

MicroBead™ Biofilters

The MicroBead™ Biofilter (MBB) is a patented technology that has been successfully implemented in commercial recirculating aquaculture systems since the early 1990s. MBB Technology has proven itself as an extremely efficient, practical and cost effective biofilter solution for a wide range of aquaculture applications

Principle of Operation

The MicroBead Biofilter combines processes for CO₂ stripping, oxygenation, nitrification and fine solids capture into a single compact unit. MBB's are operated in a downflow configuration where influent water is distributed over the top of the media bed. The water then trickles down through the media and gravity flows water out of the reactor vessel. Low cost granular polystyrene biomedica provides an extremely high surface area per unit volume of roughly 1,200 ft²/ft³ (3,936 m²/m³). Maximum nitrification is achieved in a small footprint. MBB's have nitrification rates similar to high-rate fluidized bed biofilters, however the MBB has significantly lower capital cost, operating cost and will not "crash" during a shut down or pump failure.

Benefits

- **Low Operating Costs:** MBBs' cost of operation is roughly 50% less than traditional fluidized bed biofilters and pressurized bead filters. This is due to the ability of the non-pressurized MBB to operate with minimal hydraulic head pressure which allows use of low head pumps, minimizing pumping costs.
- **Scalable Design:** MBB systems are 100% scalable to any size recirculating system and are sized to achieve the specific water quality required in your system. We provide an in-depth water quality analysis review with every system to ensure proper sizing.
- **Degassing & Oxygenation:** MBB's address multiple water quality issues in one compact and efficient process including degassing, nitrification and oxygenation.
- **Wide Range of Applications:** MBB Systems are powerful biofilters, able to provide exceptional water quality for a wide range of aquaculture research and commercial applications



Model	Dimensions (Diam. x Ht.)	Flow Rate (GPM)	Air Requirement (CFM)	Max Feed Rates* (lbs per day w/ 48% protein dry feed)		
				warm water 68 deg. F	cool water 52 - 59 deg. F	cold water 46 - 50 deg. F
MBB-12	12" x 96"	17	17	3.4	3.3	2.3
MBB-18	18" x 96"	39	39	7.7	7.3	5.1
MBB-24	24" x 96"	69	69	13.7	13.1	9.1
MBB-36	36" x 96"	155	155	30.8	29.4	20.6
MBB-48	48" x 96"	275	275	54.8	52.2	36.5

*Feed rates are provided as an estimate for general sizing purposes only. Consult Integrated Aqua for application assistance and pricing.