

9.0 VS 8.8

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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To facilitate the orientation in the **9.0 vs 8.8** 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 9.0** compared to version **8.8**.

Feature highlights of version 9.0 include:

- Clarity paid upgrades of major versions
- Batch – reorganization of the Batch dialog. It allows to decide what to do with calibration during reprocessing
- Export to MS Excel – now supports both (*.xlsx) and (*.xls) formats
- Fraction Collector – a new default start Vial Number
- Audit Trail – an improved logging of messages
- Integration – current integration algorithm renamed to Legacy and updated
- Integration – a new integration algorithm Wave based on previous Experimental algorithm added
- Method – a better handling with computer memory during method versioning
- Sequence – barcode readers in Sequence Table can use new option Move down after Enter
- Clarity design – software windows, help system and documentation adjusted to the Windows 11 environment
- 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 Clarity paid upgrade

This is DataApex's important announcement on the upgrade policy and a free software upgrade period. Since Clarity 9.0, upgrades of major versions are paid.

Outlines

- Each new software license comes with free upgrades for one year period.
- **Upgrade** (major version):
 - The change in the version number on the first position (before the first dot A.b.c.d ^a).
 - Upgrade requires a new User Code (U/C).
 - You will be prompted to enter the new User Code right at the beginning of upgrade installation to verify that you have the one that is needed and that you have not lost the installed functional station ^b.
- **Update** (minor version): the change in the number after the first dot a.B.C.D.

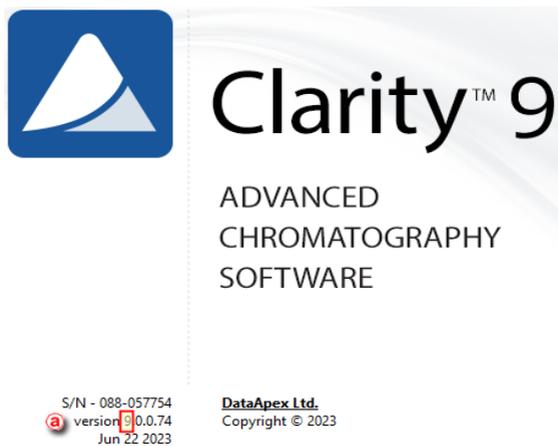


Fig 1: Clarity paid upgrade

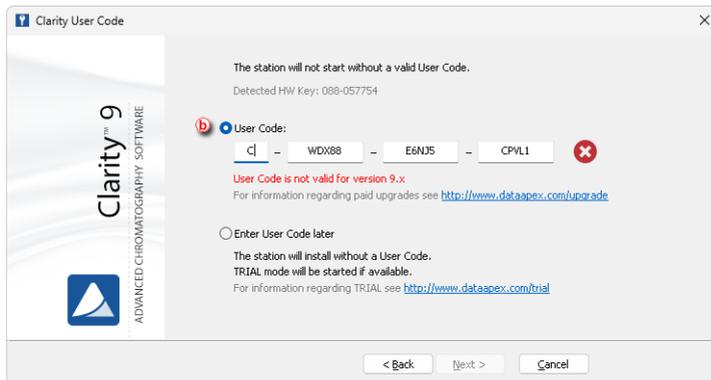


Fig 2: User Code request during upgrade

Free software upgrade period

- Each license purchased for our software products (including p/n C50, C50-xx C40, C59, C59-xx) comes with a one-year period during which a free software upgrade will be provided. This follows our *End User License Agreement (EULA)*.
- The reference day for this free upgrade period is the day when the User Code was released, which is either the day of shipment from DataApex or the day the User Code is emailed to a distributor. To ensure transparency, we will indicate a free software upgrade period in our delivery documents.

Paid upgrades vs free updates

- If a new Clarity release version **differs** from your installed Clarity in the first place (**A.b.c.d.**) then it is a major version - upgrade.
 - Check if you are eligible for free upgrade – if you purchased your station less than a year ago.
 - Contact DataApex or your distributor to purchase the new license.
 - In the About dialog (accessible from Help menu), you will find the information needed to order the upgrade (Serial number S/N, current version number). Please send them to sales@dataapex.com
- If a new Clarity release version has the **same** number in the first place (**A.b.c.d.**) then it is a minor version - update.
 - You can download and update your Clarity free of charge
 - Examples: 8.3 to 9.0 paid upgrade, 8.6 to 8.8 free update

The last software version available for free download is Clarity version 8.8.1 (released in January 2023), and Clarity Lite 8.8 (released in November 2022). All customers with versions lower than the above listed versions can update to these versions free of charge.

Please note that we only sell the latest version of our software. If you need to extend your existing software license by adding additional software modules,

such as software extensions or control modules, it may require a software upgrade depending on your current software version. Example: There is the latest software version 9.0. You have version 8.3 and need to purchase a LC control module; you will also need to buy a software upgrade to the latest software version.

Customer support

We remain committed to providing exceptional user support and technical assistance as usual. Our team is always ready to answer your questions, guide you through extensive range of our resources and to help you get the most out of our software.

Please note that we only offer support for the latest software versions. We do not provide patches for any previously released versions. Instead, we provide software versions in the form of completely new software releases.

All customers are entitled to receive free upgrades within one year after their initial purchase. After a year you will need to purchase an upgrade to use the latest version.

Paid upgrades will help us to provide the best user experience, support, and up-to-date software for you.

If you have any questions about upgrading your software or purchasing additional modules, please don't hesitate to contact our support team. We're here to help.

2.2 Batch dialog

The Batch dialog has been improved. Sections on the right have been reorganized and extended to make the dialog clearer and more intuitive for use.

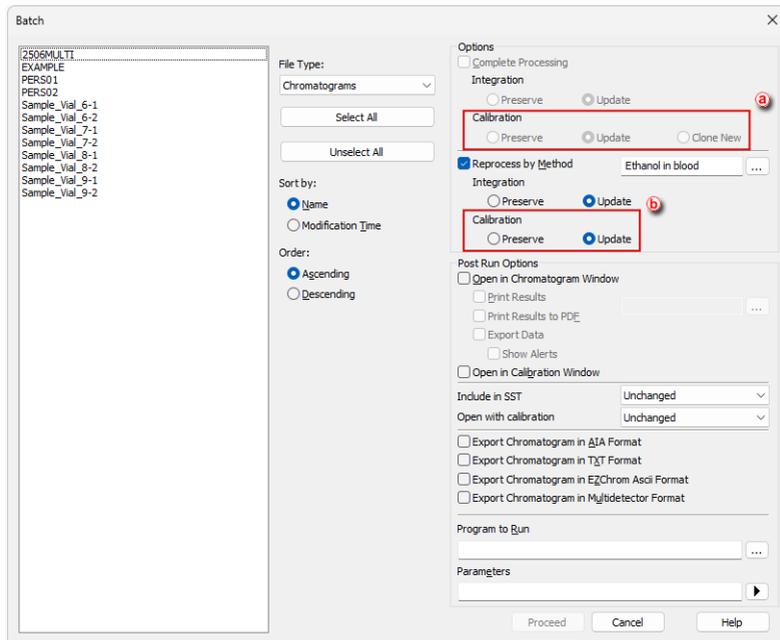


Fig 3: Batch dialog

Complete reprocessing and *Reprocess by Method* options have been extended by radio buttons indicating handling of calibration during reprocess.

Options in *Complete processing* for sequences **a** mean:

- *Preserve* - "do not touch the calibrations in the chromatograms measured according to the given sequence for any reason, do not calibrate anything"
- *Update* - "the calibrations in the chromatograms will remain the same as far as the name is concerned, but update them to the latest existing version, and if you recalibrate, recalibrate the existing ones"
- *Clone New* - "according to the settings in the method and sequence, perform a new calibration cloning and new recalibration as if the sequence had just been measured; if the sequence did not clone, behave as during Update"

Options in *Reprocess by Method* **b** mean:

- *Preserve* - "do not touch the calibration in the reprocessed chromatogram"
- *Update* - "during reprocessing, replace the calibration in the chromatogram with the calibration in the method used for reprocessing"

2.3 Export data to *.xls

Since version 9.0 users can select between *.xls and *.xlsx formats when exporting to Microsoft Excel. Excel 97 or newer is requested to be installed. The data format corresponds to the settings in the *Export Data dialog*. The delimiters must be set by the user accordingly.

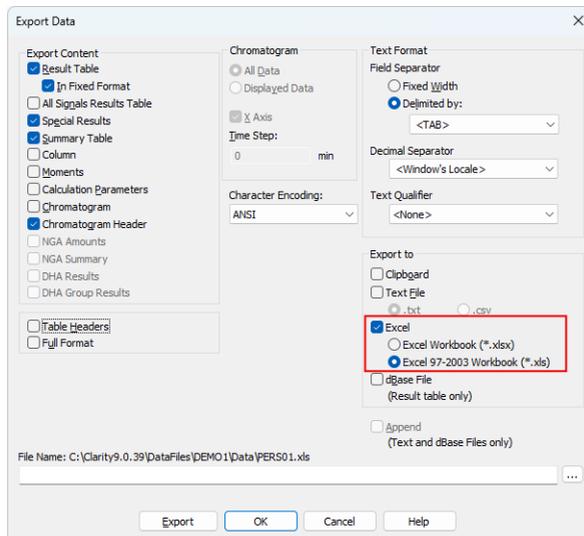


Fig 4: Export Data to *.xls file

2.4 Fraction Collector

Since Clarity 9.0, *FC by multiposition valves* have default start *Vial Number* set on "2". When the lines of the fractional table follow each other in time (Stop Time = Start Time) and *Signal Condition* is set as *None* for both, it would not be switched to *Waste*. The switch to *Waste* can only be skipped if the FC still has a free vial and if the *Waste During* option is not marked in the method.

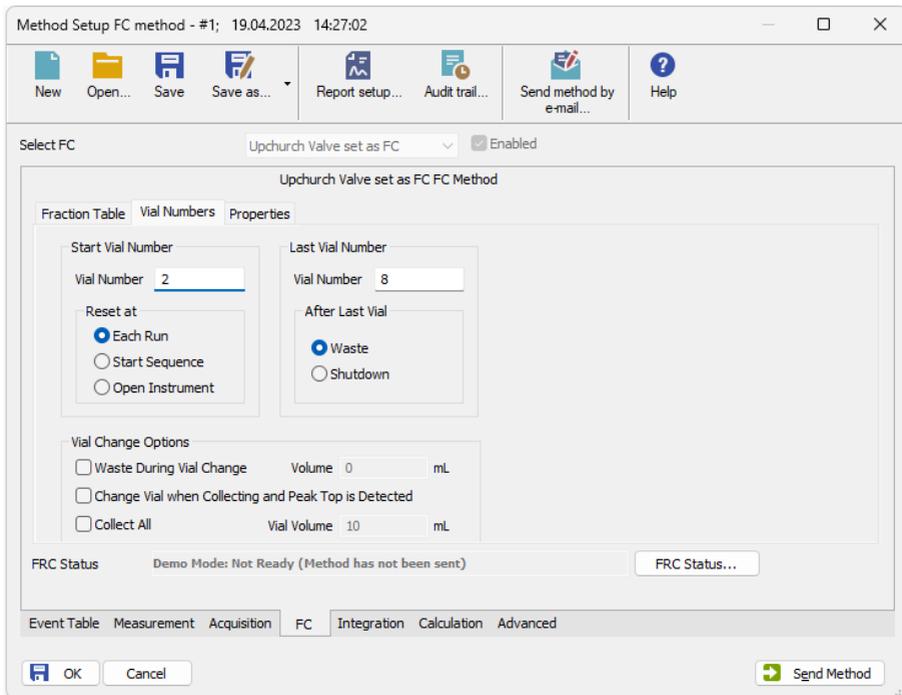


Fig 5: FC Start Vial Number

2.5 Improved logging of messages

Logging of system messages and pop-up windows has been improved. The record now contains info about the instrument and user. If user is not logged, it shows the string System.

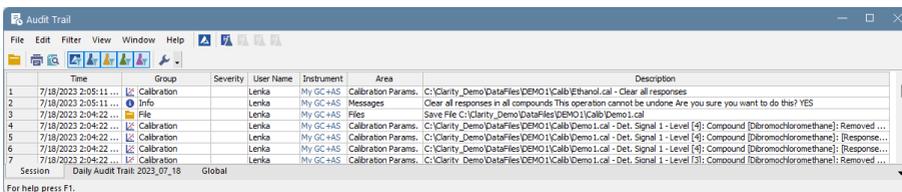


Fig 6: Improved Station Audit Trail logging of messages

2.6 WAVE integration algorithm

Integration algorithm that is used as default has been renamed to *Legacy* and updated to version 9.0 rev. 1. A new integration algorithm *Wave*, based on previous *Experimental* algorithm, is added. Selection of integration algorithm is moved to Integration tab (originally on Calculation tab in *Method Setup* and Results tab in *Chromatogram*).



Fig 7: Wave and Legacy integration algorithms

The *Wave* integration algorithm uses different approach for detecting peaks than the original *Legacy*. Both algorithms have their strong points and their drawbacks, so it strongly depends on shapes of signal curves in particular chromatograms.

In the *Wave* algorithm, detection of peaks is performed on a derivative of the signal so it is better in detecting narrower peaks and peaks divided by shoulders. Corrections then try to reduce the number of peaks following the defined parameters (*Peak Width*, *Threshold*, ...), but in *Wave* algorithm without influencing the baseline. Therefore, peaks narrower than peak width and lower than double the threshold may still be left in the chromatogram, namely at the starts or ends of peak clusters. The user then can decide to modify the baseline to results similar to the *Legacy* algorithm, if they wish to, by using the *Minimal Height*, *Minimal Half-width* or *Peak-Hide* functions.

Current limitation for the *Wave* algorithm is that sometimes the peak start or peak end is automatically detected too high in the peak slope and does not move when changing *Threshold* or *Peak Width*. This is caused by the noise present in the data and DataApex works on a resolution, in most cases

applying any filter (e.g. *Global Bunching*) or *Integration Interval operation* sorts things out.

Aside of the algorithm itself, *Wave* presents the possibility to automatically position peak starts and peak ends higher or lower on the peak slope. In *Legacy* algorithm, this position was based on entered *Threshold* and could not be influenced without changing the *Threshold* value (which in turn influenced detection of small peaks). In *Wave*, a new *Baseline Slope* operation is added to the *Integration Tables* to allow override the position of the automatically detected peak starts and peak ends irrespective on the *Threshold* value.

2.7 Method size limit

Each time method is saved a new version is created (to keep a full file history in compliance with GLP), for this reason method can grow in size after extensive adjustments and changes. Its usage can then lead to unexpected behavior of Clarity due to computer memory exhaustion, since Clarity can only allocate 2 GB of computer memory as it is 32-bit process. Therefore, the computer memory management has been improved in Clarity 9.0 and other improvements have been done.

Methods themselves now take up much less space in memory than before, even if they are not overridden. Only the last version is loaded into memory. Historical versions are loaded just for storage purposes.

Method size is now checked automatically. Warning about extensive method size pops up while saving of method is attempted and it would result in method size larger than 200 MB. It also pops up every time while saving a method which already is larger than 200 MB.

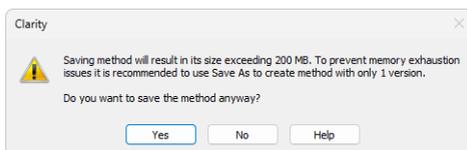


Fig 8: Method size limit indication

Clicking *Yes* will finish the method saving and result in a new method version.

Clicking *No* will take you back to the 'MODIFIED' state of the method and it will be possible to perform.

It is recommended to use method with a minimal number of versions. To reduce their number it is possible to use *Save As...* command in Method Setup and save the method under a new name.

2.8 Sequence Table On Enter

A new option *On Enter - Move Down* has been added into *User Options dialog* to make movement in Sequence table adjustable. It defines where will the focus move in Sequence table after pressing Enter.

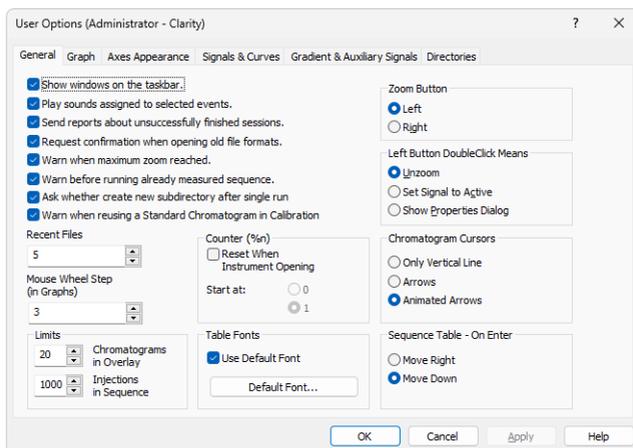


Fig 9: Sequence table on Enter

Move Right (default behavior) - table focus will move to the cell to the right after pressing Enter. This is a behavior Clarity had fixed until 8.8.1 versions.
Move Down - table focus will move to the cell to the bottom after pressing Enter. This is a new option, convenient to use with barcode reader that emulates keyboard while filling in the sequence table. Adding Enter keystroke in the settings of such reader after the scanned value will allow to fill in the table faster.

2.9 Windows 11 design in Clarity

Clarity windows, help system and software documentation has been adjusted to Windows 11 design.

3 New and updated control modules

This section contains new and updated control modules introduced in Clarity 8.8.1 and 9.0.

3.1 Clarity 8.8.1

3.1.1 Agilent

Update:

- Agilent ICF control module has been updated to version A.03.02.U1.

3.1.2 Ecom

Update:

- Ecom Panda30HID control module has been updated to version 2.1.0.0.

3.1.3 Sykam

Update:

- Sykam S150 control module has been updated to version 3.0.0.14.
- Sykam S3350 control module has been updated to version 2.0.0.25.

3.1.4 Young In Chromass

Update:

- Young In Chromass YCChroZenGC control module has been updated to version 1.0.1.30.
- Young In Chromass YCChroZenGCMS control module has been updated to version 1.0.1.16.
- Young In Chromass YL9110 control module has been updated to version 4.0.4.19.

3.2 Clarity 9.0

3.2.1 Apix

Update:

- Apix ChromPix2 control module has been updated to version 2.8.0.551.

3.2.2 Ecom

Update:

- Ecom ECP2000 control module has been updated to version 4.1.0.0.
- Ecom TOY control module has been updated to version 2.2.0.0.

3.2.3 Futecs

Update:

- Futecs CT-6000 control module has been updated.

3.2.4 HTA

First Release:

- HTA new models 2000H, 2000HT, 2100H could be controlled by the HT2x00H driver after selecting corresponding protocol version on the sampler.

3.2.5 QuadroCore

First Release:

- QuadroCore MCore control module is now available in version 1.0.0.208.

3.2.6 Shanghai Sunny Hengping

First Release:

- Shanghai Sunny Hengping Scientific Instrument GC-MS control module is now available in version 2.1.3.0.

3.2.7 Sykam

Update:

- Sykam S5300 control module has been updated to version 2.0.0.35.

3.2.8 Young In Chromass

Update:

- Young In Chromass YL6500 GC control module has been updated to version 1.0.1.26.
- Young In Chromass YCChroZenAS control module has been updated to version 1.0.0.15.
- Young In Chromass YCChroZenPump control module has been updated to version 1.0.0.18.
- Young In Chromass YCChroZenGC control module has been updated to version 1.0.1.34.
- Young In Chromass YL9110 control module has been updated to version 4.0.4.20.
- Young In Chromass - YCChroZen Pump comment is changed from YI9619 Binary Pump to YI9613 Binary Pump and YCChroZen HPLC-E comment from YL9675 RI detector to YI9673 RI detector.