SCION INSTRUMENTS

A Techcomp Company

analítica Salvadoreña

GC 8300

GAS CHROMATOGRAPH

Specification Sheet

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DIMENSIONS AND WEIGHTS

Size*: Height: 57 cm (22.4 in.)
Width: 32 cm (12.6 in.)
Depth: 61 cm (24.0 in.)
Weight*: 26.8 kg (59 lb)
*Typical values

ENVIRONMENTAL CONDITIONS

Operating temperatures: 10 °C to 40 °C.
Operating humidity (relative): 5 % to 95 %
Line voltage requirements:, 120 V, 230 V (±10 % nominal)

COLUMN OVEN

Dimensions: 23 cm (w) x 11 cm (d) x 28 cm (h)

Temperature range:
- Ambient +4 °C to 450 °C
- Liquid N2: -100 °C to 450 °C
- Liquid CO2: -60 °C to 450 °C

Temperature program ramps/holds: 24/25
Maximum temperature ramp rate: 170°C/min for all voltages

Cool down rate: 400 °C to 50 °C in 4.5 minutes
Temperature set-point resolution: 0.1°C
Ambient temperature reject <0.01°C change in oven for 1°C change in ambient temp
Retention Time Repeatability <0.008% or < 0.0008 min, based on Pentadecane under temperature program conditions
Area repeatability < 1% RSD

GENERAL SPECIFICATIONS

Up to 3 EFC modules total, injector, detector and auxiliary
Optional backflush

GC Control:
- External events (digital output):
  – 8 standard
  – 8 optional, total 16
- Max number of timed events: 25
- Heated zones:
  – Standard 5
- Two power outlets 24V (1A max. each)

Temperature Range (°C)	GC 8300 Rates (°C/min)
50 - 70	170
70 - 115	105
115 - 175	80
175 - 300	55
300 - 450	35

METHODS

- Maximum stored internal methods: 50 (max. 30 alphanumeric characters)

Logging:
- Run log file (stored with the chromatogram when using CompassCDS)
- Error log file

Local Display:
- 10" High-resolution full-colour touchscreen
- Angle of the touchscreen on the GC can be adjusted to 3 different positions for adjusted view.

Languages:
- EnglishGB, EnglishUS, German, French, Italian, Dutch, Polish, Russian, Spanish, Portuguese, ChineseSC, ChineseTC, Korean, Thai, Vietnamese, Japanese.

Local automation:
- Method lines: 25
- Modes:
  – Infinite looping
  – Dual and duplicate injection

COMMUNICATION

Ethernet: Protocol: TCP/IP
Data rate: 100 Mbps
Control: GC control and method parameters

Analog output (optional):
- Number of channels: 1
- Time programmable steps: 30
- Output software selectable (set individual):
  – 0-1 V (default)
  – 0-10 V

Synchronisation signals with other devices & data systems:
- Ready in and out
- Start in and out

Data Handling and System Control:
- CompassCDS Chromatography Data System

CERTIFICATIONS

- CE
- UKCA
- TÜV SÜD NRTL Mark (US/Canada)
- FCC Part 15 Subpart B
- CAN ICES-003(A) / NMB-003(A)

INJECTOR OPTIONS

Maximum injectors: two, operating concurrently
Pneumatics: Electronic Flow Control (EFC), or manual

Injector types:
- S/SL Split/Splitless injector*
- PTV Programmable Temperature Vaporising*
- COC Cold On-Column injector*
- Flash injector
- PWOC Packed/ Wide bore On-Column injector

*Including septum purge

S/SL SPLIT/SPLITLESS INJECTOR

Pressure range: 0-150 psi

Total flow:
- 500 mL/min for N2/Ar
- 1500 mL/min for He/H2

Maximum temperature: 450 °C
Split range: 1-10,000 (column dependent)

Suited for columns:
Wide bore: (0.53 mm)
Narrow bore: (0.05 to 0.32 mm)

COC COLD ON-COLUMN INJECTOR

Pressure range: 0-150 psi
Total Flow: 50 mL/min (Type 23 EFC)

Temperature range:
- Ambient +10 °C to 450 °C using air cooling
- -60 °C to 450 °C using liquid CO_2 cooling
- -160 °C to 450 °C using liquid N_2 cooling

Maximum temperature: 450 °C
Maximum temperature ramp rate: 200 °C/min
Temperature ramps/holds: 24/25

Suited for columns:
- Wide bore (0.53 mm)
- Narrow bore (0.32 mm)

PTV PROGRAMMABLE TEMPERATURE

Vaporising Injector
Pressure range: 0-150 psi

Total flow:
- 500 mL/min for N2/Ar
- 1500 ml/min for He/H2

TEMPERATURE RANGE

- Ambient + 10 °C to 450 °C using air cooling
- -160 °C to 450 °C using liquid N2 cooling
- -60 °C to 450 °C using liquid CO2 cooling

Maximum temperature ramp rate: 200 °C/min
Temperature ramps/holds: 24/25
Split range: 1-10,000 (column dependent)

Operational capabilities:
- Large volume injection
- Temperature ramped splitless
- Cold on-column
- Split and splitless
- ChromatoProbe solid sample introduction optional

Suited for columns:
- Wide bore (0.53 mm)
- Narrow bore (0.05 to 0.32 mm)

Maximum injection volume: 250 µL (LVI mode)

FLASH INJECTOR

Pressure range: 0-150 psi

Total flow:
- 50 mL/min (Type 23 EFC)

Maximum temperature: 450 °C
Suited for columns:
- Wide bore (0.53 mm)
- Packed (1/8" to 1/4")

PWOC PACKED/WIDE-BORE ON-COLUMN

Pressure range: 0-150 psi

Total flow:
- 50 mL/min (Type 23 EFC)

Maximum temperature: 450 °C

Suited for columns:
- Wide bore (0.53 mm)
- Packed (1/8" to 1/4")

ELECTRONIC FLOW CONTROL: INJECTORS (EFC)

Module types: 2 injector-specific modules
Pressure: 0.1 % Full Scale
Resolution pressure set points is 0.001psi
Flow sensor accuracy 2% of measured or 0.2% of full scale
Flow sensor repeatability 0.5%

SAMPLE PRECONCENTRATION TRAP (SPT)

Trace level analysis of volatiles in gases
Fully integrated

Temperature range:
- -60 °C to 450 °C using liquid CO2 cooling
- -185 °C to 450 °C using liquid N2 cooling

Temperature rate:
- Ballistic heating for instant release of adsorbed volatiles. Typical heating rate 50°/sec.

Available traps:
- Two lengths - 8 and 30 cm
- A wide range of packing materials, including glass beads, Tenax and other specific adsorbents. Packing material may be customized

QUICK-SWITCH VALVE OPTION

Instantly switch between injectors/columns and detectors
Configurations: automated or manual, factory or field installed

DETECTOR OPTIONS

Maximum detectors: Two, operating concurrently (one of which is MS or external Detector)
Pneumatics: Electronic Flow Control (DEFC) or manual

Detector types:
- FID Flame Ionization Detector
- TCD Thermal Conductivity Detector
- ECD Electron Capture Detector
- NPD (TSD) Nitrogen-Phosphorus Detector
- PFPD Pulsed Flame Photometric Detector
- PDHID Pulsed Discharge Helium Ionization Detector
- MS Mass Spectrometry (see GC/MS brochure and datasheet)

Note: Data Acquisition Rate : 600Hz for all detectors, exception is the PFPD

FID FLAME IONISATION DETECTOR

Maximum temperature: 450 °C
Detectivity: 1.2 pg C/sec
Linear dynamic range: 10^7

FLAME TIP TYPE: CERAMIC (PATENTED)

Operational quality:
- Flame-out detection
- Auto re-ignition

TCD THERMAL CONDUCTIVITY DETECTOR

Maximum temperature: 450 °C
Detectivity: 300 pg/mL (Butane)
Linear dynamic range: 10^6

Operational quality:
- Filament protection
- Automatic bridge balancing

ECD ELECTRON CAPTURE DETECTOR

Maximum temperature: 450 °C
Detectivity: 7 fg/s Lindane
Linear dynamic range: 10^4
Radioactive source: 63Ni - 15 mCi (555 Mbq)

NPD (TSD) NITROGEN-PHOSPHORUS DETECTOR

Maximum temperature: 450 °C

Detectivity:
N: 100 fg N/sec (Azobenzene)
P: 100 fg P/sec (Malathion)

Linear dynamic range:
- N: 10^5
- P: 10^4

Operational quality: self-aligning bead

PFPD PULSED FLAME PHOTOMETRIC DETECTOR

Photomultiplier tube:
- S/P
- S/P/N

Maximum temperature: 450 °C

Detectivity:
- S: 1 pg S/sec (S/P tube)
- P: 100 fg P/sec (S/P tube)
- N: 20 pg N/sec (S/P/N tube)

Linear dynamic range:
S: 10^3
P: 10^4
N: 10^2
Up to 23 elements can be detected

PDHID Pulsed Discharge Helium Ionization Detector
Detectivity: 50 ppb (Methane)
Linear dynamic range: 10^4 (Methane)

Operational quality:
- Gold plated connections
- Welded column connections

DETECTORS (DEFC)

Module types: 6 detector-specific modules
Accuracy: ± 7 % set point flow
Resolution: 0.1 or 1 mL/min

Automation Options

8410 PRO AUTO INJECTOR

Sample capacity:
- 10 x 2 mL vials
- 6 x 5 mL vials
- 5 x 10 mL vials

Large solvent wash vial: 2 x 120 mL*
Dual and duplicate mode
Internal standard addition

Modes of operation:
- Liquid
- Ambient headspace*
- SPME (Solid Phase MicroExtraction)*
- Sample heating and cooling*

Pre-programmed modes of injection Syringes:
- 1 µL, 2 µL, 5 µL, 10 µL, 100 µL, 250 µL
- for liquid injection
- SPME

8400 PRO AUTOSAMPLER

Sample capacity: 100 x 2 mL vials
Large solvent wash vial: 2 x 120 mL*
Dual and duplicate mode
Internal standard addition

Modes of operation:
- Liquid
- Ambient headspace*
- SPME*
- Sample heating and cooling*
- Pre-programmed modes of injection

SYRINGES:

- 1µ L, 2 µL ,5 µL ,10 µL ,100 µL ,250 µL for liquid injection
- SPME

* Optional

PAL3 XYZ AUTOSAMPLER – LSI, RSI, RTC VERSIONS

Sample trays: two standard and expandable to four Tray types:
- 98 x 2 mL vials
- 200 x 1 mL vials
- 32 x 10 mL/20 mL vials
- 96-well plates

Dual and duplicate mode
Internal standard addition

Modes of operation:
- Liquid
- Heated headspace*
- SPME*
- ITEX*

Sample heating and cooling
Additional optional modules: further sample trays, microwell plate holders, wash station, SPME fiber bake-out station, dilutor, barcode readers, and flowcell

* Optional

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