

# ELSD-LT II

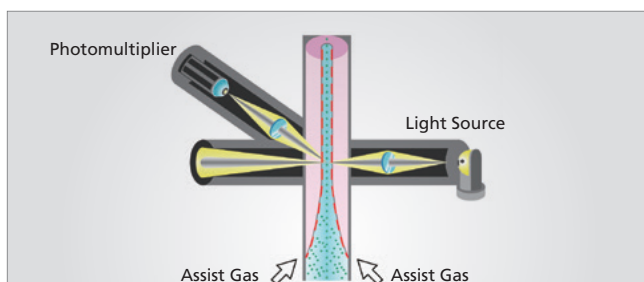
## Evaporative Light Scattering Detector



Not all compounds have a chromophore or other such structural property that allows the use of an absorbance detector. Refractive Index detection (RID) is one option but it suffers from the inability to run gradient analysis. Evaporative Light Scattering Detection (ELSD) is a perfect alternative to RID as it is more rugged, quicker to stabilize, and gradient compatible. ELSD is ideal for applications like testing the purity of compounds, measuring the molecular weight distribution of synthetic polymers, and analyzing natural substances.

### High Sensitivity by Low Temperature Evaporation

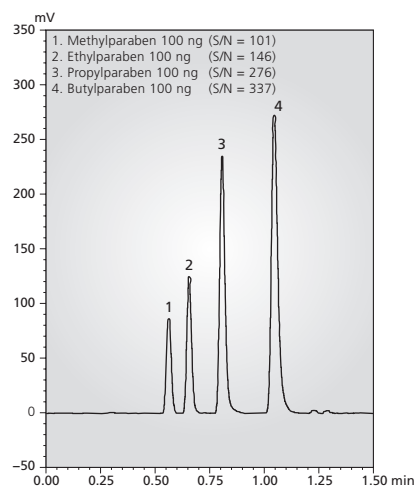
The ELSD-LT II detector uses a unique nebulizer and drift tube design to achieve stable and low-temperature evaporation of mobile phases, making it possible to analyze semi-volatile and / or thermally unstable compounds. High-sensitivity detection is achieved by focusing the sample at the detection point with assist gas flow. The ELSD-LT II offers high sensitivity with this low-temperature evaporation technology and superb detection technology. A smaller volume nebulizer and drift tube further improve sensitivity.



#### Assist Gas Functions

Before arriving at the detection point, target sample particles are gathered at the focus point of the light source by the assist gas. The assist gas is a unique flow path of the nebulizer gas that helps to reduce contamination in the detector cell. Since samples are not scattered at the detector cell, there is less contamination to the measurement system, and maintenance is easy.

Example of analyzing 4 semi-volatile alkyl parabens, considered difficult to analyze with conventional ELSD detectors.



#### Analytical Conditions

- Column: XR-ODS (75 mL × 3.0 mm I.D.)
- Mobile Phase: water / acetonitrile = 40 / 60
- Flow Rate: 1.0 mL/min
- ELSD: 27 °C, Gain: 12
- Sample: Parabens (each 100 ng)

### Automated Functions

Auto-Powerdown functions for the LED light source and nebulizer gas reduce operating costs. The self-cleaning design makes maintenance of the drift tube easier.

### Easy to Operate and Maintain

Simply set the temperature, gain and gas pressure and you are ready to measure. The long-life LED in combination with the included automated functions allows considerable operating lifetimes. The unique assist gas design feature reduces the need for detector cell cleaning by directing sample molecules out of the exhaust chimney.

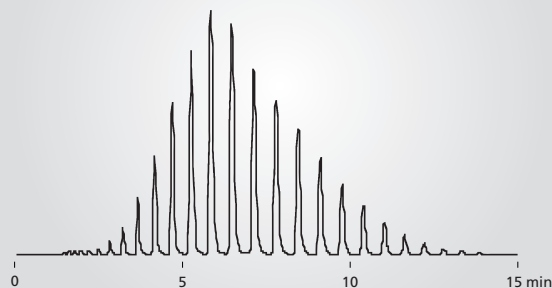
## Detects Most Compounds

With the exception of some highly volatile compounds, the ELSD-LT II is able to detect almost any compound. Unlike traditional absorbance detectors (UV-Vis, PDA, etc.), sensitivity is not dependent on the physical or structural properties of the compound, but rather the absolute quantity of the solute passing through the detector cell. Therefore, it is especially useful for detecting unknown or breakdown compounds and/or validating purity of a target compound. By this mechanism of detection the ELSD-LT II is truly a universal detector.

Note: Due to the evaporative nature of this detector, it must only be used in an area with proper exhaust ventilation.

### Analytical Conditions

- Column: Shim-pack VP-ODS (150 mmL. x 4.6 mmI.D.)
- Mobile Phase: Water/Methanol Gradient (60/40-40/60, 2 %/min)
- Flow Rate: 1 mL/min
- Temperature: 40 deg. C
- Sample: PEG-1000



Chromatogram of Non-Chromophoric Compound

## Specifications

Item	ELSD-LT II (228-45115-xx)
Measurement method	Light Scattering
Light source	LED
Detection	Photomultiplier Tube
Temperature setting range	Ambient to 80 °C
Nebulizer gas	Nitrogen (N <sub>2</sub> ) or Air (see Note 1)
Gas flow rate	Max. 3.0 L/min
Gas pressure	Max. 450 kPa
Mobile phase flow rate	0.2 to 2.5 mL/min (see Note 2)
Analog output	0 to 1 V
Operating temperature range	5 to 40 °C
Operating humidity range	<80 % (5 to 31 °C), <50 % (31 to 40 °C)
Power supply	AC 115 V, 230 V, 150 VA, 50/60 Hz
Size	W250 x D550 x H450 mm
Weight	20 kg

Note 1: Requires gas supply source, such as a gas line, nitrogen generator, or air compressor.

Note 2: 0.04 mL/min to 1.2 mL/min range when using a low-flow nebulizer.

## Detector and Accessory



ELSD-LT II



Gas Regulator



Shimadzu Corporation  
www.shimadzu.com/an/

Company names, product/service names and logos used in this publication are trademarks and trade names of Shimadzu Corporation or its affiliates, whether or not they are used with trademark symbol "TM" or "®". Third-party trademarks and trade names may be used in this publication to refer to either the entities or their products/services. Shimadzu disclaims any proprietary interest in trademarks and trade names other than its own.

For Research Use Only. Not for use in diagnostic procedures. The contents of this publication are provided to you "as is" without warranty of any kind, and are subject to change without notice. Shimadzu does not assume any responsibility or liability for any damage, whether direct or indirect, relating to the use of this publication.