

## Specification Sheet

# GCMS-QP2020 NX

### Gas Chromatograph Mass Spectrometer



GC/MS is now a standard analytical technique used in a variety of fields. With each new development, requests for more cost-effective systems and improvements in the work-life balance of users grow. Dedicated to improving efficiency, the GCMS-QP2020 NX can assist any laboratory, regardless of its analysis focus, achieve its full potential.

### Gas Chromatograph

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

### Mass Spectrometer

#### GCMS Interface

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

#### Ion Source

Type	Front access for easy maintenance
Ionization	EI (CI models are capable of CI, and NCI models are capable of CI and NCI.)
Filament	Dual, automatic switching
Electron Energy	10 to 200 eV
Electron Current	5 to 250 μA

#### Mass Analyzer and Detector

Mass Analyzer	Metal quadrupole with pre-rod
Mass Range	<i>m/z</i> 1.5 to 1090
Possible setting of FWHM	0.4 to 2.0 u
Stability	± 0.1 u/48 hours (constant temperature)
High-Speed Scan Control	ASSP™: Advanced Scanning Speed Protocol
High-Speed Scan Rate	20000 u/sec
Minimum Measurement Interval	0.01 s (100 scan/sec maximum)
Detector	Electron multiplier with low noise overdrive lens 8 × 10 <sup>6</sup> (dynamic range)
Pump	190 L/sec / 170 L/sec (He) Turbomolecular pump differential exhaust system
Auxiliary Pump	30 L/min (60 Hz) oil rotary pump
Column Flow Rate	15 mL/min maximum (He)
Carrier Gas	Helium, hydrogen, nitrogen

#### DI Probe (Option)

Temperature	Room temperature to 500 °C
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## Software

[GCMSsolution™ Ver. 4]

<b>Measurement Mode:</b>	Scan, SIM, FASST (simultaneous Scan/SIM measurements)
<b>SIM Channels:</b>	64 channels × 128 groups
<b>Energy Savings:</b>	Ecology mode
<b>Insert Replacement:</b>	Easy sTop
<b>Method Wizard:</b>	Smart SIM* <sup>3</sup> (automatic SIM table creation) AART (Automatic Adjustment of Retention Time)
<b>Library Search:</b>	Similarity searches using retention indices (Compatible with multiple retention index groups) Up to 10 libraries can be configured
<b>Instrument Tuning:</b>	Automatic (EI, CI, NCI)
<b>Quality Control:</b>	Accuracy control QA/QC function, instrument control system check function, user control security function
<b>Measurement Data Control:</b>	Optimal compound structure format for GLP
<b>Maintenance Support:</b>	MSNAVIGATOR
<b>Report:</b>	Flexible report creation, templates
<b>Multisample Quantitation Assistance:</b>	LabSolutions Insight™
<b>Library (option):</b>	NIST, Wiley, Pesticide Library, FFNSC Library (Flavor and Fragrance), Drug Library
<b>Database (option):</b>	Method packages (EPA524, EPA525, residual pesticides in foods) Smart Pesticides Database™ Smart Metabolites Database™ Forensic Toxicological Database
<b>Semi-quantitative database (option):</b>	Quick-DB™ for residual pesticide analysis Off-Flavor Analyzer Simultaneous analysis database
<b>Composition Estimation (option):</b>	MassWorks

\*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®.

## Demonstration of Performance

### EI Scan S/N:

1 pg Octafluoronaphthalene	<i>m/z</i> 272	S/N ≥ 2000 (Helium carrier gas)
		S/N ≥ 300 (Hydrogen carrier gas)

### EI 20,000 u/sec Scan IDL:

1 pg Octafluoronaphthalene	<i>m/z</i> 272	IDL ≤ 500 fg (Helium carrier gas)
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- 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 (Helium carrier gas)

### EI SIM IDL:

100 fg Octafluoronaphthalene	<i>m/z</i> 272	IDL ≤ 10fg
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### CI Scan S/N:

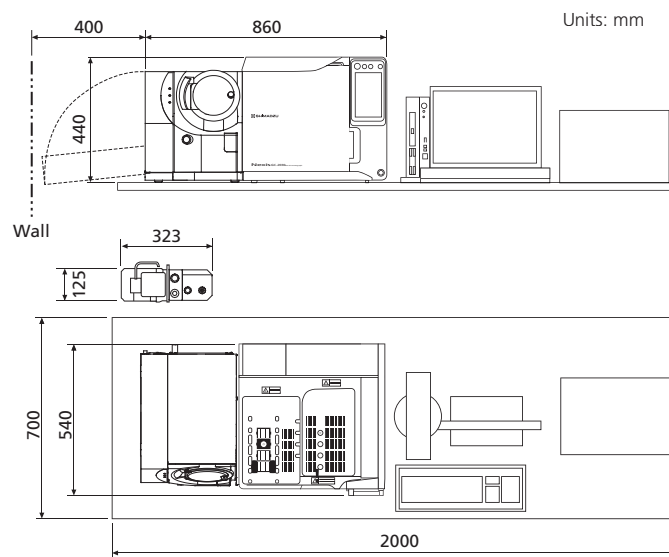
100 pg Benzophenone	<i>m/z</i> 183	S/N ≥ 1200
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### NCI Scan S/N:

100 fg Octafluoronaphthalene	<i>m/z</i> 272	S/N ≥ 1000
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## Typical Installation

Weight: GC-MS unit 85 kg and auxiliary pump 10 kg



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