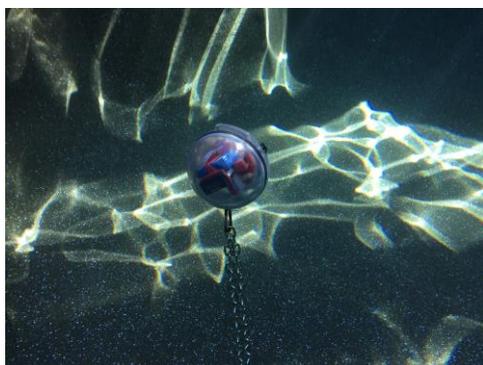


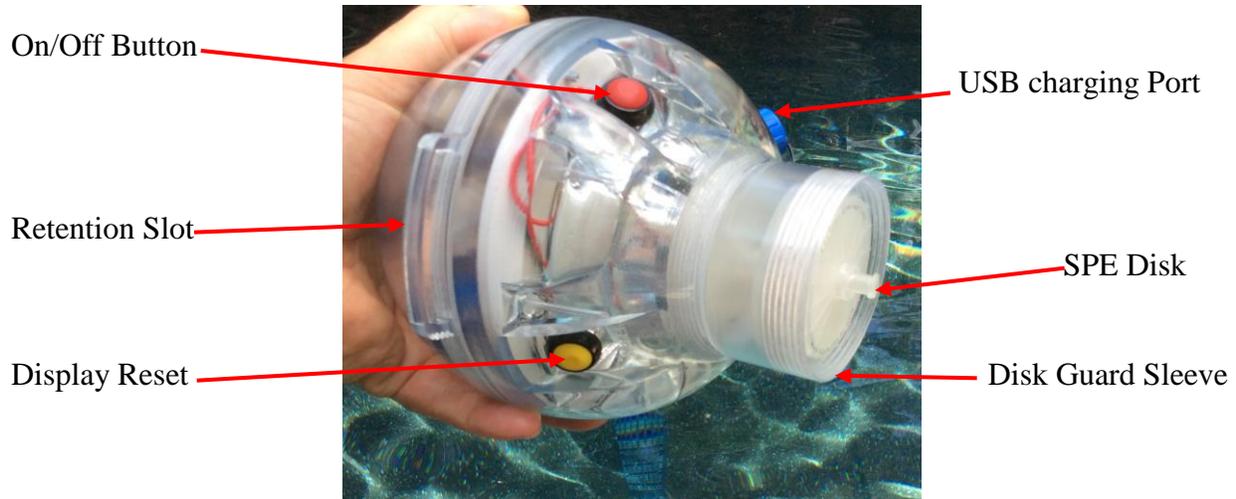
Operational and Field Instructions



Above are photos of the Continuous Low-level Aquatic Monitoring device called the CLAM . The CLAM comes in a field ready case with accessories shown in the photos above. The CLAM should be treated as an instrument and not subjected to severe jolts or rough handling.

The following steps will be a simple guide to turn on, deploy, record the volume of water extracted and retrieve the CLAM and transport the SPE disks to the Laboratory.

Operational Steps



1. Plug in the charger for the rechargeable battery that powers the CLAM. The charger uses USB to attach to the port in the CLAM. The battery should be plugged in for 12 hours to ensure a full charge before taking the CLAM to the field.

2. Transport the CLAM with a fully charged battery in the CLAM case. Evaluate the location for the CLAM deployment. The CLAM is deployed floating, submerged, or floating with the CLAM Disk submerged and attached by tubing to the CLAM at the surface. Many different deployment methods are possible, such as wading into shallow water and attaching to a fixed structure, or lowering into the water on a stainless steel chain or nylon cord, or placed by divers, or others. The CLAM is slightly buoyant and will naturally face the CLAM Disk down in the water which will reduce the potential for floatables to enter the CLAM Disk.



The CLAM has slots that can be used with a cord, cable or tie-wraps to secure the body of the CLAM to a rope, chain, rebar, fencepost, buoy or structure. The CLAM can collect a sample about 2” below the surface of the water in the floating position, or samples can be collected at depth by submerging the CLAM or just the CLAM Disk. Keep security in mind when deploying the CLAM.

3. Once the CLAM is removed from the case and is ready for deployment, press the reset button on the volume totalizer counter. It should now read zero. Press the start button to ensure the pump is running. This is done in the air and not in the water. The pump will

not be hurt by running in air, but should never be run in the water without a mounted extraction disk as sediment will harm the totalizer and pump. Press the start button again to stop the pump and press the reset button again to once again reset the volume totalizer counter to zero.

4. A new CLAM disk will come in a Mylar mailer with luer lock plugs to keep the SPE media isolated and clean. Typically, the lab that will run the analysis will solvent clean and condition the Disks beforehand, providing a activated sealed disk and return mailer to the field for deployment. A “Sharpie” pen can be used to put a unique identification on each CLAM Disk to correlate with the Chain of Custody.



5. Before removing the luer lock plugs from the CLAM Disk or



Disks if being used in a 2 or 3 stage deployment (a pre-filter disk can be used in front of a media disk for total and dissolved studies), ensure that the CLAM is just about ready to be put in the water.

6. Now remove the luer lock plugs from the CLAM Disk(s) and secure to the CLAM. The luer locks will only go one direction so if the disk fits securely, it is oriented correctly. The factory printed information on the Disk(s) will face out.
7. Press the start button. Now the CLAM should be running and ready for submersion. **IT IS CRITICAL NOT TO PRESS THE YELLOW BUTTON AGAIN ONCE THE SAMPLE COLLECTION IS BEGUN.**
8. While still activated secure the CLAM to the deployment method already established. Let the unit extract for the time period planned. Record the time, location and date of deployment.
9. Upon return, pull the CLAM from the water. **DO NOT PUSH THE YELLOW BUTTON** as it will zero the display before you recorded the resultant reading. Immediately record the reading on the volume totalizer screen. The CLAM Disk(s) should be unscrewed and immediately resealed with the provided luer lock plugs.
10. The CLAM Disk(s) should now be placed in the Mylar mailer with the Chain of Custody form and delivered to the laboratory. The Chain of Custody should include the total volume of water extracted during the CLAM deployment. This number is derived by multiplying the reading on the volume totalizer by 0.055 (this number is shown on the volume totalizer) to give a value in milliliters. Although testing has shown that there is no degradation of the Disk(s) at room temperature, the deployed disks should be shipped like any environmental sample for trace organic analysis in a chilled state, as commercial laboratories will record the sample as a nonconformance if received otherwise.