

# CHL 50Hz/60Hz

Light Horizontal Multistage Centrifugal Pump

# CHLK/CHLF(T)



# Company Profile



Hangzhou Nanfang Special Pump Industry Co., Ltd. is specialized in manufacture of stainless steel multistage pumps, integrating scientific research, production and marketing. Since its establishment ten years ago, the company has devoted considerable efforts to innovation and management. The company has successfully developed various kinds of pumps which are applicable to industrial and mining enterprises, municipal water supply, farm irrigation, petrochemical engineering, domestic water and fire water supply of high buildings, industrial water treatment, water purification, pharmaceutical industry, boiler, air-conditioning system etc. The main performances of CDL series stainless steel multistage vertical pump, TD in-line circulation pump, SJ series stainless steel multistage deep-well submersible pump, CDLK, CDLKF immersion type multi-stage centrifugal pump, CHL/CHLK/CHLF series stainless steel multistage horizontal pumps and QY series stainless steel pump conveying mixed gas and liquid, ZS series stainless steel horizontal single-stage centrifugal pump, MS series light stainless steel horizontal single-stage centrifugal pump, have fully reached international advanced level.

Besides designing pumps with advanced tools such as three-dimensional CAD and CFD software, the company boasts a complete set of precision manufacturing and inspection equipment. With perfect quality control system, the company has passed ISO9001 Quality System Certification, ISO14001 Environment Management System Certificate, and obtained CE Mark also. The company sell products well not only at home, but also in foreign countries, Europe, America, Southeastern Asia etc, gaining popularity due to their excellent quality, good credit standing and considerate after-sales service.

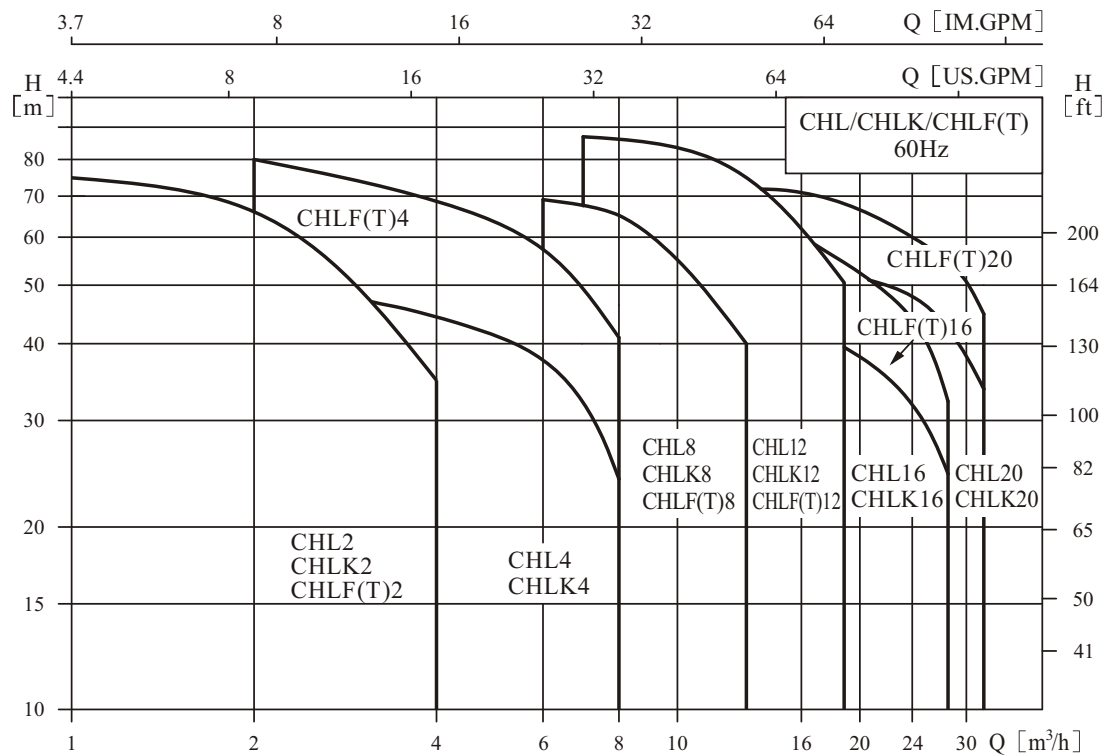
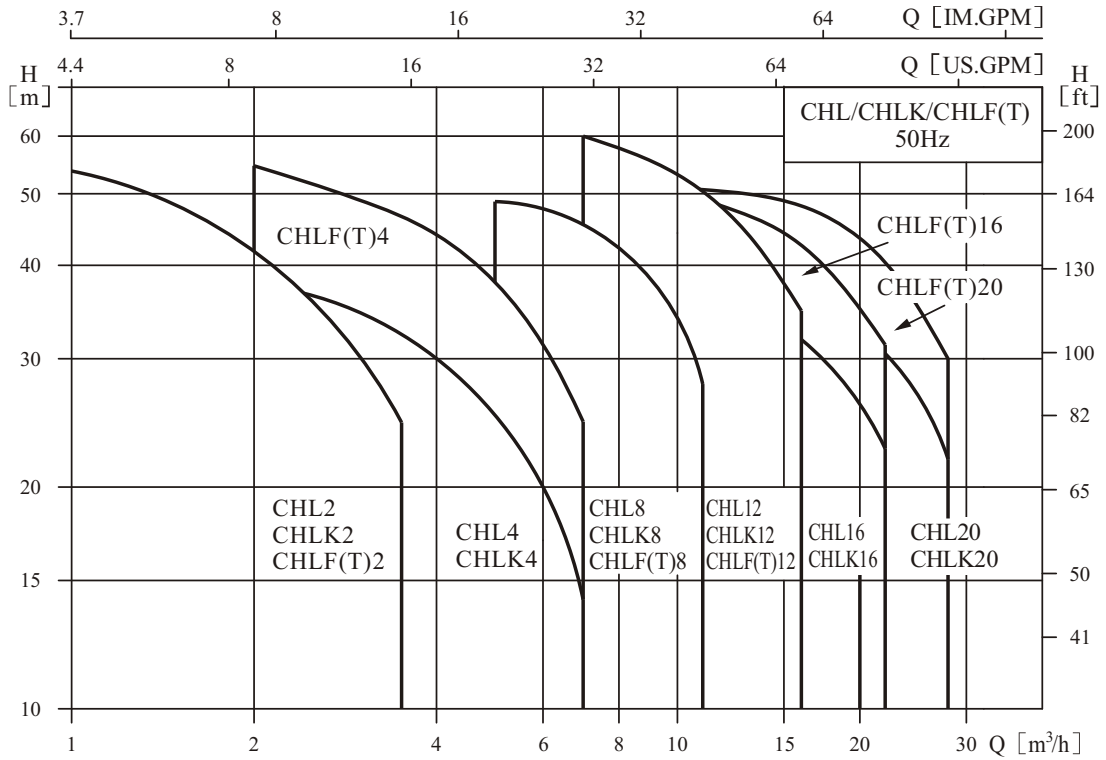
The company has established a wide sales and service network which has representative offices and service centers. Offices and service centers are set in all large and medium-scale cities, aiming to providing timely and satisfactory service for customers.

Satisfying customers will be eternal pursuit of the company. Looking forward to the future, the company will further keep up its fine tradition and persist in its business principle of "quality first, credit first and clients first" to offer customers products of high quality and more considerate services.

**Nanfang pump, an international brand worthy of your trust!**

# General Data

## ● Performance scope



## ● Application

CHL,CHLK and CHLF(T) type pump are mainly used in industrial field:

- Air-conditioning system
- Cooling system
- Industrial cleaning
- Water treatment (Water purification)
- Aquiculture
- Fertilizing / metering system
- Environmental application
- Other special applications

## ● Applicable medium

- Thin and clean non-flammable and non-explosive liquid without solid granules and fibers.
- Mineral water, soft water, pure water, edible vegetable oil and other light chemical mediums.
- When the density or viscosity of to-be-conveyed liquid is larger than that of water, it is necessary to select a driving motor of high-power.
- Whether a specific liquid is suitable for the pump depends on many factors, among which the most important ones are chlorine content, PH value, temperature, solvent and oil content.

## ● Pump

- Horizontal multistage non-self-priming centrifugal pump, attached with long shaft electric motor.
- Compact structure renders small size of pump; axial inlet and radial outlet.

## ● Curve conditions

Following conditions are suitable for the performance curves shown above.

- All curves are based on the measured values of 50Hz: constant motor speed 2900r/min, 60 Hz: constant motor speed 3500 r/min;
- Curve tolerance in conformity with ISO9906 Annex A.
- Measurement is done with 20°C air-free water, kinematic viscosity of 1mm<sup>2</sup>/sec.
- The operation of pump shall refer to the performance region described by the thickened curve to prevent overheating due to too small flow rate or overload of motor due to too large flow rate.

## ● Motor

- TEFC motor 2-pole
- Protection class:IP55
- Insulation class:F
- Standard voltage, 50Hz: 1 × 220-240V  
3 × 220-240V/380-415V
- Standard voltage, 60Hz: 1 × 220-240V  
3 × 220-240V/380-415V
- Single phase motor (max) : 2.4kW

## ● Operation condition

- Liquid temperature:  
Normal temperature type:-15°C~+70°C  
Hot water type: +70°C~+110°C
- Ambient temperature: up to +40°C
- Max.operation pressure: 10 bar
- Max.inlet pressure is limited by max. Operation pressure

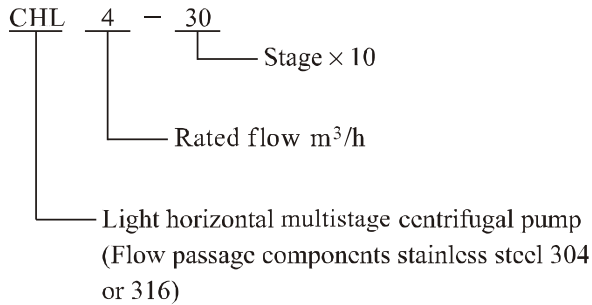
Connection port	CHL/CHLK/ CHLF(T)2	CHL/CHLK/ CHLF(T)4	CHL/CHLK8, 12,16,20	CHLF(T)8	CHLF(T)12	CHLF(T)16,20
Inlet	G1	G1 $\frac{1}{4}$	G2	G1 $\frac{1}{2}$	G1 $\frac{1}{2}$	G2
Outlet	G1	G1	G2	G1 $\frac{1}{4}$	G1 $\frac{1}{2}$	G2



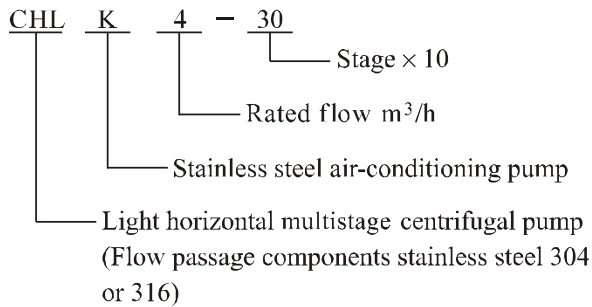
# General Data

## ● Definition of Model

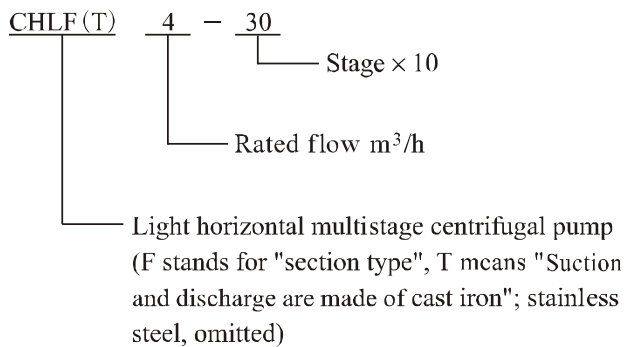
CHL Example



CHLK Example



CHLF(T) Example



## ● Material CHL/CHLK

No.	Name	Material	AISI / ASTM
1	Inlet and outlet chamber	Stainless steel	AISI304
2	Connection pipe	Stainless steel	AISI304
3	Clamp plate	Stainless steel	AISI304
4	Impeller	Stainless steel	AISI304
5	Shaft	Stainless steel	AISI304
6	Gag	Stainless steel	AISI304
7	Discharge diffuser	Stainless steel	AISI304
8	Mechanical seal		
9	Motor end cover	Aluminum alloy	
10	Base plate	Cast iron	ASTM25B
11	Quick joint	Stainless steel	AISI304
12	Diffuser	Stainless steel	AISI304
13	Support diffuser	Stainless steel	AISI304
14	Inducer	Stainless steel	AISI304

## ● Material CHLF/CHLF(T)

No.	Name	Material	AISI / ASTM
2	Gag	Stainless steel	AISI304
3	Bearing	Tungsten carbide	
4	Impeller	Stainless steel	AISI304
5	Shaft	Stainless steel	AISI304
6	Discharge diffuser	Stainless steel	AISI304
8	Mechanical seal		
9	Motor end cover	Aluminum alloy	
10	Base plate	Cast iron	ASTM25B
11	Pull-rod	Stainless steel	AISI304
12	Diffuser	Stainless steel	AISI304
13	Support diffuser	Stainless steel	AISI304
14	Impeller sleeve	Stainless steel	AISI304

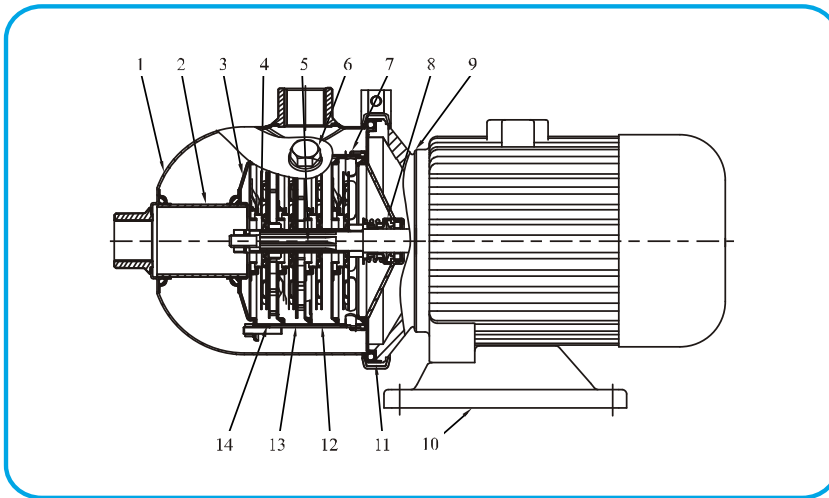
### CHLF

1	Suction	Stainless steel	AISI304
7	Discharge	Stainless steel	AISI304

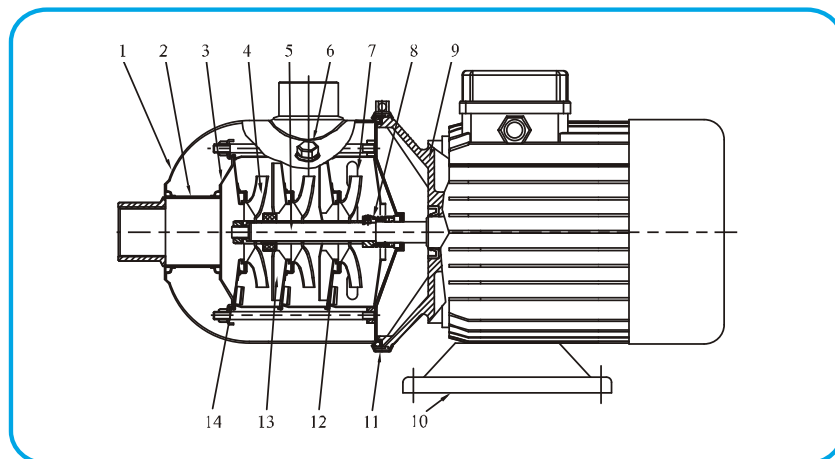
### CHLF(T)

1	Suction	Cast iron	ASTM25B
7	Discharge	Cast iron	ASTM25B

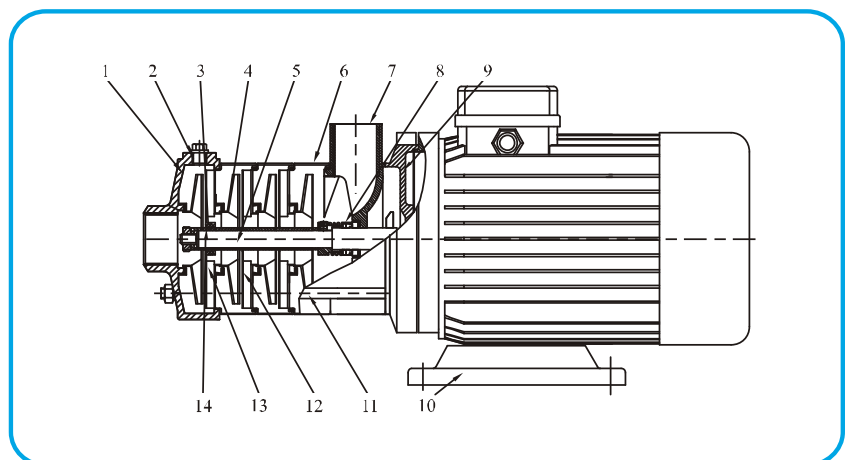
## ● Section drawing CHL,CHLK2,4



## ● Section drawing CHL,CHLK8,12,16,20



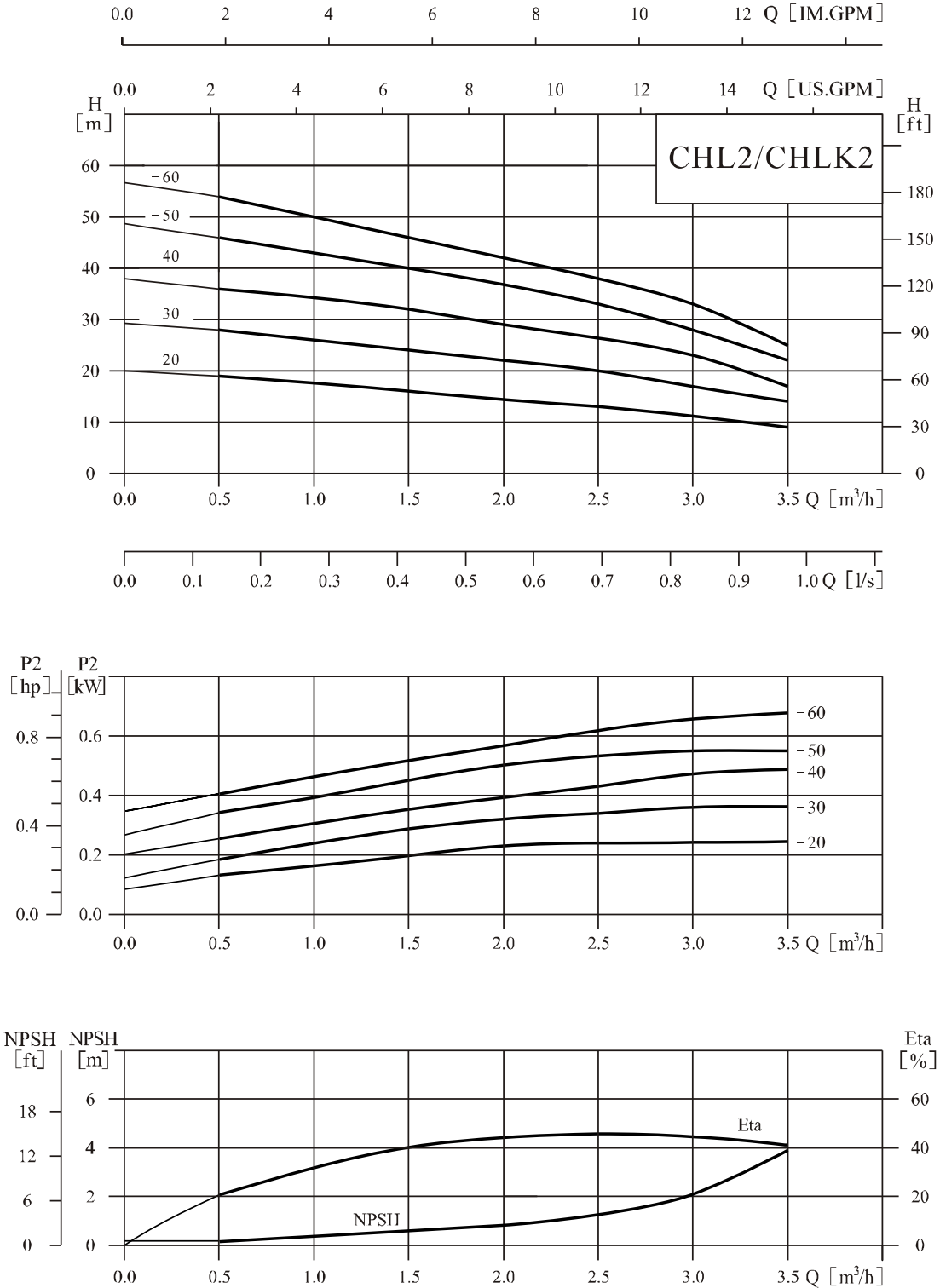
## ● Section drawing CHLF,CHLF(T)



# CHL/CHLK2,50Hz

## ● Performance curve

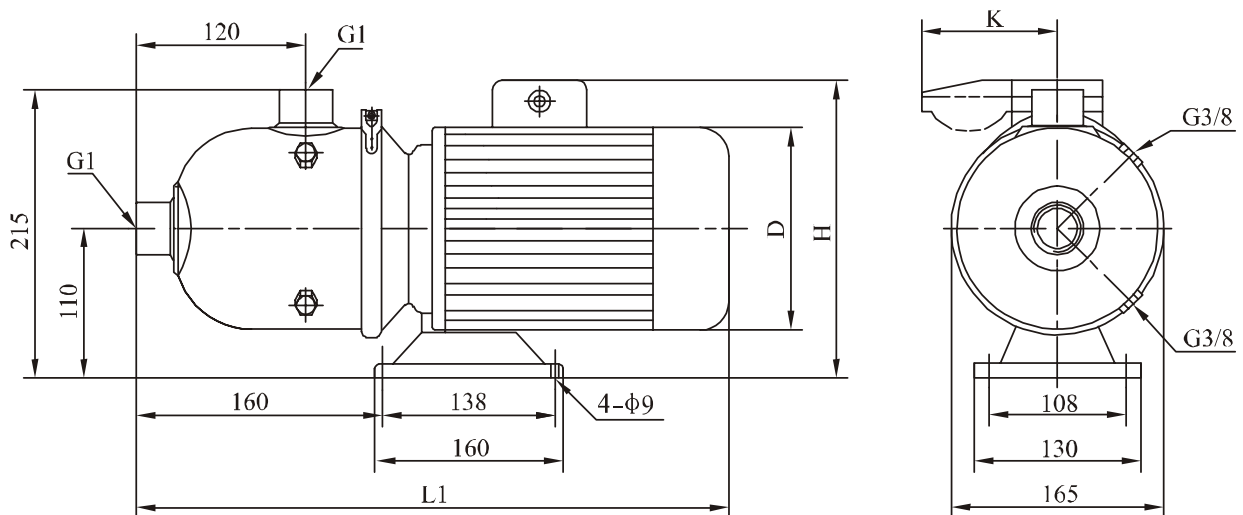
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	0.5	1.0	1.5	2.0	2.5	3.0	3.5
	(kW)	(hp)								
CHL2-20	0.37	0.5	H (m)	19	18	16	14	13	11	9
CHL2-30	0.55	0.75		28	27	24	21	20	17	14
CHL2-40	0.55	0.75		36	34	32	28	26	23	17
CHL2-50	0.55	0.75		46	43	40	35	33	28	22
CHL2-60	0.75	1		54	50	48	42	38	33	25

## ● Installation sketch



## ● Size and weight

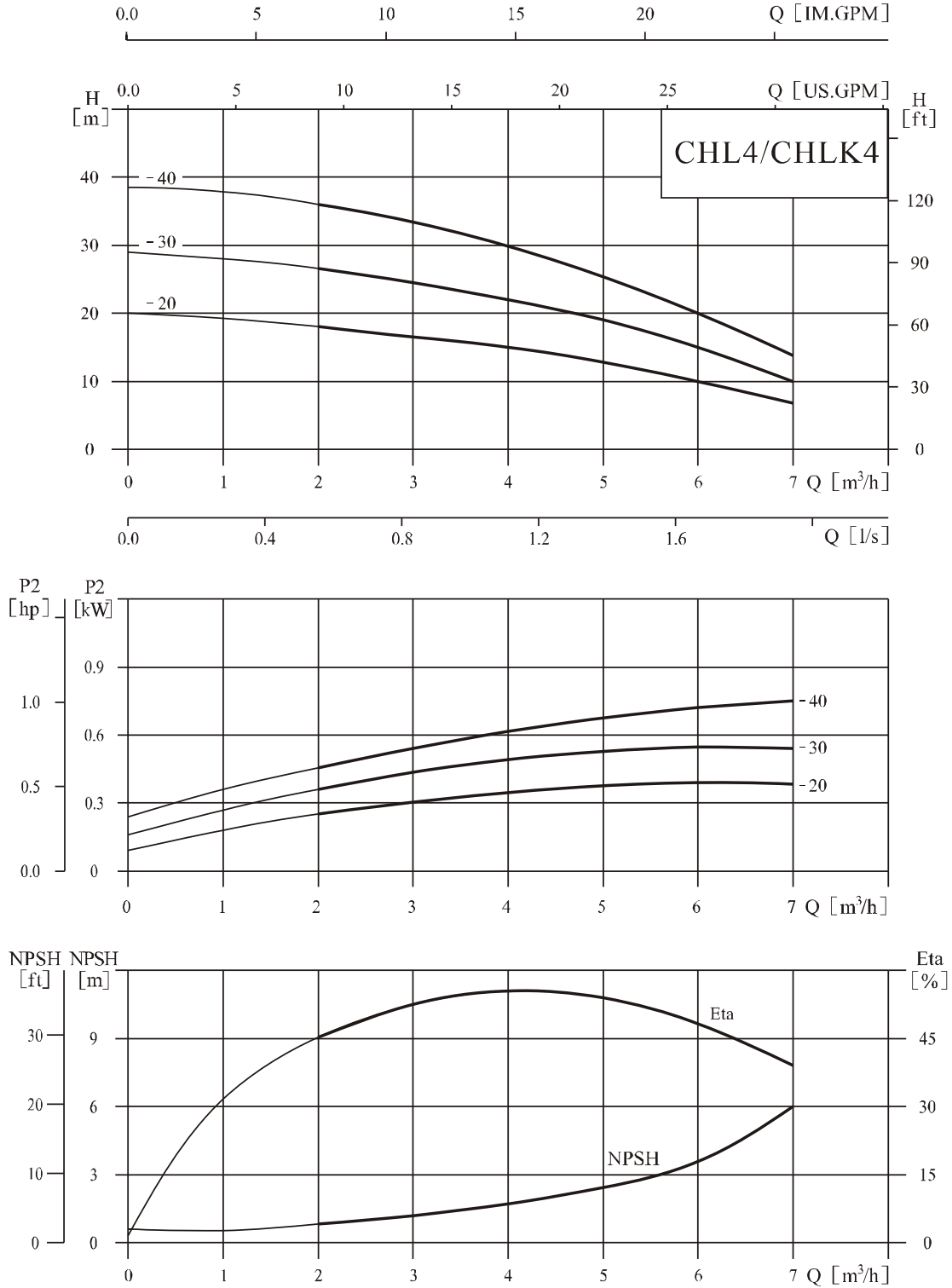
Motor	Model	Size (mm)				Weight (kg)
		L1	D	H	K	
Three-phase/ single-phase	CHL2-20	400	145	215/230	/96	13
	CHL2-30	400	145	215/230	/96	13
	CHL2-40	400	145	215/230	/96	13
	CHL2-50	400	145	215/230	/96	13
	CHL2-60	445	170	225/245	/100	15



# CHL/CHLK4,50Hz

## ● Performance curve

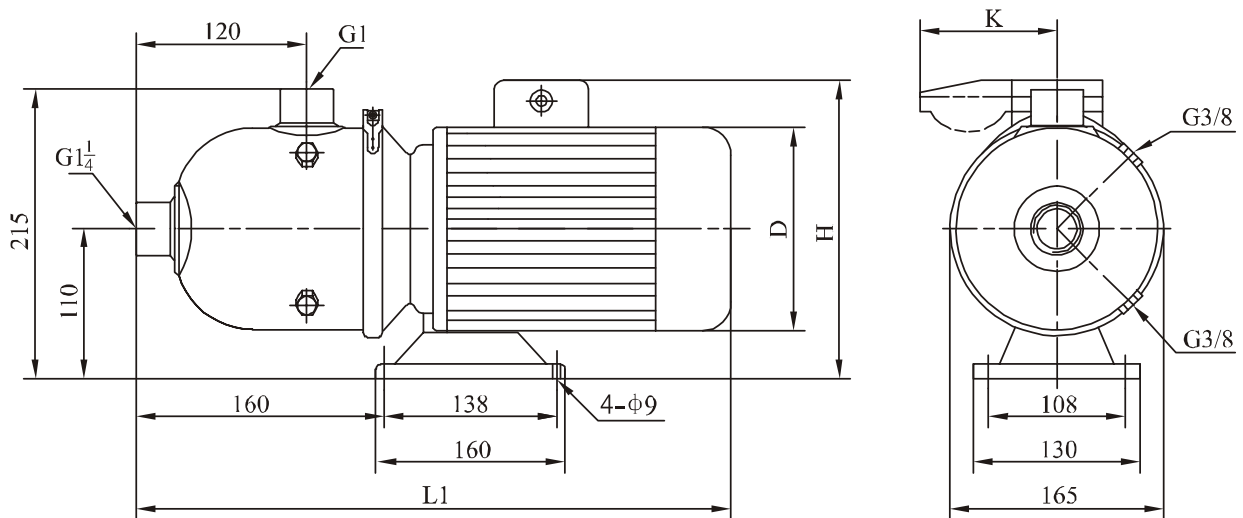
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	1	2	3	4	5	6	7
	(kW)	(hp)								
CHL4-20	0.55	0.75	H (m)	19	18	16	15	13	10	7
CHL4-30	0.75	1		28	27	24	22	19	15	10
CHL4-40	0.75	1		38	36	32	30	26	20	14

## ● Installation sketch



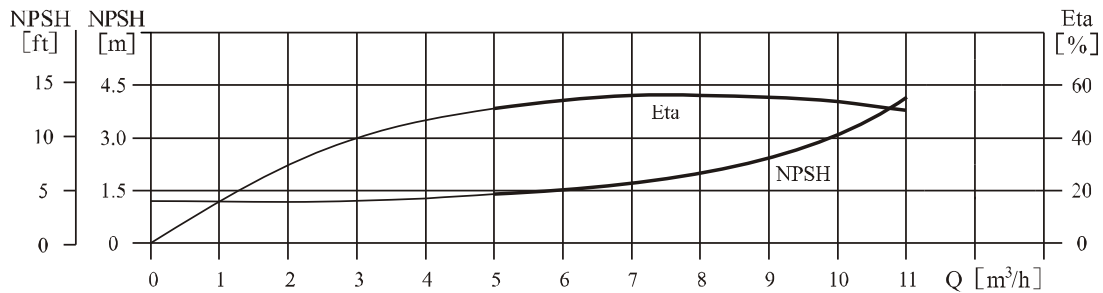
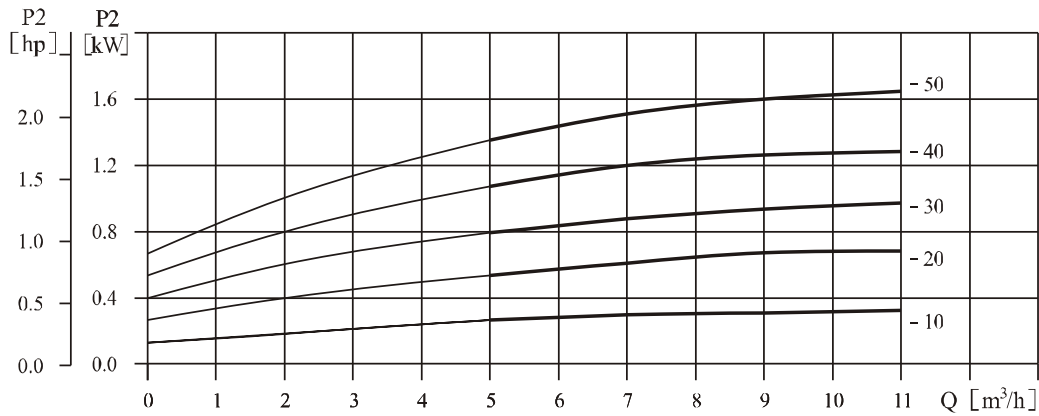
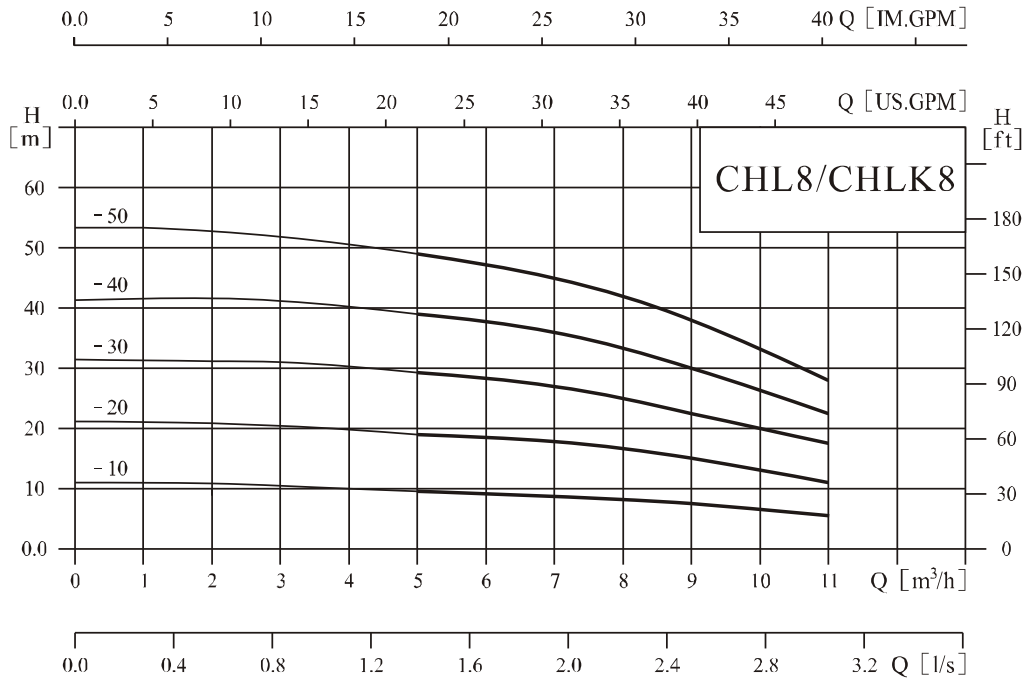
## ● Size and weight

Motor	Model	Size (mm)				Weight (kg)
		L1	D	H	K	
Three-phase/ single-phase	CHL4-20	400	145	215/230	/96	12
	CHL4-30	445	170	225/245	/100	15
	CHL4-40	445	170	225/245	/100	15

# CHL/CHLK8,50Hz

## ● Performance curve

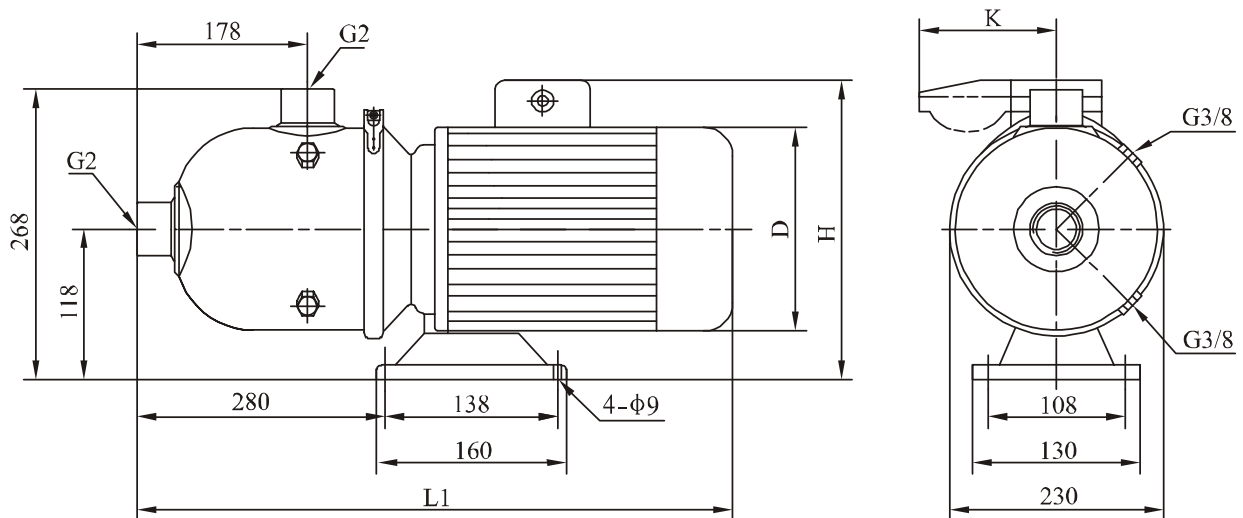
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	5	6	7	8	9	10	11
	(kW)	(hp)								
CHL8-10	0.75	1	H (m)	9.5	9.3	9	8.5	7.5	6.5	5.5
CHL8-20	0.75	1		19	18.5	18	17	15	13	11
CHL8-30	1.1	1.5		29	28	27	25.5	22.5	20	17.5
CHL8-40	1.5	2		39	38	36	34	30	26.5	22.5
CHL8-50	2.2	3		49	47	45	42.5	38	33.5	28

## ● Installation sketch



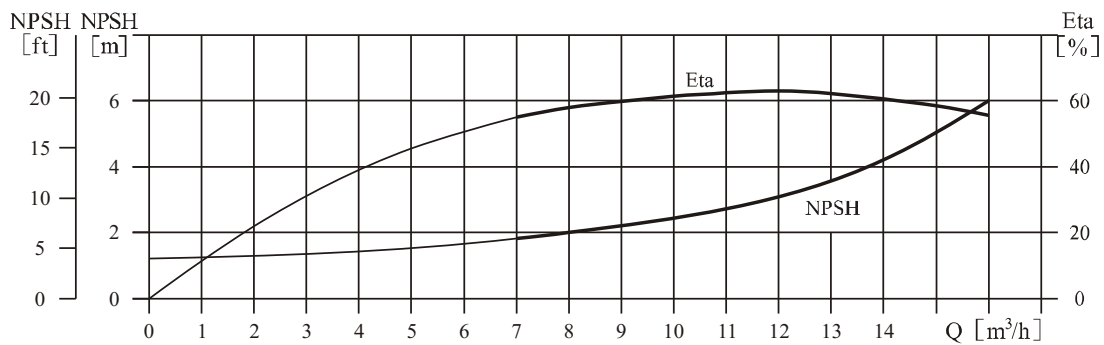
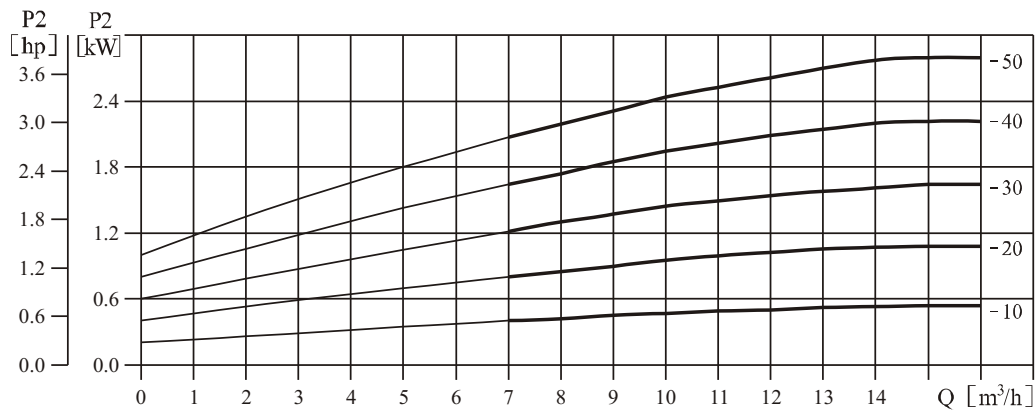
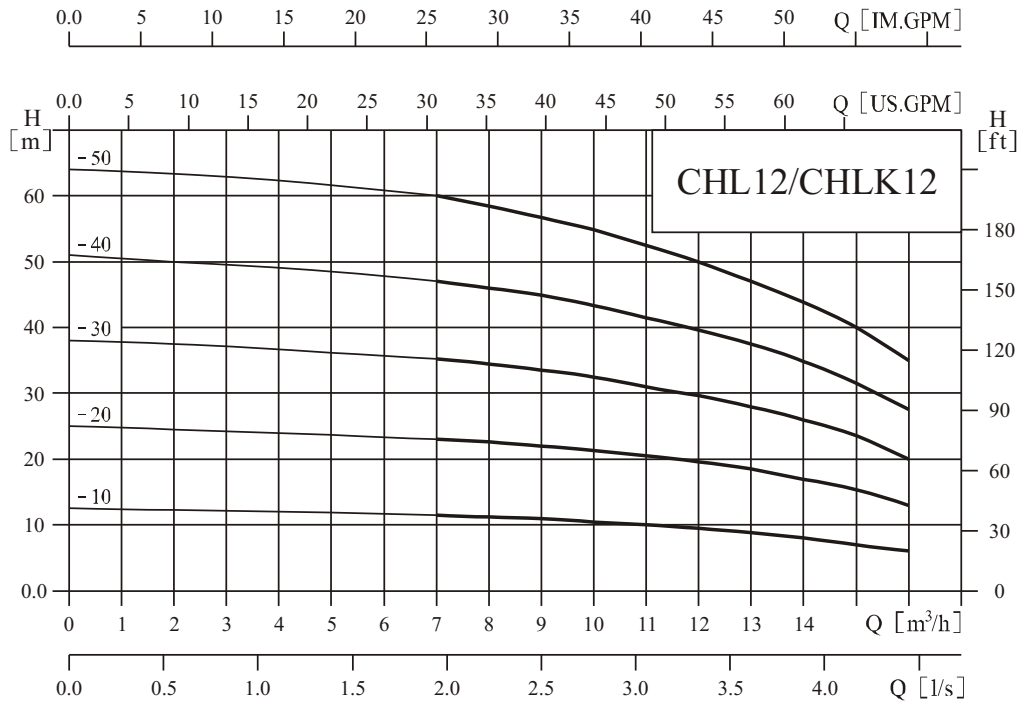
## ● Size and weight

Motor	Model	Size (mm)				Weight (kg)
		L1	D	H	K	
Three-phase/ single-phase	CHL8-10	560	170	230/265	/100	20
	CHL8-20	560	170	230/265	/100	20
	CHL8-30	560	170	230/265	/100	25
	CHL8-40	580	180	240/270	/100	25
	CHL8-50	580	180	240/270	/100	30

# CHL/CHLK12,50Hz

## ● Performance curve

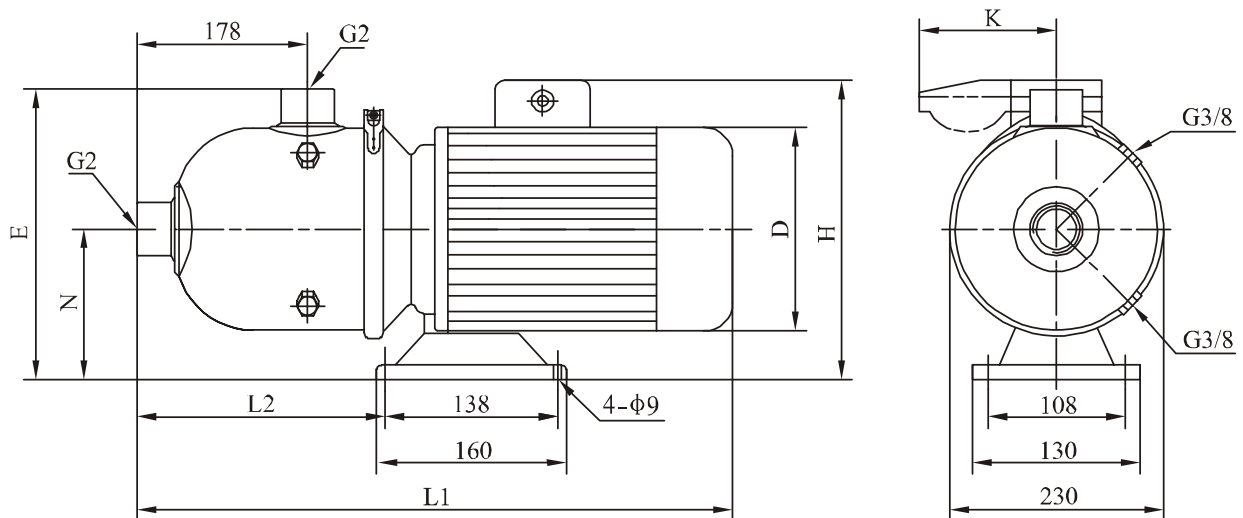
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	7	8	9	10	11	12	13	14	15	16
	(kW)	(hp)											
CHL12-10	0.75	1	H (m)	11.5	11.2	11	10.5	10	9.5	9	8	7	6
CHL12-20	1.2	1.6		23	22.5	22	21.5	20.5	19.5	18.5	17	15.5	13
CHL12-30	1.8	2.4		35	34.5	33.5	32.5	31	29.5	28	26	23.5	20
CHL12-40	2.4	3.3		47	46	45	43.5	41.5	39.5	37.5	35	31.5	27.5
CHL12-50	3	4		60	58	56.5	55	52.5	50	47	44	40	35

## ● Installation sketch



## ● Size and weight

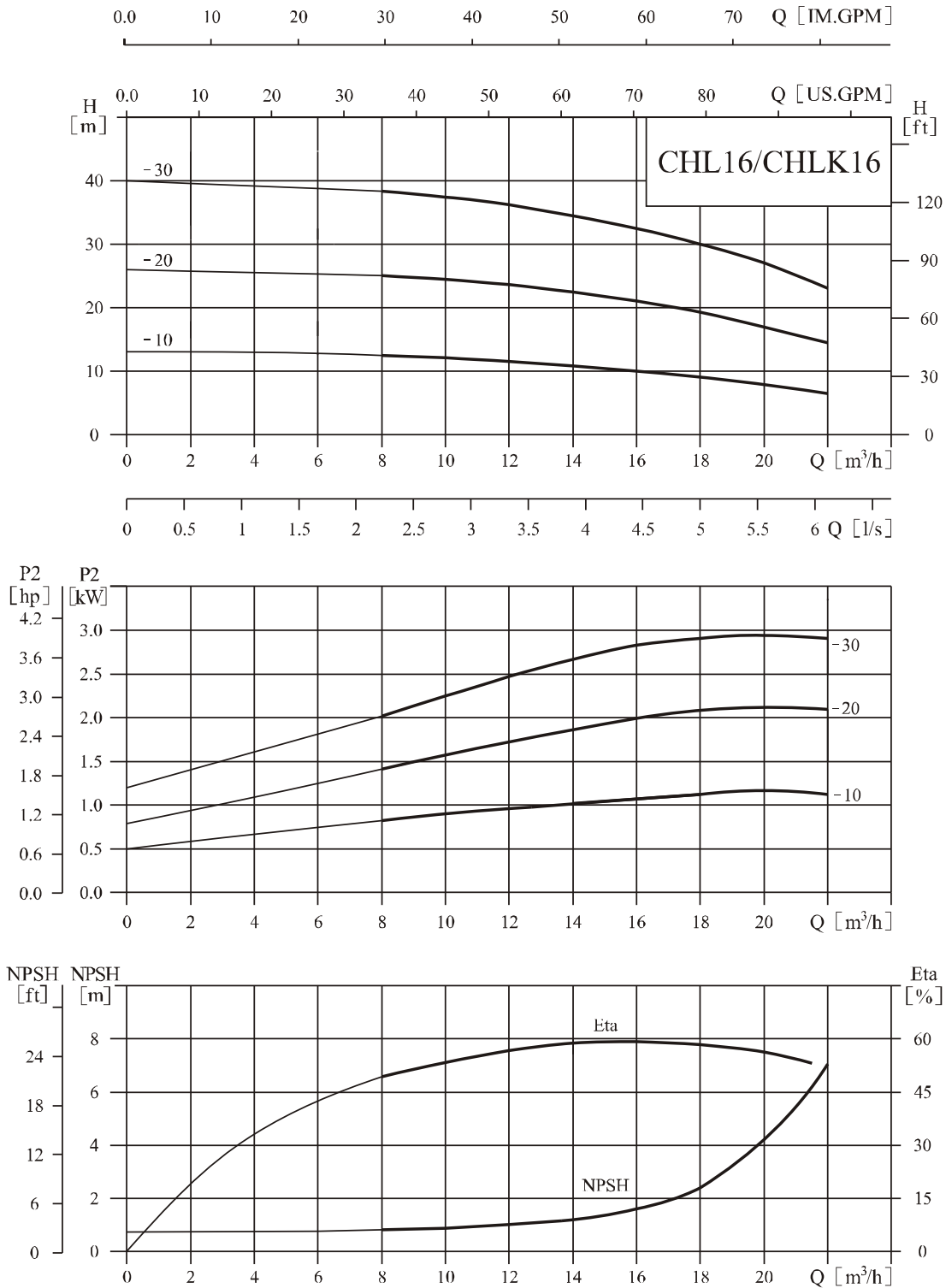
Motor	Model	Size (mm)							Weight (kg)
		L1	L2	H	D	E	N	K	
Three-phase/ single-phase	CHL12-10	560	280	230/265	170	268	118	/100	20
	CHL12-20	560	280	230/265	170	268	118	/100	21
	CHL12-30	580	280	240/270	180	268	118	/100	25
	CHL12-40	580	280	240/270	180	268	118	/100	29
	CHL12-50	610	270	270/	195	276	126		34



# CHL/CHLK16,50Hz

## ● Performance curve

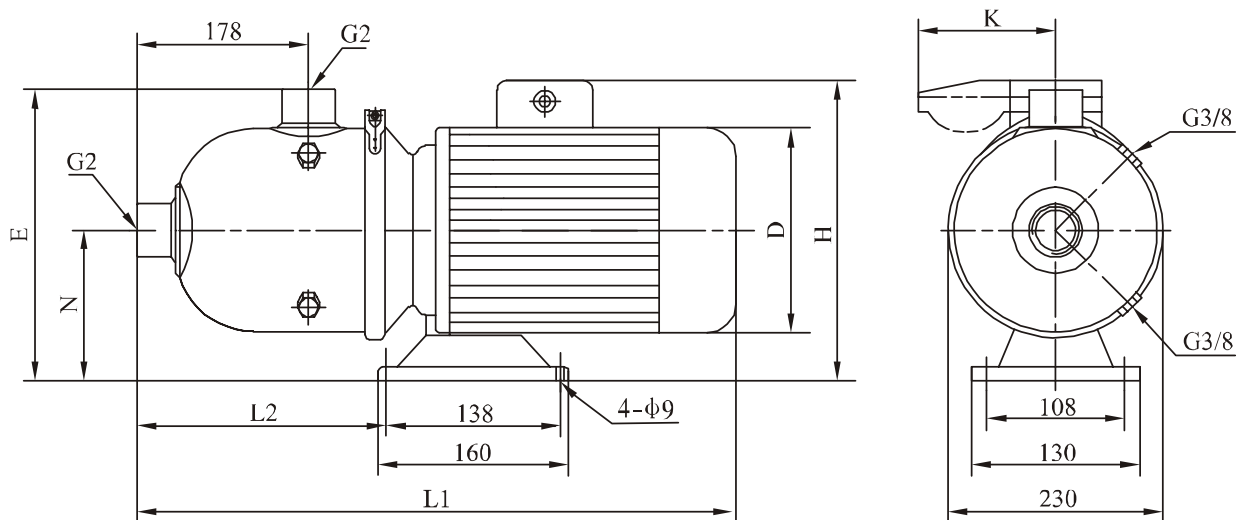
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	8	10	12	14	16	18	20	22
	(kW)	(hp)									
CHL16-10	1.1	1.5	H (m)	12.5	12	11.5	10.5	10	9	7.5	6.5
CHL16-20	2.2	3		25.5	24	23	22	21	19	17	14.5
CHL16-30	3	4		38.5	37	36	34	32	30	27	23

## ● Installation sketch



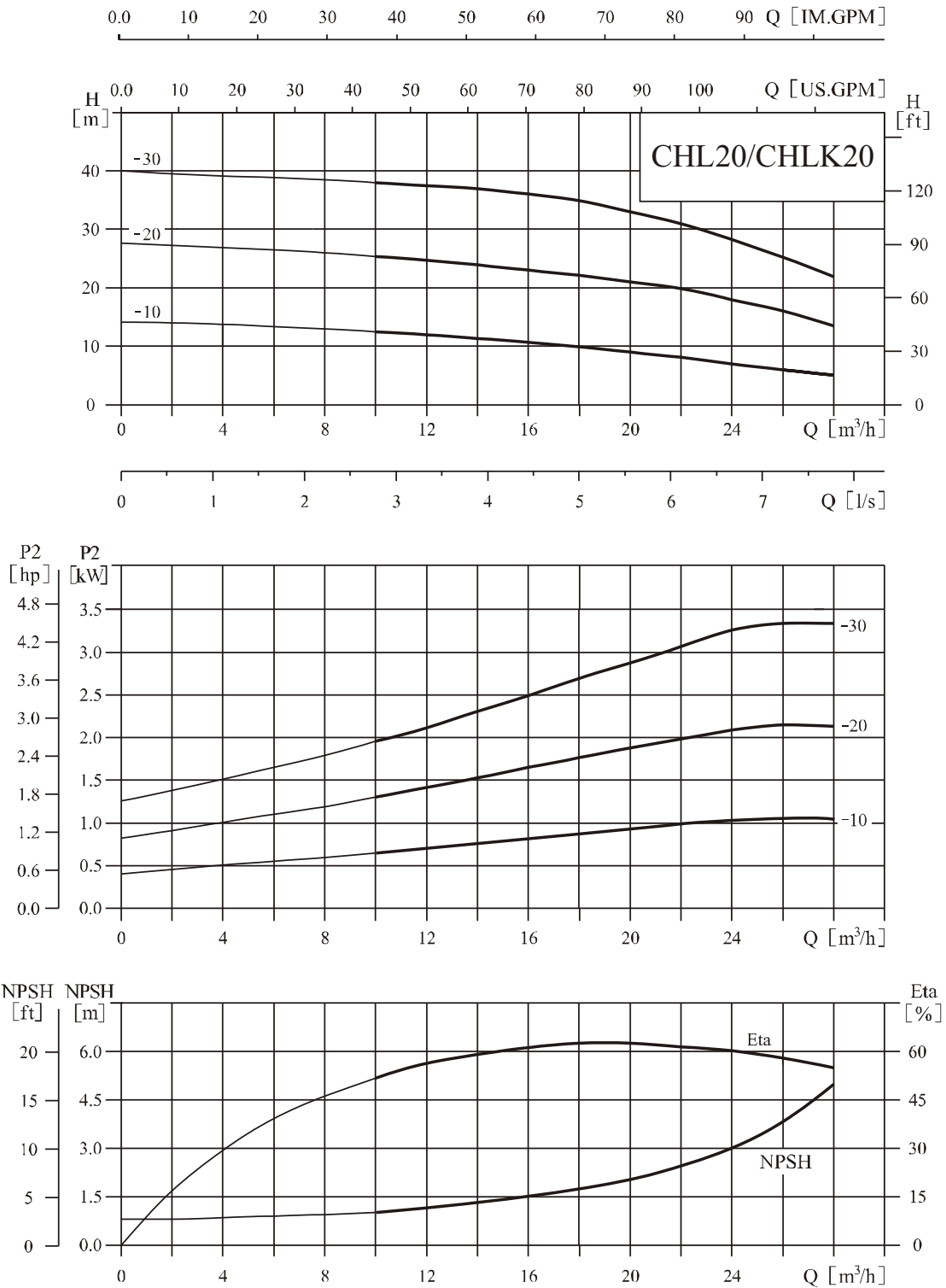
## ● Size and weight

Motor	Model	Size (mm)							Weight (kg)
		L1	L2	E	N	D	H	K	
Three-phase/ single-phase	CHL16-10	560	280	268	118	170	230/265	/100	20
	CHL16-20	580	280	268	118	180	240/270	/100	27
	CHL16-30	610	270	276	126	195	270/		34

# CHL/CHLK20,50Hz

## ● Performance curve

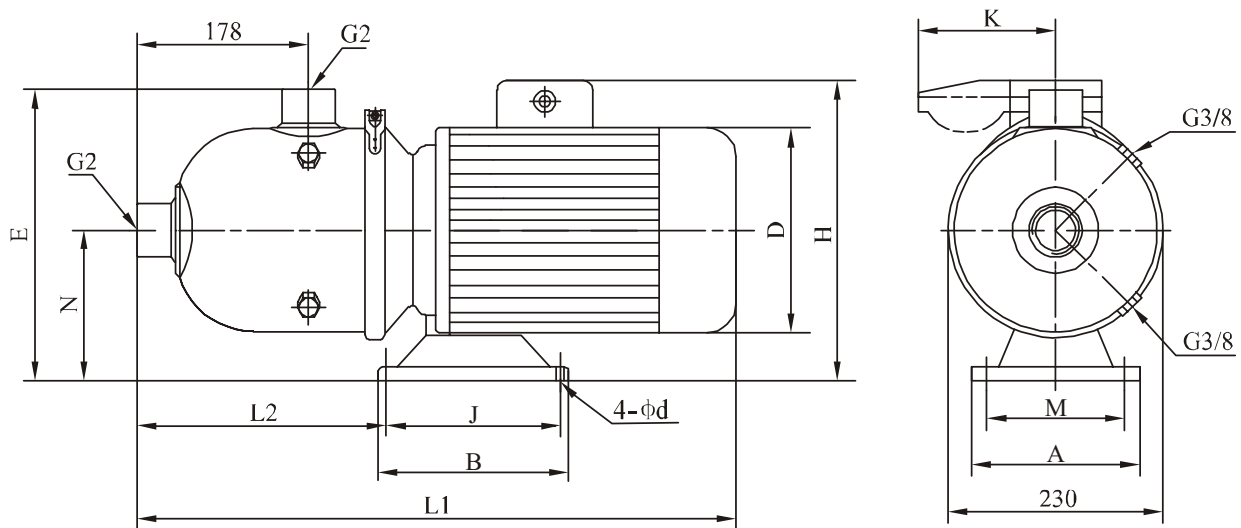
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	10	12	14	16	18	20	22	24	26	28
	(kW)	(hp)		H (m)									
CHL20-10	1.1	1.5	H (m)	12.5	12	11.5	10.5	10	9.5	8.5	7.5	6.5	5.5
CHL20-20	2.2	3		25.5	24.5	24	23	22	21	20	18	16	13.5
CHL20-30	4	5.5		38	37.5	37	36	35	33	31	28	25	22

## ● Installation sketch



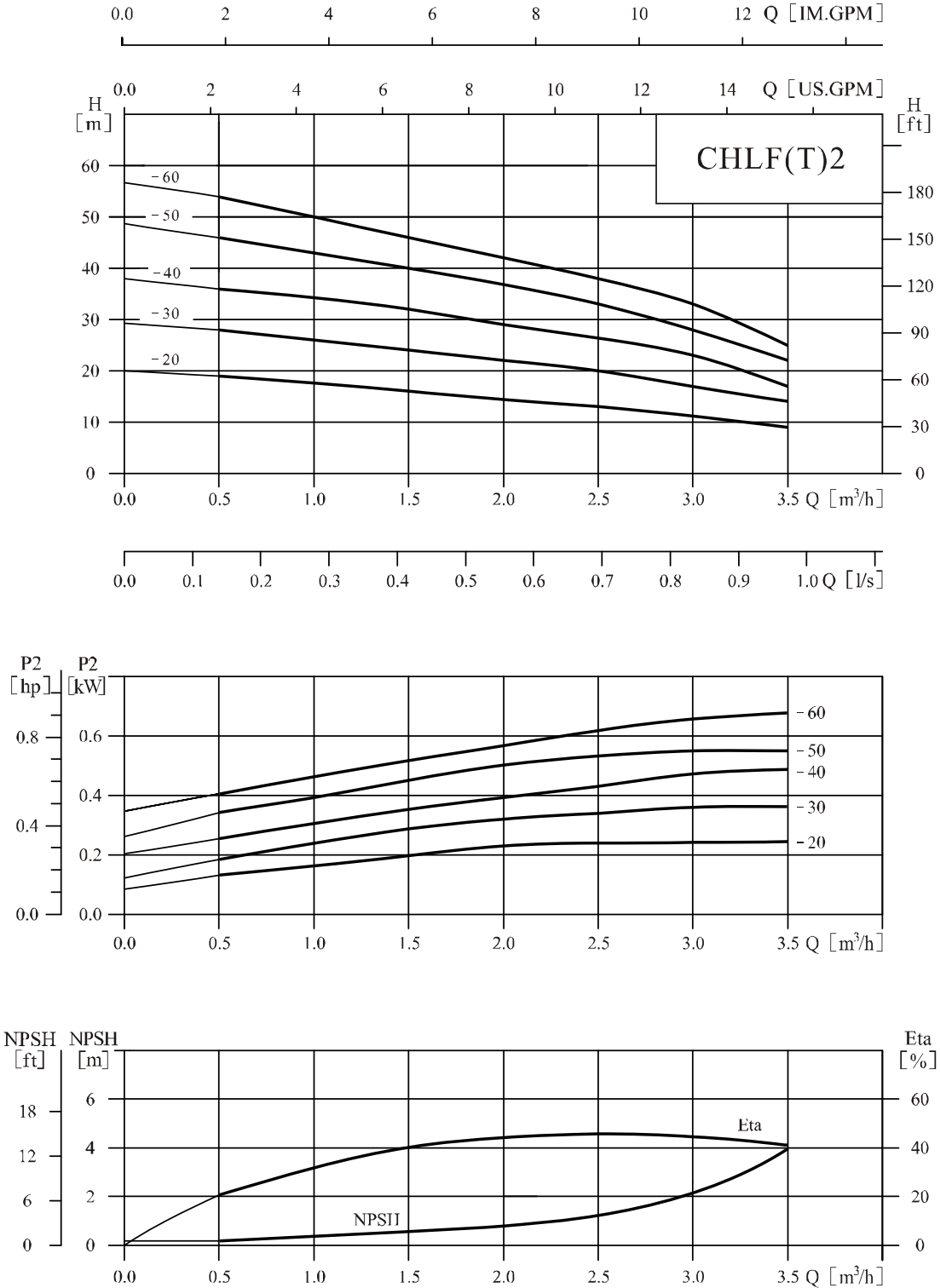
## ● Size and weight

Motor	Model	Size (mm)												Weight (kg)
		L1	L2	H	D	E	N	A	M	B	J	d	K	
Three-phase/ single-phase	CHL20-10	560	280	230/265	170	268	118	130	108	160	138	9	/100	21
	CHL20-20	580	280	240/270	180	268	118	130	108	160	138	9	/100	28
	CHL20-30	650	360	270/	220	270	120	230	190	170	140	12		42

# CHLF/CHLF(T)2,50Hz

## ● Performance curve

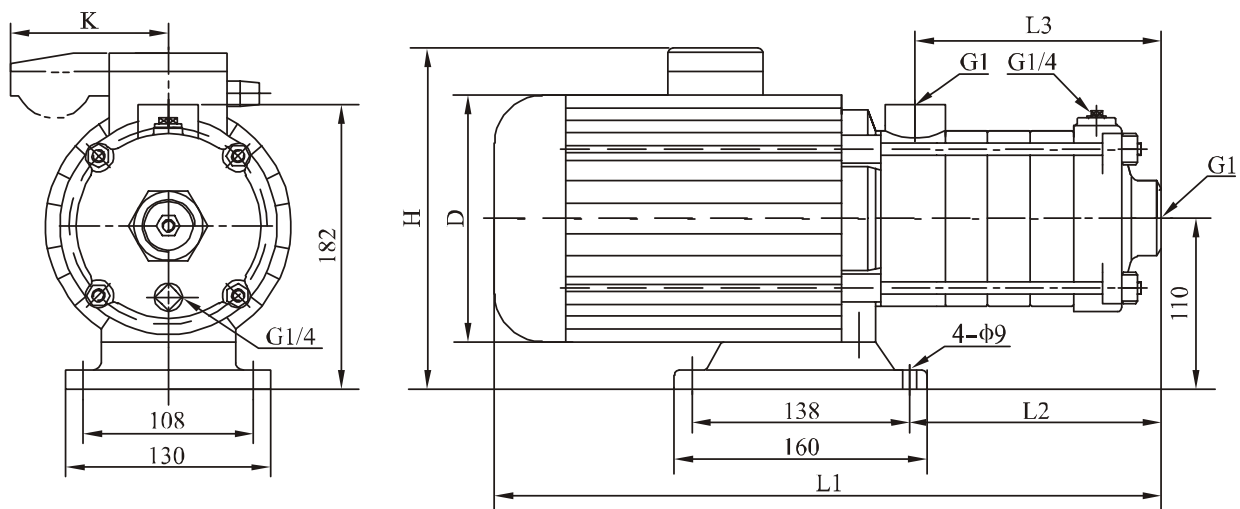
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	0.5	1.0	1.5	2.0	2.5	3.0	3.5
	(kW)	(hp)								
CHLF(T)2-20	0.37	0.5	H (m)	19	18	16	14	13	11	9
CHLF(T)2-30	0.55	0.75		28	27	24	21	20	17	14
CHLF(T)2-40	0.55	0.75		36	34	32	28	26	23	17
CHLF(T)2-50	0.55	0.75		46	43	40	35	33	28	22
CHLF(T)2-60	0.75	1		54	50	48	42	38	33	25

## ● Installation sketch



## ● Size and weight

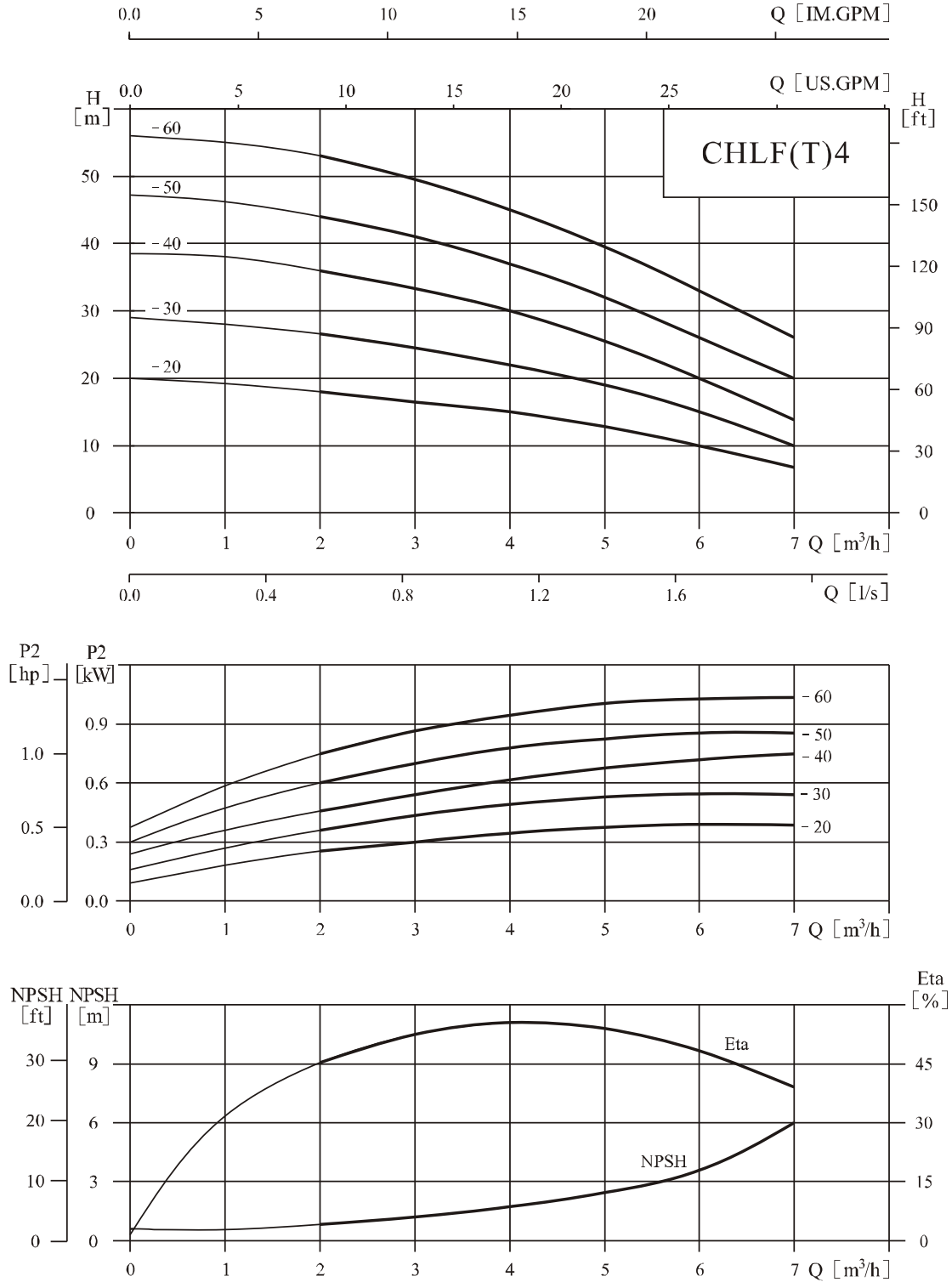
Motor	Model	Size (mm)						Weight (kg)
		L1	L2	L3	D	H	K	
Three-phase/ single-phase	CHLF(T)2-20	305	87	84	145	215/230	/96	15
	CHLF(T)2-30	323	105	102	145	215/230	/96	15
	CHLF(T)2-40	341	123	120	145	215/230	/96	15
	CHLF(T)2-50	359	141	138	145	215/230	/96	15
	CHLF(T)2-60	422	159	156	170	225/245	/100	17



# CHLF/CHLF(T)4,50Hz

● Performance curve

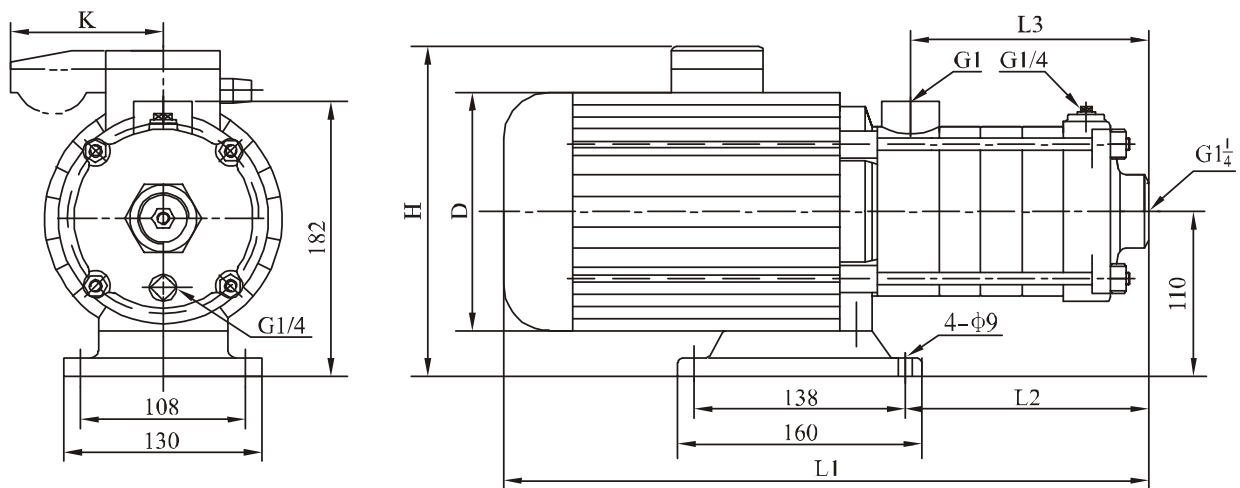
ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	1	2	3	4	5	6	7
	(kW)	(hp)								
CHLF(T)4-20	0.55	0.75	H (m)	19	18	16	15	13	10	7
CHLF(T)4-30	0.55	0.75		28	27	24	22	19	15	10
CHLF(T)4-40	0.75	1		38	36	32	30	26	20	14
CHLF(T)4-50	1.1	1.5		46	44	41	38	32	26	20
CIILF(T)4-60	1.1	1.5		55	53	50	45	37	31	26

## ● Installation sketch



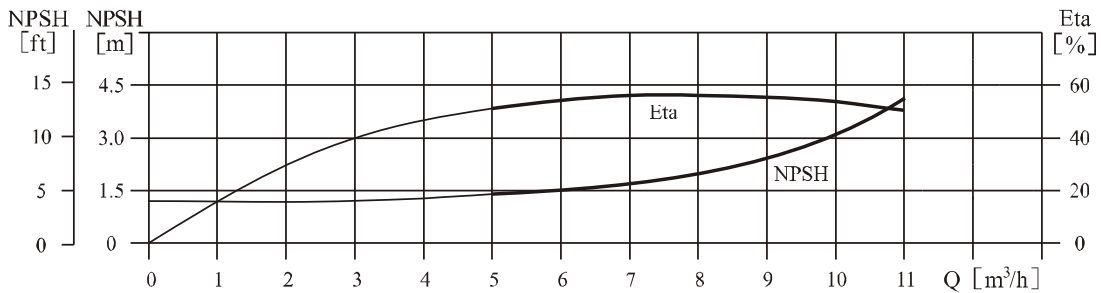
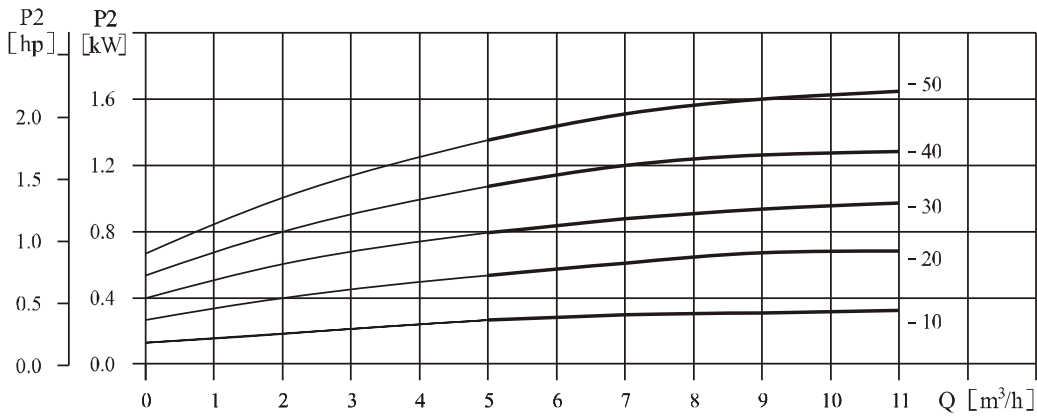
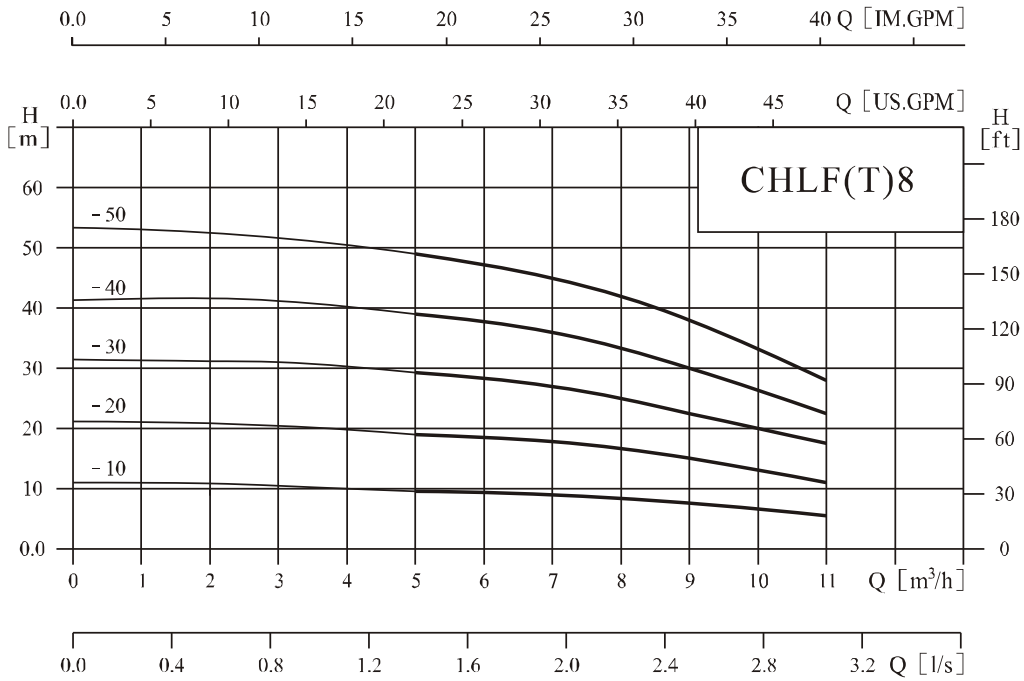
## ● Size and weight

Motor	Model	Size (mm)						Weight (kg)
		L1	L2	L3	D	H	K	
Three-phase/ single-phase	CHLF(T)4-20	329	105	102	145	215/230	/96	15
	CHLF(T)4-30	356	132	129	145	215/230	/96	15
	CHLF(T)4-40	416	162	156	170	225/245	/100	17
	CHLF(T)4-50	455	188	183	170	225/245	/100	17
	CHLF(T)4-60	482	213	210	170	225/245	/100	17

# CHLF/CHLF(T)8,50Hz

## ● Performance curve

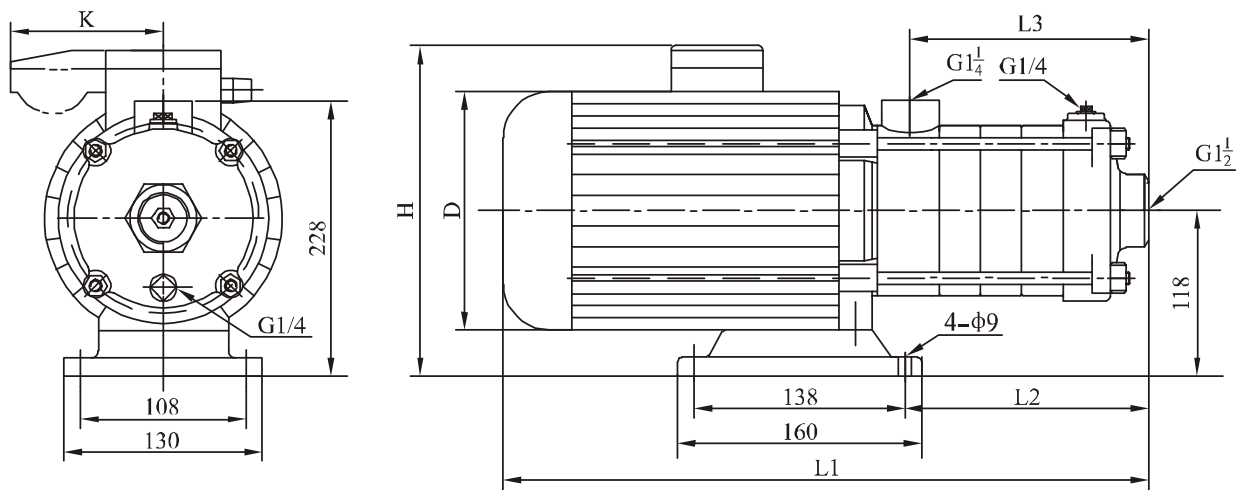
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	5	6	7	8	9	10	11
	(kW)	(hp)								
CHLF(T)8-10	0.75	1	H (m)	9.5	9.3	9	8.5	7.5	6.5	5.5
CHLF(T)8-20	0.75	1		19	18.5	18	17	15	13	11
CHLF(T)8-30	1.1	1.5		29	28	27	25.5	22.5	20	17.5
CHLF(T)8-40	1.5	2		39	38	36	34	30	26.5	22.5
CHLF(T)8-50	2.2	3		49	47	45	42.5	38	33.5	28

## ● Installation sketch



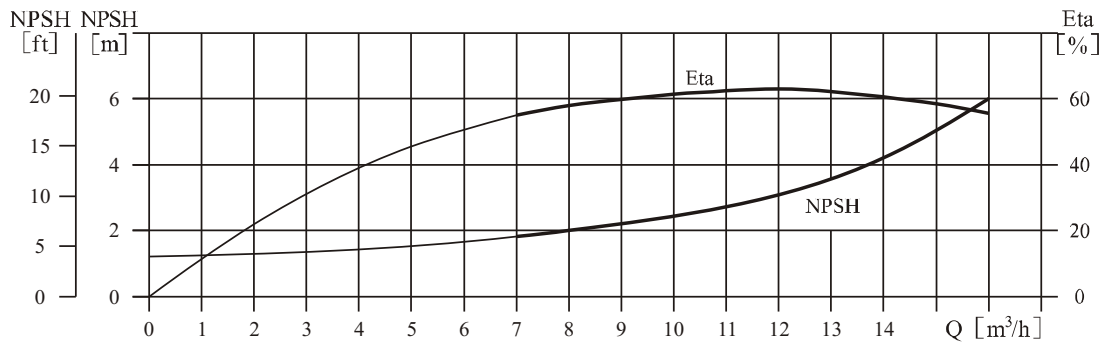
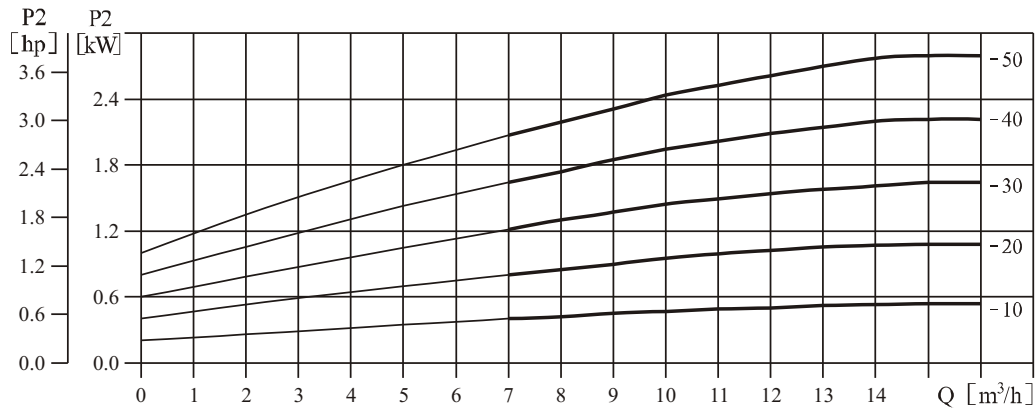
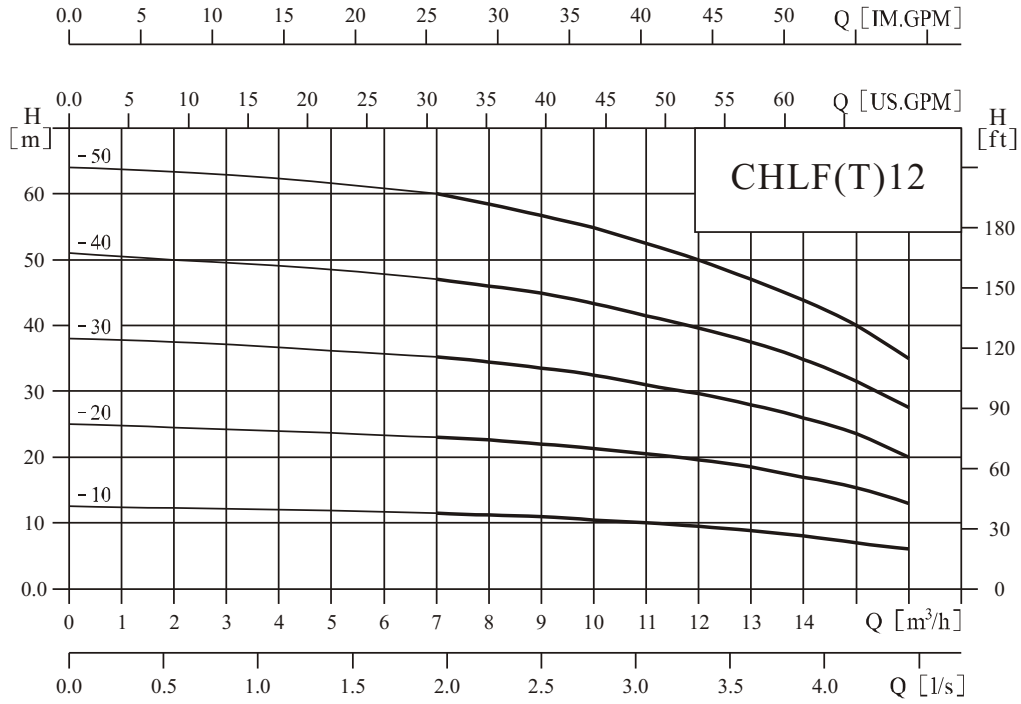
## ● Size and weight

Motor	Model	Size (mm)						Weight (kg)
		L1	L2	L3	D	H	K	
Three-phase/ single-phase	CHLF(T)8-10	395	126	108	170	230/265	/100	20
	CHLF(T)8-20	395	126	108	170	230/265	/100	20
	CHLF(T)8-30	425	156	138	170	230/265	/100	25
	CHLF(T)8-40	490	186	168	180	240/270	/100	28
	CHLF(T)8-50	520	216	198	180	240/270	/100	30

# CHLF/CHLF(T)12,50Hz

## ● Performance curve

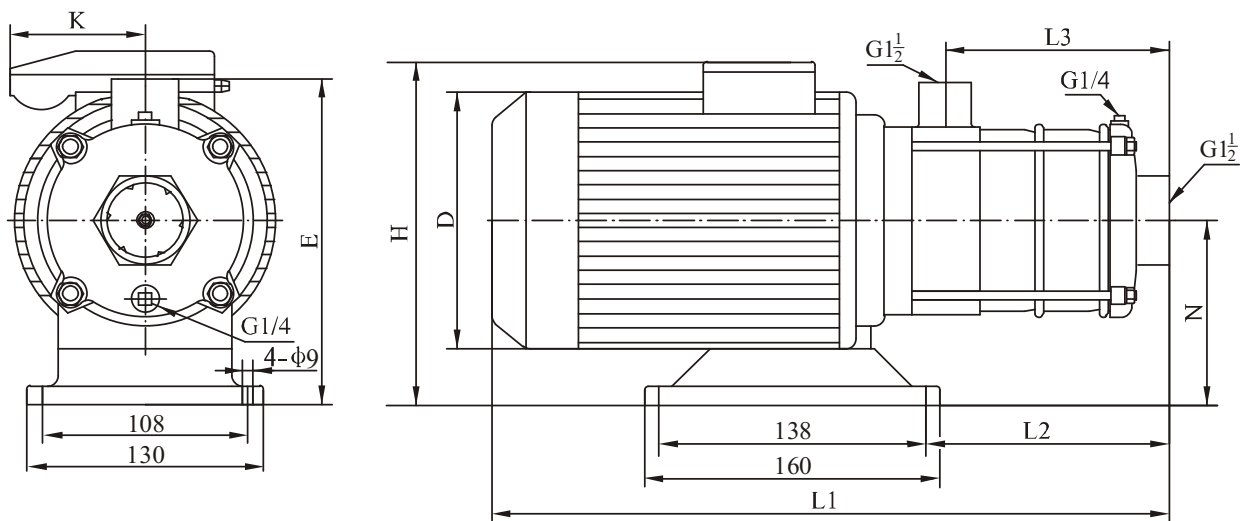
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## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	7	8	9	10	11	12	13	14	15	16
	(kW)	(hp)											
CHLF(T)12-10	0.75	1	H (m)	11.5	11.2	11	10.5	10	9.5	9	8	7	6
CHLF(T)12-20	1.2	1.6		23	22.5	22	21.5	20.5	19.5	18.5	17	15.5	13
CHLF(T)12-30	1.8	2.4		35	34.5	33.5	32.5	31	29.5	28	26	23.5	20
CHLF(T)12-40	2.4	3.3		47	46	45	43.5	41.5	39.5	37.5	35	31.5	27.5
CHLF(T)12-50	3	4		60	58	56.5	55	52.5	50	47	44	40	35

## ● Installation sketch



## ● Size and weight

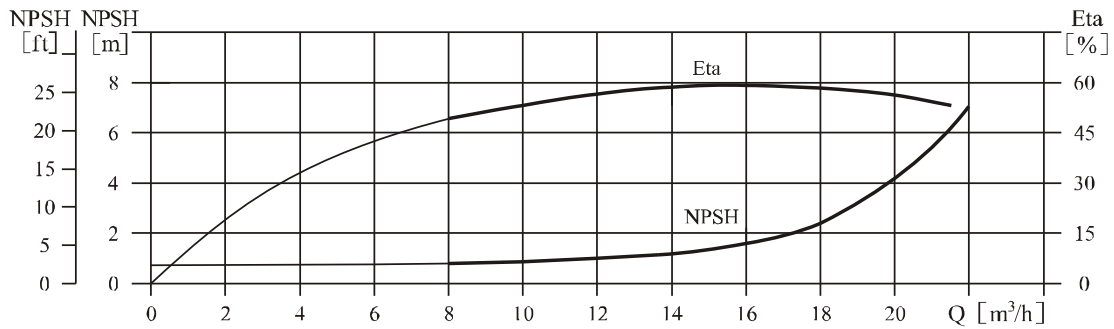
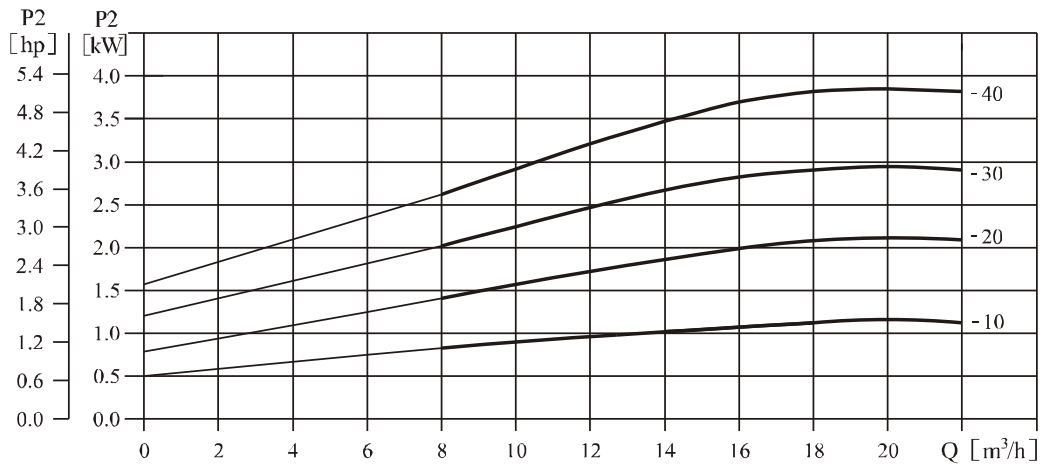
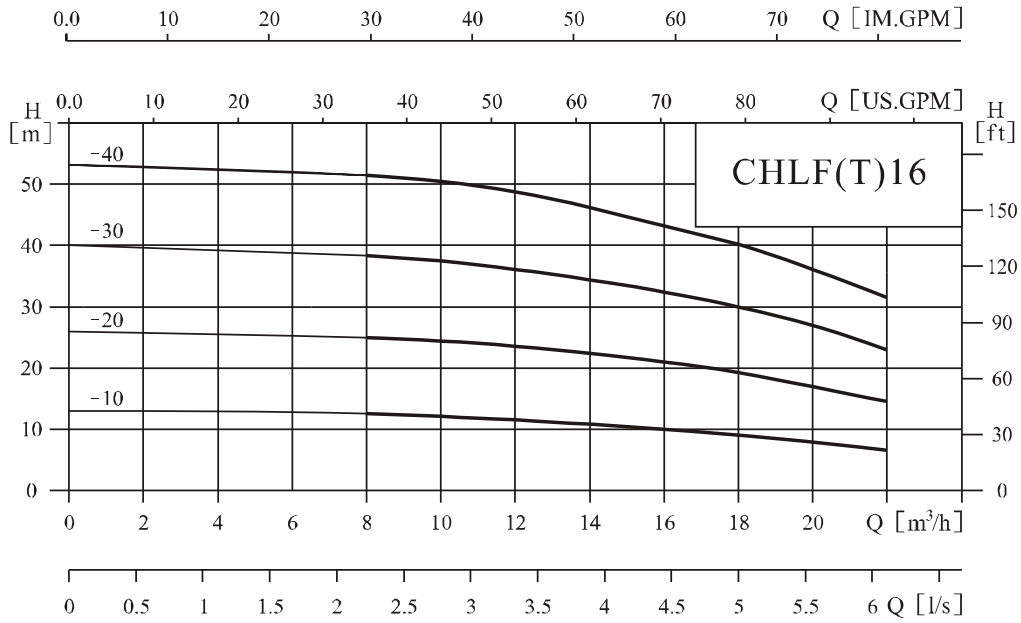
Motor	Model	Size (mm)								Weight (kg)
		L1	L2	L3	H	D	E	N	K	
Three-phase/ single-phase	CHLF(T)12-10	395	126	108	230/265	170	228	118	/100	20
	CHLF(T)12-20	395	126	108	230/265	170	228	118	/100	21
	CHLF(T)12-30	460	156	138	240/270	180	228	118	/100	25
	CHLF(T)12-40	490	186	168	240/270	180	228	118	/100	29
	CHLF(T)12-50	555	216	198	270/	195	240	126		34



# CHLF/CHLF(T)16,50Hz

## ● Performance curve

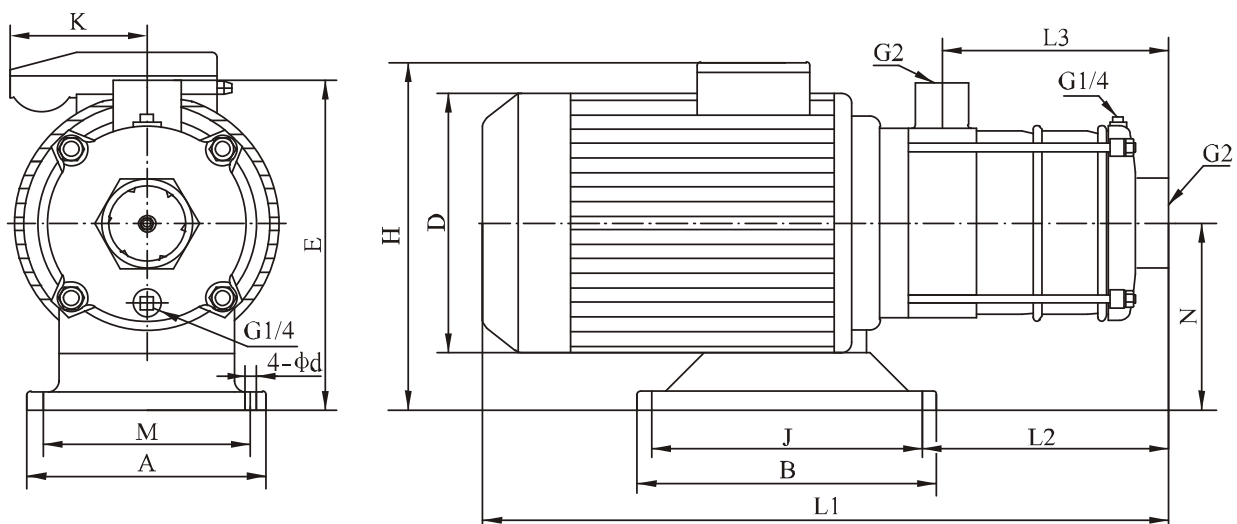
## ISO9906 Annex A



## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	8	10	12	14	16	18	20	22
	(kW)	(hp)									
CHLF(T)16-10	1.1	1.5	H (m)	12.5	12	11.5	10.5	10	9	7.5	6.5
CHLF(T)16-20	2.2	3		25.5	24	23	22	21	19	17	14.5
CHLF(T)16-30	3	4		38.5	37	36	34	32	30	27	23
CHLF(T)16-40	4	5.5		51.5	50.5	49	46	43	40.5	36	31.5

## ● Installation sketch



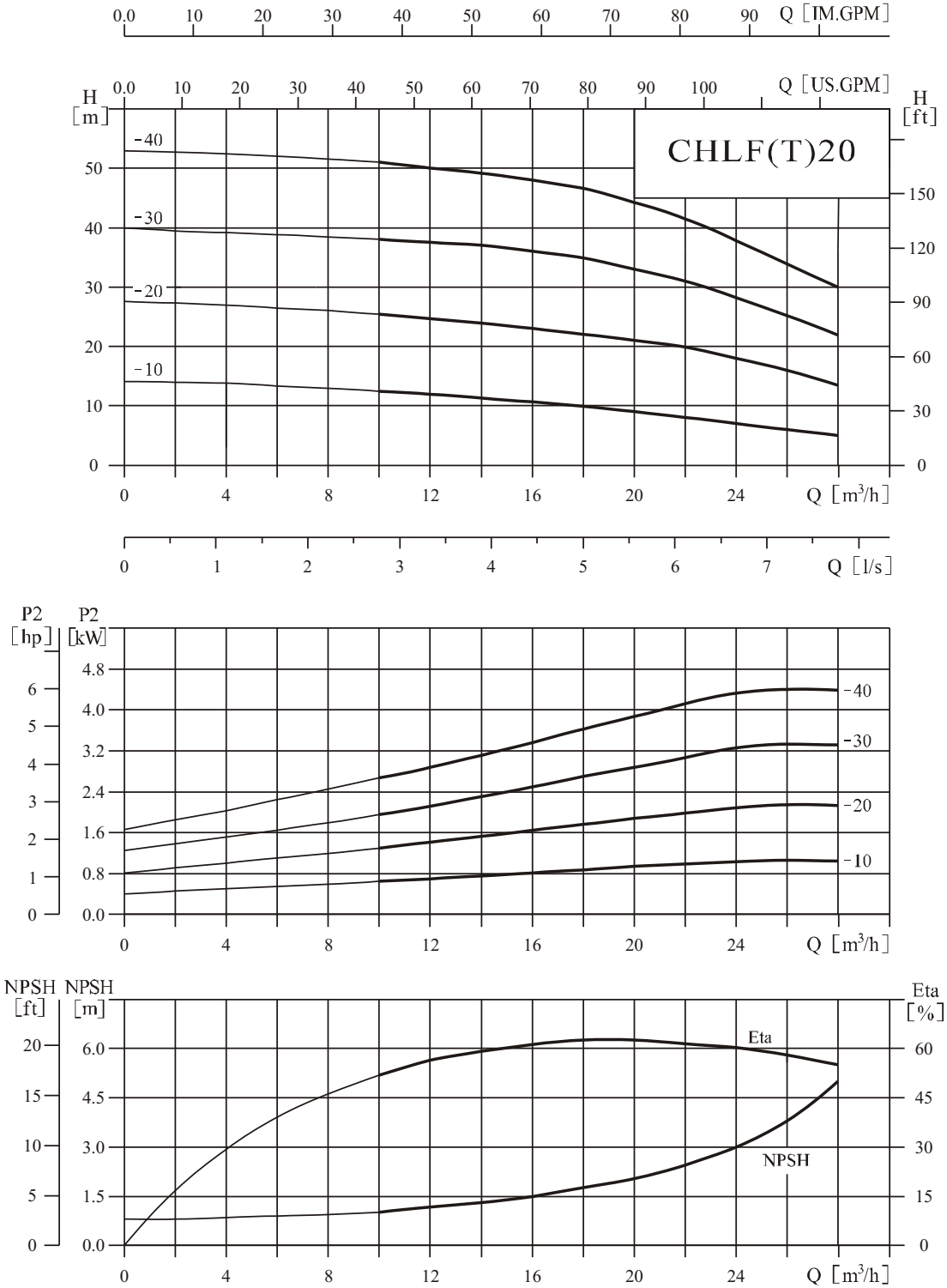
## ● Size and weight

Motor	Model	Size (mm)													Weight (kg)
		L1	L2	L3	H	D	E	N	A	M	B	J	d	K	
Three-phase/ single-phase	CHLF(T)16-10	423	151	126	230/265	180	227	117	130	108	160	138	9	/100	17.5
	CHLF(T)16-20	455	151	126	240/270	180	228	118	130	108	160	138	9	/100	27
	CHLF(T)16-30	561	196	171	270/	195	240	130	130	108	160	138	9		33
	CHLF(T)16-40	621	340	216	270/	220	230	120	230	190	170	140	12		41

# CHLF/CHLF(T)20,50Hz

● Performance curve

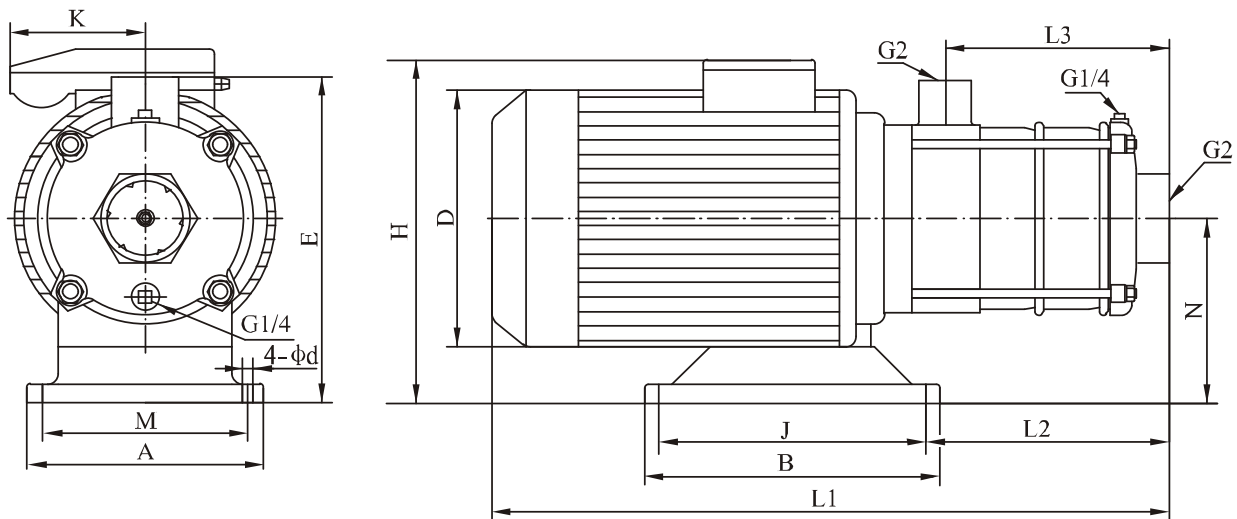
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## ● Performance table

Model	Driving motor		Q (m <sup>3</sup> /h)	10	12	14	16	18	20	22	24	26	28
	(kW)	(hp)		H (m)									
CHLF(T)20-10	1.1	1.5	H (m)	12.5	12	11.5	11	10.5	9.5	8.5	7.5	6.5	5.5
CHLF(T)20-20	2.2	3		25.5	24.5	24	23	22	21	20	18	16	13.5
CHLF(T)20-30	4	5.5		38	37.5	37	36	35	33	31	28	25	22
CHLF(T)20-40	4.4	6		51	50	49	48	47	44.5	41.5	37.5	33.5	30

## ● Installation sketch



## ● Size and weight

Motor	Model	Size (mm)													Weight (kg)
		L1	L2	L3	H	D	E	N	A	M	B	J	d	K	
Three-phase/ single-phase	CHLF(T)20-10	423	151	126	230/265	180	227	117	130	108	160	138	9	/100	17.5
	CHLF(T)20-20	455	151	126	240/270	180	228	118	130	108	160	138	9	/100	27
	CHLF(T)20-30	576	294	171	270/	220	230	120	230	190	170	140	12		41
	CHLF(T)20-40	621	340	216	270/	220	230	120	230	190	170	140	12		44