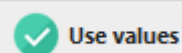
Closes without using the values. The standard values will not be changed



11

Average values

Average values of the measurements. Will be used as standard values by



Average

L* 90,41

a* -4,93

b* 70,76

2.2.



Here you can either enter color values of a new standard or [insert spectral values](#) from clipboard (you can also type them in, if you really want to):

To adjust the measured values to certain target values e.g. to match the values of two instruments, a hitch can be defined.

For samples that are thermo-chrome, a temperature compensation can be defined. To use temperature compensation you need to connect a thermometer.

a) Enter a color values

colorWorkbench

Enter a new standard

Insert X Delete

Tabs 1 Numeric standard Spectral values

Color scale 2 Color Scale CIE Lab

Illuminant 3 Illuminant D65/10°

Standard values 4 L* 80,0000 X: 51,82 a* -5,0000 Y: 56,68 b* 70,0000 Z: 11,69

Temperature 5 Temperature 20,0000 °C

6 Standard in XYZ scale

7 Color preview

13 Hitch active

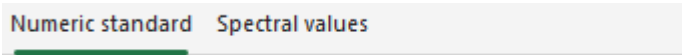
14 Factors for hitch

15 Hitch factors display in XYZ scale

OK Cancel

1 Tabs

Switch from Numeric standard with possible Hitch to Spectral values or Temperature compensation (if an external thermometer is connected)



2

Color scale

Select the color scale for your standard's values. Will also be used for temperature compensation and hitch.

Color Scale CIELab ▼

CIELab

CIE LCh

Hunter Lab

XYZ

3

Illuminant

Select the Illuminant for your standard's values.

Illuminant D65/10° ▼

4

Standard values

Enter your standard's values. Enter as many decimal places as you have. This makes the color calculation more accurate:

80,0000

-5,0000

70,0000

5

Temperature

Enter temperature of measurement of your standard. If temperature compensation is not active, this value is only for comparison with measurements

20,0000 °C

6

Standard in XYZ scale

The calculated XYZ values for the standard (colorWorkbench calculates internally with spectral data or XYZ values, but not with CIELab)

X: 51,82

Y: 56,68

Z: 11,69

7

Color preview

A RGB color preview of the entered values. Will not correspond exactly to real color.



13

Hitch active

Check to activate a [hitch](#). A hitch is an adjustment of the measured values to certain target values e.g. to match the values of two instruments.

☐ Hitch active

14

Factors for hitch

Enter hitch factors.

L*	0,0000
a*	0,0000
b*	0,0000

15 Hitch factors display in XYZ scale

The calculated XYZ values for the hitch (colorWorkbench calculates internally with spectral data or XYZ values, but not with CIELab)

X:	0,00
Y:	0,00
Z:	0,00

b) Hitch a measured color value

To hitch a standard means to assign slightly different color values to a measured standard. This is often used to match two instruments.

Enter a new standard

Insert Delete

Numeric standard Spectral values

Color Scale: CIELab

Illuminant: D65/10°

☒ Hitch active

L* 90,4101 X: 70,85

a* -4,9300 Y: 77,19

b* 70,7638 Z: 19,20

Temperature 20,0000 °C

L* 92,5000 X: 75,03

a* -5,2000 Y: 81,83

b* 71,3000 Z: 20,81

OK Cancel

1 Hitch active

2 Hitch values

3 Hitch values in X,Y, Z

1 Hitch active

Check to activate a hitch

☒ Hitch active

2 Hitch values

Enter the values you want to have displayed for the color indicated at the left side of the window. Select the desired color scale above.

L*	92,5000
a*	-5,2000
b*	71,3000

3

Hitch values in X,Y, Z

Entered values in X,Y,Z-scale

X: 75,03

Y: 81,83

Z: 20,81

c) Enter spectral data

Select the tab **Spectral values** to insert data of another standard as spectral values

1 Delete

2 Insert

3 Spectral values

Numeric standard		Spectral values	
360nm	0,00000	450nm	0,12720
370nm	0,00000	460nm	0,14230
380nm	0,00000	470nm	0,19090
390nm	0,00000	480nm	0,31390
400nm	0,11350	490nm	0,46800
410nm	0,10860	500nm	0,59170
420nm	0,10860	510nm	0,68080
430nm	0,11210	520nm	0,74390
440nm	0,12180	530nm	0,78950
		540nm	0,82380
		550nm	0,84570
		560nm	0,85760
		570nm	0,86680
		580nm	0,88020
		590nm	0,89540
		600nm	0,90620
		610nm	0,91130
		620nm	0,91910
		630nm	0,93180
		640nm	0,94850
		650nm	0,96090
		660nm	0,97010
		670nm	0,97480
		680nm	0,97800
		690nm	0,98110
		700nm	0,98580
		710nm	0,00000
		720nm	0,00000
		730nm	0,00000
		740nm	0,00000
		750nm	0,00000
		760nm	0,00000
		770nm	0,00000
		780nm	0,00000

OK Cancel

1

Delete

Clear all values.

✗ Delete

2

Insert from clipboard

Insert the data from clipboard. Wavelengths boxes are active corresponding to the connected instrument.

Note: Make sure, that the inserted values have the same range of wavelengths.

Copy the values (Ctrl + C) and click on insert.

It doesn't matter if the values are given in percent or as a range from 0,00 to 1,00. A window opens to select if values are given in percent or not.



3

Spectral values

Enter spectral data for the right range.

360nm	0,00000	450nm	0,12720	540nm	0,82380	630nm	0,93180	720nm	0,00000
370nm	0,00000	460nm	0,14230	550nm	0,84570	640nm	0,94850	730nm	0,00000
380nm	0,00000	470nm	0,19090	560nm	0,85760	650nm	0,96090	740nm	0,00000
390nm	0,00000	480nm	0,31390	570nm	0,86680	660nm	0,97010	750nm	0,00000
400nm	0,11350	490nm	0,46800	580nm	0,88020	670nm	0,97480	760nm	0,00000
410nm	0,10860	500nm	0,59170	590nm	0,89540	680nm	0,97800	770nm	0,00000
420nm	0,10860	510nm	0,68080	600nm	0,90620	690nm	0,98110	780nm	0,00000
430nm	0,11210	520nm	0,74390	610nm	0,91130	700nm	0,98580		
440nm	0,12180	530nm	0,78950	620nm	0,91910	710nm	0,00000		

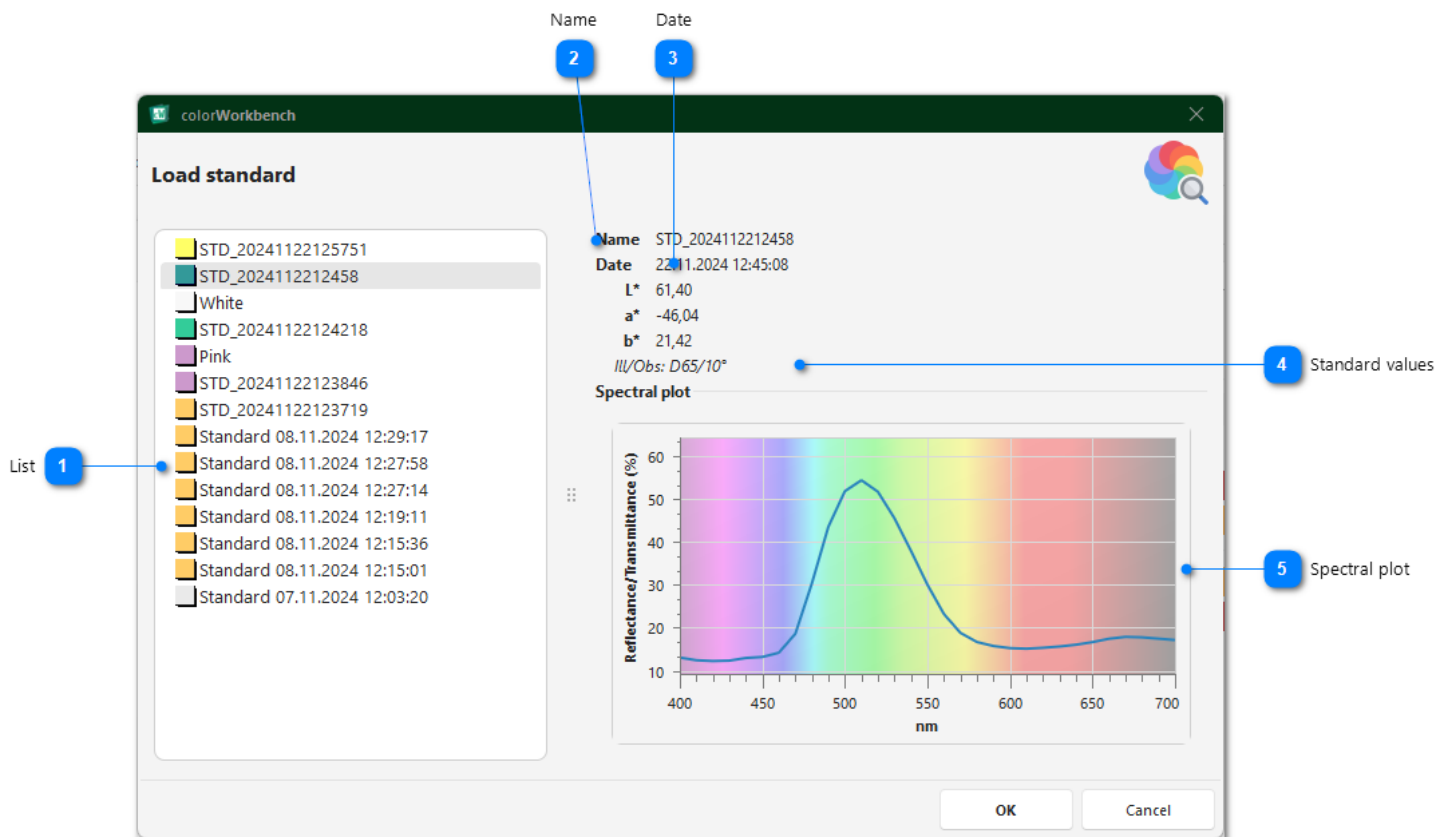
d) Temperature compensation

2.3.



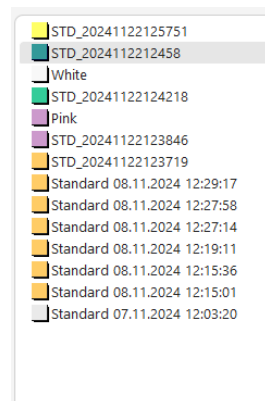
Load a standard from database

Select a standard from the list. All standards that have ever been stored in the database are listed:



1 List

A list of all standards with color preview



2 Name

The name of the selected standard

Name STD_2024112212458

3 Date

The date and time, when the selected standard was created

Date 22.11.2024 12:45:08

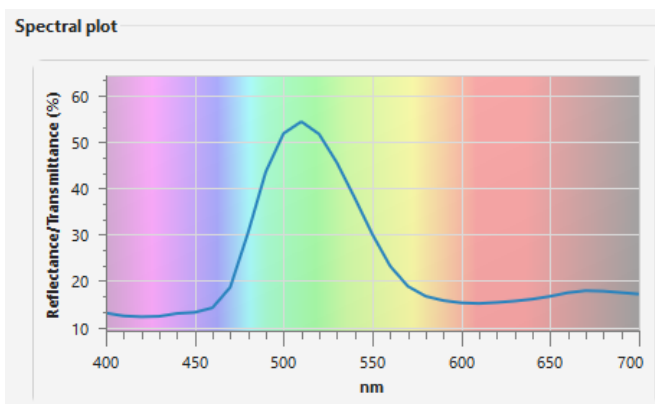
4 Standard values

Standard values displayed in the selected scale

L* 61,40
a* -46,04
b* 21,42
Ill/Obs: D65/10°

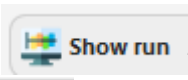
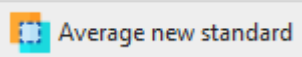
5 Spectral plot

The spectral plot of the selected standard. Not available for numeric standards.

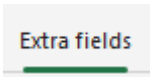


3. Create a standard color from measurements of an existing run

See [Average a new standard](#).

Shortly: Go to the run list , select a run, let it show , select the measurements you want to average and create the standard .

6.4. Extra fields

Navigation: Side menu >  > 

Select a product in the list and fill in the values for the extra fields. These can be defined at the [Field names](#).

Extra fields

1 Date: 07.07.2025 08:49:26

2 Insert Date/Time: Insert date/time

3 Illuminant: D65/10°

4 IDs: ExtraID, ProductID, ItemID

5 Group: Ungrouped standards

6 Template: ☐

7 Plugin fields: Plugin field 1 to 10

8 Notes: Notes

1

Date

Enter the date of adding/modifying the standard

2 Insert Date/Time

Click here to insert the current date and time into the date field.

3 Illuminant

Select illuminant and observer for the measurements in at this standard (standard and samples)

4 IDs

Enter IDs to the selected standard

5 Group

Select a standard group to assign the standard to. The groups are set via the [standard groups editor](#).

6 Template

If you set the standard as a template, it will appear in the list of templates, when creating a new standard. In this template all properties of the standard like tolerances, extra fields, SpectraTrend settings and analog output will be saved and can be applied to a new standard with a different standard color.

7 Plugin fields

Plugin fields will become active by connecting an external device such as for example a gloss meter. Then you can enter here a value as standard for this quality. The name of the field [can be customized](#).

Plugin fields

8 Notes

Notes of facts to remember with the standard can be saved here

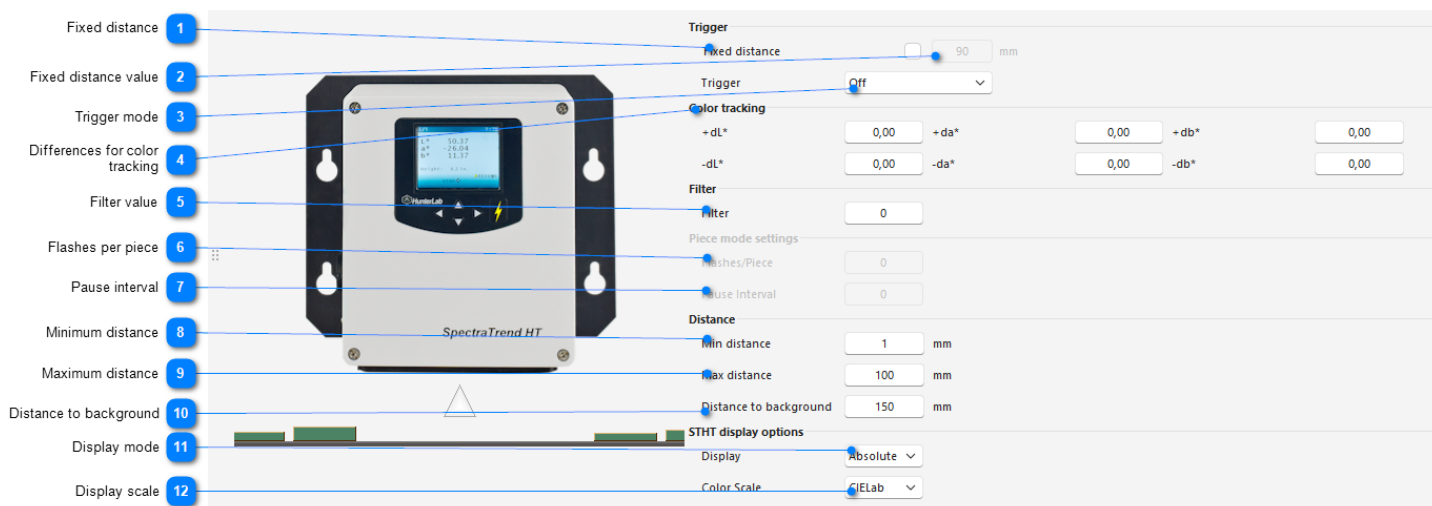
Notes

6.5. SpectraTrend settings

Navigation: [Side menu](#) >  > [SpectraTrend HT](#)

The options *Distance/Height*, *Tracking* and *Filter* in the standard management are for SpectraTrend specific settings.

You can set these for the selected standard:



1 Fixed distance

Activates a fixed distance. Should be used, if a constant distance of the sensor to the sample is installed in a dirty environment or might have any other trouble to measure the distance correctly. The SpectraTrend won't correct any measured values when fixed distance is enabled

Note: Fixed distance is **not available** when [measurement type](#) is set to **piece mode**!

Fixed distance

2 Fixed distance value

Enter the distance of the sensor to the sample. You can measure this distance with the laser of the instrument (Select **Diagnostics** -> **Distance Sensor** directly at the instrument). The instrument starts measuring the distance

90 mm

3 Trigger mode

Changes the trigger type for the selected standard. Height trigger uses the internal laser, so carefully set up *Background*, *Min* and *Max* distance in the Distance/Height fields. Our support will help you to install an external trigger if required.

Off

4 Differences for color tracking

Enter the maximum deviation for color tracking. Measurements will only be reported, if the color is within these limits to the standard color.

This enables to start a run as soon as a sample different in color from the belt is present.

If the color tracking values are all set to 0 (zero), the feature is disabled.

Color tracking

5 Filter value

The filter function allows you to smoothen the measurements read by the instrument. The entered filter value must be a value between zero and 100. A value of 0 disables the filter. The filter is calculated with this formula:

$$\text{OutputValue} = [\text{NewValue} \times (1 - \text{FilterValue})/100] + [\text{OldValue} \times (\text{Filter})/100]$$

Filter

0

6 Flashes per piece

Only active if *Piece mode* is selected at the *Global* Tab. This will allow you to set the maximum number of flashes (i.e. averaged measurements) on a detected sample regardless of its length. Set to 0 to disable this option.

7 Pause interval

Only active, if *Piece mode* is selected at the *Global* Tab.

Enter the time interval in seconds between detection of sample and start of measurement.

Pause interval 0

8 Minimum distance

Enter the minimum distance of the sample (Select **Diagnostics -> Distance Sensor** directly at the instrument to verify). The run will stop if the height of the sample is bigger and thus the distance is smaller.

Min distance 1

9 Maximum distance

Enter the maximum distance of the sample (Select **Diagnostics -> Distance Sensor** directly at the instrument to verify). The instrument won't report values if the distance to an object underneath the sensor is bigger (e. g. the belt)

Max distance 100

10 Distance to background

Enter the distance to background (belt). The SpectraTrend uses this value and the current measured distance to calculate the height of a sample.

You can determine this distance directly at the instrument's menu: **Diagnostics -> Distance Sensor**

Distance to background 150

11 Display mode

Choose between absolute or delta values shown on the instrument's display. This affects a connected stack light or an analog output module installed in the instrument (see [Analog output](#))

Absolute ▾

12 Display scale

Sets the visible scale at the instrument's display. This affects a connected stack light or an analog output module installed in the instrument (see [Analog output](#))

CIELab ▾

6.6. Analog output

Navigation: Side menu >  > Analog output

Depending on your SpectraTrend, you might have a built-in 4-channel analog output to control an external device.

Here you can configure the output values in the products management:

Channel settings 1

Analog output	
Channel 1: 4mA	0,00
Channel 2: 4mA	0,00
Channel 3: 4mA	0,00
Channel 4: 4mA	0,00

Channel 1: 20mA	0,00
Channel 2: 20mA	0,00
Channel 3: 20mA	0,00
Channel 4: 20mA	0,00

1

Channel settings

Channels are used for an analog output module. An analog output module is delivered by HunterLab and mounted into the support unit of the SpectraTrend HT.

The four Channels are referring to values according to the settings (Absolute/Difference and Color scale) at the [SpectraTrend settings](#):

The first three are settings for the color scale and the fourth for the dE*.

Enter the desired minimum and maximum values for the channels.

Example:

If **Delta** and **CIELab** is set, the channels are

Channel 1 (dL*), Channel 2 (da*) , Channel 3 (db*) and Channel 4 (dE*or whatever is set for the stack-light).

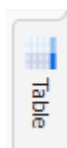
	Minimum value	Maximum value
Channel 1: 4mA	0,00	

7. Measurement



[Learn, how to start a run](#)

During a run you can still operate some items (if you have the right to do so):



[Arrange views](#) (Switch between windows or dock them on some place on the screen)



[Change parameters during a run](#)



Export the actual table during a run



[Open the Run list without interfering with the actual run](#)

7.1. Standardization

Navigation: *Side menu* >



Note: If the button  is grayed out, you have insufficient permissions, the instrument is not connected or a run is in progress.

A regular standardization is necessary in order to get stable results from the instrument.
The interval for the standardization reminder is set at the [global settings](#).

Standardization can be done [by the software](#). Which is recommended, because in this case, the green check tile results are **stored for a later review**.

Or, if the distance between the PC and the instrument is too big it can be done [at the instrument](#) via the built-in display.

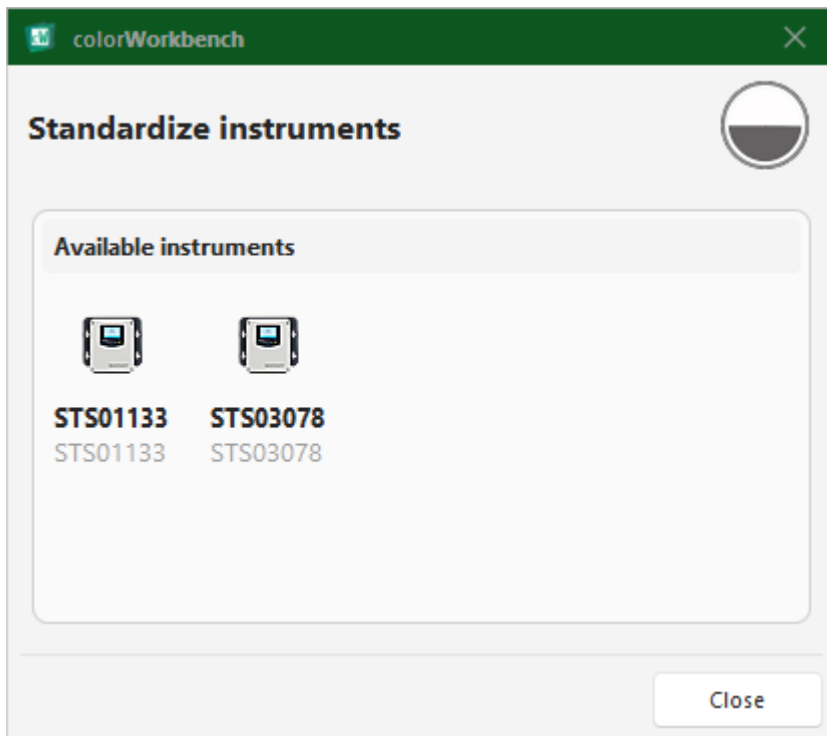
For standardization you need the standardization box that was delivered with the instrument.

Be sure that all 3 tiles are cleaned very well and that there is no dirt or dust on the surface!



The click on  *Standardize* button in the side menu.

If you have more than one instrument, all instruments are listed in the window. Select the instrument, you would like to standardize:

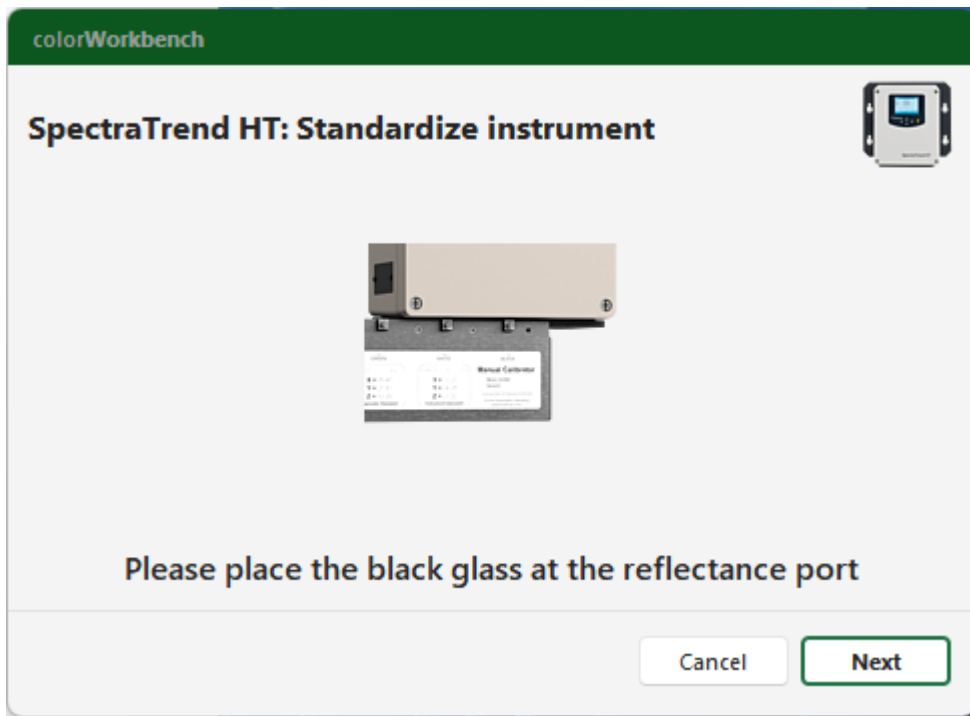


By selecting the right instrument, a standardization window opens with promptings for the standardization:

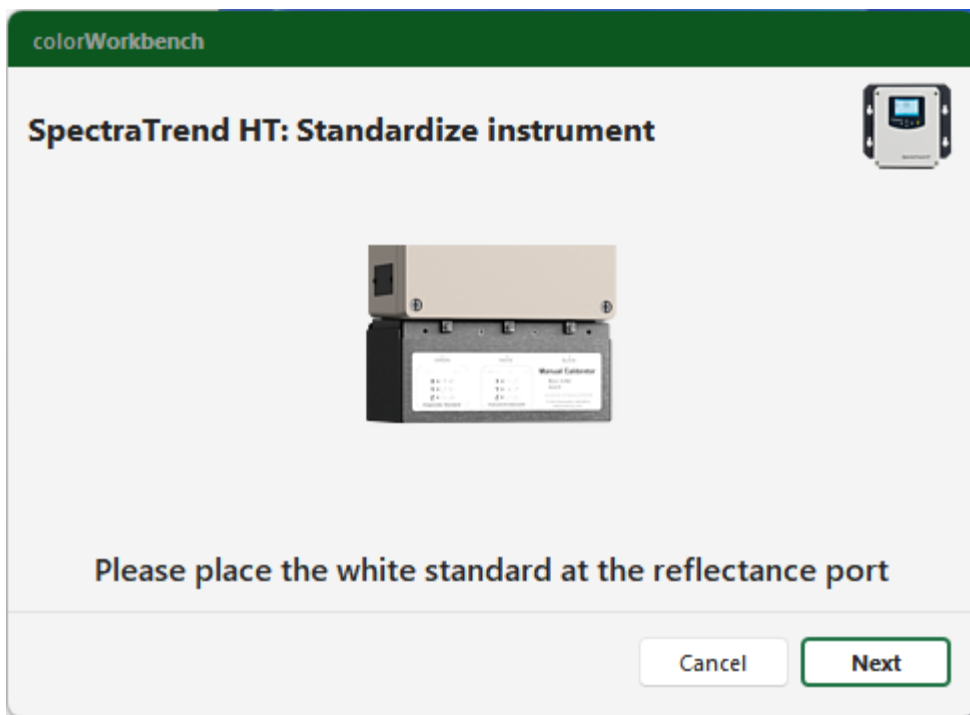
Performing the standardization by software

Place the box underneath the instrument by sliding it in the track with the label to the front.

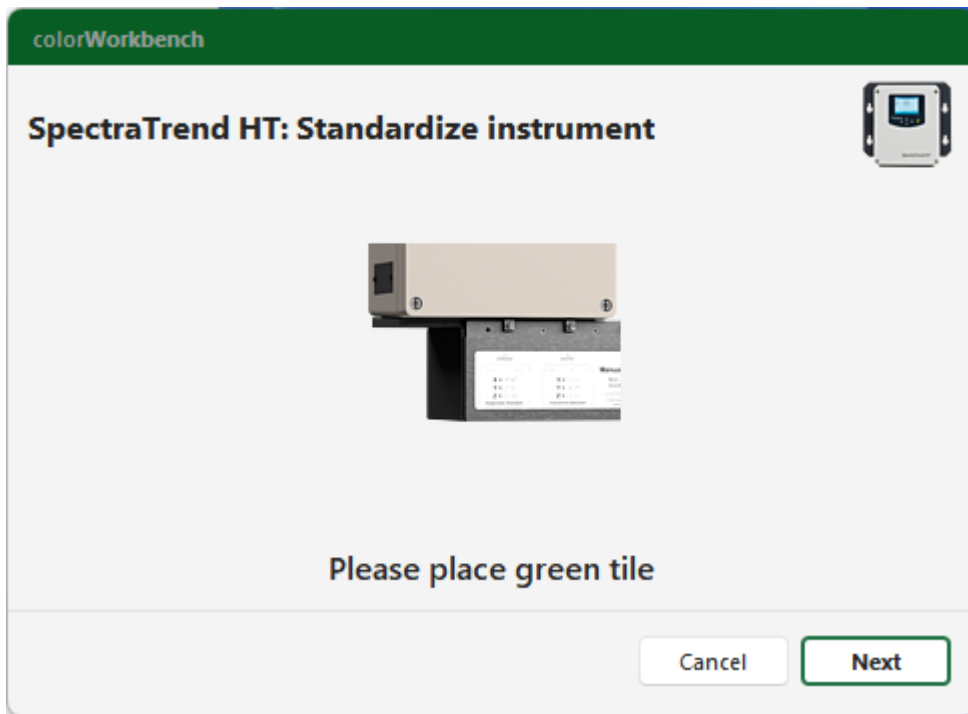
Place the black tile underneath the sensor and click **Next**:



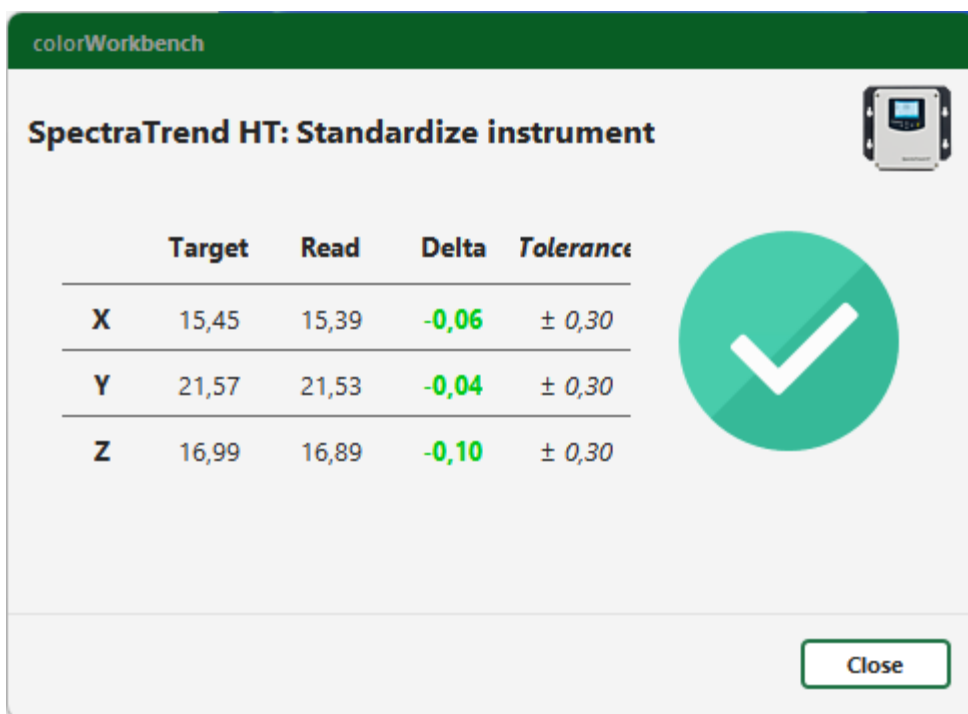
When the next window is displayed, shift the box and place the white tile under the sensor:



Then place the green tile under the sensor:



After the green tile measurement, the green tile check result is presented:



If the green tile test fails, clean all three standards in the calibrator box and the sensor's window, then retry.

Performing the standardization at the instrument:

Place the black tile and click on the Flash key:



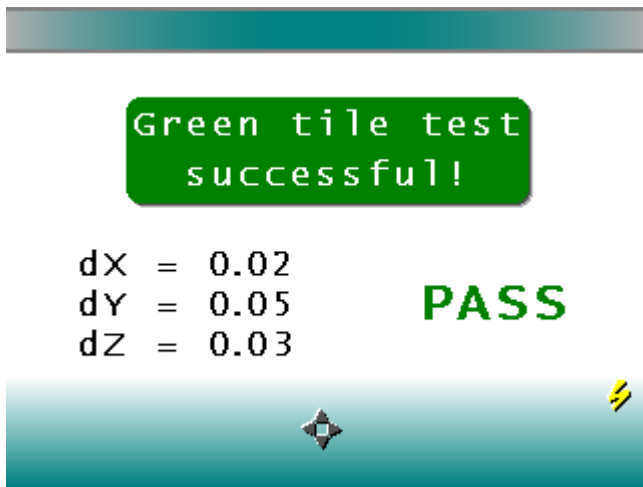
Then place the white tile and press the Flash key again:



Then place the green tile and press the Flash key:



After the green tile check, the test results are displayed:



If the green tile test fails, clean all three standards in the calibrator box and the sensor's window, then retry.

7.2. Start a run

Navigation: Side menu >



To start a run, click on *Start* in the side menu.



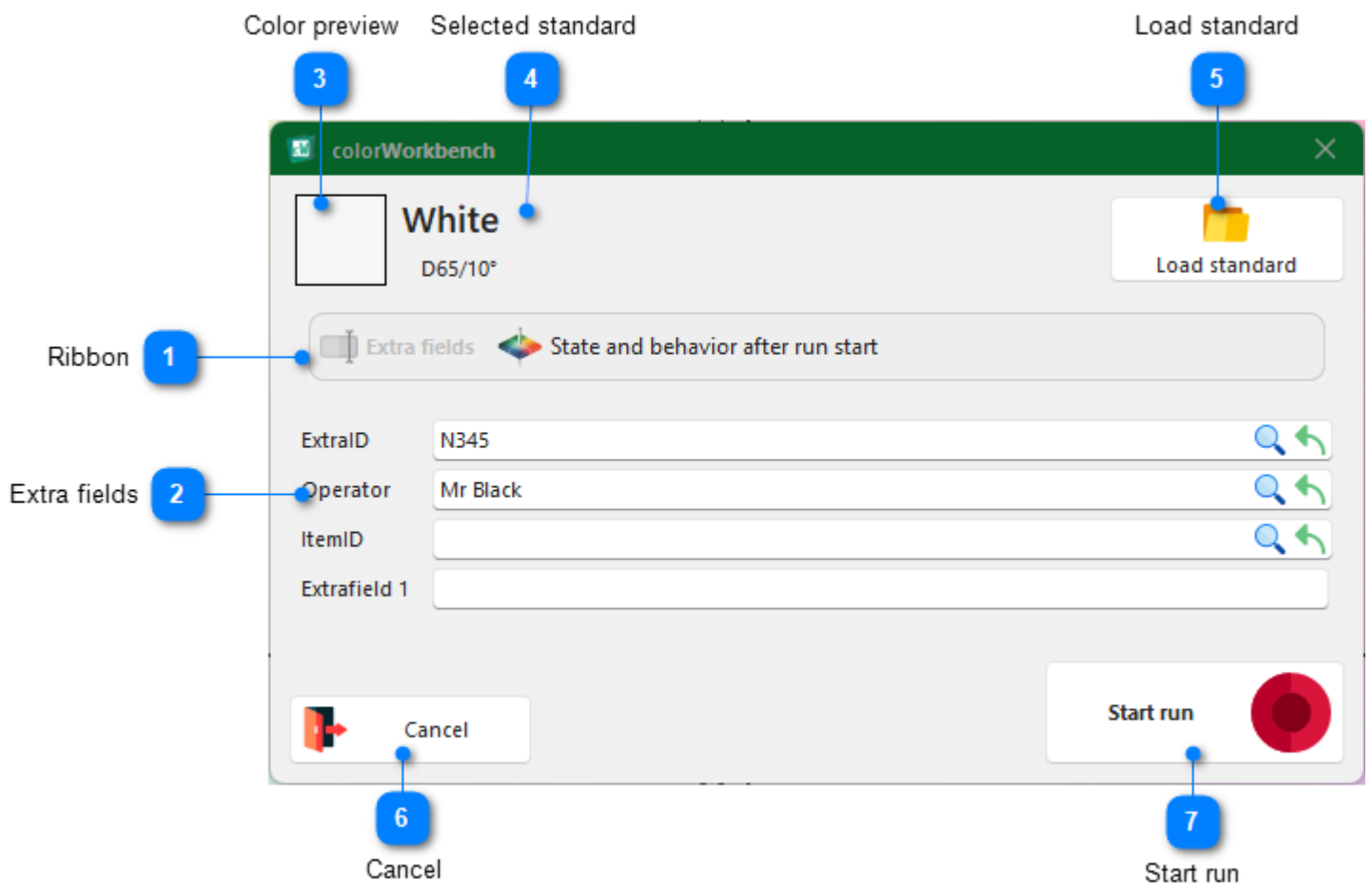
The window for standard selection and run settings opens.

There are two tabs:

- a) [Extra fields](#)
- b) [State and behaviour after run start](#)

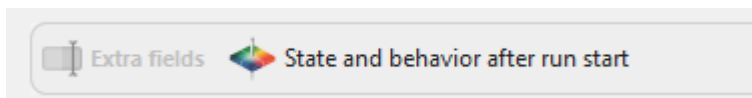
All fields can be changed during a run at the [Parameters](#).

a) Extra fields



1 Ribbon

Extra fields is opened. Open the other tab for more run settings: [State and behavior after run start](#)
An icon to select the active instruments for the run appears, when more than one instrument is connected.



2 Extra fields

The fields and field names to be shown here at the start measurement window can be selected at [Settings/Field names](#).

Enter the appropriate entries for the run. Button reloads the last Extra ID. Button searches for existing Extra IDs for selection.

ExtraID	N345
Operator	Mr Black
ItemID	
Extrafield 1	

3 Color preview

Color preview of selected standard



4 Selected standard

Name and illuminant/observer of the selected standard is shown here.

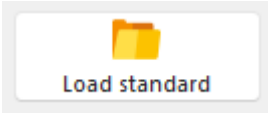
White

D65/10°

5

Load standard

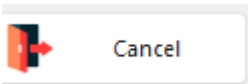
If you want to select another standard for the run, click here to select out of the list of all defined standards (edit a standard [see here](#))



6

Cancel

Exit the window without starting the run



7

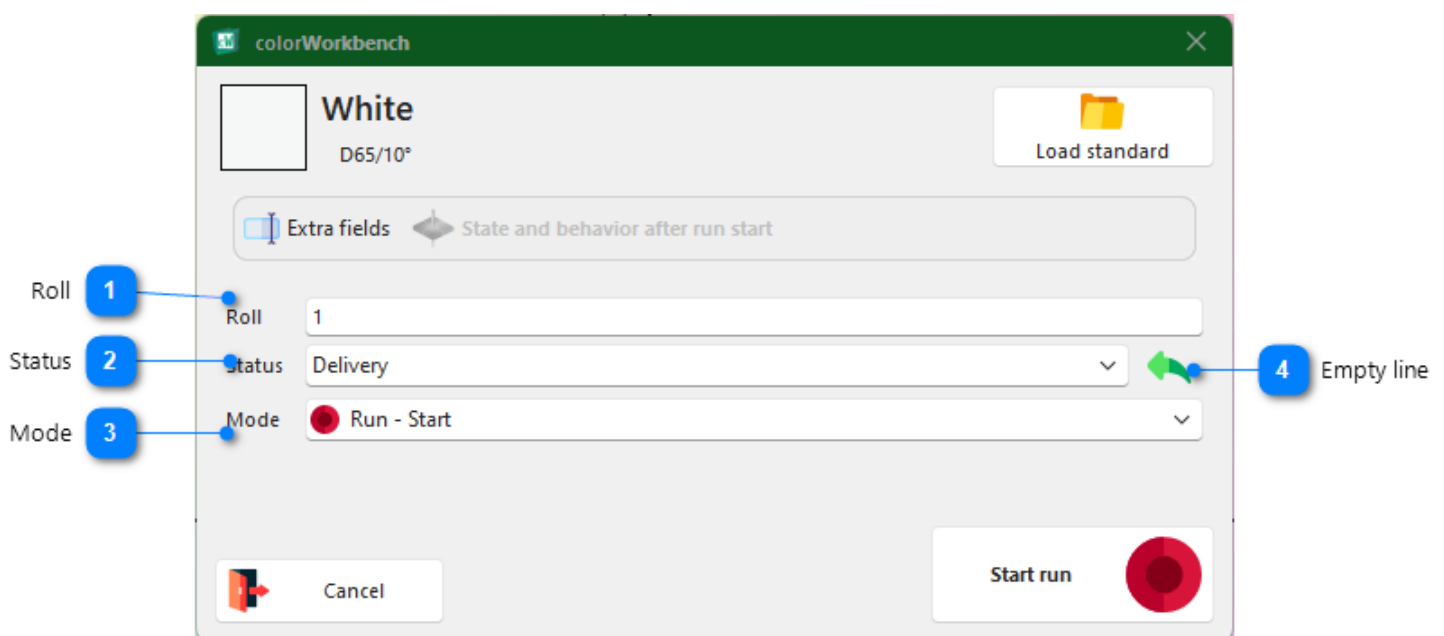
Start run

Start the run with selected standard and settings. Subsequently the icon at the top left will change to "Stop" to enable you to stop the run. After the end of the run a [Summary of the run](#) will pop up which can be printed.



State and behavior after run start

These entries can be done at start and then can always be changed during the run



1

Roll

Enter number of roll if applicable

Roll

1

2

Status

Select a status (set at [Groups/Status](#)) for the run

Status

Delivery

3

Mode

Switch between Modes:



Run - Standby



Run - Start



Average while Trigger HIGH, output when Trigger LOW

The last point averages measured values or pauses the measurement run depending on the trigger channel of the Adam-5000

Mode



Run - Start

4

Empty line

Empties the line



7.3. End of run

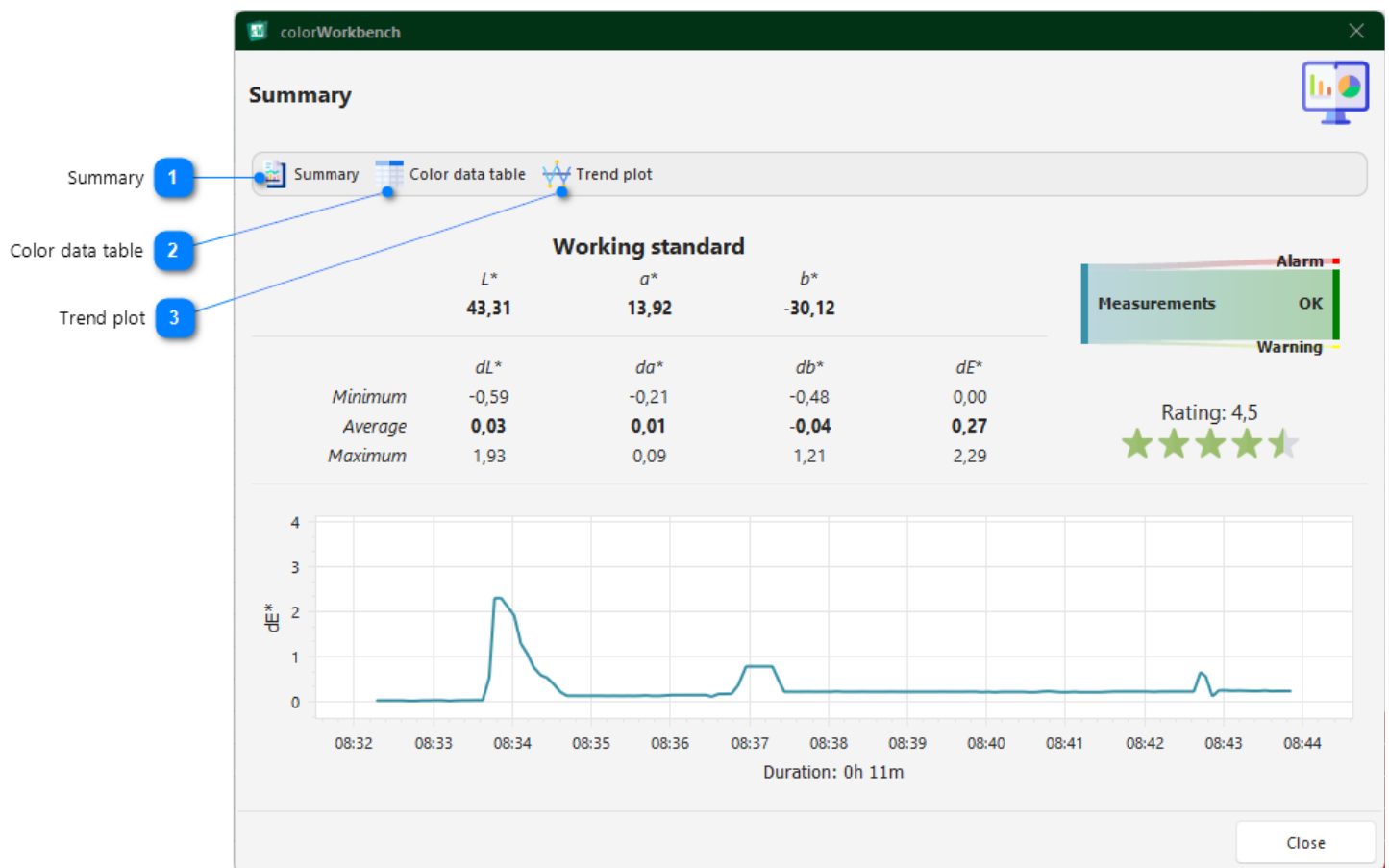
Navigation: Side menu >



If a measurement is running, you find the stop  icon in the side menu.

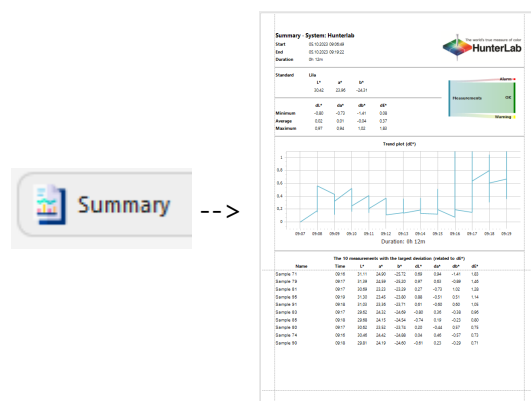
After the stop, a summary is displayed. There, the summary, the color data table and the trend plot can be selected for storage or printing.

Summary



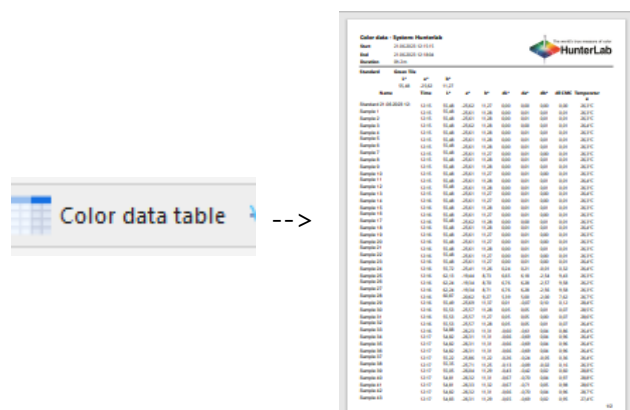
Summary

Opens a summary file of the measurement to be stored or printed



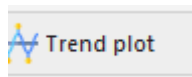
Color data table

Opens a color data table of the measurement to be stored or printed



Trend plot

Opens the trend plot of the measurement to be stored or printed



-->



7.4. Set parameters (during a run)

Navigation: [Side menu](#) >



All fields for the parameters can be selected and defined at the [Field names](#) and at [Groups/Status](#) and can be entered at the [start of a run](#).

During a run the contents of these fields can be changed. These changes affect the next measured sample. They will not affect any measurements already taken.

If the button  is grayed out, you have insufficient permissions.

1

Status

Select a status here. States are defined at [Groups/Status](#),

Status

Process 1

2

IDs

Enter new values for various IDs here, defined and selected at [Field names](#)

ExtraID	H2347
Operator	Mr. White
ItemID	

3 Search

Searches for existing entries of the type



4 Extra Fields

If extra fields are activated at [Field names](#), new values can be entered here

Extrafield 1	new
--------------	-----

7.5. Export data

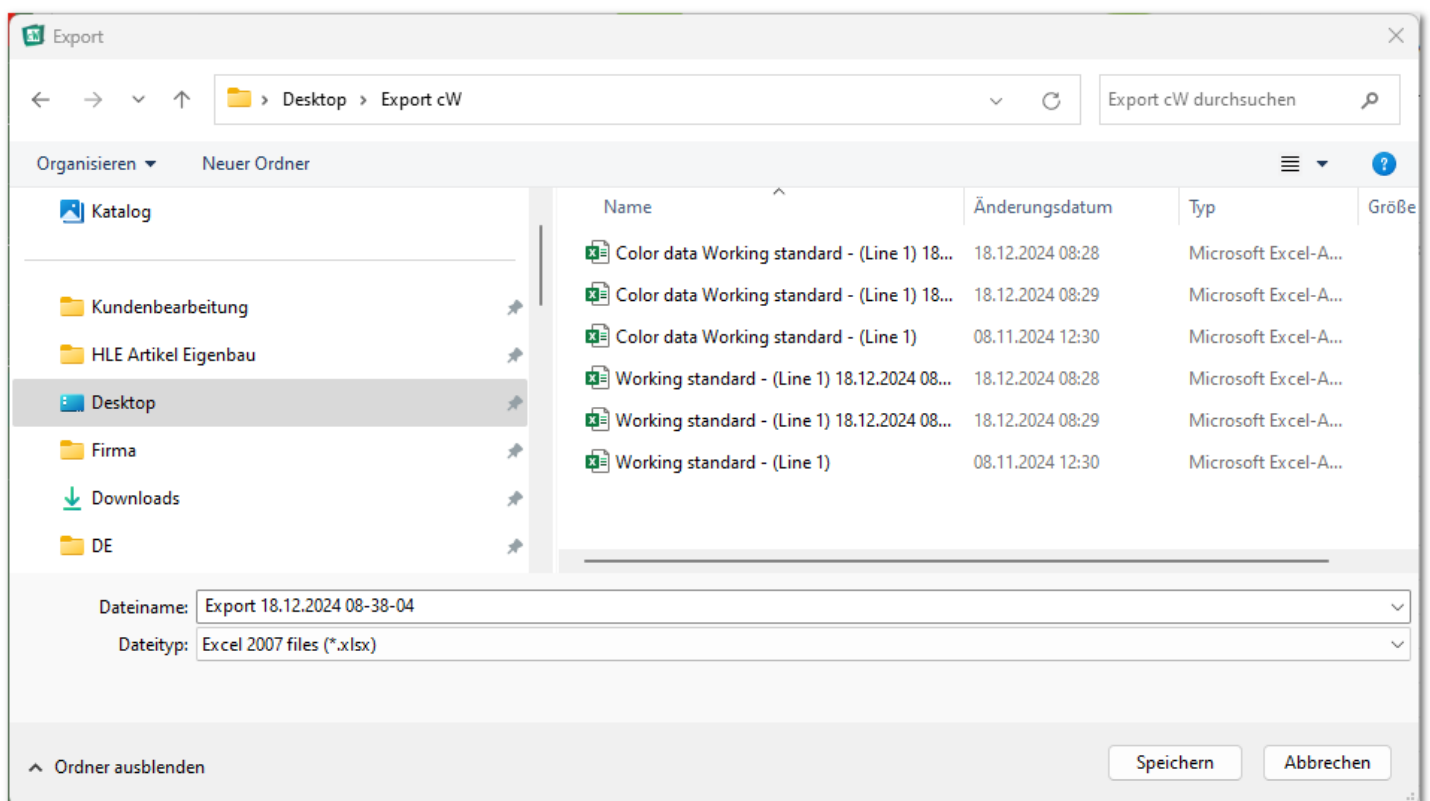
Navigation: [Side menu](#) >



You can export data while a run is in progress or having finished the run. The color data table with all measurements until then will be exported with the entries as set in the color data table.

If the button  is grayed out, you have insufficient permissions.

Select the folder where you want to save the data. Select the file type (PDF, Excel or CSV), enter a name and save it.



8. Run list

Navigation: Side menu > 

If the button  is grayed out, you have insufficient permissions.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

colorWorkbench

Run list

Show run

Show report

Export

Continue

Delete run

Select icon

Search

1

Enter text to search...

Find

List

2

Entry	Start	End	Operator	Item ID	ExtraID
Working standar...	18.12.2024 08:32	18.12.2024 08:43	Mr. White		H2347
Working standar...	18.12.2024 08:29	18.12.2024 08:29	Mr. White		N234
Working standar...	18.12.2024 08:10	18.12.2024 08:28	ES		
Working standar...	08.11.2024 12:29	08.11.2024 12:30			
Working standar...	08.11.2024 12:27	08.11.2024 12:28			
Working standar...	08.11.2024 12:27	08.11.2024 12:27			
Working standar...	08.11.2024 12:19	08.11.2024 12:21			
Working standar...	08.11.2024 12:15	08.11.2024 12:16			
Working standar...	08.11.2024 12:14	08.11.2024 12:15			
Working standar...	07.11.2024 12:03	07.11.2024 12:03			
Blue - (Line 1)	07.11.2024 11:51	07.11.2024 11:52			
Blue - (Line 1)	07.11.2024 11:17	07.11.2024 11:18			

Run information

Standard Working standard

Count Count: 142 (Alarm: 11/Warning: 6)

Rating: 4,5

Alarm

Measurements

OK

Warning

Plot

Close

1

Search

Search for a run here. You can search by entry name, date, Extra ID and Product ID

Enter text to search...

2

List

List of all runs performed so far with start and end time and IDs. You can select one by "show run" or just by double click.

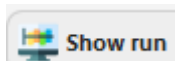
Enter text to search...

Find

Entry	Start	End	Operator	Item ID	ExtraID
Working standar...	18.12.2024 08:32	18.12.2024 08:43	Mr. White		H2347
Working standar...	18.12.2024 08:29	18.12.2024 08:29	Mr. White		N234
Working standar...	18.12.2024 08:10	18.12.2024 08:28	ES		
Working standar...	08.11.2024 12:29	08.11.2024 12:30			
Working standar...	08.11.2024 12:27	08.11.2024 12:28			
Working standar...	08.11.2024 12:27	08.11.2024 12:27			
Working standar...	08.11.2024 12:19	08.11.2024 12:21			
Working standar...	08.11.2024 12:15	08.11.2024 12:16			
Working standar...	08.11.2024 12:14	08.11.2024 12:15			
Working standar...	07.11.2024 12:03	07.11.2024 12:03			
Blue - (Line 1)	07.11.2024 11:51	07.11.2024 11:52			
Blue - (Line 1)	07.11.2024 11:17	07.11.2024 11:18			

3 Show run

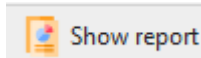
Opens the selected run as a summary, as after the run and in the back, a report consisting of table and trend plot [with several options](#). The report can be closed by the top right cross to return to the colorWorkbench screen.



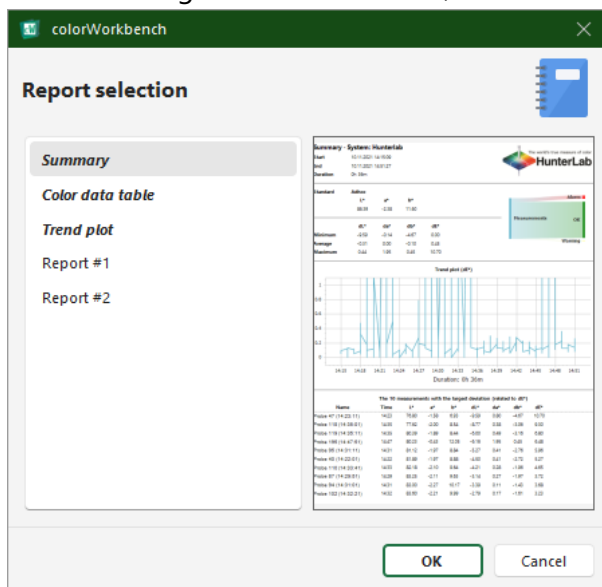
4 Show report

Opens a window to select a report for saving or printing. [Three reports](#) are predefined. Further ones [can be created](#).

Select the report, and click on OK to get to a new window, where to save or print the report.



-->



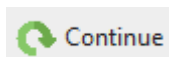
5 Export

Opens the explorer to save the table as Excel, CSV or PDF file.



6 Continue selected run

The selected run will open and you can continue the measurements



7 Delete run

Delete the selected run



8 Rename

Rename the selected run



9 Select icon

Select an icon to mark the run in the first column

Example:

Run information

Short summary of the selected run

11 Standard

Name of the selected standard for the run

Number counts

Indicates how many measurements were taken in the run (Including number of alarm and warning)

Rating

5-Star rating of the run. The rating shows the "quality" of the measurements. The rating is calculated automatically for new runs at run end. It ranges from 0 stars (very bad) to 5 stars (very good) with one digit precision.

It's calculated as follows:

$$\text{Rating} = (\text{Measurements Count} - (\text{Warnings Count} / 2) - \text{Alarms Count}) / (\text{Measurements Count}) * 5;$$

Rating: 4,5



Plot, showing quantitative distribution of measurements.

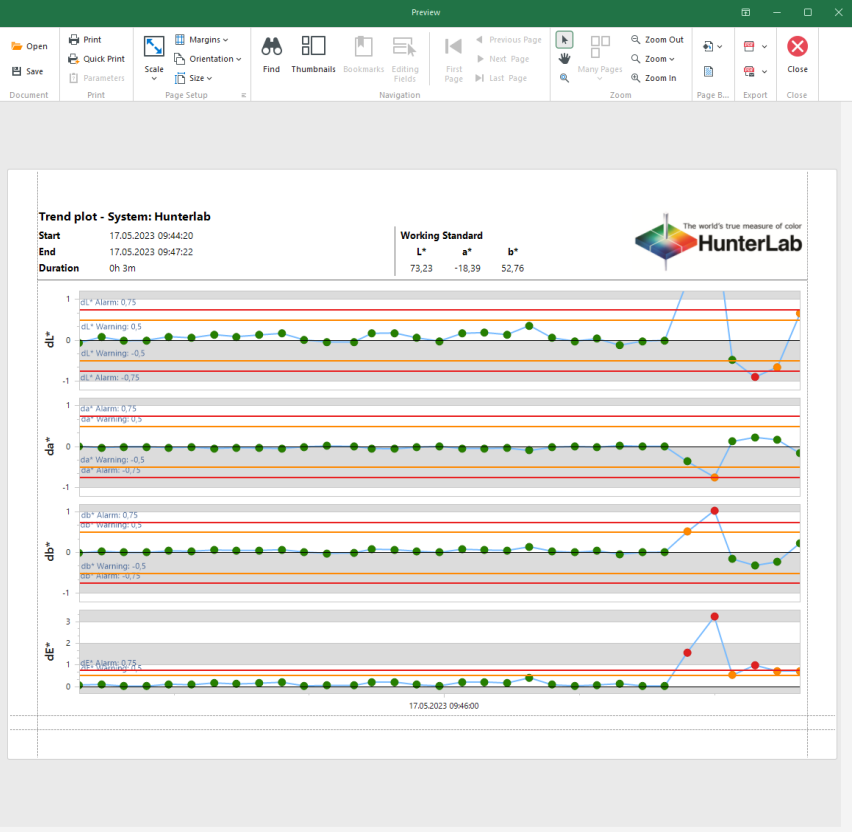
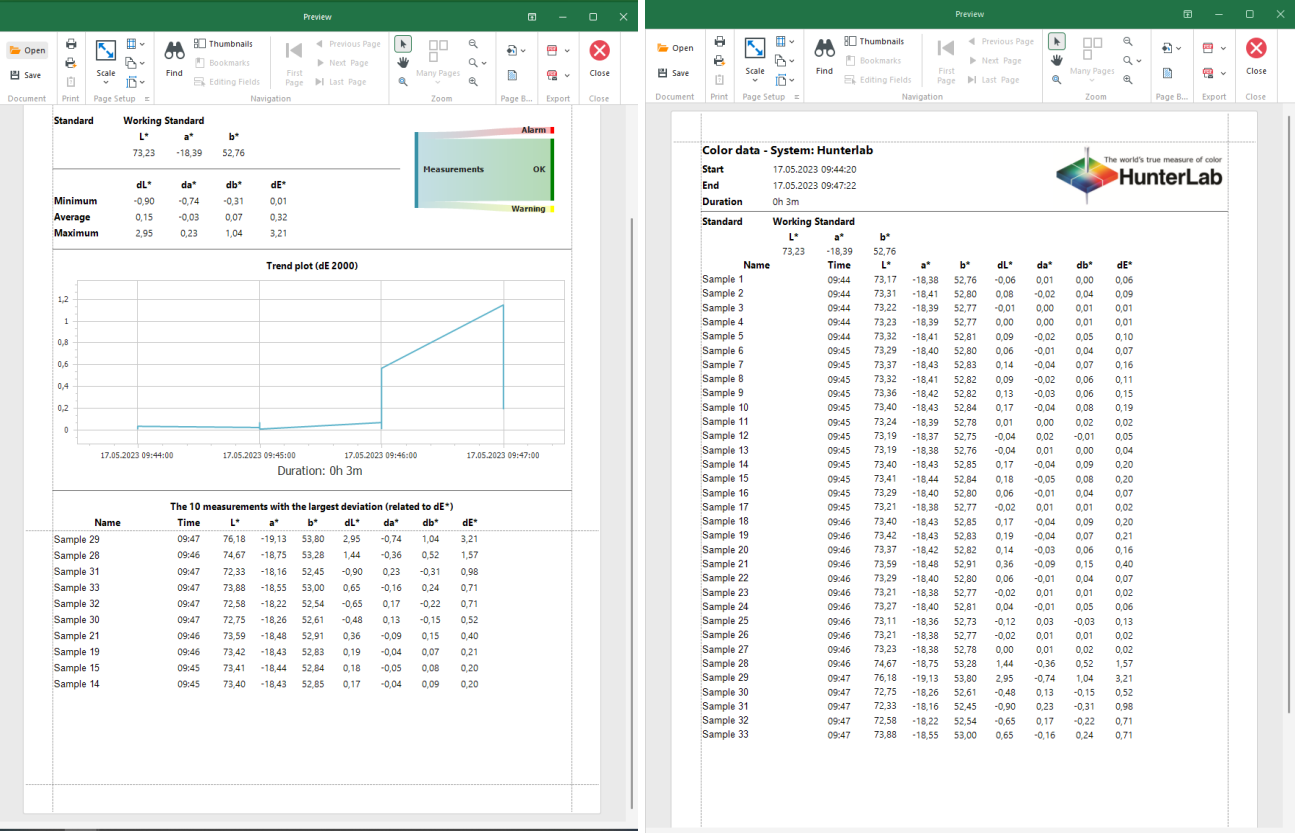


Three reports for editing and insert of printing:

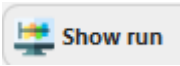
Summary plot

Color data table

Trend



8.1. Show run

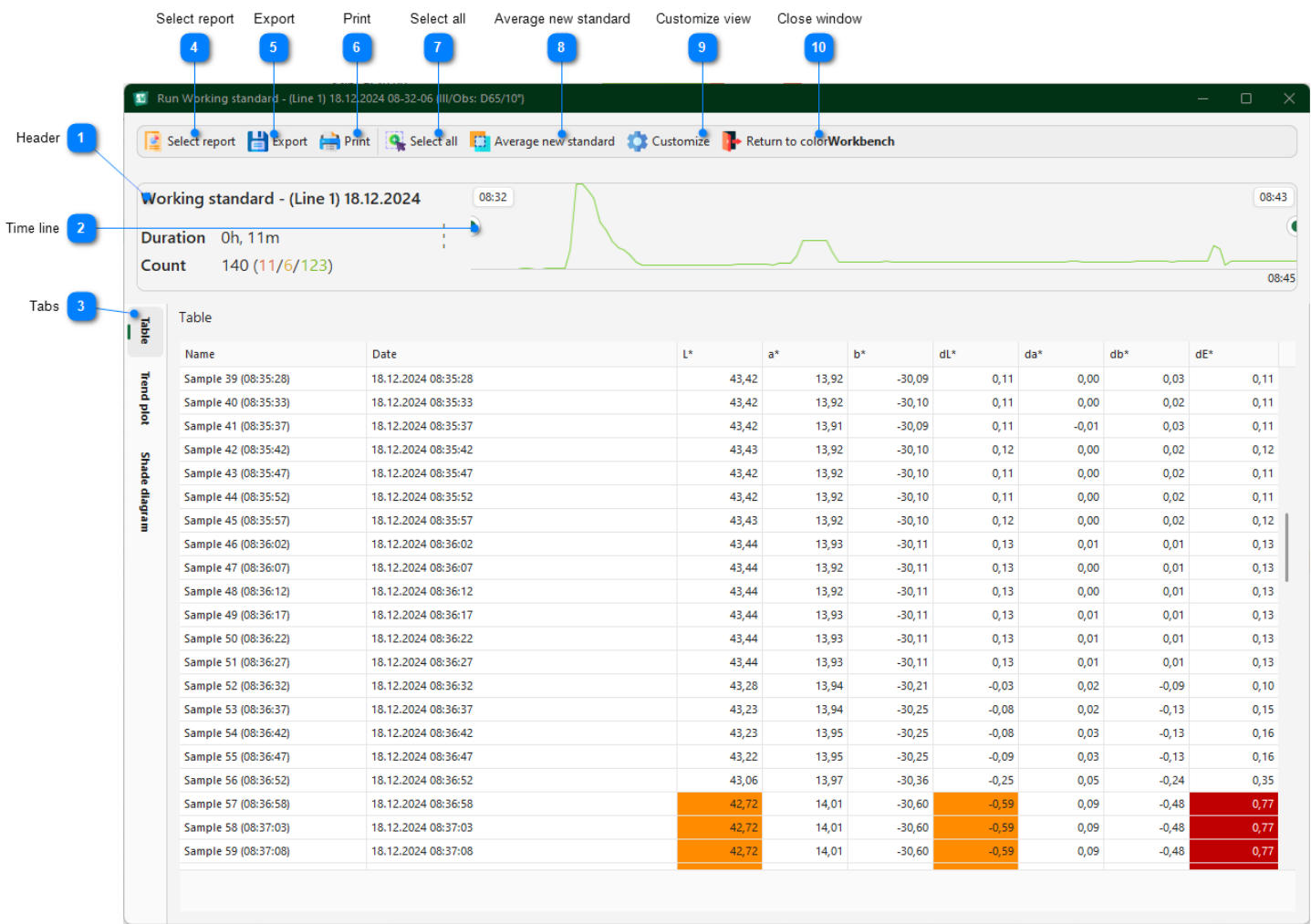
Navigation: Side menu > Run List  >  (for selected run)

If a run is selected, two windows are opening by this button:
A [Summary](#) and a [Run report](#) in the background.

Run report

The run report window has three tabs on the left side: **table**, **trend plot** and **Shade diagram**. All of them can be customized by the cogwheel button in the header.
In the **time line** the visible data ca be restricted to a certain period.

This view is especially useful to **create a new standard** by [averaging a new standard](#) from selected measurements.



- 1
- ### Header

Fixed header, reporting standard name, ranking, duration, counts (Number (Alarm/Warning/within tolerances))

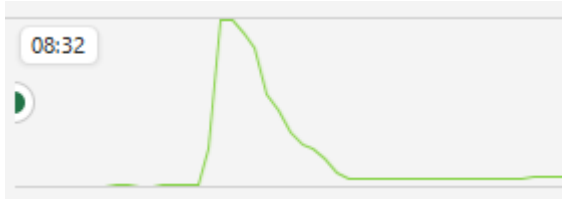
Working standard - (Line 1) 18.12.2024

Duration 0h, 11m

Count 140 (11/6/123)

2 Time line

Time line of the whole measurement. A section can be selected by shifting left and right margin, to show only measurements within margins.



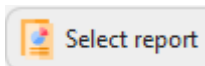
3 Tabs

Selects a view - either the measurements data table or the trend plot (displayed measurements can be restricted by the time-line)



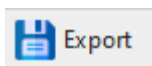
4 Select report

Opens a window to select a template for a report (as at the summary above) to save or print (how to create a template [see here](#))



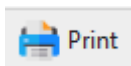
5 Export

Opens the explorer to export the whole table as customized as Excel, CSV or PDF file (see [export data](#))



6 Print

Prints the active view - either the measurements data table or the trend plot as customized



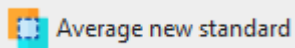
7 Select all

Selects all visible measurements of the color data table for averaging



8 Average new standard

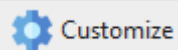
[Averages a new standard](#) from selected (=marked light green) measurements in the data table. Use "Select all" and Shift- and Control-Key for marking.



9

Customize view

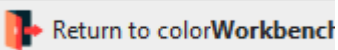
Customizes the active view. See [Table layout](#), [Trend plot settings](#) and [Shade diagram settings](#)



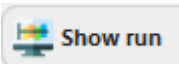
10

Close window

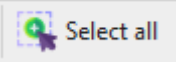
Closes the current run and returns to the colorWorkbench measurement window



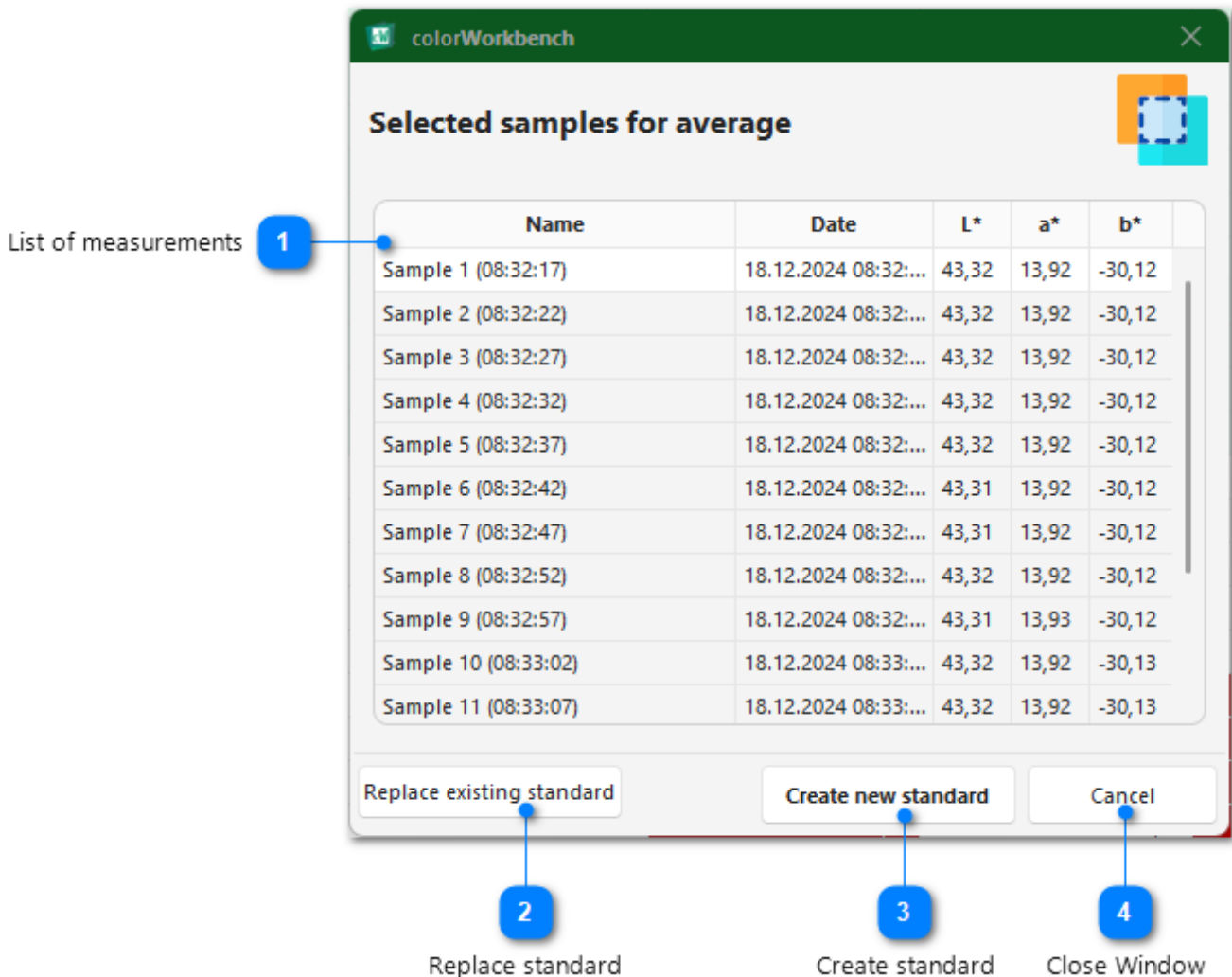
8.2. Average a new standard

Navigation: *Side menu* >  > 

Then **select the measurements** you want to average, from the measurements data table:

You can use the [time line](#), the  button and you can select a range by clicking on the first sample, hold down *SHIFT* key and select the last one. You can also select specific samples while holding down the *CTRL* key.

Then select from the ribbon:  :



1 List of measurements

The list of all selected measurements

Name	Date	L*	a*	b*
Sample 1 (08:32:17)	18.12.2024 08:32:...	43,32	13,92	-30,12
Sample 2 (08:32:22)	18.12.2024 08:32:...	43,32	13,92	-30,12
Sample 3 (08:32:27)	18.12.2024 08:32:...	43,32	13,92	-30,12

2 Replace standard

Opens a list with all existing standards and you can select an existing standard to replace it's standard with this averaged one. All settings except the color values will be kept as set in the standard.

Replace existing standard

3 Create standard

Creates a new standard with the averaged values from the list.

If Standard templates are saved, a "[Select template](#)" window opens to select one.

If this window is skipped or no templates are defined the **Manage products** window opens.

Create new standard

4 Close Window

Closes the window without creating a new standard

Cancel

9. Customizing colorWorkbench

The display screen of colorWorkbench can be customized:

The various views of colorWorkbench can be selected, arranged and sized on the screen and each view can be customized individually via the Setup view button:



[Customize the screen layout](#)

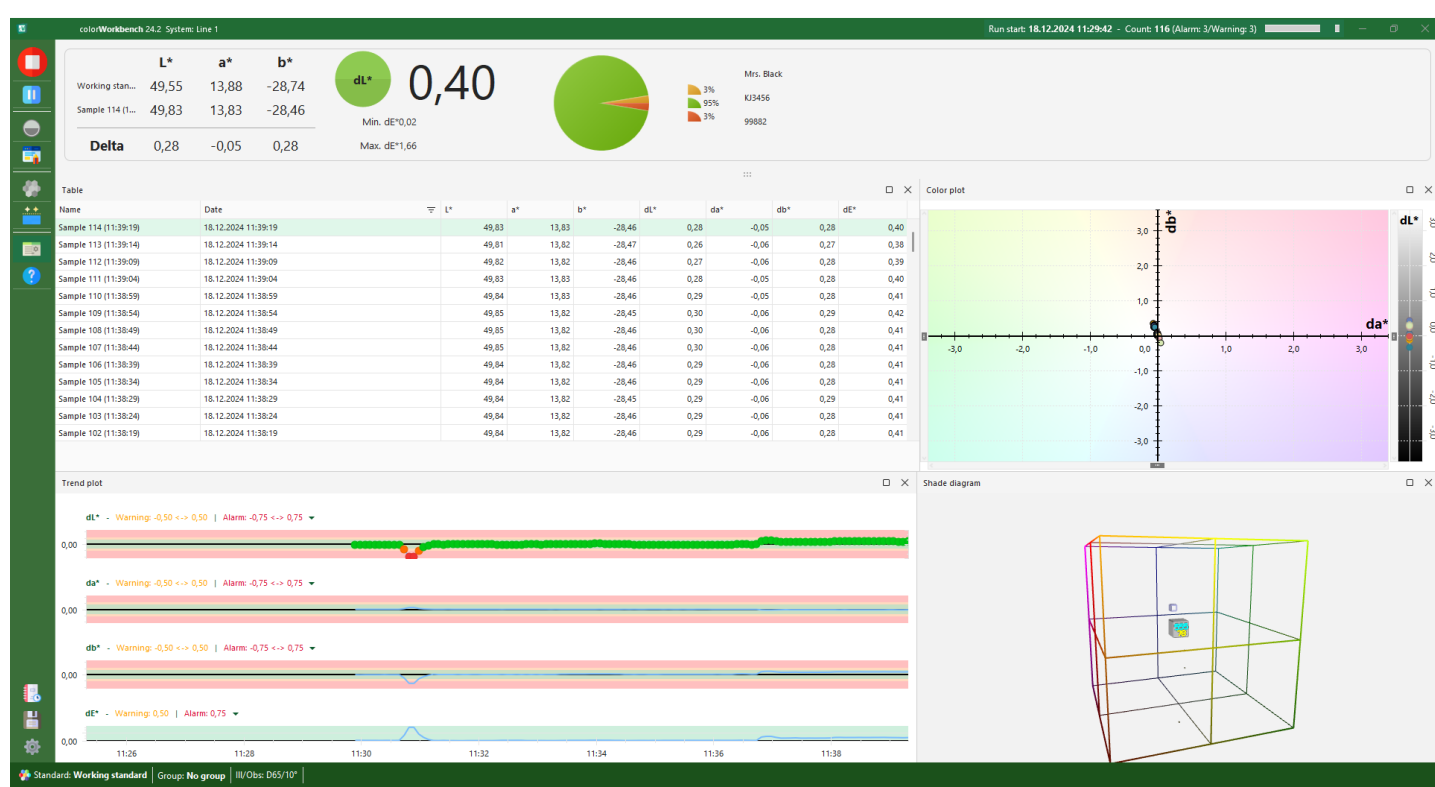
[Customize the info panel](#)

[Customize the table layout](#)

[Customize the trend plot](#)

[Customize the color plot](#)

[Configure shade diagram](#)



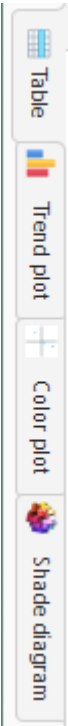
9.1. Arrange views

Info Panel

The **Info panel** at the top of the window is always shown and can't be deleted.



Table, Trend plot, Color plot, Shade diagram



At default settings, these views can be alternatively selected by the tabs at the left side of the window.

In **Trend plot** and **Color plot** the common **scroll and zoom** functions are available.
 In the **Trend plot** make sure to set the mouse on the **center of the zooming area** (mostly time-axis).

You can either **change** between these views **by the tabs** or drag and [dock the views](#) at various parts of the screen and even maximize a view on a [second monitor](#).

The layout of each view can also be [customized](#). But to be effective on the report, this should be done while **no run is active**.

Docking Views

Note: If the docking is not working you might not have the permission .

The following windows can be docked:

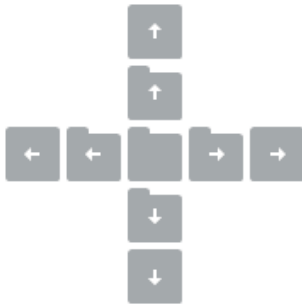
- Trend plot view
- Measurements table view
- Color plot
- Shade diagram

You can't drag the info panel.

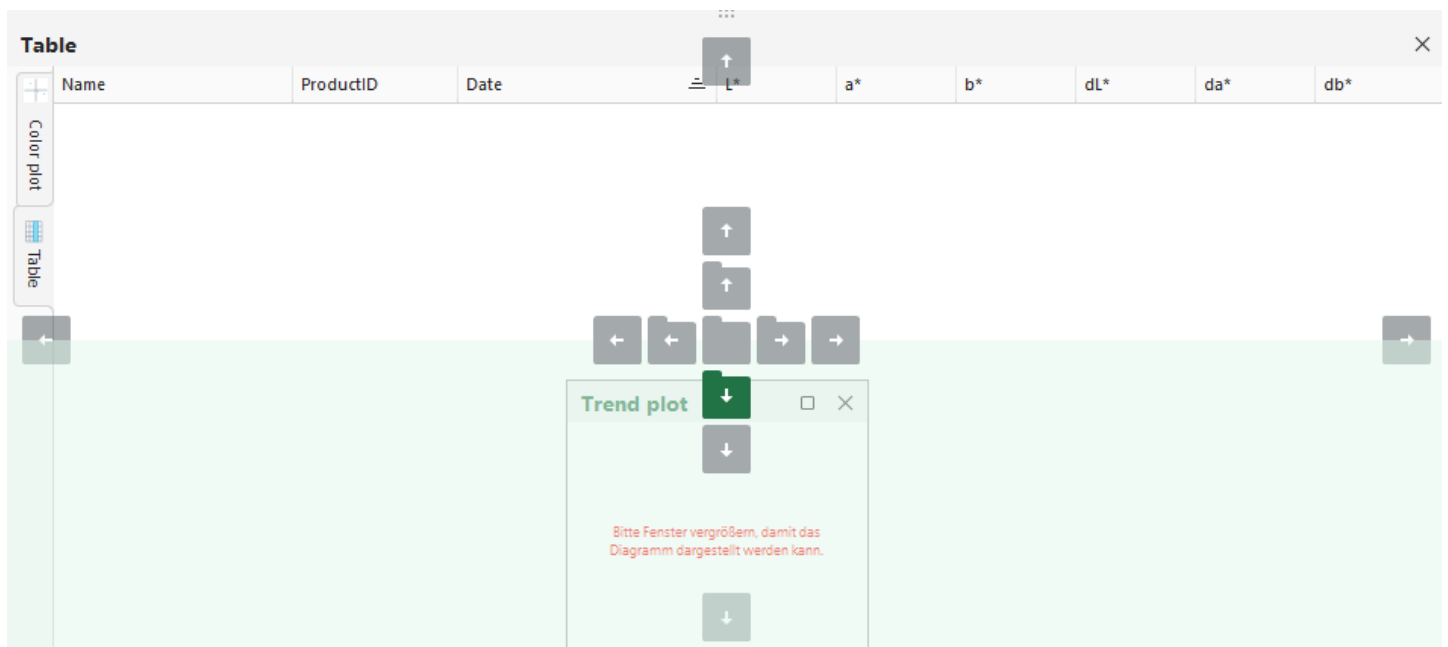
If you have completely closed some views the icon *Windows*  will appear in the side menu offering a drop down menu with all closed views to restore.

Views can be **docked** by clicking on their title bar and dragging them somewhere on the screen (if some windows are grouped together, click on the Description near the window's symbol). Some icons appear, e.g. this one in

the middle:



Now drag the mouse over one of those little rectangle symbols. It will become green and the area where the view will dock is marked light green.

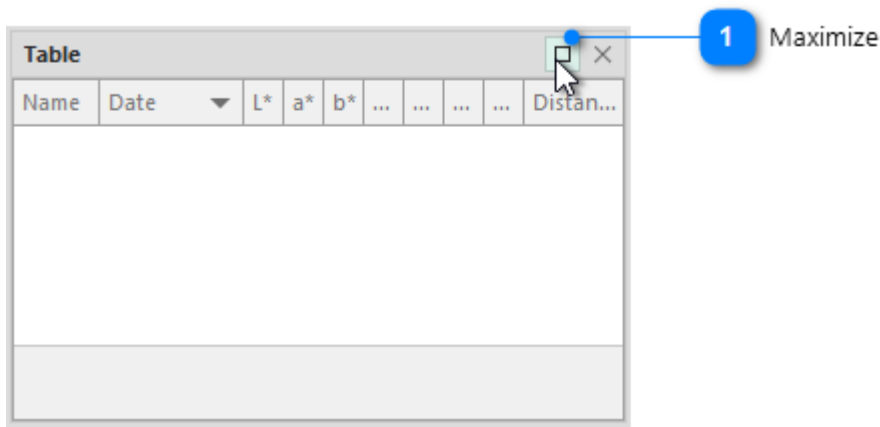


If you release the mouse button, the window will be docked there.

Note: If you select the centered icon, the views will be on top of each other and can be selected by the tabs, on the bottom of the view, then.

Using a second monitor

You can even maximize one window on a second monitor by dragging one view to the second monitor and use the maximize button here:



9.2. Infopanel setting

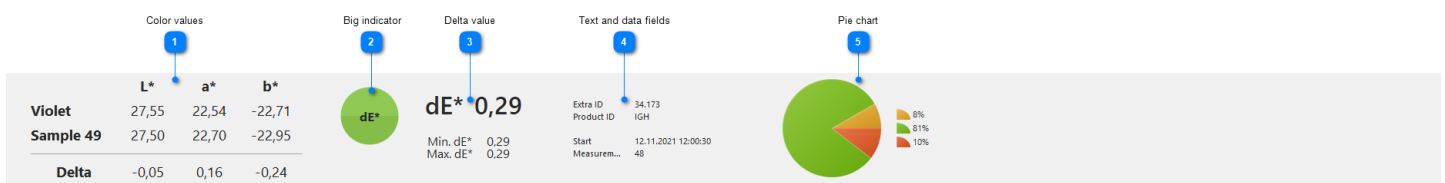
The **info panel** is always displayed at the top of the screen.

There are various [elements](#) to add to the panel, which can be [inserted and customized](#).
To make it easier there is a default [template](#).

For [creating and editing a single field](#) there are many options, demonstrated here at an [example](#).

Elements

The following elements are available for the info panel:



1 Color values

Configurable color values (CIELab, XY, CIELCh and deltas, YI E313, WI E313, dE cmc)

	L*	a*	b*
Violet	27,55	22,54	-22,71
Sample 49	27,50	22,70	-22,95
Delta	-0,05	0,16	-0,24

2

Big indicator

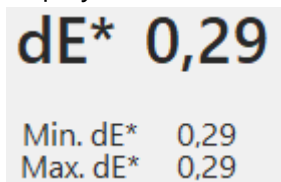
A big indicator indicating the last sample measurement. Can be chosen for different color values and can operate as warn/alarm indicator (green/orange/red) or as tendency indicator (e.g. green/red for dL^*). Indicator for $L^*/a^*/b^*$ will warn if only one value is out of bounds.



3

Delta value

Can be configured to various deltas. Minimum dE and maximum dE values (Of the whole run) can be displayed as well.



4

Text and data fields

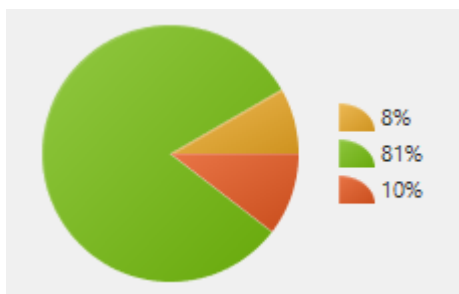
Configurable text fields (Special IDs, Extra fields, Plug in fields, Measurements counter, start date, status and shade)

Extra ID	34.173
Product ID	IGH
Start	12.11.2021 12:00:30
Measurem...	48

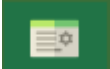
5

Pie chart

Shows a small statistic for the current run as a pie chart



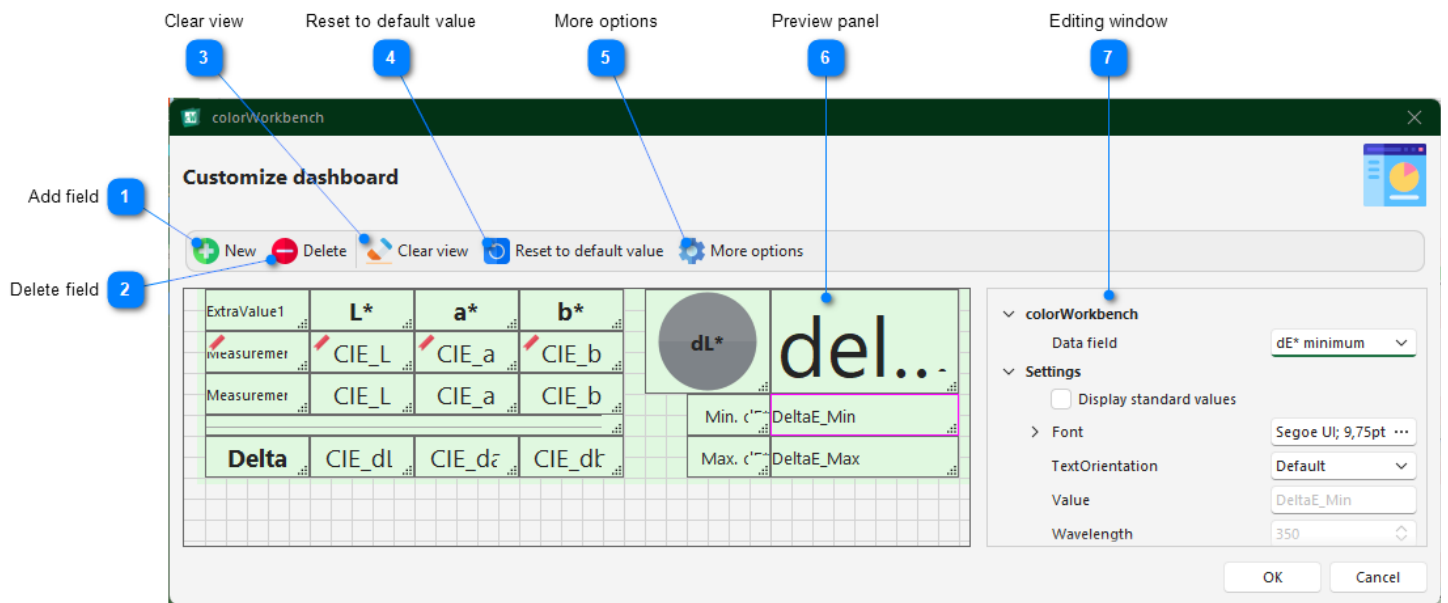
Customizing the info panel

Navigation: Side menu >  >  Info panel

Note: If the button  Info panel is grayed out, you have insufficient permissions.

A window with the default view opens. Either this view can be edited or it can be completely deleted and a new view can be created.

Enlarge the window horizontally to see the whole panel to be edited.



1 Add field

Creates a new field in the editing panel. If you don't see it, enlarge the window horizontally. See here, how to [edit a field](#).



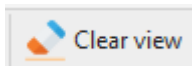
2 Delete field

Deletes a selected field



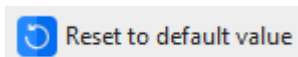
3 Clear view

Deletes the whole view



4 Reset to default value

Resets to default view (CIE Lab values)



5 More options

Import or export the view or load a **template**



6 Preview panel

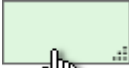
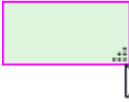
In the preview you can size and position fields for the panel by drag and drop

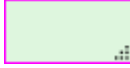
ExtraValue1	L*	a*	b*	dL*	del...
Measuremer	CIE_L	CIE_a	CIE_b		
Measuremer	CIE_L	CIE_a	CIE_b		
				Min. c*	DeltaE_Min
				Max. c*	DeltaE_Max
Delta	CIE_dL	CIE_dC	CIE_dM		

7 Editing window

Select entries for a field and edit font and text orientation

Create and edit a field

Create a new field by  **New** add (if you don't see any new field, enlarge the panel window to the right), drag it to some position in the panel  and resize it by dragging it larger/smaller at the right bottom edge. 

Be careful to position it only in the greenish marked area. Select the field by mouse click , so it will appear with a pink frame and you can edit it in the editing window on the right side:

1 Data field

Select if you want to enter *Text*, the content of some *field* (*ID*, *Extra*, *name*, *date*, ...), or some *color value* or *color index*.

Text

2 Standard values

If you have selected some value (for example L^*) which is available for samples as well as for standards, activate here to show standard value. Otherwise the values of the last sample measurement will be shown.

☐ Display standard values

3 Font

Choose font and text orientation for the selected field

> Font Segoe UI;...
TextOrientation Center

4 Text value

If *Text* is selected at *data field*, insert the text to be shown.

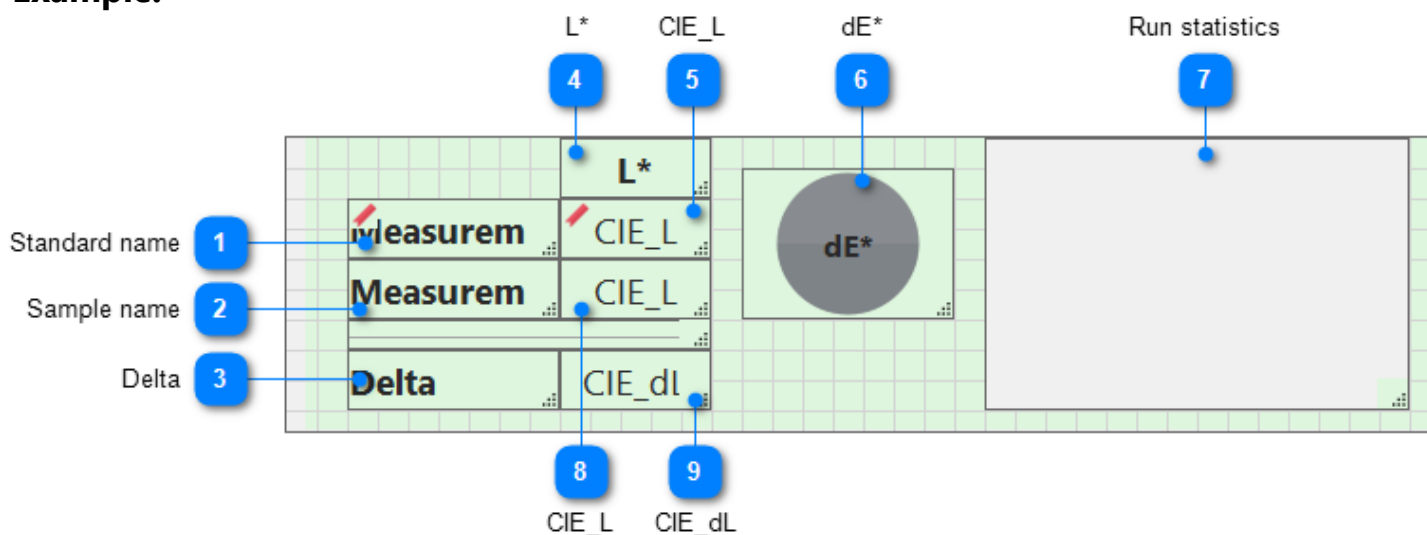
Delta

5 Wavelength

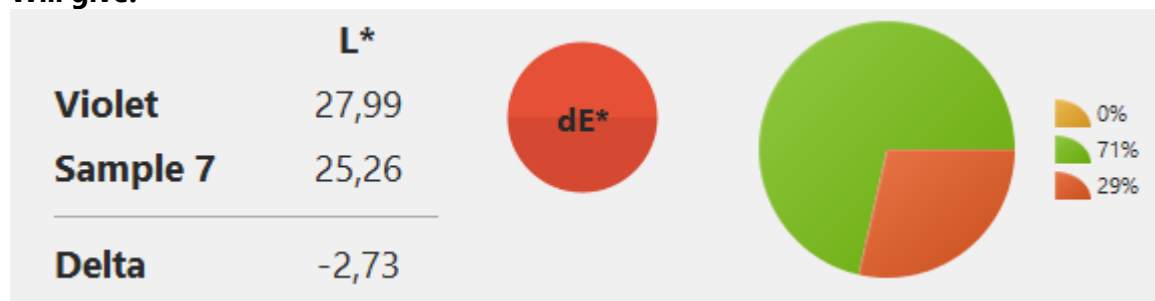
If *wavelength* is selected at *data field*, choose the wavelength for which the reflection values shall be shown.

350

Example:

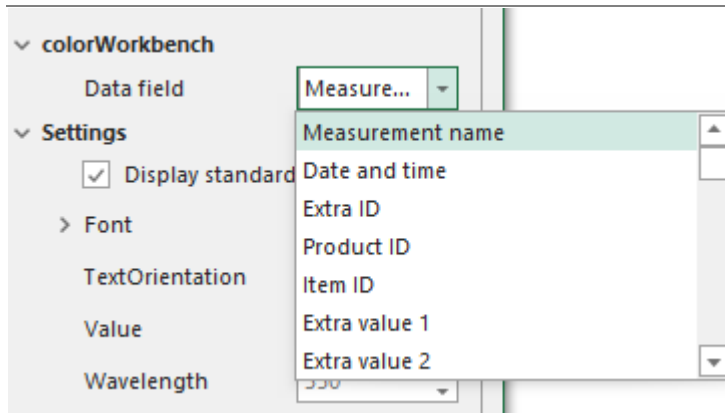


Will give:

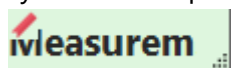


1

Standard name

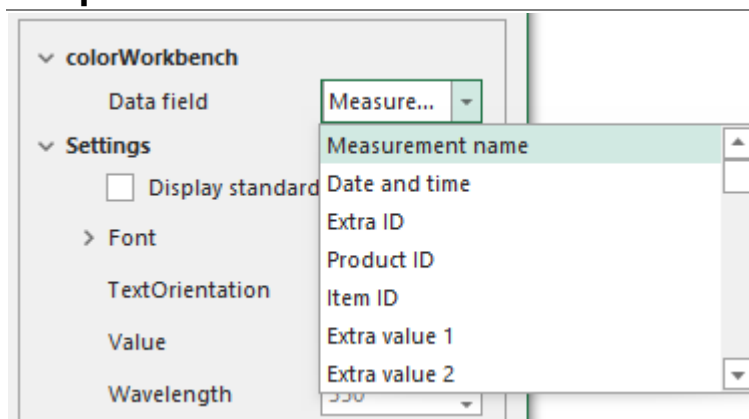


At *Data field* select *Measurement name* and tick off *Display standard values* so the name of the standard (not the sample) is shown in this field (as selected at [Start settings](#)). This will be indicated by a red pen symbol in the preview panel.

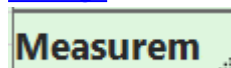


2

Sample name

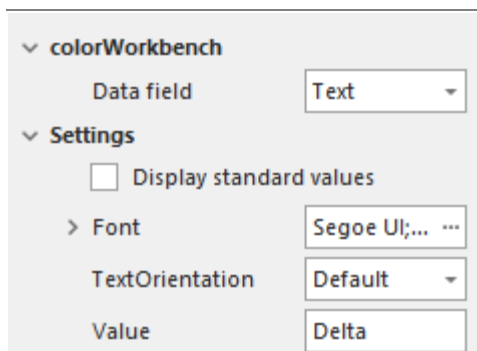


At *Data field* select *Measurement name* without "Display standard" and the sample name as set at [Start settings](#) will be displayed.



3

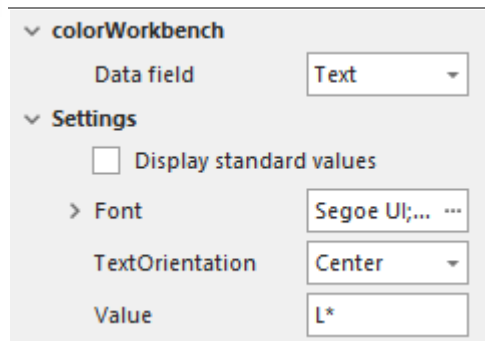
Delta



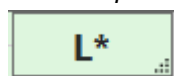
At *Data field* select *Text* and at enter "Delta" at *Value* to show the word "Delta" at the info panel.



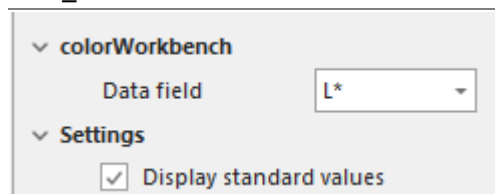
4

L*

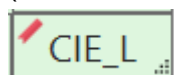
At *Data field* select *Text* and enter "L*" at *Value* to show "L*"



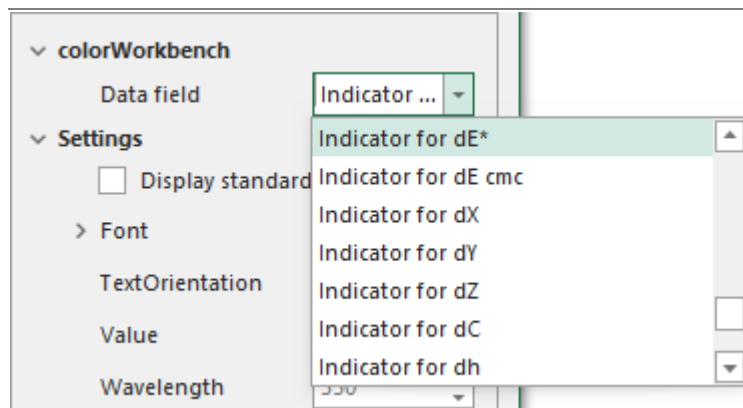
5

CIE_L

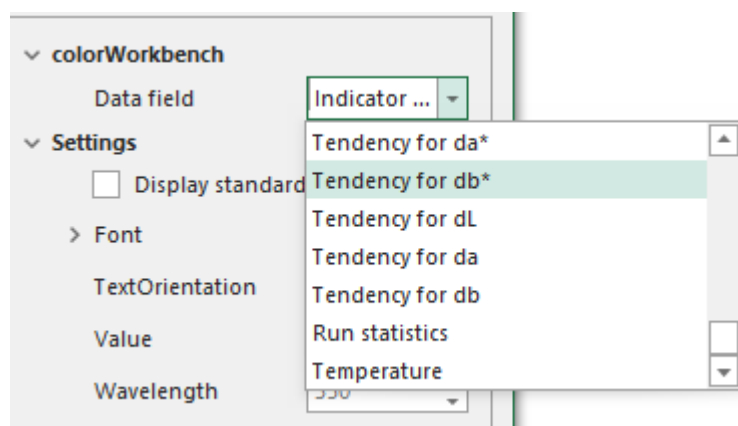
At *Data field* L* selected with selection of *Display standard values* shows the L* value of the standard (standard indicated by red pen symbol)



6

dE*

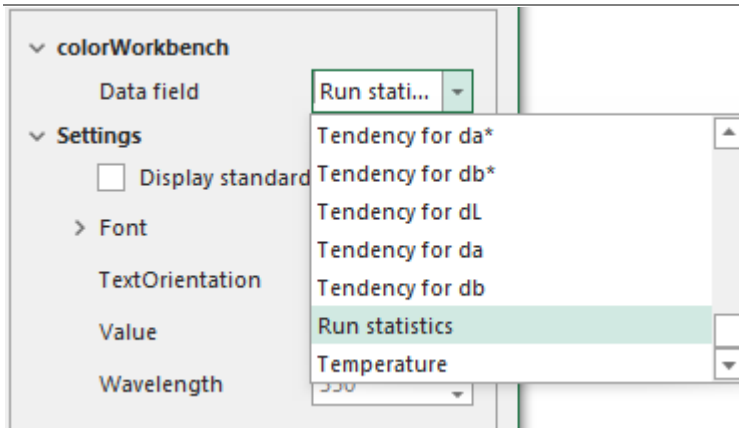
Indicator for dE* shows the big indicator for Delta E* in green/orange/red. Accordingly for the other indicators.



Tendency for db* shows the indicator for db* in white/blue/yellow. Accordingly for the other indicators.



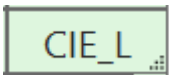
7 Run statistics



Select to show the pie chart.

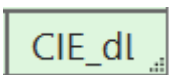
8 CIE_L

Data field L* shows the L* value of the last measurement



9 CIE_dL

Data field dL* shows the dL* value for the last measurement



9.3. Table layout

Navigation: Side menu >  >  Table

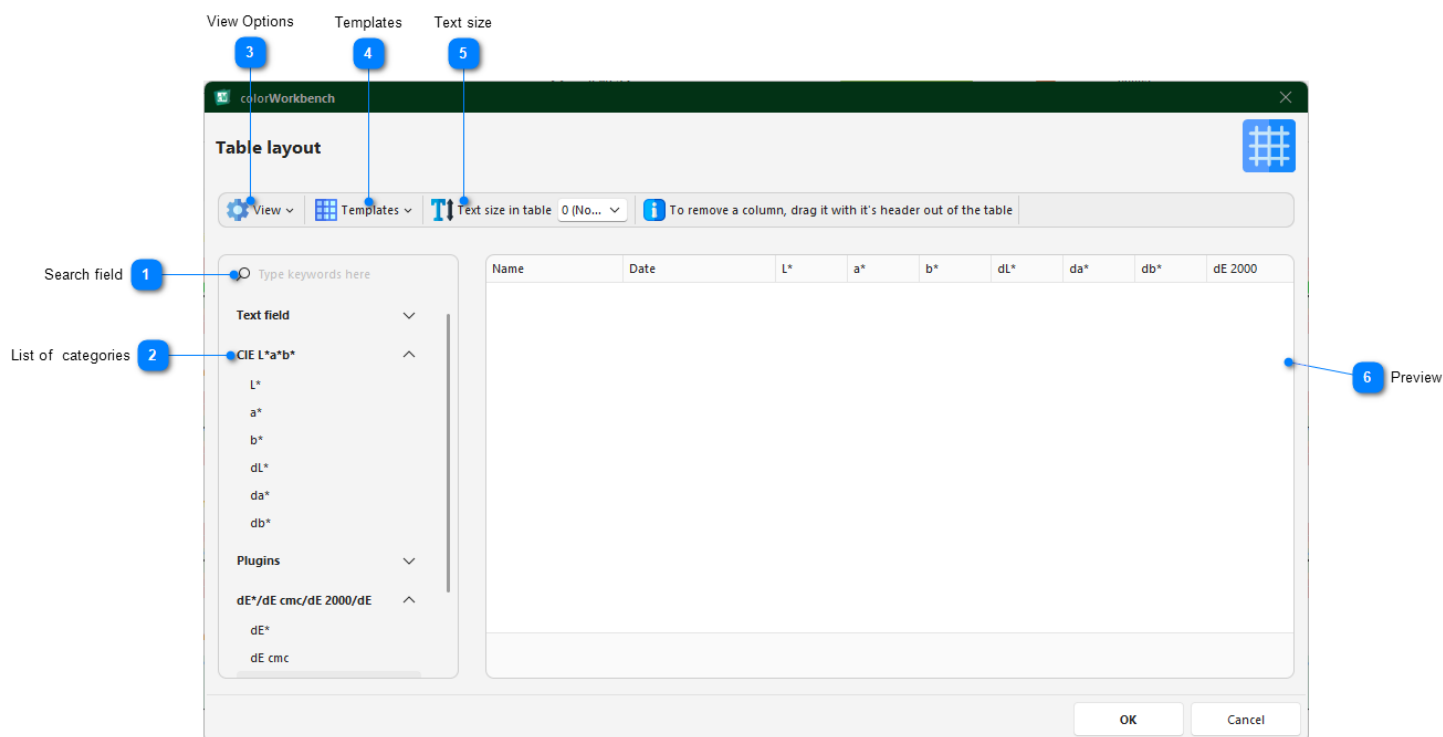
Note: If the button  Table is grayed out, you have insufficient permissions.

Select from the **list of categories** or search for the desired color values, indexes etc. in the **search field**, and add them to the table by **double click**.

By drag and drop you can **change the order** of the columns and **remove** single columns by dragging the header out of the field.

Note: The color scale in the list of categories is the one defined at the [Start settings](#). Other, you can select to display all color scales at the [Global settings](#).

All scales and indice are referring to the illuminant/observer set at the [Start settings](#).



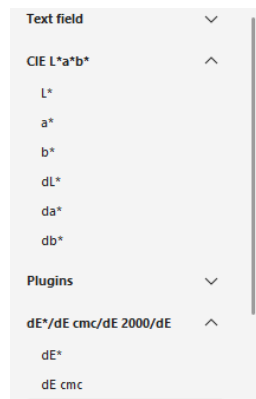
1 Search field

Search for indices or color scale values by name

Type keywords here

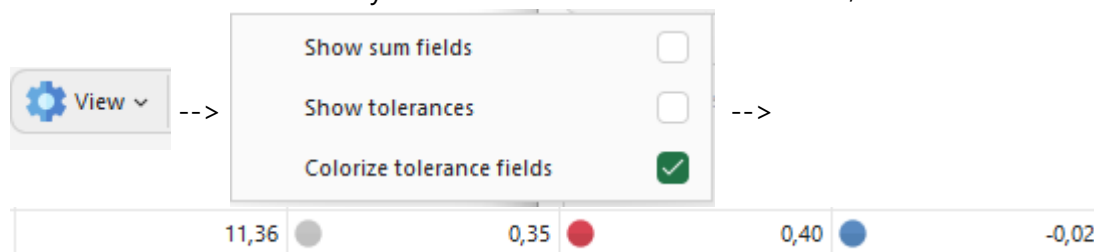
2 List of categories

List of categories of table contents - open drop down menus to see single values



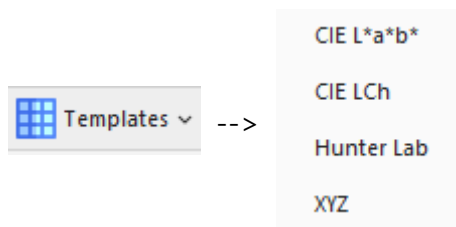
3 View Options

Options to show [sum fields](#) under a column, to show tolerances in the lines underneath the standard or to colorize tolerance fields by the color the measurement tends to, like shown here beneath.



4 Templates

Choose a template for a color scale instead of adding all values individually



5 Text size

Select a text size bigger then "Normal".



6 Preview

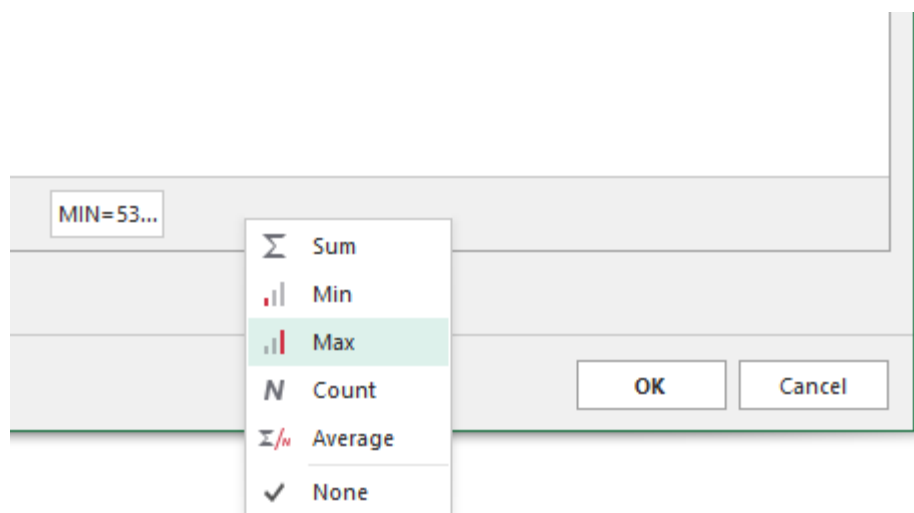
Preview of the table with selected items

Name	Date	L*	a*	b*	dL*	da*	db*	dE 2000

Show sum fields

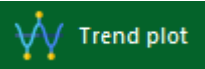
If you select *show sum fields*, a grey bottom bar will appear in the preview.

There, by a right mouse click, you can select various statistical functions for each column to be shown at the bottom of the table:



9.4. Trend plot settings

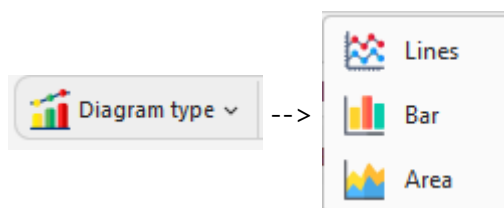
Navigation: Side menu >  >  Trend plot

Note: If the button  is grayed out, you have insufficient permissions.



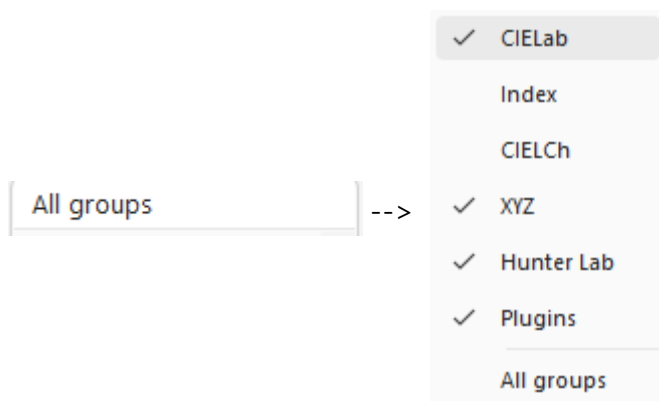
1 Diagram type

Select the display type of the diagram here



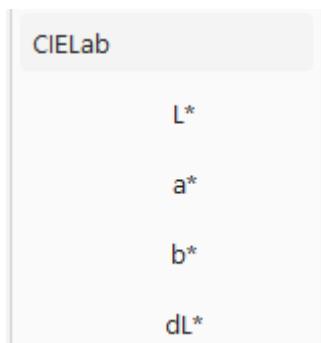
2 Scale selection

Select scales or fields for display in the values list.



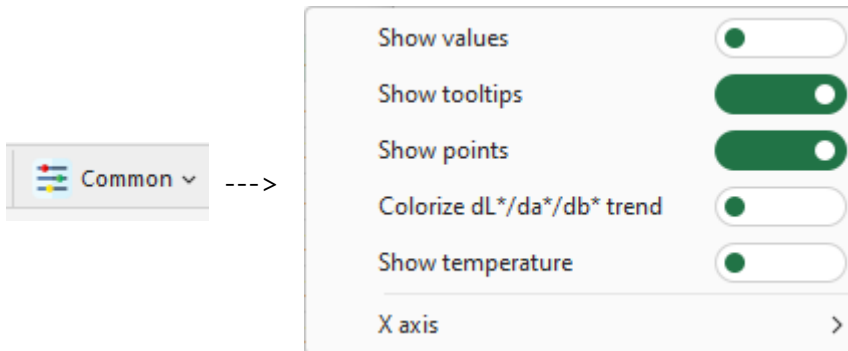
3 Values list

Drag an entry of the list into one of the (up to) four diagram fields on the right. If you want to choose from a different color scale, index or plug in, use the scale selection (#2)



4 Common settings

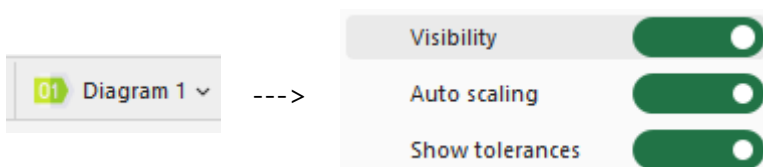
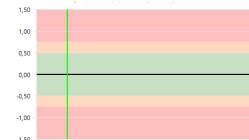
Select options for showing values, tool-tips, dots or temperature, activate a colorizer and customize the x-axis.



5 Diagram settings

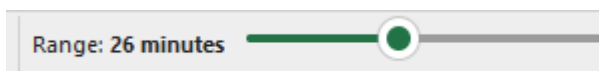
Set the following properties for each of the four diagrams:

- Show/hide the respective diagram.
- Set the y axis to **fixed** (= [tolerances of standard](#) +/- x; with x as set at [Start settings](#)) or **auto scale** mode
- Set display to colored background referring to set tolerances:



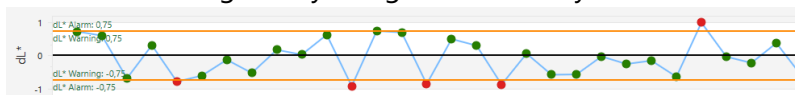
6 Range

Set the displayed time range of the diagram

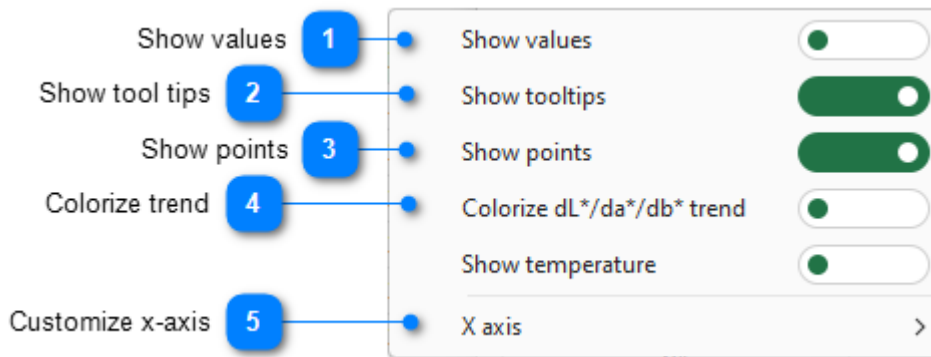


7 Preview

Shows a preview of the configured diagram (Markers are not shown in the preview). You can zoom in and out each diagram by using the wheel of your mouse.

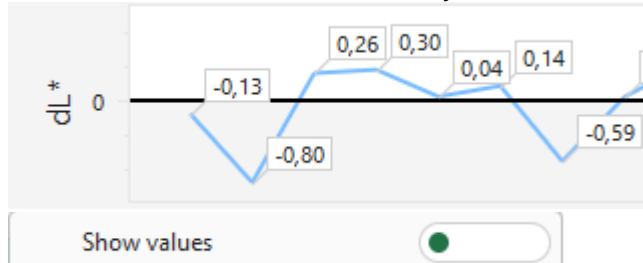


Common:



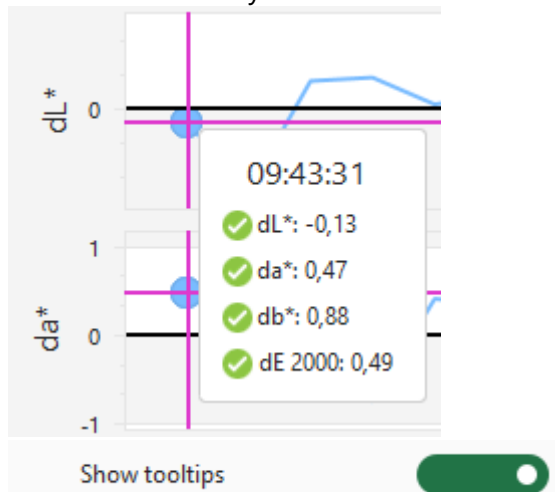
1 Show values

The values will be indicated directly at each measurement point.



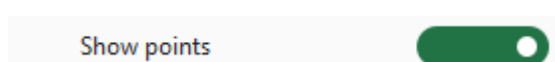
2 Show tool tips

Activates the tool tip function which shows time and values at the mouse over point for all displayed lines simultaneously



3 Show points

Activates to show a dot for each measurement



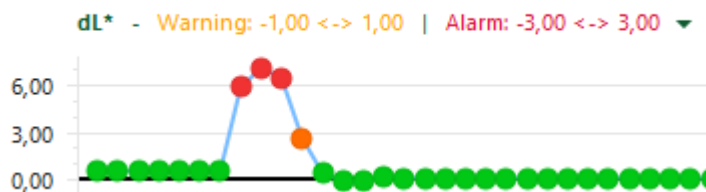
4

Colorize trend

Set the kind of colorization of dots for all diagrams.

Condition: "Show points" (#3) is set to **Yes**.

Selection **No** shows the dots in green, orange or red, referring to "within tolerances" "warning" or "alarm".



Selection **Yes** shows the dots in the color deviation of the respective axis. For example at b^* -Axis in blue and yellow:



5

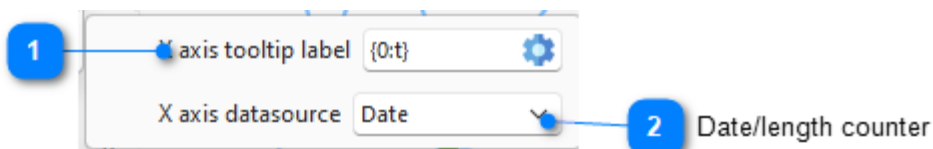
Customize x-axis

[Customize x-axis to](#) time or length counter

X axis

X axis settings

Entry for x-axis format

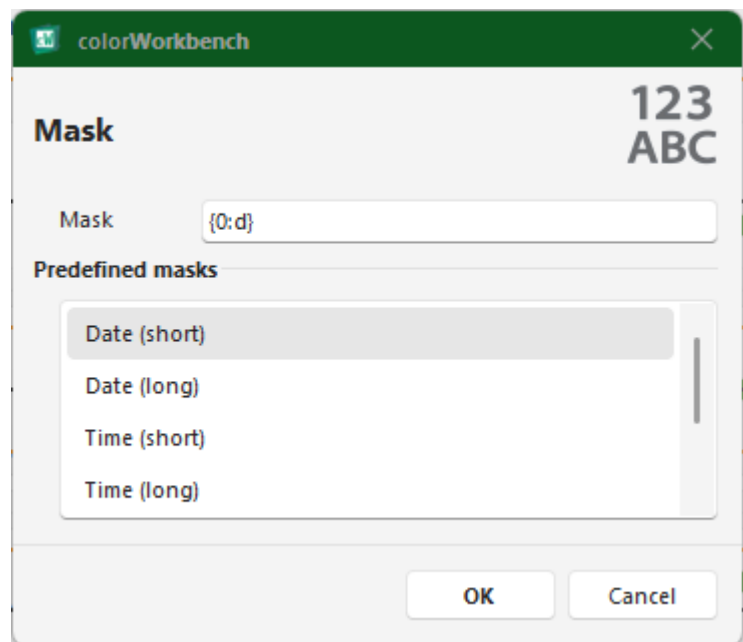


1

Entry for x-axis format

Change the entry for the date/time format of the x-axis by clicking on the  *setting icon* and selecting the entry in the pop up window.

X axis tooltip label {0:t}  -->



2

Date/length counter

If you are using a length counter, change the x-axis data source from "date" to "length counter" and set the output format: {0;yds} for yard scale and {0;m} for metric scale.

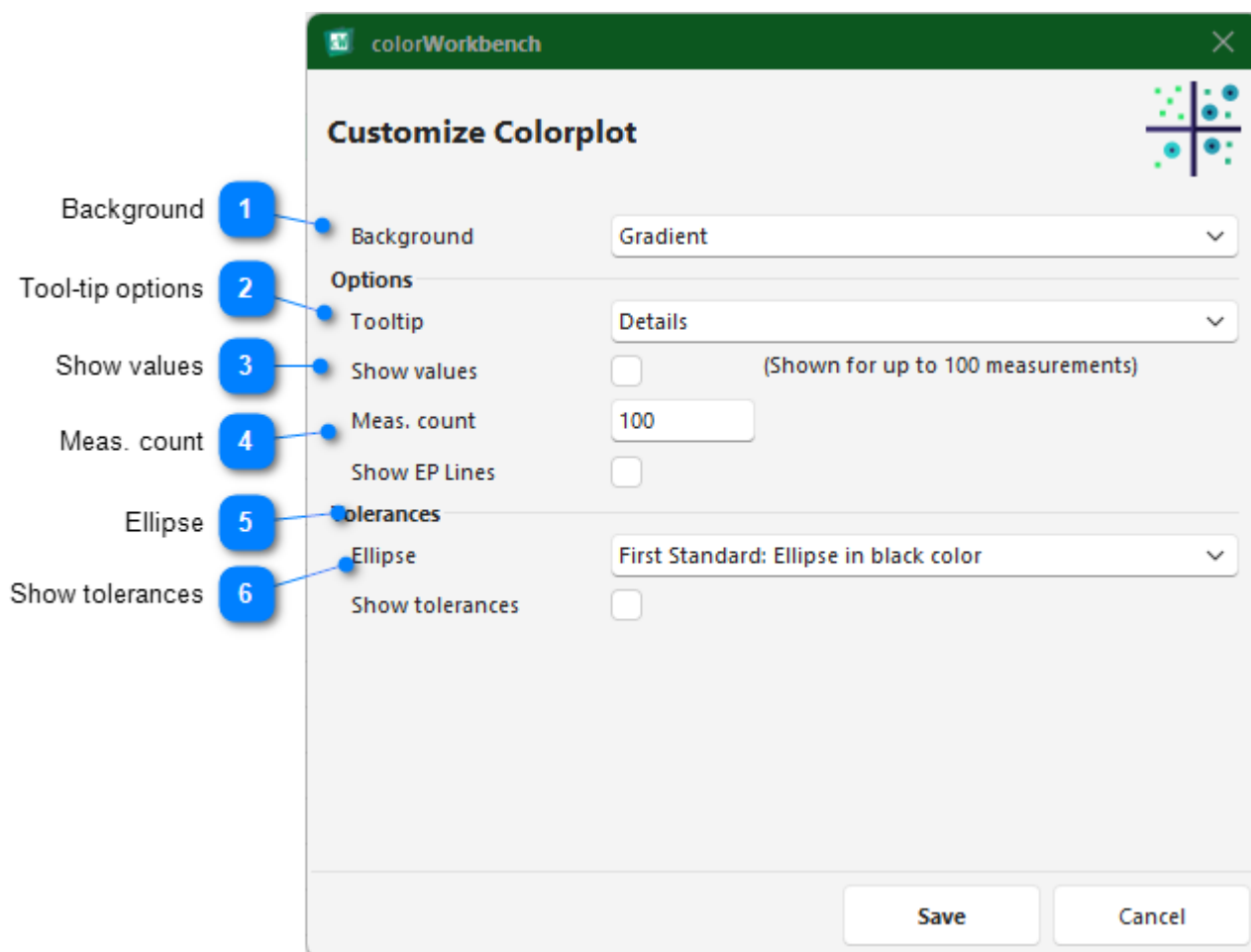
X axis datasource Date 

9.5. Customize color plot

Navigation: Side menu >  >  Color plot

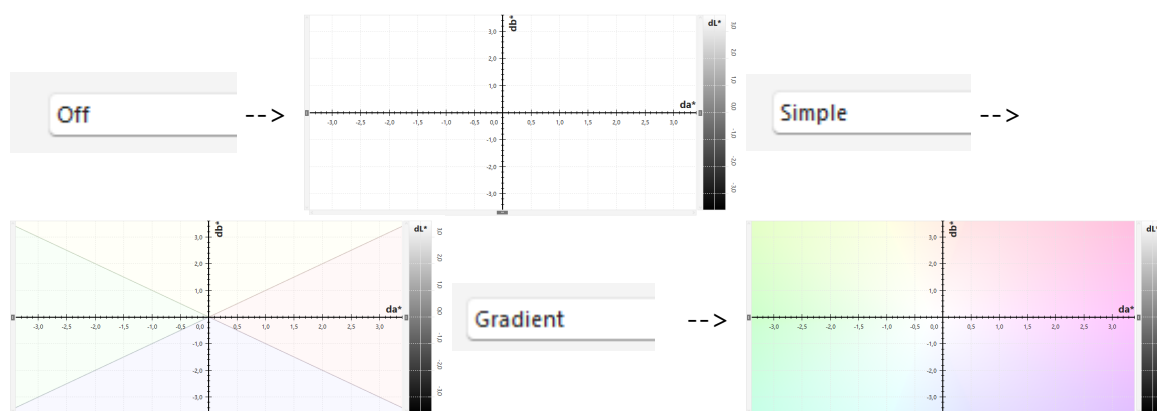
Note: If the button  Color plot is grayed out, you have insufficient permissions.

Up to 100 Measurement can be displayed in the color plot.



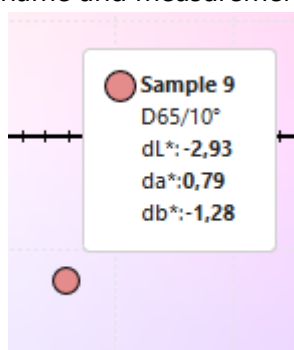
1 Background

Three options for the background of the plot: off, simple and gradient



2 Tool-tip options

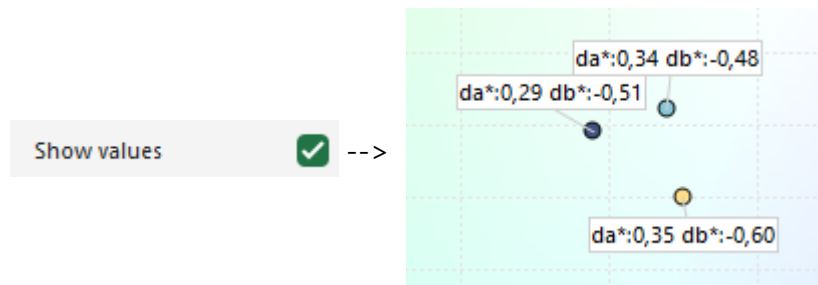
Selected, if tool-tips shown by mouse over display either nothing (OFF), the sample name (NAME) or name and measurement values (DETAILS)



3

Show values

If selected, values are shown in the plot at each point for a measurement.



4

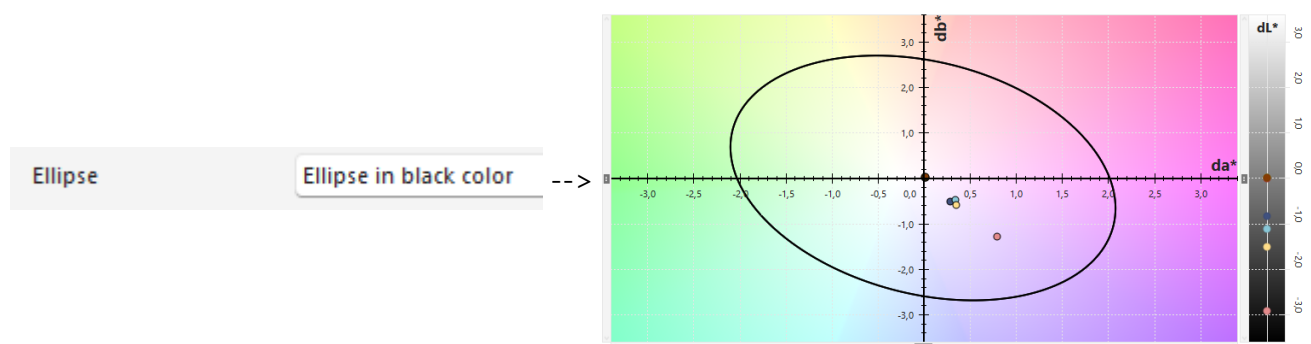
Meas. count

The maximum number of measurements shown in the color plot. Can be set to 100. The last **X** values of the run are displayed

5

Ellipse

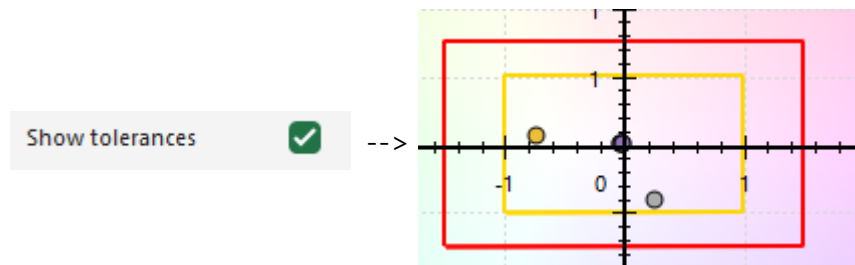
Shows the CMC ellipse. You can Choose if in standard color or in black.



6

Show tolerances

If selected, tolerances as set with the [product management](#) will be shown as rectangles in the plot.

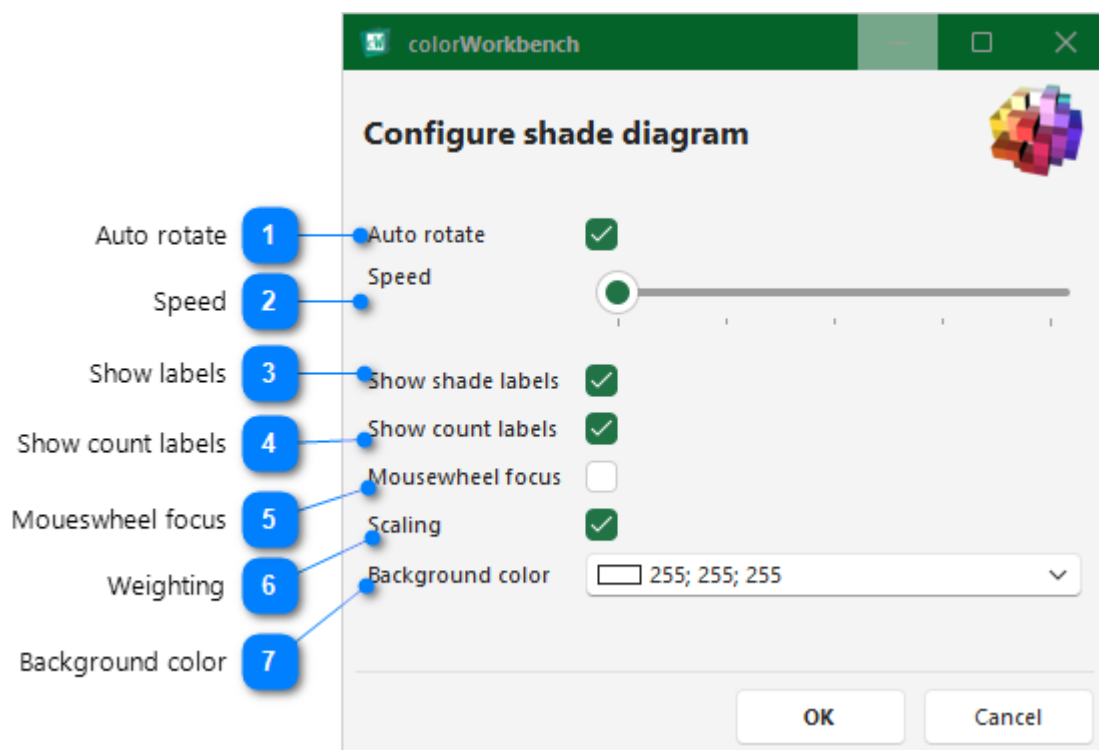


9.6. Customize Shade diagram

Navigation: Side menu >  >  Shade diagram

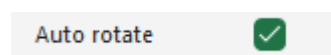
Note: If the button  Shade diagram is grayed out, you have insufficient permissions.

You can zoom in and out of the diagram by holding down the right mouse button and move the mouse. You can turn the grid by using the left mouse button when auto rotate is off.



1 Auto rotate

Activates auto rotation for the 3D-grid. When active, all labels are also rotated automatically



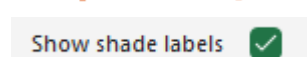
2 Speed

Adjusts the speed of the rotation.



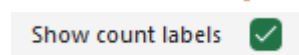
3 Show labels

Labels the cube with the respective shade number



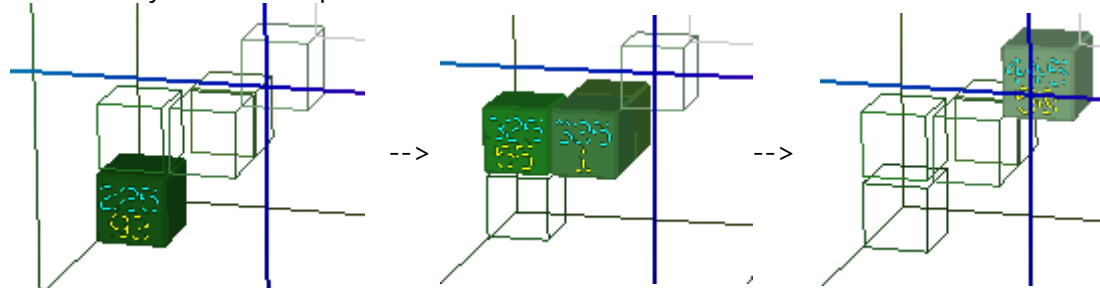
4 Show count labels

Labels the cube with the respective number of measurements sorted to this shade number.



5 Mousewheel focus

Activates the mouse-wheel focus: Using the mouse wheel, you are scrolling through the layers of cubes. All other layers are transparent then.

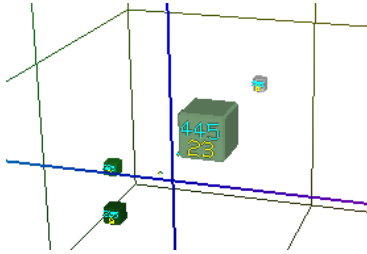


Mousewheel focus ☐

6

Weighting

Adjusts the size of the cubes to each other, referring to the number of counts. A bigger cube represents more, a smaller one less measurements for this shade block



Scaling



7

Background color

Select a background color for your grid

Background color



10. TCP commands

colorWorkbench can be remote controlled via a TCP connection. You can also receive current measurement values. The software multiView can do this, but you could also write your own software to communicate with the software directly.

You have to connect to the software over a custom TCP port (default port is 6840). After that, you have to send a 13-digit unique ID, that has to be different to other IDs you might use. after the ID add a | (pipe) and one of the following strings for the data format:

multiView Data format of multiView
Classic *Obsolete.* Uses the old, calculated format
Custom Uses a customizable format, that can be configured in the settings. See [here for customization](#) and [here for commands](#)

Command set

Start a run/resume a run after pause	
Command:	#START
Answer:	\$START_OK
Remarks:	If a run was started, that is not paused: \$RUN_IN_PROGRESS If a run was paused and now restarted: \$RUN_RESTART
Pause a run	
Command:	#PAUSE
Answer:	\$PAUSE_OK
Remarks:	If no run was started: \$NO_RUN_STARTED
Stop a run	
Command:	#STOP
Answer:	\$STOP_OK
Remarks:	If no run was started: \$NO_RUN_STARTED
Modify Status	
Command:	#U + value
Answer:	\$U + value
Modify ExtraID	
Command:	#W + value
Answer:	\$W + value
Modify ProductID	
Command:	#X + value
Answer:	\$X + value
Modify Extra value 1	
Command:	#A + value
Answer:	\$A + value
Modify Extra value 2	

Command:	#B + value
Answer:	\$B + value
Modify Extra value 3	
Command:	#C + value
Answer:	\$C + value
Modify Extra value 4	
Command:	#D + value
Answer:	\$D + value
Modify Extra value 5	
Command:	#E + value
Answer:	\$E + value
Modify Extra value 6	
Command:	#F + value
Answer:	\$F + value
Modify Extra value 7	
Command:	#G + value
Answer:	\$G + value
Modify Extra value 8	
Command:	#H + value
Answer:	\$H + value
Load a standard	
Command:	#Y + standard ID
Answer:	\$Y + standard ID
Remarks:	If ID is not found: \$Y_ERROR If a run is already in progress: \$RUN_IN_PROGRESS
Message	Description
\$LOW_DATA	Instrument's signals are low. Check the instrument for dirt support
\$NO_DATA	Instrument does not measure data. Check cable connection
\$MEASUREMENT_ERROR	Spectral data seem to be faulty. Check the instrument for support
\$UNKOWN_COMMAND	An unknown command was received
#STATUS (deprecated)	\$STATUS;{0};{1};{2};{3};{4};{5};{6};{7};{8};{9};{10}; {0} = Standard-ID {1} = Standard-ID {2} = Run in progress {3} = ExtraID {4} = ProductID {5} = Extra value 1 {6} = Extra value 2 {7} = Extra value 3 {8} = Extra value 4 {9} = Extra value 5 {10} = StatusID

10.1. Command reference

Start a run/continue a run

Command	#START
Answer	@START_OK
Note	- If a run as already be started, that is not in pause mode: @RUN_IN_PROGRESS - If a paused run is continued: @RUN_RESTART

Pause a run

Command	#START
Answer	@START_OK
Note	- If a run as already be started, that is not in pause mode: @RUN_IN_PROGRESS - If a paused run is continued: @RUN_RESTART

Stop a run

Command	#STOP
Answer	@STOP_OK
Note	- When no run is started: @NO_RUN_STARTED

Change status

Command	#U{Value}
Answer	@U{Value}
Note	

Change Extra ID

Command	#W{Value}
Answer	@W{Value}
Note	

Change Product ID

Command	#X{Value}
Answer	@X{Value}
Note	

Change Standard

Command	#Y{Value}
Answer	@Y{Value}
Note	- If standard ID was not found: @Y_ERROR - If a run is in progress: @RUN_IN_PROGRESS

Change Extra value 1

Command	#A{Value}
---------	------------------

Answer *@A{Value}*
Note

Change Extra value 2

Command *#B{Value}*
Answer *@B{Value}*
Note

Change Extra value 3

Command *#C{Value}*
Answer *@C{Value}*
Note

Change Extra value 4

Command *#D{Value}*
Answer *@D{Value}*
Note

Change Extra value 5

Command *#E{Value}*
Answer *@E{Value}*
Note

Change Extra value 6

Command *#F{Value}*
Answer *@F{Value}*
Note

10.2. Status and error messages

@LOW_DATA

The measured signal is too low. Clean the instrument and perform a standardization. Contact support if problem persists.

@NO_DATA

The instrument does not send data. Check cabling and distance and tracking settings in the standard management

@MEASUREMENT_ERROR

Invalid spectral values were received from the instrument. See **@LOW_DATA**

@UNKNOW_COMMAND

colorWorkbench received an unrecognized command

@STATUS (obsolete)

Format: #STATUS;{0};{1};{2};{3};{4};{5};{6};{7};{8};{9};{10}

{0} = Standard ID

{1} = Standard ID

{2} = Run started

{3} = Extra ID

{4} = Product ID

{5} = Extra value 1

{6} = Extra value 2

{7} = Extra value 3

{8} = Extra value 4

{9} = Extra value 5

{10} = Status ID

10.3. Custom TCP data

The wild cards have to be separated by a semicolon (";"), e.g.: [SAM_Name];[SAM_Date];[SAM_dE].

colorWorkbench will then send the sample name, date and time of measurement and the dE* value to a connected client.

These wild cards are available:

Wild cards for samples

SAM_ID	Sample ID in the database
SAM_Name	Sample name
SAM_Date	Sample date/time
SAM_L	L* value
SAM_A	a* value
SAM_B	b* value
SAM_C	C value
SAM_H	h° value
SAM_X	X value
SAM_Y	Y value
SAM_Z	Z value
SAM_YI	YI E313 value
SAM_WI	WI E313 value
SAM_dL	dL* value
SAM_dA	da* value
SAM_dB	db* value
SAM_dC	dC value
SAM_dH	dh° value
SAM_dX	dX value
SAM_dY	dY value
SAM_dZ	dZ value

SAM_dE	dE* value
SAM_dECMC	dE CMC
SAM_dLCMC	dL CMC value
SAM_dCCMC	dC CMC value
SAM_dHCMC	dh° CMC value

Wild cards for standards

STD_ID	Standard ID in the database
STD_Name	Standard name
STD_Date	Standard date/time
STD_L	L* value
STD_A	a* value
STD_B	b* value
STD_C	C value
STD_H	h° value
STD_X	X value
STD_Y	Y value
STD_Z	Z value
STD_YI	YI E313 value
STD_WI	WI E313 value

Wild cards for run info

ME_ID	Last measurement ID in the database
Status	Status of the last measurement
Measurements	Measurements count for current run
Alarm	Alarm count for current run
Warning	Warning count for current run
ExtraID	Current Extra ID value
ProductID	Current Product ID value
E1	Extra value 1
E2	Extra value 2
E3	Extra value 3
E4	Extra value 4
E5	Extra value 5
E6	Extra value 6
E7	Extra value 7
E8	Extra value 8
IllObs	Current Illuminant/Observer
PRD_ID	Active product ID

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New Keyword1, 71