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Product Name : Gas Chromatography mass Spectroscopy Triple Quadrapole GC-MS and MS	**Product Code :** LBNY-0001-500003

Description :

Gas Chromatography mass Spectroscopy Triple Quadrapole GC-MS and MS

Technical Specification :

The GC/MS/MS provides trace detection in complex matrices. MS/MS continues to replace SIM based applications by reaching lower detection levels and reliable identification while reducing the need for re-analysis in challenging matrices.
Maintain sample integrity while reducing analyte loss and decomposition from carrier gas introduction through detector.
It is a very important instrument in environmental /science/chemistry/toxicology.

The Triple Quad MS features:
One split flow air cooled vacuum turbo molecular pump evacuating the source and analyser
One vacuum pump
Rotary vane for line pump
Independently MS heated ion source
Chemical and electron-ionization modes (CI and EI) shall be available
Two high resolution, high stability quadrapole analyser MS1/MS2 plus pre filter to maximize resolution and transmission while preventing contamination of the main analysers
Innovative curved T-wave collision cell
A titanium coated inverted magnetron gauge fitted to the source to monitor the vacuum
Automated filament shut-off linked to pressure read backs to avoid filament burn-out

Low noise off axis long life photomultiplied detector
Independently GC heated GC/MS interface
Independently GC controlled collision cell gas flows
Low noise off axis Long life photomultiplied detector
Software controlled and key pad on instrument as an optional use as well
Two high resolution high stability quadrapole analyzers (MS1/MS2), plus pre filter to maximize resolution and transmission while preventing contamination of the main analyser
GC/MSMS-CI source system upgrade kit adds to the Triple Quad MS
EI/CI GC/MS interface

Scan speed
Shall have a maximum scan speed of 20,000 amu/sec

ES Source:
Equipped with an EI source as standard
One-click complete system shutdown for any routine maintenance
User changeable internal calibrant system as needed
Source temperature shall be limited to 250 oC to avoid excess fragmentation whilst retaining high chromatography performance
The EI filaments shall be long lasting, high efficiency yttrium coated so that they rarely require replacing

Gas purifier:
supplied with gas filtering module based on the collision gas
Collision cell
Innovative curved T-Wave or Hexapole collision system which blocks meta stable collision gas ion and neutral molecules reducing base line noise. The collision cell shall be assigned for optimal MS to MS performance at high data acquisition rates, with a minimal performance loss
A high efficiency, travelling wave device with beam focusing at ion entry, and exit must serve as the collision cell
Digitally controlled collision energy
Directly monitored Collision cell gas pressure in the range 1 x 10-4 to 1 mbar
Collision gas introduction, pump out and regulation must be under full data system control. Collision gas pressures and flows used during data acquisition must be automatically appended to the relevant data file

Collision energy:
Programmable collision energy to 120V
Filament Current Setting
Operable filament emission control from 0 to 1000 µA

Software and software feature:
Standard work station software with License.
The software shall include target application manager, mass spectral libraries, QC monitor and trend plot as standard
Designed to be easily accessible and will automatically perform source tuning, mass resolution and calibration from a reference compound. In addition, there are multiple health checks for filament setting, temperature, peak shape, peak resolution peak position, peak ratio and instrument vacuum
Automated MRM scheduling (Acquisition rate assignment): Dwell time, Inter-channel, delay time, and inter scan delay time for individual channels in a multiple MRM experiment can be automatically assigned (Using the auto Dwell feature) to insure that the optimal number of MRM data points per chromatographic peak is acquired
Qualitative analysis: shall be feature rich mass spec screening software for the confirmation of target or suspect compounds, and for the identification of unknown analyte.
Quantification method: a database for storing and sharing user defined GC/MRM acquisition method and associated processing method for the targeted quantification of named compounds/software shall be able to quantify analytes from environment, food, pharma, energy and forensic toxicology testing

Seamlessly integrating Software platforms with environmental, food and beverage, clinical research, forensic toxicology and other applications to extract the best possible information
Basic operation of GC-MS-MS should be controlled from the software having provision for automatic tuning. The MS-MS can be vented and pumped down from the interface for easy maintenance
Fully automated Data Acquisition, Peak Integration, Calibration, Quantification and QC calculations
Shall support semi-quantitative analysis with rapid screening of unknowns
Enabled Data archival and retrieval functions
Data Reporting Programming of customized analysis routines
System diagnostics software
System shall include an automated health check facility to check gas composition ratios that may indicate the presence of a leak
21 CFR part 11 compatibility or similar
With offline data analysis

MS LIBRARY:
NIST library–latest version with license (or equivalent) shall be supplied with the system
GC PART
Operating temperature: shall be ambient to 450 0C with set point resolution of 0.1 0C
Oven shall have a front display and control panel
Temperature ramp: 1 to 125 0C
Cryogenic cooling: from -80 to 450 0C with LN2 or CO2
Oven ramp shall support 9 oven ramps with 10 plateaus or better
Maximum temperature of oven: 450 0C
Maximum operating temperature for auxiliary zones: 300 0C
Pressure control: Pressure control of ±0.001psi for range of 0-150 psi
Split ratio range: 0-200 ml/min for Nitrogen gas and 0-1000 ml/min for Hydrogen or Helium
Oven cool down: 450 0C to 50 0C with in 4 min (3.5 min with oven insert accessory)

MS PART:
Mass stability
Instrument shall exhibit a mass drift of less than 0.1 Da in 24hrs
Linearity of response: Linearity of response relative to sample concentration, for a specified compound, shall be 6 orders of magnitude from the limit of detection

MS to MS/MS Switching:
Capable of acquiring data alternating between MS and MS/MS modes.
The time taken to switch between modes (inter-scan delay) prior to acquiring data in that each mode shall be no more than 3 ms

MRM/SIM Acquisition Times:
Capable of acquiring data in MRM or SIM mode using a minimum dwell time of 1ms per channel with inter-channel delay and the inter-scan delay set at 1ms without more than 20% loss in chromatographic peak height relative to an acquisition with dwell time of 10 ms and inter-scan delay of 10 ms

MRM Inter-Channel Cross Talk:
The inter-Channel cross talk between two MRM transitions shall be less than 0.001% (less than 10 ppm)
MRM sensitivity - Instrument Detection Limit (IDL)
The instrument shall have an Instrument Detection Limit (IDL) of less than 4 fg of OFN (octafluoronaphthalene)

MRM sensitivity (EI):
1 ?L of 10 fg/?L OFN shall give a chromatographic signal-to-noise greater than 1600:1, for the transition of m/z 272 >222

MRM sensitivity Positive Chemical Ionisation (PCI):
1 ?L of 100 fg/?L BZP (Benzylpiperazine) shall give a chromatographic signal-to-noise greater than 80:1, for the transition of m/z 183>105

Scanning sensitivity EI:
1 ?L of 1 pg/?L of OFN shall give a chromatographic signal-to-noise greater than 300:1 for the EIC of m/z 272 when scanning from m/z 50 to m/z 550
SIR sensitivity Negative Chemical Ionisation (NCI)
1 ?L of 100 fg/?L OFN shall give a chromatographic signal-to-noise greater than 2000:1

MS Resolution:
Automatically adjusted to desired resolution

Service Diagnostics:
Intelligent service delivery tools shall be built into the software and electronics provided with the instrument (to be activated/deactivated by a user) to enable remote secure web based GC/MS system monitoring, instant alert notification, and to provide a direct link to vendor technical experts to maximise system uptime and increase laboratory productivity
Fully compatible with wireless networking devices
Software tools provided that enable a suitably qualified service engineer to monitor and record voltage outputs from the MS electronics (e.g., gas flow, temperatures, and voltage read backs) without the need to access the electronics directly using a traditional hand-held voltmeter
The facility shall also enable instrument faults to be diagnosed remotely by the vendor via a web-based connection

Detectors:
FID and ECD detectors along with the mass analyzer
Vacuum pumps for Triple Quad GC/MS
Shall use two vacuum pumps to obtain the vacuum levels needed
One split flow air cooled vacuum turbo molecular pump evacuating the source and analyzer

One vacuum backing pump:
With oil drip tray
Rough pump oil
Integrated Gas Ballast and Safety Valve
Most of the vacuum system shall be automated

Autosampler:
Standard autosampler and one sample tray with minimum place of 100 vial of 2ml capacity

Safety:
The Triple Quad GC/MS and all electrical supplies shall conform at least to the following safety standards on Electromagnetic Compatibility (EMC) and Radio Frequency Interference (RFI):
International Electro technical Commission (IEC) 61010–1 or EuroNorm (EN) 61010–1 The 7000 or CISPR 11/EN 55011: Group 1, Class A, IEC/EN 61326 or AUS/NZ and certificate shall be delivered with the system

Carrier Gas:
Helium Purity 99.999% (Hydrocarbon free) with cylinder, and all accessories (Copper wire, Dual stage cylinder regulators and fittings)

Power requirement:
All electrical supplies shall be smooth, clean and free of line transients greater than 40V peak-to-peak and must meet the following tolerances:

For GC - with standard (current) heating rate: 220 ±10V, 50/60 Hz, 16 Amps

Accessories:
Carrier Gas Purification System
Copper wire & tubing with their fittings 60 meter
Leak detector including probe, extended flexible probe, range extension nozzle, probe clip and template, cable, AC power adapter/battery charger, battery, user manual, cleaning wipe, and carrying case suitable for 220 ±10V power)

MSD Tool Kit:
MS cleaning kit - 1 set
Driving tools kit full set - 1 set
Filament, for (EI) - 5 pcs
Filament, for (CI) - 5 pcs

MSD Accessories:
Nylon gloves, lint free, large - 10 pair
Nylon gloves, lint free, small - 10 pair
Lint free industrial wipes, 100% cotton - 100pk
Ion source cleaning kit - 15pk
Cloth, lint free - 15pk
Abrasive sheets, Aluminum oxide green lapping paper, 600 mesh - 5pk
Alumina powder, abrasive – 5pk
PFTBA sample, certified, 1ml – 10 vials
Cotton swaps - 100pk
Octafluoronapthalene (OFN) - 1ml ampoule

Vials:
2ml screw vial with caps, PTFE septa inside - 500pcs

Syringe:
10 ?L Syringe , fitted plunger for general purpose – 50 pcs

Septa:
11mm Bleed and Temperature Optimized Non-Stick Septa - 50 pcs
1mm Long-Life Non-Stick Septa - 50psc
11mm Green Non-Stick Septa - 50psc

Ferrules (For the GC/MS interface):
Blank, graphite-vespel - 20pcs
0.4-mm id, 85%/15%, for 0.20 and 0.25-mm id columns - 20pcs
0.5-mm id, 85%/15%, for 0.32-mm id columns - 20pcs
0.8-mm id, 85%/15%, for 0.53-mm id columns - 20pcs

Ferrules (For the GC inlet):
0.40-mm id, 90%/10%, for 0.25-mm id columns - 20pcs
0.47-mm id, 90%/10%, for 0.32-mm id columns - 20pcs
0.74-mm id, 90%/10%, for 0.53-mm id columns - 20pcs

Column Nuts:
MS interface column nut - 5pcs
Column nut for GC/MS ferrules – 5pcs
Tool, Wrench 1/4 inch to 5/16 inch - 1set

Liners:
Liner for split injection - 10pcs
Liner for splitless injection - 10pcs

Fuses:
Include appropriate fuses

Gas Chromatography mass Spectroscopy Triple Quadrapole GC-MS and MS, Gas Chromatography mass Spectroscopy Triple Quadrapole GC-MS and MS Equipments, Gas Chromatography mass Spectroscopy Triple Quadrapole GC-MS and MS Tools, Gas Chromatography mass Spectroscopy Triple Quadrapole GC-MS and MS Tool Kits, Gas Chromatography mass Spectroscopy Triple Quadrapole GC-MS and MS Manufacturers, Gas Chromatography mass Spectroscopy Triple Quadrapole GC-MS and MS Suppliers from India, China, Kenya