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Version:	10.0	Authors:	Due, MaG	Date:	17.01.2022

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## 1. Supported Instruments

### Pumps

- Smartline Pump 100
- BlueShadow Pumps 10P/20P
- AZURA Pumps P 2.1S/P 4.1S
- AZURA Pumps P 6.1L
- AZURA Pump P 2.1L
- BlueShadow Pumps 40P, 80P
- Smartline Pump 1050
- Any pump with analog flow rate control (voltage or frequency) via SCPA Multcom Interface
- more pumps available on demand

### Detectors (control and digital data acquisition)

- AZURA UV-Detector UVD 2.1S
- AZURA UV-Detector UVD 2.1L
- AZURA UV-Detector UV MWD 2.1L (4 channels, up to 50 Hz)
- AZURA DAD 6.1L, AZURA DAD 2.1L (limited 3D functionality, up to 10 Hz)
- AZURA Conductivity Monitor CM 2.1S
- Conductivity Monitor Mikron 81
- AZURA RID 2.1L (up to 2 Hz)  
*RID 2.1L or CM 2.1S or Mikron 81 cannot be controlled together.*
- BlueShadow Detector 50D
- Shimadzu RF20A  
*RF20A or IFU 2.1/IFU2.1LAN cannot be controlled together*
- SEDEX LC
- Smartline DAD 2600  
more detectors available as controllable device only (+ data acquisition via SCPA ADC or KNAUER IFU)
- more detectors available on demand

### Autosamplers

- KNAUER 3950
- KNAUER AS 6.1L
- Autosampler KNAUER Optimas
- KNAUER Liquid Handler LH 2.1
- more autosamplers (e.g. Spark Marathon, Midas) controllable via SCPA Multcom Interface

### Valves

- any KNAUER Valve Drives (AZURA, smartline, Wellchrom)
- more Valves available on demand
- Manual injection valves **cannot** be used to start a pump located in an ASM 2.1L
- VICI Valco Drives (at maximum 8 VICI valves in one system)

### Fraction Collectors

- ISCO Foxy R1
- ISCO Foxy R2
- LABOCOL Vario-4000, Vario-4000 Plus
- KNAUER Liquid Handler LH 2.1
- more fraction collectors (e.g. ISCO Foxy Jr.) controllable via SCPA Multcom Interface
- more fraction collectors available on demand

### Column ovens

- Column ovens controllable via SCPA Multcom Interface: JetStream, Spark Mistral  
more ovens available on demand
- CT2.1 (without leakage alarm)
- Memmert Oven UN55
- SCPA Eluentheater

### Interfaces

- KNAUER Interface Box IFU 2.1 (Analog Inputs only)
- KNAUER Interface Box IFU 2.1 LAN (Analog Inputs only)
- Ethernet Eventbox SCPA

### Flowmeter

- Bronkhorst Mini Cori-Flow M12, M13, M14

### Assistant

- ASM 2.1L (*ASM is not supported as device; the included modules can be controlled as separate devices via IP port; only one valve as fraction collector*)
- ASM 2.2L (*ASM is not supported as device; the included modules can be controlled as separate devices via IP port; only one valve*)

*as fraction collector*

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## 2. Installation Requirements

<b>Operating Systems</b>	Windows XP Windows Vista Windows 7 Windows 8 Windows 10 Only English and German as operating system languages are tested and supported.
<b>CPU/Memory</b>	Pentium III or higher with at least 1 GHz at least 512 MB RAM (Windows XP) and 2 GB (Windows Vista and higher)
<b>Network</b>	Second network card is required for network integration
<b>Graphics</b>	Screen with minimal resolution 1024 x 768
<b>Connectors and Slots</b>	USB for license dongle COM, USB or LAN according to connected instruments

### Language Selection

PurityChrom is available in English and German. Some Error messages and notifications may be displayed in English regardless of the language selection.

### Installation and use under Windows:

Installation of PurityChrom in directories under C:\Windows\Program Files (or C:\Windows\Programme) is NOT recommended as write access may be limited by the windows user administration in these directories. Please use installation paths like C:\PurityChrom or D:\PurityChrom.

Administrator rights are necessary during installation of PurityChrom and the Windows User Account Control settings should be set to "Never notify" in order to deactivate the User Account Control. It may be re-activated after the installation.

The user needs write and read permission for registry and folders C:\Windows, C:\Puritychrom.

PurityChrom needs to be excluded from Microsoft Security Essentials. Furthermore, the Windows Defender and antivirus software should be deactivated.

If Windows version older than 8 or 10 is used it is recommended to start PurityChrom as an administrator. Go to C:\PurityChrom and right-click the PurityChrom.exe to open the properties. Go to compatibility and check "Run this program in compatibility mode for" and choose "Windows Vista (Service Pack 2)". After this, check "Run this program as an administrator". Click "Apply" and "Ok", then close the window.

If Windows 8 or 10 is used it is recommended to start PurityChrom as an administrator. Go to C:\PurityChrom and right-click the PurityChrom.exe to run the program as administrator.

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## Energy Saving Features

Automatic switching to energy-saving mode or hibernating has to be disabled i.e. settings for “Turn Off Hardware”, “Turn off Computer” or “System Standby” must be set to “Never” in the control panels energy options.

## 3. Release History

In the latest version 5.09.149, the following changes and improvements have been added or bugs have been fixed from version 5.09.135:

- New supported devices: conductivity monitor Runge Mikron 81, Ethernet Eventbox SCPA, KNAUER Liquid Handler LH 2.1
- New features:
  - o Configurable event box signals,
  - o stacked injections with autosampler AS 6.1L,
  - o helpdesk (using multiple configurations and linking them to respective software start-button)
- Improvement of default settings for demo mode in ini, cfg and visualization files
- Improvement of variables, especially as an option in thresholds
- Improvement of MS spectra in the chromatogram window
- Improvement of the user administration:
  - o Manual stop of a sequence or time control file is now logged in the audit trail
  - o Start of the software and used configuration is logged in the audit trail
- Improvement of the report file:
  - o The injection volume is now part of the report
  - o If stacked injections were used, this information is given in the header of the report
- “Initialize” was added as a new option in the valve control
- The name of the software manual is now part of the ini (entry [MainWindow] Manual\_DE=\*.pdf and Manual\_EN=\*.pdf)
- The option of area delay was deleted
- Bugfixes:
  - o Online editing of function lines
  - o Peak sampling function “logical gate” had no function
  - o Start and end of a peak window was always in time units instead of volume
  - o Wait for input” could be programmed multiple times at the same function time
  - o Display “Run No.” was always 1
  - o Threshold function “ set annotation” worked only in time-based methods
  - o The chromatogram window could be closed during analysis and data were lost
  - o The peak value function in the reconstruction window was lost when another channel was chosen

- VU 4.1: Remote and Position commands were sent in one ethernet package
- During scaling chromatograms, factors and offset were not used
- Closing the autosampler setup without saving the new settings is now disabled
- Toolbar buttons in visualization showed another status than in the main menu
- End command of drivers was not sent in case of closing the software
- The option to set the column temperature in an autosampler control file did not work
- The function “acoustic signal” was not working
- Column coefficients were missing when automatic print was used
- Threshold delays were not working accurately
- In case of flushed loop as autosampler injection mode, an injection volume higher than syringe volume was able to configure
- Ini file entry “ParameterChange” is now also working for the buttons of the minor pump system
- Crash of calculating the column coefficients if the respective result file had a high noise-to-signal value
- Software crash in case of overlay mode during a running analysis in the chromatogram window
- Deactivating all previous sequence lines in case of a manual stop of the sequence