DataApex
Clarity™
CHROMATOGRAPHY SOFTWARE

10.0 VS 9.0

Clarity (Lite) ENG

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Sections of the manual connected only to the **Clarity Full** version are marked with the Full version icon.

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Contents

To facilitate the orientation in the 10.0 vs 9.0 manual and Clarity chromatography station, different fonts are used throughout the manual. Meanings of these fonts are:

Open File (italics) describes the commands and names of fields in Clarity, parameters that can be entered into them or a window or dialog name.

WORK1 (capitals) indicates the name of the file and/or directory.

ACTIVE (capital italics) marks the state of the station or its part.

The bold text is sometimes also used for important parts of the text and the name of the Clarity station. Moreover, some sections are written in format other than normal text. These sections are formatted as follows:

Note: Notifies the reader of relevant information.

Caution: Warns the user of possibly dangerous or very important information.

Marks the problem statement or trouble question.

Description: Presents more detailed information on the problem, describes its causes, etc.

Solution: Marks the response to the question, presents a procedure how to remove it.

1 Preamble

This document will guide you through the news and improvements in the **Clarity Chromatography Station** version **10.0** compared to version **9.1.1**, **9.1**, **9.0.1** and **9.0**.

Feature highlights include:

- Dual sampler support
- GLP - Improvements for GLP mode
- Isoplot display in Data Acquisition
- Method adaptation message extended by reason of adaptation
- MS - Improvements for MS extension
- NGA - Support of calculations according to the Natural gas norm EN ISO 6976:2016
- External Control Module Installer
- New and updated control modules

The list of all changes is available in the What's New document accessible from the software.

2 Clarity

2.1 Dual Chromatogram Mode

Since version **10.0** the **Dual Chromatogram Mode** is available in **Clarity**. It enables to create separate chromatograms instead of shared one when using chromatographs processing two samples simultaneously (GC with dual tower sampler or LC with dual loop sampler). It can also serve to split detector signals to two separate chromatograms if needed (for non-dual systems).

The **Dual Chromatogram Mode** can be enabled using the check box in Dual Chromatogram Mode section of *System Configuration* dialog. At least two detector signals should be assigned to the Instrument - one to Front and one to Back position. Positions are selected in the *Dual Chromatogram Mode - Assign Signals* dialog. All Instrument Types and Subtypes, except for MS Subtype, support the **Dual Chromatogram Mode**.

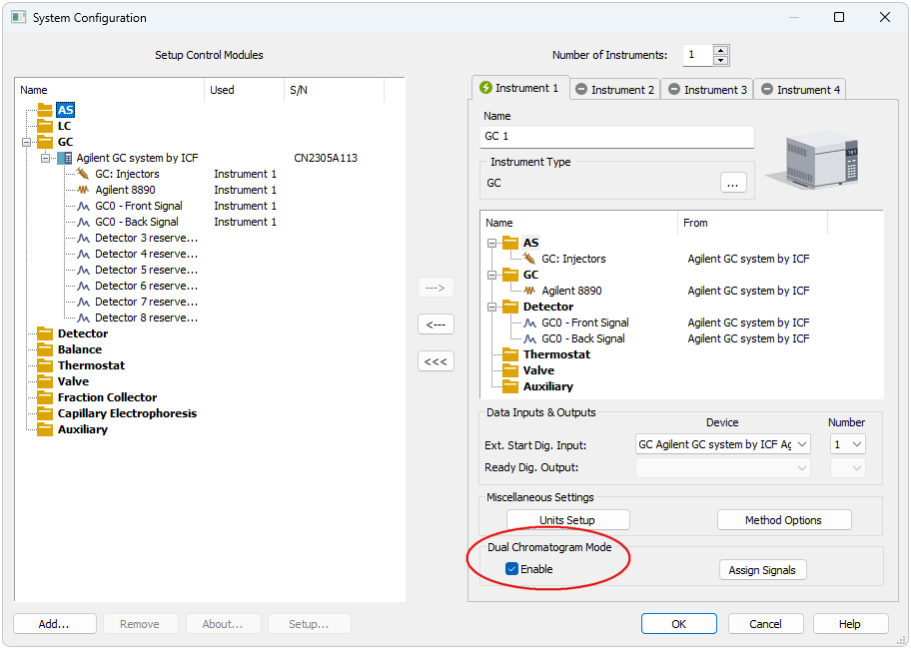


Fig 1: Dual Chromatogram Mode - System Configuration

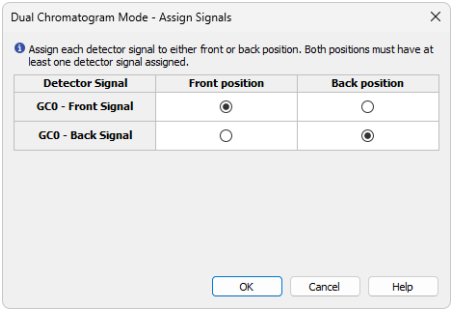


Fig 2: Dual Chromatogram Mode - Assign Signals

When **Dual Chromatogram Mode** is enabled, every signal in *Method Setup* is identified also with the position that was assigned to (Front- / Back -). Calculation and Advanced tabs are divided to 2 sub-tabs, one for each position. On Calculation tab, the calibration file has to be set for both position to a different file or not at all. On Advanced tab, as the subtraction chromatogram is set for each position separately, it is not possible to display it in the *Data Acquisition* window during the measurement.

In the *Sequence* window, columns meant for sample and chromatogram identification are duplicated so it is possible to input different values for the Front and Back position chromatograms. The positions of the samples cannot be defined independently. Back position is derived from the Front position. The sequence created in **Dual Chromatogram Mode** cannot be opened in standard mode and vice versa.

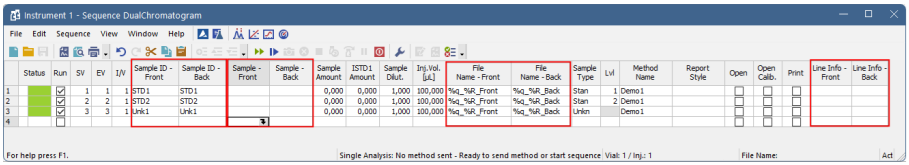


Fig 3: Dual Chromatogram Mode - Sequence

In the *Instrument* window, the rows for the duplicated columns are divided in half to display both Front and Back position content.

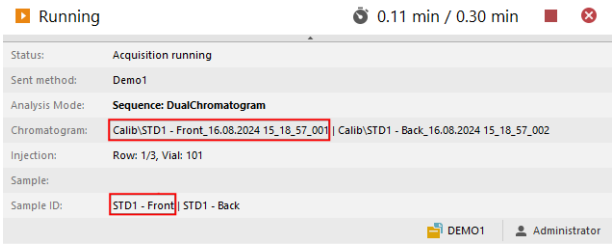


Fig 4: Dual Chromatogram Mode - Instrument window

For more detailed description of the **Dual Chromatogram Mode** and its usage please refer to **M251-Dual Chromatogram mode** manual available on our website in section Downloads.

2.2 Improvements for GLP mode

In **Clarity 10.0** several improvements for GLP mode have been done. It concerns changes in the *GLP Options, User Accounts* and *Station Audit Trail* dialogs.

2.2.1 GLP Options dialog

A new checkbox *Disallow user deletion and renaming* has been added to *GLP Options* dialog. When checked, it disables deletion or renaming of existing user, both options are grayed out. The renaming is possible only right after the creation of the user, before saving the *User Accounts*.

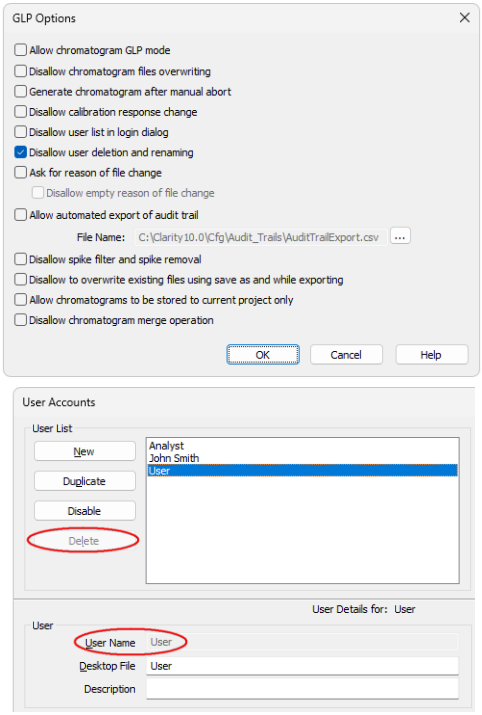


Fig 5: Disallow user deletion and renaming

2.2.2 User Accounts dialog

New options to disable the user account manually or automatically have been added.

For automatic disabling of the account after reaching a maximum number of failed login attempts allowed, a new checkbox *Login Attempts* ⓐ is accessible in *Password Restrictions - Common for All* section. After reaching the set limit, the user account will be disabled permanently (until someone

enables them again). The exception is account with the right to access the *User Accounts* dialog, such account is locked only temporarily, for one hour.

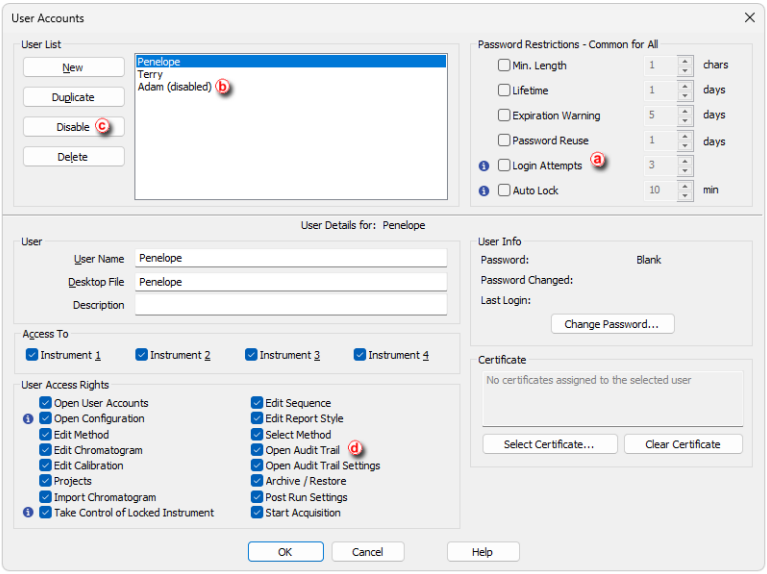


Fig 6: User Accounts dialog

The disabled user account ⓑ cannot be used to login anywhere in **Clarity**. The following warning message will appear when trying to login in with such account:

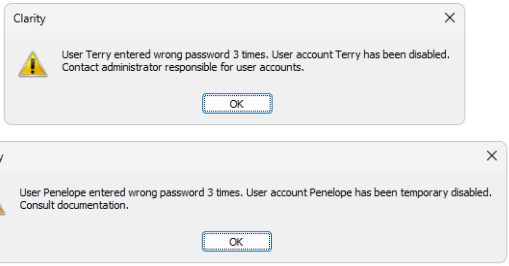
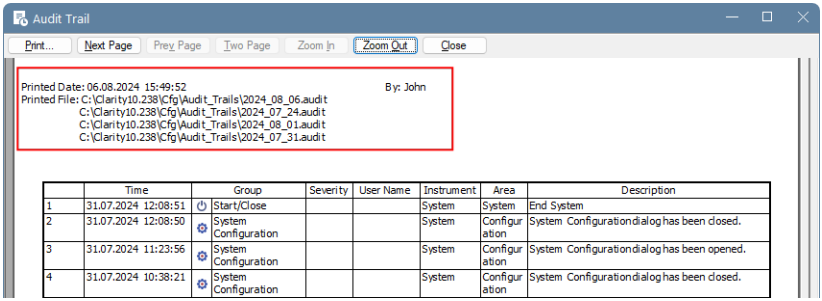


Fig 7: Disabled user accounts messages

For manual disabling of the account a new button *Disable* ⓒ can be used. To enable the account use the same button again.
In order to improve GLP mode, a new *Access Right* for opening the *Station Audit Trail* ⓓ is added.

2.2.3 Station Audit Trail

There is a new header in *Station Audit Trail* displayed in a print report. The header contains basic information about the print. Listed items are: *Printed File(s), Printed Date and Printed By*. It has up to 8 rows. When there is no user account assigned to the station, item *By:* is not displayed.



	Time	Group	Severity	User Name	Instrument	Area	Description
1	31.07.2024 12:08:51	Start/Close			System	System	End System
2	31.07.2024 12:08:50	System Configuration			System	Configuration	System Configurationdialog has been closed.
3	31.07.2024 11:23:56	System Configuration			System	Configuration	System Configurationdialog has been opened.
4	31.07.2024 10:38:21	System Configuration			System	Configuration	System Configurationdialog has been closed.

Fig 8: Station Audit Trail header

2.3 ISO plot in Data Acquisition

In *Data Acquisition* window of MS and PDA extension, the toggle *Show Spectra* was replaced by *Show Signal(s)* and *Show PDA/ MS Spectrum*. In PDA extension, the *Show Isoplot* command has been added newly. Commands are accessible from **View menu**. *Show PDA/ MS Spectrum* allows the user to display the real time spectrum acquired by the detector during a running analysis. *Show Isoplot* allows the user to display the real time isoplot made of the acquired PDA spectral data. These commands can be selected anytime, but **Clarity** displays any spectra or isoplot only during a running acquisition. It is always possible to return to the basic display mode by selecting the *Show Signal(s)* command.

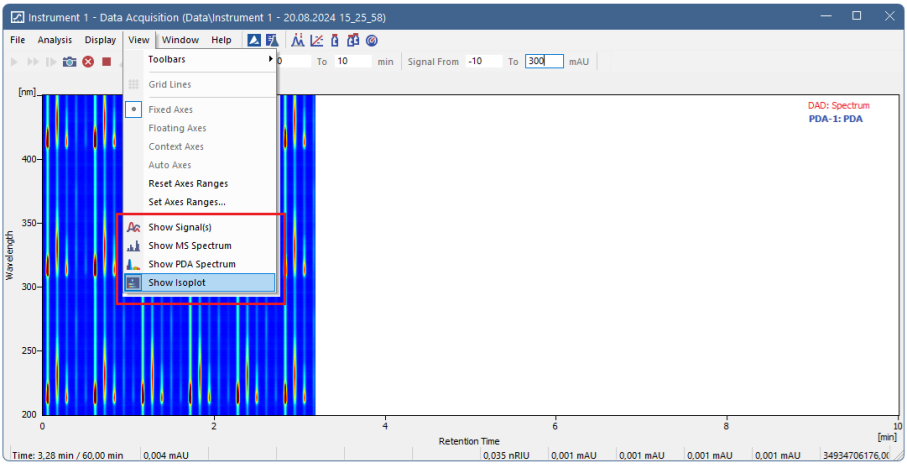


Fig 9: A real time Isoplot view

2.4 Method adaptation message

The method adaptation message has been expanded to include information about the control module(s) and other reasons requiring method adaptation . Details are displayed after pressing *More* button. Methods from the previous version may therefore require a one-time adaptation of the method.

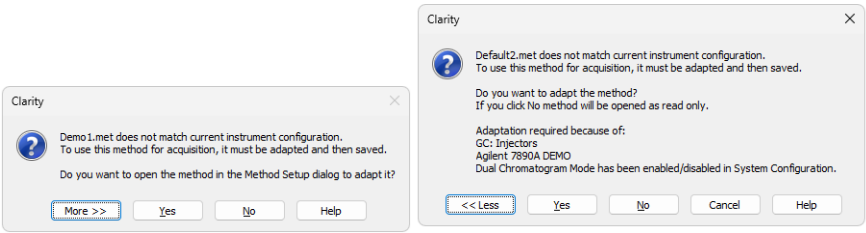


Fig 10: Method adaptation message including changes that require adaptation

2.5 Improvements for MS extension

In **Clarity 10.0** several improvements for MS extension have been done. It concerns changes in the *MS Search* dialog and on *MS Method* tab.

2.5.1 Single Compound Search

Newly user can select the libraries which should be used for the automatic search also on Single Compound Search tab. It is possible to select multiple libraries.

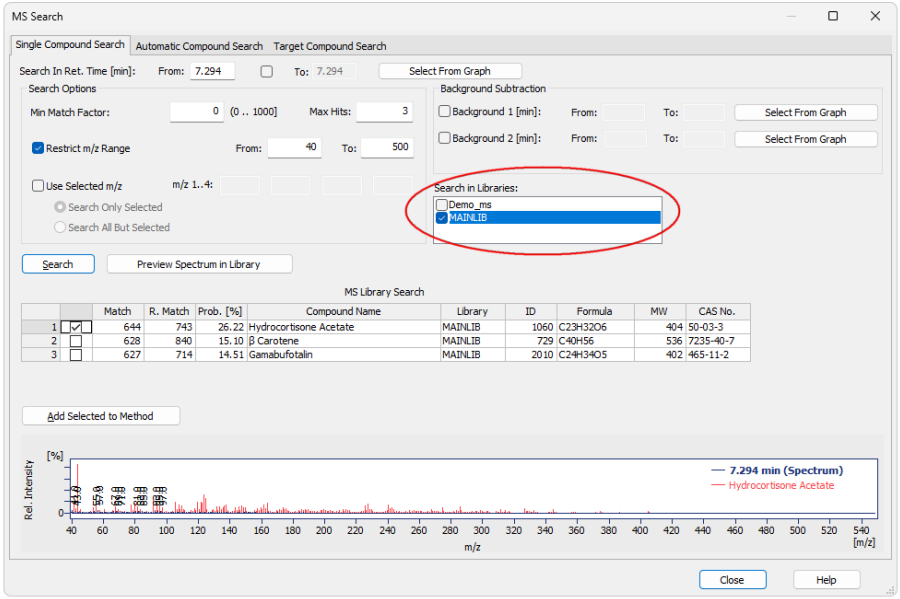


Fig 11: Single Compound Search

2.5.2 MS Search

In **Clarity 9.1**, new configurable parameters for *MS Search* mechanism type have been added. Search performed in the *MS Search program* may follow dozens of different settings. **Clarity** does not directly offer all of these settings, but some may be forced to **Clarity** searches using configuration file. Search parameters are available through *Options - Library Search Options* command. Using the configuration file, only two settings can be changed from **Clarity** - *Spectrum Search Type* and *Presearch*.
Default values are:

- *Spectrum Search Type* - Identity, Quick ⓐ
- *Presearch* - Off ⓑ

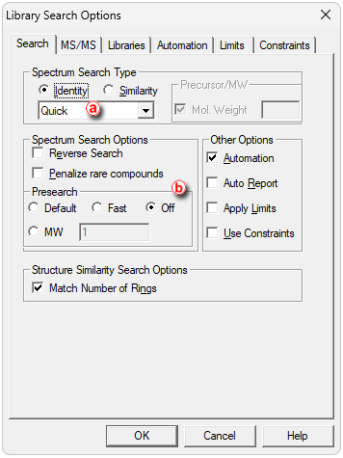


Fig 12: Library Search Options

The values can be changed in others.ini file located in /CFG/ subdirectory of **Clarity** installation directory. A new section should be created (see example below).

```
[MS]
SearchMode=Q
Presearch=Default
```

2.5.3 MS Method tab

Since **Clarity 10.0**, even a chromatogram that does not contain MS spectra has a MS Method tab available. If the substance is to be searched for on an external signal and we have it, results are always calculated. If the substance is to be searched for in the spectral data and we do not have it, a quantification signal for it is not created either when calculating the results or for the graph when selecting a substance in the *MS Method table*. Temporary signals are added only if spectral data are available.

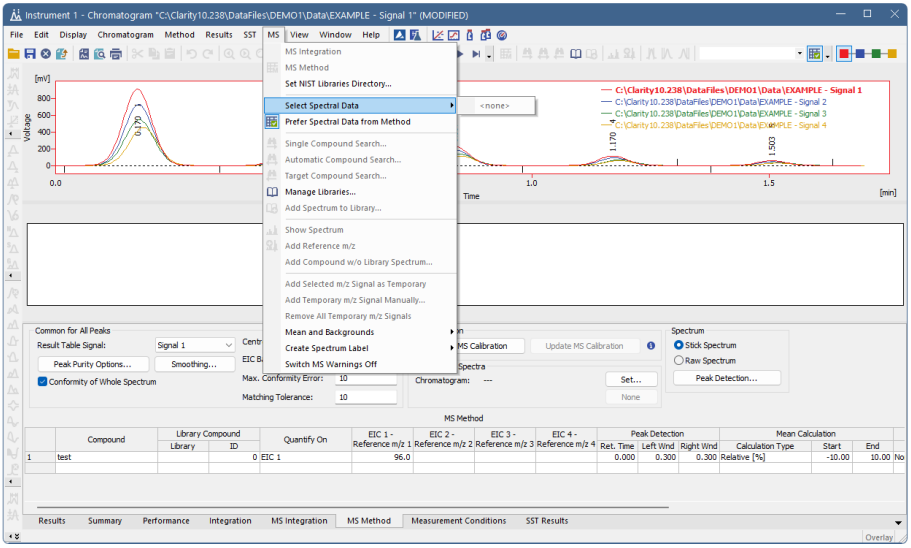


Fig 13: MS Method tab without spectral data

2.6 External Control Module Installer

We release up to three updates of the **Clarity Chromatography Software** each year. In some environments, updating or adding new control modules more frequently or simply out of this schedule might be necessary. Therefore, since **Clarity 9.1** we offer the developers a control module package installer.

The installer is custom-made. All control modules within the installer must be first approved by DataApex. The installer is then distributed by the developer and may be also available on the DataApex website (section Downloads – Software – Others). Currently available external packages are CoruiTech and Wayeal.

The Installation Qualification (IQ) of control modules added via package installers is treated separately from the integral **Clarity IQ**. The developer is fully responsible for the IQ of such drivers.

3 New and updated control modules

Full version

This section contains new and updated control modules introduced in Clarity **9.0.1**, **9.1**, **9.1.1** and **10.0** .

3.1 Clarity 9.0.1

3.1.1 Agilent

Update:

- Agilent ICF control module has been updated to version A.03.02.U2.

3.1.2 Ecom

Update:

- Ecom ECDA2000 control module has been updated to version 3.1.0.0.
- Ecom ECP2000 control module has been updated to version 4.3.0.0.

3.1.3 Haosi Bio

First Release:

- Haosi Bio ARIES LC 2400 control module is now available in version 1.0.0.8.

3.1.4 HTA

First Release:

- HTA 2800T control module is now available.

Update:

- HT1500L autosampler - support for firmware 1.08 and additional tray configurations were added.
- HT1500L autosampler - support for firmware 1.09, new options for Wash parameters and Initial Empty line were added.

3.1.5 Labio

Update:

- Labio GC-11 UV control module has been updated to version 2.0.1.23.

3.1.6 Netel

First Release:

- Netel Chrom Plus 6000 control module is now available in version 1.0.2.38.

3.1.7 Shanghai Sunny Hengping

Update:

- Shanghai Sunny Hengping Scientific Instrument GC-MS control module has been updated to version 2.1.5.0.

3.1.8 Teledyne

First Release:

- Teledyne ReaXus pumps by RUBY script are now available.

3.1.9 Welch

Update:

- Welch 5430 control module has been updated to version 3.1.0.0.

3.1.10 Young In Chromass

Update:

- Young In Chromass YCChroZenGC control module has been updated to version 1.0.2.38.

3.2 Clarity 9.1

3.2.1 Advion

First release:

- Advion CMS API control module has been updated to version 6.9.44.1.

3.2.2 Chromsystems

First release:

- Chromsystems HPLC system modules CLC 200, CLC 320, CLC 330, CLC 340, CLC 420 are now available.

3.2.3 CoruiTech

First release:

- CoruiTech Rainbow control module is now available.
- CoruiTech Rainbow Detector control module is now available.
- CoruiTech RainbowC LC system control module is now available.

The control modules for Rainbow, Rainbow Detector, RainbowC LC systems are since **Clarity 9.1** part of the external control module package only. To install it you should download CoruiTech Control Module Installer from our webpage (section Downloads-Software Other). CoruiTech Rainbow, Rainbow Detector and RainbowC LC systems were therefore removed from standard **Clarity** installation.

3.2.4 Ecom

First Release:

- Ecom ECVA2000 control module is now available in version 1.4.0.0.

Update:

- Ecom ECF2000 control module has been updated to version 2.1.0.0.

3.2.5 Labio

Update:

- Labio GC-11 UV control module has been updated to version 2.0.1.23.

3.2.6 Netel

Update:

- Netel Chrom Plus 6000 control module is now available in version 1.0.2.40.

3.2.7 Sykam

Update:

- Sykam S6510 control module has been updated to version 1.0.5.2.

3.2.8 Welch

First release:

- Welch WelNova 6110 Isocratic pump control module is now available.
- Welch WelNova 6120 High Pressure Gradient pump control module is now available.
- Welch WelNova 6140 Low Pressure Gradient pump control module is now available.
- Welch WelNova 6210 Autosampler control module is now available.

3.2.9 Young In Chromass

Update:

- Young In Chromass YL9130 control module has been updated to version 4.0.2.25.
- Young In Chromass ChroZenGC control module has been updated to version 1.0.2.40.
- Young In Chromass ChroZenAS control module has been updated to version 1.0.0.17.
- Young In Chromass ChroZenPump control module has been updated to version 1.0.1.19.

3.3 Clarity 9.1.01

3.3.1 Agilent

First release:

- Agilent 8697 XL control module is now available.

3.3.2 Ecom

First Release:

- Ecom ECA Amino 500 control module is now available.

Update:

- Ecom ECP2000 control module has been updated to version 4.5.0.0.

3.3.3 Netel

Update:

- Netel Chrom Plus 6000 control module is now available in version 1.0.2.43.

3.3.4 Sykam

First release:

- Sykam S6410 control module is now available.

Update:

- Sykam S150 control module has been updated to version 3.0.1.5.

3.3.5 Young In Chromass

Update:

- Young In Chromass ChroZenGC control module has been updated to version 1.0.2.41.
- Young In Chromass ChroZenPump control module has been updated to version 1.0.1.20.

3.4 Clarity 10.0

Note: Please notice that due to changes in version **10.0**, configuration files of the following control modules now support only a new format. Removing and adding these control modules in *System Configuration* is necessary, if the configuration was last saved in **Clarity** version in brackets or older: Bischoff 2250 (version 2.5), CB20 (version 2.5), Gilson 30X (version 9.1), Spark Alias (version 3.0), Spark Optimas (version 3.0) and Spark Symbiosis (version 5.0.02).

3.4.1 CoruiTech

First release:

- Corui Module samplerC control module is now available.
- Corui Module BSM control module is now available.
- Corui Module QSM control module is now available.
- Corui Module CHManager control module is now available.
- Corui Module UV Detector control module is now available.
- Corui Module PDA detector control module is now available.

The control modules for Corui Modules - samplerC, BSM (binary pump), QSM (quaternary pump), CHManager (column oven), UV detector and PDA detector are part of the external control module package. To install it you should download CoruiTech Control Module Installer from our webpage (section Downloads-Software Other).

3.4.2 CXTH

First release:

- CXTH P3000 control module is now available.
- CXTH P6000 control module is now available.
- CXTH UV1000 control module is now available.
- CXTH UV3000 control module is now available.
- CXTH UV6000 control module is now available.

3.4.3 Ecom

First Release:

- Ecom AS96 control module is now available.
- Ecom ECDM2000 control module is now available in version 1.0.0.0.

3.4.4 Knauer

First release:

- Knauer FC6.1 and P4.2S control modules are now available
- Knauer UAD 6.1L and UAD 6.1L Prep control modules are now available.

Update:

- Knauer LH8.1 and FLD2.1 control modules have been updated.
- Knauer HPLC control module has been updated to version 9.1.0.6149.

3.4.5 Konik

First release:

- KONIK 6000A control module is now available.
- MSQ1 control module is now available.

3.4.6 Netel

Update:

- Netel Chrom Plus 6000 control module is now available in version 1.0.2.43.

3.4.7 Sykam

Update:

- Sykam S1130 control module has been updated to version 2.0.1.35.
- Sykam S150 control module has been updated to version 3.0.1.8.
- Sykam S3250 control module has been updated to version 1.0.12.0.
- Sykam S3350 control module has been updated to version 2.0.0.29.

3.4.8 Vici Valco

Update:

- Vici Valco TCD3 control module has been updated to version 1.0.0.14.

3.4.9 VWR

First release:

- VWR ELSD control module is now available.

3.4.10 Wayeal

First release:

- Wayeal FLD 3200 control module is now available.

The control module for Wayeal FLD 3200 is since **Clarity10.0** part of the external control module package. To install it you should download Wayeal Control Module Installer from our webpage (section Downloads-Software Other).

3.4.11 Young In Chromass

Update:

- Young In Chromass ChroZenAS control module has been updated to version 1.0.0.19.
- Young In Chromass ChroZenGC control module has been updated to version 1.0.2.43.

- Young In Chromass ChroZenPDA control module has been updated to version 1.0.0.10.
- Young In Chromass YL6500 GC control module has been updated to version 1.0.1.27.
- Young In Chromass YL9150 Plus control module has been updated to version 1.0.1.15.