

Your local *gas generation* partner



## Precision H2

Hydrogen gas solution for  
CVD diamond production

A **PEAK**  gas generation brand

Discover more at [www.peakscientific.com/precision](http://www.peakscientific.com/precision)

# Precision Hydrogen

## Features & Benefits

- › **High purity, 99.99999% hydrogen gas for high quality diamond production**
- › **Each unit produces 1.2L/min of hydrogen on-demand**
- › **Cascading feature allows multiple units to work in series to increase flow and offer redundancy**
- › **Proven PEM cell technology to generate hydrogen consistently and safely**
- › **Safe H<sub>2</sub> supply with internal and external leak detection and minimal stored hydrogen**
- › **Compact and stackable space-saving design**
- › **Quick and easy start up and shutdown**
- › **12 month fully comprehensive warranty covering all parts**
- › **3 year warranty on PEM cell**

# Get clarity with **Precision**

Traditional cylinder supplies increase health and safety risks and introduce inefficiencies into the CVD production process. Peak Scientific's on-demand Precision hydrogen generators will provide around the clock supply of high purity hydrogen gas whilst reducing the time you spend monitoring, changing, and ordering cylinders.

## **A gas supply you can rely on**

Precision hydrogen generators contain only premium quality parts to consistently perform to the highest standards, requiring only a supply of electricity and de-ionized water to produce 99.99999% purity hydrogen 24/7.

## **The safest method of gas supply**

Peak Scientific hydrogen generators are the safest way to supply UHP hydrogen. All Precision hydrogen generators meet IEC gas safety standards, with a range of safety and fail-safe features built into each generator ensuring that they pose no risk of causing fire or explosion.

## **Purity and clarity from your gas supply**

Gas generators use the latest PEM cell technology with patented Nafion and PSA dryers which remove residual moisture to deliver dry gas (-75°C dewpoint) at 99.99999% purity. Gas from a Precision hydrogen generator is cleaner than hydrogen from gas cylinders, which can contain residual hydrocarbons and moisture and risk interruption of supply when they empty

Unlike gas cylinders, a generator can run around the clock without the need to break the connection between gas supply and your CVD apparatus.

# Complete Solution

Multiple Precision Hydrogen Trace 1200 generators, a de-ionised water purifier, an 8 litre water bottle and consumables can all be purchased from Peak to give you a complete CVD solution.

When combining Precision Hydrogen Trace generators into a single supply line, Peak's cascading technology means one generator will manage the output of the whole stack to optimize output flow and ensure that wear and tear is spread across all units, increasing the longevity of your generators.





## Precision H2 Trace 1200

- 1200 cc/min of hydrogen, connect multiple units for greater flow rates
- 99.99999% purity, independently verified by the National Physical Laboratory, UK
- Advanced safety features, including auto-leak detection and shutdown
- Proven PEM technology generating hydrogen on-demand



# Complete Solution

## Water Purifier

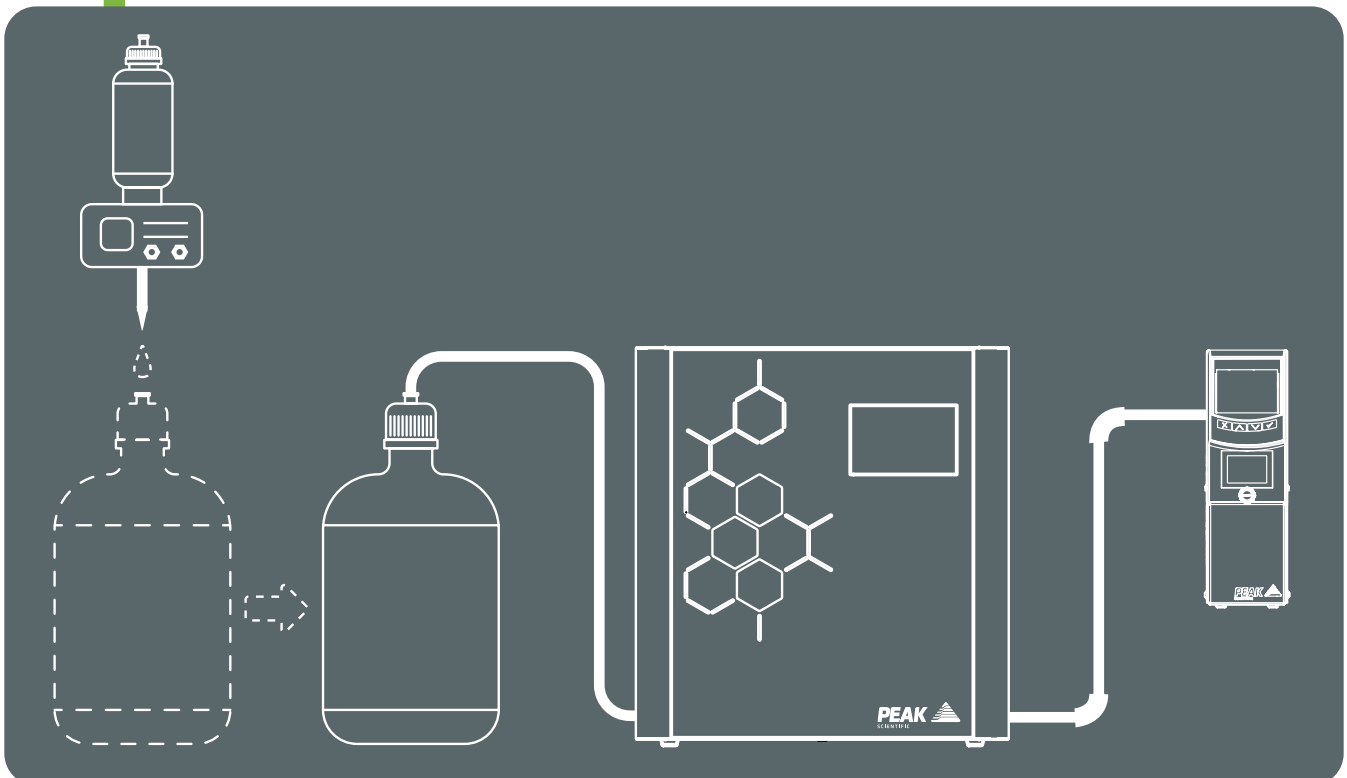
Hydrogen generators require a supply of ASTM Type II ( $<1\mu\text{s}/\text{cm}$  /  $>1\text{M}\Omega/\text{cm}$ ) de-ionized water. Peak can supply a suitable water purifier that is tested and approved for use with Precision hydrogen generators. Mineral or tap water is not suitable for supply to Precision hydrogen generators.

## Water Bottle

Peak Scientific recommends the use of a water bottle to provide deionised water to your system. The specialised water bottle prevents bacterial and algal growth to ensure the highest quality water for the highest purity hydrogen for the best quality diamonds.

## H2 Detector

For additional peace of mind, an H2 detector can be purchased to detect any leaks in your system. The detector will immediately shut down the generator if any significant leak is detected.



# Peace of mind



## 72 Hour On-site Response

Rapid response service engineer network, guaranteed on-site within 72 hours globally, 48 or 24 hours available in some regions.



## Manufacturer Approved Parts

All components in Precision are engineered and tested to ensure optimal performance in your generator.



## 95% First Time Fix

Having dedicated Peak engineers around the world means most issues are resolved on first visit – 95% of the time in fact.



## Installation

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



## Certified Engineers

Over 100 dedicated, fully certified direct Peak Service Engineers globally, with expert knowledge in troubleshooting and fixing any generator.



## Global 24hr Technical Support

Around the clock support by phone or online with our global technical helpdesk, aided by remote Visual Support.

## Technical Specifications

### Hydrogen 1200cc CVD

|                              |   |
|------------------------------|---|
| Max Flow Rate                | 1200 cc/min   |
| Max Pressure                 | 100 psi / 6.9 bar   |
| Purity                       | 99.99999%   |
| Dew Point                    | -75 °C / -103 °F  |
| Gas Outlets                  | 1 x 1/8" Swagelok compression fitting (1/4" adapter supplied) |
| Water Purity Requirement     | <1.0µs/cm OR >1 MΩ/cm   |
| Water Consumption            | up to 2.1 L/day   |
| Operating Temperature        | 10°C - 35°C / 50°F - 95°F                                     |
| Electrical Requirements      | 110 / 230 V 50 / 60 HZ 2.3 - 4.8 A                            |
| Power Consumption            | 787 Watts   |
| Heat Output                  | up to 1000 BTU/ hr  |
| Generator Dimensions (WxDxH) | 406 x 380 x 540 mm / 16 x 15 x 21.3"                          |
| Generator Weight             | 38 Kg (83.8 lbs)  |
| Noise Level                  | Silent in operation   |

## Complete CVD Diamond H2 Solution

|                                 |         |
|---------------------------------|---------|
| Precision Hydrogen Trace 1200cc | 3301768 |
| DI water system                 | 20-3000 |
| 8L bottle                       | 10-9017 |
| H2 Detector                     | 10-9010 |

**Contact us today** to discover more!

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