

8.8 VS 8.7

Clarity (Lite)

ENG

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To facilitate the orientation in the **8.8 vs 8.7** manual and **Clarity** chromatography station, different fonts are used throughout the manual. Meanings of these fonts are:

Instrument (blue text) marks the name of the window to which the text refers.

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 (when you already are in the topic describing the window).

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 **8.8** compared to version **8.7**.

The most interesting features of version 8.8 include:

- Calibration new function "Filter Not Used Compounds"
- Export Data new export to text file with .csv suffix
- Colibrick new option to offset data
- Colibrick, U-PAD2 and Zebrick now use WinUSB driver from Microsoft
- UNI-Ruby control modules support User Units settings
- Current units new "nA" unit available
- Integration Integration Algorithm updated to version 8.0 Rev.3.
- Chromatogram File Open dialog new dynamic label on Open button indicating use of Overlay
- Chromatogram new columns "Start Value (Signal)" and "End Value (Signal)" for Peak to Valey Ratio calculation available
- PDA Extension new improved method of rescaling available for Peak Purity calculation
- 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 Filter Not Used Compounds

A new *Filter Not Used Compounds* functionality has been added to the Calibration Window. The function eases the work with multisignal chromatograms and calibrations in situations where compounds are only relevant to a particular signal (e.g. in speciation). It is accessible through the Calibration menu (ⓐ), the icon on Toolbar (ⓑ), or from local menu of the Calibration Summary table.

🛃 Instrument 1 - Calil	bration C:\Clarity8.8.047 OQ test\Da	itaFiles\D	EMO 1\Ca	alib\D	emo1 <	IST(D (MOD	IFIED)					— (⊐ ×
File Edit Display Ca	alibration View Window Help	山外。	<u>^ 0</u> 2									•		
🗈 🖿 🖬 🖿 💿	Set Level	C Auto	matic	• c	alibratio	n	• or	n All Sigi	nais	•	R 🗖 👗	🎐 🔳 🗧	k 🗈 🖻	5 °
	Set Signal	able (ISTD	- C:\Clarity	8.8.04	7 00 tes	tiDataF	iles\DEM0	01\Calib\	Demo1	- Signal 1)				
	Add All	Peak	Named	Is	Use	Peak			Respo	Manual		L	evel 1	
Usec Compou	Add Existing	Туре	Groups	ISTD	ISTD	Color	LOD	LOQ	nse	Resp.	Response	Amount	Resp. Fact	Rec No.
1 Chloroform	Add Peak	n Ordn		No			0,000	0,000	A	0,0000	28,5632	0,400	0,0140	1/1
2 Trichloroett	Audreak	n Ordn		No			0,000	0,000	A	0,0000	79,4499	0,400	0,0050	1/1
3 Tetrachlorn	Add Group	n Ordn		No			0,000	0,000	A	0,0000	287,5541	0,400	0,0014	1/1
4 Trichloroett	Add Named Group	1 Ordn		No			0,000	0,000	A	0,0000	25,4551	0,400	0,0157	1/1
5 Bromodichic	Delete Compound	n Oran		NO			0,000	0,000	A	0,0000	158,0919	0,400	0,0025	1/1
7 d Totrachlard	G Delete Compound	ordn		1D1 No			0,000	0,000	A .	0,0000	162,0000	2,000	0,0029	1/1
8 Jul Dibromochk	Delete All Compounds	Ordn		No			0,000	0,000	~ ^	0,0000	138,2215	0,400	0,0020	1/1
	Clear All Responses Clear All Levels Clear Selected Level Show Details Filter Not Used Compounds							·						
Compounds Chic	proform Trichloroethane Tetraci	hlormetha	ne Tri	chloro	ethylene	в	romodich	hloroeth	iane	ISTD	Tetrachlor	oethylene	đ	

Fig 1: Filter Not Used Compounds

It allows to hide rows of Calibration Summary Table with disabled *Used* check-box (ⓒ) on the selected signal. Corresponding Compound tabs (ⓓ) are then also hidden.

The *Filter Not Used Compounds* helps to make the Calibration Summary Table clear and easy to read or present. Using of the filter is indicated in the Calibration Summary Table header (O). Rows can be easily restored by pressing *Show all* button (O)

Ľ	Instru	ment 1 - Calibration	C:\Clarity8	.8.047 OC) test\Dat	∋Files∖C	EMO1\C	alib\C	emo1	< IST	D (MOD	IFIED)						
File	Edit	Display Calibration	View	Window	Help 🗾	1	Å Ö											
	- 6	🗀 💿 🔝 🙆 着	R.		梁 1	t Aut	omatic	- (Calibrati	on	• 01	n Active !	Signal	• ,	R 🗖 👗		x 🗈 🖹	9 *
	Calibration Sumery Table (1STD - C:\Clarity8.8.047 OQ test\DataFine\DEMO1\Calib\Demo1 - Signal 1)																	
			Reten.	Left	Right	Peak	Named	Is	Lise	Peak			Respo	Manual		L	evel 1	
	Used	Compound Name	Time	Window	Window	Туре	Groups	ISTD	ISTD	Color	LOD	LOQ	nse	Resp.	Response	Amount	Resp. Fact	Rec No.
1		Chloroform	3,717	0,200 min	0,200 min	Ordn		No	ISTD		0,000	0,000	A	0,0000	28,5632	0,400	0,0140	1/1
2	\checkmark	Trichloroethane	4,053	0,200 min	0,200 min	Ordn		No	ISTD		0,000	0,000	A	0,0000	79,4499	0,400	0,0050	1/1
5	\checkmark	Bromodichloroethane	6,870	0,200 min	0,200 min	Ordn		No	ISTD		0,000	0,000	A	0,0000	158,0919	0,400	0,0025	1/1
6	\checkmark	ISTD	7,107	0,200 min	0,200 min	Ordn		IST			0,000	0,000	A	0,0000	678,5633	2,000	0,0029	1/1
7	\checkmark	Tetrachloroethylene	9,567	0,200 min	0,200 min	Ordn		No	ISTD		0,000	0,000	A	0,0000	153,8191	0,400	0,0026	1/1
8	\checkmark	Dibromochloromethane	9,930	0,200 min	0,200 min	Ordn		No	ISTD		0,000	0,000	A	0,0000	138,2215	0,400	0,0029	1/1
<																		>
	ompou	Inds Chloroform	Trichloi	roethane	Bromod	ichloroe	thane	ISTD	Tetr	rachloro	pethylene	Dit	iromoc	hlorometh	ane			

Fig 2: Filter Not Used Compounds indication

This function can be used also in the regulated environment, information about using the *Filter Not Used Compounds* is saved in *.dsk file and reported in the Print Report.

2.2 Export Data to *.csv

Since Clarity 8.8 it is possible to Export data to text file with .csv suffix. The data format corresponds to the settings in the Export Data dialog. The delimiters must be set by the user accordingly.

Export Data		×	
Export Content Export Content Besult Table Special Results Table Special Results Column Moments Column Column Moments Calculation Parameters Chromatogram Header NGA Amounts NGA Amounts DHA Results DHA Coroup Results Hong Res	Chromatogram All Data Displayed Data Alls Chromatogram Anis Character Encoding: ANSI	Text Format Field Separator ○ Fixed Width ④ Delemited by:	
File Name: C:\Clarit\DataFiles\DEMO1\Data	a\EXAMPLE.bxt	(Result table only) Append (Text and dBase Files only)	

Fig 3: Export Data to *.csv file

2.3 Offset data in Colibrick

A new option to *Offset* (a) data has been added into Colibrick's Setup dialog. It allows to set zero signal different than 0 V. It describes what value should be deducted from the measured value to receive the real value. In other words, this value becomes the "new" zero.

The value itself can be changed in Set Units... dialog (b) . Default is 0 V.

DataApex Colibri	ck Setup					×
Device:	Colibrick (Serial No: 5933)	~				
Name	Colibrick - 1 Quantity: coefficient:	Inversion of Signal Voltage 0 mV 1 mV/1 mV	Dipolar Units:	mV Yes	Syndronize Start with Digital Input Digital Input 1 Make sure that the same input is also selected in the System Configuration / Ext. Start Dig. Input field!	
Channel 2 Name Set Unit	Colibridk - 2 Quantity: Offset: Coefficient:	Inversion of Signal Voltage OmV ImV/1mV	☑ Bipolar Units: Autoprefix:	mV Yes	Synchronize Start with Digital Input	

Fig 4: Colibrick Offset settings

Detector Unit	:3		×
Quantity	Voltage	Units	m 🗸 V
Offset	25 mV	🗹 Autop	orefix
⊆oefficient	1 mV / 1 mV		
	OK Cancel	Default Un	its Help

Fig 5: Detector Units

2.4 WinUSB driver

Since Clarity 8.8 our A/D and D/A converters (Colibrick, U-PAD2, Zebrick) use WinUSB driver from Microsoft instead of the driver from Silicon Laboratories Inc. It solves several minor issues with stability.

2.5 UNI-Ruby User Units

Control modules written in UNI-Ruby now support User Units setting as defined by the user.

2.6 New "nA" unit

Current units can be now displayed in nanoampers using the "nA". Current units can be set in Units Setup located in the System Configuration window.

basic onics	Units		
Flow Rate Units	mL/min	~	
Pressure Units	MPa	~	
Temperature Units	°C	~	
Injection Volume Units	μ	~	
Aundianu Signal Lloite			
Auxiliar y bighar brins	Units		
Voltage Units	V	~	
Power Units	W	~	
Current Units	mû	×	-
	nA		
X-Axis Units Title	mA A		Custom Units
Time	Time - minutes	~	
Replace Retention Time :	with:		Retention Time
Replace Start Time with:			Start Time
Replace End Time with:			End Time
Display Area in:			Time - seconds 🛛 🗸
Display W05 in:			Time - minutes 🛛 🗸
Display Drift in:			Time - hours 🗸 🗸

Fig 6: Current Unit "nA"

2.7 Dynamic Open chromatogram button

A new dynamic label has been added on *Open* button of Chromatogram file open dialog to easily indicate whether *Overlay mode* is on or off.

Open Chromatogram - C:\	and the USACT Data		×
Look In: 📘 Data	- 🔸 🛃 🎼 🖽 🗠 🔛	👬 D C	
Name 🔺	Size Type	Created	Last Change
al 2506MULTI.prm	1675 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
EXAMPLE.prm	1280 kB PRM File	15.09.2022 18:40	22.09.2022 17:22
PERS01.prm	983 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
PERS02.prm	942 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
Sample_Vial_6-1.prm	854 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
Sample_Vial_6-2.prm	854 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
Sample_Vial_7-1.prm	855 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
Sample_Vial_7-2.prm	856 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
Sample_Vial_8-1.prm	853 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
Sample_Vial_8-2.prm	854 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
Sample_Vial_9-1.prm	855 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
Sample_Vial_9-2.prm	853 kB PRM File	15.09.2022 18:40	15.09.2022 18:40
File Name Sample_Vial_6-1.prm; Sample_Via File Type Chromatogram files (*.prm)	al_6-2.prm; Sample_Vial_7-1.prm; S	Signals:	Open in Overlay
Version Recent		✓ Signal 2 ✓ Signal 3 ✓	
Details for:			
Created By: <varies></varies>	Creat	ted: From to 31	.08.2004
Modified By: <varies></varies>	Modif	ied: From to 23	.09.2022
Sample ID: <varies></varies>	Descr	iption: <varies></varies>	
Sample: <varies></varies>	Time:	From 0,00 r	min to 11,80 min
Signature: <varies></varies>	Has P	DA Data: No	
GLP Mode: Off	Has N	IS Data: No	
^	\mathcal{A}		

Fig 7: Open in Overlay label

Overlay mode indication has been also improved in File menu of Chromatogram Window.



Fig 8: File menu Overlay indication

2.8 Start and End Value (Signal)

In Clarity 8.8 there are new columns "Start Value (Signal)" and "End Value (Signal)" present in the Result Tables. They are useful for calculating Peak to Valley Ratio. By default these columns are hidden.

	Show Columns	
Show All	Reten. Time [min]	不
Show	Height [mV]	
Hide	Height [%]	1
Hide All	Compound Name	
User Columns		
Add		\downarrow
Edit Selected		
Eak Solociou		
Delete Selected		\mathbf{T}
No -		2
140	O Places O Declinal Places	5
	Preview 123	,457
	Show All Show Hide Hide All User Columns Add Edt Selected Delete Selected No.:	Show Columns Show All Reten. Time [rin] Area [riv.3] Hide Hide All User Columns Add Edd: Selected Delete Selected No.: O Places Decimal Places [

Fig 9: Start Value (Signal) and End Value (Signal)

To calculate Peak to Valley Ratio a new User Column has to be added into the Result table.



Fig 10: Add User Column

The Expression is set as following:

🔳 Add Use	er Column				-		×
<u>T</u> itle	P/V Ratio		Units			ОК	
			Calculate Tota	al		Cance	el
Expression	:					Help	
[Height]/([End Value (Sign	al)]-	[End Value])				
Qpers: + - - - != <= >= < >	Euncts: abs acos asin atg cos exp lo log max min round sin cost	*	Columns: Eff/ Resolution Response Factor Correction Factor Start Time End Time Start Value End Value Start Value Start Value (Signal) End Value (Signal)	^	Variables: Sample Amount Sample Dilution Injecton Volume ISTD1 Amount ISTD2 Amount ISTD3 Amount ISTD5 Amount ISTD5 Amount ISTD5 Amount ISTD6 Amount ISTD9 Amount ISTD9 Amount		*
			Special Values	•			

Fig 11: Peak to Valley Ratio calculation

Note: Value is only valid for peaks, where signal in the peak end is not on the baseline.

2.9 PDA correlation

The Pearson correlation coefficient (noted as Correlation in Clarity), that is always used for *Peak Purity* and can be used for *Match Factor* calculations, now uses an improved method of rescaling to the resulting 0-1000 interval.

3 New and updated control modules

This section contains new and updated control modules introduced in Clarity **8.7.1** and **8.8**.

The control modules in:

- Testing state are already functional and their development is in the stage of external testing.

- Ready state have been already tested and verified.

3.1 Clarity 8.7.01

3.1.1 Analytik Jena

New:

 Analytik Jena PQ LC PDA Detector control module is now in the Testing state.

3.1.2 Bischoff

New:

 Bischoff 2250 pump - Older versions of pump firmware can now be connected.

3.1.3 Chromophor

New:

• Chromophor PDA Detector control module is now in the Testing state.

3.1.4 CQS

New:

 CQS Climax S 3345 and S 3350 PDA Detectors control module are now in the Testing state.

3.1.5 Dionamix

Updated:

 Dionamix L-3320 control module updated to version 2.0.0.7 (previously developed by Rigol).

3.1.6 ECOM

New:

• Ecom ECV2010 control module is now available in the Ready state.

3.1.7 HTA

New:

• HTA 3000A, 3100A, and 3200A control modules are now available in the Ready state.

3.1.8 Knauer

New:

• Knauer P8.1L pump control module is now in the Testing state.

Updated:

• Knauer HPLC driver control module updated to version 8.5.0.6076.

3.1.9 Konik

New:

• Konik 580 ELSD and 580 PDA control modules are now available in the Ready state.

3.1.10 RotaChrom

New:

• RotaChrom rCPC control module is now in the Testing state.

3.1.11 Schambeck

New:

• Schambeck S 4345 and S 4350 control modules are now in the Testing state.

3.1.12 Sykam

New:

• Sykam S3345 and S3350 control modules are now in the Testing state.

Updated:

• Sykam S1130 control module updated to version 2.0.1.32.

3.1.13 Watrex

New:

• Watrex Streamline PDA control module is now in the Testing state.

3.1.14 Young In Chromass

New:

• Young In Chromass ChroZen3000A, ChroZen3100A and ChroZen3200A control modules are now available in the Ready state.

Updated:

- Young In Chromass YCChroZenAS control module updated to version 1.0.0.13.
- Young In Chromass YCChroZenColumn control module updated to version 1.0.0.9.
- Young In Chromass YCChroZenGC control module updated to version 1.0.1.27.
- Young In Chromass YCChroZenGCMS control module updated to version 1.0.1.13.
- Young In Chromass YCChroZenPump control module updated to version 1.0.0.16.
- Young In Chromass YCChroZenUVD control module updated to version 1.0.0.17.
- Young In Chromass YL9120 control module updated to version 4.0.4.25.
- Young In Chromass YL9130 control module updated to version 4.0.2.22.

3.2 Clarity 8.8

3.2.1 Agilent

Updated:

• Agilent ICF control module updated to version A.03.02.

3.2.2 Apix

Updated:

• Apix ChromPix2 control module updated to version 2.7.0.545.

3.2.3 Axcend

New:

• Axcend Focus LC control module is now in the Testing state.

3.2.4 CMP Scientific

New:

• ECE-001 control module is now in the Testing state.

3.2.5 Recipe

New:

• Recipe EC6000 control module is now available in the Ready state.

3.2.6 Sykam

Updated:

• Sykam S150 control module updated to version 3.0.0.7.

3.2.7 Vici Valco

Updated:

- Vici Valco TCD3 control module updated to version 1.0.0.12.
- Vici Valco FTP200 control module updated to version 1.2.0.6.

3.2.8 Young In Chromass

New:

• Young In Chromass ChroZen HPLC RID-E control module is now available in the Ready state.

Updated:

• Young In Chromass YL9110 Pump control module updated to version 4.0.4.18.