



EBARA

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SPECIFICATION

50Hz

Rev. N

PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	min. -5 max. +60 (Standard - L version – E - Q1AEGG – VAEGG - U3U3EGG - Q1U3EGG - U3CEGG) max. +110 (H – HS – HW - HSW)
Maximum working pressure	[MPa]	0.8
Construction	Impeller	Closed centrifugal type (Twin)
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction [inch]	from G 1"¼ to G 1"½ (2CDX 200) UNI ISO 228-1
	Discharge [inch]	G 1" UNI ISO 228-1
Material	Casing	EN 1.4301 (AISI 304) - (AISI 316 only for "L" version)
	Impeller	EN 1.4301 (AISI 304) - (AISI 316 only for "L" version)
	Casing cover	EN 1.4301 (AISI 304) - (AISI 316 only for "L" version)
	Shaft seal	Ceramic/Carbon/NBR (for version see page 301)
	Shaft	AISI 304 / AISI 316 (Wet extension)
	Bracket	Aluminium (up to 1.5 kW included) Cast iron (2.2 kW and above)
	Diffuser	AISI 304 / AISI 316
Applicable standard of test		ISO 9906:2012 – Grade 3B

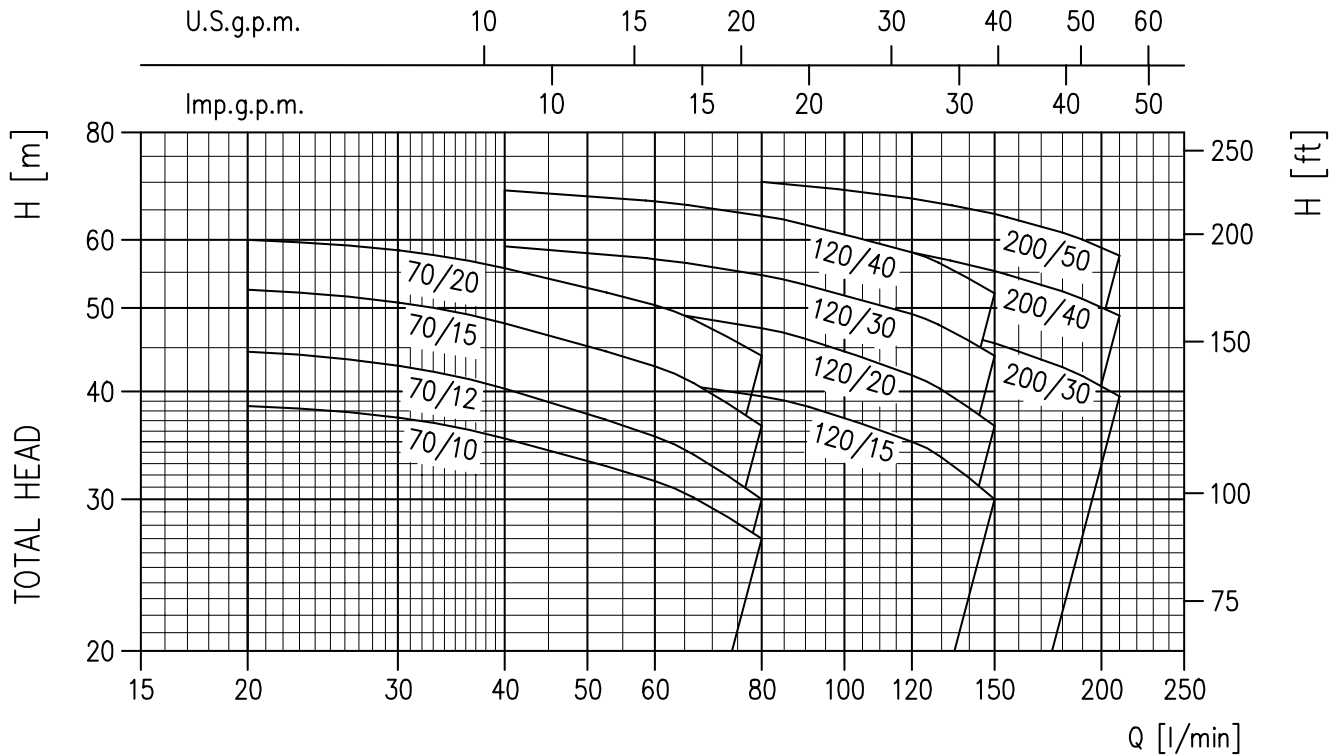
MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Reg. 640/2009)	-	IE2 from 0.75 kW up to 4.0 kW IE3 from 0.75 kW up to 4.0 kW
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 2800	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	IP 55	
Power rating	[kW]	0.75 ÷ 2.2
	[HP]	1 ÷ 2
Frequency [Hz]	50	
Voltage [V]	230 ±10%	230/400 ±10%
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	Aluminium	
Motor support	Aluminium	
Dimensions of cable entry	PG 11 – PG 13.5 – PG 16 - M16x1.5 - M20x1.5 (see dimensions page 400)	

SELECTION CHART

50Hz

Rev. N

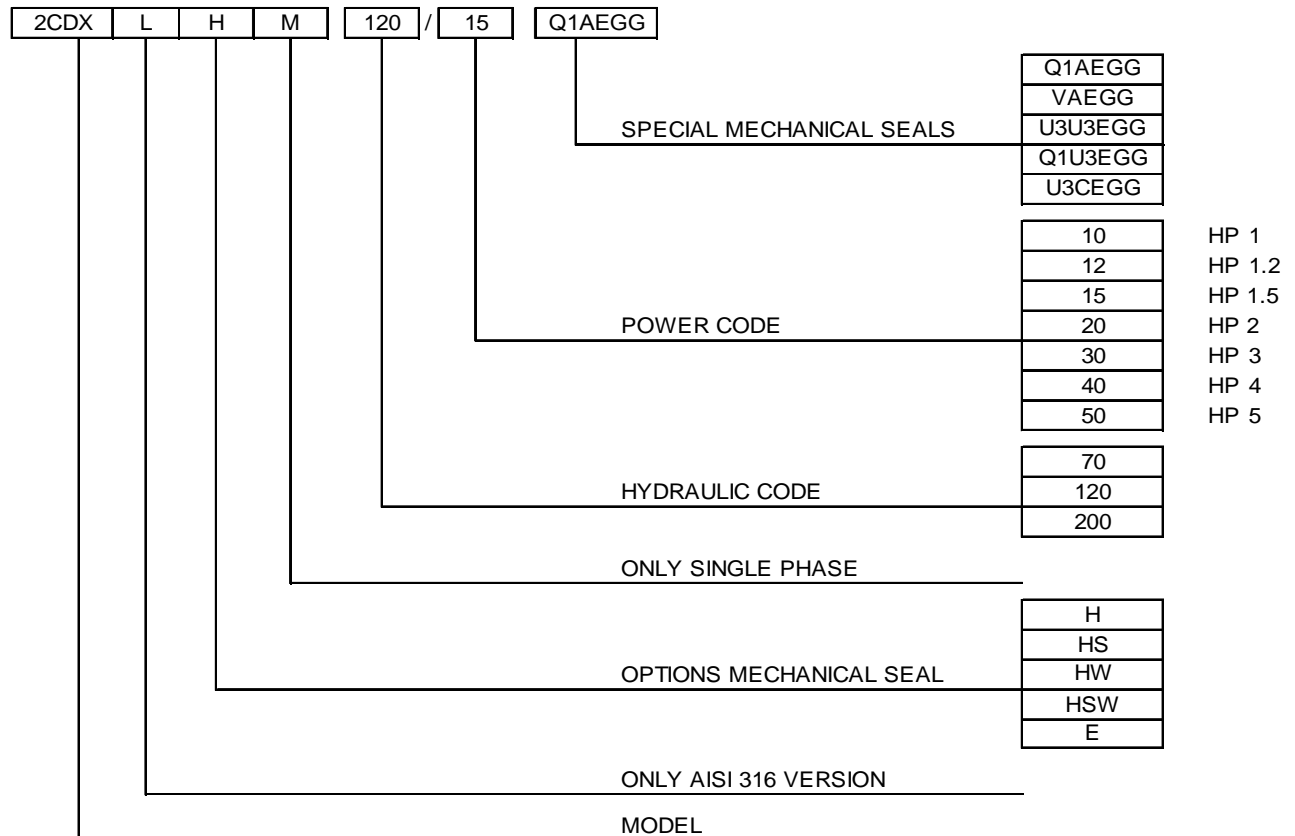
PERFORMANCE RANGE



SELECTION CHART

Pump Type		Power		Q=Capacity									
Single Phase	Three Phase	[kW]	[HP]	l/min	0	20	40	60	80	120	150	180	210
				m³/h	0	1.2	2.4	3.6	4.8	7.2	9.0	10.8	12.6
H=Total manometric head in meters													
2CDXM 70/10	2CDX 70/10	0.75	1	41	38.5	35.3	31.5	27	-	-	-	-	-
2CDXM 70/12	2CDX 70/12	0.9	1.2	48	44.5	40.3	35.5	30	-	-	-	-	-
2CDXM 70/15	2CDX 70/15	1.1	1.5	56	52.5	48	42.8	36.5	-	-	-	-	-
2CDXM 70/20	2CDX 70/20	1.5	2	64	60	55.6	50.4	44	-	-	-	-	-
2CDXM 120/15	2CDX 120/15	1.1	1.5	46	-	42	41	39.5	35	30	-	-	-
2CDXM 120/20	2CDX 120/20	1.5	2	55	-	51.5	49.5	47.4	41.8	36.5	-	-	-
-	2CDX 120/30	2.2	3	63	-	59	57	54.6	49.2	44	-	-	-
-	2CDX 120/40	3	4	71.5	-	68.5	66.5	64	58	52	-	-	-
-	2CDX 200/30	2.2	3	55	-	-	52	50.8	48.1	45.5	42.7	39.5	-
-	2CDX 200/40	3	4	66	-	-	62.5	61.1	58	55.2	52.3	49	-
-	2CDX 200/50	3.7	5	75	-	-	71.5	70.1	67	64.3	61.2	57.5	-

TYPE KEY



PERFORMANCE CURVE SPECIFICATIONS

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906:2012 - Grade 3B

The curves refer to effective speed of asynchronous motors at 50 Hz, 2 poles.

Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt)

The NPSH curve is an average curve obtained in the same conditions of performance curves.

The continuous curves indicate the recommended working range. The dotted curve is only a guide.

In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

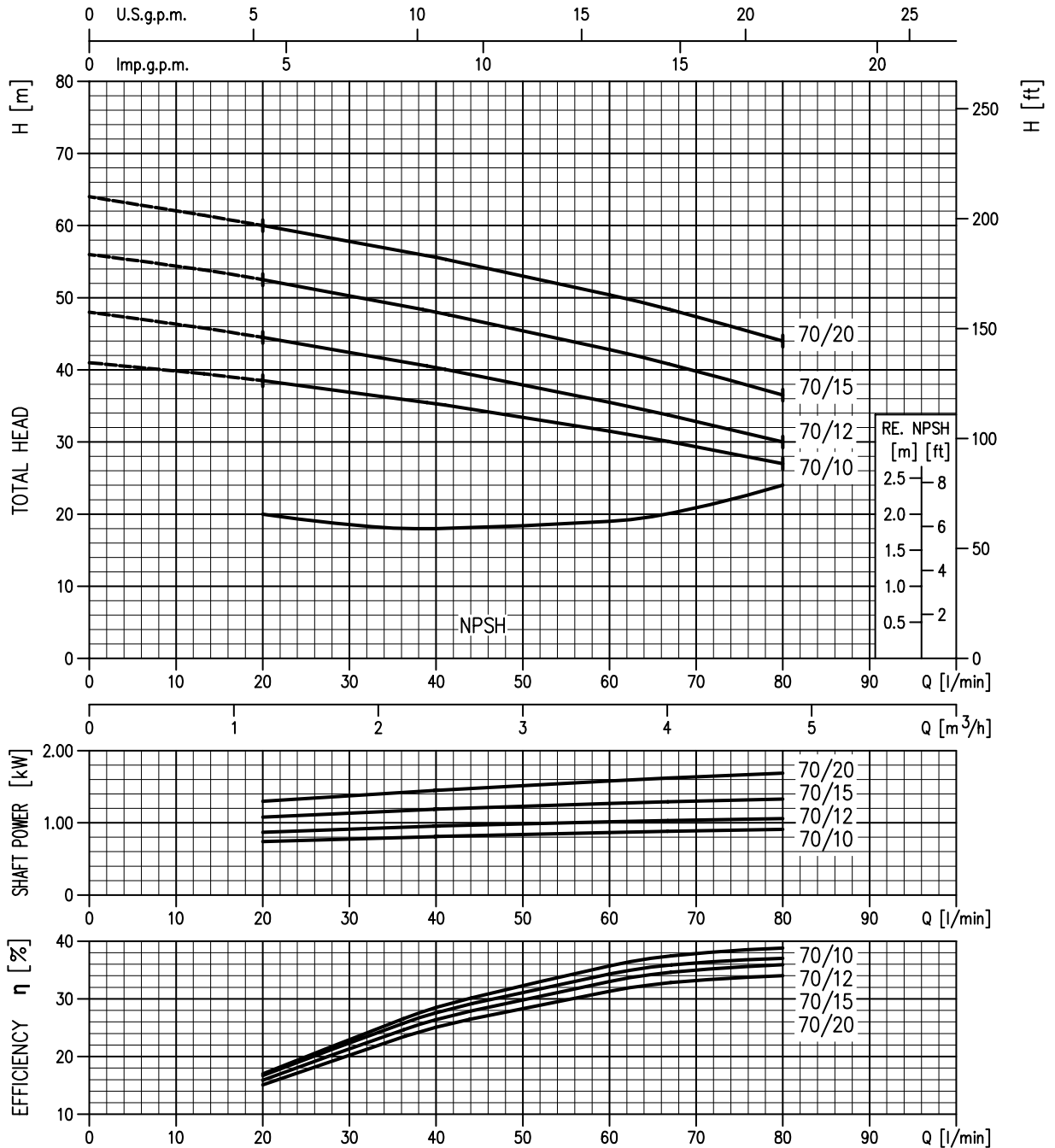
- Q = volume flow rate
- H = total head
- P_2 = pump power input (shaft power)
- η = pump efficiency
- NPSH = net positive suction head required by the pump

PERFORMANCE CURVE

50Hz

Rev. N

2CDX 70/10 (0.75 kW) - Impeller diameter = 132/132 mm
 2CDX 70/12 (0.9 kW) - Impeller diameter = 153/132 mm
 2CDX 70/15 (1.1 kW) - Impeller diameter = 153/153 mm
 2CDX 70/20 (1.5 kW) - Impeller diameter = 153/176 mm



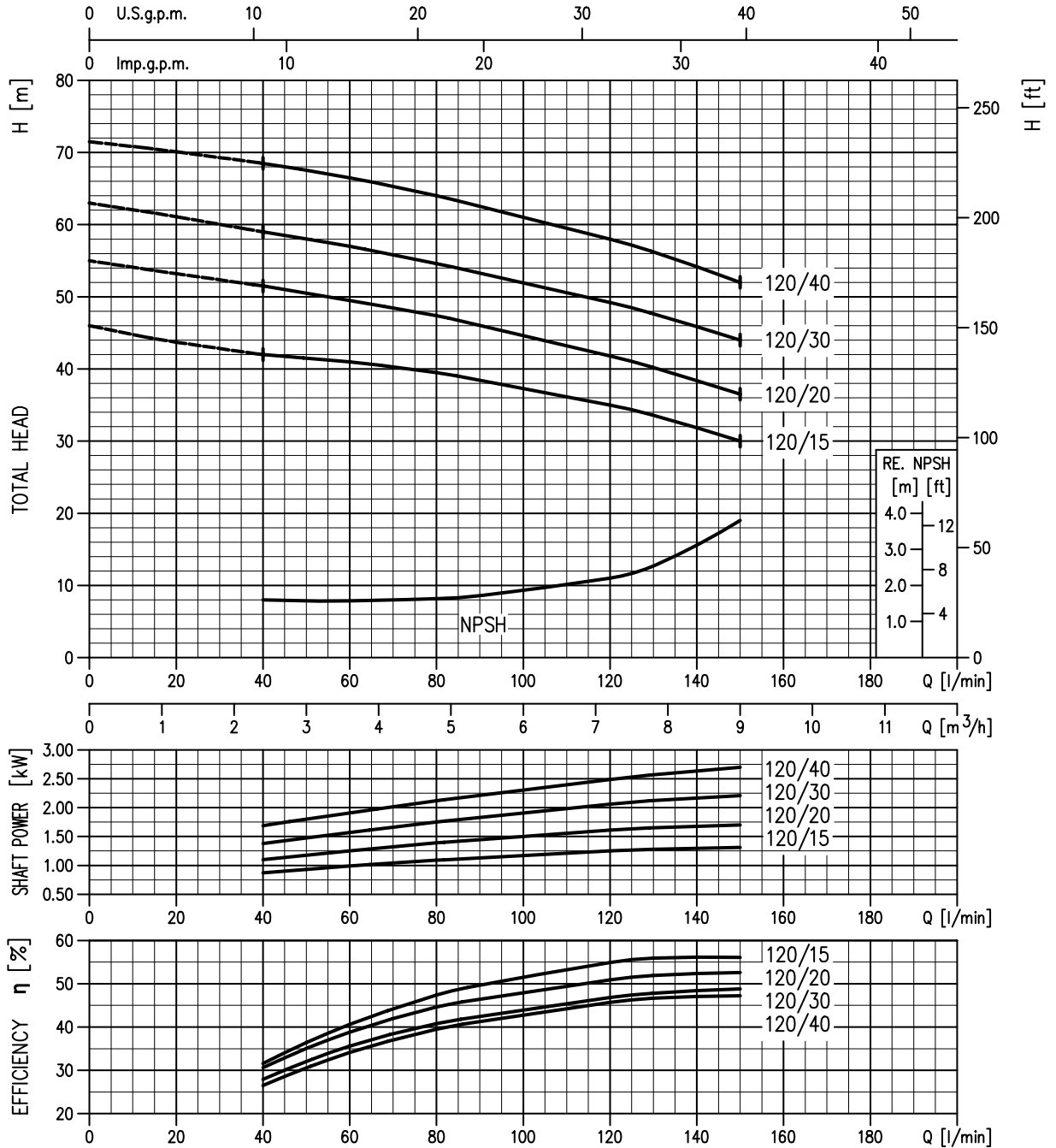
Rotation speed ≈ 2800 min⁻¹
 Test standard: ISO 9906:2012 - Grade 3B

PERFORMANCE CURVE

50Hz

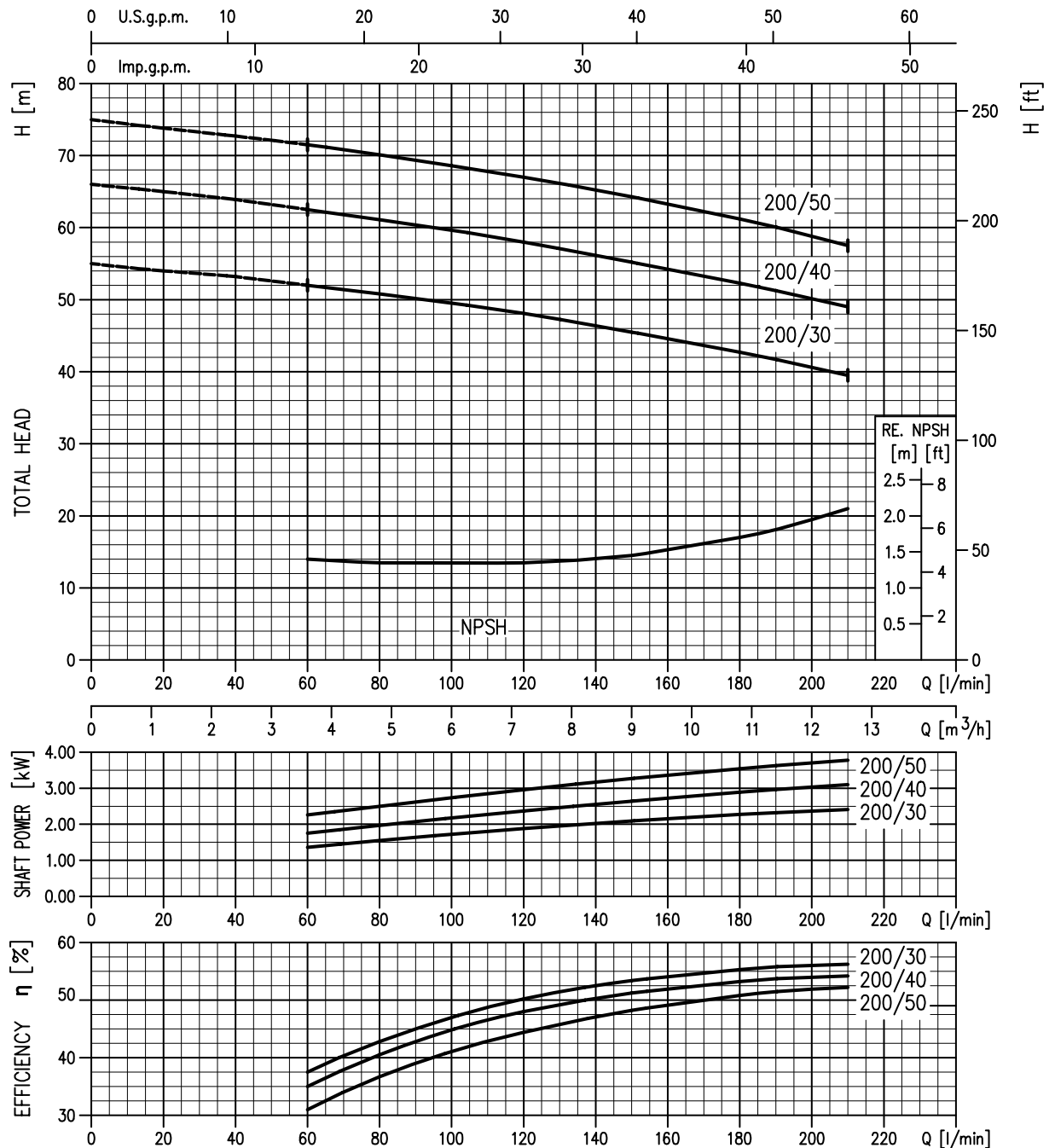
Rev. N

2CDX 120/15 (1.1 kW) - Impeller diameter = 132/132 mm
 2CDX 120/20 (1.5 kW) - Impeller diameter = 157/132 mm
 2CDX 120/30 (2.2 kW) - Impeller diameter = 157/157 mm
 2CDX 120/40 (3.0 kW) - Impeller diameter = 176/157 mm



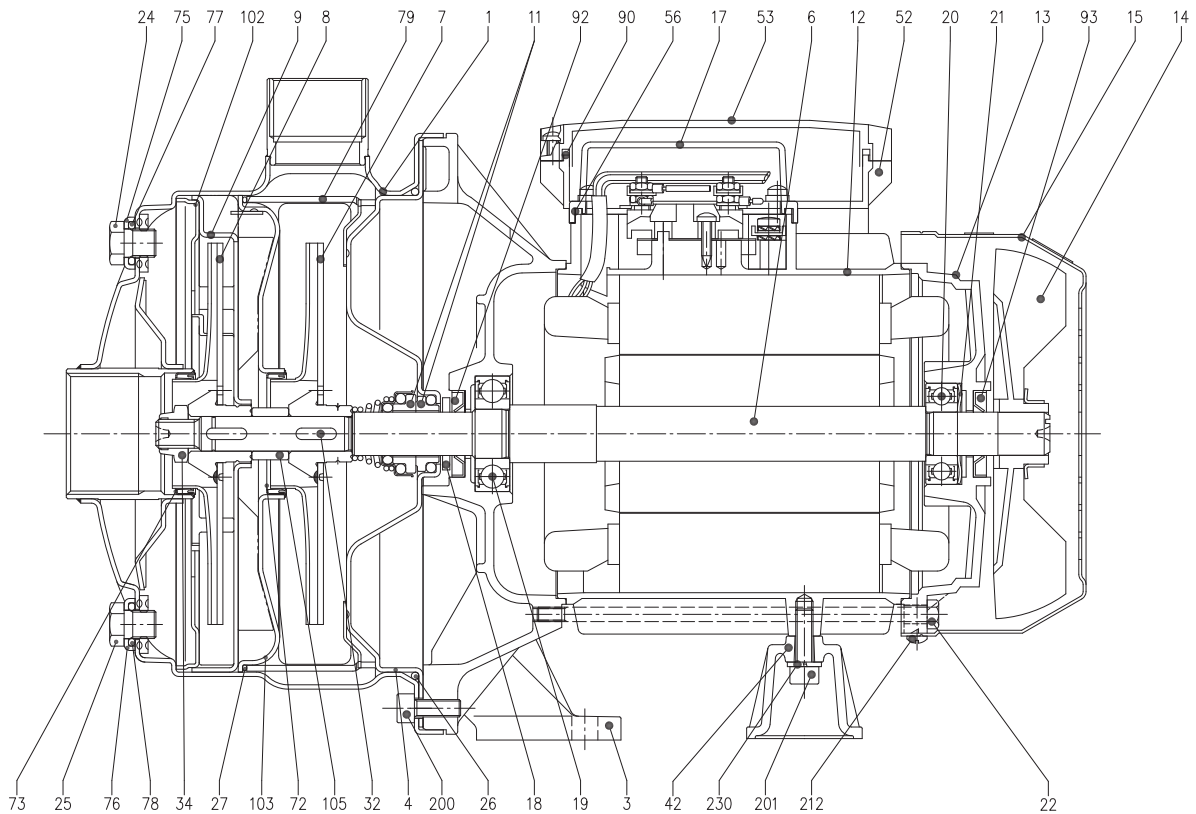
Rotation speed ≈ 2800 min⁻¹
 Test standard: ISO 9906:2012 - Grade 3B

2CDX 200/30 (2.2 kW) - Impeller diameter = 157/132 mm
 2CDX 200/40 (3.0 kW) - Impeller diameter = 157/157 mm
 2CDX 200/50 (3.7 kW) - Impeller diameter = 176/157 mm



Rotation speed ≈ 2800 min⁻¹
 Test standard: ISO 9906:2012 - Grade 3B

SECTIONAL VIEW



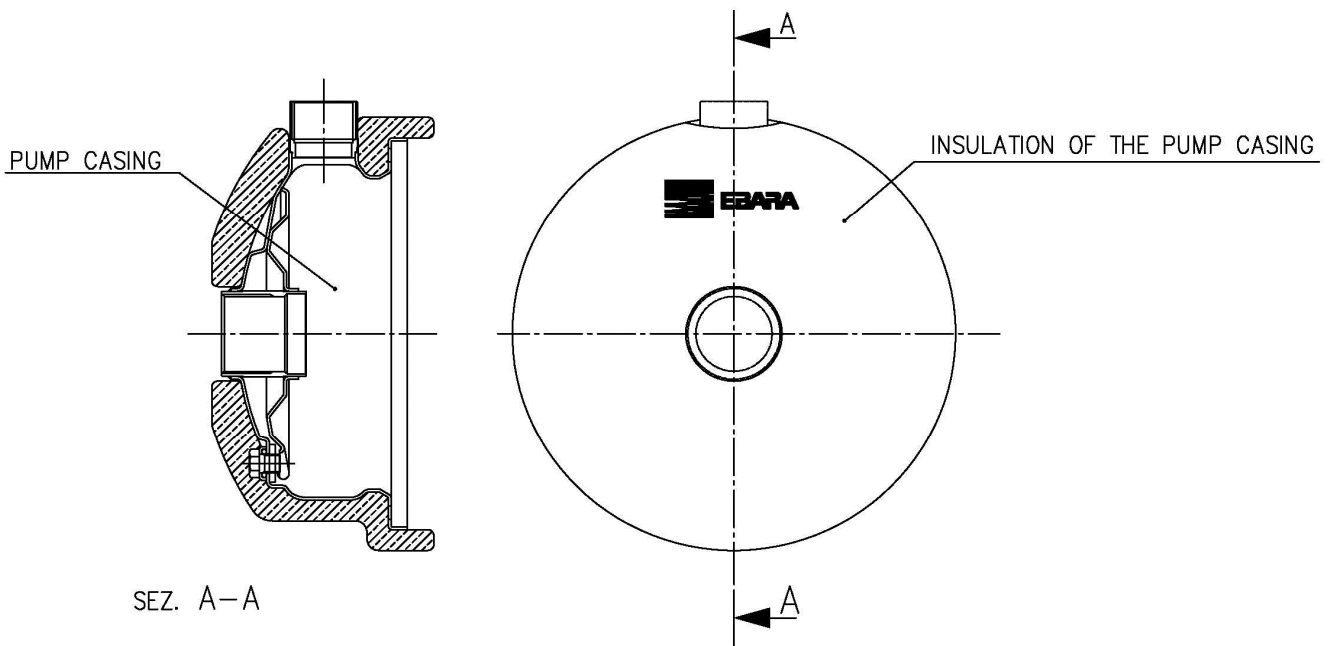
N°	PART NAME	MATERIAL	DIMENSION	STANDARD	Q.TY
1	Casing	ASI 304 / ASI 316 [6]			1
3	Motor bracket	[4]			1
4	Casing cover	ASI 304 / ASI 316 [6]			1
6	Shaft w ith rotor	ASI 303 / ASI 316 [6] (Wet extension)			1
7	Impeller	ASI 304 / ASI 316 [6]			1
8	Impeller	ASI 304 / ASI 316 [6]			1
9	Diffuser	ASI 304 / ASI 316 [6]			1
11	Mechanical seal	Ceramic/Carbon/NBR	see page 301		1
12	Motor frame w ith stator	-			1
13	Motor cover	Aluminium			1
14	Fan	PA			1
15	Fan cover	Fe P04 Galvanized			1
17	Terminal box cover [2]	Aluminium			1
18	Splash ring	NBR			1
19	Pump side ball bearing	-			1
20	Fan side ball bearing	-			1
21	Adjusting ring	Steel C70			1
22	Tie rod	Fe 420 Galvanized			4
24	Priming plug	ASI 304 / ASI 316 [6]			1
25	Drain plug	ASI 304 / ASI 316 [6]			1
26	O-ring [3]	NBR			1
27	O-ring [3]	NBR			1
32	Key	ASI 316			2
34	Impeller nut	Stainless steel A2-70	M10X1,25	UNI 7474	1

N°	PART NAME	MATERIAL	DIMENSION	STANDARD	Q.TY
42	Motor support	Aluminium			1
52	Capacitor box	[1] ABS class V-0			1
53	Capacitor box cover	[1] ABS class V-0			1
56	Box gasket	NBR			1
72	Casing ring	[5] NBR			1
73	Casing ring	[5] NBR			1
75	Washer	ASI 304			1
76	Washer	ASI 304			1
77	O-ring	[3] NBR			1
78	O-ring	[3] NBR			1
79	Space diffuser	ASI 304 / ASI 316 [6]			1
90	Terminal box cover gasket	[1] NBR			1
92	Lip seal	NBR			1
93	Lip seal	NBR			1
102	Suction cover	ASI 304 / ASI 316 [6]			1
103	Conveyor cover	ASI 304 / ASI 316 [6]			1
105	Sleeve	ASI 304 / ASI 316 [6]			1
200	Screw	70/10, 120/15, 120/20, 200/30	M6X16	UNI 5931	8
		70/12, 70/15, 70/20, 120/30, 120/40, 200/40, 200/50	M8X18		
201	Screw	Zn. Steel cl.8.8		UNI 5931	1
212	Screw	Stainless steel A2	3.5X9.5	UNI 6954	4
230	Washer	Steel C70	6.4	UNI 1751	1

- [1] Only for single phase
- [2] Only for three phase
- [3] FPM for H-HS-HW-HSW
EPDM for E and Special Mechanical Seals

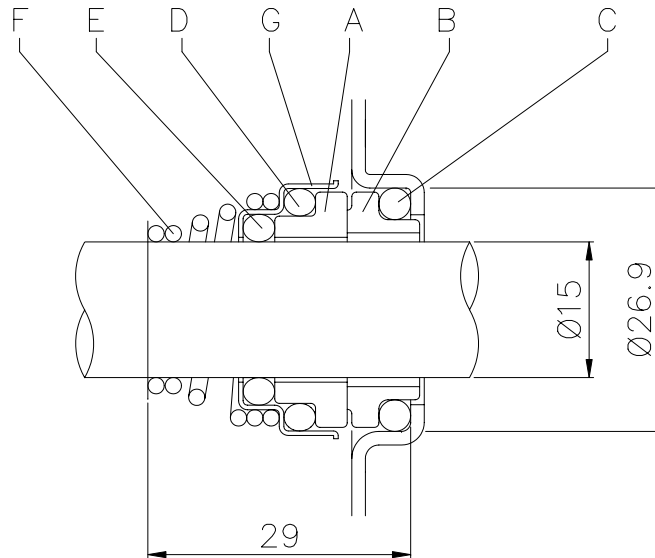
- [4] Material: Aluminium for version up to 1.5 kW included
Cast iron for version 2.2 kW and above
- [5] FPM for H-HS-HW-HSW
EPDM for E and Special Mechanical Seals
- [6] Only for "L" version

THERMAL INSULATION



Pump Type	Insulation of the pump casing
2CDX 70/10	ON REQUEST
2CDX 70/12	
2CDX 70/15	
2CDX 70/20	
2CDX 120/15	
2CDX 120/20	
2CDX 120/30	
2CDX 120/40	
2CDX 200/30	
2CDX 200/40	
2CDX 200/50	

MECHANICAL SEAL



REF	PART NAME	MATERIAL Standard version	MATERIAL Optional (H)	MATERIAL Optional (HS)	MATERIAL Optional (HW)	MATERIAL Optional (HSW)	MATERIAL Optional (E)
A	Rotary seal ring	Ceramic	Ceramic	Silicon carbide	Tungsten carbide	Silicon carbide	Ceramic
B	Stationary seal ring	Carbon graphite	Carbon graphite	Silicon carbide	Tungsten carbide	Tungsten carbide	Carbon graphite
C	O Ring	NBR	FPM	FPM	FPM	FPM	EPDM
D	O Ring	NBR	FPM	FPM	FPM	FPM	EPDM
E	O Ring	NBR	FPM	FPM	FPM	FPM	EPDM
F	Self driving spring	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316
G	Frame	AISI 304	AISI 304	AISI 316	AISI 316	AISI 316	AISI 316

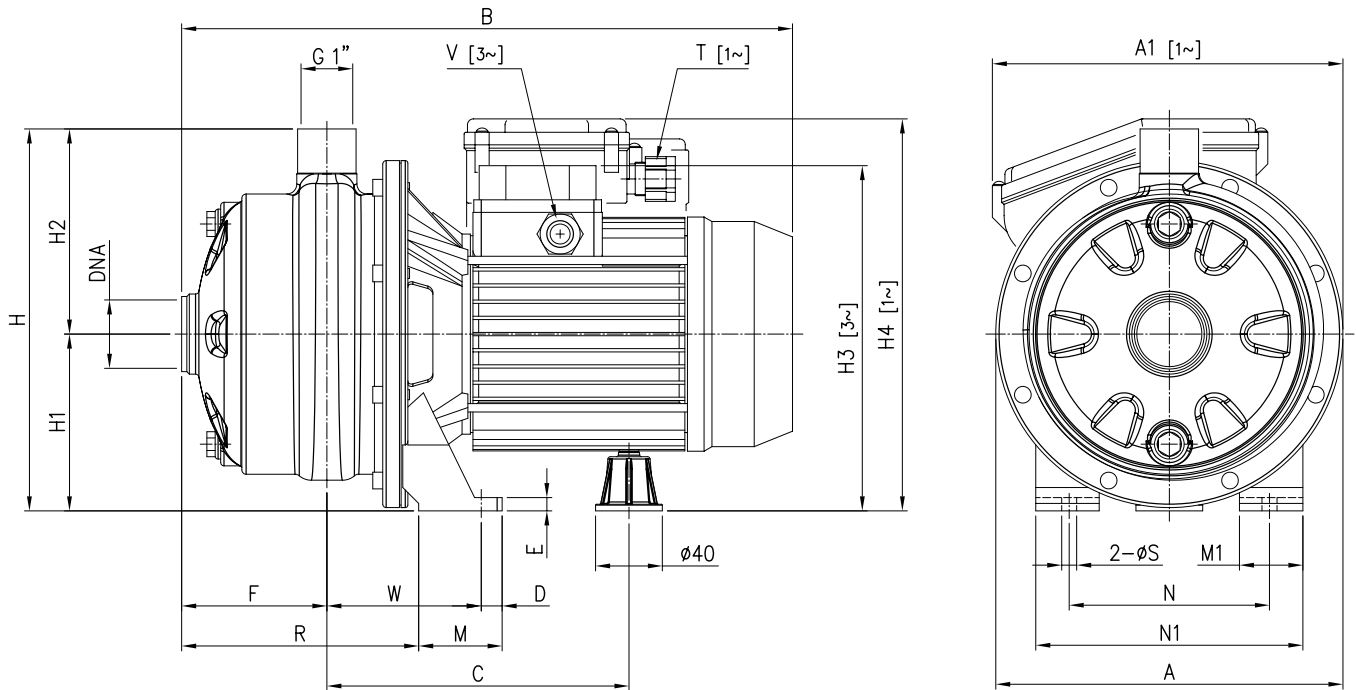
REF	PART NAME	MATERIAL Optional (Q1AEGG)	MATERIAL Optional (VAEGG)	MATERIAL Optional (U3U3EGG)	MATERIAL Optional (Q1U3EGG)	MATERIAL Optional (U3CEGG)
A	Rotary seal ring	Silicon Carbide	Ceramic	Tungsten Carbide	Silicon Carbide	Tungsten Carbide
B	Stationary seal ring	Metallised Carbon	Metallised Carbon	Tungsten Carbide	Tungsten Carbide	Special Carbon
C	O Ring	EPDM	EPDM	EPDM	EPDM	EPDM
D	O Ring	EPDM	EPDM	EPDM	EPDM	EPDM
E	O Ring	EPDM	EPDM	EPDM	EPDM	EPDM
F	Self driving spring	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316
G	Frame	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316

BEARINGS

Pump type		Ball Bearing			
Single Phase	Three Phase	Pump side	(**) Pump side	Fan side	(**) Fan side
2CDXM 70/10	2CDX 70/10	6203 2RSH	6203-ZZ C3	6202 2RSH	6202-ZZ C3
2CDXM 70/12	2CDX 70/12	6203 2RSH	6203-ZZ C3	6202 2RSH	6202-ZZ C3
2CDXM 70/15	2CDX 70/15	6204 2RSH	6204-ZZ C3	6203 2RSH	6203-ZZ C3
2CDXM 70/20	2CDX 70/20	6204 2RSH	6204-ZZ C3	6203 2RSH	6203-ZZ C3
2CDXM 120/15	2CDX 120/15	6204 2RSH	6204-ZZ C3	6203 2RSH	6203-ZZ C3
2CDXM 120/20	2CDX 120/20	6204 2RSH	6204-ZZ C3	6203 2RSH	6203-ZZ C3
-	2CDX 120/30	6305 2RSH	6305-ZZ C3	6205 2RSH	6205-ZZ C3
-	2CDX 120/40	6305 2RSH	6305-ZZ C3	6205 2RSH	6205-ZZ C3
-	2CDX 200/30	6205 2RSH	6205-ZZ C3	6205 2RSH	6205-ZZ C3
-	2CDX 200/40	6305 2RSH	6305-ZZ C3	6205 2RSH	6205-ZZ C3
-	2CDX 200/50	6206 2RSH	6206-ZZ C3	6205 2RSH	6205-ZZ C3

(**) Only for IE3 Motors

PUMP



Pump type 2CDXM 2CDX	Dimensions [mm]																				Weight [kgf]									
	A	(*) A1 [1~]	[1~]	[3~]	(**) B [3~]	C	D	E	F	H	H1	H2	H3 [3~]	H3 (**) [3~]	H4 [1~]	M	M1	N	N1	R	T	V	(**) V [3~]	W	S	DNA	[1~]	[3~]	(**)	
70/10	208	-	355	354	354	181	181	12.5	8	87	229	106	123	207	207	216	50	38	120	160	142	PG 11	PG 11	M16x1.5	92.5	9	G1¼	12.7	12.6	12.6
70/12	208	210	355	366	366	181	181	12.5	8	87	229	106	123	207	207	235	50	38	120	160	142	PG 13.5	PG 11	M16x1.5	92.5	9	G1¼	13.3	13.7	13.7
70/15	232	-	395.5	382	407	198.5	198.5	12.5	8	89	250	118	132	237	237	248.5	55	40	140	180	141.5	PG 13.5	PG 11	M20x1.5	95	9	G1¼	17.5	17	17
70/20	232	-	382.5	395	407.5	198.5	198.5	12.5	8	89	250	118	132	237	237	248.5	55	40	140	180	141.5	PG 13.5	PG 11	M20x1.5	95	9	G1¼	18.5	19.2	20.1
120/15	208	210	395.5	382	407	198.5	198.5	12.5	8	89	229	106	123	225	225	236.5	55	40	140	180	141.5	PG 13.5	PG 11	M20x1.5	95	9	G1¼	16.3	15.6	15.6
120/20	208	210	382.5	395	407.5	198.5	198.5	12.5	8	89	229	106	123	225	225	236.5	55	40	140	180	141.5	PG 13.5	PG 11	M20x1.5	95	9	G1¼	17	17.4	18.3
120/30	232	-	-	419	405	223.5 ÷ 234.5	198.5	12.5	10	87	250	118	132	242	237	-	65	40	140	180	143.5	-	PG 13.5	M20x1.5	109	9	G1¼	-	25.2	26.1
120/40	232	-	-	458	458	223.5 ÷ 234.5	223.5 ÷ 234.5	12.5	10	87	250	118	132	242	242	-	65	40	140	180	143.5	-	PG 13.5	M20x1.5	109	9	G1¼	-	27.8	27.8
200/30	208	-	-	458	458	223.5 ÷ 234.5	223.5 ÷ 234.5	12.5	10	87	229	106	123	230	230	-	65	40	140	180	143.5	-	PG 13.5	M20x1.5	109	9	G1¼	-	25.7	26.6
200/40	232	-	-	458	458	223.5 ÷ 234.5	223.5 ÷ 234.5	12.5	10	87	250	118	132	242	242	-	65	40	140	180	143.5	-	PG 13.5	M20x1.5	109	9	G1¼	-	27.6	27.6
200/50	232	-	-	481	481	232.5	232.5	16	12	87	250	118	132	259	259	-	68	50	160	210	143.5	-	PG 16	M20x1.5	108.5	12	G1¼	-	35.6	35.6

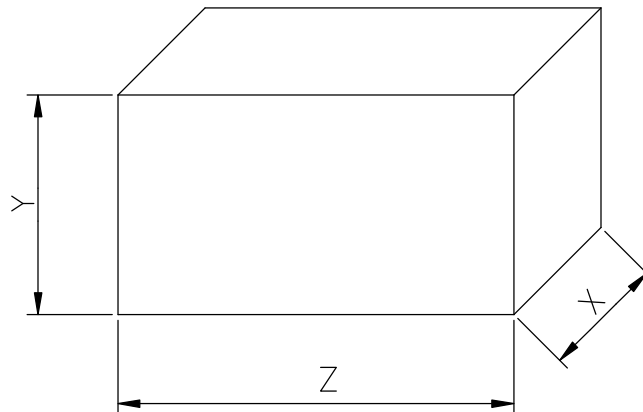
(*) Specified only if higher than "A"

(**) Only for IE3 Motors

[1~] Single phase

[3~] Three phase

PACKING



Pump type		Packing [mm]						Weight [kgf]		
Single Phase	Three Phase	X		Y		Z		[1~]	[3~]	(**)
		[1~]	[3~]	[1~]	[3~]	[1~]	[3~]	[1~]	[3~]	[3~]
2CDXM 70/10	2CDX 70/10	237	237	280	280	445	445	13.3	13.3	13.3
2CDXM 70/12	2CDX 70/12	237	237	280	285	445	500	13.9	14.6	14.6
2CDXM 70/15	2CDX 70/15	237	237	285	285	500	500	18.4	17.8	17.8
2CDXM 70/20	2CDX 70/20	237	237	285	285	500	500	19.5	20.1	21
2CDXM 120/15	2CDX 120/15	237	237	285	285	500	500	17	16.4	16.4
2CDXM 120/20	2CDX 120/20	237	237	285	285	500	500	17.7	18.4	19.3
-	2CDX 120/30	-	237	-	285	-	500	-	25.8	26.7
-	2CDX 120/40	-	237	-	285	-	585	-	28.8	28.8
-	2CDX 200/30	-	237	-	285	-	585	-	27.6	28.5
-	2CDX 200/40	-	237	-	285	-	585	-	28.6	28.6
-	2CDX 200/50	-	237	-	285	-	585	-	37.5	37.5

[1~] Single phase

[3~] Three phase

(**) Only for IE3 motors

MOTOR DATA

Pump type		Power		Efficiency		Capacitor		Efficiency (% load)			Input		Full load current			Locked rotor current			
Single Phase	Three Phase	[kW]	[HP]	Single Phase	Three Phase	Single Phase [μF]	Three Phase [V]	Three phase η %			Single Phase [kW]	Three Phase [kW]	[A]			[A]			
								50%	75%	100%			Single Phase 230 V	Three Phase 230 V	Three Phase 400 V	Single Phase 230 V	Three Phase 230 V	Three Phase 400 V	
2CDXM 70/10	2CDX 70/10	0.75	1.0	-	IE2	20	450	77.2	80.9	81.3	1.30	1.14	6.0	3.6	2.0	22.7	22.0	12.9	
-	2CDX 70/10	0.75	1.0	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7	-	-	19.7	11.4
2CDXM 70/12	2CDX 70/12	0.9	1.2	-	IE2	31.5	450	79.0	81.7	81.6	1.55	1.35	7.0	4.3	2.5	25.5	31.0	17.8	
-	2CDX 70/12	0.9	1.2	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5	-	-	28.8	16.6
2CDXM 70/15	2CDX 70/15	1.1	1.5	-	IE2	40	450	79.7	82.5	83.0	1.80	1.80	8.1	5.6	3.2	43.0	45.0	25.7	
-	2CDX 70/15	1.1	1.5	-	IE3	-	-	83.5	84.3	84.6	-	1.77	-	5.8	3.3	-	-	47.4	27.4
2CDXM 70/20	2CDX 70/20	1.5	2.0	-	IE2	40	450	80.3	83.4	83.8	2.30	2.28	10.0	7.4	4.3	43.0	34.3	20.0	
-	2CDX 70/20	1.5	2.0	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1	-	-	66.6	38.4
2CDXM 120/15	2CDX 120/15	1.1	1.5	-	IE2	40	450	79.7	82.5	83.0	1.80	1.80	8.3	5.6	3.2	43.0	45.0	25.7	
-	2CDX 120/15	1.1	1.5	-	IE3	-	-	83.5	84.3	84.6	-	1.77	-	5.8	3.3	-	-	47.4	27.4
2CDXM 120/20	2CDX 120/20	1.5	2.0	-	IE2	40	450	80.3	83.4	83.8	2.35	2.28	10.2	7.3	4.2	43.0	34.3	20.0	
-	2CDX 120/20	1.5	2.0	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1	-	-	66.6	38.4
-	2CDX 120/30	2.2	3.0	-	IE2	-	-	83.1	85.7	86.2	-	2.90	-	8.8	5.1	-	-	75.0	43.5
-	2CDX 120/30	2.2	3.0	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7	-	-	66.6	38.4
-	2CDX 120/40	3.0	4.0	-	IE2	-	-	85.0	86.7	86.3	-	3.48	-	10.6	6.1	-	-	100.0	57.7
-	2CDX 120/40	3.0	4.0	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4	-	-	90.0	52.0
-	2CDX 200/30	2.2	3.0	-	IE2	-	-	85.0	86.7	86.3	-	3.48	-	10.6	6.1	-	-	100.0	57.7
-	2CDX 200/30	2.2	3.0	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4	-	-	90.0	52.0
-	2CDX 200/40	3.0	4.0	-	IE2	-	-	85.0	86.7	86.3	-	3.83	-	11.6	6.7	-	-	100.0	57.7
-	2CDX 200/40	3.0	4.0	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4	-	-	90.0	52.0
-	2CDX 200/50	3.7	5.0	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7	-	-	151.0	87.0
-	2CDX 200/50	3.7	5.0	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7	-	-	131.8	76.1

NOISE DATA

Pump type		Power		L _{pA} - dB(A) *
Single Phase	Three Phase	[kW]	[HP]	
2CDXM 70/10	2CDX 70/10	0.75	1.0	62
2CDXM 70/12	2CDX 70/12	0.9	1.2	
2CDXM 70/15	2CDX 70/15	1.1	1.5	64
2CDXM 70/20	2CDX 70/20	1.5	2.0	
2CDXM 120/15	2CDX 120/15	1.1	1.5	64
2CDXM 120/20	2CDX 120/20	1.5	2.0	
-	2CDX 120/30	2.2	3.0	68
-	2CDX 120/40	3.0	4.0	
-	2CDX 200/30	2.2	3.0	
-	2CDX 200/40	3.0	4.0	
-	2CDX 200/50	3.7	5.0	

* Mean value of several measures at 1m distance around the pump.
Tolerance ± 2.5 dB.