

Model 4500

Mobile Ultra-Fast GC Analyzer

EST Part No. SYS4500C5 (DB-5 Column), SYS4500C6 (DB-624 Column)



Portable Gas Chromatography for Field Use

What is it?

The Model 4500 is a completely portable GC/SAW with an internal controller. Simple operating steps for automated results.

The 4500 is designed with an internal helium cylinder (refillable), and can use disposable helium cylinders. The lithium ion battery is rechargeable, typically lasting 5 hours.



How does it work?

Employing a trap and helium carrier gas, the Model 4500 injects samples into a heated column where separation is achieved. Materials sequentially exit the column and are deposited on the SAW detector. This deposition results in a change in the oscillating frequency of the resonator directly proportional to the mass.

Specifications

Analysis Time

- ≈ 5 – 60 seconds

Recycle Time

- ≈ 30 seconds minimum

Precision and Accuracy

- ≈ Standard Deviation <2%

Sensitivity

- ≈ Can analyze vapors in 10 seconds with sensitivity in parts-per-billion for many compounds
- ≈ Detects hydrocarbons in the range of C4 – C25. Sensitivity will vary by sampling time, matrix, interferences and detector temperature settings.

Sampling

- ≈ Internal Sample Pump
- ≈ Sample Introduction: ~.5 ml/second
- ≈ Time programmable: 1-300 seconds

Compound Identification

- ≈ Automatic with calibration

Mobility

- ≈ Integral handle and wheels

Dimensions

Head

- ≈ Weight 5.7 lbs 2.6 kg
- ≈ Length 12.5 in 31.8 cm
- ≈ Width 4.3 in 10.9 cm
- ≈ Height 6.8 in 17.3 cm

Support

- ≈ Weight 18.7 lbs 8.5 kg
- ≈ Length 15 in 38.1 cm
- ≈ Width 9.7 in 26.4 cm
- ≈ Height 5.8 in 14.5 cm

Charger

- ≈ Weight 7.7 lbs 3.5 kg
- ≈ Length 13.5 in 34.25 cm
- ≈ Width 9.7 in 14 cm
- ≈ Height 3.7 in 9.5 cm

Environmental Conditions

- ≈ Operating Temperature Range: 32° F to 105° F (0° C to 40° C)
- ≈ Relative Humidity: 0 – 95% non-condensing

Power

- ≈ Battery Pack: 28VDC, 16 AHr – Lithium-Ion (5 hr use typical)

Charger Power

- ≈ 100 – 127 VAC at 3 amps – 50/60 Hz
- ≈ 200 – 240 VAC at 1.5 amps – 50/60 Hz

Column Limits

- ≈ 35° C to 225° C – depending on column

Column Ramping

- ≈ Ramped from 0 – 18° C/second

Carrier Gas

- ≈ Helium (Min. 99.999% Purity, #6)
Typical usage: 300 tests per charge
- ≈ Helium (Replaceable Cylinder),
95cc at 17.6 MPz (2560 psi).
Typical usage: 200-300 tests

Detector

- ≈ Surface Acoustic Wave (SAW)
Quartz microbalance
- ≈ Dynamic Range: 10⁵
- ≈ Temperature: 0° C to 150° C,
programmable

Inlet

- ≈ Connection: Stainless Steel LUER inlet port
- ≈ Temperature: 50° c to 200° C

Data Storage/Transfer

- ≈ USB port for external memory