

- Pictured above, Environmental Sample Processor instrument.
- See ESP Puck specifications on the reverse page.
- For more information about this sampler, see the ESP pages at [mclanelabs.com](http://mclanelabs.com).

## ESP Pucks

### Application:

The Environmental Sample Processor (ESP) uses special two-piece, titanium containers for sample collecting and processing. These reusable containers, called pucks, provide the solid support for filters or probe arrays. While there are several types of pucks, all have the same external shape and size for handling in the ESP (approximately 1.2 inches in diameter and 0.64 inches high).

A puck is comprised of two pieces: a puck top and a puck bottom. These pieces are snapped together and held in place by an O-ring. A second O-ring is used to seal the puck. There are openings in the top and bottom pieces through which fluid enters and exits the puck. The size of the opening in the puck top varies between the puck types; the openings in the puck bottoms are the same size.

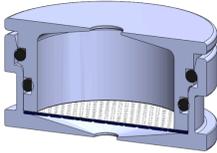
Every McLane puck top and bottom is examined for quality, fit, and finish. Each puck has a serial number that indicates the type of puck, the date it was manufactured, and provides a unique 4-digit identifier.

The following are the available ESP pucks (see reverse for puck specifications):

- Standard-volume sample (SVS)
- High-volume sample (HVS)
- Whole cell archive (WCR)
- Large array format (LAF)
- Small array format (SAF)

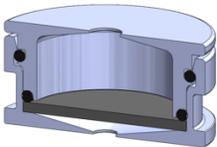
# ESP Puck Specifications

## Std. Volume Sample Puck



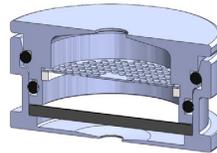
A standard-volume sample puck (SVS) is used during sample collection and during lysate filtration. For either collection or filtration, the SVS puck is assembled using an SHT top and an SH1 bottom. For a standard-volume sample collection, the puck is loaded with a membrane filter through which 25 ml to 2 liters of water are passed. (For a sample volume greater than 2 liters, the HVS puck is used.) The filter porosity (0.22  $\mu\text{m}$  to 5  $\mu\text{m}$ ) is determined by the protocol used in the phase. The majority of phases use this puck for sampling. When used in lysate filtration, the SVS puck contains a 0.22  $\mu\text{m}$  membrane filter through which the lysate is drawn. This configuration is used during lysate filtration for all current protocols.

## High-Volume Sample Puck



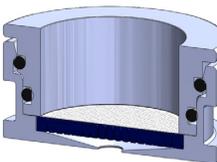
A high-volume sample puck (HVS) is used during sample collection when the environmental occurrence of a target microorganism is low, requiring a larger volume of water to be collected (one to 10 liters). A HVS puck is assembled using a HV2 top and an SH1 bottom, and is loaded with a sintered titanium frit.

## Whole Cell Archival Puck



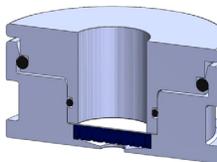
The whole cell archival puck (WCR) is used for archive sample collection. A WCR puck is assembled using a WCR top and WCR bottom. A WCR puck contains one or more membrane filters supported by a titanium frit through which 25 ml to 2 liters of water are passed. The porosity of the membrane filters are based on the protocol used in the phase. This puck is used only during the archival collection process in which whole cells are collected and preserved for future laboratory testing. A preservative is added during the archival process.

## Large Array Format



A large array format puck (LAF) is used during sample processing. A LAF puck is assembled from an LAF top and an LAF bottom. A LAF puck contains a probe array on a nitrocellulose membrane supported by a polysulfone disc. Pre-configured arrays have been designed for several algal, bacterial, and larval organisms.

## Small Array Format



A small array format puck (SAF) is used during the sample processing. A SAF puck is assembled from an SAF top and an SAF bottom. A SAF puck contains a probe array on a nitrocellulose membrane supported by a polysulfone disc. Currently, small format arrays have been designed for phases running the domoic acid (DA) and Saxitoxin (STX) protocols.