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C146-E372

Specification Sheet

GCMS-TQ8040 NX

Gas Chromatograph Mass Spectrometer

Smart Performance
Enabling highly sensitive simultaneous analysis of multiple components

Smart Productivity
Achieving superior productivity through dedication to efficiency

Smart Operation
Supporting easy creation of methods and data analysis

The fusion of these three Smart features makes this universal triple quadrupole GCMS applicable in any field, where it is sure to deliver the utmost in performance.

Gas Chromatograph

Model	Nexis™ GC-2030
Oven Temperature	Ambient + 2 to 450 °C
Retention Time Repeatability	＜0.0008min*1
Flow Control	Constant flow, constant pressure, constant liner velocity
Injection Port Temperature	Ambient to 450 °C
AFC Pressure Range	0 to 1035 kPa
Peak Area Repeatability	<1% RSD*1
Oven Ramp Rate	Max 120℃/min*2

Mass Spectrometer

GCMS Interface

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

Ion Source

Type	Front access for easy maintenance
Ionization	EI (standard) EI, PCI, NCI (option)
Filament	Dual, automatic switching with shield placed between filament and source box (patented)
Electron Energy	10 to 200 eV
Emission Current	5 to 250 µA

Vacuum System

Main Pump	Dual inlet turbo molecular pump 190 L/second + 170 L/second (He)
Fore Pump	Oil rotary pump, 30 L/minute (60 Hz)
Column Flow	10 mL/minute (He)

DI Probe (Option)

Temperature	Room temperature to 500 °C

Mass Analyzer and Detector

Mass Analyzer	Metal quadrupole mass filter with pre-rods
Collision Cell	UFsweeper™, 0 to 60 eV Argon collision gas
Mass Range	*m/z* 10 to 1090
Mass Resolution	0.4 to 3.0 u (FWHM)
Mass Axis Stability	±0.1 u/48 hours (constant temperature)
High-speed Scan Control	ASSP™: Advanced Scanning Speed Protocol
Scan Rate	20000 u/second (Q3 Scan)
Minimum Event Time	3 msec (maximum 333 scans/second)
Maximum Transitions	16 transitions/event
Maximum Events	2048 Events
Minimum Dwell Time	< 0.5 msec
Maximum MRM Speed	800 MRM transitions/second
Detector	Secondary electron multiplier with patented Overdrive Lens and conversion dynode 8×10^6 dynamic range

Software

[GCMSsolution™ Ver. 4]

Operation Modes:	Q1 Scan, Q3 Scan, Product Ion scan, Precursor Ion scan, Neutral Loss scan, Q1 SIM, Q3 SIM, MRM, Scan/SIM and Scan/MRM FASST (simultaneous Scan/SIM measurements)
Energy Savings:	Ecology mode
Insert Replacement:	Easy sTop
Method Wizard:	Smart MRM/SIM*[3] (Automatic SIM, MRM table creation) AART (Automatic Adjustment of Retention Time)
Library Search:	Similarity searches using retention indices (Compatible with multiple retention index groups) Up to 10 libraries can be configured
Instrument Tuning:	Automatic (EI, CI, NCI)
Quality Control:	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
Multisample Quantitation Assistance:	LabSolutions Insight™
Library (optional):	NIST, Wiley, FFNSC Library (Flavor and Fragrance)
Database (optional):	Smart Pesticides Database™ Smart Forensic Database™ Smart Metabolites Database™ Smart Environmental Database™
Semi-quantitative database (optional):	Quick-DB™ for residual pesticide analysis Quick-DB™ for forensic toxicological analysis Off-Flavor Analyzer
Composition Estimation (optional):	MassWorks

Demonstration of Performance

EI MRM IDL:

10 fg Octafluoronaphthalene *m/z* 272 → 222 IDL ≤ 4 fg

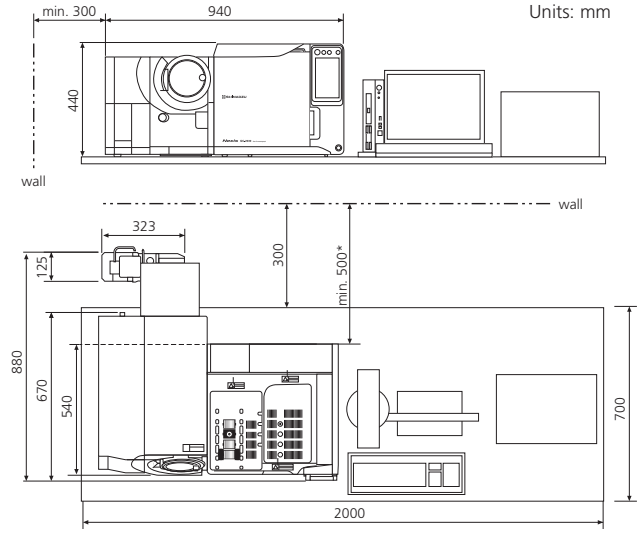
- IDL (Instrument Detection Limit) is statistically calculated from peak area repeatability of 8 times sequential analyses at 99% confidence level.
- Demonstration of Performance can be confirmed at installation upon request. IDL will be tested only with the auto injector.

Installation Checkout Criteria

EI Scan S/N:		
1 pg Octafluoronaphthalene	*m/z* 272	S/N ≥ 1500
EI MRM S/N:		
100 fg Octafluoronaphthalene	*m/z* 272 → 222	S/N ≥ 18000
CI MRM S/N:		
1 pg Benzophenone-d_{10}	*m/z* 193 → 110	S/N ≥ 2000
NCI SIM S/N:		
100 fg Octafluoronaphthalene	*m/z* 272	S/N ≥ 4000

Typical Installation

Weight: GC-MS unit 110 kg and auxiliary pump 10 kg



*[1] Auto Injector AOC-20i Plus; FID as the detector; tetradecane (2.5 ng to the column) split injection.
*[2] 230V type.
*[3] Smart SIM uses Excel®.

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