



## New Energy Lab

The unique New Energy Lab addresses all aspects of integrated renewable energy systems: generation, storage and management of energy. Its flexible energy management unit enables the quick modification of the system's setup, making it possible to combine multiple renewable inputs with different energy storage options.



### Energy Components

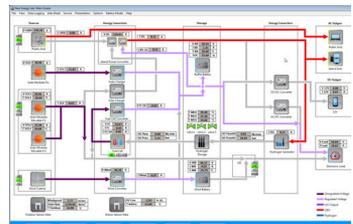
Photovoltaic	1500 - 2500Wp
Wind Turbine	300 W
Fuel Cell	1200W
Hydrogen Generator	72l/h; 198l/h
Battery Bank	55 Ah



MHS à 800 nl/h



Software with API (OPC UA)



# Power for the 21st Century

## Hybrid Systems Fully Operational Hydrogen & Fuel Cell Training System

Software with  
API (OPC UA)



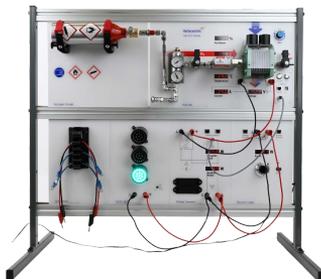
Hybrid Energy Lab - System FC 1200W

### Hybrid Training System

Industrial Components: 1,2kW FC  
Energy Flux & System Efficiency, Energy Management  
Fuel Cell - Battery Hybrid Application  
UPS (uninterruptible power supply)  
Versatile Electronic Load

### Fuel Cell Trainer 50W

Fuel Consumption  
Factors Effecting the Characteristic Curve  
(temperature, air supply, etc.)  
Stack Efficiency vs. System Efficiency



## Electrolyze operated via Solar Energy combined to HEL & FCT

Solar Hydrogen Trainer 30l/h; 72l/h



Energy Flux & System Efficiency Power2Gas  
Energy Harvester  
Modular Mobile System  
Industrial Components  
Simulation of Autarkic Energy Supply



## NEXA® 1200W Integration System connected to 200 bar Cylinder - Electrolyze - MHS Canisters

### Nexa® Integration System

**Interface Unit**

- CAN In
- CAN Out
- Service
- RG 232
- H<sub>2</sub>
- Power Supply
- Remote Control
- Aux Out
- Safety Chain
- DSP Switch

**Power Curve**

Current (A)	PII Stack (W)	PI Stack (W)	UI Module (W)	UI Stack (W)
0	0	0	1300	1300
10	100	100	1250	1250
20	200	200	1200	1200
30	300	300	1150	1150
40	400	400	1100	1100
50	500	500	1050	1050
60	600	600	1000	1000
70	700	700	950	950
80	800	800	900	900
90	900	900	850	850
100	1000	1000	800	800

#### 1200W Fuel Cell



#### DC/DC Converter



Connections Kit



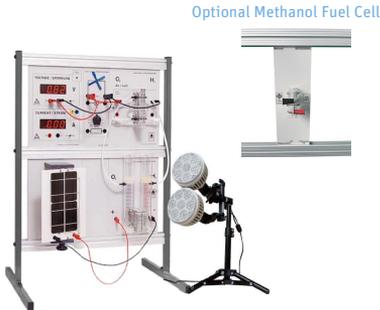
MHS Canister



Electrolyze HG 72 l/h



**Dr Fuel Cell® Professional**  
 Electrolyze operated via Solar  
 Energy connected to double Fuel Cell



Optional Methanol Fuel Cell

LED-Lamp is not included to be ordered separately.



Basic level of Renewable Energy  
 Introduction on double  
 PEM Fuel Cell | Hydrogen Generation | Solar Cells

**Hybrid Renewable Energy Trainer**  
 Modular indoor training system with PV,  
 wind turbine and fuel cell



Optionally, the wind turbine could be installed outdoor.

- Modular Indoor System
- PV - Wind -Fuel Cell
- Hybrid-System

\*Subject to change without notice\*



# Heliocentris

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