

Infinity 1045 User Manual



Contents

Change History	3
How to use this manual	3
Warranties and Liabilities	4
Safety Notices	5
Symbols	5
Safety Notice to Users	5
Declaration of Conformity	6
Environmental Declaration	7
Technical Specifications	8
Environment	8
Inlet Conditions	8
Outlet Gas	8
General	8
Introduction	9
Unpacking and Installation	9
Fittings Kit	10
General Dimensions	10
Air Connection	11
Commissioning	12
Pressure & Flow Settings	12
Cleaning	12
Maintenance Schedule	13
Service Schedule	13
Safely Isolated Condition	13
IMPORTANT DOCUMENTS	14

Change History

Rev.	Comment	Name	Date
1			
2			
3			
4			
5			

How to use this manual

This manual is intended for end users and has been written so that it can either be read as a step by step guide to installation and usage; or as a reference document where you can skip to the relevant information.

Please review each of the following sections carefully.

Thank you for selecting Peak Scientific to meet your Gas Generation needs, 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.

Warranties and Liabilities

1. The Company warrants that it has title to the Goods.
2. Subject to the provisions of this clause the Company warrants that the Goods shall comply in all material respects with any specification referred to in the Order Confirmation (as the same may be amended) and shall, subject thereto, be free from defects in material and workmanship for the lesser of a period of twelve months from the date of delivery or thirteen months from the date of dispatch from the factory.
3. Save as provided in this clause and except where the Goods are sold to a person dealing as a consumer (within the meaning of the Unfair Contract Terms Act 1977) all warranties, conditions or other terms implied by statute or common law are hereby expressly excluded save to the extent they may not be lawfully excluded. When the Goods are sold to a consumer within the meaning of the Unfair Contract Terms Act 1977 their statutory rights are not affected by the provisions of this clause.
4. In the event of the Customer making a claim in respect of any defect in terms of clause 2 hereof the Customer must.
 - 4.1. Reasonably satisfy the Company that the Goods have been properly installed, commissioned, stored, serviced and used and without prejudice to the generality of the foregoing that any defect is not the direct or indirect result of lack of repair and/or servicing, incorrect repair and/or servicing, use of wrong materials and/or incorrect spare parts
 - 4.2. Allow the company to inspect the Goods and/or any installation and any relevant packaging as and when reasonably required by the Company.
5. Subject to the Company being notified of any defect as is referred to in sub-clause 2 hereof within a reasonable time of it becoming apparent and subject always to the terms of sub-clause 4 hereof, the Company shall, in its option, replace or repair the defective Goods or refund a proportionate part of the Price. The Company shall have no further liability to the Customer (save as mentioned in sub-clause 6 hereof).
6. The Company shall be liable to indemnify the Customer in respect of any claim for death or personal injury to any person in so far as such is attributable to the negligence or breach of duty of the Company or any failure by the Company to comply with the provisions of sub-clause 2 hereof.
7. Save as provided in sub-clause 2 hereof the Company shall not be liable in respect of any claim by the Customer for costs, damages, loss or expenses (whether direct, indirect, consequential or otherwise) or indemnity in any respect howsoever arising including, but not by way of limitation, liability arising in negligence (other than pursuant to clause 6 above) that may be suffered by the Customer or any third party.

Safety Notices

Symbols

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



	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.
	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.

Table 1 - Safety Symbols

Safety Notice to Users

These instructions must be read thoroughly and understood before installation and operation of your Peak Scientific Infinity 1045. 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.



Nitrogen is not a poisonous gas, but if the concentration in the inhaled air becomes too high there will be a risk of asphyxiation.

Infinity 1045 User Manual

Declaration of Conformity

We **Peak Scientific Instruments Ltd.**
of **Fountain Crescent, Inchinnan. Renfrewshire PA4 9RE**
declare that:

Equipment **Nitrogen Gas Generator**

Model **Infinity 1045**

Has been designed & manufactured in accordance with ISO 9001:2008 (certificate number FM515973) and complies with the relevant directive below,

- **Machinery Directive - 2006/42/EC**

BS EN ISO 12100:2010 Safety of machinery. General principles for design. risk assessment and risk reduction.

BS EN ISO 4414:2010 Pneumatic fluid power. General rules and safety requirements for systems and their components.

Signed By: 
Name: Chris Pugh
Position: Engineering Director
Done at: Peak Scientific Instruments Ltd, Inchinnan, Scotland.
Date: 9th of July 2013



Infinity 1045 User Manual

Environmental Declaration

We Peak Scientific Instruments Ltd.

of Fountain Crescent, Inchinnan. Renfrewshire PA4 9RE

declare that:

Equipment Nitrogen Gas Generator

Model Infinity 1045

Is fully compliant with the following Directives:

2002/96/EC WEEE (Waste of Electrical and Electronic Equipment)

2002/95/EC RoHS (Restriction of Hazardous Substances)

Peak Scientific Instruments Ltd fully complies with its obligations towards the European WEEE (Waste of Electrical and Electronic Equipment) Directive 2002/96/EC. These obligations are being met within the B2B compliance group.

Peak Scientific Instruments Ltd has developed all reasonable 'due diligence' controls to ensure that our products comply with the principles and requirements of the European RoHS (Restriction of Hazardous Substances) Directive 2002/95/EC. Similar directives in the United States and China, for example, have also been captured within this program.

Where a specific certificate of compliance is required, this can be requested, on a product serial number basis, directly from Peak Scientific Instruments Ltd, by contacting us through our website on www.peakscientific.com

Signed By: 

Name: Chris Pugh

Position: Engineering Director

Done at: Peak Scientific Instruments Ltd, Inchinnan, Scotland.

Date: 29th of July 2013



Infinity 1045 User Manual

Technical Specifications

Environment

	1045
Min/Max Air Operating Temperature	5°C - 30°C / 41°F - 86°F
Maximum Relative Humidity	70%
Min/Max Storage Temperature	-20°C - 60°C / -4°F - 140°F

Inlet Conditions

Min/Max Air Inlet Pressure	8.3-10 bar / 120-145 psi
Minimum Air inlet Flow (l/min)	215

Outlet Gas

Maximum Gas output Pressure	80 psig
Maximum Pressure Drop (Outlet-Inlet)	8 psig
Max Nitrogen gas output flow	32 l/min
Max Air output flow	50 l/min
Start up time for purity	60 minutes
Particles	0.01µm

General

Dimensions (cm) WxDxH	31x25x73
Dimensions (ins) WxDxH	12x10x29
Generator Weight (Kg/lbs)	39 / 86
Shipping Weight (Kg/lbs)	47 / 104

Introduction

The Peak Scientific Nitrogen Generator is designed specifically for use with Mass Spectrometer applications. The Generator has been designed to produce Nitrogen from an existing source of dry, oil free, compressed air in the laboratory.

Unpacking and Installation

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

Check 'SHOCKWATCH' label for signs of rough handling prior to un-packing -



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 onto the floor.

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



After unpacking and a visual inspection, the unit should be placed in a ventilated area away from direct sunlight. Care should be taken not to obstruct the ventilation holes on the side of the unit. The Generator should be placed on a steady and level base. The Infinity 1045 has been designed to fit under most workbenches. Alternatively, the unit may be wall mounted using the fixing slots provided.



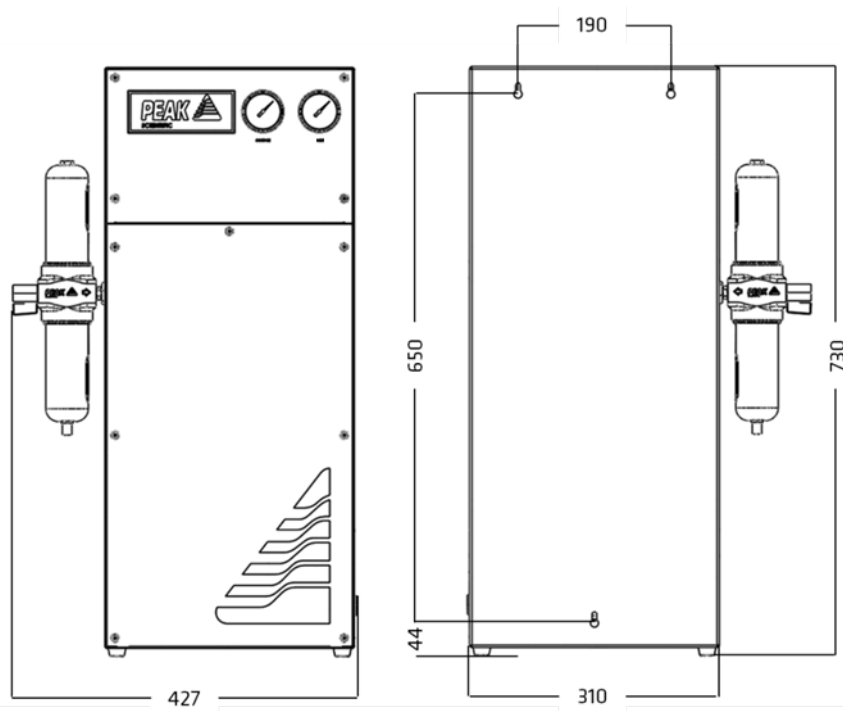
Performance of the Generator (like all sophisticated equipment) is affected by ambient temperatures. Prolonged operation in temperatures exceeding 30°C will shorten the life of the unit.

Fittings Kit

Supplied in the Fittings Kit are all the fittings required to connect the Infinity 1045 Generator to the application. The contents of the Fittings Kit are as follows:

- | | |
|-------------------------------------|------|
| 1. ¼" Compression Fittings | × 2 |
| 2. ¼" Teflon Tubing | × 8m |
| 3. Screw N8 x 1 ½ Supa Counter Sunk | × 3 |
| 4. Raw-Plug for N8 Screw (521-3087) | × 3 |
| 5. Installation Guide-Infinity 1045 | × 1 |
| 6. User Manual CD- Infinity 1045 | × 1 |

General Dimensions



Infinity 1045 in mm

Air Connection

Infinity 1045 Generator should be connected to a clean, dry, OIL - FREE source of compressed air. A minimum inlet pressure of 120 psig (8.3 barg) is required. Any doubts as to the suitability of your compressed air supply should be referred to Peak Scientific or any of their authorised partners.

The generator has a *Breathing Air Filter* with ¼" BSPT connection to the left side of the unit. The Compressed Air supply should be connected here. This filter will drain moisture and is equipped with an automatic drain. The drain should be led to a convenient place. There are 2-off ¼" BSPT Female bulkhead connections to the right of the unit. Fittings are provided to connect these ports to the gas connections of the Mass Spectrometer.

LC/MS with 2-off Connections (e.g. LC-TQ)

Connect the 2-off gas ports at the right side of the generator to their respective ports on the Mass Spectrometer using the 2-off ¼" BSPT x ¼" Swagelok fittings. Use ¼" tubing throughout.

Commissioning

With the Generator installed (as described earlier), connect compressed air to the unit and open the air supply to the Unit. Disconnect the Outlet connections to allow the generator to vent to atmosphere until the unit is stabilised. The Generator has been pre-set in the factory to give the specified output flow-rate and pressure in line with known requirements. Once the Membranes reach the design pressures the Generator will stabilise and produce Nitrogen. Maximum purity will be achieved after approximately 1 hour. The generator can then be re-connected to the application.

The design of the generator is such that it can deliver up to the supplies specified in the **Pressure & Flow Settings** table below. Should the demand for gasses be less than the rated output flow at any time, the demand will be determined by the consuming equipment. In circumstances of no demand, the Generator remains operational and will provide Nitrogen immediately as demand resumes.

Pressure & Flow Settings

Port	Usage/Connection	Flow/Pressure (l/min @ psi)
		1032
Nitrogen	Curtain Gas	32 @ 80
Air	Ion Source/Nebuliser	50 @ 80

The above settings should allow the Infinity 1045 to be operated with all standard configurations for the Bruker EVOQ range of LC/MS/MS instruments. Should the above settings not provide sufficient flow or pressure for your application please contact Peak Scientific for assistance.

Cleaning

Clean the outside of the Generator only using warm soapy water and a clean damp cloth. Ensure the cloth is thoroughly rung out to remove excess fluid prior to use.



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

Maintenance Schedule



Servicing and/or repair of the Generator should only be undertaken by a **TECHNICALLY COMPETENT PERSON** with the Generator in a safely isolated condition.

Due to the simplicity of the design and the small number of moving parts, the Infinity 1045 Nitrogen Generator will have a long and trouble free life. However as with all scientific and technical equipment it should be regularly inspected and serviced as below.

Service Schedule

Service interval	Component	Part No.	Qty.
12 months	Element Active Carbon (Black)	00-0046	1
	Element 0.01 micron (Blue)	00-0045	1
	RAC Filter Element	00-0039	2

As an alternative to purchasing the 12 month service items individually an Annual Service Kit is available as one part number. This contains all the filters required for this Generator.

Purchase Interval	Component	Part No.	Qty.
12 months	Annual Service Kit	08-0317	1

Safely Isolated Condition

The unit is in a safely isolated condition when it is disconnected from its application and fully de-pressurised. Directions for isolating the Generator are shown below.



Failure to place the Generator in a safely isolated condition when instructed to do so may lead to personal injury or injury to others and even death.

- a) Disconnect from air supply.
- b) Ensure the output pressure gauge read zero. (If gauge does not fall to zero, loosen the outlet fitting slightly to allow trapped gas to escape).

Disconnect from the application.

IMPORTANT DOCUMENTS



Warranty Entitlement

To register your generator for your warranty entitlement, send the completed form to Peak Scientific by:

- **Email** warranty@peakscientific.com
- **Online** http://www.peakscientific.com/service-and-support/warranty_registration
- **Phone** +44 (0)141 530 4185
- **Fax** +44 (0)141 812 8200

PRODUCT WARRANTY REGISTRATION	
COMPANY:	CONTACT NAME:
ADDRESS:	
	EMAIL ADDRESS:
CITY/TOWN:	GENERATOR SERIAL NUMBER:
POSTCODE:	
COUNTRY:	MODEL TYPE:
TELEPHONE:	INSTALLATION DATE (DD/MM/YYYY):

Important Please Note:

You have 1 month to register your Peak Scientific product from the date of shipment.

If you wish to defer installation of your generator you must notify Peak Scientific within 1 month of the shipment date. This can be done by emailing warranty@peakscientific.com Once registered the warranty will be honoured for a period of 12 months after the installation date.

For any generators that remain unregistered the warranty will begin from date of shipment.

Thank you on behalf of Peak Scientific.

Peak Scientific UK

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

Tel: +44 (0)141 812 8100

Fax: +44 (0)141 812 8200

Peak Scientific Germany

Herriotstrasse 1
60528 Frankfurt

Germany

Tel: +49 (0)69 677 33 490

Fax: +49 (0)69 677 33 200

Peak Scientific Taiwan

4F.-6, No.736
Zhongzheng Rd.
Zhonghe Dist.
New Taipei City

Tel: +886 2 8226 2383

Fax: +886 2 8226 9499

Peak Scientific North America

19 Sterling Road
Suite #1
Billerica, MA 01862

USA

Tel: +1 866 647 1649

Fax: +1 978 608 9503

Peak Scientific China

Room 606 Building 1
Lane 2277 Zuchongzhi
Road
Pudong New Area
Shanghai
201203, China

Tel: +86 21 5079 1190

Fax: +86 21 5079 1191

Peak Scientific Brazil

Peak Scientific Brasil
Av. Quieroz Filho
1700 - torre Sunny-Conj.
602
São Paulo SP Brasil

Tel: +1 866 647 1649

Peak Scientific India

202, Amsri Shamira
Old Lancer Line
Opp. St. Mary's Degree
College
S.D. Road Secunderabad
500 025, India

Tel: +91 40 2780 0663

Fax: +91 40 2780 0663

Peak Scientific Mexico

Solon 352
Col. Los Morales Polanco
11530 Mexico, D.F.

Mexico

Tel: +1 866 647 1649

Fax: +1 978 608 9503

Peak Scientific Japan K.K.

2-7-56, 2F Fuji Building 28
Kita Aoyama, Minato-Ku
Tokyo, Japan
107-0061

Tel: +81 3-6864-0468

Peak Scientific Africa

PO Box 478
Somerset Mall
7137

South Africa

Tel: +27 (0)2185 16542

Fax: +27 (0)8654 64473

Peak Scientific Australia

PO Box 65
Belmont
Victoria 3216

Australia

Tel: +61 1300 965 352

Peak Scientific Singapore

3 Science Park Drive
#03-14 The Franklin
Science Park Drive 1
Singapore, 118223

Tel: +65-6777 1966

Fax: +65-6777 1978