SWP
Water Pumps

CHL,CHLF,CHLT

Horizontal Multistage Centrifugal Pump, 50Hz

Approvals

General Data

Technical Data

Horizontal Multistage Pumps

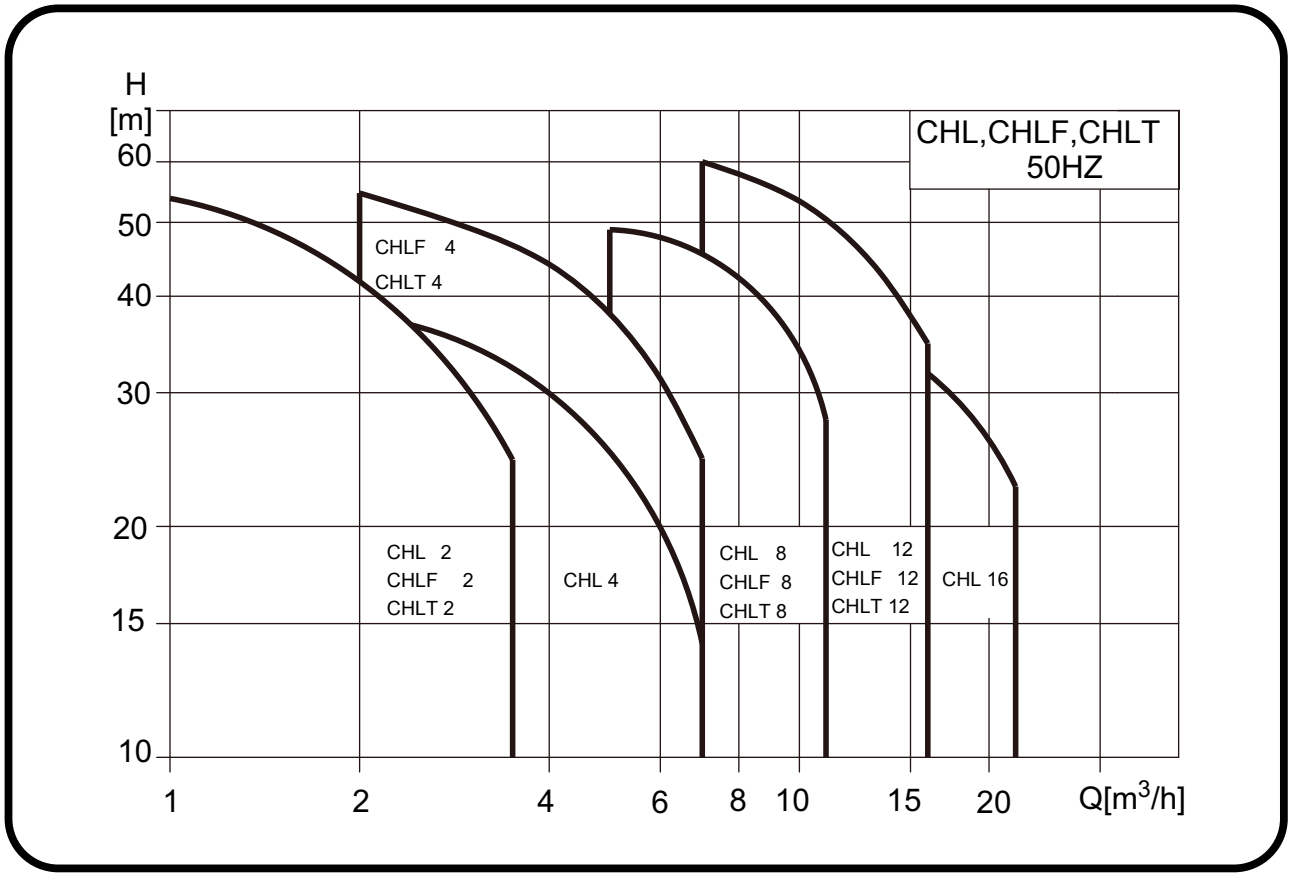
English - SWP horizontal multistage pumps CHLF / CHLT and CHL with pumping pressure up to 60 meter and flow up to 22 m3/h. All essential parts like shaft, impeller and intermediate chambers are fully stainless steel AISI 304 (W-Nr. 1.43.01) while the suction and discharge are in cast iron for CHLF. CHL and CHLT pumps are fully stainless steel including the suction and discharge parts. The pumps are equipped with mechanical seal silicon carbide / carbon. The pumps have got high efficiency.

Deutsch - SWP horizontale Hochdruckpumpen der Baureihe CHLF / CHLT und CHL mit Förderhöhen bis zu 60 Metern und Fördermengen bis zu 22 m3/h. Sämtliche wesentlichen Teile wie Welle, Laufräder und Zwischenkammern sind aus Edelstahl AISI (W-Nr. 1.43.01). CHL und CHLT Pumpen sind komplett aus Edelstahl inkl. der Saug- und Druckstutzen während die CHLF Pumpen Grausguss Druck- und Saugstutzen haben. Die Gleitringdichtung besteht aus Kohle / Hartmetall. Die Pumpen haben einen hohen Wirkungsgrad und sind wartungsfrei.

Français - Les pompes de haute pression horizontales SPCO de l'assortiment CHLF,CHLT et CHL avec des hauteurs de propulsion jusqu'à 60 mètres et une puissance de propulsion jusqu'à 22 m3/h. Toutes les pièces principales comme axes, roués libres et espaces intermédiaires sont fabriquées en acier inoxydable AISI 304 (W-No. 1.43.01). Les pompes CHL et CHLT sont entièrement fabriquées en acier y compris les raccords aspires et marques et le pompe CHLF avec le raccord en font gris. Le joint circulaire mobile se compose de charbon / métal dur. Les pompes ont un degré d'activité élevé et sont libres de maintenance.

Italiano - SWP – Pompe orizzontali plurigiranti CHLF – CHLT e CHL sono capaci di prevalenze fino a 60 m e portate sino a 22 m3/h. Nel tipo CHLF la costruzione prevede ACCIAIO INOX 304 (W-Nr. 1.43.01) per le parti essenziali come giranti, albero e camere intermedie, camere di aspirazione e mandata sono in ghisa. Per i tipi CHL e CHLT anche camere di aspirazione e mandata sono realizzate in ACCIAIO INOX. Tutte sono provviste di tenuta meccanica in carburo di silicio e grafite. Le pompe garantiscono alta efficienza e sono esenti da manutenzione.

Performance Ranges



Curve conditions

Following conditions are suitable for the performance curves shown above

- All the performance curves are based on the measured values of a motor 3 x 380V - 415V at a constant speed of 2900 rpm
- Curve tolerance in conformity with ISO9906, appendix A
- Measurement is done with 20°C air-free water, kinematic viscosity of 1mm²/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.

Application

CHL,CHLF and CHLT 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.

Operation conditions

Liquid (normal) temperature type: -15°C to +70°C.

- Hot water type: +70°C to 110°C.
- Highest ambient temperature: up to +52°C.
- Max. operation pressure: 10 bar.
- Max. inlet pressure is limited by max. operation pressure.

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

Connection port

Connection port	CHL,CHLF CHLT 2	CHL,CHLF CHLT 4	CHL 8,12,16	CHLF 8 ,CHLT 8	CHLF 12 ,CHLT 12
Inlet	G1	G 1 ¼	G2	G 1 ½	G 1 ½
Outlet	G1	G1	G2	G 1 ¼	G 1 ½

Definition of Model

CHL Example

CHL 4 - 30

- 30 — Stage x10
- 4 — Rated flow m3/h
- CHL — Horizontal multistage centrifugal pump (Flow passage components stainless steel 304 or 316)

CHLF Example

CHLT 4 - 30

- 30 — Stage x10
- 4 — Rated flow m3/h
- CHLT — Light horizontal multistage centrifugal pump
  T stands for "Water-in and water-out body" is of cast iron
  other parts stainless steel

CHLT Example

CHLF 4 - 30

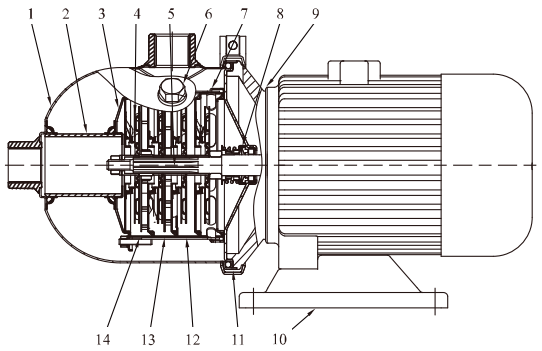
- 30 — Stage x10
- 4 — Rated flow m3/h
- CHLF — Light horizontal multistage centrifugal pump
  F stands for stainless steel version

Electric Motor

The pump is fitted with a totally enclosed, fan-cooled squirrel-cage 2 pole motor

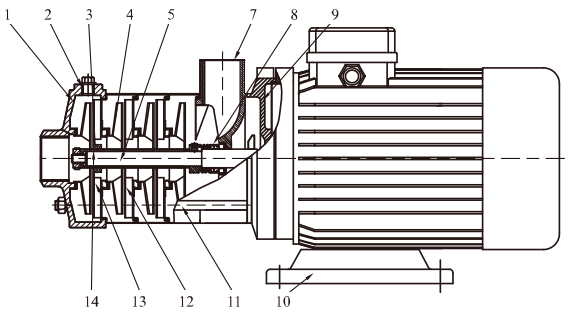
- Protection class: IP55
- Insulation class: F
- Standard voltage 50Hz 1x220-240V
  3x220-240V/380-415V

Section drawing CHL and material list



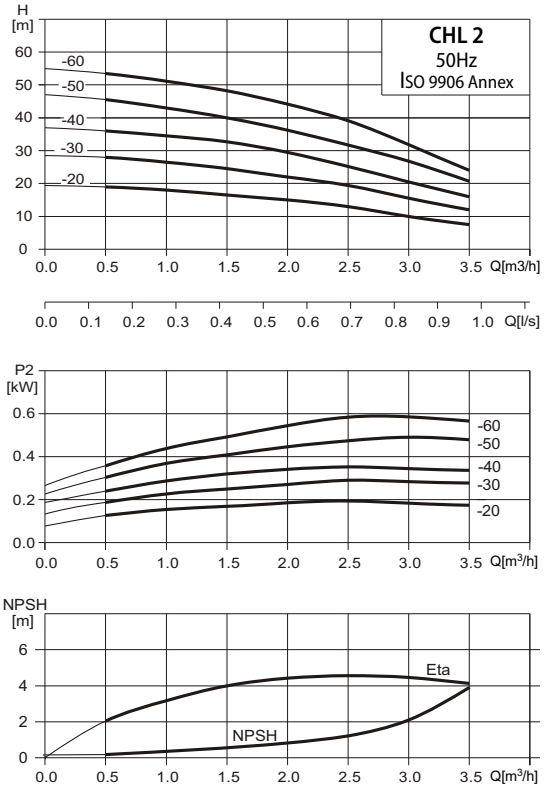
No.	Name	Material	AISI / ASTM
1	Inlet and outlet chamber	Stainless steel	AISI 304
2	connection pipe	Stainless steel	AISI 304
3	Clamp plate	Stainless steel	AISI 304
4	Impeller	Stainless steel	AISI 304
5	Shaft	Stainless steel	AISI 304
6	Plug	Stainless steel	AISI 304
7	Discharge diffuser	Stainless steel	AISI 304
8	Mechanical seal		
9	Motor end cover	Aluminum alloy	
10	Base plate	Steel plate	AISI1015
11	Spannband	Stainless steel	AISI 304
12	Diffuser	Stainless steel	AISI 304
13	Support diffuser	Stainless steel	AISI 304
14	Inducer	Stainless steel	AISI 304

Section drawing CHLF,CHLTand material list



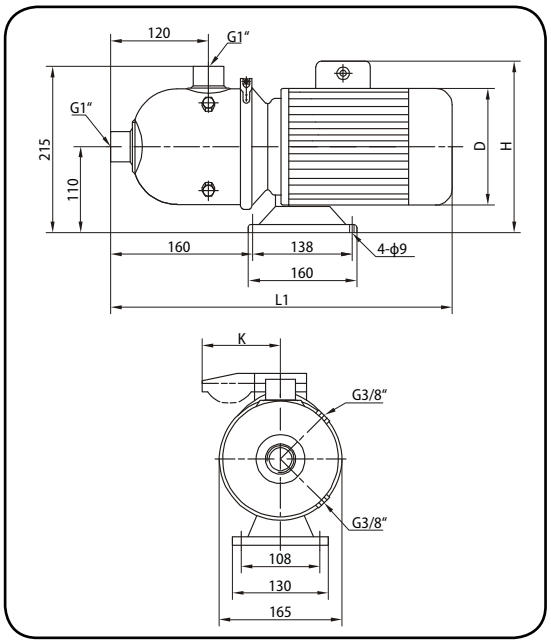
No.	Name	Material	AISI / ASTM
2	Plug	Stainless steel	AISI 304
3	Bearing	Tungsten carbide	
4	Impeller	Stainless steel	AISI 304
5	Shaft	Stainless steel	AISI 304
8	Mechanical seal	Stainless steel	
9	Motor end cover	Aluminum alloy	
10	Base plate	Steel plate	AISI1015
11	Staybolt	Stainless steel	AISI 304
12	Diffuser	Stainless steel	AISI 304
13	Support diffuser	Stainless steel	AISI 304
14	Impeller sleeve	Stainless steel	AISI 304
CHLF			
1	Suction	Cast iron	ASTM25B
7	Discharge	Cast iron	ASTM25B
CHLT			
1	Suction	Stainless steel	AISI 304
7	Discharge	Stainless steel	AISI 304

Performance curves



CHL 2

Installation sketch



Size and weight

Model	Size [mm]					Weight [kg]
	L1	D	H		K (1Ø)	
			1Ø	3Ø		
CHL 2-20	400	145	230	215	96	13
CHL 2-30	400	145	230	215	96	13
CHL 2-40	400	145	230	215	96	13
CHL 2-50	400	145	230	215	96	13
CHL 2-60	445	170	245	225	100	15

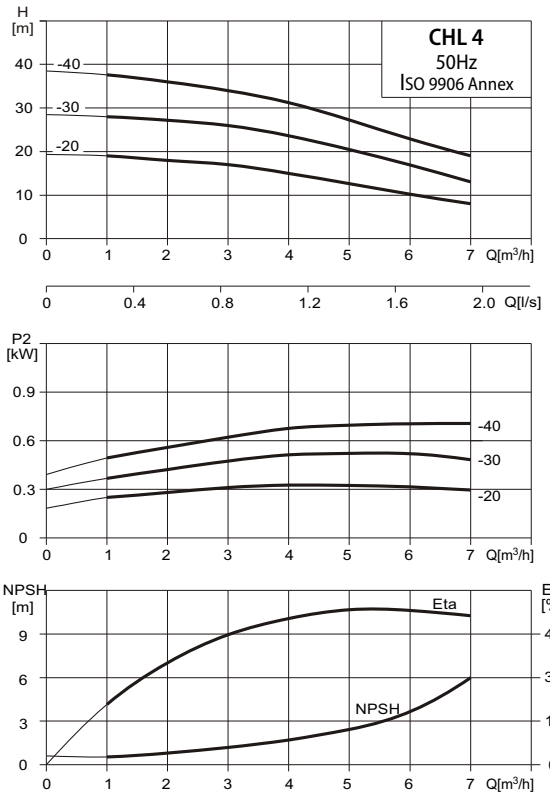
Performance table

Model	Q [m^3/h]	0.5	1.0	1.5	2.0	2.5	3.0
CHL 2-20	H [m]	19	18	16.5	15	13	10
CHL 2-30		28	26.5	24.5	22	19	15.5
CHL 2-40		36	34.5	33	29	25	20.5
CHL 2-50		45.5	43	40	36	31.5	26.5
CHL 2-60		53.5	51	48	44	39	32

Electrical data

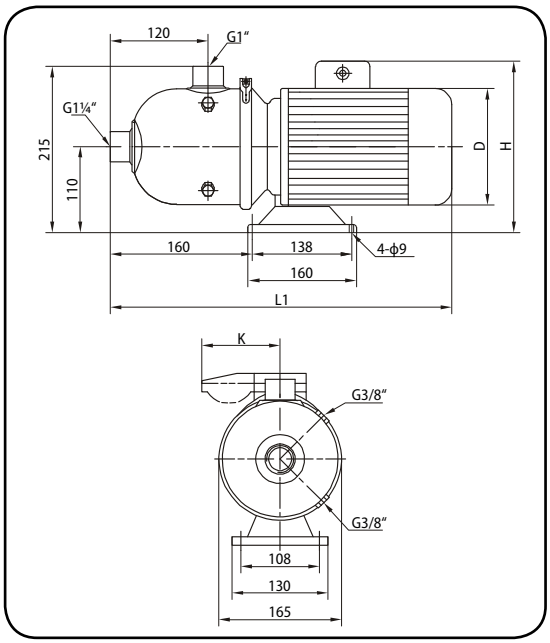
Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHL 2-20	510～530	470～480	2.26	1.66～1.49/0.96～0.86
CHL 2-30	720～730	700～730	3.65	2.20～2.11/1.27～1.22
CHL 2-40	720～730	700～730	3.65	2.20～2.11/1.27～1.22
CHL 2-50	720～730	700～730	3.65	2.20～2.11/1.27～1.22
CHL 2-60	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65

Performance curves



CHL 4

Installation sketch



Size and weight

Model	Size [mm]					Weight [kg]
	L1	D	H		K (1Ø)	
			1Ø	3Ø		
CHL 4-20	400	145	230	215	96	12
CHL 4-30	445	170	245	225	100	15
CHL 4-40	445	170	245	225	100	15

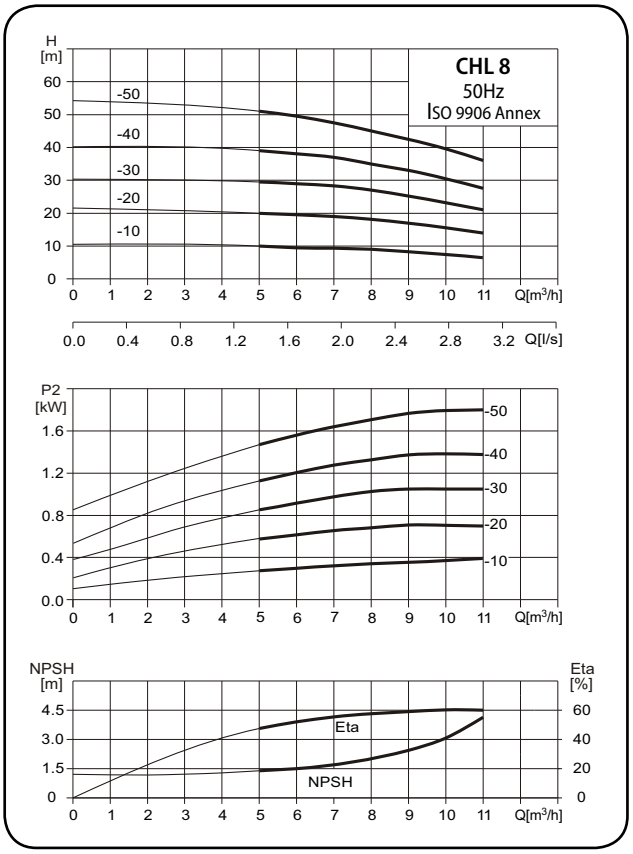
Performance table

Model	Q [m³/h]	1	2	3	4	5	6
CHL 4-20	H [m]	19	18	17	15	12.5	10
CHL 4-30		28	27	26	23.5	20.5	17
CHL 4-40		37.5	36	34	31	27	23

Electrical data

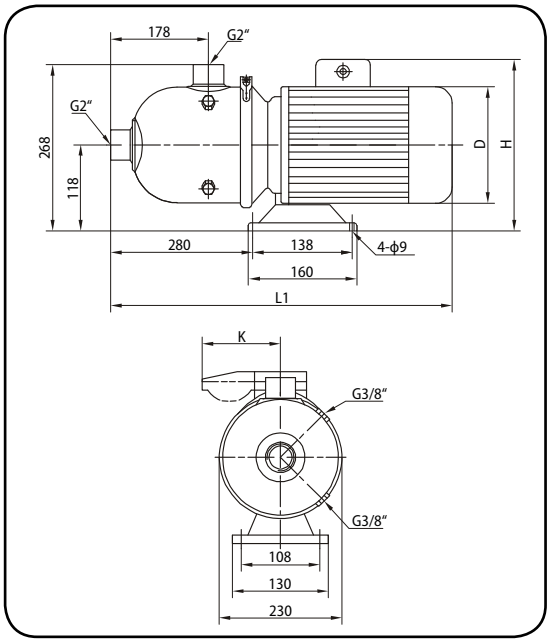
Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHL 4-20	720～730	700～730	3.65	2.20～2.11/1.27～1.22
CHL 4-30	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65
CHL 4-40	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65

Performance curves



CHL 8

Installation sketch



Size and weight

Model	Size [mm]					Weight [kg]
	L1	D	H		K (1Ø)	
			1Ø	3Ø		
CHL 8-10	560	170	265	230	100	20
CHL 8-20	560	170	265	230	100	20
CHL 8-30	560	170	265	230	100	25
CHL 8-40	580	180	270	240	100	25
CHL 8-50	580	180	270	240	100	30

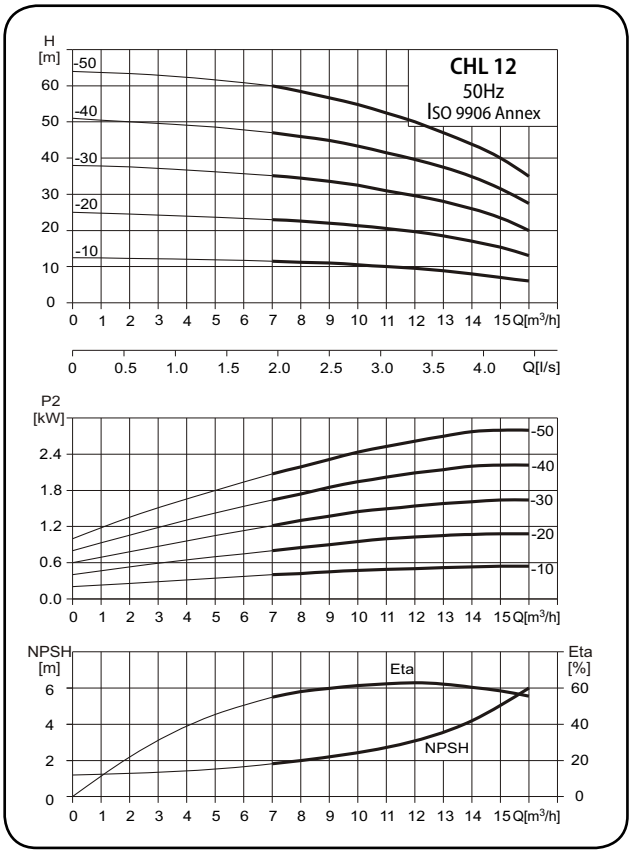
Performance table

Model	Q [m³/h]	5	6	7	8	9	10
CHL 8-10	H [m]	10	9.5	9.3	9	8	7.5
CHL 8-20		20	19.5	19	18	17	15.5
CHL 8-30		29.5	29	28	27	25	23
CHL 8-40		39	38	37	35	33	30.5
CHL 8-50		51	49.5	47.5	45	42.5	39.5

Electrical data

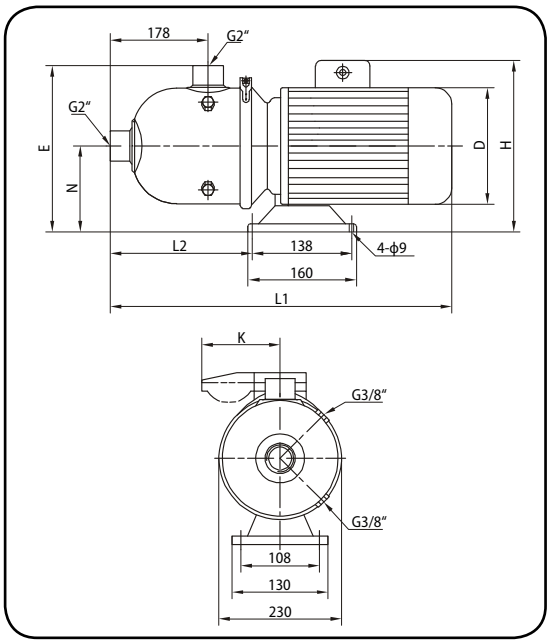
Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHL 8-10	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65
CHL 8-20	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65
CHL 8-30	1500～1600	1460～1330	7	4.16～3.98/2.4～2.3
CHL 8-40	1800～1900	1820～1900	9.1	5.96～5.37/3.44～3.10
CHL 8-50	2740～2720	2720～2750	12.4	8.31～7.67/4.80～4.43

Performance curves



CHL 12

Installation sketch



Size and weight

Model	Size [mm]								Weight [kg]
	L1	L2	H		D	E	N	K (1Ø)	
			1Ø	3Ø					
CHL 12-10	560	280	265	230	170	268	118	/100	20
CHL 12-20	560	280	265	230	170	268	118	/100	21
CHL 12-30	580	280	270	240	180	268	118	/100	25
CHL 12-40	580	280	270	240	180	268	118	/100	29
CHL 12-50	610	270		270	195	276	126		34

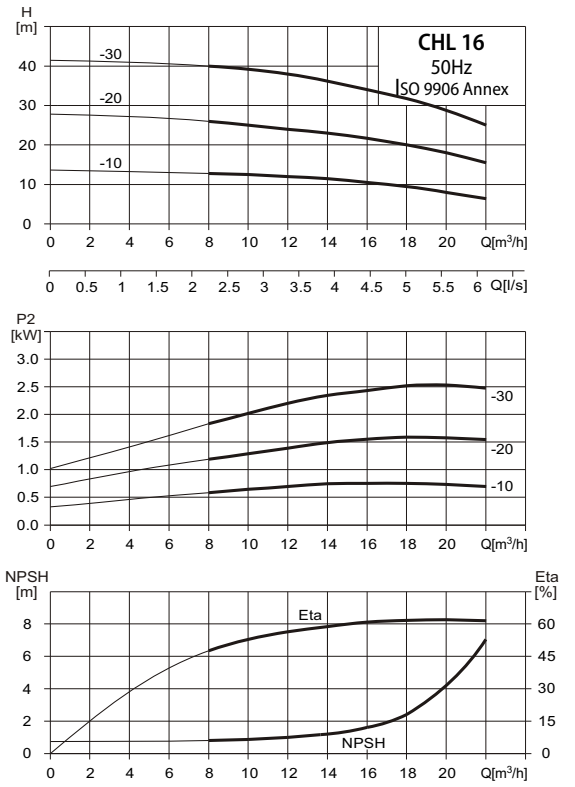
Performance table

Model	Q [m³/h]	7	8	9	10	11	12	13	14	15
CHL 12-10	H [m]	11.5	11.2	11	10.5	10	9.5	9	8	7
CHL 12-20		23	22.5	22	21.5	20.5	19.5	18.5	17	15.5
CHL 12-30		35	34.5	33.5	32.5	31	29.5	28	26	23.5
CHL 12-40		47	46	45	43.5	41.5	39.5	37.5	35	31.5
CHL 12-50		60	58	56.5	55	52.5	50	47	44	40

Electrical data

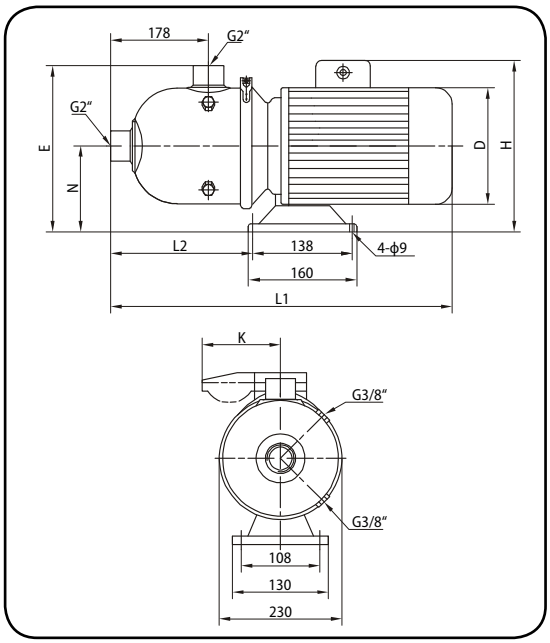
Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHL 12-10	1466	1443	7-6.4	4.5-4.1/2.6-2.4
CHL 12-20	1466	1443	7.6-7	4.9-4.5/2.8-2.6
CHL 12-30	2368	2292	11-10.1	7.1-6.5/4.1-3.8
CHL 12-40	3376	3029	14.6-13.4	9-8.3/5.3-4.8
CHL 12-50		3631		11-10/6.3-5.8

Performance curves



CHL 16

Installation sketch



Size and weight

Model	Size [mm]							Weight [kg]
	L1	L2	H		D	E	N	K (1Ø)	
			1Ø	3Ø					
CHL 16-10	560	280	265	230	170	268	118	/100	20
CHL 16-20	580	280	270	240	180	268	118	/100	27
CHL 16-30	610	270		270	195	276	126		34

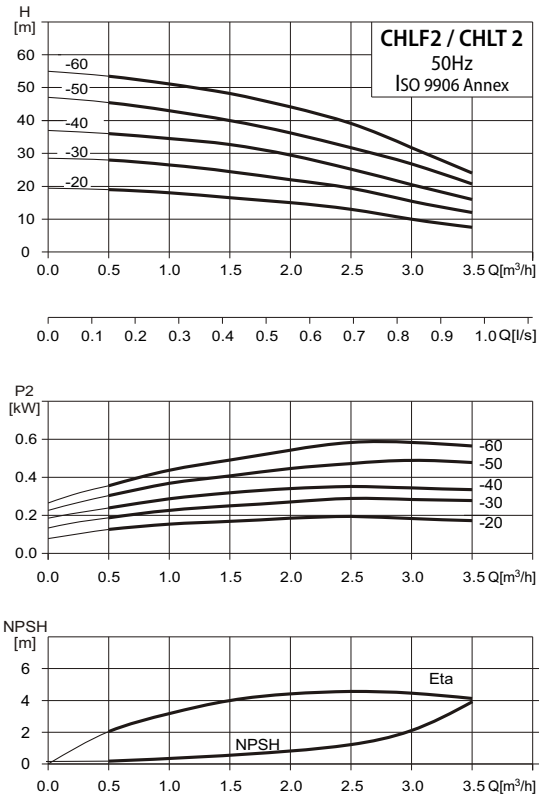
Performance table

Model	Q [m3/h]	8	10	12	14	16	18	20
CHL 16-10	H [m]	12.8	12.5	12	11.5	10.5	9.5	8
CHL 16-20		26	25	24	23	21.7	20	18
CHL 16-30		40	39	38	36	34	31.5	29

Electrical data

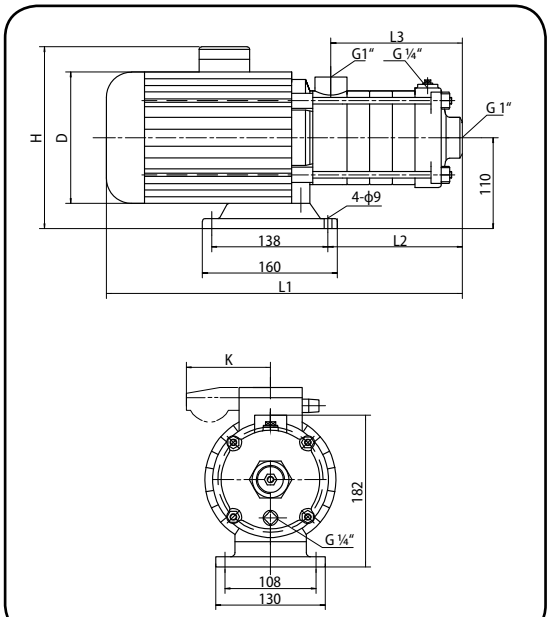
Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHL 16-10	1500～1600	1460～1330	7	4.16～3.98/2.4～2.3
CHL 16-20	2740～2720	2720～2750	12.4	8.31～7.67/4.80～4.43
CHL 16-30		3520～3600		10.76～10.13/6.21～5.85

Performance curves



CHLF 2 / CHLT 2

Installation sketch



Size and weight

Model	Size [mm]							Weight [kg]
	L1	L2	L3	H		D	K (1Ø)	
				1Ø	3Ø			
CHLF 2-20 / CHLT 2-20	305	87	84	230	215	145	96	15
CHLF 2-30 / CHLT 2-30	323	105	102	230	215	145	96	15
CHLF 2-40 / CHLT 2-40	341	123	120	230	215	145	96	15
CHLF 2-50 / CHLT 2-50	359	141	138	230	215	145	96	15
CHLF 2-60 / CHLT 2-60	422	159	156	245	225	170	100	17

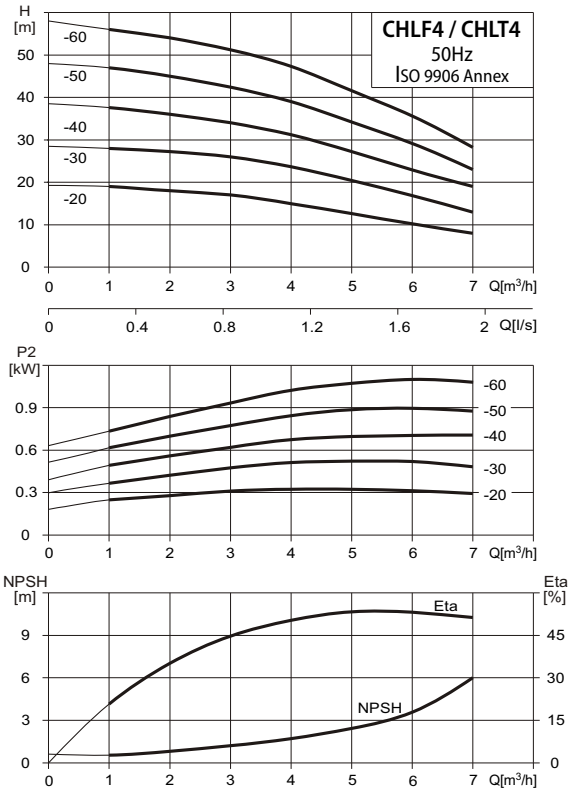
Performance table

Model	Q [m³/h]	0.5	1.0	1.5	2.0	2.5	3.0
CHLF 2-20 / CHLT 2-20	H [m]	19	18	16.5	15	13	10
CHLF 2-30 / CHLT 2-30		28	26.5	24.5	22	19	15.5
CHLF 2-40 / CHLT 2-40		36	34.5	33	29	25	20.5
CHLF 2-50 / CHLT 2-50		45.5	43	40	36	31.5	26.5
CHLF 2-60 / CHLT 2-60		53.5	51	48	44	39	32

Electrical data

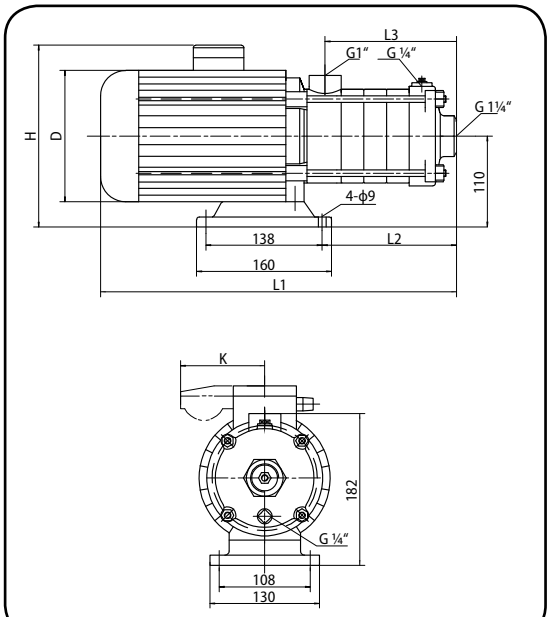
Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHLF 2-20 / CHLT 2-20	510～530	470～480	2.26	1.66～1.49/0.96～0.86
CHLF 2-30 / CHLT 2-30	720～730	700～730	3.65	2.20～2.11/1.27～1.22
CHLF 2-40 / CHLT 2-40	720～730	700～730	3.65	2.20～2.11/1.27～1.22
CHLF 2-50 / CHLT 2-50	720～730	700～730	3.65	2.20～2.11/1.27～1.22
CHLF 2-60 / CHLT 2-60	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65

Performance curves



CHLF 4 / CHLT 4

Installation sketch



Size and weight

Model	Size [mm]							Weight [kg]
	L1	L2	L3	H		D	K (1Ø)	
				1Ø	3Ø			
CHLF 4-20 / CHLT 4-20	329	105	102	230	215	145	96	15
CHLF 4-30 / CHLT 4-30	356	132	129	230	215	145	96	15
CHLF 4-40 / CHLT 4-40	416	162	156	245	225	170	100	17
CHLF 4-50 / CHLT 4-50	455	188	183	245	225	170	100	17
CHLF 4-60 / CHLT 4-60	482	213	213	245	225	170	100	17

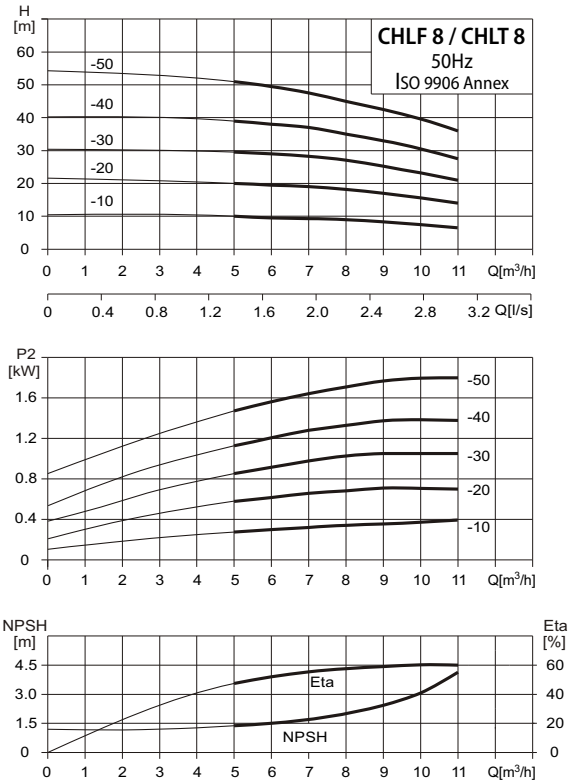
Performance table

Model	Q [m^3/h]	1	2	3	4	5	6
CHLF 4-20 / CHLT 4-20	H [m]	19	18	17	15	12.5	10
CHLF 4-30 / CHLT 4-30		28	27	26	23.5	20.5	17
CHLF 4-40 / CHLT 4-40		37.5	36	34	31	27	23
CHLF 4-50 / CHLT 4-50		47	45	42.5	39	34	29
CHLF 4-60 / CHLT 4-60		56	54	51	47	41.5	35.5

Electrical data

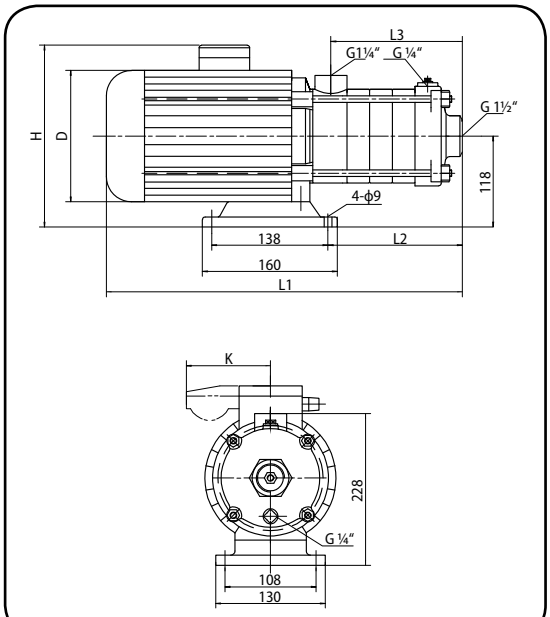
Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHLF 4-20 / CHLT 4-20	720～730	700～730	3.65	2.2～2.11/1.27～1.22
CHLF 4-30 / CHLT 4-30	800～840	780～820	3.9	2.3～2.2/1.3～1.27
CHLF 4-40 / CHLT 4-40	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65
CHLF 4-50 / CHLT 4-50	1500～1600	1460～1330	7	4.16～3.98/2.4～2.3
CHLF 4-60 / CHLT 4-60	1500～1600	1460～1330	7	4.16～3.98/2.4～2.3

Performance curves



CHLF 8 / CHLT 8

Installation sketch



Size and weight

Model	Size [mm]							Weight [kg]
	L1	L2	L3	H		D	K (1Ø)	
				1Ø	3Ø			
CHLF 8-10 / CHLT 8-10	395	126	108	265	230	170	100	20
CHLF 8-20 / CHLT 8-20	395	126	108	265	230	170	100	20
CHLF 8-30 / CHLT 8-30	425	156	138	265	230	170	100	25
CHLF 8-40 / CHLT 8-40	490	186	168	270	240	180	100	28
CHLF 8-50 / CHLT 8-50	520	216	198	270	240	180	100	30

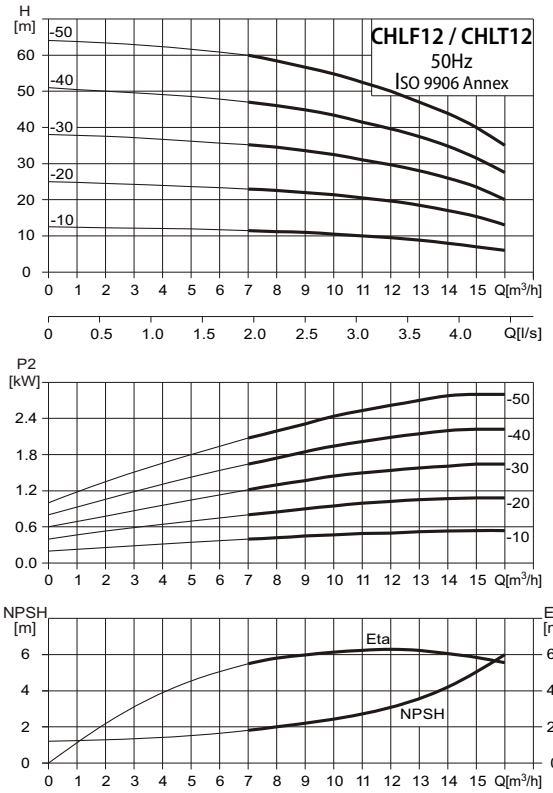
Performance table

Model	Q [m³/h]	5	6	7	8	9	10
CHLF 8-10 / CHLT 8-10	H [m]	10	9.5	9.3	9	8	7.5
CHLF 8-20 / CHLT 8-20		20	19.5	19	18	17	15.5
CHLF 8-30 / CHLT 8-30		29.5	29	28	27	25	23
CHLF 8-40 / CHLT 8-40		39	38	37	35	33	30.5
CHLF 8-50 / CHLT 8-50		51	49.5	47.5	45	42.5	36

Electrical data

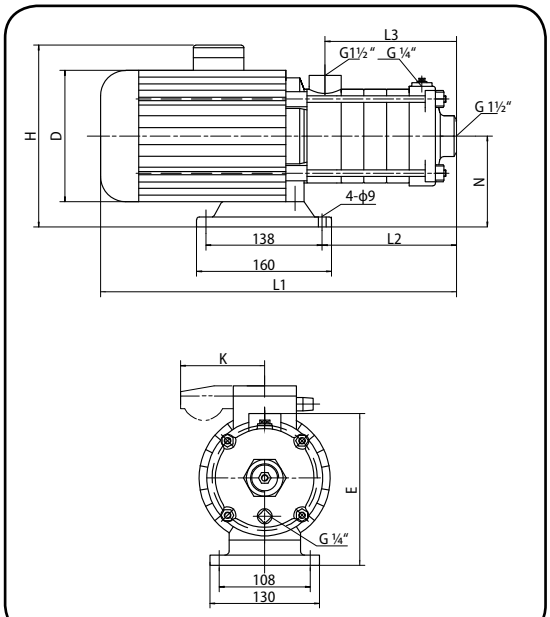
Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHLF 8-10 / CHLT 8-10	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65
CHLF 8-20 / CHLT 8-20	1000～1060	1000～1030	4.8	3.01～2.86/1.74～1.65
CHLF 8-30 / CHLT 8-30	1500～1600	1460～1330	7	4.16～3.98/2.4～2.3
CHLF 8-40 / CHLT 8-40	1800～1900	1820～1900	9.1	5.96～5.37/3.44～3.10
CHLF 8-50 / CHLT 8-50	2740～2720	2720～2750	12.4	8.31～7.67/4.80～4.43

Performance curves



CHLF 12 / CHLT12

Installation sketch



Size and weight

Model	Size [mm]									Weight [kg]
	L1	L2	L3	H		D	E	N	K (1Ø)	
				1Ø	3Ø					
CHLF 12-10 / CHLT 12-10	395	126	108	265	230	170	228	118	100	20
CHLF 12-20 / CHLT 12-20	395	126	108	265	230	170	228	118	100	21
CHLF 12-30 / CHLT 12-30	460	156	138	270	240	180	228	118	100	25
CHLF 12-40 / CHLT 12-40	490	186	168	270	240	180	228	118	100	29
CHLF 12-50 / CHLT 12-50	555	216	198		270	195	240	126		34

Performance table

Model	Q [m³/h]	7	8	9	10	11	12	13	14	15
CHLF 12-10 / CHLT 12-10	H [m]	11.5	11.2	11	10.5	10	9.5	9	8	7
CHLF 12-20 / CHLT 12-20		23	22.5	22	21.5	20.5	19.5	18.5	17	15.5
CHLF 12-30 / CHLT 12-30		35	34.5	33.5	32.5	31	29.5	28	26	23.5
CHLF 12-40 / CHLT 12-40		47	46	45	43.5	41.5	39.5	37.5	35	31.5
CHLF 12-50 / CHLT 12-50		60	58	56.5	55	52.5	50	47	44	40

Electrical data

Model	P1(W)		I1/1(A)full load current	
	1x220-240V	3x220-240V/380-415V	1x220-240V	3x220-240V/380-415V
CHLF 12-10 / CHLT 12-10	1466	1443	7 ~ 6.4	4.5 ~ 4.1/ 2.6 ~ 2.4
CHLF 12-20 / CHLT 12-20	1466	1443	7.6 ~ 7	4.9 ~ 4.5/2.8 ~ 2.6
CHLF 12-30 / CHLT 12-30	2368	2292	11 ~ 10.1	7.1 ~ 6.5/4.1 ~ 3.8
CHLF 12-40 / CHLT 12-40	3376	3029	14.6 ~ 13.4	9 ~ 8.3/5.3 ~ 4.8
CHLF 12-50 / CHLT 12-50		3631		11 ~ 10/6.3 ~ 5.8

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