User Manual

CROMLAWATCH

Data Logging Software

Version 1.7

For use with Color Sensors

CROMLAVIEW® CR100

CROMLAVIEW® CR200

CROMLAVIEW® CR210

ASTECH

Angewandte Sensortechnik

Notes

The information contained in this manual has been thoroughly researched and prepared. Nevertheless, we cannot assume liability for omissions or errors of any nature whatsoever. We would, however, be grateful for your comments or suggestions.

We shall not accept any claims for damages, except for those resulting from intent or gross negligence.

As this product is available in several designs, there might be deviations between the descriptions and instructions in hand and the product supplied.

We reserve the right to make technical changes, which serve to improve the product, without prior notification. Thus, it cannot be assumed that subsequent versions of a product will have the same features as those described here.

Registered trademarks are the property of their manufacturers.

CROMLAWATCH User Manual V1.7

Revision history

Manual Version	Date	Changes
1.7	13.06.18	Installation comments, smaller correction
1.6	04.02.15	New design
1.5	15.09.14	Screenshot Fig. 3 Main Screen changed
1.4	17.07.12	Measurement method "Difference" of CR200 integrated
1.3	06.03.12	First start integrated
1.0	15.03.11	Created

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1 Software installation

Due to registry entries please do the installation in the later used Windows **administrator** account. For installing the software, please execute the file "SETUP.EXE".

After starting the "SETUP.EXE" several windows will appear. Please follow the corresponding instructions.

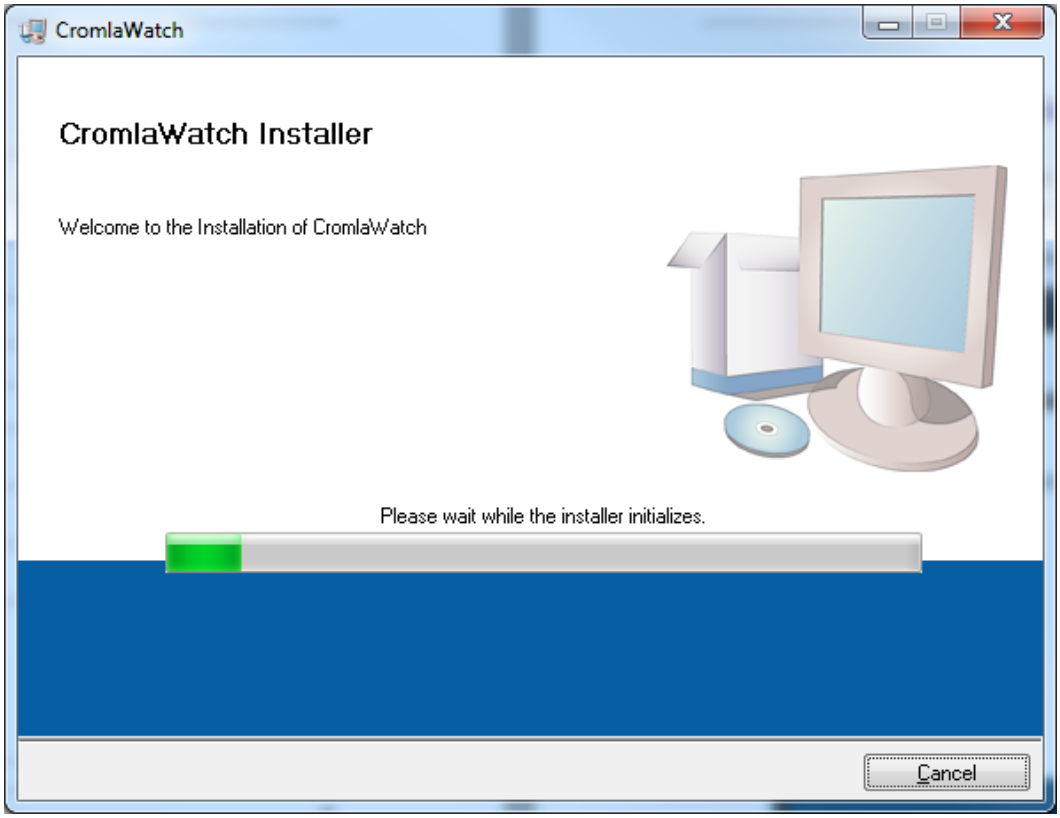


Figure 1 : Installer window

Please make sure that for operating the software the following requirements are fulfilled.

- Windows® OS from version WIN XP
- 500 MB free hard disc space
- USB port
- VGA graphic with minimum resolution 1024x768
- Mouse for operation

2 First start

At the first time start after installation the program asks for a license number. Customers can buy a valid license number from Astech to use ***CromlaWatch*** with all features.

Figure 2 : Window for license key entry

If the user enters a wrong license key, the software detects this and the user will get another try. If there is no valid license number the user may cancel this dialog. Then the software will run in a demo mode where some key functions of the program are not available. For example, in the demo mode it is not possible to save data to file or to set up own tolerance values. If you want to use full function in a non-administrator account, transfer the data from the registry using the Registry Editor under HKEY_CURRENT_USER→Software→ASTECH GmbH→ Cromlawatch.

3 Main Screen

After start the program shows its standard screen (Figure 3). Three graphical diagrams are used to display the color values over the time. Several numerical indicators display all current data values. Buttons and numerical controls can be used to set up the data logging functions.

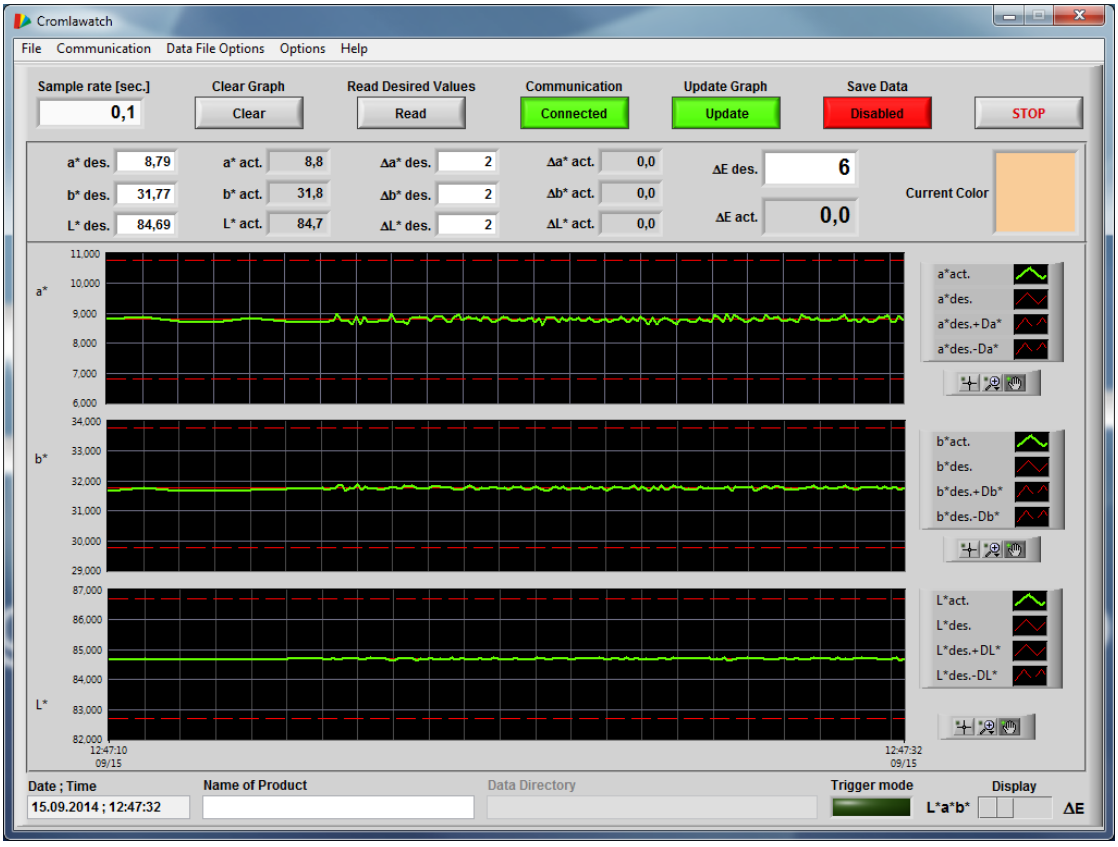
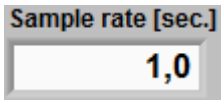


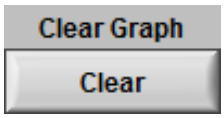
Figure 3 : Main screen

3.1 Button functions

Below the usage of all the buttons of the main screen are described.



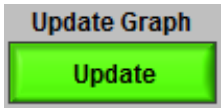
Sets the sampling rate. Can be edited by keyboard. Default value is 1.0.



Clears all graphical indicators. Use this button after you scanned the desired color values.

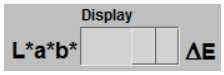
Opens a subwindow where the desired color values can be scanned from the sensor or typed in by keyboard.

Use this button to establish / break a connection to the color sensor. A subwindow appears where the communication parameters can be set.



This button enables/disables the periodic update of the graphical displays. This enables the user to explore a certain state of the graph. The collection of new values continues in the background.

This button enables/disables the data logging. If enabled, the program stores all values to a data file. The path to the data file is shown in the status bar. (See 3.4.)



This element switches between graphical display of components (L*a*b*) and distance (ΔE).

Stops the program.

3.2 Numerical display

This display bar shows the actual and desired color values and the actual and desired color distance in the L*a*b*-color space. Color differences can be read component-wise in L*, a* b* or together as ΔE. If a color sensor type CR200 is connected and the measurement method is set to "Difference" the software will read and display the current color difference values.

Elements with white colored backgrounds may be edited manually by keyboard. Useless values will be rejected and replaced with default values.

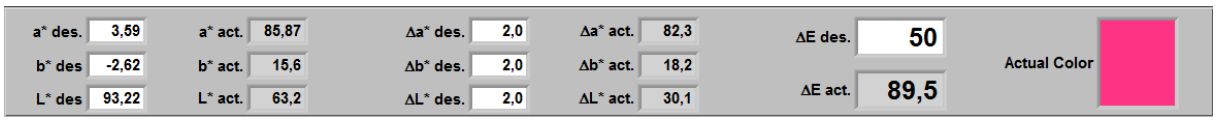


Figure 4 : Numerical display

3.3 Graphical displays with graph palette and plot legend

The graphic indicators for the color components L*, a* and b* show three plots. The actual and the desired color value are drawn as continuous line and the range of the desired color distance. So the user can easily detect, if the actual color leaves the desired tolerance range.

If the ΔE-Graph is enabled, there are only two plots – the actual and the maximum color difference.

The graphical displays can be set up by the user. Right click the graph to change settings or to export the graph as image. Also the automatic scaling function can be turned off for each scale.

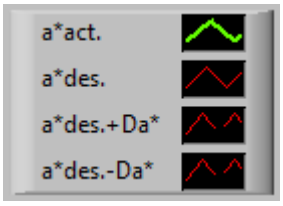


Figure 5 : Plot legend

Each graphical display has a Plot Legend where all plots can be parameterized separately. Right click the entry of a certain plot to change its style, color, width or the like.

Figure 6 : Graph palette

Right-click the graph or chart and select "Visible Items" → "Graph Palette" from the shortcut menu to display the graph palette, shown as follows.

Click a button in the graph palette to move cursors, zoom, or pan the display. Each button displays a green LED when you enable the button. The graph palette appears with the following buttons, in order from left to right:

- **Cursor Movement Tool** - Moves the cursor on the display.
- **Zoom -** Zooms in and out of the display.
- **Panning Tool -** Picks up the plot and moves it around on the display.

3.4 Status display

A general information display is placed at the bottom of the main screen. Here the actual date and time is displayed. Additionally a user defined product name can be set to identify a certain set of data.

Data Directory shows the currently set folder for the data files generated by the software. To change the directory either click into the display and a folder dialog will appear or choose "Data File Options" → "Select Folder" from the menu bar.

Figure 7 : Status display

Elements with white colored backgrounds may be edited manually by keyboard. Useless values will be rejected and replaced with default values.

4 Communication settings

To establish a connection to the color sensor you can use the button "Communication" or the menu entry "Communication" → "Connect". In both cases a sub window appears. (See Figure 8)

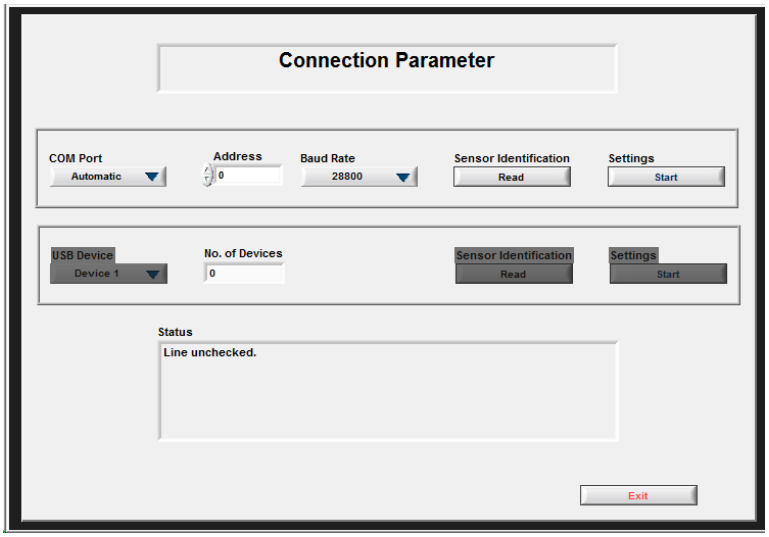
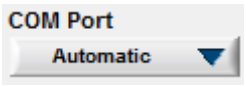
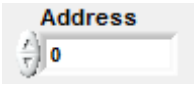


Figure 8 : Subwindow for communication settings

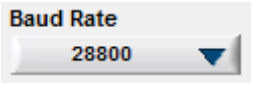
The buttons and displays of the communication window are described below.



Selects the desired COM-Port for the communication. "Automatic" scans the Ports numbered 1 to 19 to find a color sensor for communcatio



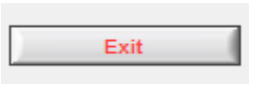
Selects the pre-defined sensor address. "0" means "all sensors".



Selects the baudrate for the communication between 9.600 and 115.200 Baud.

If all settings work properly, this button returns the sensors ID-string.

If all settings work properly, this button starts the communication and the data logging.



Exits the subwindow without starting the communication.

4.1 Program menu

Most of the functions in the program can be activated either by clicking the appropriate button on the control panel or by using the programs main menu. The specific menu items are described below.

Submenu "File":

"Exit" Stops data communication and exits the program

Submenu "Communication"

"Connect" Opens the subwindow to establish the connection

"Disconnect"	Stops an established connection

Submenu "Data File Options"

"Select Folder"	Opens a file dialog to select the folder for the data files
"Time per File"	Provides the possible time for each data file. The user may choose time durations between 5 minutes and 24 hours.

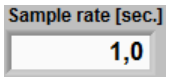
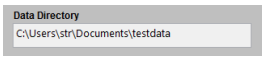
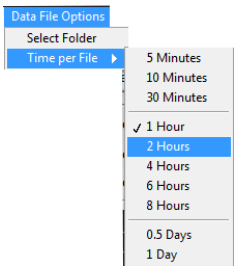
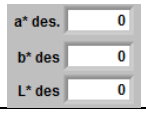
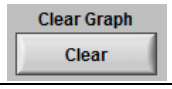
Submenu "Options"

"Timed Scan"	This operation mode scans the color values from the sensor in a constant time based sample rate. The sample rate can be adjusted with the appropriate control on the main window. (See 3.1)
"Ext. USB-Trigger"	In this operation mode the software requests new color values only after receiving a trigger signal by an external input over the USB-port of the PC. Therefore special hardware is used, which can be ordered by ASTECH GmbH.

5 How to write data files

It is recommended to use the sensors parameterization tool prior to ***CromlaWatch*** to set up the application correctly.

Then the following steps describe how to make ***CromlaWatch*** write correct data files.

	1. Select a correct sample rate. Please note, that the less the time for sample rate is the bigger data files grow.
	2. The program will store the data files in a folder you specify. All data files in that folder will have a title of the format: 3. ColorSensorDataFile_<*date of start*>_<*time_of_start*>.csv 4. To change the data folder see chapter 4.1.
	5. There are selectable time durations for the recorded data files. After this duration, the program automatically generates a new data file. This happens to limit the file size in case of fast sampling rates and long recording times. 6. To select the recording time, please use the menu bar entry "Data File Options" → "Time per file".
	7. Establish the communication to the color sensor using either the menu entry "Communication" → "Connect" or the button "Connection". (See chapter 4)
	8. To scan or type in the desired color values open the sub window via the button "Read Desired Values". Alternatively the numerical indicators with white background may be edited manually.
	9. Use "Clear Graph" to reset all graphical indicators.
	10. Start the data recording by "Save data".