AEROSTAK HYDROGEN FUEL CELL SYSTEMS FOR UAS

FULL LINE UP OF ULTRA-LIGHT PEM FUEL CELL SYSTEMS

H3 Dynamics

The H3 Dynamics AEROSTAKs are family of advanced ultra-light hydrogen fuel cells, ranging from 250W to 1.5kW nominal rated power. All AEROSTAKs feature a special grade PEM fuel cell stack, full balance of plant, control electronics, LiPo-compatible hybrid electronics, lightweight casing and are plug and play. Pair the AEROSTAK with our hydrogen storage, pressure regulation, and refilling technology for a complete turnkey power solution.

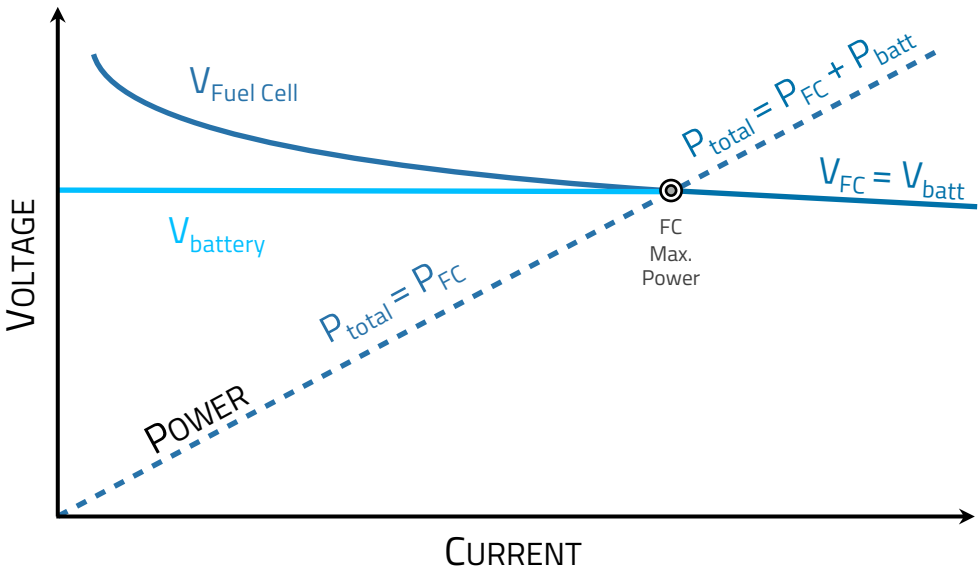
System operational data such as voltages, currents, power, and temperatures are provided through an RS232 data connection. Wireless data transmission is available as an option. The LiPo battery provides power for startup and additional electric power when the load required exceeds the capacity of the fuel cell stack. The electronics also provide up to 1.5 A to recharge the battery when excess power is available.

Standard system features:

- Remote ON/OFF button
- RS232 Data monitoring
- Maintenance cycle signal
- Waterproof hard case for transport
- H2 supply tube and quick-connect

Add-ons:

- DC/DC converter
- Wireless telemetry
- Custom firmware
- Higher power systems by stacking several systems



AEROSTAK A-1500 (1500W)

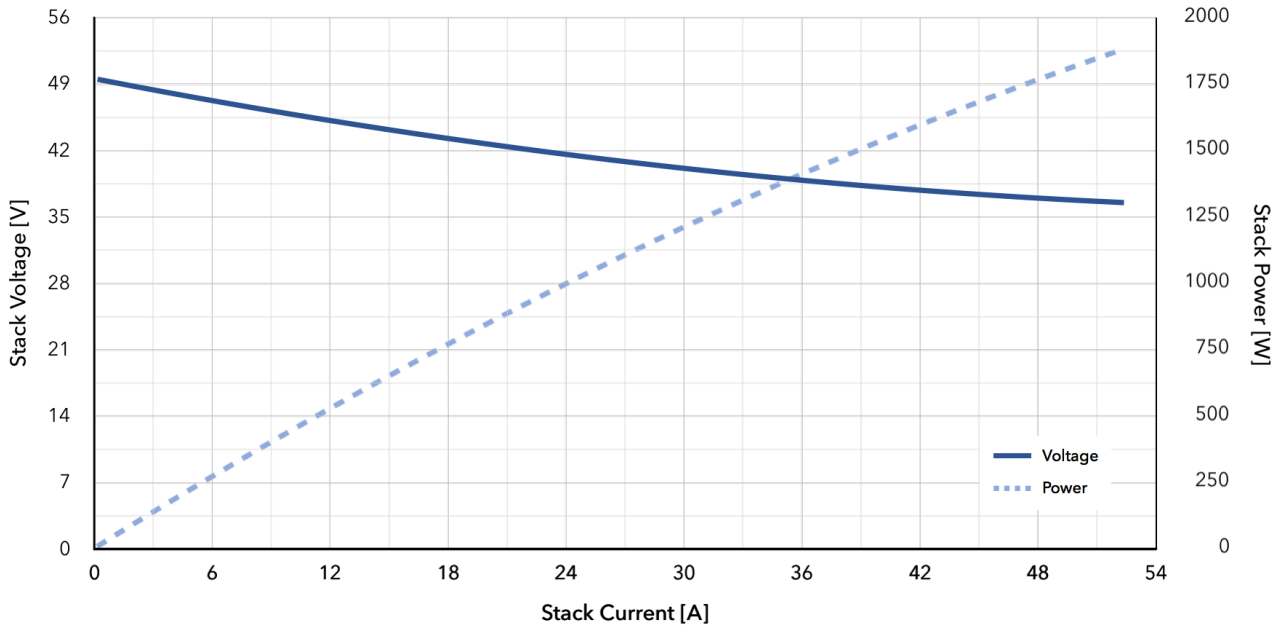
ADVANCED LIGHTWEIGHT FUEL CELL SYSTEM

H³Dynamics

The AEROSTAK 1500 is suitable for larger payload multi rotor UAV's as well as for fixed wing, VTOL and other higher power mobile applications.

Stack Design	55 cells
Rated Power (FC)	1500 W
Peak Power (FC + battery)	4000 W
Voltage	32.0 - 51.3 V
Current	0 - 50 A
Weight	3 000 g
Specific Power	500 W/kg
Power Density	180 W/L

Dimensions	339 x 143 x 172 mm
Cooling	Air
Air Input Temperature	0 - 35°C
Hydrogen Input Pressure	0.6 - 0.8 bar
Hydrogen Purity Required	99,998%
Max. Consumption	< 16.8 L/min
Start Up Time	< 20 s
Suggested Hybrid LiPo	9S (>100C)



AEROSTAK A-1000 HV (1000W)

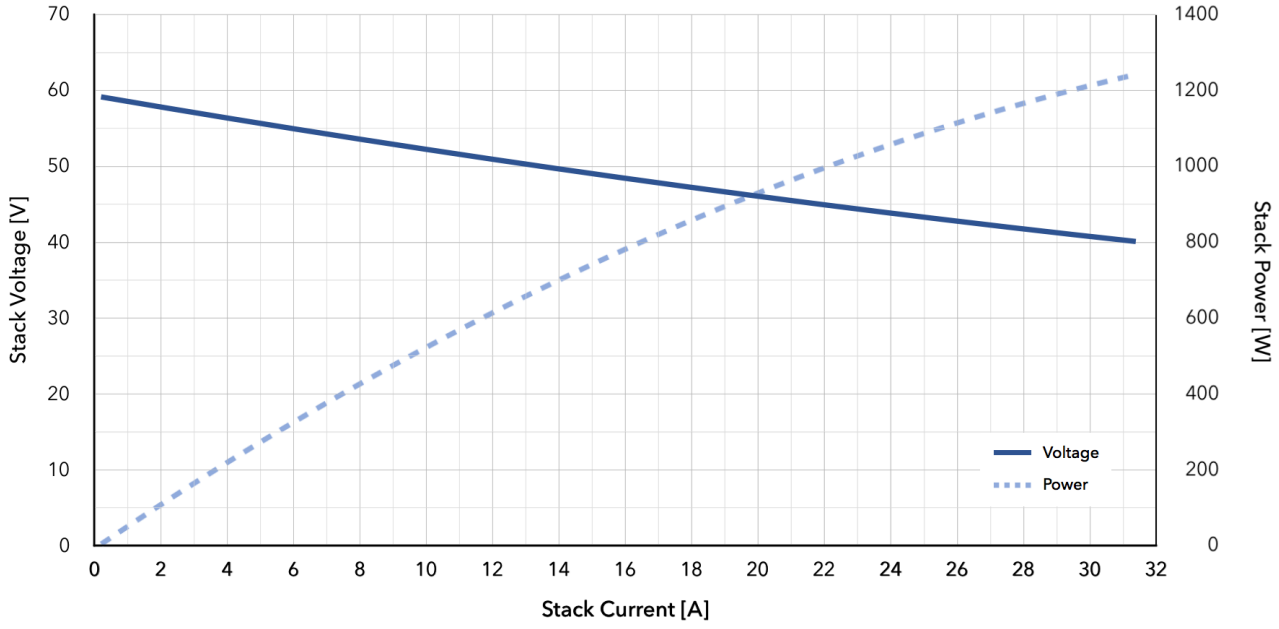
ADVANCED LIGHTWEIGHT FUEL CELL SYSTEM

H³Dynamics

The AEROSTAK 1000-HV has been designed to power large fixed wing drones and mid-sized multi rotor UAV's (<10 kg MTOW), as well as other portable applications.

Stack Design	65 cells
Rated Power (FC)	1000 W
Peak Power (FC + battery)	3800 W
Voltage	35.0 - 61.8 V
Current	0 - 30 A
Weight	2 100 g
Specific Power	476 W/kg
Power Density	210 W/L

Dimensions	194 x 127 x 193 mm
Cooling	Air
Air Input Temperature	0 - 35°C
Hydrogen Input Pressure	0.6 - 0.8 bar
Hydrogen Purity Required	99,998%
Max. Consumption	< 11.2 L/min
Start Up Time	< 20 s
Suggested Hybrid LiPo	10 S (>100C)



AEROSTAK A-1000 LV (1000W)

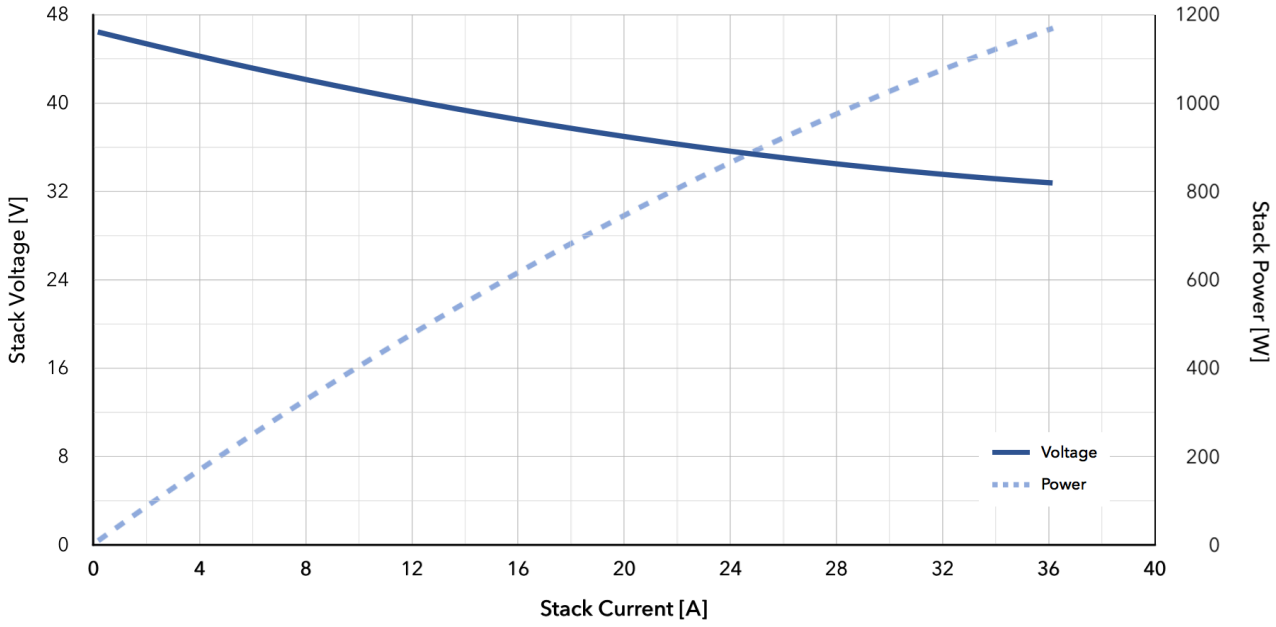
ADVANCED LIGHTWEIGHT FUEL CELL SYSTEM

H³Dynamics

The AEROSTAK 1000-LV has been designed to power large fixed wing drones and mid-sized multi rotor UAV's (<10 kg MTOW), as well as other portable applications.

Stack Design	50 cells
Rated Power (FC)	1000 W
Peak Power (FC + battery)	3250 W
Voltage	28.0 - 47.5 V
Current	0 - 35 A
Weight	2 150 g
Specific Power	465 W/kg
Power Density	197 W/L

Dimensions	279 x 127 x 143 mm
Cooling	Air
Air Input Temperature	0 - 35°C
Hydrogen Input Pressure	0.6 - 0.8 bar
Hydrogen Purity Required	99,998%
Max. Consumption	< 11.2 L/min
Start Up Time	< 20 s
Suggested Hybrid LiPo	8 S (>100C)



AEROSTAK A-500 (500W)

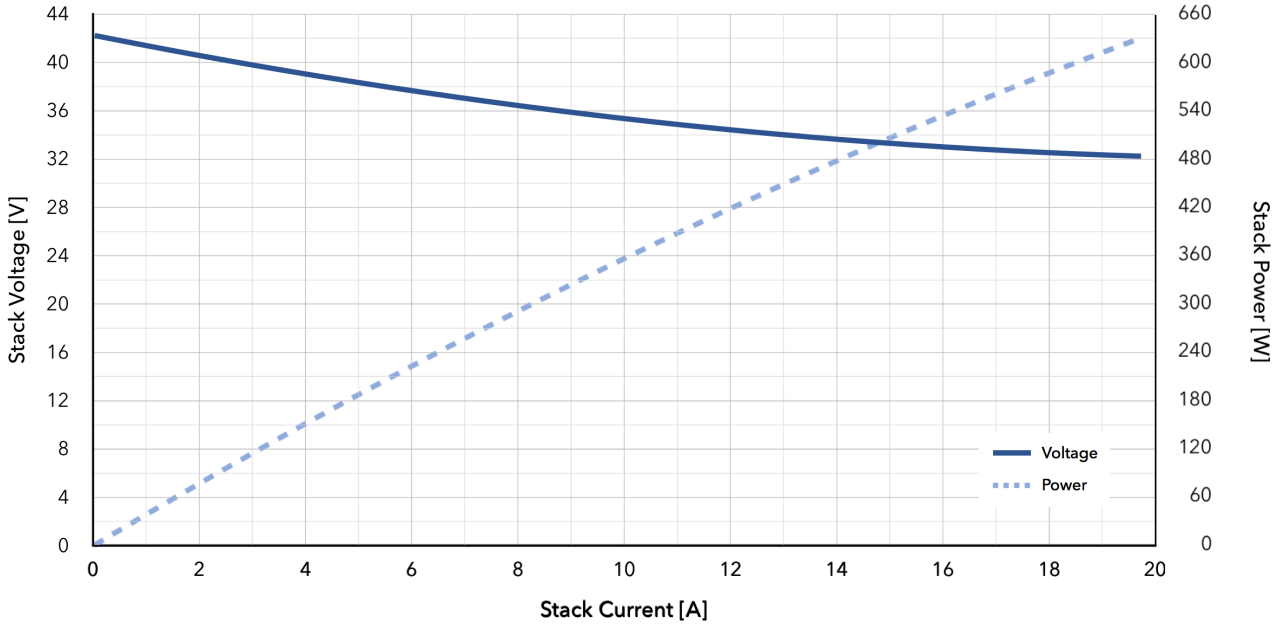
ADVANCED LIGHTWEIGHT FUEL CELL SYSTEM

H³Dynamics

The AEROSTAK 500 has the perfect power and form factor for fixed wing and VTOL drones.

Stack Design	45 cells
Rated Power (FC)	500 W
Peak Power (FC + battery)	2750 W
Voltage	28.0 - 42.8 V
Current	0 - 20 A
Weight	1 580 g
Specific Power	316 W/kg
Power Density	146 W/L

Dimensions	214 x 123 x 130 mm
Cooling	Air
Air Input Temperature	0 - 35°C
Hydrogen Input Pressure	0.6 - 0.8 bar
Hydrogen Purity Required	99,998%
Max. Consumption	< 5.6 L/min
Start Up Time	< 20 s
Suggested Hybrid LiPo	8 S (>100C)



AEROSTAK A-250 (250W)

ADVANCED LIGHTWEIGHT FUEL CELL SYSTEM

H³Dynamics

The AEROSTAK 250 is ideal for powering smaller fixed wing drones, scaled demonstrators, research, and other low-powered hydrogen applications.

Stack Design	37 cells
Rated Power (FC)	250 W
Peak Power (FC + battery)	800W – up to 2210W
Voltage	24.5 - 35.2 V
Current	0 - 13 A
Weight	720 g
Specific Power	347 W/kg
Power Density	149 W/L

Dimensions	122 x 123 x 112 mm
Cooling	Air
Air Input Temperature	0 - 35°C
Hydrogen Input Pressure	0.6 - 0.8 bar
Hydrogen Purity Required	99,998%
Max. Consumption	< 2.8 L/min
Start Up Time	< 20 s
Suggested Hybrid LiPo	7 S (>100C)