

Ultra High Performance Liquid Chromatograph

# Nexera series Key Features at a Glance

Integration of Analytical Intelligence and  
High-Performance Hardware



**ANALYTICAL  
INTELLIGENCE**

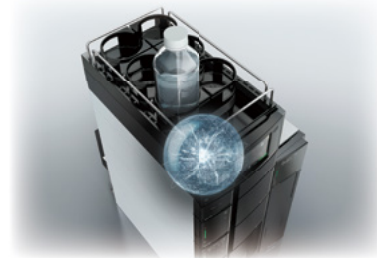


## Analytical Intelligence

- Automated support functions utilizing digital technology, such as M2M, IoT, and Artificial Intelligence (AI), that enable higher productivity and maximum reliability.
- Allows a system to monitor and diagnose itself, handle any issues during data acquisition without user input, and automatically behave as if it were operated by an expert.
- Supports the acquisition of high quality, reproducible data regardless of an operator's skill level for both routine and demanding applications.



**ANALYTICAL INTELLIGENCE**



### Customer Comments



It allows anyone to analyze samples successfully (foods).



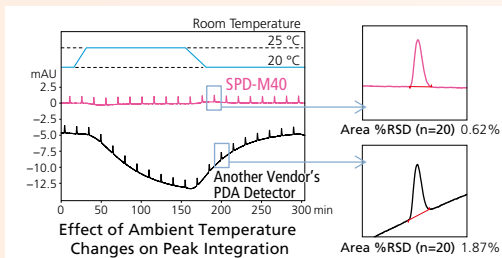
It should improve work efficiency in situations where multiple people share the same system (pharmaceuticals).



It helps achieve consistently uniform data quality that is independent of human skill level, which is the ultimate goal of GMP (pharmaceuticals).

**5**

### Eliminates Effects of Room Temperature Changes Stable PDA Baseline



- The advanced TC-Optics (patent pending) triple temperature-control function and proprietary heat-removal design help eliminate effects from room temperature changes and provide reliable quantitation results that do not depend on environmental conditions.
- Achieves accurate peak integration during high-sensitivity analysis.



### Customer Comments

The Advanced TC-Optics function can be expected to provide a stable baseline for users frustrated with baseline drift caused by the following.



Temperature control in the laboratory is unstable (chemicals).



Baseline fluctuation occurs when the air conditioner is switched OFF at night (pharmaceuticals and chemicals).



The only available installation sites are near the entrance/exit or air blower outlet (chemicals).

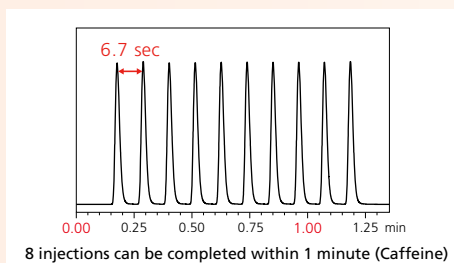


Frustration with baseline drift for a non-Shimadzu PDA detector (pharmaceuticals, academia, and research institution)

For further information, please see Technical Report C190-E241.

**5**

### Maximizes Total Analysis Throughput Ultra-Fast Injection at 6.7-Second Intervals and Large-Volume Sample Holding Capacity



Approx. 17,000 samples when using 384-well MTPs



### Customer Comments



Our autosampler is fast. In combination with a plate changer, the Nexera series would be useful for ultra-fast analysis or high-speed screening (pharmaceuticals and CRO).

For further information, please see Technical Report C190-E228.

**6** Shut down

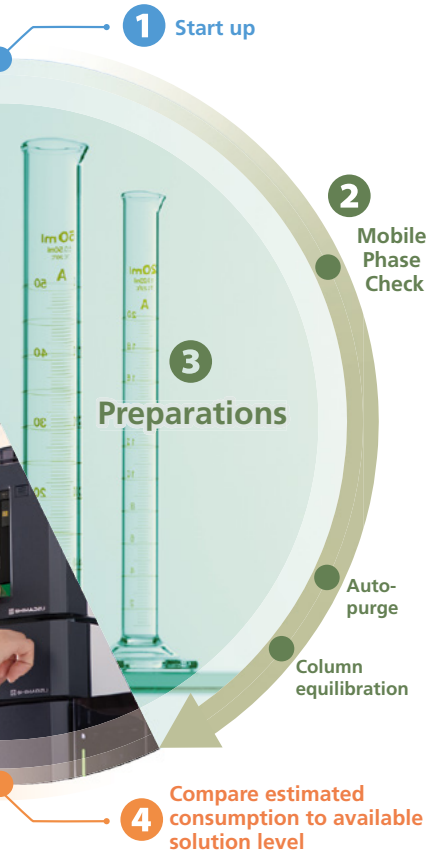
Checking results

Analysis complete

**5**  
Analysis

Auto-diagnostics  
Auto-recovery

Analysis begins



## 1 Start Up at a Specified Time and Equilibrate Smart Startup

**ANALYTICAL INTELLIGENCE**

**Ready for analysis !**

- After auto-purging, the FlowPilot function automatically prepares the system for analysis at the specified time.
- In combination with the auto-shutdown function after the analysis is finished, smart startup helps improve the efficiency of routine analysis.

**Customer Comments**

- Not having to remain next to the system until preparation is finished improves work efficiency (pharmaceuticals).
- Being able to automatically switch the power ON at a specific time, auto-purge, start analysis, stop analysis, and switch the power OFF is very convenient (pharmaceuticals).
- FlowPilot automatically starting up the system eliminates any worry about column damage (pharmaceuticals).

For further information, please see Technical Report C190-E227.

## 1 Automatic System Startup Protects Columns FlowPilot

**ANALYTICAL INTELLIGENCE**

**Customer Comments**

- We do the same process manually, so automating the process would improve convenience and also reduce mistakes (foods and pharmaceuticals).
- It would be great for less skilled analysts (pharmaceuticals).
- It would help reduce human errors (pharmaceuticals).

- Mobile phase flowrate is automatically controlled during smart startup to prevent excessive pressure loads on the column.
- It eliminates the need to wait in front of the system until equilibration is finished.

For further information, please see Technical Report C190-E227.

## 2 → 6 Risk of Running Out of Mobile Phase Reduced to Zero MPMChecker Mobile Phase Monitor

**ANALYTICAL INTELLIGENCE**

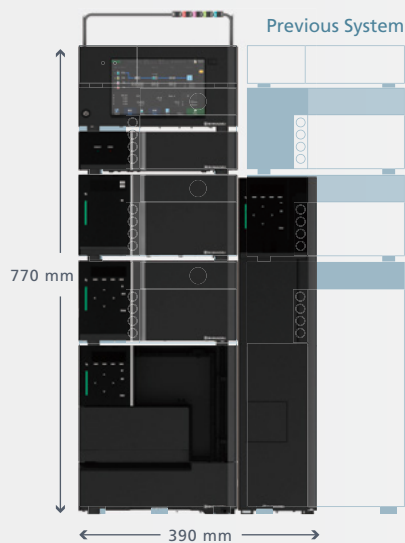
**Customer Comments**

- Multiple people share our system, so there is a large risk of running out of mobile phase, but this function would solve that problem (pharmaceuticals).
- It also reduces the risk of damaging expensive columns from running out of mobile phase (environmental).
- It can also prevent injection errors caused by running out of rinse solution (pharmaceuticals).

- It constantly monitors the solution weight, which can be checked using the MPMChecker app on a smart device or computer.
- A warning or error is sent whenever the mobile phase reaches a certain level.
- When using LabSolutions™, it compares the predicted usage volume to the volume available before starting each analysis and notifies the user if there is not enough available (marked 4 in the figure).

For further information, please see Technical Report C190-E226.

## Supports More Effective Laboratory Space Utilization and Asset Management Both Space-Saving and Multi-Functional



Nexera series Standard Model

- More compact than previous models, both in terms of system height and installation width.
- Not only utilizes laboratory space more effectively, but also improves access to mobile phase bottles.
- The dual-injection system, which provides two independent flow channels in the same system, not only reduces installation space and improves operating efficiency, but also ensures traceability of samples and data files using simple operations.



### Customer Comments



With our limited laboratory space, the small footprint is very appealing (pharmaceuticals, foods, and testing institutions).



Dual injection would be especially helpful when separation is inadequate using only one set of conditions or when two separate tests must be performed on the same sample. It would allow us to reduce installation space, analysis time, and costs (pharmaceuticals, foods, chemicals, and testing institutions).



Dual injection could improve the efficiency of analyses with methods that are difficult to speed up (testing institutions).

For more information about the dual injection function, please see Technical Report C190-E239.

Additional features:

- 2.5 AU PDA linearity
- UV cutoff filter improves ability to quantify compounds that photodegrade
- Ultra-low carryover
- Zero condensation with autosampler's cooler function
- Autosampler offers automatic pretreatment

For more details, please visit: [Nexeraseries.com](http://Nexeraseries.com)



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