

Improvements to Eclipse™ (NEON™) Firmware

Introduction

This document highlights the most important enhancements, changes, and bug fixes made to the Wyatt Firmware. Please contact us at www.wyatt.com/contact if you have any questions or suggestions.

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Revision History

Special Note

- Instruments with firmware versions 6.1.5 or later installed at manufacture cannot be downgraded below version 6.1.5.

6.2.5

Eclipse (NEON) firmware version 6.2.5 requires VISION 3.1.2.21 or later.

Known Issues

- Occasionally, spurious Startup Check errors may occur following a firmware update. Performing a hard reboot resolves this issue.

New Features

- **Added:** Support for impedance measurement. (S-27842, S-28732)
- **Added:** With VISION 4.1.1.636 or later, users can test the alarm out cable setup for emergency pump shutdown. (S-20565)
- **Added:** Support for managing four bottles in VISION RUN's solvent manager. (S-19626)

Miscellaneous changes

- Includes version 0.5.43 of Frontly (instrument front panel application).
- **Changes:** Added more logging details for alarms. (S-26148)
- **Fixed:** Instrument intermittently stuck on "Connecting" dialog during boot-up. (S-27235)
- **Fixed:** Audio issues when rebooting some older instruments. (D-29029, S-29003)
- **Fixed:** Startup Check errors could occur after rebooting under heavy firmware load. (D-28905, D-28958, D-28955)

6.1.7

Eclipse (NEON) firmware version 6.1.7 requires VISION 3.1.2.21 or later.

Miscellaneous changes

- **Fixed:** The power button may stop working if the instrument does not initialize properly on startup. (D-27620)
- **Fixed:** The audio beep tone is changed to 4 kHz to increase the speaker's lifespan. (D-27631)

6.1.6

Eclipse (NEON) firmware version 6.1.6 requires VISION 3.1.2.21 or later.

Miscellaneous changes

- **Fixed:** Installer issue found in version 6.1.5. (D-26218)

6.1.5

Eclipse (NEON) firmware version 6.1.5 requires VISION 3.1.2.21 or later.

New Features

- **Added:** The Eclipse high-pressure model (ECDSH) to support Waters columns. (S-23967)
- **Added:** New alarm when the ratio of "(Pump pressure - Channel Pressure) / Pump flow rate" is below 10 bar/(mL/min). (S-20566)

Miscellaneous changes

- **Changed:** When switching from FFF to SEC mode, the Eclipse will wait for both the flow rate and inlet pressure to go down to zero. (S-15133)
- **Changed:** Improved the handling of exponential gradient in the Eclipse method to avoid sudden micro flow rate changes. (D-20443)
- **Changed:** Improved auto-calibration of the inject valve to be performed only during the focus+inject mode. (D-25617)
- **Fixed:** The “Not Ready” state due to temp lock is triggered even when the temperature sensor is not connected. (D-20763)
- **Fixed:** The flow rate drops to zero when entering or leaving SEC mode. (D-23797)
- **Fixed:** There can be unexpected spikes in the flow rate at the method line boundaries. (D-23838)
- **Fixed:** Changing the temperature set point would not propagate properly to VISION RUN. (D-18133)
- **Fixed:** If waits for channel temperature was enabled in a prior run in FFF mode, switching to SEC mode would wait indefinitely for reaching that temperature. (D-25824)
- **Fixed:** Vapor alarm would not be shutting off the pump in VISION RUN. (D-23609)

6.0.9

Eclipse (NEON) firmware version 6.0.9 requires VISION 3.1.2.21 or later to connect to the instrument in VISION RUN.

Miscellaneous changes

- **Fixed:** Installer would sometimes hang when trying to find instruments on the network. (D-19715)
- **Fixed:** Installer would not properly report out of disk space error. (D-19559)
- **Fixed:** Some communication settings were not preserved after a reboot. (D-19163)

6.0.7

Eclipse (NEON) firmware version 6.0.7 requires VISION 3.1.2.21 or later to connect to the instrument in VISION RUN.

New Features

- **Added:** Ability to quickly reset the membrane flush and column rinse counter. (S-18956, S-17848)

Miscellaneous changes

- **Fixed:** The color of the UV and cross flow legend/trace during a collection were not using their expected color. (D-18570)
- **Fixed:** A network connection failure on startup would fill the disk space preventing the installation of new firmware releases. (D-19558)
- **Fixed:** Installer would not properly report out of disk space error. (D-19559)
- **Fixed:** Installer would sometimes hang when trying to find instruments on the network. (D-19715)

6.0.3

Eclipse (NEON) firmware version 6.0.3 requires VISION 3.1.2.21 or later to connect to the instrument in VISION RUN.

Miscellaneous changes

- **Added:** Improved the firmware updater so that it no longer requires the instrument to reboot. (S-18706)
- **Added:** The firmware records new instrument health diagnostic information. (S-18673)

5.12.17

Eclipse (NEON) firmware version 5.12.17 requires VISION 3.1.2.21 or later to connect to the instrument in VISION RUN.

Miscellaneous changes

- **Changed:** Optimized logging by the firmware. (D-18218, D-18367).

5.12.16

Eclipse (NEON) firmware version 5.12.16 requires VISION 3.1.2.21 or later to connect to the instrument in VISION RUN.

New Features

- **Added:** Buttons to control the waste and recycle valves are now available on the front panel and are properly synced with VISION RUN. (S-09038)
- **Added:** More details are now available on the front panel badges when an error occurs. (S-14475)
- **Added:** New commands for directly controlling the purge valves and the Rheodyne positions. (S-16161)

Miscellaneous changes

- **Fixed:** Overpressure on Eclipse base models would occur when flushing purges. (S-15282)
- **Fixed:** Spurious channel leak alarms would be triggered when handling a channel. (S-16520)
- **Fixed:** When switching to voltage mode, the front panel mobility channel image would remain in Current mode. (D-08127)

5.10.0

Eclipse (NEON) firmware version 5.10.0 requires VISION 3.1.1.8 or later to connect to the instrument in VISION RUN.

New Features

- **Added:** Support for the new channel temperature regulator with leak sensor. (TT#20035)
- **Added:** The instrument configuration can be retrieved and set remotely. (TT#20074)

Miscellaneous changes

- **Fixed:** A high memory usage causing the low memory warning to appear will not occur anymore. (TT#19994)
- **Fixed:** Self-test voltage failures were not properly flagged as a failure. (TT#20090, TT#20091)
- **Fixed:** Unable to boot an Eclipse (NEON) instrument when there are flow controller errors. (TT#20128)
- **Fixed:** Over-current and self-test voltage error badges did not appear on the front panel of an Eclipse (NEON) instrument. (TT#20129)
- **Fixed:** Minimum inlet flow is set to 0.05 mL/min to better control flow during focus and focus + injection steps with low flows. (TT#20036)
- **Fixed:** Reduced number of cross flow alarms during linear ramps by providing a better flow ramping. (TT#20132)
- **Fixed:** Reduced number of inlet flow alarms by adding a pump calibration function in the Performance & Tuning window in VISION RUN to adjust for minor differences between the pump flow and the measured flow. (TT#19955)

- **Fixed:** Missing alarms for low solvent and over-current. (TT#20133)
- **Fixed:** Parameter changes are not immediate. (TT#20134)

5.7.0

Eclipse (NEON) firmware version 5.7.0 requires VISION 3.0.1.12 or later to connect to the instrument in VISION RUN.

Miscellaneous changes

- **Fixed:** Use configurable values for self-test voltage tolerances. (TT#20049)

5.6.0

Eclipse (NEON) firmware version 5.6.0 requires VISION 3.0.1.12 or later to connect to the instrument in VISION RUN.

New Features

- **Added:** Support the dispersion inlet channel. (TT#20013)

Miscellaneous changes

- **Fixed:** When using an Eclipse (NEON) instrument with the SEC switching option, the cross-flow controller will now properly control the cross-flow after a hard reboot of the instrument. (TT#20009)

5.4.0

Eclipse (NEON) firmware version 5.4.0 requires VISION 3.0.1.12 or later to connect to the instrument in VISION RUN.

New Features

- **Added:** Mitigate the flow rate drop when switching from Focus to Elute. (TT#19834, TT#19810)
- **Added:** Faster internal response time to improve data quality and reproducibility. (TT#19838)
- **Added:** Implemented “Alarm Out” to stop the flow when a critical error occurs. (TT#19921)
- **Added:** Depressurize the channel when a critical error occurs to not put the instrument in an unsafe state. (TT#19928)

Miscellaneous changes

- **Changed:** Better data communication with VISION RUN and correct conversion parameters. (TT#19837)
- **Changed:** Use the Channel Pressure instead of the DCM Pressure when calculating the Focus Flow Offset. (TT#19927)
- **Fixed:** Use seconds for timestamps instead of milliseconds. (TT#19885)
- **Fixed:** Ensured that the detector flow mismatch badge appears when the set value and read value for the detector flows differ by the flow warning threshold set in the software. (TT#19907)
- **Fixed:** Incorrect warning/error level for the leak alarms. A flow controller leak and the valve leak alarm will now trigger an error while the fluid connection leak alarm will only trigger a warning. (TT#19908)
- **Fixed:** When the DCM Pressure controller is disconnected, the front panel will now show the “DCM Pressure controller” error instead of the “Detector Flow Meter” error. (TT#19918)
- **Fixed:** Ensured the collection current start time is reset when in Prerun. Not doing so could add an extra data point at the end of a collection at offset zero. (TT#19923)
- **Fixed:** When the “Focus Valve” is unplugged, it will not show the “SEC Switching Valve” error alongside the “Focus Valve” error. (TT#19924)
- **Fixed:** When using an Eclipse (NEON) instrument with the DCM option, it will now allow users to set both the detector flow and the channel flow to the same value (thus using the instrument as if it did not have the DCM option). (TT#19929)

- **Fixed:** When pressing the “Stop Flow” button on the front panel, it will now display a red error badge instead of a warning one. (TT#19930)
- **Fixed:** The focus flow offset calibration is now correct for Eclipse (NEON) instruments without the DCM option (TT#19960)

5.0.5

Initial Release.

Eclipse (NEON) firmware version 5.0.5 requires VISION 3.0.0.20 or later to connect to the instrument in VISION RUN.