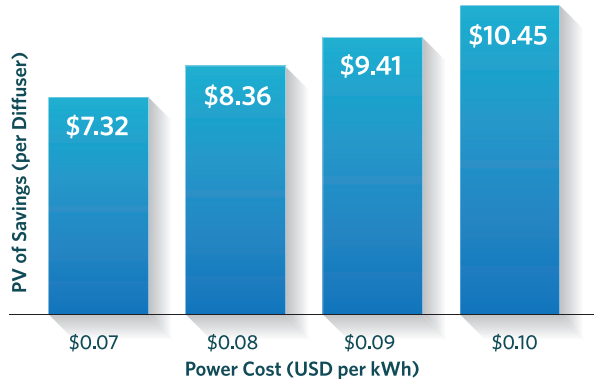


### Diamond™ S Plus Diffuser Energy Savings



Diamond™ S Plus Diffuser delivers savings from \$7-10 per diffuser.

## DIAMOND™ S PLUS MEMBRANE DISC DIFFUSER – YOUR PATH TO ENERGY SAVINGS

The Diamond™ S Plus membrane diffuser, part of the Envirex® product family, is more efficient than a typical 9" diameter diffuser, resulting in better performance and lower energy costs. The proprietary diamond punch pattern provides 10% more slits than a typical membrane, allowing more fine bubbles to be produced.

A series of diffusers were sent to Redmon Engineering Company for analysis in April 2016 in order to quantify the benefit of the diamond punch pattern. Redmon Engineering is well known in the industry as an expert in diffuser and mass transfer analysis.

Tests were conducted in Redmon Engineering's laboratory facility, which is typically used to measure diffuser performance using steady state clean water standard oxygen transfer efficiency (SOTE) test protocols. The Diamond S Plus diffusers were tested at the same density and submergence as other comparable diffusers. The resulting SOTE values for the Diamond S Plus diffusers averaged just over 21%.

***"These are excellent values, as typical nine-inch diameter membranes typically fall in the range of 19% to 20%."***

***— Redmon Engineering***

This equates to a minimum of 5% greater performance than industry standard membrane discs. For a 1.0 MGD facility, this yields an energy savings of 2.3 HP.

The Diamond S Plus membrane present value (PV) of energy savings for a typical 10 year membrane life is \$7,320 at a 7% discount rate, or \$7.32 per diffuser if power costs are \$0.07/kWh. PV of savings varies based on the power cost.

For every 1,000 replacement membrane diffusers at \$0.07/kWh, other standard industry diffusers would need to be offered at a capital cost of \$7,320 less to match the present value power savings of the Diamond S Plus diffuser.

Additionally, the Diamond S Plus diffuser has 45% greater tensile strength than typical membranes for durability and tear resistance and less than 9% extractable oil for improved diffuser life.

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