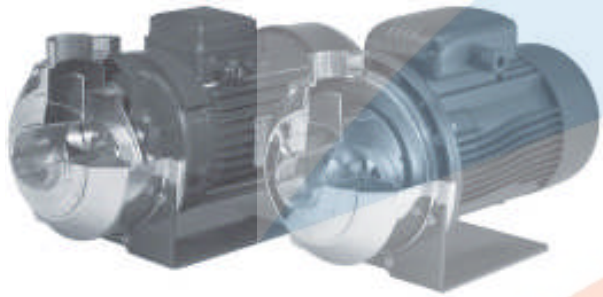
LOWARA
a xylem brand

Open impeller centrifugal electric pumps and threaded connections

CO-COM Series

MARKET SECTORS
CIVIL, INDUSTRIAL.

APPLICATIONS
- Washing of metal parts and/or surface treatment.
- Washing of produce in the packaging industry.
- Food industry washing equipment and syatems.
- Dyeing plant and textile industry.
- Plants for the circulation and transfer of moderately viscous liquids, with light chemical aggressiveness.
- Industrial washing machines and commercial dishwashers.



❑ **All components in contact with pumped liquid are made of AISI 316L stainless steel**

❑ **Mechanical seal made of Silicon carbide/tungsten carbide/FPM in the "K" version**

SPECIFICATIONS
PUMP
Delivery up to 900 l/min (54 m³/h).
Head up to 24 m.
Temperature of pumped liquid: -10°C to +110°C for standard version.
Maximum working **pressure** : 8 bar (PN 8).
Suspended solids handled up to:
CO350: 11 mm.
CO500: 20 mm.

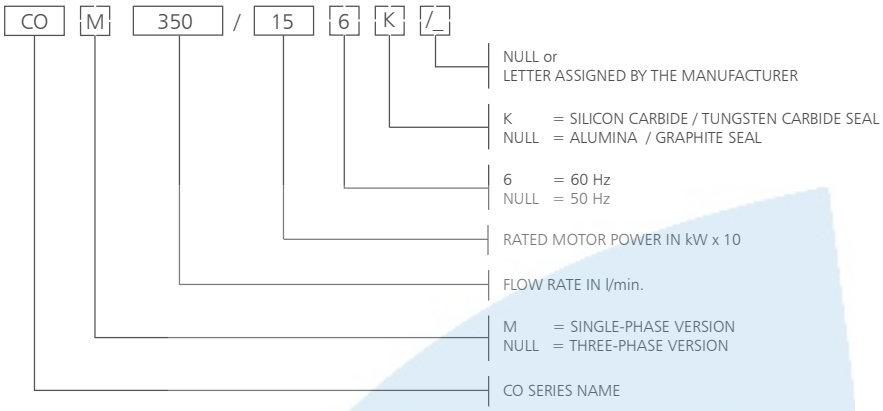
MOTOR
Asynchronous, squirrel cage rotor, enclosed construction in aluminium casing, external ventilation.
Protection: IP55.
Class 155 (F) **insulation**.
Performances according to EN 60034-1.
Maximum ambient **temperature**: 40°C.
Standard voltage:
- **Single-phase** version: 220-240 V 50 Hz, 2 poles with built-in automatic reset overload protection up to 1,5 kW. For higher powers the protection must be provided by the user.
- **Three-phase** version: 220-240/380-415 V 50 Hz, 2 poles; overload protection to be provided by the user.

Condensate drain plugs on all motors.

CONSTRUCTION FEATURES
Close-coupled, single-impeller centrifugal pump with axial suction and radial delivery.
Threaded suction and delivery ports (Rp ISO 7).
Compact construction; adaptor for motor/pump coupling; the impeller is keyed directly to the motor shaft extension.
Back pull-out design; no need to disconnect the pump body from the system pipes.
AISI 316L stainless steel open **impeller** with four pressed vanes welded onto base disk.
Impeller's front **wear surface** consists of a study **AISI 316L** stainless steel plate welded onto the suction port.
AISI 316L stainless steel **pump body and seal housing disk**, with no diffusers or cavities for easier cleaning and maintenance.
Pump body tightened by 8 screws allowing rotation of the discharge head.
Mechanical seal:
Standard version: **Carbon**/**Ceramica** faces, **FPM** elastomers.
The other parts are made of AISI 316L stainless steel.
"**K**" **version** : faces are made of **Silicon Carbide and Tungsten Carbide**. **FPM** Elastomers.
The other parts are made of AISI 316L stainless steel.
FPM O-Rings.

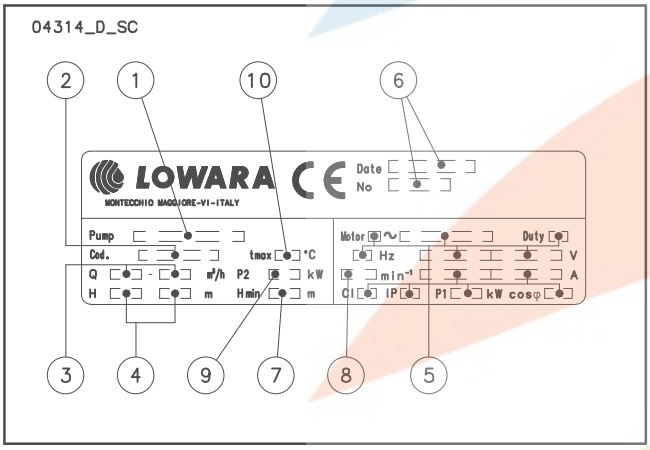
OPTIONAL FEATURES
Different voltages and frequencies.
Different materials for the mechanical seal and O-rings.

CO - COM SERIES
IDENTIFICATION CODE



EXAMPLE : COM 350/156K
CO series electric pump, single-phase, flow rate 350 l/min,
rated power 1,5 kW, 60 Hz version, Silicon Carbide / Tungsten Carbide seal.

RATING PLATE

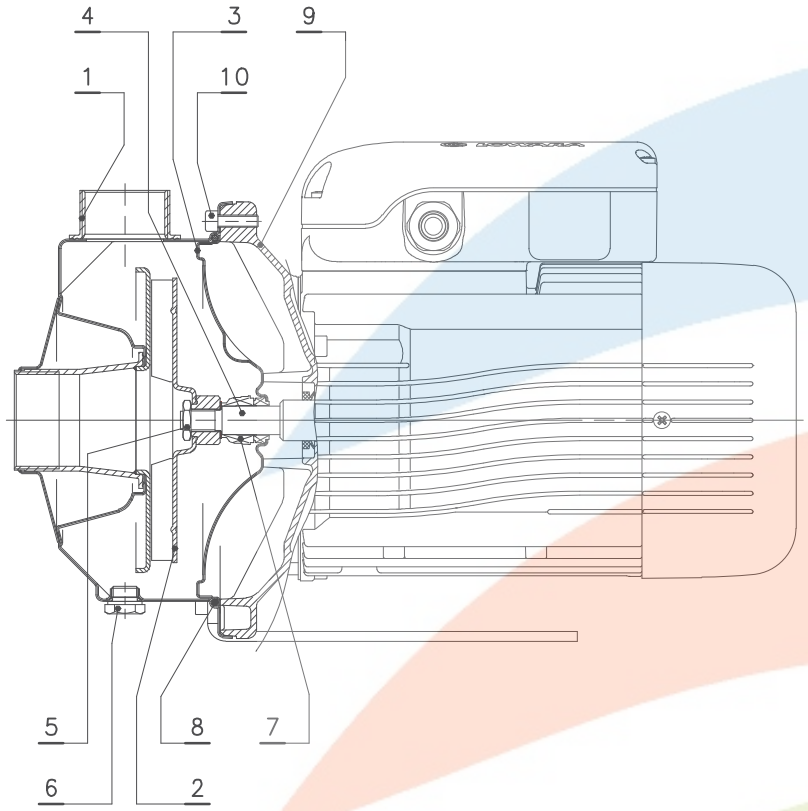


LEGEND

1 - Electric pump type
2 - Code
3 - Delivery range
4 - Head range
5 - Motor type
6 - Date of manufacture and serial number
7 - Minimum head
8 - Speed
9 - Rated output
10 - Maximum operating temperature

CO - COM SERIES
LIST OF MODELS AND TABLE OF MATERIALS

04309_A_DS



VERSIONS	
SINGLE-PHASE	THREE-PHASE
COM 350/03	CO 350/03
COM 350/05	CO 350/05
COM 350/07	CO 350/07
COM 350/09	CO 350/09
COM 350/11	CO 350/11
COM 350/15	CO 350/15
COM 500/15	CO 500/15
COM 500/22	CO 500/22
	CO 500/30

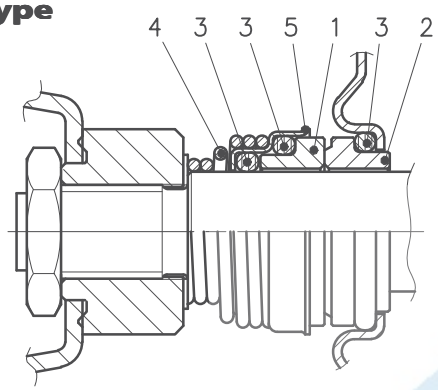
co-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Seal housing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Shaft extension	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Mechanical seal	Ceramic / resin impregnated Carbon / FPM (standard version)		
8	Elastomers	FPM (standard version)		
9	Adapter	Aluminium	EN 1706-AC-AlSi11Cu2(Fe)DF	ASTM Class 25
10	Pump body fastening bolts & screws	Galvanized steel		

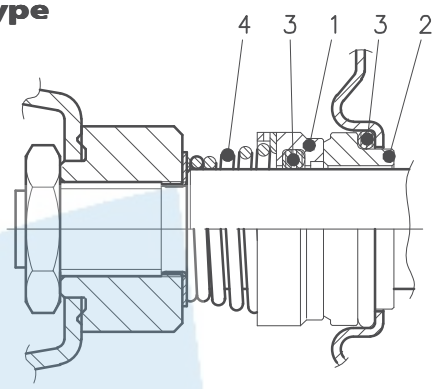
co-en_a_tm

CO - COM SERIES
MECHANICAL SEAL

3K Type



2K Type



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LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4 - 5
B : Resin impregnated carbon	E : EPDM	G : AISI 316
C : Special resin impregnated carbon	V : FPM	
V : Ceramic		
Q_1 : Silicon Carbide		
U_3 : Tungsten Carbide		

co_ten-mec-3-en_a_tm

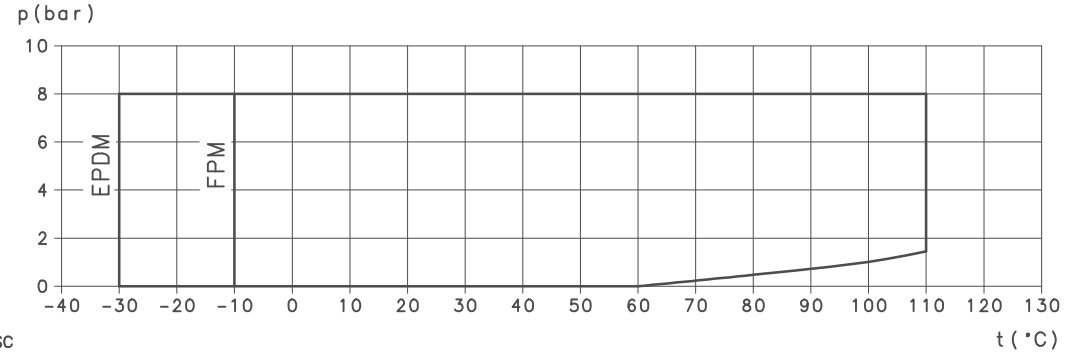
SEAL TYPES

TYPE	POSITION 1 ROTATING ASSEMBLY	POSITION 2 FIXED ASSEMBLY	POSITION 3 ELASTOMERS	POSITION 4 SPRINGS	POSITION 5 OTHER COMPONENTS	TEMPERATURE (°C)
STANDARD MECHANICAL SEAL						
3K - V B V G G	V	B	V	G	G	-10 +110
OTHER MECHANICAL SEAL TYPES						
3K - V C V G G	V	C	V	G	G	-10 +110
3K - Q_1CVGG	Q_1	C	V	G	G	-10 +110
3K - Q_1Q_1VGG	Q_1	Q_1	V	G	G	-10 +110
2K - U_3Q_1VGG	U_3	Q_1	V	G	G	-10 +110
2K - U_3U_3VGG *	U_3	U_3	V	G	G	-10 +110
3K - VBEGG	V	B	E	G	G	-30 +110
3K - VCEGG	V	C	E	G	G	-30 +110
3K - Q_1CEGG	Q_1	C	E	G	G	-30 +110
3K - Q_1Q_1EGG	Q_1	Q_1	E	G	G	-30 +110
2K - U_3Q_1EGG	U_3	Q_1	E	G	G	-30 +110
2K - U_3U_3EGG *	U_3	U_3	E	G	G	-30 +110

* Version with anti-rotation lockpin available on request.

co_tipi-ten-mec-3-en_b_tc

COMPLETE PUMP PRESSURE / TEMPERATURE OPERATING LIMITS (WITH ANY OF THE SEALS LISTED ABOVE)



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CO - COM SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES

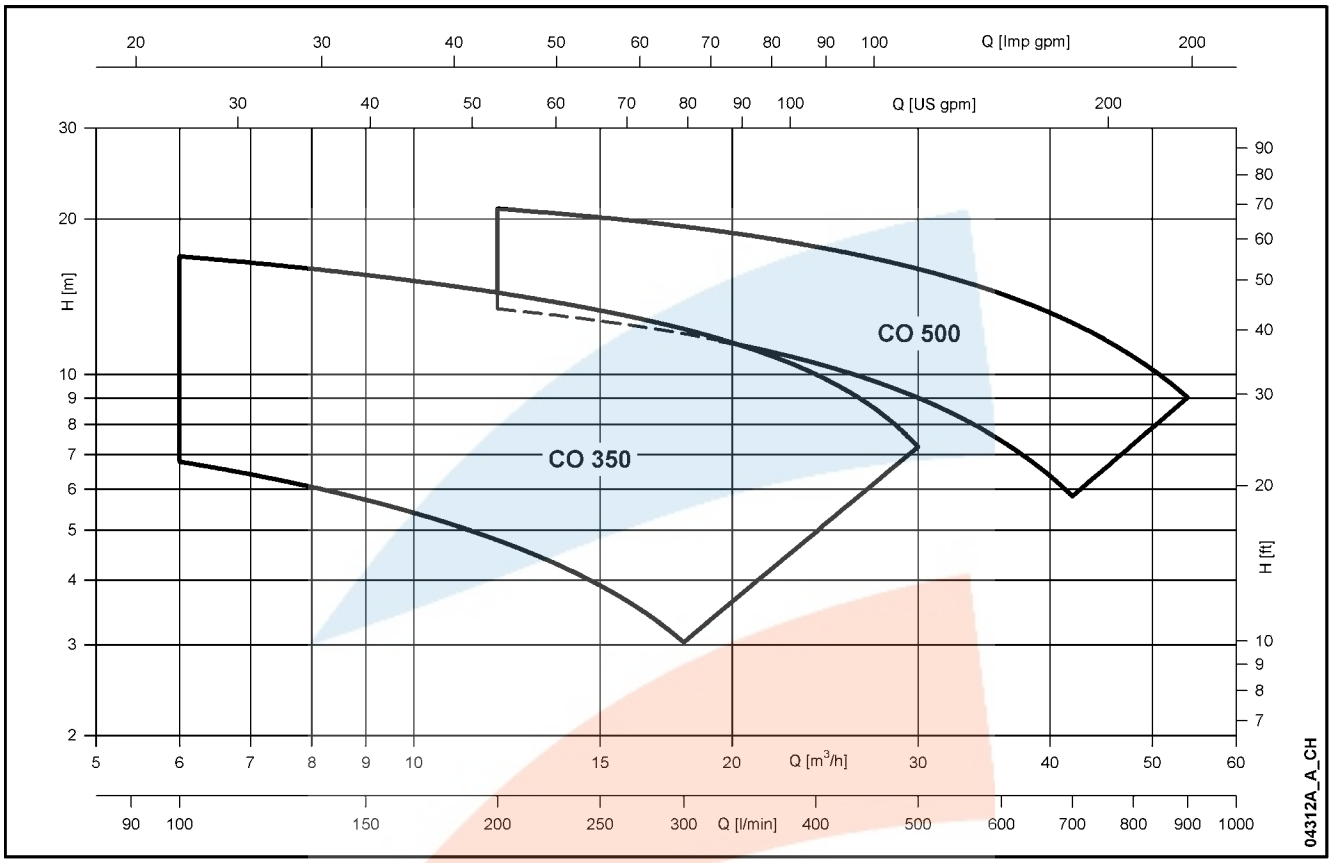

TABLE OF HYDRAULIC PERFORMANCES AT 50 Hz, 2 POLES

ELECTRIC PUMP TYPE	RATED POWER		Q = DELIVERY																	
			l/min 0	100	120	160	200	240	280	300	350	375	400	450	500	600	650	700	800	900
			m³/h 0	6	7,2	9,6	12	14,4	16,8	18	21	22,5	24	27	30	36	39	42	48	54
	kW	HP	H = TOTAL HEAD METRES COLUMN OF WATER																	
CO(M) 350/03	0,37	0,5	9,5	6,8	6,3	5,5	4,8	4,1	3,4	3,0										
CO(M) 350/05	0,55	0,75	12,0	9,2	8,8	7,9	7,1	6,3	5,5	5,1	4,0									
CO(M) 350/07	0,75	1	13,7	11,2	10,8	9,9	9,1	8,2	7,4	6,9	5,8	5,3								
CO(M) 350/09	0,9	1,2	15,7	12,7	12,2	11,3	10,5	9,6	8,8	8,3	7,2	6,6	5,9							
CO(M) 350/11	1,1	1,5	17,3	14,3	13,8	12,9	12,0	11,2	10,5	10,1	9,1	8,6	8,0	6,8						
CO(M) 350/15	1,5	2	20,3	16,9	16,4	15,3	14,4	13,5	12,7	12,2	11,2	10,6	10,0	8,7	7,2					
CO(M) 500/15	1,5	2	16,0				13,4	12,8	12,3	12,0	11,3	10,9	10,5	9,8	9,0	7,4	6,6	5,8		
CO(M) 500/22	2,2	3	19,6				17,3	16,7	16,2	15,9	15,2	14,9	14,5	13,7	13,0	11,3	10,4	9,6	7,7	
CO 500/30	3	4	24,1				20,9	20,3	19,7	19,3	18,5	18,1	17,7	16,9	16,0	14,3	13,5	12,6	10,8	9,0

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PUMP TYPE 1 ~	MOTOR TYPE	INPUT POWER* kW	INPUT CURRENT* 220-240 V A	CAPACIT. µF / 450 V
COM350/03	SM63BG/1045	0,63	2,82	14
COM350/05	SM71BG/1055	0,88	4,25	16
COM350/07	SM71BG/1075	1,02	4,67	20
COM350/09	SM71BG/1095	1,21	5,46	25
COM350/11	SM80BG/1115	1,75	7,85	30
COM350/15	SM80BG/1155	2,04	9,21	40
COM500/15	SM80BG/1155	2,02	9,12	40
COM500/22	PLM90BG/1225	2,72	12,7	70
-	-	-	-	-

PUMP TYPE 3 ~	MOTOR TYPE	INPUT POWER* kW	INPUT CURRENT* 220-240 V A	INPUT CURRENT* 380-415 V A
C0350/03	SM63BG/304	0,64	2,53	1,46
CO350/05	SM71BG/305	0,79	2,70	1,56
C0350/07	SM80BG/307PE	0,92	2,96	1,71
CO350/09	SM80BG/311PE	1,08	3,72	2,15
C0350/11	SM80BG/311PE	1,61	4,87	2,81
CO350/15	SM80BG/315PE	1,87	5,75	3,32
C0500/15	SM80BG/315PE	1,84	5,70	3,29
CO500/22	PLM90BG/322	2,66	8,27	4,78
C0500/30	PLM90BG/330	3,80	11,4	6,57

*Maximum value in specified range.

co-2p50-en_f_te

MOTORS FOR CO SERIES

Standard supplied IE2/IE3 three-phase surface motors ≥ 0,75 kW are compliant with Regulation (EC) no. 640/2009 and IEC 60034-30.

Electrical performances according to EN 60034-1.
Insulation class 155 (F). IP55 protection. Condensate drain plugs on standard version.
Cooling by fan according to EN 60034-6.
Cable gland metric size according to EN 50262. Standard voltage:

- **Single-phase** version: 220-240 V 50 Hz (incorporated automatic-reset overload protection).
- **Three-phase** version: 220-240/380-415 V 50 Hz (overload protection to be provided by the user).

SINGLE-PHASE MOTORS AT 50 Hz, 2 POLES

P_N kW	MOTOR TYPE	IEC SIZE	Construction Design	INPUT CURRENT In (A) 220-240 V	CAPACITOR µF	CAPACITOR V	DATA FOR 230 V 50 Hz VOLTAGE min^{-1}	Is / In	η %	cosφ	Tn Nm	Ts/Tn	Tm/Tn
0,4	SM63BG/1045	63	SPECIAL	2,79-2,85	14	450	2745	2,64	65,1	0,96	1,39	0,68	1,63
0,55	SM71BG/1055	71		3,76-3,99	16	450	2820	3,72	68,9	0,91	1,86	0,61	2,00
0,75	SM71BG/1075	71		4,90-4,85	20	450	2765	3,42	70,1	0,96	2,59	0,58	1,75
0,95	SM71BG/1095	71		6,25-5,89	25	450	2740	3,39	71,1	0,98	3,31	0,58	1,66
1,1	SM80BG/1115	80		6,88-6,65	30	450	2800	3,89	74,7	0,96	3,75	0,46	1,72
1,5	SM80BG/1155	80		9,21-8,58	40	450	2810	4,00	76,1	0,98	5,09	0,39	1,74
2,2	PLM80BG/1225	90		12,5-11,6	70	450	2825	4,47	82,4	0,97	7,43	0,53	1,87

THREE-PHASE MOTORS AT 50 Hz, 2 POLES

co-motm-2p50-en_a_te

P_N kW	Efficiency η_N % Δ 220 V Y 380 V 4/4	3/4	2/4	Δ 230 V Y 400 V 4/4	3/4	2/4	Δ 240 V Y 415 V 4/4	3/4	2/4	Δ 380 V Y 660 V 4/4	3/4	2/4	Δ 400 V Y 690 V 4/4	3/4	2/4	Δ 415 V 4/4	3/4	2/4	IE	Year of manufacture
0,4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	By June 2011
0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
0,75	82,5	83,1	81,3	82,8	82,7	80,1	82,6	82,0	78,9	82,5	82,0	78,9	82,5	82,0	78,9	82,5	82,0	78,9	3	
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1,5	85,6	86,5	85,8	85,9	86,4	84,9	86,0	86,0	84,0	85,6	86,0	84,0	85,6	86,0	84,0	85,6	86,0	84,0		
2,2	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	2	
3	85,5	86,8	85,6	86,1	86,8	85,6	86,3	86,8	85,6	85,5	86,8	85,6	85,5	86,8	85,6	85,5	86,8	85,6		

P_N kW	Manufacturer: Lowara srl Unipersonale, Reg. No. 341820260, Montecchio Maggiore Vicenza - Italia. Model	IEC SIZE	Construction Design	N. of Poles	f_N Hz	Data for 400 V / 50 Hz Voltage cosφ	Is / I_N	T_N Nm	Ts/T_N	Tm/Tn
0,4	SM63BG/304	63	SPECIAL	2	50	0,66	4,32	1,38	4,14	3,13
0,55	SM71BG/305	71				0,74	5,97	1,85	3,74	3,56
0,75	SM80BG/307PE	80				0,78	7,38	2,48	3,57	3,75
0,9	SM80BG/311PE	80				0,79	8,31	3,63	3,95	3,95
1,1	SM80BG/311PE	80				0,79	8,31	3,63	3,95	3,95
1,5	SM80BG/315PE	80				0,80	8,80	4,96	4,31	4,10
2,2	PLM90BG/322	90				0,80	8,63	7,25	3,74	3,71
3	PLM90BG/330	90				0,82	8,39	9,96	3,50	3,32

P_N kW	Voltage U_N V Δ 220 V	230 V	240 V	Y 380 V	400 V	415 V	Δ 380 V	400 V	415 V	Y 660 V	690 V	I_N (A)	n_N min^{-1}	See note.	Operating conditions ** Altitude Above Sea Level (m)	T. amb min/max °C	ATEX
0,4	2,20	2,34	2,51	1,27	1,35	1,45	-	-	-	-	-		2740 ÷ 2790		≤ 1000	-15 / 40	No
0,55	2,56	2,56	2,62	1,48	1,48	1,51	-	-	-	-	-		2825 ÷ 2850				
0,75	2,96	2,94	2,96	1,71	1,70	1,71	1,70	1,69	1,70	0,98	0,98		2875 ÷ 2895				
0,9	4,19	4,14	4,16	2,42	2,39	2,40	2,41	2,38	2,38	1,39	1,37		2870 ÷ 2900				
1,1	4,19	4,14	4,16	2,42	2,39	2,40	2,41	2,38	2,38	1,39	1,37		2870 ÷ 2900				
1,5	5,56	5,49	5,51	3,21	3,17	3,18	3,21	3,18	3,19	1,85	1,84		2870 ÷ 2895				
2,2	8,05	8,04	8,09	4,65	4,64	4,67	4,62	4,61	4,63	2,67	2,66		2885 ÷ 2900				
3	10,8	10,6	10,6	6,23	6,14	6,12	6,18	6,10	6,06	3,57	3,52		2850 ÷ 2885				

Note: Observe the regulations and codes locally in force regarding sorted waste disposal.

co-ie2-mott-2p50-en_b_te

** Operating conditions to be referred to motor only. About electric pump, refer to limits in user's manual.

LOWARA
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AVAILABLE VOLTAGES MOTORS FOR CO SERIES

P_N kW	IEC SIZE	SINGLE-PHASE 50 Hz			SINGLE-PHASE 60 Hz				
		1 x 220-240	1 x 100	1 x 110-120	1 x 220-230	1 x 100	1x 110-115	1 x 120-127	1 x 200-210
0,4	63	s	o	o	s	-	o	-	-
0,55	71	s	o	o	s	o	o	o	o
0,75	71	s	o	o	s	o	o	o	o
0,95	71	s	o	o	s	o	o	o	o
1,1	80	s	-	o	s	-	o	-	o
1,5	80	s	-	-	s	-	o	-	o
2,2	90	s	-	-	s	-	-	-	-

s = Standard voltage o = Optional voltage

P_N kW	THREE-PHASE - 2 POLES 50 Hz							60 Hz							50/60 Hz	
	3 x 220-230-240/380-400-415	3 x 380-400-415/660-690	3 x 200-208/346-360	3 x 255-265/440-460	3 x 290-300/500-525	3 x 440-460/-	3 x 500-525/-	3 x 220-230/380-400	3 x 255-265-277/440-460-480	3 x 380-400/660-690	3 x 440-460-480/-	3 x 110-115/190-200	3 x 200-208/346-360	3 x 330-346/575-600	3 x 575/-	3 x 230/400 50 Hz 3 x 265/460 60 Hz	3 x 400/690 50 Hz 3 x 460/- 60 Hz
0,4	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
0,55	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
0,75	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
0,95	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
1,1	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
1,5	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
2,2	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o
3	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o

- = Not available

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