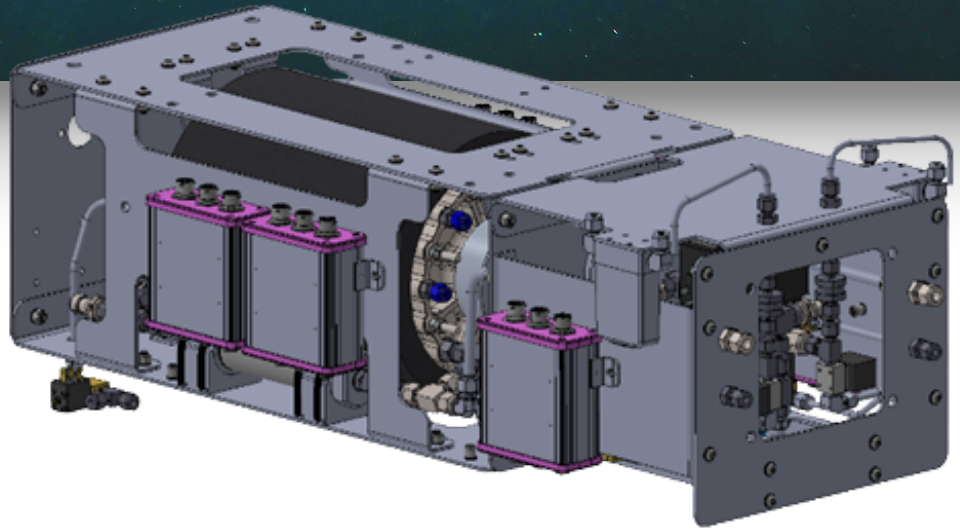


Breakthrough range extender for UUVs & AUVs:

# Mystic 2000<sup>TM</sup>

## Fuel Cell Power System

The Mystic 2000 is Infinity's newest product that stems from a multi-year product development process in which the prototype system successfully completed a 2000+ km mission in a customer's UUV.



The Mystic 2000 is a fuel cell power system aimed at providing sustained electrical power for long duration underwater missions. Electrical power is generated from a Proton Exchange Membrane (PEM) fuel cell that uses hydrogen and oxygen to produce electricity and water. By using pure oxygen instead of air as the oxidizer, the fuel cell is able to operate in environments where air is not present.

The fuel cell power system provides a great advantage over batteries for long duration missions due to the energy density of the stored hydrogen. The energy storage section is independent of the fuel cell power system which allows the reactant storage to be customized to store enough energy for the duration of the mission. Unlike batteries fuel cell power systems do not dissipate energy when turned off in low temperature environments such as the ocean floor, which allow UUVs to be launched to a specific location and hibernate there for a long duration before turning back on and completing the mission without loss of stored energy.

# Key Advantages & Benefits

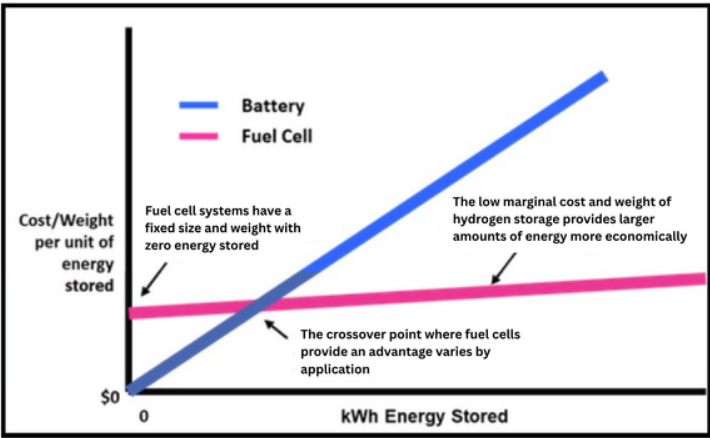
|                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------|
| Custom controller with automated start/stop capability                                                                       |
| Ability to receive external commands from vehicle                                                                            |
| Ability to integrate with various reactant storage for range extension                                                       |
| Ability to store more energy per unit of mass due to high specific energy of hydrogen                                        |
| Energy does not self discharge when stored in underwater environment                                                         |
| Supports multi-week missions that streamline military logistics & deliver substantial cost savings for commercial operations |



Cellula Robotics Envoy class AUV  
Image ©Cellula Robotics

## Product Features

|                      |                          |
|----------------------|--------------------------|
| Dimensions           | 12" W x 9.875" H x 34" L |
| Maximum Output Power | 2000 Watts               |
| Current Range        | 0-45 Amps                |
| Fuel Cell Efficiency | 22+ kWh/kg Hydrogen      |



Environmental Testing  
Performed:

2000+ km UUV mission  
completed