

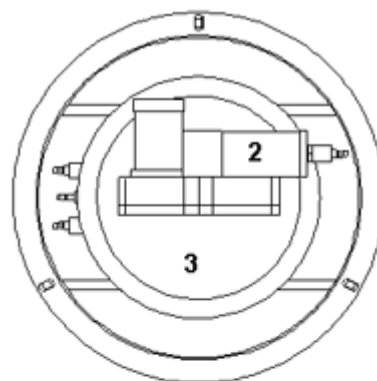
## Time-Series Zooplankton Sampler, ZPS 6-50

Time-Series Zooplankton Samplers (ZPS 6-50) collect samples in either standard time-series or in action-trigger mode as controlled by the micro-controller (1). A sample is collected using a specially designed positive displacement pump (2) that generates negative pressure through a hydrodynamically modeled space between two horizontal disks (3). Zooplankton are unaware of being drawn towards the sampler until they are well inside and can not escape. They are transported onto a 3.5 x 6 cm frame of a special roll of Nitex mesh. Up to 250 liters of water can be filtered through each frame of mesh. Several mesh sizes are available. The Zooplankton retained on the sample frame is sandwiched by another layer of Nitex mesh for protection and immediately moved to the fixative bath (4) for storage until recovery of the sampler.

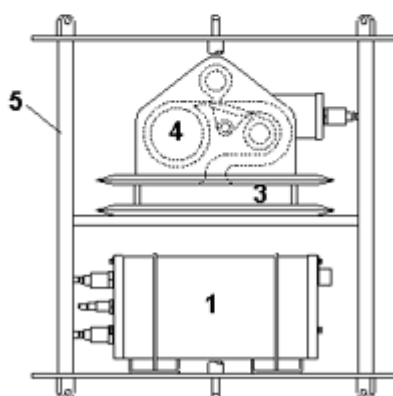
A new frame of mesh is positioned automatically for the next sampling cycle. This procedure can be repeated up to 50 times for each roll of Nitex mesh as instructed by the micro-controller. Upon recovery, the Nitex mesh roll is removed from the fixative tank and the zooplankton on each frame can be examined. This sampling process is analogous to a roll of photographic film in a camera which is wound up into a cartridge until developed.

By using optional sensors, such as a transmissometer or a current meter, the sampler can be turned on by external independent environmental variability. This event trigger mode and standard time-series mode can be mixed. This intelligence is a significant feature of this sampler.

The standard frame is Titanium weldment (5) which allows the sampler to be attached to a mooring. In case other platforms are preferred such as sea floor tripod, the collector and the controller/battery can be removed from the frame and installed onto the tripod.



TOP VIEW



SIDE VIEW  
Representative figure

### Physical Configuration

Height	92 cm
Diameter	82 cm
Weight in air	76 Kg
Weight in water	26 Kg
Maximum depth	300 m (5,000 m optional)

### Collector Configuration (4)

Max. number of samples	50
Frame mesh	Nitex 50 to 500
Frame area	3.5 x 6 cm
Protective second mesh	Nitex 50 to 500
Recommended fixative	Glutaraldehyde/sea water buffer in the take up reel tank
Cleaning of frames	Sea water back-flush
Collector materials	Acrylic and Acetal block

### Pump (2)

Flow rate	15 to 25 l/min.
Maximum total volume	25,000 liters
Recommended vol./sample	250 liters

Type of pump McLane rotary 30 l/m pump

Volume error Average ?5%

**Controller/Battery (1)**

Computer/recorder TT-8 based micro-controller

External Computer Any computer with serial (RS-232) output

Main battery 36 VDC 42 Ah alkaline battery pack

Material Aluminium, 6061-T6 hardcoat anodized

**Frame (5)**

Material Titanium Ti-45 A/G-2

Structure Weldment

**Duration of Deployment**

3 months or longer, depending upon bio-fouling situation

**Options**

External sensors including current meter, transmissometer, or fluorometer are ready to be integrated to the sampler's micro-controller