Evaporative Light Scattering Detection (ELSD)

Teledyne Isco’s Evaporative Light Scattering Detectors improve the detection of compounds with little or no UV chromophore such as carbohydrates, steroids, lipids, and terpenes. Whether you are analyzing or simply purifying your compounds, these powerful detectors add greater detection sensitivity for your most complex separations.

Unlike UV detection alone, adding an ELSD to your existing LC system can provide near universal detection without changing your existing chromatographic methods.

How does it work?

The ELSD receives liquid eluting from the chromatography column. The fluid is nebulized using a stream of inert gas, forming an aerosol cloud of solvent droplets containing your compound.

The aerosol cloud is then evaporated, leaving particles of dried compound. A gas stream carries the particles to the detector.

Within the detector, a laser illuminates the gas stream. When compound is present, the particles cause the laser light to scatter, indicating its presence and creating a detector signal.

Why choose a Teledyne Isco ELSD?

The Teledyne Isco 330 and 340CF detectors offer advantages over other conventional ELSD systems:

- Patented technology precisely controls temperature to optimize analyte detection (see Figure 1)
- Flexible signal filter option reduces baseline noise, without affecting resultant peaks
- Straight drift tube and long life laser provide long-term reliability and require minimal maintenance
- Low gas consumption — compatible with almost any gas supply, (nitrogen recommended)
- Backed by Teledyne Isco’s sales and service professionals

* US Patent 7,290,723 B1
Model 340CF Preparative ELSD

This detector is a modular component solution for the unique needs of preparative chromatography, allowing you to confidently see compounds without chromophores.

An integral flow split system maintains a steady, 0.7 mL per minute flow stream over a wide range of flow rates and solvent compositions.

Although ELSD is a destructive technique, only a miniscule amount of compound is lost.

When used with UV-vis or All-wavelength detection on Teledyne Isco’s CombiFlash RF and CombiFlash Torrent systems, the 340CF gives you the most universal flash system available.

- Flexible - Easily configure the 340CF for preparative or analytical applications with a simple tubing change. The 340CF can be used with most prep systems having an external detector input.
- Scalable - Keep preparative compound purifications on scale from 50 mg to 300 g (Model 340CF).
- Modular - Share the detector among multiple instruments in your lab. Use either detector when you need it, where you need it.

Model 330 Analytical ELSD

The Model 330 is ideal for advanced research requiring extremely high sensitivity, high flow rates, or analysis of semi-volatile compounds. Filtering algorithm options allow use with conventional and fast HPLC systems. Store and quickly recall up to ten user-defined profiles to support a wide variety of analytical methods.

- Detection limits down to nanogram level
- Dynamic range of over 3 orders of magnitude
- Excellent reproducibility ~2% RSD
- Minimal peak dispersion for detecting closely eluting peaks
ELSD Specifications

### Dimensions (W x D x H)
9.8 x 18 x 11.5 inches (24.9 x 45.7 x 29.2 cm)

### Weight
25 lbs. (11.3 kg)

### Display
Two line, 20 character per line VFDL

### User Interface
Four multi-function keys

### Evaporative Zone Temperature
Ambient to 120 °C (248 °F)

### Thermo-Split™ Chamber Temperature
10 °C to 70 °C (50 °F to 158 °F)

### Liquid Flow Rate
- Model 340CF: 5 mL/min to 1 L/min
- Model 330: 0.2 mL/min to 5 mL/min

### Gas Requirements
65 psi ± 5 psi nitrogen or other inert gas

### Gas Consumption
~ 2.5 SLPM

### Operating Conditions
16 °C to 29 °C (60 °F to 85 °F) and < 90% R.H. non-condensing

### Electrical Requirements
Nominal 120 VAC, 50/60 Hz or Nominal 240 VAC, 50/60 Hz; 600 watts maximum

### Wetted Materials
Stainless steel, glass, anodized aluminum, PTFE, PEEK, Carbon

### Light Source
670 nm Laser Diode, < 5 mW

### Detector
Hermetically sealed photo-diode/operational amplifier

### Output Signal
- User selectable: 0 - 1V DC, 0 - 5V DC

### Interface
RS232, Contact Closure

### Ordering Information

**Model 340CF ELSD** for use with preparative chromatography systems of 5 mL/min or greater with self contained flow splitter pump for minimal sample loss. Includes connections for 1/8" OD tubing. Contact factory for cables for use with non-CombiFlash systems. .................................................................68-5237-062

**Model 330 ELSD** for use with analytical chromatography systems up to 5 mL/min. Unit is compatible with either 5V or 1V analog data systems. Compatible with 1/16" OD tubing. ..................................................................................68-5237-067

**Connection kit for Model 340CF to CombiFlash Torrent or systems using ¼" OD tubing.** .................................................................60-5247-021