



Technical Catalogue



FHM Series

Horizontal multistage centrifugal pump

FHM

HORINZONTAL MULTISTAGE CENTRIFUGAL PUMP

Introduction

FHM Series non self-priming horizontal multistage centrifugal pump drives the fluid to rotate to complete the liquid transportation with the centrifugal force produced by the impeller of the rotary pump. The series is equipped with non-standard customized motor, which mounted on the same motor shaft to connect the impeller, diffuser and mechanical seal tightly, and is installed on the bottom plate for connection.

FHM series horizontal multi-stage centrifugal pump with back pullout construction adopts the structure design of axial thread inlet and radial thread outlet. Its balanced impeller reduces the axial thrust of motor bearing and prolongs the service life of motor bearing. According to the special application and installation mode of household, industrial and construction service market, three design schemes of

FHM series provide a variety of solutions to meet different usage habits.

Motor

- Totally enclosed, fan-cooled, 2-pole standard motors
- Enclosure class: IP55
- Insulation class: F
- Voltage: 3x220-240/380-415V
1x220-240V
- Available with single-phase motors(0.37kW-2.2kW)

Liquid temperature °C

- Normal temperature pump: -15°C to +70°C
- Hot temperature pump: -15°C to +105°C

Performance curves

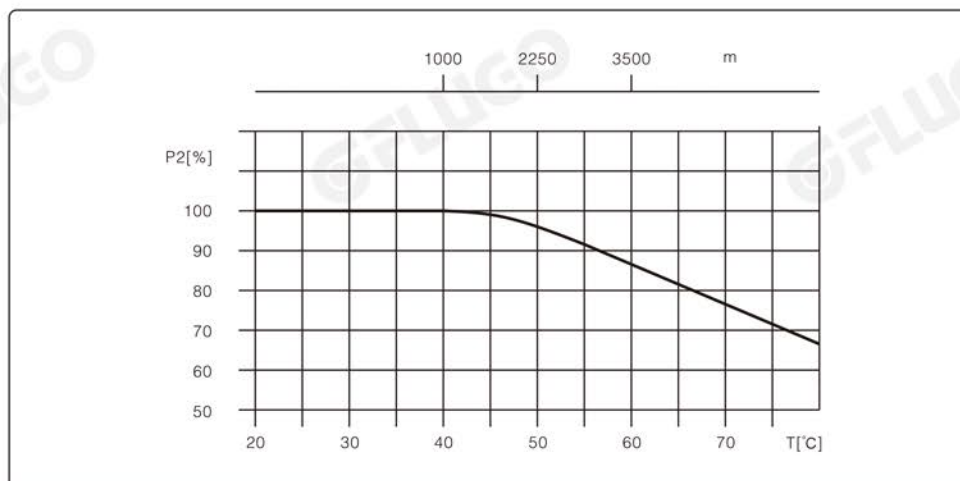
- The motors used for the measurements are based on 2900rpm or 2950 rpm
- Tolerances to ISO 9906
- Measurements have been made with airless water at a temperature of 20 °C
- The curves apply to the following kinematic viscosity:
= 1 mm²/s
- Select a best efficiency of the pump which is operating within the bold curve of the pump performance.

Pump operating conditions

- Pumping liquids which are thin, clean, non-flammable, non-combustible or non-explosive liquids, not containing solid particles or fibers.
- Maximum ambient temperature: +40 °C
- Maximum altitude above sea level: 1000 m

Ambient temperature

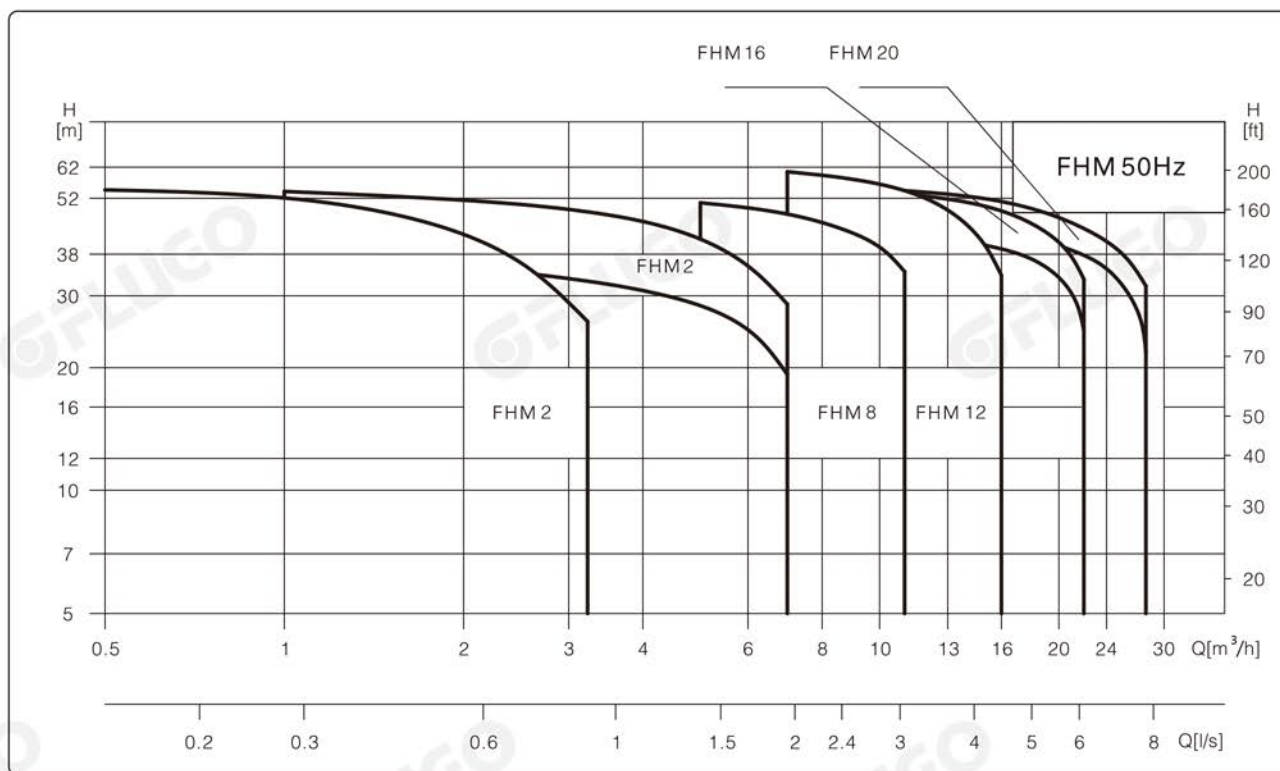
If the ambient temperature exceeds the 40 °C or the pump is installed at an altitude exceeding 1000 m, the motor output power P₂ will decrease. In such cases, it necessary to use a motor with a higher rated output.



HORIZONTAAL MULTISTAGE CENTRIFUGAL PUMP

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Pump performance range



Minimum inlet pressure, NPSH

Cavitation may occur if the following conditions exist during the operation of the water pump:

- The water tank or pool is lower than the water pump inlet;
- High liquid temperature;
- Actual flow significantly greater than rated flow;
- Pressure in the pump lower than the vaporization pressure of the conveying liquid.

To avoid cavitation, make sure there is a minimum pressure on the inlet side of the pump. The maximum suction range H (m) can be calculated as follows:

P_b = Atmospheric pressure (atmospheric pressure can be set to 1 bar),
in closed system, P_b is system pressure

H_f = Net positive suction head (can be read from the maximum possible flow rate of the pump on the NPSH curve)

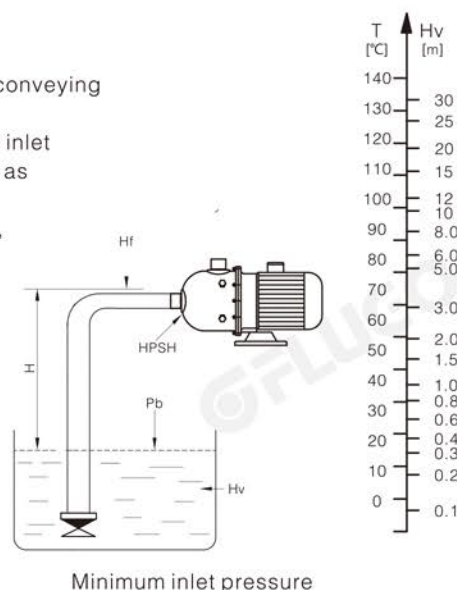
H_f = Pipeline loss at inlet

H_v = Vaporization pressure

H_s = Safety margin = Minimum 0.5m head

If the calculated value of H is positive, the pump can be operated at the maximum suction range H.

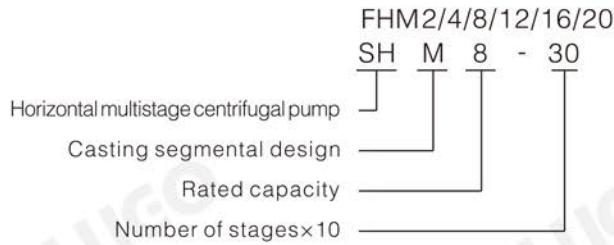
If the calculated H is negative, there must be a head with minimum inlet pressure H.



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Model specification



Applications

Water supply

- Water filter
- Supercharging
- Pressurization of hotels
- Industrial pressurization

Industrial boosting

- Cleaning system
- High pressure flushing system
- Firefighting system
- Car cleaning equipment

Water treatment

- Ultrafiltration system
- Reverse osmosis system
- Distillation system
- Separator
- Swimming pool

Irrigation

- Regional irrigation
- Sprinkler irrigation
- Drip irrigation
- Greenhouse irrigation

Industrial liquid transport

- Cooling air conditioning system
- Boiler feed water
- Condensing system and cooling tower
- Machine tool cooling lubrication system

HORIZONTAAL MULTISTAGE CENTRIFUGAL PUMP

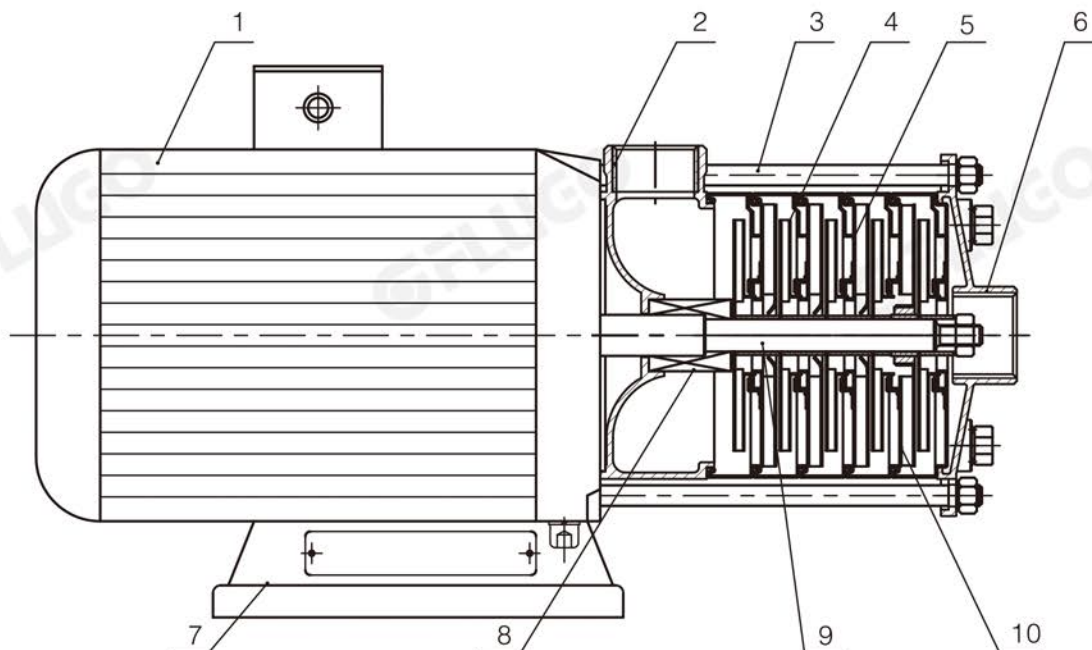
FHM

FHM Product range introduction

Parameter	FHM 2	FHM 4	FHM 8	FHM 12	FHM 16	FHM 20
Rated flow rate [m ³ /h]	2	4	8	12	16	20
Rated flow rate [l/s]	0.56	1.1	2.2	3.3	4.4	5.6
Flow rate [m ³ /h]	0.6~3.2	1~7	5~11	7~16	8~22	10~28
Flow rate [l/s]	0.17~0.89	0.28~1.9	1.39~3	1.9~4.4	2.2~6.1	2.8~7.8
Maximum pressure [bar]	5.3	5.6	5	6	5.3	5.3
Power [kW]	0.37~0.75	0.37~1.1	0.75~2.2	1.2~3	2.2~4	2.2~4.4
Temperature range [°C]	-15~105					
Highest efficiency [%]	46	58	62	63	66	69
Thread connection						
Outlet	Rp1	Rp1	Rp1 $\frac{1}{4}$	Rp1 $\frac{1}{2}$	Rp2	Rp2
Inlet	Rp1	Rp1 $\frac{1}{4}$	Rp1 $\frac{1}{2}$	Rp1 $\frac{1}{2}$	Rp2	Rp2

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HORINZONTAL MULTISTAGE CENTRIFUGAL PUMP

Structure FHM2,4,8,12,16,20**Materials FHM2,4,8,12,16,20**

No.	Spare parts	Material	GB	EN/DIN	AISI/ASTM
1	Motor	/	/	/	/
2	Outlet	Stainless steel	GB/T20878-06Cr19Ni10	EN 10088-1.4301	AISI304
3	Tie rod	Stainless steel	GB/T20878-06Cr19Ni10	EN 10088-1.4301	AISI304
4	Impeller	Stainless steel	GB/T20878-06Cr19Ni10	EN 10088-1.4301	AISI304
5	Diffuser	Stainless steel	GB/T20878-06Cr19Ni10	EN 10088-1.4301	AISI304
6	Inlet	Stainless steel	GB/T20878-06Cr19Ni10	EN 10088-1.4301	AISI304
7	Bottom seat	Steel	/	/	/
8	Mechanical seal	/	/	/	/
9	Extend shaft	Stainless steel	GB/T20878-06Cr19Ni10	EN 10088-1.4301	AISI304
10	Support diffuser	Stainless steel	GB/T20878-06Cr19Ni10	EN 10088-1.4301	AISI304

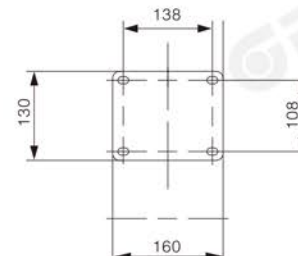
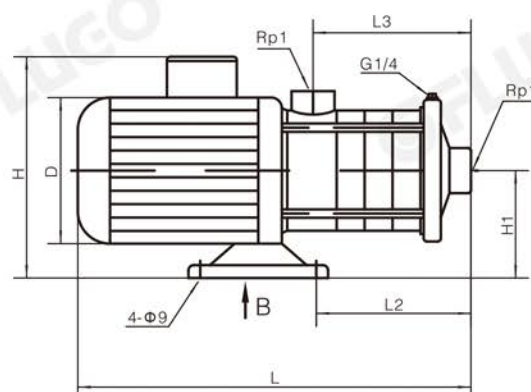
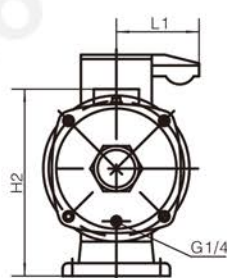
HORIZONTAAL MULTISTAGE CENTRIFUGAL PUMP

FHM 2

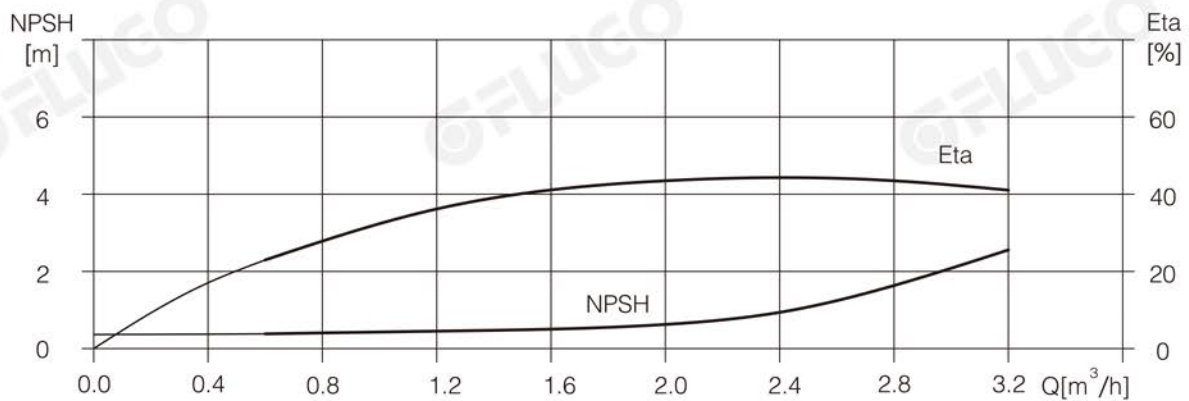
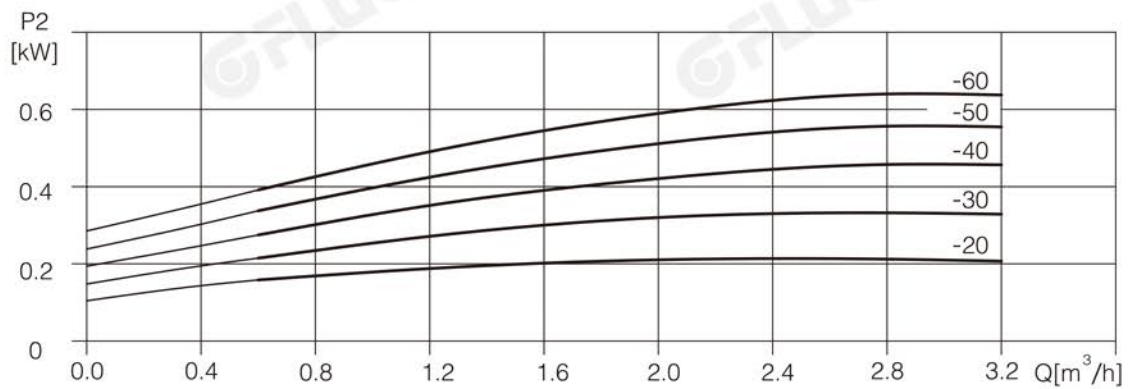
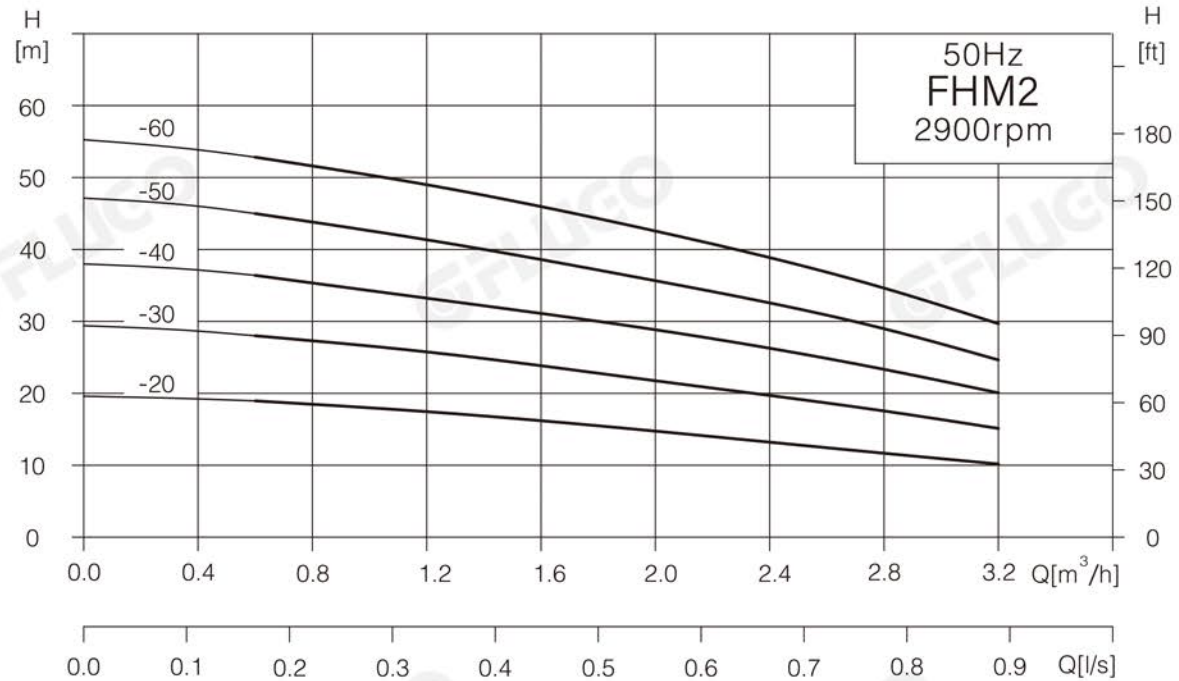
Performance data

Model	Power		Q (m ³ /h)	0.6	1.2	1.6	2	2.4	2.8	3.2
	(kW)	(HP)								
FHM2-20	0.37	0.5	H (m)	18.6	17.6	16	15	13.5	10.6	9.3
FHM2-30	0.37	0.5		27.7	26	24	22	19.5	16.5	13.5
FHM2-40	0.55	0.75		35.7	34	32	29	25.5	23.5	19
FHM2-50	0.55	0.75		45	42	39	36	33	28	24.5
FHM2-60	0.75	1		53	50	47.5	43.5	39	34	29.5

Installation dimensions and weight



Motor	Model	Dimension (mm)								Weight (kg)
		L	L1	L2	L3	H	H1	H2	D	
3ph/1ph	FHM2-20	314	/96	90	87	205/235	100	174	137	13
	FHM2-30	332	/96	108	105	205/235	100	174	137	13
	FHM2-40	350	/96	126	123	205/235	100	174	137	14
	FHM2-50	368	/96	144	141	205/235	100	174	137	14
	FHM2-60	446	/100	172	159	225/255	110	184	156	16

FHM 2**HORINZONTAL MULTISTAGE CENTRIFUGAL PUMP****Performance Curve**

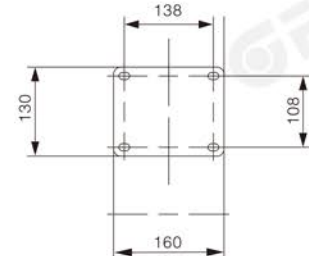
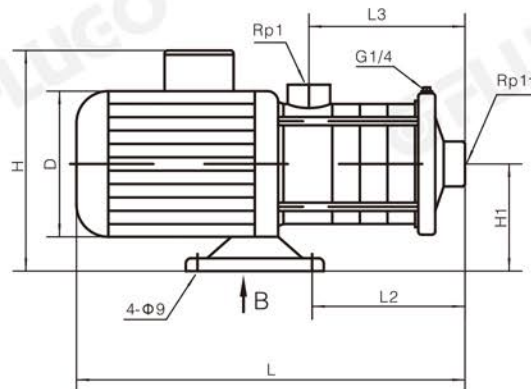
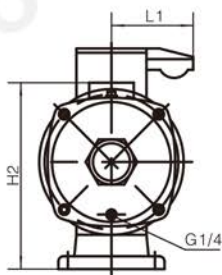
HORIZONTA L MULTISTAGE CENTRIFUGAL PUMP

FHM 4

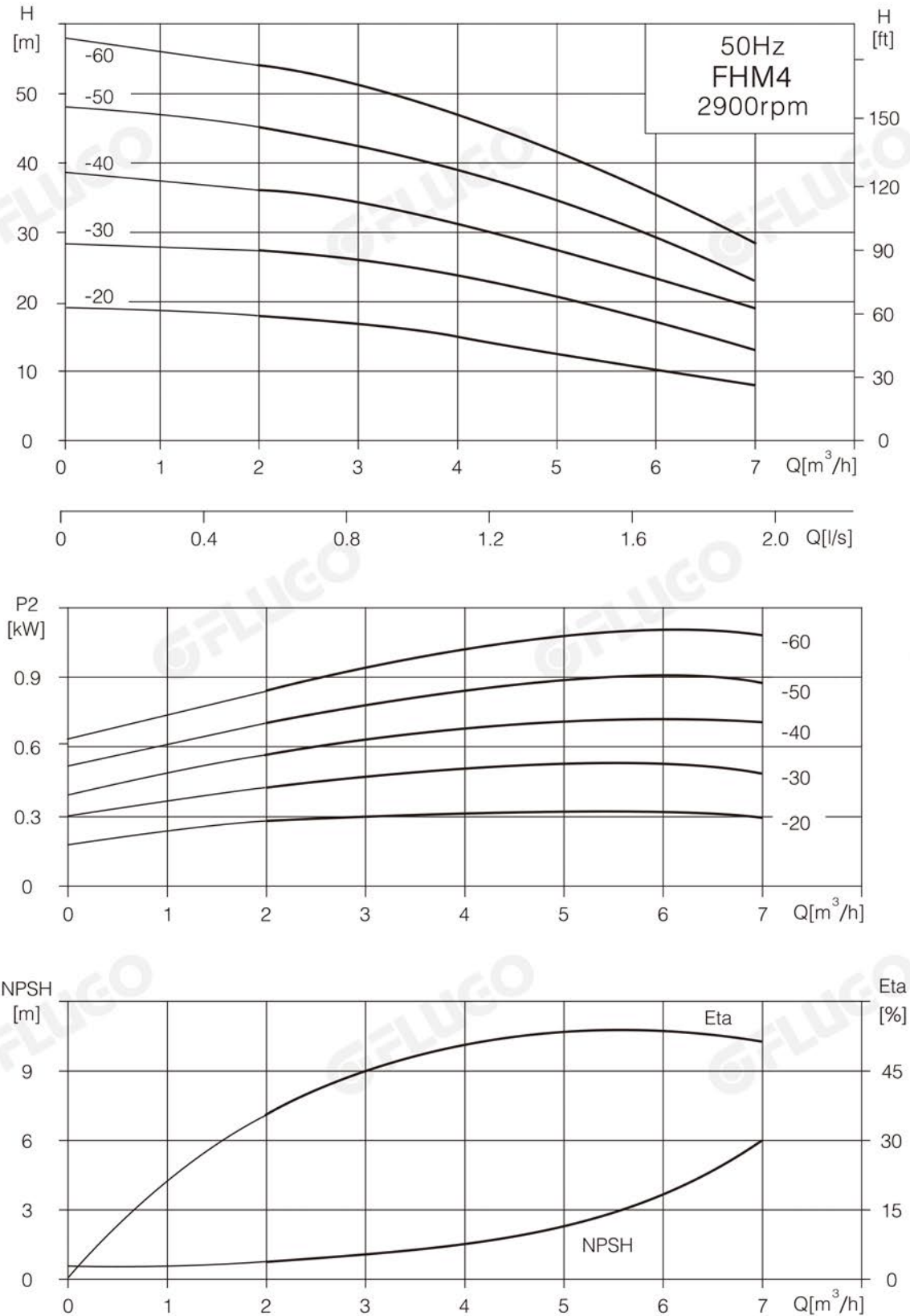
Performance data

Model	Power		Q (m ³ /h)	1	2	3	4	5	6	7
	(kW)	(HP)								
FHM4-20	0.37	0.55	H (m)	19	18	17	15	12.5	10	7.5
FHM4-30	0.55	0.75		28	27	26	23.5	20.5	17	13
FHM4-40	0.75	1		37.5	36	34	31	27	23	19
FHM4-50	1.1	1.5		47	45	42.5	39	34	29	23
FHM4-60	1.1	1.5		56	54	51	47	41.5	35.5	28

Installation dimensions and weight



Motor	Model	Dimension (mm)								Weight (kg)
		L	L1	L2	L3	H	H1	H2	D	
3ph/1ph	FHM4-20	332	/96	108	105	205/235	100	174	137	13
	FHM4-30	359	/96	135	132	205/235	100	174	137	13
	FHM4-40	446	/100	172	159	225/255	110	184	156	14
	FHM4-50	473	/100	199	186	225/255	110	184	156	16
	FHM4-60	500	/100	226	213	225/255	110	184	156	16

FHM 4**HORINZONTAL MULTISTAGE CENTRIFUGAL PUMP****Performance Curve**

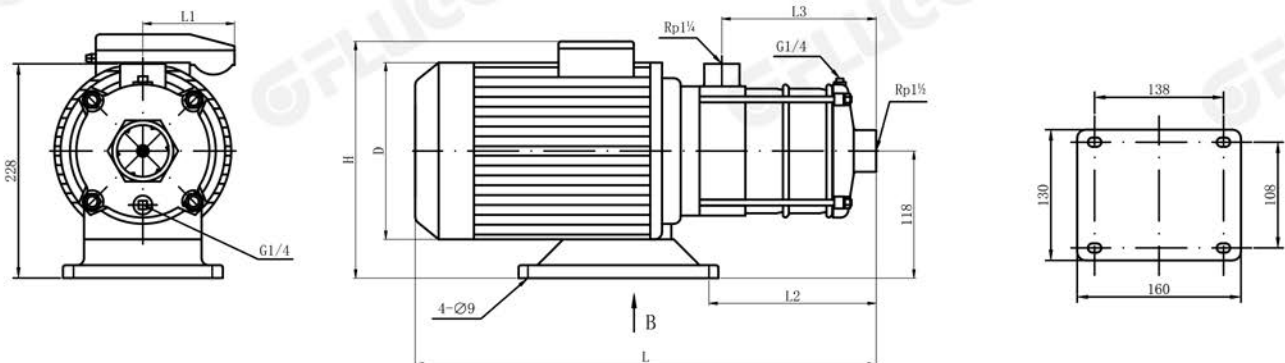
HORIZONTA L MULTISTAGE CENTRIFUGAL PUMP

FHM 8

Performance data

Model	Power		Q (m ³ /h)	5	6	7	8	9	10	11
	(kW)	(HP)								
FHM8-10	0.75	1	H (m)	10	9.5	9.3	9	8	7.5	7
FHM8-20	0.75	1		19.5	19	18.5	17.5	16.5	15	13.5
FHM8-30	1.1	1.5		29	28.5	27.5	26.5	24	22	20
FHM8-40	1.5	2		39	38	36.5	35	32	29.5	26
FHM8-50	2.2	3		50.5	49	46.5	44	41	38	33

Installation dimensions and weight

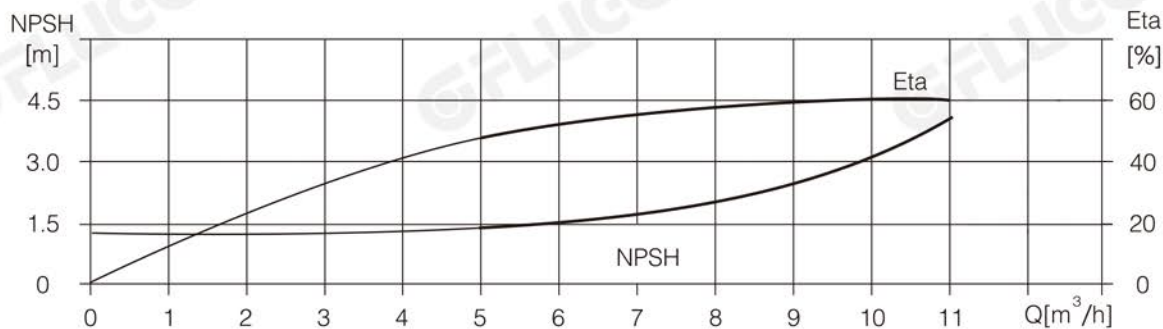
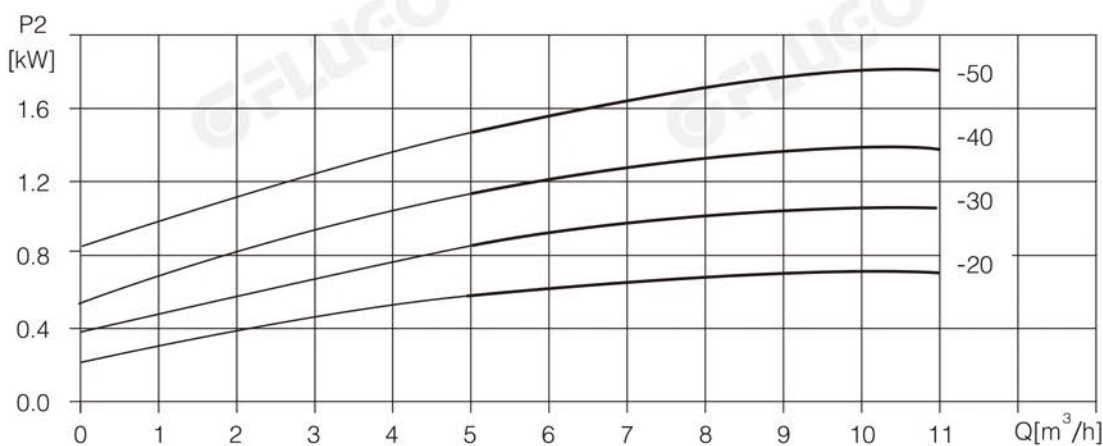
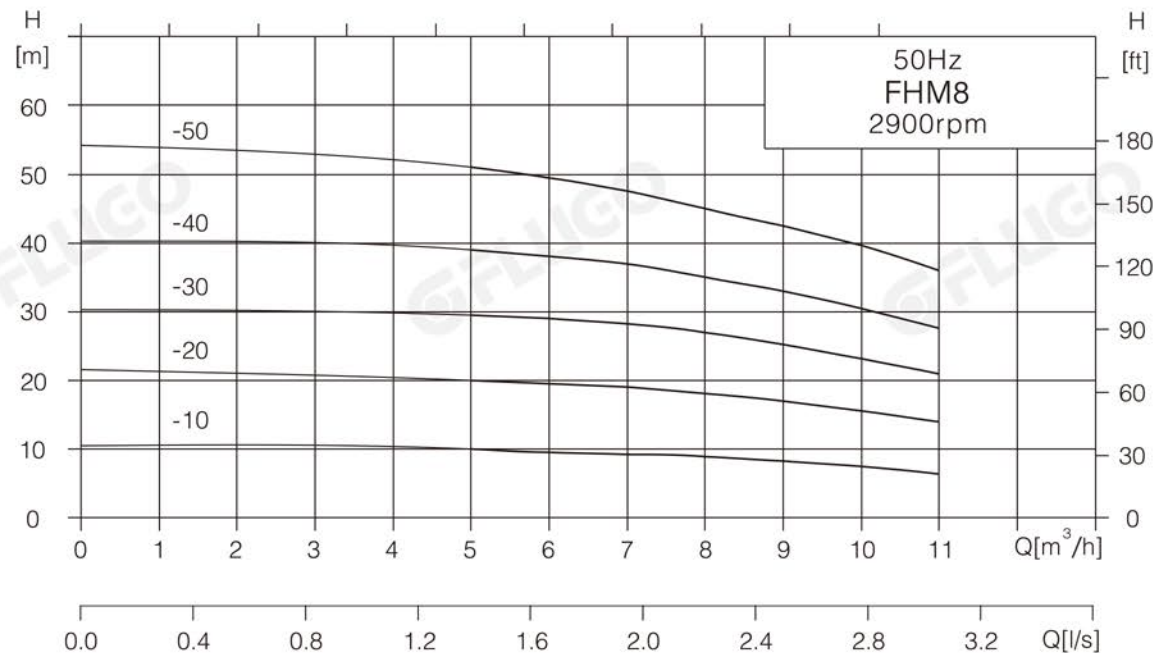


Motor	Model	Dimension (mm)						Weight (kg)
		L	L1	L2	L3	H	D	
3ph/1ph	FHM8-10	395	/100	126	108	230/265	165	20
	FHM8-20	425	/100	130	108	225/255	156	20
	FHM8-30	455	/100	160	138	225/255	156	24
	FHM8-40	493	/100	190	168	240/270	165	28
	FHM8-50	523	/100	220	198	240/270	165	30

FHM 8

HORINZONTAL MULTISTAGE CENTRIFUGAL PUMP

Performance Curve



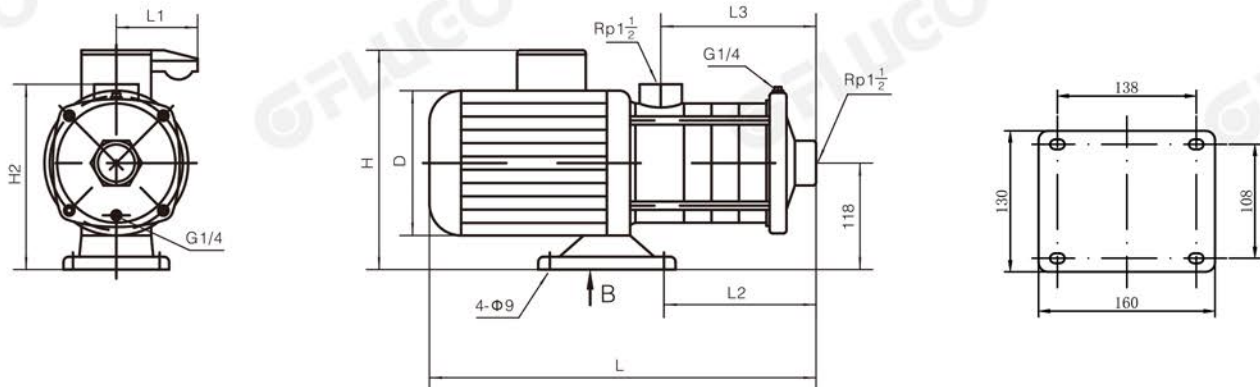
HORIZONTAAL MULTISTAGE CENTRIFUGAL PUMP

FHM 12

Performance data

Model	Power		Q (m ³ /h)	7	9	11	12	13	15	16
	(kW)	(HP)								
FHM12-10	0.75	1	H (m)	11.5	11	10	9.5	9	7	6
FHM12-20	1.2	2		23	22	20.5	19.5	18.5	15.5	13
FHM12-30	1.8	2.4		35	33.5	31	29.5	28	23.5	20
FHM12-40	2.4	3.3		47	45	41.5	39.5	37.5	31.5	27.5
FHM12-50	3	4		60	56.5	52.5	50	47	40	35

Installation dimensions and weight

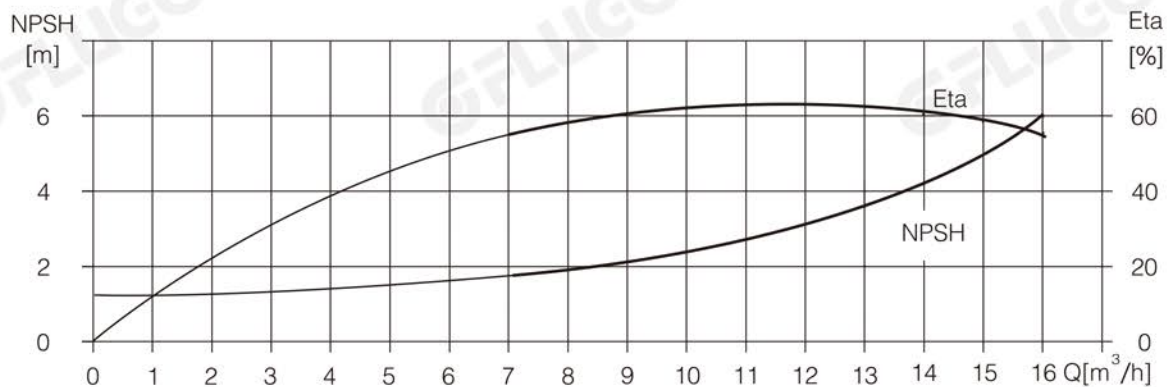
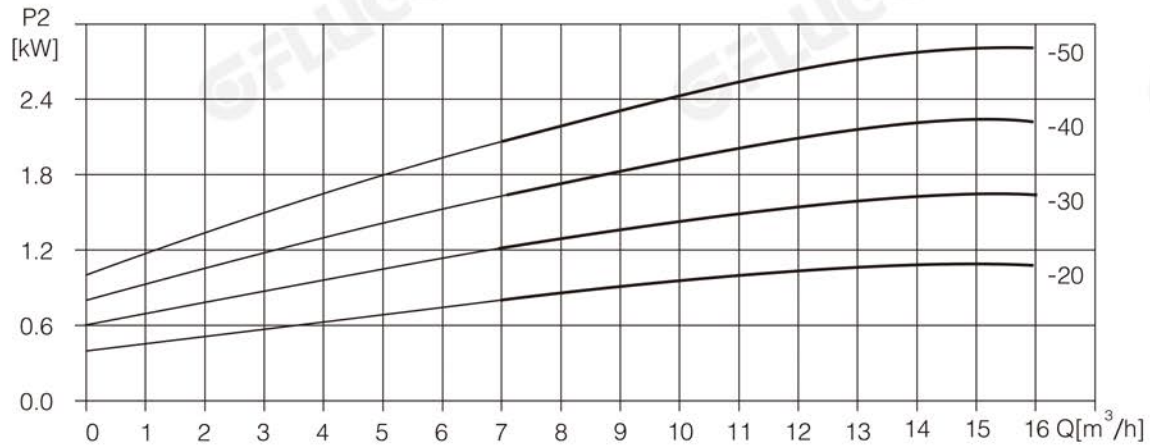
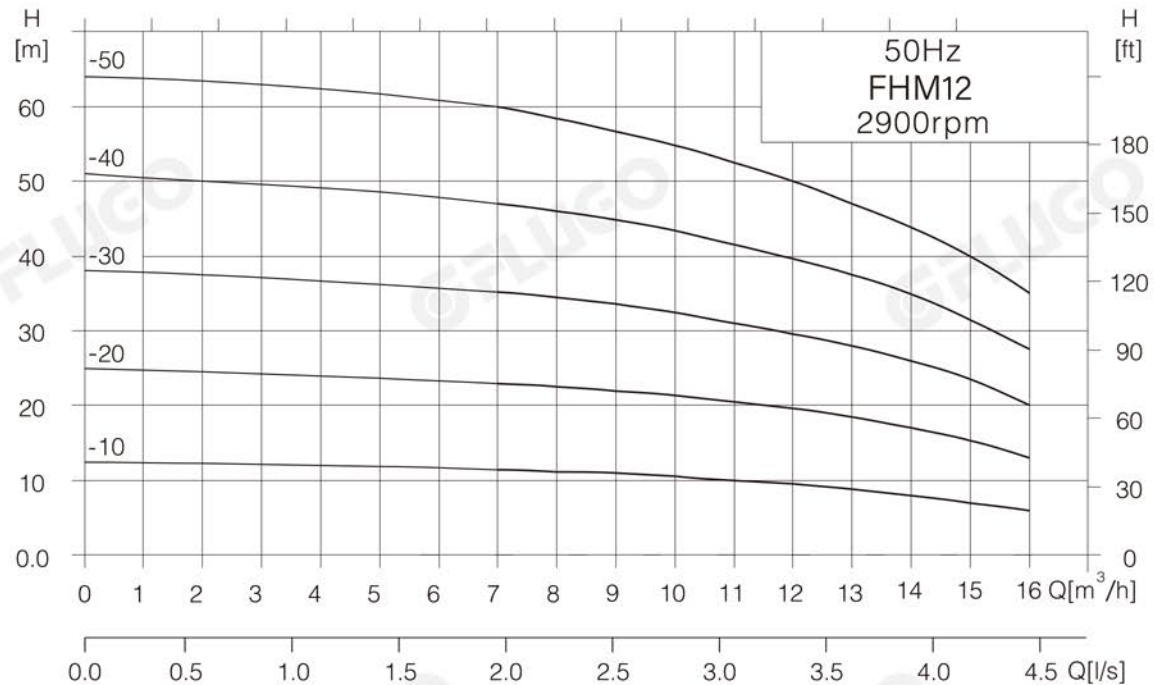


Motor	Model	Dimension (mm)							Weight (kg)
		L	L1	L2	L3	H	H2	D	
3ph/1ph	FHM12-10	395	/100	126	108	230/265	227	165	20
	FHM12-20	425	/100	130	108	225/255	228	156	21
	FHM12-30	462	/100	160	138	240/270	228	165	25
	FHM12-40	492	/100	190	168	240/270	228	165	29
	FHM12-50	535		220	198	270/	240	177	34

FHM 12

HORIZONTAL MULTISTAGE CENTRIFUGAL PUMP

Performance Curve



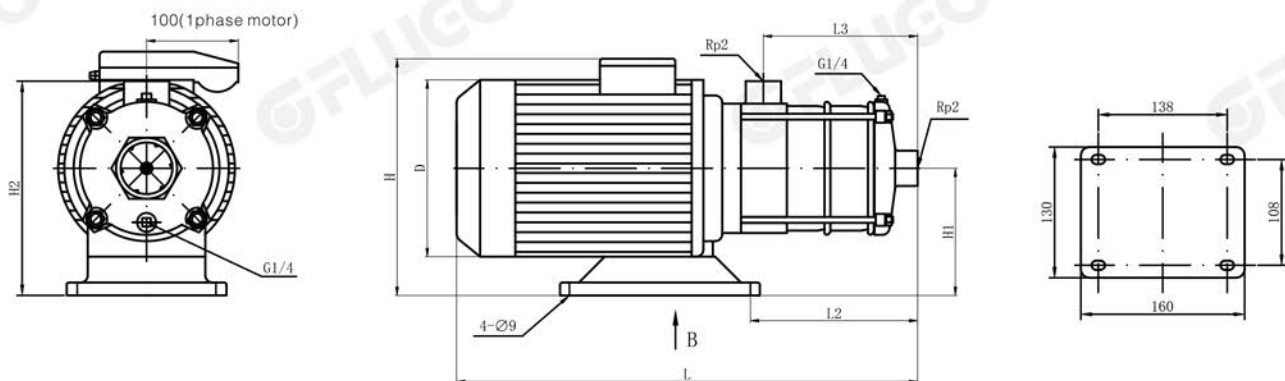
HORIZONTA L MULTISTAGE CENTRIFUGAL PUMP

FHM 16

Performance data

Model	Power		Q (m ³ /h)	8	10	12	14	16	18	20	22
	(kW)	(HP)									
FHM16-10	1.1	2	H (m)	12.8	12.5	12	11.5	10.5	9.5	8	7
FHM16-20	2.2	3		26	25	24	23	21.6	20	18	15.5
FHM16-30	3	4		40	39	38	36	34	31.5	29	25
FHM16-40	4	5.5		53.5	52	50	48	45	42	38	33.5

Installation dimensions and weight

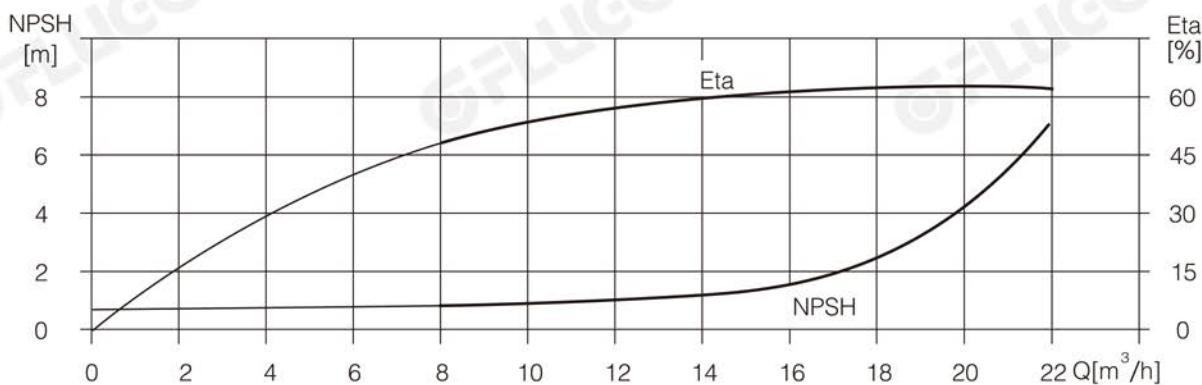
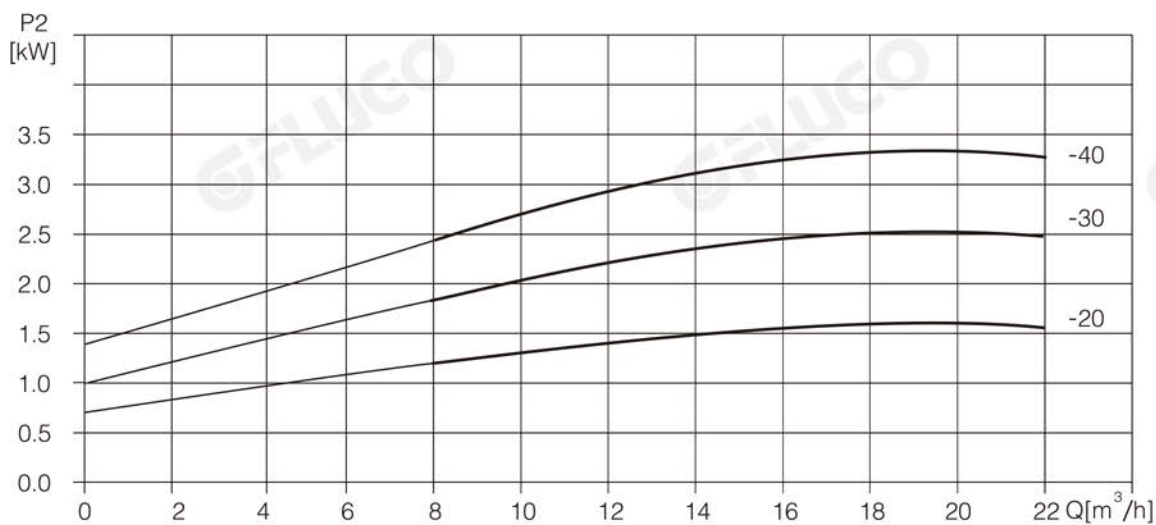
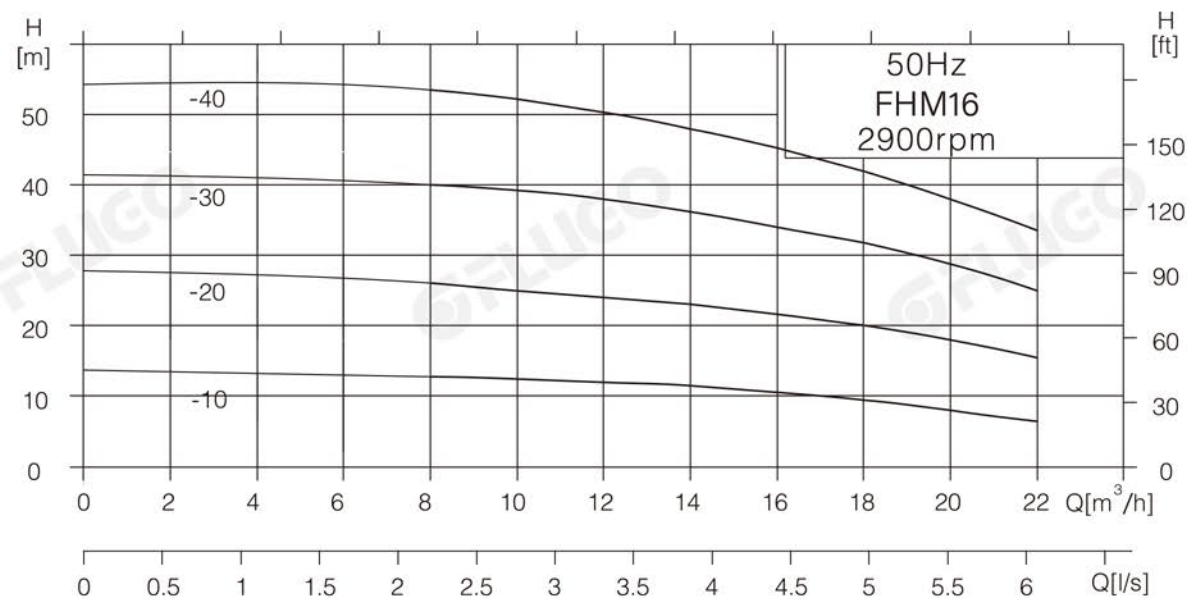


Model	Dimension (mm)							Weight (kg)
	L	L2	L3	H	H1	H2	D	
FHM16-10	423	151	126	230/265	117	227	165	17.5
FHM16-20	458	155	126	240/270	118	228	165	27
FHM16-30	515	195	171	270/	132	242	177	33
FHM16-40	578	245	216	270/	132	242	220	40

FHM 16

HORINZONTAL MULTISTAGE CENTRIFUGAL PUMP

Performance Curve



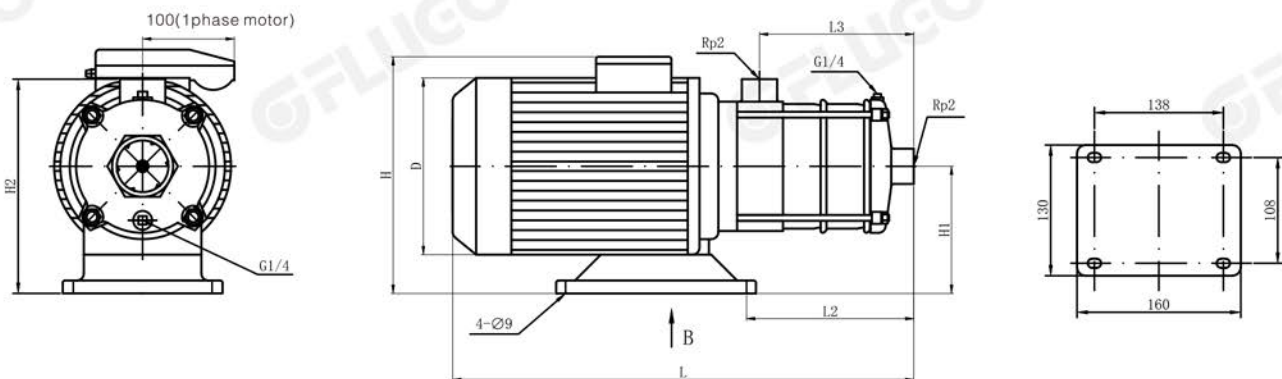
HORIZONTAAL MULTISTAGE CENTRIFUGAL PUMP

FHM 20

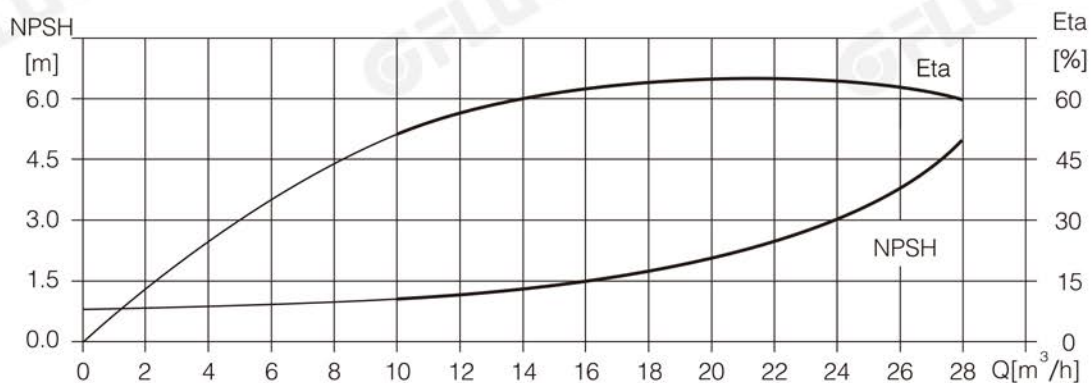
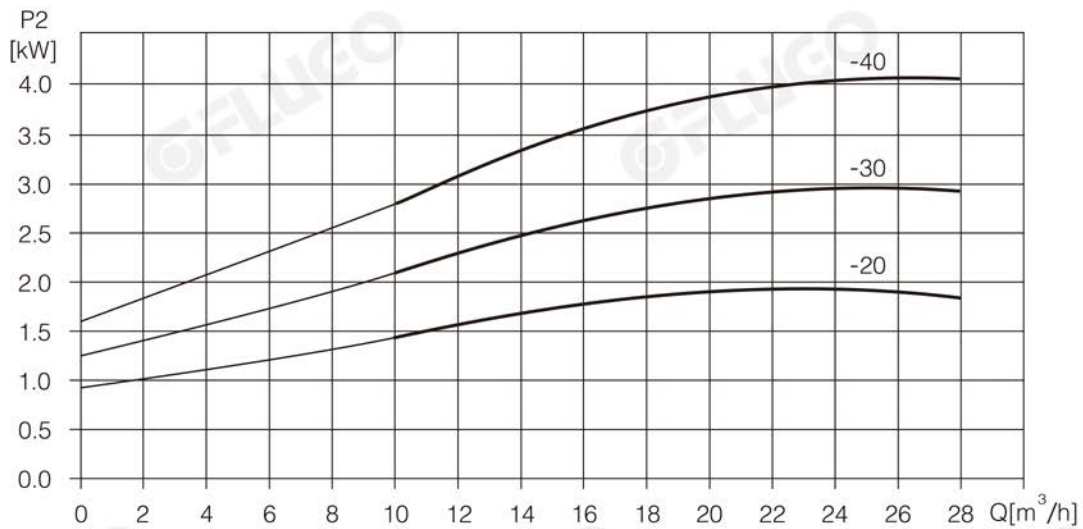
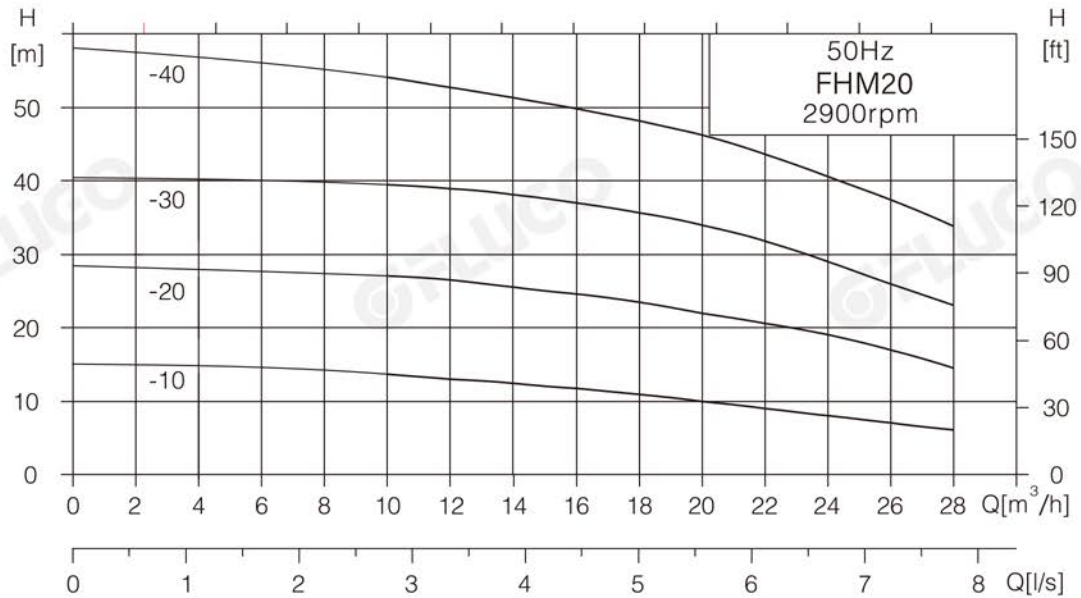
Performance data

Model	Power		Q (m ³ /h)	10	14	16	18	20	22	24	28
	(kW)	(HP)									
FHM20-10	1.1	1.5	H (m)	13.5	12.5	12	11	10	9	8	6
FHM20-20	2.2	3		27	25.5	25	23.5	22	20.5	18.5	14.5
FHM20-30	4	5.5		39.5	38	37.5	35.5	34	31	29	23
FHM20-40	4.4	6		53	51	50	48.5	46.5	43	40	32.5

Installation dimensions and weight



Model	Dimension (mm)							Weight (kg)
	L	L2	L3	H	H1	H2	D	
FHM20-10	423	151	126	230/265	117	227	170	17.5
FHM20-20	458	155	126	240/270	118	228	180	27
FHM20-30	530	195	171	270/	132	242	220	40
FHM20-40	578	240	216	270/	132	242	220	44

FHM 20**HORINZONTAL MULTISTAGE CENTRIFUGAL PUMP****Performance Curve**

Authorized Distributor



FHM Series - Horizontal Multistage
Centrifugal Pump