AHM Series, Horizontal Multi Stage Catalogue

PT. Archimedes Global Pump

Kawasan Pusat Niaga Terpadu
Jl. Daan Mogot Raya Km 19.6 Blok E 8A
Tangerang 15122, Indonesia.
Phone : (021) 54377378
Email : info@archimedes.co.id


Archimedes
Pump
Pump Solution Provider

General Data

Technical Data

AHM Series

Commercial & Industrial

Horizontal Multistage Centrifugal Pump

Power	Max.Flow	Max.Head
380-3320 W	Up to 230 L/min	Up to 59 M

Description

Archimedes AHM series pump is a non-self-priming, horizontal, multistage, end-suction centrifugal pump. The pump shaft, impeller, chamber and filling plug are made of stainless steel. The AHM series pump is a special product to fulfill a wide variety of customer demands. The AHM series is available in various sizes and numbers of stages to fulfill different requirements of liquid capacity and pressure. The AHM series pump has many advantages, and some of which are compact design, worldwide usage, high reliability, service-friendly, wide performance range, low noise, and customized solutions. The AHM series pump is designed to cover a wide variety of applications, ranging from small pressure boosting applications to large industrial systeams.

Application

- Industrial circulation system
- Agricultural irrigation
- Pressure booster system
- Chiller machine & cooling system
- Washing & cleaning system
- Ultrasonic clean machine
- Reverse osmosis system
- PCB Industrial
- CNC, grinding, lathes, electric discharge, air conditioner machines

Features

- Easy set-up and installation
- High efficiency for low electricity bill
- Robust construction for better reliability
- Quiet operation for better life quality
- Optional mechanical seal combinations for various applications

General Data

Motor Spec	
Motor Type	2 Pole, totally enclosed fan-cooled, squirrel-cage
Frequency	50HZ
Standard Voltages	1Ø 220~240V
	3Ø 220~240/380~415V
Insulation Class	F class(155°C)
Enclosure Protection Class	IP 54
Nominal Speed	2850 rpm
Operation Conditions	
Liquids	Clean liquid without solid particles
Liquid Temperature	0°C ~90°C
Ambient Temperature	Max. 50°C
System Pressure	Max. 10kg

Model Code

AHM 2 - 50 S/T

Series name

Nominal flow rate[m^3/h]

Max head (m)

S= Single Phase
T= Three Phase

Operating Conditions

The maximum operating pressure depends on the temperature of the pumped liquid, see table:

Max. operating pressure	10 kg/cm	6 kg/cm
AHM 2, AHM 4	0°C to + 40°C	+ 41°C to + 90°C
AHM 8, AHM 12	0°C to + 55°C	+ 56°C to + 90°C

Min. inlet pressure: According to the NPSH curve + a safety margin of 0.5m.

Max. inlet pressure: Limited by the max. operating pressure.

Pipe Connections

Connection	AHM2	AHM4	AHM8	AHM12
Suction Port	Rp 1	Rp 1 1/4	Rp 1 1/2	Rp 1 1/2
Discharge Port	Rp 1	Rp 1	Rp 1 1/4	Rp 1 1/2
Drain Hole, Priming Hole	Rc 3/8	Rc 3/8	Rp 1/2	Rp 1/2

Mechanical Seals

List of Materials	
H: Seal Type	B: Carbon
C: Seal Type	V: Viton
U: Tungsten carbide	E: EPDM
Q: Silicon carbide	

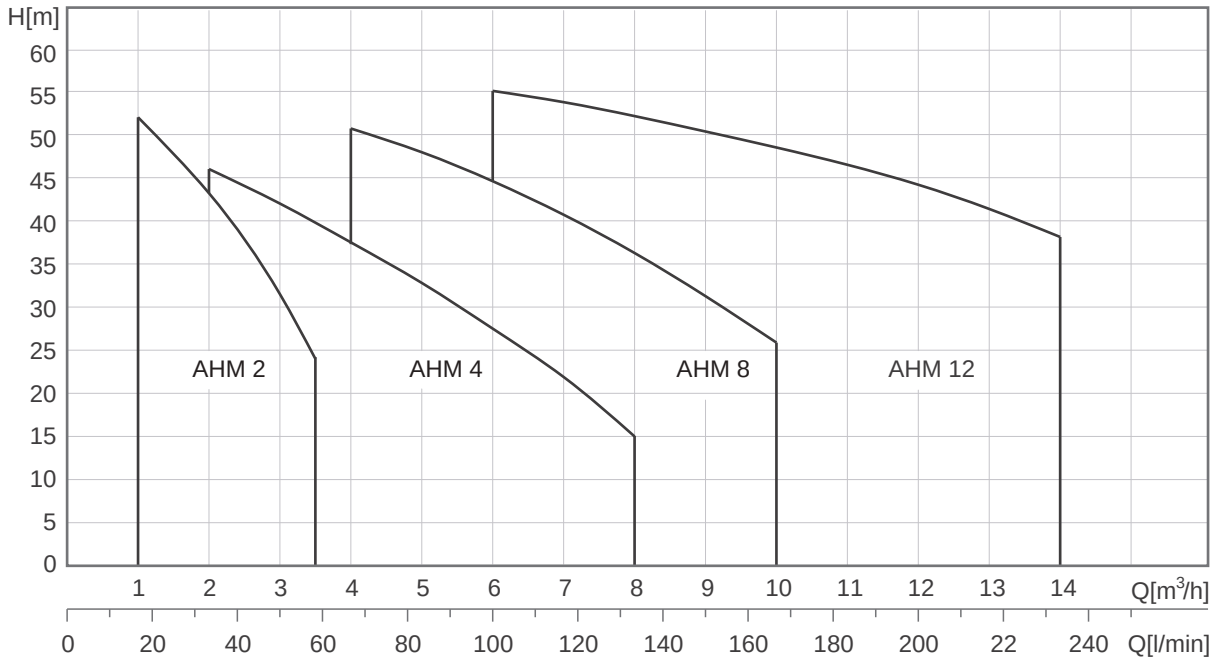
Mechanical seals	AHM 2/4	AHM 8,12
HQB	●	●
HQQ	Optional	Optional
HUU	Optional	Optional
O-rings	**AHM 2/4**	**AHM 8,12**
E	●	●
V	Optional	Optional

● Standard

Liquids to be pumped

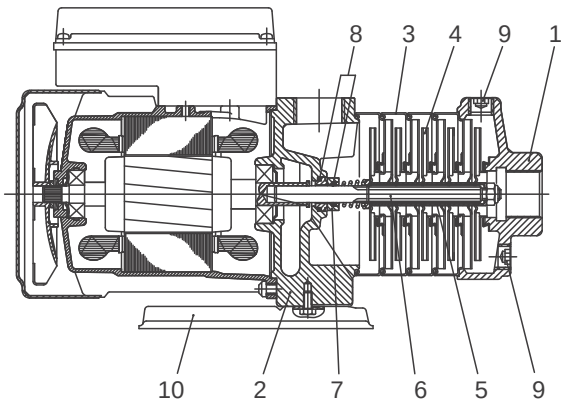
These pump is designed for pumping freely flowing non-corrosive, non-explosive, and non-flammable liquids. The liquids to be pumped must also be free of solid matter, sands, fiber, and similar materials. Most common non-highly corrosive watery liquids, hot and cold liquids can be pumped with this pump. The suitability of factors, such as the pH level, contents of chemicals such as chlorides, oils, the temperature of the liquids, etc. Please contact Archimedes if there are any questions as to whether certain liquids are suitable for pumping with the pump.

Performance Range

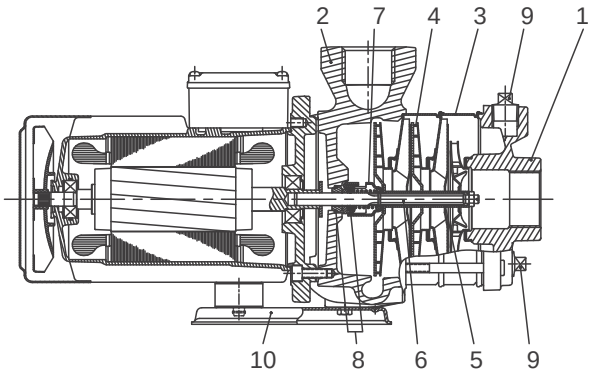


Material Construction

AHM 2, AHM 4



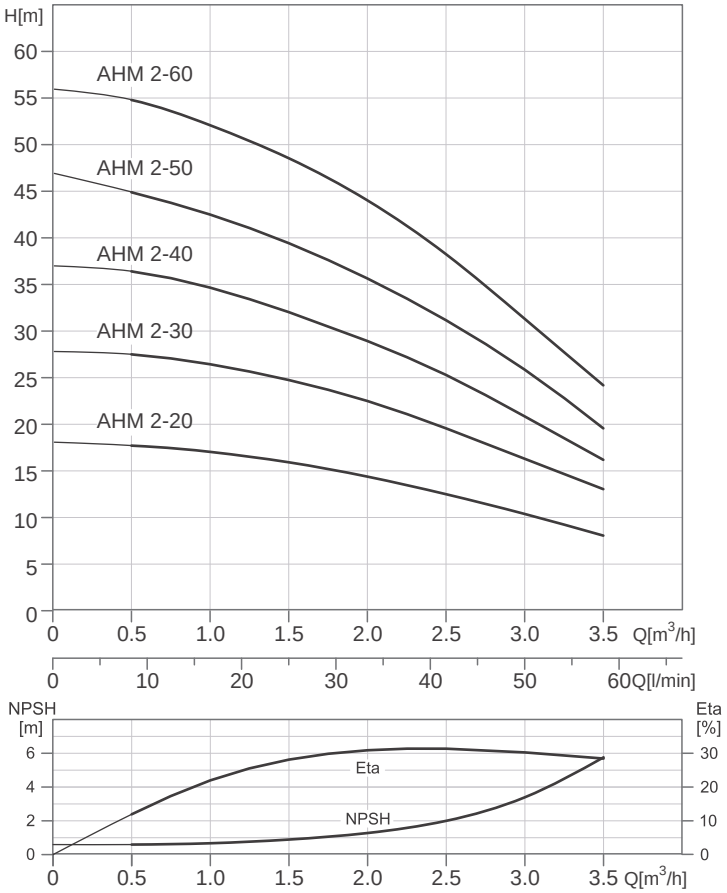
AHM 8, AHM 12

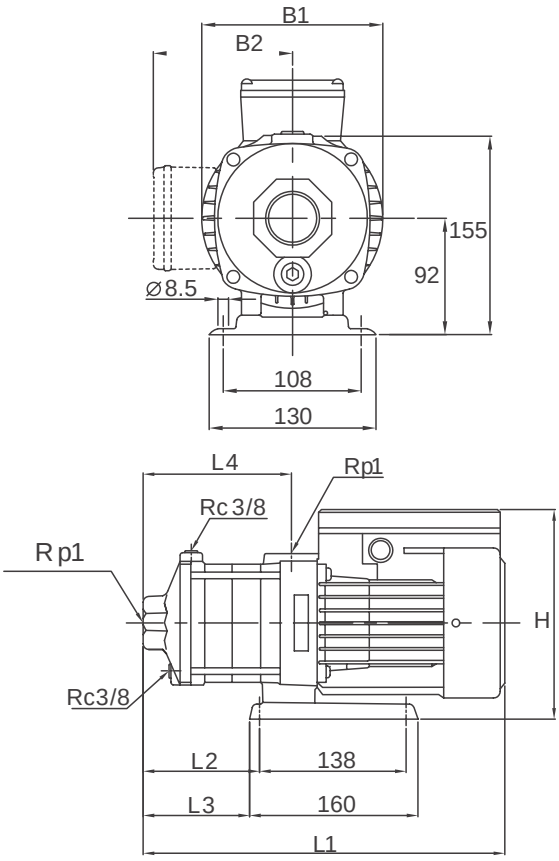


Pos.	Description	Materials
1	Suction chamber	Cast iron
2	Pump head	Cast iron
3	Intermediate chamber	SS304
4	Impeller	SS304
5	Spacing pipe	SS304
6	Shaft	SS431
7	Mechanical seal	Silicon carbide / Carbon
8	O-ring	EPDM
9	Drain and priming plug	Steel
10	Base plate	Steel

AHM 2

Performance Curves





Dimensions and Weights

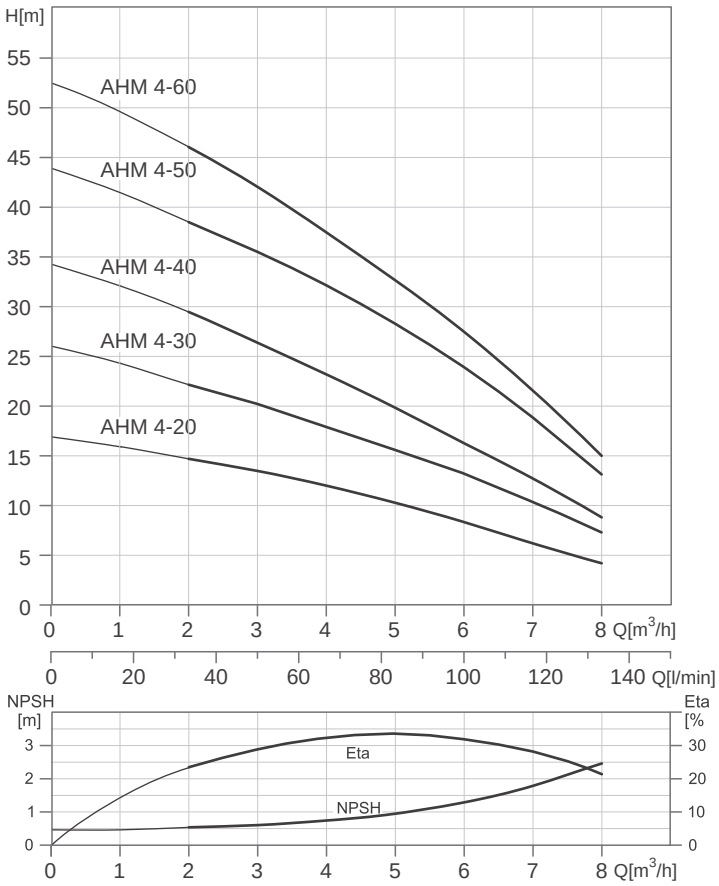
Model	Motor P_2		Dimensions(mm)									Weight (kg)	
			L1	L2	L3	L4	B1	B2		H			
	Phase	HP						1phase	3phase	1phase	3phase	1phase	3phase
AHM 2-20	1/3	0.5	309	75	63	101	141	127	112	228	206	10.3	10.0
AHM 2-30	1/3	0.5	327	93	81	119	141	127	112	228	206	10.5	10.3
AHM 2-40	1/3	0.5	345	111	99	137	141	127	112	228	206	10.8	10.5
AHM 2-50	1/3	0.75	363	129	117	155	141	127	112	228	206	11.6	11.2
AHM 2-60	1/3	0.75	381	147	135	173	141	127	112	228	206	11.8	11.5

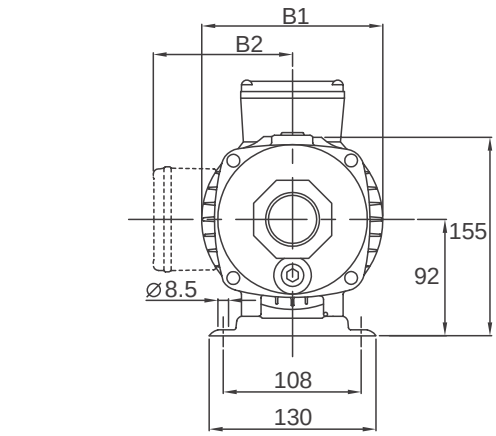
Electrical Data

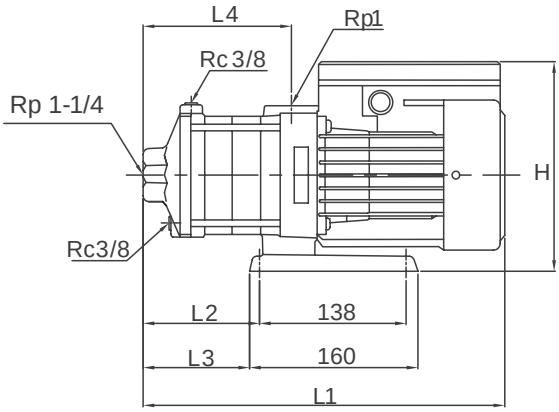
Model	1 x 220-240 V		3 x 220-240 / 380-415 V	
	P_1 [W]	$I_{1/1}$ [A]	P_1 [W]	$I_{1/1}$ [A]
AHM 2-20	380		430	2.2-2.6 / 1.3-1.5
AHM 2-30	470	2.1-2.2	530	2.2-2.5 / 1.3-1.45
AHM 2-40	620	2.7-2.8	660	2.4-2.8 / 1.4-1.6
AHM 2-50	720	3.2-3.1	770	2.5-2.9 / 1.45-1.7
AHM 2-60	830	3.7-3.6	860	2.9-3.3 / 1.7-1.9

AHM 4

Performance Curves







Dimensions and Weights

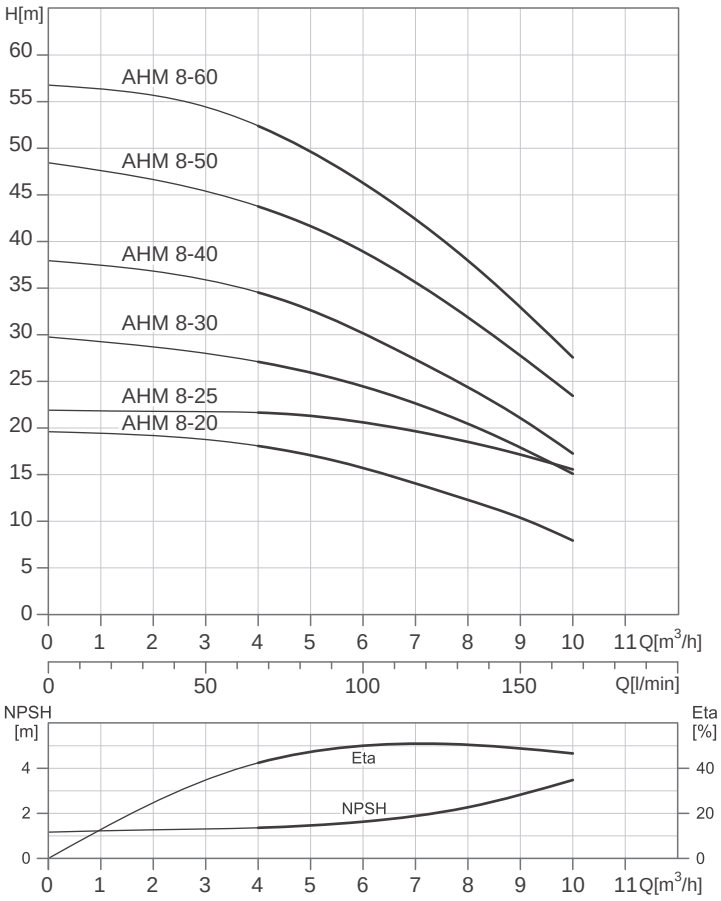
Model	Motor		Dimensions(mm)									Weight (kg)	
	P_2		L1	L2	L3	L4	B1	B2		H			
	Phase	HP						1phase	3phase	1phase	3phase	1phase	3phase
AHM 4-20	1/3	0.5	318	84	72	110	141	127	112	228	206	10.4	10.1
AHM 4-30	1/3	0.5	344	111	99	137	141	127	112	228	206	10.8	10.5
AHM 4-40	1/3	0.75	372	138	126	164	141	127	112	228	206	11.6	11.2
AHM 4-50	1/3	1.0	438	165	153	191	141	127	112	228	206	13.4	13.1
AHM 4-60	1/3	1.5	465	192	180	218	141	127	112	228	206	14 8	14 5

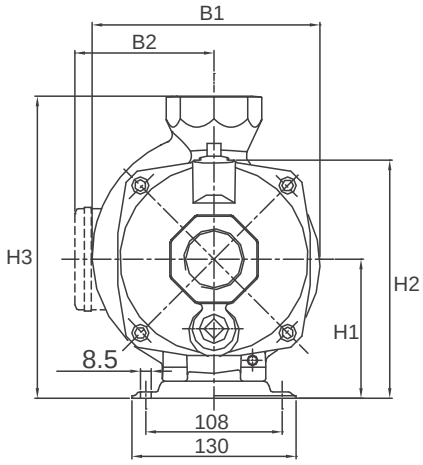
Electrical Data

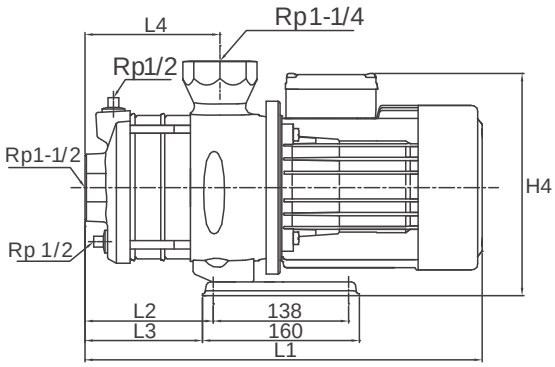
Model	1 x 220-240 V		3 x 220-240 / 380-415 V	
	P_1 [W]	$I_{1/1}$ [A]	P_1 [W]	$I_{1/1}$ [A]
AHM 4-20	560	2.6-2.5	610	2.4-2.9 / 1.4-1.7
AHM 4-30	770	3.6-3.5	790	2.5-2.9 / 1.5-1.7
AHM 4-40	960	4.4-4.1	1010	3.1-3.3 / 1.8-1.9
AHM 4-50	1160	5.3-5.0	1240	4.2-4.5 / 2.4-2.6
AHM 4-60	1430	6.7-6.4	1460	5.1-5.5 / 2.9-3.2

AHM 8

Performance Curves







Dimensions and Weights

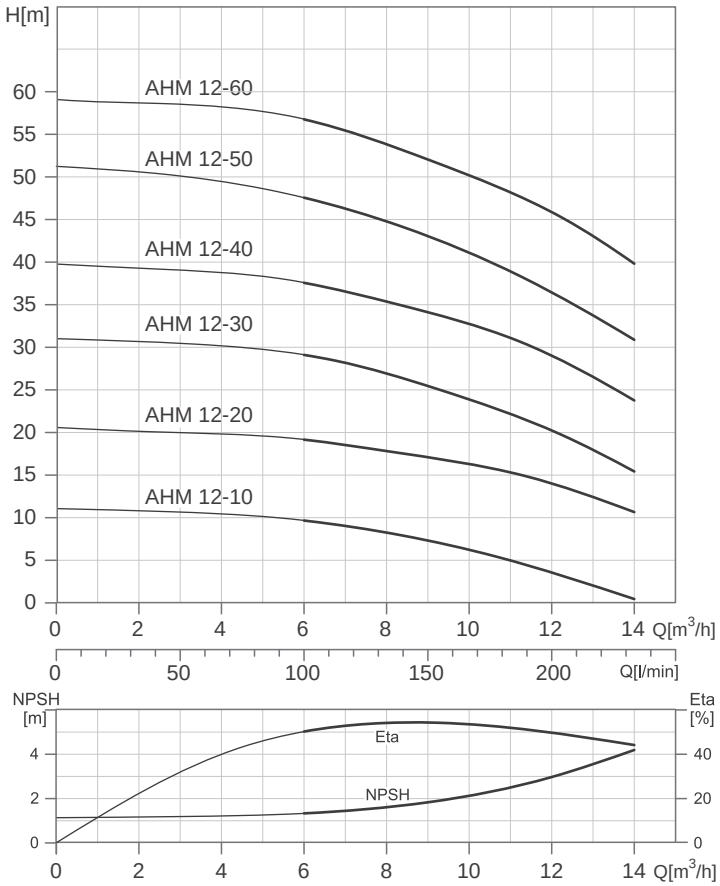
Model	Motor		Dimensions(mm)														Weight (kg)	
	P_2		L1		L2	L3	L4	B1		B2		H1	H2	H3	H4			
	Phase	HP	1phase	3phase				1phase	3phase	1phase	3phase				1phase	3phase	1phase	3phase
AHM 8-20	1/3	0.75	320	320	54	42	78	181	181	136	116	112	190	240	248	228	17.2	17
AHM 8-25	3	1.0	-	390	84	72	108	-	181	-	116	112	190	240	-	228	-	19.1
AHM 8-30	1/3	1.0	390	390	84	72	108	181	181	136	116	112	190	240	248	228	19.5	19.2
AHM 8-40	1/3	1.5	390	390	84	72	108	181	181	136	116	112	190	240	248	228	20.72	20.5
AHM 8-50	1 3	2.0 1.5	478	420	132	120	138	185	181	156	116	112	190	240	268	228	27.9	21.4
AHM 8-60	1/3	2.0	478	478	132	120	138	185	185	156	141	112	190	240	268	253	28.1	27

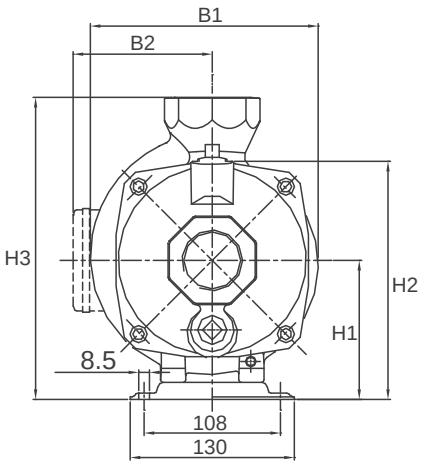
Electrical Data

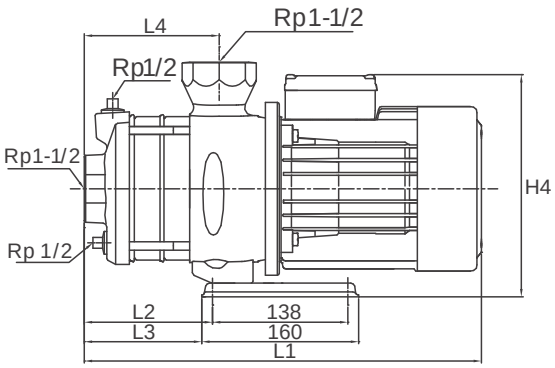
Model	1 x 220-240 V		3 x 220-240 / 380-415 V	
	P_1 [W]	$I_{1/1}$ [A]	P_1 [W]	$I_{/1}$ [A]
AHM 8-20	760	3.3-3.2	810	2.9-3.3 / 1.7-1.9
AHM 8-25	-	-	1060	3.5-3.8 / 2.0-2.2
AHM 8-30	1130	5.2-5.0	1260	4.3-4.8 / 2.5-2.8
AHM 8-40	1390	6.3-6.1	1520	5.7-6.3 / 3.3-3.7
AHM 8-50	1940	8.2-8.1	1860	5.7-6.3 / 3.4-3.7
AHM 8-60	2090	9.0-8.8	2110	6.5-7.0 / 3.8-4.1

AHM 12

Performance Curves







Dimensions and Weights

Model	Motor		Dimensions(mm)														Weight (kg)	
	P_2		L1		L2	L3	L4	B1		B2		H1	H2	H3	H4			
	Phase	HP	1phase	3phase				1phase	3phase	1phase	3phase				1phase	3phase	1phase	3phase
AHM 12-10	3	0.5	-	320	54	42	78	-	181	-	116	112	190	240	-	228	-	17.85
AHM 12-20	1/3	1.0	360	360	54	42	78	181	181	136	116	112	190	240	248	228	18.35	18.15
AHM 12-30	1/3	1.5	390	390	84	72	108	181	181	136	116	112	190	240	248	228	20.62	20.4
AHM 12-40	1/3	2	448	448	102	90	108	185	185	156	141	112	190	240	268	253	27.05	26.05
AHM 12-50	1/3	3	478	450	132	120	138	185	185	156	141	112	190	240	268	253	29.22	29.3
AHM 12-60	3	4	-	503	132	120	138	-	196	-	147	125	203	253	-	272	-	34.58

Electrical Data

Model	1 x 220-240 V		3 x 220-240 / 380-415 V	
	P_1 [W]	$I_{1/1}$ [A]	P_1 [W]	$I_{1/1}$ [A]
AHM 12-10	-	-	590	2.8-3.1 / 1.6-1.8
AHM 12-20	1160	5.3-5.1	1170	3.8-4.0 / 2.2-2.3
AHM 12-30	1680	7.8-7.4	1690	5.7-6.5 / 3.3-3.8
AHM 12-40	2400	11.0-10.6	2350	7.3-7.6 / 4.2-4.4
AHM 12-50	2910	12.7-12.2	2820	8.8-9.0 / 5.1-5.2
AHM 12-60	-	-	3320	10.6-11.4 / 6.1-6.6

Friction Loss Table

Head Loss in mWC / 100 m Pipe Due to Friction (C = 150)

C = 150 for High Density Polyethylene Pipe (HDPE)

Flow			Fr Loss & Velocity	Pipe Diameter (Inch)													
GPM	M3/H	L/sec		½"	¾"	1"	1-¼"	1-½"	2"	2-½"	3"	4"	5"	6"	8"	10"	12"
0.5	0.1	0.0	Friction loss (m WC)	0.8	0.1												
		0.0	*Velocity (m/s)*	0.25	0.11	0.06											
1	0.2	0.1	Friction loss (m WC)	**2.9**	**0.4**	**0.1**											
			Velocity (m/s)	*0.50*	*0.22*	*0.12*	*0.08*										
2	0.5	0.1	Friction loss (m WC)	**10.5**	**1.5**	**0.4**	**0.1**										
			Velocity (m/s)	*1.00*	*0.44*	*0.25*	*0.16*										
3	0.7	0.2	Friction loss (m WC)	**22.2**	**3.1**	**0.8**	**0.3**	**0.1**									
			Velocity (m/s)	*1.49*	*0.66*	*0.37*	*0.24*	*0.17*									
4	0.9	0.3	Friction loss (m WC)	**37.9**	**5.3**	**1.3**	**0.4**	**0.2**									
			Velocity (m/s)	*1.99*	*0.89*	*0.50*	*0.32*	*0.22*									
5	1.1	0.3	Friction loss (m WC)	**57.2**	**7.9**	**2.0**	**0.7**	**0.3**	**0.1**								
		0.3	*Velocity (m/s)*	*2.49*	*1.11*	*0.62*	*0.40*	*0.28*	*0.16*								
10	2.3	0.6	Friction loss (m WC)		**28.6**	**7.1**	**2.4**	**1.0**	**0.2**	**0.1**							
			Velocity (m/s)		*2.21*	*1.24*	*0.80*	*0.55*	*0.31*	*0.20*							
15	3.4	0.9	Friction loss (m WC)		**60.6**	**14.9**	**5.0**	**2.1**	**0.5**	**0.2**	**0.1**						
			Velocity (m/s)		*3.32*	*1.87*	*1.19*	*0.83*	*0.47*	*0.30*	*0.21*						
20	4.5	1.3	Friction loss (m WC)			**25.4**	**8.6**	**3.5**	**0.9**	**0.3**	**0.1**						
			Velocity (m/s)			*2.49*	*1.59*	*1.11*	*0.62*	*0.40*	*0.28*						
30	6.8	1.9	Friction loss (m WC)				**18.2**	**7.5**	**1.8**	**0.6**	**0.3**	**0.1**					
			Velocity (m/s)				*2.39*	*1.66*	*0.93*	*0.60*	*0.41*	*0.23*					
40	9.1	2.5	Friction loss (m WC)				**30.9**	**12.7**	**3.1**	**1.1**	**0.4**	**0.1**					
			Velocity (m/s)				*3.19*	*2.21*	*1.24*	*0.80*	*0.55*	*0.31*					
50	11.4	3.2	Friction loss (m WC)				**46.7**	**19.2**	**4.7**	**1.6**	**0.7**	**0.2**	**0.1**				
			Velocity (m/s)				*3.98*	*2.77*	*1.56*	*1.00*	*0.69*	*0.39*	*0.25*				
60	13.6	3.8	Friction loss (m WC)				**65.5**	**26.9**	**6.6**	**2.2**	**0.9**	**0.2**	**0.1**				
			Velocity (m/s)				*4.78*	*3.32*	*1.87*	*1.19*	*0.83*	*0.47*	*0.30*				
70	15.9	4.4	Friction loss (m WC)					**35.8**	**8.8**	**3.0**	**1.2**	**0.3**	**0.1**				
			Velocity (m/s)					*3.87*	*2.18*	*1.39*	*0.97*	*0.54*	*0.35*				
80	18.2	5.0	Friction loss (m WC)					**45.9**	**11.3**	**3.8**	**1.6**	**0.4**	**0.1**	**0.1**			
			Velocity (m/s)					*4.43*	*2.49*	*1.59*	*1.11*	*0.62*	*0.40*	*0.28*			
90	20.4	5.7	Friction loss (m WC)						**14.1**	**4.7**	**2.0**	**0.5**	**0.2**	**0.1**			
			Velocity (m/s)						*2.80*	*1.79*	*1.24*	*0.70*	*0.45*	*0.31*			
100	22.7	6.3	Friction loss (m WC)						**17.1**	**5.8**	**2.4**	**0.6**	**0.2**	**0.1**			
			Velocity (m/s)						*3.11*	*1.99*	*1.38*	*0.78*	*0.50*	*0.35*			
150	34.1	9.5	Friction loss (m WC)						**36.1**	**12.2**	**5.0**	**1.2**	**0.4**	**0.2**			
			Velocity (m/s)						*4.67*	*2.99*	*2.07*	*1.17*	*0.75*	*0.52*			
200	45.4	12.6	Friction loss (m WC)							**20.8**	**8.5**	**2.1**	**0.7**	**0.3**	**0.1**		
			Velocity (m/s)							*3.98*	*2.77*	*1.56*	*1.00*	*0.69*	*0.39*		
250	56.8	15.8	Friction loss (m WC)								**12.9**	**3.2**	**1.1**	**0.4**	**0.1**		
			Velocity (m/s)								*3.46*	*1.94*	*1.24*	*0.86*	*0.49*		
300	68.1	18.9	Friction loss (m WC)								**18.1**	**4.5**	**1.5**	**0.6**	**0.2**	**0.1**	
			Velocity (m/s)								*4.15*	*2.33*	*1.49*	*1.04*	*0.58*	*0.37*	
400	90.8	25.2	Friction loss (m WC)									**7.6**	**2.6**	**1.1**	**0.3**	**0.1**	
			Velocity (m/s)									*3.11*	*1.99*	*1.38*	*0.78*	*0.50*	
500	113.6	31.5	Friction loss (m WC)									**11.5**	**3.9**	**1.6**	**0.4**	**0.1**	**0.1**
			Velocity (m/s)									*3.89*	*2.49*	*1.73*	*0.97*	*0.62*	*0.43*
600	136.3	37.9	Friction loss (m WC)										**5.4**	**2.2**	**0.5**	**0.2**	**0.1**
			Velocity (m/s)										*2.99*	*2.07*	*1.17*	*0.75*	*0.52*
700	159.0	44.2	Friction loss (m WC)										**7.2**	**3.0**	**0.7**	**0.2**	**0.1**
			Velocity (m/s)										*3.48*	*2.42*	*1.36*	*0.87*	*0.61*
800	181.7	50.5	Friction loss (m WC)										**9.2**	**3.8**	**0.9**	**0.3**	**0.1**
			Velocity (m/s)										*3.98*	*2.77*	*1.56*	*1.00*	*0.69*
900	204.4	56.8	Friction loss (m WC)											**4.7**	**1.2**	**0.4**	**0.2**
			Velocity (m/s)											*3.11*	*1.75*	*1.12*	*0.78*
1000	227.1	63.1	Friction loss (m WC)											**5.7**	**1.4**	**0.5**	**0.2**
			Velocity (m/s)											*3.46*	*1.94*	*1.24*	*0.86*
1200	272.5	75.7	Friction loss (m WC)											**8.0**	**2.0**	**0.7**	**0.3**
			Velocity (m/s)											*4.15*	*2.33*	*1.49*	*1.04*
1500	340.7	94.6	Friction loss (m WC)											**12.1**	**3.0**	**1.0**	**0.4**
			Velocity (m/s)											*5.19*	*2.92*	*1.87*	*1.30*
2000	454.2	126.2	Friction loss (m WC)												**5.1**	**1.7**	**0.7**
			Velocity (m/s)												*3.89*	*2.49*	*1.73*
3000	681.4	189.3	Friction loss (m WC)													**3.6**	**1.5**
			Velocity (m/s)													*3.73*	*2.59*

Notes:

1. Values shown above are used in the Hazen-Williams Equation for flow in pipes. Feet of head loss values shown in the tables were developed using the Hazen-Williams equation.
2. Feet of head loss values are subject to the following conditions:

a) Pipes carrying clear water at approximately 60° F (15.6° C).

b) Pipes are flowing full.

c) Velocities of water are generally less than 3 m/sec.

Note: HDPE is commonly sized by outside diameter. If in doubt, use the next smaller pipe size.