



## SHFA Model 100

### Scalable Hydrogen Fueling Appliance

as of 11/3/2022 this unit cost \$175,000 USD  
 With Certificate of Attestation to CSA Group IR 3-18



### DESCRIPTION

#### SHFA Model 100

Palletized, 2 kilogram per day production, Scalable Hydrogen Fueling Appliance  
 With 4 kilograms storage at 6,000 psi with fixed orifice fueling and J2600 nozzle

240 Volt AC single Phase at 50 amperes

J2719 fuel quality

### ELECTROLYTE

Alkaline = NaOH Sodium Hydroxide at less than .75% by weight Electrolyte 5.5 ounces NaOH to 5 gallons water

### HYDROGEN PRODUCTION

Net Production Rate:

scf/hr @ 70 F  
 Nm3/hr @ 0 C  
 SLPM @ 70 F  
 kg per 24 hours

35 scfm  
 .9 Nm3/hr  
 18.1 liters/min  
 2 kg/24hr

If Continuously run at maximum voltage  
 and amperage, output will vary site to site  
 based on available power

H2 stack Delivery Pressure-Nominal:

10.16 barG (150 PSIG) stack

Power Consumed per kilogram of H2 Gas produced by the  
 Stack

48 KWH per Kilogram

48 Kilowatt hours of electricity to  
 produce 1 kilogram of hydrogen

Purity from Stack

99.95%

Purity after flowing thru Honey Comb Purifier

99.998%

Third Party Test Performed

Twin dryers w/Silica Gel

Included

Oxygen Scrubber

Included

Upgradeability / production and storage

Yes

Power Consumed per kilogram of H2 Gas produced, purified & compressed to 350 bar

58 kwh per kg. optimized



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### WATER REQUIREMENT

Rate at Max, Consumption Rate	.719 Liters/hr or .19 gal/hr. ( 2.3 gallons/kg.)
de-ionized, distilled or filtered rain water	De-Ionizer and activated charcoal filter included in package
Tanks and stacks total capacity	20 gallons

### COOLING SYSTEM

Coolant	Water/Ethylene Glycol
Maximum Coolant Temperature	160F
Average Coolant Temperature	150F
Coolant Flow rate	14 gpm.

### ELECTRICAL SPECIFICATIONS 240 Volt AC single Phase at 60 amperes

Breaker Rating	50 amp 2 pole
Electrical connection both male and female plug included	240VAC through a DSN 60 Meltric 60 amp plug with power cut off built in
Automation:	2- TECO PLCs
Average electrolyzer power input	4,250 watts Varies Based on Site Location Line Voltage and ambient Temp.
Compressor power	1,440 Watts 50% duty cycle

### INTERFACE CONNECTIONS

H2 Product Port	9.525 mm (3/8")
H2 Vent Port	9.525 mm (3/8")
Water Port	12.7 mm (1/2 ")
Coolant Supply and Return Ports	12.7 mm (1/2 ")
Drain Port	12.7 mm (1/2 ")
O2 Vent Port	9.525 mm (3/8")



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### CONTROL SYSTEMS

Standard Components	Electrolyzer Purifier Compressor Storage Dispenser	Features	Fully automated 2 kg/day audible and text alarm system 14/92 twin piston electric compressor Automatic power shutdown Automatic fault detection	On-board H2 leak & heat detection Battery Backup for PLC E stop 4 kg onboard storage at 6,000 psi 350 bar J2600 fueling Nozzle
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### PLATFORM CHARACTERISTICS

shipping Dimensions, WxDxH (Product)	7' 4" w x 4' 1" D 7' 1" H
Model 100 Total Weight	3,700 pounds

### ENVIROMENTAL CONSIDERATIONS

Standard Sitting Location	Indoor ventilated/Sheltered/outdoor
Ambient Temperature fueling Range // operating	2 C to 33 C ( 35.6 F to 91.4 F) // electrolyzer operations 33 F to 100 F
Ventilation	Proper ventilation must provided for indoor use at a rate in accordance with NFPA 2 10.3.2.2.1.6

### SAFETY and REGULATORY CONFORMITY

Maximum On-board H2 Inventory at Full Production	4 kg
Cabinet Ventilation with Environment	Yes
Oxygen Flashback arrestor	Yes
200 PSIG Pressure Relief Valves	yes
Temperature Control	Yes
Equipment orientation is part of mandatory training built to codes and standards CSA IR 3-18 that include can be moved with a 2.5 ton Pallet Jack	ISO 22734-1 & 2, NFPA 2, applicable ASME, CSA 4.1

### STORAGE

The Model 100 comes standard with Four DOT 3 A receivers at 6,000 psi max working pressure manifolded together. 6,000 psi key activated auto solenoid valve separating storage from dispensing expansion port with valve provided to accommodate additional external storage available in six packs of 6 kilograms each

### OPTIONS

Increased internal storage in 2 kg increments to 6kg for a model 102 and 8 KG for a model 104. Could add external Storage in 6 kg units order extra compressor seals in advance and desiccant and water filters