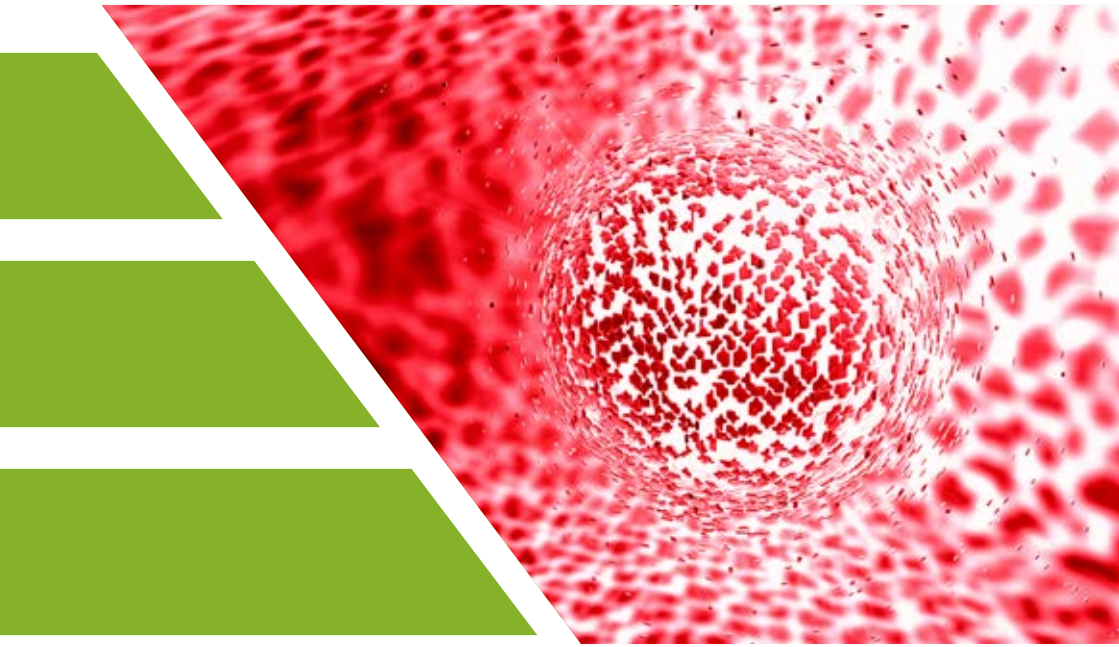
*Your local **gas generation** partner*

PEAK SCIENTIFIC



Gas Generators

For Shimadzu Instruments

SHIMADZU
Excellence in Science

Discover more at **www.peakscientific.com/shimadzu**

Our story

THE PEAK WAY

PEAK Scientific is a leading innovator in the design, manufacture and support of high-performance gas generators for analytical laboratories. Established in 1997 near Glasgow (Scotland), where our corporate Headquarters and high-tech manufacturing and R&D facilities reside, PEAK Scientific boasts a significant local presence on every continent – including major operations in North America, China and India.

With over two decades of experience pioneering reliable gas generator technology, PEAK Scientific develops market-leading nitrogen, hydrogen and zero air systems mainly for the field of LC-MS and GC.

Our strength lies in providing our customers with high-quality, dependable gas generation solutions tailored to meet their specific laboratory demands; what differentiates us is our world-class technical support and on-going service care throughout the generator's lifespan, wherever you are in the world.

MANUFACTURING EXCELLENCE

Our products are the result of our meticulous Research and Development culture, built over more than 20 years at the forefront of the gas generator market. We pride ourselves on the greatest care taken to assess specific application needs before designing and rigorously testing new products.

As we have expanded, our R&D capabilities have advanced to the point where we are better equipped than ever to meet changing market demands. By implementing the latest manufacturing technologies and philosophies, PEAK continues to improve product quality, responsiveness and efficiency – resulting in a better value proposition for our customers.

Every PEAK Scientific generator is designed from our ISO 9001:2015 accredited manufacturing center of excellence in the UK and independently tested to ensure compliance with all applicable safety standards.

Our story

PEAK AND SHIMADZU

Shimadzu is a global manufacturer and distributor of mass spectrometers and analytical tools headquartered in Kyoto, Japan. Shimadzu and PEAK Scientific have been working in conjunction since 2009, when a gas solution for the LCMS-8050 was in development, culminating in the launch of the Genius 1051.
Since then, PEAK has produced several gas generation solutions for Shimadzu applications including the Genius 3051, and most recently the Genius XE SMZ. PEAK has also specifically designed the Precision Nitrogen Headspace for the Shimadzu HS-10 and HS-20, the TOC 1000 to support all Shimadzu TOC instruments and the PG14L for Shimadzu FT-IR instruments.

DEDICATED GAS SOLUTION

Product Managers and Engineers from both organizations are in constant contact throughout the New Product Development process to ensure PEAK's products meet and exceed the specific gas requirements of Shimadzu's range of LC-MS, GC and TOC instruments.
There is a PEAK Scientific gas generator for any Shimadzu LC-MS, GC or TOC instrument you may have. PEAK have engineered purposely built generators, meeting the most efficient operating standards of Shimadzu's TOC, FT-IR, GC, Headspace Autosampler and 8030, 8040, 8045, 8050, 8060, 8060NX & 9030 LC-MS instruments.

SHIMADZU
Excellence in Science

Our Promise

Our commitment is to provide laboratories with a reliable gas generation solution that delivers long term value. We achieve this through **exceptional product** design, and direct global on-site support that is **unmatched** in our industry.

We take a vested interest in customer outcomes and strive to be a valued partner in their success by delivering **exceptional service** over the life of our product.

Our story

PEAK PERFORMERS: OUR WORLD-CLASS PRODUCT PLATFORMS

PEAK has developed dedicated product platforms to support numerous Shimadzu instruments. Our best-selling Genius and Genius XE series, designed mainly for LC-MS and LC-MS/MS applications, is a self-contained system featuring integrated compressors, delivering laboratory-grade nitrogen at various pressures and flow rates required by numerous laboratory instruments.

The Infinity, Infinity XE and Solaris series of nitrogen gas generators are silent-running compressor-free systems for laboratories with an in-house supply of clean, dry air - delivering nitrogen/dry air in a wide range of flow rate.

For TOC instruments, PEAK's Total Organic Carbon generators have been developed to provide TOC-grade gas from a compact footprint. For Shimadzu's FT-IR instruments the PG gas generator provides constant CO2 free purge gas.

Engineered specifically to meet the needs of Gas Chromatography our cutting-edge Precision series is a modular system consisting of high-purity nitrogen, hydrogen and zero air generators that can be combined into a compact stack tailored to your needs.

Application Matrix

		PEAK Solution	
Application		**Single Instrument**	**Two Instruments**
LCMS IT TOF	No compressor	Solaris XE 35	Infinity XE 6010
	Built in compressor	Genius XE 35	Genius XE 70
LCMS-2020	No compressor	Solaris XE 35	Infinity XE 6010
	Built in compressor	Genius SQ 24	Genius XE 70
LCMS-2050	No compressor	Solaris XE 35	
	Built in compressor	Genius SQ 24	
LCMS-8030	No compressor	Solaris XE 35	Infinity XE 6010
	Built in compressor	Genius XE 35	Genius XE 70
LCMS-8040	No compressor	Solaris XE 35	Infinity XE 6010
	Built in compressor	Genius XE 35	Genius XE 70
LCMS-8045*	No compressor	Infinity 1051	-
	Built in compressor	Genius 1051	Genius XE SMZ*
LCMS-8050*	No compressor	Infinity 1051	-
	Built in compressor	Genius 1051	Genius XE SMZ*
LCMS-8060*	No compressor	Infinity 1051	-
	Built in compressor	Genius 1051	Genius XE SMZ*
LCMS-8060NX	Built in compressor	Genius XE SMZ	2 x Genius XE SMZ*
LCMS-9030	Built in compressor	Genius XE SMZ	2 x Genius XE SMZ*

Note:

* The **Genius 1051, 1061** is the recommended PEAK solution for both the 8045, 8050 and 8060, and will provide sufficient gas flow when the 8045/8050/8060 is operating in '**Default Gas Delivery Mode**'. 2 instruments operating in '**Default Gas Delivery Mode**' may be supplied bya single Genius XE SMZ, if the total combined gas requirement does NOT exceed 66LPM.

When operating in '**High Flow Gas Delivery Mode**', the gas flow requirement is increased, which may exceed the capabilities of the Genius 1051, in this instance the **Genius XE SMZ** is the recommended solution.

NB: The Genius 1061 has been designed specifically for use within the japanese market.

Application Matrix

PEAK Gas Generator Recommendations For Shimadzu GC					
	Carrier Gas		Detector Gas		
Detector	Hydrogen	Nitrogen	Hydrogen	Air	Nitrogen
MS	Precision Hydrogen Trace	Precision Nitrogen Trace	Not Applicable		
FID	Precision Hydrogen Trace	Precision Nitrogen Trace	Precision Hydrogen	Precision Zero Air	Precision Nitrogen
TCD	Precision Hydrogen Trace	Precision Nitrogen Trace	Precision Hydrogen Trace	-	Precision Nitrogen Trace
ECD	Precision Hydrogen Trace	Precision Nitrogen Trace	-	-	Precision Nitrogen Trace
ECD Sensitivity	Precision Hydrogen Trace	Precision Nitrogen Trace	-	-	Precision Nitrogen Trace
FPD	Precision Hydrogen Trace	Precision Nitrogen Trace	Precision Hydrogen SL	Precision Zero Air	-
FTD	Precision Hydrogen Trace	Precision Nitrogen Trace	Precision Hydrogen SL	Precision Zero Air	Precision Nitrogen

PEAK Gas Generator Recommendations For Shimadzu Headspace Autosampler	
Instrument	Recommendation
GC Headspace Autosampler HS-10	Precision Nitrogen Headspace
GC Headspace Autosampler HS-20	Precision Nitrogen Headsapce

PEAK Gas Generator Recommendations For Shimadzu TOC	
Instrument	Recommendation
TOC (All Models)	TOC1000 / PG14L*

PEAK Gas Generator Recommendations For Shimadzu FT-IR	
Instrument	Recommendation
FT-IR	PG14L

*Precision Air Compressor can support these generators if compressed air supply is required

Genius XE SMZ

DESCRIPTION

With dual outlets (1 x nitrogen, 1 x air), Genius XE SMZ has been precision engineered to provide LC-MS grade nitrogen on-demand from a small and quiet gas generator. Featuring Multi-Stage Purification™ and next-generation integrated compressors with Electronic Compressor Optimization™ (ECO) technology, Genius XE SMZ can comfortably support the latest Shimadzu LC-MS instruments including the LCMS-8060NX.

Features

- Validated and approved by Shimadzu to meet the demands of the latest Shimadzu LC-MS instruments
- Multi-Stage Purification™ to efficiently remove moisture and contaminants, providing a consistent quality of gas
- Low impact on lab environment with low noise and heat emissions
- Next-generation high performance premium compressors, engineered exclusively for Genius XE
- Touch-screen full color user interface for ease of use and operation
- ECO (Electronic Compressor Optimisation™) technology for low energy consumption and compressor durability
- Fixed annual maintenance schedule
- 2 year comprehensive manufacturer's warranty*

Product	Flow Rate	Gas Output	Pressure	Size (HxWxD)	Application
Genius XE SMZ	27 l/min 29 l/min	Nitrogen Air	100 psi / 6.89 bar	700 x 570 x 897 mm 27.6 x 22.5 x 35.4"	8045, 8050 and 8060, 8060NX, 9030

** Year 2 of warranty subject to generator being serviced at end of year 1 by a PEAK-approved agent in accordance with fixed annual maintenance schedule.*

Genius 1051

DESCRIPTION

The Genius 1051 has been developed to provide nitrogen gas and dry air to the Shimadzu LC-MS-8045, 8050 or 8060 to labs with electrical supply of up to 230V. We've built the Genius 1051 with two internal air compressors as standard, this removes the reliance upon an in-house air supply The configuration allows users to change the flow ratio of nitrogen and dry air, such that the total flow is 25L/min, split between nitrogen and dry air.

Features

- Compressor based solution, no need for an external air supply
- Minimal set-up required
  Highly economical source of nitrogen gas with low lifetime running costs
- The latest generation of compressors located in an insulated chamber reducing noise and vibration
- Service indication to allow planning of preventative maintenance
- 12 month comprehensive on-site warranty

Product	Flow Rate	Gas Output	Pressure	Size (HxWxD)	Application
Genius 1051	up to 25 L/min total	Nitrogen & Dry Air	110 psi / 7.6 bar	713 x 600 x 750 mm 28.1 x 23.7 x 29.6"	8045, 8050 and 8060 LC-MS/MS in Default Gas Mode

Stability and reliability are really important. We cannot afford to pause our research efforts due to a bad Nitrogen tank or limited delivery over holidays. Having a PEAK gas generator helps ensure that our **LCMS systems are always in operation**.

Michael Jacobsen
Senior Research Manager
Danny Chou Lab, Stanford
USA

Genius XE Series

DESCRIPTION

Inspired by the success of our best-selling Genius line of nitrogen gas generators for LC-MS/MS, Genius XE Nitrogen is a cutting-edge evolution combining advanced technology with refined and robust engineering. With two models - XE 35 (up to 35 L/min) and XE 70 (up to 70 L/min) - Genius XE Nitrogen provides a premium standalone nitrogen solution for high performance LC-MS/MS and other mission-critical laboratory applications where performance and reliability are paramount.

Features

- Variable flow up to 70 L/min
- Variable pressure up to 116 psi
- Multi-Stage Purification™ producing analytical grade nitrogen gas up to 99.5% purity
- 2 year comprehensive manufacturer's warranty*
- Touch-screen full colour user interface for ease of operation
- Additional compressor capacity (Genius XE 70 only)

Product	Flow Rate	Gas Output	Pressure	Size (HxWxD)	Application
Genius XE 35	up to 35 L/min	Nitrogen	116psi / 8 bar	650 x 570 x 710 mm 25.2 x 22.5 x 28"	LC-MS/MS
Genius XE 70	up to 70 L/min	Nitrogen	116psi / 8 bar	1000 x 570 x 710 mm 23.6 x 29.5 x 28 in39.4 x 22.5 x 28"	LC-MS/MS

** Year 2 of warranty subject to generator being serviced at end of year 1 by a PEAK-approved agent in accordance with fixed annual maintenance schedule.*

Genius SQ 24

DESCRIPTION

For labs using any Single Quad LC-MS systems, the Genius SQ 24 nitrogen gas generator delivers analytical grade nitrogen supply dedicated for this instrument. With a compact size to fit under most lab benches and flow rates of up to 24 L/min, meeting and exceeding the maximum flow rate required by any Single Quad LC-MS on the market today, your lab can enjoy hassle free nitrogen gas which helps you deliver the best analytical results.

Features

- Best value nitrogen generator on the market
- Variable flow up to 24 L/min
- Analytical grade nitrogen supply for Single Quad LC-MS
- Outlet pressure up to 116psi (at 22 L/min maximum)
- Reduced height and compact size to fit under most lab benches
- Integrated internal compressors for easy plug and play

Product	Flow Rate	Gas Output	Pressure	Size (HxWxD)	Application
Genius SQ 24	24 L/min	Nitrogen	116psi / 8 bar	610 x 600 x 750 mm 24.1 x 23.7 x 29.6"	Single Quad LC-MS

Infinity 1051

DESCRIPTION

Designed and engineered as an on-site, compressorless nitrogen generation solution tailored for the Shimadzu LCMS-8045, 8050 or 8060, the Infinity 1051 delivers one output of nitrogen and another of dry air to laboratories who already have an existing air supply.

Features

- Both a nitrogen and dry air output suitable for the Shimadzu LCMS-8045/50/60 and instruments requiring similar specifications
- 24/7 operation at optimum performance if required
- Gas is supplied on demand so generator works to your schedule
- Few moving parts means little maintenance required and ensures long life of the generator
- Minimal set-up required
- Completely silent in operation
- 12 month comprehensive on-site warranty

Product	Flow Rate	Gas Output	Pressure	Size (HxWxD)	Application
Infinity 1051	up to 25 L/min total	Nitrogen Dry Air	100 psi / 6.9 bar 100 psi / 6.9 bar	730 x 424 x 250 mm 28.8 x 16.7 x 9.9"	LCMS-8045/ 8050/ 8060 instruments

Product

Solaris XE

DESCRIPTION

PEAK Scientific's Solaris XE generator has been engineered using membrane technology to meet the gas delivery requirements for labs using LC-MS or multiple lower flow nitrogen instruments such as ELSDs or Compact Mass Spectrometers. Solaris XE can operate with varying flow rates (up to 35L/min of high purity nitrogen), purity (up to 99.5%) and outlet pressure can be adjusted down from 116psi, offering a flexible solution for a variety of applications.

Features

- Nitrogen up to 35L/min, up to 116 psi and up to 99.5% purity
- Variable outlet flow, pressure and purity
- Compact, stackable system maximizing the use of valuable laboratory floor or bench space
- Colour indicative LED lighting for easy status awareness
- Manufactured and tested to highest spec in UK, CE/FCC/CSA certified

Product	Flow Rate	Gas Output	Pressure	Size (HxWxD)	Application
Solaris XE	35 L/min	Nitrogen	116psi / 8 bar	156 x 343 x 650 mm 6.2 x 13.5 x 25.6"	LC-MS, LC-MS/MS or Multiple ELSDs

Product

TOC1000

DESCRIPTION

The TOC 1000 has been engineered using the latest in PSA and air catalyst technology to supply clean, dry, CO2 and hydrocarbon-free air for Total Organic Carbon analyzers using combustion catalytic oxidation.

The TOC 1000 provides a consistent and continuous supply of carrier and combustion air for TC, IC, TOC and NPOC analysis from a compact, bench-top system. Meeting the purity requirements of all combustion-type TOC analyzers, PEAK Scientific's TOC 1000 can support up to 5 TOC instruments with a maximum output of 1000cc/min.

Features

- 1000cc TOC-grade air @ 50psi outlet pressure
- <1ppm CO2, <0.05ppm CH4, <0.1ppm NOx/SOx
- Tested and validated on leading TOC instrument manufacturers' equipment
- Plug and play supply for TOC instruments with minimal set-up required
- Can operate 24/7 with no compromise on performance
- NPL (National Physical Laboratory) validated performance of catalytic chamber
- Space-saving small bench-top form factor
- Effectively silent in operation
- 2 year comprehensive warranty

Product	Flow Rate	Gas Output	Pressure	Size (HxWxD)	Application
TOC1000	1000 cc/min	Air	50 psi / 3.4 bar	334 x 270 x 530 mm 13.5 x 10.7 x 20.9"	TC, IC, TOC, NPOC

Product

Precision SL

DESCRIPTION

The smallest hydrogen generator for GC-FID, the Precision Hydrogen SL line has been developed to offer a streamlined laboratory-grade hydrogen gas solution for GC flame detectors at a purity of 99.9995%. Precision Hydrogen SL is safe, simple to use, easy to maintain and takes up minimal bench space.

With an impressive form factor, Precision Hydrogen SL produces hydrogen at up to 200cc/min with no compromise on safety. A range of features ensure that Precision Hydrogen SL will produce hydrogen safely, storing a minimal volume of gas compared to cylinders.

Features

- 2 models – 100cc and 200cc
- 99.9995% purity @ 100 psi
- One-button start-up and shutdown
- Easy end-user managed servicing
- Optional auto-water fill or pressurized water fill
- Auto-shutdown fail-safe feature
- CE, CSA compliant
- 2 year comprehensive warranty*
- Available in black or white

** dependent on annual change of DI cartridge*

GC Gas Calculator

Here at PEAK we are always trying to help with your workflow...

Visit **www.peakscientific.com/gasflow** to calculate the optimal Precision gas generator stack solution for you.

Product

Precision Hydrogen

DESCRIPTION

The Precision Hydrogen generators come in two variants, standard and trace. The standard models are designed to provide detector gas for applications such as FID available in 100cc, 200cc, 300cc, 450cc and 1200cc/min. The trace model can deliver 250cc, 500cc or 1200cc/min of UHP hydrogen for both carrier and detector gas. One generator is capable of supplying multiple detectors and GC or GC-MS units.

Features

- 99.9995% purity (standard) / 99.99999%* purity (trace)
- Suitable for GC detector gas (all) and carrier gas (trace model only)
- Creates hydrogen on demand, minimal storage of hydrogen in the system
- Low maintenance and minimal running costs over product lifetime
- Internal leak detection with automatic shutdown
- Automatic loading pump as standard

** Based on O2 content independently verified by National Physical Laboratory, UK*

GC Gas Calculator

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Product

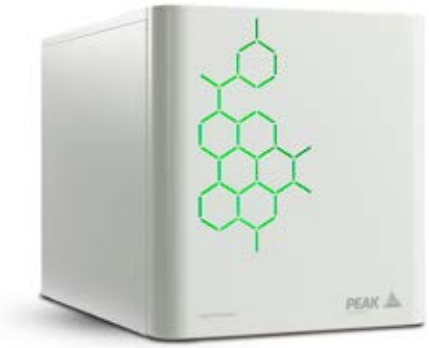
Precision Nitrogen

DESCRIPTION

The Precision Nitrogen generators are available in both standard and trace models. The standard models come in three flow rate models (250cc, 600cc and 1L) which are able to provide make-up gas, reference gas and for sample preparation (i.e. headspace). The Nitrogen Trace models are engineered to offer zero nitrogen as carrier gas, make-up gas and reference gas for sample preparation available in 250cc, 600cc and 1L models, and N2 Headspace model which is specifically designed to support the HS10 & HS20 headspace samplers

Features

- All models offer 99.9995% purity
- Nitrogen Trace model suitable as GC and GC/MS carrier and detector gas
- Trace capable of delivering hydrocarbon-free (as Methane) nitrogen suitable for carrier gas, make-up gas and sample preparation
- Highly economical source of nitrogen gas with low lifetime running costs
- Ultra-fast start-up time, quick to reach standard operating purity



GC Gas Calculator

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Product

Precision Zero Air

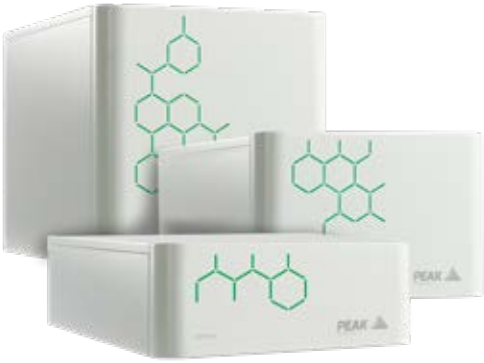
DESCRIPTION

The Precision Zero Air generators are designed specifically to supply clean, dry, hydrocarbon-free air to be used as flame support gas for GC.

As with all Precision Series generators, Zero Air benefits from a compact and modular, stackable design, minimizing the total footprint required for GC gas supply, and providing flexibility to add or remove modules as your laboratory requirements evolve over time.

Features

- Hydrocarbon content (as methane) <0.05ppm for market-leading purity
- Integrates seamlessly with other Precision units
- Minimum lifetime maintenance requirements, no expensive catalyst chamber replacements
- Highly economical source of dry, hydrocarbon free air
- Avoid risk of contaminants entering the system (when switching out empty cylinders)



GC Gas Calculator

Here at PEAK we are always trying to help with your workflow...

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"The instrument is quiet and provides high quality gas for our LC/MS system."

Cindy Li, B. Braun Medical Inc., Sheffield, UK

Safeguard your laboratory **workflow** with

[PEAK Protected]™

Servicing any equipment in your lab should not be seen as just an option, it should be treated as a necessity. With many moving parts and wear & tear, especially where generators feature integrated compressors, as well as filters and other 'consumables', a gas generator needs to be maintained regularly to continue to perform at its best for many years.

Here at PEAK we see your gas generator as the beating heart of your laboratory, enabling your analytical instruments to perform and achieve the results you need. With this being the case it is extremely important you look after your 'beating heart' to ensure the best possible results.

We offer a range of **[PEAK Protected]** services to suit your particular needs.

Complete Plan 24
Complete maintenance care with 24 hour rapid response breakdown cover

Complete Plan 48/72
Complete maintenance care with guaranteed response time breakdown cover

PM Plan+
Preventative Maintenance by a PEAK engineer at a time that suits you

Self-Service Plan
Maintenance support specifically for selected compressor-less generators

Paid Repairs
On-site repairs carried out by a certified PEAK FSE in case of a breakdown

Replacement Parts
Genuine parts with express delivery, ensuring optimal performance and lifetime

Installation
Trained PEAK FSE will visit to install and commission your generator

IQ/OQ
Certified assurance for applications requiring documented qualification

Technical Support Hotline
Around the clock support by phone or online with our global technical helpdesk with Visual Support

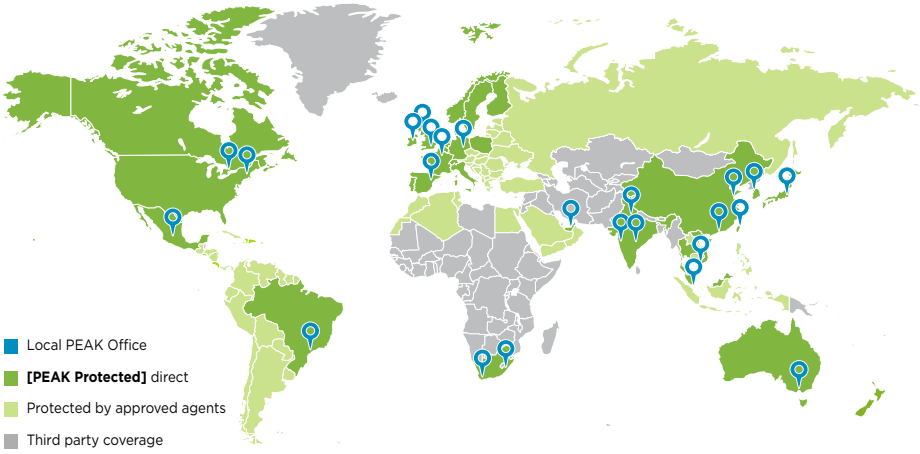
Not all warranties are equal.

What differentiates PEAK from other gas generator manufacturers is that a PEAK gas generator comes with a truly comprehensive on-site warranty. This means that in the unlikely event that your gas generator develops a problem, we will send a PEAK Certified Field Service Engineer to your laboratory to try to resolve the issue on-site and get you back up and running with minimal fuss and disruption.

What's more, when we say fully-comprehensive, we mean it. Every part of your generator is covered during warranty. While other manufacturer warranties may only cover certain components or require the return of your generator to the factory for repair, leaving you without gas for weeks or even months, our warranty is designed to give you complete peace of mind.

To find out more about our unique warranty, visit **www.peakscientific.com/warranty**

Your local **gas generation** partner



PEAK Scientific has highly trained, fully certified Field Service Engineers located in over 20 countries across every continent around the world. This allows us to provide an industry-leading rapid response service to our customers. With **[PEAK Protected]**, your laboratory's productivity becomes our top priority.

Contact us today to discover more!

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