

NON ROV DEVICE DOCUMENTATION

SAILOR

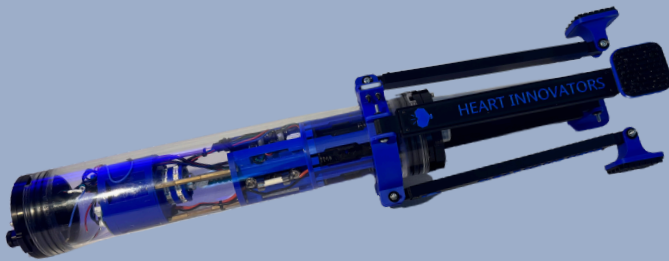


Figure 1: Sailor
(Photo: Natalie Mitchell, 2025)

Battery Pack

SAILOR's battery pack was designed to safely give the full power current requirement by ensuring the wire gauge exceeds the requirement to carry the current from the battery, soldering and insulating each of the wires between each wire segment and ensuring the fuse is located near the battery pack and properly specced for the load. The battery pack consists of 8 NiMH (Nickel Metal Hydride) AA batteries wired in series to make a final voltage of 9.6V and the average full load amperage is around 3-4 amps.

Buoyancy Engine

SAILOR, Heat Innovator's vertical profiling float features a buoyancy engine powered by a Nema 17 17hs4401s stepper motor to intake and expel water to change the quantity of liquid present within the internal syringe.

Communication

SAILOR communicates over Wi-Fi to the shore side / topside computer to deploy, collect data, and manage the hardware present within the float. There is various data packed that are sent after the float deploys which include:

Figure 3: HEART Innovators Team Photo.
(Photo: Cole Murphy, 2025)

