



VICI DBS GENERATORS

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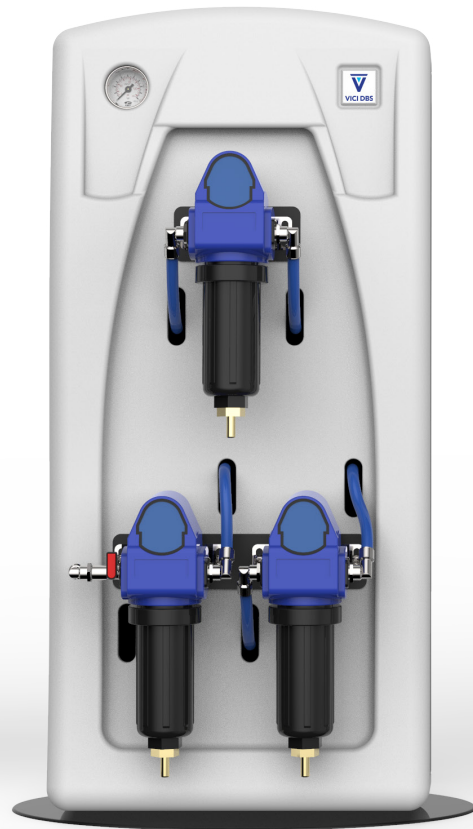
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WHISPER-0 & MINI WHISPER NITROGEN GENERATOR

 **VICI
DBS**
www.vicidbs.com



DESCRIPTION

The VICI DBS® Whisper-0 nitrogen generator can produce up to 120 L/min of high purity LC/MS grade nitrogen at pressures up to 8 barg (116 psig). These generators are engineered to transform standard compressed air into a safe regulated nitrogen supply with minimal operator attention and maintenance. Nitrogen is produced by utilizing a combination of filtration and membrane separation technologies. A standard supply of compressed air is filtered by high efficiency coalescing filters to remove all contaminants down to 0.1 micron. A unique proprietary membrane then separates the air into a concentrated nitrogen stream.

Membrane technology offers many unique performance benefits for LC/MS users including phthalate free nitrogen, silent operation, no moving parts and no electrical requirements. The generators can be installed directly in the laboratory with the Whisper-0 mounting to the wall and the Whisper-0 Mini to the floor. Both require minimal operator attention or maintenance. The generators are designed to run continuously or on demand providing a clean, dry high purity nitrogen supply.



INCREASE EFFICIENCY

The relatively high gas volumes required by LC/MS instruments make cylinder supply inappropriate and liquid nitrogen expensive. A constant, uninterrupted gas supply eliminates interruptions of analysis to change cylinders.



RETURN ON INVESTMENT

Payback period can be as short as 6 to 12 months.



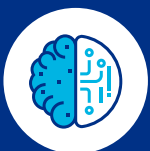
IMPROVE SAFETY

Nitrogen produced at low pressure and ambient temperature removes the hazards associated with high pressure cylinders and liquid Dewars.



ENHANCE PERFORMANCE

Production of a constant flow and pressure of nitrogen improves the consistency of the LC/MS analysis, results and reproducibility.



SUPERIOR TECHNOLOGY

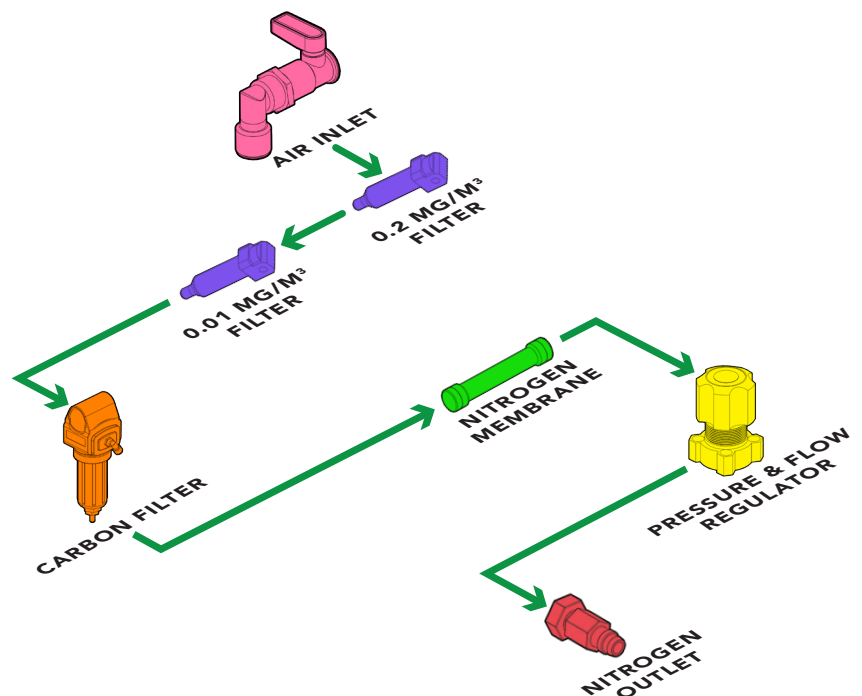
The VICI DBS membrane nitrogen generators require no electricity, have no moving parts and minimal noise.

OPERATING DIAGRAM

Membrane separation technique:

Compressed air is forced through a hollow fiber membrane, with selective permeation of the different components - nitrogen, oxygen, carbon dioxide, water vapor and traces of rare gases - depending on the rate of diffusion.

The rate of diffusion of nitrogen through the membrane is slower than the other components, which thus flow outside of the fiber membrane. Just nitrogen remains inside which is then subsequently discharged, ready for use.





FEATURES

Produces a continuous supply of high purity nitrogen | On-demand supply 24/7 | Flow rate at 8 barg (116 psig): 8 to 120 L/min | Purity: LC/MS grade | Integrated economy mode as standard | Proprietary membrane technology | 2-year complete product warranty | No noise, no moving parts and no electricity



BENEFITS

Eliminates dangerous high pressure cylinders helping to keep your employees safer | Removes the logistics, inconvenience, downtime and costs of a cylinder system | Flow capacity to match your specific instrument demands | Ideal for all LC/MS applications | Reduces compressed air consumption and cost | Superior air purification with long life membrane | Peace of mind | Install directly in the laboratory



APPLICATIONS

LC/MS INSTRUMENTS

- Nebulizing gas
- Curtain gas
- Shield gas
- Sheath gas
- Electrospray gas
- APCI gas
- Jet stream gradient

SPECTROSCOPY

- Nuclear magnetic resonance spectrometers (NMR)

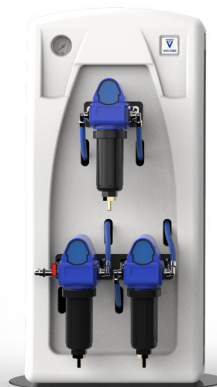
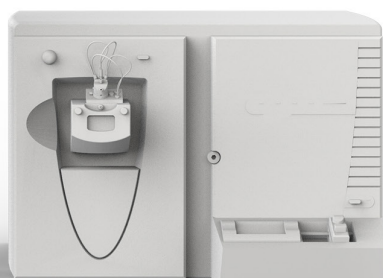
ANALYZERS

- Thermal analyzers (TGA/DSC)

OTHER APPLICATIONS

- Sample concentrators
- Evaporative light scattering detector (ELSD)
- Corona detectors
- Charged aerosol (CAD)
- Sample evaporators
- Cell incubators
- IVF Stem Cell incubators

- Mask aligner
- Fume hood/cabinet purge
- 3D printer inerting
- Glove box purge



MODELS & SPECS

	MINI WHISPER	WHISPER 0-40	WHISPER 0-80	WHISPER 0-120
Flow L/min	12	40	80	120
Purity	99% @ 12 L/min 99% @ 10 L/min	97% @ 40 L/min 99% @ 20 L/min	97% @ 80 L/min 98% @ 50 L/min	95% @ 120 L/min 98% @ 50 L/min
Dewpoint	-50 °C			
Outlet pressure barg (psig)	7 (100)			
Inlet pressure barg (psig)	8.5 to 10 (123 to 160)			
Actual inlet air requirement liters	60	120	210	245
Recommended compressor air inlet	120	240	420	490
Pressure drop barg (psig)	1.5 (22)			
Inlet air quality	Clean dry compressed air ISO8573-1:2010 Class 1.2.1			
Technology	Membrane			
Warm up time (minutes)	None			
Electrical supply	None			
Noise level	None			
Dimensions mm (in)	348W x 735H x 350D (13.7W x 29H x 20.8D)	480W x 1300H x 300D (18.9W x 51H x 11.8D)		
Weight kg (lbs)	8 (17.6)	15 (33)	18 (40)	20 (44)
Shipping dimensions mm (in)	890W x 445H x 3530D (35W x 17.5H x 20.8D)	1600 W x 400H x 590D (63W x 15.7H x 23.2D)		
Shipping weight kg (lbs)	14 (31)	22 (49)	27 (60)	27 (60)
Operating temp °C (°F)	15 to 35 (59 to 95)			
Inlet connection	3/8" G			
Outlet connection	1/4" Compression			
Certification	CE			
OPTIONS				
	None	10 liter tank, 10 mt. tube, special 100% Teflon tubing		

MINI WHISPER**DB-MWN2-10****WHISPER 0-40****DB-WN2-0-40****WHISPER 0-80****DB-WN2-0-80****WHISPER 0-120****DB-WN2-0-120**

MISTRAL EVOLUTION NITROGEN GENERATOR



DESCRIPTION

The VICI DBS® Mistral Evolution is a self contained generator that produces up to 40 L/min of pure LC/MS grade nitrogen at up to 8 barg (116 psig). Nitrogen is produced by utilizing a combination of compressor and Carbon Molecular Sieve (CMS) technology. High and low pressure compressors are carefully matched to the CMS demand to ensure quiet and reliable operation. This unique combination of dual compressor technology has several unique advantages over all other nitrogen generators commercially available.

Nitrogen is produced at low pressure, which ensures a longer compressor life and then compressed to 8 barg (116 psig) using a second stage compressor. This combination guarantees a long compressor life reducing maintenance costs and down time.



INCREASE EFFICIENCY

The relatively high gas volumes required by LC/MS instruments make cylinder supply inappropriate and liquid nitrogen expensive. A constant, uninterrupted gas supply eliminates interruptions of analyses to change cylinders.



RETURN ON INVESTMENT

Payback period can be as short as 6 to 12 months.



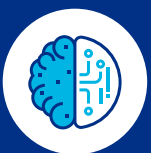
IMPROVE SAFETY

Nitrogen produced at low pressure and ambient temperature removes the hazards associated with high pressure cylinders and liquid dewars.



ENHANCE PERFORMANCE

Production of a constant flow and pressure of nitrogen improves the consistency of the LC/MS analysis, results and reproducibility.



SUPERIOR TECHNOLOGY

The 2-stage pressure design allows the compressors to work at their optimum pressure range reducing the stress and results in extending the life time of the compressors. This reduces maintenance costs and associated downtime.





FEATURES

Produces a continuous supply of high purity nitrogen | On-demand supply 24/7 | Flow rate at 8 barg (116 psig): 8 to 40 L/min | Purity: LC/MS grade | Integrated low noise oil free compressors | Proprietary carbon molecular sieve technology | 2-year complete product warranty | Complete “plug and play” LC/MS solution



BENEFITS

Eliminates dangerous high pressure cylinders helping to keep your employees safer | Removes the logistics, inconvenience, downtime and costs of a cylinder system | Flow capacity to match your specific instrument demands | Ideal for all LC/MS applications | Simple installation and operation | Superior gas purification | Peace of mind | Install directly in the laboratory



APPLICATIONS

LC/MS INSTRUMENTS

- Nebulizing gas
- Curtain gas
- Shield gas
- Sheath gas
- Electropray gas
- APCI gas
- Jet stream gradient

SPECTROSCOPY

- Nuclear magnetic resonance spectrometers (NMR)

ANALYZERS

- Thermal analyzers (TGA/DSC)

OTHER APPLICATIONS

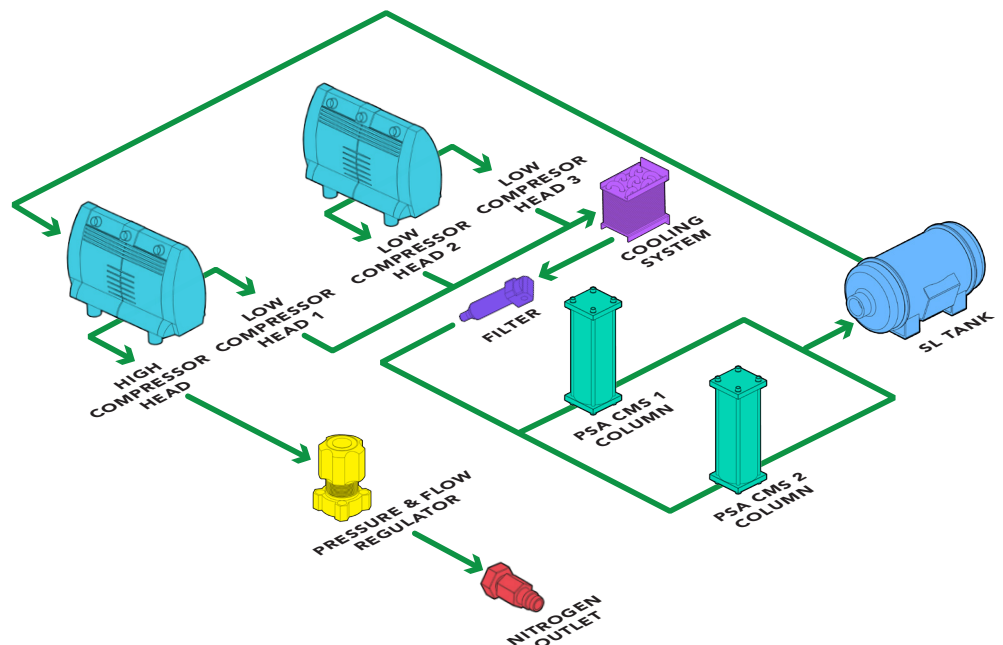
- Sample concentrators
- Evaporative light scattering detector (ELSD)

- Corona detectors
- Charged aerosol (CAD)
- Sample evaporators
- Cell incubators
- IVF Stem cell incubators
- Mask aligner
- Fume hood/cabinet purge
- 3D printer inerting
- Glove box purge

OPERATING DIAGRAM

The Mistral Evolution (PSA technology) includes two dynamically balanced, long-life compressors and delivers a continuous or on demand stream of pure nitrogen gas of 99.5% with a flow rate to 40 L/min.

It uses pressure swing adsorption (PSA) system which removes oxygen, carbon dioxide and water from compressed air. The resulting stream of pure nitrogen is ideal for LCMS instruments and other laboratory applications where inert gases are required.



MODELS & SPECS	MISTRAL EVOLUTION 10	MISTRAL EVOLUTION 25	MISTRAL EVOLUTION 35	MISTRAL EVOLUTION 40
Nitrogen flow rate L/min	10	25	35	40
Nitrogen purity	+99.5%	99%	98%	97%
Dewpoint °C (°F)	-50 (-58)			
Outlet pressure barg (psig)	3 (45)	8 (116)		
Technology	Carbon molecular sieve			
Warm up time (minutes)	20			
LED indicators	Power on/off, system ready, errors			
Electricity supply	110-120V 60Hz / 220-240V 50Hz			
Power consumption (watts)	1800			
Dimensions mm (in)	482W x 641H x 835D (18.9W x 25H x 33D)			
Weight kg (lbs)	90 (198)			
Shipping dimensions mm (in)	550W x 800H x 940D (21.6W x 31.4H x 37D)			
Shipping weight kg (lbs)	115 (254)			
Operating temp °C (°F)	15 to 35 (59 to 95)			
Outlet connection	6 mm OD compression or 1/4"			
Certification	CE, FCC, MET (UL and CSA compliant)			
OPTIONS	10 liter tank			

MISTRAL EVOLUTION 10

DB-EVO-10-EU 220V/50Hz
DB-EVO-10-US 115V/60Hz

MISTRAL EVOLUTION 25

DB-EVO-25-EU 220V/50Hz
DB-EVO-25-US 115V/60Hz

MISTRAL EVOLUTION 35

DB-EVO-35-EU 220V/50Hz
DB-EVO-35-US 115V/60Hz

MISTRAL EVOLUTION 40

DB-EVO-40-EU 220V/50Hz
DB-EVO-40-US 115V/60Hz

MISTRAL EVOLUTION GAS STATION NITROGEN + AIR GENERATOR



DESCRIPTION

The VICI DBS® Mistral Evolution Gas Station is a self contained generator that produces up to 25 L/min of pure nitrogen and 35 L/min of air specifically for the Agilent MP AES 4100 & 4200 instruments. Nitrogen is produced by utilizing a combination of compressor and Carbon Molecular Sieve (CMS) technology. High and low pressure compressors are carefully matched to the CMS demand to ensure quiet and reliable operation. This unique combination of dual compressor technology has several unique advantages over all other nitrogen generators on the market.

Nitrogen is produced at low pressure, which ensures a longer compressor life and then compressed to 8 barg (116 psig) using a second stage compressor. This combination guarantees a long compressor life reducing maintenance costs and down time. Air is produced using an additional third stage compressor maintaining a separate constant flow and pressure.



INCREASE EFFICIENCY

The relatively high gas volumes required by MP AES instruments make cylinder supply inappropriate and liquid nitrogen expensive. A constant, uninterrupted gas supply eliminates interruptions of analysis to change cylinders.



RETURN ON INVESTMENT

Payback period can be as short as 12 to 18 months.



IMPROVE SAFETY

Nitrogen produced at low pressure and ambient temperature removes the hazards associated with high pressure cylinders and liquid Dewars.



ENHANCE PERFORMANCE

Production of a constant flow and pressure of nitrogen and air improves the consistency of the Agilent MP AES analysis, results and reproducibility.



SUPERIOR TECHNOLOGY

The 3-stage pressure design allows the compressors to work at their optimum pressure range reducing the stress and results in extending the life time of the compressors. This reduces maintenance costs and associated downtime.





FEATURES

Produces a continuous supply of high purity nitrogen | On-demand supply 24/7 | Flow rate: 25 L/min of N₂ and 35 L/min of air | Purity: MP AES grade | Integrated low noise oil free compressors | Proprietary carbon molecular sieve technology | 2-year complete product warranty | Complete “plug and play” LC/MS solution



BENEFITS

Eliminates dangerous high pressure cylinders helping to keep your employees safer | Removes the logistics, inconvenience, downtime and costs of a cylinder system | Flow capacity to match your specific instrument demands | Simple installation and operation | Superior air purification | Peace of mind | Install directly in the laboratory



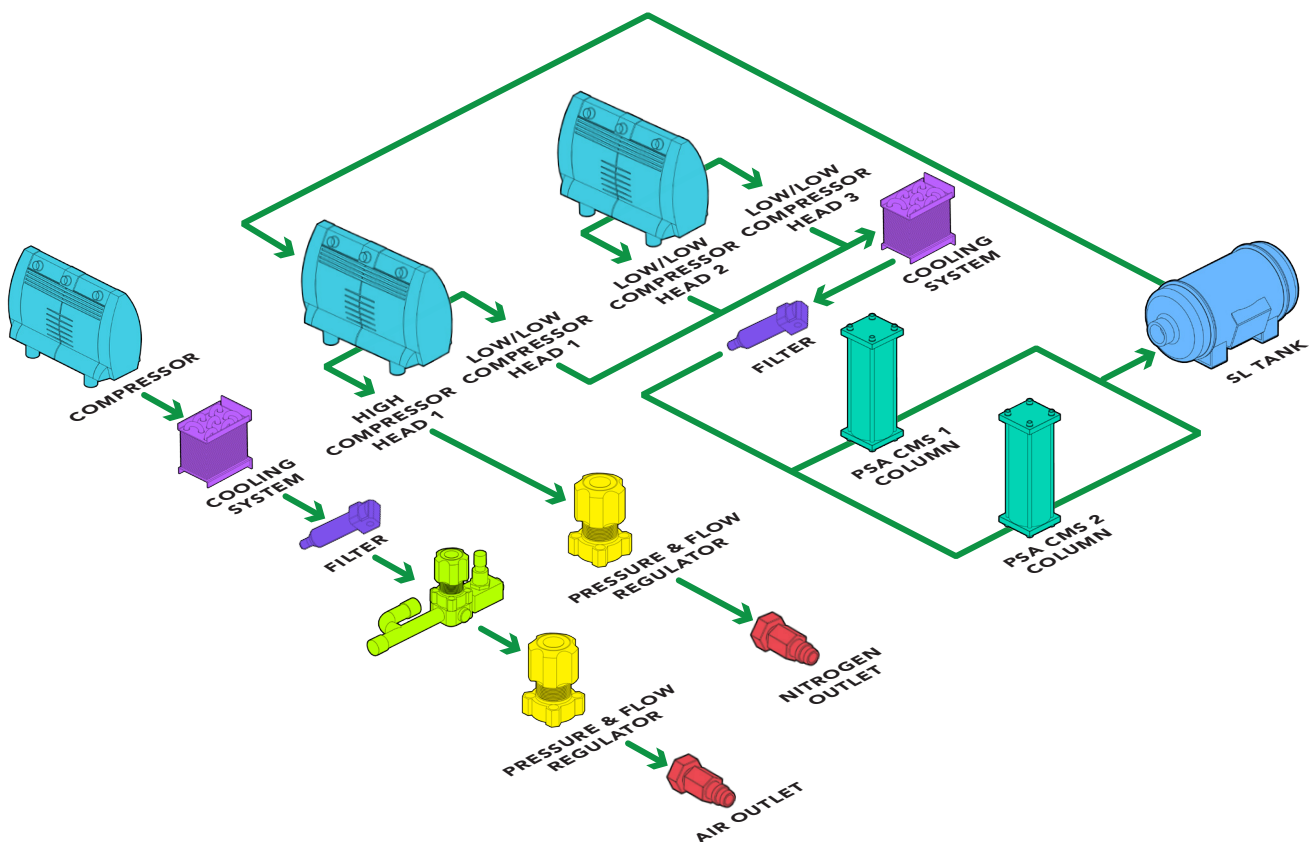
APPLICATIONS

MICROWAVE PLASMA ATOMIC EMISSION SPECTROMETRY

- Agilent MP AES 4100 & 4200

OPERATING DIAGRAM

Two integral oil-free compressors and a pressure swing adsorption system (PSA) produce 25 L/min of high purity nitrogen. In parallel an additional oil-free compressor and dryer are dedicated to the 35 L/min of dry air. With two separate outlets the generator is ideal to support the gas requirements of the Agilent MP AES systems.



MODELS & SPECS

	MISTRAL EVOLUTION GAS STATION
Nitrogen flow rate L/min	25 @ 5.5 barg (80 psig)
Air 1 - flow rate L/min	35 @ 5.5 barg (80 psig)
Nitrogen purity	99.5%
Dewpoint °C (°F)	-40 (-40)
Outlet pressure barg (psig)	7 (100)
Technology	Carbon molecular sieve
Warm up time (minutes)	20
Electrical supply	110-120V 60 Hz / 220-240V 50Hz
Power consumption (watts)	2700
Dimensions mm (in)	482W x 641H x 1235D (18.9W x 25H x 48D)
Weight kg (lbs)	110 (243)
Shipping dimensions mm (in)	550W x 800H x 940D (21.6W x 31.4H x 37D)
Shipping weight kg (lbs)	141 (311)
Operating temp °C (°F)	15 to 35 (59 to 95)
Outlet connection	2 x 6mm OD compression or 1/4"
Certification	CE, FCC, MET (UL and CSA compliant)

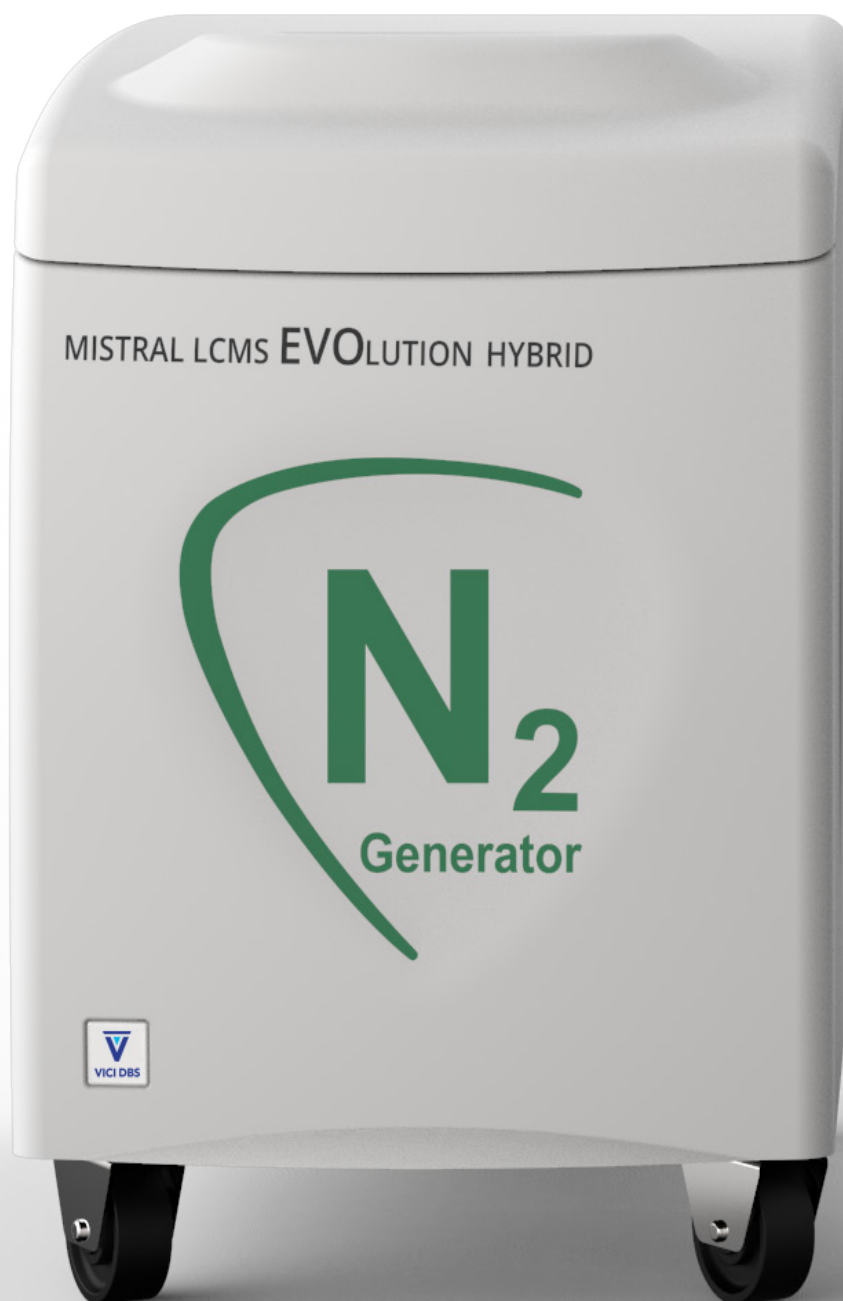
**MISTRAL EVOLUTION GAS STATION****DB-EVO-GS-EU**

220V/50Hz

DB-EVO-GS-US

115V/60Hz

MISTRAL EVOLUTION HYBRID NITROGEN + AIR GENERATOR



DESCRIPTION

The VICI DBS® Mistral Evolution Hybrid is a self contained generator that produces up to 12 L/min of high purity nitrogen and 22 L/min of air. The generator is designed to meet the specific requirements of the Sciex LC/MS. Nitrogen is produced by utilizing a combination of compressor and Carbon Molecular Sieve (CMS) technology. High and low pressure compressors are carefully matched to the CMS demand to ensure quiet and reliable operation. This unique combination of dual compressor technology has several unique advantages over all other nitrogen generators commercially available.

Nitrogen is produced at low pressure, which ensures a longer compressor life and then compressed to 8 barg (116 psig) using a second stage compressor. This combination guarantees a long compressor life reducing maintenance costs and down time.



INCREASE EFFICIENCY

The relatively high gas volumes required by LC/MS/MS instruments make cylinder supply inappropriate and liquid nitrogen expensive. A constant, uninterrupted gas supply eliminates interruptions of analysis to change cylinders.



RETURN ON INVESTMENT

Payback period can be as short as 6 to 12 months.



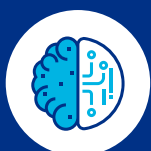
IMPROVE SAFETY

Nitrogen produced at low pressure and ambient temperature removes the hazards associated with high pressure cylinders and liquid Dewars.



ENHANCE PERFORMANCE

Production of a constant flow and pressure of nitrogen and air improves the consistency of the Sciex LC/MS analysis, results and reproducibility.



SUPERIOR TECHNOLOGY

The 2-stage pressure design allows the compressors to work at their optimum pressure range reducing the stress and results in extending the life time of the compressors. This reduces maintenance costs and associated downtime.





FEATURES

Produces a continuous supply of high purity nitrogen and air for Sciex LC/MS | On-demand supply 24/7 | Flow rate: 12 L/min of N₂ and 35 L/min of air | Purity: LC/MS grade | Integrated low noise oil free compressors | Proprietary carbon molecular sieve technology | 2-year complete product warranty | Complete "plug and play" LC/MS solution



BENEFITS

Eliminates dangerous high pressure cylinders helping to keep your employees safer | Removes the logistics, inconvenience, downtime and costs of cylinder and dewar systems | Flow capacity to match your specific instrument demands | Ideal for all Sciex LC/MS applications | Simple installation and operation | Superior air purification | Peace of mind | Install directly in the laboratory



APPLICATIONS

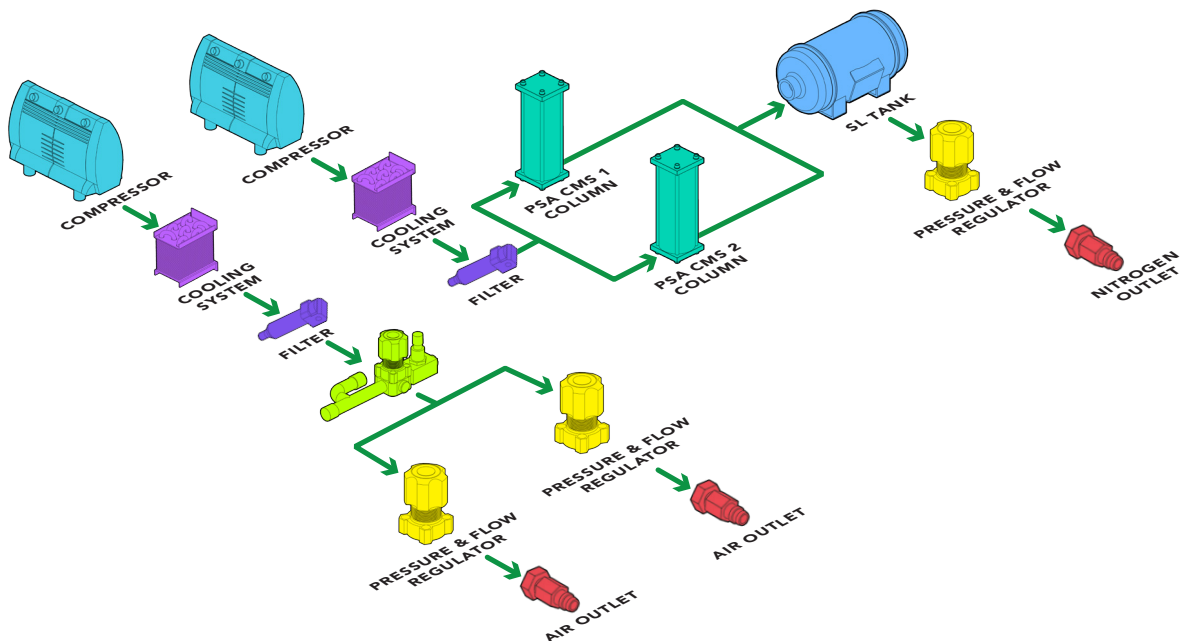
PRODUCTS FOR LC/MS

- Sciex LC/MS

OPERATING DIAGRAM

The Mistral Evolution Hybrid (PSA technology) includes two dynamically balanced oil-free air compressors and delivers a continuous stream of pure nitrogen gas for curtain gas and purified air for gas 1 gas 2 and source exhaust.

Each Mistral uses a pressure swing adsorption (PSA) system which removes oxygen, carbon dioxide and water from compressed air. The output is a stream of pure nitrogen with clean, dry purified air for Sciex LC/MS instruments.



MODELS & SPECS

	MISTRAL EVOLUTION HYBRID
Nitrogen flow rate L/min	12 @ 5 barg (80 psig)
Air 1 - flow rate L/min	8 @ 4 barg (60 psig)
Air 2 - flow rate L/min	24 @ 7 barg (100 psig)
Nitrogen purity	+98%
Dewpoint °C (°F)	-50 (-58)
Outlet pressure barg (psig)	7 (100)
Technology	Carbon molecular sieve
Warm up time (minutes)	20
Electrical supply	110-120V 60Hz / 220-240V 50Hz
Power consumption (watts)	1800
Dimensions mm (in)	482W x 641H x 835D (18.9W x 25H x 33D)
Weight kg (lbs)	90 (198)
Shipping dimensions mm (in)	550W x 800H x 940D (21.6W x 31.4H x 37D)
Shipping weight kg (lbs)	115 (254)
Operating temp °C (°F)	15 to 35 (59 to 95)
Outlet connections	3 x 6 mm OD Compression or 1/4"
Certification	CE, FCC, MET (UL and CSA Compliant)

MISTRAL EVOLUTION HYBRID**DB-EVO-HY-EU** 220V/50Hz**DB-EVO-HY-US** 110V/60Hz




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