



Instruction Manual  
**colorWATCHER-Pro**

colorSENSOR  
LT-1-ST  
LT-2-ST  
LT-2-DU

Software manual to the recording software colorWATCHER-Pro for color recognition devices

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## 1. Introduction Software colorWATCHER-Pro

The colorWATCHER-Pro software allows you to record the Lab color values detected by the colorSENSOR LT-1-ST, ..-2-ST and ..-2-DU color recognition devices. The software has the following key features:

- Long-term recording of Lab color values with a measuring rate  $\geq 0.125$  s, as well as logging.
- Free definition of the target directory for the log file anywhere in the network by specifying the directory in the `colorWATCHER-Pro.ini` configuration file.
- It is possible to automatically create the name of the log file according to pre-defined rules.
- Any number of sensor licence files can be saved in the `Data` licence folder in the `colorWATCHER-Pro` software installation directory.
- Free definition of the licence directory anywhere in the network by specifying the directory in the `colorWATCHER-Pro.ini` configuration file.
- It is possible to record multiple sensors in parallel by launching a corresponding number of instances (copies) of the software.

The functions of the program are described below.

**Note:** To make full use of all functions, a licence file is required (and can be purchased) for every sensor whose measured values are to be recorded. The software will start in demo mode if no licence file is found. The measured values are only displayed in demo mode.

## 2. Installing the Software

The following preconditions must be met in order to install and run the software:

- PC with a 300 MHz CPU
- 40 MB of free hard disk space
- Mouse
- RS232 interface
- USB interface for sensors with USB option
- CD ROM drive
- Graphic display with at least 800 x 600 pixels
- Windows® operating system (Windows XP, Windows Vista, Windows 7, Windows 8 or Windows 10)

To install the software, insert the CD-ROM into the appropriate drive and follow the installation instructions. Alternatively, the `setup.exe` file can be run from `[CDdrive]:\colorWATCHER-Pro_v1.8`.

When delivered by e-mail or via the Internet, the `colorWATCHER-Pro.zip` file must be unpacked into any directory and the `setup.exe` file is then run from this directory.

Follow the instructions from the installation wizard. As default, the software is installed in the `C:\Programs\MICRO-EPSILON\colorWATCHER-Pro` directory.

When you have a licence file `LTX[DeviceSeriesNo].liz` it must be copied to the `Data` directory of the `colorWATCHER` installation directory (e.g. `C:\Programs\MICRO-EPSILON\colorWATCHER-Pro\Data` or to the licence directory specified in the `colorWATCHER.ini` configuration file (see also the description in `Special functions`).

### 3. Operating the Program

To launch the program, double-click on the `colorWATCHER-Pro` icon in `Start/Programs/MICRO-EPSILON/colorWATCHER-Pro` or execute the `colorWATCHER-Pro.exe` file in the `.\colorWATCHER-Pro` directory.

The `Connection` configuration window will then appear.

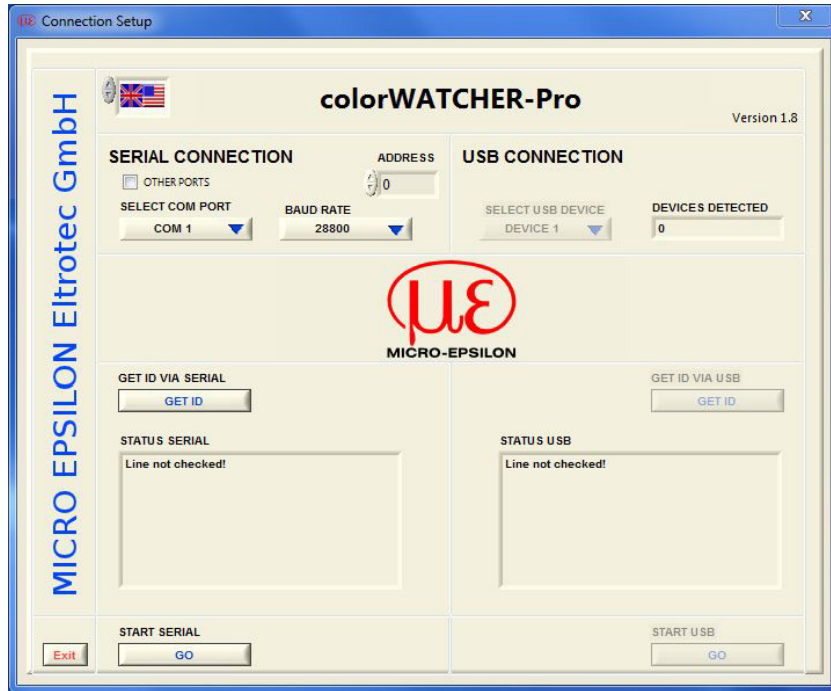


Fig. 1 Selecting the connection

#### 3.1 Selecting the Interface

The sensor system can be connected to the PC via a RS232 or a USB interface, as desired. The choice of the interface used is made after launching the program, see Fig. 1.

##### 3.1.1 Serial Connection

The settings for the serial interface can be seen on the left-hand side of the window. The connection can be chosen by using the selector switch in the `SELECT COM PORT` box.

Selecting the RS232 port connection shows the selection window, see Fig. 2. The address of each sensor can be selected with the `ADDRESS` input field when multiple sensors are connected.

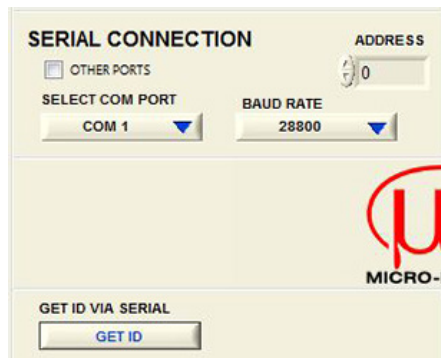


Fig. 2 Selecting the RS232 port connection



Fig. 3 Selecting the USB port connection

**i** Using the drop down menu `other COM-Ports`, you can select the desired Com-port.

By default, communication takes place with the following parameters:

- Baud rate: 28,800
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: none

The `Status serial` text window is located below the `READ ID` button and it provides information on errors and status information.

### 3.1.2 USB Connection

The program can be launched from a USB <sup>1</sup> connection on the right-hand side of the window. A corresponding USB connection is necessary for this purpose. Multiple devices can be connected to the USB at the same time. The number of devices detected appears in the right-hand `DEVICE DETECTED` box. The appropriate device can be selected using the `SELECT USB DEVICE` selector switch, see [Fig. 3](#). After selecting the interface, process monitoring can be reached by pressing the respective start button.

1) The USB interface is only available for the colorCONTROL LT-2 sensors.

### 3.2 Process Monitoring

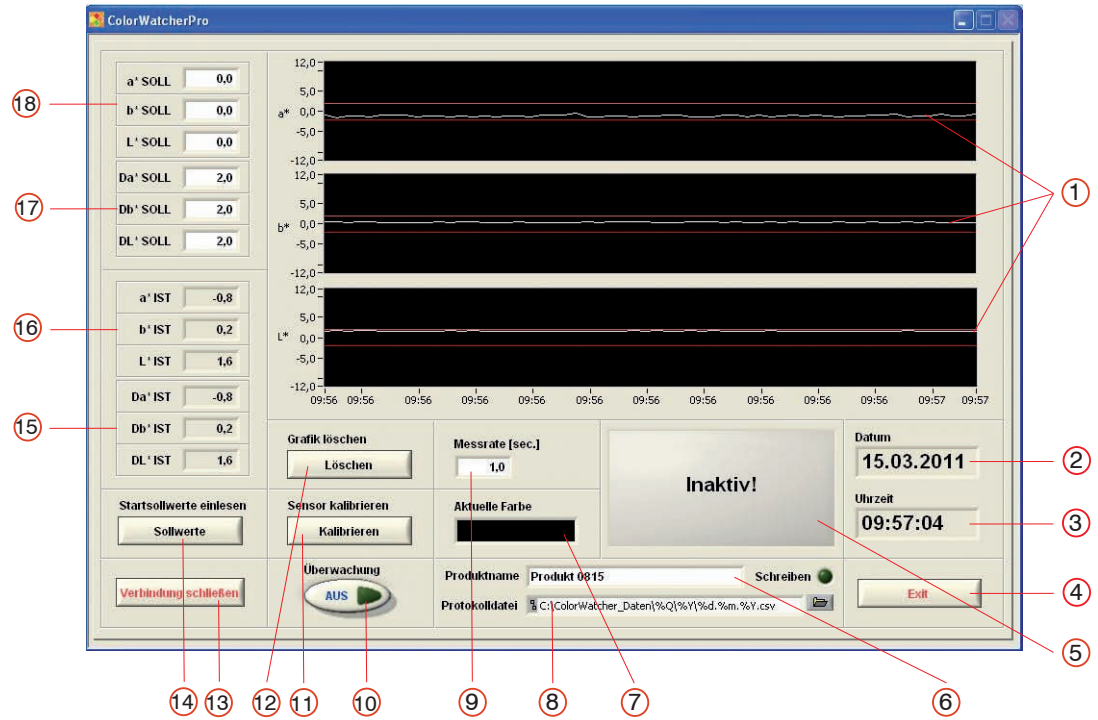


Fig. 4 Process monitoring

①	Line recorder Lab measured value diagram	⑩	Switch monitoring on/off
②	Display of the date	⑪	Button for opening the calibration menu
③	Display of the time	⑫	Button for deleting the graphic of the line recorder
④	Exit the program	⑬	Button for ending the connection to the sensor
⑤	Display of the color evaluation <sup>1</sup>	⑭	Button for accepting the current actual values as target values
⑥	Entry of the designation for the recording	⑮	Display of the current deviations
⑦	Display of current color	⑯	Display of the current color values
⑧	Entry of the name and the place for storing the log file	⑰	Input of the error thresholds of the target values
⑨	Setting the measuring rate ( $\geq 1$ s)	⑱	Input of the target values

1) green = color OK; red = color NOK; gray = monitoring inactive



### 3.3 Calibration

In some cases it may be beneficial to calibrate the color sensor against a white standard.

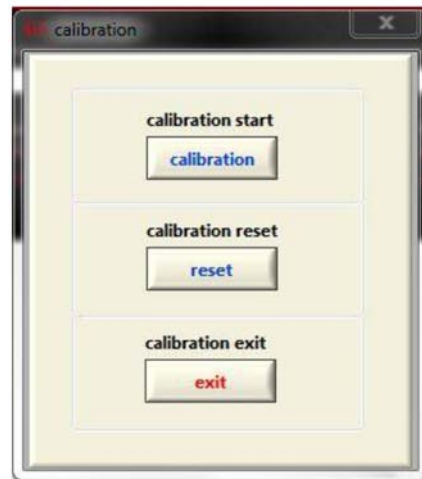


Fig. 5 Calibration

By pressing the `Calibrate` button, the `Calibration` window will open.

After pressing the `Calibrate` button in the `Calibration` window and following the instructions in the program, the color sensor is calibrated against the white standard provided. Details can also be found in the sensor manual at `Reference white`.

The calibration is reversed by pressing the `Reset` button.

Calibration is exited by pressing the `End` button.

### 3.4 Special Functions

- The name of the log file may contain the usual date-formatting wildcards (for example, % d. % m. % Y -> 09.03.2011). This way, the distribution of the measurement results to the log files can be specified as desired (hourly, daily, monthly, etc.). Another possible wildcard is % Q, which stands for the product name. You can obtain information on this when you let the mouse cursor hover just above the input field of the log file.

- The current default for designating the log file is one new file daily, grouped by year each time.

- The directory of licence files can be set manually in the `colorWATCHER-Pro.ini` configuration file, in the installation directory of the `colorWATCHER-Pro` installation. Thus, for example, all a company's licence files can be stored in a shared network drive.

The (optional) definition of this licence directory is made possible by entering `LicenceDirectory` in the `colorWATCHER-Pro.ini` file.

By default, the data directory of the `colorWATCHER-Pro` installation is used.

Example:

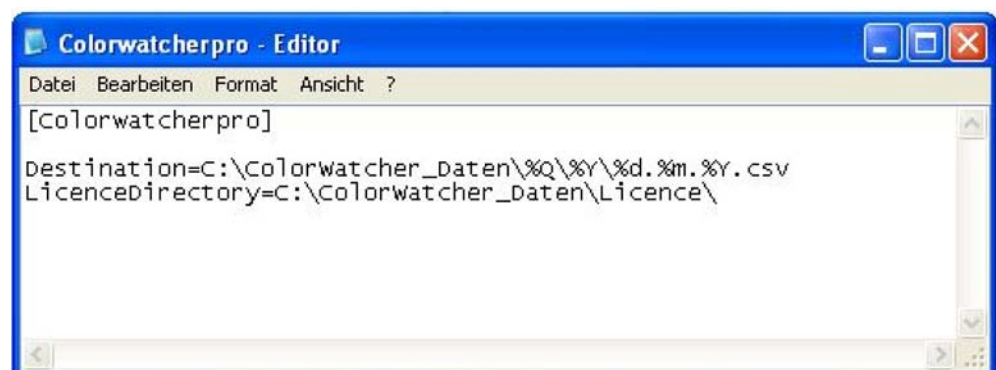


Fig. 6 colorWATCHER-Pro editor

#### 4. Licence Allocation

To record the color values of a color sensor, a license is required for each sensor. This can be purchased. By default, the recording software checks for the existence of a license for the sensor in the data directory of the `colorWATCHER-Pro` installation. A warning is given if no license is found. Following purchase, the license files should be copied into this directory.

For cases in which access to the licenses needs to be possible from various points, the location of a common accessible license directory can be specified in the `colorWATCHER-Pro.ini` configuration file (see `Special functions 1.2.4, Section 3`).

#### 5. Recording Multiple Sensors with one PC

Since `colorWATCHER-Pro` itself cannot record from multiple sensors, a number of instances (copies) of the software must be launched. This requires the installation directory of `colorWATCHER-Pro` to be copied in the same number as the sensors that are to be recorded with one PC. We recommend numbering the copied directories and the `colorWATCHER-Pro.exe` file contained within them consecutively in order to keep track of the programs launched later.

Example:

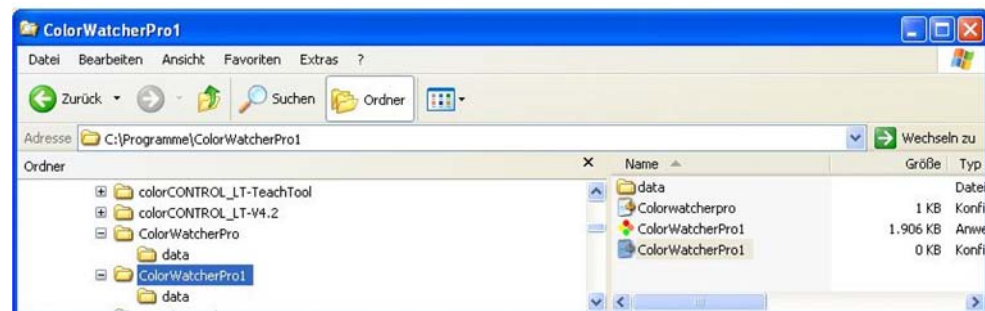


Fig. 7 `colorWATCHER-Pro` file

The `colorWATCHER-Pro` program is then launched in every directory, and the recording color sensor (device no.), the product name and the log file are specified. Recording can then begin.

- To record multiple sensors with one computer, we recommend the use of a common licence directory, which can be specified in the respective `colorWATCHER-Pro.ini` configuration file (see `Special functions 1.2.4, section 3`).

The device selection, the data of which is recorded by the respective program, is made via the assignment of the interfaces selected (COM no. or Device no.).





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