

## The best in fuel cell and metal hydride technology



- RELIABLE FUEL CELLS FROM 12W - 30W
- REFILLABLE HYDROGEN CARTRIDGES
- ON DEMAND DESKTOP HYDROGEN REFUELING
- SOME OF THE MOST EFFICIENT FUEL CELLS ON THE MARKET

## H-12

12W

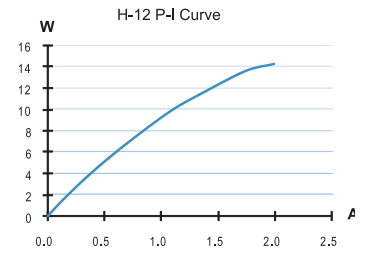
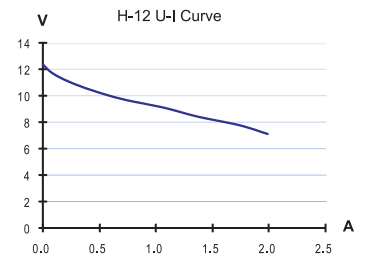
FCS-B12



- Integrated fan and casing
- 12W stack with blower

INCLUDES

Type of fuel cell	PEM
Number of cells	13
Rated power	12W
Rated performance	7.8V@1.5A
Purging valve voltage	6V
Blower voltage	5V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C (41-86°F)
Max stack temperature	55°C(131°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	275g(±30g)
Controller weight	90g(±10g)
Stack size	75x47x70mm
Flow rate at max output	0.18L/min
Hydrogen purity	≥99.995% dry H <sub>2</sub>
Start up time	≤30s (ambient temp.)
Efficiency of system	40% at full power



## H-20

20W

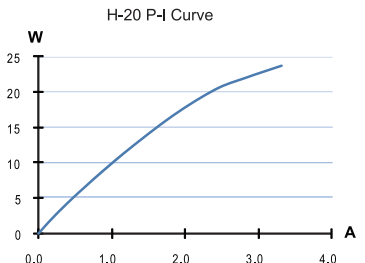
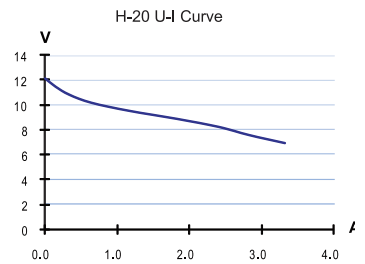
FCS-B20



- Miniature electronic valve
- Control electronics
- Integrated fan and casing
- Low voltage protection
- 20W stack with blower

INCLUDES

Type of fuel cell	PEM
Number of cells	13
Rated power	20W
Rated performance	7.8V@2.6A
Purging valve voltage	6V
Blower voltage	5V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C (41-86°F)
Max stack temperature	55°C(131°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	275g(±30g)
Controller weight	90g(±10g)
Stack size	75x47x70mm
Flow rate at max output	0.28L/min
Hydrogen purity	≥99.995% dry H <sub>2</sub>
Start up time	≤30s (ambient temp.)
Efficiency of system	40% at full power



## H-30

30W

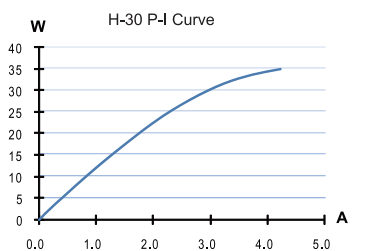
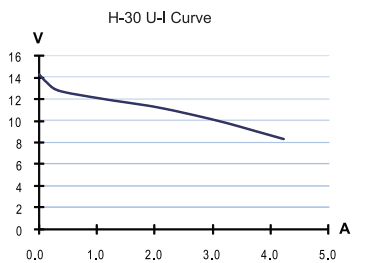
FCS-B30



- Miniature electronic valve
- Control electronics
- Integrated fan and casing
- Low voltage protection
- 30W stack with blower

INCLUDES

Type of fuel cell	PEM
Number of cells	14
Rated power	30W
Rated performance	8.4V@3.6A
Purging valve voltage	6V
Blower voltage	5V
Reactants	Hydrogen and Air
Ambient temperature	5-30°C (41-86°F)
Max stack temperature	55°C(131°F)
Hydrogen pressure	0.45-0.55Bar
Humidification	Self-humidified
Cooling	Air (integrated cooling fan)
Stack weight (with fan & casing)	280g(±30g)
Controller weight	90g(±10g)
Stack size	80x47x75mm
Flow rate at max output	0.42L/min
Hydrogen purity	≥99.995% dry H <sub>2</sub>
Start up time	≤30s (ambient temp.)
Efficiency of system	40% at full power



## Hydrogen on demand for universities and schools



### HYDROFILL PRO

FCH-020

- Produces hydrogen safely
- Indispensable for HYDROSTIK based engineering projects
- Input is just water and electricity

FEATURES

### HYDROSTIK PRO

LWH22-10L-5

- Stores hydrogen safely in a non-compressed, solid metallic form
- Powers Horizon fuel cells up to 30W
- Refillable multiple times

FEATURES



The world's only on demand hydrogen supply system for refilling HYDROSTIK PRO metal hydride cartridges. By generating hydrogen through water electrolysis, HYDROFILL PRO enables homes and classrooms to become energy self-sufficient. Then, rather than compressing hydrogen gas, the safe and reliable HYDROSTIK PRO binds hydrogen with a metal alloy to form a solid metal hydride. Perfect for next generation science kits and engineering projects.

HYDROFILL PRO FCH-020	<b>Stack type</b>	PEM electrolysis cell
	<b>Dimensions (WxDxH)</b>	145x153x208 mm (5.7x 6x8.2 in)
	<b>Weight</b>	1.8Kg ±5% (3.97Lbs ±5%)
	<b>Rated power</b>	≤23W
	<b>Input voltage</b>	DC: 10V-19V
	<b>Water input</b>	De-ionized or distilled water
	<b>Water temperature</b>	10-40°C (50-104°F)
	<b>Water consumption</b>	Approx. 20ml/hr (1.2in <sup>3</sup> /hr)
	<b>H2 output pressure</b>	0-3.0 MPaG (0-435.11 PSI)
	<b>H2 generation capacity</b>	Up to 3L/hr (0-183 in <sup>3</sup> /hr)
	<b>Purity</b>	99.995%
	<b>Compatible cartridge</b>	HYDROSTIK & HYDROSTIK PRO
<b>Refilling time for one Cartridge</b>	Around 4 hours (at 25°C room temperature)	

HYDROSTIK PRO LWH22-10L-5	<b>Name</b>	HYDROSTIK PRO
	<b>Model number</b>	LWH22-10L-5
	<b>Capacity</b>	10L hydrogen
	<b>Hydrogen purity</b>	≥99.995%
	<b>Cartridge size</b>	ø22x88mm
	<b>Weight</b>	Approx. 105g
	<b>Storage material</b>	AB5 metal hydride
	<b>Rated charging pressure</b>	3.0MPa
	<b>Working temperature</b>	0-55°C (0-131°F)
	<b>Service life</b>	10 years

## REFILLING TREE

21-RT-21



- Charge up to 21 Hydrostiks at once
- M6 screws provided to block surplus holes
- Takes up to 1h to charge all 21
- Dual headed pressure regulator required but not included.

HOW IT WORKS

## REFUELING TUBING CONNECTOR

M6



- Enables single Hydrostiks to be refilled from large cannister
- Connects to Refueling Tubing

HOW IT WORKS

## REFUELING TUBING

FSC-RA-5

350L



- Connects Refilling Tree (or single Hydrostik) to hydrogen cannister
- Also used to check leakages from cartridges

HOW IT WORKS

## SINGLE REFILLING ADOPTER

FSC-RA-1



- Facilitates Hydrostik recharging from small hydrogen cannister
- Connects to silicon tubing

HOW IT WORKS

## 1-STEP PRESSURE REGULATOR

FSC-PR-1



- Facilitates release of hydrogen from Hydrostik
- Connects to silicon tubing

HOW IT WORKS

## SILICON TUBING

FCEA-14



- Connects Single Refilling Adopter to small hydrogen cannister
- Also connects to 1-Step Pressure Regulator

HOW IT WORKS