

FID. HiQ® Hydrogen FID Gas Generator.



Background The flame ionisation detector (FID) is one of the most used detectors for gas chromatography (GC). The FID is well suited for analysis of hydrocarbons and other easily flammable components. As they are very sensitive to these components, and response tends to be linear across a wide range of concentrations, maintaining consistent purity of the hydrogen fuel is a must. However, laboratory location and safety concerns sometime conflict with the storage and use of high pressure hydrogen cylinders. HiQ® hydrogen laboratory gas generators are the economical alternative.

Description The HiQ® Hydrogen FID generator employs the latest in Polymer Electrolyte Membrane (PEM) technology for on-site production of gaseous pure hydrogen. No caustic solution is needed, and the small contained volume (<40 ml) makes the HiQ® Hydrogen FID generator safe for operation in any laboratory. Only distilled or deionised water is required to provide long-term operation, and a no maintenance static dryer has replaced the molecular sieve design allowing the HiQ® Hydrogen FID generator to produce high purity hydrogen with total hydrocarbon (THC) levels < 0.1 ppm in a trouble free operational environment. The purity of the hydrogen also allows the option to be used as the sample carrier gas. The log file can easily be downloaded to a PC via the USB interface to make the traceability and diagnostics more efficient.

With a small footprint of 16 x 35 cm the HiQ® Hydrogen FID generator saves space. It is compatible to all major voltages and power supplies.

Functioning Hydrogen Principle

The internal pump forces distilled water to flow from the external water reservoir to the PEM electrolysis cell; mixed with oxygen, a by-product of electrolysis, the water returns to the reservoir. On the way to the cell, the water is filtered, then deionised through a special cartridge and its conductivity measured. The humid hydrogen passes through the membrane and is dried by the gas liquid separator and then by a static dryer. The hydrogen pressure level is then measured and regulated at the set pressure by a feedback of current to the cell.

Laboratory Applications

With its small size, trouble free operational environment, low maintenance drying system and dual gas supply ability the HiQ® Hydrogen FID generator is the preferred source of hydrogen fuel gas for GC-FID detectors and THC analysers. With its low hydrocarbon content (less than 0.1 ppm) the HiQ® Hydrogen FID generator will give excellent and stable baseline to any chromatograph on the market

Specifications

HiQ® H₂-FID-100	Flowrate: 100 ml/min
HiQ® H₂-FID-160	Flowrate: 160 ml/min
HiQ® H₂-FID-250	Flowrate: 250 ml/min
HiQ® H₂-FID-400	Flowrate: 400 ml/min
HiQ® H₂-FID-500	Flowrate: 500 ml/min
HiQ® H₂-FID-700	Flowrate: 700 ml/min
HiQ® H₂-FID-900	Flowrate: 900 ml/min

external floor water tank 5L for models 100 to 500 + water tubing and 1 deionisation cartridge included

external floor water tank 10L for models 700 to 900 + water tubing and 1 deionisation cartridge included

Hydrogen purity:	99.999% (5.0), hydrocarbon free <0.1 ppm
Electrolysis cell:	Solid Polymer Membrane type (PEM)
Drying System:	Static dryer (no maintenance)
Delivery pressure:	20-155 psig / 1.4-10.5 barg
Safety:	Auto shut-off / low internal volume of H ₂ gas (<40 ml)
User interface:	Set points, system status, user parameter / Touch screen / LCD graphic display
Remote command:	USB / download of the logfile possible
Cascading:	up to 10 units (if the option is installed)
Water:	Deionised or distilled <10 uS conductivity
Dimensions (cm):	16 x 35 x 25 (W x D x H) (without external water tank)
Shipping Dim (cm):	41 x 51 x 36 (W x D x H)
Power requirements:	230V/50Hz - 230V/60Hz - 115V/60Hz - 100V/60Hz

H ₂ flow rate (Nml/min) (max):	100	160	250	400	500	700	900
Net weight (kg):	11	11	11	13	13	15	17
Shipping weight (kg):	15	15	15	17	17	19	21
Power consumption (Watt):	100	150	200	240	260	375	460

Options and Accessories

Cascading interface
Remote command software including CD and USB cable
Table water tank 5L (7 x 33 x 33) in stead of the external floor water tank
Additional 5L floor water tank (14 x 18 x 40)
Additional 10L floor water tank (18 x 22 x 47)
Additional 5L floor water tank, fully equipped, 1.5m tubes
Additional 10L water tank, fully equipped, 1.5m tubes

HiQ® Hydrogen FID generator in principal

