

MAX300-LG

Product Note GP-210G

Extrel® MAX300™ -LG Gas Analyzer

The MAX300-LG Benchtop Gas Analyzer is the latest system in the Extrel family of high performance quadrupole mass spectrometers. It is designed with the high sensitivity, resolution and flexibility to meet the challenges of the research laboratory, and the ruggedness and reliability required on the production floor.

The MAX300-LG is unique in that it offers two separate software packages: the **Merlin Automation™ Data System**, a research software package or the **Questor 5** process control software package. Merlin Automation's fast data acquisition, full control of system hardware such as ion optics, and powerful macro programming language make the MAX300-LG a powerful and flexible mass spectrometer tool for research and development. Equipped with Questor 5 software, the MAX300-LG provides unlimited stream selection and component analysis, making it perfect for on-line production or quality control applications. If required, the analyzer can be configured with both user interfaces.



The Extrel MAX300-LG is the perfect analyzer to take a product through every stage of the process, from research to final test. The benchtop system comes standard with a four (4) port valve, Yttria-coated Iridium filaments, heated ionizer, and vacuum gauge. Options such as a stainless steel or aluminum cart, corrosive pumping package, or low pressure inlets are also available to accommodate your application needs. Please contact Extrel for a complete list of available configurations.

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Hardware Specifications:

Mass Analyzer:	3/4" (19 mm) High Transmission Quadrupole Mass Filter
Operating Frequency:	1.2 mHz
Mass Range:	2 - 250 amu standard, 2 - 300 amu optional
Detectable Components:	Any gas or vapor with a molecular weight or fragment ion within the mass range
Upper Detection Limit:	100%
Lower Detection Limit:	For components with no interference Faraday: 10 parts per million (ppm) Electron Multiplier: 10 parts per billion (ppb)*
Dynamic Range:	Dual Faraday/Multiplier: 8 orders of magnitude (10 ⁸)
Filaments:	Two, one active and one spare with automatic switchover for continuous operation

*As documented on trace analysis of benzene in air

MAX300-LG Applications

Pharmaceutical

Ambient Air Monitoring ■ Dryers/Vacuum Dryers
Feedstock Purity ■ Fermentation Headspace
Lyophilizer Monitoring ■ Solvent Recovery
Waste Water Analysis

Semiconductor/Gas Production

Ambient Air Monitoring ■ Argon in Oxygen
Scrubber/Burnbox Efficiency
UHP Gas Impurities ■ Waste Water Analysis

Petrochemical

Ambient Air Monitoring ■ Bench Scale Reactors
Catalysis Research ■ Pilot Plants



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Installation Requirements:

Recommended Power Supply: 110 VAC, 50/60 Hz, 10 Amp circuit
220 VAC, 50/60 Hz, 10 Amp circuit

Output Power: Nominal: 700 Watts, Maximum: 770 Watts

Ambient Temperature: 55°F to 80°F (13°C to 27°C)

Relative Humidity: 0-90% noncondensing

Area Classification: General Purpose

Analyzer Weight: Approximately 165 lbs (75 kg)

Analyzer Dimensions: Height: 23.5" (60 cm), Depth: 19.0" (49 cm), Width: 26.5" (68 cm)

Merlin Automation Data System Software:

Control Unit: Information and control is transmitted and displayed via RS232 to a PC with Microsoft Windows® XP operating system

Analysis Mode: Scan Mode or Single Ion Monitoring (SIM)

Analysis Rate: Maximum 80 microseconds per sample in Scan Mode
Typically 5 milliseconds per ion in SIM mode

Number of Ions: Up to 72 ions with 20 scan segments

Analog Inputs/Outputs: 10 or 20 channel, 12 bit, 0 to 10V or -10V to +10V Outputs
6 differential Analog Inputs 12 bit -10V to +10V

Digital Inputs/Outputs: 8 Inputs, 8 Outputs, 16 User Selectable Input/Outputs (all I/O's 1 bit TTL)

External Communications: Not Supported

Questor 5 Process Control Software:

Control Unit: Information and control is transmitted and displayed via RS232 to a PC with Microsoft Windows® XP operating system and Internet Explorer® browser

Security: Meets government requirements for electronic records as defined in 21 CFR 11

Analysis Rate: Typically 400 milliseconds per component

Analysis Precision: +/- 0.0025 absolute, based on a 1% Argon concentration with no interferences

30 Day Analysis Stability: +/- 0.005 absolute, based on a 1% Argon concentration with no interferences

Number of Components: Unlimited

Masses per Component: Unlimited; allows multivariate analysis

Sample Streams: Unlimited

Scanning Mode: Capable of scanning user selected mass ranges or the full analyzer mass range

Analog Outputs: 10 or 20 channel, 12 bit, 0 to 10 Volt or -10V to +10V Outputs

External Communications: Ethernet, Bi-directional modbus RTU or TCP/IP, OPC and Analog Outputs

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