



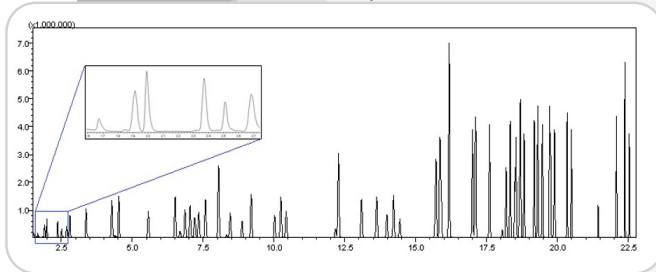
## **CDS 8500 Automated Purge and Trap Concentrator for GC-MS**

- Purge and Trap Concentrator with the Latest 3rd Generation Autosampler for EPA 8260 Water and Soils

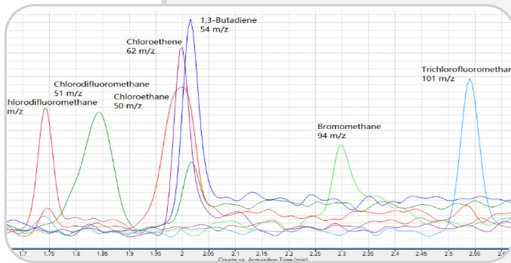
## Introduction

CDS Analytical is celebrating its 50th anniversary. CDS Analytical was founded by Dr. Eugene Levy in Nottingham, PA in 1969, and moved to its state-of-the-art Oxford, PA facility in 1981. Over the past 50 years, CDS Analytical has been expanding its core business from Analytical Pyrolysis to a full range of GC Sample Introduction methods, including Thermal Desorption, Purge & Trap, and Dynamic Headspace.

The CDS-8500 is now the latest installment in the Purge and Trap concentrator line having originated from the legendary 7000 series concentrator. Combined with a cutting-edge 3rd generation autosampler, the unmatched reliability and chromatographic resolution will make the 8500 a perfect fit for US EPA methods 524 (drinking water), 624 (waste water), and 8260 (soil and water).

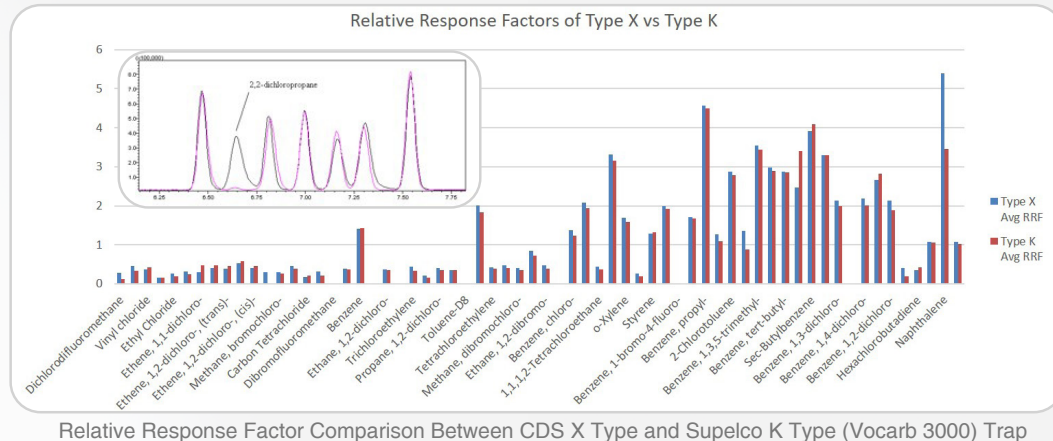


63 EPA 8260 VOC's at 20 ppb concentration



Detection limits as low as 0.2ppb

- Patented Foam Sensor
- Optional N<sub>2</sub> and He Dual Channel MFC
- Exceeds the EPA 8260C Method Requirements
- Silconert 2000 and PEEK Inert Coated Sample Pathway
- Proprietary Membrane-type Heater for Sparge Vessel
- 8-port Valco Higher Temperature Valve for Online Moisture Removal
- Proprietary X Type Trap Improves the Relative Response Factor Comparing to K Type Trap



## 8500C Purge and Trap Concentrator



1



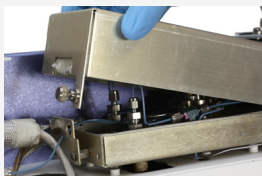
High temperature (350 °C)  
pneumatic 8-port valve

5



High temperature  
transferline (350 °C)

2



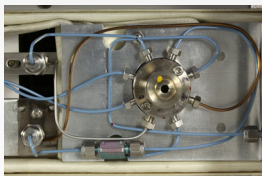
Insulated valve oven

6



Foam and back-flow  
sensor

3



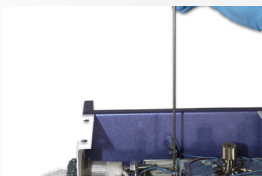
Silconert 2000 coated  
sample path

7



Active air-cooled trap  
with quick access  
compartment

4



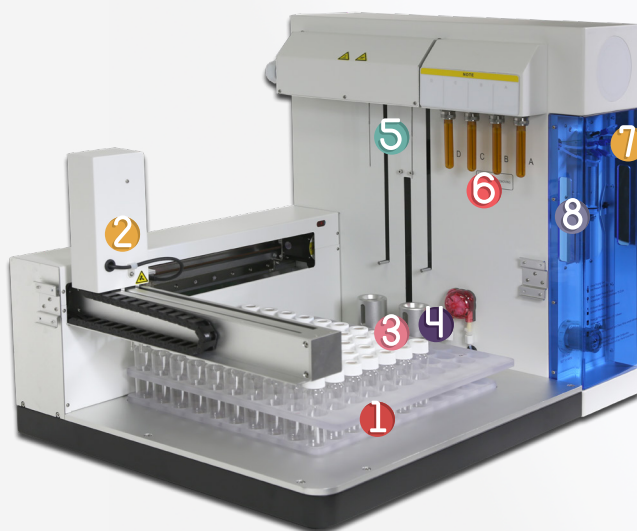
Proprietary Type X  
trap

8



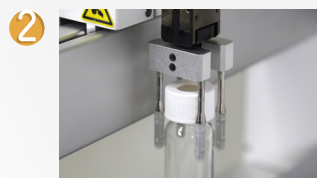
Quick release sparge  
door

## 8500A Purge and Trap Water and Soil Autosampler



1

110 Position Autosampler



2

4 Prong Gripper



3

Magnetic Stirrer  
for Water and Soil  
Samples



4

Independent Water  
and Soil Pathways



5

Separate Water  
and Soil Needles  
to Prevent Cross-  
Contamination



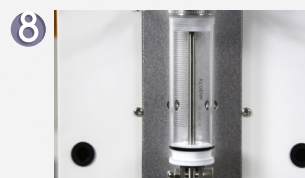
6

4 Channels for 2 Internal  
Standards and 2  
Surrogates



7

PEEK Sample  
Pathways



8

Precision Syringe for 5  
and 25 mL Samples



## Additional 8500A Features

- Optional Chiller Tray
- Built-In EPA Methods
- Automated Sample Dilution
- No Cold Spots and No Active Sites
- Automated Calibration Standard Preparation
- Pre-loaded Autosampler Calibration Coordinates
- Choice between Water Rinse and Methanol Extraction
- Equipped with EPC to Deliver a Precise, High Speed Injection for Internal Standards



## Product Specifications

### 8500A Max Temperatures

- Soil Needle Oven 180°C
- Soil Transferline 350°C
- Soil Cup 150°C
- Hot Water Rinse 95°C

### 8500C Max Temperatures

- Valve Oven 350°C
- GC Transferline 350°C
- Wet Trap 300°C
- Analytical Trap 300°C
- Sparge Vessel Heater 90°C

### 8500C option

- Dual N<sub>2</sub> and He MFC

## Product Dimensions

	Autosampler Dimensions	Concentrator Dimensions
Height	36" (91 cm)	20" (51 cm)
Width	21" (53 cm)	7" (18 cm)
Depth	24" (61 cm)	14" (36 cm)
Weight	80 lb (36 kg)	40 lb (18 kg)
Line Voltage	115V or 220V	

## 8500 User Interface



The screenshot displays the 8500 User Interface. On the left is a sidebar with navigation options: 8500, Method Editor, Sequence Table, Data Log, admin, Setting, and Configuration. The main area features a large image of the 8500 instrument. To the right of the image is a 'Communication status' section with a list of system health checks, each with a green checkmark indicating it is active or within range. Below this is a 'Module configuration' section showing the status of various modules. At the bottom right are buttons for 'System initialization' and 'Configuration'. The bottom status bar shows 'GC Run #:-', 'Autosampler:ide', 'Concentrator:Ready', and the date/time '2022/07/16 09:43:5'.

Section	Item	Status
Communication status	Autosampler communication established	COM5 ✓
	Concentrator COM port connected	COM4 ✓
System pressure status	Autosampler inlet pressure within range (≥15psi)	✓
	Concentrator inlet pressure within Range (≥15psi)	✓
Purge gas status	Concentrator idle flow within range, Readout as 10mL/min	✓
Module configuration	Soil module	Configured ✓
	Internal standard module	Configured, Pressure as 8.1 Psi ✓
	Sparger heater module	Not Available ✓

The homescreen of the 8500 uniquely provides real-time updates on system health for communications, system pressure, purge gas, and active module configuration.

### Method Editor / Water sample

New

Ready			Purge and Dry purge			Desorb			Bake		
Setting	Value	Unit	Setting	Value	Unit	Setting	Value	Unit	Setting	Value	Unit
Valve oven temp	150	°C	Sample volume	5	mL	Trap pre-desorb temp	245	°C	Trap bake temp	260	°C
GC transferline temp	150	°C	Vessel pre-purge time	0.5	min	Trap desorb temp	250	°C	Wet trap bake temp	260	°C
Trap ready temp	40	°C	Vessel pre-purge flow	40	mL/min	Trap desorb time	2	min	Trap bake time	8	min
Wet trap ready temp	50	°C	Vessel pre-heat temp	50	°C	Drain flow	250	mL/min	Trap bake flow	250	mL/min
System ready flow	10	mL/min	Vessel pre-heat time	11	min				Vessel methanol rinse	0	Time
Rinse water	<input checked="" type="checkbox"/> Heated		Vessel purge temp	40	°C				Vessel water rinse	1	Time
Rinse water temp	80	°C	Vessel purge time	11	min						
When "Heated" checked, Rinse water heated to "Set temperature". Otherwise, cold water rinse.			Vessel purge flow	40	mL/min						
			Trap dry-purge temp	40	°C						
			Trap dry-purge time	2	min						
			Trap dry-purge flow	200	mL/min						
			Water needle methanol rinse	1	Time						
			Water needle water rinse	1	Time						

Method Editor was water samples provides an interactive window to browse and change all the critical parameters needed for analysis. Once saved, this method is easily added to the 8500 dynamic sequence table.

## Method Editor / Methanol extraction

New

### Ready

Setting	Value	Unit
Valve oven temp	150	°C
GC transferline temp	150	°C
Trap ready temp	40	°C
Wet trap ready temp	40	°C
System ready flow	10	mL/min
Rinse water	<input checked="" type="checkbox"/> Heated	
Rinse water temp	80	°C
Soil cup temp	45	°C

When "Heated" checked, Rinse water heated to "Set temperature". Otherwise, cold water rinse.

### Purge and Dry purge

Setting	Value	Unit
Add methanol volume	10	mL
Stir speed	Med	▼
Stir time	2	min
Settle time	3	min
Vessel purge temp	40	°C
Vessel purge time	11	min
Vessel purge flow	40	mL/min
Trap dry-purge temp	40	°C
Trap dry-purge time	2	min
Trap dry-purge flow	200	mL/min
Water needle methanol rinse	1	Time
Water needle water rinse	2	Time

### Desorb

Setting	Value	Unit
Trap pre-desorb temp	245	°C
Trap desorb temp	250	°C
Trap desorb time	2	min
Drain flow	250	mL/min

### Bake

Setting	Value	Unit
Trap bake temp	260	°C
Wet trap bake temp	260	°C
Trap bake time	8	min
Trap bake flow	250	mL/min
Vessel methanol rinse	0	Time
Vessel water rinse	1	Time

Method Editor also has dedicated windows for water water rinsing and methanol extraction (shown above) as well.

## Configuration

Autosampler Concentrator Calibration Test System info

### Calibration

#### Vial #1

Vial #10  
Vial #110  
Water sample loading  
Soil sample loading  
Sample lift  
Syringe

### Vial #1 alignment

Fine tune steps

2

X arm

63

Y arm

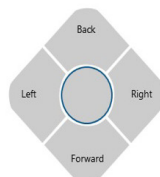
50

Z arm

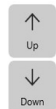
1120

Move Test

Save & Continue



Reset Open gripper



Z arm reset

A simplified calibration screen makes it easy to calibrate all the key positions on the 8500A autosampler. Each system is delivered pre-calibrated to eliminate the hassle of calibrating during installation.

CDS Analytical's 8500C focusing trap is made of stainless steel and inert coated to remove any active site. A laser printed arrow is marked on the body to show the trap direction in installation.



Part Number	Description	Inert Coating	Size
30E2-5113	Type X	Yes	1/8" x 11 1/4"
30E2-5114	Type K (Vocarb 3000)	Yes	1/8" x 11 1/4"
30E3-5063	Tenax TA	Yes	1/8" x 11 1/4"
30E3-5069	3% SP-2100/Tenax TA	Yes	1/8" x 11 1/4"



Thermal Desorption

Pyrolysis

Purge and Trap

**CDS Analytical Headquarters:**

465 Limestone Road P.O. Box 277 Oxford, PA 19363-0277 Tel: 800.541.6593 610.932.3636 [www.cdsanalytical.com](http://www.cdsanalytical.com)