

**SPECIFICATIONS**  
**MASTERS SERIES® FLOATING FOUNTAIN AERATOR SYSTEM**

**1.0 GENERAL**

**1.1 DESCRIPTION**

- A. Manufacturer shall furnish a floating fountain aerator system capable of pumping water from below the surface of a body of water.
- B. A submersible motor shall draw water into an impeller housing where it shall be pumped into the atmosphere in the form of a decorative spray - type fountain.
- C. The water droplets shall become oxygen enriched and return to the surface, therefore transferring oxygen from the atmosphere into the body of water. Surface area of water body shall also be increased through constant wave action resulting in additional atmospheric oxygen transfer.
- D. This repeated action shall effectively mix and de-stratify the body of water and distribute the dissolved oxygen continuously.
- E. Fountain aerator system shall include an oil-cooled motor sealed in a stainless steel housing, with shaft mounted impeller, attached to a float. This assembly shall be connected to an electrical control panel by underwater power cable, all of which as specified in SECTION 1.2.

**1.2 AERATOR COMPONENTS DESCRIPTION**

- A. **1 – 5HP Float** shall be made of linear low density polyethylene. Float shall contain a center tube which shall be minimum Schedule 40 PVC and is attached to the impeller housing with four series 300 stainless steel hex head bolts. An o-ring is used to prevent leakage. A protective series 300 stainless steel intake screen shall be mounted around the impeller housing between the float assembly and motor housing. The motor housing shall be attached to the impeller housing with series 300 stainless steel hardware. All optional lights and anchor mounting shall be capable of being installed into fixture mounting areas which are molded into the float design as an integral part of the float. (See SECTION 5).
- B. **Impeller** shall be precision machined and balanced, formed using Series 300 Stainless Steel or molded composite. The impeller is connected to the motor shaft by a series 300 stainless steel bolt and lockwasher.
- C. **Impeller Housing** shall be molded from glass reinforced nylon type 6 material. The impeller housing shall be precision molded to accept the float tube and capable of being bolted to the motor housing. The impeller housing shall house the impeller, insert and flow straightener (if applicable).
- D. **Flow Straightener (where applicable)** shall be precision machined from acetal material and shall have 20 curved vanes. The vanes shall take the spinning discharge water from the impeller and convert it to a straight, vertical flow. The gap between the vanes shall be at least 3/8” wide and have a total length not less than 2-1/2” long. It shall be factory installed for various optional spray patterns.

- E. **Motor Housing** shall be Series 300 Stainless Steel. The housing shall have a permanent Series 300 stainless steel electrical hub welded on the side of the housing to allow electrical cable entry..
- F. **Motor** shall contain a Series 316 Stainless Steel shaft incorporating a permanent split phase capacitor run on single phase motors and a polyphase induction on three phase motors. The rotor shall be dynamically balanced and run in a ball bearing supported system. The stator windings shall be double dipped and baked with a Class F insulation, designed for oil immersion operation. The oil shall be a highly refined, mineral oil of food grade quality, specially formulated for lubrication. It shall meet FDA regulations. The oil shall provide continuous lubrication of bearings and internal seals and further function as an efficient heat transfer medium, allowing the motor to operate at 3450 RPM, at relatively low temperatures. The motor shall be contained in the motor housing by a series 300 stainless steel top plate.
- G. **Seals** used to protect the motor against water or oil leakage shall be a mechanical, rotating type assembly, composed of silicon carbide and series 300 stainless steel. All elastomers shall meet UL 778 requirements. This assembly shall then be encapsulated and protected within a series 300 stainless steel cartridge assembly.
- H. **Underwater Power Cable** shall be UL Listed and specifically designed for underwater use. The conductors are flexible, stranded copper wire sized for the amp draw and length of run. The conductors shall be resistant to oil, water and cracking. Power cable shall be fitted with a cable strain relief device, located within five feet of motor housing, capable of being attached to the latch mounted on the motor housing clamp. This will ensure that no potential damage can occur to any cable connections, due to tension on the cable.
- I. **Underwater Power Cable Disconnect** shall be located approximately three feet from the motor housing. It is a two piece molded assembly made of thermoplastics, meeting UL 778 requirements. The cap end shall be permanently connected to the underwater pin and socket connector (see Section 1.2 Item J.). The body end of the disconnect shall be permanently attached to the underwater power cable and sealed with an approved compound. This is intended to prevent water entry if damage should occur to the cable. The disconnect shall be sealed with an internal o-ring and by an external series 300 stainless steel clamp ring, which can be easily opened.
- J. **Underwater Pin and Socket Connector** shall consist of a Series 900 IP68 pin and socket connector. It shall be of a 4 pin configuration rated 32 amps at 600 volts AC. The pin end shall be potted into a series 300 stainless steel 90° adapter elbow with an approved ridged epoxy. This assembly shall be permanently attached to the series 300 stainless steel hub that is welded onto the side of the series 300 stainless steel motor housing. The socket end shall be attached to a 36” piece of UL Listed underwater power cable. It shall be permanently secured to the UL Listed power cable by means of an integrated clamp and series 300 stainless steel screws. It shall be completely epoxied to prevent entry of water or any other foreign matter. The other end of this assembly is permanently attached to the cap end of the underwater cable disconnect. It is sealed with a flexible potting compound.
- K. **Fasteners and Anchor Connectors** shall be Series 300 Stainless Steel.
- L. **Electrical Control Panel** specifications, see SECTION 3.

- M. **Intake Screen** shall be made of 20 Gauge, Series 300 Stainless Steel. The screen shall have a minimum of 58% open area, representing 91 square inches of open intake area.
- N. **Large Custom Intake Screen** (optional) shall be made of 18 Gauge, Series 300 Stainless Steel. The large custom intake screen shall completely enclose the motor power unit assembly. It shall have a minimum of 58% open area representing 765 square inches of open intake area. Additional depth is required.
- O. **Nozzles** (optional) shall be interchangeable without the use of tools, in most cases. Nozzles will be sealed to the float tube utilizing an o-ring and series 300 stainless steel thumb screws to prevent leakage.
- P. **Series 316 Stainless Steel Upgrade** (optional) is available for sites with salt or brackish water. This option will upgrade all series 300 stainless steel components to series 316.
- Q. **Horizontal MASTERS SERIES®** (optional) is designed for fountain aerators in shallow applications. Requires a minimum operating depth of 16 inches and the use of a straightened flow pattern. Includes a large custom intake screen and supplemental float.

## FOUNTAIN AERATOR DETAIL SPECIFICATIONS

**2.0 DETAILED INFORMATION** – Refer to TABLES 1, 2 and 3 to complete this section

**2.1** This specification is intended to provide prospective bidders the necessary information pertaining to the fountain aerator(s) specified for the \_\_\_\_\_ Project.

**2.2** The MOTOR(S) shall be \_\_\_\_\_ HP, operating at \_\_\_\_\_ Volts, 60 Hertz, \_\_\_\_\_ Phase at 3450 RPM.

**2.3** The MASTERS SERIES® MODEL(S) specified shall be the \_\_\_\_\_ MODEL NUMBER \_\_\_\_\_ capable of creating a \_\_\_\_\_ pattern. It shall come complete with an electrical control panel, protective intake screen to be attached to a float assembly and \_\_\_\_\_ feet of \_\_\_\_\_ gauge, 4 conductor underwater power cable.

**2.4** The fountain aerator shall produce a SPRAY PATTERN \_\_\_\_\_ feet in diameter and \_\_\_\_\_ feet in height.

## FOUNTAIN AERATOR DETAIL SPECIFICATIONS (cont.)

### 3.0 ELECTRICAL CONTROL PANEL COMPONENTS DESCRIPTION

- A. **Electrical Enclosure** shall be NEMA 3R type, galvanized and powder-coat painted gray in color. Panel shall be both lock and mount capable.
- B. **Ground Fault Protection**
  - 1. Single phase applications, a GFCI breaker shall provide overload and short circuit protection, combined with Class A ground fault protection.
  - 2. Three phase applications, a molded case breaker shall provide overload and short circuit protection, while a residual current device rated at 30 mA shall provide ground fault protection.
- C. **Control Breaker** shall provide overload protection and be capable of disconnecting all incoming electricity from the control panel.
- D. **Motor Contactor** shall provide a means for disconnection of all motor leads. It shall be a magnetic, across the line starter type.
- E. **Overload Relay** shall provide overload protection by means of a bi-metallic overload relay. It is adjustable over the full load amperage draw of the motor. It shall have a visual trip indicator, test button and manual/automatic reset modes.
- F. **Digital Timer** shall be a single pole type, rated at 120 Volts, 16 Amps, capable of 8 ON / OFF functions per day for 7 days. Digital timer has a lithium battery to retain the programming when power is disconnected.

### 3.1 SAFETY TESTING CONTROL PANEL

The electrical control panel shall be tested and approved as a complete unit. It is inspected and listed by Underwriters Laboratories, Inc. under Category 508: Industrial Control Panels and Category 778: Submersible Aerators and Aerating Fountain Pump Systems.

### 3.2 ACCEPTABLE MANUFACTURER

This fountain aerator electrical control panel, as specified in Section 3.0, shall be manufactured by AQUAMASTER® FOUNTAINS AND AERATORS, 16024 CTH X, Kiel, WI 53042, (800) 693-3144 or approved equal.

### 3.3 INSTALLATION

The electrical control panel 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 Underwriters Laboratories Listing and will void the product warranty. It may also create a hazardous installation. Read the instructions thoroughly before starting the installation and follow them carefully throughout.

### 3.4 ELECTRICAL CONTROL PANEL WARRANTY

All control panels and their components have a 3 year warranty on parts and labor.

## **FOUNTAIN AERATOR DETAIL SPECIFICATIONS (cont.)**

### **4.0 SAFETY TESTING**

The floating fountain aeration system shall be tested and approved as a complete unit. This approval must meet Underwriters Laboratories Inc. requirements in compliance with Category 508: Industrial Control Panels and Category 778: Submersible Aerators and Aerating Fountain Pump Systems. Individual component testing and wet niche environment equipment approval are not acceptable.

### **4.1 ACCEPTABLE MANUFACTURER**

This fountain aerator, as specified in Sections 2.2, 2.3 and 2.4, shall be manufactured by AQUAMASTER® FOUNTAINS AND AERATORS, 16024 CTH X, Kiel, WI 53042, (800) 693-3144, or approved equal.

### **4.2 INSTALLATION**

All AQUAMASTER® FOUNTAIN AERATORS are designed and built to be installed with an AQUAMASTER® UL Listed control panel and to be operated as a complete system. Any alterations to or substitution for items in this system, unless allowed by the installation instructions, will void the UL Listing and will void the product warranty. It may also create a hazardous installation. Read the instructions thoroughly before starting the installation and follow them carefully throughout.

### **4.3 WARRANTY**

All 1 – 5HP AQUAMASTER® THE MASTERS SERIES® FOUNTAIN AERATORS motor, seal assembly, float and underwater power cable (referred to as in-water components) are covered under warranty at 100% replacement cost should it fail due to defects in materials or workmanship for a period of 5 years on parts and labor. This 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.

**FOUNTAIN AERATOR LIGHTING SYSTEMS AND OPTIONS SPECIFICATIONS**

- 5.0 LIGHTING SYSTEM** shall be LED/RGBW \_\_\_\_\_ Volts/Watts, Model #(s)\_\_\_\_\_. There are \_\_\_\_\_ total fixtures, containing \_\_\_\_\_ (choose color(s): white, amber, blue, red, or green) color board assemblies.
- 5.1** A total length of \_\_\_\_\_ feet of \_\_\_\_\_ gauge 3(LED) or 5(RGBW) conductor underwater power cable is required. Two runs of cable may be required; reference cable sizing chart.
- 5.2 MULTI-PURPOSE ELECTRONIC LIGHT SYSTEM SEQUENCER** shall be capable of cycling light fixtures off and on, up to 6 programs. Yes\_\_\_\_No\_\_\_\_
- 5.3** A total length of \_\_\_\_\_ feet of \_\_\_\_\_ gauge 4 conductor underwater power cable is required for sequencer. Two runs of cable are required.
- 5.4 DEEP WATER INTAKE SYSTEM** shall be capable of drawing water from further depths, in three foot increments. This system provides the fountain aerator the capability to de-stratify the pond very efficiently. Total length should reach beyond 50% depth but not to exceed 75%. Total \_\_\_\_\_ feet.
- 5.5 LARGE CUSTOM INTAKE SCREEN** shall provide additional protected intake area if Fountain Aerator(s) will operate in a potentially high debris filled aquatic environment. Yes \_\_\_\_\_ No \_\_\_\_\_
- 5.6 SERIES 316 STAINLESS STEEL UPGRADE** is available for sites with salt or brackish water. Yes \_\_\_\_\_ No \_\_\_\_\_
- 5.7 HORIZONTAL MASTERS SERIES®** is designed for 1-5HP fountain aerators in shallow applications. Yes \_\_\_\_\_ No \_\_\_\_\_

Please refer to TABLE 4 to assist in the completion of SECTION 5.

## 6.0 DESCRIPTION - LIGHTING

- A. **Light Set** shall consist of line voltage (120 VAC) 11W LED, 22W LED, 35W LED, or 40W RGBW LED lighting system with either 2, 3, 4, 6, or 8 lights.
- B. **Lights** shall consist of a power supply/driver module with a 11W, 22W, 35W, or 40W RGBW (10W red, 10W green, 10W blue, 10W white) LED light engine.
- C. **Light Fixture** shall be of Series 300 Stainless Steel construction. They shall have a permanent series 300 stainless steel electrical hub welded on the bottom of the housing to allow electrical cable entry and be mounted with series 300 stainless steel brackets and fasteners.
- D. **Light Fixture Assembly** shall consist of a lens made of tempered glass with a clear non-diffusing surface with a minimum of 5/32<sup>nd</sup> thickness and sealed with “V” shaped lens gasket made of silicon. Clamp ring shall be of series 300 stainless steel. Fasteners and mounting hardware shall be of series 300 stainless steel.
- E. **Underwater Pin and Socket Connector** shall consist of a Series 900, IP68 pin and socket connector. It shall be of a 3(LED) or 5(RGBW) pin configuration rated 32 Amps at 600 VAC. The pin and socket ends shall each be attached to a UL Listed underwater power cable rated at 600 Volts. They both shall be permanently secured to their UL Listed power cables by an integrated neoprene grommet and compression nut assembly. These assemblies shall be epoxy filled to prevent entry of water or any other foreign matter. The pin end assembly shall be permanently attached to the light fixture with a nonmetallic connector and potted using a flexible approved potting compound. The socket end assembly shall be permanently attached to the power cable. Both the pin end and socket end assemblies come with protector caps.
- F. **Underwater Power Cable** shall be UL Listed and specifically designed for underwater use. The conductors are flexible, stranded copper wire sized for the amp draw and length of run. The conductors shall be resistant to oil, water and cracking. Power cable shall be fitted with a cable strain relief device, located within five feet of the first light fixture. This will ensure that no potential damage can occur to any cable connections, due to tension on the cable.
- G. **Light Controls** shall consist of a GFCI (Ground Fault Circuit Interrupter), overcurrent protection (fuse), digital timer with battery back-up. The Sequencer (optional) shall be capable of cycling light fixtures on and off, up to 8 fixtures. The RGBW controller (optional) is pre-programmed with assorted color, shows and holiday themed selectable programs. The controller can also adjust program speed and brightness. The standard controller shall consist of a programmable controller with push button interface. An optional programmable WiFi controller is available with an Android or iOS app included. An Android tablet preloaded with the app and connected to the controller is also available as a WiFi option.
- H. **Safety Testing** shall be tested and approved as a complete assembly. This approval must meet Underwriters Laboratories Inc. requirements in compliance with UL category 676: Underwater Luminaires.
- I. **Warranty** on all AQUAMASTER LIGHTING SYSTEMS are covered under warranty at 100% replacement cost should it fail due to defects in materials or workmanship for a period of 3 years.



**TABLE 1: THE MASTERS SERIES® PERFORMANCE SPECIFICATIONS**

**TECHNICAL DATA  
REFERENCE MATERIAL FOR SECTION 2.0 DETAILED INFORMATION**

Model Number	HP	Voltage and Phase	Running Amp Draw	Minimum Operating Depth	Ship Weight LBS.	LAKEWOOD FULL FLOW (no nozzle)	MASTERS NOZZLE SERIES
							Ace
M5410-SC	1	120 - 1PH	19.0	3'	250	7 x 18 GPM 318	Upper 4 x 10 Lower 3 x 22 GPM 305
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	3'	250	10 x 24 GPM 344	Upper 6 x 11 Lower 4 x 26 GPM 345
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3.5	208-240 - 1PH	15.2	3'	250	11 x 30 GPM 415	Upper 8 x 12 Lower 5 x 32 GPM 412
M5432-3SC	3	208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	3'	300	15 x 36 GPM 535	Upper 10 x 12 Lower 6 x 35 GPM 532
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				
Model Number	HP	Voltage and Phase	Running Amp Draw	MASTERS NOZZLE SERIES			
				Birdie	Biscayne	Crown & Geysler	Crystal Geysler
M5410-SC	1	120 - 1PH	19.0	3 x 5 GPM 336	Upper 11 Lower 7 x 14 GPM 204	Geysler Ht 13 Crown 5 x 35 GPM 215	15 x 26 GPM 214
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	3.5 x 5 GPM 361	Upper 14 Lower 10 x 19 GPM 217	Geysler Ht 15 Crown 6 x 40 GPM 282	17 x 30 GPM 241
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3.5	208-240 - 1PH	15.2	4.5 x 8 GPM 454	Upper 16 Lower 10 x 20 GPM 250	Geysler Ht 20 Crown 6 x 42 GPM 297	19 x 30 GPM 254
M5432-3SC	3	208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	5 x 12 GPM 546	Upper 20 Lower 14 x 28 GPM 403	Geysler Ht 22 Crown 7 x 50 GPM 465	22 x 32 GPM 396
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				

**TABLE 1: THE MASTERS SERIES® PERFORMANCE SPECIFICATIONS (cont.)**

**TECHNICAL DATA  
REFERENCE MATERIAL FOR SECTION 2.0 DETAILED INFORMATION**

Model Number	HP	Voltage and Phase	Running Amp Draw	MASTERS NOZZLE SERIES			
				Eagle	Geyser	Par	Wide Geyser
M5410-SC	1	120 - 1PH	19.0	11 x 8 GPM 119	18 x 2 GPM 141	Upper 6 Lower 3 x 20 GPM 274	18 x 10 GPM 182
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	15 x 9 GPM 136	20 x 2 GPM 205	Upper 10 Lower 4 x 26 GPM 294	22 x 10 GPM 203
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3	208-240 - 1PH	15.2	17 x 11 GPM 143	24 x 2 GPM 209	Upper 13 Lower 6 x 30 GPM 377	26 x 10 GPM 208
M5432-3SC		208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	20 x 12 GPM 308	28 x 2 GPM 380	Upper 15 Lower 7 x 40 GPM 487	28 x 10 GPM 345
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				
Model Number	HP	Voltage And Phase	Running Amp Draw	NOZZLES REQUIRING FLOW STRAIGHTENERS			
				Arabella	Augusta	Bayside	Baytree
M5410-SC	1	120 - 1PH	19.0	Upper 7 x 12 Lower 3 x 28 GPM 268	9 x 20 GPM 236	Upper 9 x 11 Lower 3 x 18 GPM 197	N/A
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	Upper 9 x 15 Lower 5 x 35 GPM 308	12 x 28 GPM 243	Upper 11 x 14 Lower 3 x 22 GPM 209	N/A
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3	208-240 - 1PH	15.2	Upper 11 x 16 Lower 5 x 38 GPM 337	13 x 30 GPM 269	Upper 13 x 16 Lower 3 x 24 GPM 239	N/A
M5432-3SC		208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	Upper 13 x 18 Lower 5 x 55 GPM 482	15.5 x 35 GPM 452	Upper 16 x 20 Lower 4 x 30 GPM 390	Upper 23 Middle 17 x 17 Lower 12 x 29 GPM 279
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				

**TABLE 1: THE MASTERS SERIES® PERFORMANCE SPECIFICATIONS (cont.)**

**TECHNICAL DATA  
REFERENCE MATERIAL FOR SECTION 2.0 DETAILED INFORMATION**

Model Number	HP	Voltage And Phase	Running Amp Draw	NOZZLES REQUIRING FLOW STRAIGHTENERS			
				Champion	Colonial	Diamondback	Doral
M5410-SC	1	120 - 1PH	19.0	7 x 20 GPM 157	Upper 14 Lower 10 x 26 GPM 99	5 x 50 GPM 184	Upper 8 x 10 Lower 4 x 8 GPM 196
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	9 x 24 GPM 168	Upper 19 Lower 13 x 32 GPM 120	5 x 55 GPM 181	Upper 10 x 12 Lower 5 x 10 GPM 214
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3.5	208-240 - 1PH	15.2	10 x 30 GPM 195	Upper 20 Lower 14 x 35 GPM 112	5 x 60 GPM 226	Upper 11 x 14 Lower 5 x 12 GPM 221
M5432-3SC	3	208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	15 x 37 GPM 414	Upper 30 Lower 22 x 60 GPM 244	5 x 65 GPM 398	Upper 13 x 18 Lower 7 x 13 GPM 439
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				
Model Number	HP	Voltage and Phase	Running Amp Draw	NOZZLES REQUIRING FLOW STRAIGHTENERS			
				Double Eagle	Firestone	Half Moon	Imperial
M5410-SC	1	120 - 1PH	19.0	18 x 5 GPM 109	Upper 11 Middle 6 x 11 Lower 2 x 14 GPM 181	7 x 28 GPM 253	Upper 9 Middle 6 x 16 Lower 1 x 25 GPM 195
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	23 x 5 GPM 137	Upper 13 Middle 7 x 12 Lower 3 x 14 GPM 205	9 x 30 GPM 278	Upper 11 Middle 6.5 x 18 Lower 1.5 x 28 GPM 217
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3.5	208-240 - 1PH	15.2	25 x 5 GPM 129	Upper 15 Middle 9 x 20 Lower 3 x 23 GPM 251	12 x 34 GPM 315	Upper 13 Middle 7 x 23 Lower 2.5 x 28 GPM 230
M5432-3SC	3	208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	35 x 5 GPM 297	Upper 18 Middle 11 x 26 Lower 4 x 28 GPM 399	13 x 36 GPM 466	Upper 15 Middle 13 x 30 Lower 5 x 36 GPM 421
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				

**TABLE 1: THE MASTERS SERIES® PERFORMANCE SPECIFICATIONS (cont.)**

**TECHNICAL DATA  
REFERENCE MATERIAL FOR SECTION 2.0 DETAILED INFORMATION**

Model Number	HP	Voltage and Phase	Running Amp Draw	NOZZLES REQUIRING FLOW STRAIGHTENERS			
				Medinah	Monterey	Prestwick	Riviera
M5410-SC	1	120 - 1PH	19.0	9 x 14 GPM 218	Upper 8 Middle 5 x 9 Lower 3 x 13 GPM 169	Upper 10 x 10 Lower 5 x 30 GPM 188	Upper 15 Middle 9 x 12 Lower 3 x 10 GPM 79
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	12 x 18 GPM 253	Upper 12 Middle 7 x 10 Lower 4 x 17 GPM 176	Upper 10 x 12 Lower 5 x 32 GPM 237	Upper 20 Middle 11 x 12 Lower 4 x 10 GPM 91
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3.5	208-240 - 1PH	15.2	14 x 20 GPM 275	Upper 16 Middle 11 x 13 Lower 7 x 23 GPM 177	Upper 12 x 14 Lower 5 x 35 GPM 255	Upper 21 Middle 12 x 14 Lower 4 x 12 GPM 86
M5432-3SC	3	208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	18 x 24 GPM 410	Upper 19 Middle 13 x 15 Lower 8 x 27 GPM 351	Upper 13 x 18 Lower 6 x 40 GPM 452	Upper 30 Middle 18 x 16 Lower 9 x 20 GPM 126
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				
Model Number	HP	Voltage and Phase	Running Amp Draw	NOZZLES REQUIRING FLOW STRAIGHTENERS			
				Royal	Somerset	Turnberry	Valhalla
M5410-SC	1	120 - 1PH	19.0	Upper 6 x 24 Lower 3 x 32 GPM 204	Upper 12 Lower 6.5 x 16 GPM N/A	5.5 x 1.5 GPM 226	Upper 10 Middle 7 x 14 Lower 3 x 35 GPM 222
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	Upper 6.5 x 24 Lower 3.5 x 30 GPM 242	Upper 14 Lower 7.5 x 18 GPM N/A	7 x 18 GPM 278	Upper 12 Middle 8 x 20 Lower 4 x 35 GPM 251
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3.5	208-240 - 1PH	15.2	Upper 7.5 x 38 Lower 4 x 38 GPM 251	Upper 17 Lower 9 x 22 GPM N/A	8 x 20 GPM 300	Upper 16 Middle 10 x 20 Lower 4 x 40 GPM 269
M5432-3SC	3	208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	Upper 8.5 x 38 Lower 4 x 42 GPM 465	Upper 20 Lower 11.5 x 25 GPM N/A	10 x 23 GPM 391	Upper 18 Middle 12 x 20 Lower 5 x 45 GPM 414
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				

**TABLE 1: THE MASTERS SERIES® PERFORMANCE SPECIFICATIONS (cont.)**

**TECHNICAL DATA  
REFERENCE MATERIAL FOR SECTION 2.0 DETAILED INFORMATION**

Model Number	HP	Voltage and Phase	Running Amp Draw	ADJUSTABLE NOZZLES W/FLOW STRAIGHTENERS		SPECIALTY NOZZLES W/FLOW STRAIGHTENERS	
				Reflection	Sanibel	Captiva	
M5410-SC	1	120 - 1PH	19.0	Upper 7 x 16 Lower 3 x 22 GPM 273	11 x 14 GPM 172	9 x 4 GPM 141	
M5412-SC		208-240 - 1PH	9.6				
M5412-3SC		208-240 - 3PH	5.4				
M5414-3SC		440-480 - 3PH	2.7				
M5422-SC	2	208-240 - 1PH	12.6	Upper 9 x 20 Lower 3 x 30 GPM 307	15 x 17 GPM 186	12 x 4 GPM 177	
M5422-3SC		208-240 - 3PH	6.3				
M5424-3SC		440-480 - 3PH	3.1				
M5432-SC	3.5	208-240 - 1PH	15.2	Upper 12 x 26 Lower 3 x 30 GPM 354	16 x 18 GPM 199	15 x 5 GPM 223	
M5432-3SC	3	208-240 - 3PH	10.1				
M5434-3SC		440-480 - 3PH	5.1				
M5452-SC	5	208-240 - 1PH	27.1	Upper 13 x 16 Lower 4 x 37 GPM 485	19 x 20 GPM 406	19 x 7 GPM 290	
M5452-3SC		208-240 - 3PH	18.0				
M5454-3SC		440-480 - 3PH	9.0				

\*All performance data (heights and diameters), have been tested at 240 volt single phase electrical.  
Your overall performance may vary due to actual voltage, intake restrictions and cable lengths.

**TABLE 2: CABLE SIZING CHARTS**

**Maximum recommended length (in feet) from fountain aerator to control panel**

*AquaMaster® recommends consulting a Licensed Electrician to properly size any underground cable from the main power source to our control panel. Cable runs to the panel located away from main power source requires recalculating voltage drop to insure proper cable sizing. Please contact AquaMaster® if assistance is required.*

<b>4 conductor: Required on all 1 - 10HP Single Phase &amp; Three Phase Aerators</b>									
<b>Single Phase 4 conductor</b>			<b>4 conductor Copper Wire Gauge Size</b>						
<b>Unit</b>	<b>Volts</b>	<b>Approx Amps</b>	<b>#14</b>	<b>#12</b>	<b>#10</b>	<b>#8</b>	<b>#6</b>	<b>#4</b>	<b>#2</b>
1HP	120	19.0	--	--	132	202	322	509	789
1HP	208-240	9.6	--	271	451	694	1105	1747	2708
2HP	208-240	12.6	--	206	344	529	842	1331	2063
3.5HP	208-240	15.2	--	--	285	439	698	1104	1711
5HP	208-240	27.1	--	--	--	246	392	619	959

<b>Three Phase 4 conductor</b>			<b>4 conductor Copper Wire Gauge Size</b>						
<b>Unit</b>	<b>Volts</b>	<b>Approx Amps</b>	<b>#14</b>	<b>#12</b>	<b>#10</b>	<b>#8</b>	<b>#6</b>	<b>#4</b>	<b>#2</b>
1HP	208-240	5.4	--	556	927	1426	2269	3587	5560
1HP	440-480	2.7	--	2352	3920	6031	9601	15176	23522
2HP	208-240	6.3	--	477	794	1222	1945	3075	4766
2HP	440-480	3.1	--	2049	3415	5253	8362	13218	20487
3HP	208-240	10.1	--	297	495	762	1213	1918	2973
3HP	440-480	5.1	--	1245	2076	3193	5083	8034	12453
5HP	208-240	18.0	--	--	278	428	681	1076	1668
5HP	440-480	9.0	--	706	1176	1809	2880	4553	7057

**Actual voltage to motor will affect your fountain's performance.**

**TABLE 3: FOUNTAIN AERATOR SPRAY PATTERN DESCRIPTIONS**

1. **Masters Series® ACE - Basic Flow Pattern (BFP)**  
Full circle, two-tiered pattern with multi-point center formation.  
SPECIFICATION DESCRIPTION: POINTED FAN SHAPE
2. **Masters Series® ARABELLA – Straightened Flow Pattern (SFP)**  
Sparkling, two-tiered pattern consisting of an upper multi-stream and a lower full conical spray design.  
SPECIFICATION DESCRIPTION: COMBINED FAN AND STREAMS
3. **Masters Series® AUGUSTA – Straightened Flow Pattern (SFP)**  
Beautiful multi-tiered streamed pattern with a center geyser to add height.  
SPECIFICATION DESCRIPTION: FAN SHAPE INDIVIDUAL STREAMS WITH CENTER GEYSER
4. **Masters Series® BAYSIDE – Straightened Flow Pattern (SFP)**  
Narrower version of Red Tail, excellent in smaller contained areas.  
SPECIFICATION DESCRIPTION: COMBINED FAN AND STREAMS
5. **Masters Series® BAYTREE – Straightened Flow Pattern (SFP)**  
Frothy tri-tiered pattern providing aeration benefits beautifully.  
SPECIFICATION DESCRIPTION: TRI-TIER FROTHY SPRAY
6. **Masters Series® BIRDIE - Basic Flow Pattern (BFP)**  
Creates a dense, round ball of water, perfect for smaller containments of water.  
SPECIFICATION DESCRIPTION: ROUND
7. **Masters Series® BISCAYNE - Basic Flow Pattern (BFP)**  
Variation of classic two-tier with taller, narrower lower spray.  
SPECIFICATION DESCRIPTION: UPRIGHT FAN & COLUMN
8. **Masters Series® CAPTIVA – Specialty Pattern**  
Heavy-water vertical frothy column, excellent in open areas.  
SPECIFICATION DESCRIPTION: DENSE FROTHY COLUMN
9. **Masters Series® CHAMPION – Straightened Flow Pattern (SFP)**  
Multi-stream pattern with specific points resulting in a dramatic surface effect.  
SPECIFICATION DESCRIPTION: INDIVIDUAL STREAMS FAN SHAPE
10. **Masters Series® COLONIAL – Straightened Flow Pattern (SFP)**  
Two tier pattern that has a narrow center geyser, surrounded by a multi-streamed lower tier.  
SPECIFICATION DESCRIPTION: FAN SHAPED INDIVIDUAL STREAMS WITH CENTER GEYSER

**TABLE 3: FOUNTAIN AERATOR SPRAY PATTERN DESCRIPTIONS (cont.)**

11. **Masters Series® CROWN & GEYSER - Basic Flow Pattern (BFP)**  
A beautiful, dramatic pattern still achieves aeration results. This nozzle combines the Lakewood Full Flow with the vertical Geysers column of water through its center.  
SPECIFICATION DESCRIPTION: COMBINED FAN & COLUMN
12. **Masters Series® CRYSTAL GEYSER- Basic Flow Pattern (BFP)**  
This nozzle produces a very decorative crystalline spray pattern in an abstract, multi-tiered formation.  
SPECIFICATION DESCRIPTION: FROTHY SPRAY
13. **Masters Series® DIAMONDBACK – Straightened Flow Pattern (SFP)**  
Low height pattern sending streams of water in tremendous diameter.  
SPECIFICATION DESCRIPTION: WIDEST LOW FAN SHAPE
14. **Masters Series® DORAL – Straightened Flow Pattern (SFP)**  
A two-tiered multi-streamed arch pattern.  
SPECIFICATION DESCRIPTION: TWO TIERED FAN SHAPED INDIVIDUAL STREAMS
15. **Masters Series® DOUBLE EAGLE – Straightened Flow Pattern (SFP)**  
Statuesque, frothy vertical pattern creates a stunning full profile.  
SPECIFICATION DESCRIPTION: SOLID VERTICAL COLUMN
16. **Masters Series® EAGLE - Basic Flow Pattern (BFP)**  
Elongated, frothy vertical pattern creates a beautiful, full profile.  
SPECIFICATION DESCRIPTION: FROTHY VERTICAL COLUMN
17. **Masters Series® FIRESTONE – Straightened Flow Pattern (SFP)**  
Beautiful tri-tier, perfect for smaller area applications.  
SPECIFICATION DESCRIPTION: TRI-TIER MULTIPLE STREAMS
18. **Masters Series® GEYSER - Basic Flow Pattern (BFP)**  
A multi-port nozzle achieves a dramatic vertical pattern in a solid column of water, fanning slightly at the top.  
SPECIFICATION DESCRIPTION: SOLID VERTICAL COLUMN
19. **Masters Series® HALF MOON – Straightened Flow Pattern (SFP)**  
Gorgeous multi-stream pattern results in a full floral effect.  
SPECIFICATION DESCRIPTION: SCALLOPED FAN SHAPE



**TABLE 3: FOUNTAIN AERATOR SPRAY PATTERN DESCRIPTIONS (cont.)**

20. **Masters Series<sup>®</sup> IMPERIAL – Straightened Flow Pattern (SFP)**  
Spectacular tri-tier, multiple-point rotating formation creating a dramatic effect.  
SPECIFICATION DESCRIPTION: ROTATING COMBINED FAN AND STREAMS WITH CENTER GEYSER
  
21. **LAKWOOD - Basic Flow Pattern (BFP)**  
Internal impeller technology creates this full, more upright cone pattern, **without a nozzle**.  
This is the base model for The Masters Series<sup>®</sup>.  
SPECIFICATION DESCRIPTION: FAN SHAPE
  
22. **Masters Series<sup>®</sup> MEDINAH – Straightened Flow Pattern (SFP)**  
Taller, narrower version of the Turnberry.  
SPECIFICATION DESCRIPTION: NARROW FAN SHAPE
  
23. **Masters Series<sup>®</sup> MONTEREY – Straightened Flow Pattern (SFP)**  
Frothy tri-tiered pattern combines both aesthetics and aeration.  
SPECIFICATION DESCRIPTION: TRI-TIER FROTHY SPRAY
  
24. **Masters Series<sup>®</sup> PAR - Basic Flow Pattern (BFP)**  
Heavy-water version of the Crown & Geyser, excellent choice in open areas.  
SPECIFICATION DESCRIPTION: DENSE COMBINED FAN & COLUMN
  
25. **Masters Series<sup>®</sup> PRESTWICK – Straightened Flow Pattern (SFP)**  
Dramatic multi-streamed two-tiered pattern.  
SPECIFICATION DESCRIPTION: TWO-TIERED MULTIPLE STREAMS
  
26. **Masters Series<sup>®</sup> REFLECTION – Adjustable Straightened Flow Pattern (ASFP)**  
Dazzling, full circle, two-tiered pattern with multiple-point formation.  
SPECIFICATION DESCRIPTION: ADJUSTABLE COMBINED FAN AND STREAMS
  
27. **Masters Series<sup>®</sup> RIVIERA – Straightened Flow Pattern (SFP)**  
Dazzling, three tier display that combines a narrow multi-streamed geyser with two surrounding conical shaped tiers. Great for applications that require a tiered, narrower pattern.  
SPECIFICATION DESCRIPTION: TWO TIERED FAN SHAPED INDIVIDUAL STREAMS WITH CENTER GEYSER
  
28. **Masters Series<sup>®</sup> ROYAL – Straightened Flow Pattern (SFP)**  
Spectacular two-tier, multiple-point rotating formation creating a dramatic effect.  
SPECIFICATION DESCRIPTION: ROTATING COMBINED FAN AND STREAMS

**TABLE 3: FOUNTAIN AERATOR SPRAY PATTERN DESCRIPTIONS (cont.)**

- 29. **Masters Series® SANIBEL – Adjustable Straightened Flow Pattern (ASFP)**  
Taller and frothier version of Medina.  
SPECIFICATION DESCRIPTION: NARROW FAN SHAPED
  
- 30. **Masters Series® SOMERSET – Straightened Flow Pattern (SFP)**  
Heavy upright multi-stream fan shape with a geyser creates a stunning full profile pattern.  
SPECIFICATION DESCRIPTION: HEAVY INDIVIDUAL STREAM FAN SHAPE WITH CENTER GEYSER
  
- 31. **Masters Series® TURNBERRY – Straightened Flow Pattern (SFP)**  
Upright funnel shape creates a stunning full profile pattern.  
SPECIFICATION DESCRIPTION: HEAVY FAN SHAPE
  
- 32. **Masters Series® VALHALLA – Straightened Flow Pattern (SFP)**  
Stunning tri-tier resulting in both excellent height and diameter.  
SPECIFICATION DESCRIPTION: TRI-TIER SPRAY
  
- 33. **Masters Series® WIDE GEYSER - Basic Flow Pattern (BFP)**  
A modification of the Geyser nozzle produces a less dense, more decorative version.  
SPECIFICATION DESCRIPTION: WIDE VERTICAL COLUMN

**TABLE 4: FOUNTAIN AERATOR LIGHTING SYSTEMS**

AQUAMASTER® FOUNTAIN AERATORS are even more dramatic at night, with the addition of a UL and cUL Listed NIGHT GLOW LIGHTING SYSTEM.

Any lighting system choice includes stainless steel lamp housings, sealed with clear tempered glass lenses in a stainless steel clamp ring. All lights remain water-cooled.

All necessary electrical controls, including timer, are pre-wired into the fountain’s existing UL Listed control panel. Color board assemblies (White, Red, Green, Blue, or Amber) must be selected for each light. An optional sequencer can complete your dramatic aquatic display.

**For uniformity of spray pattern coverage, 4 lights minimum is recommended.**

**LINE VOLTAGE:** 120 Volt LED Lighting Systems

<b>11 Watt Fixtures</b>	<b>Each system includes:</b> <ul style="list-style-type: none"> <li>• 11, 22, or 35 Watt LED light engine</li> <li>• GFCI Protection</li> <li>• Digital Timer</li> <li>• Clear lenses</li> <li>• UL and cUL Listing</li> <li>• Choice of Red, Green, Blue, or Amber Light Engine</li> </ul>
4 light system: Model #870747	
<b>22 Watt Fixtures</b>	
2 light system: Model # 870607	
3 light system: Model # 870608	
4 light system: Model # 870595	
6 light system: Model #870609	
8 light system: Model #870610	
<b>35 Watt Fixtures</b>	
2 light system: Model # 870792	
3 light system: Model # 870793	
4 light system: Model # 870794	
6 light system: Model # 870795	
8 light system: Model # 870796	

**LINE VOLTAGE:** 120 Volt RGBW LED Lighting Systems

<b>40 Watt Fixtures</b>	<b>Each system includes:</b> <ul style="list-style-type: none"> <li>• 40 Watt RGBW LED light engine</li> <li>• GFCI Protection</li> <li>• Digital Timer</li> <li>• Clear lenses</li> <li>• UL and cUL Listing</li> </ul>
2 light system: Model # 870677	
3 light system: Model # 870678	
4 light system: Model # 870679	
6 light system: Model # 870680	
8 light system: Model # 870681	

**TABLE 4: FOUNTAIN AERATOR LIGHTING SYSTEMS (cont.)**

**CABLE SIZING CHART FOR LED LIGHTS**

*Maximum recommended length (in feet) from fountain lights to control panel.*

*AquaMaster® recommends consulting a Licensed Electrician to properly size any underground cable from the main power source to our control panel. Cable runs to the panel located away from main power source requires recalculating voltage drop to insure proper cable sizing. Please contact AquaMaster® if assistance is required.*

3 Conductor				Copper Wire Gauge Size		
Watts Per Fixture	# of Fixtures	Volts	Approx Amps	#14	#12	#10
11	4	120	0.367	2639	4091	6818
22	2	120	0.283	3416	5294	8824
22	3	120	0.425	2277	3529	5882
22	4	120	0.567	1708	2647	4412
22	6	120	0.850	1139	1765	2941
22	8	120	1.133	854	1324	2206
35	2	120	0.583	1659	2571	4286
35	3	120	0.875	1106	1714	2857
35	4	120	1.167	829	1286	2143
35	6	120	1.750	553	857	1429
35	8	120	2.333	415	643	1071

**Cable Sizing Chart for lights when ordered with a sequencer**

3 & 4 Conductor see notes below			Copper Wire Gauge Size		
Watts Per Fixture	# of Fixtures	Volts	#14	#12	#10
11	3 or 4	120	10558	16364	27272
22	3 or 4	120	6832	3227	17648
22	6 (3 colors)	120	3416	1614	8824
22	8 (4 colors)	120	3416	1614	8824
35	3 or 4	120	3318	1567	8572
35	6 (3 colors)	120	1659	784	4286
35	8 (4 colors)	120	1659	784	4286

*Lighting sequencer requires 2 runs of cable:*

- 1) Sequencer with 3 colors require (1) run of 3 conductor cable and (1) run of 4 conductor cable
- 2) Sequencer with 4 colors require (2) runs of 4 conductor cable

**CABLE SIZING CHART FOR RGBW LED LIGHTS**

5 Conductor				Copper Wire Gauge Size		
Watts Per Fixture	# of Fixtures	Volts	Approx Amps	#14	#12	#10
40	2	120	0.667	1452	2250	3750
40	3	120	1.000	968	1500	2500
40	4	120	1.333	726	1125	1875
40	6	120	2.000	484	750	1250
40	8	120	2.667	363	563	938