UHPC-Plot release notes

> ⓘ **Info**
>
> All software versions built and tested on MS Windows 11 64-bit (Build 26100)

2.15.0:

- **Graph Presets:**
    - Views renamed to Graph Presets on main page
    - Normalization Settings now included when saving Graph Presets
    - Can now save graph presets while using "Single Graph Mode"
    - Bug Fix: "blank" presets renamed to to 'Nameless View' and can now be deleted properly under Manage Graph Presets
    - Bug Fix: File-> Load File List now works better, older file lists no longer default to only showing rest steps by default
    - File → Save Page as Default Values now opens up Manage Graph Presets
- **Cumulative Energy** Cell Data Axis option added
- **Colour Changes:**
    - New colour palette with more choices
    - **Batch Colouring**
        - Right click selected datafiles "Change Colour Selected Graphs"
    - Choosing a custom colour is no longer transparent by default
    - Relabelled SDA to Transparency
    - Bug fixes for choosing a new colour triggering click events below mouse
- Pressing Esc while zooming will cancel the zoom
- Moved Default colour "Yellow" to bottom of preferred colour list
- Bug Fixes **Cross Capacity** graph displays
    - The wrong offset / direction if last cycle was a half cycle
    - Cross Capacity is now calculated per concurrent cycle charge/discharge, pulses within a cycle will not cause strange cross capacity behavior
    - Blank graph screen should no longer appear

2.14.0

- **New Single Graph View**:
  - Can now expand any of the 4 graphs to be a single graph
    - Changes will persist when switching back and forth between the expanded graph, and 4 graph view
  - The previous "one graph per file" multi-panel functionality has been removed
  - Option to set Single Graph View as the new default view on load in Chart Settings
  - Memory Optimization mode: Can disable the 4 graph mode to only draw one graph using the single graph view in Chart Settings.
- **Drag and drop reordering:**
  - Can now drag loaded datafiles up and down to re-order them in the list
    - The graph colour on top is still determined by the first one to be coloured, and can be reordered by disabling and enabling checkboxes
- **Relabel File Names:**
  - Can now select one or more plotted files, and give them new names
    - Select and Right Click Files → Change Filename Label
    - If more than one file is selected, "-1", "-2", etc will be added after each.
- **Plotting Cell Data Rest steps only**
  - Replacing "Both" "Chg" "Dis" buttons on each graph is "Charge", "Discharge", "Rest"
    - All 3 can be enabled, or any of them disabled to customize the view
- **Connect (or disconnect) step endpoints**
  - The datapoints between steps will not be connected if this is unchecked
  - Settings → Chart Settings → Connect Step Endpoints
- **Hide first or last cycle data**
  - Found in Cycle Settings
- **Show or hide graph gridlines**
  - Found in Cycle Settings
- **Show or hide graph colour gradient**
  - When enabled, a slight white->grey gradient applied to each graph (legacy), when disabled, the background will be a solid white
  - Found in Cycle Settings
- Show in Folder during file generation
  - When processing files on the "Save Data" page, after file generation is completed, a "Show in Folder" option will now appear.
- Fixed bug with capacity unit conversion when exporting processed data for multiple files containing different masses when units have been changed to be based on mass.
- Using the Gradient slider now works as expected
- Fix for cycle summary metrics when datafile has cycle data out of order (archived snapshot, etc)

2.13.1

- Some users have noticed the UHPC installer not removing previous versions. After installing, check Windows → Installed Apps (or Apps and Features)→ Novonix UHPC Plot to ensure only one version remains.
  - Contact NOVONIX if any problems arise
- Fix for Cross Capacity not normalizing properly

2.13.0

- Normalizing and Zeroing Enhancements
  - Can now normalize (divide) against other cycle data types

- Can now normalize each cycle against itself (using other cycle data)
- Can now zero after normalizing cycle data
- Can scale and shift
- Axis labels (and units) now improved when normalizing and zeroing
- Can normalize cell data against capacity and energy
- Can normalize against cycle time in addition to other normalizing
- Right click → Copy to Clipboard, and Export Image now show updated labels for normalized/zeroed axis
- Cycle Summary Axis Changes
  - X and Y Axis now both contain the full list of types
  - The following axis types have been removed:
    - Capacity (dis)Charge Percent
    - Energy (dis)charge Percent
    - (dis)Charge Endpoint Capacity Percent
    - (dis)Charge Slippage Percent
    - Capacity Fade Percent
    - Zeroed (dis)Charge Endpoint Capacity
  - The above remove axis types can all be calculated with normalizing and zeroing functions, condensing this helps to make a more intuitive list.
  - The above removed axis types can still be exported from the "save data" table
    - Labels updated and capitalized more consistently
- dQdV and dVdQ changes
  - When viewing dQdV and dVdQ the step-change artifacts (such as sharp spikes) have been removed to greatly improve readability of the datasets.
    - New Units: mAh/V, (Ah/g)/V, (mAh/g)/V for dQdV
    - New Units: mV/Ah, V/(Ah/g), mV/(Ah/g) for dVdQ
- New Axis Data Types
  - Charge Capacity Fade and Discharge Capacity Fade added
    - Calculated as previous cycle (dis)charge capacity - current cycle (dis)charge capacity
- Capacity Fade Changes:
  - Capacity Fade renamed to Inter Cycle Capacity Fade
    - Calculated as Charge Slippage - Discharge Slippage
  - Capacity Fade is now positive (Absolute Value) to match industry standard
    - Option to display negative values as before remains in Chart Settings → Negative Capacity Fade checkbox
- CIE per hour cell data axis removed
  - This can be reproduced by using Normalize By Cycle Time in the normalize settings
- Save Page renamed to Export Processed Data Page for ease of use
- Can now plot temperature units in Fahrenheit.
- Can now plot energy as Wh/g and Wh/kg
- Files to import can be dragged and dropped in plot.
- Exporting Data from the main graph display will now apply cycle filters to exported data, and export normalized/zeroed data if the data has been normalized or zeroed.
  - If you are graphing cycles 4-9 only cycles 4-9 will be exported
- When viewing specific cycles in cell data mode (after the 1st cycle), the 1st datapoint shown is no longer the last datapoint of the previous cycle, it is now correctly the 1st datapoint of the current cycle.
- Support for future "Chamber Temperature" column
  - This is intended for future updates, datafiles do not yet include chamber temperature as of UHPC Control

v2.13.0

- Chart Settings new features:
  - Cycle Data will now leave a gap between cycles if there's a missing cycle between (ex: filtering)
    - This can be changed by checking "Connect Missing Cycles" in Chart Settings
  - Chart Settings now has option to ignore interpolated data points while plotting (Step Position 2)
- Data Hover-Over:
  - Cycle data hover-over now easier to read, cycle: ## and (X,Y) data shown on a second line below file name
  - Cell data hover-over will now show the cycle number and file name for the highlighted dataset
  - This may be disabled in Settings → Chart Settings → Hide Data HoverOver
- Updated micro symbol from u to μ.
  - example: uAh → μAh

2.12.2

- New Icon

2.12.1

- Fix for exception being thrown when closing UHPC Plot after opening from UHPC Control

2.12.0:

- Multiple Large file optimizations:
  - "Yes to All" and "No to All" options appear for Trimming large files
  - Loading/Refreshing/Changing Axis is now faster when using many files, visual changes occur after all data has been (re)loaded.
- Switching from the "Main View" to "Single Graph View" multiple times will no longer cause a major memory leak.
- Sort alphabetical (Ascending and Descending) have been added. (Right Click → Sort: Ascending/Descending).
- Lightning Chart updated to the latest version (12.0.1.1)
- Migrated some data types from float to double to improve data precision
- Sorted X and Y axis alphabetically
  - CE, CIE now labelled Coulombic Efficiency and Coulombic Inefficiency
  - Voltage Hysteresis and Delta V relabeled as ΔV
- Tool tips have been added to axis variables.

2.11.0:

- Added a one time prompt on startup if a new version of software is available.
- A new option "Settings" has been added to menu bar.
  - A new option Notification settings has been added to it.
  - The "Chart Settings" have been moved here.
- "Views" feature has been implemented.
  - Users can now set the x-axis/y-axis units and save them as a view.
  - Users can switch seamlessly between views.
  - Users can Add/Remove/Override views.
  - Users can also set a view as "default view" which will be used when Plot is started.
- Software update available pop up has been added on application start.
- Request for contact info when downloading updates from software.
- We can now export data when the cycles are missing in data file (any missing cycle will be skipped).
- Users can now see the release notes before downloading the update (Enable software updates pop up on startup for this feature).

- Improvements to Annotation points in the UI.
- Color functionality has been improved.
  - Users can now set preferred colors that will be used when charts are imported.
  - Default colors are still present.
  - Users can manage the preferred colors by adding/deleting.
- 'Esc' key now closes the company details window when downloading software updates.
- 'Load Configuration' and 'Save Configuration' on File menu options have been renamed to 'Load file list' and 'Save file list'.

2.10.0

- Popup when duplicate filenames are loaded
- Discharge Slippage Percent data error corrected
- Capacity Fade Percent added
- Fixed bug where files removed from plot could not be reloaded
- Normalization & Zeroing:
  - Normalization/Zero popup box added where normalization/Zero checkboxes used to be
  - Normalize X data option added
  - Zero X data option added
  - Normalize by Number option added
  - Can now normalize Cell Data (only by number, not reference cycle)
- A running instance of plot can now be used to open files directly from control without opening up
- Fixed bug where trimming large data files would trim too much data
- "Space Bar" key on keyboard can be used to select/deselect files.
- Duplicate errors found in logs have been reduced.
- "Show Cycles" can now be configured for each file specifically by "select the file → right click → Show Cycles for Selected Files".
- File locations can now be opened by selecting file(s) → right click → Show in folder(s).
- Improved formats for error logs.
- The scale for Y-axis/X-axis can now be set to Log base 10 by click "Axes" button → check/uncheck Log scale x-axis/y-axis → Apply/Apply to All.
- If the network drive connection is slow/disconnected we show a loading popup to check the drive connection on Open files/Save files.
- You can now copy the graphs to clipboard by "Right click on graph → Copy to clipboard".
- Switched to 64-bit Architecture.
- Added mAh/V units to dQ/dV column.

2.9.0:

- Chart Setting of the previous version will be permanently **LOST**. This will only happen on first installation.
- Chart Settings are moved to files.
- Can now open files for displayed selected from UHPC - Control
- Units are no longer sorted alphabetically, but in logical selected order
  - Example: Volts starts with Volts instead of mV
- Fixed issue with values being converted w.r.t selected units after normalization.
- When a Normalized graph is exported as image the y-axis does not show units, but "Norm=cycle_reference" in place of units.
- Fixed a issue with data not loading properly when the cycles with no data are present.
- "Delete" key can now be used to remove the files from plot.

- Left click left drag to fit data to graph can now be disabled.
- Right Click-> Reset Zoom is now available to fit data to graph.
- Plot Normalization now works on any data on y-axis.

2.8.0:

- Coulombic Efficiency calculation configuration for anode half cells added, to allow user to flip the CE and CIE calculations if desired.
    - Cycle Settings → Coulombic Efficiency Calculations: Discharge/Charge or Charge/Discharge
- Fixed some bugs related to setting the Axes and users can now apply the changes to all the graphs in the Axes dialog (Axes → Apply to All button)
- The release notes are now packaged along with software (Help → Release Notes).
- Renamed the "Delete File(s)" to "Remove From List" in the right click options for the list of files.
- Fixed issue with plot color changing to white when color panel is closed without making any change.
- Added new validation when setting min and max values in Axes dialog.
- Fixed display bug when changing units and switching around cell data and cycle data.

2.7.1:

- Updated "Include First halfcycle" (introduced in 2.7.0) for Calculated cycles to be false by default
- Fixed "Cycle Error" prompt not correctly using Calculated cycles if user reloaded data.
- Fixed "Save Page" view to properly use the selected cycle type (Incremented or calculated)
- Added "Do not show me again" checkbox for the "Add NOVONIX cycles.." prompt when loading files without increment cycle. Also added this checkbox in cycle configuration to enable and disable this prompt.
- Zeroed capacity column calculation errors in save files have been fixed.

2.7.0:

- Added a "Cycle Settings" button to allow the user to switch between datafile Increment Cycle counter, and calculated (NOVONIX) cycles
    - Option to use Charge Discharge OR Discharge charge
    - Option to include the first half cycle in the first cycle
    - Configuration saved between sessions
- Improvements made to cycle summary calculations
- No longer prompted of possible cycle errors on data file load unnecessarily
    - Only prompted that your data file may have cycle issues error popup if:
        - You only have one cycle in your datafile
        - You're using datafile cycles not calculated cycles
        - There are more than 2 calculated cycles
- When exporting data from main screen, datafiles with different numbers of cycles won't impact the export results of other datafiles
- Fixed bug that could prevent graphs from loading if "cycle data" or "cell data" defaults had been changed

2.6.1:

- Fixed issue related to log spamming and performance while importing certain files.

2.6.0:

- Error string displayed if errors occur during "Save Page" data generation
- Rare error with 12th gen intel chipsets causing graphs not to appear on launch resolved
- Contact us button added containing customer support email added to Help dropdown

- Checks for software updates when the application starts and "Download update" button will be shown if a new version is available.

2.5.1:

- Adding 3rd party plugin licensing information

2.5.0:

- Save File - Generate Data functionality rework
  - Fixed the column selected exporting wrong data / labels
  - Fixed Save Setup as Default button to properly save and load preferences
  - Merged Summary Cycle/Time tables and given user preference on which is included (time or cycle)
  - Added DetailedVQ table to select detailed V, Q, DV, DQ output information
  - Added option for user to combine or separate selected datafiles export data
  - Added option for user to combine or separate selected traits when generating data
  - Updating naming convention for output files to better match displayed
  - Output Change:
    - Updated generated data headers to include file name in first row/column
    - Updated generated data headers to include column names
    - DetailedPreset export data format remains unchanged
- Updated the plot axis to show units for all types of data (like dv/dq , capacity, etc)
- The Error logs will now be stored in c:\Novonix\UHPC Log Files\ErrorLogs\

2.4.1:

- Fixed file dropdown not opening applications using new installer
- Fixed dd-MMM-yyyy timestamps not loading data files
- Switched to standard yyyy-MM-dd format
- Some optimizations to datafile reading

2.4.0:

- Updated to latest Novonix Graphic
- Added regional support to prevent language issues
- fixed issue where exporting a single cycle's data resulted in the wrong (always 1st cycle) export data
- Including .NET framework in latest installer

2.3.0.5:

- Renamed from HPC Plot to UHPC Plot
- Added Novonix11 type datafile
- Added support for UHPC Control 2.4.1 data files

2.3.0.4:

- Normalization and Zeroing fixes
- Update button added to recalculate if plot isn't updating after a field change
- Fixed issue with columns not using Percentage Columns correctly
- Minor UI changes
- Changes to drop down colour picker
- Turned off Colour on Plot name line

- Changed file size from 500,000 to 100,000 data points before pop-up appears offering to trim data, so optimizations can be offered sooner

2.3.0.3

- Fixed issue exporting graph with uneven cycle numbers

> ⓘ **Info**
>
> The latest version of each software package is available for download in the NOVONIX Customer Area