

Chrysalis® II LC/MS Nitrogen Generator



"LCMS M-4"

Description

The Chrysalis® II LC/MS M-4 Nitrogen Generator is specifically designed to deliver the larger capacity flow rates required for LC/MS instrument operation. The Chrysalis® II LC/MS M-4 utilizes an integral membrane based system to transform standard compressed air into a continuous stream of high purity dry nitrogen. The LC/MS M-4 can produce flow rates from 1 Lpm up to 30 Lpm, with purities ranging from 96 to 99.9%. An optional PUR-Gas™ UHP purification system is available to increase outlet nitrogen purity to 99.9999%, for flow rates up to 20 Lpm.

The Chrysalis® II LC/MS M-4 Nitrogen Generator incorporates an integral oil-free direct drive air compressor system to continuously supply the air to the gas generator inlet. Caster wheels for floor mobility are standard.

The design of the Chrysalis II® LC/MS M-4 Nitrogen Generator is based on hollow fiber membrane technology. Pressurized air is directed through a series of hollow fiber membrane tubes where, due to their high diffusion rates, oxygen, water vapor and carbon dioxide molecules diffuse rapidly out of the stream through the membrane walls. Nitrogen, which has a low diffusion rate through the membrane, is predominantly retained inside the membrane flow stream.

The first membrane stage eliminates most of the moisture and oxygen from the air stream. The pre-purified nitrogen then passes through a second membrane stage where more moisture, water vapor and carbon dioxide are removed. In the delivery stage, the nitrogen stream passes through a third membrane for final purification.

The nitrogen pressure out of the third membrane stage is then elevated from 45 psig to a standard discharge pressure of 115 psig. Operating the membranes at a lower initial pressure and then boosting the pressure downstream results in extending membrane



"LCMS M-0"

life compared to traditional designs that utilize a single compressor to operate throughout the entire pressure range. This also serves to extend the operating life of the air compressor components and significantly reduces routine maintenance requirements and costs.

The LC/MS Nitrogen Generator is also available without an integral air-compressor (the M-0 model) and operates from an external compressed air source. The Chrysalis® II LC/MS M-0 is capable of producing flow rates up to 60 Lpm. The LC/MS M-0 model is compact, lightweight, economical and is wall mountable.

Applications

- Nebulizing gas for LC/MS and ELSD instruments
- Purge and drying gas for ICP instruments
- Carrier and make-up gas for GC-ECD instruments
- Make-up gas for GC-NPD instruments
- Compatible for use with Atmospheric Pressure Chemical Ionization and Electrospray Ionization interfaces
- Specific solvent evaporations
- Low purity purge gas requirements

Product Features

- Flow capacities range from 1 Lpm to 60 Lpm
- Warranty is 2 years or 8,000 hours of operation (whichever occurs first)
- Flow control valve allows variable flow rates and nitrogen purity levels (M-4)
- Pressure indication provided for the outlet nitrogen supply
- Integral Oxygen Sensor monitors purity (M-4)
- Integral oil-free direct drive air compressor for "turn key" operation is standard (M-4)
- Caster (self-locking) wheels provide mobility for installation (M-4)
- Optional PUR-Gas™ purifier increases N₂ purity to 99.9999%
- Power cord included
- CE & CSA Approved



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Operating and Physical Specifications

Nitrogen Flow Rate:
 Nitrogen Purity:
 Nitrogen Outlet Pressure (max):
 Pressure Drop:

M-4 Model

1-30 Lpm
 96-99.9%
 115 psig
 none
 none
 1/4" FPT
 none
 Yes
 < 58 dB
 110 VAC / 60 Hz
 230 VAC / 50 Hz
 12"W x 27"H x 35"D
 204 lbs
 2-years (or 8,000 hrs of operation)

M-0 Model

1-60 Lpm*
 98-99%
 132 psig
 8 psig (25 Lpm)
 13 psig (60 Lpm)
 1/4" NPT
 1/4" NPT
 65/145 psig
 No
 < 45 dB
 none
 none
 11"W x 32"H x 5"D
 70 lbs

***Note: To determine air requirements, the M-0 model requires a compressed air volume at the inlet of approximately '8' to '10' times that of the desired nitrogen volume (flow). Consult factory for assistance.**

Nitrogen Purity Flow Chart (M-4 model)

Purity, %	99.9	99.7	99.5	99.3	99.1	99	98	97	96
Flow, Lpm	1-8	12	13	15	17	19	25	28	30

Ordering Information

Model Number	Description	Flow Capacity
LCMS-M430-AC60	Nitrogen Generator With Air Compressor, 60Hz	0-30 Lpm
LCMS-M430-AC50	Nitrogen Generator With Air Compressor, 50Hz	0-30 Lpm
LCMS-M025	Nitrogen Generator Without Air Compressor	1-25 Lpm
LCMS-M060	Nitrogen Generator Without Air Compressor	1-60 Lpm
PUR-0232	Optional PUR-Gas™ LC/MS Purification System	0-20 Lpm
CTG-0055	PUR-Gas™ LC/MS Purifier Replacement Cartridges	
M430-FILT-KIT	Annual Internal Filter Replacement Kit (M-4 Model)	
M430-O2-SEN	Oxygen Analyzer Replacement Sensor (M-4 Model)	
M025-FILT-KIT	Annual Internal Filter Replacement Kit (M-0/25 Lpm Model)	
M060-FILT-KIT	Annual Internal Filter Replacement Kit (M-0/60 Lpm Model)	



PUR-Gas™ LC/MS Nitrogen Gas Purification System.
Unique 2-Position System achieves 99.9999% hydrocarbon removal
of the nitrogen gas produced from the LC/MS Nitrogen Generator.

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