

NM PLUS FID TOWER H2 + ZERO AIR GENERATOR

VICI DBS
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CARRIER GRADE

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DESCRIPTION

The VICI DBS® NM Plus FID Tower is a unique instrument that combines the reliability of the hydrogen generator with a zero air generator into one compact package. The FID Tower can be installed next to the GC taking only 140 mm (5.5 inches) of bench space. This simple but effective instrument can supply all your carrier gas and FID gas requirements. Designed as a hazard free alternative to high pressure cylinders, all that is required is deionized water, compressed air and a standard electrical supply for weeks of continuous operation. Innovative software allows unrivaled operational performance and safety as well as the additional options of remote networking and cascading for built in redundancy. With a maximum output capacity of 1350 mL/min, one generator can supply up to 33 GCs. The compact design allows the generator to be installed directly in the laboratory eliminating the requirement for long gas lines and guaranteeing the delivery of high purity gas to your GC. A sophisticated control system connected to an easy to use touch screen continuously monitors vital operating parameters to ensure a safe and consistent performance. Built in sensors will shut the generator down if internal/external leaks are present, contaminated water, low water or over pressure. This is why the VICI DBS generators meet the strict safety guidelines to be certified for CE, FCC, and MET (UL and CSA compliant).



INCREASE EFFICIENCY

A constant gas supply with a guaranteed purity, eliminates interruptions of analysis to change cylinders and reduces the amount of instrument re-calibrations required.



ENHANCE RESULTS

Hydrogen as a carrier gas is faster and more sensitive than expensive helium, with run time savings of 25% to 35% without a decline in resolution. The use of hydrogen as a carrier gas allows lower temperature elution, thus extending the life of the chromatograph column.



IMPROVE SAFETY

Gas is produced on demand, which allows for the safe use of the hydrogen generator when cylinders are prohibited or regarded as potentially dangerous. Sophisticated software control and full alarm capability, including for hydrogen leaks, gives the users full control of the gas supply.



ENHANCE PERFORMANCE

Gas generators can be installed in the laboratory close to the instrument, eliminating the need for long gas lines from external cylinder supplies. A constant guaranteed high purity gas supply improves stability and ensures greater reproducibility of results.



FEATURES

Produces a continuous supply of hydrogen | Compact space saving design at only 140 mm (5.5 inches) wide | On-demand supply 24/7 | H₂ Flow rate: 100 to 1350 mL/min & zero air up to 5 L/min | H₂ Purity: +99.99996% & zero air <0.1 ppm THC | Pressure: 11 barg (160 psig) | Proprietary 100% titanium cell technology | Unique permeation membrane drying system | Cold dual dynamic regeneration dryer | USB connectivity | 2-year complete cell and product warranty | Easy to install, operate and maintain



BENEFITS

Eliminates dangerous high pressure cylinders | Frees up valuable bench space | Removes the logistics, inconvenience, downtime and costs of a cylinder system | Flow capacity to match your specific instrument demands | Ideal for all GC and GC/MS applications | Exceeds the requirements for the most demanding GC applications including fast GC | Superior hydrogen production with reliable long life cell | Minimal maintenance | PC Monitoring | Peace of mind | Improve your laboratory work flow and productivity



APPLICATIONS

GC APPLICATIONS

- GC carrier gas
- GC/MS carrier gas
- GC fuel gas
- GC-ELCD & Hall ELCD reaction gas

SPECTROSCOPY APPLICATIONS

- ICP-MS Collision cell reaction gas

ANALYZER APPLICATIONS

- Total Hydrocarbon Analyzer (THA) fuel gas
- Chemisorption/Physisorption measurement gas

OTHER APPLICATIONS

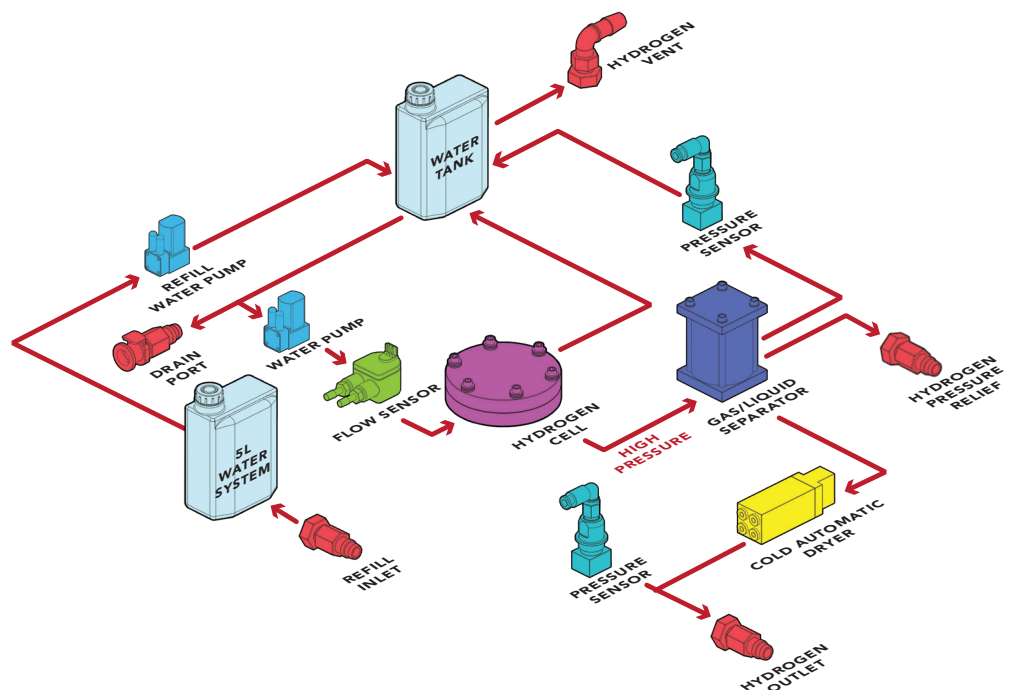
- Chemical vapor deposition instrumentation (CVD)
- Plasma cleaning instrumentation (UCP)
- High efficiency process gas
- Hydrogenation reactors
- Hydrogen fuel cells
- Weather balloon filling
- Electronic nose (eNose)
- 3-D chromatography

MODELS & SPECS

MODELS & SPECS	NM PLUS 100 FID TOWER	NM PLUS 160 FID TOWER	NM PLUS 250 FID TOWER	NM PLUS 300 FID TOWER
Flow mL/min	100	160	250	300
Purity	+99.99996%			
Dewpoint at 7 barg (100 psig)	-73 °C (-103°F)			
Outlet pressure barg (psig)	1.4 to 11 (20 to 160)			
Technology	PEM (Proton Exchange Membrane) - 100% titanium cell			
Drying system	No maintenance cold dual dynamic regeneration system			
Deionized water quality	Minimum < 1 micro S/cm @25oC - 1 Mohm-cm@25oC - ASTM II Recommended < 0.2 microS/cm @25oC - 5 Mohm-cm @25oC - ASTM II			
Internal water tank (liters)	5			
Safety	Automatic shut down - internal/external hydrogen leak, overpressure and low water			
Display	Touch screen with operating parameters, system status and safety alarms			
LED Indicators	Power on/off, system ready, errors			
Interface	USB mod A			
Electrical supply	110-120V 60Hz / 220-240V 50 Hz			
Power consumption (watts)	90	115	140	150
Dimensions mm (in)	140W x 490H x 580D (5.5W x 19H x 22.8D)			
Weight kg (lbs)	23 (50)		24 (53)	
Shipping dimensions mm (in)	770W x 590H x 410D (30.3W x 23.2H x 16.1D)			
Shipping weight kg (lbs)	27 (59.5)		28 (62)	
Operating temp °C (°F)	15 to 35 (59 to 95)			
Outlet connection	1/8" Compression			
Certification	CE, FCC, MET (UL and CSA compliant)			

OPERATING DIAGRAM

Hydrogen is produced from the hydrolysis of deionized water across a PEM (proton exchange membrane), housed in a 100% titanium cell. The resultant hydrogen is dried via a dual stage process, a gas liquid separator and a unique cold dual dynamic regeneration drying system. In addition to water all that the generator requires is a standard connection and supply of electricity for a continuous 24/7 supply of high purity hydrogen. Consumable items are limited to the replacement of a deionizer bag every six months.



MODELS & SPECS	NM PLUS 500 FID TOWER	NM PLUS 600 FID TOWER	NM PLUS 1000 FID TOWER	NM PLUS 1350 FID TOWER
Flow mL/min	500	600	1000	1350
Purity	+99.99996%			
Dewpoint at 7 barg (100 psig)	-73 °C (-103°F)			
Outlet pressure barg (psig)	1.4 to 11 (20 to 160)			
Technology	PEM (Proton Exchange Membrane) - 100% titanium cell			
Drying system	No maintenance cold dual dynamic regeneration system			
Deionized water quality	Minimum < 1 micro S/cm @25oC - 1 Mohm-cm@25oC - ASTM II Recommended < 0.2 microS/cm @25oC - 5 Mohm-cm @25oC - ASTM II			
Internal water tank (liters)	5			
Safety	Automatic shut down - internal/external hydrogen leak, overpressure and low water			
Display	Touch screen with operating parameters, system status and safety alarms			
LED Indicators	Power on/off, system ready, errors			
Interface	USB mod A			
Electrical supply	110-120V 60Hz / 220-240V 50 Hz			
Power consumption (watts)	200	300	400	500
Dimensions mm (in)	140W x 490H x 580D (5.5W x 19H x 22.8D)			
Weight kg (lbs)	25 (55)		26 (57)	
Shipping dimensions mm (in)	770W x 590H x 410D (30.3W x 23.2H x 16.1D)			
Shipping weight kg (lbs)	29 (64)		30 (66)	
Operating temp °C (°F)	15 to 35 (59 to 95)			
Outlet connection	1/8" Compression			
Certification	CE, FCC, MET (UL and CSA compliant)			



OPTIONS

Zero air flow option 1.8 L/min or 5 L/min | I/O board | Remote control software (RS232 or USB) | Cascading hardware (standard or high purity) | H2 sensor

CHOOSE YOUR ZERO AIR FLOW RATE

Zero Air is built into the NM Plus FID Tower and you have two choices for flow rates. When ordering, be sure to select the Zero Air flow rate best suited to your needs.

ZERO AIR FLOW OPTIONS	DB-FH-1800	DB-FH-5000
Flow mL/min	1800	5000
Purity - hydrocarbons + CO	<0.1 ppm	
Inlet pressure barg (psig)	4.5 to 10 (65 to 145)	
Inlet air quality	Clean dry compressed air ISO8573-1:2010 Class 1.2.1	
Max outlet pressure barg (psig)	5 (73)	
Max HC in	100 ppm	
Max CO in	50 ppm	