

Press Release

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Nexera-i MT

UHPLC and HPLC analysis on a single system

Nexera-i MT's dual flow lines /

New integrated LC simplifies HPLC / UHPLC method transfer

Shimadzu, one of the world leaders in analytical instrumentation, has released the new Nexera-i MT, based on the very successful i-Series platform of compact HPLC and UHPLC systems launched in 2014. The instrument offers enhanced functionality to support the transfer of existing HPLC to faster UHPLC methods while assuring high cross-compatibility between the old and new method conditions. Nexera-i MT targets a wide range of industries including pharmaceuticals, chemicals and foods.

Nexera-i MT features two independent and dedicated flow lines, one for UHPLC and the other for HPLC analyses. Newly developed Analytical Conditions Transfer and Optimization (ACTO) technology minimizes the effect of system volume differences on analytical results. In addition to drastic improvement of efficiency and quality of method development and transfer efforts in quality control departments, Nexera-i MT's dual flow lines also maximize operational efficiency. They enable a single instrument to run both HPLC and UHPLC analyses, as opposed to separate dedicated instruments for each analysis.

Background to the development

In recent years there has been a strong focus on the use of UHPLC instruments and small particle columns to develop faster and better analytical methods that improve efficiency and throughput, especially in R&D environments. However, many of the analytical methods used in quality control laboratories, including those listed in the pharmacopeia, are conventional HPLC methods. Transferring these HPLC methods to UHPLC and validating the new methods is a time consuming and labor intensive task.

Nexera-i MT seamlessly performs both HPLC and UHPLC analyses

The Nexera-i MT incorporates two analytical flow lines with different system volumes into a single compact integrated LC. By switching automatically between the flow lines, Nexera-i MT seamlessly performs both HPLC and UHPLC analyses, preserving the relative separation pattern by compensating automatically for differences in system volume. Consequently, Nexera-i MT achieves exceptional analytical reproducibility when switching from a system with large volume to a system with small volume or vice-versa. The same technology also allows Nexera-i MT to match any existing HPLC or UHPLC method, eliminating the need to consider and to carefully match plumbing to achieve identical system volumes between instruments.

Features

Nexera-i MT provides technologies, features and functionalities which support efficiency, method conversion, productivity and reduced solvent consumption:

1. Dual flow lines permit UHPLC and HPLC analysis on a single system

The Nexera-i MT features two independent analytical flow lines with different system volumes. This configuration permits UHPLC and HPLC analysis using a single system and enables the transfer of UHPLC and HPLC methods currently used in the laboratory on other instruments to Nexera-i MT without the need for modification.

2. ACTO technology optimizes system volume differences

The new ACTO technology precisely adjusts injection timing based on the system volume difference between the existing HPLC system and Nexera-i MT, without requiring any modification to the original gradient program.

Additionally, the ACTO technology can be used to convert an existing HPLC method automatically to UHPLC conditions. Nexera-i MT is an ideal solution for anyone considering the conversion of existing HPLC to UHPLC separations, reducing mobile phase solvent consumption while enhancing productivity. It is especially attractive for laboratories requiring both HPLC and UHPLC analysis, as both methods can be run on a single system.

3. i-Series features significantly improved analytical efficiency

Nexera-i MT implements the core features of the i-Series integrated LC product line including fully automated system startup, baseline stabilization and simplified user interfaces. The on-instrument touchscreen control panel as well as the Interactive Communication Mode (ICM) allow the user to edit and start analytical methods and batches directly from the instrument touch panel and synchronize automatically with Shimadzu's LabSolutions software. The instrument occupies a small footprint and is equipped with a stable low-noise detector and high speed, highly reproducible injector (especially for low volume injections) that are hallmarks of Shimadzu's LC product line.

Advanced design for the "computer-less, hassle-free laboratory"

The central concept driving the development of all i-Series instruments is "to free operators from the laboratory". The core features of the i-Series instruments, such as high reliability, small footprint and intuitive operation via touch-panel and smart device functionality, are highly praised by users of these instruments. The i-Series has been accepted globally in a wide range of industries including pharmaceuticals, chemicals and foods. In 2015, the i-series has been awarded with the Good Design Award donated by the Japan Institute for Design Promotion. The i-Series is not just an analytical instrument; its advanced design heralds the future analytical environment, the "computer-less, hassle-free laboratory."

Web summary

Shimadzu has released the new Nexera-i MT UHPLC system, based on the very successful i-Series platform launched in 2014. The instrument offers enhanced functionality to support transfer of existing HPLC to faster UHPLC methods while assuring high cross-compatibility between the old and new method conditions. Nexera-i MT targets a wide range of industries including pharmaceuticals, chemicals and foods.



Figure 1: Nexera-i MT provides technologies, features and functionalities which support efficiency, method conversion from HPLC to faster UHPLC, productivity and reduced solvent consumption.

Web link: www.shimadzu.eu/nexera-i-mt-method-transfer-system



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