

Agilent HPLC System Firmware Bulletin

Firmware Set 6.50-6.80

1290 Infinity II LC System

1220 Infinity LC

1260 Infinity LC System

1260 Infinity SFC System

1290 Infinity LC System

1100/1200/1120 LC System

G7100 Capillary Electrophoresis



Agilent Technologies

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Contents

About this Document.....	6
Where To Get Latest Information.....	6
Document History.....	7
General Firmware Information.....	12
Firmware A	12
Firmware B.....	12
Firmware C.....	12
Firmware D	12
Main/Resident Firmware	12
Firmware for New RFID Tag.....	13
Compatibility Information	14
Agilent LC Firmware Set Interoperability and Support Statement	14
Notes for Agilent LC instruments controlled by non-Agilent Chromatography Data Systems (CDS)	14
Examples.....	14
OQ/PV - Validation Information	15
Firmware Revision Change Information	16
Resident Firmware.....	16
1120 Compact LC / 1220 Infinity LC.....	17
1260 Infinity SFC Modules	22
HPLC Modules.....	23
Pumps	23
Samplers	26
Detectors	28
Others	31
Core Firmware Changes.....	33
Modules without on-board LAN (“A” firmware)	33
Core Changes A.06.55.....	33
Core Changes A.06.54.....	33
Core Changes A.06.50.....	33
Modules with on-board LAN (“B” and “D” firmware)	34
Core Changes B/D.06.80	34
Core Changes B/D.06.77	34
Core Changes B/D.06.75	34
Core Changes B/D.06.73	34
Core Changes B/D.06.72	35
Core Changes B/D.06.70	35

Core Changes B/D.06.60	35
Core Changes B.06.54	36
Core Changes B.06.53	36
Core Changes B.06.52	36
Core Changes B.06.51	37
Core Changes B.06.50	37
Modules with "C" firmware	38
Core Changes C.06.72	38
Core Changes C. 06.70	38
Core Changes C. 06.60	38
Core Changes C. 06.53	38
Core Changes C. 06.50	39
Pump Firmware Changes	40
Iso- / Quat- / Bin-Pump (G1310A, G1311A, G1312A)	40
Iso - / Quat-Pump (G1310B, G1311B, G1311C, G1312C, G5611A)	41
Quaternary Pump (G4204A, G7104A)	42
Binary Pump (G1312B SL, G4302A SFC)	46
Binary Pump (G4220A, G4220B, G7120A)	48
Prep Pump (G1361A)	52
Capillary Pump (G1376A, G2226A)	53
Sampler Firmware Changes	54
Standard Autosampler (G1313A, G1329A, G1329B, G1389A, G2260A, G4303A SFC)	54
High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A, G5667A)	55
Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO)	56
Infinity II Sampler (G7129A VS, G7129B AS)	58
Infinity II Multisampler (G7167A, G7167B)	59
Detector Firmware Changes	62
Variable Wavelength Detector (VWD) (G1314A, G1314B, G1314C)	62
Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F)	62
Infinity II Variable Wavelength Detector (VWD) (G7114B)	65
DAD/MWD (G1315A DAD, G1315B DAD, G1365A MWD, G1365B MWD)	67
DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)	67
DAD (G4212A, G4212B)	70
Infinity II DAD (G7117A, G7117B)	73
Fluorescence Detector (FLD) (G1321A SPECTRA, G1321B SPECTRA, G1321C FLD)	74
Refractive Index Detector (RID) (G1362A)	75
Infinity II Refractive Index Detector (RID) (G7162A STD, G7162B MICRO)	76
Other Modules	77

Thermostatted Column Compartment (TCC) (G1316A, G1316B, G1316C)	77
Universal Interface Box (UIB) (G1390A)	78
Valves (G115xA/B, G116xA/B)	78
Chip Cube (G4240A)	78
LAN Interface Card (G1369C)	79
CAN Slaves (Hosted Modules)	81
Infinity II Multicolumn Thermostat (MCT) (G7116B)	81
Valve Drive (G1170A)	82
Universal Interface Box II (UIB II) (G1390B)	84
Flexible Cube (G4227A)	86
1120/1220 LC system	88
SFC Modules	91
SFC Controller (G4301A)	91
SFC Pump (G4302A)	92
SFC Autosampler (G4303A)	93
Capillary Electrophoresis System	94
Capillary Electrophoresis System (CE) (G7100)	94
Local Controllers	96
G4208A Instant Pilot and G1323A/B Local Control Module	96

About this Document

This document provides the firmware changes in set 6.50-6.80 used for the following LC Systems

- 1220 Infinity LC
- 1260 Infinity LC Systems
- 1290 Infinity LC Systems
- 1290 Infinity II LC Systems
- 1200 Series LC
- G7100 Capillary Electrophoresis
- 1120 Compact LC
- 1100 Series LC

For information about other firmware sets refer to the Firmware Bulletin provided with the set.

Where To Get Latest Information

Visit the Agilent web

<http://www.agilent.com/en-us/firmwareDownload?whid=69761>

for

- Latest updates
- Firmware Sets / Firmware Bulletin
- Emulation information
- Firmware Update tools and
- Instructions

Document History

The table below lists all changes that have been made to this document.

Table 1 - Document History

Date	Description	Author
Aug 18, 2017	Corrected typos	W. Albrecht
Aug 16, 2017	Changed document to new template, corrected typos	W. Albrecht
Mar 16, 2016	New Firmware 6.80 has been released for all HPLC modules with B/C/D-Firmware • Implemented support for Agilent 2D-LC Software A.01.03. • Implemented hosting functionality for slave modules with revision C.06.80 • Bug fix in some modules • Core Changes B/D.06.80 • Quaternary Pump (G4204A, G7104A) • Binary Pump (G4220A, G4220B, G7120A) • Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO) • Infinity II Sampler (G7129A VS, G7129B AS) (added section) • Infinity II Multisampler (G7167A, G7167B) • Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F) • Infinity II Variable Wavelength Detector (VWD) (G7114B) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B) • Infinity II DAD (G7117A, G7117B) • Infinity II Refractive Index Detector (RID) (G7162A STD, G7162B MICRO) (added section) • LAN Interface Card (G1369C) • Infinity II Multicolumn Thermostat (MCT) (G7116B) • Valve Drive (G1170A) • Universal Interface Box II (UIB II) (G1390B) • Flexible Cube (G4227A)	W. Albrecht
Dec 4, 2015	New Firmware has been released for some HPLC modules • Infinity II Multisampler (G7167A, G7167B) (D.06.78)	W. Albrecht
Nov 13, 2015	New Firmware has been released for some HPLC modules • Resident firmware for B and D Firmware and G1369C LAN Card • Core Changes B/D.06.77 • Quaternary Pump (G4204A, G7104A) (B.06.77) • Binary Pump (G4220A, G4220B, G7120A) (B.06.77) • Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO) (A.06.56) • Infinity II Multisampler (G7167A, G7167B) (D.06.77) • Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F) (B.06.77) • Infinity II Variable Wavelength Detector (VWD) (G7114B) (D.06.77) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) (B.06.77) • DAD (G4212A, G4212B) (B.06.77) • Infinity II DAD (G7117A, G7117B) (D.06.77) • 1120/1220 LC system (B.06.77)	W. Albrecht

Aug 25, 2015	Added information • SFC Controller (G4301A)	W. Albrecht
Jul 31, 2015	New Firmware has been released for most HPLC modules. • 06.75 for all B/C/D-firmware based modules • 06.55 for A-firmware based modules • Resident firmware changed for C-firmware based modules only. • Added section Firmware for New RFID Tag. • Updated all sections/modules that were impacted by the new revisions.	W. Albrecht
Feb 27, 2015	New Firmware has been released for some HPLC modules. • D.06.74 for all FUSION based MLS • Resident firmware not changed. • Infinity II Multisampler (G7167A, G7167B) • Updated all sections/modules that were impacted by the new revisions.	W. Albrecht
Feb 16, 2015	New Firmware has been released for some HPLC modules. • A.06.54 for all LEONARDO based RID, FRC • B.06.73 for all NUCLEUS based VWD, DAD, MWD, Pumps, CE (G4294B only) • D.06.73 for all FUSION based VWD, DAD, MLS • Resident firmware not changed. • Core Changes A.06.54 • Core Changes B/D.06.73 • Quaternary Pump (G4204A, G7104A) • Binary Pump (G4220A, G4220B, G7120A) • Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO) • Infinity II Multisampler (G7167A, G7167B) • Infinity II Variable Wavelength Detector (VWD) (G7114B) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B) • Infinity II DAD (G7117A, G7117B) • Refractive Index Detector (RID) (G1362A) • 1120/1220 LC system • Capillary Electrophoresis System (CE) (G7100) • Updated all sections/modules that were impacted by the new revisions.	W. Albrecht
Dec 4, 2014	New Firmware has been released for some HPLC modules • Infinity II Multisampler (G7167A, G7167B) (D.06.78)	W. Albrecht
Dec 1, 2014	New Firmware has been released for some HPLC modules. • A.06.54 for all LEONARDO based pumps • B.06.72 for all NUCLEUS based VWD, DAD, MWD, pumps, Compact LC, CE • C.06.72 for Multicolumn Thermostat (G7116B) • D.06.73 for all FUSION based (VWD, MLS) • Resident firmware not changed. • Updated all sections/modules that were impacted by the new revisions. • Added section Capillary Electrophoresis System.	W. Albrecht

Nov 12, 2014	Release of firmware 06.70 for all modules that use B/C/D firmware versions. Existing 1200/1260/1290 modules with A/B/C/D firmware must be upgraded to latest firmware from set 6.50 when used with the new 1290 Infinity II modules G7167 Multisampler, G7114B VWD, G7117A DAD-FS, G7117B DAD, G7116B MCT. • New sections added: • Quaternary Pump (G4204A, G7104A) • Binary Pump (G4220A, G4220B, G7120A) • Infinity II Multisampler (G7167A, G7167B) • Infinity II Variable Wavelength Detector (VWD) (G7114B) • Infinity II DAD (G7117A, G7117B) • Infinity II Multicolumn Thermostat (MCT) (G7116B) • Updated all sections/modules that were impacted by the new revisions.	W. Albrecht
Sep 10, 2014	Updated build number of G7167B firmware. • Infinity II Multisampler (G7167B) (D.06.60 [011])	W. Albrecht
Sep 04, 2014	Release of firmware 06.60 for all modules that use B/C/D firmware versions. Existing 1200/1260/1290 modules with A/B/C/D firmware must be upgraded to latest firmware from set 6.50 when used with the new G7167B Multisampler! D-Firmware is for new platform modules. First module is the G7167B Multisampler. Due to an incompatibility between main firmware B.06.60 [0005] and old resident firmware it is mandatory to also update the resident firmware to B.06.60 [002] and C.06.60 [001]. Updated all sections/modules that were impacted by the new revision.	W. Albrecht
Apr 29, 2014	Update on Compatibility Section (added/modified) • Agilent LC Firmware Set Interoperability and Support Statement • Notes for Agilent LC instruments controlled by non-Agilent Chromatography Data Systems (CDS) • Examples	W. Albrecht
Mar 14, 2014	Release of firmware 06.57 for some modules • DAD (G4212A, G4212B)	W. Albrecht
Mar 7, 2014	Correct naming of models (no change on firmware change information) • 1120/1220 LC system (updated)	W. Albrecht
Mar 6, 2014	Rework of document (no change on firmware change information) • About this Document(updated) • 1200 Infinity Compatibility and Emulation Mode (removed, use Where To Get Latest Information) • Compatibility Information (added) • OQ/PV - Validation Information (moved)	W. Albrecht
Jan 13, 2014	• Moved SFC Modules into of section 1260 Infinity SFC Modules and SFC Modules • Added Firmware Information for SFC Controller (G4301A) (A.03.80)	W. Albrecht

Dec 18, 2013	Release of firmware 06.55/56 for some modules • Quaternary Pump (G4204A) (B.06.56) • Binary Pump (G4220A, G4220B) (B.06.56) • Fluorescence Detector (FLD) (G1321A SPECTRA, G1321B SPECTRA, G1321C FLD) (A.06.55)	W. Albrecht
Jul 23, 2013	Release of firmware 06.55 for some modules • Quaternary Pump (G4204A) (B.06.55) • Binary Pump (G4220A, G4220B) (B.06.55) Release of firmware 06.54 for some modules • High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A, G5667A)	W. Albrecht
May 8, 2013	Release of firmware 06.54 for some modules • Core Changes B.06.54 • Binary Pump (G4220A, G4220B) • Standard Autosampler (G1313A, G1329A, G1329B, G1389A, G2260A, G4303A SFC) • Fluorescence Detector (FLD) (G1321A SPECTRA, G1321B SPECTRA, G1321C FLD) Release of firmware 06.53 for some modules • High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A, G5667A)	W. Albrecht
Apr 24, 2013	Added chapter "Conversion Possibilities" in section "OQ/PV - Validation Information".	W. Albrecht
Feb 25, 2013	Release of firmware 06.53 for some modules • Core Changes B.06.53 • Binary Pump (G1312B SL) • Prep Pump (G1361A) • Quaternary Pump (G4204A) • Binary Pump (G4220A, G4220B) • High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A, G5667A) • Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO) • Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B) • Thermostatted Column Compartment (TCC) (G1316C) • LAN Interface Card (G1369C) • Valve Drive (G1170A) • Universal Interface Box II (UIB II) (G1390B) • Flexible Cube (G4227A) • 1120/1220 LC system	W. Albrecht
Feb 25, 2013	Created a new sections • CAN Slaves (Hosted Modules) with Valve Drive (G1170A), Universal Interface Box II (UIB II) (G1390B) and Flexible Cube (G4227A)	W. Albrecht
Feb 22, 2013	Removed information for the Instant Pilot (G4208A). It's now documented in an individual document "Local Controller" and can be downloaded from the web, see Where To Get Latest Information ..	W. Albrecht

Sep 6, 2012	Release of firmware 06.52 for some modules • Core Changes B.06.52 for use with hosted modules G1170A, G4227A • Binary Pump (G1312B SL) • Quaternary Pump (G4204A) • Binary Pump (G4220A, G4220B) • Flexible Cube (G4227A) • Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B)	W. Albrecht
Jul 19, 2012	Release of firmware 06.51 for some modules • Core Changes B.06.51 for use with hosted modules G1170A, G4227A • Binary Pump (G4220A, G4220B) • Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B)	W. Albrecht
May 31	Release of firmware A.06.50/B.06.50/C.06.50 for ALL modules • Updated all sections/modules that were impacted by the new revisions.	W. Albrecht

General Firmware Information

Firmware A

This firmware was introduced with the 1100 series LC modules in 1995. These can be identified by

- No LAN connection
- GPIB connector (not with 1260 modules and later)
- RS-232 connector
- 9-pin APG remote connector
- Interface slot for LAN card (not on G1316A/B/C TCC)

Firmware B

This firmware was introduced with the 1200 series LC modules with new electronic platform starting 2005. These can be identified by

- LAN onboard (instead of Interface slot)
- No GPIB

These modules can work as host for hosted (CAN slave) modules with C-firmware.

Firmware C

This firmware is used in hosted (CAN slave) modules. To operate them, these require a host module with (B- or D-firmware).

- G7116A/B Multicolumn Thermostat (1290 Infinity II)
- G4227A Flexible Cube (1290)
- G1170A Valve Drive (1290)
- G1390B Universal Interface Box II (1260/1290)

Firmware D

D-Firmware is for new Infinity II platform modules introduced August 2014. These can be identified by

- product numbers G71XX and
- 15 pin enhanced remote interface (instead of 9-pin APG remote) and
- mini-USB connection (instead of RS-232)
- Main boards with FUSION core piggyback board and

These modules can work as host for hosted (CAN slave) modules with C-firmware.

NOTE Existing 1100/1200/1260/1290 modules with A/B/C/D firmware must be upgraded to latest firmware (main/resident) from set 7.01 when used with the 1260 Infinity II modules.

Main/Resident Firmware

The module firmware consists of two parts

- Main firmware – for the operation of the module and resident firmware update
- Resident firmware – for boot (if the main is not starting) and main firmware update

NOTE Main and resident firmware revision should be from the same firmware set.

For details see Agilent web for **LC firmware!** See [Where To Get Latest Information](#).

Firmware for New RFID Tag

New RFID tag assemblies were introduced later in November 2016 on various modules:

- VWD (G1314D, G1314E, G1314F),
- DAD, MWD (G1315C, G1365C, G1315D, G1365D), Infinity DAD (G4212A, G4212B),
- Infinity Binary Pump (G4220A, G4220B),
- TCC (G1316C),
- Universal Valve (G1170A),
- FlexCube (G4227A),
- CE (G7100A)

To support old and new RFID tags compatible firmware is required:

- G1316C TCC with A.06.55 or later,
- B-firmware since release B.06.73 or later.
- C-firmware for G1170A Universal Valve or G4227A Flexible Cube since release C.06.72 or later.
- D-firmware since release D.06.70 or later.

For details see Agilent web for **RFID Tag Information - Important for all users!** See [Where To Get Latest Information](#).

Compatibility Information

This chapter provides information about compatibility.

The information is related to firmware described in this firmware set.

NOTE This set includes just the latest firmware of each module. It's fully compatible with your CDS that supports this firmware set.

Agilent LC Firmware Set Interoperability and Support Statement

- Agilent releases LC firmware updates as so-called “firmware sets”.
- All Agilent LC instrument firmware sets have been designed and tested to be truly and strictly backward compatible to the installed software base (CDS).
- The module firmware contained in each set is fully compatible and interoperable with all other module firmware of the same set.
- Agilent recommends using always the latest module firmware revision of a firmware set to avoid interoperability issues.
- Generally, Agilent recommends keeping the LC instrument firmware always current.
- Do not mix firmware revisions between different sets. Agilent does not guarantee mixed firmware revisions from older or newer sets.
- If you must document the firmware revision (for validation reasons) please use the term “Revision XXX or later” or “Firmware from Set XX or later”. This might help on discussions in case of required updates due to malfunctions that have been corrected in later releases.

Notes for Agilent LC instruments controlled by non-Agilent Chromatography Data Systems (CDS)

- The 3rd-party CDS software vendor is responsible for compatibility testing with the respective CDS revision.
- The 3rd-party CDS software vendor defines the minimum firmware revision required for CDS compatibility.
- The 3rd-party CDS release notes issued by the respective CDS vendor may use different terminology for the firmware requirements such as “tested firmware”, “supported firmware”, “firmware requirements”, “minimum tested firmware”, etc.
- An Agilent LC instrument running a current firmware set is fully supported as long as it meets or exceeds the minimum firmware requirements specified by the 3rd-party CDS software vendor and meets Agilent's firmware set/firmware interoperability requirements.

Examples

NOTE If a new feature has been added in a newer revision, an appropriate CDS revision that supports the new feature might be required. Otherwise it is just not visible/used.

This means

- A later revision than the initial firmware in this set is fully backward compatible and does not require re-validation of the system, unless it is mentioned under the specific change information, see [Agilent LC Firmware Set Interoperability and Support Statement](#) and [OQ/PV - Validation Information](#).
- A CDS tested with the initial revision will also work with the later revisions. This is normally also true for non-Agilent control software (3rd party CDS), see [Notes for Agilent LC instruments controlled by non-Agilent Chromatography Data Systems \(CDS\)](#).
- Use firmware from a single set only.
- Use the latest firmware revision if possible.

- Upgrade all modules to latest revision when
 - a (new) module is added to the system or
 - receives a new main board or
 - a module is updated due to solving a problem.
- References in validation documents should not be done to specific revisions. Use (if possible) the term “Set X.XX or later”.

NOTE Do not mix firmware revisions from this set with older or newer sets. This firmware is not tested across set borders.

This means

- Use of firmware from different sets may cause unpredictable problems.

NOTE A.06.xx / B.0x.xx firmware does not talk to old 1100 firmware revisions A.05.xx and below.

This means

- Adding a new 1260/1290 module to an existing 1100 system will not show the new module in the CDS.
- Depending on the interfacing either only the old or new or no module(s) are shown in the CDS.
- You should upgrade either the old module(s) to new firmware or downgrade the new module to old firmware (while the other side is disconnected via CAN).

OQ/PV - Validation Information

If a firmware upgrade has been performed, normally no re-validation of the module/system is required.

NOTE Whether are-validation is required or not is defined on the customer’s requirements.

Firmware Revision Change Information

This chapter provides the details of the various firmware revisions for the Agilent HPLC Systems/Modules. The initial changes (6.50) listed in this chapter are the changes based on the last revisions of set 6.30.

Resident Firmware

The resident firmware depends on the target module.

Table 2 - Resident Firmware

Module	Product#	Filename (.DLB)
with LAN on-board "D"	Note 2	Res_D680_001
with LAN on-board "D"	Note 2	Res_D677_002
with LAN on-board "D"	Note 2	Res_D670_001
with LAN on-board "D"	Note 2	Res_D660_001
with LAN on-board "B"	all	Res_B680_002
with LAN on-board "B"	all	Res_B677_002
with LAN on-board "B"	all	Res_B670_001
with LAN on-board "B"	all	Res_B660_002
with LAN on-board "B"	all	Res_B650_003
without LAN on-board "A"	all	Res_A650_003
LAN Interface Card	G1369C	Res_1369C_B680_001
LAN Interface Card	G1369C	Res_1369C_B677_004
LAN Interface Card	G1369C	Res_1369C_B670_001
LAN Interface Card	G1369C	Res_1369C_B660_002
LAN Interface Card	G1369C	Res_1369C_B650_003
for CAN slaves that requires host module "C"	Note 1	Res_C680_001
for CAN slaves that requires host module "C"	Note 1	Res_C675_001
for CAN slaves that requires host module "C"	Note 1	Res_C670_005
for CAN slaves that requires host module "C"	Note 1	Res_C660_001
for CAN slaves that requires host module "C"	Note 1	Res_C653_001
for CAN slaves that requires host module "C"	Note 1	Res_C650_001
Instant Pilot	G4208A	Res_4208A_B2xx_xxx (always latest)

Notes:

- 1 Used for 'HOSTED' modules
 - G7116B Multicolumn Thermostat (1290 Infinity II)
 - G4227A Flexible Cube (1290)
 - G1170A Valve Drive (1290)
 - G1390B Universal Interface Box II (1260/1290)

Resident version must be the same as main version and same as on host module.

- 2 New models introduced since August 2014 use a new electronic platform that run with "D" firmware (main and resident). See [Firmware D](#) and next pages for module list.

Due to an incompatibility between main firmware B.06.60 [0005] and old resident firmware it is mandatory to also update the resident firmware to B.06.60 [0002] and C.06.60 [001].

Existing 1200/1260/1290 modules with A/B/C/D firmware must be upgraded to latest firmware from set 6.50 when used with the new G7167 Multisampler and the other new modules!

1120 Compact LC / 1220 Infinity LC

NOTE Firmware updates can be done with the Agilent Lab Advisor software ONLY! See Agilent web for **Firmware Update Tools & Procedures!** See [Where To Get Latest Information](#).

Table 3 - 1120 Compact LC / 1220 Infinity LC

Module	Product#	Filename (.DLB)
1120 Compact LC	G4286A	4286A_B680_006
1120 Compact LC	G4286A	4286A_B677_004
1120 Compact LC	G4286A	4286A_B675_010
1120 Compact LC	G4286A	4286A_B672_002
1120 Compact LC	G4286A	4286A_B670_005
1120 Compact LC	G4286A	4286A_B660_005
1120 Compact LC	G4286A	4286A_B653_013
1120 Compact LC	G4286A	4286A_B652_001
1120 Compact LC	G4286A	4286A_B650_003
1220 Infinity LC	G4286B	4286B_B680_006
1220 Infinity LC	G4286B	4286B_B677_004
1220 Infinity LC	G4286B	4286B_B675_010
1220 Infinity LC	G4286B	4286B_B672_002
1220 Infinity LC	G4286B	4286B_B670_005
1220 Infinity LC	G4286B	4286B_B660_005
1220 Infinity LC	G4286B	4286B_B653_013
1220 Infinity LC	G4286B	4286B_B652_001
1220 Infinity LC	G4286B	4286B_B650_003
1220 Infinity LC VL	G4286C	4286C_B680_006
1220 Infinity LC VL	G4286C	4286C_B677_004
1220 Infinity LC VL	G4286C	4286C_B675_010
1220 Infinity LC VL	G4286C	4286C_B672_002
1220 Infinity LC VL	G4286C	4286C_B670_005
1220 Infinity LC VL	G4286C	4286C_B660_005
1220 Infinity LC VL	G4286C	4286C_B653_013
1220 Infinity LC VL	G4286C	4286C_B652_001
1220 Infinity LC VL	G4286C	4286C_B650_003
1120 Compact LC	G4287A	4287A_B680_006
1120 Compact LC	G4287A	4287A_B677_004
1120 Compact LC	G4287A	4287A_B675_010
1120 Compact LC	G4287A	4287A_B672_002
1120 Compact LC	G4287A	4287A_B670_005
1120 Compact LC	G4287A	4287A_B660_005
1120 Compact LC	G4287A	4287A_B653_013
1120 Compact LC	G4287A	4287A_B652_001
1120 Compact LC	G4287A	4287A_B650_003
1220 Infinity LC	G4287B	4287B_B680_006
1220 Infinity LC	G4287B	4287B_B677_004
1220 Infinity LC	G4287B	4287B_B675_010
1220 Infinity LC	G4287B	4287B_B672_002
1220 Infinity LC	G4287B	4287B_B670_005
1220 Infinity LC	G4287B	4287B_B660_005
1220 Infinity LC	G4287B	4287B_B653_013
1220 Infinity LC	G4287B	4287B_B652_001
1220 Infinity LC	G4287B	4287B_B650_003
1120 Compact LC	G4288A	4288A_B680_006

1120 Compact LC	G4288A	4288A_B677_004
1120 Compact LC	G4288A	4288A_B675_010
1120 Compact LC	G4288A	4288A_B672_002
1120 Compact LC	G4288A	4288A_B670_005
1120 Compact LC	G4288A	4288A_B660_005
1120 Compact LC	G4288A	4288A_B653_013
1120 Compact LC	G4288A	4288A_B652_001
1120 Compact LC	G4288A	4288A_B650_003
1220 Infinity LC	G4288B	4288B_B680_006
1220 Infinity LC	G4288B	4288B_B677_004
1220 Infinity LC	G4288B	4288B_B675_010
1220 Infinity LC	G4288B	4288B_B672_002
1220 Infinity LC	G4288B	4288B_B670_005
1220 Infinity LC	G4288B	4288B_B660_005
1220 Infinity LC	G4288B	4288B_B653_013
1220 Infinity LC	G4288B	4288B_B652_001
1220 Infinity LC	G4288B	4288B_B650_003
1220 Infinity LC VL	G4288C	4288C_B680_006
1220 Infinity LC VL	G4288C	4288C_B677_004
1220 Infinity LC VL	G4288C	4288C_B675_010
1220 Infinity LC VL	G4288C	4288C_B672_002
1220 Infinity LC VL	G4288C	4288C_B670_005
1220 Infinity LC VL	G4288C	4288C_B660_005
1220 Infinity LC VL	G4288C	4288C_B653_013
1220 Infinity LC VL	G4288C	4288C_B652_001
1220 Infinity LC VL	G4288C	4288C_B650_003
1120 Compact LC	G4289A	4289A_B680_006
1120 Compact LC	G4289A	4289A_B677_004
1120 Compact LC	G4289A	4289A_B675_010
1120 Compact LC	G4289A	4289A_B672_002
1120 Compact LC	G4289A	4289A_B670_005
1120 Compact LC	G4289A	4289A_B660_005
1120 Compact LC	G4289A	4289A_B653_013
1120 Compact LC	G4289A	4289A_B652_001
1120 Compact LC	G4289A	4289A_B650_003
1220 Infinity LC	G4289B	4289B_B680_006
1220 Infinity LC	G4289B	4289B_B677_004
1220 Infinity LC	G4289B	4289B_B675_010
1220 Infinity LC	G4289B	4289B_B672_002
1220 Infinity LC	G4289B	4289B_B670_005
1220 Infinity LC	G4289B	4289B_B660_005
1220 Infinity LC	G4289B	4289B_B653_013
1220 Infinity LC	G4289B	4289B_B652_001
1220 Infinity LC	G4289B	4289B_B650_003
1220 Infinity LC VL	G4289C	4289C_B680_006
1220 Infinity LC VL	G4289C	4289C_B677_004
1220 Infinity LC VL	G4289C	4289C_B675_010
1220 Infinity LC VL	G4289C	4289C_B672_002
1220 Infinity LC VL	G4289C	4289C_B670_005
1220 Infinity LC VL	G4289C	4289C_B660_005
1220 Infinity LC VL	G4289C	4289C_B653_013
1220 Infinity LC VL	G4289C	4289C_B652_001
1220 Infinity LC VL	G4289C	4289C_B650_003
1120 Compact LC	G4290A	4290A_B680_006

1120 Compact LC	G4290A	4290A_B677_004
1120 Compact LC	G4290A	4290A_B675_010
1120 Compact LC	G4290A	4290A_B672_002
1120 Compact LC	G4290A	4290A_B670_005
1120 Compact LC	G4290A	4290A_B660_005
1120 Compact LC	G4290A	4290A_B653_013
1120 Compact LC	G4290A	4290A_B652_001
1120 Compact LC	G4290A	4290A_B650_003
1220 Infinity LC	G4290B	4290B_B680_006
1220 Infinity LC	G4290B	4290B_B677_004
1220 Infinity LC	G4290B	4290B_B675_010
1220 Infinity LC	G4290B	4290B_B672_002
1220 Infinity LC	G4290B	4290B_B670_005
1220 Infinity LC	G4290B	4290B_B660_005
1220 Infinity LC	G4290B	4290B_B653_013
1220 Infinity LC	G4290B	4290B_B652_001
1220 Infinity LC	G4290B	4290B_B650_003
1220 Infinity LC VL	G4290C	4290C_B680_006
1220 Infinity LC VL	G4290C	4290C_B677_004
1220 Infinity LC VL	G4290C	4290C_B675_010
1220 Infinity LC VL	G4290C	4290C_B672_002
1220 Infinity LC VL	G4290C	4290C_B670_005
1220 Infinity LC VL	G4290C	4290C_B660_005
1220 Infinity LC VL	G4290C	4290C_B653_013
1220 Infinity LC VL	G4290C	4290C_B652_001
1220 Infinity LC VL	G4290C	4290C_B650_003
1120 Compact LC	G4291A	4291A_B680_006
1120 Compact LC	G4291A	4291A_B677_004
1120 Compact LC	G4291A	4291A_B675_010
1120 Compact LC	G4291A	4291A_B672_002
1120 Compact LC	G4291A	4291A_B670_005
1120 Compact LC	G4291A	4291A_B660_005
1120 Compact LC	G4291A	4291A_B653_013
1120 Compact LC	G4291A	4291A_B652_001
1120 Compact LC	G4291A	4291A_B650_003
1220 Infinity LC	G4291B	4291B_B680_006
1220 Infinity LC	G4291B	4291B_B677_004
1220 Infinity LC	G4291B	4291B_B675_010
1220 Infinity LC	G4291B	4291B_B672_002
1220 Infinity LC	G4291B	4291B_B670_005
1220 Infinity LC	G4291B	4291B_B660_005
1220 Infinity LC	G4291B	4291B_B653_013
1220 Infinity LC	G4291B	4291B_B652_001
1220 Infinity LC	G4291B	4291B_B650_003
1220 Infinity LC VL	G4291C	4291C_B680_006
1220 Infinity LC VL	G4291C	4291C_B677_004
1220 Infinity LC VL	G4291C	4291C_B675_010
1220 Infinity LC VL	G4291C	4291C_B672_002
1220 Infinity LC VL	G4291C	4291C_B670_005
1220 Infinity LC VL	G4291C	4291C_B660_005
1220 Infinity LC VL	G4291C	4291C_B653_013
1220 Infinity LC VL	G4291C	4291C_B652_001
1220 Infinity LC VL	G4291C	4291C_B650_003
1120 Compact LC	G4292A	4292A_B680_006

1120 Compact LC	G4292A	4292A_B677_004
1120 Compact LC	G4292A	4292A_B675_010
1120 Compact LC	G4292A	4292A_B672_002
1120 Compact LC	G4292A	4292A_B670_005
1120 Compact LC	G4292A	4292A_B660_005
1120 Compact LC	G4292A	4292A_B653_013
1120 Compact LC	G4292A	4292A_B652_001
1120 Compact LC	G4292A	4292A_B650_003
1220 Infinity LC	G4292B	4292B_B680_006
1220 Infinity LC	G4292B	4292B_B677_004
1220 Infinity LC	G4292B	4292B_B675_010
1220 Infinity LC	G4292B	4292B_B672_002
1220 Infinity LC	G4292B	4292B_B670_005
1220 Infinity LC	G4292B	4292B_B660_005
1220 Infinity LC	G4292B	4292B_B653_013
1220 Infinity LC	G4292B	4292B_B652_001
1220 Infinity LC	G4292B	4292B_B650_003
1220 Infinity LC VL	G4292C	4292C_B680_006
1220 Infinity LC VL	G4292C	4292C_B677_004
1220 Infinity LC VL	G4292C	4292C_B675_010
1220 Infinity LC VL	G4292C	4292C_B672_002
1220 Infinity LC VL	G4292C	4292C_B670_005
1220 Infinity LC VL	G4292C	4292C_B660_005
1220 Infinity LC VL	G4292C	4292C_B653_013
1220 Infinity LC VL	G4292C	4292C_B652_001
1220 Infinity LC VL	G4292C	4292C_B650_003
1120 Compact LC	G4293A	4293A_B680_006
1120 Compact LC	G4293A	4293A_B677_004
1120 Compact LC	G4293A	4293A_B675_010
1120 Compact LC	G4293A	4293A_B672_002
1120 Compact LC	G4293A	4293A_B670_005
1120 Compact LC	G4293A	4293A_B660_005
1120 Compact LC	G4293A	4293A_B653_013
1120 Compact LC	G4293A	4293A_B652_001
1120 Compact LC	G4293A	4293A_B650_003
1220 Infinity LC	G4293B	4293B_B680_006
1220 Infinity LC	G4293B	4293B_B677_004
1220 Infinity LC	G4293B	4293B_B675_010
1220 Infinity LC	G4293B	4293B_B672_002
1220 Infinity LC	G4293B	4293B_B670_005
1220 Infinity LC	G4293B	4293B_B660_005
1220 Infinity LC	G4293B	4293B_B653_013
1220 Infinity LC	G4293B	4293B_B652_001
1220 Infinity LC	G4293B	4293B_B650_003
1220 Infinity LC VL	G4293C	4293C_B680_006
1220 Infinity LC VL	G4293C	4293C_B677_004
1220 Infinity LC VL	G4293C	4293C_B675_010
1220 Infinity LC VL	G4293C	4293C_B672_002
1220 Infinity LC VL	G4293C	4293C_B670_005
1220 Infinity LC VL	G4293C	4293C_B660_005
1220 Infinity LC VL	G4293C	4293C_B653_013
1220 Infinity LC VL	G4293C	4293C_B652_001
1220 Infinity LC VL	G4293C	4293C_B650_003
1220 Infinity LC VL	G4294B	4294B_B680_006

1220 Infinity LC VL	G4294B	4294B_B677_004
1220 Infinity LC VL	G4294B	4294B_B675_010
1220 Infinity LC VL	G4294B	4294B_B673_001
1220 Infinity LC VL	G4294B	4294B_B672_002
1220 Infinity LC VL	G4294B	4294B_B670_005
1220 Infinity LC VL	G4294B	4294B_B660_005
1220 Infinity LC VL	G4294B	4294B_B653_013
1220 Infinity LC VL	G4294B	4294B_B652_001
1220 Infinity LC VL	G4294B	4294B_B650_003

1260 Infinity SFC Modules

NOTE Firmware updates can be done for

- G4301A with the special SFC updater ONLY!
- G4302A/G4303A with Agilent Lab Advisor software (B.02.07 or later). See Agilent web for **Firmware Update Tools & Procedures**! See [Where To Get Latest Information](#).

Table 4 - 1260/1290 Infinity SFC Modules

Module	Product#	Filename (.DLB)	Notes
1260 SFC Control Module	G4301A	4301A_x2_A309_005.af	x
1260 SFC Control Module	G4301A	4301A_x2_A308_009.af	x
1260 SFC Control Module	G4301A	4301A_x2_A307_009.af	x
1260 SFC Binary Pump	G4302A	4302A_B655_004	
1260 SFC Binary Pump	G4302A	4302A_B654_001	
1260 SFC Standard Autosampler	G4303A	4302A_B650_003	
1260 SFC Standard Autosampler	G4303A	4303A_A654_003	
1260 SFC Standard Autosampler	G4303A	4303A_A650_003	

NOTE X: individual firmware file for board revision B or C available.

HPLC Modules

NOTE This includes modules introduced as 1100/1200/1290/Infinity/Infinity II modules.

NOTE Firmware updates should be done with Agilent Lab Advisor software (use latest version). This tool provides also the conversion for the emulation mode. See Agilent web for **Firmware Update Tools & Procedures**! See [Where To Get Latest Information](#).

NOTE Some new 1260/1290 Infinity/Infinity II modules that can be converted to emulate earlier modules shown in the column “Emulation” the type it can be converted to.

Pumps

Table 5 - HPLC Modules - Pumps

Module	Product#	Filename (.DLB)	Emulation
1100/1200 Isocratic Pump	G1310A	1310A_A655_004	
1100/1200 Isocratic Pump	G1310A	1310A_A654_001	
1100/1200 Isocratic Pump	G1310A	1310A_A650_003	
1260 Isocratic Pump	G1310B	1310B_A655_004	A
1260 Isocratic Pump	G1310B	1310B_A654_001	A
1260 Isocratic Pump	G1310B	1310B_A650_003	A
1100/1200 Quaternary Pump	G1311A	1311A_A655_004	
1100/1200 Quaternary Pump	G1311A	1311A_A654_001	
1100/1200 Quaternary Pump	G1311A	1311A_A650_003	
1260 Quaternary Pump	G1311B	1311B_A655_004	A
1260 Quaternary Pump	G1311B	1311B_A654_001	A
1260 Quaternary Pump	G1311B	1311B_A650_003	A
1260 Quaternary Pump VL	G1311C	1311C_A655_004	A
1260 Quaternary Pump VL	G1311C	1311C_A654_001	A
1260 Quaternary Pump VL	G1311C	1311C_A650_003	A
1100/1200 Binary Pump	G1312A	1312A_A655_004	
1100/1200 Binary Pump	G1312A	1312A_A654_001	
1100/1200 Binary Pump	G1312A	1312A_A650_003	
1260 Binary Pump	G1312B	1312B_A655_004	A
1260 Binary Pump	G1312B	1312B_A654_001	A
1260 Binary Pump	G1312B	1312B_A653_002	A
1260 Binary Pump	G1312B	1312B_A652_001	A
1260 Binary Pump	G1312B	1312B_A650_003	A
1260 Binary Pump VL	G1312C	1312C_A655_004	A
1260 Binary Pump VL	G1312C	1312C_A654_001	A
1260 Binary Pump VL	G1312C	1312C_A650_003	A
1260 Preparative Pump	G1361A	1361A_A654_001	
1260 Preparative Pump	G1361A	1361A_A653_003	
1260 Preparative Pump	G1361A	1361A_A650_004	
1260 Capillary Pump	G1376A	1376A_A654_001	
1260 Capillary Pump	G1376A	1376A_A650_003	
1260 Nanoflow Pump	G2226A	2226A_A654_001	
1260 Nanoflow Pump	G2226A	2226A_A650_003	
1290 Quaternary Pump	G4204A	4204A_B680_007	
1290 Quaternary Pump	G4204A	4204A_B677_004	
1290 Quaternary Pump	G4204A	4204A_B675_010	
1290 Quaternary Pump	G4204A	4204A_B673_002	
1290 Quaternary Pump	G4204A	4204A_B672_002	

1290 Quaternary Pump	G4204A	4204A_B671_001	
1290 Quaternary Pump	G4204A	4204A_B670_005	
1290 Quaternary Pump	G4204A	4204A_B660_005	
1290 Quaternary Pump	G4204A	4204A_B656_002	
1290 Quaternary Pump	G4204A	4204A_B655_005	
1290 Quaternary Pump	G4204A	4204A_B653_013	
1290 Quaternary Pump	G4204A	4204A_B652_001	
1290 Quaternary Pump	G4204A	4204A_B651_004	
1290 Binary Pump	G4220A	4220A_B680_007	
1290 Binary Pump	G4220A	4220A_B681_002	
1290 Binary Pump	G4220A	4220A_B677_004	
1290 Binary Pump	G4220A	4220A_B675_010	
1290 Binary Pump	G4220A	4220A_B673_001	
1290 Binary Pump	G4220A	4220A_B672_002	
1290 Binary Pump	G4220A	4220A_B671_001	
1290 Binary Pump	G4220A	4220A_B670_005	
1290 Binary Pump	G4220A	4220A_B660_005	
1290 Binary Pump	G4220A	4220A_B656_002	
1290 Binary Pump	G4220A	4220A_B655_003	
1290 Binary Pump	G4220A	4220A_B654_006	
1290 Binary Pump	G4220A	4220A_B653_013	
1290 Binary Pump	G4220A	4220A_B652_001	
1290 Binary Pump	G4220A	4220A_B651_004	
1290 Binary Pump	G4220A	4220A_B650_003	
1290 Binary Pump VL	G4220B	4220B_B681_002	
1290 Binary Pump VL	G4220B	4220B_B680_007	
1290 Binary Pump VL	G4220B	4220B_B677_004	
1290 Binary Pump VL	G4220B	4220B_B675_010	
1290 Binary Pump VL	G4220B	4220B_B673_001	
1290 Binary Pump VL	G4220B	4220B_B672_002	
1290 Binary Pump VL	G4220B	4220B_B671_001	
1290 Binary Pump VL	G4220B	4220B_B670_005	
1290 Binary Pump VL	G4220B	4220B_B660_005	
1290 Binary Pump VL	G4220B	4220B_B656_002	
1290 Binary Pump VL	G4220B	4220B_B655_003	
1290 Binary Pump VL	G4220B	4220B_B654_006	
1290 Binary Pump VL	G4220B	4220B_B653_013	
1290 Binary Pump VL	G4220B	4220B_B652_001	
1290 Binary Pump VL	G4220B	4220B_B651_004	
1290 Binary Pump VL	G4220B	4220B_B650_003	
1260 Bio-inert Quaternary Pump	G5611A	5611A_A655_004	
1260 Bio-inert Quaternary Pump	G5611A	5611A_A654_001	
1260 Bio-inert Quaternary Pump	G5611A	5611A_A650_003	
1290 Infinity II Quaternary Pump	G7104A	7104A_B680_007	G4204A
1290 Infinity II Quaternary Pump	G7104A	7104A_B677_004	G4204A
1290 Infinity II Quaternary Pump	G7104A	7104A_B675_010	G4204A
1290 Infinity II Quaternary Pump	G7104A	7104A_B673_002	G4204A
1290 Infinity II Quaternary Pump	G7104A	7104A_B672_002	G4204A
1290 Infinity II Quaternary Pump	G7104A	7104A_B671_001	G4204A
1290 Infinity II Quaternary Pump	G7104A	7104A_B670_005	G4204A
1290 Infinity II Binary Pump	G7120A	7120A_B681_002	G4220A
1290 Infinity II Binary Pump	G7120A	7120A_B680_007	G4220A
1290 Infinity II Binary Pump	G7120A	7120A_B677_004	G4220A
1290 Infinity II Binary Pump	G7120A	7120A_B675_010	G4220A

1290 Infinity II Binary Pump	G7120A	7120A_B673_001	G4220A
1290 Infinity II Binary Pump	G7120A	7120A_B672_002	G4220A
1290 Infinity II Binary Pump	G7120A	7120A_B671_001	G4220A
1290 Infinity II Binary Pump	G7120A	7120A_B670_005	G4220A

Samplers

Table 6 - HPLC Modules - Samplers

Module	Product#	Filename (.DLB)	Emulation
1100 Autosampler	G1313A	1313A_A654_003	
1100 Autosampler	G1313A	1313A_A650_003	
1100/1200 Standard Autosampler	G1329A	1329A_A654_003	
1100/1200 Standard Autosampler	G1329A	1329A_A650_003	
1260 Standard Autosampler	G1329B	1329B_A654_003	A
1260 Standard Autosampler	G1329B	1329B_A650_003	A
1200 Fraction Collector	G1364A	1364A_A656_001	
1200 Fraction Collector	G1364A	1364A_A654_002	
1200 Fraction Collector	G1364A	1364A_A653_005	
1200 Fraction Collector	G1364A	1364A_A650_003	
1260 Fraction Collector (PS)	G1364B	1364B_A656_001	
1260 Fraction Collector (PS)	G1364B	1364B_A654_002	
1260 Fraction Collector (PS)	G1364B	1364B_A653_005	
1260 Fraction Collector (PS)	G1364B	1364B_A650_003	
1260 Fraction Collector (AS)	G1364C	1364C_A656_001	
1260 Fraction Collector (AS)	G1364C	1364C_A654_002	
1260 Fraction Collector (AS)	G1364C	1364C_A653_005	
1260 Fraction Collector (AS)	G1364C	1364C_A650_003	
1260 Fraction Collector (μS)	G1364D	1364D_A656_001	
1260 Fraction Collector (μS)	G1364D	1364D_A654_002	
1260 Fraction Collector (μS)	G1364D	1364D_A653_005	
1260 Fraction Collector (μS)	G1364D	1364D_A650_003	
1200 High Performance Autosampler	G1367A	1367A_A654_006	
1200 High Performance Autosampler	G1367A	1367A_A653_002	
1200 High Performance Autosampler	G1367A	1367A_A650_003	
1200 High Performance Autosampler	G1367B	1367B_A654_006	A
1200 High Performance Autosampler	G1367B	1367B_A653_002	A
1200 High Performance Autosampler	G1367B	1367B_A650_003	A
1200 High Performance Autosampler SL	G1367C	1367C_A654_006	A
1200 High Performance Autosampler SL	G1367C	1367C_A653_002	A
1200 High Performance Autosampler SL	G1367C	1367C_A650_003	A
1200 High Performance Autosampler SL+	G1367D	1367D_A654_006	C
1200 High Performance Autosampler SL+	G1367D	1367D_A653_002	C
1200 High Performance Autosampler SL+	G1367D	1367D_A650_003	C
1260 High Performance Autosampler	G1367E	1367E_A654_006	A, B, C, D
1260 High Performance Autosampler	G1367E	1367E_A653_002	A, B, C, D
1260 High Performance Autosampler	G1367E	1367E_A650_003	A, B, C, D
1260 High Performance Micro Autosampler	G1377A	1377A_A654_006	
1260 High Performance Micro Autosampler	G1377A	1377A_A653_002	
1260 High Performance Micro Autosampler	G1377A	1377A_A650_003	
1200 Micro Autosampler	G1389A	1389A_A654_003	
1200 Micro Autosampler	G1389A	1389A_A650_003	
1260 Dual-Loop Autosampler	G2258A	2258A_A654_006	
1260 Dual-Loop Autosampler	G2258A	2258A_A653_002	
1260 Dual-Loop Autosampler	G2258A	2258A_A650_003	
1260 Preparative Autosampler	G2260A	2260A_A654_003	
1260 Preparative Autosampler	G2260A	2260A_A650_003	
1290 Autosampler	G4226A	4226A_A654_006	
1290 Autosampler	G4226A	4226A_A653_002	
1290 Autosampler	G4226A	4226A_A650_003	

1290 Flexible Cube	G4227A	4227A_C680_001	
1290 Flexible Cube	G4227A	4227A_C670_005	
1290 Flexible Cube	G4227A	4227A_C660_001	
1290 Flexible Cube	G4227A	4227A_C653_001	
1290 Flexible Cube	G4227A	4227A_C652_001	
1290 Flexible Cube	G4227A	4227A_C650_001	
1260 Fraction Collector Bio	G5664A	5664A_A656_001	
1260 Fraction Collector Bio	G5664A	5664A_A654_002	
1260 Fraction Collector Bio	G5664A	5664A_A653_005	
1260 Fraction Collector Bio	G5664A	5664A_A650_003	
1260 High Performance Autosampler	G5667A	5667A_A654_006	C, E
1260 High Performance Autosampler	G5667A	5667A_A653_002	C, E
1260 High Performance Autosampler	G5667A	5667A_A650_003	C, E
1260 Infinty II Vialsampler	G7129A	7129A_D680_008	
1260 Infinty II Vialsampler	G7129A	7129A_D677_004	
1290 Infinty II Vialsampler	G7129B	7129B_D680_008	
1290 Infinty II Vialsampler	G7129B	7129B_D677_004	
1290 Infinty II Multisampler	G7167A	7167A_D680_007	
1290 Infinty II Multisampler	G7167A	7167A_D678_001	
1290 Infinty II Multisampler	G7167A	7167A_D677_004	
1290 Infinty II Multisampler	G7167A	7167A_D675_011	
1290 Infinty II Multisampler	G7167A	7167A_D674_001	
1290 Infinty II Multisampler	G7167A	7167A_D673_003	
1290 Infinty II Multisampler	G7167A	7167A_D672_002	
1290 Infinty II Multisampler	G7167A	7167A_D670_005	
1290 Infinty II Multisampler	G7167B	7167B_D680_007	
1290 Infinty II Multisampler	G7167B	7167B_D678_001	
1290 Infinty II Multisampler	G7167B	7167B_D677_004	
1290 Infinty II Multisampler	G7167B	7167B_D675_011	
1290 Infinty II Multisampler	G7167B	7167B_D674_001	
1290 Infinty II Multisampler	G7167B	7167B_D673_003	
1290 Infinty II Multisampler	G7167B	7167B_D672_002	
1290 Infinty II Multisampler	G7167B	7167B_D670_005	
1290 Infinty II Multisampler	G7167B	7167B_D660_011	

Detectors

Table 7 - HPLC Modules - Detectors

Module	Product#	Filename (.DLB)	Emulation
1100/1200 Variable Wavelength Detector VWD	G1314A	1314A_A650_004	
1260 Variable Wavelength Detector VL	G1314B	1314B_A650_004	A
1260 Variable Wavelength Detector VL+	G1314C	1314C_A650_004	A, B
1200 Variable Wavelength Detector	G1314D	1314D_B680_006	
1200 Variable Wavelength Detector	G1314D	1314D_B677_004	
1200 Variable Wavelength Detector	G1314D	1314D_B675_010	
1200 Variable Wavelength Detector	G1314D	1314D_B673_001	
1200 Variable Wavelength Detector	G1314D	1314D_B672_002	
1200 Variable Wavelength Detector	G1314D	1314D_B670_006	
1200 Variable Wavelength Detector	G1314D	1314D_B660_005	
1200 Variable Wavelength Detector	G1314D	1314D_B653_013	
1200 Variable Wavelength Detector	G1314D	1314D_B652_001	
1200 Variable Wavelength Detector	G1314D	1314D_B651_004	
1200 Variable Wavelength Detector	G1314D	1314D_B650_005	
1290 Variable Wavelength Detector	G1314E	1314E_B680_006	
1290 Variable Wavelength Detector	G1314E	1314E_B677_004	
1290 Variable Wavelength Detector	G1314E	1314E_B675_010	
1290 Variable Wavelength Detector	G1314E	1314E_B673_001	
1290 Variable Wavelength Detector	G1314E	1314E_B672_002	
1290 Variable Wavelength Detector	G1314E	1314E_B670_006	
1290 Variable Wavelength Detector	G1314E	1314E_B660_005	
1290 Variable Wavelength Detector	G1314E	1314E_B653_013	
1290 Variable Wavelength Detector	G1314E	1314E_B652_001	
1290 Variable Wavelength Detector	G1314E	1314E_B651_004	
1290 Variable Wavelength Detector	G1314E	1314E_B650_003	
1260 Variable Wavelength Detector	G1314F	1314F_B680_006	D
1260 Variable Wavelength Detector	G1314F	1314F_B677_004	D
1260 Variable Wavelength Detector	G1314F	1314F_B675_010	D
1260 Variable Wavelength Detector	G1314F	1314F_B673_001	D
1260 Variable Wavelength Detector	G1314F	1314F_B672_002	D
1260 Variable Wavelength Detector	G1314F	1314F_B670_006	D
1260 Variable Wavelength Detector	G1314F	1314F_B660_005	D
1260 Variable Wavelength Detector	G1314F	1314F_B653_013	D
1260 Variable Wavelength Detector	G1314F	1314F_B652_001	D
1260 Variable Wavelength Detector	G1314F	1314F_B651_004	D
1260 Variable Wavelength Detector	G1314F	1314F_B650_003	D
1100 Diode Array Detector	G1315A	1315A_A650_003	
1100/1200 Diode Array Detector	G1315B	1315B_A650_003	
1260 Diode Array Detector VL+	G1315C	1315C_B680_006	D
1260 Diode Array Detector VL+	G1315C	1315C_B677_004	D
1260 Diode Array Detector VL+	G1315C	1315C_B675_010	D
1260 Diode Array Detector VL+	G1315C	1315C_B673_001	D
1260 Diode Array Detector VL+	G1315C	1315C_B672_002	D
1260 Diode Array Detector VL+	G1315C	1315C_B670_005	D
1260 Diode Array Detector VL+	G1315C	1315C_B660_005	D
1260 Diode Array Detector VL+	G1315C	1315C_B653_013	D
1260 Diode Array Detector VL+	G1315C	1315C_B652_001	D
1260 Diode Array Detector VL+	G1315C	1315C_B651_004	D
1260 Diode Array Detector VL+	G1315C	1315C_B650_003	D
1260 Diode Array Detector VL	G1315D	1315D_B680_006	

1260 Diode Array Detector VL	G1315D	1315D_B677_004	
1260 Diode Array Detector VL	G1315D	1315D_B675_010	
1260 Diode Array Detector VL	G1315D	1315D_B673_001	
1260 Diode Array Detector VL	G1315D	1315D_B672_002	
1260 Diode Array Detector VL	G1315D	1315D_B670_005	
1260 Diode Array Detector VL	G1315D	1315D_B660_005	
1260 Diode Array Detector VL	G1315D	1315D_B653_013	
1260 Diode Array Detector VL	G1315D	1315D_B652_001	
1260 Diode Array Detector VL	G1315D	1315D_B651_004	
1260 Diode Array Detector VL	G1315D	1315D_B650_003	
1100/1200 Fluorescence Detector	G1321A	1321A_A655_001	
1100/1200 Fluorescence Detector	G1321A	1321A_A654_002	
1100/1200 Fluorescence Detector	G1321A	1321A_A650_003	
1260 Fluorescence Detector	G1321B	1321B_A655_001	A
1260 Fluorescence Detector	G1321B	1321B_A654_002	A
1260 Fluorescence Detector	G1321B	1321B_A653_002	A
1260 Fluorescence Detector	G1321B	1321B_A650_003	A
1260 Fluorescence Detector	G1321C	1321C_A655_001	
1260 Fluorescence Detector	G1321C	1321C_A654_002	
1260 Refractive Index Detector	G1362A	1362A_A654_004	
1260 Refractive Index Detector	G1362A	1362A_A650_002	
1100 Multiple Wavelength Detector	G1365A	1365A_A650_003	
1100/1200 Multiple Wavelength Detector	G1365B	1365B_A650_003	
1260 Multiple Wavelength Detector	G1365C	1365C_B680_006	D
1260 Multiple Wavelength Detector	G1365C	1365C_B677_004	D
1260 Multiple Wavelength Detector	G1365C	1365C_B675_010	D
1260 Multiple Wavelength Detector	G1365C	1365C_B673_001	D
1260 Multiple Wavelength Detector	G1365C	1365C_B672_002	D
1260 Multiple Wavelength Detector	G1365C	1365C_B670_005	D
1260 Multiple Wavelength Detector	G1365C	1365C_B660_005	D
1260 Multiple Wavelength Detector	G1365C	1365C_B653_013	D
1260 Multiple Wavelength Detector	G1365C	1365C_B652_001	D
1260 Multiple Wavelength Detector	G1365C	1365C_B651_004	D
1260 Multiple Wavelength Detector	G1365C	1365C_B650_003	D
1260 Multiple Wavelength Detector VL	G1365D	1365D_B680_006	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B677_004	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B675_010	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B673_001	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B672_002	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B670_005	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B660_005	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B653_013	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B652_001	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B651_004	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B650_003	
1290 Diode Array Detector	G4212A	4212A_B680_006	
1290 Diode Array Detector	G4212A	4212A_B677_004	
1290 Diode Array Detector	G4212A	4212A_B675_010	
1290 Diode Array Detector	G4212A	4212A_B673_001	
1290 Diode Array Detector	G4212A	4212A_B672_002	
1290 Diode Array Detector	G4212A	4212A_B670_005	
1290 Diode Array Detector	G4212A	4212A_B660_005	
1290 Diode Array Detector	G4212A	4212A_B657_012	
1290 Diode Array Detector	G4212A	4212A_B653_013	

1290 Diode Array Detector	G4212A	4212A_B652_001	
1290 Diode Array Detector	G4212A	4212A_B651_004	
1290 Diode Array Detector	G4212A	4212A_B650_003	
1260 Diode Array Detector	G4212B	4212B_B680_006	
1260 Diode Array Detector	G4212B	4212B_B677_004	
1260 Diode Array Detector	G4212B	4212B_B675_010	
1260 Diode Array Detector	G4212B	4212B_B673_001	
1260 Diode Array Detector	G4212B	4212B_B672_002	
1260 Diode Array Detector	G4212B	4212B_B670_005	
1260 Diode Array Detector	G4212B	4212B_B660_005	
1260 Diode Array Detector	G4212B	4212B_B657_012	
1260 Diode Array Detector	G4212B	4212B_B653_013	
1260 Diode Array Detector	G4212B	4212B_B652_001	
1260 Diode Array Detector	G4212B	4212B_B651_004	
1260 Diode Array Detector	G4212B	4212B_B650_003	
1290 Infinity II Variable Wavelength Detector	G7114B	7114B_D680_006	G1314D/F
1290 Infinity II Variable Wavelength Detector	G7114B	7114B_D677_004	G1314D/F
1290 Infinity II Variable Wavelength Detector	G7114B	7114B_D675_010	G1314D/F
1290 Infinity II Variable Wavelength Detector	G7114B	7114B_D673_001	G1314D/F
1290 Infinity II Variable Wavelength Detector	G7114B	7114B_D672_002	G1314D/F
1290 Infinity II Variable Wavelength Detector	G7114B	7114B_D670_005	G1314D/F
1290 Infinity II Diode Array Detector	G7117B	7117B_D680_006	G4212A
1290 Infinity II Diode Array Detector	G7117B	7117B_D677_004	G4212A
1290 Infinity II Diode Array Detector	G7117B	7117B_D675_010	G4212A
1290 Infinity II Diode Array Detector	G7117B	7117B_D672_002	G4212A
1290 Infinity II Diode Array Detector	G7117B	7117B_D670_005	G4212A
1290 Infinity II Diode Array Detector FS	G7117A	7117A_D680_006	G4212B
1290 Infinity II Diode Array Detector FS	G7117A	7117A_D677_004	G4212B
1290 Infinity II Diode Array Detector FS	G7117A	7117A_D675_010	G4212B
1290 Infinity II Diode Array Detector FS	G7117A	7117A_D672_002	G4212B
1290 Infinity II Diode Array Detector FS	G7117A	7117A_D670_005	G4212B
1260 Infinity II Refractive Index Detector	G7162A	7162A_D680_006	
1260 Infinity II Refractive Index Detector	G7162A	7162A_D677_004	
1290 Infinity II Refractive Index Detector	G7162B	7162B_D680_006	
1290 Infinity II Refractive Index Detector	G7162B	7162B_D677_004	

Others

Table 8 - HPLC Modules - Others

Module	Product#	Filename (.DLB)	Emulation
1260 Thermostatted Column Compartment	G1316A	1316A_A650_005	
1200 Thermostatted Column Compartment	G1316B	1316B_A650_005	
1290 Thermostatted Column Compartment	G1316C	1316C_A656_001	A, B
1290 Thermostatted Column Compartment	G1316C	1316C_A655_005	A, B
1290 Thermostatted Column Compartment	G1316C	1316C_A653_002	A, B
1290 Thermostatted Column Compartment	G1316C	1316C_A650_005	A, B
1290 Infinity II Multicolumn Thermostat	G7116B	7116B_C680_001	
1290 Infinity II Multicolumn Thermostat	G7116B	7116B_C675_001	
1290 Infinity II Multicolumn Thermostat	G7116B	7116B_C672_001	
1290 Infinity II Multicolumn Thermostat	G7116B	7116B_C670_005	
1260 Automation Interface (WPS, AFC)	G2254A	2254A_A650_001	
1290 Flexible Cube	G4227A	4227A_C680_001	1
1290 Flexible Cube	G4227A	4227A_C675_001	1
1290 Flexible Cube	G4227A	4227A_C653_001	1
1290 Flexible Cube	G4227A	4227A_C652_001	
1290 Flexible Cube	G4227A	4227A_C650_001	
1260 Chip Cube MS Interface	G4240A	4240A_A650_003	
1260 6-Position/7-Ports Valve	G1156A	1156A_A650_001	
1260 2-Position/10-Ports Valve	G1157A	1157A_A650_001	
1200 2-Position/6-Ports Valve	G1158A	1158A_A650_001	
1260 2-Position/6-Ports Valve	G1158B	1158B_A650_001	
1260 6-Position Column Selector Valve	G1159A	1159A_A650_001	
1260 12-Position Selector Valve	G1160A	1160A_A650_001	
1260 Micro Valve 2-Position/6-Ports	G1162A	1162A_A650_001	
1260 Micro Valve 2-Position/10-Ports	G1163A	1163A_A650_001	
1290 Infinity Valve Drive	G1170A	1170A_C680_001	1
1290 Infinity Valve Drive	G1170A	1170A_C675_001	1
1290 Infinity Valve Drive	G1170A	1170A_C670_005	1
1290 Infinity Valve Drive	G1170A	1170A_C660_001	1
1290 Infinity Valve Drive	G1170A	1170A_C653_001	1
1290 Infinity Valve Drive	G1170A	1170A_C650_001	1
1260 Universal Interface Box (UIB II)	G1390B	1390B_C680_001	1
1260 Universal Interface Box (UIB II)	G1390B	1390B_C675_001	1
1260 Universal Interface Box (UIB II)	G1390B	1390B_C670_005	1
1260 Universal Interface Box (UIB II)	G1390B	1390B_C660_001	1
1260 Universal Interface Box (UIB II)	G1390B	1390B_C653_002	1
1260 Universal Interface Box (UIB II)	G1390B	1390B_C650_001	1
1260 Universal Interface Box (UIB)	G1390A	1390A_A650_001	
LAN Interface Card G1369C	G1369C	1369C_B680_006	2
LAN Interface Card G1369C	G1369C	1369C_B677_004	2
LAN Interface Card G1369C	G1369C	1369C_B675_001	2
LAN Interface Card G1369C	G1369C	1369C_B672_002	2
LAN Interface Card G1369C	G1369C	1369C_B670_005	2
LAN Interface Card G1369C	G1369C	1369C_B660_002	2
LAN Interface Card G1369C	G1369C	1369C_B653_013	2
LAN Interface Card G1369C	G1369C	1369C_B652_001	2
LAN Interface Card G1369C	G1369C	1369C_B650_003	2
G7100 Capillary Electrophoresis (CE)	G7100A	7101A_B673_002	
G7100 Capillary Electrophoresis (CE)	G7100A	7101A_B670_005	
G7100 Capillary Electrophoresis (CE)	G7100A	7101A_B644_001	

Controllers are now listed in a separate bulletin!	G1323A/B G4208A		
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Notes:

1. To operate this CAN-slave module a host module with firmware from the same set/revision (any pump or detector with B.06.30 or above) is required.
2. If hosted modules are used in the system, the G1369C LAN Interface Card MUST have the same firmware revision (from the same set) as the hosted module. Otherwise the operation of hosted modules will show malfunctions.
3. Use always the latest revision.

Core Firmware Changes

NOTE The core firmware changes are implemented on all modules in addition to module specific changes.

Modules without on-board LAN (“A” firmware)

Core Changes A.06.55

Table 9 - Core Changes A.06.55 (modules without on-board LAN)

Date Introduced:	July 2015
General:	For all modules with “A” firmware based on A.06.55 main firmware.
Bugfix:	Take over the Core fixes of releases up to A.06.55.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes A.06.54

Table 10 - Core Changes A.06.54 (modules without on-board LAN)

Date Introduced:	February 2015
General:	For all modules with “A” firmware (G1362A, G1364A/D, G5464A).
Bugfix:	TeamTrack #019548: Made flow unit conversion unique when using remote services across modules with different LC module-platforms.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 11 - Core Changes A.06.54 (modules without on-board LAN)

Date Introduced:	December 2014
General:	For all modules with “A” firmware.
Bugfix:	Took over the core fixes of releases up to A.06.54 for those modules with older Core.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes A.06.50

Table 12 - Core Changes A.06.50 (modules without on-board LAN)

Date Introduced:	May 2012
General:	For all modules with “A” firmware.
Bugfix:	TeamTrack #006383, #010628, #013784: Fixed some seldom occurring effects with analysis synchronization, e.g. hanging runs.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Modules with on-board LAN (“B” and “D” firmware)

Core Changes B/D.06.80

Table 13 - Core Changes B/D.06.80 (modules with on-board LAN)

Date Introduced:	March 2016
General:	For all modules with “B” and “D” firmware.
Bugfix:	None
New Features:	- Implemented support for Agilent 2D-LC Software A.01.03. - Implemented hosting functionality for slave modules with revision C.06.80.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B/D.06.77

Table 14 - Core Changes B/D.06.77 (modules with on-board LAN)

Date Introduced:	November 2015
General:	For all modules with “B” and “D” firmware.
Bugfix:	TeamTrack #023295: Fixed that condition error is not cleared after triggering a reset.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B/D.06.75

Table 15 - Core Changes B/D.06.75 (modules with on-board LAN)

Date Introduced:	July 2015
General:	For all modules with “B” and “D” firmware.
Bugfix:	Implemented hosting functionality for slave modules with revision C.06.75.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B/D.06.73

Table 16 - Core Changes B/D.06.73 (modules with on-board LAN)

Date Introduced:	February 2015
General:	For all modules with “B” and “D” firmware.
Bugfix:	None
New Features:	Enabled handling for new, upcoming tags in Nucleus (B-firmware) modules.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B/D.06.72

Table 17 - Core Changes B/D.06.72 (modules with on-board LAN)

Date Introduced:	December 2014
General:	For all modules with “B” and “D” firmware.
Bugfix:	- TeamTrack #022297: Under very special conditions time table entries were not executed correctly. This could only happen if the CPU load of the module was very high (e.g. a high-load module like the G4220A pump hosting slaves) and a time-table entry was made at the end of the run-time. Under these conditions there was a small risk that time table entries of the next run were ignored. - TeamTrack #022293: When condensation for the MCT G7116B is enabled and the thermostat cooled down to a low temperature, condensate was detected as expected. When the temperature now rises again above ambient, a leak error in the G7116B wrongly occurred (only if hosting a G7116B). - TeamTrack #022258: Enlarged field for column name and comment for the MCT G7116B from 16 to 32 bytes (only if hosting a G7116B).
New Features:	Implemented support for the new module types G7116B (Multi-column Thermostat).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B/D.06.70

Table 18 - Core Changes B/D.06.70 (modules with on-board LAN)

Date Introduced:	November 2014
General:	For all modules with “B” and “D” firmware.
Bugfix:	TeamTrack #019984: Made tag access more robust against wrongly detected.
New Features:	Implemented support for the new module types G7116B (Multi-column Thermostat).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B/D.06.60

Table 19 - Core Changes B/D.06.60 (modules with on-board LAN)

Date Introduced:	September 2014
General:	For all modules with “B” and “D” firmware.
Bugfix:	TeamTrack #20608, #021604: The time table did not work correctly if deleted and newly written during active run.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B.06.54

Table 20 - Core Changes B.06.54 (modules with on-board LAN)

Date Introduced:	May 2013
General:	For all modules with “B” firmware.
Bugfix:	TeamTrack #017747, 017625: Implemented fix to prevent from very seldom occurring CAN interface resets (resulting in module disappearing for 2 seconds on the CAN bus).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B.06.53

Table 21 - Core Changes B.06.53 (modules with on-board LAN)

Date Introduced:	February 2013
General:	For all modules with “B” firmware.
Bugfix:	- Changed that purge pump time (command PPMP:TIME <time>) now specifies the absolute purge time needed for drawing and ejecting. Before, the time was a net-ejection-time (drawing did not count) (only for G4227A). - TeamTrack #017535: UIB G1390B did not correctly support fraction collector (AFC) clustering (only for G1390B). - TeamTrack #017667: UIB G1390B calculated wrong AnalogIn signal and actual for the user-defined unit (only for G1390B).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B.06.52

Table 22 - Core Changes B.06.52 (modules with on-board LAN)

Date Introduced:	September 2012
General:	For all modules with “B” firmware.
Bugfix:	None
New Features:	- TeamTrack #016377: Implemented additional commands PPMP:VOLB (pump volume with specific SSV selections) and PPMP:TIMB (pump for a time with specific SSV selections) for pumping from a specific bottle (only for hosted module G4227A Flex Cube). - TeamTrack #016378: Changed the behavior if the duration for pump volume (PPMP:VOL, PPMP:VOLB) or pump time (PPMP:TIME, PPMP:TIMB) takes longer than the stop time. If the stop time is over, the G4227A gets 'not ready' until the pump command has also finished (only for hosted module G4227A Flex Cube).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B.06.51

Table 23 - Core Changes B.06.51 (modules with on-board LAN)

Date Introduced:	July 2012
General:	For all modules with "B" firmware.
Bugfix:	• TeamTrack #16282: Modules with clustered valves occasionally did stay in 'not ready'-state with "Valve position member missing" (only for G1170A, G4227A). • TeamTrack #016321: A module with clustered valves did not accept a second "get ready to switch" command. If the valve was already "ready to switch" a second command "get ready to switch" from the switching master caused a panic, now it will be ignored (only for G1170A, G4227A).
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes B.06.50

Table 24 - Core Changes B.06.50 (modules with on-board LAN)

Date Introduced:	May 2012
General:	For all modules with "B" firmware.
Bugfix:	• • No TeamTrack: Fixed some seldom occurring effects with analysis synchronization, e.g. hanging runs. • No TeamTrack: Improved the performance of COSY list execution. • No TeamTrack: Fixed that diag counters occasionally are counting wrong over power-cycle.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Modules with “C” firmware

Core Changes C.06.72

Table 25 - Core Changes C.06.72 (modules with C-firmware)

Date Introduced:	December 2014
General:	
Bugfix:	TeamTrack #022297: Under very special conditions time table entries were not executed correctly. This could only happen if the CPU load of the module was very high (e.g. a high-load module like the G4220A pump hosting slaves) and a time-table entry was made at the end of the run-time. Under these conditions there was a small risk that time table entries of the next run were ignored.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes C. 06.70

Table 26 - Core Changes C. 06.70 (modules with C-firmware)

Date Introduced:	November 2014
General:	
Bugfix:	See Core Changes B/D.06.70
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes C. 06.60

Table 27 - Core Changes C. 06.60 (modules with C-firmware)

Date Introduced:	September 2014
General:	
Bugfix:	See Core Changes B/D.06.60.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes C. 06.53

Table 28 - Core Changes C. 06.60 (modules with C-firmware)

Date Introduced:	February 2012
General:	
Bugfix:	See Core Changes B.06.53
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Core Changes C. 06.50

Table 29 - Core Changes C. 06.50 (modules with C-firmware)

Date Introduced:	May 2012
General:	
Bugfix:	• See Core Changes B.06.50.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Pump Firmware Changes

Iso- / Quat- / Bin-Pump (G1310A, G1311A, G1312A)

Table 30 - Pump Changes A.06.55 (G1310A, G1311A, G1312A)

Date Introduced:	July 2015
Revision:	1310A_A655_004, 1311A_A655_004, 1312A_A655_004, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.55.
New Features:	No TeamTrack: Implemented the new remote service "EquilTrigger" for G7167 dual-needle sampler MLS.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 31 - Pump Changes A.06.54 (G1310A, G1311A, G1312A)

Date Introduced:	December 2014
Revision:	1310A_A654_001, 1311A_A654_001, 1312A_A654_001, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.54.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 32 - Pump Changes A.06.50 (G1310A, G1311A, G1312A)

Date Introduced:	May 2012
Revision:	1310A_A650_003, 1311A_A650_003, 1312A_A650_003, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.50.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Iso - / Quat-Pump (G1310B, G1311B, G1311C, G1312C, G5611A)

Table 33 - Pump Changes A.06.55 (G1310B, G1311B, G1311C, G1312C, G5611A)

Date Introduced:	July 2015
Revision:	1310B_A655_004, 1311B_A655_004, 1311C_A655_004, 1312C_A655_004, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.55.
New Features:	No TeamTrack: Implemented the new remote service "EquilTrigger" for G7167 dual-needle sampler MLS.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 34 - Pump Changes A.06.54 (G1310B, G1311B, G1311C, G1312C, G5611A)

Date Introduced:	December 2014
Revision:	1310B_A654_001, 1311B_A654_001, 1311C_A654_001, 1312C_A654_001, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.54.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 35 - Pump Changes A.06.50 (G1310B, G1311B, G1311C, G5611A)

Date Introduced:	May 2012
Revision:	1310B_A650_003, 1311B_A650_003, 1311C_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	TeamTrack #015081: Changed the high-pressure limit to 200 bar if flow is higher than 5.0 ml/min.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 36 - Pump Changes A.06.50 (G1312C)

Date Introduced:	May 2012
Revision:	1312C_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	- TeamTrack #015483: Fixed that EMF counter CHVO and CUVO for liquimeters are counting in wrong increments when using compositions different from 100 % one channel (G1312A only). - No TeamTrack: Fixed that ACT:SSVA? sometimes show wrong value if pump was off..
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Quaternary Pump (G4204A, G7104A)

Table 37 - Pump Changes B.06.80 (G4204A, G7104A)

Date Introduced:	March 2016
Revision:	4204A_B680_007, 7104A_B680_007, Res_B680_002
General:	See Core Changes B/D.06.80 .
Bugfix:	- TeamTrack #023657: Implemented a check for the degasser. Module shows error on failed check now. - TeamTrack #024447: Fixed unstable positive tuning signal at low flow settings. - No TeamTrack: Activated seal wash path measurement for proper operation. Send feedback event EF 22469 if measurement fails.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 38 - Pump Changes B.06.77 (G4204A, G7104A)

Date Introduced:	November 2015
Revision:	4204A_B677_004, 7104A_B677_004, Res_B677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	TeamTrack #023815: Fixed that valves did not switch when using the G4204A/G7104A in the first dimension of 2D-LC (only occurred in revision B.06.75).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 39 - Pump Changes B.06.75 (G4204A, G7104A)

Date Introduced:	July 2015
Revision:	4204A_B675_010, 7104A_B675_010, Res_B670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	TeamTrack #023815: Fixed that valves did not switch when using the G4204A/G7104A in the first dimension of 2D-LC (only occurred in revision B.06.75).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 40 - Pump Changes B.06.73 (G4204A, G7104A)

Date Introduced:	February 2015
Revision:	4204A_B673_002, 7104A_B673_002, Res_B670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 41 - Pump Changes B.06.72 (G4204A, G7104A)

Date Introduced:	December 2014
Revision:	4204A_B672_002, 7104A_B672_002, Res_B670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	TeamTrack #022286: The seal wash option was wrongly detected if no seal wash pump was present. This only occurred with firmware revision B.06.70 and B.06.71.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 42 - Pump Changes B.06.71 (G4204A, G7104A)

Date Introduced:	November 2014
Revision:	4204A_B671_001, 7104A_B671_001, Res_B670_001
General:	
Bugfix:	TeamTrack #022218: Under very seldom circumstances the seal wash option was not detected correctly. This could only occur with firmware revision B.06.70.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 43 - Pump Changes B.06.70 (G4204A, G7104A)

Date Introduced:	November 2014
Revision:	4204A_B670_005, 7104A_B670_005, Res_B670_001
General:	See Core Changes B/D.06.70 .
Bugfix:	TeamTrack #022157: Fixed that stopping the filter back flush could lead to the error "Timeout: Wait for Pressure".
New Features:	Implemented support for the new module type G7104A.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 44 - Pump Changes B.06.60 (G4204A)

Date Introduced:	September 2014
Revision:	4204A_B660_005, Res_B660_002
General:	See Core Changes B/D.06.60 .
Bugfix:	TeamTrack #022157: Fixed that stopping the filter back flush could lead to the error "Timeout: Wait for Pressure".
New Features:	Implemented support for the new module type G7104A.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 45 - Pump Changes B.06.56 (G4204A)

Date Introduced:	December 2013
Revision:	4204A_B656_002, Res_B650_003
General:	
Bugfix:	TeamTrack #019325: Fixed that detecting a leak during purge did not switch off the pump.
New Features:	- TeamTrack #019437: Implemented the 'Evacuation Mode' for removing condensed solvents from the degassing chamber and the tubings. - Module supports ISET now (use USB-Dongle for licensing).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 46 - Pump Changes B.06.55 (G4204A)

Date Introduced:	July 2013
Revision:	4204A_B655_005, Res_B650_003
General:	
Bugfix:	- TeamTrack #017825, #017941: Changed the pump on/off behavior after purge or prime. Now the on/off status is the same as before the prime or purge. This enables the pumps for Walkup-systems, where purge/prime must be possible without activating the method flow. In previous revisions, the pump was always ON after prime or purge. If now the pump should be ON after prime or purge, it must be switched ON before prime or purge. - TeamTrack #018017, #018827: Occasionally a high-pressure limit violation occurred after filter backflush due to wrong (blocked) valve position. - TeamTrack #018018: The value for compressibility was wrong by factor 100 when using a single value instead of compressibility tables. - TeamTrack #018171: FChannel A was always selected for initialization of the pump. Changed to use the primary channel for initialization. - TeamTrack #018777: Implemented a more robust leak test.
New Features:	- TeamTrack #019437: Implemented the 'Evacuation Mode' for removing condensed solvents from the degassing chamber and the tubings. - Module supports ISET now (use USB-Dongle for licensing).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 47 - Pump Changes B.06.53 (G4204A)

Date Introduced:	February 2013
Revision:	4204A_B653_013, Res_B650_003
General:	See Core Changes B.06.53 .
Bugfix:	- Sometimes the method flow did not ramp-up correctly. If purge was started from standby, the method flow did not ramp-up after purge was finished. - Pressure ramp-up did not work after negative pressure values caused by a preceding purge.
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 48 - Pump Changes B.06.52 (G4204A)

Date Introduced:	September 2012
Revision:	4204A_B652_001, Res_B650_003
General:	See Core Changes B.06.52 .
Bugfix:	- TeamTrack #016499: Pump on-time now only counts when pump is on. - TeamTrack #016500: Rework of filter back-flush algorithm also removed problems when back-flush is stopped by a leak.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 49 - Pump Changes B.06.51 (G4204A)

Date Introduced:	July 2012
Revision:	4204A_B651_004, Res_B650_003
General:	Initial firmware for 1290 Infinity G4204A Quaternary Pump
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Binary Pump (G1312B SL, G4302A SFC)

Table 50 - Pump Changes A.06.55 (G1312B SL, G4302A SFC)

Date Introduced:	July 2015
Revision:	1312B_A655_004, 4302A_B655_004, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.55.
New Features:	No TeamTrack: Implemented the new remote service "EquilTrigger" for G7167 dual-needle sampler MLS.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 51 - Pump Changes A.06.54 (G1312B SL, G4302A SFC)

Date Introduced:	December 2014
Revision:	1312B_A654_001, 4302A_A654_001, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.54.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 52 - Pump Changes A.06.53 (G1312B SL, G4302A SFC)

Date Introduced:	February 2013
Revision:	1312B_A653_002, 4302A_A653_002, Res_A650_003
General:	
Bugfix:	None
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 53 - Pump Changes A.06.52 (G1312B SL, G4302A SFC)

Date Introduced:	September 2012
Revision:	1312B_A652_001, 4302A_A652_001, Res_A650_003
General:	
Bugfix:	None
New Features:	TeamTrack #016501: Add internal leak test from G1311B to binary pump.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 54 - Pump Changes A.06.55 (G1312B SL, G4302A SFC)

Date Introduced:	May 2012
Revision:	1312B_A650_003, 4302A_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	• TeamTrack #015483: Fixed that EMF counter CHVO and CUVO for liquimeters are counting in wrong increments when using compositions different from 100 % one channel (G1312A only). • TeamTrack #015567: Fixed that Keep Pressure Mode used wrong pressure when trying to keep the actual pressure. • No TeamTrack: Fixed that ACT:SSVA? sometimes show wrong value if pump was off. • No TeamTrack: Moved memory for diagnostic buffers "CMPR" and "THRM" from FLASH to RAM to prevent from exhaust of user-flash memory.
New Features:	• Allow max pressure of 600 bar for G4302A.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Binary Pump (G4220A, G4220B, G7120A)

Table 55 - Pump Changes B.06.82 (G4220A, G4220B, G7120A)

Date Introduced:	November 2016
Revision:	4220A_B682_001, 4220B_B682_001, 7120A_B682_001, Res_B680_002
General:	
Bugfix:	Since the last FW-revisions B.06.80/81 for the pumps (G4220A/B, G7120A, G4204A, G7104A) had an error and let the modules crash (going into resident mode), this fix is taken-over from already released firmware B.07.01.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 56 - Pump Changes B.06.81 (G4220A, G4220B, G7120A)

Date Introduced:	April 2016
Revision:	4220A_B681_002, 4220B_B681_002, 7120A_B681_002, Res_B680_002
General:	
Bugfix:	- TeamTrack #024593: The revision A.01.02 of the 2D-LC ChemStation plug-in is not working with revision B.06.80. - TeamTrack #024646: Fixed incorrect flush-gradient monitoring in revision A.01.02 of the 2D-LC ChemStation plug-in. The 2D-LC monitor showed no progress during a flush cycle. - The progress bar always remained at 100 % flush gradient time. This only occurred with B.06.80.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 57 - Pump Changes B.06.80 (G4220A, G4220B, G7120A)

Date Introduced:	March 2016
Revision:	4220A_B680_007, 4220B_B680_007, 7120A_B680_007, Res_B680_002
General:	See Core Changes B/D.06.80 .
Bugfix:	- TeamTrack #023657: Implemented a check for the degasser. Module shows error on failed check now. - TeamTrack #024447: Fixed unstable positive tuning signal at low flow settings. - No TeamTrack: Activated seal wash path measurement for proper operation. Send feedback event EF 22469 if measurement fails.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 58 - Pump Changes B.06.77 (G4220A, G4220B, G7120A)

Date Introduced:	November 2015
Revision:	4220A_B677_004, 4220B_B677_004, 7120A_B677_004, Res_B677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 59 - Pump Changes B.06.75 (G4220A, G4220B, G7120A)

Date Introduced:	July 2015
Revision:	4220A_B675_010, 4220B_B675_010, 7120A_B675_010, Res_B670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	None
New Features:	See Core Changes B/D.07.10.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 60 - Pump Changes B.06.73 (G4220A, G4220B, G7120A)

Date Introduced:	February 2015
Revision:	4220A_B673_001, 4220B_B673_001, 7120A_B673_001, Res_B670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 61 - Pump Changes B.06.72 (G4220A, G4220B, G7120A)

Date Introduced:	December 2014
Revision:	4220A_B672_002, 4220B_B672_002, 7120A_B672_002, Res_B670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 62 - Pump Changes B.06.71 (G4220A, G4220B, G7120A)

Date Introduced:	November 2014
Revision:	4220A_B671_001, 4220B_B671_001, 7120A_B671_001, Res_B670_001
General:	
Bugfix:	TeamTrack #022218: Under very seldom circumstances the seal wash option was not detected correctly. This could only occur with firmware revision B.06.70.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 63 - Pump Changes B.06.70 (G4220A, G4220B, G7120A)

Date Introduced:	November 2014
Revision:	4220A_B670_005, 4220B_B671_001, 7120A_B670_005, Res_B670_001
General:	See Core Changes B/D.06.70 .
Bugfix:	None
New Features:	- Implemented support for the new 2D-LC feature. - Implemented support for the new module type G7120A.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 64 - Pump Changes B.06.60 (G4220A, G4220B)

Date Introduced:	September 2014
Revision:	4220A_B660_005, 4220B_B660_005, Res_B660_002
General:	See Core Changes B/D.06.60 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 65 - Pump Changes B.06.56 (G4220A, G4220B)

Date Introduced:	December 2013
Revision:	4220A_B656_002, 4220B_B656_002, Res_B650_003
General:	
Bugfix:	TeamTrack #019324: Fixed that detecting a leak during purge did not switch off the pump.
New Features:	TeamTrack #019437: Implemented the 'Evacuation Mode' for removing condensed solvents from the degassing chamber and the tubing.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 66 - Pump Changes B.06.55 (G4220A, G4220B)

Date Introduced:	July 2013
Revision:	4220A_B655_003, 4220B_B655_003, Res_B650_003
General:	
Bugfix:	- TeamTrack #017825, #017941: Changed the pump on/off behavior after purge or prime. Now the on/off status is the same as before the prime or purge. This enables the pumps for Walkup-systems, where purge/prime must be possible without activating the method flow. In previous revisions the pump was always ON after prime or purge. If now the pump should be ON after prime or purge, it must be switched ON before prime or purge. - TeamTrack #017992, #018437: Fix that occasionally the error EE 29233 ("Intake wasn't done when deliver demanded defill") occurred during sharp flow increase. - TeamTrack #018777: Implemented a more robust leak test.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 67 - Pump Changes B.06.54 (G4220A, G4220B)

Date Introduced:	May 2013
Revision:	4220A_B654_006, 4220B_B654_006, Res_B650_003
General:	See Core Changes B.06.54 .
Bugfix:	TeamTrack #017747, #017625: Implemented fix to prevent from very seldom occurring CAN interface resets (resulting in module disappearing for 2 seconds on the CAN bus).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 68 - Pump Changes B.06.53 (G4220A, G4220B)

Date Introduced:	February 2013
Revision:	4220A_B653_013, 4220B_B653_013, Res_B650_003
General:	See Core Changes B.06.53 .
Bugfix:	- Implemented better reproducibility for 2D-LC by stroke-preview. - TeamTrack #016991: Implemented more accurate composition values. The sum of actual composition values was sometimes 99,999% instead 100%.
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 69 - Pump Changes B.06.52 (G4220A, G4220B)

Date Introduced:	September 2012
Revision:	4220A_B652_001, 4220B_B652_001, Res_B650_003
General:	See Core Changes B.06.52 .
Bugfix:	- TeamTrack #016231: Fixed that 1st composition values of a shifted gradient (2DLC) was always 100% A - TeamTrack #016498: Fixed that manual stop of a purge was ignored, although purge state was not shown anymore. - TeamTrack #016499: Pump on-time now only counts when pump is on. - TeamTrack #016502: DRIVE:PARK now retracts pistons far enough..
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 70 - Pump Changes B.06.51 (G4220A, G4220B)

Date Introduced:	July 2012
Revision:	4220A_B651_004, 4220B_B651_004, Res_B650_003
General:	See Core Changes B.06.51 .
Bugfix:	None
New Features:	Completed the implementation of support for 2D-LC.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 71 - Pump Changes B.06.50 (G4220A, G4220B)

Date Introduced:	May 2012
Revision:	4220A_B650_003, 4220B_B651_004, Res_B650_003
General:	See Core Changes B.06.50 .
Bugfix:	TeamTrack #016070: Implemented a more accurate primary piston leak test.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Prep Pump (G1361A)

Table 72 - Pump Changes A.06.54 (G1361A)

Date Introduced:	December 2014
Revision:	1361A_A654_001, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.54.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 73 - Pump Changes A.06.53 (G1361A)

Date Introduced:	February 2013
Revision:	1361A_A653_003, Res_A650_003
General:	
Bugfix:	- Changed the time argument of purge actual query: show PURG 1,-1 for infinite purging. - TeamTrack #016467: Purge stop command 'PURG 0' was not working on infinite purging. - TeamTrack #017435: Implemented that a second 'Purge' command is not executed when purging is currently in progress.
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 74 - Pump Changes A.06.50 (G1361A)

Date Introduced:	May 2012
Revision:	1361A_A650_004, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	TeamTrack #15918: Allow the specified max number of 97 time table entries.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Capillary Pump (G1376A, G2226A)

Table 75 - Pump Changes A.06.54 (G1376A, G2226A)

Date Introduced:	December 2014
Revision:	1376A_A654_001, 2226A_A654_001, Res_A650_003
General:	
Bugfix:	See Core Changes A.06.54.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 76 - Pump Changes A.06.50 (G1376A, G2226A)

Date Introduced:	May 2012
Revision:	1376A_A650_003, 2226A_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	TeamTrack #015483: Fixed that EMF counter CHVO and CUVO for liquimeters are counting in wrong increments when using compositions different from 100 % one channel (G1312A only).
New Features:	Support of degasser through RS232 interface.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Sampler Firmware Changes

Standard Autosampler (G1313A, G1329A, G1329B, G1389A, G2260A, G4303A SFC)

Table 77 - Autosampler Changes A.06.54 (G1313A, G1329A, G1329B, G1389A, G2260A, G4303A SFC)

Date Introduced:	May 2013
Revision:	1313A_A654_003, 1329A_A654_003, 1329B_A654_003, 1389A_A654_003, 2260A_A654_003, 4303A_A654_003, Res_A650_003
General:	
Bugfix:	- TeamTrack #018219: Occasionally the method download directly after error failed if using own or SFC injector program. It reproducibly failed if the abort-reaction lasted for a while e.g. if the needle is at uppermost position, which is typical for G4303A as this is the needle's position when the sample vial shall be grabbed. - Implemented support for SFC fixed-loop user interface (method and config UI) (only for G4303A).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 78 - Autosampler Changes A.06.50 (G1313A, G1329A, G1329B, G1389A, G2260A, G4303A SFC)

Date Introduced:	May 2012
Revision:	1313A_A650_003, 1329A_A650_003, 1329B_A650_003, 1389A_A650_003, 2260A_A650_003, 4303A_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	Only Core Changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A, G5667A)

Table 79 - Autosampler Changes A.06.54 (G1367A/E, G1377A, G2258A, G4226A, G5667A)

Date Introduced:	July 2013
Revision:	1367A_A654_006, 1367B_A654_006, 1367C_A654_006, 1367D_A654_006, 1367E_A654_006, 1377A_A654_006, 2258A_A654_006, 4226A_A654_006, 5667A_A654_006, Res_A650_003
General:	
Bugfix:	- TeamTrack #018348: Module functionality was frozen after tray change during ReadTrayTag operation. - TeamTrack #018706: Needle crashed moving down in-between the two seats after "Needle to maintenance position" in driver's UI, meaning "position 50 mm above seat" (G2258A only).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 80 - Autosampler Changes A.06.53 (G1367A/E, G1377A, G2258A, G4226A, G5667A)

Date Introduced:	February 2013 (G1367E), May 2013 (others)
Revision:	1367A_A653_002, 1367B_A653_002, 1367C_A653_002, 1367D_A653_002, 1367E_A653_002, 1377A_A653_002, 2258A_A653_002, 4226A_A653_002, 5667A_A653_002, Res_A650_003
General:	
Bugfix:	- Implemented possibility for controllers w/o injector program support to overwrite the method parameter specifying the wanted injector program. - Added new definition for well-plate 'WorkBench's 35VialRack'.
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 81 - Autosampler Changes A.06.50 (G1367A/E, G1377A, G2258A, G4226A, G5667A)

Date Introduced:	May 2012
Revision:	1367A_A650_003, 1367B_A650_003, 1367C_A650_003, 1367D_A650_003, 1367E_A650_003, 1377A_A650_003, 2258A_A650_003, 4226A_A650_003, 5667A_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	No TeamTrack: Move away from seat in case of error at measure seat to have access to the needle.
New Features:	TeamTrack #015365: Added the low-dispersion-kit (1.15 µl seat cap) effectively for G1367C, G1367D and G1367E equipped with a 40 µl-analytical head and old 102 µl volume loop cap.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO)

Table 82 - Fraction Collector Changes A.06.56 (G1364A, G1364B, G1364C, G1364D, G5664A BIO)

Date Introduced:	November 2015
Revision:	1364A_A656_001, 1364B_A656_001, 1364C_A656_001, 1364D_A656_001, 5664A_A656_00, Res_A650_003
General:	See Core Changes A.06.55 .
Bugfix:	TeamTrack #023808: Fixed that configuration settings FractionFillVolumes and FractionStartPosition were lost when tray was removed and re-inserted.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 83 - Fraction Collector Changes A.06.54 (G1364A, G1364B, G1364C, G1364D, G5664A BIO)

Date Introduced:	February 2015
Revision:	1364A_A654_002, 1364B_A654_002, 1364C_A654_002, 1364D_A654_002, 5664A_A654_002, Res_A650_003
General:	See Core Changes A.06.54 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 84 - Fraction Collector Changes A.06.53 (G1364A, G1364B, G1364C, G1364D, G5664A BIO)

Date Introduced:	February 2013
Revision:	1364A_A653_005, 1364B_A653_005, 1364C_A653_005, 1364D_A653_005, 5664A_A653_005, Res_A650_003
General:	
Bugfix:	- TeamTrack #017003: In a FC cluster the partner list update (signal SIG_RS_PARTNERLIST_UPDATE) was not handled at all. - TeamTrack #017180: The FCRecovery master stuck in 'not ready'-state when method parameter RinseNeedleDuringPrepare was selected. - TeamTrack #017409: Allow Delay/DeadVolume-listing of calibrated peak-detectors even if they are currently not linked. - TeamTrack #017458: Reducing the list of linked detectors did not work correctly. - TeamTrack #017626, #017647, #017657: Set, reset and increment of RecoveryPosition did not always work correctly. - Implemented that the event for incomplete cluster (EV 04265, EV_CLUSTER_INCOMPLETE) is sent again each time the list of missing modules has changed.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 85 - Autosampler Changes A.06.50 (G1313A, G1329A, G1329B, G1389A, G2260A, G4303A SFC)

Date Introduced:	May 2012
Revision:	1313A_A650_003, 1329A_A650_003, 1329B_A650_003, 1389A_A650_003, 2260A_A650_003, 4303A_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	Only Core Changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Infinity II Sampler (G7129A VS, G7129B AS)

Table 86 - Sampler Changes D.06.80 (G7129A VS, G7129B AS)

Date Introduced:	November 2015
Revision:	7129B_D680_008, 7129A_D680_008, Res_D680_001
General:	See Core Changes B/D.06.80 .
Bugfix:	TeamTrack #024291: Fixed defect in power reduction for the ICC. If a present cooler was switched off, the ICC occasionally was not started correctly.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 87 - Sampler Changes D.06.77 (G7129A VS, G7129B AS)

Date Introduced:	November 2015
Revision:	7129B_D677_004, 7129A_D677_004, Res_D677_002
General:	Initial firmware.
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Infinity II Multisampler (G7167A, G7167B)

Table 88 – Multisampler Changes D.06.80 (G7167A, G7167B)

Date Introduced:	March 2016
Revision:	7167B_D680_007, 7167A_D680_007, Res_D680_001
General:	See Core Changes B/D.06.80
Bugfix:	- TeamTrack #023309: Fixed occasional occurring failure in needle auto-referencing. Failure resulted in unlocked needle in park station. - TeamTrack #024451: Fixed that the automatic purge routine (dual-needle option) may quit with an error due to production variance of the needle assy. This fix may also help in case of initialization errors also for the Multi-wash option.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 89 – Multisampler Changes D.06.78 (G7167A, G7167B)

Date Introduced:	December 2015
Revision:	7167B_D678_001, 7167A_D678_001, Res_D677_002
General:	
Bugfix:	TeamTrack # 023927: Only for sampler with option multi-wash: Fixed that the command to move all devices into maintenance position generated a timeout in Lab Advisor. The wrong moving speed of the flush pump was corrected. This problem only occurred with D.06.77.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 90 – Multisampler Changes D.06.77 (G7167A, G7167B)

Date Introduced:	November 2015
Revision:	7167B_D677_004, 7167A_D677_004, Res_D677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	- TeamTrack #023571: Fixed that the module showed wrongly not-ready 'method mismatch' after power-cycle if bypass capillary was installed for the right needle and the method needle was set to 'left', although all method parameters were correct. - TeamTrack #023678: Fixed that in special cases there was a danger of damage the needle loop by moving into external vial bar when using dual-needle option.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 91 – Multisampler Changes D.06.75 (G7167A, G7167B)

Date Introduced:	July 2015
Revision:	7167B_D675_011, 7167A_D675_011, Res_D670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	- TeamTrack #023351: Fixed that the cooler automatically switched off. - TeamTrack #023337: Fixed that sampler initialization failed while needle gripped in park station.
New Features:	- No TeamTrack: Implement support for dual-needle sampler MLS. - No TeamTrack: Implement better cooler calibration and prevent from occasional occurring compressor start problem. - TeamTrack #023275: To exchange the air in sampling area, let the fan run full-speed for one minute before initialization after power-cycle. - TeamTrack #022637: Generate error event if a draw/eject command cannot be executed because the used volume is not correct..
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 92 – Multisampler Changes D.06.74 (G7167A, G7167B)

Date Introduced:	February 2015
Revision:	7167B_D674_001, 7167A_D674_001, Res_D670_001
General:	
Bugfix:	- TeamTrack #022665: Wrong calculation of decompress volume in sampler with multi-wash option. - TeamTrack #022669: Wrong control of solvent-selection valve (SSV) current in sampler with multi-wash option. This prevents from overheating and possible damage of the SSV.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 93 – Multisampler Changes D.06.73 (G7167A, G7167B)

Date Introduced:	February 2015
Revision:	7167B_D673_003, 7167A_D673_003, Res_D670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	- TeamTrack #022327: Implemented a better prevention from occasional solvent squirts when sampler's needle leaves park station and multi-wash option is installed. - TeamTrack #022420: Fixed missing volume when using multi-draw. - TeamTrack #022525: Shortened the time for reconditioning solvent for seat back-flush during multi-wash. - Implemented better cooler control to also prevent from a possible malfunctioning of the optional cooler.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 94 – Multisampler Changes D.06.72 (G7167A, G7167B)

Date Introduced:	December 2014
Revision:	7167B_D672_002, 7167A_D672_002, Res_D670_001
General:	
Bugfix:	See Core Changes B/D.06.72.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 95 – Multisampler Changes D.06.70 (G7167A, G7167B)

Date Introduced:	November 2014
Revision:	7167B_D670_005, 7167A_D670_005, Res_D670_001
General:	Initial firmware for G7167A.
Bugfix:	Occasionally the writing of post-mortem debug information after a panic took so long that it seemed that the module did not react at all (not starting the resident system and also no reaction of the power-switch).
New Features:	Implemented support for the new module type G7167A (600 bar Multisampler).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 96 – Multisampler Changes D.06.60 (G7167B)

Date Introduced:	September 2014
Revision:	7167B_D660_011, Res_D660_001
General:	Initial firmware for G7167B.
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Detector Firmware Changes

Variable Wavelength Detector (VWD) (G1314A, G1314B, G1314C)

Table 97 - VWD Changes A.06.50 (G1314A, G1314B, G1314C)

Date Introduced:	May 2012
Revision:	1314A_A650_004, 1314B_A650_004, 1314C_A650_004, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	Only Core Changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F)

Table 98 - VWD Changes B.06.80 (G1314D, G1314E, G1314F)

Date Introduced:	March 2016
Revision:	1314D_B680_006, 1314E_B680_006, 1314F_B680_006, Res_B680_002
General:	See Core Changes B/D.06.80 .
Bugfix:	Only core changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 99 - VWD Changes B.06.77 (G1314D, G1314E, G1314F)

Date Introduced:	November 2015
Revision:	1314D_B677_004, 1314E_B677_004, 1314F_B677_004, Res_B677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 100 - VWD Changes B.06.75 (G1314D, G1314E, G1314F)

Date Introduced:	July 2015
Revision:	1314D_B675_010, 1314E_B675_010, 1314F_B675_010, Res_B670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 101 - VWD Changes B.06.73 (G1314D, G1314E, G1314F)

Date Introduced:	February 2015
Revision:	1314D_B673_001, 1314E_B673_001, 1314F_B673_001, Res_B670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	Only core changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 102 - VWD Changes B.06.72 (G1314D, G1314E, G1314F)

Date Introduced:	December 2014
Revision:	1314D_B672_002, 1314E_B672_002, 1314F_B672_002, Res_B670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	Only core changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 103 - VWD Changes B.06.70 (G1314D, G1314E, G1314F)

Date Introduced:	November 2014
Revision:	1314D_B670_006, 1314E_B670_006, 1314F_B670_006, Res_B670_001
General:	See Core Changes B/D.06.70 .
Bugfix:	TeamTrack #019984 / CAPA #5265: The lamp and the cell tag intermittently disappeared for a few seconds.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 104 - VWD Changes B.06.60 (G1314D, G1314E, G1314F)

Date Introduced:	September 2014
Revision:	1314D_B660_005, 1314E_B660_005, 1314F_B660_005, Res_B660_002
General:	See Core Changes B/D.06.60 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 105 - VWD Changes B.06.53 (G1314D, G1314E, G1314F)

Date Introduced:	February 2013
Revision:	1314D_B653_013, 1314E_B653_013, 1314F_B653_013, Res_B650_003
General:	See Core Changes B.06.53 .
Bugfix:	None
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 106 - VWD Changes B.06.52 (G1314D, G1314E, G1314F)

Date Introduced:	September 2012
Revision:	1314D_B652_001, 1314E_B652_001, 1314F_B652_001, Res_B650_003
General:	See Core Changes B.06.52 .
Bugfix:	None
New Features:	Only Core Changes.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 107 - VWD Changes B.06.51 (G1314D, G1314E, G1314F)

Date Introduced:	July 2012
Revision:	1314D_B651_004, 1314E_B651_004, 1314F_B651_004, Res_B650_003
General:	See Core Changes B.06.51 .
Bugfix:	Only Core Changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 108 - VWD Changes B.06.50 (G1314D, G1314E, G1314F)

Date Introduced:	May 2012
Revision:	1314D_B650_005, 1314E_B650_003, 1314F_B650_003, Res_B650_003
General:	See Core Changes B.06.50 .
Bugfix:	Only Core Changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Infinity II Variable Wavelength Detector (VWD) (G7114B)

Table 109 - VWD Changes D.06.80 (G7114B)

Date Introduced:	March 2016
Revision:	7114B_D680_006, Res_D680_001
General:	See Core Changes B/D.06.80
Bugfix:	TeamTrack #024310: Changed WL-Alignment-check on lamp ignition. Use reference diode for WL-Alignment check to get a more accurate result. Also adjusted the alignment verification interval.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 110 - VWD Changes D.06.77 (G7114B)

Date Introduced:	November 2015
Revision:	7114B_D677_004, Res_D677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 111 - VWD Changes D.06.75 (G7114B)

Date Introduced:	July 2015
Revision:	7114B_D675_010, Res_D670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 112 - VWD Changes D.06.73 (G7114B)

Date Introduced:	February 2015
Revision:	7114B_D673_001, Res_D670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	TeamTrack #022348: The Dual-WL mode was not working when the lamp was ignited after the Dual-WL mode was activated. This resulted in a flat chromatogram.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 113 - VWD Changes D.06.72 (G7114B)

Date Introduced:	December 2014
Revision:	7114B_D672_002, Res_D670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	Core Changes only.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 114 - VWD Changes D.06.70 (G7114B)

Date Introduced:	November 2014
Revision:	7114B_D670_005, Res_D670_001
General:	Initial Firmware. See Core Changes B/D.06.70 .
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

DAD/MWD (G1315A DAD, G1315B DAD, G1365A MWD, G1365B MWD)

Table 115 - DAD/MWD Changes A.06.50 (G1315A DAD, G1315B DAD, G1365A MWD, G1365B MWD)

Date Introduced:	May 2012
Revision:	1315A_A650_003, 1315B_A650_003, 1365A_A650_003, 1365B_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	Only Core Changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Table 116 - DAD/MWD Changes B.06.80 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	March 2016
Revision:	1315C_B680_006, 1315D_B680_006, 1365C_B680_006, 1365D_B680_006, Res_B680_002
General:	See Core Changes B/D.06.80
Bugfix:	Only core changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 117 - DAD/MWD Changes B.06.77 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	November 2015
Revision:	1315C_B677_004, 1315D_B677_004, 1365C_B677_004, 1365D_B677_004, Res_B677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 118 - DAD/MWD Changes B.06.75 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	July 2015
Revision:	1315C_B675_010, 1315D_B675_010, 1365C_B675_010, 1365D_B675_010, Res_B670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 119 - DAD/MWD Changes B.06.73 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	February 2015
Revision:	1315C_B673_001, 1315D_B673_001, 1365C_B673_001, 1365D_B673_001, Res_B670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	TeamTrack #022603: The module type could not be changed from G1315C to G4285B if the DAD mainboard was exchanged in the G4294B Compact LC.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 120 - DAD/MWD Changes B.06.72 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	December 2014
Revision:	1315C_B672_002, 1315D_B672_002, 1365C_B672_002, 1365D_B672_002, Res_B670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	Only core changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 121 - DAD/MWD Changes B.06.70 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	November 2014
Revision:	1315C_B670_005, 1315D_B670_005, 1365C_B670_005, 1365D_B670_005, Res_B670_001
General:	See Core Changes B/D.06.70 .
Bugfix:	TeamTrack #019984 / CAPA #5265: The lamp and the cell tag intermittently disappeared for a few seconds.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 122 - DAD/MWD Changes B.06.60 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	September 2014
Revision:	1315C_B660_005, 1315D_B660_005, 1365C_B660_005, 1365D_B660_005, Res_B660_002
General:	See Core Changes B/D.06.60 .
Bugfix:	TeamTrack #020768: Made module more robust against process congestion when hosting three slaves and using high data rates. For this, the scan data rate for data intensive scans was lowered and better performing filter stages are used.
New Features:	TeamTrack #018619: Added sysvar 'LGHT 1 0' which enables or disables the light-on switching after lamp ignition (used in the G4212 DAD).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 123 - DAD/MWD Changes B.06.53 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	February 2013
Revision:	1315C_B653_013, 1315D_B653_013, 1365C_B653_013, 1365D_B653_013, Res_B650_003
General:	See Core Changes B.06.53 .
Bugfix:	None
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 124 - DAD/MWD Changes B.06.52 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	September 2012
Revision:	1315C_B652_001, 1315D_B652_001, 1365C_B652_001, 1365D_B652_001, Res_B650_003
General:	See Core Changes B.06.52 .
Bugfix:	None
New Features:	Only Core Changes.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 125 - DAD/MWD Changes B.06.51 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	July 2012
Revision:	1315C_B651_004, 1315D_B651_004, 1365C_B651_004, 1365D_B651_004, Res_B650_003
General:	See Core Changes B.06.51 .
Bugfix:	Only Core Changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 126 - DAD/MWD Changes B.06.50 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	May 2012
Revision:	1315C_B650_003, 1315D_B650_003, 1365C_B650_003, 1365D_B650_003, Res_B650_003
General:	See Core Changes B.06.50 .
Bugfix:	Only Core Changes
New Features:	Support of future new micro slit assembly. This new micro slit assembly will replace the current slit assembly (planned for July/August 2012).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

DAD (G4212A, G4212B)

Table 127 - DAD Changes B.06.80 (G4212A, G4212B)

Date Introduced:	March 2016
Revision:	4212A_B680_006, 4212B_B680_006, Res_B680_002
General:	See Core Changes B/D.06.80
Bugfix:	Only core changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 128 – DAD Changes B.06.77 (G4212A, G4212B)

Date Introduced:	November 2015
Revision:	4212A_B677_004, 4212B_B677_004, Res_B677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 129 - DAD Changes B.06.75 (G4212A, G4212B)

Date Introduced:	July 2015
Revision:	4212A_B675_010, 4212B_B675_010, Res_B670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 130 - DAD Changes B.06.73 (G4212A, G4212B)

Date Introduced:	February 2015
Revision:	4212A_B673_001, 4212B_B673_001, Res_B670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 131 - DAD Changes B.06.72 (G4212A, G4212B)

Date Introduced:	December 2014
Revision:	4212A_B672_002, 4212B_B672_002, Res_B670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	Only core changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 132 - DAD Changes B.06.70 (G4212A, G4212B)

Date Introduced:	November 2014
Revision:	4212A_B670_005, 4212B_B670_005, Res_B670_001
General:	See Core Changes B/D.06.70 .
Bugfix:	TeamTrack #019984 / CAPA #5265: The lamp and the cell tag intermittently disappeared for a few seconds.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 133 - DAD Changes B.06.60 (G4212A, G4212B)

Date Introduced:	September 2014
Revision:	4212A_B660_005, 4212B_B660_005, Res_B660_002
General:	See Core Changes B/D.06.60 .
Bugfix:	TeamTrack #020768: Made module more robust against process congestion when hosting three slaves and using high data rates. For this, the scan data rate for data intensive scans was lowered and better performing filter stages are used.
New Features:	TeamTrack #018619: Added sysvar 'LGHT 1 0' which enables or disables the light-on switching after lamp ignition (used in the G4212 DAD).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 134 - DAD Changes B.06.57 (G4212A, G4212B)

Date Introduced:	March 2014
Revision:	4212A_B657_012, 4212B_B657_012, Res_B650_003
General:	See Core Changes B.06.54 .
Bugfix:	None
New Features:	Added new 'High Dynamic Range' (HDR) feature (to be enabled by USB-Dongle).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 135 - DAD Changes B.06.53 (G4212A, G4212B)

Date Introduced:	February 2013
Revision:	4212A_B653_013, 4212B_B653_013, Res_B650_003
General:	See Core Changes B.06.53 .
Bugfix:	None
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 136 - DAD Changes B.06.52 (G4212A, G4212B)

Date Introduced:	September 2012
Revision:	4212A_B652_001, 4212B_B652_001, Res_B650_003
General:	See Core Changes B.06.52 .
Bugfix:	None
New Features:	Only Core Changes.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 137 - DAD Changes B.06.51 (G4212A, G4212B)

Date Introduced:	July 2012
Revision:	4212A_B651_004, 4212B_B651_004, Res_B650_003
General:	See Core Changes B.06.51 .
Bugfix:	TeamTrack #016294: The (re)-calibration algorithm showed too large deviations (>1nm). The (re)-calibration algorithm worked correctly in FW revision B.06.44 but not in B.06.50.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 138 - DAD Changes B.06.50 (G4212A, G4212B)

Date Introduced:	May 2012
Revision:	4212A_B650_003, 4212B_B650_003, Res_B650_003
General:	This firmware has a problem with the (re)calibration algorithm and should not be used. Use B.06.51 or later. See Core Changes B.06.50 .
Bugfix:	Only Core Changes
New Features:	Support of future new micro slit assembly. This new micro slit assembly will replace the current slit assembly (planned for July/August 2012).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Infinity II DAD (G7117A, G7117B)

Table 139 – Infinity II DAD Changes D.06.80 (G7117A, G7117B)

Date Introduced:	March 2016
Revision:	7117A_D680_006, 7117B_D680_006, Res_D680_001
General:	See Core Changes B/D.06.80
Bugfix:	Only core changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 140 – Infinity II DAD Changes D.06.77 (G7117A, G7117B)

Date Introduced:	November 2015
Revision:	7117A_D677_004, 7117B_D677_004, Res_D677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 141 - Infinity II DAD Changes D.06.75 (G7117A, G7117B)

Date Introduced:	July 2015
Revision:	7117A_D675_010, 7117B_D675_010, Res_D670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	TeamTrack #022381: Fixed wrong scaling of Analog Out in HDR.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 142 - Infinity II DAD Changes D.06.72 (G7117A, G7117B)

Date Introduced:	December 2014
Revision:	7117A_D672_002, 7117B_D672_002, Res_D670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	Only core changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 143 - Infinity II DAD Changes D.06.70 (G7117A, G7117B)

Date Introduced:	November 2014
Revision:	7117A_D670_005, 7117B_D670_005, Res_D670_001
General:	Initial Firmware.
Bugfix:	None
New Features:	Initial firmware release for the new module types G7117A and G7117B.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Fluorescence Detector (FLD) (G1321A SPECTRA, G1321B SPECTRA, G1321C FLD)

Table 144 - FLD Changes A.06.55 (G1321A SPECTRA, G1321B SPECTRA, G1321C FLD)

Date Introduced:	December 2013
Revision:	1321A_A655_001, 1321B_A655_001, 1321C_A655_001, Res_A650_003
General:	See Core Changes A.06.55 .
Bugfix:	TeamTrack #013049, #019246: Corrected the peak-form in case of ADC overflow. The overflow value is now the ADC saturation value (and no longer zero). Default is as mentioned in the 1260 Infinity user documentation.
New Features:	TeamTrack #019245: With the change for TeamTrack #013049, #019246 we now have three peak-forms in case of ADC overflow. Implemented a new command to allow switching back to "old" peak-forms in case of ADC overflow. This setting defaults to the new peak-form. The new command should only be used if advised to by support. Default is as mentioned in the 1260 Infinity user documentation.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 145 - FLD Changes A.06.54 (G1321A SPECTRA, G1321B SPECTRA, G1321C FLD)

Date Introduced:	May 2013
Revision:	1321A_A654_002, 1321B_A654_002, 1321C_A654_002, Res_A650_003
General:	See Core Changes A.06.54 . Initial Firmware for G1321C FLD (derived from the existing G1321B, but does not have spectral and multi-signal capabilities).
Bugfix:	None
New Features:	- Code supports the new module type G1321C. - Allow doubled frequency (145 Hz) for G1321B - Requires new controller interfaces: Instant Pilot with firmware B.02.16, Driver A.02.08, Agilent OpenLAB CDS ChemStation Edition C.01.05, OpenLAB EZChrom Edition EE A.04.05, ICF A.02.01 and Lab Advisor B.02.04.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 146 - FLD Changes A.06.53 (G1321B SPECTRA)

Date Introduced:	May 2012
Revision:	1321B_A653_002, Res_A650_003
General:	
Bugfix:	None
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 147 - FLD Changes A.06.50 (G1321A SPECTRA, G1321B SPECTRA)

Date Introduced:	May 2012
Revision:	1321A_A650_003, 1321B_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	Only Core Changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Refractive Index Detector (RID) (G1362A)

Table 148 - RID Changes A.06.54 (G1362A)

Date Introduced:	February 2015
Revision:	1362A_A654_004, Res_A650_003
General:	See Core Changes A.06.54 .
Bugfix:	TeamTrack #020325: Corrected the wrong scale of the parameters for the RemotePeakDetector (Thrs, UpperThrs, UpSlope, DownSlope). Scale was wrong by factor 1/100 before.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 149 - RID Changes A.06.50 (G1362A)

Date Introduced:	May 2012
Revision:	1362A_A650_002, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	TeamTrack #015985: Fixed the not-ready state-machine. If the heater was switched on automatically after power-on (auto-on) with heater temperature set to 'not controlled', the module now correctly shows state 'ready' instead 'not-ready' before.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Infinity II Refractive Index Detector (RID) (G7162A STD, G7162B MICRO)

Table 150 – Infinity II RID Changes D.06.80 (G7162A STD, G7162B MICRO)

Date Introduced:	March 2016
Revision:	7162A_D680_006, 7162B_D680_006, Res_D680_001
General:	See Core Changes B/D.06.80
Bugfix:	Only core changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 151 – Infinity II RID Changes D.06.77 (G7162A STD, G7162B MICRO)

Date Introduced:	November 2015
Revision:	7162A_D677_004, 7162B_D677_004, Res_D677_002
General:	Initial firmware.
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Other Modules

Thermostatted Column Compartment (TCC) (G1316A, G1316B, G1316C)

Table 152 - TCC Changes A.06.56 (G1316C)

Date Introduced:	November 2015
Revision:	1316C_A656_001, Res_A650_003
General:	See Core Changes A.06.55 .
Bugfix:	TeamTrack #023747: Fixed that occasionally the valve position's actual and setpoint could be out-of-sync after change of valve head.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 153 - TCC Changes A.06.56 (G1316C)

Date Introduced:	July 2015
Revision:	1316C_A655_005, Res_A650_003
General:	See Core Changes A.06.55 .
Bugfix:	None
New Features:	- No TeamTrack: Possibility to store tag contents in NV-RAM as a workaround for incompatible tags. - No TeamTrack: Implemented the support for "Valve Cluster".
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 154 - Table 155 - TCC Changes A.06.53 (G1316C)

Date Introduced:	February 2013
Revision:	1316C_A653_002, Res_A650_003
General:	
Bugfix:	Analysis might occasionally hang when using 2D-LC.
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 156 - Table 157 - TCC Changes A.06.50 (G1316A, G1316B, G1316C)

Date Introduced:	May 2012
Revision:	1316A_A650_005, 1316B_A650_005, 1316C_A650_005, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	- TeamTrack #010293, #010526: Allow the specified max number of 54 time table entries. - No TeamTrack: Implemented better compatibility for command VALV if G1316C is emulating G1316A or G1316B. - No TeamTrack: Improved error handling/detection of fan errors (less false fan errors).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Universal Interface Box (UIB) (G1390A)

Table 158 - UIB Changes A.06.50 (G1390A)

Date Introduced:	May 2016
Revision:	1390A_A650_001, Res_A650_001
General:	Compatibility Change
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Valves (G115xA/B, G116xA/B)

Table 159 - Valve Changes A.06.50 (G115xA/B, G116xA/B)

Date Introduced:	May 2016
Revision:	115x_A650_001, 116x_A650_001, Res_A650_001
General:	Compatibility Change
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Chip Cube (G4240A)

Table 160 - Chip Cube Changes A.06.50 (G4240A)

Date Introduced:	May 2012
Revision:	4240A_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	Only Core Changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

LAN Interface Card (G1369C)

NOTE If hosted modules are used in the system, the G1369C LAN Interface Card MUST have the same firmware revision (from the same set) as the hosted module. Otherwise the operation of hosted module(s) will show malfunctions.

Table 161 - LAN Interface Card Changes B.06.80 (G1369C)

Date Introduced:	March 2016
Revision:	1369C_B680_006, Res_B680_002
General:	See Core Changes B/D.06.80
Bugfix:	Only core changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 162 – LAN Interface Card Changes B.06.77 (G1369C)

Date Introduced:	November 2015
Revision:	1369C_B677_004, Res_B677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 163 - LAN Interface Card Changes B.06.75 (G1369C)

Date Introduced:	July 2015
Revision:	1369C_B675_001, Res_B670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 164 - LAN Interface Card Changes B.06.72 (G1369C)

Date Introduced:	December 2014
Revision:	1369C_B672_002, Res_B670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	Only core changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 165 - LAN Interface Card Changes B.06.70 (G1369C)

Date Introduced:	November 2014
Revision:	1369C_B670_005, Res_B670_001
General:	See Core Changes B/D.06.70 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 166 - LAN Interface Card Changes B.06.60 (G1369C)

Date Introduced:	September 2014
Revision:	1369C_B660_002, Res_B660_002
General:	See Core Changes B/D.06.60 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 167 - LAN Interface Card Changes B.06.53 (G1369C)

Date Introduced:	February 2013
Revision:	1369C_B653_013, Res_B650_003
General:	See Core Changes B.06.53 .
Bugfix:	None
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 168 - LAN Interface Card Changes B.06.52 (G1369C)

Date Introduced:	September 2012
Revision:	1369C_B652_001, Res_B650_003
General:	See Core Changes B.06.52 .
Bugfix:	None
New Features:	Only Core Changes.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 169 - LAN Interface Card Changes B.06.50 (G1369C)

Date Introduced:	May 2012
Revision:	1369C_B650_003, Res_B650_003
General:	See Core Changes B.06.50 .
Bugfix:	Only Core Changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

CAN Slaves (Hosted Modules)

NOTE These modules require “C” firmware!

Infinity II Multicolumn Thermostat (MCT) (G7116B)

Table 170 - Infinity II MCT Changes C.06.80 (G7116B)

Date Introduced:	March 2016
Revision:	7116B_C680_001, Res_C680_001
General:	
Bugfix:	- TeamTrack #023550, #23666 : Occasionally the MCT stays ‘not ready’ even if the correct enforced column for run was selected. - TeamTrack #023763: Under very special circumstances the valve did not switch after declustering.
New Features:	Implemented support for Agilent 2D-LC Software A.01.03.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 171 - Infinity II MCT Changes C.06.75 (G7116B)

Date Introduced:	July 2015
Revision:	7116B_C675_001, Res_C675_001
General:	
Bugfix:	- TeamTrack #022412: Changed maximum length of product number to 14. - TeamTrack #023316: Fixed that injection counter is not incremented when no column tag is present.
New Features:	No TeamTrack: Implemented support for Valve Custer.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 172 - Infinity II MCT Changes C.06.72 (G7116B)

Date Introduced:	December 2014
Revision:	7116B_C672_001, Res_C670_005
General:	
Bugfix:	- TeamTrack #022293: When condensation is enabled and the thermostat cooled down to a low temperature, condensate was detected as expected. When the temperature now rises again above ambient, a leak error wrongly occurred. Fixed now. - TeamTrack #022258: Enlarged field for column name and comment from 16 to 32 bytes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 173 - Infinity II MCT Changes C.06.70 (G7116B)

Date Introduced:	November 2014
Revision:	7116B_C670_005, Res_C670_005
General:	Initial Firmware
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Valve Drive (G1170A)

Table 174 - Valve Drive Changes C.06.80 (G1170A)

Date Introduced:	March 2016
Revision:	1170A_C680_001, Res_C680_001
General:	
Bugfix:	TeamTrack #023763: Under very special circumstances the valve did not switch after declustering.
New Features:	Implemented support for Agilent 2D-LC Software A.01.03.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 175 - Valve Drive Changes C.06.75 (G1170A)

Date Introduced:	July 2015
Revision:	7116B_C675_001, Res_C675_001
General:	
Bugfix:	None
New Features:	No TeamTrack: Implemented support for Valve Custer.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 176 - Valve Drive Changes C.06.70 (G1170A)

Date Introduced:	November 2014
Revision:	1170A_C670_005, Res_C670_005
General:	
Bugfix:	Occasionally the switch-counter of the rotary valve could not work correctly.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 177 - Valve Drive Changes C.06.60 (G1170A)

Date Introduced:	September 2014
Revision:	1170A_C660_001, Res_C660_001
General:	
Bugfix:	None
New Features:	TeamTrack #018900: New event EV 10210 (EV_COLD_STARTED) shows if the module was cold-started. The event is stored in the event history until the next warm-start is performed. The event's argument shows the time of the cold-start in seconds since 1970.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 178 - Valve Drive Changes C.06.53 (G1170A)

Date Introduced:	February 2013
Revision:	1170A_C653_001, Res_C653_001
General:	
Bugfix:	Analysis did occasionally hang when using 2D-LC.
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 179 - Valve Drive Changes C.06.503 (G1170A)

Date Introduced:	May 2012
Revision:	1170A_C653_001, Res_C653_001
General:	Use firmware B.06.51 in the host module that fixes some issue on the hosted modules G1170A and G4227A).
Bugfix:	• See Core Changes B.06.51. • See Core Changes C. 06.50.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Universal Interface Box II (UIB II) (G1390B)

Table 180 - UIB II Changes C.06.80 (G1390B)

Date Introduced:	March 2016
Revision:	1170A_C680_001, Res_C680_001
General:	
Bugfix:	Only core changes.
New Features:	Implemented support for Agilent 2D-LC Software A.01.03.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 181 - UIB II Changes C.06.75 (G1390B)

Date Introduced:	July 2015
Revision:	1390B_C675_001, Res_C675_001
General:	See
Bugfix:	No TeamTrack: Improved buffer underrun protection for analog out signal.
New Features:	No TeamTrack: Implemented support for Valve Custer.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 182 - UIB II Changes C.06.70 (G1390B)

Date Introduced:	November 2014
Revision:	1390B_C670_005, Res_C670_005
General:	See Core Changes C. 06.70 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 183 - UIB II Changes C.06.60 (G1390B)

Date Introduced:	September 2014
Revision:	1390B_C660_001, Res_C660_001
General:	
Bugfix:	Fixed ERI overcurrent detection.
New Features:	TeamTrack #018900: New event EV 10210 (EV_COLD_STARTED) shows if the module was cold-started. The event is stored in the event history until the next warm-start is performed. The event's argument shows the time of the cold-start in seconds since 1970.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 184 - UIB II Changes C.06.53 (G1390B)

Date Introduced:	February 2013
Revision:	1390B_C653_002, Res_C653_001
General:	
Bugfix:	TeamTrack #017349: UIB G1390B went to resident mode if 5V output was overloaded.
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 185 - UIB II Changes C.06.503 (G1390B)

Date Introduced:	August 2012
Revision:	1390B_C650_001, Res_C653_001
General:	Initial Release
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Flexible Cube (G4227A)

Table 186 - Flexible Cube Changes C.06.80 (G4227A)

Date Introduced:	March 2016
Revision:	4227A_C680_001, Res_C680_001
General:	
Bugfix:	TeamTrack #023763: Under very special circumstances the valve did not switch after declustering.
New Features:	Implemented support for Agilent 2D-LC Software A.01.03.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 187 - Flexible Cube Changes C.06.75 (G4227A)

Date Introduced:	July 2015
Revision:	4227A_C675_001, Res_C675_001
General:	
Bugfix:	None
New Features:	No TeamTrack: Implemented support for Valve Custer.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 188 - Flexible Cube Changes C.06.70 (G4227A)

Date Introduced:	November 2014
Revision:	4227A_C670_005, Res_C670_005
General:	See Core Changes C. 06.70 .
Bugfix:	Occasionally the switch-counter of the rotary valve could not work correctly.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 189 - Flexible Cube Changes C.06.60 (G4227A)

Date Introduced:	September 2014
Revision:	4227A_C660_001, Res_C660_001
General:	See Core Changes C. 06.60 .
Bugfix:	Fixed ERI overcurrent detection.
New Features:	- TeamTrack #018900: New event EV 10210 (EV_COLD_STARTED) shows if the module was cold-started. The event is stored in the event history until the next warm-start is performed. The event's argument shows the time of the cold-start in seconds since 1970. - Implemented support of the 160 bar pressure sensor.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 190 - Flexible Cube Changes C.06.53 (G4227A)

Date Introduced:	February 2013
Revision:	4227A_C653_001, Res_C653_001
General:	See Core Changes C. 06.53 .
Bugfix:	None
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 191 - Flexible Cube Changes C.06.52 (G4227A)

Date Introduced:	February 2013
Revision:	4227A_C652_001, Res_C650_001
General:	
Bugfix:	None
New Features:	TeamTrack #016376: Implemented support for the Flex Cube hardware version with 1st valve optional.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 192 - Flexible Cube Changes C.06.50 (G4227A)

Date Introduced:	May 2012
Revision:	4227A_C650_001, Res_C650_001
General:	Use firmware B.06.51 in the host module that fixes some issue on the hosted modules G1170A and G4227A).
Bugfix:	- See Core Changes B.06.51. - See Core Changes C. 06.50.
New Features:	- Implemented enhancement for commands PPMP:VOL and PPMP:TIME to optionally specify the flow. - Implemented support for different FlexCube hardware versions (w/o pump, SSV, 2nd valve).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

1120/1220 LC system

NOTE The 1120 Compact LC and 1220 LC System include several modules under several product numbers, see [1120 Compact LC / 1220 Infinity LC](#).

Table 193 - 1120/1220 LC system Changes B.06.80 (G428x, G429x)

Date Introduced:	March 2016
Revision:	B.06.80_006, Res_B680_001
General:	See Core Changes B/D.06.80
Bugfix:	Only core changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 194 - 1120/1220 LC system Changes B.06.77 (G428x, G429x)

Date Introduced:	November 2015
Revision:	B.06.77_004, Res_B677_002
General:	See Core Changes B/D.06.77 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 195 - 1120/1220 LC system Changes B.06.75 (G428x, G429x)

Date Introduced:	July 2015
Revision:	B.06.75_010, Res_B670_001
General:	See Core Changes B/D.06.75 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 196 - 1120/1220 LC system Changes B.06.73 (G4294B)

Date Introduced:	February 2015
Revision:	G4294B only: B.06.73_001, Res_B670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	None
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 197 - 1120/1220 LC system Changes B.06.73 (G428x, G429x)

Date Introduced:	December 2014
Revision:	B.06.72_002, Res_B670_001
General:	See Core Changes B/D.06.72 .
Bugfix:	Only core changes
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 198 - 1120/1220 LC system Changes B.06.73 (G428x, G429x)

Date Introduced:	November 2014
Revision:	B.06.70_005, Res_B670_001
General:	See Core Changes B/D.06.70 .
Bugfix:	TeamTrack #019984 / CAPA #5265: The lamp and the cell tag intermittently disappeared for a few seconds.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 199 - 1120/1220 LC system Changes B.06.60 (G428x, G429x)

Date Introduced:	September 2014
Revision:	B.06.60_005, Res_B660_002
General:	See Core Changes B/D.06.60 .
Bugfix:	- TeamTrack #021162: Occasionally the pre-fetch vial did not work. - TeamTrack #020768: (G4294B only) Made module more robust against process congestion when hosting three slaves and using high data rates. For this, the scan data rate for data intensive scans was lowered and better performing filter stages were used.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 200 - 1120/1220 LC system Changes B.06.53 (G428x, G429x)

Date Introduced:	February 2013
Revision:	B.06.53_013, Res_B650_003
General:	See Core Changes B.06.53 .
Bugfix:	- TeamTrack #017223: Unnecessary long delay in analysis synchronization (G4294B only). - TeamTrack #017701: Module initialization sometimes did not finish after cold-start.
New Features:	Preparation for future support of new medical devices class I module (K-Module).
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 201 - 1120/1220 LC system Changes B.06.52 (G428x, G429x)

Date Introduced:	September 2012
Revision:	B.06.52_001, Res_B650_003
General:	See Core Changes B.06.52 .
Bugfix:	None
New Features:	Only Core Changes.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 202 - 1120/1220 LC system Changes B.06.50 (G428x, G429x)

Date Introduced:	May 2012
Revision:	B.06.50_003, Res_B650_003
General:	See Core Changes B.06.50 .
Bugfix:	Only Core Changes
New Features:	- Implemented park position for mobile Compact-LC - Support new module type G4294B. - Allow max temperature of 80°C for the column heater (instead 60°C)
OQ/PV Recommendation:	See OQ/PV - Validation Information .

SFC Modules

SFC Controller (G4301A)

NOTE The Controller firmware is independent from the module firmware. The version B2 and C2 depend on the used main board version.

Table 203 - SFC Controller Changes A308 (G4301A)

Date Introduced:	December 2013
Revision:	4301A_B2_A308_009.af, 4301A_C2_A308_009.af
General:	
Bugfix:	TeamTrack #019514: SFC back pressure control was too slow during gradient recovery. During recovery from a gradient run, the instrument back pressure had oscillations and it took minutes before the instrument was ready again, often it fell into the not ready time-out after 15 minutes. This was fixed and recovery is done faster now.
New Features:	TeamTrack #018563: Implemented a new reference signal which provides either the AuxPressure signal or the AnalogIn signal following the same logic as the corresponding actual value.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 204 - SFC Controller Changes A307 (G4301A)

Date Introduced:	May 2013
Revision:	4301A_B2_A307_009.af, 4301A_C2_A307_009.af
General:	
Bugfix:	- TeamTrack #018227: Implemented that a SFC module in a hybrid system is always ready when in LC mode and does not prevent from a start. - Improved noise of booster pump. On heavy load a strange sound occurred due to resonance of the stepper motor. This was removed by reducing the booster maximum speed. - Ignore the standby timeout in hybrid systems in LC mode to prevent from aborting long LC runs. - Fixed that backpressure did not leave its startup value. - TeamTrack #018258: Enlarged maximum value for extended-not-ready mode from 20 bar to 100 bar.
New Features:	Support new SFC ChemStation driver A.02.08.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

SFC Pump (G4302A)

Table 205 - SFC Pump Changes A.06.55 (G4302A)

Date Introduced:	February 2017
Revision:	4302A_A655_004, Res_A650_003
General:	See Core Changes A.06.55 .
Bugfix:	• None
New Features:	• No TeamTrack: Implemented the new remote service "EquilTrigger" for G7167 dual-needle sampler MLS.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 206 - SFC Pump Changes A.06.50 (G4302A)

Date Introduced:	May 2016
Revision:	4302A_A650_003, Res_A650_003
General:	See Core Changes A.06.50
Bugfix:	• TeamTrack #015567: Fixed that Keep Pressure Mode used wrong pressure when trying to keep the actual pressure. • No TeamTrack: Fixed that ACT:SSVA? sometimes show wrong value if pump was off. • No TeamTrack: Moved memory for diagnostic buffers "CMPR" and "THRM" from FLASH to RAM to prevent from exhaust of user-flash memory.
New Features:	• Allow max pressure of 600 bar for G4302A.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

SFC Autosampler (G4303A)

Table 207 - SFC Autosampler Changes A.06.54 (G4303A)

Date Introduced:	May 2013
Revision:	4303A_A654_003, Res_A650_003
General:	See Core Changes A.06.54 .
Bugfix:	- TeamTrack #018219: Occasionally the method download directly after error failed if using own or SFC injector program. It reproducibly failed if the abort-reaction lasted for a while e.g. if the needle is at uppermost position, which is typical for G4303A as this is the needle's position when the sample vial shall be grabbed. - Implemented support for SFC fixed-loop user interface (method and config UI) (only for G4303A).
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 208 - SFC Autosampler Changes A.06.50 (G4303A)

Date Introduced:	May 2012
Revision:	4303A_A650_003, Res_A650_003
General:	See Core Changes A.06.50 .
Bugfix:	Only Core Changes.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Capillary Electrophoresis System

Capillary Electrophoresis System (CE) (G7100)

NOTE Releases prior to revision B.06.44 can be found here:
<http://www.chem.agilent.com/search/?Ntt=firmware 7100>

Table 209 - Capillary Electrophoresis System Changes B.06.73 (G7100)

Date Introduced:	February 2015
Revision:	101A_B673_002, Res_B670_001
General:	See Core Changes B/D.06.73 .
Bugfix:	TeamTrack #022599: When using the parallel replenishment, the default replenishment vial was loaded too late at the end of the analysis. As a result, the replenishment needle was exposed to the air and buffers could crystallize and block the needle.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 210 - Capillary Electrophoresis System Changes B.06.70 (G7100)

Date Introduced:	November 2014
Revision:	7101A_B670_005, Res_B670_001
General:	This release was part of the revision 6.70 release for LC modules. See also Core Changes B/D.06.70 .
Bugfix:	- TeamTrack #015616: Depending on HW-variation and special conditions the module showed 110 mbar at flushing instead of the true value of ca. 910-950 mbar. - TT #018935: Execute Replenishment in parallel to all other steps of the analysis to adapt the run time to the one of the G1600 CE. - TeamTrack #019308: Malfunction of peak detection for 7100 CE fraction. - TeamTrack #19780, #19785: When during data acquisition a vial was moved from LOAD to SEALED position and at the same time the tray cover was opened and closed the module felt into resident mode.
New Features:	If the top cover is open and the CE is switched on, the Cassette-Cooler fan will rotate with reduced speed.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 211 - Capillary Electrophoresis System Changes B.06.45 (G7100)

Date Introduced:	August 2015
Revision:	7101A_B645_001, Res_B650_003
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag .
Bugfix:	None
New Features:	Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Table 212 - Capillary Electrophoresis System Changes B.06.44 (G7100)

Date Introduced:	February 2013
Revision:	101A_B644_001, Res_B650_003
General:	This release was part of the revision 6.53 release for LC modules. See also Core Changes B.06.53 .
Bugfix:	- TeamTrack #015440, #016463: Using a virtual vial (user vial) as replenish vial led to a panic and transfer to the resident system. - TeamTrack #017076: Changed the behavior on lifter blockage to prevent from too much mechanical stress that might have led to lift head breakage.
New Features:	None
OQ/PV Recommendation:	See OQ/PV - Validation Information .

Local Controllers

G4208A Instant Pilot and G1323A/B Local Control Module

Information for the Instant Pilot (G4208A) and the Local Control Module (G1323A/B) has been removed. It's now decanted in an individual document "Local Controller" and can be downloaded from the Agilent web, see [Where To Get Latest Information](#).

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