

SepaFlash™ FP LT-ELSD

Low Temperature Evaporative Light Scattering Detector

Product Overview

The SepaFlash™ FP LT-ELSD is a universal low-temperature ELSD for detecting non-chromophoric analytes like carbohydrates, lipids, and polymers. Its low-temp technology ensures high sensitivity and low noise, ideal for thermally unstable compounds. Compatible with all SepaBean™ machines, it enhances complex separations.



Key Features

■ High Sensitivity and Universal Detection

The SepaFlash™ FP LT-ELSD is a mass-type, highly sensitive universal detector tailored for preparative liquid chromatography. It effectively detects a wide range of analytes, including those without chromophoric or electroactive groups, such as carbohydrates, phospholipids, amino acids, fatty acids, steroids, saponins, and polymers.

■ Low-Temperature Technology for Enhanced Performance

Incorporating advanced low-temperature technology, the detector achieves superior sensitivity with significantly reduced noise levels. This makes it ideal for analyzing thermally unstable or semi-volatile compounds.

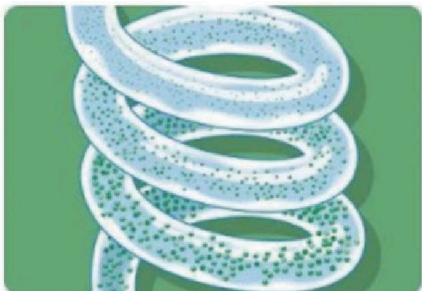

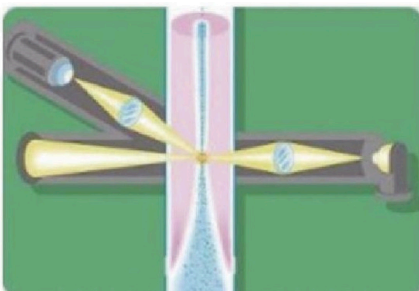
■ Compatibility with Gradient Elution

Designed to seamlessly integrate with gradient elution methods, the SepaFlash™ FP LT-ELSD delivers consistent and reliable performance across various purification workflows.

■ Simplified Operation via Remote Control

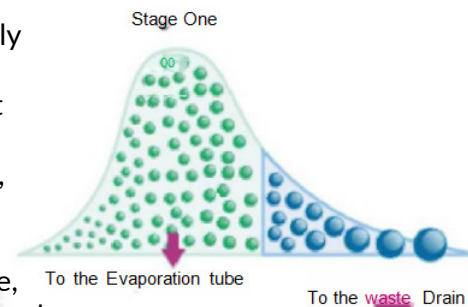
Featuring a user-friendly design, the system supports remote operation via the SepaBean™/ChemBeanGo app, enabling effortless monitoring and control for enhanced convenience.

How It Works: The Detection Principle

Step 1: Nebulization	Step 2: Evaporation	Step 3: Detection
<p>The eluent from the column is mixed with an inert gas and passed through the narrow orifice of a nebulizer, producing a uniform mist. This fine mist consists of mobile-phase droplets containing the target compound.</p>	<p>The nebulized eluent passes through a heated drift tube, where the mobile phase is evaporated. The solute molecules are isolated from the mist during this process and then directed into the detector's flow cell for analysis.</p>	<p>The stream of solute particles enters a flow cell equipped with a light source and a photodiode. The emitted light interacts with the solute particles, and the scattered light is captured by the photodiode, which converts it into an electrical signal for analysis.</p>
		

Low Temperature Detection

The SepaFlash™ FP LT-ELSD features a unique nebulization cell that selectively removes large droplets, which are harder to evaporate and increase noise. By discarding these droplets, the system operates at lower temperatures without compromising sensitivity (signal to noise ratio). The diagram shows how the nebulization cell filters droplets by size. Larger droplets are removed as waste, allowing only smaller ones to pass through the drift tube.



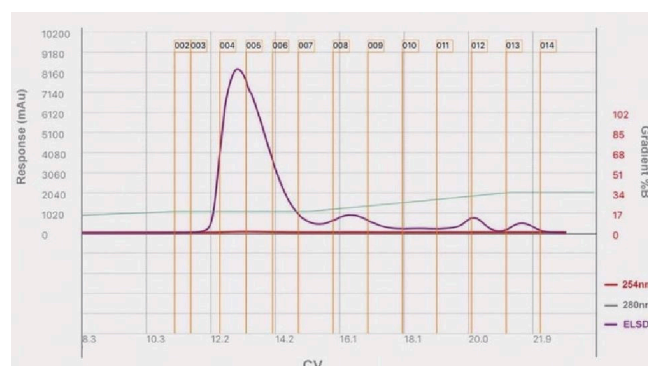
Unlike competitors' ELSDs, which require higher temperatures to reduce noise, this innovative design ensures optimal sensitivity, especially for semi-volatile and thermo-labile compounds. This droplet selection technology enables true low-temperature evaporation and superior performance across all applications.

Application Note

The chemical structure of a pharmaceutical intermediate called 2-oxaspiro[3.3]heptan-6-one is presented below. Due to its lack of UV absorption, this compound cannot be monitored in real-time using a standard UV detector during the flash separation process. However, an ELSD, as a universal detector, effectively meets this requirement.



2-oxaspiro[3.3]heptan-6-one



Parameters	Experimental Procedure	
Instrument	SepaBean™ machine T	
Flash Cartridge	12g SepaFlash™ Standard Series Flash Cartridge (irregular silica, 40 - 63 μm, 60 Å, PN: S-5101-0012)	
Detector	UV: 254 nm, 280 nm SepaFlash™ FP LT-ELSD	
Mobile Phase	Solvent A: Petroleum Ether Solvent B: Ethyl Acetate	
Flow Rate	System: 30 mL/min Split Flow for ELSD: 0.5 mL/min	
Sample Loading	600 mg	
Gradient	CV	Solvent B (%)
	0	0
	11	18
	15	18
	21	34
	24	34

Technical Specifications

Characteristics	Specifications
Detection	Photodiode
Light Source	Blue LED; Built-in Elapsed Time Counter
Temperature Range	Ambient to 100°C
Eluent Flow Rate	100 µL/min to 5 mL/min
Typical Sensitivity	100 ng
Analog Output	0 - 1 Volt
Gas Supply	Nitrogen or Air, 2.0 bar (less than 3 L/min)
Selection & Display	OLED Display and Keypad
System Control	Remote control by SepaBean™ & ChemBeanGo app
Dimension (W x H x D)	250 x 330 x 530 mm
Weight	15 kg (33 lbs)

Ordering Information

Item Number	Description
DMV10212	SepaFlash™ FP low temperature evaporative light scattering detector (LT-ELSD) stand alone
DMV10070	SepaFlash™ FP low temperature evaporative light scattering detector (LT-ELSD) and start kit
DMV10071	SepaFlash™ FP low temperature evaporative light scattering detector (LT-ELSD) start kit only including adapters, flow-splitter valve, and tubing
DMV10782	Nebulizer for SepaFlash™ FP LT-ELSD
DMV11433	Light Source for SepaFlash™ FP LT-ELSD
DMV10779	Glassware for SepaFlash™ FP LT-ELSD
DMV10776	Transparent plastic shield window for SepaFlash™ FP LT-ELSD
DMV11459	Drain tube assembly complete kit including fitting, seal, and tubing
DMV10780	Black plastic nuts (13 & 30 mm) kit, including seals for SepaFlash™ FP LT-ELSD