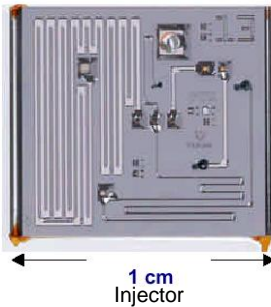


Chromatograph Components

The chromatograph contains an independent solid state sample injection, an analytical and reference column, column heater, temperature sensor and micro-chip thermal conductivity detector (TCD).

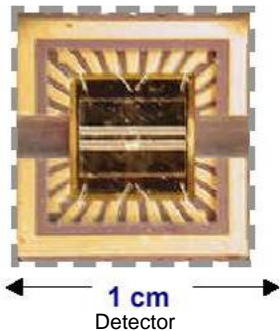
Injector



Sample injection quality is critical to analysis accuracy and speed. The chip injection and auto sampling of the TCD GC produces a small injection band ensuring sharper, faster gas elution and high resolution. The TCD Chip Injector includes the following:

- Silicon micro-machined.
- Software selectable injector volume.
- Sample size 1 - 10 μ l.
- Inject time 10 – 1000ms.
- 0.05% standard deviation on peak area precision.

Detector



The detector consists of four precisely matched nickel filaments (two sample and two reference) deposited on a silicon chip and housed in a ceramic package. The superior thermal conductivity characteristics of silicon provide six decades of linearity, detector warm-up time in seconds and high stability. Filaments are protected to ensure consistent operation and longevity. The filament voltage is reduced before they become overheated; a detector shut-off occurs if pressure drops. The TCD Chip Detector includes the following:

- Cell volume 200nl.
- Limit of Quantification 1ppm.
- Linearity 10⁶.
- Single range from ppm to percentage.

Column



Column

Analytical separation takes place in a capillary column positioned between the chip injector and chip detector. Datalog uses chemically bonded fused silica columns in general chromatographic applications, although they are interchangeable to meet the needs of special applications.

The capillary column is wound on special cage to ensure homogenous heating. This uniform heat exchange is essential to avoid cold spots that would cause peaks to broaden.

Specifications

Hydrocarbon Compounds	C1- C5, nC6 optional
Non Hydrocarbons	CO ₂ , N ₂ , O ₂
Units	PPM
Analysis Time	30s C5, 40s C6
Cycle Time	38s C5, 48s C6
Accuracy	+/- 5% reading
LOD & Resolution	1 PPM
LOQ	1 PPM
C1 saturation limit	100%
C1/C2 separation cp.	N/A
Method	Curve integration
Carrier	Helium
Column	2 x Micro-capillary
Temperature	3-180 °C
Pressure	7-50 psi
Flow	Injection on demand
Unit temperature range	5-40 °C