Agilent LC & CE Drivers 3.11

Release Note

Introduction

This release note summarizes information for release 3.11 of the LC and CE Drivers.

For the LC and CE Drivers, find the summary of major changes below.

For information about defect fixes, please see the additional documents Software Status Bulletin (SSB) and if applicable a Software Release Bulletin (SRB).

Drivers and Documentation for Agilent ELSD can be found in the "More Drivers" folder.

Features and Changes

New Features

Support of 1290 Infinity III Fluorescence Detector

LC & CE Drivers 3.11 introduce full hardware and software support for the new Agilent 1290 Infinity III Fluorescence Detector (G7123B). This includes complete CDS configuration, dashboard elements for core hardware components such as the flow cell, lamp, and EMF tracking, and three fluorescence detection modes. Single Wavelength, Multi Wavelength, and Online Spectra enabling configuration of excitation/emission wavelengths, scan ranges (for Spectra), PMT gain changes, and timetable-based wavelength or gain changes.

The driver supports both automatic and manual configuration. When configuring the instrument for the first time, the detector will appear as "FLD II" in the configured-modules list. Dashboard tiles, icons, and hardware-specific tags provide clear status information and metadata, including flow-cell volumes (e.g., 13 µL, 2 µL) and lamp burn time. The context menus and control layouts reflect the detector's capabilities, such as balance and illumination control.

Single Wavelength mode offers a simplified interface with default excitation/emission values, Zero Order handling, and wavelength selection from 200–1200 nm. Multi Wavelength mode supports up to five independent signals with dynamic Peak Width options that adjust based on the number of active signals. Online Spectra mode captures excitation or emission spectral data (I λ t) within the specified scan range.

In Single Wavelength and Multi Wavelength modes, a predefined list of Peak Width values is available. Selecting a Peak Width automatically determines the appropriate response time and data rate. In Online Spectra mode, the chosen Peak Width is used for spectra-per-peak calculations. All Peak Width changes take effect at the start of the run.

PMT Gain control provides Low, Standard, and High settings to support a wide range of sample concentrations. Users can adjust gain in the method editor or via the timetable. Low minimizes amplification for high-concentration samples, Standard (recommended) is the default and provides balanced sensitivity, and High maximizes amplification for low-concentration or weakly fluorescent samples. Timetable support enables dynamic gain adjustments during a run.

Flow-cell and lamp metadata including burn time, ignition count, and other details are stored with each analytical result. A 90% lamp-life warning supports preventative maintenance and safety. Dashboard values update immediately after lamp or flow-cell replacement.

The driver also improves method compatibility by allowing legacy FLD methods (e.g., G7121B) to load and resolve seamlessly. Compatible settings are transferred, G7123B defaults are applied where appropriate, and unsupported parameters are clearly flagged for user review.

Overall, this release delivers full integration of the new G7123B detector and robust fluorescence capabilities across single-wavelength, multi-wavelength, and spectral workflows.

Affected modules/drivers: G7123B.

NOTE

The G7123B Infinity III Fluorescence Detector will be supported in the future releases of MassHunter Acquisition or MassHunter Data Analysis software's. Please refer to the corresponding CDS and ICF documentation for details on the support of G7123B FLD II.

Multisampler Drawer Automation

LC & CE Drivers 3.11 provide drawer automation for compatible multisamplers. The system automatically manages drawer opening and closing operations in synchronization with sequence execution. The feature includes comprehensive error handling for drawer slide operations with dedicated status for error visibility. The driver broadcasts events for drawer state changes, allowing external automation systems to respond to drawer operations. This automation improves workflow

efficiency and reduces manual intervention, particularly beneficial for high-throughput laboratories and automated sample handling systems

Affected modules/drivers: G7167A, G7167B, G5668A, G3167A, G3167B, G4767A, G7167C, G7137B, G7137A.

Enhanced Cluster Support with InfinityLab Assist Control Software

LC & CE Drivers 3.11 update the Assist Control Software interface to support HDR (High Dynamic Range) DAD and VTC (Valve Thermostat Cluster). With Assist Control Software present, HDR DAD clusters no longer require secondary connections, and the system automatically adapts when Assist Control Software is added to existing HDR configurations.

Affected modules/drivers: G7180A. Please refer to the corresponding InfinityLab Assist Control software documentation for further details.

NOTE The Agilent LC and CE Drivers require an update of the Assist Control Software to version 2.1 SR1.

HTML help

LC & CE Drivers 3.11 have migrated the help system from CHM (Compiled HTML Help) to HTML5 format. Help pages now open in the user's default browser, providing improved accessibility and cross-platform compatibility. The new system supports all localized languages including English, Chinese, Japanese, and Brazilian Portuguese, with enhanced navigation and search capabilities.

Automatic Plate Rotation Detection and Assignment

LC & CE Drivers 3.11 introduce automatic plate type detection and rotation correction for multisamplers equipped with barcode readers. The system automatically detects the Agilent 40 vial tray using barcode reader markers and identifies rotation angles, eliminating manual configuration errors for barcoded systems.

Affected modules/drivers: G7167A, G7167B, G5668A, G3167A, G3167B, G4767A, G7167C, G7137B, G7137A.

Dynamic Metering Head Support for Multisamplers

LC & CE Drivers 3.11 add support for metering heads with firmware-provided limits. The drivers automatically read limit values from firmware for all speed parameters, ensuring compatibility with new hardware configurations including PFAS-ready metering heads.

Affected modules/drivers: G7167A, G7167B, G5668A, G3167A, G3167B, G4767A, G7167C, G7137B, G7137A, G7129A, G7129B, G7129C, G7157A.

Compatibility Matrix

The compatibility matrix provides information about installation and execution prerequisites with respect to hardware, firmware and the operating system.

Supported Operating Systems

The following operating systems are supported:

- Windows Server 2016 (64-Bit)
- Windows Server 2019 (64-Bit)
- Windows Server 2022 (64-Bit)
- Windows Server 2025 (64-Bit)
- Windows 10 (64-Bit)
- Windows 11 (64-Bit)

The Agilent LC and CE Drivers have been optimized for the Windows default font size (100%). Larger font sizes may require increasing the window size or may cause truncations.

NOTE

Additional operating systems may be supported by the Chromatographic Data System in use. Any known issues with specific operating systems and the LC & CE Drivers are documented in the LC & CE Drivers Software Status Bulletin.

Specification Description	Details
Web browser	Chromium-based browser (Chrome, Edge, etc.) with a version higher than 132

Driver Localization

The Agilent LC and CE Drivers are available in US English, Chinese, Japanese and Brazilian Portuguese language.

NOTE

Not all available languages may be supported by all CDSs. Please refer to the corresponding CDS and ICF documentation for further details.

Supported Chromatographic Data Systems

This version of the Agilent LC and CE Drivers is supported with:

Chromatographic Data System	Version
OpenLab CDS	2.6, 2.7 and 2.8
OpenLab CDS ChemStation Edition	C.01.10 and LTS 01.11
OpenLab CDS EZChrom Edition	None
Agilent MassHunter Acquisition	11.0 and 12.1 (QTOF), 12.2 and 12.3 (TQ)

The LC and CE Drivers may also be offered with other media of the tested Chromatographic Data Systems (CDSs) and other third party CDSs through the instrument control framework (ICF). Such CDSs require dedicated installers that are not included in the stand-alone driver media.

NOTE Some of the functionality offered by the LC and CE drivers may not be supported by all CDSs. Please refer to the corresponding CDS and ICF documentation for further details.

Backwards Compatibility

NOTE Agilent designed the Infinity III series to be backwards compatible with software versions and drivers that supported the equivalent Infinity II models.

Infinity III modules ship with current firmware (B/D.07.45 at release). Firmware changes are documented and published on http://www.agilent.com/en-us/firmwareDownload?whid=69761 webpage.

Installation

Before starting a driver installation or update, it is recommended to update the firmware for the entire LC or CE system to the recommended firmware set described above.

Each module of the LC or CE system to use this driver version must at least be updated to the minimum required firmware. For a list of minimum required firmware per LC and CE Module, see section below.

If no CDS is installed, please install a compatible CDS first using the CDS documentation observing prerequisites like CPU, memory and hard drive space. Usually, a driver will be installed by the CDS, which however may not be the latest one and may require a driver update in the next step.

If the Chromatography Data System (CDS) has already been installed, please check, if it is compatible to this driver revision. Then update the driver, if needed.

To update the LC and CE drivers in OpenLab 2.x, double click the "OpenLab2_LC_Drivers.msi" and follow the instructions.

To update the LC and CE drivers in MassHunter double click the “Agilent_MassHunter_LC_Drivers.msi” and follow the instructions.

In OpenLab CDS ChemStation, please use the tool "OpenLab Additional Software and Drivers" which you will find in your Windows Start Menu (All Programs - Agilent Technologies - OpenLab) for installing or updating the driver.

NOTE

The HTML help system requires Microsoft Edge web browser to be installed on the system. The help system will open in the default browser when invoked.

Other Documents

The driver USB drive includes more documents with further information:

- Software Status Bulletin (SSB): The Software Status Bulletin lists known limitations, incompatibilities and information about available fixes or workarounds for this and previous versions.
- Software Release Bulletin (SRB): The Software Release Bulletin is an excerpt from the SSB which lists issues which have been fixed with this revision.
- ELSD specific information can be found in folder “More Drivers\ELSD 1.8”.

Where to find additional information online

- SSB and SRB are included in the driver installation media and can be found in the folder documentation.
- The SSB is updated regularly. Please visit our Website for the latest version at http://www.agilent.com/cs/library/support/Patches/SSBs/LC_RC_Net.html.
- Firmware and firmware documentation are available for download from http://www.agilent.com/en-us/firmwareDownload?whid=69761.
- For detailed information on new modules and features, please refer to the driver online help (press F1 button in the driver user interface, e.g. in the module dashboard) and corresponding module manuals, which are available at http://www.agilent.com.

Updates

Agilent continuously improves its drivers, firmware and software and recommends using latest updates. If applicable, any updates or bug fix releases for this driver package are available from SubscribeNet at https://agilent.subscribenet.com.

Appendix

Appendix A – Release History

Release 3.10

Support of Mass-based fraction collection workflow

LC & CE Drivers 3.10 support the Agilent 1260 and 1290 Infinity II MBFC Purification Systems, including integration with the Pro iQ and Pro iQ Plus mass detectors. This enables seamless control of mass-based fraction collection (MBFC) workflows through OpenLab CDS. Users can now configure and control Single Quadrupole MS systems, to support MBFC workflows. This includes both manual and automatic setup, real-time status monitoring, and advanced method creation with MS-specific parameters.

Affected MS modules/drivers: G6160A, G6160B, G6170A (Dedicated MS drivers are required).

Affected LC modules/drivers: G1364E/F, G5664B, G7159B / G7158B, G7166A.

Support CDS: OpenLab CDS 2.8 with Feature Pack 02

Support of new 1290 Infinity III Hybrid Multisampler

LC & CE Drivers 3.10 add hardware support to G7137B Agilent 1290 Infinity III Hybrid Multisampler, expanding the Infinity III Hybrid Multisampler Series. This model supports both classic flow-through injection and Agilent's unique Feed Injection mode, which improves peak shape and sensitivity by mitigating strong solvent effects.

Affected modules/drivers: G7137B

Support of blocking for service from Infinity Lab Assist

The drivers now apply the 'Block for Service' setting configured in the InfinityLab Assist Hub. When this toggle is activated in Assist Hub, the drivers will suspend all actions that could interfere with ongoing service operations, ensuring uninterrupted and safe execution of service tasks. Once the block is lifted, normal CDS operations resume automatically.

Affected modules/drivers: G7180A

Release 3.9

Support of new Level Sensing

LC & CE Drivers 3.9 add hardware support to G7175A InfinityLab Level Sensing as well as software functionality for level sensing and prediction.

Affected modules/drivers: G7175A

Enhanced Easy Injector Program Functionality

LC & CE Drivers 3.9 has enhanced Easy Injector Program functionality to simplify the creation of injector programs

Affected modules/drivers: Samplers

Release 3.8

Support of new Assist Hub

LC & CE Drivers 3.8 add support to G7180A InfinityLab Assist Hub

Affected modules/drivers: G7180A

Support of new Sample ID Reader

LC & CE Drivers 3.8 add support for the InfinityLab Sample ID Reader for Multisamplers

Affected modules/drivers: G7167A, G7167B, G7167C, G7137A. G3167A, G3167B, G4767A and G5668A

Support of new Easy Injector Program Functionality

LC & CE Drivers 3.8 add support to the Easy Injector Program functionality to simplify the creation of injector programs

Affected modules/drivers: Samplers

Support of new Pressure Control Ramp

LC & CE Drivers 3.8 add support to pressure-controlled ramps outside of analytical runs

Affected modules/drivers: G7110B, G7111A, G7111B, G5654A, G7112B, G4782A, G4204A, G7104A, G7104C, G7131A, G7131C, G4220A, G4220B, G7120A and G7132A

Support of Steady Inject

LC & CE Drivers 3.8 add support to Steady Inject for Multisamplers with Multiwash

Affected modules/drivers: G7167A, G7167B, G7137A and G5668A

Release 3.7-SR1

Enhanced support for method parameter overrides for Fraction Collectors for OpenLab CDS

LC & CE Drivers 3.7 SR1 add support for Threshold of 4 Peak Triggers as a method parameter which can be overridden in the sequence table.

Affected modules/drivers: G1364E/F, G5664B, G7159B, G7166A and Fraction Collector Cluster

Appendix

Release 3.7

Support of new Bio Online Sample Manager

LC & CE Drivers 3.7 add support to G3167B 1260 Infinity II Bio Online Sample Manager

Affected modules/drivers: G3167B

Support of bottle fillings for Preparative Open-Bed Sampler/Collector

LC & CE Drivers 3.7 add support of bottle fillings for Agilent 1290 Infinity II Preparative Open-Bed Sampler/Collector

Affected modules/drivers: G7158B

Support of new Agilent Infinity II Bio valve head

LC & CE Drivers 3.7 add support to 3-Position/6-Port Bio Valve 1300 bar (5320-0003)

Affected modules/drivers: Valve drives

Release 3.6

Support of new Hybrid Multisampler

LC & CE Drivers 3.6 add support to G7167C Agilent 1260 Infinity II Hybrid Multisampler

Affected modules/drivers: G7167C

Support of new Agilent Infinity II Bio valve head

LC & CE Drivers 3.6 add support to 6-Position/14-Port Bio Valve 1300 bar (5320-0025)

Affected modules/drivers: Valve drives

Enhanced support for pump Seal Wash Run Mode

LC & CE Drivers 3.6 add support for seal wash run mode to some 1260 Infinity II pumps

Affected modules/drivers: G7110B, G7111A/B, G5654A, G7112B and G4782A

Enhanced support for Maximum Flow Gradient

LC & CE Drivers 3.6 add support for Maximum Flow Gradient of 0,1 ml/min² for 1290 Infinity II pumps

Affected modules/drivers: G4204, G4220A/B, G7120A, G7104A/C, G7131A/C, G7132A

Added support for exporting and importing the injector program table

LC & CE Drivers 3.6 now add support to exporting and importing the injector program table

Affected modules/drivers: Samplers

Release 3.5-SR2

Continuous Improvement of the LC and CE Drivers

With LC and CE Drivers 3.5 SR2 the audit trail functionality during the migration of MCT methods or VTC methods created with the drivers 3.4 or older to 3.5 SR2 has been re-enabled.

Affected modules/drivers: G7116A/B, VTC Cluster with G7116A/B

Appendix

Release 3.5-SR1

Continuous Improvement of the LC and CE Drivers

With LC and CE Drivers 3.5 SR1 the Column Assignment functionality of the ICC has been re-enabled.

Affected modules/drivers: G7130A

Release 3.5

Restrict access to context menu items that affect configuration

LC & CE Drivers 3.5 can now restrict the access of CDS users without instrument admin rights to context menu items that affect the instrument configuration.

Currently only OpenLab CDS 2.7 supports this feature; the required permission name is called “Modify instrument configuration in CDS client”.

In the upcoming version of Chemstation C.01.11 this feature will be supported; the required permission name is called “Modify instrument configuration”.

Affected modules/drivers: all

Support of new Thermal Equilibration Device

LC & CE Drivers 3.5 add support to the Thermal Equilibration Device.

Affected modules/drivers: G7116A/B

Enhanced support of 2D-LC System Driver

LC & CE Drivers 3.5 now support using an ASM valve without park deck valves.

Affected modules/drivers: 2D-LC System

Added Windows 11 support

LC & CE Drivers 3.5 now add support to Windows 11 (64-Bit) installations.

Affected modules/drivers: All

Removed support of Russian language

LC & CE Drivers 3.5 no longer support the Russian language.

Affected modules/drivers: All

Release 3.4

Support of new Agilent Infinity II Bio modules

LC & CE Drivers 3.4 add support to

• G7131A Agilent 1290 Infinity II Bio Flexible Pump

• G7131C Agilent 1260 Infinity II Bio Flexible Pump

• 5-Position/10-Port Bio ASM Valve (5320-0017)

Affected modules/drivers: G7131A, G7131C, Valve drives

Support of new Online Sample Manager

LC & CE Drivers 3.4 add support to

• G3167A Agilent 1260 Infinity II Online Sample Manager

• 3-Position/6-Port 800 bar Valve (5067-6680)

Affected modules/drivers: G3167A, Valve drives

Enhancements to Fraction Collectors and Fraction Collector Clusters

LC & CE Drivers 3.4 add support to

• Flow gradients during fractioning

Affected modules/drivers: fraction collectors and fraction collector cluster

Enhanced support of 2D-LC System Driver

LC & CE Drivers 3.4 come "ready for data acquisition" with 2D-LC systems where supported by the associated data system. This is in preparation of future MassHunter and OpenLab CDS releases

Release 3.3-SR1

LC and CE Drivers 3.3 SR1 now support Brazilian-Portuguese language

With LC & CE Drivers 3.3 SR1 support of operation or data systems that are localized in Brazilian Portuguese is re-enabled.

Affected modules/drivers: All

Release 3.3

Support of new Agilent Infinity II Bio modules

LC & CE Drivers 3.3 add support of

• G7132A Agilent 1290 Infinity II Bio High-Speed Pump

• G7137A Agilent 1290 Infinity II Bio Multisampler

• G5641A 2 position / 10 port 1300 bar Bio Valve (5067-6682)

Affected modules/drivers: G7132A, G7137A, Valve drives

Initial support of 2D-LC System Driver

LC & CE Drivers 3.3 come "ready for data acquisition" with 2D-LC systems where supported by the associated data system. Activating the 2D-LC System Driver will require a dongle-based license which will be made available at a later stage.

Affected modules/drivers: 2D-LC Cluster

Enhanced support of Agilent 7100 Capillary Electrophoresis System

LC & CE Drivers 3.3 adds support of the Agilent 7100 Capillary Electrophoresis System in OpenLab CDS v2.5 or higher.

Affected modules/drivers: G7100A, represented in driver as G7150A and G7151B

Support of preparative valve G4734B

LC & CE Drivers 3.3 adds support of the G4734B Preparative 6-column selector valve, 600 bar (5067-6722)

Affected modules/drivers: Valve drives

Improved terminology in audit trail

LC & CE Drivers 3.3 now logs changes to certain method parameters by denoting the modification of the value rather than implying deletion of a method parameter.

For example, the change entry "Deleted Stoptime with value 1.00 min" now is logged as "Modified Stoptime: Value '1.00 min' is not used anymore."

This change is purely editorial and does not affect the function of the driver or the method audit trail.

Affected modules/drivers: All Features and Changes

Known Limitations

As of now, LC & CE Drivers 3.3 do not support operation or data systems that are localized in Brazilian Portuguese. This limitation is temporary only and will be resolved with a future version of the LC & CE Drivers.

Affected modules/drivers: All

Release 3.2-SR1

Fix for re-configuration issues of Dual Loop and High Performance Autosamplers

Service Release 1 of the LC & CE Drivers 3.2 contains a fix for an improper handling of configuration changes in our legacy Dual-loop and High-Performance Samplers.

Dual Loop Autosamplers (G2258A)

In LC Driver 3.2, a Dual-loop sampler will remain offline after updates to the Lower Loop Capillary volumes are done in instrument configuration.

High Performance Autosamplers (G1367A/B/C/D/E, G1368A, G1377A, G4226A, G5667A)

In LC Driver 3.2, any of the affected High-Performance samplers might not recognize a syringe tag during auto-configuration or syringe exchange. This might allow users to define injection that are larger than what is physically possible with a given syringe. If such a case occurs, the instrument will reject that injection. In a sequence, this will lead to a full sequence abort. If the injection volumes are still within the limits of the installed syringe, there is no impact to run or sequence execution.

Release 3.2

Enhanced support of G7158B 1290 Infinity II Preparative Open-bed Autosampler & Fraction Collector in Fraction Collector Cluster

The LC and CE Drivers now support clustering of the G7158B with up to 2 additional Fraction Collector modules and up to 3 additional Recover Collector modules

Affected modules/drivers: G7169B, Fraction Collector II Cluster

Support of Delay Calibration in OpenLab CDS 2.5

With OpenLab CDS 2.5, the LC and CE Drivers now support Delay Calibration for Fraction Collectors.

Affected modules/drivers: G1364E/F, G5664B, G7158B, G7159B, G7166A, FCC II

Continuous Improvement of the LC and CE Drivers

In addition to the new features, the following enhancements have been made to further improve existing features of the LC & CE Drivers.

Recovery Location is now available in OpenLab CDS 2.5's sequence setup

The LC and CE Drivers now support defining Recovery Locations during sequence setup in OpenLab CDS 2.5. The new sequence column "Recovery Location" is now available when using any Fraction Collector II module. When a position index is entered here, recovery collection will start at the specified location, if that position is empty. If a non-empty location is entered, the module will automatically skip to the next empty location and a logbook entry will be created. By default, recovery positions automatically increment for each new run in the sequence, unless specified differently in the sequence table.

Affected modules/drivers: Fraction Collector II Cluster with at least one recovery collector

New vial plate 5042-8544 is available for use in Agilent Open-bed Autosampler & Fraction Collectors

The LC and CE Drivers now support the vial plate 5042-8544 with a capacity of up to 24 vials (18mm diameter each).

Affected modules/drivers: G7158B, G7159B, FCC II

New "Early Fetch" is now offered by Agilent 1260 and 1290 Infinity II Vialsamplers

With Agilent 1260 and 1290 Infinity II Vialsamplers, the LC and CE Drivers with latest Firmware (D.07.30 and later) now support pre-fetching of vials during the "Prepare" phase of runs. To activate this feature set the vialsampler's "High Throughput" method parameter "Overlapped injection mode" to "Prefetch vial". The vialsampler will then start to prepare for injection while other modules are still preparing for the run - for example, while detectors perform autobalancing before a run. This decreases cycle times in those cases.

Affected modules/drivers: G7129A/B/C, G7157A

Error method setup of LC instrument is now enhanced in OpenLab CDS ChemStation Edition C.01.10 Update 3

With update 3 of OpenLab CDS ChemStation Edition C.01.10, an additional, instrument-wide error method can now be specified when setting up single runs or sequences. When, during sequence or run setup, an "Error Method" is specified in the respective dialogs of OpenLab CDS ChemStation Edition, the data system will automatically apply that method in case an instrument error is encountered.

This feature supplements the existing "Error Method" of individual LC modules that can be set in the context menu of individual LC modules. These module-specific error methods are still valid and will still be executed, if an instrument is not connected to the data system when it encounters an error.

Affected modules/drivers: All

Release 3.1

Support of G7158B 1290 Infinity II Preparative Open-bed Autosampler / Fraction Collector

The LC and CE Drivers now support the new G7158B 1290 Infinity II Preparative Open-bed Autosampler / Fraction Collector.

As this new module combines the features of a Preparative Injector with those of a Preparative Fraction Collector, it is represented in the LC and CE Drivers as two distinct modules:

- The preparative injector driver (shown as G7169B) handles method setup for Sample Injection
- The preparative fraction collector driver (shown as G7159B) handles method setup for Fraction Collection.

Affected modules/drivers: G7169B, G7159B, Fraction Collector II Cluster

Support of the Auto-scale cluster for analytical and preparative purification

The LC and CE Drivers now allow to combine the G7158B 1290 Infinity II Preparative Open-bed Autosampler / Fraction Collector with the G1170A Universal Valve Drive and the new 2-position/14-port preparative valve head (5320-0002) to form the so-called “Auto-scale cluster”. Use this combination of modules to allow for seamless switching between analytical scouting runs and preparative-scale purification within the same sequence.

Affected modules/drivers: Auto-scale Cluster

1260 Infinity II Pumps now contribute to the Pressure Limit Cluster functionality

The feature to automatically limit the system pressure based on certain limiting components in the LC instrument stack has now been extended from 1290 Infinity II pumps to 1260 Infinity II pumps.

This so-called Pressure Limit Cluster functionality will now automatically cause 1260 pumps to limit the system pressure to the maximum allowed pressure for LC modules or components with a lower pressure tolerance, like valves and specific injector or fraction collector tubing.

Release 3.0

Increased Capabilities for analytical-scale Fraction Collector II Clusters

Up to three collectors can now be combined with dedicated rotary valves to collect fractions. For Recovery Collection, up to three additional modules can be attached using a G9322A Agilent 1260 Infinity II Clustering Valve.

Supported modules for analytical-scale cluster setups:

Fraction Collector	Clustering Valve, Fraction Side	Recovery Collector	Clustering Valve, Recovery Side
G1364F G5664B	G1170A Universal Valve Drive with one of the following valve pods: 5067-4107, 5067-4108, 5067-4121, 5067-4147, 5067-4159, 5067-4176, 5067-4239, 5067-4194	G7166A	G9322A

Increased Capabilities for preparative-scale Fraction Collector II Clusters

Up to three modules can now be combined with one G9322A to collect fractions. For recovery collection, up to three additional modules can be attached using a G9322A.

Supported modules for preparative-scale cluster setups:

Fraction Collector	Clustering Valve, Fraction Side	Recovery Collector	Clustering Valve, Recovery Side
G1364E	G9322A	G7166A	G9322A
G7159B			
G7166A[1]			

[1] If G7166A is used as fraction collector, recovery collection is not supported.

Continuous Improvement of the LC & CE Drivers

In addition to the new features, the following enhancements have been made to further improve existing features of the LC & CE Drivers.

Addition of a new Valve Pod for preparative-scale Flows

LC & CE Driver now support valve pod 5067-6711 (2-position/14-port valve, Preparative, 600 bar) for use in Agilent Valve Drives.Affected Module Drivers: G1170A, G1316C, G7116A/B, Valve Thermostat Cluster Driver

Ability to control the Use of Recovery Collection

The LC & CE Drivers now support the flexible set up of Recovery Collection within Fraction Collector II clusters. Recovery Collection can now be turned on or off on a method-by-method basis.Affected modules/drivers: Fraction Collector II Cluster

Support of additional Pressure Sensor in G7161B

The LC & CE drivers now allow the use of a second pressure sensor for G7161B Agilent 1290 Infinity II Preparative Binary Pump.Affected module drivers: G7161B

Multisampler Injector Program now supports Draw from Seat

The LC & CE Drivers now support the use of the new parameter

Draw from Seat in the Injector Program of Multisamplers. Please note that this new function is not available for Multisamplers that have a Multi-wash or Dual-Needle option installed.

Affected module drivers: G7167A, G7167B and G5668A.

Improved Visibility and Tracking of Sample Plate Orientations

With LC & CE Drivers 3.0, the use of non-standard sample plate orientations has been made more obvious by adding visual hints to the well plate assignment dialogs. Additionally, the logging of changes to sample plate rotation has been improved as well.

Affected module drivers: G1364A/B/C/D, G1367A/B/C/D/E, G1377A, G2258A, G4226A, G4767A, G5664A, G5667A, G5668A, G7167A/B, Fraction Collector Cluster (legacy)

Improved Usability to Well Plate Assignment in Fraction Collector II Modules

With LC & CE Drivers 3.0, well plate assignment in Fraction Collector II modules has been improved. You can now use the common CTRL-click feature to select multiple well plates or simply choose to Select All to modify the well plate types in the fraction collector.

Affected module drivers: G7159B, G1364 E/F, G5664B, Fraction Collector II Cluster

Ability to view ERI Port Classes of LC Modules

With LC & CE Drivers 3.0, LC modules now display the class of a LC module's ERI port in the Module List pop-up window of the Instrument Dashboard.

Affected module drivers: All modules that offer an ERI port.

Appendix B – Minimum required Firmware per LC module

In the following sections this guide summarizes the instruments and modules for which drivers are available from Agilent and lists the minimum required firmware.

Agilent uses several different firmware architectures, which are based on different underlying electronic architectures and are indicated by a different letter A/B/C/D/E:

Revision	Description
Revision A:	Electronic architecture of Agilent 1100 Series, 1200 Series and 1200 Infinity modules. This is the architecture used by recent and historic modules.
Revision B:	Electronic architecture of many Agilent 1200 Series and 1200 Infinity modules. This architecture is used by many modules with high computing performance or data acquisition rates like recent VWD, DAD and MWD detectors or 1290 Infinity pumps.
Revision C:	This architecture is used by hosted modules. Hosted modules have a mainboard with reduced complexity and require a hosting module with revision B or D firmware. The host firmware version is shown between bracket in the compatibility matrix in case of a hosted module. Example: see module G7116A.
Revision D:	This architecture is used by 1290 Infinity II and Infinity III modules like G7114B and G7117A/B detectors and G7167A/B Multisamplers.
Revision E:	This architecture is used by InfinityLab Assist Hub module G7180A

Agilent recommends using the most recent firmware revisions which include latest firmware features and improvements. Agilent LC and CE Drivers are forward-compatible with respect to firmware, i.e. the firmware can be updated without the need of updating the driver.

NOTE

Please note that a firmware update within set A/B/C/D.07.01 is required for all modules in that stack, not only new modules, as for example the fraction collector uses new detector features. Refer to firmware documentation for details, see section "Other documents" on page 6.

In general, the Agilent LC & CE drivers are backwards compatible down to the so called minimum required firmware version. Modules with identical Product Numbers are supported, even if the tables below list only the product name of the current model version. 1100 Series and 1200 Series models are supported on a best-effort basis.

The following table lists the minimum required firmware for all LC modules supported by the LC and CE Drivers. Please note that not all features might be available, if only the minimum required firmware is used.

Agilent LC – Pumps

Product Number	Product Description	min. required FW
G1310A	Agilent 1200 Isocratic Pump	A.06.10
G1310B	Agilent 1260 Infinity Isocratic Pump	A.06.32
G1311A	Agilent 1200 Quaternary Pump	A.06.10
G1311B	Agilent 1260 Infinity Quaternary Pump	A.06.10
G1311C	Agilent 1260 Infinity Quaternary Pump VL	A.06.32
G1312A	Agilent 1200 Binary Pump	A.06.10
G1312B	Agilent 1260 Infinity Binary Pump	A.06.10
G1312C	Agilent 1260 Infinity Binary Pump VL	A.06.32
G1361A	Agilent 1260 Infinity Preparative Pump	A.06.50
G1376A	Agilent 1260 Infinity Capillary Pump	A.06.10
G2226A	Agilent 1260 Infinity Nanoflow Pump	A.06.10
G4204A	Agilent 1290 Infinity Quaternary Pump	B.07.42
G4220A	Agilent 1290 Infinity Binary Pump	B.07.42
G4220B	Agilent 1290 Infinity Binary Pump VL	B.07.42
G4302A	Agilent 1260 Infinity SFC Binary Pump	A.06.10
G4782A	Agilent 1260 Infinity II/III SFC Binary Pump	D.07.42
G5611A	Agilent 1260 Infinity Bio-Inert Quaternary Pump	A.06.10
G5654A	Agilent 1260 Infinity II/III Bio-Inert Pump	D.07.42
G7104A	Agilent 1290 Infinity II/III Flexible Pump	B.07.42
G7104C	Agilent 1260 Infinity II/III Flexible Pump	B.07.42
G7110B	Agilent 1260 Infinity II/III Isocratic Pump	D.07.42
G7111A	Agilent 1260 Infinity II/III Quaternary Pump VL	D.07.42
G7111B	Agilent 1260 Infinity II/III Quaternary Pump	D.07.42
G7112B	Agilent 1260 Infinity II/III Binary Pump	D.07.42
G7120A	Agilent 1290 Infinity II/III High-Speed Pump	B.07.42
G7131A	Agilent 1290 Infinity II/III Bio Flexible Pump	B.07.42
G7131C	Agilent 1260 Infinity II/III Bio Flexible Pump	B.07.42
G7132A	Agilent 1290 Infinity II/III Bio High-Speed Pump	B.07.42
G7161A	Agilent 1260 Infinity II Preparative Binary Pump	D.07.20
G7161B	Agilent 1290 Infinity II Preparative Binary Pump	D.07.27

Agilent LC - Sampling Systems

Product Number	Product Description	min. required FW
G1313A	Agilent 1100 Autosampler	A.06.10
G1329A	Agilent 1200 Series Standard Autosampler	A.06.10
G1329B	Agilent 1260 Standard Autosampler	A.06.10
G1367A	Agilent 1100 Well-Plate Autosampler	A.06.31
G1367B	Agilent 1200 High Performance Autosampler	A.06.31
G1367C	Agilent 1200 High Performance Autosampler SL	A.06.31
G1367D	Agilent 1200 High Performance Autosampler SL+	A.06.31
G1367E	Agilent 1260 Infinity High Performance Autosampler	A.06.32
G1377A	Agilent 1260 High Performance Micro-Scale Autosampler	A.06.12
G1389A	Agilent 1100 Micro-Scale Autosampler	A.06.10
G2258A	Agilent 1260 Infinity Dual-Loop Autosampler	A.06.50
G2260A	Agilent 1260 Infinity Preparative Autosampler	A.06.50
G3167A	Agilent 1260 Infinity II/III Online Sample Manager	D.07.45 (New)
G3167B	Agilent 1260 Infinity II/III Bio Online Sample Manager	D.07.45 (New)
G4226A	Agilent 1290 Infinity Autosampler	A.06.31
G4303A	Agilent 1260 Infinity SFC Standard Autosampler	A.06.54
G4767A	Agilent 1260 Infinity II/III SFC Multisampler	D.07.45 (New)
G5667A	Agilent 1260 Bio-Inert High Performance Autosampler	A.06.32
G5668A	Agilent 1260 Infinity II/III Bio-Inert Multisampler	D.07.45 (New)
G7129A	Agilent 1260 Infinity II/III Vialsampler	D.07.38
G7129B	Agilent 1290 Infinity II/III Vialsampler	D.07.38
G7129C	Agilent 1260 Infinity II/III Vialsampler	D.07.38
G7137A	Agilent 1290 Infinity II/III Bio Multisampler	D.07.45 (New)
G7157A	Agilent 1260 Infinity II Preparative Autosampler	D.07.38
G7158B	Agilent 1290 Infinity II Open-bed Sampler / Fraction Collector	D.07.43
G7167A	Agilent 1260 Infinity II/III Multisampler	D.07.45 (New)
G7167B	Agilent 1290 Infinity II/III Multisampler	D.07.45 (New)
G7167C	Agilent 1260 Infinity II/III Hybrid Multisampler	D.07.45 (New)
G7169B	Agilent 1290 Infinity II Open-bed Sampler / Fraction Collector - Sampler Driver	D.07.39
G7137B	Agilent 1290 Infinity III Hybrid Multisampler	D.07.45 (New)

Agilent LC - Fraction Collectors

Product Number	Product Description	min. required FW
G1364A	Agilent 1100 Fraction Collector	A.06.53
G1364B	Agilent 1260 Infinity Preparative-Scale Fraction Collector	A.06.53
G1364C	Agilent 1260 Infinity Analytical-Scale Fraction Collector	A.06.53
G1364D	Agilent 1260 Infinity Micro-Scale Fraction Collector/Spotter	A.06.53
G1364E	Agilent 1260 Infinity II Preparative-Scale Fraction Collector	D.07.43
G1364F	Agilent 1260 Infinity II Analytical-Scale Fraction Collector	D.07.43
G5664A	Agilent 1260 Infinity Bio-Inert Fraction Collector	A.06.53
G5664B	Agilent 1260 II Infinity Bio-Inert Fraction Collector	D.07.43
G7159B	Agilent 1290 Infinity II Preparative Open-Bed Fraction Collector	D.07.43
G7166A	Agilent 1260 Infinity II Preparative Valve-Based Fraction Collector	B.07.43

Agilent LC - Column Compartments

Product Number	Product Description	min. required FW
G1316A	Agilent 1260 Infinity Thermostatted Column Compartment	A.06.10
G1316B	Agilent 1200 Thermostatted Column Compartment SL	A.06.10
G1316C	Agilent 1290 Infinity Thermostatted Column Compartment	A.06.14
G7116A	Agilent 1260 Infinity II/III Multicolumn Thermostat	C.07.32 (B.07.35 / D.07.35)
G7116B	Agilent 1290 Infinity II/III Multicolumn Thermostat	C.07.32 (B.07.35 / D.07.35)
G7130A	Agilent Infinity Integrated Column Compartment	D.06.75

Agilent LC – Detectors

Product Number	Product Description	min. required FW
G1314A	Agilent 1100/1200 Variable Wavelength Detector	A.06.10
G1314B	Agilent 1260 Infinity Variable Wavelength Detector VL	A.06.10
G1314C	Agilent 1260 Infinity Variable Wavelength Detector VL+	A.06.10
G1314D	Agilent 1260 Infinity Variable Wavelength Detector	B.06.32
G1314E	Agilent 1290 Infinity Variable Wavelength Detector	B.06.32
G1314F	Agilent 1260 Infinity Variable Wavelength Detector	B.06.32
G1315A	Agilent 1100/1200 Diode-Array Detector	A.06.10
G1315B	Agilent 1200 Diode-Array Detector	A.06.10
G1315C	Agilent 1260 Infinity Diode-Array Detector VL+	B.06.30
G1315D	Agilent 1260 Infinity Diode-Array Detector VL	B.06.30
G1321A	Agilent 1100/1200 Fluorescence Detector	A.06.10
G1321B	Agilent 1260 Infinity Fluorescence Detector	A.06.36
G1321C	Agilent 1260 Infinity Fluorescence Detector	A.06.54
G1362A	Agilent 1100/1200 Refractive Index Detector	A.06.10
G1365A	Agilent 1100 Multiple Wavelength Detector	A.06.10
G1365B	Agilent 1200 Multiple Wavelength Detector	A.06.10
G1365C	Agilent 1260 Infinity Multiple Wavelength Detector	B.06.30
G1365D	Agilent 1260 Infinity Multiple Wavelength Detector VL	B.06.30
G4212A	Agilent 1290 Infinity Diode-Array Detector	B.06.30
G4212B	Agilent 1290 Infinity Diode-Array Detector	B.06.30
G4218A	Agilent 1260 Infinity Evaporating Light-Scattering Detector	N/A
G4260A	380-ELSD	25.00
G4260B	Agilent 1260 Infinity II/III Evaporating Light-Scattering Detector	32.06
G4261A	385-ELSD	25.00
G4261B	Agilent 1290 Infinity II Evaporating Light-Scattering Detector	32.06
G7114A	Agilent 1260 Infinity II/III Variable Wavelength Detector	D.07.01
G7114B	Agilent 1290 Infinity II/III Variable Wavelength Detector	D.06.70
G7115A	Agilent 1260 Infinity II/III Diode Array Detector WR	D.07.01
G7117A	Agilent 1290 Infinity II/III Diode Array Detector FS	D.06.70
G7117B	Agilent 1290 Infinity II/III Diode Array Detector	D.06.70
G7117C	Agilent 1260 Infinity II/III Diode Array Detector HS	D.07.01
G7121A	Agilent 1260 Infinity II/III Fluorescence Detector	D.07.01
G7121B	Agilent 1260 Infinity II/III Fluorescence Detector Spectra	D.07.01
G7162A	Agilent 1260 Infinity II/III Refractive Index Detector	D.06.76
G7162B	Agilent 1290 Infinity II/III Refractive Index Detector	D.06.76
G7165A	Agilent 1260 Infinity II/III Multiple Wavelength Detector	D.07.01
G7123B	Agilent 1290 Infinity III Fluorescence Detector	D.07.45 (New)

Agilent LC - Valve Drives, Valves

Product Number	Product Description	min. required FW
G1157A	Agilent 1200 2-Position/10-Port Valve	A.06.02
G1158A	Agilent 1200 2-Position/6-Port Valve	A.06.02
G1158B	Agilent 1200 2-Position/6-Port Valve 600 Bar	A.06.02
G1159A	Agilent 1200 6-Position Switching Valve	A.06.02
G1160A	Agilent 1200 12-Position/13-Port Valve	A.06.02
G1162A	Agilent 1200 2-Position/6-Port Micro Valve	A.06.02
G1163A	Agilent 1200 2-Position/10-Port Micro Valve	A.06.02
G1170A	Agilent 1290 Infinity II/III Valve Drive	C.07.40 (B.07.40/D.07.40)
G9322A	Agilent 1260 Infinity II Clustering Valve	N/A
5067-4134	4pos/10 port Bio 600bar	N/A
5067-4142	6 Col Selector 1200bar	N/A
5067-4143	6 Col Selector 600bar, BIO	N/A
5067-4144	2PS/10PT 600bar, Micro	N/A
5067-4145	2PS/10PT 600bar, Dual MBB	N/A
5067-4145	2ps-10pt (600bar, with 10-32 fittings)	N/A
5067-4146	6 Col Selector 600bar	N/A
5067-4147	12PS/13PT 200bar	N/A
5067-4148	2PS/6PT 600bar, BIO	N/A
5067-4157	2pos/10-port micro valve 1200 bar	N/A
5067-4159	12ps-13pt selection valve head (bio-inert)	N/A
5067-4170	2ps-8pt Valve for 2D-LC 1200bar	N/A
5067-4171	2ps-8pt Valve for 2D-LC 600bar	N/A
5067-4193	2ps-10pt, prep LC up to 200 ml/min, 600 bar	N/A
5067-4194	8ps-9pt, prep LC up to 200 ml/min, 600 bar	N/A
5067-4214	2ps/4pt-4pt, 1200 bar	N/A
5067-4233	8 Column selector valve	N/A
5067-4239	8/9 valve head	N/A
5067-4240	2/10 valve head	N/A
5067-4241	2/6 valve head	N/A
5067-4243	6 Column selector valve	N/A
5067-4244	8/2 valve head	N/A
5067-4266	combi-valve G4243A (5pos/10ports)	N/A
5067-4267	Prep 6 column selector 600 bar	N/A
5067-4273	6 Column selector valve NPL 1300 bar	N/A
5067-4279	4-column selector 800 bar	N/A
5067-4282	2pos/6port Valve Head 800 bar	N/A
5067-4283	2pos/10port Valve head 800 bar	N/A
5067-4284	6 column selector 800 bar	N/A
5067-4287	4 column selector SST 600 bar	N/A

Product Number	Product Description	min. required FW
5067-6680	3-Position/6-Port Valve 800bar	N/A
5067-6682	2pos/10port 1300 bar Bio	N/A
5067-6711	2ps/14port Valve	N/A
5067-6722	6-pos/14-port preparative valve 600 bar	N/A
5320-0002	2ps-14pt Valve Head-S, 600bar, Prep	N/A
5320-0003	3-Position/6-Port bio valve 1300bar	N/A
5320-0017	5-Position/10-Port Bio ASM Valve	N/A
5320-0025	6-Position/14-Port bio valve 1300bar	N/A

Agilent LC - Other Modules

Product Number	Product Description	min. required FW
G1390A	Agilent 1100 Series Universal Interface Box	N/A
G1390B	Agilent InfinityLab Universal Interface Box	C.06.50 (B.06.53 / D.06.53)
G4227A	Agilent 1290 Infinity II Flexible Cube	C.06.50 (B.06.52 / D.06.52)
G4240A	Agilent 1260 Infinity Chip Cube MS Interface	A.06.36
G4301A	Agilent 1260 Infinity II/III SFC Control Module	A.03.09
G7170B	Agilent 1290 Infinity II MS Flow Modulator	C.06.20 (B.06.20 / D.06.20)
G7180A	Agilent InfinityLab Assist Hub – Assist Control Software	E.02.01 (Assist Control Software 2.1 SR1) (new)
G7175A	Agilent InfinityLab Level Sensing	D.07.42

Agilent LC - Combined LC Systems

Product Number	Product Description	min. required FW
G4286A	1120 Compact LC, Isocratic	B.06.21
G4286B	1220 Infinity LC System Isocratic, Man. Inj., VWD, 600 bar	B.06.32
G4287A	1120 Compact LC, Isocratic with Oven and ALS	B.06.50
G4287B	1220 Infinity LC System Isocratic, ALS, VWD and Oven 600 bar	B.06.50
G4288A	1120 Compact LC, Gradient	B.06.21
G4288B	1220 Infinity LC Gradient, Man. Inj., VWD, 600 bar	B.06.32
G4288C	1220 Infinity LC System VL, Gradient, Man. Inj. VWD, 400 bar	B.06.32
G4289A	1120 Compact LC, Gradient with Oven	B.06.50
G4289B	1220 Infinity LC Gradient, Man. Inj., VWD and Oven 600 bar	B.06.50
G4289C	1220 Infinity LC System VL, Gradient, Man. Inj. VWD, 400 bar	B.06.50
G4290A	1120 Compact LC, Gradient with Oven and ALS	B.06.50
G4290B	1220 Infinity LC Gradient, ALS, TCC, VWD, 600 bar	B.06.50

Appendix

Product Number	Product Description	min. required FW
G4290C	1220 Infinity LC System VL, Gradient, ALS, TCC, VWD, 400 bar	B.06.50
G4291B	1220 Infinity LC System Isocratic, Man. Inj., VWD and Oven 600 bar	B.06.50
G4292B	1220 Infinity LC System Isocratic, ALS, VWD, 600 bar	B.06.32
G4293B	1220 Infinity LC Gradient, ALS, VWD, 600 bar	B.06.32
G4293C	1220 Infinity LC System VL, Gradient, ALS, VWD, 400 bar	B.06.32
G4294B	1220 Infinity LC Gradient, ALS, TCC, DAD, 600 bar	B.06.50

Agilent CE

Product Number	Product Description	min. required FW
G7150A	Agilent 7100 Capillary Electrophoresis System	B.06.25
G7151A	Agilent 7100 Capillary Electrophoresis System (DAD)	B.06.25

Agilent LC - Cluster Drivers

Agilent recommends using the most recent firmware revisions which include latest firmware features and improvements. Agilent LC and CE Drivers are forward-compatible with respect to firmware, i.e. the firmware can be updated without the need of updating the driver.

Product Description	Usage
Agilent Auto-scale Cluster Driver	Combines one G7158B with a G1170A Valve Drive and Prep Valve Pod (5320-0002)
Agilent 1200 Infinity Series High Dynamic Range DAD Solution	Combines two G4212A/B or two G7117A/B for high dynamic range DAD applications
Agilent Column Compartment Cluster Driver	A combination of up to three G1316A/B/C for combined valve and temperature control
Agilent Fraction Collector Cluster Driver	Combines up to three G1364A/B/C or G5664A with one G1364A/B/C or one G5664 for recovery. This cluster driver is considered obsolete. Please use for legacy support only.
Agilent Fraction Collector Cluster II Driver	A combination of Fraction Collectors for increased fraction and recovery capacity. Supports up to three G1364E/F, G5664B or G7159B as fraction collectors with up to 3x G7166A as recovery. Since LC&CE Drivers 3.2, this driver also supports one G7158B with up to two additional G7159B for fraction collection and up to three G7166A for recovery.
Agilent Preparative Pump Cluster Driver	Combines up to four G1361A
Agilent Pump Valve Cluster Driver	A combination of one of the following pumps with up to two G1160A or up to two G1170A and valves 5067-4147 or 5067-4159 Supported pumps: G1311x, G1312x, G4220x, G4204x, G4302x, G4782x, G5611x, G7111x, G7112x, G5654x, G7104x, G7120x, G7131x, G7132x
Agilent Valve-Thermostat Cluster Driver	A combination of G7116B, G1170A for combined valve control plus a combination of G1316A/B/C, G7116B and G7130A for combined temperature control. Supports up to 32 columns.
Agilent 2D-LC System Driver	Combination of one 2D-capable pump G4220A or G7120A with up to four G1170A valve drives into a 2D-LC System Driver. The 2D-LC System Driver requires FW B/D.07.33 to be installed on the 2D-capable pump. The 2D-LC System Driver supports • one 5067-4214, 5067-4244 or 5067-4266 (ASM valve) as 2D-LC Valve pod. • up to two 5067-4142 or 5067-4273 as deck valve pods • an optional G1170A to hold one diverter valve • pre-defined capillaries for use as Transfer, loop or ASM Bridge capillaries • the definition of generic capillaries for custom-made loop capillaries. (requires Agilent LabAdvisor software to define generic capillaries) For a list of pre-defined loop capillaries, please contact Agilent.

Appendix

Product Description	Usage
Online Sample Manager Cluster Driver	Combine the sampler G3167A with a valve driver G1170A and the external sampling valve 5067-6680. • pre-defined capillaries for use as loop or seat capillaries
Online Sample Manager Cluster Driver	Combine the sampler G3167B with a valve driver G1170A and the external sampling valve 5320-0003. pre-defined capillaries for use as loop or seat capillaries

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