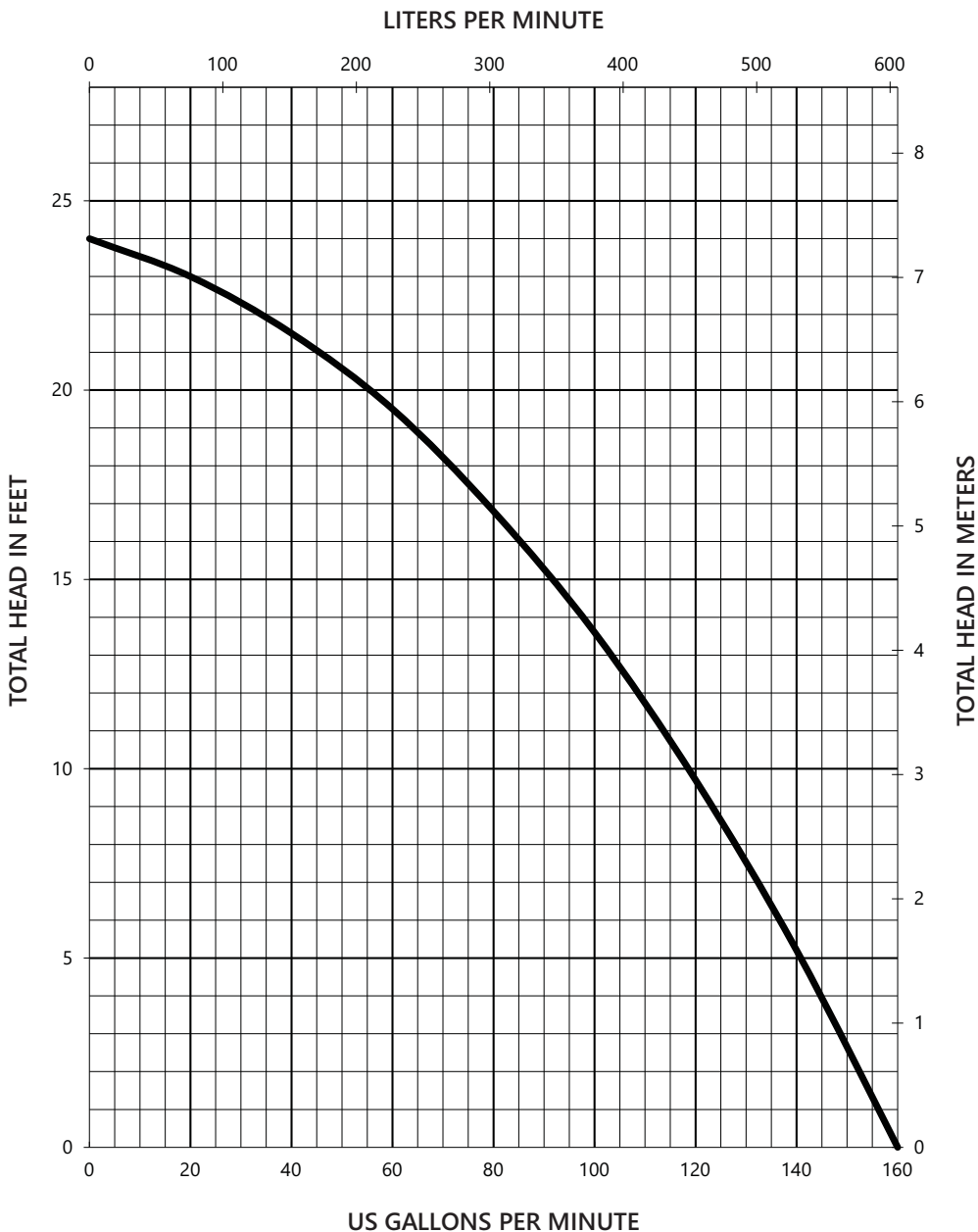
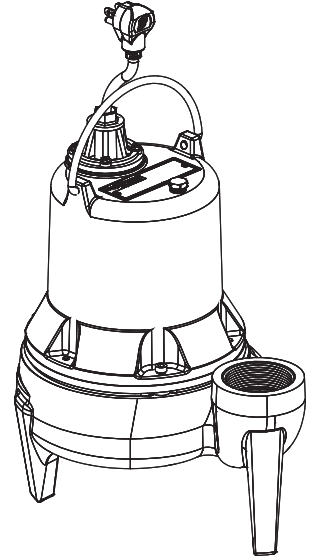


## Pump Specification

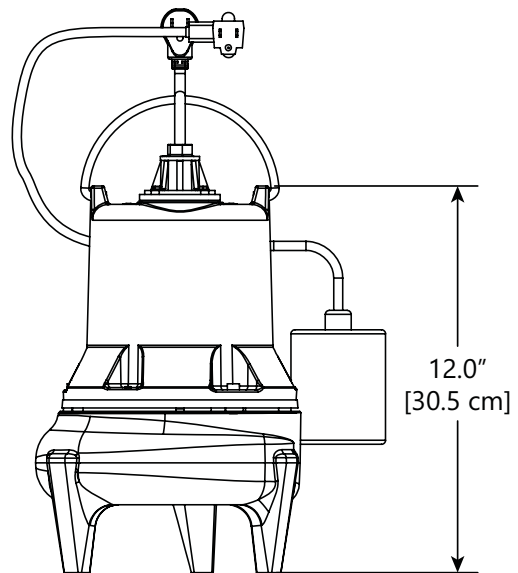
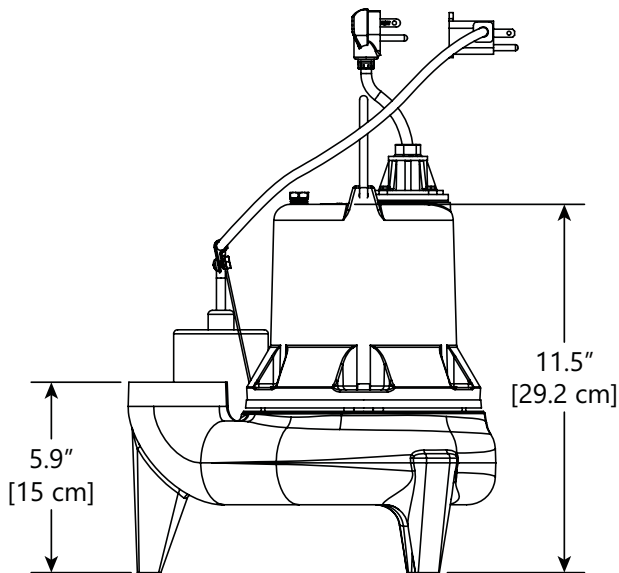
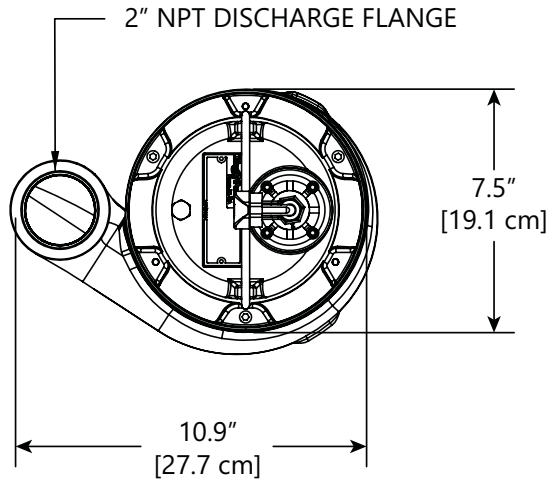
60 Hz

### LE50-Series

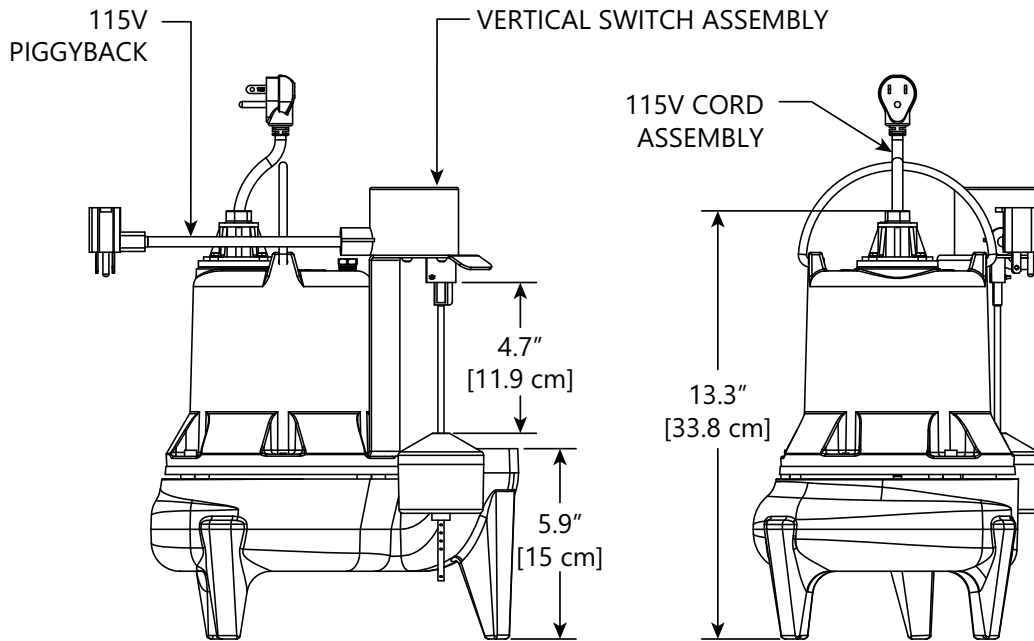
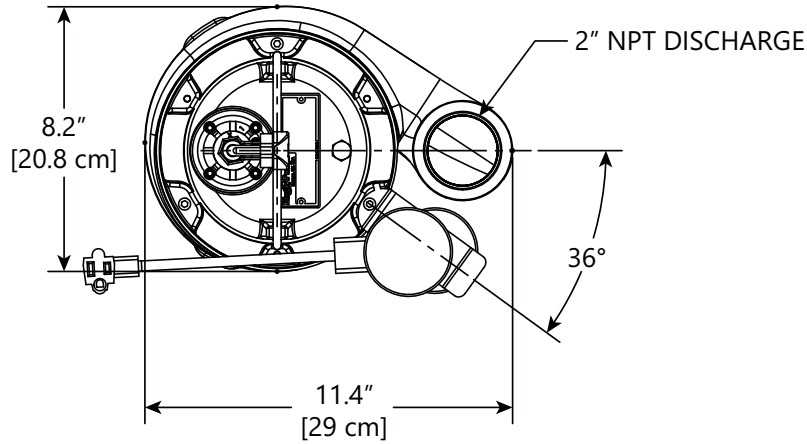
### 1/2 hp Submersible Sewage Pumps



WIDE-ANGLE SWITCH SERIES



VERTICAL SWITCH SERIES



## LE50-Series Electrical Data

MODEL	HP	VOLTAGE	PHASE	SF	FULL LOAD AMPS	LOCKED ROTOR AMPS	THERMAL OVERLOAD TEMP	STATOR WINDING CLASS	CORD LENGTH	DISCHARGE	AUTOMATIC
LE51A	1/2	115	1	1.00	12	22.5	105°C / 221°F	B	10'	2"	WIDE-ANGLE SWITCH
LE51A-2	1/2	115	1	1.00	12	22.5	105°C / 221°F	B	25'	2"	WIDE-ANGLE SWITCH
LE51AV	1/2	115	1	1.00	12	22.5	105°C / 221°F	B	10'	2"	VERTICAL SWITCH
LE51AV-2	1/2	115	1	1.00	12	22.5	105°C / 221°F	B	25'	2"	VERTICAL SWITCH
LE51M	1/2	115	1	1.00	12	22.5	105°C / 221°F	B	10'	2"	NO
LE51M-2	1/2	115	1	1.00	12	22.5	105°C / 221°F	B	25'	2"	NO
LE51M-3 <sup>1</sup>	1/2	115	1	1.00	12	22.5	105°C / 221°F	B	35'	2"	NO
LE51M-5 <sup>1</sup>	1/2	115	1	1.00	12	22.5	105°C / 221°F	B	50'	2"	NO
LE52A	1/2	208-230	1	1.00	6.8	12	105°C / 221°F	B	10'	2"	WIDE-ANGLE SWITCH
LE52A-2	1/2	208-230	1	1.00	6.8	12	105°C / 221°F	B	25'	2"	WIDE-ANGLE SWITCH
LE52M	1/2	208-230	1	1.00	6.8	12	105°C / 221°F	B	10'	2"	NO
LE52M-2	1/2	208-230	1	1.00	6.8	12	105°C / 221°F	B	25'	2"	NO
LE52M-3 <sup>1</sup>	1/2	208-230	1	1.00	6.8	12	105°C / 221°F	B	35'	2"	NO
LE52M-5 <sup>1</sup>	1/2	208-230	1	1.00	6.8	12	105°C / 221°F	B	50'	2"	NO

1 Bare lead cords

## LE50-Series Control Panel Information

PUMP MODEL	SX-SERIES 3-FLOAT NEMA 1	SX-SERIES 3-FLOAT NEMA 4X	AE-SERIES 3-FLOAT NEMA 1	AE-SERIES 4-FLOAT NEMA 1	AE-SERIES 3-FLOAT NEMA 4X	AE-SERIES 4-FLOAT NEMA 4X	IPS-SERIES	IPD-SERIES
	SIMPLEX		DUPLEX				SIMPLEX	DUPLEX
LE51	SXL21=3	SXL24=3	AE21L=3	AE21L=4	AE24L=3	AE24L=4	IPS-24L	IPD-24L
LE52	SXL21=3	SXL24=3	AE21L=3	AE21L=4	AE24L=3	AE24L=4	IPS-24L	IPD-24L

## LE50-Series Technical Data

IMPELLER	2 VANE SEMI-OPEN ENGINEERED THERMOPLASTIC ELASTOMER
SOLIDS HANDLING	2"
PAINT	POWDER COATING
MAX LIQUID TEMP	
CONTINUOUS DUTY	40°C / 104°F
INTERMITTENT	60°C / 140°F
MAX STATOR TEMP	130°C / 266°F
THERMAL OVERLOAD	105°C / 221°F
POWER CORD TYPE	SJTW
MOTOR HOUSING	CLASS 25 CAST IRON
VOLUTE	CLASS 25 CAST IRON
SHAFT	STAINLESS
HARDWARE	STAINLESS
O-RINGS	BUNA-N
MECHANICAL SEAL	CARBON CERAMIC
MIN BEARING LIFE	50,000 HRS
WEIGHT	19.5 KG / 43 LBS
CERTIFICATIONS	SSPMA, cCSAus

## ***LE50-Series Specifications***

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### **1.01 GENERAL**

The contractor shall provide labor, material, equipment, and incidentals required to provide \_\_\_\_\_ (QTY) centrifugal pumps as specified herein. The pump models covered in this specification are LE50-Series single-phase pumps. The pump furnished for this application shall be model \_\_\_\_\_ as manufactured by Liberty Pumps.

### **2.01 OPERATING CONDITIONS**


Each submersible pump shall be rated at 1/2 hp, \_\_\_\_\_ volts, 1-phase, 60 Hz, 1725 RPM. The unit shall produce \_\_\_\_\_ GPM at \_\_\_\_\_ feet of total dynamic head.

The submersible pump shall be capable of handling residential sewage with 2" solids handling capability. The submersible pump shall have a shut-off head of 24 feet and a maximum flow of 141 GPM @ 5 feet of total dynamic head.

The pump shall be controlled with:

- \_\_\_\_\_ A piggyback style on/off float switch
- \_\_\_\_\_ A pre-assembled heavy-duty vertical switch
- \_\_\_\_\_ A NEMA 4X outdoor simplex control panel with three float switches including a high water alarm
- \_\_\_\_\_ A NEMA 1 indoor simplex control panel with three float switches including a high water alarm
- \_\_\_\_\_ A NEMA 4X outdoor duplex control panel with three float switches including a high water alarm
- \_\_\_\_\_ A NEMA 1 indoor duplex control panel with three float switches including a high water alarm
- \_\_\_\_\_ A NEMA 4X outdoor duplex control panel with four float switches including a high water alarm
- \_\_\_\_\_ A NEMA 1 indoor duplex control panel with four float switches including a high water alarm

### **3.01 CONSTRUCTION**

Each centrifugal sewage pump shall be equal to the  Certified LE50-Series pumps as manufactured by Liberty Pumps, Bergen NY. The castings shall be constructed of class 25 cast iron. The motor housing shall be oil filled to dissipate heat. Air filled motors shall not be considered equal since they do not properly dissipate heat from the motor. All mating parts shall be machined and sealed with a Buna-N O-ring. All fasteners exposed to the liquid shall be stainless steel. The motor shall be protected on the top side with sealed cord entry plate with molded pins to conduct electricity eliminating the ability of water to enter internally through the cord. The motor shall be protected on the lower side with a carbon ceramic seal with stainless steel housings and spring. The pump shall be furnished with a stainless steel handle.

### **4.01 ELECTRICAL POWER CORD**

The submersible pump shall be supplied with length of multi-conductor power cord as per *Electrical Data* table. It shall be cord type SJTW, capable of continued exposure to the pumped liquid. The power cord shall be sized for the rated full load amps of the pump in accordance with the National Electric Code. The power cord shall not enter the motor housing directly but will conduct electricity to the motor by means of a watertight compression fitting cord plate assembly, with molded pins to conduct electricity. This will eliminate the ability of water to enter internally through the cord by means of a damaged or wicking cord.

## **5.01 MOTORS**

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Single-phase motors shall be oil-filled permanent split capacitor, class B insulated NEMA B design, rated for continuous duty. At maximum load the winding temperature shall not exceed 130°C un-submerged. Since air-filled motors are not capable of dissipating heat as effectively, they shall not be considered equal. The pump motor shall have an integral thermal overload switch in the windings for protecting the motor. The capacitor circuit shall be mounted internally in the pump.

## **6.01 BEARINGS AND SHAFT**

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An upper and lower ball bearing shall be required. Both bearings shall be permanently lubricated by the oil that fills the motor housing. The motor shaft shall be made of 300 or 400 series stainless steel and have a minimum diameter of 0.50".

## **7.01 SEALS**

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The pump shall have a unitized carbon ceramic seal with stainless steel housings and spring equal to Crane Type 6A. The motor plate/housing interface shall be sealed with a Buna-N O-ring.

## **8.01 IMPELLER**

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The impeller shall be engineered thermoplastic elastomer with pump out vanes on the back shroud to keep debris away from the seal area. It shall be threaded to the motor shaft.

## **9.01 CONTROLS**

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All units can be supplied with CSA and UL approved automatic wide-angle tilt float switches or pre-installed heavy-duty vertical switches. The switches shall be equipped with piggyback style plug that allows the pump to be operated manually without the removal of the pump in the event that a switch becomes inoperable. Manual pumps are operable by means of a pump control panel.

## **10.01 PAINT**

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The exterior of the casting shall be protected with powder coat paint.

## **11.01 SUPPORT**

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The pump shall have cast iron support legs, enabling it to be a freestanding unit. The legs will be high enough to allow 2" solids to enter the volute.

## **12.01 SERVICEABILITY**

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Components required for the repair of the pump shall be shipped within a period of 24 hours.

### 13.01 FACTORY ASSEMBLED TANK SYSTEMS WITH GUIDE RAIL AND QUICK DISCONNECT DISCHARGE

- Factory mounted guide rail system with pump suspended by means of bolt-on quick disconnect that is sealed by means of nitrile grommets or O-rings. The discharge piping shall be Schedule 80 PVC and furnished with a check valve and PVC shut-off ball valve. The tank shall be wound fiberglass or roto-molded plastic. An inlet hub shall be provided with the fiberglass systems.
- Stainless steel guide rail
- Zinc plated steel guide rail
- Diameter of basin in inches
- Height of basin in inches
- Distance from top of tank to discharge pipe outlet in inches
- Fiberglass cover
- Structural foam polymer cover
- Steel cover
- Simplex system with outdoor panel and alarm
- Duplex system with outdoor panel and alarm
- Simplex system with indoor panel and alarm
- Duplex system with indoor panel and alarm
- Separate outdoor alarm
- Remote outdoor alarm

### 14.01 TESTING

The pump shall have a ground continuity check and the motor chamber shall be hi-potted to test for electrical integrity, moisture content and insulation defects. The motor and volute housing shall be pressurized and an air leak decay test performed to ensure integrity of the motor housing. The pump shall be monitored for run voltage and current, and checked for noise or other malfunction.

### 15.01 QUALITY CONTROL

The pump shall be manufactured in an ISO 9001 certified facility.

### 16.01 WARRANTY

Standard limited warranty shall be 3 years.