

## **GAS CHROMATOGRAPHY AND MASS SPECTROMETER SPECIFICATIONS**

**ABC: P9,800,000.00**

### **GAS CHROMATOGRAPHY UNIT**

Oven Temperature	: ambient to 450°C
Sample Injection Unit Temperature	: max of 450°C
Injection Port Temperature	: max of 450°C
Programmable Temp Ramps	: at least 20 ramps
AFC Pressure Range	: at least 970 kPa

#### **Column Oven**

<b>Temperature range</b>	: Room temperature + 4 °C to 450 °C with a double-jet cooling system
Oven volume	: at least 13 L
Temperature accuracy	: set value (K) $\pm$ 1% (calibration at 0.01 °C)
Temperature deviation	: <2 °C max
Temperature variation coefficient	: <0.01 °C/ °C
Temperature program steps	: Up to 20 (cooling program possible)
Programmed rate setting range	: -250 to 250 °C/min.
Total time for all steps	: 9999.99 minutes max.
temperature set point resolution	: 0.1°C.

#### **Injection Units**

Maximum 3 independently temperature controlled injector units

#### **Detectors**

Four detectors can be installed simultaneously and individually temperature controlled.

### **MASS SPECTROMETER**

#### **INTERFACE**

Type	: Direct connection with capillary column
Temperature	: 50 °C to 350 °C

#### **ION SOURCE**

Ionization	: EI (Standard)
Temperature	: 140 to 350 °C
<b>Filament</b>	: <b>Dual rhenium coil type</b>

<b>Access to Filaments</b>	: <b>Front door access for easy maintenance by the user</b>
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Electron Energy	: 10 to 200 eV
Electron Current	: 1-300 $\mu$ A

## MASS ANALYZER AND DETECTOR

### Mass Analyzer

#### Mass Range

High-Speed Scan Control

#### High-Speed Scan Rate

Contamination prevention

Detector

Pump

### Vacuum system

Vacuum evacuation

Turbo molecular pump

Vacuum control

Column flow

Carrier Gas

: Metal quadrupole mass filter with pre-rod

: m/z 1.5 to 1100

: Advanced Scanning Speed Protocol

: 20000 u/sec

: Differentially pumped vacuum system  
With pre-rods

: Electron multiplier with low noise overdrive lens

: Turbo molecular pump differential  
exhaust system

: Differentially pumped system

: dual-Inlet differential vacuum system

: Fully Automatic

Up to 15mL/min (EI for He)

: Capable of Helium, Hydrogen and Nitrogen

## SOFTWARE

Measurement Mode

: Scan, SIM, FASST

(simultaneous Scan/SIM measurements)

### System Start-up

#### and Shutdown

Energy Savings

Method Wizard

: Fully-automatic with one-click button

: Ecology mode

: Smart SIM

(automatic SIM table creation)

AART (Automatic Adjustment of Retention Time)

: Similarity searches using retention indices

Up to 10 libraries can be configured

: Automatic (EI, CI, NCI)

: Accuracy control QA/QC function, instrument  
control system check function, user control  
security function

Measurement Data Control

: Optimal compound structure format for GLP

Maintenance Support

: MSNAVIGATOR

Report

: Flexible report creation, templates

## AUTO INJECTOR WITH AUTOSAMPLER

Sample injection method

: Liquid sample injection via special  
micro syringe and multifunctional auto sampler  
headspace

Sample volume

: 0.1~8.0µL, 0.1µL steps (using 10µL syringe)

Number of sample injections

: 1~99 injections per sample

Syringe speed

: 2 Modes: Fast and Slow

Plunger speed

: 3 Modes: Fast, Medium and Slow

Type of sample injection

: 3 Modes: Traditional, Solvent Flush And  
Solvent Flush with a Second Solvent

Injection volume linearity

: ±0.5%

**LIBRARIES INCLUDED:**

- 1 UNIT NIST MASS SPECTRUM LIBRARY
- 1 UNIT METABOLITES LIBRARY
- 1 UNIT FLAVOUR & FRAGRANCE NATURAL & SYNTHETIC COMPOUNDS GC/MS LIBRARY
- 1 UNIT PESTICIDES & ENVIRONMENTAL POLLUTANTS DATABASE
- 1 UNIT ANALYTIC SOFTWARE

## Accessories Included:

- GCMS Columns
  - Micropolar) column [n alkane], 2516[FAMES] (ID: 0.25 mm, L: 30m)
  - Highly-polar column 1466[FAMES], 1466[FAEEs] (ID: 0.25 mm, L: 30m)
  - Non-polar column (646[n-alkane] (ID: 0.25 mm, L: 30m)
- 1.5ml Sample Vial Set with cap & septum, 100 pcs/set
- Regulator for He and Argon Gas
- SUS pipe for He and Argon Gas, 5 meters each
- Initial Supply of He and Argon Gas
- Gas filter
- UPS 10KVA with 30 minutes back up time
- Headspace accessories
- Consumable kit for GC
- GCMS kit
- Table for the GCMS
- Commissioning of exhaust/ ducting system
- Warranty: 2 years on parts and services
- PM service: annual PM with replaceable parts
- Complete PC System, O/S: Microsoft Windows 10, Hard Disk Drive: 1 TB, Monitor: 21.5" LED Color monitor, Processor: i5, 4G RAM with Microsoft office
- Printer with continuous ink.

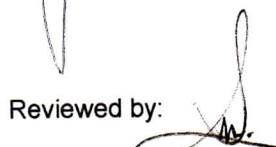

**FREE TRAINING & WARRANTY**

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