



## Diffuser Testing for Fine Bubble Diffuser Pumping Rates

Diffused aeration systems aerate ponds and lakes by efficiently lifting water from bottom to top. Diffuser station design greatly affects the efficiency of the lifting action.

In 2009, Kasco tested 8 different designs through an independent testing firm as a part of the R&D for developing the Robust-Aire line of diffused aeration systems. Four custom designs from Kasco were tested as well as four of the leading designs from other manufacturers: Aqua Control, Otterbine, Vertex, and Aquatic Ecosystems.

The current Robust-Aire design (using four U-shaped tubes) was the clear leader with respect to efficiently creating the most flow. Not only did the Robust-Aire diffuser design create the most upward water flow, but the diffusers created the least amount of back pressure. This means that your compressor can operate at its full capacity to deliver more air and more work will be accomplished with the delivered air when it passes through a Robust-Aire diffuser station.

CFM	Flow rates in gallons per minute of diffusers as percentage of the flow rate of RA, the top performer.								
Cubic feet per minute of delivered air	Robust-Aire	Aqua Control 4 x 1" Rubber Membrane	% of Robust-Aire	Otterbine 4 x 9" Rubber Disk	% of Robust-Aire 4 U-tubes	Vertex 5 x 9" Rubber Disk	% of Robust-Aire	Aquatic Ecosystems H-Pattern	% of Robust-Aire
1.50	<b>927</b>	585	63.11%	589	63.54%	818	88.24%	567	61.17%
2.00	<b>1,053</b>	485	46.06%	734	69.71%	927	88.03%	691	65.62%
2.50	<b>1,189</b>	666	56.01%	861	72.41%	998	83.94%	805	67.70%

