# **Thermo Scientific Orbitrap Exploris Series 3.0 Release Notes**

This document lists installation notes, new features and improvements regarding the Thermo Scientific<sup>™</sup> Orbitrap Exploris<sup>™</sup> Series 3.0 Instrument Control Software release. For information regarding the installation, features, functionality, and use of this product, refer to the following sources of information:

- Orbitrap Exploris Series Operating Manual
- Orbitrap Exploris GC Operating Manual

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## Installation Notes

## Supported Target Systems

System Requirements

| Thermo Scientific Orbitrap Exploris 120 mass spectrometer    |
|--|
| Thermo Scientific Orbitrap Exploris 240 mass spectrometer    |
| Thermo Scientific Orbitrap Exploris 480 mass spectrometer    |
| Thermo Scientific Orbitrap Exploris GC mass spectrometer     |
| Thermo Scientific Orbitrap Exploris GC 240 mass spectrometer |

The minimum hardware and software configurations required for Orbitrap Exploris Series 3.0 operation are as follows:

| System   | Requirements   |
|----------|--|
| PC       | <ul> <li>3.0 GHz Quad Core Intel<sup>™</sup> Processor</li> <li>32 GB RAM</li> <li>512 GB SSD Hard Drive</li> <li>Display Monitor Resolution of 1920 × 1080</li> <li>Two Network Interface Cards (NIC), 1000 MBit/s</li> </ul> |
| Software | Microsoft™ Windows™ 10 Enterprise 2016 LTSB or 2019 LTSC<br>Thermo Scientific Xcalibur 4.4   |

**Tip** The Orbitrap Exploris Series 3.0 Instrument Control Software was only tested within the delivered composition.

## Installation

**Tip** Prepare the computer in advance of any new installation.

**Note for FAIMS Users** Please reboot the FAIMS unit after the installation of the Orbitrap Exploris Series 3.0 Instrument Control Software (switch Main Control Box off and on).

The new Orbitrap Exploris Series 3.0 Instrument Control Software provides a firmware update for the FAIMS unit, which is mandatory to support the new Total Carrier Gas Flow.

This guidance addresses a standard installation of a Windows computer acting as an access point for Orbitrap Exploris Series based instruments. The current software version is 3.0. 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 might be different. The current explanations have Microsoft Windows 10 Enterprise LTSB 2016 or LTSC 2019 and English in focus.  |
|---------------------------------|--|
|                                 | Thermo Fisher Scientific does not accept any warranty claims about the completeness of this instruction list.<br>Consulting a Thermo Fisher Scientific support team member of Orbitrap Exploris Series instruments is highly<br>recommended for setting up a new PC.   |
| Technical<br>Requirements       | Choose a PC equipped as described at "System Requirements" on page 1.  |
| Operating<br>System<br>Language | English is the only tested language. It is recommended to switch to English language before installation. This installation instruction refers to names of English operating systems.  |
| Network Setup                   | At least two NICs must be present in the system. The one connected to the instrument must not be connected to<br>the regular Internet connection. Only the instrument to be driven by this particular PC may be connected to the<br>PC using a 1 GBit switch or hub. Additional devices like autosampler or LC or GC systems may be connected to<br>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 6 patch cable. Double-check the quality of the cable, if errors occur.  |
| Virus Scanner<br>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 Thermo Exploris Core Service (file locations see below) needs access to incoming and outgoing network traffic. Remember 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<br>Installation        | <b>Tip</b> Do not start the software installation before the network setup has been completed. See "Network Setup" on page 2.  |
|                                 | File Locations   |
|                                 | The default installation folder on the computer is C:\ProgramData\Thermo\Exploris.   |
|                                 | This instruction list uses C:\ProgramData\Thermo\Exploris for easy reading, but depending on the installation package like Orbitrap Exploris Series Instrument Control Software kit or Chromeleon, this may be different.  |
|                                 | When the Orbitrap Exploris Series software has been installed on a system, the folder of the previous 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.   |
|                                 | <ul> <li>These files and folders (see "File Locations" on page 2) should be saved if present:</li> <li>C:\ProgramData\Thermo\Exploris\instrument\msx_instrument_files</li> <li>C:\ProgramData\Thermo\Exploris\Licenses.txt</li> <li>C:\Thermo\Instruments\Exploris\[version]\System\Database</li> </ul>  |
|                                 | Setup of a new computer without any backup requires assistance of the Orbitrap Exploris support team of Thermo Fisher Scientific. The computer may require licenses or some extra configuration files.   |
|                                 | Uninstalling   |
|                                 | The Installer will automatically remove outdated versions prior to the installation of a new version.  |

#### Installation

Install using the ISO image or a copy of its content by executing the installation program OrbitrapExplorisFullSetup.exe. 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 Orbitrap Exploris Series 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 in the backup may be different to that of the present 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 Thermo Exploris Core Service.

#### To stop Thermo Exploris Core Service

- 1. In Windows 10 desktop, open **Computer Management** (<Ctrl> + <X>).
- 2. Select Computer Management (Local) > Services and Applications > Services > Thermo Exploris Core Service.
- 3. Right-click it and select Stop.

Keep the dialog open.

- 4. After a new installation, the instrument already created the msx\_instrument\_folder with default content. Replace the content of that folder by the files from the backup.
- 5. Use the open dialog to start the **Thermo Exploris Core Service** again. Alternatively, reboot the computer. In doubt, contact the Orbitrap Exploris support team of Thermo Fisher Scientific.

## Operation

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. To not disturb your data acquisitions by automatic updates, we strongly recommend setting all updates to **manual** and checking for updates regularly.

Put the computer to sleep: Never (Control Panel/Hardware and Sound/Power Options/Edit Plan Settings).

## Software Compatibility Matrix

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

| Version | Version No. | Orbitrap Exploris 480 | Orbitrap Exploris 240 | Orbitrap Exploris 120 | Orbitrap Exploris GC | Orbitrap Exploris GC 240 |
|---------|-------------|-----------------------|-----------------------|-----------------------|----------------------|--------------------------|
| 1.0     | 1.0.77.7    | $\checkmark$          | _                     |                       | _                    |                          |
| 1.1     | 1.1.117.22  | $\checkmark$          | —                     |                       | —                    | —                        |
| 1.1 SP1 | 1.1.117.26  | $\checkmark$          | —                     |                       | —                    |                          |
| 2.0     | 2.0.182.18  | $\checkmark$          | √                     | √                     | _                    | —                        |
| 2.0 SP1 | 2.0.182.25  | $\checkmark$          | $\checkmark$          | $\checkmark$          | _                    | _                        |
| 2.0 SP2 | 2.0.182.35  | √                     | √                     | √                     |                      | —                        |
| 3.0     | 3.0.261.13  | $\checkmark$          | $\checkmark$          | $\checkmark$          | $\checkmark$         | $\checkmark$             |

## New Features and Improvements

Table 1 lists new features, improvements and defect fixes in the Orbitrap Exploris Series 3.0 Instrument Control Software release that were implemented since the Orbitrap Exploris Series 2.0 SP2 Instrument Control Software release.

**Table 1.** Changes from Orbitrap Exploris Series 2.0 SP2 Instrument Control Software to Orbitrap Exploris Series 3.0

 Instrument Control Software

| New Features |  |  |  |  |
|--------------|--|--|--|--|
| ID           | Title  |  |  |  |
| 152951       | FAIMS Pro: Data acquisition optimizes FAIMS CV post-switching delay time when using multiple CV Voltages per experiment  |  |  |  |
| 153796       | FAIMS Pro: Total Carrier Gas Flow succeeds FAIMS User Gas to enable lower flow rates for improved nano spray (NSI) stability                                       |  |  |  |
| 153696       | FAIMS Pro: Instrument configuration supports user-defined IP addresses for FAIMS   |  |  |  |
| 152892       | Tune Diagnostics provides restructured procedures separated by category (Partial Calibration,<br>Optional Calibration) and polarity (Positive, Negative)           |  |  |  |
| 152877       | Tune Diagnostics provides Low m/z Spectral Mass Accuracy Calibration and Check to obtain high mass accuracy also in the low mass range                             |  |  |  |
| 154453       | Tune Diagnostics provides a tool to change the Mass Calibration Due Time   |  |  |  |
| 153319       | Tune supports Collaborator interfaces via license  |  |  |  |
| 153450       | Method Editor supports TMTpro Reagent (TMT-16-plex) for Orbitrap Exploris 480  |  |  |  |
| 163618       | Method Editor supports variable collision energies in a Mass List Table for multiplexing experiments   |  |  |  |
| Improveme    | nts  |  |  |  |
| ID           | Title  |  |  |  |
| 153497       | Tune: Instrument Status pane displays vacuum pressures in a separate heading "Vacuum System"   |  |  |  |
| 152895       | Tune: System Calibration and Check stop the syringe pump when procedure has finished to save consumption of FlexMix  |  |  |  |
| 152998       | Tune: System Calibration: Calibration Solution Pre-Check forces the ion transfer tube to 320 °C for optimal spectral quality of FlexMix                            |  |  |  |
| 152997       | Tune: System Calibration includes an Interference Peak Removal procedure (only run after Venting and Bake-out)   |  |  |  |
| 152996       | Tune: System Calibration provides an improved Quadrupole Main and End Segment DC Calibration   |  |  |  |
| 185621       | System Calibration Negative: Improved robustness of ICS Active HV Current calibration subprocedure so that the procedure runs successfully after the first attempt |  |  |  |
| 152994       | Tune: System Check checks HCD Fragmentation/Trapping in both ion polarities  |  |  |  |
| 152978       | Tune Diagnostics provide Tooltips for the whole diagnostics procedure tree   |  |  |  |
| 152897       | Tune Diagnostics provide High Mass Range Calibrations (AHFP) also for Negative polarity when using Application Mode 'Intact Protein'                               |  |  |  |
| 153051       | Tune Diagnostics provides an improved Quadrupole Maintenance Check procedure   |  |  |  |
| 152983       | Tune Diagnostics provides an improved Transfer Tube Maintenance Check procedure  |  |  |  |
| 154542       | Tune Diagnostics procedure "Disable AGC" disables PrOSA when AGC mode = fixed  |  |  |  |
| 155647       | Help Files: Method Editor provides an Online Help  |  |  |  |
| 155646       | Help Files: Tune provides an Online Help   |  |  |  |
| 164760       | AcquireX: Improved robustness for running experiments with Mass List Tables >5000 entries  |  |  |  |
| 152995       | BioPharma: Improved eFT phase calibration to improve mass accuracy for High Mass Range applications  |  |  |  |
| 173884       | tSIM Isolation Offset: the user can define an isolation offset for the isolation windows. The parameter is accessible as table value                               |  |  |  |
|              |  |  |  |  |

**Table 1.** Changes from Orbitrap Exploris Series 2.0 SP2 Instrument Control Software to Orbitrap Exploris Series 3.0

 Instrument Control Software, continued

| 152874       | Method Editor: user needs to access updated System Templates as applies with the upcoming release OES 3.0  |
|--------------|--|
| 152875       | Method Editor: Global MS Settings provide optimized default values per selected Application<br>Mode (Small Molecule, Peptide, Intact Protein)      |
| 152979       | Data Acquisition: RAW files include signal instability warnings in the Error Log   |
| Defect Fixes | S  |
| ID           | Title  |
| 152969       | Chromeleon: User cannot open Method Editor Workstation Standalone from client computer   |
| 153344       | Data Acquisition: Instrument still scanning in Standby and Off mode  |
| 183927       | Data Acquisition: When recording a RAW file triggered by handshake mode, one extra scan is added into RAW file                                     |
| 153308       | EASY-IC: In Polarity Switching experiments, ICS AGC is not done for each polarity separately   |
| 166232       | Method Editor: DIA peak lists do not give original values when Mass Defect is set back to $1.0005$ $m/z$   |
| 180523       | Method Editor: Could not run Quan View DIA methods when Precursor Mass Range exceeded last mass <i>m</i> / <i>z</i> 524                            |
| 166862       | Method Editor: DIA scan Window Placement Optimization not properly applied for non-zero<br>Window Overlap value                                    |
| 153270       | Method Editor: Incorrect RF Lens Value Shown when Importing Methods between Orbitrap Exploris models   |
| 152940       | Method Editor: Targeted Mass Filter does not support Fixed Collision Energy as table value (SureQuant)   |
| 170714       | Method Execution: Dynamic exclusion filter: Mass tolerance mode "m/z" not working  |
| 153420       | Method Validation: Mismatch of Ion Source type configuration during sequence submission  |
| 153577       | Tune: System Calibration: Not all 'after venting procedures' run after venting - and 'after venting procedures' run although no venting took place |
| 162574       | Tune: Ion Source pane calls wrong default (H)ESI settings when 'Current LC Flow' = 500 $\mu$ L/min   |

Table 2 lists improvements and defect fixes in the Orbitrap Exploris Series 2.0 SP2 Instrument Control Software release that were implemented since the Orbitrap Exploris Series 2.0 SP1 Instrument Control Software release.

**Table 2.** Changes from Orbitrap Exploris Series 2.0 SP1 Instrument Control Software to Orbitrap Exploris Series 2.0 SP2

 Instrument Control Software

| Improvements                         |   |  |  |
|--------------------------------------|---|--|--|
| ID                                   | Title   |  |  |
| 9783                                 | Orbitrap Exploris 120 Method Editor: Extend Data Dependent MS2 Method to create TopN experiments with $N=1,2,3,4$ in DDA  |  |  |
| 9781                                 | Orbitrap Exploris 120 Method Editor: Provide System Templates for TopN experiments with N=1,2,3,4   |  |  |
| Defect                               | Defect Fixes  |  |  |
| ID                                   | Title   |  |  |
|                                      |   |  |  |
| 9667                                 | BioPharma: Application Mode "Intact Protein" uses unsafe Extended Trapping 1 eV   |  |  |
| 9667<br>9849                         | BioPharma: Application Mode "Intact Protein" uses unsafe Extended Trapping 1 eV<br>EASY-IC: ICS Prechecks should give dedicated error for extreme mass deviation  |  |  |
| 9667<br>9849<br>9683                 | BioPharma: Application Mode "Intact Protein" uses unsafe Extended Trapping 1 eV<br>EASY-IC: ICS Prechecks should give dedicated error for extreme mass deviation<br>EASY-IC: Issues with ICS ion intensities after prolonged idle time  |  |  |
| 9667<br>9849<br>9683<br>9817         | BioPharma: Application Mode "Intact Protein" uses unsafe Extended Trapping 1 eV<br>EASY-IC: ICS Prechecks should give dedicated error for extreme mass deviation<br>EASY-IC: Issues with ICS ion intensities after prolonged idle time<br>RunStart EASY-IC: Miscorrection when polarity switching is active   |  |  |
| 9667<br>9849<br>9683<br>9817<br>9844 | BioPharma: Application Mode "Intact Protein" uses unsafe Extended Trapping 1 eV<br>EASY-IC: ICS Prechecks should give dedicated error for extreme mass deviation<br>EASY-IC: Issues with ICS ion intensities after prolonged idle time<br>RunStart EASY-IC: Miscorrection when polarity switching is active<br>System Calibration: C-Trap RF Frequency Calibration should avoid 3.2 MHz |  |  |

Table 3 lists improvements and defect fixes in the Orbitrap Exploris Series 2.0 SP1 Instrument Control Software release that were implemented since the Orbitrap Exploris Series 2.0 Instrument Control Software release.

**Table 3.** Changes from Orbitrap Exploris Series 2.0 Instrument Control Software to Orbitrap Exploris Series 2.0 SP1

 Instrument Control Software

| Improvements |  |  |  |
|--------------|--|--|--|
| ID           | Title  |  |  |
| 9409         | Limit maximum C-Trap RF for increased robustness   |  |  |
| 9261         | BioPharma: Provide AHFP calibration in TNG Tune Diagnostics  |  |  |
| Defect       | Fixes  |  |  |
| ID           | Title  |  |  |
| 9228         | BioPharma Orbitrap Exploris 240: Loss of signal at maximum S-lens RF amplitude during intact mAb LC-MS analysis  |  |  |
| 9498         | DIA: Method transfer from Orbitrap Exploris Series ≤1.1 SP1 to Orbitrap Exploris Series 2.0 does not consider the new AGC Target Normalized Base 1e5   |  |  |
| 9267         | Diagnostics: Quadrupole Maintenance Test switches rod configuration but does not apply rod-specific calibration set                                    |  |  |
| 9524         | FAIMS communication LED remains off when ion source is removed and reconnected   |  |  |
| 9242         | FAIMS DV Tune and Check are not always shown in Tune Diagnostics pane  |  |  |
| 9461         | FAIMS: In-source CID together with FAIMS results in a defect raw file  |  |  |
| 9464         | Method Execution: In-source CID is not applied for data-dependent scans  |  |  |
| 9341         | System Calibration: Checkpoint "Inject Filter (IF) Calibration" separates IF Isolation Calibration and Check, trapping users with poor IF calibrations |  |  |
| 9470         | UI: Method Editor crashes when deleting Targeted Mass Exclusion Filter from the method   |  |  |
| 9283         | UI: Tune: Ion Source tab: "Get Defaults" ion source values for "Current LC flow" does not work   |  |  |

Table 4 lists new features, improvements and defect fixes in the Orbitrap Exploris Series 2.0 Instrument Control Software release that were implemented since the Orbitrap Exploris Series 1.1 SP1 Instrument Control Software release.

**Table 4.** Changes from Orbitrap Exploris Series 1.1 SP1 Instrument Control Software to Orbitrap Exploris Series 2.0

 Instrument Control Software

| New Features |   |  |
|--------------|---|--|
| ID           | Title   |  |
| 4846         | AcquireX: Orbitrap Exploris 240 and 480 support AcquireX workflows for Application Mode "Small molecule"  |  |
| 765          | iAPI provides access to real-time control of Orbitrap Exploris 480  |  |
| 7514         | Method Editor provides access to latest System Templates updates directly via the Thermo Fisher<br>Cloud  |  |
| 8144         | Method Editor: Application Mode 'Small Molecule' provides optionally access to Mild Trapping settings to reduce MS1 fragmentation of labile compounds |  |
| 7513         | Method Editor: Ion Source pane provides access to time-dependent ion source gas flows   |  |
| 5121         | Method Editor: RunStart EASY-IC allows for internal mass calibration only at the beginning of the data acquisition                                    |  |
| 7512         | Method Editor: tMS2 and DIA scans use isochronous injection times for multiplexing experiments  |  |
| 322          | Method transfer: Method Editor is able to open and save methods from all Orbitrap Exploris Series instruments   |  |
| 7953         | Tune Calibration pane: System Calibration provides improved help text in gray box, Alert Window and Calibration Reports                               |  |
| 8174         | Chromeleon: Orbitrap Exploris Series 2.0 shall run under Chromeleon 7.2.10  |  |
| 8173         | Chromeleon: Orbitrap Exploris Series 2.0 shall run under Chromeleon 7.3   |  |
|              |   |  |

**Table 4.** Changes from Orbitrap Exploris Series 1.1 SP1 Instrument Control Software to Orbitrap Exploris Series 2.0

 Instrument Control Software, continued

| Improve | ements  |
|---------|---|
| ID      | Title   |
| 5012    | EASY-IC: Method Execution and Tune operate IC Source in idle mode when EASY-IC is not use   |
| 8090    | EASY-IC: Thermo Foundation Instrument Configuration provides the possibility to switch off the IC Source  |
| 7545    | FAIMS Pro provides same optimized CV values aligned with Tribrid Series and TSQ Series instruments  |
| 7121    | Method Editor: DIA Scan AGC target is aligned with Tribrid Series - Normalized Base (100%) is equal to 1e5  |
| 8542    | Method Editor: Mass List Tables: MRFA is default compound aligned with Tribrid Series   |
| 8816    | Method Editor: Mass List Tables: Pop-up Warning 'Columns don't match' has improved messages when importing Exactive Series Global Lists                                       |
| 7119    | Method Editor: Targeted MS2 Scans: 'Dynamic RT' provides a Retention Time Standards Table for<br>Pierce PRTC Mixture (Orbitrap Exploris 240 and Orbitrap Exploris 480 models) |
| 7410    | Scan Filter: Methods using Internal Mass Calibration hide "lock" to improve generating XICs from the same scan filter   |
| 8001    | Tune Calibration pane: Recommended Date of a mass calibration updates after successful system calibration   |
| 643     | Tune: Ion Source pane provides improved default Ion Source Parameters   |
| Defect  | Fixes   |
| ID      | Title   |
| 7919    | Installer: Uninstallation report of Orbitrap Exploris Series 1.1 shows content of installation  |
| 7840    | Instrument stays in Off mode after Data System Computer Reset   |
| 6605    | Method Editor: Audit trail shows wrong number of data dependent scans   |
| 8747    | Method Execution: Too much precursor ion intensity is remaining when using stepped (N)CE  |
| 8555    | RAW file Scan Header: Precursor Fit Filter: 'Error in isotopic envelope fit' is not recorded  |
| 4972    | RAW files: Instrument Method settings do not reflect Method Editor Summary content  |
| 8489    | Tune cannot start because TNGConfig.xmb file gets corrupted sporadically  |
| 6095    | Tune Diagnostics pane shows FAIMS procedures although FAIMS is not attached with the instrument   |
| 8869    | Tune: Application Mode 'Intact Protein': Trapping voltage of Continuous acquisition is misaligned with Instrument Method acquisition  |
| Table 5 | lists improvements and defect fixes in the Orbitrap Exploris Series 1.1 SP1 Instrument Control Software   |

release that were implemented since the Orbitrap Exploris Series 1.1 SP1 Instrument Control Software release. For details, please refer to the Online Help or the Software Manual.

**Table 5.** Changes from Orbitrap Exploris Series 1.1 Instrument Control Software to Orbitrap Exploris Series 1.1

 SP1 Instrument Control Software

| Improvements |  |  |  |
|--------------|--|--|--|
| ID           | Title  |  |  |
| 8053         | Instrument Configuration: Check box "Enable Minimum Gas Flow Requirement for Ion Source" replaces the previous text field. |  |  |
| 8348         | System Calibration: Improved Bent Flatapole RF calibration.  |  |  |
| 8162         | System Calibration: Improved Quad Transm./Rod Config Calibration.  |  |  |
| 8115         | System Calibration: Removed checkpoint after quadrupole isolation calibration.   |  |  |
| Defect Fixes |  |  |  |
| ID           | Title  |  |  |
| 8128         | Alerts Console: Low OT temperature readback raises "Temperature too high" failure.   |  |  |

- **Table 5.** Changes from Orbitrap Exploris Series 1.1 Instrument Control Software to Orbitrap Exploris Series 1.1 SP1, continuedInstrument Control Software
- 8297 Chromeleon: MS Tuning ePanel: Passed calibration file is named as Failed.
- 8180 Instrument Status: Electronics does not recognize readbacks being outside possible set range.
- 8284 Instrument Status: Threshold for warning "UHV gauge not ignited" is too high.
- 8070 Method Editor: System Templates: SureQuant method is not fully functional.
- 8031 Method Editor: TopN with multiple outcomes and ddSIM: Method Editor closes after appending a Targeted Mass Filter.
- 8040 System Calibration: Wrong threshold used in IF Low m/z RF Calibration.

Table 6 lists new features, improvements and defect fixes in the Orbitrap Exploris Series 1.1 Instrument Control Software release that were implemented since the Orbitrap Exploris Series 1.0 Instrument Control Software release. For details, please refer to the Online Help or the Software Manual.

**Table 6.** Changes from Orbitrap Exploris Series 1.0 Instrument Control Software to Orbitrap Exploris Series 1.1

 Instrument Control Software

| New Fe  | New Features  |  |  |
|---------|---|--|--|
| ID      | Title   |  |  |
| 7538    | System Calibrations must provide improved user experience.  |  |  |
|         | User Story 4140—Tune: Diagnostics provide single-component sub procedures of system calibration.  |  |  |
|         | User Story 6961—Tune Calibration: System calibrations are resume-able. Intermediate results are saved as checkpoints. This allows for optimizing spray conditions or refilling the syringe.   |  |  |
| 365     | The user must be able to define favorite scan settings for easy access to sets of parameters.   |  |  |
|         | User Story 748—Tune: Favorites pane: System Settings: Favorite settings for ESI source provide default ion source and define scan properties for calibration and diagnostics procedures.  |  |  |
| 7084    | The Dynamic Exclusion filter must support a global list option (exclusion across experiments and outcomes).   |  |  |
|         | User Story 819—Method Editor: Dynamic Exclusion Filter provides global functionality across all experiments in the method time line (new property "Share dynamic exclusion list with other selected dynamic exclusion filters").  |  |  |
| 7126    | Method Editor: Must have import list functionality from QE exported lists.  |  |  |
|         | <ul> <li>User Story 7339—Method Editor: Import of Exactive Series mass lists (CSV files) into Orbitrap Exploris Series 1.1 mass list tables is supported.</li> <li>Exactive Series global inclusion lists can be imported into Orbitrap Exploris Series mass list tables of scans (tMS2, Product Ion Scan, SIM Scan) and filters (Targeted Mass Filter).</li> <li>Exactive Series global exclusion lists can be imported into Orbitrap Exploris Series Targeted Mass Exclusion Filter.</li> </ul> |  |  |
| 762     | The instruments must be able to interface with Chromeleon Software.   |  |  |
|         | User Story 3174—Chromeleon: Tune and Method Editor are integrated in Chromeleon 7.2.10 (please install Chromeleon 7.2.10 hotfix files from thermo.flexnetoperations.com or from support.thermoinformatics.com).   |  |  |
| Improve | ements  |  |  |
| ID      | Title   |  |  |
| 7297    | FAIMS: Acquisition sequence will pause if system recognizes a DV drop. This gives the opportunity to run a DV Check or DV Tune procedure before resuming the sequence.  |  |  |

| ladie 6.   | Changes from Orbitrap Exploris Series 1.0 Instrument Control Software to Orbitrap Exploris Series 1.1<br>Instrument Control Software, continued   |  |  |
|--|---|--|--|
| 7538   | System Calibrations must provide improved user experience.  |  |  |
|  | User Story 6227—Tune Diagnostics: improved bake-out procedure.  |  |  |
|  | User Story 6228—Tune Calibration: System calibrations are improved regarding robustness.  |  |  |
|  | User Story 7167—Tune Diagnostics: improved ICS calibrations (EASY-IC option).   |  |  |
|  | User Story 7295—Tune Calibration: Additional calibration information is displayed in gray box.  |  |  |
|  | User Story 7328—Tune Diagnostics: "FlexMix Solution Evaluation" procedure to check for contaminated FlexMix.  |  |  |
| 7231   | Tune Diagnostics: improved ion optics maintenance check.  |  |  |
| 7587   | Tune Alert Window: improved messages about instrument status, calibration/check and diagnostics.  |  |  |
| 371  | Users must have access to user manuals and online Help.   |  |  |
|  | User Story 2145—UI: Tune shall display tooltips for each UI element.  |  |  |
|  | User Story 2146—UI: Method Editor shall display Tooltips for each UI element.   |  |  |
| 7098   | Updated system templates must be applied  |  |  |
|  | User Story 7420—Method Editor: Templates tab provides updated system templates for all application modes and for all models of Orbitrap Exploris Series MS systems.   |  |  |
| Defect I   | -ixes   |  |  |
| ID   | Title   |  |  |
|  |   |  |  |
| 6490   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.  |  |  |
| 6490<br>6493   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.<br>Tune: APPI Lamp of APPI ion source not controlled.  |  |  |
| 6490<br>6493<br>6733   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.<br>Tune: APPI Lamp of APPI ion source not controlled.<br>Chromeleon: Data Acquisition via MS Tune panel is not supported.  |  |  |
| 6490<br>6493<br>6733<br>6736   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.Tune: APPI Lamp of APPI ion source not controlled.Chromeleon: Data Acquisition via MS Tune panel is not supported.Chromeleon: Instrument Status ePanel needs to be configured manually.   |  |  |
| 6490<br>6493<br>6733<br>6736<br>6760   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.<br>Tune: APPI Lamp of APPI ion source not controlled.<br>Chromeleon: Data Acquisition via MS Tune panel is not supported.<br>Chromeleon: Instrument Status ePanel needs to be configured manually.<br>Chromeleon: Anomaly on first sequence acquisition in a series of sequences.  |  |  |
| 6490<br>6493<br>6733<br>6736<br>6760<br>6790   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.<br>Tune: APPI Lamp of APPI ion source not controlled.<br>Chromeleon: Data Acquisition via MS Tune panel is not supported.<br>Chromeleon: Instrument Status ePanel needs to be configured manually.<br>Chromeleon: Anomaly on first sequence acquisition in a series of sequences.<br>Chromeleon: User mode selection anomaly.  |  |  |
| 6490<br>6493<br>6733<br>6736<br>6760<br>6790<br>6799   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.Tune: APPI Lamp of APPI ion source not controlled.Chromeleon: Data Acquisition via MS Tune panel is not supported.Chromeleon: Instrument Status ePanel needs to be configured manually.Chromeleon: Anomaly on first sequence acquisition in a series of sequences.Chromeleon: User mode selection anomaly.Instrument needs to be set to standby manually after reboot.  |  |  |
| 6490<br>6493<br>6733<br>6736<br>6760<br>6790<br>6799<br>6812   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.Tune: APPI Lamp of APPI ion source not controlled.Chromeleon: Data Acquisition via MS Tune panel is not supported.Chromeleon: Instrument Status ePanel needs to be configured manually.Chromeleon: Anomaly on first sequence acquisition in a series of sequences.Chromeleon: User mode selection anomaly.Instrument needs to be set to standby manually after reboot.ME and Tune GUI allows isolation low being higher than 2500.  |  |  |
| 6490<br>6493<br>6733<br>6736<br>6760<br>6790<br>6799<br>6812<br>6817   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.Tune: APPI Lamp of APPI ion source not controlled.Chromeleon: Data Acquisition via MS Tune panel is not supported.Chromeleon: Instrument Status ePanel needs to be configured manually.Chromeleon: Anomaly on first sequence acquisition in a series of sequences.Chromeleon: User mode selection anomaly.Instrument needs to be set to standby manually after reboot.ME and Tune GUI allows isolation low being higher than 2500.User does not reliably get a message when vacuum is not ready for instrument electronics to be set to "On" or "Standby."  |  |  |
| 6490<br>6493<br>6733<br>6736<br>6760<br>6790<br>6812<br>6812<br>6817   | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.Tune: APPI Lamp of APPI ion source not controlled.Chromeleon: Data Acquisition via MS Tune panel is not supported.Chromeleon: Instrument Status ePanel needs to be configured manually.Chromeleon: Anomaly on first sequence acquisition in a series of sequences.Chromeleon: User mode selection anomaly.Instrument needs to be set to standby manually after reboot.ME and Tune GUI allows isolation low being higher than 2500.User does not reliably get a message when vacuum is not ready for instrument electronics to be set to "On" or "Standby."Tune: Define Scan: Collision Energy Mode: Stepped CE is not supported.  |  |  |
| <ul> <li>6490</li> <li>6493</li> <li>6733</li> <li>6736</li> <li>6760</li> <li>6790</li> <li>6799</li> <li>6812</li> <li>6817</li> <li>6819</li> <li>6821</li> </ul>                             | Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.<br>Tune: APPI Lamp of APPI ion source not controlled.<br>Chromeleon: Data Acquisition via MS Tune panel is not supported.<br>Chromeleon: Instrument Status ePanel needs to be configured manually.<br>Chromeleon: Anomaly on first sequence acquisition in a series of sequences.<br>Chromeleon: User mode selection anomaly.<br>Instrument needs to be set to standby manually after reboot.<br>ME and Tune GUI allows isolation low being higher than 2500.<br>User does not reliably get a message when vacuum is not ready for instrument electronics to be set to<br>"On" or "Standby."<br>Tune: Define Scan: Collision Energy Mode: Stepped CE is not supported.<br>PDF Reports: Diagnostics: Quadrupole Maintenance Check Plot not included.  |  |  |
| <ul> <li>6490</li> <li>6493</li> <li>6733</li> <li>6736</li> <li>6760</li> <li>6790</li> <li>6799</li> <li>6812</li> <li>6817</li> <li>6819</li> <li>6821</li> <li>6850</li> </ul>               | <ul> <li>Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.</li> <li>Tune: APPI Lamp of APPI ion source not controlled.</li> <li>Chromeleon: Data Acquisition via MS Tune panel is not supported.</li> <li>Chromeleon: Instrument Status ePanel needs to be configured manually.</li> <li>Chromeleon: Anomaly on first sequence acquisition in a series of sequences.</li> <li>Chromeleon: User mode selection anomaly.</li> <li>Instrument needs to be set to standby manually after reboot.</li> <li>ME and Tune GUI allows isolation low being higher than 2500.</li> <li>User does not reliably get a message when vacuum is not ready for instrument electronics to be set to "On" or "Standby."</li> <li>Tune: Define Scan: Collision Energy Mode: Stepped CE is not supported.</li> <li>PDF Reports: Diagnostics: Quadrupole Maintenance Check Plot not included.</li> <li>Tune: Status Pane: Peripheral Devices: "Turbo Pump 1" show Status "Not Connected" although turbo pump is connected.</li> </ul>  |  |  |
| <ul> <li>6490</li> <li>6493</li> <li>6733</li> <li>6736</li> <li>6760</li> <li>6790</li> <li>6812</li> <li>6817</li> <li>6819</li> <li>6821</li> <li>6850</li> <li>6877</li> </ul>               | <ul> <li>Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.</li> <li>Tune: APPI Lamp of APPI ion source not controlled.</li> <li>Chromeleon: Data Acquisition via MS Tune panel is not supported.</li> <li>Chromeleon: Instrument Status ePanel needs to be configured manually.</li> <li>Chromeleon: Anomaly on first sequence acquisition in a series of sequences.</li> <li>Chromeleon: User mode selection anomaly.</li> <li>Instrument needs to be set to standby manually after reboot.</li> <li>ME and Tune GUI allows isolation low being higher than 2500.</li> <li>User does not reliably get a message when vacuum is not ready for instrument electronics to be set to "On" or "Standby."</li> <li>Tune: Define Scan: Collision Energy Mode: Stepped CE is not supported.</li> <li>PDF Reports: Diagnostics: Quadrupole Maintenance Check Plot not included.</li> <li>Tune: Status Pane: Peripheral Devices: "Turbo Pump 1" show Status "Not Connected" although turbo pump is connected.</li> <li>Data Acquisition via Method: Source type "ESI" not supported.</li> </ul>   |  |  |
| <ul> <li>6490</li> <li>6493</li> <li>6733</li> <li>6736</li> <li>6790</li> <li>6790</li> <li>6799</li> <li>6812</li> <li>6817</li> <li>6819</li> <li>6850</li> <li>6877</li> <li>6929</li> </ul> | <ul> <li>Tune: APCI Source Optimization: Pos and Neg ion discharge current not supported.</li> <li>Tune: APPI Lamp of APPI ion source not controlled.</li> <li>Chromeleon: Data Acquisition via MS Tune panel is not supported.</li> <li>Chromeleon: Instrument Status ePanel needs to be configured manually.</li> <li>Chromeleon: Anomaly on first sequence acquisition in a series of sequences.</li> <li>Chromeleon: User mode selection anomaly.</li> <li>Instrument needs to be set to standby manually after reboot.</li> <li>ME and Tune GUI allows isolation low being higher than 2500.</li> <li>User does not reliably get a message when vacuum is not ready for instrument electronics to be set to "On" or "Standby."</li> <li>Tune: Define Scan: Collision Energy Mode: Stepped CE is not supported.</li> <li>PDF Reports: Diagnostics: Quadrupole Maintenance Check Plot not included.</li> <li>Tune: Status Pane: Peripheral Devices: "Turbo Pump 1" show Status "Not Connected" although turbo pump is connected.</li> <li>After boot, Orbitrap Supply throws a warning (Device Limit exceed and Status-Warn), which can be ignored.</li> </ul> |  |  |

## **Known Issues**

Table 7 lists all known issues that exist in the Orbitrap Exploris Series 3.0 release.

|            | Table 7. K                            | nown Issues                               |   |
|------------|---------------------------------------|---|---|
|            | ID                                    | Severity                                  | Title   |
|            | 153326                                | 3 - Medium                                | DIA scan type: import of mass lists from vDIA methods (QE series) with variable windows can be executed in OES ICSW.  |
|            |                                       |   | Remedy: do not import lists deriving from QE Focus methods.   |
|            | 153327                                | 3 - Medium                                | Chromeleon: Instrument Method shows AcquireX UI when instrument is operated by Chromeleon.  |
|            |                                       |   | Remedy: Method execution is not affected because Chromeleon does not support the AcquireX workflow.   |
|            | 153093                                | 3 - Medium                                | Divert Valves need to be Configured for USB Control.  |
|            |                                       |   | Remedy: The divert valves can be controlled through interfacing with a computer.<br>Download the MX Series II <sup>™</sup> Control Software Program to configure the divert valves<br>for Orbitrap Exploris: https://www.idex-hs.com/literature-tools/software-drivers/   |
|            | 153505                                | 3 - Medium                                | Installer blocks workstation installation (Method Editor standalone) if there is already a Full Installation on the data system PC.   |
|            |                                       |   | Remedy: Run Workstation installation on a different computer. Installer supports simultaneous Workstation installation of all Orbitrap Exploris instrument models.  |
|            | 153665                                | 3 - Medium                                | Orbitrap Exploris 480 DVD ISO image: Software Uninstallation Error.   |
|            | 153050                                | 3 - Medium                                | Tune: Define Scan: RF Lens: Scan Range (m/z) may apply false parameters when hotlink is active.   |
|            |                                       |   | Remedy: Deselect the hotlink check box in Tune Options > Tune Preferences.  |
|            | 154441                                | 3 - Medium                                | Tune: Display imperfect on 4 k monitor.   |
|            | 153627                                | 3 - Medium                                | Tune: Under certain conditions, wrong number of errors and warnings is shown.   |
|            | 153360                                | 2 - High                                  | UI: Method Editor: Ion Source Properties: For Orbitrap Exploris 480 MS, the minimum gas requirement validation has too low thresholds.  |
|            |                                       |   | Remedy: When creating a method with user-defined Source Gas properties, check the following minimum gas flows:  |
|            |                                       |   | <ul> <li>Sheath Gas: 56.7 Arb, Aux Gas: 0 Arb, and Sweep Gas: 0 Arb or</li> <li>Sheath Gas: 0 Arb, Aux Gas: 6.21 Arb, and Sweep Gas: 0 Arb or</li> <li>Sheath Gas: 0 Arb, Aux Gas: 0 Arb, and Sweep Gas: 6.85 Arb</li> </ul>  |
|            |                                       |   | During data acquisition, monitor Tune Status pane > Status by Function > Ion<br>Source: the sum of Source Gas flows (Sheath, Aux, Sweep) should be 7 L/min or<br>higher.  |
|            | 178466                                | 3 - Medium                                | Tune: When running Mass Calibration or System calibration from Application Mode<br>"Intact Protein":  |
|            |                                       |   | <ul> <li>System adjusts back to Non-Standard Pressure (Low or High), and then again to<br/>Standard Pressure between every sub-procedure run in a sequence.</li> <li>Pressure Mode display may be incorrect and will not necessarily restore to<br/>previous Pressure Mode after procedure has finished.</li> </ul> |
|            |                                       |   | Remedy: Change Application Mode to "Peptide" before running Mass Calibration or System Calibration.   |
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