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GC-MS DW-EXPEC3750

Gas Chromatography-Quadrupole Mass Spectrometer

Introduction

DW-EXPEC3750 is a special-purpose detection and analysis instrument for laboratories based on the basic principle of Gas chromatography mass spectrometry. It adopts the advanced electronic flow pressure control system, microfluidic plate control technology, high-precision independent temperature control system, and high-sensitivity MS detector, meet the user's requirements for the capability, reliability, stability and advanced nature of instrument analysis.

Features

● Inherit the classic workstation without changing the usage habits

1. The workstation software inherits the classic operation interface, allowing the users not to change their usage habits.
2. The kernel uses Chinese language, which is specially designed for the Chinese users
3. With the batch processing function, the statistical analysis is automatically performed on sample data, to draw sample trend charts

● Multiple ion source configurations

1. Universal ion sources (EI and CI) are covered and flexible configuration for applications is realized
2. SIP high-sensitivity ion source is supported, the transmission lens design is optimized, and the ion transport efficiency is displayed, greatly improving the sensitivity
3. Color-coated inert metal material is used, to reduce complex matrix adsorption, and effectively extend the instrument time

● Durable and highly sensitive detector

1. The target ion flow passes through triple off-axis trajectories before reaching the electron multiplier, effectively shielding neutral interference and reducing the baseline noise
2. Highly durable electron multiplier effectively reduces the usage cost of mass spectrometer

Applications

Laboratory and vehicle-mounted scenarios:

With the excellent anti-seismic design, the DW-EXPEC3700 is easy to be deployed on the vehicle, free from the impact of bumps on the analysis results.

A vacuum environment can be created in an ultra-efficient manner for immediate measurement after the parking, saving the valuable time.

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Specifications

GC	
1. Chromatographic performance	
Peak area repeatability	**< 0.5%.**
Retention time repeatability	**< 0.008%.**
8-inch high-resolution full-color capacitive touch screen.	
Customized host control software based on the Android system, with the graphical interface in Cheese, full touch for operation, the UI also graphical, in combination with intelligent functions such as self-diagnosis reminder, self-leakage detection, etc., reducing the difficulty of use and maintenance, and for easily grasping of the status of the instrument.	
2. Column oven	
Temperature range applicable to all columns and their separation requirements.	
Room temperature	**Room temperature +4℃-450℃.**
Temperature setting accuracy	**≤0.1℃.**
Supporting 32 oven heating gradients,33 constant temperature platforms, and possible to realize programmed temperature rise and programmed temperature rise.	
Maximum hearting rage	**≥120℃/min.**
Oven cooling rate	**6 min from 450℃ to 50℃,at a room temperature of 20℃.**
Ambient temperature sensitivity	**1℃ change in ambient temperature, change in column oven average temperature <0.01 ℃.**
3. Electronic gas circuit control	
Standardized pressure and temperature compensation functions.	
Electronic pressure control with ruby damping, with pressure control accuracy at ± 0.001 psi.	
Pressure units are available in psi、kPa、bar；	
Programed pressure rise/flow rise	**Up to forth order.**
Supported carrier and makeup gas types	**N_2, He, H_2.**
Stability of carrier gas flow rate	**Less than1%/10 min.**
4. Injection port	
Supports installation of up to two injection ports.	
Fully electronic gas circuit control, supporting pressure compensation and temperature compensation.	
Injection port type	**Standard split/split less injection port, ultra-deactivated split/split less injection port.**
Compatible with all capillary columns(inner diameter:0.1mm-0.53mm) .	
Split ratio up to 12500:1 to avoid column overload.	
Supporting, split ,split less, pulse spilt, pulse split less injection and other injection modes.	
Maximum operating temperature	**450℃.**
Temperature setting accuracy	**≤0.1℃.**
Carrier gas saving mode, making it possible to reduce gas consumption without compromising chromatographic separation effects.	
Electronic septum purge flow control to effectively eliminate chromatographic ghost peaks.	
Flow control range 0-500mL/min(N_2),0-1000mL/min(H_2 or He).	
Injection port supporting ultra-deactivated processing, eliminating active sites on surface and improving detection sensitivity, peak shape and reproducibility of active substances.	
QMS	
1. Transfer-line	
Transfer-line temperature 50-400 ℃ without cold point.	
Ion-source	
Dual-filament high efficiency EI source, inert material.	
High sensitivity ion source with increased ionization efficiency.	
Positives/negative CI source.	
Emission	**0-300μA**
Ionization energy	**0-240eV**
Ion source temperature	**50-350℃.**

Ion source cleaning gas available with flow rate of 0-5sccm.	
Quadrupole	
High precision Mo quadrupole without temperature control.	
Pre-rod used to decrease fringing field effect and the contamination of the main rod.	
Mass range	1.5u-1200u
Mass Resolution	unit mass resolution
Mass Stability	±0.10u/48h
Sensitivity	Inert ion source：1pg（OFN），S/N≥1500：1 SIP: 100 fg（OFN），S/N≥300：1 NCI: 200 fg（OFN），S/N≥2000：1 PCI: 100 pg（BZP），S/N≥1200：1
Side-opening-board design. Maintenance of the ion source without the disassembly of the columns.	
2. Detector	
Long-life channel EM	
Triaxial ion path detector to decrease the influence of neutrals	
Dynamic range	$\geq 10^7$
3. Vacuum system	
Vacuum system of Mechanical pump and turbopump (250L/s of He)	
Vacuum lock system to decrease the time of vacuum condition setting up (10^-4Pa in 20min). Vacuum keeping under electricity outage.	