



Chromatec Crystal GC-MSD
Gas Chromatograph with Mass Spectrometry Detector

Chromatec Crystal GC-MSD Instruments

Chromatec's, unique GC-MSD solutions offer both unsurpassed sensitivity and unparalleled stability for a wide range of applications in any laboratory. The system can deliver the high-performance, throughput and accuracy at fair prices.

Chromatec Crystal is fully automated and has very easy for service design and user friendly software. Instrument features a wide range of accessories and compatible with all Chromatec's sample introduction systems.

Mass Spectrometry Detector:

Chromatec Crystal Mass Spectrometry Detector with standard electron Ionization (EI) mode, optional chemical ionization (CI) mode and optional Direct Probe System (DPS). Mass spectrometer has a new ion source designed with ADVIS technology providing better maintenance, sensitivity and resistivity against contaminations.

Gas Chromatograph:

Chromatec-Crystal 9000 (C9000) with possibility to use additional detectors/inlets and all Chromatec sample introduction products for GC: Liquid Auto samplers AS-2M and AS-2M(3D) and headspace sampler AS-2M(3D-HeadSpace). For GC specifications see GC datasheet XX-XXX-XXXX.

MSD Performance:

Key features

- New Ion Source with ADVIS Technology, with optimized ionization and ion beam focusing, provides the highest resistance to contamination, to minimize the instrument service for smooth and long workflow.
- Optional Inert Ion Source STD with minimal adsorption for Direct Probe System
- Highest levels of sensitivity
- Detection system with off-axis 10 kV dynode and long-life electron multiplier (standard)
- S-way detection system with a higher dynamic range, ion detection efficiency and lower noise from neutrals. S-way detection system based on off-axis High Energy Dynode assembly.
- Easy replaced ion source and detector components. In a few minutes and without any tool.
- Operation modes: Scan, SIM, simultaneous Scan and SIM, timed acquisition SIM
- Tune modes: Auto, Fast, Manual, DFTPP/BFB and others
- Start Delay possibility for increasing filaments life
- New high efficiency MS data processing for the best mass peak detection and identification
- Vacuum gauges: Pirani gauge for fore-vacuum (standard) and Ion high vacuum gauge (optional)
- Integrated Leak Test
- Glass window for observing filament operation
- Dual reagent gas for CI (software-switchable, digital flow control)
- Optional Hydrogen Kit
- Column Fast Switch & backflushing options available for connecting 1 column or 2 columns (to be integrated into GC)

MSD General Specification:

Ionization mode:	EI (CI – option)
Ion Source Filament:	Double
Mass Range:	1.4 – 1200 u
Mass Resolution:	0.5 to 2.0 u (FWHM)
Electron Energy:	Adjustable from 0 eV to 170 eV (241.5 eV – optional)
Max Scan Speed:	20000 u/s
Mass Stability:	± 0.1 u/48 h
Ion Source Temperature:	up to 350 °C
Transfer Line Temperature:	up to 400 °C
Vacuum System:	Turbo molecular pump: 84, 240, 300 L/s (N2)
Mass Filter type:	Single Quadrupole with pre-filter
Dynamic Range:	8.0 x 10 ⁶
Sample Introduction:	From GC (standard) or Optional Direct Probe System (DPS)

Sensitivity:

EI mode. Signal-to-Noise ratio (1uL injection of 1pg/uL OFN)	>2500:1
Scan Mode. Scanning from 50 to 300 u	
EI mode. Signal-to-Noise ratio (1uL injection of 1pg/uL HCB)	>1500:1
Scan Mode. Scanning from 50 to 300 u	
PCI mode. Signal-to-Noise ratio (1uL injection of 100pg/uL Benzophenone)	800:1
Scan mode. Scanning from 80 to 230 u-	
NCI mode. Signal-to-Noise ratio (2uL injection of 100fg/uL OFN)-	2000:1
Scan Mode. Scanning from 50 to 300 u-	
Instrument Detection Limit (IDL) ₇ (8 sequential Splitless injections, 100fg OFN, m/z 272)	<10 fg (typically less than 5 fg)

Data System:

Communication Interfaces:	LAN Ethernet (standard), USB Remote Start to GC 10 inch LCD Touch Screen (optional)
Control, Data Acquisition and Analysis Software:	Chromatec Analytic © for GC-MS Originally developed software to provide a full control of all the instruments manufactured by Chromatec, not only gas chromatograph and mass spectrometry, but also a range of peripherals (liquid sampler, thermal desorber, headspace sampler). Chromatec Analytic SW is the powerful tool for data processing starting from basic features, like peak integration and calibration, versatile tools for quantification, MS data processing, report generation, as well as customized features for particular applications and tuning.
Libraries:	<ul style="list-style-type: none"> • NIST 2017. EI library: 306k spectra, NIST MS Spectra Search, AMDIS deconvolution software. • Wiley Registry 11th Edition • Mass Spectral and GC Data of Drugs, Poisons, Pesticides, Pollutants and Their Metabolites (Pfleger-Maurer-Weber library) • Others

Environmental Conditions:

Ambient Operating Temperature:	from 10 to 35°C
Relative humidity:	not more than 80 %
Atmospheric pressure	from 84 to 107 kPa
Storage Temperature (in the package):	from -50 °C to 40°C
Power Requirements:	220/230 VAC ±10%, 50/60_Hz
Power consumption GC:	GC-: 2500 W (max at heating), 700 W (average at isotherm)
Power consumption MSD:	900 W (max), 450 W (average)

Other specification:

GC Dimensions: (WxDxH);	520 mm x 590 mm x 540 mm
MSD Dimensions: (WxDxH);	350 mm x 650 mm x 500 mm
Weight GC / MSD:	49 kg / 48 kg

Safety and Certification:

Products designed and manufactured under regulations of GOST R ISO 9001 quality standard.
At electromagnetic compatibility the chromatograph meets the requirements of IEC 61326-1.
Structural safety of the chromatograph meets to requirements of GOST IEC 61010-1, GOST IEC 61010-2.
CE Conformity Certificate approves the compliance of the instrument with essential safety requirements of the following EC New Approach Directives: 2004/95/EC Low Voltage Directive, 2004/108/EC EMC Directive.
European harmonized standards used for the conformity assessment:
EN61326-1:2013, EN 61010-1:2010, EN 61010-2-081:2002/A1:2003

Information and technical specification in this publication are subject to change without notice.

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