

Příloha 1

Palivové články firmy Valeswood

Technical Data

	Electrolyzer StaXX 2	Electrolyzer StaXX 7
Item No.	3011	3017
H x W x D	140 x 180 x 120 mm	190 x 264 x 200 mm
Weight	460 g	1.480 g
Electrode area	2 cells of 16 cm ² each	7 cells of 16 cm ² each
Power	15 W at 4 V DC	50 W at 14 V DC
Permissible voltage	3.0 - 4.0 V DC	10.5 - 14.0 V DC
Permissible current	0 - 4.0 A DC	0 - 4.0 A DC
Gas production (H ₂)	65 cm ³ /min	230 cm ³ /min

Model	Voltage	Current at 12V	Internal Capacity *	Weight	Length	Price
HC-100	14V	1.5A	80Wh / 7Ah@12V	1.2kg	440mm	Enquire

* Capacity can be increased and/or internal store recharged by coupling to an external hydrogen store.

Model	Voltage	Current at 12V	Internal Capacity *	Weight	Length	Price
HC-200	14V / 28V	3A	160Wh / 14Ah@12V	3kg	440mm	Enquire

* Capacity can be increased and/or internal store recharged by coupling to an external hydrogen store.

Model	Voltage	Current at 12V	Internal Capacity *	Weight	Length	Price
HC-400	14V / 28V / 56V	8A	320Wh / 28Ah@12V	6kg	440mm	Enquire

* Capacity can be increased and/or internal store recharged by coupling to an external hydrogen store.

Příloha 2

Externí zásobníky firmy Valeswood

Model	Hydrogen Capacity	Electrical Equivalent	Weight	Length	Info Sheet
HC-MH200	200 litres	400Wh / 36Ah@12V	2.5kg	260mm	Info...

Model	Hydrogen Capacity	Electrical Equivalent	Weight	Length	Info Sheet
HC-MH1200	1,200 litres	2,400Wh / 220Ah@12V	11kg		Info...

Tabulka specifikací PEMFC článku

Specifications: 46-cell fuel cell stack

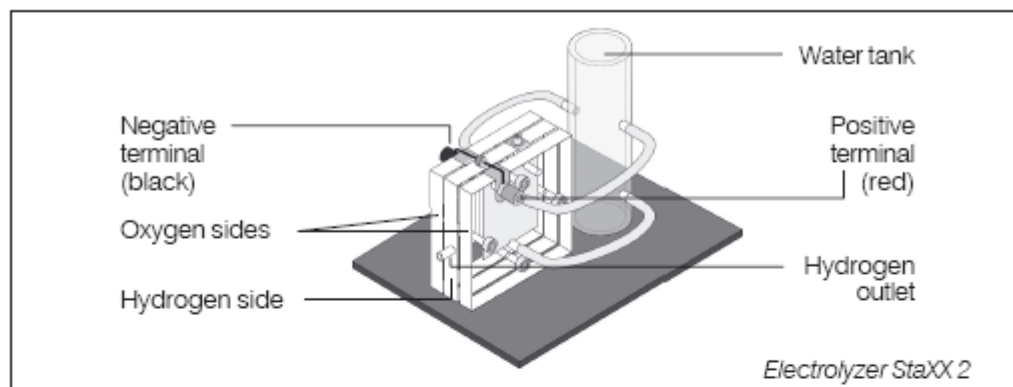
Type:	PEM (Proton Exchange Membrane) fuel cell stack	
Performance:	Rated power	1.63 kW
	Rated current	52 Amps
	DC voltage range	24 to 30 Volts ¹
	Stack efficiency	47% to 58% LHV ¹
Fuel:	Hydrogen	99.95% or better
	Fuel supply pressure	0.3 to 0.5 bar
	Fuel flow rate	19.1 slpm ¹
Oxidant/Coolant:	Coolant	Air
	Coolant flow rate	3220 slpm ¹
Stack Temperatures:	Operating temperature	-10°C to 55°C ²
	Start up temperature	≥ -10°C
Dynamic Response:	Start up to rated power	20 seconds
	Idle to full power	< 30 seconds
Durability:	Steady state life	4000 hours
	Maximum on-off cycles	2,500
	Length x width x height	112 x 405 x 280 mm
Physical Characteristics:	Volume	12.7 L
	Mass	10.6 kg

Příloha 3



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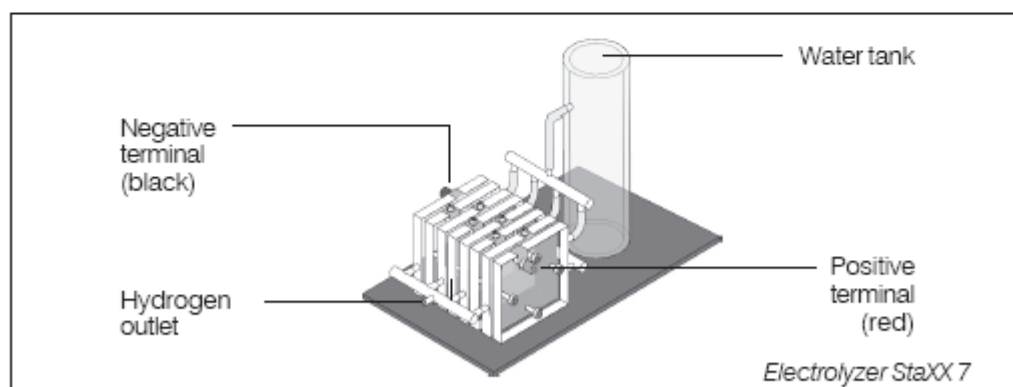
Electrolyzer StaXX 2



The electrolyzer StaXX 2 is a two-cell electrolysis stack. The centre of the cell houses the hydrogen side of the two individual cells. The two outer sides of

the cell have the function of supplying water and removing the oxygen produced. The two individual cells are connected electrically in series.

Electrolyzer StaXX 7



The electrolyzer StaXX 7 is a seven-cell electrolysis stack. The water required for electrolysis is supplied from below through a distribution pipe. The oxygen

generated escapes through the water tank. The hydrogen produced is collected through a connecting pipe, and is delivered to the hydrogen outlet.

Příloha 4

A portable, safe and low pressure metal hydride hydrogen storage **HC-MH200**



The portable metal hydride hydrogen storage HC-MH200 can be used as a fuel reservoir for any fuel cell type.

HC-MH200 is a safe, light weight and easy way to store and transport hydrogen for any application.

HC-MH200 can be connected with a fuel cell by a flexible hose.

- Capacity 200 litres hydrogen
= 36 Ah (12VDC) in fuel cell use
- Safe, because the pressure of the storage is only 4 bar (abs.) Higher pressure levels are available on request
- Safe, because hydrogen is absorbed in the metal hydride alloy
- High energy density, no self discharge effect
- Weight 2.5 kg, diameter 60mm and length 260 mm
- The storage is equipped with a quick connection coupling and a safety valve



Příloha 5

HC-MH1200

A portable, low pressure metal hydride hydrogen storage

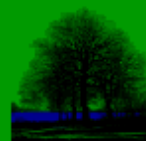


- compact
- safe
- very high hydrogen purity, 99,99999% hydrogen
- 1200 litres hydrogen capacity
- weight 11 kg
- efficient water cooling system which allows:
 - * short refilling time
 - * hydrogen pressure adjustment by water circulation





Valeswood News



Environmental Technology from Valeswood ETD Ltd.

www.valeswood.com

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Hydrogen Bike in Cambridge

Welcome to the Summer edition of Valeswood News. Our hydrogen bikes have been receiving a lot of favourable attention at shows and in the media, including the Gadget Show.

We have recently been to Christ's College, Cambridge as part of our work with the Government's Fuel Cell Knowledge Transfer Network. We are developing an exciting hydrogen bike project with them in London which will go public later this year.

Mike Hugh, Jon Butler and John Turner at Christ's College

All Aboard the Hydrogen Boat

We have developed our first hydrogen boat and are very grateful to Barnt Green Waters Limited for allowing us to successfully trial it on Upper Bittell Reservoir.

We used a Minn Kota 12 volt electric motor supplied by Johnson Outdoors. We connected this to a PEM hydrogen fuel cell and a nickel hydride cylinder containing 1200 litres of hydrogen gas.

Dr Alex Bevan of our partners Proto-Systems Limited enjoyed putting the boat through its paces.

Alex Bevan takes the helm



Fuel Cell Scooter Launch

We will be launching our new hydrogen electric scooter this summer.

This great new vehicle has a certificate for use on the UK roads. It demonstrates that affordable, silent and pollution free hydrogen vehicles are beginning to arrive.

It has a top speed of 40 mph and a range of 100 miles on a tank of hydrogen. It can be ridden by anyone who is licensed to ride an ordinary motor scooter.

Tomas Urban test rides our scooter

Příloha 7

A FUEL CELL is an electrochemical energy conversion device. It produces electricity from external supplies of fuel - usually hydrogen (on the anode side) and oxygen (on the cathode side). These react in the presence of an electrolyte. Generally, the reactants flow in and reaction products flow out while the electrolyte remains in the cell. Fuel cells can operate virtually continuously, as long as the necessary flows are maintained.

ACME Fuel Cells contribute towards making this a viable technology

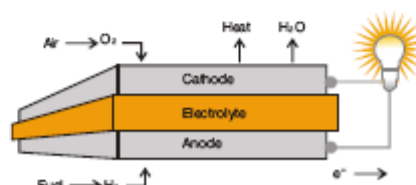
- **High electrochemical conversion efficiency**
- **Quick start, even in sub-zero temperatures**
- **Broad range of low-cost electrocatalysts (not platinum that PEMs require) Can be built from inexpensive materials - plastics, carbon, base metals and metal oxides, etc.**
- **Simpler heat and water management when compared to other fuel cell technologies**

ACME has a range of Alkaline Fuel Cell products from 2.5kW to 10kW to suit the distributed power requirements of telecom sites.

Technical Specifications - Portable AFC Generator

Performance	
Nominal power	2.4kW
Nominal voltage	48 +10/-4 VDC
Nominal current	50A
Maximum current	60A
Fuel cell stack	2 x MC250 - 1200w
Stock life	2000 hrs
Fuel	Hydrogen
Hydrogen consumption (at nominal power)	1.6 Nm ³ /hr
Supply pressure	6-200 bar (100 - 300 psi)
Fuel tank	External
Electrolyte	8 M KOH
CO ₂ scrubber	Built in, dry chemical
System efficiency	>50%
Start up time	<3 min. (48V DC instant)

Environment	
Ambient temperature	0 - 40°C
Relative humidity	5 - 95%
General	
Dimensions, including handles (L x W x H)	72 x 61 x 61 cm (28.5 x 24 x 24 in)
Weight	125 kg (275 lbs)



Conceptual Operation of a Fuel Cell