



CB, 2, 4, 8, 12 CBI 2, 4 series

HBI, HBN2, 4, 8, 12 series

Horizontal Multistage Centrifugal Pumps 50, 60 Hz



STAIRS INDUSTRIAL CO., LTD.

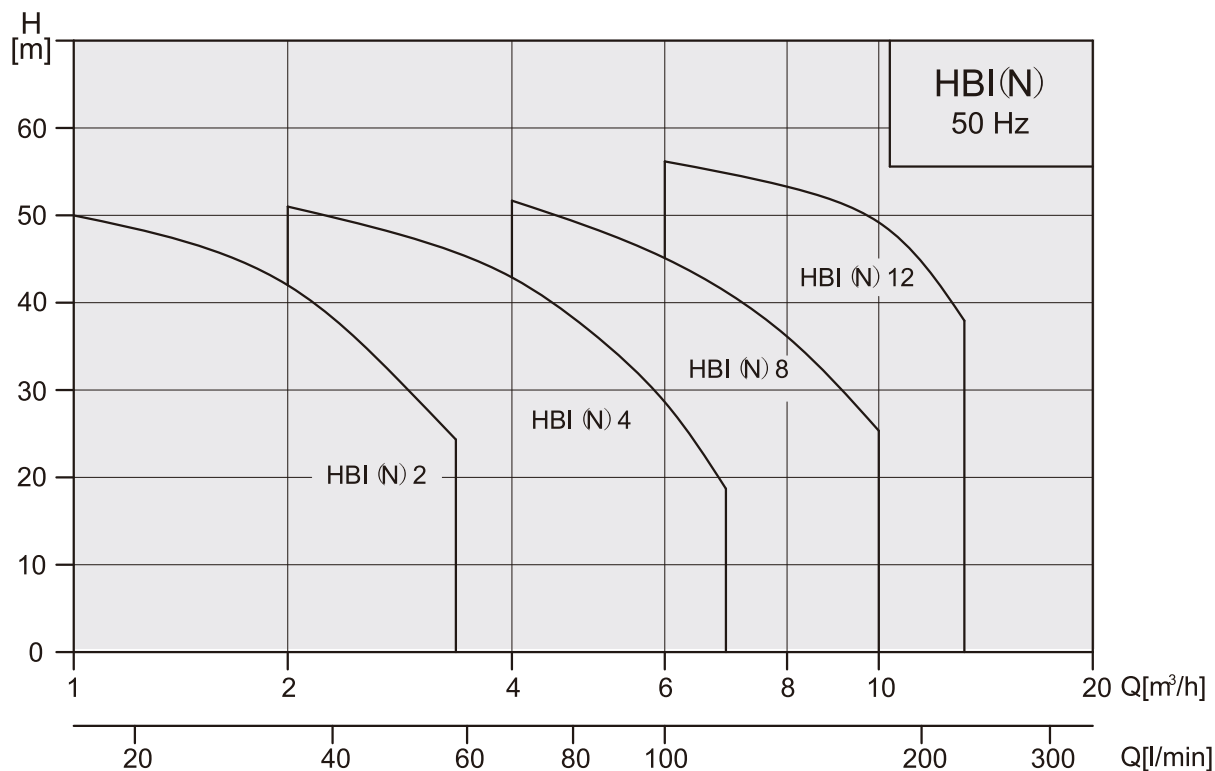


STAIRS PUMPS

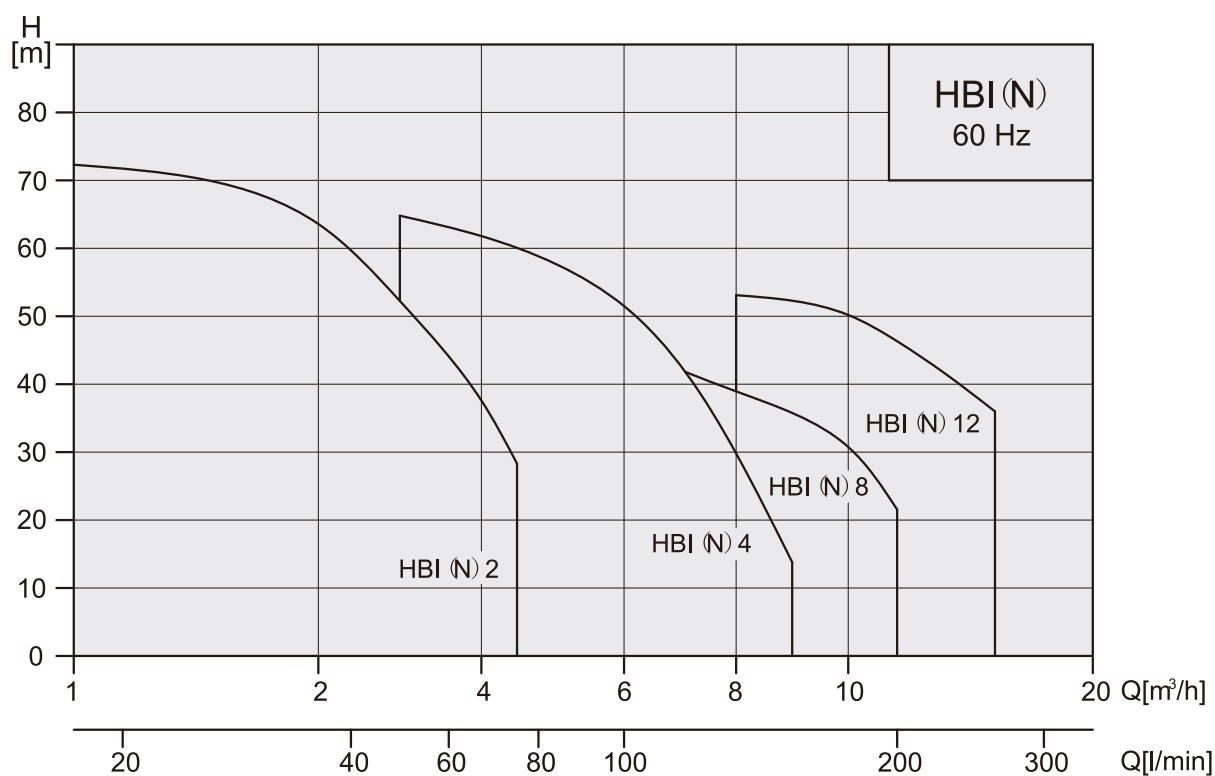
General data

HBI, HBN

Performance range, 50Hz



Performance range, 60Hz



Applications

Water supply and pressure boosting
Air-conditioning
Water treatment
Heating and cooling in industrial processes
Industrial washing and dish-washing machines
softened water
Pressure boosting of process water
Fertilizer/dosing systems



Pump

A horizontal, multistage centrifugal pump is made of stainless steel. The pump is a non-self priming type and fitted with a mechanical shaft seal.

Pipe connections:

Connection \ Pump	HBI(N) 2	HBI(N) 4	HBI(N) 8	HBI(N) 12
Suction port	Rp 1	Rp1 1/4	Rp 1 1/2	Rp 1 1/2
Discharge port	Rp 1	Rp1 1/4	Rp 1 1/2	Rp 1 1/2
Drain hole, priming hole	G 3/8	G 3/8	G 3/8	G 3/8

Motor

Totally enclosed and fan-cooled standard motor.
Rated speed: 2850rpm(50Hz), 3450rpm(60Hz)
Enclosure class: IP 54
Insulation class: F

Standard voltages:

	Phase	voltages
50Hz	1Φ	220-240V
	3Φ	220-240V / 380-415V
60Hz	1Φ	110 / 220V
		220-240V
	3Φ	220-255V / 380-440V
		220-277V / 380-480V

Operating conditions

Liquid temperature range: 0°C ~+110°C
Maximum ambient temperature: +40°C
Maximum operating pressure: 10 kg./cm².
Maximum inlet pressure is limited by maximum operating pressure.

Liquids to be pumped

These pumps are 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, fibers, and similar materials.

Most common non-highly corrosive watery liquids, oily liquids, hot and cold liquids can be pumped with these pumps.

The suitability of these pumps for pumping any particular liquid depends upon a number of factors, such as the pH value, contents of chemicals such as chlorides, oils, the temperature of the liquids, etc..

Please contact your distributor or the factory if there are any questions as to whether certain liquids are suitable for pumping with these pumps.

Model code

Type range	Nominal flow rate [m³/h]		Number of stages x10			Mechanical Seals
HBI (N) 2 , 4	4	-	3 0	-		RQBE (HBI) RQQE (HBN)

Type range	Nominal flow rate [m³/h]		Number of 130mm diameter impellers	Number of 98mm diameter impellers		Mechanical Seals
HBI (N) 8 , 12	8	-	1	5	-	RQBE (HBI) RQQE (HBN)

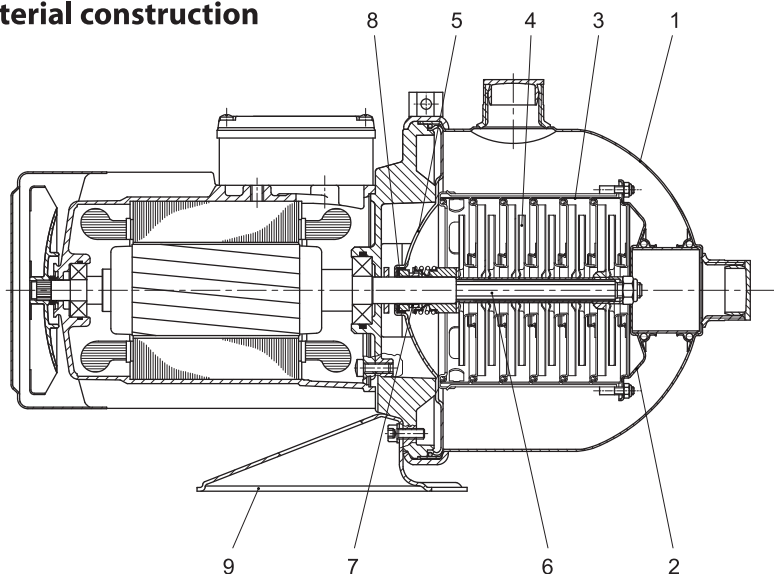
※ HBI 8-20M = Two 98 mm diameter impellers

Mechanical seals

List of Materials		Mechanical Seals	HBI 2/4	HBI 8/12	HBN 2/4	HBN 8/12
Q : Silicon carbide	E : EPDM	RQB	●	●	-	-
B : Carbon	V : Viton	RQQ	Optional	Optional	●	●
R : Seal Type		O-rings				
		E	●	●	●	●
		V	Optional	Optional	Optional	Optional

● Standard

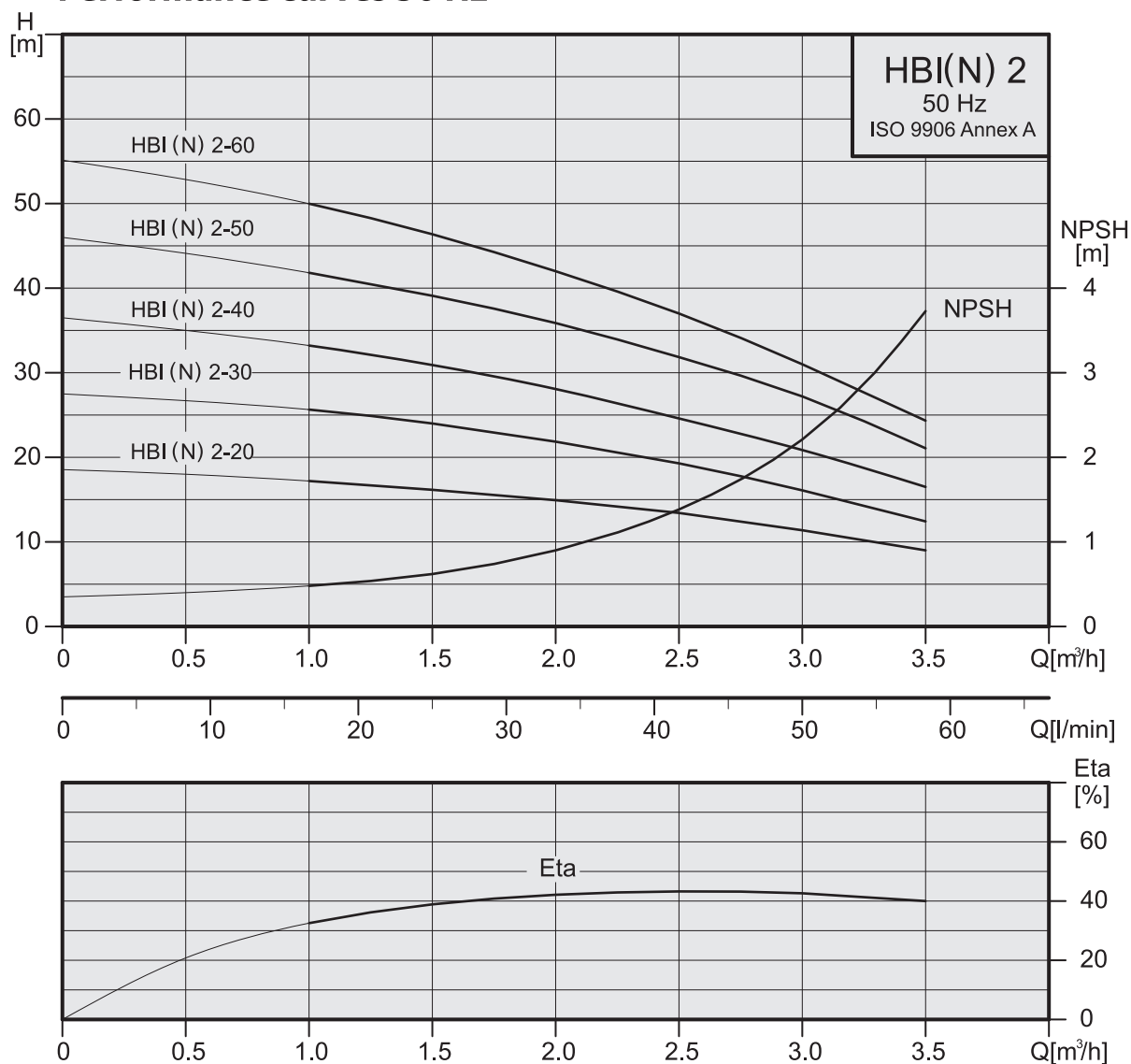
Material construction



Materials

Pos.	Description	Materials	
		HBI	HBN
1	Pump casing	SS304	SS316
2	Suction inter-connector	SS304	SS316
3	Chamber	SS304	SS316
4	Impeller	SS304	SS316
5	Cover plate	SS304	SS316
6	Shaft	SS431	SS316
7	Mechanical seal	Silicon carbide/Carbon	Silicon carbide/Silicon carbide
8	O-ring	EPDM	EPDM
9	Base plate	Steel	Steel

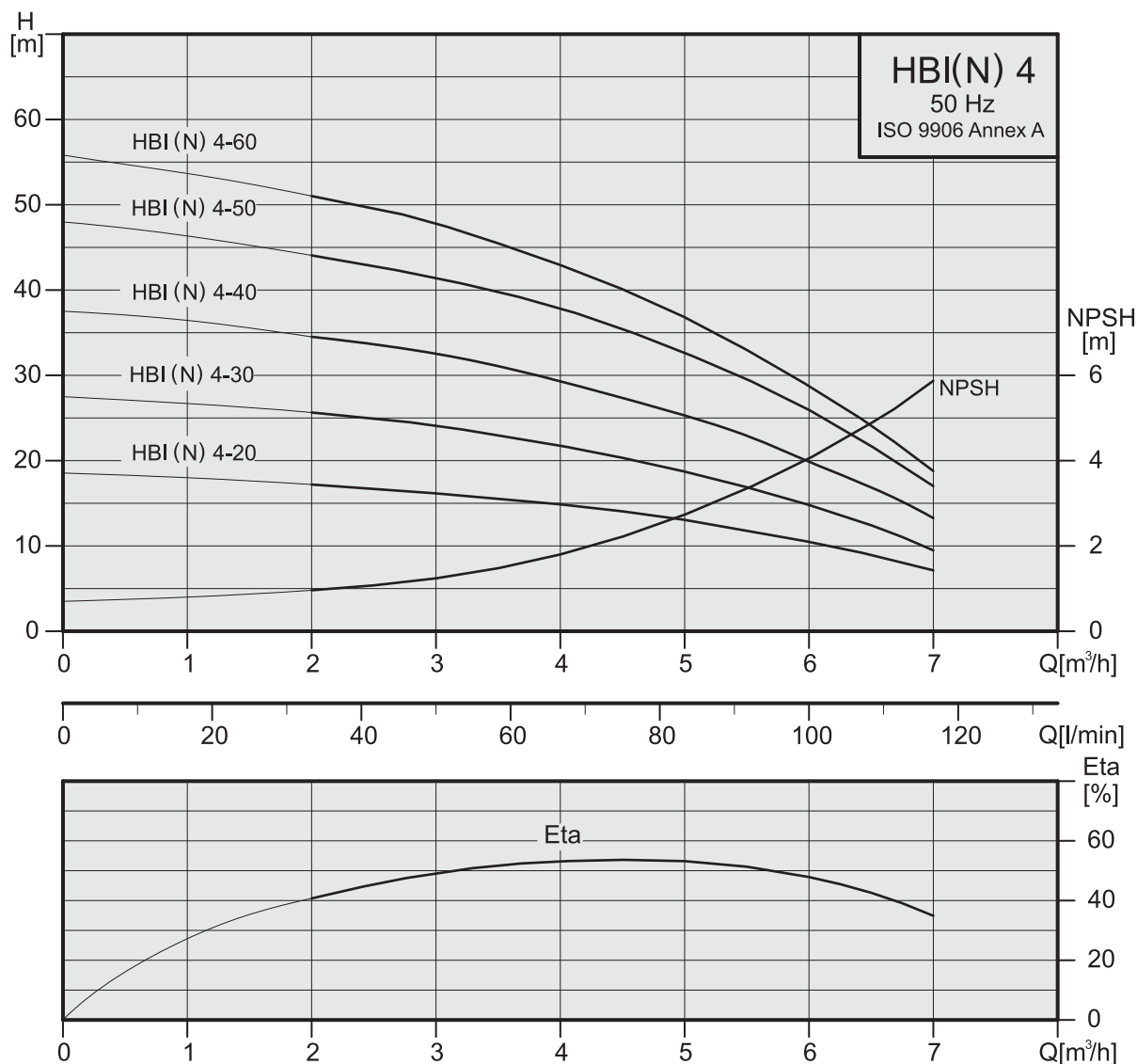
Performance curves 50 Hz



Electrical data, 2850 rpm

Pump type	1Φ 220-240V			3Φ Δ220-240V / Y 380-415V		
	I _{1/1} [A]	P ₁ [W]	P ₂ [W]	I _{1/1} [A]	P ₁ [W]	P ₂ [W]
HBI/HBN 2-20	1.7 - 1.9	360	280	2.0 - 2.7 / 1.2 - 1.6	370	290
HBI/HBN 2-30	2.3 - 2.2	470	365	2.4 - 2.8 / 1.4 - 1.6	550	430
HBI/HBN 2-40	2.7 - 2.6	580	455	2.4 - 2.7 / 1.4 - 1.6	650	505
HBI/HBN 2-50	3.2 - 3.3	720	550	2.7 - 3.0 / 1.6 - 1.8	810	620
HBI/HBN 2-60	3.8 - 3.6	830	635	2.9 - 3.3 / 1.7 - 1.9	910	690

Performance curves 50 Hz



Electrical data, 2850 rpm

Pump type	1 Φ 220-240V			3 Φ Δ220-240V / Y 380-415V		
	I _{1/1} [A]	P ₁ [W]	P ₂ [W]	I _{1/1} [A]	P ₁ [W]	P ₂ [W]
HBI/HBN 4-20	2.7 - 2.6	580	450	2.5 - 2.9 / 1.5 - 1.7	660	515
HBI/HBN 4-30	3.9 - 3.7	820	635	2.8 - 3.0 / 1.6 - 1.7	850	650
HBI/HBN 4-40	4.6 - 4.4	1000	765	3.3 - 3.5 / 1.9 - 2.0	1060	810
HBI/HBN 4-50	5.8 - 5.5	1240	1005	4.2 - 4.5 / 2.4 - 2.6	1310	1060
HBI/HBN 4-60	7.1 - 6.9	1510	1210	5.2 - 5.6 / 3.0 - 3.3	1550	1230



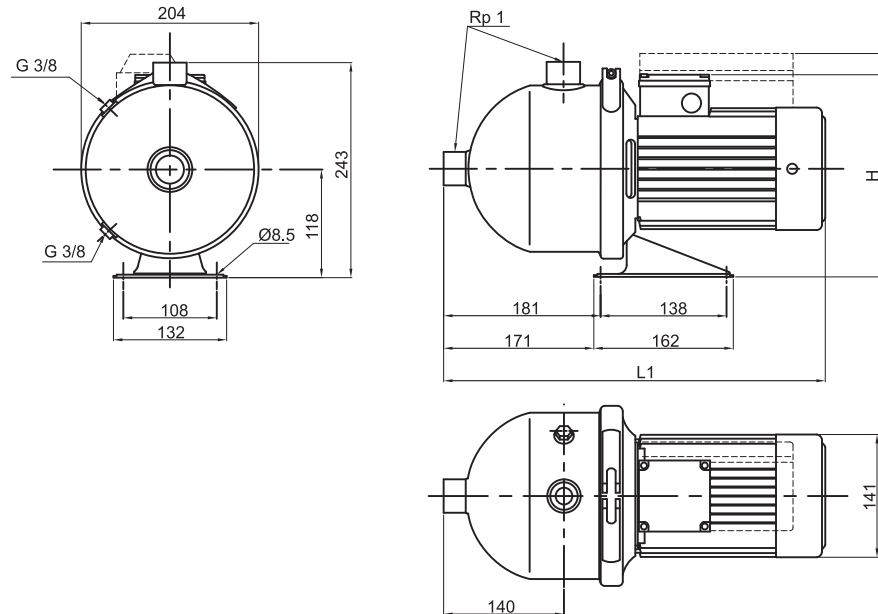
STAIRS PUMPS

Technical data

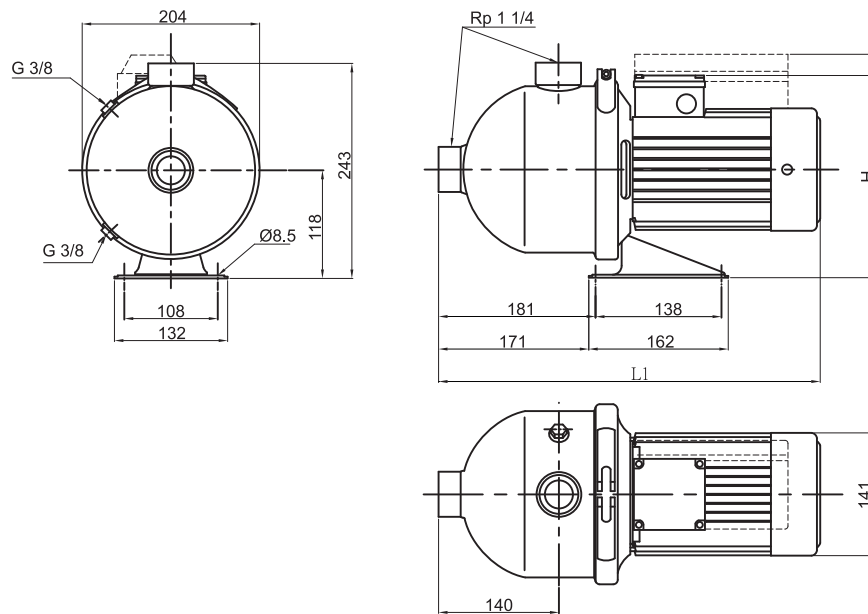
HBI, HBN

Dimensions and weights 50 Hz

HBI(N)-2

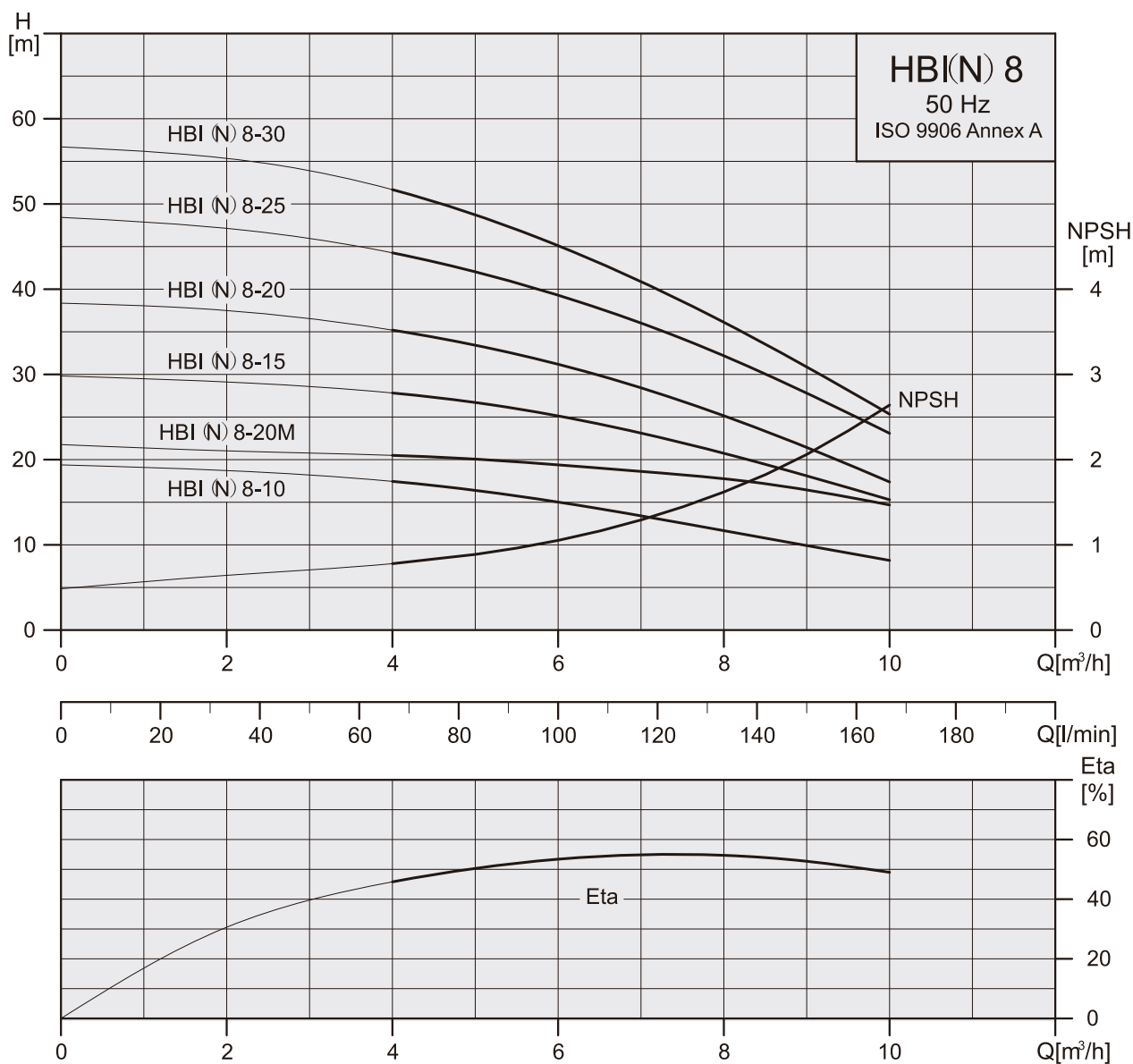


HBI(N)-4



pump type	Dimension (mm)				
	1-Phase		3-Phase		Net Weight (kg)
	L1	H	L1	H	
HBI/HBN 2-20	403	255	403	233	9.6
HBI/HBN 2-30	403	255	403	233	9.9
HBI/HBN 2-40	403	255	403	233	10.1
HBI/HBN 2-50	403	255	403	233	10.8
HBI/HBN 2-60	403	255	403	233	11.0
HBI/HBN 4-20	403	255	403	233	9.6
HBI/HBN 4-30	403	255	403	233	9.9
HBI/HBN 4-40	403	255	403	233	10.6
HBI/HBN 4-50	441	255	441	233	12.1
HBI/HBN 4-60	441	255	441	233	12.3

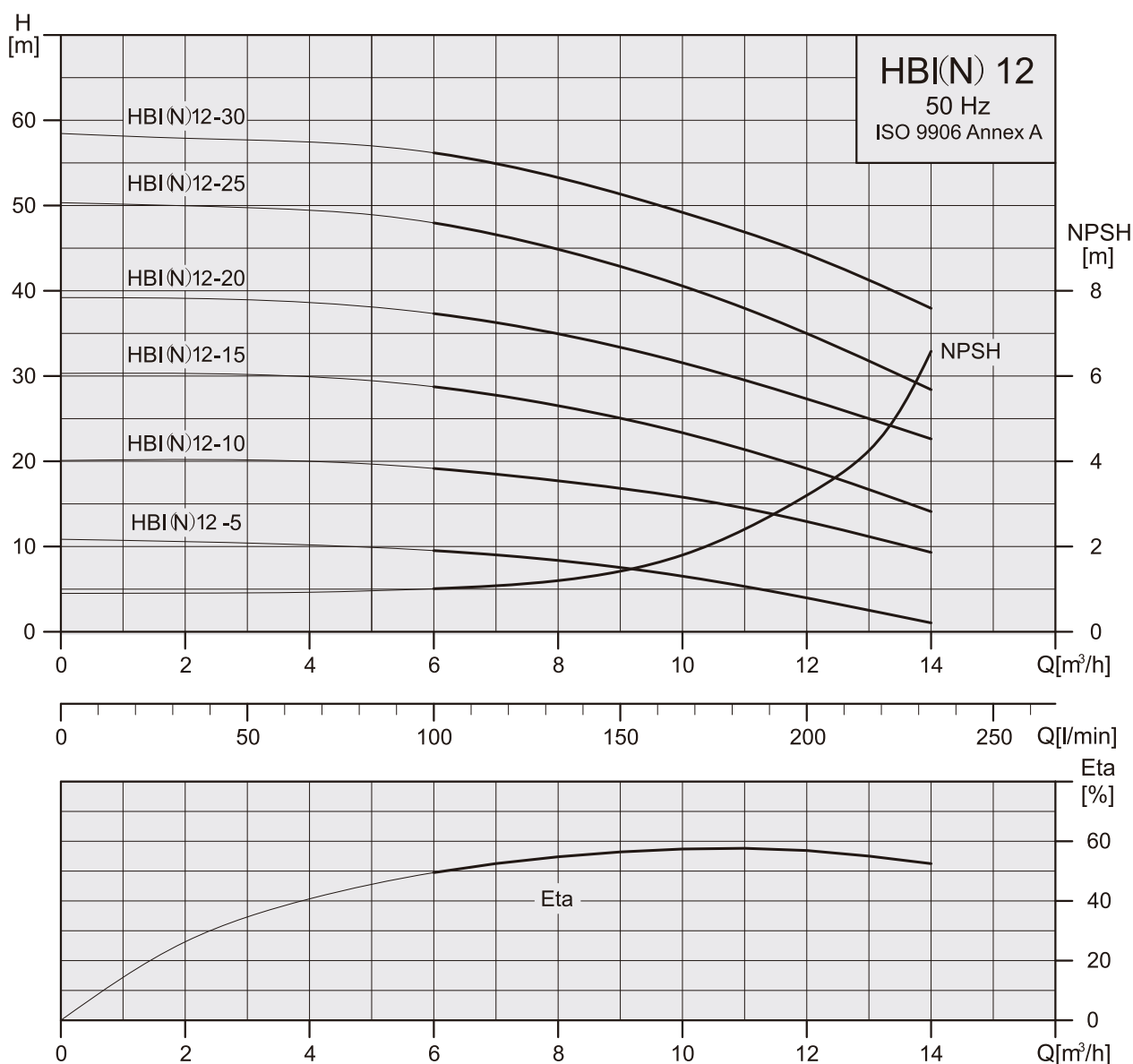
Performance curves 50Hz



Electrical data, 2850 rpm

Pump type	1Φ 220-240V			3Φ Δ220-240V / Y 380-415V		
	I _{1/1} [A]	P ₁ [W]	P ₂ [W]	I _{1/1} [A]	P ₁ [W]	P ₂ [W]
HBI/HBN 8-10	3.3 - 3.1	760	580	2.7 - 3.1 / 1.6 - 1.8	810	620
HBI/HBN 8-20M	—	—	—	4.2 - 4.5 / 2.4 - 2.6	1120	910
HBI/HBN 8-15	5.3 - 5.1	1150	930	3.9 - 4.4 / 2.3 - 2.6	1190	965
HBI/HBN 8-20	6.8 - 6.6	1420	1130	5.0 - 5.5 / 2.9 - 3.2	1450	1150
HBI/HBN 8-25	8.1 - 7.9	1880	1560	5.8 - 6.5 / 3.4 - 3.8	1840	1460
HBI/HBN 8-30	9.1 - 9.0	2100	1750	6.4 - 6.9 / 3.7 - 4.0	2050	1710

Performance curves 50Hz



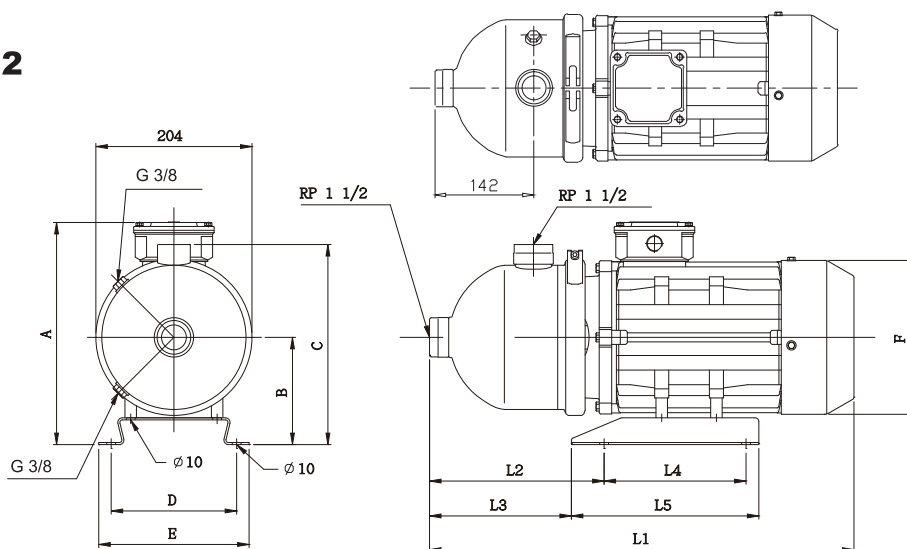
Electrical data, 2850 rpm

Pump type	1Φ 220-240V			3Φ Δ220-240V / Y 380-415V		
	I _{1/1} [A]	P ₁ [W]	P ₂ [W]	I _{1/1} [A]	P ₁ [W]	P ₂ [W]
HBI/HBN 12-05	—	—	—	2.4 - 2.8 / 1.4 - 1.6	550	425
HBI/HBN 12-10	5.3 - 5.1	1170	945	3.6 - 3.8 / 2.1 - 2.2	1190	965
HBI/HBN 12-15	7.6 - 7.5	1650	1310	5.5 - 6.0 / 3.2 - 3.5	1690	1345
HBI/HBN 12-20	10.6 - 10.4	2310	1925	7.0 - 7.4 / 4.0 - 4.3	2350	1960
HBI/HBN 12-25	13.1 - 12.7	2980	2510	9.0 - 9.3 / 5.2 - 5.4	2880	2420
HBI/HBN 12-30	—	—	—	11.7- 12.1 / 6.8 - 7.0	3610	3110



HBI, HBN

HBI(N)-8



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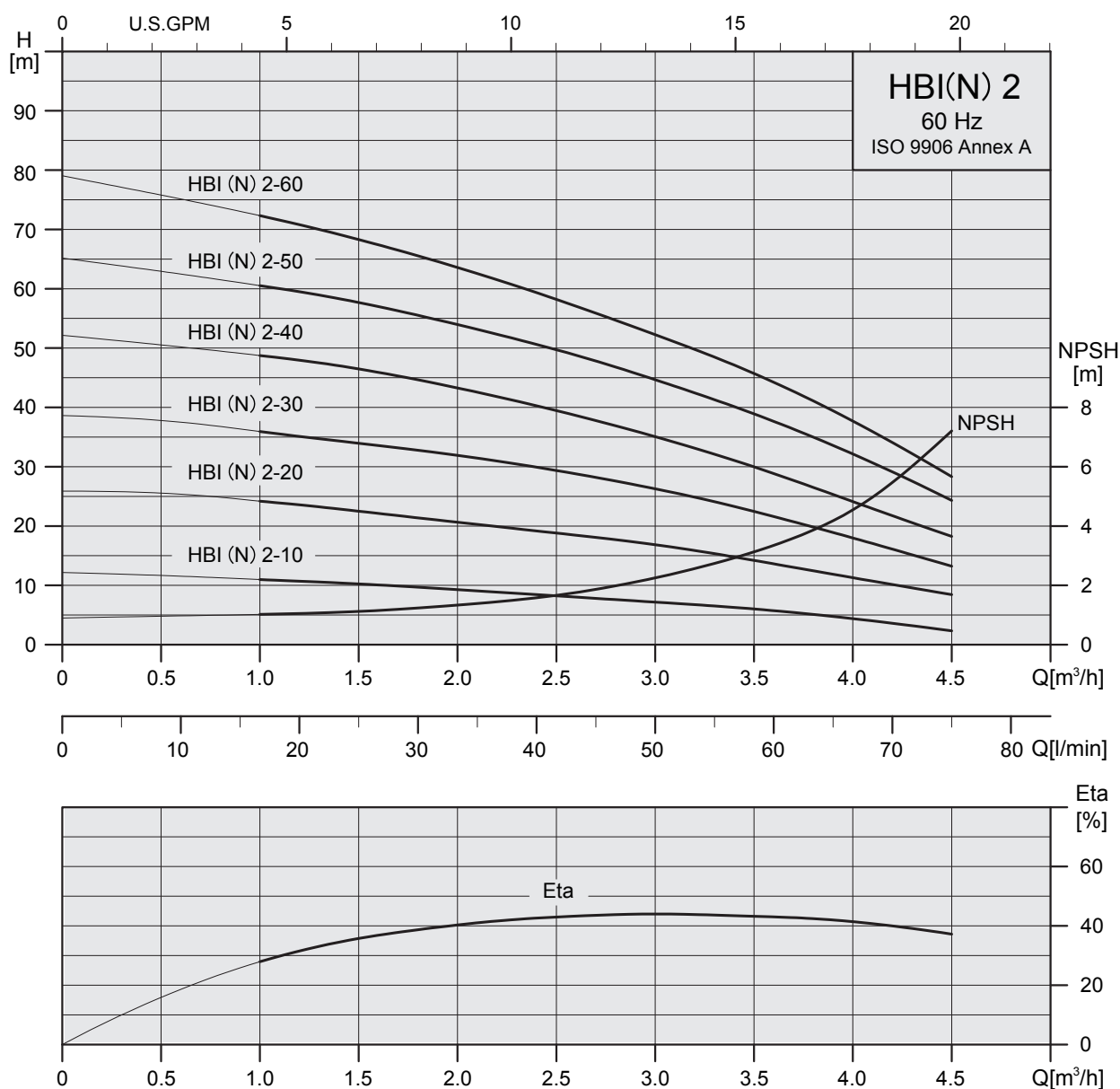


STAIRS PUMPS

Technical data

HBI, HBN 2

Performance curves 60 Hz



Electrical data, 3450 rpm

Pump type	1Φ 110 / 220V			3Φ Δ220-255V / Y 380-440V		
	I _{1/1} [A]	P ₁ [W]	P ₂ [W]	I _{1/1} [A]	P ₁ [W]	P ₂ [W]
HBI/HBN 2-10	5.9 / 3.0	390	310	1.5 - 1.6 / 0.9 - 1.0	360	290
HBI/HBN 2-20	6.6 / 3.4	570	455	1.7 - 1.8 / 1.0 - 1.1	540	435
HBI/HBN 2-30	7.6 / 3.8	750	605	2.2 - 2.3 / 1.3 - 1.4	720	580
HBI/HBN 2-40	9.3 / 4.7	980	790	3.0 - 3.2 / 1.75 - 1.9	950	770
HBI/HBN 2-50	10.7 / 5.4	1160	970	3.8 - 3.9 / 2.2 - 2.3	1170	980
HBI/HBN 2-60	12.4 / 6.3	1375	1150	4.1 - 4.2 / 2.35 - 2.45	1330	1115

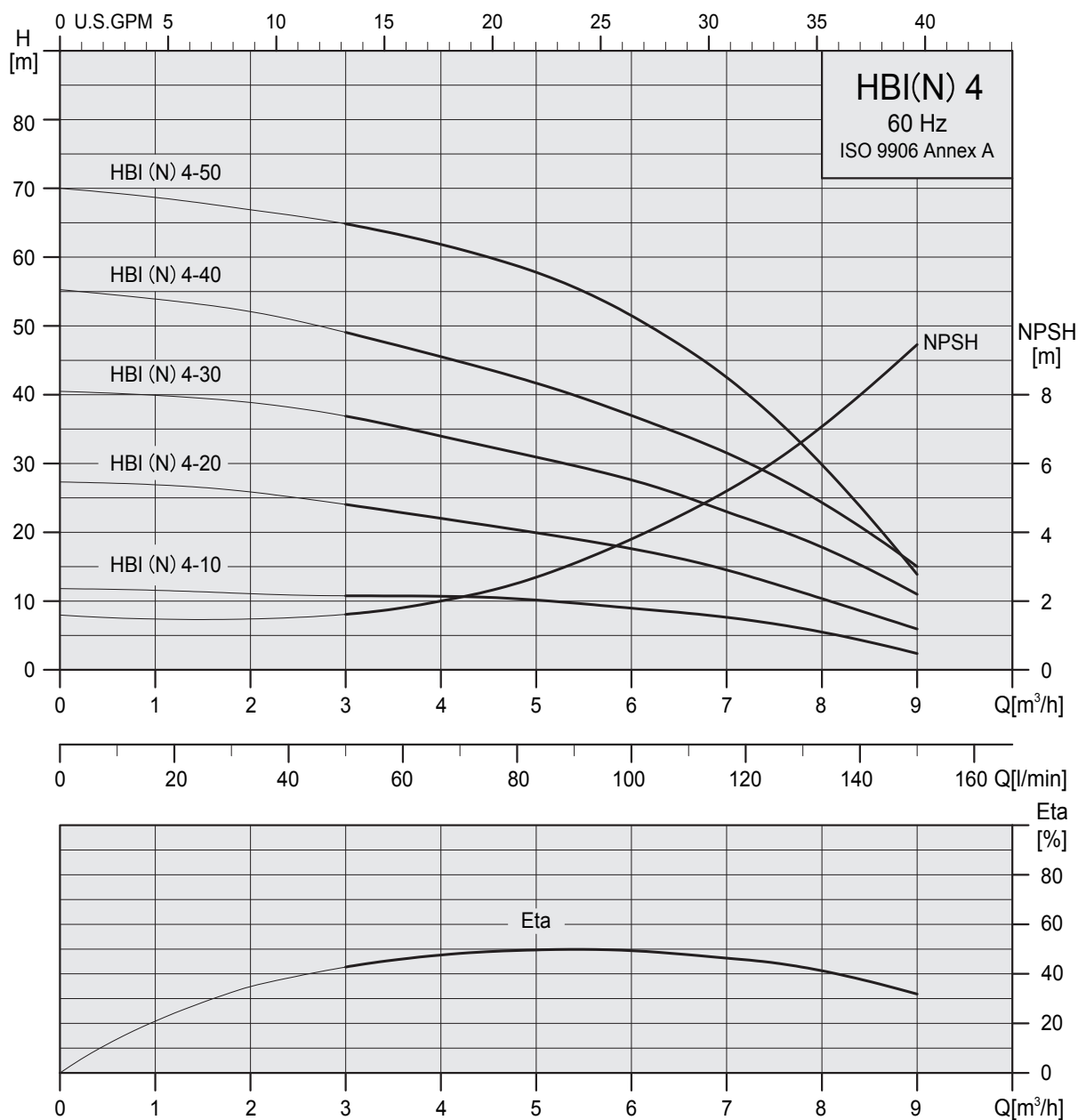


STAIRS PUMPS

Technical data

HBI, HBN 4

Performance curves 60 Hz



Electrical data, 3450 rpm

Pump type	1Φ 110 / 220V			3Φ Δ220-255V / Y 380-440V		
	I _{1/1} [A]	P ₁ [W]	P ₂ [W]	I _{1/1} [A]	P ₁ [W]	P ₂ [W]
HBI/HBN 4-10	5.9 / 3.1	530	425	1.8 - 1.9 / 1.1 - 1.2	560	450
HBI/HBN 4-20	9.3 / 4.7	970	780	2.9 - 3.1 / 1.7 - 1.8	910	740
HBI/HBN 4-30	12.5 / 6.5	1360	1140	4.1 - 4.2 / 2.4 - 2.5	1280	1080
HBI/HBN 4-40	— / 8.5	1730	1380	4.7 - 4.8 / 2.7 - 2.8	1675	1340
HBI/HBN 4-50	— / 9.9	2080	1660	5.7 - 6.0 / 3.3 - 3.5	1995	1595



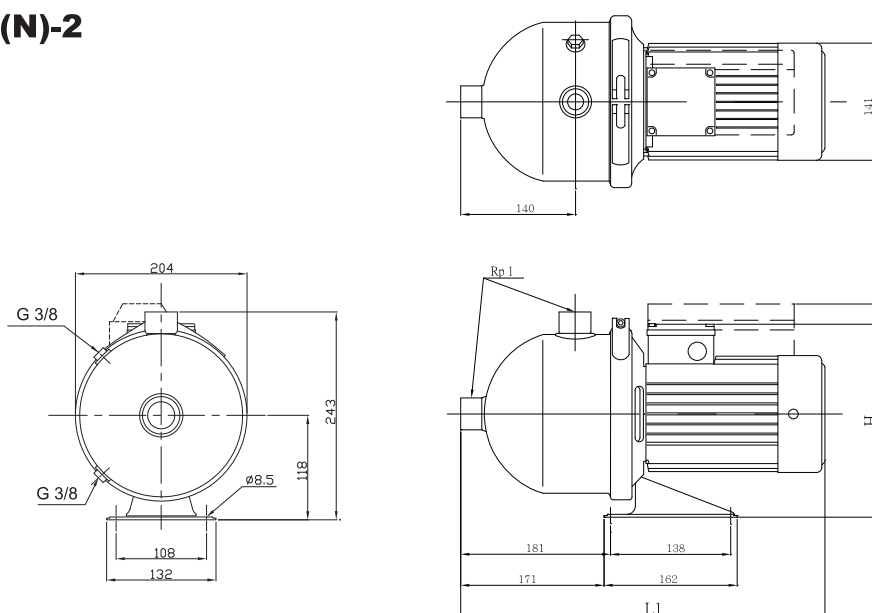
STAIRS PUMPS

Technical data

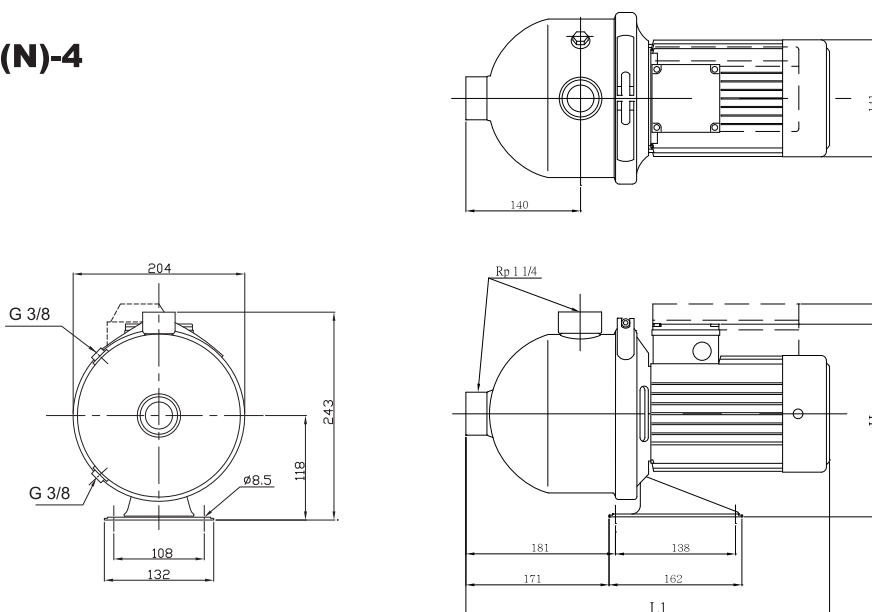
HBI, HBN

Dimensions and weights 60 Hz

HBI(N)-2

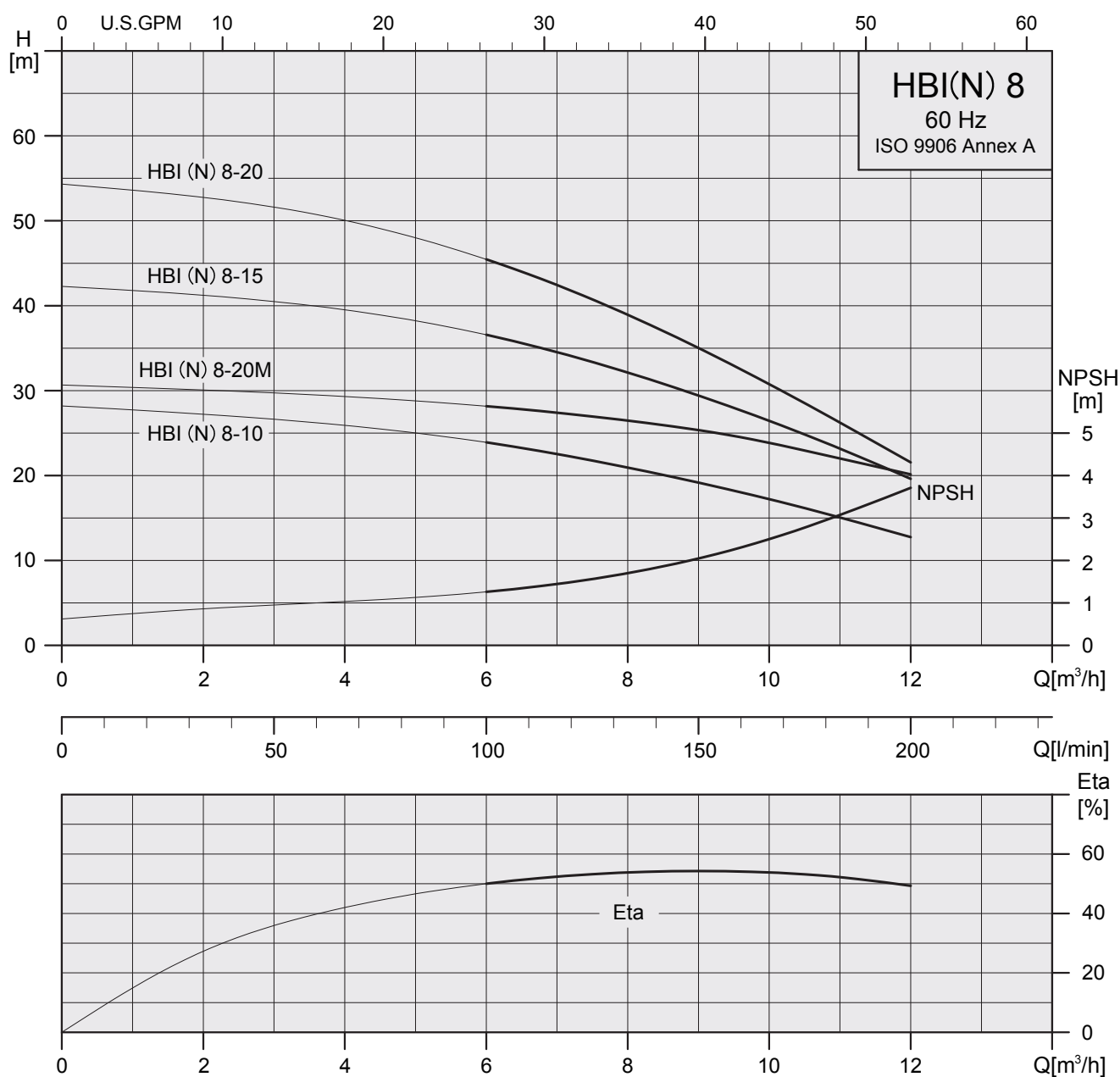


HBI(N)-4



pump type	Dimension (mm)				
	1-Phase		3-Phase		Net Weight (kg)
	L1	H	L1	H	
HBI/HBN 2-10	403	255	403	233	9.5
HBI/HBN 2-20	403	255	403	233	9.5
HBI/HBN 2-30	403	255	403	233	9.8
HBI/HBN 2-40	403	255	403	233	10.3
HBI/HBN 2-50	441	255	441	233	11.7
HBI/HBN 2-60	441	255	441	233	12.0
HBI/HBN 4-10	403	255	403	233	9.5
HBI/HBN 4-20	403	255	403	233	9.5
HBI/HBN 4-30	441	255	441	233	10.1
HBI/HBN 4-40	441	255	441	233	11.5
HBI/HBN 4-50	441	255	441	233	12.8

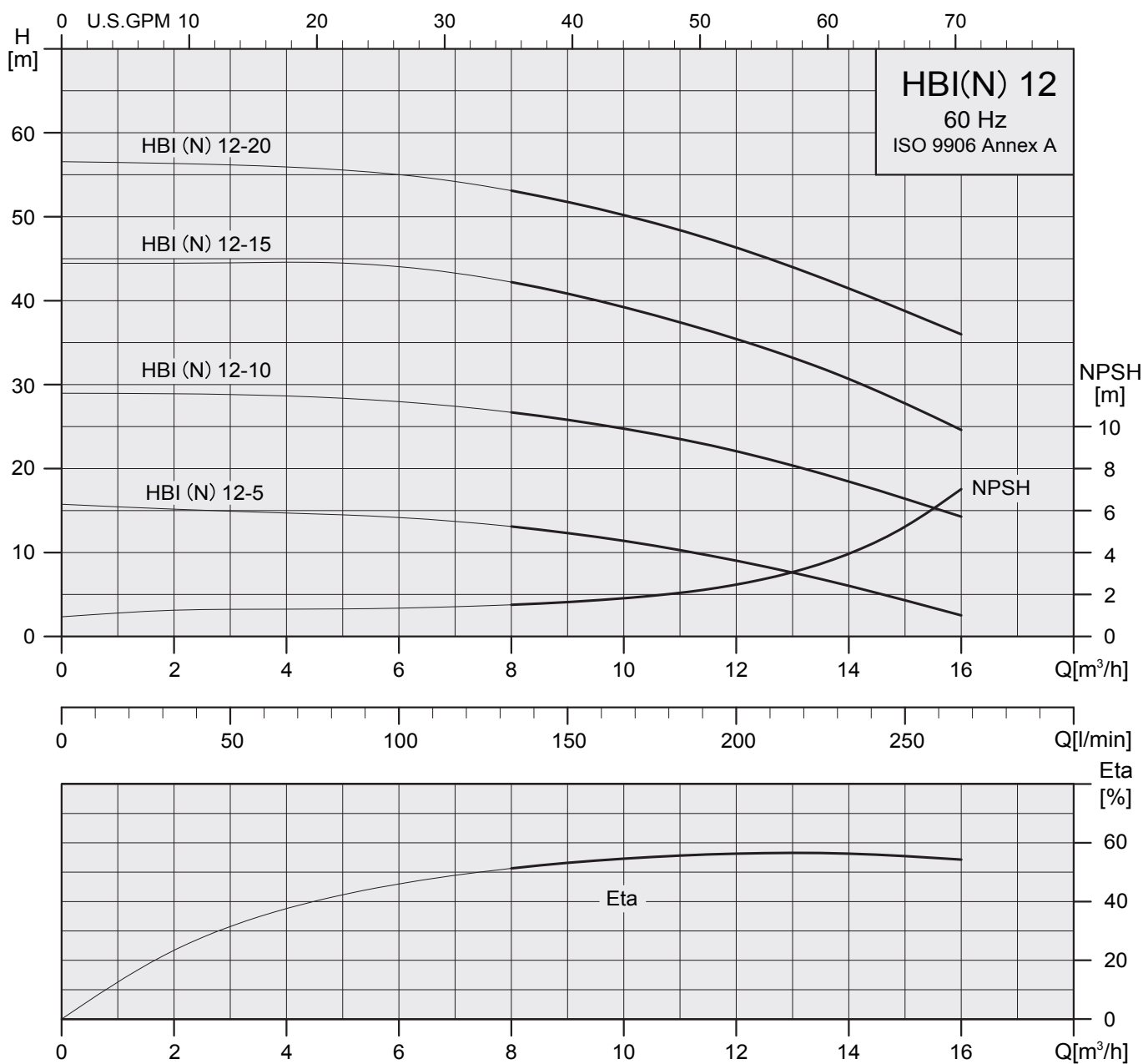
Performance curves 60Hz



Electrical data, 3450 rpm

Pump type	1Φ 110 / 220V			3Φ Δ220-255V / Y 380-440V		
	I _{1/1} [A]	P ₁ [W]	P ₂ [W]	I _{1/1} [A]	P ₁ [W]	P ₂ [W]
HBI/HBN 8-10	11.4 / 6.0	1280	1070	3.9 - 4.1 / 2.3 - 2.4	1210	1010
HBI/HBN 8-20M	— / 8.3	1730	1380	5.2 - 5.3 / 3.0 - 3.1	1670	1340
HBI/HBN 8-15	— / 9.3	2080	1710	5.6 - 5.7 / 3.2 - 3.3	1890	1560
HBI/HBN 8-20	— / 10.9	2460	2030	3Φ Δ220-277V / Y 380-480V		
				7.1 - 6.9 / 4.1 - 4.0	2360	1950

Performance curves 60Hz

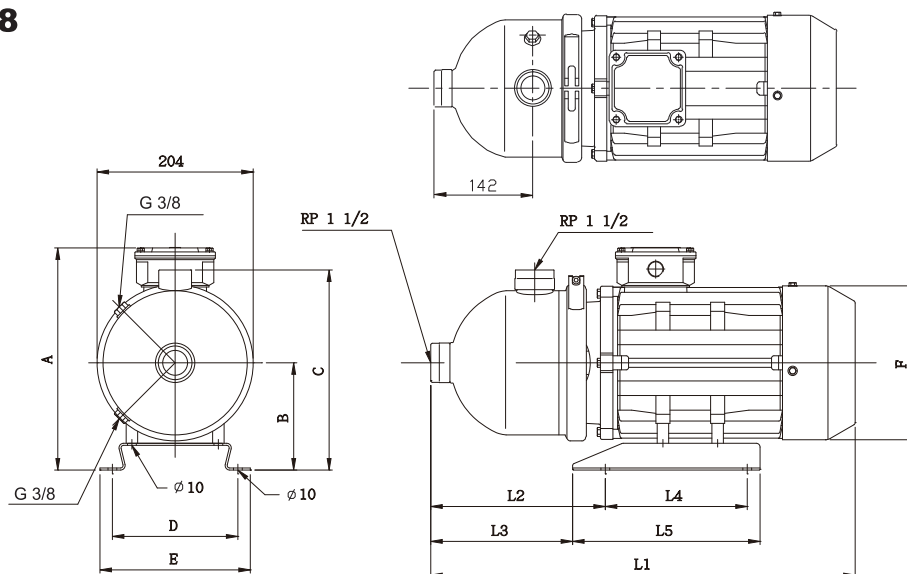


Electrical data, 3450 rpm

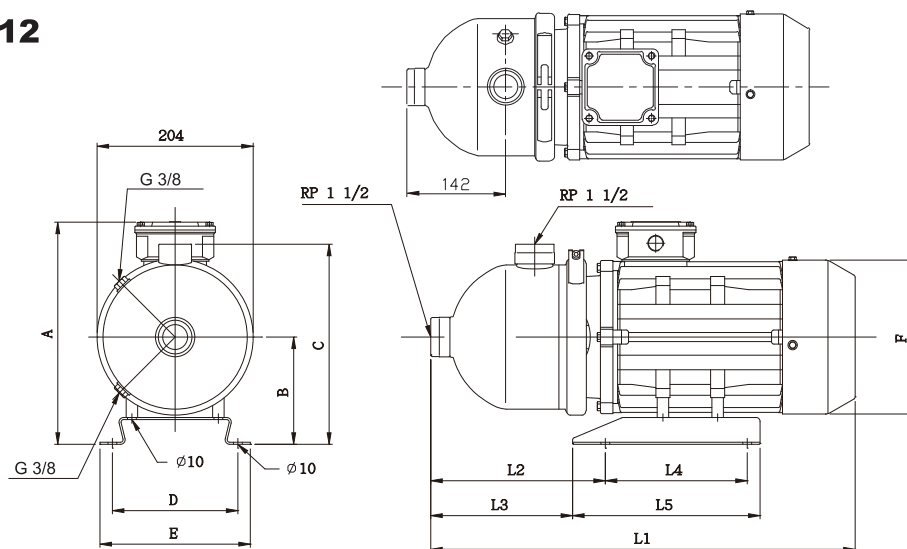
Pump type	1Φ 110 / 220V			3Φ Δ220-255V / Y 380-440V		
	I _{1/1} [A]	P ₁ [W]	P ₂ [W]	I _{1/1} [A]	P ₁ [W]	P ₂ [W]
HBI/HBN 12-05	8.5 / 4.5	940	760	2.8 - 3.0 / 1.6 - 1.75	850	690
HBI/HBN 12-10	— / 9.7	2170	1790	5.7 - 5.9 / 3.3 - 3.4	1930	1595
				3Φ Δ220-277V / Y 380-480V		
HBI/HBN 12-15	—	—	—	9.2 - 8.9 / 5.3 - 5.1	2860	2365
HBI/HBN 12-20	—	—	—	11.2 - 11.8 / 6.5 - 6.8	3950	3370

Dimensions and weights 60 Hz

HBI(N)-8



HBI(N)-12



pump type	Dimension[mm]														
	L1		L2	L3	L4	L5	A		B	C	D	E	F	Net Weight(kg)	
	1phase	3phase					1phase	3phase						1phase	3phase
HBI(N) 8-10	441	441	181	171	138	162	255	233	118	243	108	132	141	11.70	11.50
HBI(N) 8-15	514	-	200	180	195	235	267	-	121	245	158	178	177	21.42	-
	-	441	181	171	138	162	-	233	118	243	108	132	141	-	13.18
HBI(N) 8-20M	441	441	181	171	138	162	255	233	118	243	108	132	141	13.24	13.05
HBI(N) 8-20	514	514	200	180	195	235	267	261	121	245	158	178	177	21.50	21.60
HBI(N) 12-05	403	403	181	171	138	162	255	233	118	243	108	132	141	10.26	10.06
HBI(N) 12-10	514	-	200	180	195	235	267	-	121	245	158	178	177	20.64	-
	-	441	181	171	138	162	-	233	118	243	108	132	141	-	12.64
HBI(N) 12-15	-	493	200	180	195	235	-	261	121	245	158	178	177	-	23.72
HBI(N) 12-20	-	514	230	198	195	245	-	284	133	259	174	198	197	-	29.40



Note

