SURVIVOR®

Survivor 4" Submersible Pumps

Lancaster Pump offers a broad selection of SURVIVOR 4" submersible well pumps. Horsepower from ½ to 5 HP, with the most popular size range ½ to 1½ HP, available in Corrosion Resistant Thermoplastic or Super Strength Stainless Steel. Capacity ratings are 5, 7, 10, 15 and 22 gallons per minute with heads as high as 990 feet.

INSIDE A PUMP STAGE

- Diffuser with stainless steel seal/wear surfaces for upper impeller hub
- Impeller eye surrounding lower hub
- Stage plate with stainless steel seal/wear surface for impeller eye

ASSEMBLED PUMP STAGE

- Laminated phenolic thrust washer on top of every stage provides down-thrust protection and axial sealing for the impeller inside the next stage above

BREAKDOWN

- Glass-filled Noryl® Discharge Head with field replaceable fluted Internal Check Valve. Molded jug handles - no need for safety cable adapter, ½ HP thru 1½ HP models. Available in Stainless Steel up to 5 HP.
- Fluted Polyurethane Bearing at top end of shaft. Excellent abrasion and wear resistance.
- Stainless Steel Cable Guard for maximum cable protection. Attached with stainless steel screws.
- Balanced Teflon® impregnated Impellers made of glass-filled thermoplastic, provide for lower friction for longer pump life.
- Stainless steel Hex Shaft with slotted end for test turning.
- Fully enclosed, glass-filled thermoplastic Diffusers and Stage Plates with stainless steel wear surfaces. Each stage is complete with an individual composite thrust washer for extra protection.
- Heavy wall, high quality Stainless Steel Pump Casing sized inside for perfect stage alignment.
- Glass-filled Noryl® Motor Support ½ HP thru 1 ½ Hp models. Available in Stainless Steel up to 5 HP.
- Stainless Steel screen, cannot snap off during installation.

SURVIVOR 4" SUBMERSIBLE PUMP MODEL NUMBER BREAKDOWN

2-2LST5007-2

- **2-** Catalog Section
- **2-** 2 = 2 Wire, 3 = 3 Wire
- **2L-** L = Lancaster Hydro-Force Motor, (no letter L) = Franklin Electric Motor
- **2LP-** P = Plastic Discharge Head, Plastic Motor Support
- **2LS-** S = Stainless Steel Discharge Head, Stainless Steel Motor Support
- **2LSP-** SP = Stainless Steel Discharge Head, Plastic Motor Support
- **2LST-** J = 5 GPM, L = 7 GPM, T = 10 GPM, U = 15 GPM, W = 22 GPM
- **2LST50-** 50 = 0.50 HP, 75 = 0.75 HP, 100 = 1.0 HP, 150 = 1.5 HP, 200 = 2.0 HP, 300 = 3.0 HP, 500 = 5.0 HP
- **2LST5007-** Number of Stages
- **2LST5007-2** 1 = 115 Volt, Single Phase, 2 = 230 Volt, Single Phase, 3 = 230 Volt, Three Phrase (Additional Voltages Available)

SURVIVOR SERIES

LANCASTER HYDRO-FORCE™

4" ENCAPSULATED SUBMERSIBLE MOTORS
SINGLE PHASE TWO-WIRE & THREE-WIRE, ½ -1 HP, 230 V
EQUIPPED WITH LIGHTNING ARRESTORS

TECHNICAL FEATURES

TWO-WIRE DESIGN

- Split-phase induction run (IR) design with built-in electronic starter connected in series to a high resistance auxiliary start winding – no capacitor required – electronic starter controls disengagement of start winding as a function of starting time and starting voltage.

THREE-WIRE DESIGN

- Capacitor-start induction run (CSIR) design – control box required
- Control box quick-disconnect design disconnects control box components from the electrical system when the lid is removed – will retrofit F.E. Q-D control boxes of same HP and voltage.
- Control box components include a 230V voltage relay for easy installation, two ground terminals, cable terminals up to AWG 8, and a start capacitor for higher starting torque.
- Control box painted steel enclosure with multiple knockouts is rated NEMA 3R for indoor or outdoor installation.

TWO-WIRE AND THREE-WIRE DESIGNS

- Stator filled with special epoxy resin and hermetically sealed for a better insulation of the winding and a greater heat exchange.
- Rotor and thrust bearings lubricated by water mixed with Propylene Glycol.
- Built-in check valve for restoring of cooling liquid (well water) as needed.
- Built-in lightning arrestors providing surge protection.
- Built-in automatic reset overload providing thermal (overheat) protection caused by high amperage and/or inadequate motor cooling.
- AISI 304 Stainless Steel motor frame shell, top and bottom end bracket covers.
- AISI 303 Stainless Steel splined shaft end.
- Cationic epoxy electrocoated G20 cast iron top and bottom end brackets.
- Shaft sealing system using labyrinth seal, sand slinger and lip seal.
- Pressure equalizing diaphragm.
- 4" NEMA flange.
- M8 threaded mounting studs.
- Removable plug-in lead cable.
- Degree of protection: IP68.
- Insulation: Class B.
- Time Rating: Continuous Duty.
- UL recognized component.

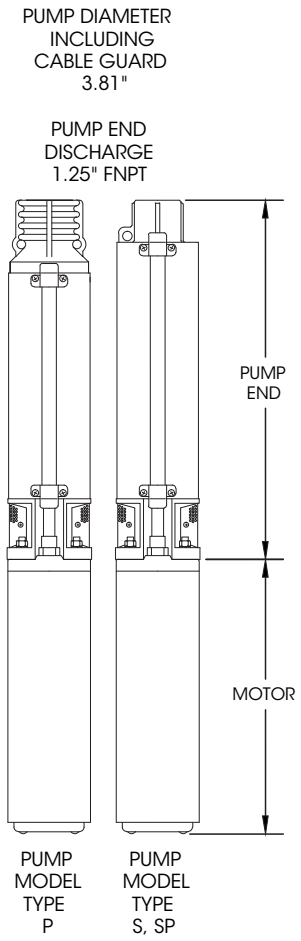
OPERATING LIMITS

- Water temperature: max. 95°F (35°C)
- Maximum starts per hour: 30
- Minimum flow-rate speed for motor cooling in water up to 95°F: 0.26 ft/s (0.08 m/s)
- Voltage tolerance: ±10%
- Mounting position: vertical/horizontal
- Water characteristics: pH from 5.8 to 8.6
- NEMA service factors (S.F.) for 60 Hz pump motors
- Axial Thrust Load: 300 Lb (1500 N)

FRANKLIN

Lancaster Pump is also teamed up with Franklin Electric's stainless water filled motors, meaning high quality and dependable service.

SURVIVOR® L-SERIES 7 GPM



L SERIES - 7 GPM

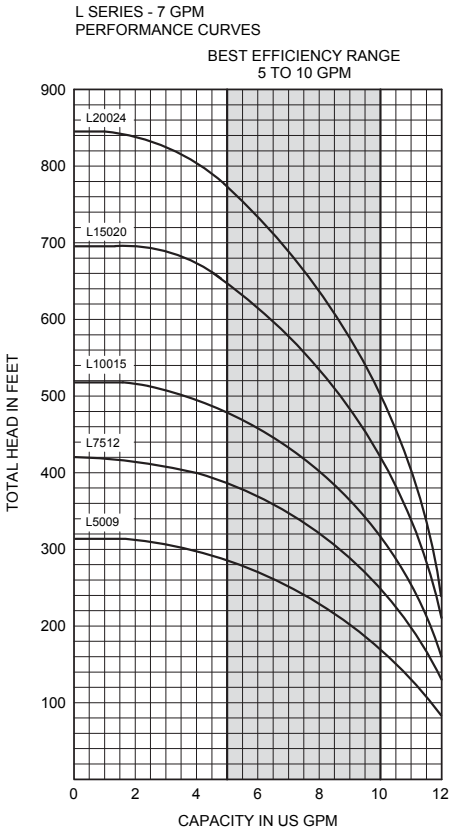
60 Hz, 3450 rpm

Pump Model	HP	Pump End		Single-Phase Motors - 2-wire				Single-Phase Motors - 3-wire				Three-Phase Motors	
				LP Hydro-Force		FE Super Stainless		LP Hydro-Force		FE Super Stainless		FE Super Stainless	
		Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)
PL5009 SL5009 SPL5009	1/2	13.88	4.8 7.5 6.0	10.69	19.6	9.53	18	10.25	19.5	9.53	19	9.53	18
PL7512 SL7512 SPL7512	3/4	16.03	5.7 8.6 7.1	11.69	22.0	10.66	21	10.50	20.2	10.66	21	10.66	21
PL10015 SL10015 SPL10015	1	18.19	7.0 9.5 8.0	12.44	24.1	11.75	24	12.12	23.9	11.75	24	11.75	24
PL15020 SL15020 SPL15020	1-1/2	22.78	9.0 11.7 10.2	n/a	n/a	15.12	31	n/a	n/a	13.62	28	11.75	24
SL20024	2	25.63	13.7	n/a	n/a	n/a	n/a	n/a	n/a	15.12	33	13.62	28

General notes for estimating only.
All Single-Phase motors are 230 Volt (FE Super Stainless 1/2 HP available 115 Volt OR 230 Volt).
Single-Phase 3-wire motors require properly matched control box.
Three-Phase motors available: 200 OR 230 OR 460 Volt.
Three-Phase motors require a magnetic starter with three leg Class 10 overload protection.

LANCASTER pump

SURVIVOR® L-SERIES 7 GPM



L SERIES - 7 GPM PERFORMANCE CHART

Ratings are in GPM (Gallons per Minute).
DO NOT operate pump at flow rates indicated by the symbol — .
Shaded areas indicate most efficient performance.
Friction losses in discharge pipe and fittings are not included in these charts.

Pump Model	HP	PSI	Depth to Water in Feet																														
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	460	500	540	580	620	660	700	740	780	820
L5009	1/2	0	—	—	—	12.1	11.7	11.3	10.8	10.3	9.8	9.2	8.5	7.6	6.7	5.5	3.9																
		20	—	11.9	11.6	11.2	10.7	10.1	9.6	9.1	8.2	7.3	6.3	5.0	3.1																		
		30	11.9	11.5	11.1	10.6	10.0	9.5	8.9	8.1	7.2	6.2	4.8	2.8																			
		40	11.4	11.0	10.5	9.9	9.4	8.8	7.9	7.1	6.0	4.5	2.3																				
		50	10.9	10.4	9.8	9.3	8.7	7.8	6.9	5.8	4.3																						
		60	10.3	9.8	9.3	8.5	7.7	6.8	5.6	4.0																							
Shut-off PSI			128	120	111	102	94	85	76	68	59	50	42	33	24	16	7																
L7512	3/4	0	—	—	—	—	—	12.1	11.8	11.6	11.3	11.1	10.7	10.3	9.8	9.2	8.6	7.8	7.2	6.3	5.3	4.1											
		20	—	—	—	12.0	11.8	11.5	11.3	10.9	10.5	10.1	9.6	9.0	8.3	7.7	6.9	6.1	5.0	3.6														
		30	—	—	12.0	11.8	11.5	11.2	10.9	10.5	10.1	9.5	8.9	8.3	7.5	6.8	5.9	4.8	3.2															
		40	—	12.0	11.7	11.4	11.2	10.8	10.4	10.0	9.4	8.8	8.2	7.4	6.7	5.8	4.6	2.8																
		50	11.9	11.7	11.4	11.1	10.8	10.3	9.9	9.3	8.7	8.0	7.3	6.5	5.6	4.4	2.0																
		60	11.6	11.3	11.1	10.7	10.3	9.8	9.3	8.6	7.9	7.2	6.4	5.4	4.3																		
Shut-off PSI			173	165	156	147	139	130	121	113	104	95	87	78	69	61	52	43	35	26	17	9											
L10015	1	0	—	—	—	—	—	—	—	12.0	11.8	11.6	11.3	11.1	10.8	10.6	10.3	9.9	9.4	9.0	8.5	8.0	7.3	5.8	3.8								
		20	—	—	—	—	12.1	11.9	11.7	11.5	11.3	11.1	10.8	10.5	10.1	9.7	9.3	8.9	8.3	7.8	7.1	6.4	5.6	3.3									
		30	—	—	—	12.1	11.8	11.7	11.5	11.3	11.1	10.7	10.4	10.1	9.7	9.2	8.8	8.3	7.8	7.0	6.3	5.2	4.4										
		40	—	—	12.0	11.8	11.7	11.4	11.3	11.0	10.7	10.4	10.0	9.6	9.2	8.7	8.3	7.6	6.9	6.2	5.3	4.3	2.8										
		50	—	12.0	11.8	11.6	11.4	11.2	11.0	10.6	10.3	10.0	9.5	9.1	8.7	8.2	7.5	6.8	6.1	5.2	4.1	2.5											
		60	12.0	11.8	11.6	11.4	11.2	10.9	10.6	10.3	9.9	9.5	9.0	8.6	8.1	7.4	6.7	5.9	5.1	4.0	2.2												
Shut-off PSI			216	208	199	190	182	173	164	156	147	138	130	121	112	104	95	86	78	69	61	52	43	26	9								
L15020	1-1/2	0	—	—	—	—	—	—	—	—	—	12.1	11.9	11.8	11.7	11.5	11.3	11.2	11.0	10.8	10.5	10.2	10.0	9.3	8.7	7.9	6.9	5.8	4.4				
		20	—	—	—	—	—	—	—	12.0	11.9	11.7	11.6	11.4	11.3	11.1	11.0	10.7	10.4	10.1	9.8	9.5	9.3	8.5	7.8	6.8	5.6	4.2					
		30	—	—	—	—	—	—	—	12.1	12.0	11.9	11.7	11.6	11.4	11.3	11.1	10.9	10.7	10.4	10.1	9.8	9.5	9.2	8.8	8.1	7.2	6.1	4.9	2.8			
		40	—	—	—	—	12.1	12.0	11.8	11.7	11.5	11.4	11.3	11.1	10.9	10.6	10.3	10.0	9.8	9.4	9.2	8.8	8.4	7.6	6.6	5.4	3.8						
		50	—	—	—	12.1	12.0	11.8	11.7	11.5	11.3	11.2	11.1	10.8	10.6	10.3	10.0	9.7	9.4	10.0	8.8	8.4	8.0	7.1	5.9	4.6							
		60	—	—	12.1	12.0	11.8	11.6	11.5	11.3	11.2	11.0	10.8	10.5	10.3	10.0	9.7	9.3	9.0	8.7	8.3	7.9	7.4	6.4	5.3	3.5							
Shut-off PSI			293	285	276	267	259	250	241	233	224	215	207	198	189	181	172	163	155	146	137	129	120	103	86	68	51	34	16				
L20024	2	0	—	—	—	—	—	—	—	—	—	—	12.1	12.0	11.8	11.7	11.6	11.4	11.3	11.2	11.1	10.9	10.7	10.3	9.8	9.3	8.8	8.3	7.6	6.8	5.8	4.8	3.3
		20	—	—	—	—	—	—	—	—	12.1	11.9	11.8	11.7	11.5	11.4	11.3	11.1	11.0	10.8	10.6	10.4	10.3	9.8	9.3	8.8	8.2	7.4	6.7	5.7	4.6	2.8	
		30	—	—	—	—	—	—	—	12.0	11.9	11.8	11.7	11.5	11.4	11.3	11.1	11.0	10.8	10.6	10.4	10.2	10.0	9.5	9.0	8.4	7.8	7.0	6.1	5.1	3.8		
		40	—	—	—	—	—	12.1	12.0	11.9	11.8	11.6	11.5	11.4	11.3	11.1	10.8	10.7	10.6	10.4	10.2	10.0	9.8	9.3	8.7	8.0	7.3	6.5	5.5	4.4	2.3		
		50	—	—	—	—	12.1	12.0	11.9	11.8	11.7	11.5	11.3	11.2	11.1	10.9	10.8	10.5	10.3	10.1	9.9	9.7	9.4	8.9	8.3	7.7	6.9	6.0	5.0	3.5			
		60	—	—	—	12.1	12.0	11.9	11.8	11.6	11.4	11.3	11.2	11.1	10.9	10.7	10.5	10.3	10.1	9.9	9.7	9.4	9.2	8.6	7.9	7.3	6.3	5.4	4.3	1.7			
Shut-off PSI			356	348	339	330	322	313	304	296	287	278	270	261	252	244	235	226	218	209	200	192	183	166	149	131	114	97	79	62	45	27	10