

Nitrogen Generators

for LC/MS



Nitrogen on Demand, up to 228 lpm

The Parker Balston membrane nitrogen generators can produce up to 228 lpm of pure LC/MS grade nitrogen at pressures up to 8 bar. Generators are complete systems engineered to transform standard compressed air into a safe regulated nitrogen supply with minimal operator attention.

Typical applications include LC/MS, LC/MS/MS, nebuliser gases for APCI and ESI, ELSD, Turbo Vaps and chemical solvent evaporation. The membrane nitrogen generators have been tried and tested by all the major LC/MS manufactures.



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Product Features:

- Recommended and used by all major LC/MS manufacturers
- Eliminates inconvenient nitrogen dewars from the laboratory
- No electrical requirement, no noise, no moving parts
- Phthalate-free, no organic vapours
- Can supply up to 6 LC/MS from one generator
- Utilises Parker's propriety membrane technology



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Nitrogen is produced by utilising a combination of filtration and membrane separation technologies.

A house supply of compressed air is filtered by high efficiency coalescing filters to remove all contaminants down to 0.01 micron.

Unique proprietary hollow fibre membranes then separate the air into a concentrated nitrogen stream

Membrane technology offers some unique performance benefits for LC/MS users including phthalate-free

nitrogen, silent operation, no moving parts and no electrical requirements. 10,000's of systems are installed worldwide.

Principal Specification

Model	N2-14	N2-22	N2-35	N2-45	N2-80	N2-135
Purity	Up to 99.5 %	Up to 99.5 %	Up to 99.5 %	Up to 99.5 %	Up to 99.5 %	Up to 99.5 %
Phthalate-free	Yes	Yes	Yes	Yes	Yes	Yes
Hydrocarbon-free	Yes	Yes	Yes	Yes	Yes	Yes
Flow Rates	Up to 34 lpm	Up to 50 lpm	Up to 75 lpm	Up to 114 lpm	Up to 171 lpm	Up to 228 lpm
Inlet Pressure	7 to 10 bar	7 to 10 bar	7 to 10 bar	7 to 10 bar	7 to 10 bar	7 to 10 bar
Ambient Temperature	10 to 35 °C	10 to 35 °C	10 to 35 °C	10 to 35 °C	10 to 35 °C	10 to 35 °C
Inlet Connection	1/4" NPT	1/4" NPT	1/4" NPT	1/2" NPT	1/2" NPT	1/2" NPT
Outlet Connection	1/4" NPT	1/4" NPT	1/4" NPT	1/2" NPT	1/2" NPT	1/2" NPT
Electrical Requirements	None	None	None	None	None	None
Number of LC/MS*	Up to 1	Up to 2	Up to 3	Up to 4	Up to 5	Up to 6
Dimensions (H x W x D)	1270x400x400mm	1270x400x400mm	1270x400x400mm	1700x610x510mm	1700x610x510mm	1700x610x510mm
Weight (Shipping)	30 Kg (34)	42 Kg (46)	48 Kg (52)	104 Kg (114)	104 Kg (114)	104 Kg (114)

*Based on 25 lpm at 7 bar LC/MS

Ordering Information

Description	Model Number
Nitrogen Generator for up to 1 LC/MS	N2-14
Nitrogen Generator for up to 2 LC/MS	N2-22
Nitrogen Generator for up to 3 LC/MS	N2-35
Nitrogen Generator for up to 4 LC/MS	N2-45
Nitrogen Generator for up to 5 LC/MS	N2-80
Nitrogen Generator for up to 6 LC/MS	N2-135
Installation Kit for N2-14, N2-22, N2-35	IK7572
Installation Kit for N2-45, N2-80, N2-135	IK75880

Maintenance Items	Model Number	Change Frequency
Maintenance Kit for N2-14, N2-22, N2-35	MK7572C	6 Months (Kit contains 1 year supply)
Maintenance Kit for N2-45, N2-80, N2-135	75478	6 Months (Kit contains 1 year supply)
Carbon Tower for N2-45, N2-80, N2-135	75344	6 Months



Nitrogen Generators

for GC and General Lab Applications



Parker domnick hunter nitrogen generators are suitable for a wide range of laboratory applications, from purge gas for ICP-OES instruments to applications where purity is less critical such as ELSD, GC make-up gas, NMR sample spinning and Circular Dichroism.

All generators employ proven durability pressure swing adsorption (PSA) technology to deliver best in class life expectancy. The technology uses carbon molecular sieve to remove oxygen, carbon dioxide and moisture from a compressed air supply to produce laboratory grade nitrogen.

An integrated oil-free compressor is optional, but all generators provide nitrogen at purities ranging from 98% to 99.999% (or better). Zero Nitrogen and Nitrogen and Air generators are also available for more specific GC applications



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Features:

- **Integral oil-free compressor (optional)**
- **Fully regenerative, proven durability PSA technology**
- **Soundproofed compressor box**
- **Simple installation**
- **Compact**
- **CE, UL and CRN approved**
- **Global manufacturing support**

Benefits:

- **Improved instrument performance**
Guaranteed consistent nitrogen purity improves stability and ensures greater reproducibility of results
- **Low and stable gas supply costs**
- **Security of supply**
An optional integral oil-free compressor removes the reliance on dedicated compressed air supplies
- **Reduced health and safety risks**
No manual handling of high pressure gas bottles or storage issues
- **Space saving**
Fits under bench
- **Peace of mind**
Service contracts and extended warranty available
- **Expert advice**
Over 20 years experience of PSA system design

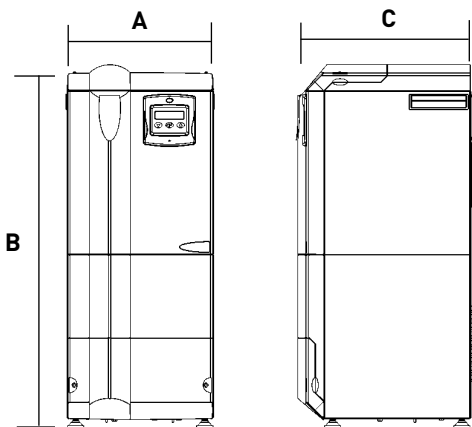


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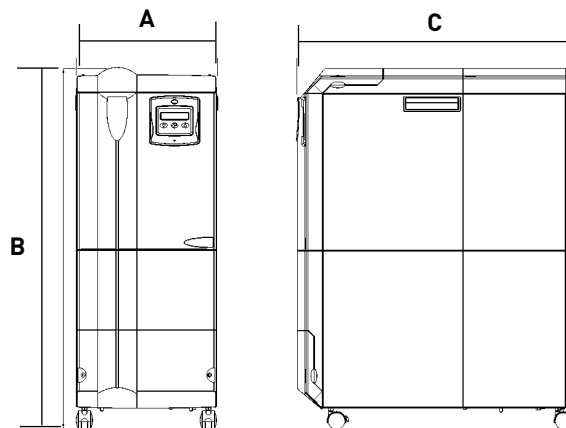
Technical Specifications

Models	Flowrate L/min	Purity % O ₂	Connections BSP		Voltage Vac	Dimensions mm			Weight kg	
			air inlet	gas outlet		A	B	C	without compressor	with compressor
Nitrogen										
G1	0.55	10 ppm	1/8"	1/8"	110/230	345	842	413	52	56
	0.75	10 ppm								
G2	1.5	10 ppm	1/8"	1/8"	110/230	345	873	663	77	90
	3.0	10 ppm								
G3	2.5	100 ppm	1/8"	1/8"	110/230	345	873	663	71	83
	4.0	0.1								
	5.0	0.5								
	7.0	1								
G4	8.0	2	1/8"	1/8"	110/230	345	873	663	77	90
	5.0	100 ppm								
	6.0	0.1								
	10.0	0.5								
	12.5	1								
	14.0	2								
Zero Nitrogen										
G5	1.0	10 ppm	1/8"	1/8"	110/230	345	842	413	51	55
N₂ & Dry Air										
G6	N2: 0.6	10 ppm	1/8"	1/8"	110/230	345	842	413	54	58
	Air: 1.5	-55°C adp		1/8"						
G7	N2 : 3.0	10 ppm	1/8"	1/8"	110/230	345	873	663	80	93
	Air: 3.0	-55°C adp		1/8"						
Dry Air										
G8	3.0	-55°C adp	1/8"	1/8"	110/230	345	842	413	50	54
G9	6.0	-55°C adp	1/8"	1/8"	110/230	345	842	413	50	54

G1/G5/G6/G8/G9 models



G2-G4/G7 models



For more information on extended warranty and preventative maintenance contract availability, please contact your local Parker domnick hunter sales office or log on to www.domnickhunter.com/scientific

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High Flow Nitrogen Gas Generators

for General Laboratory Applications



Parker domnick hunter MAXIGAS nitrogen generators provide a cost effective and convenient nitrogen supply for laboratories having a high nitrogen demand.

MAXIGAS generators provide a safe and cost-effective alternative to cylinders and liquid bulk supplies. The generators are designed to deliver nitrogen at purity levels from 3% to 10 ppm oxygen content and are ideal for supplying nitrogen both to multiple laboratories or to notoriously high flow applications such as solvent evaporation or multiple-bank LC/MS instrument installations



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Features:

- **Robust Carbon Molecular Sieve media**
- **Continuous automatic operation**
- **High-efficiency re-pressurization technique**
- **Purities from 3% to 10 ppm oxygen content**
- **Modular design**
- **Compact**
- **Built in oxygen analyzer**
- **Fully comprehensive service contracts available**
- **CE and UL approved**
- **Global manufacturing support**

Benefits:

- **Reduced gas costs**
No on-going gas costs. No rental, refill, order processing or delivery charges
- **Increased safety**
No high pressure gas storage, no manual handling of tanks or cylinders
- **Long lifetime**
Robust, completely regenerative media
- **No downtime**
No interruption to analyses for cylinder or dewar changes or house gas outage
- **High efficiency**
Standby mode and re-pressurization techniques reduces energy consumption
- **Expandable**
Easy expandable if your gas requirements increase
- **Guaranteed gas quality**
Visible verification of nitrogen purity for high reproducibility of results
- **Local support**
Expert advice and support in your local time-zone



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Technical Information

Parker domnick hunter MAXIGAS nitrogen generators are available in a large number of sizes and purities. Please refer to the table below for performance summaries.

The MAXIGAS MIDI range offers the scientist a compromise between the lower flow laboratory range of nitrogen generators and the larger flow MAXIGAS range. These units are

available either with or without an integral oil-free compressor.

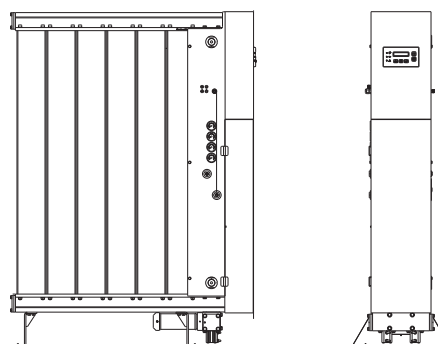
Technical Specifications

Nitrogen outlet flowrate – Nm3/hr (ATP) v Oxygen Concentration												
Model	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	10ppm	100ppm	500ppm	0.1%	0.5%	1%	2%	3%
MAXIGAS												
MAXIGAS 104	1895	550	692	334	2.0	3.2	8.1	8.9	14.1	17.8	21.9	25.8
MAXIGAS 106	1895	550	861	442	3.0	4.8	12.1	13.4	21.2	26.6	32.8	38.7
MAXIGAS 108	1895	550	1029	550	4.0	6.4	16.2	17.9	28.3	35.5	43.8	51.6
MAXIGAS 110	1895	550	1198	658	5.0	8.0	20.2	22.4	35.3	44.4	54.7	64.5
MAXIGAS 112	1895	550	1368	766	6.0	9.6	24.2	26.8	42.4	53.3	65.7	77.4
MAXIGAS 116	1895	550	1765	982	7.9	12.8	30.7	34.0	53.7	67.5	83.2	98.1
MAXIGAS 120	1895	550	2043	1192	9.9	16.0	37.2	41.2	65.0	81.7	100.7	118.7
MIDIGAS												
N2MID350	1100	590	600	145	0.6	1.0	1.4	1.6	2.6	3.1	4.0	n/a
N2MID351*	1100	1180	600	305	0.6	1.0	1.4	1.6	2.6	3.1	4.0	n/a
N2MID600	1100	590	600	180	0.9	1.5	2.2	2.6	3.9	4.6	6.1	n/a
N2MID601*	1100	1180	600	340	0.9	1.5	2.2	2.6	3.9	4.6	6.1	n/a

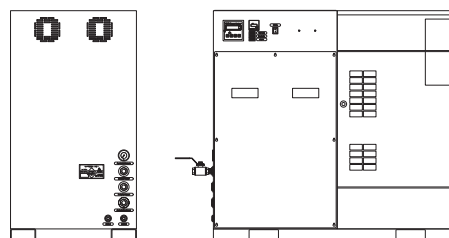
Performance data based on 6 barg air inlet pressure, 20°-25°C ambient temperature. Consult Parker domnick hunter for performance under other specific conditions. *with intergrated compressor

Ambient temp. range	5°-50°C
Nitrogen outlet pressure	5 barg MAXIGAS MIDI 5-16 barg MAXIGAS
Min. air inlet pressure	6 barg
Max. air inlet pressure	9.5 barg MAXIGAS MIDI 18 barg MAXIGAS
Inlet air quality	Dewpoint: -40°C (-40°F) Particulate: <0.1micron Oil: <.01 mg/m3
Electrical supply	220V/1ph/50Hz or 110V/1ph/60Hz
Inlet/outlet connections	G ¹ / ₂ MAXIGAS MIDI Air G1/N2 G ¹ / ₂ MAXIGAS

MAXIGAS



MAXIGAS MIDI



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Nitrogen Generators

for Agilent 6410/6510 LC/MS Instruments



The Parker domnick hunter LCMS 6410 nitrogen generator is designed specifically to satisfy the complete nitrogen gas requirements of the Agilent 6410 triple quadrupole and 6510 Q-TOF mass spectrometer without the need for secondary gas purification.

Utilising proven pressure swing adsorption technology the LCMS 6410 is the only gas generator system available on the market today capable of supplying the required flow rates of low purity nebulising grade nitrogen and high purity nitrogen for use in the collision cell from a single self contained unit.

Models of the LCMS 6410 nitrogen generator featuring an integral oil-free compressor give increased security of supply, completely removing the reliance on external air supplies.



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Features:

- **Suitable for supplying both nebulising and collision cell gas**
- **Integral oil-free compressor**
- **Fully regenerative, proven durability PSA technology**
- **Phthalate-free componentry**
- **Soundproofed compressor box**
- **Digital interface**
- **CE, UL and CRN approved**
- **Global manufacturing support**

Benefits:

- **Low and stable gas supply costs**
Payback in less than 18 months
- **Reduced Health and Safety risks**
No manual handling or high pressure gas storage
- **Effortless operation**
A total gas supply solution at the push of a button
- **Security of supply**
Integral oil-free compressors removes the reliance on dedicated compressed air supplies
- **Improved instrument performance**
Guaranteed consistent nitrogen purity improves stability and ensures greater reproducibility of results
- **Peace of mind**
Service contracts and extended warranty available
- **Space saving**
Fits under bench
- **Expert advice**
Over 20 years experience of PSA system design



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Technical Information

The Parker domnick hunter LCMS 6410 nitrogen generator employs totally regenerative carbon molecular sieve / pressure swing adsorption technology to produce both the high purity and low purity nitrogen streams required by the Agilent 6410 triple quadrupole and 6510 Q-TOF mass spectrometers.

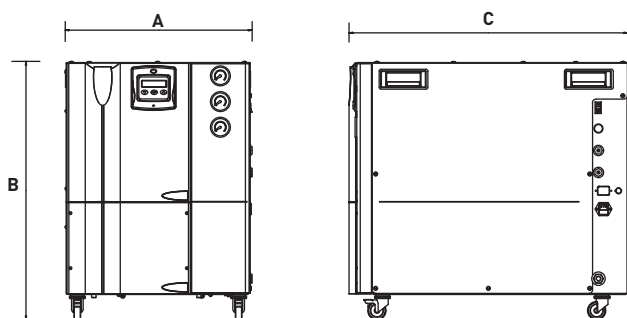
Having proved its fitness for purpose in thousands of installations worldwide for over two decades, this technology offers many advantages over membranes employed in other generators. These benefits include a significantly longer service life, a more consistent purity of gas and a better compressed air to nitrogen

ratio. The improved compressed air to nitrogen ratio not only results in a more energy efficient solution, with the ongoing benefit of lower energy costs, but also means that the compressors used to produce the compressed air can be smaller making them both quieter and less expensive to replace.

Technical Specifications

Model	Drying / Nebulising Gas		Collision Cell Gas		Connections BSP		Voltage ac	Dimensions mm			Weight kg
	Flowrate L/min	Purity % O ₂	Flowrate MI/min	Purity ppm O ₂	Air inlet	Gas outlets		A	B	C	
LCMS 6410-0	18	0.5	20	10	1/4"	1/8"	110/230	510	705	559	89
LCMS 6410-1	18	0.5	20	10	-	1/8"	110/230	510	705	826	129

LCMS 6410



To ensure optimum performance and longevity of your LCMS 6410 nitrogen generator, Parker domnick hunter recommends the following service kits be used as part of a preventative maintenance program:

230 Vac Models

Model	4000 hours	8000 hours	24000 hours	Also required at 24000 hours if no compressor fitted
LCMS 6410-0	60 627 2251	—	60 627 2255	1off 60 627 2257
LCMS 6410-1*	60 627 2251	60 627 2253	60 627 2255	—

110 Vac Models

Model	4000 hours	8000 hours	24000 hours	Also required at 24000 hours if no compressor fitted
LCMS 6410-0	60 627 2251	—	60 627 2263	1off 60 627 2265
LCMS 6410-1*	60 627 2251	60 627 2261	60 627 2263	—

* with integral compressor

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