

# Nitrogen Generators with Research Grade Purity

- Produce a continuous supply of high purity nitrogen gas from existing compressed air
- Eliminate the need for costly, dangerous, inconvenient nitrogen cylinders in the laboratory
- Compact design frees up valuable laboratory floor space
- Offers long term cost stability - uncontrollable vendor price increases, contract negotiations, long term commitments and tank rentals are no longer a concern
- Ideal for carrier gas applications



Model UHPN2-1100

## The Parker Balston® Models HPN2 and UHPN2 Series

**Nitrogen Generators** are completely engineered to transform standard compressed air into 99.99% or 99.9999% nitrogen, exceeding the specification of UHP cylinder gas. These systems can produce up to 1.1 lpm of UHP nitrogen gas and up to 2.0 lpm of research grade purity nitrogen gas. Nitrogen is produced by utilizing a combination of state-of-the art purification technologies and high efficiency filtration.

Pressure swing adsorption removes O<sub>2</sub>, CO<sub>2</sub>, and water vapor. A catalyst module is incorporated in the UHPN2 Series to oxidize hydrocarbons from the inlet air supply. High efficiency coalescing prefilters

and a 0.01 micron (absolute) membrane filter is also incorporated into the design of the generators.

The Parker Balston UHPN2 and HPN2 Series Nitrogen Generators are engineered and packaged in a small cabinet to fit on or under any bench-top. The systems eliminate the need for costly, inconvenient high pressure nitrogen cylinders.

Typical applications include GC carrier and make-up gas and low flow sample concentrators.

### Flow Table

Inlet Air Pressure (psig)	Max Outlet Flow (cc/min.)	Max Outlet Pressure (psig)
<b>Models HPN2-1100 and UHPN2-1100</b>		
125	1100	85
110	1000	75
100	900	65
90	800	60
80	700	50
70	600	45
60	500	35
<b>Model HPN2-2000</b>		
75-120	2000	90

# Nitrogen Generators with Research Grade Purity

## Principal Specifications

Model	HPN2-1100, UHPN2-1100	HPN2-2000
Max Nitrogen flow rate	See Flow Table	2 lpm
Nitrogen Purity	99.9999%	99.99%
Max Nitrogen output pressure	See Table	90 psig
CO concentration	< 1 ppm	NA
CO <sub>2</sub> concentration	< 1 ppm	< 1 ppm
O <sub>2</sub> concentration	< 1 ppm	< 100 ppm
H <sub>2</sub> O Concentration	< 1 ppm	< 2 ppm
Hydrocarbon concentration (1)	< 0.1 ppm	NA
Argon concentration (2)	0.9%	0.9%
Min/Max inlet pressure	60 psig/125 psig	75 psig/120 psig
Recommended inlet temperature	78°F (25°C)	78°F (25°C)
Ambient operating temperature	60°F-100°F (16°C-38°C)	60°F-100°F (16°C-38°C)
Max air consumption	42 lpm (1.5 scfm)	42 lpm (1.5 scfm)
Inlet connection	1/4" NPT (female)	1/4" NPT (female)
Outlet connection	1/8" compression	1/8" NPT compression
Electrical requirements (3, 4)	120 VAC/60 Hz	120 VAC/60 Hz
Dimensions	12" w x 16" d x 35" h (30cm x 41cm x 89cm)	12" w x 16" d x 35" h (30cm x 41cm x 89cm)
Shipping Weight	110 lbs. (50 kg)	110 lbs. (50 kg)

### Notes:

- 1 Models HPN2-1100 and HPN2-2000 do not remove hydrocarbons and carbon monoxide.
- 2 Purity specification for Nitrogen does not include Argon concentration.
- 3 Power Consumption is as follows:  
Model HPN2-1100 = 25 Watts  
Model UHPN2-1100 = 700 Watts  
Model HPN2-2000 = 25 Watts.
- 4 Refer to voltage appendix for electrical and plug configurations for outside North America.

## Ordering Information call 800-343-4048, 8 to 5 EST

Description	Model Numbers
High Purity Nitrogen Generator	HPN2-2000
Ultra High Purity Nitrogen Generator	HPN2-1100 and UHPN2-1100
Purity Indicator/Scrubber	72092
Optional Prefilter Scrubber Assembly	76080
Pressure Regulator	W-425-4032-000
Maintenance Kit	MK7692, MK7694, MKHPN22000
Installation Kit for All Models	IK7694
Preventive Maintenance Plan	HPN2-1000-PM, UHPN2-1100-PM, HPN2-2000-PM
Extended Support with 24 Month Warranty	HPN2-1100-DN2, UHPN2-1100-DN2, HPN2-2000-DN2

# NitroVap Gas Generators

- Ideal for any combination of sample evaporators up to 100 nozzle positions
- Produces clean, dry (to -20°F) dewpoint evaporator grade nitrogen from any standard laboratory compressed air source
- Accelerates evaporation by decreasing the partial vapor pressure above the solvent liquid
- Eliminates inconvenient and dangerous LN2 boil-off dewars and nitrogen gas cylinders from the laboratory
- Recommended and used by many sample concentrator and sample evaporator manufacturers
- Payback period of typically less than one year
- Sleep economy mode
- Silent operation and minimal operator attention required



NitroVap-1LV and NitroVap-2LV

## Proven Technology

Parker Balston's NitroVap-1LV and NitroVap-2LV Nitrogen Generators can provide clean, ultra-dry nitrogen to sample evaporators. These systems offer high nitrogen output flows in a miniature cabinet. The user can activate the manual SLEEP economy mode to eliminate compressed air consumption when the sample concentrator is not in use.

## Nitrogen Technology

Nitrogen is produced by utilizing a combination of filtration and membrane separation technologies. A high efficiency prefiltration system pretreats the compressed air to remove all contaminants down to 0.01 micron. Hollow fiber membranes subsequently separate the clean air into a concentrated nitro-

gen output stream and an oxygen enriched permeate stream, which is vented from the system. The combination of these technologies produces a continuous on demand supply of pure nitrogen.

## Gas Generator Benefits

The NitroVap generators are complete systems with state-of-the-art, highly reliable components engineered for easy installation, operation, and long term performance. The Parker Balston NitroVap-1LV and NitroVap-2LV eliminate all the inconveniences and cost of LN2 dewar and nitrogen cylinder gas supplies and dependence on outside vendors. Uncontrollable price increases, dewar ice and condensation, contract negotiations, long term commitments, and tank rentals are no longer a concern. With a NitroVap generator, you control your gas supply.

## Ease of Use

Since NitroVap generators incorporate unique membrane separation technology, nitrogen delivery is immediate to the sample concentrator. "Lock-it-and-leave-it" operation of the sample concentrator is maintained without downtime and without "running out of gas" mid blow-down.



This Technology Features Advanced HiFluxx Fiber!

# NitroVap Gas Generators

## Principal Specifications - NitroVap Generators

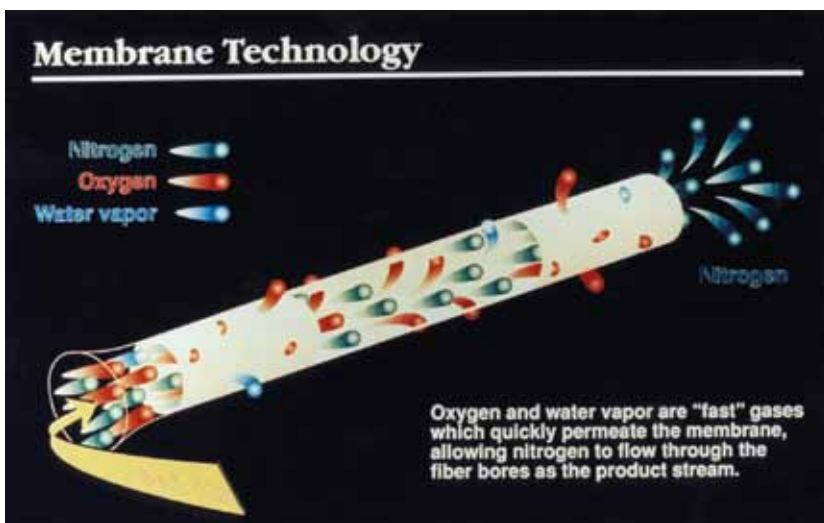
Nitrogen Purity	Up to 90%
Nitrogen Dewpoint	Down to -20°F (-29°C) atmospheric
Maximum Nitrogen Flow Rate	NitroVap-1LV: up to 80 slpm @ 100 psig input up to 140 slpm @ 125 psig input  NitroVap-2LV: up to 160 slpm @ 100 psig input up to 287 slpm @ 125 psig input
Electrical Requirements	None
Nitrogen Outlet Pressure	0-15 psig user controlled
Dimensions	10.63"w x 14.1"d x 16.5"h (26.92cm x 35.81cm x 41.91cm)
Inlet Port/Outlet Port	1/4" NPT (female)
Shipping Weight	53 lbs/24 kg

## Use with These and Other Blowdown Evaporators

TurboVap from Biotage  
 N-Evap from Organomation  
 RapidVap from LabConco  
 Reacti-Vap from Fisher Pierce  
 Duo-Vap from Jones Chromatography  
 DryVap from Horizon Technology  
 Evaporex from Apricot

## Ordering Information for assistance, call 800-343-4048, 8 to 5 Eastern Time

Model	Description
NitroVap-1LV and NitroVap-2LV	NitroVap Nitrogen Generators
MKNITROVAP	Maintenance Kit (Includes 1 each filter cartridge, and 1 each membrane cartridge)
NITROVAP-1LV-PM, NITROVAP-2LV-PM	Preventive Maintenance Plan
NITROVAP-DN2	Extended Support with 24 Month Warranty



# NitroFlow Lab Self Contained LC/MS Membrane Nitrogen Generator

- Flow capacity to 30 LPM
- Includes 2 year compressor warranty
- Ideal for all derivatives of ESI and APCi modes
- Includes state-of-the-art, oil-less compressors
- Unlike PSA Hosmer technologies, membrane will not suppress corona needle discharge
- Special sound insulation design ensures quiet operation



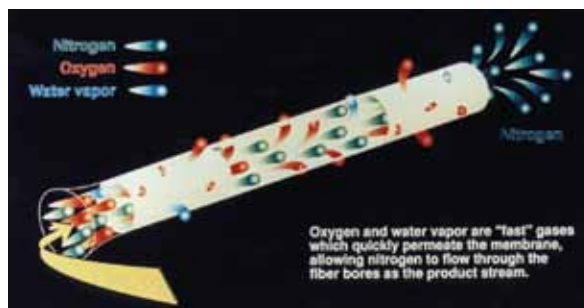
NitroFlowLab

**The Parker Balston® LC/MS Nitro-Flow Lab** is a self-contained membrane nitrogen generator that produces LC/MS grade nitrogen with output pressure to 116 psig. Nitrogen is produced by utilizing a combination of compressors, carefully matched with filtration, and membrane separation technology components.

Intake ambient air from the laboratory is filtered using an inlet suction breather filter to remove airborne organic and particulate impurities. This purified air is delivered to a long life low pressure air compressor which provides an air stream to hollow fiber membranes which subsequently separate the clean air into a concentrated nitrogen retentate and oxygen enriched permeate, which is then cycled through the system. Prior to exiting the system pure nitrogen retentate is delivered to a nitrogen amplification compressor to assure proper pressure, flow and purity to the LC/MS.

The Parker Balston LC/MS NitroFlow Lab will deliver a continuous or on demand supply of pure nitrogen making it the smart alternative to cylinders. Superior engineering with carefully matched filtration, membrane separation and compression technologies have

resulted in a system with the utmost reliability and longevity. Additional applications include: nebulizer gases, chemical and solvent evaporation, instrument supply and purge, evaporative light scattering equipment and sparging.



## Principal Specifications

Model	NitroFlowLab
Nitrogen	Phthalate free with flow to 30 lpm @ sea level
Maximum Outlet Pressure	116 psig (8 barg)
Hydrocarbon Content	< 2ppm (excluding methane)
Atmospheric Dewpoint	-58°F (-50°C)
Outlet Port	Female 1/4" NPT
Min/Max Ambient Temperature	50°F/95°F (10°C/35°C)
Electrical Requirements	120Vac/60Hz/20Amp / NEMA 5 - 20 Straight Blade
Dimensions	27.6"h x 12.2"w x 35.4"d (70.1cm x 31cm x 90cm)
Shipping Weight	204 lbs. (92.5 kg)

*"We've used the Parker Balston Nitroflow® (combined compressor and nitrogen generator) on our LCMS for 3 years. In just over two years, it more than paid for itself in nitrogen savings, but the real advantages of the nitrogen generator are the continuous supply of high quality nitrogen and the tremendous amount of time saved from not having to check, order and switch high pressure liquid nitrogen tanks."*

Karl J. Dria, PhD.  
 Assistant Research Scientist  
 Department of Chemistry and Chemical Biology  
 Indiana University-Purdue University Indianapolis

# UHP Zero Nitrogen Generators

for GC carrier gas and make up applications



## Nitrogen on demand, up to 3,200 ml/min

The Parker Balston Ultra High Purity (UHP) Zero Nitrogen Generators are engineered to transform standard compressed air in to a safe regulated supply of 99.9995% pure nitrogen, with <0.1ppm of hydrocarbons

Typical applications include GC make up gas and carrier gas, including ECD (Electron Capture Detector), DSC (Differential Scanning Calorimeter) and virtually any analytical instrument that requires a small flow of ultra high purity zero nitrogen.

Innovative design features include integral compressors with economy mode as standard. This extends compressor life and reduces ongoing running costs.



## Contact Information:

**Parker Hannifin Manufacturing Limited.**  
Industrial Division  
Suite 42, Kent House, Romney Place  
Maidstone, Kent ME15 6LH

**Tel:** +44 (0)1622 722440

**Fax:** +44 (0)1622 722446

**Email:** [balstonukinfo@parker.com](mailto:balstonukinfo@parker.com)

**www.parker.com/dhFNS**

## Product Features:

- Produces a continuous supply of ultra high purity organic free nitrogen at 99.9995% purity
- Ideal for make-up and carrier gas applications including ECD
- Eliminate dangerous nitrogen cylinders from the laboratory
- Integral oil free compressors with noise reduction technology
- Economy mode: increasing compressor life and reducing ongoing running costs
- Designed to run 24 hours a day

Nitrogen is produced by utilising a combination of filtration and pressure swing adsorption (PSA) technology. Standard compressed air is filtered by high efficiency coalescing filters to remove all contaminants down to 0.01 micron. For ultra sensitive applications such as ECD, units also include the addition of a heated catalyst module to ensure hydrocarbons are removed to < 0.1ppm.

The air then passes through two columns filled with carbon molecular sieve (CMS) which adsorb O<sub>2</sub>, CO<sub>2</sub>, moisture and hydrocarbons. These are desorbed to atmosphere during the pressure swing cycle leaving a supply of ultra pure nitrogen.

## Principal Specification

Model	UHPZN2-1100	UHPZN2-1100C	UHPZN2-3200	UHPZN2-3200C
Purity	99.9995%	99.9995%	99.9995%	99.9995%
Hydrocarbon concentration	<0.1ppm	<0.1ppm	<0.1ppm	<0.1ppm
CO Concentration	<1ppm	<1ppm	<1ppm	<1ppm
CO2 Concentration	<1ppm	<1ppm	<1ppm	<1ppm
H2O Concentration	<1ppm	<1ppm	<1ppm	<1ppm
Flow rates	1100ml/min	1100ml/min	3200ml/min	3200ml/min
Inlet pressure	8-9.9 bar	N/A	8-9.9 bar	N/A
Integral compressor	No	Yes	No	Yes
Outlet pressure	5 bar	5 bar	5 bar	5 bar
Inlet connection	1/4"	N/A	1/4"	N/A
Outlet connection	1/8" BSPP	1/8" BSPP	1/4" BSPP	1/4" BSPP
Ambient temperature	15 to 25°C	15 to 25°C	15 to 25°C	15 to 25°C
Electrical requirements	230VAC-50Hz	230VAC-50Hz	230VAC-50Hz	230VAC-50Hz
Power Consumption	720 Watts	1250 Watts	720 Watts	1250 Watts
Dimensions (HxWxD)	869x345x667mm	869x345x667mm	869x345x667mm	869x345x667mm
Weight	86	96	86	96

## Ordering Information

Description	Model Number
1,100 ml/min Zero UHP Nitrogen Generator	UHPZN2-1100
1,100 ml/min Zero UHP Nitrogen Generator with integral compressor	UHPZN2-1100C
3,200 ml/min Zero UHP Nitrogen Generator	UHPZN2-3200
3,200 ml/min Zero UHP Nitrogen Generator with integral compressor	UHPZN2-3200C
Installation Kit	IK7694

Maintenance Items	Model Number	Change Frequency
Filter Kit - all non compressor models	MKUHPZN2-FK	12 months
Filter Kit - All compressor models	MKUHPZN2CL-FK	12 months
Compressor Kit 230V - All models	MKN2-CK230L	4,000 hours or 12 months (which ever comes sooner)

# Ultra High Purity Nitrogen Generators

for GC and other analytical applications



## Nitrogen on demand, up to 3,200 ml/min

The Parker Balston Ultra High Purity (UHP) Nitrogen Generators are engineered to transform standard compressed air in to a safe regulated supply of 99.9995% pure nitrogen.

Typical applications include GC make up gas, solvent evaporation, DSC (Differential Scanning Calorimeter) and virtually any analytical instrument that requires a small flow of ultra high purity nitrogen.

Innovative design features include integral compressors with economy mode as standard. This extends compressor life and reduces ongoing running costs.



## Contact Information:

**Parker Hannifin Manufacturing Limited.**  
Industrial Division  
Suite 42, Kent House, Romney Place  
Maidstone, Kent ME15 6LH

**Tel:** +44 (0)1622 722440

**Fax:** +44 (0)1622 722446

**Email:** [balstonukinfo@parker.com](mailto:balstonukinfo@parker.com)

**www.parker.com/dhFNS**

## Product Features:

- Produces a continuous supply of high purity nitrogen 99.9995% for analytical applications
- Compact, reliable with minimal operator attention and maintenance
- Eliminate dangerous nitrogen cylinders from the laboratory
- Integral oil free compressors with noise reduction technology
- Economy mode: increasing compressor life and reducing ongoing running costs
- Designed to run 24 hours a day



Nitrogen is produced by utilising a combination of filtration and pressure swing adsorption (PSA) technology. Standard compressed air is filtered by high efficiency coalescing filters to remove all contaminants down to 0.01 micron.

The air then passes through two columns filled with carbon molecular sieve (CMS) which adsorb O<sub>2</sub>, CO<sub>2</sub>, moisture and hydrocarbons. These are desorbed to atmosphere during the pressure swing cycle leaving a supply of ultra pure nitrogen.

## Principal Specification

Model	UHPN2-600	UHPN2-600C	UHPN2-800	UHPN2-800C	UHPN2-1600	UHPN2-1600C	UHPN2-3200	UHPN2-3200C
Purity	99.9995%	99.9995%	99.9995%	99.9995%	99.9995%	99.9995%	99.9995%	99.9995%
Hydrocarbon concentration	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CO Concentration	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm
CO2 Concentration	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm
H2O Concentration	<<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm	<1ppm
Flow rates	600ml/min	600ml/min	800ml/min	800ml/min	1600ml/min	1600ml/min	3200ml/min	3200ml/min
Inlet pressure	8-9.9 bar	N/A	8-9.9 bar	N/A	8-9.9 bar	N/A	8-9.9 bar	N/A
Integral compressor	No	Yes	No	Yes	No	Yes	No	Yes
Outlet pressure	5 bar	5 bar	5 bar	5 bar	5 bar	5 bar	5 bar	5 bar
Inlet connection	1/4"	N/A	1/4"	N/A	1/4"	N/A	1/4"	N/A
Outlet connection	1/8" BSPP	1/8" BSPP	1/8" BSPP	1/8" BSPP	1/4" BSPP	1/4" BSPP	1/4" BSPP	1/4" BSPP
Ambient temperature	15 to 25°C	15 to 25°C	15 to 25°C	15 to 25°C	15 to 25°C	15 to 25°C	15 to 25°C	15 to 25°C
Electrical requirements	230VAC-50Hz	230VAC-50Hz	230VAC-50Hz	230VAC-50Hz	230VAC-50Hz	230VAC-50Hz	230VAC-50Hz	230VAC-50Hz
Power consumption	85 Watts	606 Watts	85 Watts	606 Watts	88 Watts	698 Watts	88 Watts	698 Watts
Dimensions (HxWxD)	869x345x417mm	869x345x417mm	869x345x417mm	869x345x417mm	869x345x667mm	869x345x667mm	869x345x667mm	869x345x667mm
Weight	44Kg	50Kg	44Kg	50Kg	84Kg	93Kg	84Kg	93Kg

## Ordering Information

Description	Model Number
600 ml/min UHP Nitrogen Generator	UHPN2-600
600 ml/min UHP Nitrogen Generator with integral compressor	UHPN2-600C
800ml/min UHP Nitrogen Generator	UHPN2-800
800ml/min UHP Nitrogen Generator with integral compressor	UHPN2-800C
1600ml/min UHP Nitrogen Generator	UHPN2-1600
1600ml/min UHP Nitrogen Generator with integral compressor	UHPN2-1600C
3,200 ml/min UHP Nitrogen Generator	UHPN2-3200
3,200ml/min UHP Nitrogen Generator with integral compressor	UHPN2-3200C
Installation Kit	IK7694

Maintenance Items	Model Number	Change Frequency
Filter Kit - all non compressor models	MKUHPN2-FK	12 months
Filter Kit - UHPN2-600C/800C models	MKUHPN2C-FK	12 months
Filter Kit UHPN2-1600C / 3200C models	MKUHPN2CL-FK	12 months
Compressor Kit 230V - UHPN2-600C/800C models	MKN2CK230S	8,000 hours or 24 months (which ever comes first)
Compressor Kit 230V UHPN2-1600C/3200C models	MKN2-CK230L	8,000 hours or 24 months (which ever comes first)