Description

EKHO-EW-FID is based on the traditional design of a gas chromatograph to fit into a small case. The device ensures high-speed quantitative and qualitative analysis of organic compounds in gaseous and liquid samples, including those preconcentrated on sorbents, in laboratory and field conditions.

Gas chromatograph "EKHO-EW-FID"

The device is applicable for:

- High-speed on-stream analysis of natural gases and mineral oil at exploration, recovery and processing sites, ecological disaster sites, etc.
- Environmental monitoring of air, water and soil for the presence of organic compounds.
- Screening and monitoring of public transport, luggage and postings for the presence of certain organic compounds.
- Express-analysis of samples for the presence of organic compounds.

The device ensures creation and augmentation of databases for a wide range of substances being analyzed and maintenance of the archives of chromatograms. Organic compounds are identified automatically. The device makes it possible to take samples from out-of-the-way places. Data are displayed and processed using a PC/Windows Operating System. Developers of the EKHO GC series were awarded the Government Prize in 1997.

Technical specifications:

Flame ionization detector.
Sensitivity, g/s (for toluene): not worse than \(8 \times 10^{-11}\).
Operating temperature range, °C: +5 ... +40, up to +50.
Power consumption: triggering mode, 70 W; measurement mode, 25 W.
Dimensions: 500x135x330 mm.
Weight with accumulator: 14.9 kg.

Gas chromatography column: 20-cm high-speed multicapillary column or 60-cm Z-shaped column.

Sample injectors:
a) syringe injector;
b) concentrator injector;
c) automatic sample loop.

Gases used:
a) inert carrier-gas (nitrogen, argon, helium): built-in gas cylinder with a volume of 0.46 l; flow rate, 40 cm\(^3\)/min; pressure, 15 MPa; fast external gas cylinder connection.
b) hydrogen: built-in gas cylinder with a volume of 0.46 l; flow rate, 40 cm\(^3\)/min;
c) air: built-in compressor with easily regenerated air filter; flow rate, 300 cm\(^3\)/min.
**Power supply:**
   a) built-in accumulator PANASONIC LRC 12V 10PF; operation time at a GCC temperature of 100 °C: 3.5 h; 4 h in measurement mode;
   b) external DC source: output voltage from 11 to 15 V; rated power, 70 W; can operate from a car cigarette lighter panel or an accumulator of 12 V;
   c) external AC source: 220/115 V, 50—60 Hz.

**Technical and Economic Benefits**
- Low weight (2—10 kg less than that of available analogs);
- compact configuration;
- low power consumption;
- high sensitivity;
- high-speed response;
- remote sampling;
- easy to operate.

EKHO-EW-FID ensures high speed of analysis (several seconds) and low power consumption. It competes well with the analogs in all characteristics, but its cost is lower.

**Application areas**

**Development stage**
Individual production has been arranged.
The device is used in research laboratories for environmental monitoring. The type of the EKHO-EW gas chromatographs is authorized by the GOSSTANDART.

**Patent situation**
RF patents granted.

**Commercial offers**
Investment contract to commercialize the development (organize production). Production and supply contract. Contract for further research and development. Marketing agreement.

**Estimated cost**
Negotiated price.

**Contacts**
Trofimuk Institute of Petroleum Geology and Geophysics
Prosp. Ak. Koptyuga 3, Novosibirsk, 630090, Russia
Vladimir M. Gruznov, Deputy Director
Tel.: (383) 333-27-11
Fax: (383) 333-29-04
E-mail: Gruznovvm@ipgg.nsc.ru
http://www.ipgg.nsc.ru/