

# BCH-M13 and BCH-M22

## Classic Bilayer Chambers and Cuvettes

# bilayer workstation

### The standard membrane support system

Since the pioneering work on black lipid membranes by Paul Mueller and co-workers in the early '60s, several generations of membrane biologists have exploited this model membrane for biophysical and reconstitution studies. The planar bilayer formed by painting lipids across a small aperture in a partition is one of the simplest techniques available to the novice and expert alike, and the cup/chamber system has been used to reconstitute and record the single-channel behavior of a wide variety of ion channel proteins from diverse tissues.



- Polystyrene, polysulfone or Delrin cuvettes
- Precision machined apertures of 150, 200 or 250  $\mu\text{m}$
- *cis* and *trans* stirbar wells
- Stirbar included with each cup and chamber
- Viewing window
- Shipments from stock

### The Basics

Classic design cups and chambers from Warner Instruments are designed such that addition of equal volumes to the *cis* and *trans* sides results in a balanced solution height, thus minimizing mechanical gradients across the bilayer membrane.

All cuvettes have a 0.5 mm well milled into their base to confine the motion of stirbars and to reduce mechanical noise artifacts. A 2 x 5 mm or 2 x 7 mm Teflon-coated stirbar is supplied with each cuvette. Standard available aperture diameters are 150, 200 or 250  $\mu\text{m}$ . **Contact our offices for custom aperture sizes.** The wall thickness at the aperture is 250  $\mu\text{m}$ .

### Bilayer Chambers

Chambers are made from black Delrin and have a 0.5 mm recessed well milled into the floor of the non-cup side to confine the motion of stirbars and to reduce mechanical noise artifacts. A 2 x 5 mm or 2 x 7 mm Teflon-coated stirbar is supplied with each chamber.

Polyethylene centrifuge tubes (supplied) serve as intermediate wells for electrical connections between the headstage electrodes and the cup or chamber. Chambers include a nylon screw and rubber plug to secure the cups during use. The classic model has a window for viewing the aperture during membrane formation.

### Classic Models BCH-M13 and BCH-M22

Two classic models are offered: The BCH-M13 is a small volume chamber (1.0 ml) with a 13 mm ( $\frac{1}{2}$ " diameter) cuvette. The BCH-M22 is a larger volume chamber with (3.0 ml) chamber with a 22 mm ( $\frac{7}{8}$ " diameter) cuvette.

### Bilayer Cuvettes

Polystyrene has been a favored material for cuvettes for several years. The physical properties of this material make for a high quality membrane support. However, its poor resistance to organic solvents can lead to degradation of the aperture.

Cuvettes have also been made from Delrin (acetyl resin) and many users report good membrane formation as well as easier maintenance. It should be noted, however, that Delrin cuvettes do not work equally well in all applications and with all users.

Warner Instruments now offers bilayer cups made from polysulfone. This material has many of the mechanical properties of polystyrene coupled with enhanced solvent resistance. The choice of material will depend on your application.

Order #	Model	Product
<b>Classic 13 mm Chamber (1 ml volume)</b>		
W4 64-0451	BCH-M13	Bilayer Chamber (Includes Two 2 x 5 mm Stirbar Magnets)
<b>Classic 13 mm Cuvettes</b>		
W4 64-0404	CP13A-150	Polystyrene with 150 $\mu\text{m}$ Aperture
W4 64-0403	CP13A-200	Polystyrene with 200 $\mu\text{m}$ Aperture
W4 64-0402	CP13A-250	Polystyrene with 250 $\mu\text{m}$ Aperture
W4 64-0410	CD13A-150	Delrin with 150 $\mu\text{m}$ Aperture
W4 64-0409	CD13A-200	Delrin with 200 $\mu\text{m}$ Aperture
W4 64-0408	CD13A-250	Delrin with 250 $\mu\text{m}$ Aperture
W4 64-0416	CF13A-150	Polysulfone with 150 $\mu\text{m}$ Aperture
W4 64-0415	CF13A-200	Polysulfone with 200 $\mu\text{m}$ Aperture
W4 64-0414	CF13A-250	Polysulfone with 250 $\mu\text{m}$ Aperture
<b>Classic 22 mm Chamber (3 ml volume)</b>		
W4 64-0453	BCH-M22	Bilayer Chamber (Includes Two 2 x 7 mm Stirbar Magnets)
<b>Classic 22 mm Cuvettes</b>		
W4 64-0407	CP22A-150	Polystyrene with 150 $\mu\text{m}$ Aperture
W4 64-0406	CP22A-200	Polystyrene with 200 $\mu\text{m}$ Aperture
W4 64-0405	CP22A-250	Polystyrene with 250 $\mu\text{m}$ Aperture
W4 64-0413	CD22A-150	Delrin with 150 $\mu\text{m}$ Aperture
W4 64-0412	CD22A-200	Delrin with 200 $\mu\text{m}$ Aperture
W4 64-0411	CD22A-250	Delrin with 250 $\mu\text{m}$ Aperture
W4 64-0419	CF22A-150	Polysulfone with 150 $\mu\text{m}$ Aperture
W4 64-0418	CF22A-200	Polysulfone with 200 $\mu\text{m}$ Aperture
W4 64-0417	CF22A-250	Polysulfone with 250 $\mu\text{m}$ Aperture