# HYDRO70 LS

Seven-Nines Purity Hydrogen Generator

Leman Instruments

## DESCRIPTION:

LEMAN Instruments designed the HYDRO70LS product line of Seven-Nines Purity Hydrogen Generator modules, the ultimate grade of the range, for ICP-MS reaction gas, MOCVD carrier gas and any duty where the gas must not appear in the result, close to the consumer.

Based on the field-proven Solid Polymer Electrolyte (PEM) cell technology, pure Hydrogen is produced at low pressure from electricity and high-quality deionized water (Zero Water). This process can be started on demand without a caustic solution. The instrument could be alimented directly from a bi-distilled water distribution network (option).

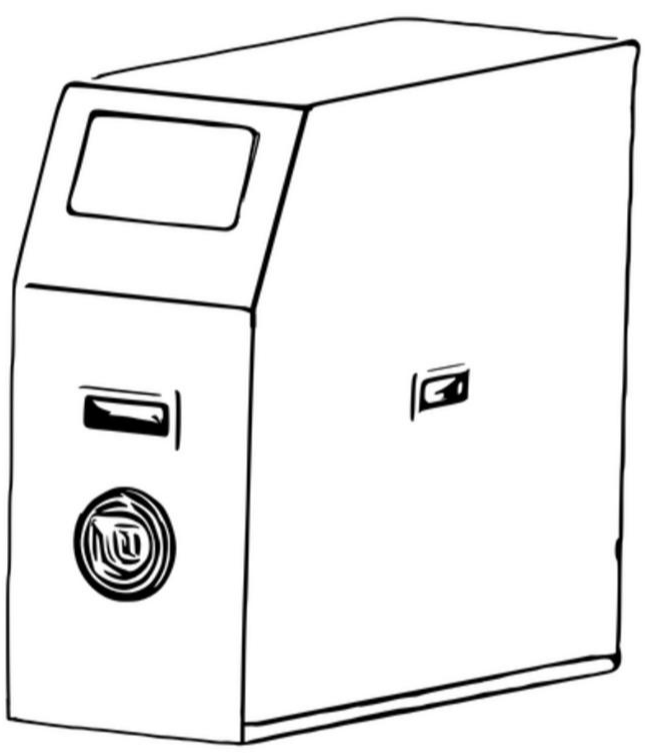
After the passive dryers, the gas passes a maintenance-free PSA module, the step that takes it to seven nines. The produced Hydrogen is available 24/7 with a constant purity of >99.99999% at a -80°C dew point, at output flows of 1 to 2 NL/min (depending on the model). The H2 output pressure is regulated electronically and can be set from 0.5 to 7 bar (7 to 102 psig).

Each instrument is equipped with high performance communication interfaces RS485, USB and Ethernet, empowering you to create a very flexible gas network with local or central control.




## APPLICATION TYPES:

- Reaction gas for ICP-MS
- Carrier gas for MOCVD (compound semiconductor epitaxy)
- Fuel Cell Research, Protection gas



## FEATURES:

- Reduces in operation costs. Return on investment within one year, then the hydrogen is free.
- Seven-nines purity, cleaner than most cylinder grades on the market.
- No heavy maintenance. PSA module is maintenance-free.
- H2 is available 24/7 at constant purity. No contamination.
- Independent source of Hydrogen that does not require complex piping and can be easily moved around the laboratory.
- Smallest footprint on the market.
- Our hydrogen generator ensures a very safe operation with its internal leak-test, automatic shut-down, over-pressure valve, and current and voltage limits.
- No handling and storage of cumbersome gas cylinders. There is no cylinder rental fee.

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|---|---|
| **MODELS** | HYDRO70 LS-1<br>HYDRO70 LS-2 |
| **LMP Outflow @1013 / 20°C** | HYDRO70 LS-1: 1 LPM<br>HYDRO70 LS-2: 2 LPM |
| **H2 purity** | >99,99999% (seven nines) |
| **Dew point** | -80°C |
| **Outlet Pressure** | From 0.5 – 7 bar (7 – 102 psig) |
| **Dimensions cm / in** | L: 60cm / l: 22.5cm / H: 50cm<br>L: 23.6in / l: 8.6in / H: 19.6in |
| **Net weight (kg/lbs)** | 40–50kg / 88–110lb |

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| **Water quality** | High-purity deionized water (DI water). TOC free |
| **Water source** | 2L external tanks or auto-refill |
| **Water consumption** | 5L water generates about 6000L Hydrogen |
| **Final purification** | Passive dryer + maintenance-free PSA module |
| **Safety** | Low H2 stored volume; overpressure valve; internal leak test; automatic shut down; maximum current limit; water quality; over temperature. |
| **Manual control** | Through a 7″ TFT-LCD color display with a touch screen on the front panel. Display of significant parameters, pressure, functioning status, and alarms. Intuitive navigation to functions by menus and sub-menus. |
| **Remote control, Communications** | • Through Ethernet 10/100 network<br>• Through the WLAN network<br>• Logbook download by USB |
| **H2 outlet fitting** | Stainless steel 1/8″ OD compression |
| **Power supply** | Automatic switching from 90VAC to 260VAC, 47 to 63 Hz |
| **Power consumption (max at full flow)** | LS-1: max 500W<br>LS-2: max 800W |
| **Ambient temperature** | +5 to +35°C, non condensing |

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