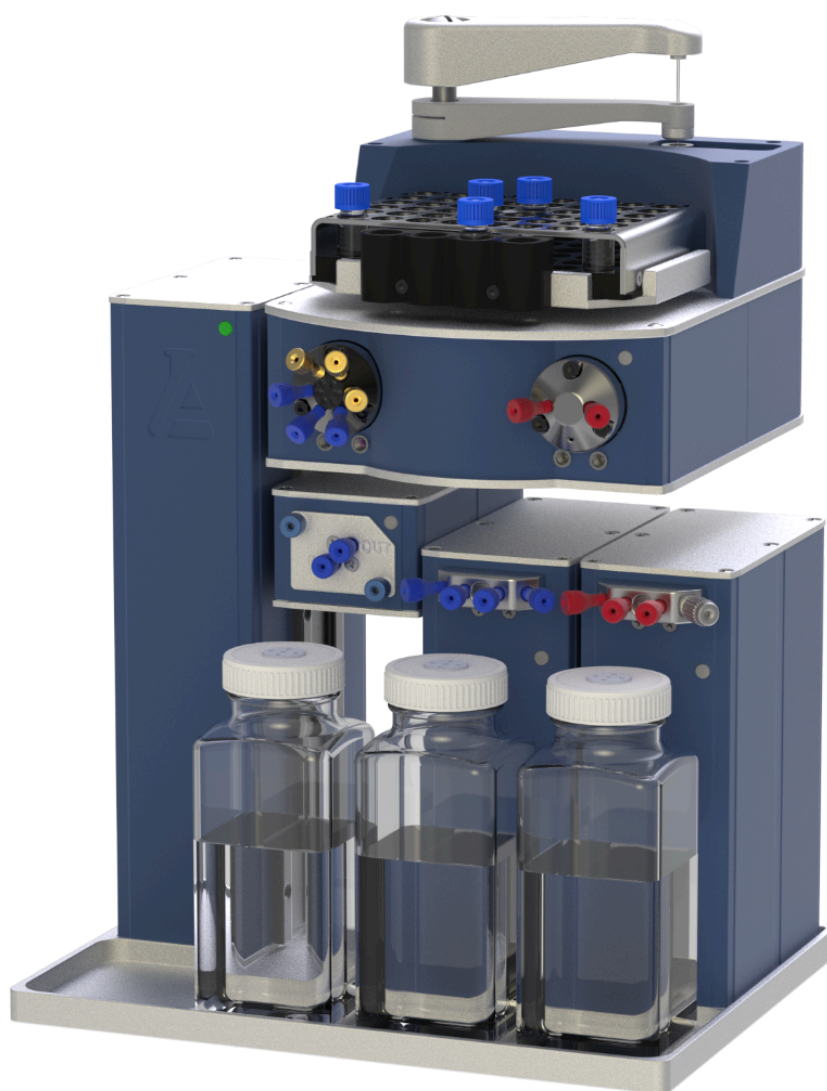


# Alltesta™ Automated Analyzer

## Instruction Manual

Ver 1.0



## Contact Us

There are several ways to contact us:

### **Ordering Information**

For ordering information or sales support for HPLC products, contact the SIELC Technologies sales organization. For contact information, go to Contact Information on [Contact Information](#) | [SIELC Technologies](#)

### **Technical Assistance**

For technical support for HPLC products, contact the SIELC Technologies support organization. For contact information, go to Contact Information on <https://sielc.com/>

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Manufactured by SIELC Technologies, Inc.  
804 Seton Court, Wheeling, IL USA 60090  
E: [mail@sielc.com](mailto:mail@sielc.com)  
Phone. +1 (847) 229-2629  
[www.sielc.com](http://www.sielc.com)

The information in the printed customer documentation was correct at the time of issue. SIELC Technologies continues to improve products and reserves the right to change specifications, equipment, and maintenance procedures at any time without notice.

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## Safety

### General Safety

Work in a well-ventilated area. An eyewash station and a sink should be easily accessible.

Always wear appropriate personal protective equipment (see “[Personal Protective Equipment](#)”).

Review the Safety Data Sheets (SDS) for all solvents and samples used with the system.

### Chemical Safety

Store and handle flammable solvents (e.g., MeCN, EtOH) away from ignition sources.

Use only chemically compatible solvents and buffers. Avoid suspensions, particulates, or viscous materials that may block the flow path.

Dispose of waste according to your laboratory's safety procedures and local environmental regulations. Do not mix incompatible waste in the same container.

In case of a spill: stop the pump, disconnect power if necessary, contain the spill with absorbent material, clean the affected area, and ventilate the workspace.

### Pressure & Flow Safety

The system operates at pressures up to 4000 psi. Before handling any solvent bottles, or columns ensure the pump is stopped and pressure is stable and reduced.

Do not exceed the maximum pressure rating of your column (see “[Technical Specifications](#)”).

Never run the pump dry — make sure the solvent inlet filter is fully submerged in the mobile phase.

After replacing a solvent, perform a purge (see “[Before Using the System](#)”).

### Mechanical & Handling

Do not touch the needle or moving parts while the instrument is operating — risk of injury or contamination.

Do not use tools to tighten connections unless explicitly specified as required. Over-tightening may damage threads or seals.

When moving the instrument, hold the body with both hands. The system weight is approximately 1.45 kg.

## Electrical & Connectivity

Power requirements: 100–240 V, 50–60 Hz. Use a properly grounded outlet and an intact power cable.

Do not open the instrument housing — there are no user-serviceable components inside. Servicing must be performed by SIELC Technologies or an authorized technician.

Follow the instructions in [“Connecting Devices to the Network”](#) for Ethernet, Wi-Fi, or LTE setup.

Do not insert or remove USB adapters or modems during firmware updates.

## Environment & Location

Place the instrument on a stable, level surface, away from vibration, direct sunlight, or heat sources.

Operating temperature range: 0–40 °C (see Technical Specifications). Avoid condensation or high humidity.

## Maintenance & Cleaning

Follow all procedures described in Maintenance and Care ([“Changing Mobile Phase”](#), [“Emptying Waste”](#), [“Cleaning the Needle”](#)).

Use soft, lint-free wipes. For external cleaning, use 70% isopropanol or a neutral laboratory cleaner.

Do not spray or pour liquids inside the housing.

## Prohibited Uses

Do not operate the instrument in explosive (ATEX) environments, for unvalidated in-vitro clinical diagnostics, or with unknown or aggressive solvents without verified chemical compatibility.

## Emergency Procedures

Immediately press Stop if you notice a leak, unusual noise, sudden pressure increase, solvent odor, or a red status indicator.

Disconnect power if short circuiting or solvent leakage inside the housing is suspected.

Contact SIELC Technologies support (see [“Contact Us”](#)).

Record the serial number, firmware version [“Devices”](#), and the last user actions before the issue occurred.

## Intended Use

- The Alltesta™ Automated Analyzer, developed by SIELC Technologies, is a high-performance liquid chromatography (HPLC) instrument designed to provide fast, accurate, and reliable analysis across a wide range of applications. It is intended for use in scientific research facilities, pharmaceutical development, food and beverage quality control, environmental monitoring, and educational laboratories.
- With its compact benchtop design, the analyzer is well-suited for laboratories with limited space while maintaining exceptional analytical performance. Its portability also makes it a practical option for decentralized labs or field applications. By integrating seamlessly into existing laboratory workflows, the instrument supports efficient and cost-effective analysis with minimal operator intervention.
- The analyzer generates results within minutes, ensuring high throughput and productivity for demanding laboratory environments. Its cloud connectivity enables remote monitoring and real-time data access, supporting collaboration and streamlined workflows. Combined with its user-friendly software interface and reliable technical support, the Alltesta™ Automated Analyzer is a versatile and affordable HPLC solution for both professional and academic use.

## System Components

The **Alltesta™ Isocratic Automated Analyzer** includes components for solvent delivery, sampler injection, and UV/Vis detection in separate modules.

- The components of the analyzer are:
- Alltesta™ Power Tower
- Alltesta™ Mini Autosampler
- Alltesta™ UV-Vis Detector
- Alltesta™ Ultra High Pressure Mini Syringe Pump

The **Alltesta™ Gradient Automated Analyzer** includes components for solvent delivery, sampler injection, and UV/Vis detection in separate modules.

- The components of the analyzer are:
- Alltesta™ Power Tower
- Alltesta™ Mini Autosampler
- Alltesta™ UV-Vis Detector
- 2 x Alltesta™ Ultra High Pressure Mini Syringe Pumps

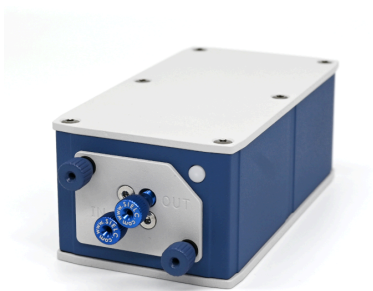
The **Alltesta™ Power Tower** acts as a power supply and chromatography data acquisition device, connecting, controlling, and streaming your Alltesta™ Analyzers to free cloud software at [hplc.cloud](https://hplc.cloud). It serves as a bridge between your laboratory and a centralized data storage hub.



The **Alltesta™ Mini Autosampler** is an affordable and dependable solution for automated sample handling in various analytical and liquid handling applications, including HPLC.



The Alltesta™ **UV-Vis Multi-wavelength Mini Detector** is a compact and versatile device that can continuously monitor the optical properties of solutions flowing through it. The Mini Detector is ideal for use in HPLC, Flow Injection Analysis (FIA), and preparative and flash chromatography.



The Alltesta™ **Ultra High Pressure Mini Syringe Pump** is designed to produce a steady, high pressure, pulsation-free flow, so there is no need for bulky dampeners, mixers, and precision check valve arrangements.



**HPLC.Cloud** is a software platform developed by SIELC Technologies to streamline high-performance liquid chromatography (HPLC) workflows. It operates entirely via the cloud, allowing users to access, monitor, and control their instruments from any internet-enabled device. By connecting instruments directly to a secure cloud server, the software provides a centralized and flexible solution for managing HPLC operations.

### Solvent Bottles Area

The system includes a designated area for solvent bottles.

- In gradient configuration, up to two solvent bottles can be connected to the LC system.
- In isocratic configuration, one solvent bottle is used.
- In both configurations, an additional waste bottle is required.

## Personal Protective Equipment

Wear personal protective equipment and follow good laboratory practice to protect you from hazardous substances. The appropriate equipment depends on the hazard. For advice on the hazards and the equipment required for the substances you are using, refer to the material handling and safety data sheet provided by the vendor.

**WARNING!** An eyewash facility and a sink should be available nearby. If any substance contacts your skin or eyes, wash the affected area and seek medical attention.

### Protective Clothing

To protect you from chemical splashes, harmful liquids, or other contamination, put on appropriate protective clothing, such as a lab coat.

### Protective Eyewear

To prevent liquids from striking your eyes, put on appropriate protective eyewear, such as safety glasses with side shields. If there is a risk of splashing liquids, put on goggles.

### Gloves

To protect you from harmful liquids and avoid personal injury during maintenance or service, put on appropriate protective gloves.

# Installation

## Unpacking

### **WARNING!** Personal Injury

To prevent personal injury, do not insert fingers, tools, or other objects into the instrument's ports, valve area, or flow path while the system is connected to power or pressurized.

### **WARNING!** Risk of Electrical Shock or Instrument Damage

A risk of electrical shock or permanent equipment damage may occur if the device is connected to a line voltage higher than specified.

After unboxing, place the Alltesta™ on a stable, level surface (such as a laboratory bench) with adequate ventilation and sufficient clearance on all sides. Ensure that the surface can support the weight of the system and that the analyzer is positioned away from direct sunlight, heat sources, and strong airflow (e.g., ventilation ducts). Leave enough space behind the unit to allow easy access to the power cables and communication ports without causing strain or bending.

For detailed connection instructions, refer to [Appendix 1 — Connection Guide for Alltesta™ Automated Isocratic Analyzer](#) and [Appendix 2 — Connection Guide for Alltesta™ Automated Gradient Analyzer](#).

### **CAUTION!** "Defective on Arrival" Problems

If there are any signs of damage, do not attempt to install or operate the module. Inspection by SIELC Technologies is required to determine whether the instrument is in good condition or damaged.

→ Notify your "[SIELC Technologies sales](#)" or service representative about the damage.

## Tubing Connections

For detailed connection instructions, refer to [Appendix 1 — Connection Guide for Alltesta™ Automated Isocratic Analyzer](#) and [Appendix 2 — Connection Guide for Alltesta™ Automated Gradient Analyzer](#).

### **CAUTION!** "Defective on Arrival" Problems

If there are any signs of damage, do not attempt to install or operate the module. Inspection by SIELC Technologies is required to determine whether the instrument is in good condition or damaged.

→ Notify your "[SIELC Technologies sales](#)" or service representative about the damage.

## Cables Connections

After assembling all mechanical components and installing all required tubing, you can proceed with connecting the equipment of your Alltesta™ Analyzer System.

This section describes the complete procedure for connecting all modules to the Alltesta™ Power Tower, which serves as the central hub of the system.

### 1. Alltesta™ Power Tower

The Alltesta™ Power Tower performs two essential functions:

1. Distributes power to all Alltesta™ devices.
2. Provides communication between the devices and the **HPLC.Cloud** platform.  
The Alltesta™ Power Tower includes:
  - 24 V power output ports,
  - USB ports for device communication,
  - an Ethernet port for network connection,
  - a power button (do **not** press yet).



#### Step 1 — Connecting Cables to the Alltesta™ Power Tower

1. Connect the main **power cable** to the Alltesta™ Power Tower.
2. Connect the **CAT5 Ethernet cable** to the Ethernet port on the Power Tower and then to your local network.

**CAUTION!** The Ethernet connection allows the Power Tower to access the internet and communicate with **HPLC.Cloud**.

If your organization uses network restrictions, consult your IT administrator.

**WARNING!** Do NOT turn on the Alltesta™ Power Tower at this stage.

Powering on will be performed later in the setup procedure.

## 2. Connecting Power to Alltesta™ Modules

Each module of the Alltesta™ system is powered directly from the Power Tower using a dedicated 24 V power cable.

All required cables are included in the package.

Connect the following devices:

### Alltesta™ Mini-Autosampler

Connect the 24 V power cable from the Alltesta™ Power Tower to the Alltesta™ Mini-Autosampler.



### Alltesta™ Syringe Pump (Pump A)

Connect the second 24 V power cable to the **Alltesta™ Syringe Pump (Pump A)**.



### Alltesta™ Syringe Pump (Pump B)

*for Alltesta™ Gradient Automated Analyzer only*

If your system is an **Alltesta™ Gradient Automated Analyzer**, it includes two independent pump modules:

- Pump A — Mobile Phase A
- Pump B — Mobile Phase B

Connect:

- a separate 24 V power cable to Alltesta™ Syringe Pump (**Pump B**),
- ensuring both pumps are connected to individual power outputs on the Alltesta™ Power Tower.



### 3. Connecting USB Communication Cables

USB communication enables data exchange between the devices and the Power Tower, and subsequently with **HPLC.Cloud**.

Use the USB Type-B → USB-A cables provided in the kit.

For each device:

1. Plug the **USB Type-B** connector into the device.
  2. Plug the **USB Type-A** connector into any available USB port on the Alltesta™ Power Tower.
- (All USB ports function identically and may be used in any order.)

Connect USB cables for:

- **Alltesta™ Mini-Autosampler**

Connect the second USB Type-B to the Alltesta™ Mini-Autosampler.



- **Alltesta™ Syringe Pump (Pump A)**

Connect the second USB Type-B to the Alltesta™ Syringe Pump (Pump A)



- **Alltesta™ Syringe Pump (Pump B) (if using a Gradient Analyzer)**

Connect the second USB Type-B to the Alltesta™ Syringe Pump (Pump B)



- **Alltesta™ Detector**

Connect the second USB Type-B to the Alltesta™ Detector



All devices must be connected **directly** to the Alltesta™ Power Tower — do not use USB hubs, splitters, or extension adapters.

**CAUTION!** Do not attempt to disconnect, replace, or modify the internal tubing — this may compromise the system’s integrity and void the warranty.

Once all fluidic and electrical connections are in place, activate the system by switching the Alltesta™ Power Tower power button to the ON position.



**NOTE:** The Alltesta™ Analyzer can also connect to HPLC.Cloud via a wireless network (Wi-Fi, 4G, or 5G). For more information, see “[Connecting Devices to the Network](#)”.

Once powered on, the system will automatically initiate communication with the cloud server. The **status light** on the side panel indicates the current operational state:

- **Green (slow blinking):** System ready.
- **Yellow (slow blinking):** Software initializing.
- **Magenta (steady):** Analysis in progress.
- **Cyan (short blink):** Software update in progress.
- **Red (short blink):** Hardware, software, or communication error detected

For software setup and registration, see “[Software](#)” → “[Registration](#)”.

### **CAUTION! "Defective on Arrival" Problems**

If there are any signs of damage, do not attempt to install or operate the module. Inspection by SIELC Technologies is required to determine whether the instrument is in good condition or damaged.

→ Notify your “[SIELC Technologies sales](#)” or service representative about the damage.

## Column Installation

For detailed connection instructions, refer to [Appendix 1 — Connection Guide for Alltesta™ Automated Isocratic Analyzer](#) and [Appendix 2 — Connection Guide for Alltesta™ Automated Gradient Analyzer](#).

The HPLC column is one of the most critical components of the analytical system — it directly determines separation efficiency, retention time, and overall performance.

Supported column dimensions and pressure limits are listed in the “[Technical Specifications](#)” section.

### Preparation

1. Stop all active runs and make sure the **Pump** is turned **off**.
2. If necessary, protect the workspace with an absorbent pad to catch any solvent drips.

### Removing the Current Column

1. Carefully unscrew the coupling nut while holding the column with your hand for support. Turn the fitting clockwise to disconnect the column.
2. Disconnect the removed column.

### Prepare the Column and Fittings

Before making any connections, ensure that:

- the column is oriented correctly (flow direction arrow → toward the detector),
- both column ends are clean and undamaged, appropriate fittings are used (typically 1/16”, fingertight, or PEEK/Stainless fittings).

**CAUTION!** Do not use worn or deformed fittings — this may cause leaks and unstable pressure.

### Identify the Fluidic Connections on the Alltesta™

The Alltesta™ system follows a straightforward flow path:

Alltesta™ systems use the following flow path:

- Pump Outlet → Column Inlet
- Column Outlet → Detector Inlet

### Connect the Pump Outlet to the Column Inlet

- Locate the tubing coming from the Pump Outlet.
- Connect it to the Column Inlet — this is the end marked with the flow direction arrow.
- Insert the tubing fully, with no gap, to avoid dead volume.

Tighten the fitting manually until secure.

#### **Connect the Column Outlet to the Detector Inlet**

- Locate the tubing leading to the Detector Inlet.
- Connect it to the Column Outlet.
- Insert the tubing fully and tighten the fitting gently by hand.

#### **Checks:**

- The tubing must not be bent, kinked, or twisted.
- Ensure the connection is firm but not overtightened.

**CAUTION!** Do not overtighten — hand-tightening until firm contact is sufficient.

**CAUTION!** Use only solvents and conditions (pH, temperature, pressure) compatible with the column.

**CAUTION!** Before analytical runs, allow the column to equilibrate under the method's operating conditions.

## **Before Using the System**

When the solvents have been replaced or the pumping system has been turned off for an extended period (for example, overnight), priming of the pumping system is required before starting any analysis.

Priming ensures that all tubing and internal channels are completely filled with solvent and that no air remains in the flow path, which could otherwise cause unstable pressure, baseline noise, or irregular flow.

For more information about Purge, see "[Devices](#)"

#### **CAUTION!** Common Issues During Priming

- Air bubbles visible in the tubing — repeat priming until the flow is continuous.
- Pump not drawing solvent — confirm that the inlet lines are fully submerged in the solvent bottles.

## Software

### Software Overview

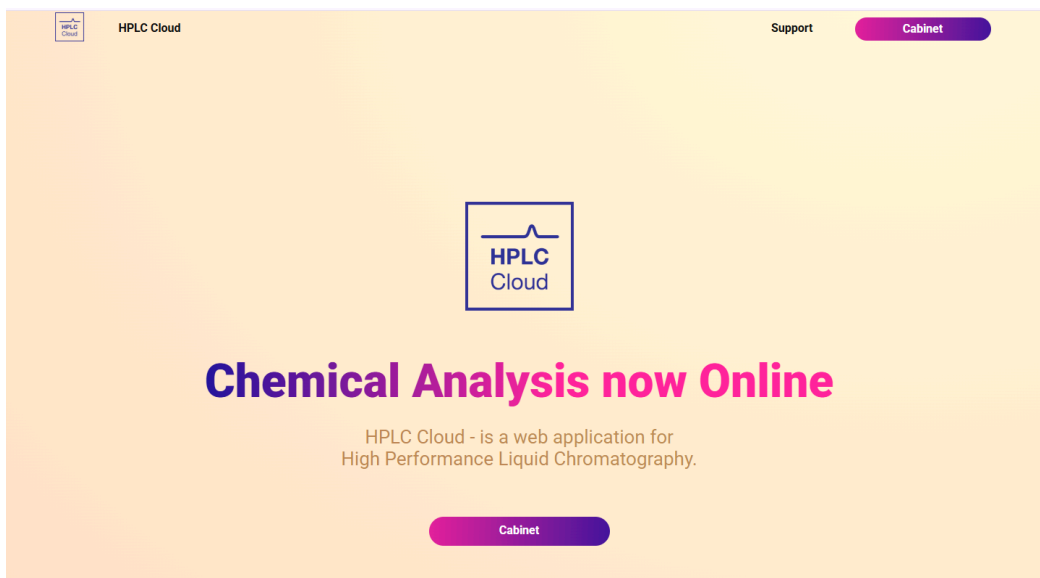
HPLC.Cloud introduces a modern approach to high-performance liquid chromatography (HPLC) by integrating cloud-based software with instrument control. Each Alltesta™ unit connects securely to a cloud server via a local Ethernet line or wireless network, eliminating the need for complex software installations or ongoing support. As a web-based application, HPLC.Cloud requires only a username and password for access, making it easy to get started by signing up online.

**IMPORTANT!** This connectivity enables remote monitoring and operation of your laboratory from anywhere, using any internet-enabled device.

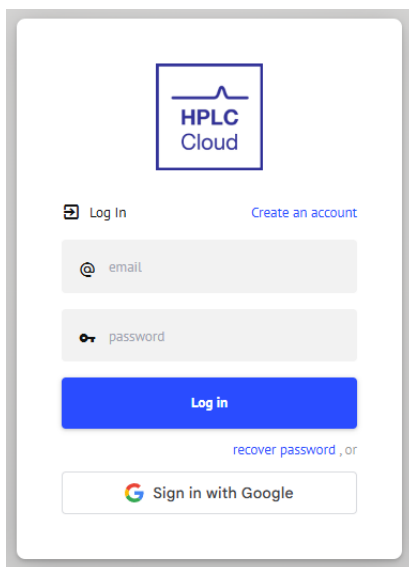
For device registration and connection, see “[Registration/Devices](#)”.

## Registration

1. In order to set up and connect your devices to the cloud, start by creating an account on the website [HPLC.Cloud](https://HPLC.Cloud). Click “**Cabinet**” as shown below:



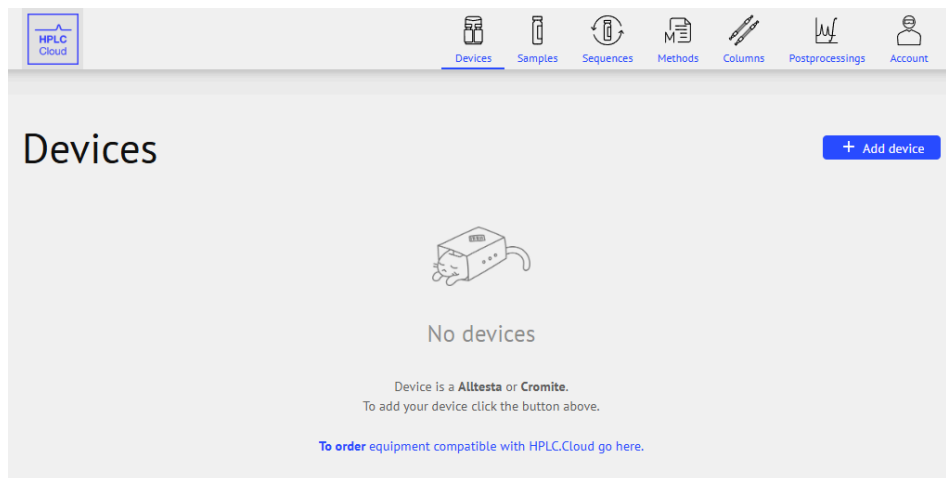
2. By clicking the **Sign Up** button you will be directed to the Sign-Up page:



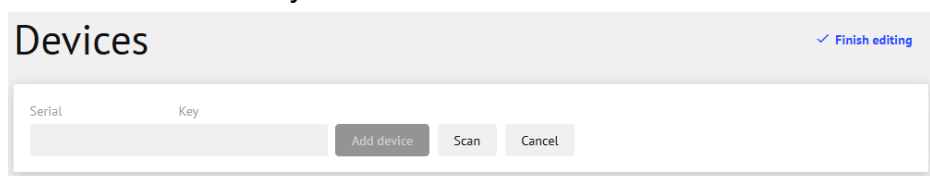
3. Enter in the required information, click **Sign Up** and your account set-up is complete.
4. You will receive an email shortly after confirming that your email has been registered with the software.
5. After that is complete, login to your account.

## Devices

1. Click the Add Device button located at the top of the interface. Follow the on-screen instructions to complete the device registration process.



2. After clicking the Add Device button, the following screen will appear, requesting the serial number and key of the device. The Serial Number and Key can be found on the back of each Alltesta™ Analyzer.



**NOTE:** All units have been tested by SIELC. A message may appear stating that “these units belong to [sales@sielc.com](mailto:sales@sielc.com).” Simply confirm the request to delete them from that account and transfer them to the current account.

3. Repeat steps 1-2 for each Alltesta™ Analyzer to add them to the HPLC.Cloud account.
4. After adding each Alltesta™ Analyzer to your account, all devices can be viewed by clicking the Devices tab at the top of the screen.



5. To select the system you want to use, click on the **StreamLC**.
  - Devices can be renamed by clicking on the serial number once the specific device is open.

- If the device is not plugged in, it will appear as **• Offline**
- If the device is plugged in, it will appear as **• Online**.

## #32 Alltesta™ Example

Alltesta L699-RVE2   Ping fv2.157 **• Online**

 Settings

- When clicking on your device, the interface may appear.
  - First, check that your firmware is up to date by clicking on the text starting with **fv**.
  - If a new firmware version is available, click **Update Now**.
  - Alternatively, click **Remind me later** to set an update reminder.
- When clicking on your device, the interface may appear.
  - Phase
  - Waste

## #32 Alltesta™ Example

Alltesta L699-RVE2   Ping fv2.157 **• Online**

 Settings

- Enter the volume for Mobile Phase (A) and the Waste Containers. For the Alltesta™ Gradient Automated Analyzer, you must also specify the volume for Mobile Phase (B). A standard Alltesta™ flask has a volume of 250 mL.

### Settings

#### Phase

Volume of A container, mL

250

Add B container

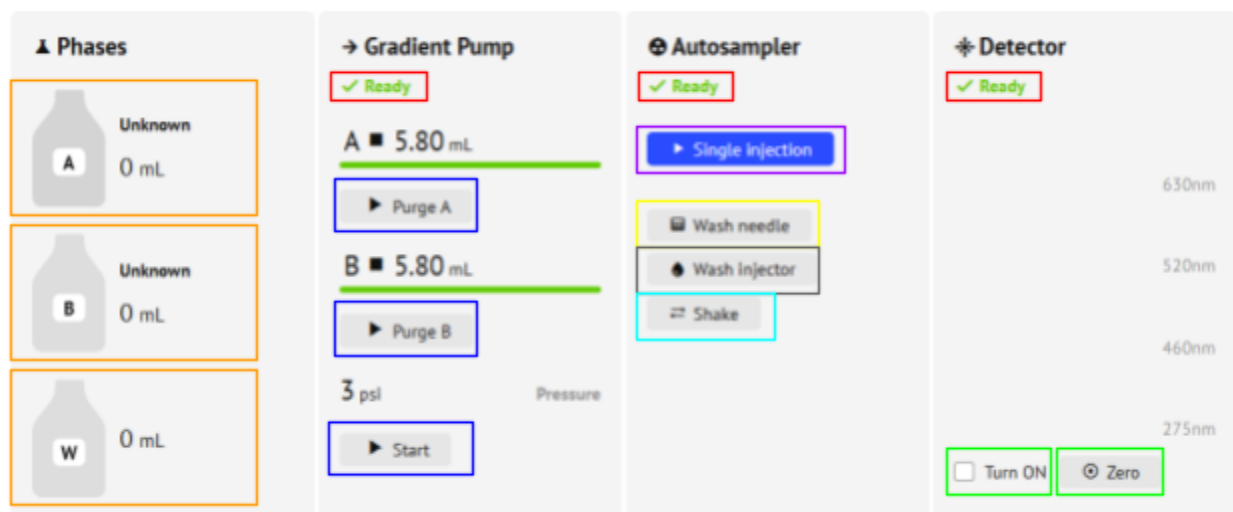
#### Waste

Volume of waste container, mL

250

Save

- Once all component devices are added, associated with the respective Alltesta™ will be visible and controllable.



## 10. Operation Panel

- Phases (orange color frame)
  - Displays the names and current volumes for Mobile Phase (A), Mobile Phase (B — available only on the Alltesta™ Gradient Automated Analyzer), and the Waste Container. If the mobile phase names are not defined in the active method, the system displays “Unknown”.

For details on replacing or preparing solvents, see “[Maintenance and Care](#) → [Changing Mobile Phase](#)”.

**NOTE:** The standard Alltesta™ flask supplied with the system has a volume of 250 mL.

- Gradient Pump
  - Ready (red color frame) — indicates that the pump is ready for operation.
  - The panel shows the current volumes entered for Mobile Phase (A) and, if a gradient system is used, Mobile Phase (B).
  - Available commands (blue color frame):
    - Purge A — initiates purging of Line A. Runs the pump at a 4.00 mL/min flow rate.
    - Purge B — initiates purging of Line B (available only on the Alltesta™ Gradient Automated Analyzer). Runs the pump at a 4.00 mL/min flow rate.
    - Start — Runs the pump at the current set flow rate. This is useful for quickly replacing the mobile phase in the pump.
  - The Pressure indicator shows the real-time pump pressure.
- Autosampler
  - Ready (red color frame) — the autosampler is ready for operation.
  - Available commands:

- Single Injection (purple color frame) — performs a single injection using the active analytical method and the column selected in the software.  
For more information, see “[Method](#)”, “[Column](#)”.
- Wash needle (yellow color frame) — starts the needle cleaning procedure.
- Wash injector (gray color frame) — starts the injector cleaning procedure.
- Shake (cyan color frame) — activates shaking of the plate or well-plate, depending on the installed autosampler configuration.

**WARNING!** During any cleaning procedure, the system draws liquid from the wash station.

Make sure that the appropriate wash vials are placed in the wash station before running any cleaning operation.

Running the system without wash solvents may result in improper cleaning or needle damage.

- Detector
  - Ready (red color frame) — the detector is ready for operation.
  - Detector controls (green color frame):
    - Turn ON — switches on the detector LEDs.
    - Zero — manually zeros all detector channels.
  - The displayed wavelengths — 630 nm, 520 nm, 460 nm, 275 nm — represent the LED wavelengths installed in this system.  
These wavelengths may vary, as the LED set is selected at the time of ordering the analyzer.  
If you wish to modify the wavelength configuration later, please contact us at [sales@sielc.com](mailto:sales@sielc.com) to review available options.

**NOTE:** The system automatically performs a detector zero before each injection.

## Sample



The Samples tab provides an overview and management interface for all samples analyzed or prepared for analysis in your HPLC system.

It allows users to create new samples, view existing ones, and organize them by device, date, or sequence.

## Samples

[View Compare](#) [View Archive](#) [+ New](#)

Keywords  Any device  Any time

### Main Features

- **New** — create a new sample record.
- **View Compare** — compare multiple samples and their results.
- **View Archive** — access previously archived samples.
- **Search / Filter** — use keywords, device filters, or time filters to quickly locate a specific sample.

### Create Sample Window

When the New button is clicked, the Create Sample window appears.

This window allows the user to define and register a new sample before performing injections or analyses.

Name

Description, optional

Device, optional

Use Ctrl+Enter to create

### Fields:

- **Name** — user-defined sample name (required).

- **Description (optional)** — notes or additional information about the sample.
- **Device (required)** — select the connected device (e.g., #32 Alltesta™ Example) to assign the sample to a specific HPLC system.
  - When a device is online, its status is indicated in green (Online).

## Sample View

After creation, the system automatically opens the Sample View page.

This page displays all information and actions related to the selected sample.



## Displayed Elements

- **Sample name** — displayed at the top of the page.
- **Date** — creation or last modification date.
- **Device** — connected HPLC system associated with this sample.
- **Description** — editable notes for sample details or preparation method.
- **Vial** — specifies the vial position that will be used for this injection. The available options depend on the autosampler configuration (plate, or well-plate).

**WARNING!** Make sure that the vial selected in this field actually contains the intended sample. Incorrect vial selection may result in injecting the wrong sample or running an injection with an empty vial.

Below the description area is the Injections section, which lists all injections associated with this sample.

If no injections exist yet, the message “No injections for this sample. Click New Injection to create an injection.” is displayed. To add a new run, click New Injection.



This window appears when you click New Injection inside a selected sample.

It allows you to set up a new injection, link it to a specific device, select a method, assign a column, and configure detection parameters.

## Device and Configuration

This section defines which instrument and method will be used.

- Device** — the connected instrument used for injection (e.g., #32 *Alltesta™ Example*).  
 The green **Online** indicator confirms that the device is active and ready.  
 For more information, see [“Methods”](#)
- Method** — the analytical method applied for the injection (e.g., *MeCN – 50%, 0.2 H<sub>2</sub>SO<sub>4</sub>*).  
 You can **Edit** the current method or click **Add** to select another one from the database.  
 For more information, see [“Methods”](#)
- Column** — the chromatographic column used for this analysis (e.g., *Primesep 100*).  
 For more information, see [“Column”](#).

**WARNING!** Make sure the selected column is physically installed in the device. Selecting a different column in the software without physically replacing it may cause system overpressure or incorrect separation performance.

- Postprocessing** — selected detection channel (e.g., *D4 – 275 nm*).  
**NOTE:** “The selected method supports only one channel. Choose a different one to add multiple postprocessings” informs that this method allows only one detection wavelength.  
 For more information, see [“Postprocessing”](#).

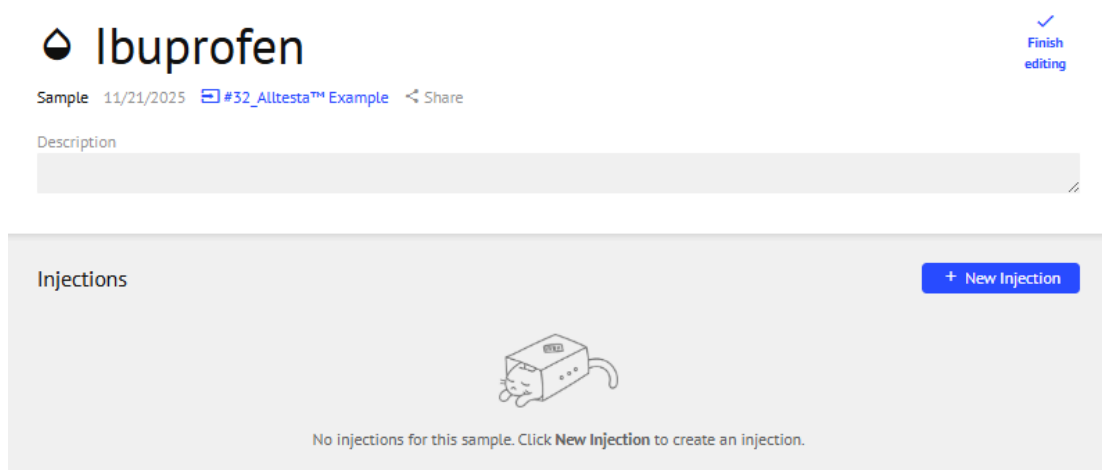
For running analytical injections, see [‘Injection’](#).

For organizing multiple injections, see “[Sequence](#)”.

## Injection

The Injection section allows the user to configure and start a chromatographic run for a selected sample.

It defines the instrument, method, column, and detection channels used during the analysis.



## Overview

When a new sample is created, the Injections area initially displays an empty state. Click New Injection to begin setting up a new analytical run.

### Setup New Injection

This form defines the analytical configuration for the sample.

### Description

An optional field for notes about the run (e.g., dilution, concentration, batch ID, or purpose).

### Device and Configuration

- **Device** — the connected HPLC instrument performing the analysis (e.g., #32 *Alltesta™ Example*). The **green Online** indicator confirms the system is ready.
- **Method** — the analytical method applied for the injection (e.g., *MeCN – 50%, 0.2 H<sub>2</sub>SO<sub>4</sub>*). You can **Edit** the current method or click **Add** to select another one from the database. For more information, see “[Method](#)” Click **Edit** to modify or **Add** to select another stored method.

- **Column** — chromatographic column used for the run (e.g., *Primesep 100*).

### Postprocessings

This section defines which detector channels will be recorded during the run.

Each wavelength corresponds to one detector channel (e.g., *D1 – 630 nm*, *D2 – 520 nm*, *D3 – 460 nm*, *D4 – 275 nm*).

The user may add or remove channels depending on the selected method and detector configuration.

For more information, see “[Postprocessing](#)”

### Start Injection

Click **Start** to initiate the injection and begin data collection.

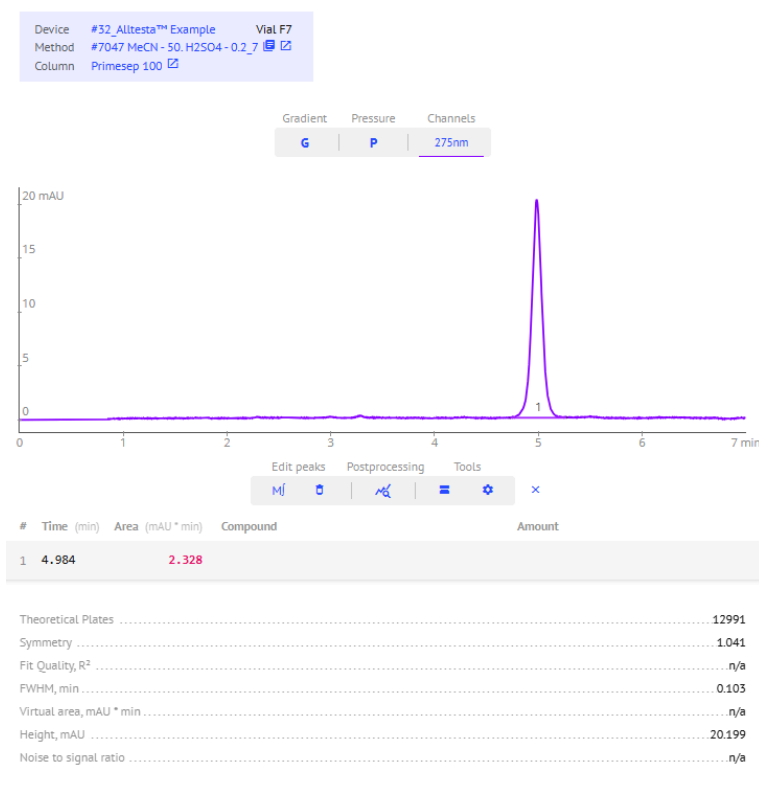
Once started, the chromatographic data from the selected detector channels will be recorded in real time.

### NOTES:

- Each injection is automatically linked to the sample and stored in its history.
- The selected method, column, and detector channels define the conditions under which the analysis is performed.
- If multiple injections are created for one sample, each will be saved as a separate entry.

### Injection Results

After the chromatographic run is completed, the system automatically displays the recorded chromatogram and calculated analytical parameters.



## Chromatogram Display

The main graph shows the detector signal over time (mAU vs. minutes).

Each detected peak is automatically labeled and integrated according to the selected postprocessing parameters.

- **Channels** — selected wavelength for the detector signal (e.g., 275 nm).
- **Pressure (P)** — displays the recorded system pressure during the run.

## Toolbar Functions

You can perform manual integration by selecting the peak region yourself, or configure postprocessing parameters for automatic peak detection and integration.

 **Manual Integration Peak** — allows you to manually select and integrate a peak by highlighting its region on the chromatogram.

 **Remove Integration Peak** — deletes the selected integrated peak from the chromatogram.

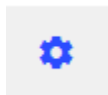
 **Postprocessing** — postprocessing parameters for automatic peak detection and integration  
For more information, see [“Postprocessing”](#)



**Add to Compare** — adds the current chromatogram to the comparison view, allowing you to overlay multiple chromatograms for visual analysis.

**Edit Chromatogram Appearance** — opens a window where you can adjust how the chromatogram is displayed.

**Available options:**



- **Show grid lines** — displays grid lines on the graph for easier visual alignment.
  - **Show coordinates on hover** — shows X/Y coordinate values when you hover over the chromatogram.
- After selecting the desired options, click **Save** to apply the changes.

## Peak Table

After integration, below the chromatogram, all detected peaks are summarized in a table with their analytical characteristics.

| Parameter      | Description                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------|
| Time (min)     | Retention time of the peak.                                                                                               |
| Area (mAU·min) | Integrated peak area proportional to compound concentration.                                                              |
| Compound       | Assigned compound name (if available).                                                                                    |
| Amount         | Calculated concentration (if calibration is applied).<br>For more information, see <a href="#">“Calibration Sequence”</a> |

## Calculated Parameters

For each detected peak, the following chromatographic performance metrics are calculated automatically:

Для каждого обнаруженного пика система автоматически вычисляет следующие параметры хроматографического качества:

- **Theoretical Plates** — indicates column efficiency
- **Symmetry** — measures the peak shape
- **Fit Quality ( $R^2$ )** — evaluates how well the integration model fits the actual peak shape
- **FWHM (min)** — Full Width at Half Maximum, characterizes peak sharpness
- **Height (mAU)** — maximum peak height above the baseline
- **Signal-to-Noise** — indicator of baseline stability

## Result Status

At the top of the page, the injection status is indicated:

- **Completed** — analysis finished successfully.
- **Failed** — indicates an error during the run.
- **Running** — analysis currently in progress.

## Sequence

The Sequences tab allows users to create and manage analytical sequences — sets of samples that will be analyzed automatically according to predefined methods and device configurations.

Each sequence is strictly linked to a specific analyzer (device) to ensure traceability and consistency of analytical results.



### Creating a Sequence

When you click New, the Create Sequence window appears.

Two types of sequences are available: standard and calibration.

Name

⊕

Sequence name

Description

≡

☐ Calibration mode

Device

#32\_Alltesta™ Example

• Offline

Use Ctrl+Enter to create

Create

### Standard Sequence

To create a standard sequence, do not check the Calibration mode box.

Enter the sequence name, select the connected analyzer, and click Create.

After creation, a sequence table appears where you can add one or more samples.

Only after adding samples to the sequence will the method selection, repeat count, and other analytical parameters become available for configuration.

## Sequence 11/21/2025 #32 Alltesta™ Example New

### Sequence Table

## Samples

+ Add sample

- **Sample name** — name of each sample in the sequence.
- **Method** — analytical method applied for this sample.  
For more information, see [“Methods”](#)
- **Vial** — Defines the vial position from which the sample will be aspirated (e.g., A1).  
This position must correspond to a physically present and accessible vial in the autosampler.
- **Repeat** — number of repetitions for the sample.
- **Run** — enable or disable this sample in the sequence.

Once all samples are configured, click **Start** to begin automatic sequence execution.

## Sequence 11/21/2025 #32 Alltesta™ Example ! New

### Sequence Table

▶ Start

| Sample name      | Method                 | Method ID | Vial | Repeat | Run                                 |
|------------------|------------------------|-----------|------|--------|-------------------------------------|
| Example          | MeCN - 50. H2SO4 - 0.2 | #7050     | A1   | 1      | <input checked="" type="checkbox"/> |
| + Add a new line |                        |           |      |        |                                     |

## Samples

| Name                                                                                           | Date          |
|------------------------------------------------------------------------------------------------|---------------|
|  Example    | 11/21 9:52 AM |
|  Add sample |               |

Before initiating sequence execution, ensure the following conditions are met:

- All vial positions referenced in the sequence contain the correct samples.
- Vials are placed in their exact physical positions (e.g., A1, B3, etc.) as defined in the sequence.
- No vial is missing, empty, or incorrectly positioned.
- All methods used in the sequence are compatible with the installed device configuration (pump type, detector wavelengths, autosampler type).
- The device is online, connected, and in the Ready state.

- Mobile Phase levels (A, and B for gradient systems) are sufficient for the entire sequence duration.
- Waste container capacity is adequate to accommodate the volume generated during the sequence.

Failure to comply with these checks may result in:

- aborted injections,
- incorrect sample aspiration,
- incomplete chromatographic runs,
- system overpressure or detector errors,
- contamination of the autosampler needle or injector.

## Calibration Sequence

When the Calibration mode checkbox is selected, additional configuration options appear.

This type of sequence is designed for automated calibration using known standards.



Name

Sequence with Calibration

Description

☒ Calibration mode

Calibration Mode Sequence Restrictions:

- Define a single method, column, and post-processing template for the entire sequence.
- Use only one detector channel in the specified method.
- This setting applies to all injections in the sequence.
- Only automated peak identification is available.
- Each vial can only be used for one sample or standard.
- Download a detailed report after the sequence is finished. You have selected the calibration mode, which helps automate the experiment by using standards.

Device

#32\_Alltesta™ Example

• Offline

Method

MeCN - 50. H2SO4 - 0.2

#7050

Edit

Add

Column

Primesep 100

Postprocessings

D4 - 275nm

+

You must configure a postprocessing

Use Ctrl+Enter to create

Create

### Calibration Mode Parameters:

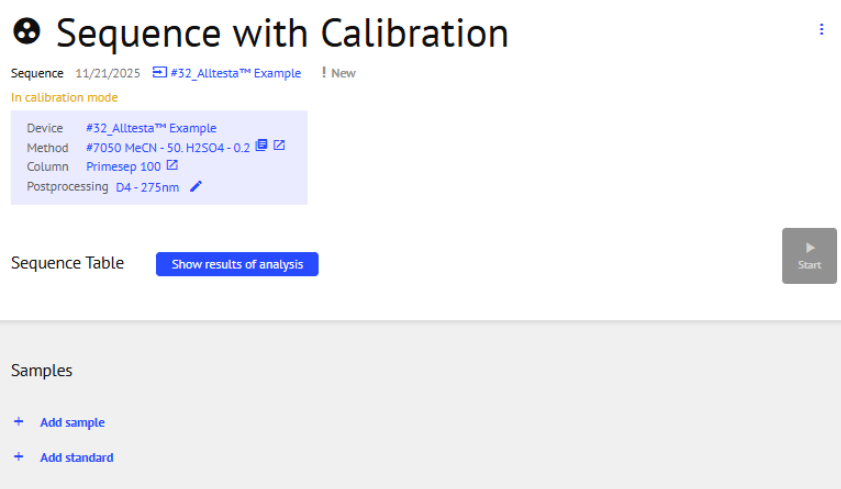
- **Device** — connected analyzer for all injections within the sequence.
- **Method** — single analytical method applied to all injections within the sequence.  
For more information, see “[Methods](#)”
- **Column** — chromatographic column used for all injections within the sequence.  
For more information, see “[Columns](#)”
- **Postprocessing** — data processing parameters such as wavelength, integration algorithm, and peak detection settings.  
For more information, see “[Postprocessing](#)”

After configuration, click Save to confirm.

Each calibration sequence must have a defined device, method, column, and postprocessing template before it can be executed.

### Running Calibration Sequence

Once the calibration sequence is fully configured, the system displays the active device, method, column, and postprocessing.



You can then add entries to the Samples section using Add sample and Add standard. Calibration standards are treated as individual injections and processed according to the selected method.

### Samples and Standards for Calibration Sequence

After the calibration sequence is configured, you can add entries to the Samples section using Add sample and Add standard.

Standards are used to build calibration curves and must be assigned known concentrations.

## Creating a Standard

# Sequence with Calibration

Sequence 11/21/2025 [#32\\_Alltesta™ Example](#) ! New

In calibration mode

Device [#32\\_Alltesta™ Example](#)

Method [#7050 MeCN - 50. H2SO4 - 0.2](#) 🔗

Column [Primesep 100](#) 🔗

Postprocessing [D4 - 275nm](#) ✎

Sequence Table [Show results of analysis](#) ▶ Start

## Samples

[+](#) [Add sample](#)

Compound 

Not selected

▼

Standard concentration 

mg/mL

[+ Standard](#) ✕

Start of peak search time, min

End of peak search time, min

When adding a standard, the following parameters must be defined:

- **Compound** — select the compound being calibrated.
- **Standard concentration (mg/mL)** — enter the known concentration of the standard.
- **Start of peak search time (min)** — set the expected start of the target peak.
- **End of peak search time (min)** — set the expected end of the target peak.

After filling in the required information, click + Standard to add it to the sequence.

## Creating a Sample

Samples in calibration sequences are added using Add sample.



# Sequence with Calibration

Sequence 10/14/2025 [#7 Cromite™ Example](#) ↑ New

In calibration mode

Device [#7 Cromite™ Example](#)

Method [#6948 MeCN + 40%, 0.1 H2SO4](#)  

Column [Primesep B](#) 

Postprocessing [D4 - 275nm](#) 

Sequence Table [Show results of analysis](#)



Start

## Samples

[+ Sample](#)

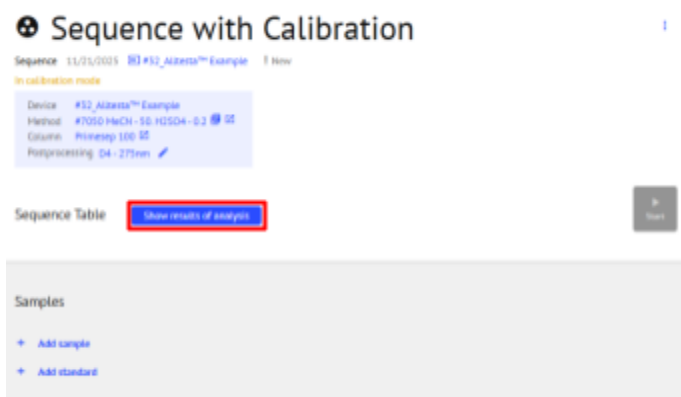

[+](#) [Add standard](#)

Each sample is analyzed under the same method, column, and postprocessing parameters defined for the sequence.

## Running Calibration Sequence

After all standards and samples are added, click **Start** to run the calibration sequence. Once complete, a detailed calibration report becomes available.

## Calibration Report

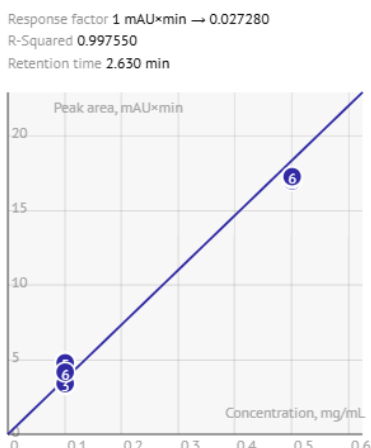


To view the results of calibration, click Show results of analysis in the calibration sequence window.

After the calibration sequence is completed, the software automatically generates a preliminary calibration report.

It displays the analytical summary for each calibrated compound and allows exporting a detailed report.

## Report Contents



- **Summary for [Compound name]** — title of the section containing calibration data for compound.
- **Response factor** — indicates the calibration slope that relates the detector signal (mAU×min) to concentration (mg/mL).

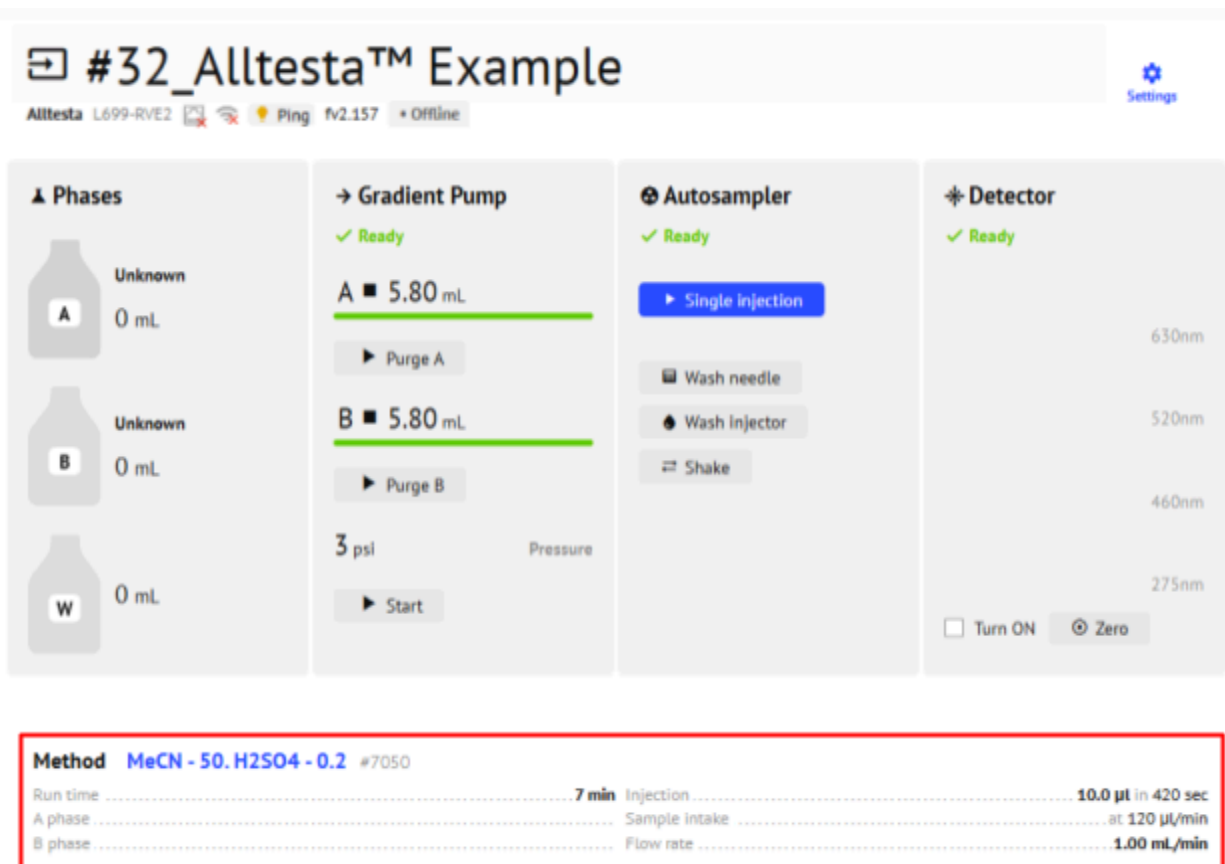
- **R-Squared ( $R^2$ )** — coefficient of determination representing the linearity of the calibration curve.
- **Retention time** — means retention time of the calibrated compound.
- **Calibration curve** — a plotted graph of detector response (Y-axis) versus concentration (X-axis).  
Each calibration point corresponds to an injected standard with a known concentration.

If no compounds were identified during the sequence, a message appears indicating that no calibration data are available yet.

### Report Options

**Get a detailed report** — download a full calibration report containing all numerical data, linear regression parameters, peak areas, and statistical results.

## Method



The **Methods** section displays all analytical methods available for the selected HPLC device.

Each method defines how the instrument performs an analysis — including pump parameters, flow rate, pressure limits, injection volume, and detector settings.

Hovering the mouse over a method allows you to either **Edit** or **Add** it:

- **Edit** — opens the existing method for review or modification.
- **Add** — creates a new method based on the current device configuration.

When you click **Add**, the *Create Method* window opens.

## Method Configuration Parameters

Create method
Select method as preset

Method name

- General
- Pump
- Gradient
- Detector
- Injection

General

Description

Run time, min

→ Pump

A phase

B phase

Flow rate, mL/min

Refill flow rate, mL/min

Pressure min, psi

100

Gradient

| Time, min | A, % | B, % |
|-----------|------|------|
| + Add row |      |      |

\* Detector

Channel mode

All

Calibration delay, s

0

⊕ Injection

Sample amount, µL

Injection delay, s

0

Revert
Create

### General

- **Method name** — a required field used to assign a unique name to the method. The method name will appear in all sequence tables, sample configurations, and device listings.
- **Description** — a short note describing the purpose or conditions of the method (e.g., sample type, solvent composition, or analysis goal). This helps to identify the method in the list.
- **Run time, min** — total duration of the method in minutes. After this time elapses, the instrument automatically stops the run.

**NOTES:** Ensure that the run time is sufficient for complete elution of all analytes. A run time that is too short may result in truncated chromatograms or unresolved peaks.

**NOTES:** The maximum pump volume is **5.8 mL**, and the user-accessible working volume is **5.0 mL**.

Make sure that your method parameters — specifically the **run time** and **selected flow rate** — remain within this volume.

If the total solvent consumption during the run exceeds **5.8 mL**, the analyzer will **not start the injection**.

## Pump

- **A phase / B phase** — the solvent or mobile phase composition used for the method (e.g., “MeCN-40%, 0.1 H<sub>2</sub>SO<sub>4</sub>”).

This field identifies which solvent is connected to the A inlet of the pump.

**NOTES:** Mobile Phase (B) is only applicable for the Alltesta™ Gradient Automated Analyzer. On isocratic systems, only Mobile Phase (A) is used

- **Flow rate, mL/min** — the flow rate of the mobile phase through the system.  
Example: 0.50 mL/min is typical for analytical columns with 3.2 mm internal diameter.

**NOTES:** The maximum pump volume is **5.8 mL**, and the user-accessible working volume is **5.0 mL**.

Make sure that your method parameters — specifically the **run time** and **selected flow rate** — remain within this volume.

If the total solvent consumption during the run exceeds **5.8 mL**, the analyzer will **not start the injection**.

- **Refill flow rate, mL/min** — defines the refill rate of the pump during its refill cycle.  
Setting it too low can cause pressure instability; too high may introduce bubbles into the flow path.  
Maximum: 8 mL/min
- **Pressure min, psi** — the minimum pressure allowed during operation.  
If the pressure drops below this limit (for example, due to solvent depletion or a loose fitting), the method will automatically stop and an error will be displayed.

**NOTES:** Incorrect pressure limits may cause unintended pump shutdowns or allow operation under unsafe conditions. Always verify that pressure settings correspond to the column and method specifications.

## Gradient

The gradient table defines changes in solvent composition over time.

The table contains the following fields:

- Time, min — the time point at which the composition changes
- A, % — percentage of Mobile Phase A
- B, % — percentage of Mobile Phase B (gradient systems only)

### Add row

Adds a new time point to the gradient program.

## Detector

- **Channel mode** — selects which detector channels are active during the run:
  - **All** — all available wavelengths are monitored (e.g., 275 nm, 460 nm, 520 nm, 630 nm).

**NOTES:** Standard detector wavelengths are 275 nm, 460 nm, 520 nm, and 630 nm. Custom wavelength configurations are available upon request, starting from **235 nm**.

- **Calibration delay, s** — sets the delay time in seconds before signal acquisition starts.  
This parameter compensates for flow delay between the pump, column, and detector.

**NOTES:** Setting a calibration delay longer than the injection delay may result in missing initial peaks.

## Injection

- **Sample amount,  $\mu\text{L}$**  — the injection volume (range 1-75  $\mu\text{L}$ )
- **Injection delay, s** — time delay between the sample injection and the start of pump operation or signal recording.  
This allows pressure and flow stabilization before data acquisition begins.

These parameters fully define how the HPLC system operates during a method — including solvent delivery, sample injection, detection, and valve control.

Once all settings are configured, click **Create** to save the method to the database.

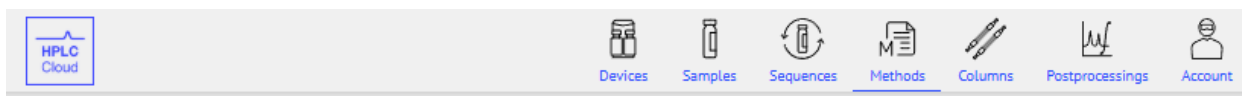
Saved methods can then be used for Samples, Single Injections, Standard Sequences, or Calibration Sequences.

## Method Management



The Methods tab provides an overview and management interface for all chromatographic methods available in the system.

Each method defines analytical parameters for an HPLC run — such as solvent composition, gradient profile, flow rate, and injection setup.



### Methods

[View archived](#)
[★ Show favorites](#)


| ID | Name | Run time | Injection | Flow rate | A phase | B phase |
|----|------|----------|-----------|-----------|---------|---------|
|----|------|----------|-----------|-----------|---------|---------|

### Main Features

- Search — find a method by name or ID.
- View archived — open previously saved or inactive methods.
- Show favorites — display methods marked as favorites for quick access.

### Displayed Parameters

- ID — unique identifier of the method.
- Name — user-assigned method name.
- Run time — total analysis duration.
- Injection — sample injection settings.
- Flow rate — solvent flow rate through the column (mL/min).
- A phase — the name of Mobile Phase A.
- B phase — the name of Mobile Phase B (this field is displayed only when the connected device is the Alltesta™ Gradient Automated Analyzer, as isocratic systems do not use Mobile Phase B).

## Column

### Column Configuration Parameters

#32\_Alltesta™ Example

Alltesta L699-RVE2
Ping
v2.157
Offline

Settings

Phases

Unknown

A

0 mL

Unknown

B

0 mL

Unknown

W

0 mL

Gradient Pump

Ready

A 5.80 mL

Purge A

B 5.80 mL

Purge B

3 psi

Pressure

Start

Autosampler

Ready

Single Injection

Wash needle

Wash injector

Shake

Detector

Ready

630nm

520nm

460nm

275nm

Turn ON

Zero

Method

MeCN - 50. H2SO4 - 0.2

#7050

Run time

7 min

Injection

10.0 µl in 420 sec

A phase

Sample intake

at 120 µl/min

B phase

Flow rate

1.00 mL/min

Column

Primesep 100

Serial

RJ1

Length × ID

150 × 4.6 mm

Type

Particle, pore size

5 µm, 100 Å

The Columns tab provides access to all chromatographic columns registered in the system.

Each column entry contains detailed information such as type, dimensions, serial number, and maximum operating pressure. Hovering over a column record displays quick access options for **New** and **Edit**.

- **New** — opens the column creation window (see image below), where a new column can be registered in the database.
- **Edit** — allows modifying the parameters of an existing column (e.g., updating serial number, dimensions, or pressure limit).

## Create Column Window

This window allows the user to register a new chromatographic column in the HPLC software database.

Each parameter helps ensure accurate tracking of column performance, history, and compatibility with specific methods.

Create Column

---

Column name

**Column**

Type Length, mm

Serial Internal diameter, mm

Lot Particle size,  $\mu\text{m}$

Max pressure, psi Pore size,  $\text{\AA}$

Create

### Fields:

- ❖ **Column name** — user-defined name of the column.
- ❖ **Type** — stationary phase or column model (e.g., Primesep™, Newcrom™, Cromni™).
- ❖ **Serial** — unique serial number of the column; a camera icon allows scanning or capturing the serial number directly.
  - **Autofill via Serial:** Enter the serial number, then click the arrow or press **Enter** to automatically populate all column information.
  - **Autofill via QR Code:** If a camera is connected, click the camera icon to scan the QR code on the column label or packaging.
- ❖ **Lot** — manufacturing batch number.
- ❖ **Length, mm** — physical column length in millimeters.
- ❖ **Internal diameter, mm** — column inner diameter.
- ❖ **Particle size,  $\mu\text{m}$**  — particle size of the stationary phase.
- ❖ **Pore size,  $\text{\AA}$**  — pore size of the stationary phase.
- ❖ **Max pressure, psi** — maximum allowable operating pressure.

Once all required fields are filled, click Create to add the column to the system's database.

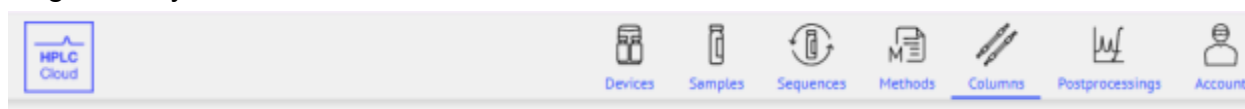
**NOTE:** Ensure that the maximum pressure limit is set to **3000 psi**

## Column Management



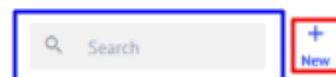
The **Columns** tab provides an overview and management interface for all chromatographic columns connected to your HPLC system.

It allows users to register, view, and track each column's operational parameters and usage history.



### Columns

[View archived](#)

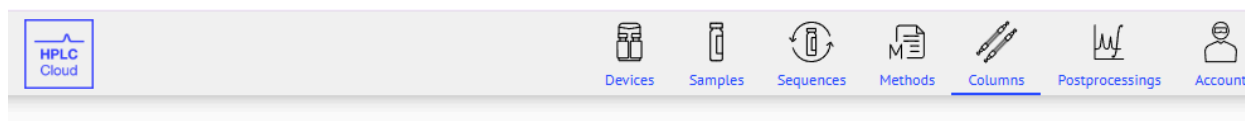


- **Main features:**
  - **New (red color)** — add a new column to the system's database.
  - **Search (blue color)** — quickly find a column by name, serial number, or type.
  - **View archived (green color)** — display previously used or archived columns.

- **Create Column Window**

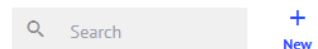
For more information, see "[Create Column Window](#)"

- **Displayed parameters:**



### Columns

[View archived](#)



| Name | Serial | Type | Lot | Pressure | Length × ID | Particle | Pore |
|------|--------|------|-----|----------|-------------|----------|------|
|------|--------|------|-----|----------|-------------|----------|------|

- **Name** — column name assigned by the user.
- **Serial** — unique serial number of the column.
- **Type** — stationary phase or model (e.g., Primesep, Newcrom, Chromni).
- **Lot** — manufacturing batch number.
- **Pressure** — current or last recorded operating pressure.
- **Length × ID** — physical dimensions of the column (length and internal diameter).
- **Particle** — particle size of the stationary phase (µm).

- **Pore** — pore size of the stationary phase (Å).

## Postprocessing Templates

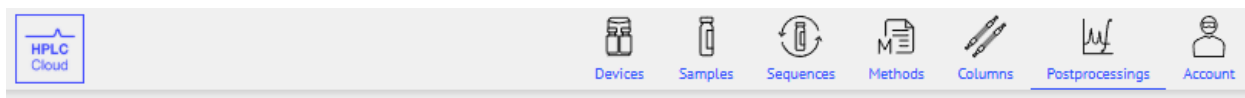


The **Postprocessing** tab allows you to create, edit, and manage data processing templates used for analyzing chromatographic results.

Each template defines how raw chromatographic data is interpreted — including peak detection, integration, baseline correction, and noise reduction.

These templates can be reused across different methods, samples, and calibration sequences.

### Main Features



## Postprocessing Templates

[View archived](#)
[Show favorites](#)

[+  
New](#)

- **New** — create a new postprocessing template.
- **Search** — find a template by name or ID.
- **View archived** — view previously saved templates.
- **Show favorites** — filter templates marked as favorites for quick access.

## Create Postprocessing Template

Each template contains the following configurable sections:

Create postprocessing template

or, Select postprocessing template as preset

Postprocessing template name

Detection time

Detection time start, min

Detection time end, min

Peak detection

Peak detection algorithm

Default

Min Prominence (relative height), mAU

Custom mAU

Custom min prominence, mAU

5

Min height, mAU

Min Width, sec

5

Min Distance between peaks, min

Peak integration

Peak integration algorithm

1st derivative

Value at start

0.05

Value at end

0.05

Baseline correction

Baseline correction algorithm

None

Blank injection

Blank injection algorithm

None

Noise reduction

Noise reduction algorithm

Wavelet v1

Revert

Create

## Postprocessing Template Name

Defines the name of the template.

## Detection Time

This section allows you to define the time window for analysis.

- **Detection time start, min** — time (in minutes) at which data analysis begins. Signals before this point are ignored.
- **Detection time end, min** — time (in minutes) at which analysis stops. Signals after this point are excluded.

## Peak Detection

Automatically detects chromatographic peaks based on signal characteristics.

- **Peak Detection Algorithm: Default**
- **Min Prominence (relative height), mAU** — defines how much a peak must stand out from the baseline to be recognized.
  - *10 × Noise level* — automatically sets the minimum prominence to ten times the estimated noise level in your data (adaptive option).
  - *Custom mAU* — allows manual control by specifying a fixed prominence threshold.
- **Min prominence, mAU** — This parameter determines how much a peak must "stick out" from the baseline to be recognized as a peak. You have two options:
  - **10 \* Noise level:** This option automatically sets the minimum prominence to be 10 times the estimated noise level in your measurement. This is a good starting point as it adapts to the noise in your data.
  - **Custom mAU:** This option allows you to specify a fixed minimum prominence value in milli-Absorbance Units (mAU). Use this if you have a good understanding of your signal levels and want more control over peak detection sensitivity.
- **Custom min prominence, mAU:** If you selected "Custom mAU" for "Min Prominence (relative height)", you set the desired minimum prominence value here.
 

**Example:** Setting this to **100 mAU** means that only peaks that rise at least 100 mAU above the baseline will be detected.
- **Min height, mAU** — The minimum absolute height a peak must reach to be detected. Peaks below this height are ignored.
 

**Example:** If you set this to **50 mAU**, any signal that doesn't reach at least 50 mAU will not be considered a peak, even if it has sufficient prominence. This helps to filter out very small noise fluctuations.
- **Min width, sec** — The minimum width (in seconds) a peak must have to be detected. This helps to ignore very sharp, narrow spikes that are likely noise and not real chromatographic peaks.
 

**Example:** Setting this to **5 sec** means that any signal that is narrower than 5 seconds will not be detected as a peak.

- **Min distance between peaks, min** — The minimum time distance (in minutes) required between two detected peaks. This is crucial for separating closely eluting peaks and preventing the algorithm from detecting multiple peaks for a single compound (e.g., shoulder peaks).  
**Example:** If you set this to 0.5 min, two peaks must be at least 30 seconds apart to be recognized as separate peaks.

## Peak Integration

Calculates the area under each detected peak, which is directly proportional to analyte concentration.

### Algorithms:

- **None:** Skips peak integration. Only peak detection will be performed.
- **Peak Fitting v1:** This algorithm fits a mathematical model (specifically, a skewed Gaussian curve) to each detected peak. This method is more sophisticated and can provide more accurate peak areas, especially for peaks that are not perfectly symmetrical or are partially overlapping.
  - **Parameters (for Peak Fitting v1 Algorithm):**
    - **Quality threshold:** This parameter, ranging from 0 to 1, sets the minimum acceptable quality of the curve fitting. It indicates how well the fitted curve matches the actual peak shape.
      - **Higher values (e.g., 0.95):** Require a very good fit. This ensures more accurate integration results but might reject some peaks if the fitting is not perfect (e.g., for noisy or poorly shaped peaks).
      - **Lower values (e.g., 0.9):** Accept lower quality fits. This will integrate more peaks, but some integrations might be less accurate, especially for complex chromatograms.
- **1st Derivative** — integrates peaks based on the first derivative of the chromatographic signal.  
The algorithm identifies the start and end of each peak at points where the derivative crosses zero, then calculates the area under the curve between these boundaries.  
This method provides robust integration for symmetrical peaks and good performance for general-purpose analyses.
  - ❖ **Value at start** — defines the baseline threshold for the start of integration (e.g., 0.01).

- ❖ **Value at end** — defines the threshold for the end of integration (e.g., 0.01).

Lower thresholds capture smaller peaks but may increase noise; higher thresholds improve selectivity.

## Baseline correction

Baseline correction removes slow signal drift and stabilizes the baseline before integration.

It ensures that each peak is measured from a consistent zero level, improving accuracy and reproducibility.

### Algorithms:

- **None** — no baseline correction is applied.
- **Manual** — allows you to manually draw the baseline by selecting points directly on the chromatogram.  
This method is suitable for complex or irregular baselines that automatic algorithms cannot handle correctly.
  - This is an interactive tool that appears when you select "Manual" baseline correction. It allows you to click on the chromatogram to define points that form your desired baseline. The software then interpolates between these points to create the baseline.
- **Horizontal correction** — automatically adjusts the baseline to a flat, horizontal level throughout the selected time window.  
It estimates a constant baseline value and subtracts it from the entire signal.
  - **Anchor point:** Determines how the horizontal baseline level is estimated.
    - **Start:** Sets the baseline level to the signal level at the beginning of the detection time window.
    - **Finish:** Sets the baseline level to the signal level at the end of the detection time window.
    - **Median:** Sets the baseline level to the median signal level within the detection time window. This can be more robust to spikes or outliers compared to start or finish points.
- **Diagonal correction** — draws a straight baseline between the signal values at the start and end of the detection window.  
It is suitable for linear baseline drift (e.g., when the baseline slowly rises or falls).

## Blank Injection

Blank injection subtraction removes background signals unrelated to your analyte by comparing your sample chromatogram with a blank run (typically solvent only).

This improves accuracy by eliminating ghost peaks, system contamination, or column bleed artifacts.

### Algorithms:

- **None** — no subtraction is performed; chromatogram remains unmodified.
- **Simple subtraction** — subtracts the chromatogram of a selected blank injection from the active measurement.

The resulting chromatogram retains only true sample peaks.

**Parameters:**

- **Select measurement** — choose the blank run to subtract from your data.

**Noise Reduction**

Noise reduction algorithms filter out random fluctuations in the chromatogram to improve signal quality and enhance small peak detection.

They are especially useful for noisy detectors or low-concentration samples, but excessive filtering may distort peak shapes.

**Algorithms:**

- **None** — no noise filtering is applied.
- **Wavelet v1** — Uses wavelet transform, a sophisticated mathematical technique, to separate the signal from noise. Wavelet methods are generally good at reducing noise while preserving the sharp features of peaks, which is important in chromatography.

## Report and Data Management



When you click on the **three-dot menu** (⋮) in the upper-right corner of an injection page, three options appear:

- **Report** — generate and download a report for the current injection.
- **Archive** — move the injection to the archive to keep the workspace organized.
- **Log** — view the detailed activity log related to the injection (e.g., time of start, completion, or errors).

## Report

Selecting **Report** opens the *Injection Report* window.

Here you can generate a report in either **PDF** or **CSV** format and choose the type of data to include:

- **Print raw data** — exports the unprocessed chromatographic signal (raw mAU vs. time data).
- **Print processed data** — exports the processed chromatogram after postprocessing (baseline correction, integration, and peak detection).
- **Print all data** — combines both raw and processed data into a single document for full traceability.

You can also add recipients under **Contacts**, allowing reports to be automatically shared with selected users.

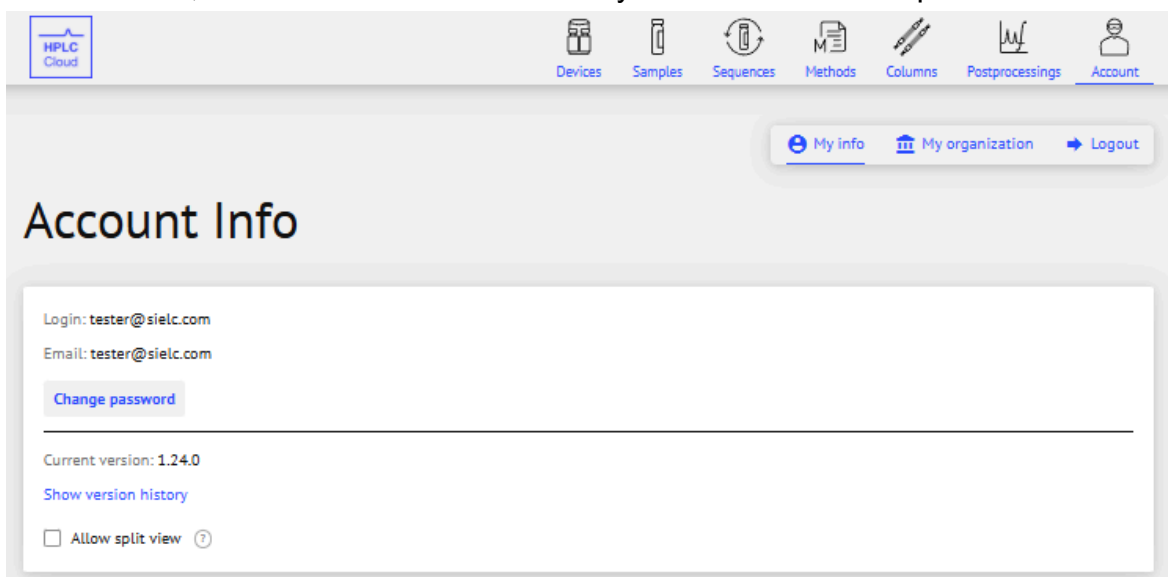
After choosing the desired options, click **Download** to generate and save your report.

## Account



The Account tab provides access to user profile information and system management options.

From this page, you can view account details, change your password, check the current software version, and review the version history of the HPLC Cloud platform.



## My Info

Displays personal account details:

- **Login** — registered user login (e.g., *tester@sielc.com*).
- **Email** — email address associated with the account.
- **Change password** — opens a secure dialog to update your login password.

## System Information

- **Current version** — shows the currently installed version of the HPLC.Cloud software (e.g., *1.24.0*).
- **Show version history** — displays a changelog of past software updates and improvements.

## Display Options

- **Allow split view** — enables simultaneous viewing of multiple panels or modules side by side.  
Useful for comparing results, sequences, or chromatograms.

## My Organization

Opens organization-level account settings (if available for your user role), such as linked devices, user permissions, and shared data access.

**NOTE:** To view and edit the Organization Info window, you must be the owner of the organization.

Each new user automatically becomes the owner of their own default organization, which is created upon registration.

An owner can either invite other users via an invitation link or join another organization. When a user joins another organization, their personal organization is automatically removed.

### Roles and Permissions

There are two roles available in the organization: Administrator and Assistant.

- The owner/administrator can invite and remove users, assign roles, and manage permissions.
- The assistant has full visibility of data and results but cannot create new methods or columns.

All roles can view data, sequences, and reports.

To invite new members:



Open **My Organization** → **Get invitation link**.

Send the generated link to the person you want to invite.

Once the invitation is accepted, the new user will appear in the member list with the assigned role.

**NOTE:** After a user is added to an organization, they must log out and log back in for the updated access permissions to take effect.

## Logout

Logs the user out of the current session securely.

## Maintenance and Care

### Changing Mobile Phase



### Preparing a New Mobile Phase

1. Ensure the new mobile phase is properly prepared in accordance with standard laboratory procedures.
2. Clearly label the bottle with the solvent composition and preparation date.

### Removing the Current Solvent Bottle

1. Stop all active runs and make sure the **Pump** is turned **off**.
2. Carefully unscrew the cap of the **A** solvent bottle.
3. If a spare bottle is not available, discard the old solvent and rinse the bottle with a small amount of **distilled water**, followed by a small amount of the **new mobile phase**.

**NOTE:** If you are using the **Alltesta™ Gradient Automated Analyzer**, repeat this procedure for **Mobile Phase B**.

Mobile Phase B is used exclusively on gradient systems and must always be replaced, cleaned, and refilled **separately** from Mobile Phase A to avoid contamination or unintended changes in gradient composition.

### Installing the New Solvent Bottle

1. Fill the clean bottle with the new mobile phase and insert the tubing with the inlet filter.
2. Secure the cap tightly to ensure a leak-free connection.
3. Place the bottle back on the platform.

## Updating Solvent Information in the Software

1. Update the solvent volume in **HPLC.Cloud** to reflect the new mobile phase level.

For more information, see “[Devices](#)”.

**NOTE:** If you are using the Alltesta™ Gradient Automated Analyzer, update the volumes of Mobile Phase A and Mobile Phase B separately, as each line has its own solvent and its own volume.

2. If the mobile phase composition has changed, make sure to update the **A phase** (and **B phase** for the Alltesta™ Gradient Automated Analyzer) field in the corresponding **Method** within **HPLC.Cloud**.

This ensures that the parameters stored in the database accurately represent the solvent currently in use.

For more information, see “[Methods](#)”.

## Priming the System

1. In **HPLC.Cloud**, turn on the **Pump** and allow it to complete **two full purge or refill cycles**.

This replaces the old mobile phase with the new solvent inside the pump head.

**NOTE:** If you are using the Alltesta™ Gradient Automated Analyzer, perform the same procedure for Pump B — two full purge/refill cycles for Line B, as each line operates independently.

2. Then, run the pump for **one additional full cycle** to completely replace the solvent in the connecting lines and the column.

For more information, see “[Devices](#)”.

**WARNING!** Do not allow the pump to run dry.

Always ensure that the solvent inlet tubing is fully submerged in the mobile phase to prevent air from entering the system.

Running the pump without solvent can cause severe damage to the pump heads and seals.

### CAUTION!

Use only solvent compositions compatible with the system materials (e.g., seals, valves, and tubing).

Incompatible solvents may cause premature wear or failure of components.

### CAUTION!

Perform all operations involving solvents in a well-ventilated area and follow your laboratory's chemical safety and waste-disposal procedures.

## Emptying Waste



Regular disposal of waste ensures safe and reliable operation of the HPLC system. The waste bottle (indicated in green) collects solvent and sample residues during analysis. It must be emptied before reaching its maximum capacity.

### Procedure

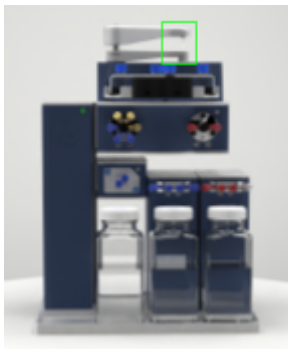
1. Stop all active runs and ensure that the Pump is turned off.
2. Carefully unscrew the cap of the Waste bottle.
3. Remove the bottle from the platform and dispose of its contents according to your laboratory's waste management and environmental safety procedures.
4. Rinse the bottle with distilled water if necessary, then place the empty bottle back on the platform.
5. Secure the cap tightly to maintain a sealed connection.
6. Update the waste information in the system to ensure accurate monitoring of solvent use and disposal records.

For more information, see "[Devices](#)".

**CAUTION!** Always handle and dispose of waste solvents in accordance with your laboratory's chemical safety and environmental policies.

**CAUTION!** Ensure that the waste bottle is correctly reconnected before resuming operation to prevent leaks or spills.

## Cleaning the Needle



Proper cleaning of the injector needle prevents carryover, contamination, and flow obstructions.

The needle is responsible for aspirating and dispensing the sample through the injection system, and its cleanliness directly affects injection accuracy and reproducibility.

### Procedure

#### 1. Prepare a cleaning vial

- Ensure that the wash station contains the correct cleaning vials. Each vial must be filled with the appropriate wash solvent (e.g., water, IPA/water mixture, or another solvent compatible with your method and system materials). The system uses these vials to flush both the inside and outside of the needle during the automated cleaning cycle.

**WARNING!** Perform needle cleaning regularly, especially after injecting viscous or particulate samples.

#### 2. Internal cleaning

- In **HPLC.Cloud**, initiate the **Wash Needle** procedure. For more information, see “[Devices](#)”. The autosampler will automatically move the needle to the wash station and draw solvent from the designated wash vial. The solvent is flushed through the **internal channel** of the needle and discharged into the waste line. This process removes sample residues and contaminants from inside the needle.

#### 3. External cleaning

- After internal cleaning, gently clean the outer surface of the needle:
  - i. Use a lint-free microfiber cloth lightly moistened with isopropyl alcohol (IPA) or another suitable cleaning solvent.
  - ii. Wipe carefully along the length of the metal portion of the needle.
  - iii. Do not bend the needle or apply excessive force.
  - iv. Ensure no lint, fibers, or particles remain on the needle surface.

**CAUTION!** Always use solvents compatible with the system materials and the current mobile phase.

**CAUTION!** Do not immerse the entire needle assembly in liquid — clean only the metal part that comes into contact with samples.

**CAUTION!** Perform needle cleaning regularly, especially after injecting viscous or particulate samples.

## Connecting Devices to the Network

Reliable network connectivity is required for data transfer, remote control, and synchronization with HPLC.Cloud.

The analyzer supports several connection methods depending on your laboratory setup and available infrastructure.

### Connecting Devices to Wi-Fi Using a USB Flash Drive

**IMPORTANT!** Before using this connection method, the device must already be connected to the internet via Ethernet or LTE. This initial connection is required so that the device can communicate with HPLC.cloud and appear in your account. If the device is offline, Wi-Fi setup through your account will not be possible.

**1. Create a Credentials File:**

- Insert the USB flash drive into your computer.
- Navigate to the root directory of the USB flash drive.
- Create a new text file named **credentials.txt**.

**2. Add Wi-Fi Network Details:**

- Open the **credentials.txt** file.
- Enter your Wi-Fi network details in the following format:

None

```
ssid=Your_SSID  
password=Your_Password
```

- [credentials.txt](#)
- Replace **Your\_SSID** with the name of your Wi-Fi network and **Your\_Password** with your Wi-Fi password.
- Save and close the file.

**3. Insert the USB Flash Drive into the Device:**

- Insert the USB flash drive into the USB port of the device you want to connect to Wi-Fi.
- Wait for the device to automatically read the credentials and connect to the Wi-Fi network.

**4. Verify the Connection:**

- Check the device to ensure it has successfully connected to the Wi-Fi network.
- Once confirmed, you can safely remove the USB flash drive from the device.

\*\*\* Updating Wi-Fi Credentials\*\*:

- If you need to change the Wi-Fi password or connect to a different network, update the `credentials.txt` file with the new details.
- Save the changes and start again from step 1.

**IMPORTANT!**

- Ensure that the `credentials.txt` file is in the root directory of the USB flash drive and not within any subfolders.

## Connecting Devices to Wi-Fi Through Your Personal Account

**IMPORTANT!** Before using this connection method, the device must already be connected to the internet via Ethernet or LTE. This initial connection is required so that the device can communicate with HPLC.cloud and appear in your account. If the device is offline, Wi-Fi setup through your account will not be possible.

### 1. Access the Device Page

- Access your personal account by entering your login credentials.
- Go to the "Devices" tab and select the device you want to connect from the list. If the device is not listed, you need to add it first.

### 2. Verify the Presence of a Wi-Fi Adapter

- On the device's page, ensure that a Wi-Fi adapter is present and supports wireless connections by checking the corresponding icon.
- If the device is inactive, ensure that the Wi-Fi adapter is correctly installed in the device's USB port. To confirm the Wi-Fi adapter is installed in the correct device, use the Ping button on the device page. Upon clicking, the device will blink blue for 5 seconds.

### 3. Connect to the Wi-Fi Network

- Click on the Wi-Fi icon and select the desired network from the list.
- **For Open Networks:**
  - If the network does not require a password, wait for the connection to be established. The Wi-Fi icon will indicate a successful connection.
- **For Secured Networks:**
  - If a password is required, enter it and wait for the confirmation, shown by a change in the Wi-Fi icon.
- **Manually Add a Wi-Fi Network**
  - If needed, manually add a Wi-Fi network profile by navigating to the settings. Enter the network's details, including the SSID and password, and connect to the network. Wait for confirmation on the Wi-Fi icon.

### 1. Verify the Connection

- If the connection is successful, the Wi-Fi icon will show an active status. Clicking on it will indicate the successful connection to the selected network.
- In case of an error, you will receive a notification with the issue's cause. After resolving the problem, you can attempt to connect again.

- You can choose a different network and connect to it by following step 3. The previous connection will be automatically disconnected.

## Connecting Devices to LTE

### 1. Install the LTE Modem

- Insert the LTE modem into the USB port of the device. To confirm the LTE adapter is installed in the correct device, use the Ping button on the device page. Upon clicking, the device will blink blue for 5 seconds.

### 2. Verify the Connection

- The Ethernet icon will display an active status if the connection is established.
- Clicking on the Ethernet icon will provide additional details, confirming the successful connection to the LTE network.
- Add model \*

## Troubleshooting

This section provides guidance on identifying and resolving common issues with the system. Below are the primary categories of problems and their potential causes.

### Peak Shape

The appearance of tailing or broadening of peaks in a chromatogram can adversely affect both the resolution and the shape of the peaks, compromising the accuracy and precision of the analysis.

#### Possible Causes and Corrective Actions:

- **Column Condition:** Examine the column for any signs of irregular packing, overloading, or degradation. These factors can disrupt proper chromatographic separation. If necessary, replace the column.
- **Injection Volume:** Ensure that the injected sample volume is within the recommended limits. Exceeding the optimal volume can lead to column overloading, resulting in peak broadening and a decrease in resolution. For software setup and registration, see "[Method](#)" → "[Injection](#)".
- **Mobile Phase Compatibility:** Assess the compatibility of the mobile phase with both the sample and the stationary phase. Incompatibilities may lead to peak distortion, which can negatively impact the separation process and the accuracy of the chromatographic data.
- **Clogged Needle or Injector Pathway:** A blockage in the needle or the injector flow path can interfere with proper sample aspiration and injection. This may lead to failed injections, reduced sample volume, or poor chromatographic performance, including distorted peaks or incomplete elution. Regularly inspect the autosampler needle and the injector pathway for obstructions. If a clog is suspected, perform the automated Wash Needle procedure in HPLC.Cloud and clean the injector according to the maintenance steps described in the manual. Proper cleaning restores normal sample flow and ensures accurate, reproducible injections.

## Noise or Spikes

Random spikes or fluctuations in the chromatogram can interfere with peak identification and hinder accurate data analysis.

### Possible Causes and Corrective Actions:

- **Sample Contamination:** Contaminants in the sample can introduce additional noise or cause random spikes in the chromatogram. It is essential to ensure the use of high-purity solvents and samples free from particulate matter or impurities that could compromise the signal integrity. Filtering samples before injection may help minimize contamination.  
For more information, see [“Maintenance and Care”](#) → [“Changing Mobile Phase”](#), [“Cleaning the Needle”](#).
- **Air Bubbles in the Mobile Phase.** Air bubbles entering the detector can cause momentary signal disruptions, sharp spikes, and unstable baseline segments.  
This may occur when:
  - mobile phase is not properly degassed,
  - solvent bottles run low,
  - pump tubing is not fully submerged,
  - the pump draws air during priming.Always degas your mobile phase before use.  
Degassing methods include sonication, vacuum degassing, or using freshly prepared solvents.  
If spikes appear suddenly during a run:
  - Stop the run,
  - Refill and degas the mobile phase,
  - Perform Purge cycles to remove trapped air.For more information, see [“Device”](#) → [“Purge”](#).
- **Leak:** Loose fittings, improperly installed columns, or worn seals may allow air to enter the system or introduce pressure fluctuations that manifest as noise or spikes.
  - Inspect all fittings manually for tightness.
  - Ensure the column is installed correctly and fully seated.
  - Check for any visible solvent leakage around the pump or connectors.For more information, see [“Set-Up”](#) → [“Column installation”](#).
- **Detector instability:** Electronic noise or failing lamp/electronics.  
For more information, see [“Device”](#) → [“Detector”](#).
- **Mobile Phase Incompatibility or Degradation:** Old, oxidized, or contaminated solvents can produce unstable baselines and random spikes.
  - Prepare a fresh mobile phase regularly.
  - Use compatible glassware and avoid plastic bottles for aggressive solvents.
  - Verify that both mobile phase A and B (for gradient systems) are clean, freshly prepared, and properly mixed.

## Peak Area Precision

Variations in peak areas, leading to poor reproducibility.

### Possible Causes and Solutions:

- **Sample Instability:** If only certain peaks show variations, the sample may be unstable. Test with a stable mixture to check consistency.
- **Sampler Issues:** If variations are observed across all peaks, the issue may be related to the sampler. Perform multiple injections to verify the problem.  
For more information, see “[Maintenance and Care](#)” → “[Cleaning the Needle](#)”.
- **System Pressure or Flow Instability:** Pressure fluctuations or unstable flow can affect peak precision. Check system pressure and flow stability.  
For more information, see “[Device](#)” → “[Purge](#)”.
- **Injector Draws Air from the Vial:** Ensure that the sample filling height and the sampling height of the injector needle are correct to prevent air from being drawn into the system.
- **Wrong Detection Wavelength(s):** Measuring in a UV/fluorescence spectrum flank can compromise the precision. Choose a detection wavelength or excitation/emission wavelength pair near the apex of the spectrum.
- **Column memory effect:** Run blank sample (no sample) after sample. If a peak is detected, then a column memory effect is present. Flush column with strong eluting eluent. Reverse column (if allowed) and flush column again. Replace column.  
For more information, see “[Set-Up](#)” → “[Column installation](#)”.

## Pressure

Pressure fluctuations or high system pressure.

### Possible Causes and Solutions:

- **Degradation of Stationary Phase:** If pressure increases, the column may be degraded. Replace the column and check the pH requirements, typically pH 2–8 for silica-based reverse phase columns.  
For replacement procedure, see “[Column Installation](#).”
- **Increase Flow Rate:** Check the flow rate setting to verify flow rate precision. A miscalculated flow rate can lead to inconsistent results.  
For more information, see “[Method](#)”
- **Mobile Phase Composition:**
  1. Ensure that the mobile phase is homogeneous by checking that it is well-mixed.
  2. If high-pressure proportioning is used, check for leaks or air bubbles in the aqueous eluent. For low-pressure proportioning, check or adjust the proportioning valve.

Refer to “[Changing Mobile Phase](#)” for solvent preparation and handling.

## Flow rate

Irregular or unstable flow rate during operation.

### Possible Causes and Solutions:

- **Leak in System:** Inspect the system for leaks in all connections, fittings, and seals. Resolve the issue by tightening connections or replacing damaged components.  
See “[Tubing Connections](#)” and “[Set-Up](#)” for correct installation procedures.
- **Pump Inlet Path Clogged:** Examine the solvent inlet lines, solvent line filters, and proportioning valve for blockages. Clean or replace these components if necessary.  
Refer to “[Changing Mobile Phase](#)” for guidance on handling solvent lines and filters.
- **Check for column blockages:** Inspect the guard column and column for contamination, consider backflushing or replacing the column if necessary.  
See “[Column Installation](#)” for instructions on safe column removal and replacement.
- **Clogged or Damaged Capillaries:** Systematically check all capillaries from the detector to the pump for clogs or damage caused by bending. Replace capillaries showing signs of wear or obstruction.  
For component access and safety precautions, see “[Maintenance and Care](#).”
- **Contamination in the System:** Flush the system thoroughly with a suitable solvent to remove any contaminants or residue that may impede flow.  
Refer to “[Priming the System](#)” for solvent flushing procedures.
- **Mobile phase inconsistency:** Verify that the mobile phase composition is stable and not changing due to mixing issues.  
See “[Changing Mobile Phase](#)” for preparation and labeling instructions.

## Retention Time Variation

Inconsistent retention times during operation.

### Possible Causes and Solutions:

- **Improper Mobile Phase Composition:** Verify the composition of the premixed mobile phase. Inspect the solvent selector or proportioning valve for potential defects.
- **Contamination:** Check for column contamination from previous samples or improper cleaning.  
Refer to “[Column Installation](#)” and “Cleaning the Needle” for column handling and contamination prevention.
- **Column Wear:** Inspect the column for signs of physical damage or degradation due to prolonged use.  
If degradation is suspected, replace the column following the steps in “[Column Installation](#).”
- **Sample Consistency:** Ensure consistent sample preparation, including proper dilution and filtration.
- **Decreasing Flow Rate:** Check for leaks in capillary connections and confirm that the flow rate settings are correctly configured.  
For replacement procedure, see “[Column Installation](#).”

## Baseline

Unstable or fluctuating baseline.

### Possible Causes and Solutions:

- **System Not Sufficiently Equilibrated:** Flush the system thoroughly to achieve proper equilibration. Typically, flushing 5–10 times the column volume should suffice.
- **Contaminated Flow Cell:** Clean the flow cell thoroughly to remove any residue or buildup.  
Refer to “[Maintenance and Care](#)” for proper cleaning recommendations and safety precautions.
- **UV/Vis Lamp Not Stable:** Allow the lamp and optics to warm up for at least 60 minutes. Replace the lamp if it is near the end of its lifespan or shows instability. See also “[Devices](#) → Detector Manual Control” for checking signal stability and zeroing the detector.
- **Air Trapped in the System:** Purge the system to remove air bubbles.  
Refer to “[Before Using the System](#)” and “[Devices](#) → Pump” for purge instructions.

## Technical Specifications

| Parameters                     | Alltesta™ Isocratic Automated Analyzer         | Alltesta™ Gradient Automated Analyzer          |
|--------------------------------|------------------------------------------------|------------------------------------------------|
| Autosampler type               | Random access                                  | Random access                                  |
| Sample capacity                | Automatic, 48/96 Vials                         | Automatic, 48/96 Vials                         |
| Injection type                 | High pressure                                  | High pressure                                  |
| Injection Range                | 1-75 µL                                        | 1-75 µL                                        |
| Injection volume accuracy      | ±1 µL                                          | ±1 µL                                          |
| Pump operation                 | Isocratic                                      | Isocratic, Gradient                            |
| Pump type                      | Syringe                                        | Syringe, Gradient                              |
| Flow Rate Range                | 0.001 to 8.0 mL/min                            | 0.001 to 8.0 mL/min                            |
| Flow rate accuracy             | 1% of full-scale                               | 1% of full-scale                               |
| Pressure limit                 | up to 3000 psi (206 bar)                       | up to 3000 psi (206 bar)                       |
| Pressure precision measurement | ±1 psi (0.07 bar)                              | ±1 psi (0.07 bar)                              |
| Detector noise Level           | < 0.05 mAU                                     | < 0.05 mAU                                     |
| Detection sample rate          | 20Hz                                           | 20Hz                                           |
| Detector wavelengths, standard | 275, 470, 520, 630 nm                          | 275, 470, 520, 630 nm                          |
| Detector wavelengths, custom   | Any 4 starting from 235 nm                     | Any 4 starting from 235 nm                     |
| Supported columns              | 3.2 and 2.1 mm ID                              | 3.2 and 2.1 mm ID                              |
| Column Length                  | Any                                            | Any                                            |
| Connectivity                   | Wi-Fi, Ethernet land line, Mobile cell network | Wi-Fi, Ethernet land line, Mobile cell network |
| Power Supply                   | 100-240V, 50-60Hz                              | 100-240V, 50-60Hz                              |

| Parameters                       | Alltesta™ Isocratic Automated Analyzer                                     | Alltesta™ Gradient Automated Analyzer                                      |
|----------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Liquid connection type           | 10-32 UNF compression type                                                 | 10-32 UNF compression type                                                 |
| Materials in contact with liquid | SS316, PTFE, PEEK, UHMW PE, SiO <sub>2</sub> , EPDM, Viton, Silicon, Glass | SS316, PTFE, PEEK, UHMW PE, SiO <sub>2</sub> , EPDM, Viton, Silicon, Glass |
| Operating Temperature            | 0 to 40° C, non-condensing                                                 | 0 to 40° C, non-condensing                                                 |

## Appendix 1 — Connection Guide for Alltesta™ Automated Isocratic Analyzer

Click here



## Appendix 2 — Connection Guide for Alltesta™ Automated Gradient Analyzer

Click here

