Release Note for Agilent LC and CE drivers Revision A.02.13

Introduction

This release note provides important information for the release of Agilent LC and CE drivers A.02.13.

List of New Features

This section lists new modules and features and describes key features from a driver perspective. No new modules are supported with this release.

New User Interface for OpenLAB CDS 2.0

The driver user interface including dashboard and context menu icons, method parameter and control setting screens have been improved, matching the new style introduced for OpenLAB CDS 2.0. It provides a better user experience by removing complexity, 3D effects and colors that do not have a functional meaning.

The same design is used if drivers are installed with previous CDS revisions and outside OpenLAB CDSs.

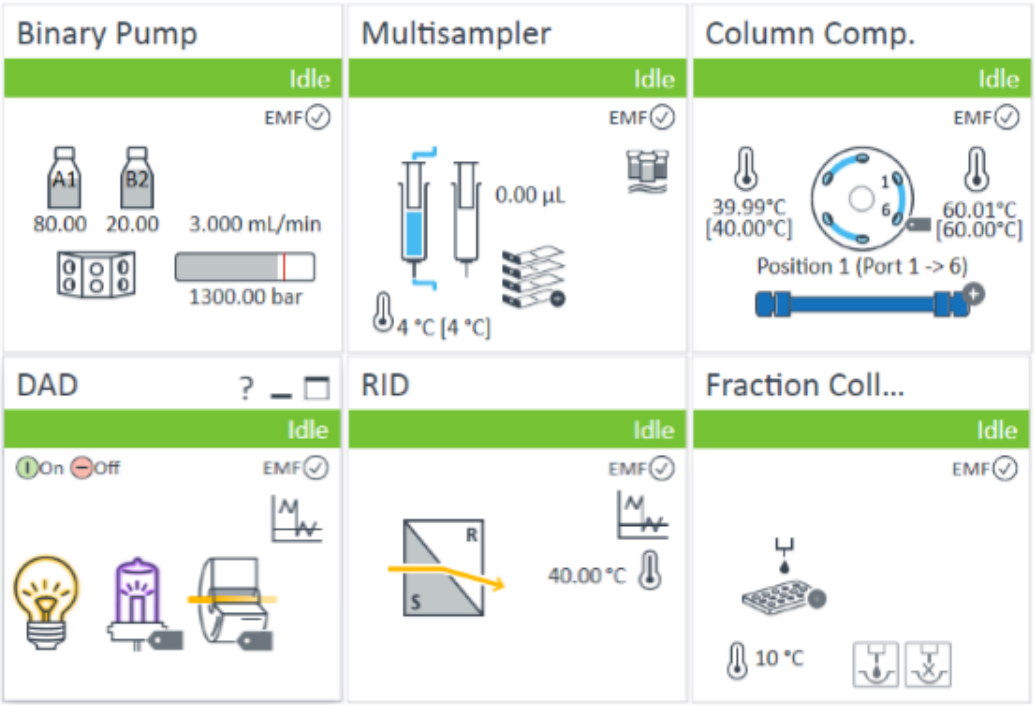


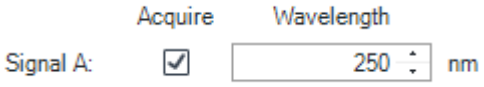
Figure 1 Examples for the new module dashboard

These images show some examples from the new module dashboard. For a complete list of new vs. previous icons, please refer to "UI Overview for LC and CE Drivers A.02.13" in folder documentation.

More driver features

- Support for the 1300 bar 6-Column Selector Quick Change Valve Head 5067-4273
- Optional data acquisition for detectors:

  All applicable detectors allow now defining, which signals shall be acquired.



- Modify valve type function for Thermostatted Column Compartments (TCC) G1316C: ID tags of new Quick Change Valve Heads are no longer recognized by G1316C modules due to a ID tag change, see http://www.chem.agilent.com/Library/usermanuals/Public/RFID-Tag.pdf. Please use the “Modify valve tag” function in the TCC user interface for setting the type of the current valve type for ensuring correct operation. Please note that this function does not change the valve tag but stores the valve type on the module. Whenever a different valve head is installed, the type needs to be set.

Compatibility Matrix

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

Supported Operating Systems

The following operating systems are supported:

- Windows 7 SP1 (32 Bit / 64 Bit)
- Windows Server 2008 R2 (64 Bit)
- Windows 8.1 (32 Bit / 64 Bit)
- Windows Server 2012 R2 (64 Bit)

Supported Chromatographic Data Systems (CDS)

This driver has been tested with:

OpenLAB CDS ChemStation Edition	C.01.07 [110] SR 1
OpenLAB CDS EZChrom Edition	A.04.07 SR1 Update 2

If previous CDS versions shall be used, please use LC and CE driver A.02.12, which has a more extensive compatibility matrix and covers the same set of modules as this release. The driver and its documentation can be found on the same disk or download.

Recommended firmware

Driver release A.02.13 has been tested and recommends the firmware set with following revisions or any later firmware:

Device	Firmware
Agilent 1100 Series, 1200 Series and 1200 Infinity	A.06.5x
Agilent 1200 Series, 1200 Infinity and 1120 Compact LC	B.06.75
Agilent 1200 Infinity Hosted Modules	C.06.75
Agilent 1290 Infinity II Modules	D.06.75
Vialsamplers G7129A/B Refractive Index Detectors G7162A/B	D.06.76

Software Solutions

Agilent offers several add-ons to its CDSs like the Method Scouting Wizard, 2D-LC software, Buffer Advisor etc. These add-ons are based on the CDS, not on the driver. For compatibility information, please consult documentation for the add-on or CDS.

Impact Analysis

A driver update changes the part of the Chromatographic Data System, which is responsible for instrument control, such as instrument configuration, method parameters, control functions and instrument signals. The Agilent Software Development Lifecycle includes extensive quality tests of all new software features as well as regression tests for existing functionality. Therefore, driver upgrades are considered to be of low risk.

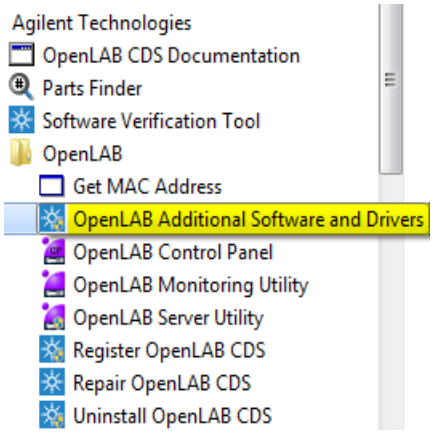
Agilent recommends the following re-validation activities after installation of the release specified in this document:

There are no documented functional software changes for this release, which would require a re-validation from Agilent's perspective.

Installation

Drivers are installed by the Agilent or third party Chromatography Data System (CDS) installer, e.g. the Agilent OpenLab Master Installer. Installation prerequisites like CPU, memory and hard drive space are also mainly determined by the underlying CDS. Please refer to documentation of the CDS installer for installation, updates and uninstallation.

For OpenLAB, please use "OpenLAB Additional Software and Drivers" for installing the driver from the Windows Start Menu.



Drivers for the ELSD are located in the "More Drivers" folder.

Other Documents

The driver DVD includes more documents with further information:

Software Status Bulletin (SSB): The Software Status Bulletin lists known limitations and incompatibilities and information about available fixes or workarounds for this and previous versions

Software Release Bulletin (SRB): The Software Release Bulletin bulletin is an excerpt from the SSB which lists issues which have been fixed with this revision.

SSB and SRB are included to the driver CD and can be found in folder documentation

The SSB is updated regularly. Please visit our Website for the latest version at http://www.chem.agilent.com/Library/Support/Patches/SSBs/LC_RC_Net.html.

The SRB is intentionally empty for this release. There are no documented bug fixes for this release.

Firmware and firmware documentation are available for download from http://www.chem.agilent.com/_layouts/agilent/downloadFirmware.aspx?whid=69761.

ELSD specific information is located in the folder “More Drivers\ G4260-60012_ELSD-Drivers”.

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 A: Classification Codes of Software Changes

The following classification codes for software changes are used in this document:

Classification	Definition
Major	Software changes with an appreciable effect on the operational characteristics and reliability of the product and its fitness for the intended purpose, relative to the previous version. Major software changes typically warrant full re-qualification of the system or the execution of detailed acceptance tests at least in the affected areas. Examples for major software changes in chromatography data systems are modified or new algorithms, calculation changes, storage format changes for central system functions such as integration or quantification of chromatographic signals.
Minor	Changes with no appreciable negative effect on the operational characteristics and reliability of the product and its fitness for the intended purpose relative to the previous version. Minor software changes typically result in one or multiple modified system files. The installation of an update or service release containing minor software changes typically requires the execution of the updated qualification protocols specified and provided by the supplier.

Appendix B: Modules and Minimum required firmware

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:

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.
Revision D:	This architecture is used by 1290 Infinity II modules like G7114B and G7117A/B detectors and G7167A/B Multisamplers.

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

This table lists the minimum required firmware for all modules supported by the driver. For recommended firmware, please refer to "Recommended firmware" on page 3. Please note that all modules in a system need to use compatible firmware from one firmware set. Please refer to firmware documentation for details, see "Other Documents" on page 5.

Please note that using some driver features like valve-thermostat clusters and new temperature control modes require firmware updates beyond this list for related modules, see "List of New Features" on page 1 for details.

Agilent LC – Pumps

Product Number	Module Name	Minimum Required Firmware Revision
G1310A	1100 Series Isocratic Pump	A.06.10
G1310B	1260 Infinity Isocratic Pump	A.06.32
G1311A	1100 Series Quaternary Pump*	A.06.10
G1311B	1260 Infinity Quaternary Pump*	A.06.32
G1311C	1260 Infinity Quaternary Pump VL*	A.06.32

Product Number	Module Name	Minimum Required Firmware Revision
G1312A	1260 Infinity Binary Pump*	A.06.10
G1312B	1260 Infinity Binary Pump SL*	A.06.10
G1312C	1260 Infinity Binary Pump VL*	A.06.32
G1361A	1260 Infinity Preparative Pump Cluster with up to 4	A.06.50
G1376A	1260 Infinity Capillary Pump	A.06.10
G2226A	1260 Infinity Nanoflow Pump	A.06.10
G4204A	1290 Quaternary Pump*	B.06.50
G4220A	1290 Infinity Binary Pump*	B.06.23
G4220B	1290 Infinity Binary Pump VL*	B.06.43
G4302A	1260 Infinity SFC Binary Pump*	A.06.32
G5611A	1260 Infinity Bio-inert Quaternary Pump*	A.06.32
G7104A	1290 Infinity II Flexible Pump	B.06.71
G7120A	1290 Infinity II High Speed Pump	B.06.71

* Pump valve clusters are possible for marked pumps with up to 2 valves of type G1160A and/or G1170A

Agilent LC - Sampling Systems

Product Number	Module Name	Minimum Required Firmware Revision
G1313A	1100 Series Standard Autosampler	A.06.10
G1329A	1100 Series Standard Autosampler	A.06.10
G1329B	1260 Infinity Standard Autosampler	A.06.10
G1367A	1100 Series Well-plate Sampler	A.06.31
G1367B	1200 Series High Performance Autosampler	A.06.31
G1367C	1200 Series High Performance Autosampler SL	A.06.31
G1367D	1200 Series High Performance Autosampler SL+	A.06.31
G1367E	1260 Infinity High Performance Autosampler	A.06.32
G1377A	1260 Infinity High Performance Micro Autosampler	A.06.12
G1389A	1100 Series Micro Thermostatted Autosampler	A.06.10
G2258A	1260 Infinity Dual-Loop Autosampler	A.06.50
G2260A	1260 Infinity Preparative Autosampler (High flow)	A.06.50
G4226A	1290 Infinity Autosampler	A.06.31

Product Number	Module Name	Minimum Required Firmware Revision
G4303A	1260 Infinity SFC standard autosampler	A.06.54
G5667A	1260 Infinity Bio-inert Autosampler	A.06.32
G7167A	1260 Infinity Multisampler	D.06.60
G7167B	1290 Infinity II Multisampler	D.06.60
G7129A	1260 Infinity Autosampler	D.06.76
G7129B	1290 Infinity II Vial Sampler	D.06.76

Agilent LC – Column Compartments

Product Number	Module Name	Minimum Required Firmware Revision
G1316A	1260 Infinity Thermostatted Column Compartment	A.06.10
G1316B	1200 Series Column Compartment SL	A.06.10
G1316C	1200 Series Thermostatted Column Compartment SL*	A.06.14
G7116B	1290 Infinity II Multicolumn Thermostat (firmware for host module in brackets)	C.06.75 (B.06.75/D.06.75)
G7130A	Integrated Column Compartment ICC	D.06.76

* Cluster with up to three G1316C with integrated 8pos/9port valves (products G4230A/B). Minimum two G1316C TCCs, the third TCC can be a G1316A, B or C.

Agilent LC – Detectors

Product Number	Module Name	Minimum Required Firmware Revision
G1314A	1100 Series Variable Wavelength Detector	A.06.10
G1314B	1200 Series Variable Wavelength Detector	A.06.10
G1314C	1200 Series Variable Wavelength Detector	A.06.10
G1314D	1200 Series Variable Wavelength Detector	B.06.32
G1314E	1290 Infinity Variable wavelength Detector	B.06.32
G1314F	1260 Infinity Variable wavelength Detector	B.06.32
G1315A	1100 Series Diode Array Detector	A.06.10
G1315B	1200 Series Diode Array Detector	A.06.10
G1315C	1200 Series Diode Array Detector VL+	B.06.30
G1315D	1200 Series Diode Array Detector VL	B.06.30
G1365A	1100 Series Multiple Wavelength Detector	A.06.10

Product Number	Module Name	Minimum Required Firmware Revision
G1365B	1100 Series Multiple Wavelength Detector	A.06.10
G1365C	1260 Infinity Multiple Wavelength Detector	B.06.30
G1365D	1260 Infinity Multiple Wavelength Detector VL	B.06.30
G1321A	1100 Series Fluorescence Detector (FLD)	A.06.10
G1321B	1260 Infinity Fluorescence Detector	A.06.32
G1321C	1260 Infinity Fluorescence Detector	A.06.54
G1362A	1260 Infinity Refractive Index Detector	A.06.10
G4212A	1290 Infinity Diode Array Detector	B.06.30
G4212B	G4212B 1260 Infinity Diode Array Detector	B.06.30
G4212A/B HDR-DAD Cluster	2x G4212A or 2x G4212B or a combination of 1x G4212A and 1x G4212B	B.06.57
G7114B	1290 Infinity II Variable Wavelength Detector	D.06.70
G7117A	1290 Infinity II Diode Array Detector	D.06.70
G7117B	1290 Infinity II Diode Array Detector FS	D.06.70
G7117A/B HDR-DAD Cluster	2x G7117A or 2x G7117B or a combination of 1x G7117A and 1x G7117B	D.06.70
G4218A	1260 Infinity Evaporative Light Scattering Detector	1.3
G4260A	380-ELSD	25.00
G4261A	385-ELSD	25.00
G4260B	1260 Infinity Evaporative Light Scattering Detector	30.35
G4261B	1290 Infinity Evaporative Light Scattering Detector	30.35
G7102A	1290 Infinity II Evaporative Light Scattering Detector	30.42
G7162A	1260 Infinity II Refractive Index Detector	D.06.76
G7162B	1290 Infinity II Refractive Index Detector	D.06.76

Agilent LC – Valves, Valve Drives and Clusters

Product Number	Module Name	Minimum Required Firmware Revision
G1156A	1200 Series 6 Position / 7 Port Valve (400 bar)	A.06.02
G1157A	1200 Series 2 Position / 10 Port Valve	A.06.02
G1158A	1200 Series 2 Position / 6 Port Valve	A.06.02
G1158B	1200 Series 2 Position / 6 Port Valve (600bar)	A.06.02

Product Number	Module Name	Minimum Required Firmware Revision
G1159A	1200 Series 6 Position Selection Valve	A.06.02
G1160A	1100 Series Multiple Purpose Switching Valve (12 Position / 13 Port)	A.06.02
G1162A	1200 Series 2 Position/ 6 Port Micro Valve	A.06.02
G1163A	1200 Series 2 Position/ 10 Port Micro Valve	A.06.02
G1170A	1290 Infinity Valve Drive (firmware for host module in brackets)	C.06.40 (B.06.40/D.06.60)

Valve Thermostat Cluster (VTC)

The Valve Thermostat Cluster is a combination of G7116B, G1170A and G1316C as valve or column hosts and G1316A/B and G7130A as column hosts.

Module	Minimum module FW	Minimum host module FW
G7116B	C.06.75	B.06.75/D.06.75
G1170A	C.06.75	B.06.75/D.06.75
G7130A (within G7129A/B)	D.06.76	n/a
G1316C	A.06.55	n/a
G1316A/B	A.06.10	n/a

Agilent LC – Other Module types

Prduct Number	Module Name	Minimum Required Firmware Revision
G1390A	1100 Series Universal Interface Box (UIB)	A.06.02
G1390B	1200 Infinity Series Universal Interface Box II (firmware for host module in brackets)	C.06.53 (B.06.53/D.06.60)
G4227A	1290 Infinity Flexible Cube (firmware for host module in brackets)	C.06.52 (B.06.52/D.06.60)
G1364A	1100 Series Automatic Fraction Collector Cluster of up to 3*	A.06.53
G1364B	1260 Infinity Fraction Collector (preparative-scale) Cluster of up to 3*	A.06.53
G1364C	1260 Infinity Fraction Collector (analytical-scale) Cluster of up to 3*	A.06.53
G1364D	1100 Series Micro Fraction Collector	A.06.53
G5664A	1260 Infinity Bio-inert fraction collector AS	A.06.53

Prduct Number	Module Name	Minimum Required Firmware Revision
G4240A	Chip Cube	A.06.36
G4301A	1260 Infinity Analytical SFC System	A.03.07

* Any combination of G1364A/B/C or G5664A plus a fourth G1364A/B/C or G5664A for recovery can be clustered. Multiple individual Fraction Collectors are not supported

Agilent LC Systems

Product Number	Module Name	Minimum Required Firmware Revision
G4286A	1120 Compact LC, Isocratic	B.06.50
G4286B	1220 Infinity LC System Isocratic, Man. Inj., VWD, 600 bar	B.06.50
G4287A	1120 Compact LC, Isocratic with Oven and ALS	B.06.50
G4287B	1220 Infinity LC Isocratic, ALS, TCC, VWD, 600 bar	B.06.50
G4288A	1120 Compact LC, Gradient	B.06.50
G4288B	1220 Infinity LC Gradient, Man. Inj., VWD, 600 bar	B.06.50
G4289A	1120 Compact LC, Gradient with Oven	B.06.50
G4289B	1220 Infinity LC Gradient, ALS, TCC, VWD, 600 bar	B.06.50
G4290A	1120 Compact LC,Gradient with oven and ALS	B.06.50
G4290B	1220 Infinity LC Gradient, ALS, Man. Inj., TCC, VWD, 600 bar	B.06.50
G4291B	1220 Infinity LC Isocratic, Man. Inj., TCC, VWD, 600 bar	B.06.50
G4292B	1220 Infinity LC Isocratic, ALS, VWD, 600 bar	B.06.50
G4293B	1220 Infinity LC Gradient, ALS, VWD, 600 bar	B.06.50
G4294B	1220 Infinity LC Gradient, ALS, TCC, DAD, 600 bar	B.06.50
G4286C	1220 Infinity LC System VL, Isocratic, Man. Inj., VWD, 400 bar	B.06.50
G4287C	S1220 Infinity LC System VL, Isocratic, ALS, TCC, VWD, 400 bar	B.06.50
G4288C	1220 Infinity LC System VL, Gradient, Man. Inj. VWD, 400 bar	B.06.50
G4289C	1220 Infinity LC System VL, Gradient, Man. Inj. VWD, 400 bar	B.06.50
G4290C	1220 Infinity LC System VL, Gradient, ALS, TCC, VWD, 400 bar	B.06.50
G4291C	1220 Infinity LC System VL, Isocratic, Man. Inj. TCC, VWD, 400 bar	B.06.50

Product Number	Module Name	Minimum Required Firmware Revision
G4292C	1220 Infinity LC System VL, Isocratic, ALS, VWD, 400 bar	B.06.50
G4293C	1220 Infinity LC System VL, Gradient, ALS, VWD, 400 bar	B.06.50

Agilent CE Firmware Information

Product Number	Module Name	Minimum Required Firmware Revision
G7150A	G7100 Capillary Electrophoresis II	B.06.25
G7151A	Diode Array Detector for CE	B.06.25

NOTE There are dependencies between firmware revisions that can be combined in one LC or CE system.

All firmware revisions need to belong to one set. For obtaining and updating firmware and for detailed information about compatibility between firmware revisions please visit our web site at http://www.chem.agilent.com/_layouts/agilent/downloadFirmware.aspx?whid=69761

Appendix B: Modules and Minimum required firmware

Hewlett-Packard-Strasse 8
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Germany

Revision 1.0