

# 2400SF (120V) Aerating Fountain Specifications

This specification is written and intended to provide bidders the necessary information pertaining to the floating aerating fountain(s) or surface aerator (s) for the \_\_\_\_\_ project.

## 1. 2400SF INFORMATION

- a. The motor shall be 1/2 HP, 3400RPM motor operating at 120 Volts, Single Phase, 60 Hz and drawing 6.6-7.3 running amps.
- b. The fountain shall include 1 nozzle with plug set for over 30 patterns, plus flow straightener for a V shape display.
- c. The unit shall be able to operate in as little as 15” of water.
- d. The unit shall include motor, float with protective bottom screen and mooring ropes, fountain components, underwater rated power cable, and 120 volt electrical control panel.
- e. The SJTOW underwater rated power cable shall be \_\_\_\_\_ feet \_\_\_\_\_ gauge, 3 conductor cable. (See chart below)

Length	Gauge (AWG)
50 Feet	16/3 AWG
100 Feet	14/3 AWG
150 Feet	12/3 AWG
200 Feet	12/3 AWG

## 2. OPTIONAL LED LIGHTING PACKAGE

- a. The LED Lighting shall be 12V (120V supply), Model \_\_\_\_\_ with \_\_\_\_\_ sealed, thermoplastic fixtures. Each fixture shall be 9 watts and have a clear lens.(See Chart 1 below)
- b. Each fixture shall be permanently sealed with thermal protection.
- c. The SJTOW underwater rated power cable shall be \_\_\_\_\_ feet 16 gauge, 3 conductor cable. (See Chart 2 below)
- d. The lighting package shall include caps and lenses in Red, Green, Amber, Blue, and Pink standard.

Chart 1

Model	Number of Fixtures	Wattage
LED3125	3	9 each

Chart 2

Length	Gauge (AWG)
50 Feet	16 AWG
100 Feet	16 AWG
150 Feet	16 AWG
200 Feet	16 AWG

# **2400SF (120) Aerating Fountain Detailed Specifications**

---

## **1. OPERATION**

- 1.1. Manufacturer shall furnish a surface aeration device that is self contained with integrated float ring and capable of pumping water from below the water surface into the air creating over 30 unique fountain displays and effectively mixing water throughout the lake or pond.
- 1.2. Submersed fountain motor with top intake shall draw water into the fountain housing and push the water past through the nozzle or around flow straightener to create the displays.
- 1.3. Individual water droplets absorb oxygen from the atmosphere and return to the body of water transferring oxygen from the air and into the water.
- 1.4. Moving water shall mix and agitate the water, spreading oxygenated water throughout the body of water.
- 1.5. Single propeller and deflector nozzle design shall allow for greater water flow with lower likelihood of clogging.
- 1.6. 3 piece thermoplastic bottom screen with stainless steel hardware shall protect the unit from clogging.

## **2. AERATING FOUNTAIN COMPONENTS**

- 2.1. **Motor:** The motor shall be 1/2 (.5) HP, 3400 RPM, 120 volt, single phase, 60 Hz, oil-cooled, continuous duty rated, submersible motor. The rotor shall have a shaft of Series 300 stainless steel, be supported by top and bottom ball bearings, dynamically balanced, and have a sacrificial zinc anode installed for corrosion protection and salt water compatibility. The stator windings shall be dipped and baked with a Class A insulation designed for complete immersion in oil and built-in automatic reset thermal overload protection. The Permanent Split Capacitor (PSC) shall be bolted to the motor bottom end bell with stainless steel hardware and have a 20 uF rating for proper motor start up. The assembled motor unit (rotor, stator, and PSC) shall be completely submersed in a no detergent, low weight, turbine oil for continuous lubrication of internal seals and ball bearings and for efficient transfer of heat to and through the stainless steel unit housing wall. The motor unit shall be sealed with an external flinger disc and internal mechanical seal and O-ring. The external flinger disc shall be water lubricated and protect the internal mechanical seal from grit and debris. The internal mechanical seal shall be a fully unitized, heavy duty mechanical seal, composed of ceramic, carbon, and stainless steel. The O-ring shall be molded rubber composite which expands in the presence of oil to create a water tight seal. Motor shall be attached to a thermoplastic motor top and inside a Series 300 stainless steel housing. No air or water lubricated motors are acceptable. Motor shall be serviceable.
- 2.2. **Motor Housing:** The motor housing shall be a canister formed deep drawn and annealed Series 300 austenitic stainless steel. The motor top shall be engineering grade thermoplastic with brass inserts for motor mounting bolts, and molded, threaded power cable connection with brass pins molded into the thermoplastic. The motor top shall fit into the motor housing canister with a molded rubber composite O-ring creating a water tight seal.
- 2.3. **Fountain Components:** The aerating fountain shall have U.V. resistant engineered thermoplastic impeller, U.V. resistant thermoplastic fountain housing, and include a thermoplastic nozzle with plug set to create over 30 unique fountain pattern designs.
- 2.4. **Fountain Nozzles/Patterns:** The aerating fountain shall include a single nozzle with plug set to create over 30 unique patterns. With nozzle and flow straightener removed, a V shape pattern shall be provided.
- 2.5. **Float:** The float shall be a U.V. resistant, high density, molded thermoplastic of single piece construction, with closed cell foam filling. The fountain draft tube shall attach to the float with 300 Series stainless steel hardware. The float shall include a protective coated, stainless steel bottom screen to protect the unit and keep debris out. The float shall have molded light mounting placements and power cable notch. The float shall include two 50' braided nylon

mooring/anchoring ropes and two 1” galvanized pipe section to be used as mooring rope weights (not a substitute for anchoring/mooring).

- 2.6. **Protective Screen:** A 3 piece, engineering grade thermoplastic bottom screen with stainless steel mounting hardware shall be standard.
- 2.7. **Underwater Power Cable:** The power cable shall be type SJTOW UL, CSA, and NEC approved underwater rated, 3 conductor power cable with a molded NEMA 5-15P plug end. The power cable shall have 6’ of protective flex sleeving at the unit for rodent protection. The power cable shall be available in 50’ 16 AWG, 100’ 14 AWG, 150’ 12 AWG, and 200’ 12 AWG cord lengths and gauges. An underwater approved, potted, O-ring sealed quick disconnect shall be factory installed on 12 AWG power cables approximately 30” from the motor housing. A Series 300 stainless steel clamp on strain relief with stainless steel chain and connector shall be installed on the power source side of the quick disconnect and attached to the float upon installation for protection of the quick disconnect.
- 2.8. **Electrical Control Panel:** The electrical control panel shall be UL listed per National Electric Code (N.E.C) and be enclosed in a NEMA Type 3R weatherproof enclosure. The electrical control panel shall be 120V with a permanent power cable with a molded NEMA 5-15P plug for plug-and-go operation. The electrical control panel shall include a 15 amp Class A Human Rated GFCI (Ground Fault Circuit Interrupter) with test and reset buttons. The electrical control panel shall have two NEMA 5-15R receptacles labeled “UNIT” and “LIGHT”. A 24 hour mechanical timer with 30 minute increments shall operate both receptacles and a permanent mounted photo eye shall create secondary operation for the “LIGHT” receptacle.
- 2.9. **Fasteners:** All fasteners shall be Series 300 stainless steel.

### 3. SAFETY INFORMATION

- 3.1. The unit shall be total component tested and approved as a complete assembly. Individual component testing is not allowed. The aerating fountain must be tested by ETL, ETL-C, CE, UL, or other accredited testing facility.
- 3.2. The unit shall be tested as a complete unit and must meet UL (Underwriters Laboratories, Inc.) requirements in compliance with Category 778 for Motor-Operated Water Pumps and compliance with Category 50 for the Electrical Equipment (control panel). Lights must be in compliance with Category 676 Underwater Luminaries and Submersible Junction Box for use on Floating Fountains.

### 4. WARRANTY INFORMATION

- 4.1. The unit shall include a 2 year manufacture’s repair warranty on all components, including electrical control panel. Unauthorized tampering will void the warranty.

### 5. ACCEPTABLE MANUFACTURER

- 5.1. The unit shall be a KASCO 3400JF Model, ¾ horsepower manufactured by Kasco Marine, Inc., 800 Deere Rd., Prescott, WI U.S.A 54021. 715-262-4488. [www.KascoMarine.com](http://www.KascoMarine.com).

### 6. INSTALLATION

- 6.1. **Unit:** The unit shall be installed per instructions included in the Owner’s Manual with each unit. The unit may be anchored or moored in place. The unit is designed as a complete package and to be used with the included electrical control panel. Any alterations or substitutions, unless allowed by the instructions in the Owner’s Manual will void the ETL Listing, void the manufacturer’s warranty, and may cause a dangerous situation. Read the Owner’s Manual thoroughly before starting the installation process and follow them carefully.
- 6.2. **Electrical Control Panel:** The electrical control panel must be installed per instructions and National Electrical Code. Any alterations or substitutions, unless allowed by the instructions in the

Owner's Manual will void the ETL Listing, void the manufacturer's warranty, and may cause a dangerous situation. Read the Owner's Manual thoroughly before starting the installation process and follow them carefully.

## 7. **OPTIONAL LED LIGHTING PACKAGES**

- 7.1. **Fixtures:** Each lighting fixture shall be permanently sealed thermoplastic with built-in LED driver with overload and thermal protection and clear windows. Each fixture shall have 3' of SJTW power cord, IP68 rated waterproof connector, and covered with protective flex sleeving. A coated, stainless mounting bracket shall be attached to each fixture with brass thumb screws for mounting to the float. Each fixture shall include 300 Series stainless steel hardware to connect the mounting bracket to the float. When installed, the light fixture lens or window shall be above the water level for greater light penetration and only partial submersion of the light is required.
- 7.2. **Splitter:** A molded, waterproof IP68 rated 3 way splitter shall be installed and allow for easy attachment of each fixture to the splitter and a single power cable run back to shore.
- 7.3. **Underwater Power Cable:** The power cable shall be type SJTOW UL, CSA, and NEC approved underwater rated, 3 conductor cable with a molded NEMA 5-15P plug end. The power cable shall have 3' of protective flex sleeving at the splitter for rodent protection. The power cable shall be available in 50', 100', 150', 200', 250', 300', & 400' cord lengths of 16 gauge.
- 7.4. **Colored Lenses:** Each LED package shall include a rubber lens cap for each fixture. It shall also include colored lenses (Red, Green, Amber, Blue, and Pink) for each fixture.
- 7.5. **Light Package Options**
  - 7.5.1. **LED3125:** The LED3125 consists of three fixtures as described above, each using 9 watts of power. To be used as an optional lighting package on the 2400SF aerating fountain.