HYDRO50 R

High-Purity Hydrogen Generator for CEM & AQMS

Leman Instruments

DESCRIPTION:

LEMAN Instruments designed the HYDRO50R product line of High-Purity Hydrogen generator modules to supply combustion and carrier-gas Hydrogen close to the consumer for FID-based Continuous Emission Monitoring (CEM) and Air Quality Monitoring System (AQMS) stations, in an elegant 19″ casing with a full-colour display and touchpad.

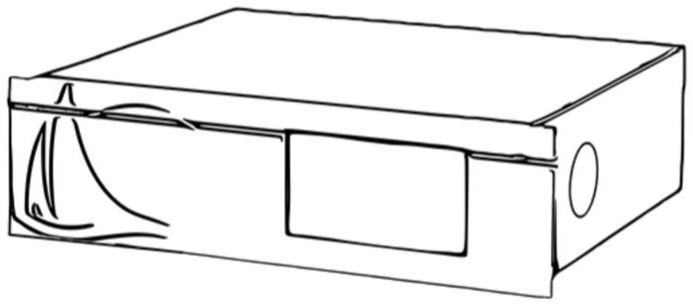
Based on the field-proven Solid Polymer Electrolyte (PEM) cell technology, pure Hydrogen is produced at low pressure from electricity and high-quality deionized water (Zero Water); the process starts on demand and requires no caustic solution. An integrated internal compressor is included for CEM/AQMS shelter and rack integration.

Models with outflow of 100 and 250 Nml/min H2 are available, each delivering constant purity 24/7, with RS485, USB and Ethernet interfaces to build a flexible gas network with local or central control.



APPLICATION TYPES:

- Combustion gas for FID-based CEM Total Hydrocarbon (THC) analyzers
- Fuel gas for CEMS flame-ionization detectors
- Carrier gas for AQMS VOC monitoring systems



FEATURES:

- Reduces operating costs — return on investment within 13 months.
- H2 available 24/7 at constant purity for continuous CEM/AQMS operation. No contamination.
- Integrated internal compressor for CEM/AQMS shelter integration.
- Independent H2 source; no complex piping; easily rack-mounted or relocated.
- Remote control and monitoring.
- Internal leak-test, automatic shut-down, over-pressure valve, current & voltage limits.
- No handling or storage of gas cylinders — no cylinder rental fee.
- Extended autonomy with 5L water tank, optionally 19″ rack 3U water tank.



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MODELS	HYDRO50 R-100 HYDRO50 R-250
LPM Outflow @1013 HPA / 20°C	HYDRO50 R-100: 0.100 LPM HYDRO50 R-250: 0.250 LPM
H2 purity	>99.9995% (maximum HC content: 0.1ppm)
Dew point	-50°C
Outlet Pressure	From 0.5 – 10 bar (7 – 145 psig)
Dimensions cm / in	L: 55cm / l: 41.5cm / H: 12cm (3U) L: 21.6in / l: 16.1in / H: 4.7in (3U)
Net weight (kg/lbs)	12kg / 26lbs

Water quality	• High-purity deionized water (DI water) • TOC free
Water source	By external 5L tank or central distribution network
Water consumption	5L water generates about 6000L Hydrogen
Compressed Air	Internal, oil-free compressor — included
Safety	Low H2 stored volume; overpressure valve; internal leak test; automatic shut-down; max current limit; water quality; over-temperature.
Manual control	Through a 7″ TFT-LCD colour touch display on the front panel. Intuitive navigation to functions by menus and sub-menus.
Remote control, Communications	• RS485 (ModBus), USB • Ethernet 10/100 network • Logbook download by USB
H2 outlet fitting	Stainless steel 1/8″ OD compression
Power supply	Automatic switching from 90 to 260 VAC, 47 to 63 Hz
Power consumption (max at full flow)	Max 150W*
Ambient temperature	+5 to +35°C, non-condensing