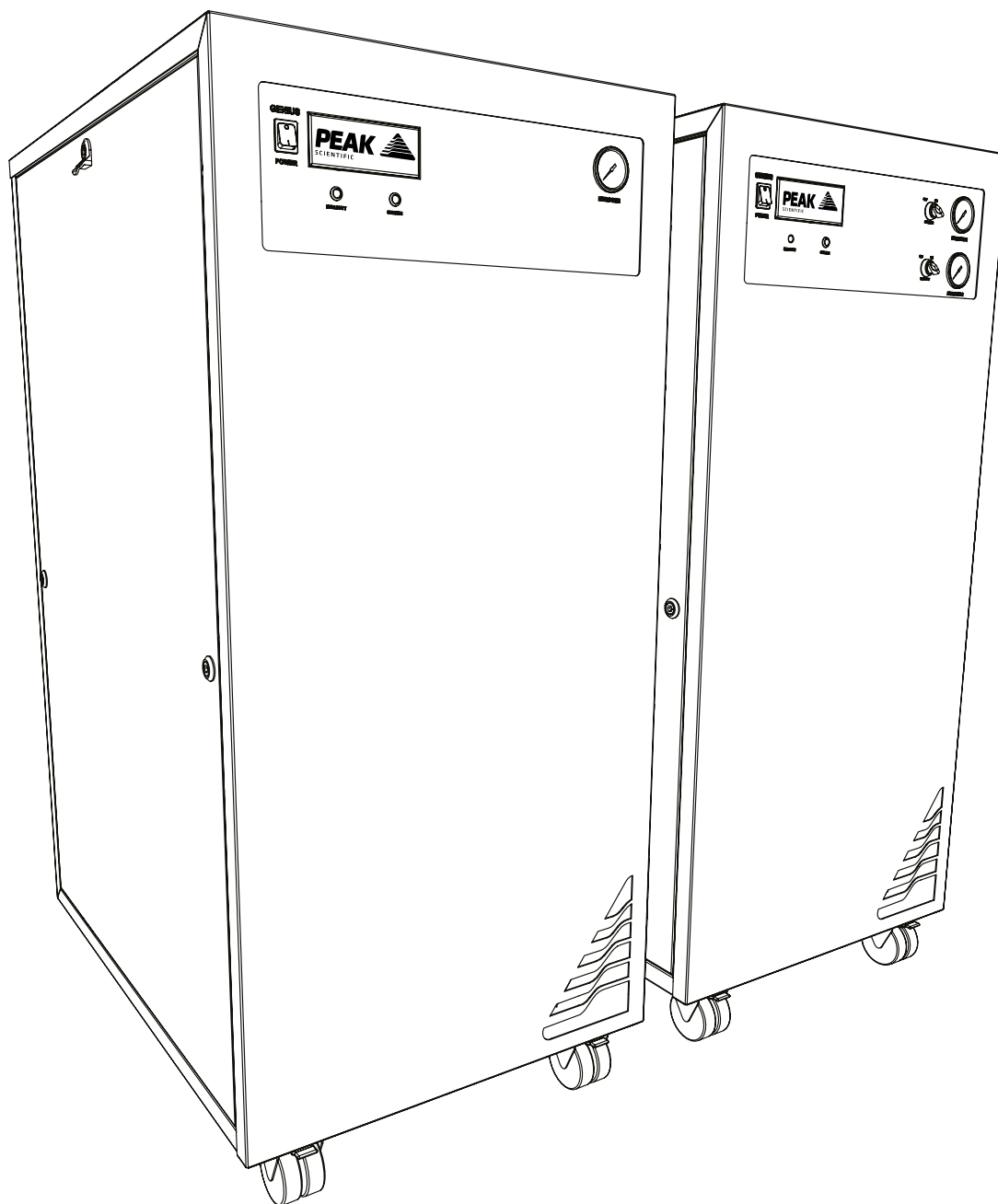


Genius 3010/13/20/22

User Manual



Contents

Change History	3
How to use this Manual	3
Introduction	4
Safety Notices	7
EU Declaration of Conformity	8
UK Declaration of Conformity	9
WEEE Compliance Statement	10
CSA Compliance Statement	11
Technical Specification	12
Unpacking	16
Fittings Kit Contents	17
Installation	18
Generator Environment	18
Generator Overview	19
General Dimensions	19
3010/3013 Rear Connections	20
3020/3022 Rear Connections	21
Electrical Connection	22
Start-Up Sequence	23
Normal Operation	24
On Demand Gas	24
Generator Cycling	24
Unusual Operation	24
Connecting to the application	25
Tubing Lengths	25
Service Requirements	26
Service Schedule	26
Peak Protected	28
Cleaning	29
Troubleshooting	30

Change History

Rev	Comment	Name	Date
2	3010 Tech Spec Update	Liam Couttie	01/02/2018
3	Declarations Update	Liam Couttie	16/11/2021

How to use this Manual

This manual is intended for end users and has been written as a reference document where you can skip to the relevant information.

Users can refer to the contents page to find the relevant information.

Please review each of the following sections carefully.

Thank you for selecting Peak Scientific to meet your gas generation needs, and should you require any further assistance or support please do not hesitate to contact Peak Scientific or the Peak Partner from which you purchased your generator.

Introduction

The Genius 3010, 3013, 3020 & 3022 have been developed to provide a supply of nitrogen gas for your LC/MS instrument. We've built them with internal air compressors as standard, removing the reliance upon an in-house air supply.

These model provide a source of nitrogen gas with other features including:

- Quiet in operation – Insulated compressor compartment for minimum disruption
- Cool – Minimal heat build-up in the lab
- Intelligent – High duty service indicator
- Mobile – Flexibility to position the generator where required
- Simple installation – Generator designed as a plug and play system
- Economical – More cost effective than any other gas supply method
- Convenient – Gas on demand, no hazards, no need to worry about running out of gas

The Genius 3010, 3013, 3020 & 3022 are based on proven technology, and selectively remove oxygen, moisture and other gases to leave clean, dry, phthalate free nitrogen. Internal air compressors make these units independent from in-house air supplies and fitted castors allow the user to easily position the units in the lab.

To ensure these Generator models meet our high expectations with regards to reliability and performance, we have tested them extensively at our manufacturing plant and with end users around the world to ensure reliability and longevity of the system.

Warranties and Liabilities

Warranty & Liability Coverage

1. Peak warrants that, subject to the provisions in this statement, purchased Peak generators, whether purchased directly from Peak or indirectly via an approved, certified and trained distributor or partner (referred to hereafter as a "Peak Partner") will comply in all material respects with any specifications referred to in your customer order confirmation and, subject to installation and operational guidelines being followed as described in applicable product manuals, shall be free from any defects in quality of materials or workmanship for a period of one year from the date of installation, provided this takes place within 3 months of factory dispatch.
2. Where the purchased generator is from the Precision Hydrogen series, Peak further warrants that, subject to installation and operational guidelines being followed as described in applicable product manuals, the hydrogen cell shall be free from any defects in quality of materials or workmanship for a total period of three years (inclusive of warranty period specified in clause 1) from date of installation, provided this takes place within 3 months of factory dispatch.
3. Where the purchased generator is from the i-Flow 6000 series, Peak further warrants that, subject to installation and operational guidelines being followed as described in applicable product manuals, the generator shall be free from any defects in quality of materials or workmanship for a total period of two years (inclusive of warranty period specified in clause 1) from the date of installation, provided this takes place within 3 months of factory dispatch and the following provisions have also been met:
 - a. you must purchase a service plan, ensuring the generator is serviced by Peak or a Peak Partner on or before the end of the first 12 months of your ownership, and serviced at least once during each subsequent 12 month period thereafter;
 - b. the generator (and any associated equipment) must have been commissioned by Peak or a Peak Partner;
 - c. the feed air or inlet air supply to the generator must comply with ISO 8573-1:2010 Class 1.2.1 at all times;
 - d. your air compressor, dryer, filtration and oil removal systems must be deemed suitable for use by Peak or a Peak Partner, and must be changed and serviced regularly, in line with the equipment manufacturer's recommended guidelines; and
 - e. any generator failure or fault that is deemed to have been caused by the failure of any upstream equipment, component, part or system (such as air compressor, air treatment or filtration) will be excluded from the warranty described herein.
4. Where the purchased generator is from the Genius XE range, Peak further warrants that, subject to installation and operational guidelines being followed as described in applicable product manuals, the generator shall be free from any defects in quality of materials or workmanship for a total period of two years (inclusive of warranty period specified in clause 1) from the date of registration, provided the following provisions have also been met:
 - a. The product must be registered within 12 months of the build date, to the end user (registrations to 3rd party resellers or other channel partners will not qualify for the warranty extension).
 - b. You must purchase a service plan, ensuring the generator is serviced by Peak or a Peak Partner on or before the end of the first 13 months of your ownership
 - c. The product is required to be serviced in accordance with manufacturer requirements, preventative maintenance visit must be arranged within 13 months of installation, and the generator must be serviced by Peak, or a Peak Partner within 13 months of installation.
 - d. Products purchased via Peak Partners may be subject to call-out and labor charges, which is at the discretion of the Peak Partner.
5. Peak also warrants that any replacement parts whether purchased (directly from Peak, or via a Peak Partner) or supplied as part of any remedial action undertaken in line with the provisions of clauses 13 and 14, shall be free from any defects in quality of materials or workmanship for a period of 180 days from the date of factory dispatch, provided its installation is performed by Peak or a Peak Partner.
6. This warranty does not exclude Peak's liability in respect of any claim for death or personal injury to

1. any person, in so far as such can be attributed to negligence or breach of duty of care directly resulting from failure of Peak to comply with the provisions in clauses 1, 2, 3, 4 & 5.

Exclusions & Limitations

2. This warranty does not cover:
 - a. damage, deterioration or malfunction resulting from an alteration or modification to a generator which has not been carried out by Peak or a Peak Partner;
 - b. damage, deterioration or malfunction resulting from what Peak reasonably believes to be abuse, or misuse of a generator by you or any third party;
 - c. liability for accident or neglect (other than pursuant to clause 6);
 - d. maintenance or repairs which have not been carried out by Peak or a Peak Partner;
 - e. operation of a generator or exposure of a generator to environmental conditions that fall out-with operational guidelines as specified in the applicable product user manual; and
 - f. lightning, power surges or any other acts of God or nature.
3. This warranty is non-transferrable. Only the original owner of the generator may benefit from the terms within this statement.
4. Peak shall not be liable in respect of any claim made for costs, damages, losses or expenses (whether consequential, direct, indirect or otherwise) or in any respect howsoever arising including, but not limited to, liability from accident or negligence (other than pursuant to clause 6) that may be suffered by you or any third party.
5. No person or entity is authorised to change the terms and conditions outlined in this warranty statement in any respect, or to create any additional obligations or liabilities for any party involved.
6. This warranty statement supersedes any and all prior warranty agreements between the parties and constitutes the complete, final and exclusive understanding of the parties with respect to the subject matter. All prior negotiations, representations, or promises, whether oral or written, of either party shall be deemed to have been merged herein.
7. If any part of this warranty statement is invalidated, for whatever reason, such part will be deleted and the rest shall remain unaffected, continuing to be in full force and effect.

Delivery of Warranty Service




8. Subject to clause 14, and:
 - a. Peak being notified by you, within the duration of the applicable warranty period, of any defect that you think is subject to any warranty valid under clauses 1, 2, 3, 4 or 5; and
 - b. Peak being permitted to inspect the generators, parts and their installation (along with any relevant packaging)Peak shall at its option repair or replace defective generators or parts (including, if necessary, any moving parts and irrespective of runtime). No additional charges will apply, for parts or delivery and, where applicable, labour or travel. Peak will endeavour to deliver this service within 3 working days of your notification.
9. Where, in Peak's reasonable opinion, a defect is subject to an exclusion described in clause 7, Peak reserves the right to charge for parts or delivery and, where applicable, you may also be charged by Peak for call out, labour or travel in respect of any repair or replacement which you authorize Peak to carry out.

Safety Notices

Peak Scientific Instruments cannot anticipate every possible circumstance which may represent a potential hazard. The warnings detailed within this manual refer to the most likely potential hazards, but by definition cannot be all inclusive. If the user employs an operating procedure, item of equipment or a method of working which is not specifically recommended by Peak Scientific, the user must ensure that the equipment will not be damaged or become hazardous to persons or property.

Symbols

This manual uses the following symbols to highlight specific areas important to the safe and proper use of the generator.

 WARNING	A WARNING notice denotes a hazard. It calls attention to an operating procedure, process or similar, which if not correctly performed or adhered to, could cause personal injury or in the worst case death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood or met.
 CAUTION	A CAUTION notice denotes a hazard. It calls attention to an operating procedure, process or similar, which if not correctly performed or adhered to, could cause damage to the generator or the application. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood or met.
	Caution, risk of electric shock. Ensure power to the generator has been removed before proceeding.

Safety Notice to Users



These instructions must be read thoroughly and understood before installation and operation of your Peak Generator. Use of the generator in a manner not specified by Peak Scientific MAY impair the SAFETY provided by the equipment.



When handling, operating or carrying out any maintenance, personnel must employ safe engineering practices and observe all relevant local health and safety requirements and regulations. The attention of UK users is drawn to the Health and Safety at Work Act 1974, and the Institute of Electrical Engineers regulations.



If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment maybe impaired.

EU Declaration of Conformity

We Peak Scientific Instruments Ltd.
Of Fountain Crescent, Inchinnan, Renfrewshire, PA4 9RE

Hereby declare that, this declaration of conformity is issued under the sole responsibility of the manufacturer.

Equipment Type: Nitrogen Gas Generator
Model Designator: Genius 3010, 3013, 3020 & 3022

To which this declaration relates, is in conformity with the following applicable EU Directives, harmonized standards, and other normative requirements.

- **Low Voltage Directive 2014/35/EU**
EN 61010-1: 2010 Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use.
- **Electromagnetic Compatibility Directive 2014/30/EU**
EN 61326-1: 2013 Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements. (Class A)
- **Restriction on the use of certain hazardous substances in electronic equipment (RoHS) Directive 2011/65/EU as amended by EU 2015/863.**
- **FCC 47 CFR Part 15 class A**
Unintentional radiators; Conducted and Radiated emissions limits.

Signed for and on behalf of Peak Scientific by

Signed: 

Name: Fraser Dunn

Position: Design Engineering Manager
Peak Scientific Instruments Ltd,
Inchinnan, Renfrew, Scotland, PA4 9RE, UK.

Date: 16th November 2021



UK Declaration of Conformity

We Peak Scientific Instruments Ltd.
Of Fountain Crescent, Inchinnan, Renfrewshire, PA4 9RE

Hereby declare that, this declaration of conformity is issued under the sole responsibility of the manufacturer.

Equipment Type: Nitrogen Gas Generator
Model Designator: Genius 3010, 3013, 3020 & 3022

To which this declaration relates, is in conformity with the following applicable UK Statutory Instruments, Standards and other normative requirements.

- **The Electrical Equipment (Safety) Regulations 2016 (SI 2016 / 1101) as amended.**
BS61010-1:2010 Safety Requirements for Electrical Equipment for Measurement Control and Laboratory Use.
- **The Electromagnetic Compatibility Regulations 2016 (SI 2016 / 1091) as amended.**
BS61326-1:2013 Electrical Equipment for Measurement , Control and Laboratory Use - EMC Requirements.
- **The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (SI 2012 / 3032) as amended.**

Signed for and on behalf of Peak Scientific by

Signed: 

Name: Fraser Dunn

Position: Design Engineering Manager
Peak Scientific Instruments Ltd,
Inchinnan, Renfrew, Scotland, PA4 9RE, UK.

Date: 16th November 2021



WEEE Compliance Statement

The Waste Electrical and Electronic Equipment (WEEE) Regulations SI 2013 No 3113 and or the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU apply to all electrical and electronic equipment placed on the market in the UK and EU covered by the scope of regulations which can be found in the Government Guidance Notes (PDF) produced by the Department for Business Innovation and skills for the UK and here for Europe.

All PEAK products that are subject to the WEEE directive are compliant with the WEEE marking requirement. Such products are marked with the “crossed-out wheellie bin” symbol (shown below) in accordance with European standard EN50419. All old electrical equipment can be recycled. Please do not dispose of any electrical equipment (including those marked with this symbol) in general rubbish bins. Please contact your dealer or distributor for clarity.



CSA Compliance Statement

CSA Group (Canadian Standards Authority) is a Nationally Recognised Testing Laboratory (NRTL), headquartered in Toronto Canada.

They are authorised to evaluate product to both their own and Underwriters Laboratory (UL) standards and certify the product to be in compliance to the relevant standards.

Peak products are certified to the current in force revision of the following standards in order to cover both Canadian and United States requirements for “Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory use, Part 1: general Requirements”.

Canada: CAN/CSA C22.2 No 61010-1-12

United States: UL 61010-1

As a result the products covered by this statement are certified and listed by CSA accordingly and are entitled to carry the CSA mark with both Canadian and United States subscripts , as shown below on the product rating label.



Technical Specification

Genius 3010

Environment

Minimum Operating Ambient Temperature	5°C (41°F)
Maximum Operating Ambient Temperature	35°C (95°F)
Maximum Altitude	2000 m
Maximum Relative Humidity	80% Non-Condensing
Minimum Storage Temperature*	-20°C (-4°F)
Maximum Storage Temperature*	60°C (140°F)

Generator Outlets

Maximum Gas Output Pressure	6.9 bar (100 psi)
Maximum Outlet Flow Rate	64 L/min (2.26 cfm)
Start-Up Time	30 mins
Particles	<0.01µm
Phthalates	NONE
Suspended Liquids	NONE
Gas Outlets	1 x ¼" BSPP
Drain Outlets	1 x ¼" BSPP
Pressure Gauges	1

Electrical Requirements

Voltage	230 VAC ± 10%
Frequency	50/60 Hz
Current	12 Amps
Input Connection	C20 Plug
Power Cord	C19 socket to local connection (13A minimum)
Pollution Degree	2
Insulation Category	II

General

Dimensions cm (inches) WxDxH	60 x 85 x 132.2 (23.6 x 33.5 x 52.0)
Generator Weight Kg (lbs)	168.5 kg (371 lb)
Shipping Weight Kg (lbs)	249 kg (548 lb)

Technical Specification

Genius 3013

Environment

Minimum Operating Ambient Temperature	5°C (41°F)
Maximum Operating Ambient Temperature	35°C (95°F)
Maximum Altitude	2000 m
Maximum Relative Humidity	80% Non-Condensing
Minimum Storage Temperature*	-20°C (-4°F)
Maximum Storage Temperature*	60°C (140°F)

Generator Outlets

Maximum Gas Output Pressure	6.9 bar (100 psi)
Maximum Outlet Flow Rate	64 L/min (2.26 cfm)
Chip Cube Mode	increased O ₂ content to 10%
Start-Up Time	30 mins
Particles	<0.01µm
Phthalates	NONE
Suspended Liquids	NONE
Gas Outlets	1 x ¼" BSPP
Drain Outlets	1 x ¼" BSPP
Pressure Gauges	1

Electrical Requirements

Voltage	230 VAC ± 10%
Frequency	50/60 Hz
Current	12 Amps
Input Connection	C20 Plug
Power Cord	C19 socket to local connection (13A minimum)
Pollution Degree	2
Insulation Category	II

General

Dimensions cm (inches) WxDxH	60 x 85 x 132.2 (23.6 x 33.5 x 52.0)
Generator Weight Kg (lbs)	189 kg (417lb)
Shipping Weight Kg (lbs)	265.5 kg (585lb)

Technical Specification

Genius 3020

Environment

Minimum Operating Ambient Temperature	5°C (41°F)
Maximum Operating Ambient Temperature	35°C (95°F)
Maximum Altitude	2000 m
Maximum Relative Humidity	80% Non-Condensing
Minimum Storage Temperature*	-20°C (-4°F)
Maximum Storage Temperature*	60°C (140°F)

Generator Outlets

Maximum Gas Output Pressure	2 x independant outlet of 6.9 bar (100 psi)
Maximum Outlet Flow Rate	2 x independant outlet of 32 L/min (1.13 cfm)
Start-Up Time	30 mins
Particles	<0.01µm
Phthalates	NONE
Suspended Liquids	NONE
Gas Outlets	2 x ¼" BSPP
Drain Outlets	1 x ¼" BSPP
Pressure Gauges	2

Electrical Requirements

Voltage	230 VAC ± 10%
Frequency	50/60 Hz
Current	12 Amps
Input Connection	C20 Plug
Power Cord	C19 socket to local connection (13A minimum)
Pollution Degree	2
Insulation Category	II

General

Dimensions cm (inches) WxDxH	60 x 85 x 132.2 (23.6 x 33.5 x 52.0)
Generator Weight Kg (lbs)	189 kg (417lb)
Shipping Weight Kg (lbs)	265.5 kg (585lb)

Technical Specification

Genius 3022

Environment

Minimum Operating Ambient Temperature	5°C (41°F)
Maximum Operating Ambient Temperature	35°C (95°F)
Maximum Altitude	2000 m
Maximum Relative Humidity	80% Non-Condensing
Minimum Storage Temperature*	-20°C (-4°F)
Maximum Storage Temperature*	60°C (140°F)

Generator Outlets

Maximum Gas Output Pressure	2 x independant outlet of 8.1 bar (116 psi)
Maximum Outlet Flow Rate	2 x independant outlet of 32 L/min (1.13 cfm)
Start-Up Time	30 mins
Particles	<0.01µm
Phthalates	NONE
Suspended Liquids	NONE
Gas Outlets	2 x ¼" BSPP
Drain Outlets	1 x ¼" BSPP
Pressure Gauges	2

Electrical Requirements

Voltage	230 VAC ± 10%
Frequency	50/60 Hz
Current	12 Amps
Input Connection	C20 Plug
Power Cord	C19 socket to local connection (13A minimum)
Pollution Degree	2
Insulation Category	II

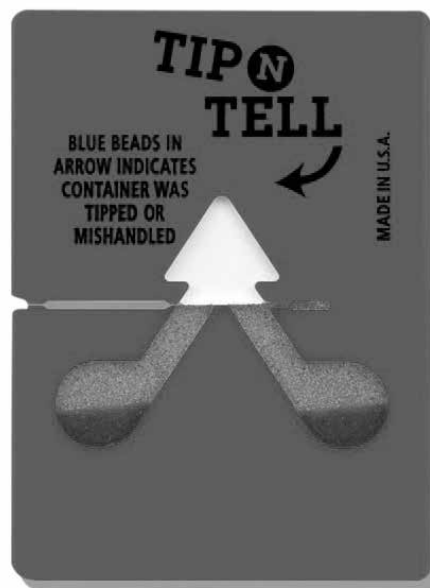
General

Dimensions cm (inches) WxDxH	60 x 85 x 132.2 (23.6 x 33.5 x 52.0)
Generator Weight Kg (lbs)	189 kg (417lb)
Shipping Weight Kg (lbs)	265.5 kg (585lb)

Unpacking

Although Peak Scientific takes every precaution with safe transit and packaging, it is advisable to fully inspect the unit for any sign of transit damage.

Check 'SHOCKWATCH' and 'TIP-N-TELL' labels for signs of rough handling prior to unpacking



Any damage should be reported immediately to the carrier and Peak Scientific or the Peak Partner from where the unit was purchased.

Follow the unpacking instructions posted on the side of the crate. It will require two people to remove the unit from the shipping crate and to manoeuvre the generator to the desired location.

Please save the product packaging for storage or future shipment of the generator.

Note: Included with the generator is a "Fittings Kit" containing mains power leads for UK, EU & US and also all the required fittings and warranty registration card. Be careful not to discard these with the packaging.

Fittings Kit Contents

Supplied in the Fittings Kit are all the fittings required to connect the generator to the application. The contents of the Fittings Kit are as follows:

1. 6mm Teflon Tubing	x 3m*
2. ¼" Teflon Tubing	x 3m*
3. 6mm PE Tubing	x 3m
4. ¼" Compression Fitting	x 1**
5. 6mm Push Fit Fitting	x 2**
6. Flow Control Silencer	x 1***
7. UK Mains Power Cable	x 1
8. EU Mains Power Cable	x 1
9. US Mains Power Cable 230v	x 1
10. 8mm Hex Key	x 1

* x6m in Genius 3020/22

** x3 in Genius 3020/22

*** x2 in Genius 3020/22

All of the generators output ports are located on the output panel at the rear of the unit.

Installation

Generator Environment

The generator is designed for indoor use only. It should be installed adjacent to the application(s) it is supplying. If this is not convenient then the unit can be sited elsewhere, however, consideration should be made of the lengths of pipe runs as pressure drops can result from extended runs of pipe.

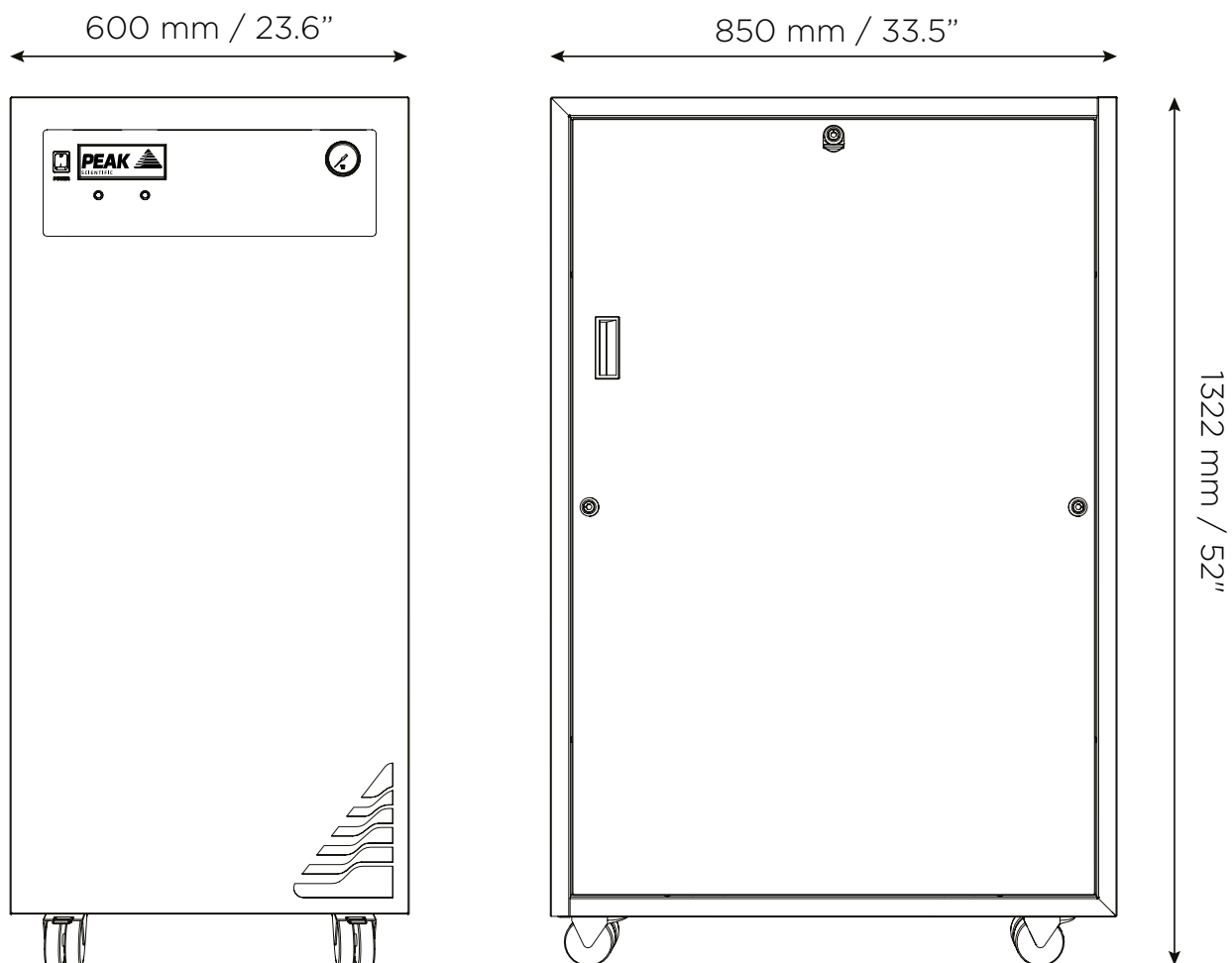
Performance of the generator (like all sophisticated equipment) is affected by ambient conditions. Note should also be taken to the proximity of Air Conditioning outlets. These can sometimes give rise to “pockets” of air with high relative humidity. Operation of the unit within such a pocket could adversely affect its performance. Consideration should also be given to the air flow around the unit. It is recommended that an air gap of 75mm (3”) should be maintained down both sides and at the rear of the unit. Please refer to the drawing below for the general dimensions of the unit.

Minimum Operating Ambient Temperature: 5 °C (41 °F)

Maximum Operating Ambient Temperature: 35 °C (95 °F)

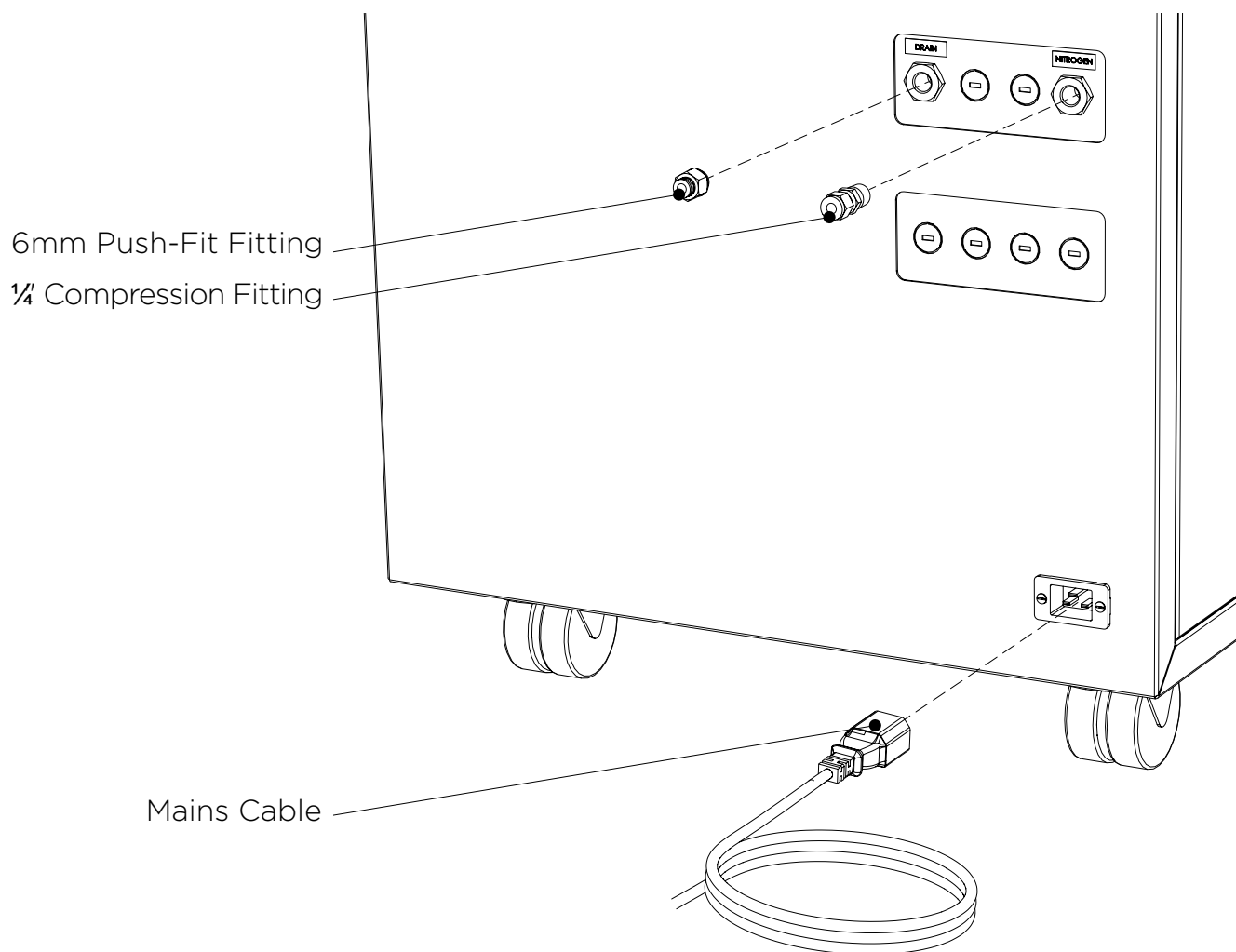
Generator Overview

General Dimensions

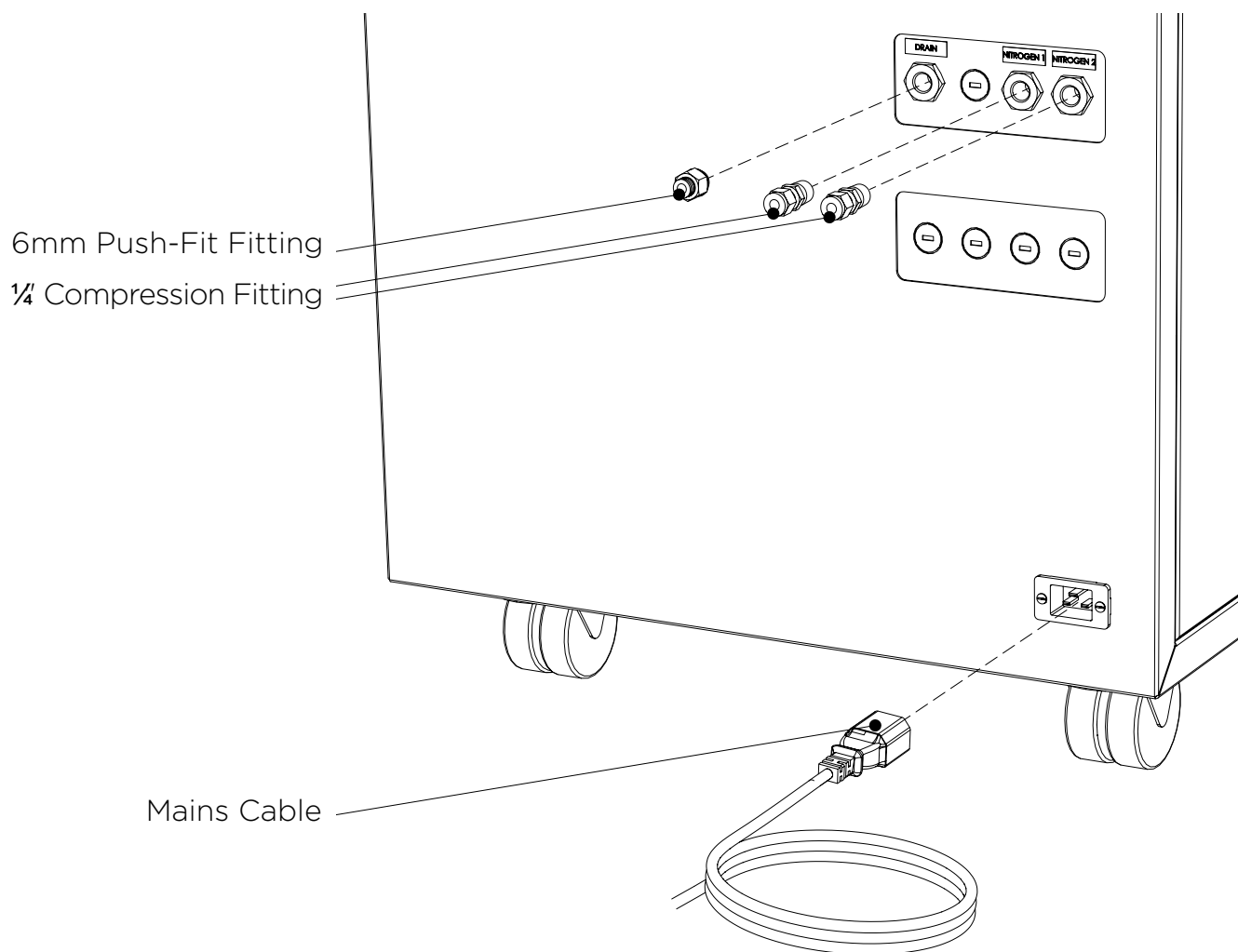


The generator must always be placed on a flat, level surface. Failure to do so will affect the performance of the generator.

3010/3013 Rear Connections



3020/3022 Rear Connections



Electrical Connection

Connect the generator to an appropriate 110 or 230 volt single-phase supply, refer to the generator serial plate for input specification and ensure your supply matches the requirements.

If the appropriate power cord is not supplied; a new plug, rated to at least 12 amps, can be fitted by a qualified electrician.



This unit is classified as SAFETY CLASS 1. THIS UNIT MUST BE EARTHED. Before connecting the unit to the mains supply, please check the information on the serial plate. The mains supply must be of the stated AC voltage and frequency.

EARTH/GROUND (E):- Green & Yellow or Green

LIVE (L):- Brown or Black

Neutral (N):- Blue or White

Electrical requirements for 230V generators is 195V - 253V 50/60Hz. For 195V - 219V a 06-3210 Dual Tap Transformer is required.



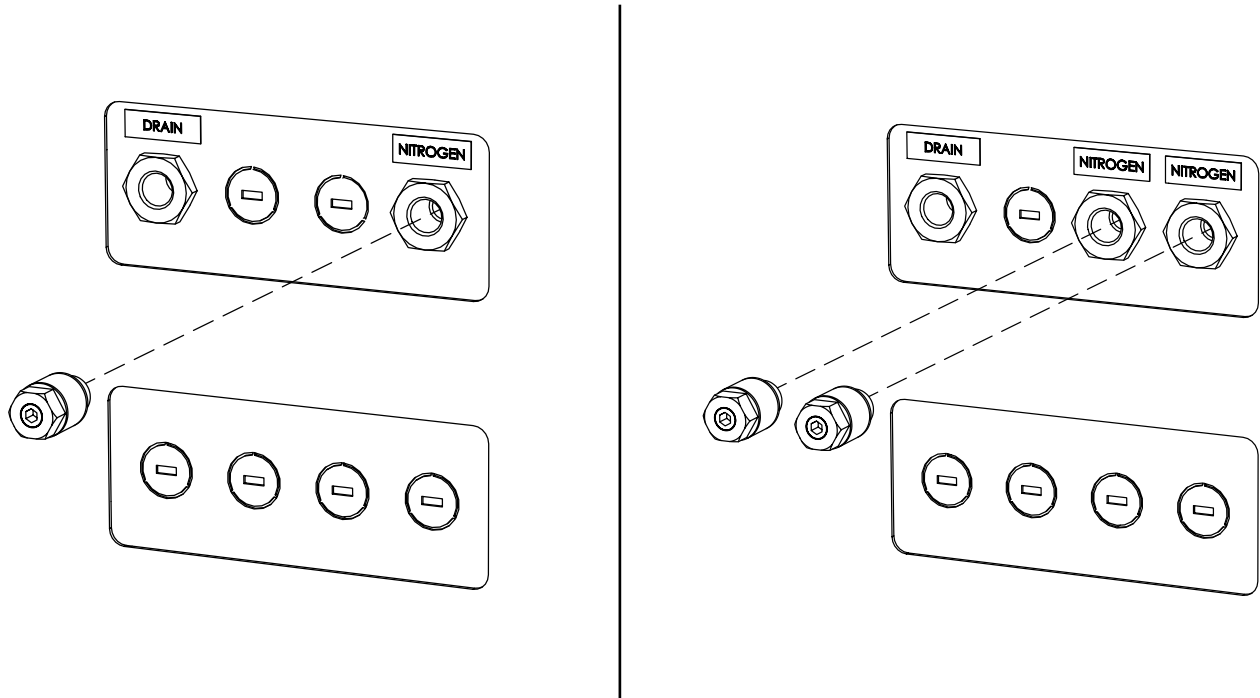
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment maybe impaired.

Start-Up Sequence



Before the Generator is connected to the application, the Generator should be operated in isolation (i.e. not connected to the application) for thirty minutes. This is to ensure any impurities present are purged from the system. Failure to do this may harm the application.

Before re-connecting the Generator to the mains and switching it on for the isolation run, it is necessary to fit the silencers (supplied in the fittings kit) to the outlet ports of the output panel as shown below.



Once this is done, the Generator can be re-connected to the mains and switched on.

Pressure will start to build in the internal storage tanks which can be monitored by watching the output pressure gauges on the front panel. This will climb to the factory set pressure as noted in the specifications.

Once this pressure is reached, the compressors will continue to run until the internal tank upper pressure limit is reached and the compressor has run for a period of at least two and a half minutes.

The compressors will then rest until the internal tank lower pressure limits is reached. Once this limit is reached the compressors will switch back on again. This compressor cycling is normal and will continue throughout the operation of the Generator.

When the system has been operated for a period of 30 minutes, all the internal pipe-work and storage tanks will have been purged with nitrogen.

Once purged, and the tubes can be connected at the rear of the unit. The generator should be allowed to run for 1 hour to allow the gas to reach purity.

Normal Operation

The Genius 3010/3013/3020 & 3022 Gas Generators are designed specifically to minimize operator involvement. Given that the systems are installed as described in earlier sections and is serviced in accordance with the specified maintenance recommendations (see Service Requirements), then it should simply be a matter of turning the Generator on when it is required.

The Generator will automatically produce the factory set flow and pressure as detailed in the Technical Specifications.

On Demand Gas

The generator will produce nitrogen on demand. If the application is operating and requires a gas flow, the system it is connected to will supply this to suit the requirements of the application. If the application requirement for gas stops, the system will also stop, once it has reached its upper set limit in the internal storage tanks. If the demand from the application starts again, the system will detect the demand for gas and will automatically start again to suit the demand.

Generator Cycling

The Generator is designed for the internal compressors to cycle. This cycling reduces the duty (run time) on the compressors. The rate at which they cycle will be dependent on the gas required to satisfy the demand of the application. If the application demands the maximum gas flow of the Generator, the compressor duty will be higher, (the rest period in the compressor cycle will be shorter). If the application demand is lower than the maximum gas flow, then the duty on the compressors will decrease, (the rest period in the compressor cycle will be longer). If the Generator is installed in an extreme environment or is subjected to low supply voltage or high altitude the compressors may undergo periods where they do not cycle.

Unusual Operation

If at any time the generator begins to emit excessive noise or vibration, then it should be switched off and you should contact Peak Scientific or the Peak Partner from which the generator has been purchased.

Connecting to the application

Once the initial purge run of 30 minutes has completed, and the generator has been running for 1 hour, it is ready to be connected to the application(s).



The pressure in the internal storage tanks must be allowed to dissipate before connecting the generator to the application(s)

Attach the appropriate fittings to the outlets of the generator. Using the tubing supplied, connect the outlets of the generator to the inlets on the application.

If you require more tubing than is supplied please refer to the Tubing Lengths section.



Once the tubing is connected to the application, please ensure that it is thoroughly checked for being leak-tight. Even the slightest leak in the gas supply between the generator and the application can lead to a reduction in efficiency.

Tubing Lengths



The diameter of the tubing which will be connected to the gas outlet is important and is determined by the length of tubing required. Failure to follow these recommendations could lead to pressure between generator and application.

- | | |
|-------------------|---|
| < 10 meters: | Use 6/4 (6mm O/D, 4mm I/D) P.T.F.E. tubing. |
| > 10 - 40 meters: | Use 10/8 (10mm O/D, 8mm I/D). Tubing and fittings not supplied in the fittings kit. |
| > 40 metres: | Please contact Peak Scientific with the relevant distance and we will calculate the flow resistance and the tubing size required. |

A combination of 6/4 and 10/8 tubing may be used to ensure that there is no large diameter tubing within the lab (i.e. for the first 20 meters from the Generator use 10/8 and the final 10 meters to the application use 6/4 tubing). Keep the connections and bends to a minimum.

The imperial equivalents are: $6/4 = 1/4''$ O/D, $3/16''$ I/D.

$10/8 = 3/8''$ O/D, $5/16''$ I/D.

Service Requirements

Service Schedule

Purchase Interval	Component	Visit
12 Months	Genius 3010/13 Annual Maintenance Kit (Pre March '14 Manufactured Generators)	www.peakscientific.com/ordering
	Genius 3010/13 Annual Maintenance Kit (Post March '14 Manufactured Generators)	
	Genius 3020/22 Annual Maintenance Kit (Pre March '14 Manufactured Generators)	
	Genius 3020/22 Annual Maintenance Kit (Post March '14 Manufactured Generators)	
Compressor Assembly	Compressor Assembly (Pre March '14 Manufactured Generators)	
	Compressor Assembly (Post March '14 Manufactured Generators)	

* Compressors can be re-fitted as an alternative to replacement up to a maximum of 3 times, this is a more cost effective solution, however a degree of technical expertise is required and can be time consuming. Please contact your service provider for more information.

Service Indication

The Generators have the following Service Indication Stages:-

Stage 1

Once either compressor requires a service the LED indicator (yellow) on the front of the Generator will illuminate.

This is to make the user aware that a service of the Generator is due and should be planned at the earliest convenience. The Generator will continue to operate as normal with the LED on.

Stage 2

If the service is not completed the Generator will continue to run. After 2 weeks, the service LED indicator (yellow) will start to flash.

This is to make the user aware that the service of the Generator is now overdue and must be completed immediately to ensure the continuous trouble free operation of the Generator.

Service Indication Reset

Once the service has been completed the Service Indication LED can be reset in the main control PLC. This will be performed by the Peak Service Engineer or trained service representative that completes the service operation.

High Duty Indication

The Genius 3010/3013/3020 & 3022 have a 'HIGH DUTY' indicator on the front panel. This indicator monitors the running condition of the internal compressors and

illuminates when they have been operating continually for a period of 8 hours.

There are a number of extreme conditions that can affect the duty cycling of the compressors inside the generator. These extremes include high ambient temperatures, low supply voltages, a high flow requirement and locations of high altitude. Any one of these or a combination of a number of these extremes can be evident in a customer site.

While the generator is designed to operate fully in these conditions it should be noted that the effect of these extremes can force the compressors to run continually. The compressors are fully capable of running continually with no detrimental effect.

High Duty Indication Reset

If the compressors have been operating continually for a period of 8 hours the indicator light will be illuminated. Once the compressors return to a cycling mode the indicator light will automatically switch off. There is no manual intervention required.

Indication of Fault

In most installations the 'HIGH DUTY' indicator will never be illuminated. If your Genius 3010/3013/3020 & 3022 Generator has been operating for a significant period of time, then suddenly develops a 'HIGH DUTY' indication with no apparent change in environmental conditions or flow requirements, it may be indicative of a problem with the system such as an external leak or imminent compressor failure.

If this is the case you should contact Peak Scientific or your service provider.

It should be noted that the Generator will continue to operate so long as it can maintain pressure during this indication.


Peak Protected

With Peak Scientific you invest in not only a product but peace of mind. With a network of certified Peak engineers stationed throughout the globe, Peak's rapid response team are never far away and our commitment is to keep your generator running day in, day out, protecting your laboratory workflow.


[Peak Protected] can provide...



Installation
A dedicated Peak engineer will visit your lab to install and setup your generator



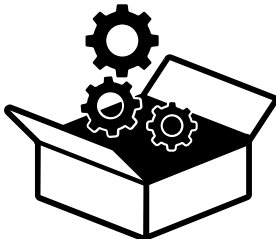
Complete plan
Swift response by a Peak Service Engineer within 72 hours & planned preventative maintenance



Premium Protected
Guaranteed rapid on-site response within 24 hours & planned preventative maintenance



IQ/OQ
Certified assurance for applications requiring documented qualification



Spares
Genuine Peak parts with express delivery, ensuring optimal performance and lifetime



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

To find out more about protecting your investment visit: www.peakscientific.com/protected

Cleaning

Clean the outside of the generator only using warm soapy water and a clean damp cloth. Ensure all excess fluid is thoroughly removed from the cloth prior to use.



Cleaning should only be undertaken with the power switched off and the power cord removed from the rear of the generator.





Under no circumstances should any solvents or abrasive cleaning solutions be used as these can contain fumes that could be harmful to the generator.



Care should be taken with Leak Detections Liquids.

Troubleshooting

Problem	Possible Solution
The Generator will not switch on and the power switch does not illuminate.	<ul style="list-style-type: none"> • Ensure power cord is plugged into the Generator and that the power socket is turned on. • Check the fuse in the power cord plug. • Contact your service provider. 
The Generator will not switch on but the power switch is illuminated.	<ul style="list-style-type: none"> • Disconnect power cord from the rear of the Generator. Open the left hand panel and check that both circuit breakers are turned on (switch in the up position). Reconnect power cord. • Contact your service provider. 
Compressors are running but pressure is not building.	<ul style="list-style-type: none"> • Check pressure gauges are showing normal pressure. • Contact your service provider.
The mass spec is reporting low pressure.	<ul style="list-style-type: none"> • Contact your service provider.
Yellow "SERVICE" LED on front panel is on constantly.	<ul style="list-style-type: none"> • Annual service is due. Contact your service provider. • Refer to Service Indication section of this manual for further information.
*Yellow "SERVICE" LED on front panel is flashing.	<ul style="list-style-type: none"> • Annual service is overdue. Contact your service provider urgently. • Refer to Service Indication section of this manual for further information.
Yellow "HIGH DUTY" LED on front panel is on constantly.	<ul style="list-style-type: none"> • A compressor(s) has not cycled for a period of 8 hours. Refer to the High Duty Indication section of this manual. • Ensure ambient temperatures are within the specification. • Ensure there are no leaks between the Generator and the mass spec.

Go Online or Complete and Return

We know that registering any of your recently purchased products is not the first thing on your mind- but it is very important to both of us. Not all warranties are alike and Peak Scientific stand out against other gas suppliers as we offer a comprehensive, quick response, on-site warranty. This means that in the very unlikely case that your gas generator develops a fault we have rapid support teams on-hand around the world who are able to come to your lab and get you back up and running in no time.

Register for your **comprehensive 12 month on-site warranty** with ease online at www.peakscientific.com/protected.

Alternatively, you can send the completed form to Peak Scientific by post or email at warranty@peakscientific.com.

Go Online or Complete and Return

You can register for your **FREE 12 month Warranty** with ease online at www.peakscientific.com/protected.

Alternatively, you can send the completed form to Peak Scientific by post or email at warranty@peakscientific.com.

Product Warranty Registration			
Contact name			
Email address			
Company			
Address			
City/town			
Postcode			
Country			
Telephone			
Generator serial #			
Model type			
Installation date			
Do you still use an alternative gas solution i.e. cylinders or bulk liquid?	Yes	No	
What gas requirements do you have in your lab?	Hydrogen	Nitrogen	Zero Air

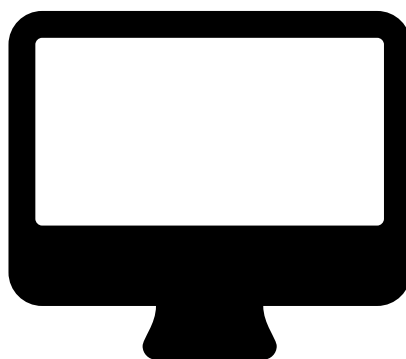
Extend your cover with

Peak Scientific offer comprehensive gas generator after sales support packages. Peak [Protected] aftercare support can guarantee an on-site response within 72 hours*, genuine parts from our ISO9001 approved factory and a 95% first-time fix rate. See our enclosed Peak [Protected] leaflet for further information.

Important!

You have 1 month to register your Peak Scientific product from the date of installation. Once registered the warranty will be honoured for a period of 12 months. If you wish to defer the installation of your generator, you must notify Peak Scientific immediately by emailing warranty@peakscientific.com. For generators that remain unregistered after 1 month from the shipment date, the warranty will be considered active from the date of factory dispatch.

* Complete Plan only



Important!

You have **1 month to register** your Peak Scientific product from the date of installation. Once registered the warranty will be honoured for a period of 12 months. If you wish to defer the installation of your generator, you must notify Peak Scientific immediately by emailing **warranty@peakscientific.com**. For generators that remain unregistered after 1 month from the shipment date, the warranty will be considered active from the date of factory dispatch.

[**PEAK Protected**]TM

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.

To discuss Peak Protected generator cover and payment options speak to your local Peak Representative or for further information contact: **protected@peakscientific.com**

Peak Scientific

Fountain Crescent
Inchinnan Business Park
Inchinnan
PA4 9RE
Scotland, UK

Tel: +44 141 812 8100

Fax: +44 141 812 8200

For further information on any of our generator products please contact **marketing@peakscientific.com**

