

SPECIFICATIONS
SOLAR AQUAAIR® 2 DIFFUSED AIR AERATION SYSTEM

1.0 GENERAL

1.1 DESCRIPTION

- A. Manufacturer shall furnish a diffused air aeration system capable of pumping a synergistic air/water lift from the bottom of a body of water to maximum depth of 35'.
- B. An on-shore compressor, powered by an electric motor, shall pump air through an individual air supply tube to a bottom-mounted diffuser assembly located in the body of water.
- C. The air shall be dispersed through a diffuser assembly that is then transferred vertically with entrained water to the surface of the water body, utilizing micro-bubble technology.
- D. This continuous action shall effectively mix, de-stratify, and transfer atmospheric oxygen throughout the body of water.

1.2 AERATION SYSTEM COMPONENTS DESCRIPTION

- A. **Compressor** – 24VDC, wobble piston built for continuous operation and equipped with thermal overload protection, pressure relief valve, and muffler for quiet operation. It shall be oil-free and require periodic preventative maintenance after every 18 months of run time which consists of a piston replacement kit and air filter. At 5PSI the compressor shall produce 1.3CFM while operating at approximately 2.5 amps @ 24VDC. At 25PSI the compressor shall produce 0.9CFM while operating at approximately 3.2 amps @ 24VDC.
- B. **Compressor Cabinet** – Enclosure shall be rectangular in design and be constructed of minimum 16-gauge stainless steel. Enclosure shall be fully gasketed and equipped with padlock for security, ventilation to provide forced air circulation and an integral cooling fan with thermal protection, producing 115 CFM to guard against excessive compressor operating temperatures.
- C. **Solar Array** – Array will consist of (2) 24VDC solar panels. Panels shall be mounted on a rack for connection to the top of a pole.
- D. **Battery Bank** – Bank shall consist of (4) 12V AGM batteries providing power for up to 3 days of operation.
- E. **Diffuser Assemblies** shall be mounted on a round, hollow chamber base constructed of linear low density polyethylene material. Base shall be capable of being filled with pea gravel for weighting or prefilled from the factory. Base shall be designed with a back-flow check valve and adjustable diffuser riser capability to accommodate site requirements.
Single Membrane (SM) – consists of (1) 9" diameter, self-cleaning, flexible, fluoroelastomer layered, fine bubble, EPDM membrane diffuser with 100% rebound memory. It shall provide superior resistance to fouling, calcium scaling, chemicals, fats, oils, grease, hydrocarbons, fuels and solvents. It shall produce millions of fine bubbles.
- F. **Weighted Air Supply Tubing** – Self-weighted, direct burial submersible tubing for connection from compressor to diffuser assembly. Tubing shall be of flexible PVC composite construction for use with standard PVC solvent weld cement and 0.5" insert fittings. 1/2" tubing shall have 0.58" ID X 1.06" OD, 5/8" tubing shall have .63" ID X 1.15"

OD and both have a .27" wall thickness, for long term durability and protection against punctures. It shall remain flexible in cold temperatures.

DIFFUSED AIR AERATION DETAIL SPECIFICATIONS

2.0 DETAILED INFORMATION

2.1 This specification is intended to provide prospective bidders the necessary information pertaining to the diffused air aeration system specified for the _____ Project.

2.2 The compressor shall be single head, operating at 24 Volts, direct current.

2.3 The MODEL specified shall be AquaAir® Ultra 2 MODEL NUMBER 96202 (2 Diffusers), 96203 (3 Diffusers) or 96204 (4 Diffusers) (circle choice). It shall come complete with cabinet, compressor, (Two, Three, or Four) (circle one) Single Membrane (SM) diffuser assembly and _____ feet of weighted air supply tubing. Tubing length is as follows: Diffuser A _____ feet. Diffuser B _____ feet. Diffuser C _____ feet (if applicable). Diffuser D _____ feet (if applicable).

3.0 INSTALLATION

The cabinet and compressor must be installed in accordance with the installation instructions, in compliance with all local and National Electrical Code requirements. This should be done by a licensed electrical contractor. Any alterations to or substitution for items in this system, unless allowed by the installation instructions, will void the manufacturer's warranty. It may also create a hazardous installation. Read the instructions thoroughly before starting the installation and follow them carefully throughout.

4.0 SAFETY

The diffused air aeration system shall be constructed as a complete unit. They will be constructed in compliance with NEC guidelines.

5.0 ACCEPTABLE MANUFACTURER

This diffused air aeration system, as specified in Section 2, shall be manufactured by AQUAMASTER® FOUNTAINS AND AERATORS, 16024 County Road X, Kiel, WI 53042, 920-693-3121, or approved equal.

6.0 WARRANTY

All AquaMaster® Solar AquaAir® Ultra Diffused Air Aeration Systems have a Limited Lifetime Warranty on the cabinet, 15 years on the tubing, 5 years on the diffuser assembly and solar panel, 3 years on compressor and cooling fan, and all other components have a 1-year warranty (excludes wear items including piston assembly, consult factory for assistance). Warranty is in effect from the date of shipment, when given normal and proper usage as determined by the seller upon examination, and when owned by the original user.