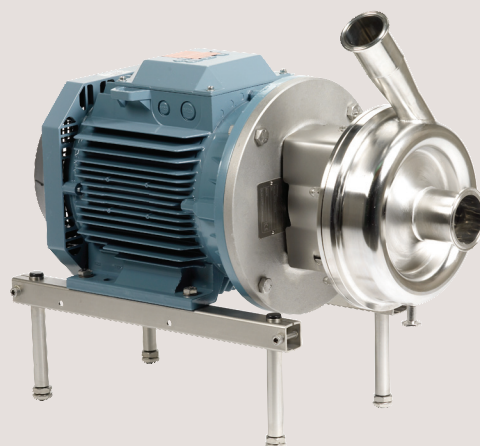




When Purity is the Issue

Alfa Laval LKH UltraPure LKHU - UltraPure Centrifugal Pump



Application

The LKH UltraPure pump is a highly efficient and economical centrifugal pump, which meets the requirements of the pharmaceutical industries. It provides gentle product treatment and is chemically resistant. LKH UltraPure is available in five sizes, LKH UltraPure-10, -20, -25, -35, and -40.

The LKHU UltraPure pump is a highly efficient and economical centrifugal pump, which meets the requirements of the pharmaceutical industries. It provides gentle product treatment. LKHU UltraPure is available in five sizes, LKH-10, -20, -25, -35, and -40.

Standard design

As standard the LKH UltraPure is delivered with a 45° outlet (counterclockwise).



45° outlet

The pump is designed for CIP and SIP with emphasis on large internal roundings and cleanable seals.

The LKHU UltraPure pump consists of a standard motor, stub shaft, mechanical compression coupling, adaptor, back plate, impeller, shaft seal, 45° product discharge, and a vertical casing drain.

As standard the LKHU UltraPure is delivered with a 45° outlet (counterclockwise). Material traceability EN 10204.3.1.B. (Mill test reports).



Shaft seals

The LKH UltraPure pump is equipped with either an external single or a double mechanical shaft seal. Both have stationary seal rings in acid-resistant steel AISI 329 with sealing surface and rotating seal rings in silicon carbide.

Shaft seals The LKHU UltraPure pump is equipped with either an external single or a double mechanical shaft seal. Both have stationary seal rings in stainless steel AISI 329 with sealing surface and rotating seal rings in silicon carbide.

TECHNICAL DATA

Materials

Product wetted steel parts: W. 1.4404 (316L) with material traceability 3.1 acc. to EN 10204

Product wetted steel parts: Stainless steel AISI 316L and 329L.

Other steel parts: Stainless steel.

Other steel parts: Stainless steel AISI 304.

Product wetted seals: EDPM - USP Class 6.

Product wetted seals: USP Class VI EPDM

Finish, product wetted surface: Bright (Ra 0.5 µm)

Finish, product wetted surface: Ra 20 µin /EP

Finish, pump casing, external surface: . Bright (Ra 0.8 µm)

Finish, pump casing, external surface: . Ra 32 µin

Motor

Standard foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm. at 50/60 Hz, IP 55 (with drain hole with labyrinth plug), insulation class F.

Standard C-faced, foot-mounted motor according to NEMA standard. 3500 RPM or 1750 RPM. Premium efficiency, Class F.

Voltage and Frequency

3 phase, 60 HZ, 230/460V standard. Other voltages and frequencies available upon request.

Motor sizes

50 Hz: 1.5 - 22 kW.

60 Hz: 1.75 - 25 kW.

60 Hz: 1 - 1.5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 25 - 30 Hp.

Hp

Horsepower requirements based on flow curves.

Warranty

Extended 3-years warranty on the LKH UltraPure Centrifugal Pump range. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used.

OPERATING DATA

Pressure

Max. inlet pressure: Static: 1000 kPa (10 bar).

Max. inlet pressure: Static: 145 psi (10 bar)

Temperature

Temperature range: -10°C to +140°C (EPDM).

Temperature range 15°F to +285°F (FPM)

Noise level

Noise level (at 1 m): 60 - 80 dB (A).

Noise level (at 3 ft.): 60 - 80 dB (A).

Double mechanical seal

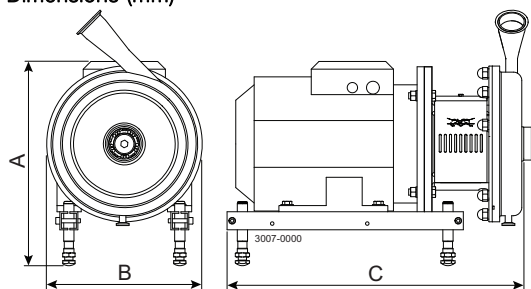
Water pressure: Max. 500 kPa (5 bar).

Water pressure: Max. 73 psi (5 bar)

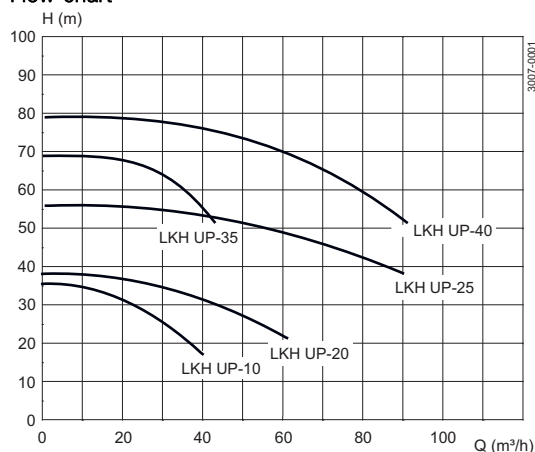
Water consumption: 0.25 - 0.5 l/min.

Water consumption: 4 - 8 usgph

Dimensions (mm)

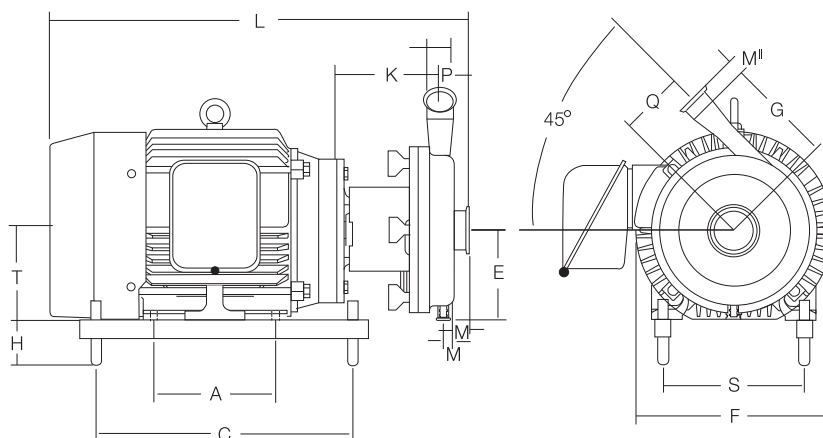


Flow chart



	LKH UltraPure-10				LKH UltraPure-20				LKH UltraPure-25			LKH UltraPure-35			LKH UltraPure-40		
Motor kW	1.5	2.2	3	4	2.2	3	4	5.5/7.5	5.5/7.5	11/15	4	5.5/7.5	11/15	7.5	11/15/18.5	22	
A min.	451	365	375	384	365	375	384	402	402	492	384	402	492	402	492	538	
A max.	451	451	485	497	451	485	497	535	535	608	497	535	608	535	608	643	
B	247	247	250	250	256	256	256	300	303	303	303	303	350	329	350	350	
C	404	404	460	467	417	472	479	557	563	675	470	548	660	558	670	709	

Dimensions (in)



LKHU UltraPure-10*

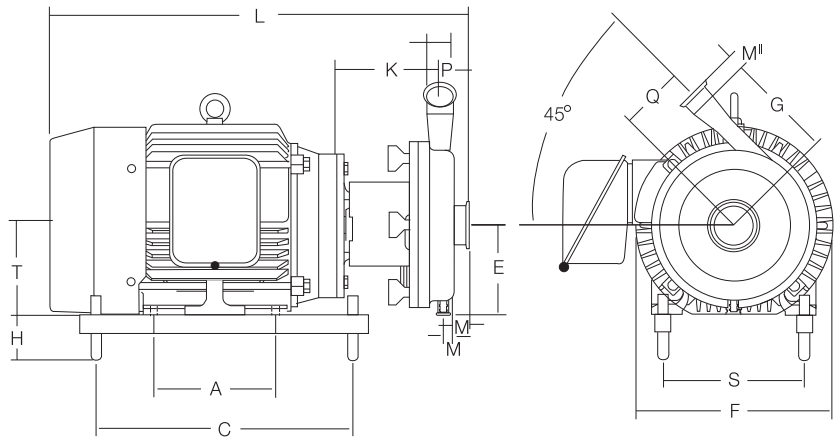
Size	1 Hp 143TC	1.5 Hp 143TC	2 Hp 145TC	Motor 3 Hp 182TC	5 Hp 184TC	7.5 Hp 213TC	10 Hp 215TC
A	4.00	4.00	5.00	4.50	5.50	5.50	7.00
C	9.53	9.53	9.53	12.60	12.60	14.17	14.17
E ½"	5.43	5.43	5.43	5.43	5.43	5.43	5.43
E ¾"	5.83	5.83	5.83	5.83	5.83	5.83	5.83
F	9.72	9.72	9.72	9.72	9.72	9.72	9.72
G	5.59	5.59	5.59	5.59	5.59	5.59	5.59
H	3.50	3.50	3.50	3.50	3.50	3.50	3.50
K	5.35	5.35	5.35	5.87	5.87	6.61	6.61
L	16.91	16.91	18.22	19.41	19.96	23.20	24.74
M	0.91	0.91	0.91	0.91	0.91	0.91	0.91
P	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Q	3.43	3.43	3.43	3.43	3.43	3.43	3.43
S	5.51	5.51	5.51	7.48	7.48	8.50	8.50
T	3.50	3.50	3.50	4.50	4.50	5.25	5.25
Approximate weight (lbs.)	81.00	89.00	91.00	111.00	128.00	179.00	204.00

LKHU UltraPure-20*

Size	Motor							
	1 Hp 143TC	1.5 Hp 143TC	2 Hp 145TC	3 Hp 182TC	5 Hp 184TC	7.5 Hp 213TC	10 Hp 215TC	15 HP 254TC
A	4.00	4.00	5.00	4.50	5.50	5.50	7.00	8.25
C	9.53	9.53	9.53	12.60	12.60	14.17	14.17	19.02
E ½"	5.63	5.63	5.63	5.63	5.63	5.63	5.63	5.63
E ¾"	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02
G	5.59	5.59	5.59	5.59	5.59	5.59	5.59	7.09
H	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
K	5.35	5.35	5.35	5.87	5.87	6.61	6.61	7.95
L	16.91	16.91	18.22	19.41	19.96	23.20	24.74	28.82
M	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
P	0.91	0.91	0.91	0.91	0.91	0.91	0.91	1.06
Q	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.47
S	5.51	5.51	5.51	7.48	7.48	8.50	8.50	10.00
T	3.50	3.50	3.50	4.50	4.50	5.25	5.25	6.25
Weight (lbs.)	81.00	89.00	91.00	111.00	128.00	179.00	204.00	301.00

Notel * = Data for pumps with Sterling brand motors.

Dimensions (in)



LKHU UltraPure-25*

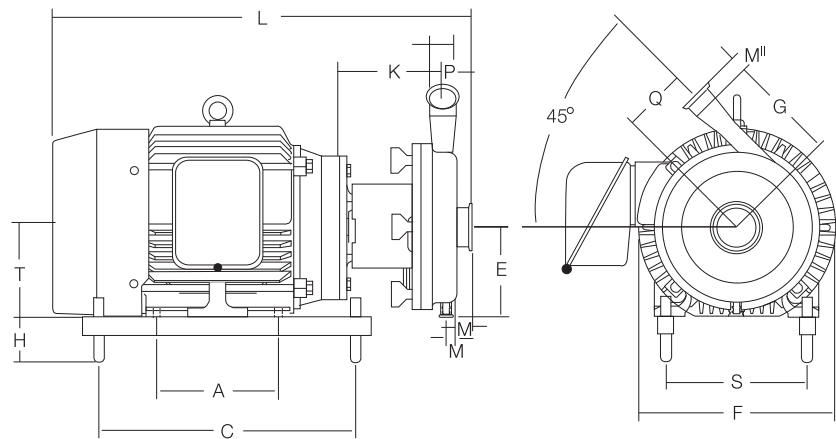
Size	Motor										
	1 Hp 143TC	1.5 Hp 143TC	2 Hp 145TC	3 Hp 182TC	5 Hp 184TC	7.5 Hp 213TC	10 Hp 215TC	15 HP 254TC	20 Hp 256TC	25 Hp 284TSC	30 Hp 286TSC
A	4.00	5.00	5.00	4.50	5.50	5.50	7.00	8.25	10.00	9.50	11.00
C	9.53	9.53	9.53	12.60	12.60	14.17	14.17	19.02	19.02	20.00	20.00
E ½"	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61
E ¾"	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
F	11.93	11.93	11.93	11.93	11.93	11.93	11.93	11.93	11.93	11.93	11.93
G	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60
H	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
K	5.98	5.98	5.98	6.50	6.50	7.24	7.24	8.07	8.07	8.07	8.07
L	17.91	17.91	18.90	19.91	20.96	24.20	25.74	29.16	30.91	32.91	34.41
M	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
P	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Q	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
S	5.51	5.51	5.51	7.48	7.48	8.50	8.50	10.00	10.00	11.00	11.00
T	3.50	3.50	3.50	4.50	4.50	5.25	5.25	6.25	6.25	7.00	7.00
Approximate weight (lbs.)	95.00	103.00	105.00	125.00	142.00	193.00	218.00	311.00	361.00	442.00	473.00

LKHU UltraPure-35*

Size	Motor										
	1 Hp	2 Hp	3 Hp	5 Hp	7.5 Hp	10 Hp	15 HP	20 Hp	25 Hp	30 Hp	
	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TSC	286TSC	
A	4.00	5.00	4.50	5.50	5.50	7.00	8.27	10.00	9.49	11.00	
C	9.53	9.53	12.60	12.60	14.17	14.17	19.02	19.02	20.00	20.00	
E ½"	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	
E ¾"	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	
F	11.93	11.93	11.93	11.93	11.93	11.93	11.93	11.93	11.93	11.93	
G	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	
H	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	
K	5.55	5.55	6.06	6.06	6.81	6.81	7.83	7.83	7.83	7.83	
L	17.11	18.10	19.10	20.15	23.40	24.94	28.55	30.30	32.30	33.80	
M	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	
P	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Q	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	
S	5.51	5.51	7.48	7.48	8.50	8.50	10.00	10.00	11.00	11.00	
T	3.50	3.50	4.50	4.50	5.25	5.25	6.25	6.25	7.00	7.00	
Approximate weight (lbs.)	99.00	101.00	121.00	138.00	189.00	214.00	307.00	357.00	438.00	469.00	

Notel* = Data for pumps with Sterling brand motors.

Dimensions (in)

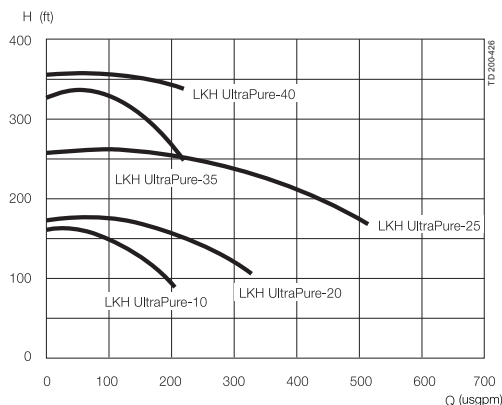


LKHU UltraPure-40

Size	Motor									
	1.5 Hp 143TC	2 Hp 145TC	3 Hp 182TC	5 Hp 184TC	7.5 Hp 213TC	10 Hp 215TC	15 HP 254TC	20 Hp 256TC	25 Hp 284TSC	30 Hp 286TSC
A	4.00	5.00	4.50	5.50	5.50	7.00	8.25	10.00	9.50	11.00
C	9.53	9.53	12.60	12.60	14.17	14.17	19.02	19.02	20.00	20.00
E ½"	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13
E ¾"	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52
F	12.95	12.95	12.95	12.95	12.95	12.95	12.95	12.95	12.95	12.93
G	8.35	8.35	8.35	8.35	8.35	8.35	8.35	8.35	8.35	8.35
H	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
K	5.75	5.75	6.26	6.26	7.01	7.01	8.03	8.03	8.03	8.03
L	17.50	18.49	19.49	22.54	23.79	25.33	28.94	30.69	32.69	34.19
M	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
P	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Q	4.96	4.96	4.96	4.96	4.96	4.96	4.96	4.96	4.96	4.96
S	5.51	5.51	7.48	7.48	8.50	8.50	10.00	10.00	11.00	11.00
T	3.50	3.50	4.50	4.50	5.25	5.25	6.25	6.25	7.00	7.00
Approximate weight (lbs.)	108.00	110.00	130.00	147.00	198.00	223.00	316.00	366.00	447.00	478.00

Note! Data for pumps with Sterling brand motors.

Flow chart

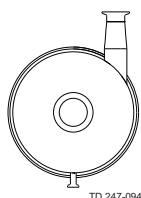


Frequency 60 Hz

Speed 3500 RPM

Options

- A. Impeller with reduced diameter.
- B. Motor for other voltage and/or frequency.
- C. 1500 rpm. motor.
- D. 1800 rpm. motor
- E. Motor with increased safety/explosion proof motor.
- F. Inducer
- G. Double mechanical shaft seal.
- H. Pump with shroud.
- I. Pump without legs.
- J. No Drain
- K. 0° outlet, see drawing below.
- L. Product wetted steel parts - ferrite max. 5%.
- M. Product wetted steel parts - ferrite max. <1%
- N. Surface finish certificate.
- O. Finish product wetted surface Ra 0.8 μm
- P. Finish product wetted surface Ra 0.5 μm + electropolished
 - The final surface value will change after electropolishing.
- Q. Product wetted seals of FPM or FEP.
- R. Special flush arrangement with 1/2 diaphragm valve, needle valve and flow meter.
- S. Hydrostatic testing with certificate
- T. Passivation
- U. 0° outlet, see drawing below.
- V. Finish, product wetted surface: Ra max. 15m-inch electropolished
- W. Product wetted seals of EPDM or PTFE Specials
- X. Special flush arrangement (for Double Mechanical)
- Y. 1/2" diaphragm valve
- Z. air actuated (for Flush Seal Arrangement)
- AA. Flow meter (for Flush Arrangement)



0° outlet

Inlet/Outlet Connections - GC-Clamp (inches)

LKHU UltraPure-10, -20, -35

Inlet size	2.50
Outlet size	2.00
MI	1.13
MII	1.13

LKHU UltraPure-25, -40

	LKH-UP 25	LKH-UP40
Inlet size	3.00	3.00
Outlet size	2.50	2.00
MI	1.13	1.13
MII	1.13	1.13

Notel

Because of the mechanical polishing on internal surfaces, the impeller diameter will be adjusted to meet the desired design point.

Standard documentation package:

- 3.1 certificate according to EN10204
- FDA certificate of conformity for product wetted elastomers.
- USP class 6 certificate of conformity - EPDM only
- Pump performance test certificate

Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

Notel

For further details, see also IM 70831.

This product has EHEDG certificate

Alfa Laval reserves the right to change specifications without prior notification. ALFA LAVAL is a trademark registered and owned by Alfa Laval Corporate AB.

ESE00269EN 1507

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How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.