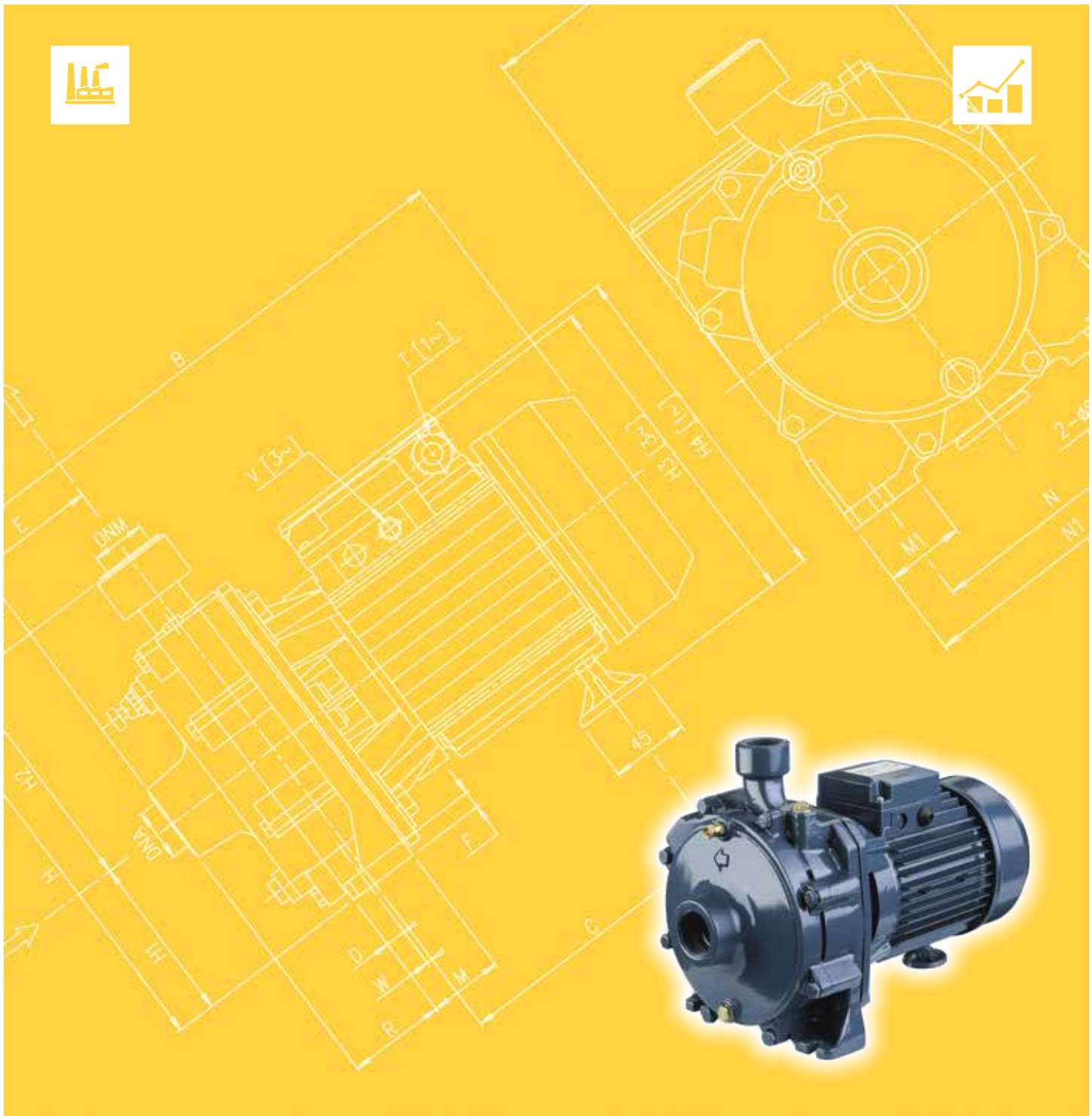




CDA

Data Book 50Hz



CENTRIFUGAL PUMPS

CDA

CONTENTS

50Hz

Rev.Q

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CENTRIFUGAL PUMPS

CDA

SPECIFICATION

50Hz

Rev.Q

PUMP		
Liquid	Type of liquid	Clean water
Handled	Temperature [°C]	min. +5 max. +40 (CDA 0.75 - 1.00) max. +90
Maximum working pressure [MPa]		0.6 (CDA 0.75-1.00) 1.0 (CDA 1.50-2.00-3.00-4.00-5.50)
Construction	Impeller	Twin closed type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	G1 (CDA 0.75-1.00) UNI ISO 228 G1¼ (CDA 1.50-2.00-3.00) UNI ISO 228 G1½ (CDA 4.00-5.50) UNI ISO 228
	Discharge	G1 (CDA 0.75-1.00-1.50-2.00-3.00) UNI ISO 228 G1¼ (CDA 4.00-5.50) UNI ISO 228
Material	Casing	Cast iron
	Impeller	PPE+PS glass fibre reinforced (CDA 0.75-1.00) Brass (CDA 1.50 - 2.00-3.00-4.00-5.50)
	Casing cover	AISI 304 (CDA 0.75-1.00) Cast iron built-in the motor bracket (CDA 2.00-3.00-4.00-5.50)
	Shaft seal	Ceramic/Carbon/NBR
	Shaft	AISI 303 (CDA 0.75-1.00-1.50-2.00-3.00) AISI 304 (CDA 4.00-5.50)
	Bracket	Aluminium (CDA 0.75-1.00) Cast iron (CDA 1.50-2.00-3.00-4.00-5.50)
Applicable standard of test		ISO 9906:2012 – Grade 3B

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Reg. 1781/2019)	IE2	IE3
No. of Poles	2	
Rotation speed [min-1]	≈ 2850	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	IP 44	
Power rating [kW]	0.55 ÷ 1.5	0.55 ÷ 4
	[HP]	0.75 ÷ 5.5
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	
Base material / Motor support	Cast iron / Plastic foot	
Dimensions of cable entry	PG11 - PG13.5 - G 1/2 – M16x1.5 – M20x1.5 (see dimensions page 400)	



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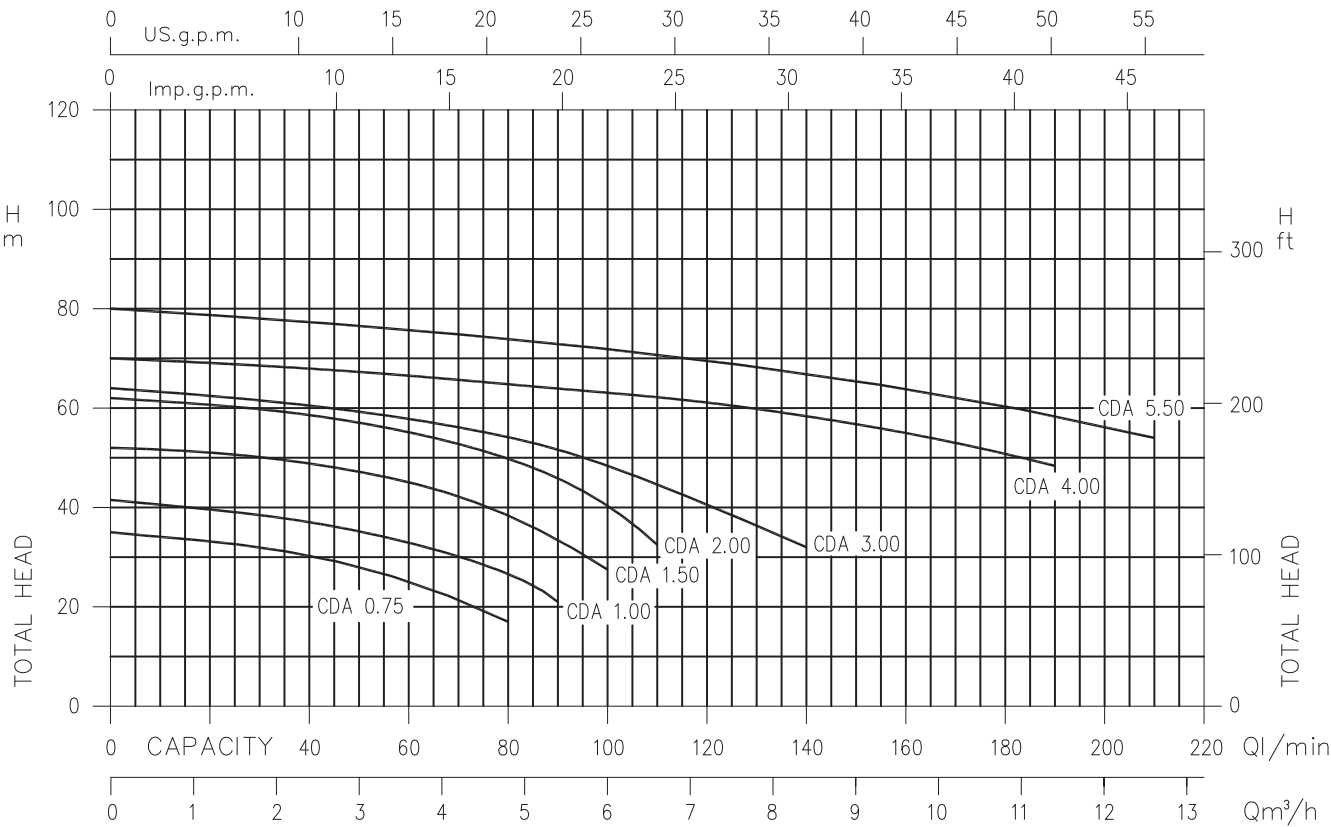
CENTRIFUGAL PUMPS

CDA

SELECTION CHART

50Hz

Rev.Q



Pump type		Q=Capacity													
		l/min	0	20	40	50	80	90	100	110	140	170	190	210	
Single Phase	Three Phase	m³/h	0	1,2	2,4	3	4,8	5,4	6,6	6,6	8,4	10,2	11,4	12,6	
H=Total manometric head in meters															
CDA 0.75 M	CDA 0.75 T	35	33	30,2	27,9	17	-	-	-	-	-	-	-	-	
CDA 1.00 M	CDA 1.00 T	41,5	39,5	37	35,2	27	21	-	-	-	-	-	-	-	
CDA 1.50 M	CDA 1.50 T	52	50,8	48,8	47,1	38,4	33,4	27,5	-	-	-	-	-	-	
CDA 2.00 M	CDA 2.00 T	62	60,5	58,6	56,9	49,8	46,5	40,3	32,5	-	-	-	-	-	
-	CDA 3.00 T	64	-	60,5	59,3	54,1	51,6	48,4	44,6	32	-	-	-	-	
-	CDA 4.00 T	70	-	-	67	64,8	63,9	62,5	62	58	53,5	48	-	-	

CENTRIFUGAL PUMPS

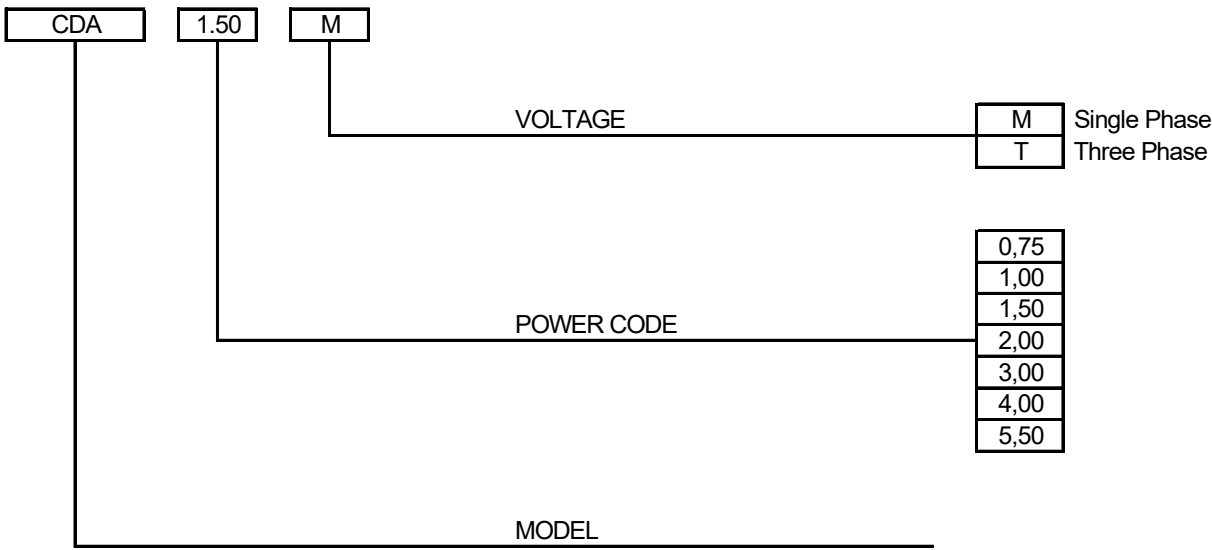
CDA

TYPE KEY AND CURVE SPECIFICATIONS

50Hz

Rev.Q

TYPE KEY



PERFORMANCE CURVE SPECIFICATIONS

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

Tolerances according to ISO 9906 Annex A
The curves refer to effective speed of asynchronous motors at 50 Hz
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)
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



EBARA PUMPS EUROPE S.p.A.

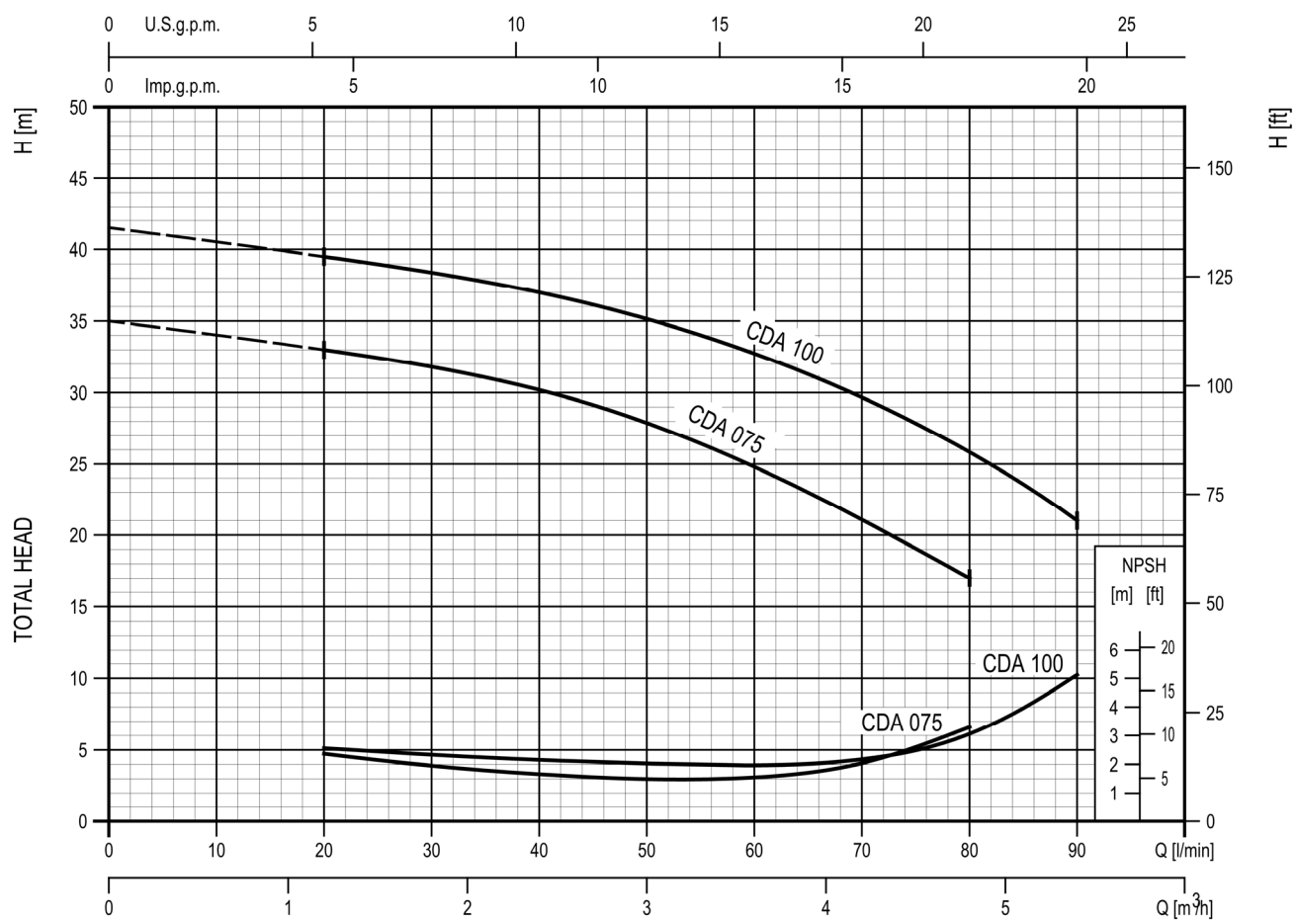
CENTRIFUGAL PUMPS

CDA

PERFORMANCE CURVE

50Hz
Rev.Q

CDA 0.75 - Impeller diameter = 122 mm
CDA 1.00 - Impeller diameter = 130 mm



Rotation speed $\approx 2800 \text{ min}^{-1}$
Test standard: ISO 9906:2012 – Grade 3B



EBARA PUMPS EUROPE S.p.A.

CENTRIFUGAL PUMPS

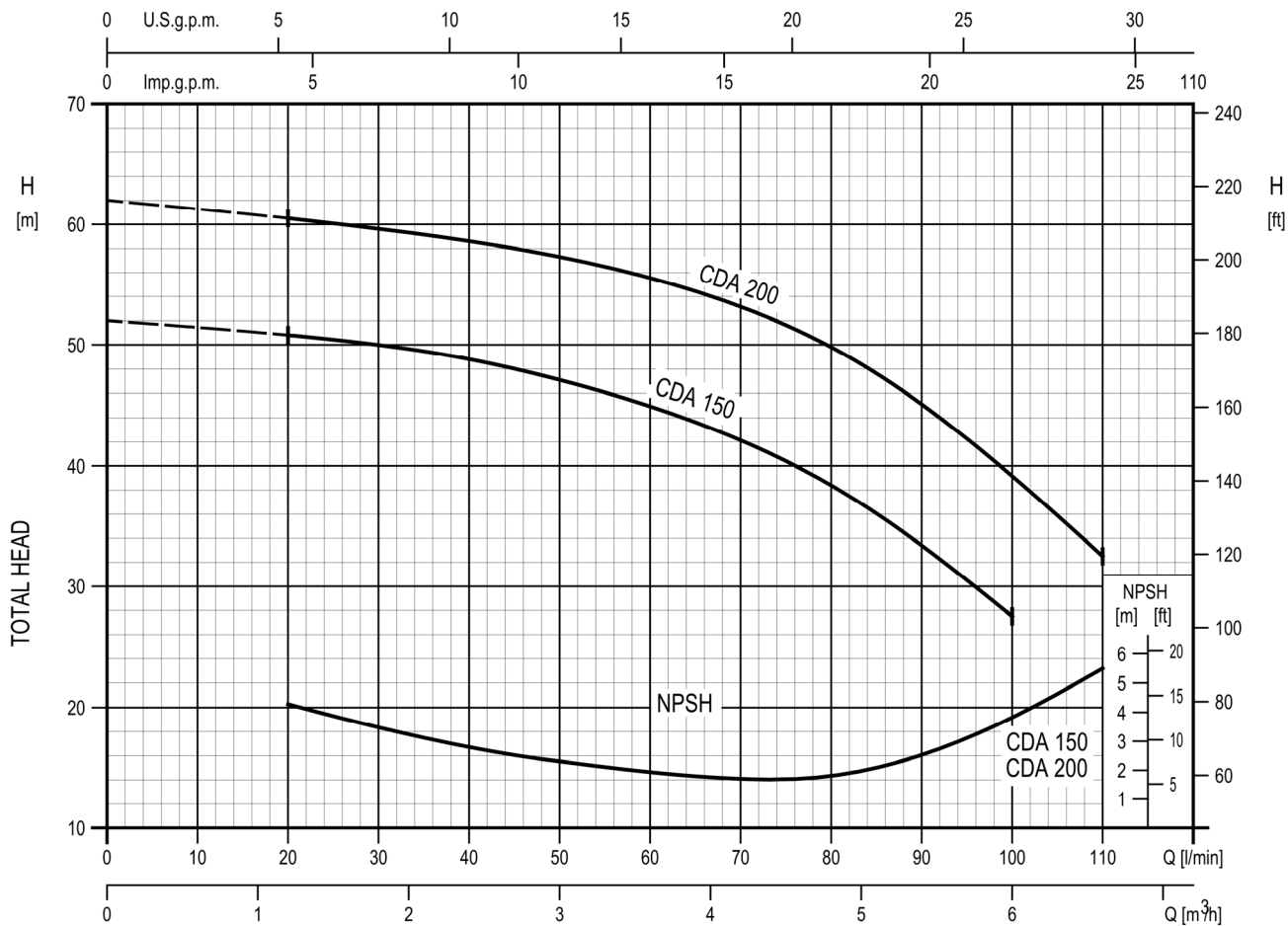
CDA

PERFORMANCE CURVE

50Hz

Rev.Q

CDA 1.50 - Impeller diameter = 143 mm
CDA 2.00 - Impeller diameter = 153 mm



Rotation speed $\approx 2850 \text{ min}^{-1}$
Test standard: ISO 9906:2012 – Grade 3B



EBARA PUMPS EUROPE S.p.A.

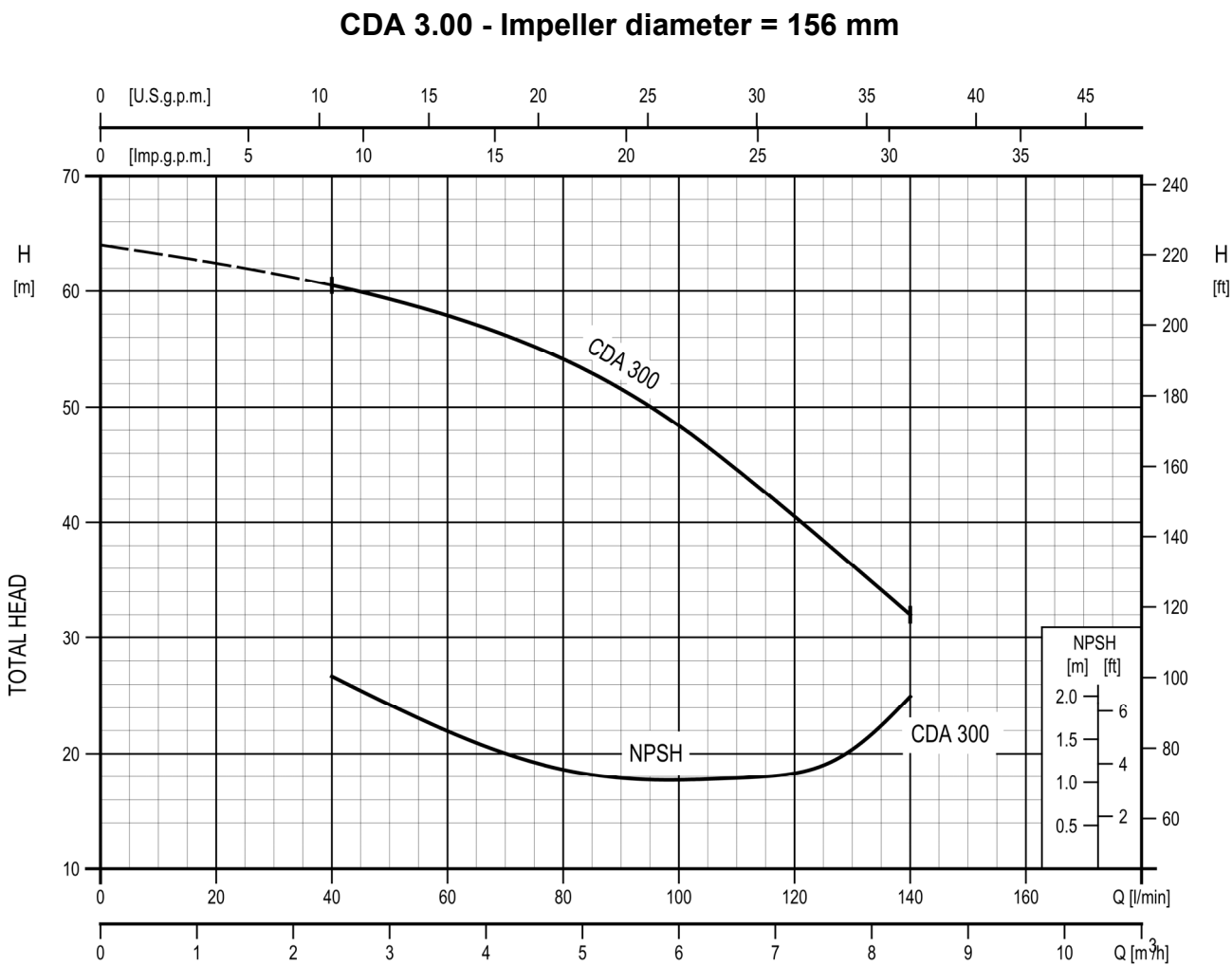
CENTRIFUGAL PUMPS

CDA

PERFORMANCE CURVE

50Hz

Rev.Q



Rotation speed $\approx 2850 \text{ min}^{-1}$
Test standard: ISO 9906:2012 – Grade 3B



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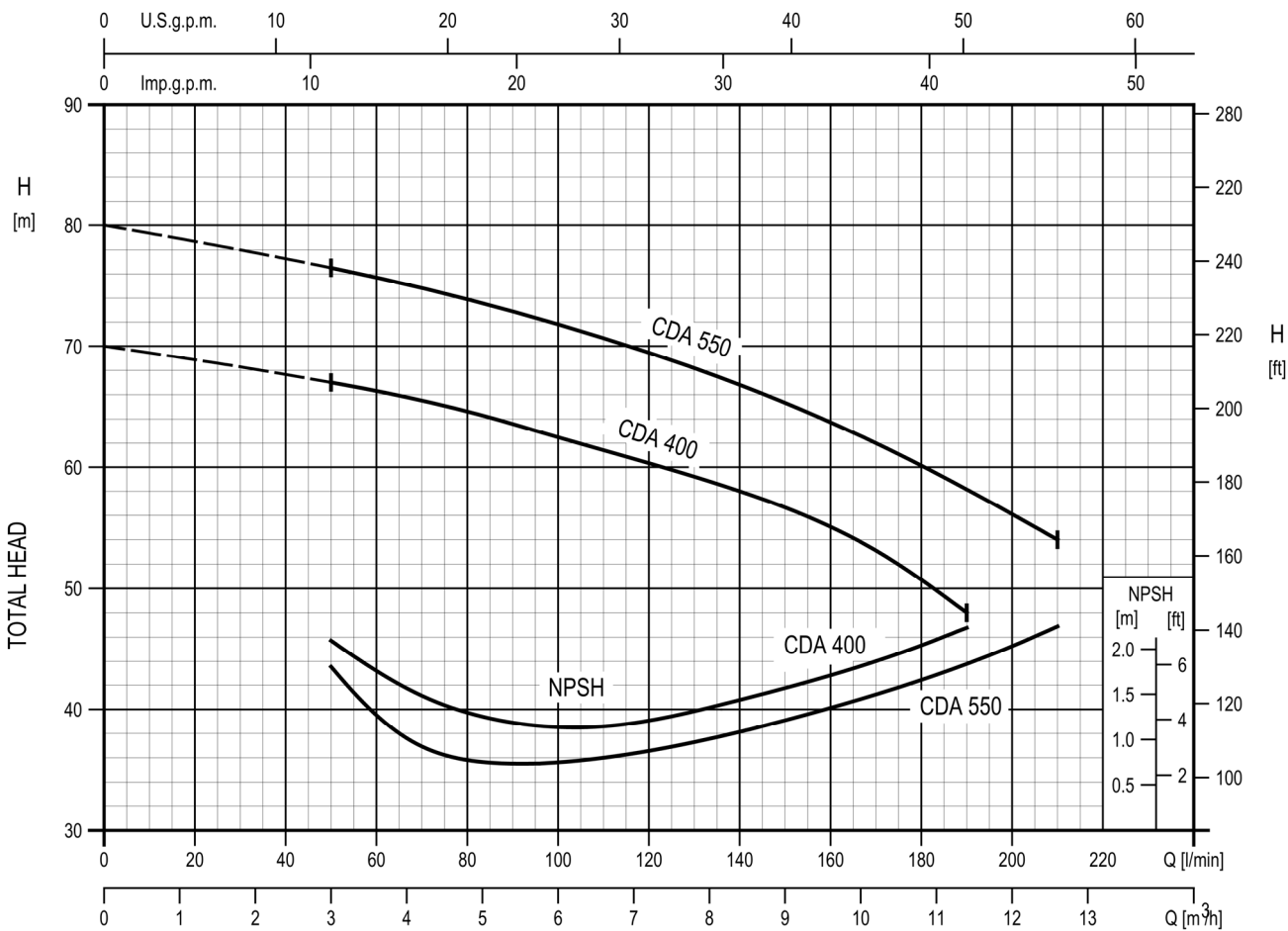
CENTRIFUGAL PUMPS

CDA

PERFORMANCE CURVE

50Hz
Rev.Q

CDA 4.00 - Impeller diameter = 167 mm
CDA 5.50 - Impeller diameter = 179 mm



Rotation speed $\approx 2900 \text{ min}^{-1}$
Test standard: ISO 9906:2012 – Grade 3B



EBARA PUMPS EUROPE S.p.A.

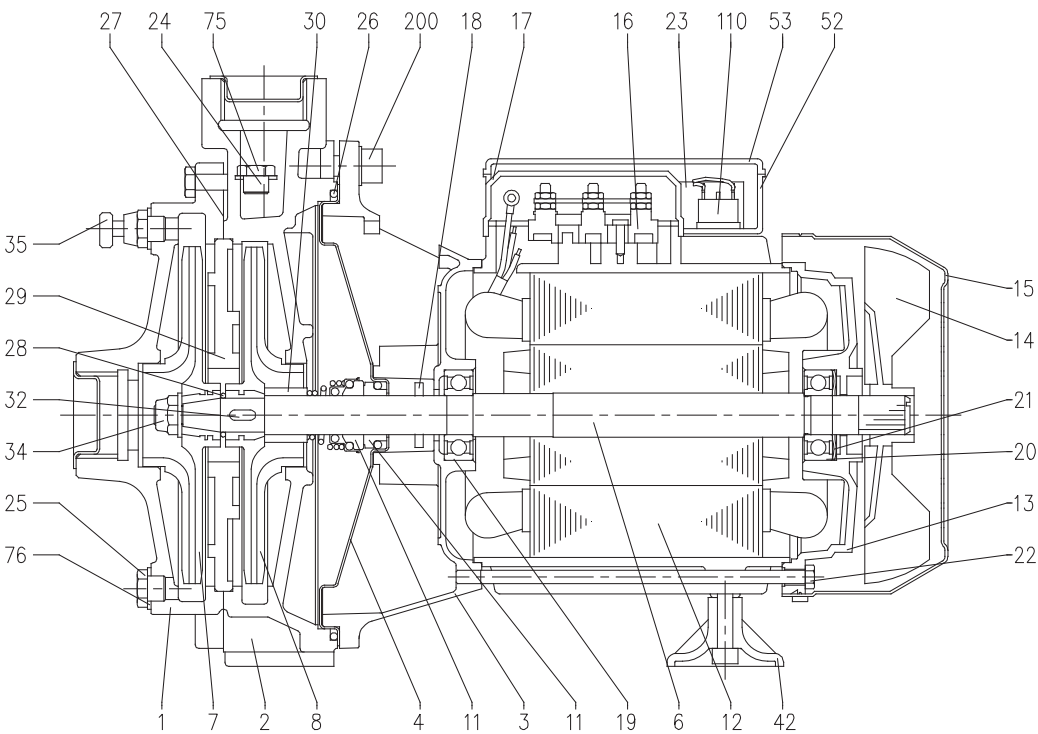
CENTRIFUGAL PUMPS

CDA

CONSTRUCTION

50Hz
Rev.Q

SECTIONAL VIEW



N°	PART NAME	MATERIAL	Q. TY	N°	PART NAME	MATERIAL	Q. TY
1	Casing	Cast iron	1	23	Capacitor [1]	-	1
2	Casing	Cast iron	1	24	Priming plug	Brass	1
3	Motor bracket	[8]	1	25	Drain plug	Brass	1
4	Casing cover	[9]	1	26	O-ring	NBR	1
6	Shaft with rotor	[6]	1	27	Gasket	Compressed cellulose fibre	1
7	Impeller	[4]	1	28	O-ring	NBR	1
8	Impeller	[4]	1	29	Intermediate plate	Cast iron	1
11	Mechanical seal [7]	Carbon/Ceramic/NBR	1	30	Mechanical seal spacer	Brass	1
12	Motor frame with stator	-	1	32	Key	AISI 316	1
13	Motor cover	Aluminium	1	34	Impeller nut [3]	AISI 304	1
14	Fan	PP	1	35	Air breather valve	Brass	1
15	Fan cover	Fe P04 Zincate	1	42	Foot	PP	1
16	Terminal box	-	1	52	Capacitor box [1]	ABS class V-0	1
17	Terminal box cover [2]	Aluminium	1	53	Capacitor box cover [10]	ABS class V-0 [10]	1
18	Splash ring	NBR	1	75	Washer	Aluminium	1
19	Pump side ball bearing	-	1	76	Washer	Aluminium	1
20	Fan side ball bearing	-	1	110	Protector [5]	-	1
21	Adjusting ring	Steel C70	1	200	Screw	Zn Steel Cl. 8.8 ISO 898-1	4
22	Tie rod	Fe 42 Zincate	4				

- [1] Only for single phase
[2] Only for three phase
[3] Only for version with impeller in Brass
[4] Material : PPE+PS glass fibre reinforced for version CDA 0.75 - 1.00
Brass for version CDA 1.50 - 2.00 - 3.00 - 4.00 - 5.50
[5] Only for version single phase CDA 1.50 - 2.00
[6] Material : AISI 303 (wet extension) for version CDA 0.75 - 1.00 - 1.50 - 2.00 - 3.00
AISI 304 (wet extension) for version CDA 4.00 - 5.50
[7] See constructions mechanical seal page 301
[8] Material : Aluminium for version CDA 0.75 - 1.00
Cast iron for version CDA 1.50 - 2.00 - 3.00 - 4.00 - 5.50
[9] Material : AISI 304 for version CDA 0.75 - 1.00
Cast iron built-in the motor bracket for version CDA 1.50 - 2.00 - 3.00 - 4.00 - 5.50
[10] With gasket in NBR only for version single phase CDA 0.75 - 1.00



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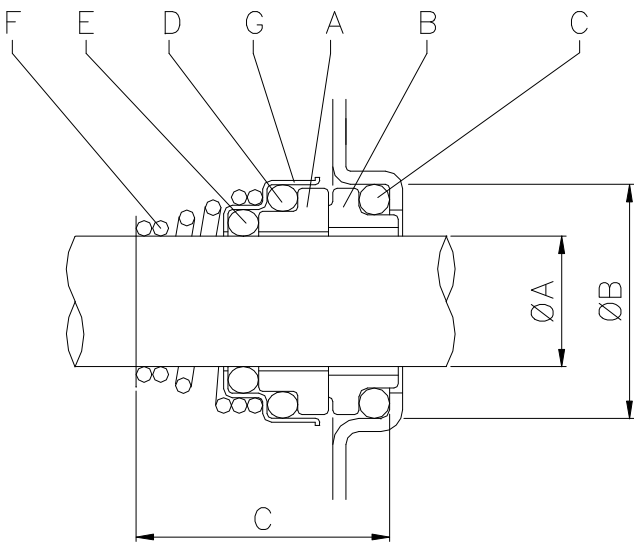
CENTRIFUGAL PUMPS

CDA

CONSTRUCTION

50Hz
Rev.Q

MECHANICAL SEAL



Single Phase	Three Phase	ØA	ØB	C
CDA 0.75 M	CDA 0.75 T	15	26	29
CDA 1.00 M	CDA 1.00 T	15	26	29
CDA 1.50 M	CDA 1.50 T	18	30.9	32
CDA 2.00 M	CDA 2.00 T	18	30.9	32
-	CDA 3.00 T	18	30.9	32
-	CDA 4.00 T	20	30.9	33
-	CDA 5.50 T	20	30.9	33

REF	PART NAME	MATERIAL
A	Rotary seal ring	Ceramic
B	Stationary seal ring	Carbon graphite
C	O Ring	NBR
D	O Ring	NBR
E	O Ring	NBR
F	Self driving spring	AISI 316
G	Frame	AISI 304

BEARINGS

Type pumps		Ball Bearing	
Single phase	Three Phase	Pump side	Fan side
CDA 0.75 M	CDA 0.75 T	6202	6203
CDA 1.00 M	CDA 1.00 T	6202	6202
CDA 1.50 M	CDA 1.50 T	6204	6203
CDA 2.00 M	CDA 2.00 T	6204	6203
-	CDA 3.00 T	6204	6203
-	CDA 4.00 T	6306	6205
-	CDA 5.50 T	6306	6205



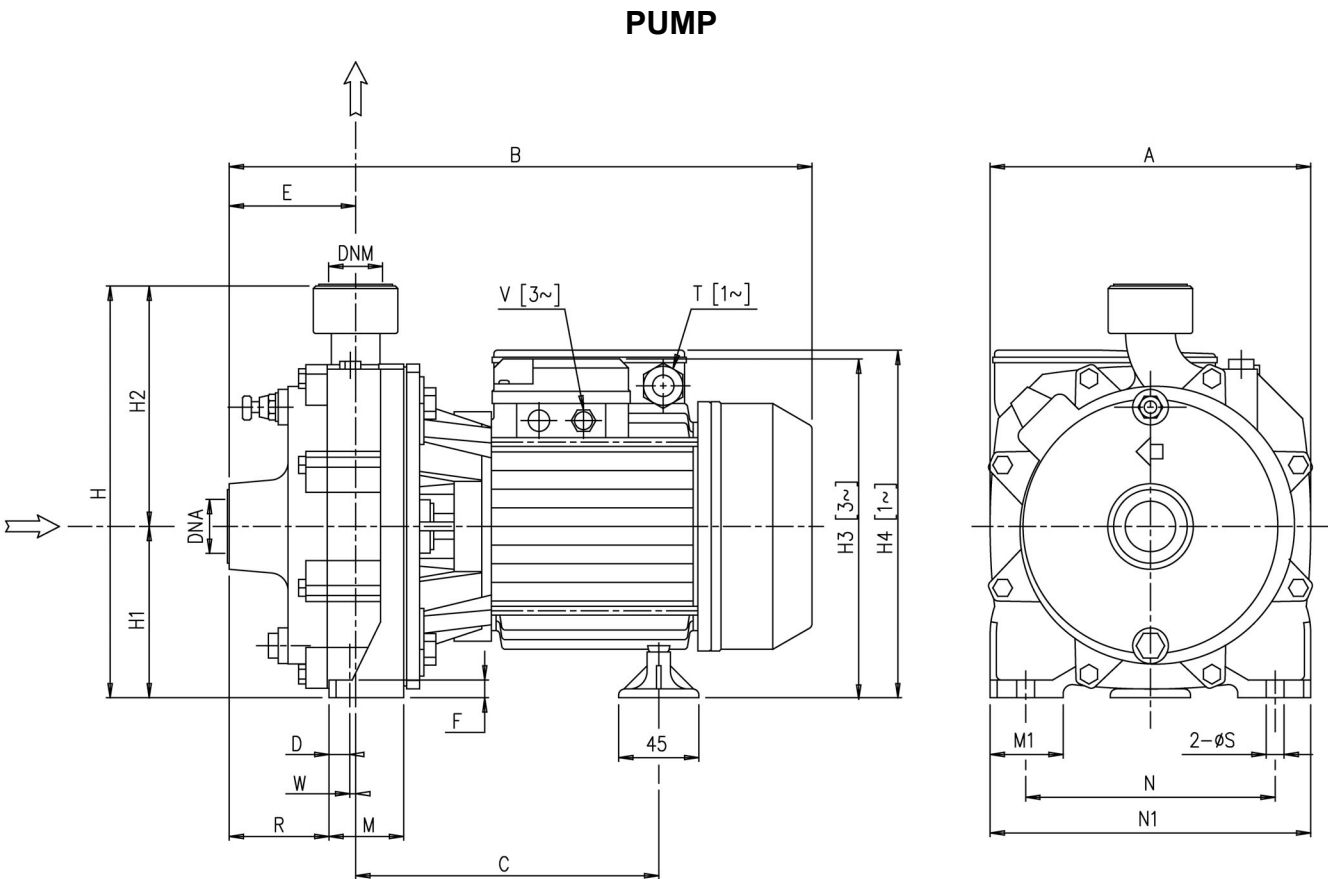
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CENTRIFUGAL PUMPS

CDA

DIMENSIONS AND WEIGHT

50Hz
Rev.Q



Pump type	Dimensions mm																					Weigh ht [kgf]	
	A	B	C	D	E	F	H	H1	H2	H3	H4	M	M1	N	N1	R	T	V	W	S	DNA		DNM
CDA 0.75M	183	336,3	179,8	8,3	73	9	227	97	130	-	198,0	42	40	140	180	57,5	PG11	-	6,8	9,5	G 1	G1	15
CDA 0.75T	183	336,3	179,8	8,3	73	9	227	97	130	197,5	-	42	40	140	180	57,5	-	M16x1,5	6,8	9,5	G 1	G1	14,1
CDA 1.00M	183	358,0	179,8	8,3	73	9	227	97	130	-	198,0	42	40	140	180	57,5	PG11	-	6,8	9,5	G 1	G1	16,5
CDA 1.00T	183	336,3	179,8	8,3	73	9	227	97	130	197,5	-	42	40	140	180	57,5	-	M16x1,5	6,8	9,5	G 1	G1	15
CDA 1.50M	209	420,0	218,3	8,3	86	9	265	110	155	-	242,0	48	40	155	195	65,5	PG13,5	-	12,3	9,5	G1 1/4	G1	28,5
CDA 1.50T	194	419,8	218,3	8,3	86	9	265	110	155	224,0	-	48	40	155	195	65,5	-	M20x1,5	12,3	9,5	G1 1/4	G1	25,8
CDA 2.00M	209	423,0	218,3	8,3	86	9	265	110	155	-	242,0	48	40	155	195	65,5	PG13,5	-	12,3	9,5	G1 1/4	G1	28,5
CDA 2.00T	194	421	218,3	8,3	86	9	265	110	155	224	-	48	40	155	195	65,5	-	M20x1,5	12,3	9,5	G1 1/4	G1	28
CDA 3.00T	194	423,3	218,3	8,3	86	9	265	110	155	224	-	48	40	155	195	65,5	-	M20x1,5	12,3	9,5	G1 1/4	G1	26,7
CDA 4.00T	228	494,5	262,5	12,0	95,5	12	308,5	133,5	175	259,5	-	57	50	180	230	71,5	-	M20x1,5	12	12	G1 1/2	G1 1/4	46,8
CDA 5.50T	228	508	225,3	12,0	95,5	12	308,5	133,5	175	264,5	-	57	50	180	230	71,5	-	M20x1,5	12	12	G1 1/2	G1 1/4	52

[1~] Single phase
[3~] Three phase



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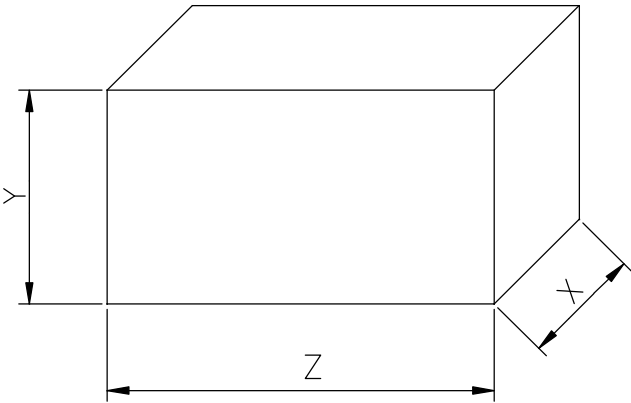
CENTRIFUGAL PUMPS

CDA

DIMENSIONS AND WEIGHT

50Hz
Rev.Q

PACKING



Pump Type		Packing [mm]						Weight	
		X		Y		Z		[kgf]	
Single Phase	Three Phase	[1~]	[3~]	[1~]	[3~]	[1~]	[3~]	[1~]	[3~]
CDA 0.75 M	CDA 0.75 T	210	210	290	290	370	370	16	15,7
CDA 1.00 M	CDA 1.00 T	240	210	320	290	460	370	17,5	15,7
CDA 1.50 M	CDA 1.50 T	240	240	320	320	435	460	29,5	26,6
CDA 2.00 M	CDA 2.00 T	240	240	320	320	435	460	29,5	28,8
-	CDA 3.00 T	-	240	-	320	-	460	-	27,5
-	CDA 4.00 T	-	280	-	350	-	520	-	48,3

[1~] Single Phase
[3~] Three Phase



EBARA PUMPS EUROPE S.p.A.

CENTRIFUGAL PUMPS

CDA

TECHNICAL DATA

50Hz

Rev.Q

MOTOR DATA

Pump type	Power		Efficiency [IE2 / IE3]	Capacitor		Efficiency (% load) and power factor				Input [kW]	Full load current		Locked rotor current	
	[kW]	[HP]		[μF]	[V]	η %			cos-φ		[A]		[A]	
						50%	75%	100%			110 V	230 V	110 V	230 V
CDA 0.75 M	0,75	1,0	IE2	25	450	61,0	70,8	79,2	0,93	0,95	-	4,4	-	24,0
CDA 1.00 M	0,9	1,2	IE2	31,5	450	67,0	75,3	79,0	0,92	1,15	-	5,4	-	31,3
CDA 1.50 M	1,5	2,0	IE2	40	450	69,8	76,6	81,3	0,92	1,90	-	9,0	-	65,2
CDA 2.00 M	1,8	2,4	IE2	40	450	73,1	78,8	82,2	0,93	2,20	-	10,5	-	65,2

Pump type	Power		Efficiency	Efficiency (% load)			Input [kW]	Full load current		Locked rotor current	
	[kW]	[HP]		Three phase				[A]		[A]	
				η %				230 V	400 V	230 V	400 V
				50%	75%	100%					
CDA 0.75 T	0,55	0,75	IE3	80,2	82,8	82,9	0,91	3,0	1,7	20,5	11,8
CDA 1.00 T	0,75	1	IE3	80,9	82,3	82,1	0,91	3,0	1,7	19,7	11,4
CDA 1.50 T	1,1	1,5	IE3	83,0	85,8	85,6	1,77	5,8	3,3	47,4	27,4
CDA 2.00 T	1,5	2	IE3	84,2	86,8	86,9	2,01	7,1	4,1	66,6	38,4
CDA 3.00 T	2,2	3	IE3	86,2	87,0	86,0	2,55	8,2	4,7	66,6	38,4
CDA 4.00 T	3	4	IE3	85,9	87,5	87,1	3,44	11,1	6,4	90,0	52,0
CDA 5.50 T	4	5,5	IE3	84,3	87,2	87,8	4,56	15,1	8,7	151,0	87,0
CDA 5.50 T	4	5,5	IE3	85,8	88,3	88,4	4,52	15,1	8,7	131,8	76,1

NOISE DATA

Pump type		L _{pA} - dB(A) *
Single Phase	Three Phase	
CDA 0.75 M	CDA 0.75 T	<70
CDA 1.00 M	CDA 1.00 T	
CDA 1.50 M	CDA 1.50 T	
CDA 2.00 M	CDA 2.00 T	
-	CDA 3.00 T	
-	CDA 4.00 T	
-	CDA 5.50 T	

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

