

Model 4300

Mobile Ultra-Fast GC



EST Part No. SYS4300C5 (DB-5 Column), SYS4300C6 (DB-624 Column)

Portable Gas Chromatography for Field Use

What is it?

The Model 4300 is a fully portable GC/SAW with all the capabilities of the Model 4200.

The 4300 is designed with an internal helium cylinder (refillable), and can adapt to use disposable helium cylinders. The lithium ion battery is rechargeable, typically lasting 6 hours.



How does it work?

Employing a trap and helium carrier gas, the Model 4300 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 compound 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 user calibration

Communications

- ≈ RS-232 between controller and 4300
- ≈ Bluetooth or RS-232, user selectable

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 12.5 in 31.8 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 is 300 tests per day on one helium 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: 2 x 10⁵
- ≈ Temperature: 0° C to 150° C, programmable

Inlet

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

System Controller Software

- ≈ Intel Pentium 100 MHz or better processor
- ≈ Minimum: 16MB RAM
1GB Hard Drive
- ≈ Microsoft Windows (any version)