

Release Notes for Thermo Scientific Exactive Series 2.13 SP1 Instrument Control Software Kit

This document lists all new features, improvements, fixed defects, and known issues that exist in the Thermo Scientific Exactive Series 2.13 SP1 Instrument Control Software release. For information regarding the installation, features, functionality, and use of this product, refer to the following sources of information:

- Operating Manual
- Online Help
- Software Manual
- Quick Start Guide

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Installation Notes

Supported Target Systems

- Thermo Scientific Exactive GC mass spectrometer
- Thermo Scientific Exactive Plus mass spectrometer
- Thermo Scientific Exactive Plus EMR mass spectrometer
- Thermo Scientific Q Exactive mass spectrometer
- Thermo Scientific Q Exactive Focus mass spectrometer
- Thermo Scientific Q Exactive GC mass spectrometer
- Thermo Scientific Q Exactive HF mass spectrometer
- Thermo Scientific Q Exactive HF-X mass spectrometer
- Thermo Scientific Q Exactive Plus mass spectrometer
- Thermo Scientific Q Exactive UHMR mass spectrometer

System Requirements

The minimum hardware and software configurations required for Exactive Series 2.13 SP1 operation are as follows:

System	Requirements
PC	3 GHz Dual Core Processor 8 GB RAM 512 GB Hard Drive Display Monitor Resolution of 1680 × 1050 2 nd Network Interface Card (NIC), 100 MBit/s
Software	Microsoft™ Windows™ 10 Enterprise 2016 LTSC, 2019 LTSC or 2021 LTSC

Tip The Exactive Series Instrument Control Software Kit 2.13 SP1 was only tested within the delivered composition.

Installation

Tip Prepare the computer in advance of any new installation!

This guidance addresses a standard installation of a computer suitable to act as a data system for Exactive Series based instruments. The current software version is 2.13 SP1. The guidance is valid at least up to this version. There are differences between nearly all computers, so even if you have a receipt of installation, be aware that the operating system or language settings are different. The current explanations have Windows 10 and English in focus.

Thermo Fisher Scientific does not accept any warranty claims about the completeness of this instruction list. Consulting a Thermo Fisher Scientific support team member of Exactive Series instruments is highly recommended for setting up a new PC.

Technical Requirements

Choose a PC with Microsoft Windows 10 as operating system. The PC should have 8 GB or more RAM, a 3 GHz CPU, better more than two CPUs core and a dedicated, separate network interface card (NIC) for communication with the instrument and LC devices, if present.

Check the list of supported operating systems for a particular Exactive Series Instrument Control Software Kit.

Operating System Language

English is the only tested language. It is required to have English as default language during the installation of Xcalibur.

Network Setup

More than one NIC must be present in the system. The one connected to the instrument must not be connected to the regular Internet connection. Only the instrument to be driven by this particular PC may be connected to the PC using a 1 GBit switch or hub. LC or GC systems may be connected to that switch, too.

Configure the IPv4 interface as follows:

- address 172.16.0.101
- network mask 255.255.0.0
- manual DNS selection with empty fields

Physical Links

Use at least a Cat 5e patch cable. Double-check the quality of the cable, if errors occur.

Virus Scanner and Firewall

Disable virus scanner and firewall during installation. Virus scanning can happen in advance and may stay turned on, if it is guaranteed that the firewall is turned off. The installation program informs only the built-in firewall of Windows properly. Other firewalls have to be informed that the program ExactiveService.exe (file locations see below) needs access to incoming and outgoing network traffic. Remind that the dedicated NIC is usually considered to be a “public network.” Firewall and virus scanner can be turned on after installation. Reboot the instrument to be sure that everything works.

Software Installation

Tip Do not start software installation before network setup has been completed! See “[Network Setup](#)” on [page 2](#).

File Locations

Depending on various conditions, the typical installation folders on the computer can be either

- C:\Xcalibur\system\Exactive
- C:\Program Files (x86)\Thermo\Exactive
- C:\Program Files\Thermo\Exactive

This instruction list uses C:\Xcalibur\system\Exactive for easy reading, but depending on the installation package like Exactive Series Instrument Software kit or Chromeleon, this may be different.

When the Exactive Series Instrument Control Software has been installed on a system, the folder of the first installation will be reused.

Backup

Several files and folders require a backup for later installation, either for crash recovery or for replacing the computer. The backup can be performed during normal operation.

These files and folders (see “[File Locations](#)” on [page 2](#)) should be saved if present:

- C:\Xcalibur\system\Exactive\instrument\msx_instrument_files
- C:\Xcalibur\system\Exactive\instrument\ExactiveLicenses.txt and C:\Xcalibur\system\Exactive\instrument\Licenses.txt
- C:\Xcalibur\system\Exactive\instrument\reports
- Various Tune files at user-selected locations

Setup of a new computer without any backup requires assistance of the Exactive support team of Thermo Fisher Scientific. The computer may require licenses or some extra configuration files.

Uninstalling

Previous versions of the Thermo Exactive Series Instrument Control Software should be removed using Control Panel operation. Present configuration settings will remain.

Installation

Install using the ISO image. The program Setup.exe in the root folder will guide you through the installation. Use the regular way of installation for best results. It detects several problems, if they exist at all.

Restoring a Backup

This step is not needed, if the installation was just an upgrade of the Exactive Series Instrument Control Software. All present configuration settings remain on uninstalling.

For setting up a replacement computer or after a disk crash, the restore procedure needs to be performed. The procedure requires administrator privileges. The restore procedure should happen after installation of the new software.

The installation place may be different to that of the installation. Either use Instrument Configuration and look where files are located or check the folders appearing at “[File Locations](#)” on [page 2](#).

Tip It is important to stop the only program that interacts with the files coming from the backup. That is ExactiveService.

❖ To stop ExactiveService

1. Press [Windows]-R, enter “services.msc” and click **OK**.
2. Select **Thermo Exactive Series**.
3. Right-click it and select **Stop**.
Keep the dialog open.
4. Replace the **msx_instrument_files** folder, because it already exists. All other files of the backup should not exist on the new system. Copy them.
5. Use the open dialog to start the **Thermo Exactive Series** service again. Alternatively, reboot the computer. In doubt, contact the Exactive support team of Thermo Fisher Scientific.

Set the power setting to maximal performance.

Tip Automatic updates of any kind, those of the operating system in particular, are usually set to **automatic**, but this may disturb instrument data acquisition. We strongly recommend setting all updates to **manual** and checking for updates regularly.

Operation

This table shows the supported instrument control software versions for various Exactive Series instrument models.

	Q Exactive	Exactive Plus	Q Exactive Plus	Exactive Plus EMR	Q Exactive HF	Q Exactive Focus	Q Exactive GC	Exactive GC	Q Exactive HF-X	Q Exactive UHMR
2.0	✓	—	—	—	—	—	—	—	—	—
2.0 SP1	✓	—	—	—	—	—	—	—	—	—
2.0 SP2	✓	—	—	—	—	—	—	—	—	—
2.1	✓	✓	—	—	—	—	—	—	—	—
2.2 SP1	✓	✓	—	—	—	—	—	—	—	—
2.3	✓	✓	✓	✓	—	—	—	—	—	—
2.3 SP1	✓	✓	✓	✓	—	—	—	—	—	—
2.4	✓	✓	✓	✓	✓	—	—	—	—	—
2.5	✓	✓	✓	✓	✓	✓	—	—	—	—
2.6	✓	✓	✓	✓	✓	✓	✓	—	—	—
2.7	✓	✓	✓	✓	✓	✓	✓	—	—	—
2.7 SP1	✓	✓	✓	✓	✓	✓	✓	—	—	—
2.8	✓	✓	✓	✓	✓	✓	✓	✓	—	—
2.8 SP1	✓	✓	✓	✓	✓	✓	✓	✓	—	—
2.9	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
2.9 SP1	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
2.9 SP2	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
2.9 SP3	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
2.9 SP4	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
2.10	—	—	—	—	—	—	—	—	—	✓
2.11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.13 SP1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The following tables list new features, improvements and defect fixes in the different Exactive Series Instrument Control Software releases.

Table 1 lists defect fixes in the Exactive Series 2.13 SP1 Instrument Control Software release that were implemented since the Exactive Series 2.13 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 1. Changes from Exactive Series 2.13 Instrument Control Software to Exactive Series 2.13 SP1 Instrument Control Software

Abstract	ID
Defect Fixes	
Custom calibration and higher order shape issue.	134980
Calibration Report: Mass Calibration Report needs to mark outliers as 'N/A'.	157818
Centroid section of the raw file data might be inconsistent.	167970
Workstation installation with installed Chromeleon needs installation of Thermo Foundation on Terminal/Citrix Servers.	15204

Table 2 lists new features and defect fixes in the Exactive Series 2.13 Instrument Control Software release that were implemented since the Exactive Series 2.12 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 2. Changes from Exactive Series 2.12 Instrument Control Software to Exactive Series 2.13 Instrument Control Software

Abstract	ID
New Features	
Q Exactive UHMR supports Charge Detection MS mode powered by Direct Mass Technology	147410
Defect Fixes	
Method execution: Entries in exclusion list are excluded even if exclusion list is turned off	132780
Q Exactive UHMR: IST Desolvation works well in tune but does not work properly via method	137655
Q Exactive UHMR: Method Editor: IST Desolvation needs to support integer values only	151658
Tune: Error message appears when Extended User Parameter license for 3 years is provided	152408
Tune: Maximum Inject Time toggles if hotlink is enabled and a tune file is loaded	152614
Tune: Source Parameters are set to positive mode values in negative mode acquisition	150030

Table 3 lists new features, improvements and defect fixes in the Exactive Series 2.12 Instrument Control Software release that were implemented since the Exactive Series 2.11 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 3. Changes from Exactive Series 2.11 Instrument Control Software to Exactive Series 2.12 Instrument Control Software

Abstract	ID
Feature: Exactive Series must allow access to more parameter via 'Extended Software Parameters' license key	88191
Feature: GC Q Exactive, GC Exactive: The precision of retention times must be improved for 2d chromatography experiments	85433
Feature: Q Exactive HF-X, Improvement: TMT experiment type should have access to all resolution settings in MS2 scans to meet users expectation regarding usage of TMT-2, -4, or 6-plex samples	80067
Improvement: enable an installer to serve the workstation, i.e. Exactive Series instrument software can be installed in a Client / Server environment, such as Chromeleon.	101289
Improvement: User needs to work with Exactive Series ICSW under Chromeleon CDS Software	120245
Improvement: Ensure that the Windows service detects StandBy and Sleeps of the operating system	115148
Improvement: Source drain tube temperature is controlled, and overheating is prevented	112587
Improvement: must provide an additional entry in scan header to reflect resolution setting @ m/z 400 for QE UHMR	97348
Improvement: QE UHMR: Noise Threshold must be a Tune Value	113241
Defect fix: QE UHMR: Bentflatpole RF Calibration does not return amplitude to previous setting	117692
Defect fix: When analyzing complex samples, intensity drop-outs may occur due to overfilling of the ion trap.	79982
Defect fix: 7500 resolution not available in Exactive GC Full MS	117111
Defect fix: QE GC: Filament Blown logic does not work	107520
Defect fix: QE GC: CTCDD default should be "off"	99782
Defect fix: QE UHMR: Mass, eFT Phase, and eFT Dispersion Calibrations report as "passed" even if one detector mode fails	124063
Defect fix: Raw file and Audit trail show wrong settings when Tune file was saved for different source	124082
Defect fix: eFT check on individual HFX instruments can fail	121342
Defect fix: API: Running procedure cannot be determined by API	100461
Defect fix: Ion transfer time test time needs to separate specs based on instrument model	103079
Defect fix: Full MS master scan with dd properties in RAW file scan header: The scan header does not include a data-dependent flag for Full Scans that follow a data-dependent MS2 scan.	61263
Defect fix: QE UHMR Tune: Customized evaluation does not use m/z values from the list	84103

Table 3. Changes from Exactive Series 2.11 Instrument Control Software to Exactive Series 2.12 Instrument Control Software, continued

Abstract	ID
Defect fix: Fast polarity switching can induce erroneous HV overload errors	40695
Defect fix: tSIM: 'loop count' is not available	114668
Defect fix: eFT Time Dependency Check does not stop	108450
Defect fix: QE UHMR: UHMR Spectral Mass Accuracy test fails	89901
Defect fix: Isolation Transmission Endurance Check not available for customer	99957
Defect fix: QE UHMR: 'Isolation Evaluation (pos)' and 'Isolation Evaluation (neg)' runs procedures not applicable to QE UHMR	89866
Defect fix: QE UHMR: The Source DC Offset is 0 V although the IST desolvation voltage is not set at maximum permitted level	110247
Defect fix: QE UHMR: Target values lower than 5e5 cannot be saved in the method editor	107595
Defect fix: QE UHMR Tune: AGC mode must automatically switch to 'Prescan' if IST is switched off	88090
Defect fix: QE UHMR: The maximum value for Extended trapping shall not exceed 300 eV	112702
Defect fix: QE UHMR: eFT phase calibration for high m/z detector is not using 500 Vp-p RF amp for the transfer MP and HCD cell	131641
Defect fix: QE UHMR: Unlike eFT phase calibration, the eFT dispersion calibration has the m/z range limited to m/z 8000	131643

Table 4 lists improvements and defect fixes in the Exactive Series 2.11 Instrument Control Software release that were implemented since the Exactive Series 2.9 SP4 Instrument Control Software release and the Exactive Series 2.10 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 4. Changes from Exactive Series 2.9 SP4 Instrument Control Software and Exactive Series 2.10 Instrument Control Software to Exactive Series 2.11 Instrument Control Software

Abstract	ID
Improvement: QE Plus, QE HF, QE HF-X: mass calibration for HMR in negative ion mode	70284
Improvement: QE Plus, QE HF, QE HF-X: eFT for HMR in negative ion mode	70285
Improvement: QE Plus, QE HF, QE HF-X: evaluation of given mass calibration for HMR in negative ion mode	70287
Improvement: QE Plus, QE HF, QE HF-X: ME: user must be able to apply negative ion mode/polarity when HMR Full MS template is applied	70289
Improvement: QE Plus, QE HF, QE HF-X: ME: user must be able to apply negative ion mode/polarity when HMR AIF template is applied	70290
Improvement: GMP Compliance eFT and Mass Calibration report	78825
Improvement: Advanced user must have a robust C-Trap Exit Lens–Purge Optimization	80958
Improvement: Exactive GC: acquisition at 7.5K resolution in full scan	85386
Improvement: Protect against cyber attacks, which try to login with the ExactiveUser account	85387
Improvement: GC Q Exactive, GC Exactive: HCD Collision Energy Limit	93301
Defect fix: C-Trap Entrance Lens Inject calibration is not shown in Advanced User mode	38908
Defect fix: Quad Transmission Evaluation runs with inject flat enabled and fails	57438
Defect fix: HV gauge protection triggered in EMR mode	57946
Defect fix: Source gases stuck at fully open	71062
Defect fix: Wrong lock masses injected when polarity switching and lock mass injection is used	72906
Defect fix: Q Exactive UHMR: Lock mass is not correctly utilized in mass calibration for UHMR	78428
Defect fix: Copy Optics Settings from positive ion mode does not copy CE-Inject	78930
Defect fix: FS-PRM (polarity switching): Sequence of scans not correct	80047
Defect fix: HMR negative mode eFT dispersion calibration is using a m/z range up to 15,000	84002
Defect fix: Q Exactive UHMR Tune: eFT and mass calibrations for low and high m/z detector settings must be performed in one step by automatically switching between low and high m/z detector settings	84104
Defect fix: C-Trap Exit Lens–Purge does not use correct filter strength	85614

Table 4. Changes from Exactive Series 2.9 SP4 Instrument Control Software and Exactive Series 2.10 Instrument Control Software to Exactive Series 2.11 Instrument Control Software, continued

Abstract	ID
Defect fix: Wrong AGC info in instrument status	88046
Defect fix: Q Exactive UHRM: Ultra High Vacuum: Underrange / No Ignition (1.9V, 680h) warning message at low trapping gas pressure settings	88089
Defect fix: Possible chance that Exactive doesn't run under Chromeleon	90897
Defect fix: QE GC PRM method Stepped collision energy wrong in scan header	92048
Defect fix: HMR negative eFT calibration reports incorrectly labeled	92104
Defect fix: Trapping gas calibration interrupts	92478
Defect fix: Update from 2.9 SP2 to 2.11 failed	92729
Defect fix: Software crash if instrument type 'QE Focus' is selected	92895
Defect fix: Temperature Logs start without or do not contain any header.	93155
Defect fix: Q Exactive GC: Cannot use m/z 30 as first mass	93302
Defect fix: APD low-res crashes when processing spectra composed of background ions	94854

Table 5 lists improvements in the Exactive Series 2.9 SP4 Instrument Control Software release that were implemented since the Exactive Series 2.9 SP3 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 5. Changes from Exactive Series 2.9 SP3 Instrument Control Software to Exactive Series 2.9 SP4 Instrument Control Software

Abstract	ID
Improvement: Support for part BRE0016997 (DATA ACQUISITION EXACTIVE)	61769

Table 6 lists defect fixes in the Exactive Series 2.9 SP3 Instrument Control Software release that were implemented since the Exactive Series 2.9 SP2 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 6. Changes from Exactive Series 2.9 SP2 Instrument Control Software to Exactive Series 2.9 SP3 Instrument Control Software

Abstract	ID
Defect fix: FT DAQ Board not connected (USB) during customer runs via method	86569
Defect fix: FT Adapter Board / Unknown FT-Adapter token	86573

Table 7 lists defect fixes in the Exactive Series 2.9 SP2 Instrument Control Software release that were implemented since the Exactive Series 2.9 SP1 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 7. Changes from Exactive Series 2.9 SP1 Instrument Control Software to Exactive Series 2.9 SP2 Instrument Control Software

Abstract	ID
Defect fix: Chromeleon: Fallback folder is not used when looking for Foundation.	61631
Defect fix: Crashes can occur when processing internal peak lists with duplicate entries.	77927
Defect fix: Embedded PC CPU core temperature read back incorrect.	77951

Table 8 lists improvements and defect fixes in the Exactive Series 2.9 SP1 Instrument Control Software release that were implemented since the Exactive Series 2.9 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 8. Changes from Exactive Series 2.9 Instrument Control Software to Exactive Series 2.9 SP1 Instrument Control Software

Abstract	ID
Improvement: Support of Microsoft Windows 10 Enterprise 2016 LTSC	61767
Improvement: Supports a dedicated TMT workflow (Q Exactive HF-X)	63899

Table 8. Changes from Exactive Series 2.9 Instrument Control Software to Exactive Series 2.9 SP1 Instrument Control Software, continued

Abstract	ID
Improvement: Improved low mass calibration in Negative Chemical Ionization mode (Q Exactive GC)	74587
Defect fix: Method Editor: Crash when importing a picture to a global list.	58454
Defect fix: Q Exactive GC: empty readbacks from Quad Subsystem	60257
Defect fix: Potential instrument crash with acquisition of very narrow isolation scans	62603
Defect fix: After restarting Thermo Acquisition Service or PC reboot, Xcalibur may show instrument not connected	62961

Table 9 lists new features, improvements and defect fixes in the Exactive Series 2.9 Instrument Control Software release that were implemented since the Exactive Series 2.8 SP1 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 9. Changes from Exactive Series 2.8 SP1 Instrument Control Software to Exactive Series 2.9 Instrument Control Software

Abstract	ID
New Feature: Q Exactive HF-X: Higher Productivity <ul style="list-style-type: none">• Resolving Power 7500• Accelerated HCD performance allows for higher scan speed.	40976
New Feature: Q Exactive HF-X: Improved Data Dependent Decisions for TopN experiments <ul style="list-style-type: none">• Improved Data Dependent decisions for TopN experiments• Normalized Collisional Energy: NCE range is extended up to charge state 100• Method Editor: new dd Setting “Multiple charge states.”	41045
New Feature for Q Exactive HF and HF-X: Provide resolution setting 45000 for unambiguously detecting TMT 11-plex reporter ions at an appropriate scan speed.	41046
New Feature for Q Exactive Plus, HF, HF-X: Method Editor: Support Dynamic Retention Time Correction capabilities for PRM experiments.	41049
New Features for Q Exactive GC, Exactive GC: <ul style="list-style-type: none">• Autotune supports ability to set user defined electron energy and ability to tune electron lens and emission current• New Procedure to tune ion source with low energy electrons• Add Methane PCI and NCI Tune Reports.	42557
Improvement: Tune: Calibration: Improved Isolation Mass/Resolution Calibration procedures for Inject Flatapole (Q Exactive Plus, HF, HF-X) and Quadrupole (all Q Exactive instruments).	47958
Improvement: Tune: Quad transfer tweak parameters are now removed from Instrument Status Tree.	39050

Table 9. Changes from Exactive Series 2.8 SP1 Instrument Control Software to Exactive Series 2.9 Instrument Control Software, continued

Abstract	ID
Improvement: Adjust peak intensity (linearity) for very low S/N values	40808
Statistical processing of a big number of spectral data points has revealed a systematic underrepresentation of certain extremely low signal intensities (signals close to the spectral detection limit). This software change adjusts the intensities of these signals, in order to extend the overall range of linear response.	
Compared to the previous software version	
<ul style="list-style-type: none">• This improves the theoretically possible LOQ of the analysis by extending the linear response range.• Signal intensities well above the detection threshold are treated identically, with identical intensity, noise, and baseline annotations.<ul style="list-style-type: none">– For all signals higher than about 2–3 times the spectral detection threshold• Signal intensities near the detection threshold are adjusted by a factor between 1.0 and 1.49.<ul style="list-style-type: none">– For certain signals lower than about 1–3 times the spectral detection threshold.– Other features like mass assignment and resolution of these signals stay identical.• Intensity ratios might therefore calculate differently (smaller by a factor between 1.0 and 1.49) when comparing signals close to the spectral detection limit to abundant signals.<ul style="list-style-type: none">– The difference is in the range of the spectral noise band, thus for single measurements it is superimposed by the statistical intensity variations.• Notably, absolute intensities stay identical for all abundant signals.• Notably, intensity ratios will calculate identically when comparing abundant signals.• Signal detection limit stays identical, meaning all signals that would have been detected by the previous version of the software will also be detected by the new version.• Number of detected peaks and size of data stays identical.	
Improvement: Method Editor: Extend Charge State value range to 1–100 in Inclusion/Exclusion lists.	53856
Improvement: Method Editor: Add an experiment to the experiment pane by double-clicking.	49615
Improvement for Q Exactive, Plus, HF, HF-X: Method Editor: Allow to turn off “MSX isochronous ITs” for PRM and DIA experiments.	52190
Improvement for Q Exactive Plus, HF, HF-X: Add Instrument Mode (Intact Protein Mode Setting and HMR Mode Setting) to rawfile’s Tune Method.	51337
Improvement for Q Exactive GC and Exactive GC: Widen frequency range in spectral noise test on (Q)E GC (up to m/z 30 equivalent).	37328
Improvement for Q Exactive GC: Move “Evacuate Vacuum Inlet” command in Tune.	43161
Improvement for Q Exactive GC: Improve calibration of injection flatapole so RF is not set too low.	43163
Defect fix: In rare cases, consecutive scans have same scan number under certain conditions.	38166
Defect fix: Fast polarity switching induces random HV overload errors.	40695
Defect fix: Thermo Foundation Instrument Configuration: Umlauts (ä, ö, ü) lead to crash when starting data acquisition.	47410
Defect fix: Cannot install Microsoft .NET Framework without Internet access.	40525
Defect fix: Tune: Calibration Report: Current Define Scan Settings are reported instead of Calibration Scan Settings.	42289
Defect fix: Tune: Calibration Report: Resolution settings are not displayed correctly.	44125
Defect fix: Tune crashes when try to view a report immediately after this report is generated.	44447
Defect fix: Tune: Customized Calibration: Resolution Setting is reported incorrectly.	53858
Defect fix: Tune: When switching between Calmix Calibration and Customized Calibration panes, start button stays grayed out under certain conditions.	38901
Defect fix: Tune: Analyzer Accuracy Calibration: CTCD Scaling Calibration passes unwantedly when signal is too low.	49689
Defect fix: Chromeleon: Name of last Mass Calibration Report is missing.	38827
Defect fix: Method Editor: PRM experiments cannot be updated from 2.3SP1 to 2.8SP1.	48196

Table 9. Changes from Exactive Series 2.8 SP1 Instrument Control Software to Exactive Series 2.9 Instrument Control Software, continued

Abstract	ID
Defect fix: Method Editor: Experiment pane does not update scroll bar, when adding high amount of scan groups.	41447
Defect fix: Method Editor: With some combination of stepped (N)CE values for one experiment having one value at the minimum, a stored method could not be validated / opened again and an error message reported: 'Missing hardware capability or feature: LabileCompounds.'	52687
Defect fix: Q Exactive Focus: Method Editor: Confirmation method in negative polarity does not work correctly.	44483
Defect fix: Q Exactive Focus: Method Editor: SIM inclusion list is restricted by factor 15 rule.	40694
Defect fix: Q Exactive GC: Method Editor: Inclusion list ignores masses between m/z 30 and m/z 50.	56348

Table 10 lists improvements and defect fixes in the Exactive Series 2.8 SP1 Instrument Control Software release that were implemented since the Exactive Series 2.8 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 10. Changes from Exactive Series 2.8 Instrument Control Software to Exactive Series 2.8 SP1 Instrument Control Software

Abstract	SCR
Improvement: Exactive GC is added as new instrument of the Exactive Series.	36326
Improvement: Improved cooling of turbomolecular pump - allow new high-speed fan to run on Exactive Series.	36330
Defect fix: normal mode eFT calibration and HMR eFT calibration as well as EMR eFT calibration interfere each other.	37111
Defect fix: manipulating a license key in the "Add license" window results in a crash of Tune.	36549
Defect fix: HMR eFT calibration makes normal mode mass calibration "void" (traffic light is yellow).	37113
Defect fix: Quadrupole Endurance Test saves Quad default values to master_cal	38338

Table 11 lists new features, improvements and defect fixes in the Exactive Series 2.8 Instrument Control Software release that were implemented since the Exactive Series 2.7 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 11. Changes from Exactive Series 2.7 Instrument Control Software to Exactive Series 2.8 Instrument Control Software

Abstract	SCR
New feature: Support of High Mass Range (HMR) mode for Q Exactive Plus and Q Exactive HF enabled by a license 'High Mass Range' for improved analysis of monoclonal antibodies: <ul style="list-style-type: none"> • Increase the m/z range to last mass 8000. • Increase S-lens RF level to maximum value 200. • Increase In-Source CID max value to 150 eV (HESI source) or 200 eV (NSI source). • Access to 'Averaging' feature. • Access to 'Trapping Gas Pressure' settings from 1.0 to 1.5. • HMR mode Calibration and Evaluation procedures using ammonium hexafluorophosphate (AHFP) as calibration solution. • HMR experiments in Method Editor: 'HMR - Full MS' and 'HMR - AIF' 	DEU-2501
Improvement: Calibration Report: Plot history values of the Isolation Transmission Endurance Test.	DEU-1980
Improvement: Make PDF Reports for Evaluations available.	DEU-2106
Improvement: PDF Reports for Calibrations: Include Report of Failed Calibration results.	DEU-2580
Improvement: Q Exactive, Q Exactive Plus and Q Exactive HF: Make Loop count user accessible in PRM experiment.	DEU-2519
Improvement: Modified bakeout procedure. Maximum bakeout time set to 30 h.	DEU-2623
Improvement: Q Exactive Plus and Q Exactive HF: Improve robustness of HCD gas supply when using Protein Mode.	DEU-2637

Table 11. Changes from Exactive Series 2.7 Instrument Control Software to Exactive Series 2.8 Instrument Control Software, continued

Abstract	SCR
Improvement: Modified bakeout procedure. Switch off Trapping Gas during bakeout.	DEU-2676
Improvement: Q Exactive GC: Reduce default lock mass tolerance in Tune to ± 5 ppm.	HR-232
Improvement: Q Exactive GC: Make C-Trap Energy Offset editable in instrument method.	HR-236
Improvement: Q Exactive GC: Hide Lock mass filter in Tune Spectrum view and raw file scan headers.	HR-237
Improvement: Q Exactive GC: Do not restore heater set values after changing in a method.	HR-239
Defect fix: Q Exactive GC: Help File has wrong release history.	DEU-2486
Defect fix: Q Exactive GC: Collection of manuals within Windows Start menu and corresponding links are not complete/correct.	DEU-2556
Defect fix: TIC Variation is not calculated correctly for all Q Exactive instruments.	DEU-2518
Defect fix: QE Focus: Method Editor help description box text shows wrong loop count.	DEU-2524
Defect fix: Rephrase Method Editor help description box text for (N)CE.	DEU-2523
Defect fix: Exactive Plus EMR: Method Editor: In-source CID values > 100 eV fall back to 100 eV after saving the method.	DEU-2562
Defect fix: Instrument Configuration: Special Characters in the Public Name prevent Reports from being generated.	DEU-2613
Defect fix: Q Exactive GC: AGC Issues when doing low mass scanning.	HR-233
Defect fix: Q Exactive GC: Tuning issue with low mass scanning.	HR-234

Table 12 lists all improvements and defect fixes in the Exactive Series 2.7 Instrument Control Software release that were implemented since the Exactive Series 2.6 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 12. Changes from Exactive Series 2.6 Instrument Control Software to Exactive Series 2.7 Instrument Control Software

Abstract	SCR
Improvement for Q Exactive, Q Exactive Plus, Q Exactive HF, Q Exactive Focus, Q Exactive GC: new property (N)CE / stepped (N)CE is available to switch between absolute collision energy (CE) and normalized collision energy (NCE).	DEU-2376
Improvement: Scan filters show precursor m/z as well as scan ranges with four decimal places.	DEU-2382
Improvement Q Exactive Focus: new experiment AIF is available.	DEU-2387
Improvement Q Exactive Focus: Full MS experiment can be combined with the experiments SIM, PRM or AIF.	DEU-2388
Improvement Q Exactive Focus: loop count up to three available for <ul style="list-style-type: none"> • Full MS - discovery • Full MS - confirmation • SIM • SIM - confirmation. 	DEU-2398
Improvement Q Exactive Focus: MSX count up to 10 in SIM experiment.	DEU-2399
Improvement Q Exactive Focus: scan range m/z 50-3000 for Full MS experiment and AIF experiment is supported.	DEU-2400
Improvement Q Exactive GC: enable low mass scanning.	DEU-2410
Defect fix Exactive Plus (EMR): intensity threshold now accepts all set values.	DEU-2370
Defect fix Q Exactive GC: repaired link to Operating Manual in Windows Start Menu.	DEU-2390
Defect fix: Carry-over of Full MS ions into subsequent fragmentation scan is prevented.	DEU-2403
Defect fix: DAQ board throws error when switching to acquisition mode too early after instrument reset.	DEU-2405
Defect fix Tune: When fragmentation CE is selected, field for charge state will be grayed out.	DEU-2421
Defect fix Method Editor Global Lists: Fragmentation Energy values are now accepted when typing in combo box.	DEU-2425

Table 12. Changes from Exactive Series 2.6 Instrument Control Software to Exactive Series 2.7 Instrument Control Software, continued

Abstract	SCR
Defect fix Method Editor: PreselectedTuneFileChooser does update renamed or deleted folders.	DEU-2433
Defect fix Q Exactive GC: Method Editor summary shows correct ion source.	DEU-2450

Table 13 lists all improvements and defect fixes in the Exactive Series 2.6 Instrument Control Software release that were implemented since the Exactive Series 2.5 SP1 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 13. Changes from Exactive Series 2.5 SP1 Instrument Control Software to Exactive Series 2.6 Instrument Control Software

Abstract	SCR
Improvement: Method Editor: Help description boxes briefly explain each property setting.	DEU-0718
Improvement: Tune: Better messages and help procedures are provided when Inject Flatapol calibration or Quadrupol Isolation Mass/Resolution Calibrations fail.	DEU-1069
Improvement: Method Editor: Minimum AGC target value instead of Underfill ratio is shown in Data Dependent settings.	DEU-1103
Improvement: Tune: UHV warn level is increased when a DART™ ion source is configured (Instrument System Configuration settings > DART Ion Source Compatibility).	DEU-1522
Improvement: Spray current standard deviation is reported in status log.	DEU-1832
Improvement: Online Help: Better description of Method Editor Experiments.	DEU-1871
Improvement: Online Help: Experiment pane is directly linked with Online Help. In Online Help, experiment symbols show hyperlinks to parameter descriptions.	DEU-2041
Improvement: Xinstaller: Newer IQ report template is available for IQ Report of the Installer.	DEU-2303
Defect Fix: Monoisotopic Peak Determination Algorithm is setting the wrong monoisotopic <i>m/z</i> in Scan Header.	DEU-2204
Defect Fix: Xcalibur Sequence Editor: Used file names that include special characters will create empty acquisitions raw files.	DEU-2213
Defect Fix: Tune About Window text block scaling is unfavorable when no MS Office is installed.	DEU-2252
Defect Fix: Method Editor TuneFileChooser: Show file time as local time.	DEU-2265
Defect Fix: Tune: CTCDC calibration is dependent on sheath gas flow.	DEU-2269
Defect Fix: Exactive Plus EMR: For support of calibrating an instrument with Advion NanoMate™ ion source, the background noise check procedure was removed for the following calibration procedures: C-trap charge detection scaling and mass calibrations.	DEU-2284
Defect Fix: Q Exactive instruments: MS1 ions carry over into MS2 after CTCDC scan.	DEU-2294
Defect Fix: Q Exactive Focus Method Editor: When 'min AGC Target' Trigger is switched off, the Intensity threshold is shown differently for dd-MS2 modes.	DEU-2330
Defect Fix: Q Exactive Focus: Wrong Scan Ranges are acquired for Full MS with Segmented Master Scans and Polarity switching.	DEU-2345
Defect Fix: Method Editor: Unfavorable Font is loaded when no MS Office is installed.	DEU-2350

Table 14 lists an improvement in the Exactive Series 2.5 SP1 Instrument Control Software release that was implemented since the Exactive Series 2.5 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 14. Changes from Exactive Series 2.5 Instrument Control Software to Exactive Series 2.5 SP1 Instrument Control Software

Abstract	SCR
Improvement: Transfer of messages from Exactive Series Tune and Method Editor is adjusted to the Chromeleon audit trails.	DEU-2059

Table 15 lists all improvements and defect fixes in the Exactive Series 2.5 Instrument Control Software release that were implemented since the Exactive Series 2.4 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 15. Changes from Exactive Series 2.4 Instrument Control Software to Exactive Series 2.5 Instrument Control Software

Abstract	SCR
Improvement: Calibration Report has to be generated for “Customized Mass Calibration.”	DEU-1907
Improvement: Q Exactive instruments: Optimize reporting of quadrupole and injection filter calibrations.	DEU-1958
Improvement: Q Exactive, Q Exactive Plus, Q Exactive HF: Provide correct “Last Locking” information in scan header with regard to time.	DEU-2179
Defect fix: Method Editor: the MS/MS data dependent first mass switches to '-' when $m/z < 50$ is entered.	DEU-735
Defect fix: Quad iso/res calibration (rough) plot: Coloring of primary and secondary axis should be different.	DEU-1929
Defect fix: Q Exactive Plus/HF: During evaluation of the Injection flatapole, the message on the graph header shows Injection flatapole calibration.	DEU-1961
Defect fix: Method Editor Global Lists: Empty fields are not supported for (N)CE when a value was set.	DEU-2042
Defect fix: Method Editor Global Lists: Cannot delete field values in a table.	DEU-2043
Defect fix: Electronics evaluations in Extra Evaluation procedures are not called when root node is selected.	DEU-2085
Defect fix: CE/NCE: Tune Analysis Graph does not support plotting CE energies.	DEU-2087
Defect fix: Tune Analysis graph / Scan HCD Energy: The Activation Energy Scan Range must be increased from (1-100) to (1-200).	DEU-2089
Defect fix: Exactive Plus EMR: Tune Analysis graph / Scan In-Source-CID Energy: The Activation Energy Scan Range must be increased from (1-100) to (1-200).	DEU-2090
Defect fix: Q Exactive Plus/HF: Mass Traces / Scan CE, NCE and in-source CID energy do not show real-time plot.	DEU-2097
Defect fix: CE/NCE: Charge state info is displayed when CE is selected.	DEU-2101
Defect fix: Q Exactive Plus: Full MS / PRM: PRM scan events are delayed with Full MS Enhanced Resolution.	DEU-2104
Defect fix: Method Editor Properties: Minimum value in a range is not honored if entered in a property grid in the edit field “mass width”.	DEU-2121
Defect fix: Method Editor TopN: Avoid using Periodic Prescan (PPS) mass ranges other than the full scan range.	DEU-2137
Defect fix: The use of Q Exactive Tune files must be forbidden on Q Exactive Plus and Q Exactive HF instruments in both Tune and Method Editor.	DEU-2145
Defect fix: Exactive Plus without HCD shows CE fragmentation in Tune.	DEU-2182

Table 16 lists all new features, improvements and defect fixes in the Exactive Series 2.4 Instrument Control Software release that were implemented since the Exactive Series 2.3 SP1 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 16. Changes from Exactive Series 2.3 SP1 Instrument Control Software to Exactive Series 2.4 Instrument Control Software

Abstract	SCR
New feature: Q Exactive, Q Exactive Plus, Q Exactive HF: Grouping in MSX Scans For spectrum multiplexed experiments, an inclusion list MSX ID defines the candidates to be multiplexed in one scan event.	DEU-1995
New feature: Q Exactive, Q Exactive Plus, Q Exactive HF: Enable switching between NCE and CE. Enable switching between normalized collision energy (NCE) and absolute collision energy (CE), which is supported in Tune Editor (“Instrument Control Fragmentation” and “Mass Traces Scan and Plot”) and in the global “Inclusion” list of the Method Editor	DEU-2003

Table 16. Changes from Exactive Series 2.3 SP1 Instrument Control Software to Exactive Series 2.4 Instrument Control Software, continued

Abstract	SCR
Improvement: TIC Intensity Compensation Factors are extended for target values higher than 2.25E6	DEU-1479
Improvement: Instrument Configuration: Audit trailing maximum text size is configurable	DEU-1956
Improvement: Q Exactive, Q Exactive Plus, Q Exactive HF: Instrument method “Targeted-MS2” is renamed to “PRM”	DEU-1962
Improvement: Tune: Save/open custom calibration lists	DEU-1978
Improvement: Q Exactive Plus/HF: Workflow FS / AIF / NL-dd MS ² workflow has to be supported for Protein Mode licensed systems if instrument is currently not in Protein Mode	DEU-1979
Improvement: Q Exactive Plus/HF: Enable averaging functionality of scans for Protein Mode	DEU-1983
Improvement: Q Exactive, Q Exactive Plus, Q Exactive HF: Stepped NCE values are displayed individually in the raw file scan header	DEU-2047
Defect fix: Quad RF Frequency Fine Adjustment Procedure does not detect intermittent large dips in isolation profile	DEU-1785
Defect fix: Exactive Plus without HCD shows AIF experiments	DEU-1954
Defect fix: targeted-MS ² (PRM): Acquisition of more than one experiment of this type in one method does not work properly	DEU-2058

Table 17 lists all improvements and defect fixes in the Exactive Series 2.3 SP1 Instrument Control Software release that were implemented since the Exactive Series 2.3 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 17. Changes from Exactive Series 2.3 Instrument Control Software to Exactive Series 2.3 SP1 Instrument Control Software

Abstract	SCR
Improvement: Support for Windows standard service accounts	DEU-1458
Improvement: Outdated log files will be automatically deleted after 18 months	DEU-1780
Improvement: Q Exactive Plus: Quadrupole isolation shape check procedure	DEU-1825
Improvement: Q Exactive, Q Exactive Plus: Improvement for isolation calibration	DEU-1862
Improvement: Automated inject time calculation for highly concentrated samples is improved	DEU-1863
Improvement: Q Exactive Plus: Optimize HCD cell parameters in protein mode	DEU-1905
Defect fix: Tune: In rare cases the spectrum view can freeze requiring a restart of the Tune	DEU-926
Defect fix: Data system runs out of memory on unexpected stop of Windows Explorer	DEU-1809
Defect fix: Acquisition freezes occasionally in methods with complex sample and big number of dependent scans	DEU-1830
Defect fix: After running a method from the tune page, some tune settings are not restored	DEU-1841
Defect fix: Exactive Plus EMR: Allow running HCD transfer tuning procedure	DEU-1846
Defect fix: Method setup: Restrict lock mass input range	DEU-1851
Defect fix: Exactive Plus EMR: Re-initialize the CTCED parameters when switching EMR mode on/off, reducing equilibration times	DEU-1856
Defect fix: Q Exactive Plus: Run-time error at end of Quad Transmission Evaluation	DEU-1864
Defect fix: Use custom max IT setting for customized mass calibration procedure	DEU-1865
Defect fix: Method setup: Customized Tolerances Dialog Boxes: Typing separators does not work as expected	DEU-1867
Defect fix: Internal rounding error for maximum ion time setting under certain conditions	DEU-1872
Defect fix: False nitrogen gas warning may appear on 0 psi set point	DEU-1932
Defect fix: Exactive Plus without HCD shows AIF experiments	DEU-1954

Table 18 lists all new features, improvements and defect fixes in the Exactive Series 2.3 Instrument Control Software release that were implemented since the Exactive Series 2.2 SP1 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 18. Changes from Exactive Series 2.2 SP1 Instrument Control Software to Exactive Series 2.3 Instrument Control Software

Abstract	SCR
New feature: Mass accuracy improvements by lock mass injection	DEU-1742
New feature: User-adjustable mass tolerances for methods	DEU-1744
New feature: More flexible stepped collision energy	DEU-1745
New feature: Support of API programs	DEU-1750
New feature: User-selectable isolation window offset	DEU-1752
Improvement: For Q Exactive Plus, tuning of transfer optics voltages is not necessary; therefore, the “Tune” pane is removed from the Tune program for Q Exactive Plus	DEU-951
Improvement: Improved quadrupole isolation/resolution narrow calibration	DEU-1370
Improvement: Tune “Plot Mass Traces” mass tolerance changed to 10ppm	DEU-1555
Improvement: Logic of inclusion list runtime-order changed	DEU-1556
Improvement: Lock mass validity restricted to single run	DEU-1561
Improvement: Broader isolation windows for MS/MS allowed	DEU-1579
Improvement: Improved Isolation Transmission Endurance Test	DEU-1697
Defect fix: Scan filter is doubly displayed by running MSX dd experiments	DEU-51
Defect fix: There is no validation for entering Start time > End time	DEU-810
Defect fix: The “Setup Complete” window hides behind another window	DEU-841
Defect fix: “Vacuum not ready” failure may show up after instrument startup	DEU-853
Defect fix: Method Editor: User role wrongly displayed after switching settings in properties	DEU-1431
Defect fix: PDF reporting issues after CTCDC calibration	DEU-1533
Defect fix: Customized mass calibration is not saved in master cal file	DEU-1540
Defect fix: Mass calculator does not store last used formula	DEU-1615
Defect fix: Double-click on Method start brings up busy messages	DEU-1640
Defect fix: Method Editor: TopN: dd-SIM is not available	DEU-1645
Defect fix: Change record missing when pasting a table	DEU-1723

Table 19 lists all new features, improvements and defect fixes in the Exactive Series 2.2 SP1 Instrument Control Software release that were implemented since the Exactive Series 2.1 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 19. Changes from Exactive Series 2.1 Instrument Control Software to Exactive Series 2.2 SP1 Instrument Control Software

Abstract	SCR
New feature: Implement a Data Independent Acquisition (DIA) MS/MS experiment in the Method Editor.	DEU-904
New feature: Widen the isolation window width limit to 50 Da.	DEU-1004
AGC improvements are needed to support faster chromatography in targeted experiments	DEU-995
New feature: Chromatographic peak width (FWHM) definable in method setup to automatically adapt instrument timings. By setting the full width half maximum (FWHM) of the persistent or expected elution profiles of your chromatographic setup, the instrument software can adapt the frequency in which AGC information will be delivered. Especially for quantification experiments at fast chromatography, the AGC information needs to be updated much faster to get the correct response areas.	DEU-1412
New feature: Implement an Exact Mass Calculator. Based on the analytes chemical formula or sequence (e.g. peptides), species (e.g. +Na adduct) and charge state, the exact mono isotopic mass is calculated and used for a target definition in inclusion lists. Additionally it is available in Tune, so one can directly calculate the needed isolation center mass for SIM and MS/MS scan types and check the current spectral data for expected candidates and species.	DEU-1262

Table 19. Changes from Exactive Series 2.1 Instrument Control Software to Exactive Series 2.2 SP1 Instrument Control Software, continued

Abstract	SCR
Improvement: Optimized quadrupole RF timing pattern	DEU-1316
Improvement: Inclusion list entries are applied in the defined order (unsorted processing, valid for DIA)	DEU-1321
New feature: Method setup shall allow selecting centroid mode for data acquisition.	DEU-956
New feature: Implemented PDF-Reports for calibration	DEU-1265
New feature: Provide a .NET based Instrument Application Programming Interface (API).	DEU-1266
New feature: Improvement of Tune for Direct Control for LC systems (supported are: Accela Pump 1250, Accela autosampler Open AS, CTC PAL autosampler)	DEU-1383
New feature: Implemented Quadrupole Transmission Evaluation	DEU-1085
New feature: To improve robustness, the sweep gas can be turned on when in standby mode.	DEU-1260
Defect fix: Exactive Series instruments overwrite Accela Pump pressure traces in RAW files with voltages if analog channel data is acquired by the instrument.	DEU-1094
Defect fix: Under certain conditions invalid values for CTCD scaling can occur.	DEU-1258

Table 20 lists all new features and improvements in the Exactive Series 2.1 Instrument Control Software release that were implemented since the Exactive Series 2.0 SP2 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 20. Changes from Exactive Series 2.0 SP2 Instrument Control Software to Exactive Series 2.1 Instrument Control Software

Abstract	SCR
New feature: Extended mass range to 50–6000.	DEU-1046
New feature: Increased speed of polarity switching; applies for Exactive Plus and for all Q Exactive instruments that are shipped after May 2012.	DEU-1088
New feature: Additional AGC target value of 5e6	DEU-989
New feature: Added AIF method	DEU-1123
New feature: Additional logic for “peptide match” trigger criteria: “preferred”	DEU-1031
New feature: Automatic source identification for DART	DEU-1010
New feature: Automatic source identification for AP-MALDI	DEU-1079
New feature: Calibration report for printout	DEU-1080
Improvement: Modified maximum inject time setting concept	DEU-1102

Table 21 lists all new features, improvements and defect fixes in the Exactive Series 2.0 SP2 Instrument Control Software release that were implemented since the Exactive Series 2.0 SP1 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 21. Changes from Exactive Series 2.0 SP1 Instrument Control Software to Exactive Series 2.0 SP2 Instrument Control Software

Abstract	SCR
Improved AGC performance via C-trap charge detection	DEU-631
Improved quadrupole calibrations and evaluations	DEU-961
Data Dependent experiment cycle improvements	DEU-632
Improved HCD RF amplitude settings (depend now on frequency readback)	DEU-943
Improvement: Separate quadrupole calibration for negative ion mode	DEU-879
Improved fan error message: Added hint to check the air filters	DEU-894
Improvement: Added voltage range checks for IOS HV supply	DEU-934
Improved scan header: Inject time now shown as integer	DEU-916
Improvement: Increased decimal places in “Neutral Loss” and “Tag Masses” lists from 3 to 5	DEU-875
Defect fix: The isolation window width can not be set to an odd number in one decimal place	DEU-938
Defect fix: Error on removing the last line in the table editor	DEU-846
Defect fix: Precursor m/z value cannot be easily set in the Instrument Control window	DEU-895

Table 22 lists all new features, improvements and defect fixes in the Exactive Series 2.0 SP1 Instrument Control Software release that were implemented since the Exactive Series 2.0 Instrument Control Software release. For details, please refer to the Online Help or the Software manual.

Table 22. Changes from Exactive Series 2.0 Instrument Control Software to Exactive Series 2.0 SP1 Instrument Control Software

Abstract	SCR
Online Help: Calibrate and Evaluate do not launch Online Help when pressed F1 if one of the sub-windows is active	DEU-844
Orbitrap: In rare cases, the mass RF amplitude dependency calibration fails in negative ion mode	DEU-896
Improvement of the Data Dependent “exclude isotopes” feature	DEU-428
Improvement of the isolation overlap control for targeted workflows	DEU-859

Known Issues

This table lists all known issues that exist in the Exactive Series 2.13 SP1 Instrument Control Software release.

Abstract	SCR
The divert valve numbering in the instrument software is not consistent with the numbering on the valve itself.	DEU-264
Tune Editor does not show correct scan types during ME data acquisition.	DEU-949
Tune File switches in an instrument method are not displayed in Tune Method Report of the raw file.	153166
Method Editor global lists changes in a saved method are not saved automatically.	DEU-1191
Remedy: Once a method including a global list was saved as Xcalibur *.meth file and this global list is edited again, save the *.meth file again.	
System does sometimes not boot automatically when Tune version is updated.	DEU-1789
Significant drop in signal every 2.5 sec using “Protein Mode.”	DEU-2075
Remedy: Average several microscans or switch off C-Trap Charge Detector Support (Instrument Status Control Settings).	
The Q Exactive Focus Method editor turns to Discovery mode for the “negative confirmation” scan if there are no entries in the Inclusion List for negative polarity and polarity switching is used. Full MS Confirmation for just positive or negative mode functions as designed.	60630
Exactive Series 2.9 SP1 is incompatible with some early Exactive GC Orbitrap and the Q Exactive GC Orbitrap Instruments. A warning is provided upon startup of the tune software if an incompatible system is detected. The warning states “An embedded PC with Core Duo CPU was detected on this system. Please consult the release notes for known issues and additional information.” Instruments with this incompatibility will exhibit Peak Ringing and interruption of sample sequences. If the warning is seen, please revert to the previous version of the software.	72531
On occasion, communication to the instrument is lost generating an “FT Adapter - not connected (USB)” or “FT DAQ Board - not connected (USB)” error message. In most cases, the communication connection will re-establish itself. Best practice is to reset the instrument and then continue with the analysis.	86192
Q Exactive GC: Wrong report masses in scan filters of PRM event when using the fixed first mass 30 <i>m/z</i> .	152933

Abstract	SCR
<p>After upgrading to Xcalibur 4.5 SP1, Xcalibur Sequence Editor may freeze during acquisition.</p> <p>Remedy: Restart Thermo Xcalibur Service or reboot Data System PC.</p>	198752
<p>Chromeleon: Orbitrap MS data missing from raw file after acquisition.</p> <p>Mass spectrometry data collected with ES 2.13 driver (or earlier version) can occasionally get corrupted during acquisition with Chromeleon 7.2.10 (MUa-MUe), and 7.3.1. After data acquisition, the data cannot be loaded into Chromeleon CDS, showing a red cross in the MiniPlot and displaying the error “Cannot load raw data for item '[raw data file path]”.</p> <p>Remedy: It is recommended implementing a deviation into the documented process (CAPA) or to not using this combination of software in a regulated production environment.</p> <p>Please upgrade to the next maintenance releases addressing the problem once available and tested, i.e. Chromeleon 7.2.10 MUf for Extended Support Branch (release planned for June 2022), and Chromeleon 7.3.1 MUa for Feature Release Branch (release planned for August 2022). The Chromeleon Driver Compatibility matrix is updated when new combinations of software versions and/or instrument models are tested. For more information and to view the compatibility matrix, sign on to support.thermoinformatics.com/downloads/default.aspx, and then select Chromeleon > Chromeleon > Related Drivers > Driver Compatibility Matrix.</p>	264423

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