HYDRO70 LS2

High-Flow, Seven-Nines Purity Hydrogen Generator

Leman Instruments

DESCRIPTION:

LEMAN Instruments designed the HYDRO70LS2 product line of High-Flow, Seven-Nines Purity Hydrogen Generators, the ultimate grade of the range, for ICP-MS reaction gas, MOCVD carrier gas and any application that needs high-flow, ultra-clean H2 production on demand close to the consumer. The generators are in an elegant casing with a full-color display and touch screen.

Based on the field-proven Solid Polymer Electrolyte (PEM) cell technology, pure Hydrogen is produced at low pressure from electricity and high-quality distilled water. This process can be started on demand without a caustic solution.

The device is composed of several independent modules connected in parallel and controlled by an RS485 internal bus. In case of failure, each module can be switched off and removed from the device without interrupting the production of other modules.

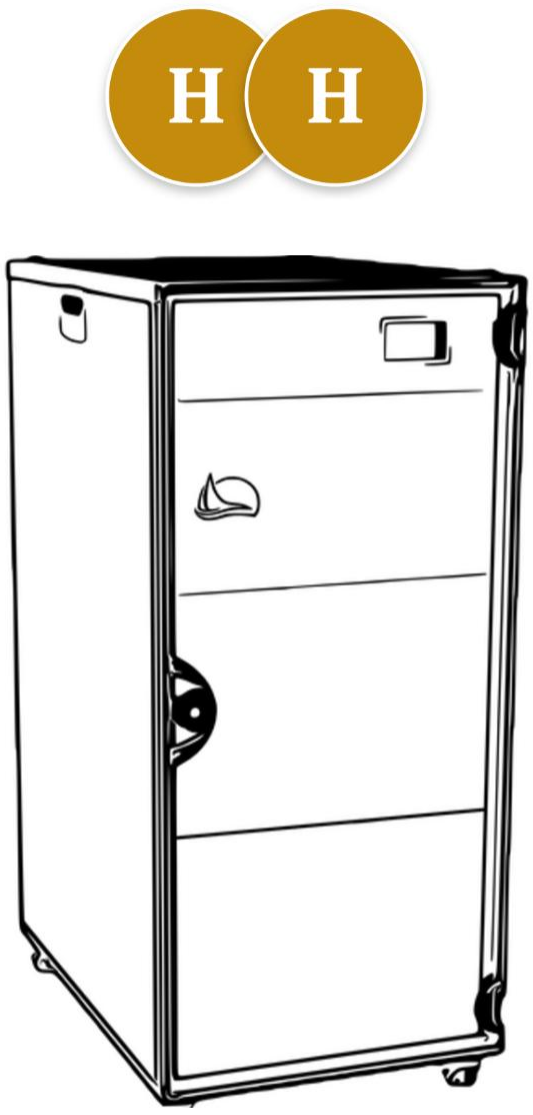
After the passive dryers, the gas passes a maintenance-free PSA module, the step that takes it to seven nines. The produced Hydrogen is available 24/7 on demand with a constant purity of >99.99999% at a -80°C dew point, at output flows of 5, 10 & 15 NL/min. The H2 output pressure is regulated electronically and can be set from 0.5 to 7 bar.

Each instrument is equipped with high-performance communication interfaces, such as USB and RS485 (Ethernet and WLAN as options), 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 test benches, research



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 maintenance. PSA module is maintenance-free.
- H2 is available on demand 24/7 at constant purity. No contamination.
- An independent, on-demand source of Hydrogen that does not require complex piping and can be easily moved around the laboratory.
- Remote control.
- Very safe operation, internal leak-test, automatic shut-down, over-pressure valve, H2-cell current, and voltage limits.
- Modular construction: a fault reduces output rather than stopping it.
- No handling and storage of cumbersome gas cylinders. No cylinder rental fees.

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MODELS	HYDRO70 LS2-5 HYDRO70 LS2-10 HYDRO70 LS2-15
LMP Outflow @1013 / 20°C	HYDRO70 LS2-5: 5 LPM HYDRO70 LS2-10: 10 LPM HYDRO70 LS2-15: 15 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: 80cm / l: 55cm / H: 120cm (variable) L: 31.4in / l: 21.6in / H: 47.2in (variable)
Net weight (kg/lbs)	80–100kg / 176–246lb

Water quality	High-purity deionized water (DI water). TOC free
Water source	Connection to central distribution network or onboard deionized water generator
Water consumption	12L water generates about 12m³ of 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 2 potential free relay contacts (I/O) • RS485 (Mod-Bus), USB • Through Ethernet 10/100 network
H2 outlet fitting	Stainless steel 1/4″ OD compression
Power supply	Automatic switching from 90VAC to 260VAC, 47 to 63 Hz
Power consumption (max at full flow)	LS2-5: max 2000W LS2-10: max 2500W LS2-15: max 3000W
Ambient temperature	+5 to +35°C, non condensing