PRODUCT CATALOGUE

FRENCH MANUFACTURER OF GAS GENERATORS AND LIQUID NITROGEN GENERATORS

DON'T BUY YOUR GAS, MAKE IT!

DISCOVER MORE AT

WWW.F-DGS.COM

F-DGSi

Innovative Gas System Company

WHO WE ARE

Established in 2006, F-DGSi is a **French family-owned** company, dynamic and innovative in the field of gas and liquid generators, as we have proven experience in design, manufacturing and technical assistance in gas and liquid generators for many years.

Our commitment is to provide your laboratory with a complete gas production solution that is reliable and durable for years. We achieve this through our expertise and **100% French design**. Our credo is: ***«always one step ahead of the competition»***.

Service is at the heart of our business. With an in-depth knowledge of laboratories and their applications, our mission is to satisfy our customers by offering them **high quality products** and a **unique customer service**. Efficiency and reactivity is always our priority. **Customer satisfaction** is our top priority which we promise to achieve through our technical expertise and by sustaining plus enhancing the quality of our products time to time. We always tend to offer our customers the best possible solution as per their current requirements, we ensure this by having our technical engineering team readily available to support you from our HQ plus we have a large network of regional distributors trained by F-DGSi. Hence you are in safe hands.

The values of F-DGSi

Know-how

The passion we share

Customer satisfaction

Is our top priority

Innovation

Is part of our DNA

Quality

A commitment that continues

Design

Because performance is not enough

Security

More intelligent. More Secure.

WHAT WE DO

At F-DGSi, we innovate, design and manufacture high performance gas generators. Our Headquarters is located near Paris (France), where all our products are **designed and manufactured 100% in-house** by our own Research & Development center. This ensures reliability on our products as we totally control our manufacturing protocols.

With the know-how of our French engineering teams, we provide laboratories around the world with a **unique and efficient gas production solution (Hydrogen, Zero Air, Nitrogen)** offering a safer, more convenient and cost effective alternative to cylinders. F-DGSi has a wide range of gas generators products and also related to your gas needs, to meet your complete needs of all your analytical instruments. Our high quality products, combined with French technology and design, provides you with absolute peace of mind and helps to reduce your operating costs, environmental impact and eliminates inconvenience of cylinder supply.

We manufacture as well liquid Nitrogen generators for various applications providing safety and on-demand production for laboratories, medical and other cryogenic industries. As our gas generators, this range is a sustainable and more convenient solution compared to conventional cylinder and bulk liquid supplies.

F-DGSi criteria is to provide the customer with the best advanced gas generator solution, which will meet the customer's expectations and quality is not compromised.

We ensure the availability of our services throughout the life time of the gas generator, where optimal maintenance of the gas generator is the utmost importance, that we provide through maintenance contracts **[F-DGSi Care]**.

Discover more on our website
www.f-dgs.com

WHY A **GAS GENERATOR**?

F-DGSi gas generator is an **economical solution** to your laboratory gas needs. Laboratories have been facing numerous challenges by using pressurized gas cylinders, dewars or bulk laboratory gas storage. These traditional sources of gas procurements also comes with extra expenses like transportation, refilling, rentals or storage, accidents etc. all of which impacts business revenue or facility budgets.

Hence, a practical solution will be to buy a F-DGSi gas generator. It does not add on any extra costs unlike the traditional sources of gas procurements. Plus, our gas generators are compliant with all International protocols, are safe to use within your lab environment which is why globally laboratories are switching to F-DGSi gas generators.

In addition, as the price of traditional method of gas supply increases and by taking in concern of delivery delays, a F-DGSi generator represents a **more economical** long-term investment than pressurized gas cylinders, dewars or bulk laboratory gas storage.

With F-DGSi gas generators, **gas is produced on demand** according to your application, gas storage is minimum, gas pressure is as per application requirement only and the generator has leak detection interlocks with automatic generator shutdown procedure.

DON'T BUY YOUR GAS, **MAKE IT!**

Convenient

No cylinder changes

Purity

The gas purity is constant - no need to add extra gas filters

Economical

No gas contract administration, low and stable ongoing gas costs

Safety

Removes the risk of leaks, no need for long gas lines from cylinders

Efficient

Can be located either on the bench or on the floor next to your GC instrument

Green

No repeated gas deliveries, energy efficient

NITROGEN & NITROGEN/AIR GENERATORS

High purity generators to get the best from your analytical instruments

A quality nitrogen supply is the key to ensure reliable GC and LC-MS analytical results. Our first manufactured gas generator was a nitrogen generator that supplied an LC-MS instrument. F-DGSi offers the most extensive range of nitrogen generators for laboratories, with flow rates from a few liters/min to several M3/H and purities from 95% to 99.9995%.

F-DGSi offers also 2-in-1 gas solutions.
Economical and safe, multi gases generators allow you to produce either nitrogen and pure air for GC, GC-2D, MP-AES & LC-MS applications.

If you are interested in improving your laboratory nitrogen supply, contact us today or check out our wide range of nitrogen generators.

See the full range

www.f-dgs.com/nitrogen
www.f-dgs.com/nitrogen-air

Two Technologies

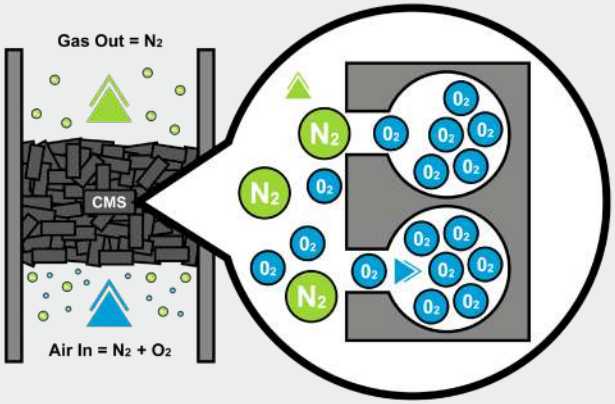
Depending on the purity and sensitivity as per market requirements and different laboratory applications, two technologies are available to generate nitrogen: PSA[1] (Pressure swing Adsorption) or Membrane[2].

Reliable and Robust PSA technology

Nitrogen gas generators using PSA rely on **Carbon Molecular Sieve (CMS)** to produce high-purity Nitrogen from compressed air.

CMS adsorbs smaller molecules like Oxygen and moisture, while Nitrogen passes through unadsorbed. This process is used in our liquid Nitrogen generators to produce high-purity Nitrogen gas efficiently.

The process has two stages: adsorption, where O2, H2O, and CO2 are captured by CMS while Nitrogen is collected, and regeneration, where pressure is released to vent the captured molecules, resetting the CMS for the next cycle.

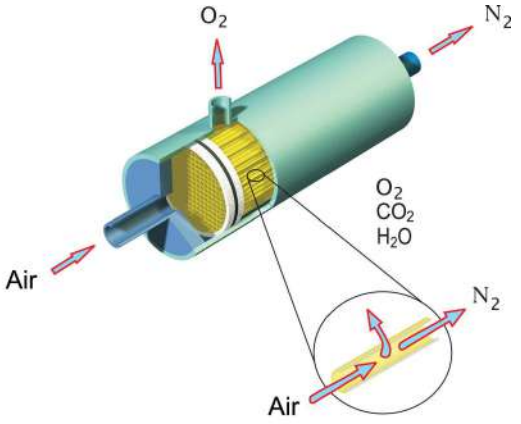


Membrane technology

Membrane gas generators separate gases based on their rate of diffusion through a bundle of hollow polymer fibres. Lighter gases like oxygen and water vapour pass through the membrane faster than nitrogen, which is retained and collected.

This technology is compact, quiet, and energy-efficient, making it ideal for applications requiring moderate nitrogen purity (up to ~99%). However, the nitrogen quality depends directly on the purity and pressure stability of the incoming compressed air.

Clean, dry, and stable air is essential to ensure consistent performance.



NESO

HIGH PURITY NITROGEN

GENERATORS FOR GC, TOC, FT-IR, ICP & CD

For analytical applications such as Gas Chromatography (GC), Total Organic Carbon (TOC), FT-IR, Inductively Coupled Plasma (ICP), and Differential Scanning Calorimetry (DSC), ultra-high purity gas is essential to guarantee accurate, stable, and reproducible results. These instruments require an exceptionally clean gas supply to prevent baseline noise, contamination, or damage to sensitive components.

Our **NESO** gas generator delivers nitrogen with a purity level of 99.9995%, making it ideal for these demanding applications. Its high level of purity ensures optimal performance and protection of your equipment.

For even more critical applications—especially those highly sensitive to hydrocarbon traces—the **Z.NESO** version provides the same 99.9995% nitrogen purity, but with hydrocarbon levels reduced to below 0.05 ppm.

Lastly, for circular dichroism applications, the **ZEPHYR** generator is specifically designed to provide the appropriate gas purity and flow stability required by these highly sensitive optical instruments.

General Informations on the nitrogen generator

	Applications	Flow rate	Pressure	Purity	Compressor
NESO	GC, TOC, FT-IR, ICP & DSC	1 to 10 L/min	6 bar / 87 psi	99.9995%	With / Without
Z.NESO	GC	1 to 10 L/min	6 bar / 87 psi	99.9995% ; HCs < 0.05 ppm	With / Without
ZEPHYR	Circular Dichroism	Up to 20 L/min	6 bar / 87 psi	Up to 99,999%	With / Without

PROSPERO THEMISTO

COMBINED HIGH PURITY NITROGEN/AIR

GENERATORS FOR GC-FID, MP-AES & GC-2D

For GC-FID applications, we offer a compact all-in-one solution that delivers both essential gases: nitrogen and zero air, in a single system designed for performance, simplicity, and efficiency. Our **PROSPERO** generator produces high-purity nitrogen and clean, hydrocarbon-free air, ideal for FID combustion and make-up gas needs. It ensures a stable and continuous gas supply without the hassle of gas cylinders.

For even more sensitive applications, the **Z.PROSPERO** version includes advanced hydrocarbon removal technology, reducing THC levels to below 0.05 ppm. This is particularly important for applications requiring ultra-clean air to maintain low background noise and high analytical accuracy.

Both systems are silent, and easy to install—making them the perfect plug-and-play solution for GC-FID users looking to save space, reduce costs, and maximize reliability in their lab setup.

Our **THEMISTO** range is designed for applications that require significantly higher gas flow rates, such as MP-AES and GC×GC.

General Informations on the combined nitrogen/air generator

	Description	Flow rate	N2/Air Pressure	Purity
PROSPERO	High Purity	N2: 1 & 3 L/min Air: 1.5 & 3 L/min	6 bar (87 psi)	N2: > 99.9995% Air: HCs < 0.1 ppm ; Air Dew point < -55°C (-67°F)
Z.PROSPERO	High Purity HCs Free	N2: 1 to 3 L/min Air: 1.5 to 5 L/min	6 bar (87 psi)	N2: > 99.9995% ; HCs < 0.05 ppm Air: HCs < 0.1 ppm; Air Dew point < -55°C (-67°F)
THEMISTO PEGA	Leco	N2: 20 L/min Air: 12 to 40 L/min	6 bar (87 psi)	N2 Dew point: < -60°C (-76°F) Air Dew point: 3°C (37.4°F)
THEMISTO MP	Agilent	N2: 10 & 25 L/min Air: 36.5 L/min	6 bar (87 psi)	N2: > 99.95% & 99.5% Air Dew point: < -20°C (-4°F)

CALYPSO

PURE NITROGEN & NITROGEN/AIR

GENERATORS FOR LC-MS(MS)

The first gas generator manufactured by F-DGSi was a nitrogen generator for LC-MS (Liquid Chromatography Mass Spectrometry). With more than 15 years of experience, our **CALYPSO** range has become the benchmark. Thanks to our close collaborations with the various manufacturers of LC-MS instrumentation, we have received multiple feedbacks for our CALYPSO where F-DGSi has currently the largest range of Nitrogen generators for LC-MS application.

Depending on the purity and sensitivity as per market requirements and different laboratory applications, **two technologies** are available to generate nitrogen: **PSA** (Pressure swing Adsorption) or **Membrane**.

The most advanced LC-MS **CALYPSO gas generator** on the market

- **Intelligent Color Touch Screen**

All the parameters are accessible using an intelligent and intuitive touch screen. Start/stop the unit, check the outlet gas flow as well as its pressure, check running hours and service hours, schedule the production during the week.

- **Remote PC monitoring and diagnostic analysis via USB**

The remote connection allows you to check internal parameters and system performance in real time without opening the device. The goal is to quickly diagnose critical points to make service maintenance faster and more precise. As a result, downtime and travel costs are reduced, this has proven to come as a very useful tool during the COVID phase.

- **Soundproofed compressor box**

The generator compressor is soundproofed, ensuring a minimum level of noise and vibrations. The generator can therefore be installed as close as possible to your analytical instrument.

- **Energy Saving Technology (EST)**

Our generator has Energy Saving Technology (EST) which allows the compressor to stop according to the gas demand. There is therefore a reduction in energy consumption and an increase in the performance/longevity of the compressor.

- **Data events logging over 30 days**

All generator events are stored on a SD card for 30 days to back up your data.

See the full range: www.f-dgs.com/calypso-generators

General Informations on the nitrogen generator

Available with or without compressor

	Description	Flow rate	Pressure	Purity
CALYPSO	N2 PSA	15 to 70 L/min	8 bar / 116 psi	> 99%
CALYPSO M	N2 Membrane	35 L/min	8 bar / 116 psi	97% - 99.5%
CALYPSO.DP.TH	Thermo - Double N2 Purities	35 & 70 L/min 100 & 200 ml/min	7 bar / 101 psi 6 bar / 87 psi	> 99% > 99.999%
CALYPSO.DP.WA	Waters - Double N2 Purities	35 & 70 L/min 400 & 800 ml/min	7 bar / 101 psi	> 99% > 99.999%
CALYPSO.DP.AG	Agilent - Double N2 Purities	35 & 70 L/min 400 & 800 ml/min	3 bar / 43 psi	> 99% > 99.999%

General Informations on the nitrogen/air generator

Available with or without compressor

	Description	Flow rate	N2/Air Pressure	Purity
CALYPSO M 3G.SC	Sciex	N2: 12 & 18 L/min Dry air source gas: 24 & 26 L/min Dry air exhaust gas: 8 & 25 L/min	5.5 bar (80 psi) 7.6 bar (110 psi) 4.1 bar (61 psi)	N2: > 99% Air: HCs < 0.1 ppm ; Air Dew point -20°C (-4°F)
CALYPSO 3G.SC	Sciex	N2: 12 & 18 L/min Dry air source gas: 24 & 26 L/min Dry air exhaust gas: 8 & 25 L/min		
CALYPSO 2G.SH	Shimadzu	Air/N2 combined: Up to 25 L/min N2: Up to 27 L/min Air: 29 L/min	6.9 bar (100 psi)	N2: > 98% Air Dew point: -20°C (-4°F)
CALYPSO 2G.PE	Perkin Elmer	N2: 15 L/min Air: 34 & 68 L/min	7 bar (101 psi)	N2: > 99% Air: HCs < 0.1 ppm ; Air Dew point -20°C (-4°F)
CALYPSO 2G.BR	Bruker	N2: 32 L/min Air: 50 L/min	5.5 bar (80 psi)	N2: > 99% Air Dew point: -20°C (-4°F)

TELESTO ERIS

PURE NITROGEN

GENERATORS FOR CAD & ELSD

For applications such as Charged Aerosol Detection (CAD) and Evaporative Light Scattering Detection (ELSD), where a nitrogen purity of 99.5% is sufficient, our **TELESTO** nitrogen generator offers a reliable, efficient, and tailored solution. Designed to meet the specific demands of analytical laboratories, the **TELESTO** ensures consistent performance, ease of use, and dependable gas delivery for optimal detection results.

In addition, our **ERIS** membrane-based generator produces high-quality nitrogen gas directly from ambient air, using an external oil-free air compressor. Utilizing advanced membrane separation technology, the ERIS delivers a continuous, clean nitrogen flow suitable for a wide range of laboratory applications.

Its compact and ergonomic design makes the **ERIS** ideal for benchtop placement, optimizing valuable lab space while maintaining easy accessibility. Quiet, low-maintenance, and efficient, it is a practical choice for modern laboratories seeking a cost-effective and space-saving nitrogen solution.

General Informations on the nitrogen generator

	Description	Flow rate	Pressure	Purity	Compressor
TELESTO	PSA	4 to 15 L/min	6 bar / 87 psi	99.5%	With / Without
ERIS	Membrane	35 L/min	7 bar / 101 psi	99.5%	Without

STREAM

PURE NITROGEN & NITROGEN/AIR

COMPRESSOR-FREE GENERATORS FOR LC-MS(MS)

Silent in operations, the **STREAM** series are able to run uninterrupted 24 hours a day.

To operate, the **STREAM** series of generators require an external source of compressed air, which meets a minimum quality grade of ISO 8573-1:2010 Class 1.4.1. Where required, F-DGSi can provide assistance on external compressors & pre/post filtration as part of delivering a complete solution for your needs

With few moving parts this generator has minimal maintenance requirements.
This generator can be wall mounted to save space in the lab.

General Informations on the nitrogen generator

	Description	Flow rate	Pressure	Purity
STREAM	Membrane	40 to 260 L/min	7 bar / 101 psi	97% - 99%

General Informations on the nitrogen/air generator

	Description	Flow rate	N2/Air Pressure	Purity
STREAM 2G	Shimadzu	N2: 27 L/min Air: 29 L/min	6.9 bar (100 psi)	N2: > 99.5% Air Dew point: -20°C (-4°F)
STREAM 3G	Sciex	N2: 12 to 85 L/min Dry air source gas: 26 to 85 L/min Dry air exhaust gas: 16 to 60 L/min	4.5 bar (65 psi) 7.6 bar (110 psi) 4.1 bar (61 psi)	N2: > 99.5% Air Dew point: -20°C (-4°F)

TORNADO

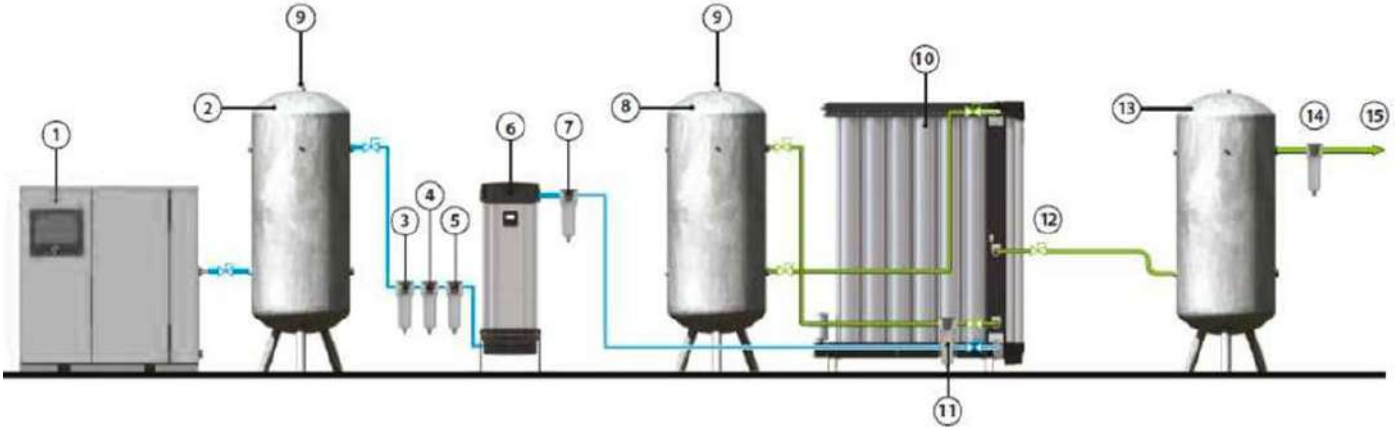
HIGH-FLOW NITROGEN FOR COMPLETE LABS

FOR LC-MS, GLOVEBOXES, FUME HOODS, SAMPLE EVAPORATORS

The **TORNADO** is a flexible, modular nitrogen generation system designed for on-site installation. It delivers a reliable and uninterrupted nitrogen supply across a wide range of flow rates and purities—up to 99.9995%—making it ideal for supporting multiple laboratory applications, including LC-MS, gloveboxes, fume hoods, sample evaporation systems, and more.

The **TORNADO** provides a complete nitrogen solution tailored to the needs of research and analytical labs. Based on PSA (Pressure Swing Adsorption) technology, each system is available in various pre-configured models, with different nitrogen flow capacities, and purity levels determined during design to suit the specific application.

Typical Installation



1 Air Compressor - 2 Humid air vessel - 3 Centrifugal separator - 4 Pre-filter - 5 Oil removal filter - 6 Adsorption dryer - 7 Particle filter - 8 Nitrogen regulation vessel - 9 Safety valve - 10 Nitrogen generator - 11 Particle filter - 12 Nitrogen outlet - 13 Nitrogen buffer vessel - 14 Particle filter - 15 Nitrogen outlet to application

General Informations

MODELS	TORNADO.ULTRA.										
	1110	2110	3110	2130	3130	4130	6130	8130	10130	12130	Air factor
N2 FLOW RATE [1] Nm^3/h VIA O2 PURITY											
99.999% (10 ppm)	0.9	1.8	2.7	5.1	7.7	10.2	15.3	20.4	23.5	27.2	6.8
99.995% (50 ppm)	1.7	3.4	5.1	7.2	10.8	14.4	21.6	28.8	33.1	38.4	5.1
99.99% (100 ppm)	2.0	4.0	6.0	8.9	12.6	16.8	25.2	33.6	38.6	44.9	4.6
99.975% (250 ppm)	2.5	5.0	7.5	10.0	15.0	20.0	30.0	40.0	46.0	53.3	3.6
99.95% (500 ppm)	3.0	6.0	9.0	11.4	17.1	22.8	34.2	45.6	52.4	60.9	3.5
99.9% (0.10%)	3.6	7.2	10.8	13.2	19.8	26.4	39.6	52.8	60.7	70.5	3.4
99.5% (0.50%)	5.2	10.4	15.6	18.9	28.4	37.8	56.7	75.6	86.9	100.9	2.8
99% (1%)	5.8	11.6	17.3	21.0	31.5	42.0	63.0	84.0	96.6	112.1	2.7
98% (2%)	7.3	14.5	21.8	26.4	39.6	52.8	79.2	105.6	121.4	141.0	2.4
97% (3%)	8.3	16.7	25.0	30.3	45.5	60.6	90.9	121.2	139.4	161.8	2.2
96% (4%)	9.5	19.0	28.5	34.5	51.8	69.0	103.5	138.0	158.7	184.2	2.1
95% (5%)	10.3	20.6	30.9	37.5	56.3	75.0	112.5	150.0	172.5	200.3	2.0

SPECIFICATIONS	
Design operating pressure range	6 - 12 barg [2]
Design operating temperature range	5 - 50°C
Recommended operating temperature range	20 - 25°C
Maximum inlet particulate	0.1 micron
Maximum inlet oil content	0.01 ppm [4]
Recommended inlet dewpoint	-40°C PDP [3]
Supply voltage	100 - 240 VAC (50 or 60Hz)
Power rating	72W

H2

HYDROGEN GENERATORS

The safest and most convenient alternative to helium GC Carrier Gas

To ensure reliable GC and GC-MS analytical results, a high quality hydrogen supply is essential. F-DGSi offers the widest range of hydrogen generators, benchtop and rack design, with different purities depending on the sensitivity required for your analyses.

If you want to improve your laboratory hydrogen supply, contact us today or check out our wide range of hydrogen generators.

See the full range

www.f-dgs.com/hydrogen-generators

Why users are shifting from gas cylinders to F-DGSi Hydrogen generator?

Hydrogen generators are more and more used by scientists because they are less bulky and safer than gas cylinders. By simple electrolysis of water, hydrogen generators deliver, on demand, high gas purity to supply to the detectors and GC carrier gas. Once installed, a hydrogen generator will provide hydrogen with constant purity 24 hours a day.

A hydrogen generator avoids any breakdown of analyses compared to gas cylinders, which will have to be ordered and replaced. It eliminates also the risk of gas quality variation. In fact, when changing cylinders, contaminants can enter the gas lines, affecting the analysis results.

Hydrogen generator is completely safe:
- it produces gas on demand, which means gas is produced as required for your GC at a regulated flow rate and under controlled pressure only.
- it is equipped with internal and external leak checks as well as an automatic shut-off function to stop the production of hydrogen.
- the volume of internal hydrogen stored is small (< 50 ml), compared to cylinders that store up to 9000 L at extremely high pressure (2000 - 3000 psi).
- it has capability of detection of various faults (water quality, water level and electrolytic cell information).
- real-time monitoring of gas pressure, to prevent overpressure and the hydrogen flow produced.
- it can be connected to a hydrogen sensor to detect the presence of hydrogen in the GC oven.

	Description	Flow rate	Delivery Pressure	Purity
COSMOS SERIES				
COSMOS MF.H2	High Purity - Dynamic regeneration dryer	110 to 1500 cc/min	1 - 11 bar (14 - 160 psi)	> 99.99999% (O2 < 0.1 ppm, dew point H2O < -75°C (-103°F)
COSMOS MD.H2	Standard Purity - Using a desiccant cartridge	110 to 600 cc/min	1 - 7 bar (14 - 101.5 psi)	> 99.9996% (O2 < 1 ppm, dew point H2O < -55°C (-67°F)
COSMOS MB.H2	Standard Purity - Static membrane dryer	110 to 600 cc/min	1 - 11 bar (14 - 160 psi)	> 99.9996% (O2 < 1 ppm, dew point H2O < -30°C (-22°F)
RACK SERIES				
RACK.MB.H2	Rack Standard Purity - Static membrane dryer	100 to 600 cc/min	0.1 - 11 bar (1 - 160 psi)	> 99.9996% (O2 < 1 ppm, dew point H2O < -30°C (-22°F)
RACK.MF.H2	Rack High Purity - Dynamic regeneration dryer	100 to 1350 cc/min	0.1 - 11 bar (1 - 160 psi)	> 99.99999% (O2 < 0.1 ppm, dew point H2O < -75°C (-103°F)

COSMOS GENERATORS

Stackable and modular solutions for GC & GC-MS

Specially designed for GC & GC-MS applications, the COSMOS range represents the cutting edge of F-DGSi innovation. Combining convenience and reliability, the COSMOS range is the stackable and modular solution that combines H2, N2 and Zero Air. An air compressor module can be stacked for laboratories without an air network to supply nitrogen and zero air generators with clean air.

The success of this range is the flexibility, as we offer you the right model following the limit of detection you are looking for in your GC results (standard or high purity gas) and the safety over traditional sources of laboratory gases such as cylinders.

See the full range

www.f-dgs.com/cosmos-generators

H2 HYDROGEN

For most GC detectors, generators of standard purity are sufficient to supply combustible gas to FID. For GC & GC-MS carrier gas, only high purity generators are recommended to achieve the desired detection limit.

N2 NITROGEN

For most GC detectors, the standard purity generator is sufficient to supply make-up gas, while the high purity generator is recommended to supply the GC carrier gas.

AIR ZERO AIR

The zero air generator is used to supply GC FID detectors by providing hydrocarbon-free air. The Total Zero Air Generator is recommended to reduce other air contaminants such as humidity, CO2, CO, NOx, SO2 and hydrocarbons.

COMP AIR COMPRESSOR

The silent air compressor can be stacked with other COSMOS generators users do not have an internal air network to supply nitrogen and zero air generators.

Why COSMOS Gas Generators are the complete solutions for GC & GC-MS labs?

High Purity Gas for Hydrogen, Nitrogen, Zero Air

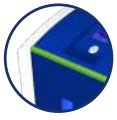
COSMOS generators ensure constant gas purity (generators operate 24H/24, 7days/7) and better gas quality by avoiding the entry of any possible contaminants that remain when changing cylinders.

Compact and stackable system

COSMOS generators are stackable in design, thus minimizing the total footprint required for GC & GC-MS gas supply. They provide the flexibility to add or remove modules as your lab needs change over time.

LED light status indicator

COSMOS generators show you its operating status via colors in order to work in complete safety.


RUNNING


STAND-BY


ALARM


OFF

Remote PC monitoring and diagnostic analysis via USB

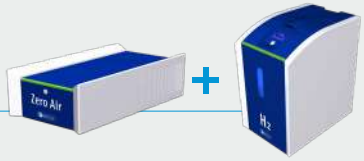
The remote connection allows you to examine internal parameters and system performance in real time without opening the device, making service maintenance faster and more precise. As a result, downtime and travel costs are reduced.

Modular Gas Solutions: Complete & Scalable Configurations

Our modular gas generators offer a complete and customizable solution for laboratories requiring multiple high-purity gases. Depending on the needs of your setup, you can configure the system as follows:

ZERO AIR + H2

(FID station)



ZERO AIR + ZERO N2

(Air for FID and ZERO N2 for carrier gas and make up)

ZERO AIR + H2 + ZERO N2

(Air and H2 for FID and ZERO N2 for carrier gas and make up)

ZERO AIR + H2 + ZERO N2 + AIR COMPRESSOR

Total solution for detector and carrier (N2 or H2) with air compressor

Each unit is compact, modular, and designed to be easily integrated into existing lab environments, ensuring reliable gas delivery with a minimal footprint.

General Informations

COSMOS HYDROGEN

	Description	Flow rate	Delivery Pressure	Purity
COSMOS MF.H2	High Purity - Dynamic regeneration dryer	110 to 1500 cc/min	1 - 11 bar (14 - 160 psi)	> 99.99999% (O2 < 0.1 ppm, dew point H2O < -75°C (-103°F)
COSMOS MD.H2	Standard Purity - Using a desiccant cartridge	110 to 600 cc/min	1 - 7 bar (14 - 101.5 psi)	> 99.9996% (O2 < 1 ppm, dew point H2O < -55°C (-67°F)
COSMOS MB.H2	Standard Purity - Static membrane dryer	110 to 600 cc/min	1 - 11 bar (14 - 160 psi)	> 99.9996% (O2 < 1 ppm, dew point H2O < -30°C (-22°F)

COSMOS NITROGEN

	Description	Flow rate	Pressure	Purity	Compressor
COSMOS N2	High Purity	0.4 to 1 L/min 0.8 to 1.8 L/min	5.5 bar / 80 psi	> 99.9995% > 99.99%	Without
COSMOS ZN2	High Purity HCs free	0.4 to 1 L/min 0.8 to 1.8 L/min	5.5 bar / 80 psi	> 99.9995% > 99.99% ; HCs < 0.05 ppm	Without

COSMOS ZERO AIR

	Description	Flow rate	Polluant	Pressure outlet
COSMOS ZA	HCs free	1.0 to 30 L/min	Total HCs/CO outlet < 0.05 ppm	6.5 bar (94 psi)
COSMOS ZA.TOTAL	HCs, CO2 and NO free	1.0 to 30 L/min	Total HCs/CO outlet < 0.05 ppm CO2, NOx, SO2 < 0.05 ppm	6.5 bar (94 psi)

COSMOS AIR COMPRESSOR

	Description	Flow rate	Outlet air Dew Point	Pressure outlet
COSMOS AIR COMPRESSOR	Clean and Dry Air	26 L/min	- 20°C (- 4°F)	8 bar (116 psi)

AIR

AIR GENERATORS

Supply your analytical instruments with a high purity air generator

If your laboratory needs high air quality, F-DGSi offers the widest range of zero air, ultra zero air and CO2-free air generators for applications such as GC, TOC and FT-IR analysis. We can offer these generators with or without compressor.

If you are interested in improving your laboratory air supply, contact us today or check out our wide range of air generators.

See the full range

www.f-dgs.com/air-generators

	Description	Flow rate	Polluant	Pressure outlet
GC				
COSMOS ZA	HCs free	1.0 to 30 L/min	Total HCs/CO outlet < 0.05 ppm	6.5 bar (94 psi)
COSMOS ZA.TOTAL	HCs, CO2 and NO free	1.0 to 30 L/min	Total HCs/CO outlet < 0.05 ppm CO2, NOx, SO2 < 0.05 ppm	6.5 bar (94 psi)
DEIMOS UZA	H2O, HCs free	1.5 to 50 L/min	Total HCs/CO outlet < 0.05 ppm dew point H2O < -50°C (-58°F)	6 bar (87 psi)
DEIMOS UZA.TOTAL	H2O, CO2, NO, HCs free	1.5 to 50 L/min	Total HCs/CO/NOx/SO2 outlet < 0.05 ppm Total CO2 outlet < 5 ppm dew point H2O < -50°C (-58°F)	6 bar (87 psi)
RACK.ZA	Rack HCs free	1.8 to 15 L/min	Total HCs/CO outlet < 0.05 ppm	6.5 bar (94 psi)
TOC				
DEIMOS TOC	H2O, CO2, HCs free	1.5 to 6 L/min	Total HCs/CO outlet < 0.05 ppm Total CO2 outlet < 1 ppm dew point H2O < -70°C (-94°F)	6 bar (87 psi)
FT-IR				
DEIMOS CO2.FREE	H2O, CO2 free	1 to 30 L/min	CO2 outlet < 1 ppm dew point H2O < -70°C (-94°F)	6 bar (87 psi)

The differents Air Purification Technology available

Zero Air

Uses high-temperature platinum catalyst that oxidizes hydrocarbons and carbon monoxide to < 0.05 ppm. (Option*)

Ultra Zero Air

Uses alumina bed adsorption technology (PSA) to remove moisture and a palladium catalyst that oxidizes hydrocarbons and carbon monoxide to < 0.05 ppm. (Option*)

TOC

Uses high-temperature platinum catalyst which, through oxidation, removes hydrocarbons and carbon monoxide to < 0.05 ppm. CO2 and moisture are removed via a CO2-free air dryer, producing a clean, dry, high-purity TOC gas stream.

CO2 Removal

The gas generator is designed to take pre-filtered compressed air at 8 bar from the existing laboratory supply or via the built-in oil-free compressor. The pre-filtered air enters an air dryer to remove CO2 and moisture, producing a clean, dry, CO2-free air stream.

*Option: The generator allows in addition to remove other polluants such as NOx and SO2. The NOx is reduced with a Purafil filter and the other components are removed with an activated carbon filter.

LN2

LIQUID NITROGEN GENERATORS

Reliable, safe and plug-and-play supply for your cryogenic needs

Liquid nitrogen finds its applications across a spectrum of industries, from medical and scientific research to metal treatment and dermatology where ultra-low temperatures are critical. However, handling dewars of liquid Nitrogen can be challenging, with safety risks, logistical hassles, and purity concerns.

The solution? On-site, on-demand liquid Nitrogen production. The CRYOGEN series developed by F-DGSi allows you to generate your own liquid Nitrogen—anytime, anywhere! Just connect it to a power supply, press start, and produce 8 up to 960 liters per day automatically.

CRYOGEN Models for 8-80 L/Day

CRYOGEN Skid for 130-960 L/Day

See the full range: www.f-dgs.com/cryogen-generators

KEY FEATURES

Why choose an F-DGSi Liquid Nitrogen Generator?

On-Demand Production
Generate liquid Nitrogen on-demand from ambient air.

Convenience
Eliminate the inconvenience from delivery delays and reliance on external suppliers.

Flexible Output
Produce **8 up to 960 L/Day** (higher capacities available).

High-purity LN_2
Produce liquid Nitrogen with 99% purity (Oxygen < 1%).

Remote control
Monitor and control via USB or internet access.

Low maintenance
Require minimal servicing and ensure maximum uptime.

Economical Performance
On-site generation is cost-effective and delivers a fast return on investment.

Safe Operation
Designed with a robust cabinet, certified built-in dewar, safety valves, and advanced electronics for secure use.

Easy to operate and dispense
Control via intelligent, intuitive touch screen to start/stop, monitor real-time process, set all parameters and schedule maintenance. Use the insulated cryogenic hose to easily dispense the liquid Nitrogen once the built-in dewar is filled.

Energy efficient & sustainable
Automatically switches to economy mode when not in use, reducing energy consumption, while sustainable on-site production eliminates the need for truck deliveries.

O_2 analyser with alarm
Built-in Oxygen sensor alerts the staff when Oxygen levels become critical.

“ Just plug in, press start, and the CRYOGEN automatically generates liquid Nitrogen on-demand! ”

Water cooled Liquid Nitrogen Generator with Helium compressor

	Max L/Day	Max L/Hour	LN2 Dewar Capacity	LN2 Pressure	Power Consumption	Dimensions	Cooling Water requirement	Air Comp.	Electrical supply
CRYOGEN.20	20	0.84	60 L	Up to 1.5 bar*	4.2 kW	1	4.5 kW	0.6 kW	Type B or C
CRYOGEN.20+	20	0.84	210 L		4.2 kW	2	4.5 kW	0.6 kW	
CRYOGEN.30	30	1.25	210 L		4.2 kW	3	5.0 kW	1.2 kW	
CRYOGEN.40	40	1.67	210 L		4.2 kW	3	5.0 kW	1.2 kW	
CRYOGEN.65	65	2.7	210 L		6.9 kW	4	7.2 kW	1.2 kW	
CRYOGEN.80	80	3.33	210 L		6.9 kW	4	7.2 kW	1.2 kW	
CRYOGEN.130	130	5.42	300 L		13.8 kW	6	13.8 kW	4.0 kW	
CRYOGEN.240	240	10	500 L		13.8 kW	7	13.8 kW	4.0 kW	
CRYOGEN.480	480	20	1000 L		27.6 kW	8	30 kW	7.5 kW	
CRYOGEN.720	720	30	1000 L		41 kW	8	42 kW	7.5 kW	
CRYOGEN.960	960	40	2000 L		55 kW	9	55 kW	13.5 kW	

Air cooled Liquid Nitrogen Generator with Helium compressor

	Max L/Day	Max L/Hour	LN2 Dewar Capacity	LN2 Pressure	Power Consumption	Dimensions	Electrical supply
CRYOGEN.FLASK.08-RA	8	0.33	60 L	Up to 1.5 bar*	1.3 kW	1	Type A
CRYOGEN.10-RA	10	0.41	60 L		1.3 kW	1	
CRYOGEN.16-RA	16	0.66	60 L		2.7 kW	1	
CRYOGEN.20-RA	20	0.84	60 L		4.2 kW	2	Type B or C
CRYOGEN.30-RA	30	1.25	210 L		4.2 kW	3	
CRYOGEN.40-RA	40	1.67	210 L		4.2 kW	3	
CRYOGEN.65-RA	65	2.70	210 L		6.9 kW	5	
CRYOGEN.80-RA	80	3.34	210 L		6.9 kW	5	

Cryogen production rate at + 25°C and < 2000 meters altitude at 50Hz. * boost mode up to 4 bar to increase liquid N2 production.

For information

As standard, our generators feature a fully automated system, combining oil-free air compression, PSA Nitrogen generation, cryo-cooling, and Helium compression.

All controlled via a user-friendly touchscreen.

The helium compressor can be cooled using two primary methods: water cooling or air cooling.

OTHER SPECIFICATIONS		
Liquid N_2 Purity		> 99% (< 1% O2)
Built-in O_2 analyser with alarm		Yes
Temperature range		7 - 25°C (45 - 77°F)
Type of Electrical supply	**A**	100 - 240 V ac / 1 ph + neutral and earth / 50 - 60 Hz
	B	200 V ac / 3 ph + neutral and earth / 50 - 60 Hz
	C	380 - 440 V ac / 3 ph + neutral and earth / 50 - 60 Hz
Noise level		Between 52 and 65 dBA (depends models)
USB/PC Control		In series

DIMENSIONS & WEIGHT			
Type	N°	W x H x D	kg / lbs
1 door cabinet on wheels	**1**	80 x 196 x 80 cm (31" x 77" x31")	320 / 705
2 doors cabinet on wheels	**2**	180 x 196 x 80 cm (71" x 77" x 31")	450 / 992
2 doors cabinet on wheels	**3**	180 x 196 x 80 cm (71" x 77" x 31")	506 / 1115
2 doors cabinet on wheels	**4**	180 x 196 x 80 cm (71» x 77» x 31»)	600 / 1322
2 doors cabinet on wheels with remote cooling unit	**5**	180 x 196 x 80 cm (71" x 77" x 31") + unit 100 x 95 x 34 cm	600 / 1322 (unit 120 / 264)
Skid platform (without chiller & comp.)	**6**	200 x 170 x 200 cm (78.7" x 67" x 78.7")	1250 / 2755.7
Skid platform (without chiller & comp.)	**7**	160 x 180 x 280 cm (63" x 70.8" x 110")	1770 / 3902
Skid platform (without chiller & comp.)	**8**	200 x 250 x 300 cm (78.7" x 98" x 118")	2500 / 5511.5
Skid platform (without chiller & comp.)	**9**	200 x 250 x 300 cm (78.7" x 98" x 118")	3000 / 6613.8

OTHERS SOLUTIONS AND ACCESSORIES

GAS FILTRATIONS | COMPRESSORS | SECURITY | GAS STORAGE

Air Dryers & Air/Gas Filters

Particles, water and oil that may be present in the compressed air cause rapid wear and tear on the equipment and affect the performance and life of the analytical equipment. The provision of clean, dry, contaminant-free compressed air is therefore important in a laboratory.

We offer several types of air dryers depending on the air quality required for your analytical instruments.

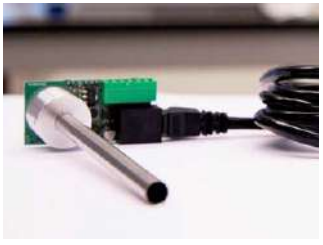
- **NDL (Absorption Air Dryers):** GC-FID | GC-ATD | NMR | Rheometer | Atomic absorption
- **NDC (CO2 Free Air Dryers):** FT-IR | Purge microscope | TOC | Laser

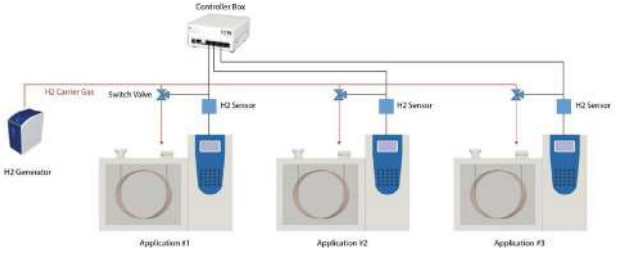
As well, a wide range of compressed air filters and gas filters in order to protect your gas generators and your analytical instruments.

See the full range on www.f-dgs.com/air-dryers-air-gas-filters

Safety Gas Detection

The hydrogen sensor is one more safety device available that allows you to secure the use of hydrogen in your GCs. It continuously checks potential leak of hydrogen in the GC oven. This sensor has been designed to automatically stop the generator when the amount of hydrogen is higher than the safety threshold.





See the product on www.f-dgs.com/safety-gas-detection

Air Production

In order to supply our generators with compressed air, we offer a range of silent, oil-free air compressors suitable for your laboratory applications.

See the full range on www.f-dgs.com/air-production

Ultrapure Water Production

From your tap water network, you can produce ultra pure water. We offer a very compact system that can be wall mounted or placed on the bench. It will allow you to supply ultra pure water to your hydrogen generator or any other application requiring this quality of water.

Accessories

Gas Tanks

We offer a wide range of painted or galvanized tanks for storing gas or compressed air.

Buffer vessel are recommended for:

- Gas supply for the instrumentation with sensitive pressure
- The storage of incoming nitrogen from a nitrogen generator
- Any other instrument requiring occasionally high flow of compressed gas which exceeds the normal gas capacity of the generator

Pressure Regulators

In order to have a turnkey solution, we propose a whole range of dual stage cylinder pressure regulators and points of use pressure regulators.

Fittings and tubing

To connect your generators to your analytical instruments, various fittings, isolation valves and tubing are available.

See the full range on www.f-dgs.com/accessories

ALL BENEFITS

WORLD-CLASS BENEFITS IN ORDER TO MAINTAIN YOUR GAS SUPPLY

With F-DGSi generators, it is a new partnership that begins. Whether it is for an installation, an unforeseen breakdown or any other service, our teams of engineers and technical assistants are at your disposal to answer your questions related to our generators, wherever you are in the world.

F-DGSi expertise: What do we cover?

In order to be as close as possible to our customers, we have a wide range of services and benefits to meet your expectations. Installation, maintenance and qualification of your products, we strive to help and advise you in the implementation of your F-DGSi products. For special requests other than the one below, please contact us, we will be happy to find solutions.

Installation
Installing the products to meet your needs

Re-location
Relocation service for your products

Advice
Your expert in gas supply by your side

Rent or lease sale
Rental of a wide range of equipment

Parts Service / Consumables
A hotline to guarantee you a 48h deadline

Maintenance
Service plans and maintenance contracts

Repairs
Repair on customer site or F-DGSi office

4Q Qualifications
CQ / IQ / OQ / PQ Qualifications

Customized training
Training by our technical experts F-DGSi

Learn more on www.f-dgs.com/benefits

[F-DGSi Care]

GET PEACE OF MIND WITH OUR WORLD-CLASS GAS GENERATOR SERVICE PLANS

When you invest in an F-DGSi gas generator, you're buying more than just a generator, you're starting a longterm partnership. The after sales service department not only keeps your generators in good working conditions, but also guarantees outstanding performance throughout their life cycle.

5 types of service plans for your gas generator

With on-site repairs and regularly scheduled maintenance, our various contracts will help you to reduce disruptions to your laboratory operations and to improve efficiency and productivity, with no hidden or unexpected costs.

Hotline Contract Do the maintenance yourself	**Day Ticket Contract** Peace of mind for your maintenance budget	**Basic Preventive Contract** Includes travel and labor without parts
Silver Preventive Contract Includes preventative maintenance parts	**Gold Contract** Contract Premium: Total peace of mind	

The benefits to take one of our FrenchCare Contracts

Cost Control

Preventive maintenance by experienced professionals of F-DGSi will reveal any wear and tear at an early stage. This avoids unexpected expenses and allows you to better control the costs of using the device.

Priority

With a Service Contract, you are our priority. We guarantee a quick maintenance response in case of emergency.

Reduced downtime

Reduce your risk of breakdowns and unscheduled downtime! Remote access to your equipment allows to analyze critical equipment parameters and identify pending failures before they affect your lab operations.

Flexibility

At the point of equipment sale, different payment options are available (Annual, Bi-annual, Quarterly, ...)

Get more details for contracts on www.f-dgs.com/service-plans

F-DGSi
Innovative Gas System Company

LAB GAS GENERATORS

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IMPRESSION: DEFICOM