

Buffer In-Line Dilution and LPLC

Analytical Accuracy with LEWA EcoPrime LPLC Systems

The new LEWA EcoPrime® LPLC chromatography and enhanced buffer dilution platform combines proprietary fluid design and the LEWA Intellidrive® pump technology to deliver unrivaled reproducibility and accuracy. The integrated buffer in-line dilution (BID) option prepares point-of-use buffers combining two unit operations into a single, space-saving skid.

A single LEWA EcoPrime system has the flow range of up to two conventional LPLC units while delivering gradient accuracy of greater than $\pm 1\%$. Because of its dynamic range, EcoPrime LPLC can bridge the gap between process development and pilot and production scales. The platform is highly configurable with 20 standard options to match your individual situation: full drainability, clean-in-place (CIP) enhancement, multiple inlet/outlet valve choices, precolumn analytics, DeltaV communication, and UPS ready are a few of the many user-configurable options. The EcoPrime LPLC series of systems provides significant flexibility, more floor space and — as a result of industry-leading gradient accuracy and reproducibility — enhanced purity and yield.

The unique, integrated buffer in-line dilution option directly connects to purified water (PW) and water-for-injection (WFI) supplies and prepares point-of-use buffers from concentrates. That significantly reduces buffer storage requirements and labor required for buffer make-up. The system can be used with single-use buffer bags for easy integration into existing processes.

The EcoPrime LPLC platform features user-adaptable automation software with an information-rich, interactive graphical interface that displays system information and historical trends. The automation software supports 21 CFR Part 11 compliance.



ADVANTAGES OF LEWA EcoPRIME LPLC/BID

Analytical Performance at Pilot and Production Scale: The EcoPrime platform performance attains laboratory precision at pilot and production scales. The EcoPrime system performs highly accurate gradients and delivers accuracy and reproducibility well below $\pm 1\%$, with linear gradients from 1% to 99%.

Increases Product Yield and Purity: Higher product yield, quality, fewer fractions, and superior batch-to-batch consistency — these benefits are produced by the exclusive LEWA intellidrive® pump technology and a highly refined flow path design with digital fluid control.

Flow Range Equivalent to Two Competitive Skids: With a flow range of 150 to 1 (e.g., 0.06 LPM to 9.0 LPM), customers can use a wider range of column diameters on a single system. One EcoPrime platform can replace two or more competitive skids, which allows pilot or production scales on the same unit. That frees up cleanroom and cold-room space, reduces costs, and requires a smaller footprint.

Flexible and Friendly Software: The EcoPrime system's user adaptable software makes it fast and easy to adapt to your specific process environment while maintaining the ability to validate. Because of the software architecture, LEWA can quickly and cost-effectively configure the software to meet your specific automation needs.

Lower Capex and Opex with Integrated Inline Buffer Dilution: Using concentrated buffers, the EcoPrime BID option will significantly reduce tank footprint, free up plant space, and lower your operation expenses. Chromatography and buffer in-line dilution are integrated on the same system combining two unit operations into a single platform!

LEWA developed its first pulseless pump for liquid chromatography in the late 1970s and delivered its first chromatography system in the early 1980s. LEWA is the leader in supplying pumps for pilot and industrial HPLC and LPLC chromatography worldwide. Design consultation, manufacturing, installation, followed by our service, spare parts supply, maintenance, and training is our 360° commercial certainty pledge. 🌐

Mary Jo Wojtusik is the global EcoPrime manager for LEWA, 8 Charlestown Street, Devens, MA; 1-978-487-1100; ecoprime@lewapt.com; www.lewapt.com.