

# 4650 LSPM

Submersible Mixer

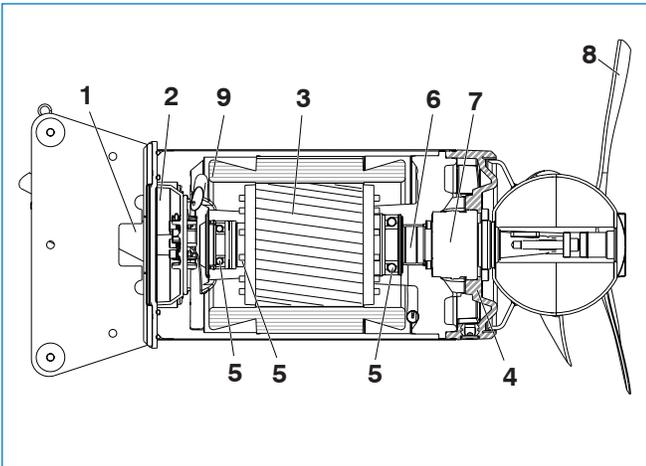


## Heavy duty, direct drive mixer Nominal Thrusts, 1,300 to 2,520N



### Applications:

4650 mixers are used in industrial processes such as Pulp & Paper, Chemicals, Food & Beverage and more. Also found in Municipal and Industrial waste treatment, Mining, Marine and Agricultural uses.



### Materials of Construction:

Available in a choice of the following:

- 304 Stainless Steel
- 316 Stainless Steel

### Approvals:

CSA tested and approved to UL Standard for Safety #778.

Factory Mutual Research tested and approved.

Suitable for use in:

Class I Div 1 groups C and D

Class II Div 1 groups E; F and G

Class III Div 1 Hazardous locations



Approved



### Specifications

#### 1. Cable Entry

Cable entry consists of two compressible rubber bushings to seal off motor area and relieve strain on the cable. Twice as many sealing bushings as previous designs means high reliability in difficult applications.

#### 2. Junction Box

Box is completely sealed off from surrounding liquid and stator casing via terminal board and an O-ring.

#### 3. Motor

The 4650 LSPM has an LSPM (line-started permanent-magnet) motor, combining the high efficiency of a synchronous permanent-magnet motor and the direct-on-line starting capacity of an induction motor. Motor insulation is Class H with a maximum working temperature of 180°C (356°F). Combined service factor of 1.10 is provided. Motors can be run continuously or intermittently. Motor ratings of 8 and 11 HP are available.

#### 4. Oil Casing

An environmentally friendly white paraffin based, FDA approved, non-toxic oil lubricates and cools the seals and acts as an additional barrier to prevent liquid from penetrating the motor area. Pressure build-up within the casing is reduced by an inner and outer oil compartment design which transports any foreign liquids a way from rotating components.

#### 5. Bearings

Bearings are of a pre-loaded design rated in excess of 100,000 hours of operation (B-10 rated life). Shaft is supported by a single row angular contact ball bearing and single row cylindrical roller bearing, plus a heavy duty single row angular contact ball bearing on the propeller side.

#### 6. Shaft

Motor shaft and rotor are a single integral unit. Shaft is completely isolated and cannot come in contact with the mixed media.

#### 7. Active Shaft Seals

Outer mechanical seal isolates the oil housing and surrounding liquids and is tungsten carbide lapped end faced running in oil. Inner mechanical seal operates between oil casing and stator casing. Only seal faces operate in the mixed media, all other components are within motor housing. One seal face of the inner seal pair has laser etched spiral grooves. As the seal rotates, these grooves act to pump any leakage back into the oil casing from out of the stator housing.

#### 8. Propeller

Three bladed, 316 stainless steel or optional high chrome propeller. Blades have large width, thin profile and smooth surface with a back swept design for optimum efficiency and non clogging operation. The blades are laser cut to exacting tolerances.

#### 9. Monitoring Equipment

The stator incorporates three thermal switches connected in series (one in each phase) which open at 260°F (125°C).

### Flygt products are affiliated with the following associations:



american rental association

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Propeller Performance

Model	*Prop. Code	Ø	Poles	Max. Motor HP Rating	Shaft HP	% Full Load	Power Input (kW)	Prop. Speed (RPM)	Prop. Dia. (inches)	Blade Angles (Degree)	Nominal Thrust (N)
Mixer With Jet Ring	P35803SJ	3	12	8.0	5.4	67	4.65	600	22 13/16"	3°	1,350
	P35805SJ	3	12	8.0	6.4	80	5.53	600	22 13/16"	5°	1,700
	P35803SJ	3	12	11.0	5.4	49	4.65	600	22 13/16"	3°	1,350
	P35805SJ	3	12	11.0	6.5	59	5.53	600	22 13/16"	5°	1,700
	P35807SJ	3	12	11.0	7.9	72	6.77	600	22 13/16"	7°	2,090
Mixer Without Jet Ring	P35809SJ	3	12	11.0	9.8	89	8.40	600	22 13/16"	9°	2,520
	P35803SF	3	12	8.0	7.2	90	6.20	600	22 13/16"	3°	1,650
	P35803SF	3	12	11.0	7.3	66	6.20	600	22 13/16"	3°	1,650
	P35805SF	3	12	11.0	9.5	86	8.10	600	22 13/16"	5°	2,010

\* Propellers also available in high chrome.

Motor Data

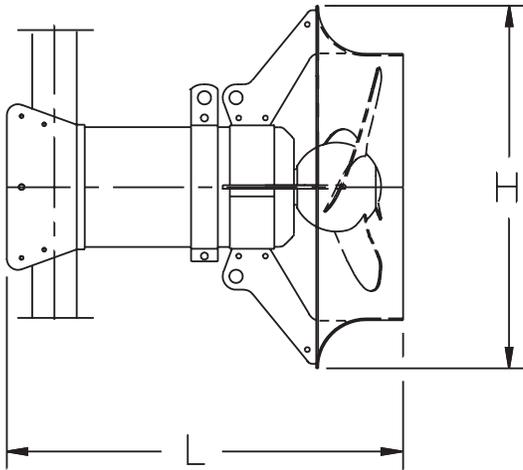
Rated Output Power HP (kW)	Ø	Volts nom.	Full Load Amps	Locked Rotor Amps	Locked Rotor KVA	NEC Code Letter	Rated Input Power kW	Poles/RPM	Cable Size	Cable Part Number	Max. Cable Length (FT.)
8 (6.0)	3	230	22	92	35.0	D	7.0	12/600	4G6+2x1.5 24.0 mm (0.94")	94 20 56	174
		460	11	74	58.9	J	6.9		4G2.5+2x1.5 17.5 mm (0.69")	94 20 59	281
		575	9	54	53.7	H	7.0		4G2.5+2x1.5 17.5 mm (0.69")	94 20 59	430
11 (8.2)	3	230	28	92	35.0	B	9.6	12/600	4G10+S(2x0.5) 25.0 mm (0.98")	94 19 81	200
		460	14	74	58.9	F	9.4		4G2.5+2x1.5 17.5 mm (0.69")	94 20 59	203
		575	11	54	53.7	E	9.6		4G2.5+2x1.5 17.5 mm (0.69")	94 20 59	324

Power Cable for Warm Liquid Mixers - HCR cable - to 195°F (90°C)

HP	Volts	Cable Size	Part No.	
8.0	230	7G6.0 - 16.7 mm (0.66")	94 20 94	<b>Liquid Temperatures:</b> Mixers constructed in 316SS are assembled using components that will withstand liquid temperatures up to 195°F. Cable sizes shown above are based on max. liquid temperature of 104°F. Choose warm liquid power cable for liquid temperatures exceeding 104°F from the table to the left.
8.0	460/575	7G2.5 - 11.4 mm (0.45")	94 20 91	
11.0	230	4G16+2x1.5 - 20.5 mm (0.81")	94 20 96	
11.0	460/575	7G2.5 - 11.4 mm (0.45")	94 20 91	

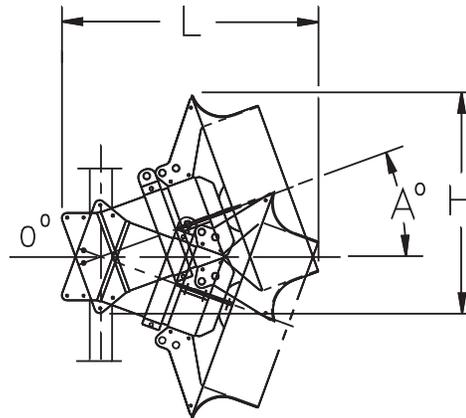
HP	Efficiency			Power Factor			Electrical Service Specifications
	100% Load	75% Load	50% Load	100% Load	75% Load	50% Load	
8.0	86.5	85.0	81.0	0.78	0.68	0.53	Voltage Tolerances: ±5% (Rated Output), ±10% (without overheating) Frequency Tolerance: ±5% Voltage Balance (Phase to Phase): ±1% VFD Compatible
11.0	86.5	86.5	84.5	0.85	0.78	0.64	

4650 LSPM



ALL DIMENSIONS IN INCHES

DIMENSIONAL CHART					
A°	-20	-10	0	+10	+20
H	31 <sup>1</sup> / <sub>8</sub>	31 <sup>5</sup> / <sub>8</sub>	32 <sup>1</sup> / <sub>8</sub>	35 <sup>5</sup> / <sub>8</sub>	31 <sup>1</sup> / <sub>8</sub>
L	39 <sup>1</sup> / <sub>8</sub>	37 <sup>5</sup> / <sub>8</sub>	35	37 <sup>5</sup> / <sub>8</sub>	39 <sup>1</sup> / <sub>8</sub>



WEIGHT (LBS)
385 With Jet Ring
330 Without Jet Ring

Xylem Inc., Flygt products, reserves the right to modify performance, specifications or design without notice.

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