



## 3 SERIES



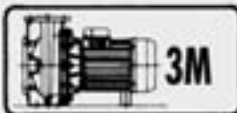
## Centrifugal Pumps



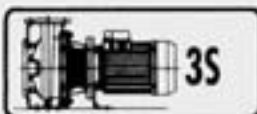


#### THREE AVAILABLE VERSIONS

Realized in three structural shapes in order to satisfy the most wide range of exigencies for the industrial applications:



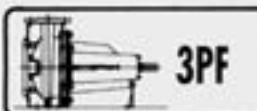
**3M:** close-coupled construction with the impeller directly splined to the motor shaft



**3S:** close-coupled construction connection of the pump with standard motor with the impeller splined to the motor by a rigid coupling



**3P:** pedestal type pump with support, connected to the motor by elastic coupling, supporting base standard motor, in compliance with EN 733



**3SF:** pump preset for coupling with standard motor B5 - B35



**3PF:** pump with support preset for coupling with standard motor B3

**Centrifugal flanged electropumps, standardized according to EN 733 and built in stainless steel AISI 304 (AISI 316).**

#### APPLICATIONS

- washing systems
- enological and food systems
- water treatment systems
- pumping of fluids reasonably aggressive
- conditioning systems
- heating systems
- pressure increase in industrial systems
- systems for air treatment/humidification

#### TECHNICAL FEATURES

- Robust hydraulic construction
- Versatile, it is possible to handle a wide range of fluid (304 or 316 version)
- Volute casing for high efficiency
- With AISI 304 pump pump foot as standard
- All pump casing fixed screw in AISI 304
- Compact design
- Wide range of performances with 2-4 poles motor
- Standard dimension as ISO EN 733
- Back pull out design - easy to dismantle, pump casing remain to the pipe
- Standard mechanical seal DIN 24960
- Standard IEC motor (3S - 3P)
- Special motor: atex, high efficiency EFF 1, low noise motor, with integrated inverter VMA (see VMA catalogue)
- Other customize solutions to meet all your needs

#### RANGE OF APPLICATION

- Capacity up to 132 m<sup>3</sup>/h
- Head up to 72 m
- Maximum working pressure: 10 bar
- Temperature of the liquid: from -10°C to 90°C standard -20° +110°C in H version

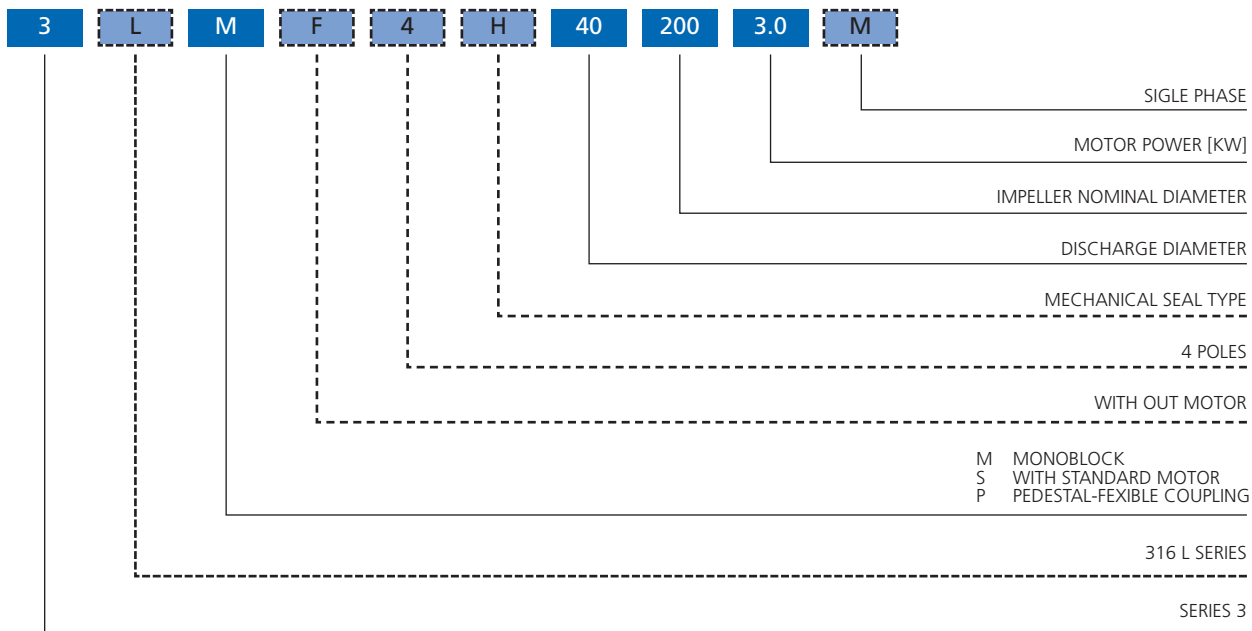
#### MATERIALS

- Pump casing, impeller, casing cover and shaft in AISI 304 (series 3), in AISI 316L (series 3L)
- Mechanical seal in carbon/standard/ceramic/NBR (series 3), in SiC/SiC/FPM (series 3L)
- Mechanical seal version H in carbon/ceramic/Viton
- Mechanical seal version HS in SiC/SiC/FPM

#### STANDARD MOTOR DATA

- asynchronous motor 2 poles and 4 poles ventilated
- insulating class F
- protection degree IP55
- mono-phase voltage 230+/- 10%
- three-phase voltage 230+/400V +/-10% 50Hz till 4kW, 400/690V +/- 10% 50Hz for higher powers
- protection edited by the user

### TYPE KEY



PUMP		
Liquid Handled	Type of liquid	Clean water and moderately aggressive fluids
	Temperature [°C]	min. -10°
		max. +90° standard max. +110° (3MH)-(3MHS)-(3LM)
Maximum working pressure	[MPa]	1
Construction	Impeller	Closed centrifugal type Reinforced laser welding for types 40-200/11, 50-200/15 Casting three dimensioned blades 3M 65
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing with permanent grease
Pipe Connection	Suction-Flange	Flange to DIN 2532 (50mm - 65mm - 80 mm)
	Discharge-Flange	Flange to DIN 2532 (32mm - 40mm - 50mm - 65 mm)
Material	Casing	AISI 304 (AISI 316 3LM)
	Impeller	AISI 304 (AISI 316 3LM)/bronze or micro Casting AISI 316L 3M65
	Casing cover	AISI 304 (AISI 316 3LM)
	Standard mechanical seal	Ceramic/Carbon/NBR (for 3M)
		Ceramic/Carbon/FPM (for 3MH)
		SiC/SiC/FPM (for 3MHS)(3LM)
Shaft	AISI 304 (Part in contact with liquid) (AISI 316 3LM)	
Bracket	Cast iron	
Applicable standard of test		ISO 9906 - Annex A

### OPTIONAL ON REQUEST

#### PUMP

- Pump in 316 (3L version)
- kit counterflanges threading, to weld, galvanized or stainless steel 304 - 316
- impellers with different diameter
- pump casing without foot

#### MECHANICAL SEALS

- different materials for the elastomers according to the pumped liquid EPDM, FKM, FFKM

- different materials for the friction surface: tungsten carbide, silicon carbide, stainless steel, special impregnated carbon, special ceramic, etc.
- different solutions at a structural level, rubber, bellows seals, with lockpin, etc.

**We are at your disposal for evaluating together your specifications and needs in order to find out the solution most suitable for your application.**



3M MOTOR VERSION AISI 304 - (3LM AISI 316)		2 POLES		4 POLES
Type		Electric - TEFC	Electric - TEFC	Electric - TEFC
		Single Phase	Three Phase	Three Phase
No. of Poles		2	2	4
Rotation speed	[min <sup>-1</sup> ]	≈2800	≈2800	≈1400
Insulation Class		F	F	F
Protection degree		IP 55	IP 55	IP 55
Power Rating	[kW]	1.1 ÷ 2.2	1.1 ÷ 22	0.25 ÷ 3.0
	[HP]	1.5 ÷ 3.0	1.5 ÷ 30	0.33 ÷ 4.0
Frequency	[Hz]	50	50	50
Voltage	[V]	230 ±10%	230/400 ±10% 400/690 ±10% (5.5 kW and above)	230/400 ±10%
Capacitor		Built in	-	-
Over load protection		Built in	Provided by the user	Provided by the user
Casing material		Aluminium	Aluminium	Aluminium

3S MOTOR VERSION AISI 304 - (3LS AISI 316)		2 POLES	4 POLES
Type		Electric - TEFC	Electric - TEFC
		Three Phase	Three Phase
No. of Poles/Speed		2	4
Rotation speed	[min <sup>-1</sup> ]	≈2800	≈1400
Insulation Class		F	F
Protection degree		IP 55	IP 55
Power Rating	[kW]	1.1 ÷ 22	0.25 ÷ 3.0
	[HP]	1.5 ÷ 30	0.33 ÷ 4.0
Frequency - Hz	[Hz]	50	50
Voltage	[V]	230/400 ±10% (up to 4.0 kW) 400/690 ±10% (5.5 kW and above)	230/400 ±10% (4.0 kW)
Over load protection		Provided by the user	Provided by the user
Casing material		Aluminium	Aluminium
Mounting arrangements (IEC motor) 3S		IM B5 (up to 2.2 kW) IM B35 (3.0 kW and above)	IM B5 (up to 1.5 kW) IM B35 (2.2 kW ÷ 3 kW)

Pump type		Power		Motor		Capacitor		Input		Full load current		
Single Phase 50 Hz	Three Phase 50 Hz	kW	HP	Size	Type	Single Phase m F	Vc	Single Phase	Three Phase	230 V	400 V	690 V
3M 32-125/1.1 M	3M 32-125/1.1	1,1	1,5	90	-	31,5	450	1,47	1,45	5	2,9	-
3M 32-160/1.5 M	3M 32-160/1.5	1,5	2	90	-	40	450	2,09	2	5,9	3,4	-
3M 32-160/2.2 M	3M 32-160/2.2	2,2	3	90	-	50	450	2,77	2,8	8,3	4,8	-
-	3M 32-200/3.0	3	4	90	-	-	-	-	3,7	11,8	6,8	-
	3M 32-200/4.0	4	5,5	100	-	-	-	-	5	15,6	9	-
	3M 32-200/5.5	5,5	7,5	112	-	-	-	-	6,8	-	11,8	6,8
3M 40-125/1,5 M	3M 40-125/1.5	1,5	2	90	-	40	450	2,01	2	5,9	3,4	-
3M 40-125/2.2 M	3M 40-125/2.2	2,2	3	90	-	50	450	2,9	2,8	8,3	4,8	-
-	3M 40-160/3.0	3	4	90	-	-	-	-	3,7	11,8	6,8	-
	3M 40-160/4.0	4	5,5	100	-	-	-	-	5,1	15,9	9,2	-
	3M 40-200/5.5	5,5	7,5	112	-	-	-	-	6,7	-	11,1	6,4
	3M 40-200/7.5	7,5	10	112	-	-	-	-	8,8	-	15,1	8,7
	3M 40-200/11	11	15	132	-	-	-	-	11,5	-	20	11,6
3M 50-125/2.2 M	3M 50-125/2.2	2,2	3	90	-	50	450	2,73	2,8	8,1	4,7	-
-	3M 50-125/3.0	3	4	90	-	-	-	-	3,7	11,8	6,8	-
	3M 50-125/4.0	4	5,5	100	-	-	-	-	5,1	15,9	9,2	-
	3M 50-160/5.5	5,5	7,5	112	-	-	-	-	6,7	-	11,5	6,6
	3M 50-160/7.5	7,5	10	112	-	-	-	-	9,1	-	15,5	9
	3M 50-200/9.2	9,2	12,5	132	-	-	-	-	10,9	-	17,4	10
	3M 50-200/11	11	15	132	-	-	-	-	13	-	22	12,7
	3M 50-200/15	15	20	160	-	-	-	-	17,5	-	31,3	18
-	3M 65-125/4	4	5,5	100	-	-	-	-	4,69	13,8	8	-
	3M 65-125/5.5	5,5	7,5	112	-	-	-	-	6,41	-	11	6,3
	3M 65-125/7.5	7,5	10	112	-	-	-	-	8,72	-	14,9	8,6
	3M 65-160/7.5	7,5	10	112	-	-	-	-	8,72	-	14,9	8,6
	3M 65-160/9.2	9,2	12,5	132	-	-	-	-	10,9	-	20,8	12,1
	3M 65-160/11	11	15	132	-	-	-	-	13	-	27	15,6
	3M 65-160/15	15	20	160	-	-	-	-	17,7	-	30,5	17,6
	3M 65-200/15	15	20	160	-	-	-	-	17,7	-	30,5	17,6
	3M 65-200/18.5	18,5	25	160	-	-	-	-	20,6	-	36,9	21,3
3M 65-200/22	22	30	160	-	-	-	-	24,3	-	40,8	23,5	

## 3M-3S-3P EBARA Advanced Technology

Casing has been tested to a pressure of 14 bar for a test sequence in excess of 1 million cycles.

The hydro-forming process to obtain the integrated volute is patented. The volute offers higher efficiency than circular casing and the absence of a circular welding guarantees a good corrosion resistance.

Volute forming                      Volute

High efficiency impeller design - giving efficiencies up to 80%.  
Stamped stainless steel impeller 304 or 316 microcasting stainless steel 316 casting bronz impeller available (65 series).

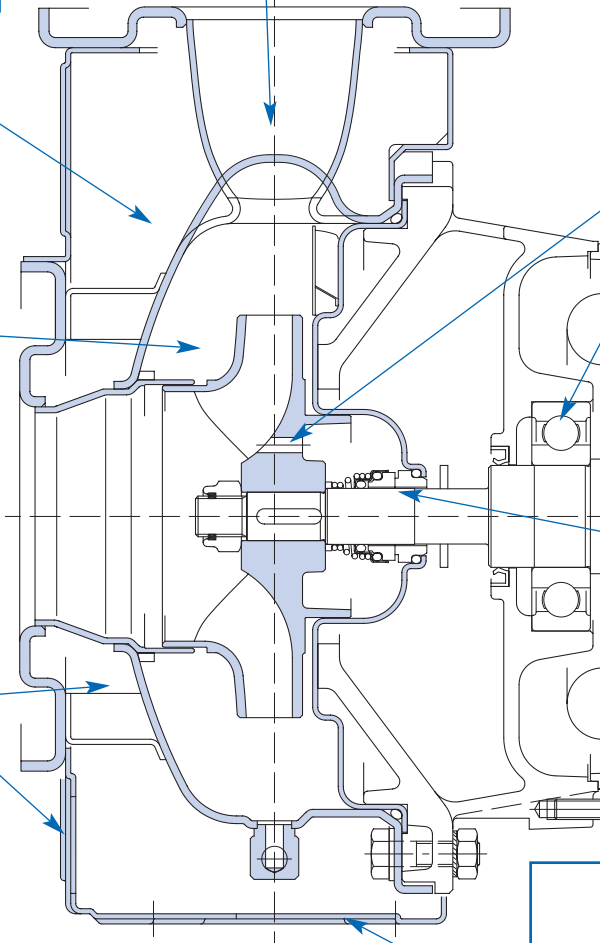
Hydraulically balanced impeller - reducing axial thrust and prolonging bearing life.

Standard DIN mechanical seal - allowing for a range of seal materials to suit the pumped medium.

Robust structural design - reducing the possible effects of pipe strain and subsequent casing deformation.

Casing

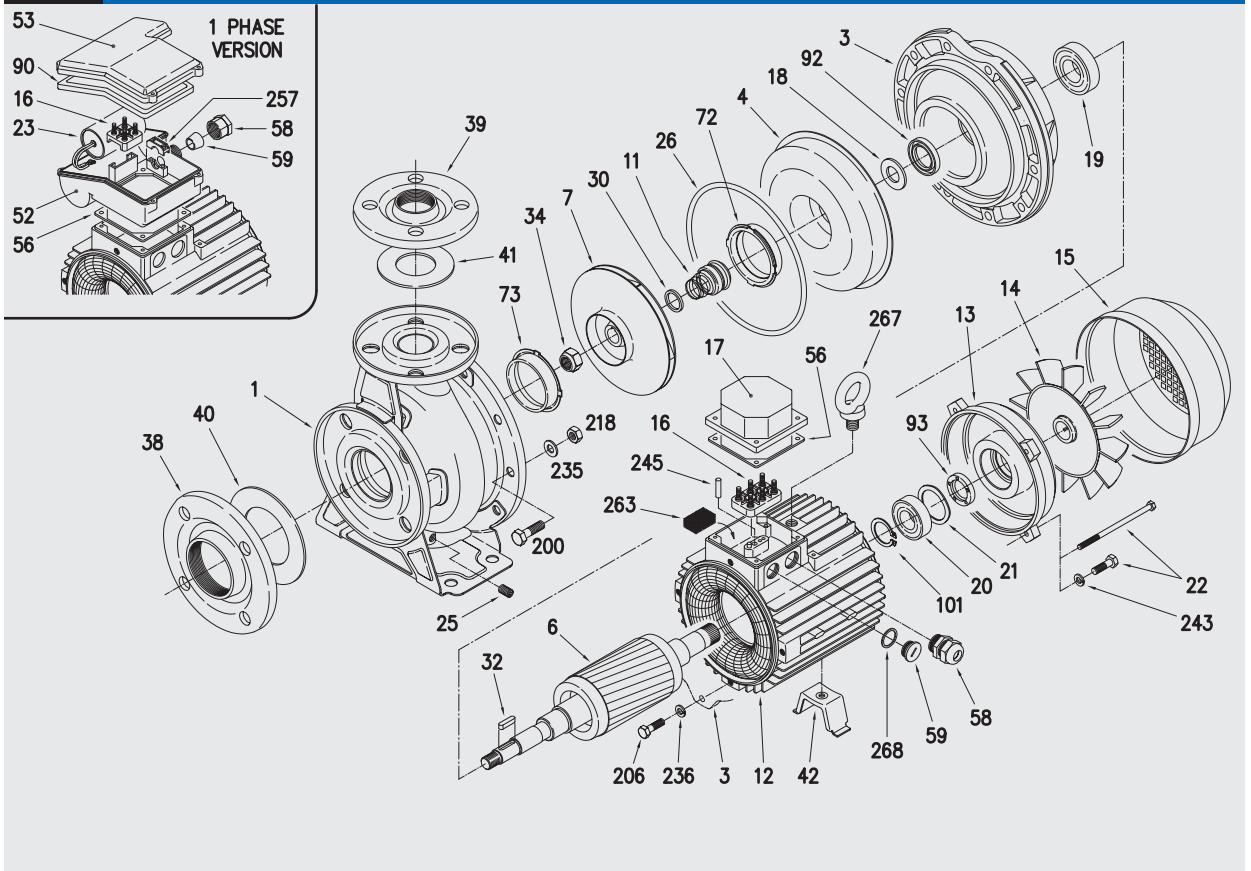
"Back Pull Out" design - allowing for the removal of the motor/impeller assembly, whilst leaving the casing in situ.





### 3M (3LM)

### EXPLODED VIEW AND LIST OF COMPONENT



N°	PART NAME	MATERIAL		Q.TY	N°	PART NAME	MATERIAL		Q.TY
		3M	3LM				3M	3LM	
1	Casing	AISI 304	AISI 316L	1	20	Fan side ball bearing	-	-	1
3	Motor bracket	G20	G20	1	21	Adjusting ring	Steel C70	Steel C70	1
4	Casing cover	AISI 304	AISI 316L	1	22	Tie rod	Fe 42 Zinked	Fe 42 Zinked	4
6	Shaft with rotor (part in contact with liquid)	AISI 304	AISI 316L	1	25	Drain plug	AISI 316	AISI 316	1
7	Impeller	AISI 304	AISI 316L	1	26	O-ring [1]	NBR	FPM	1
11	Mechanical seal [1] - [2]	Carb/Ceram/NBR	Sic/Sic/FPM	1	30	Mechanical seal spacer	AISI 304	-	1
12	Motor frame with stator	-	-	1	32	Key	AISI 304	AISI 316	1
13	Motor cover	Aluminium	Aluminium	1	34	Impeller nut	AISI 304	AISI 316L	1
14	Fan	Polypropilene	Polypropilene	1	42	Motor support	Aluminium/ Carbon steel	Aluminium/ Carbon steel	1
15	Fan cover	Fe P04 Zinked	Fe P04 Zinked	1	56	Box gasket	NBR	NBR	1
16	Terminal box	-	-	1	58	Cable entry	-	-	1
17	Terminal box cover	Aluminium (three phase version)	Aluminium (three phase version)	1	72	Casing ring	AISI 304	AISI 316L	1
18	Splash ring	NBR	-	1	73	Casing ring	AISI 304	AISI 316L	1
19	Pump side ball bearing	-	-	1	92	Lip seal	-	-	1
					93	Lip seal	-	-	1
					200	Screw	Stainless steel A2 UNI7323	Stainless steel A2 UNI7323	8-12

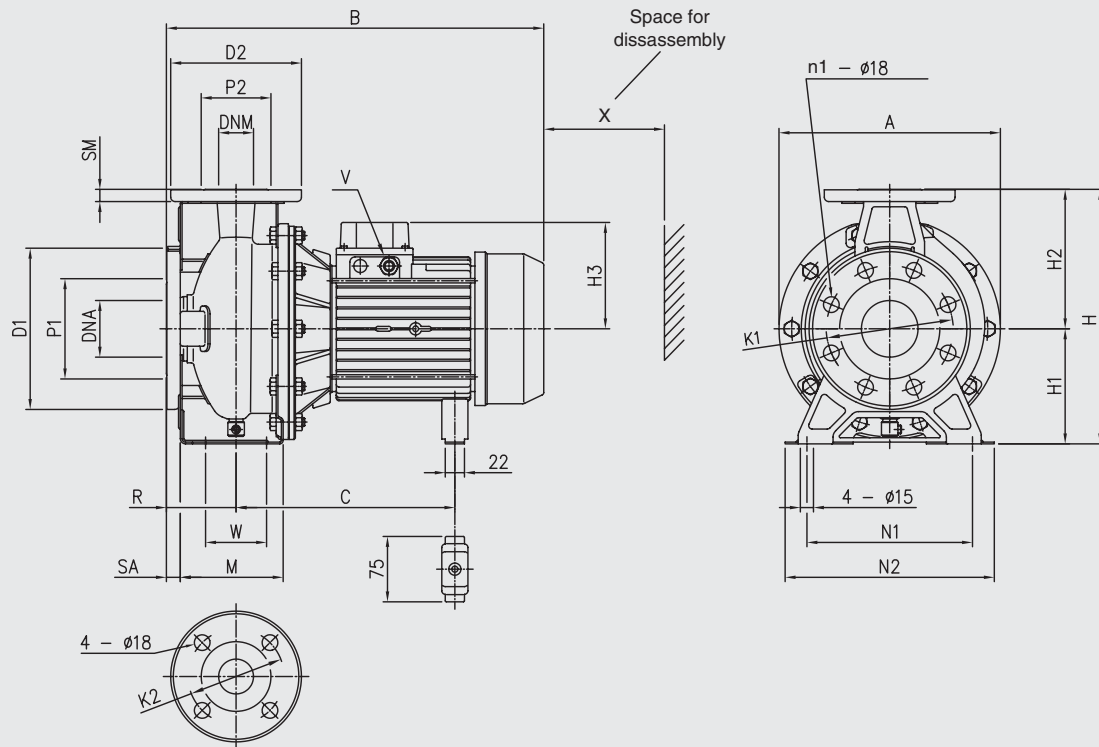
[1] FPM for 3MH-3MHS version

[2] See constructions mechanical seal pages 56/57



### 3M (3LM) UP TO 1.1 KW

### 2 POLES



Dimensional table

Model 3(L)M	Dimensions (mm)																				Weight kg							
	∅ DNA	∅ DNM	∅ P1	n1 [1] [2]	∅ K1	∅ D1	SA	∅ P2	∅ K2	∅ D2	SM	H	H1	H2	[3]	H3 [4]	R	W	N1	M		N2	A	B	C	V	X	
32-125/1,1 (M)	50	32	96	4	-	125	165	16	76	100	140	14	252	112	140	122	139	80	70	140	114	190	213	408	231	PG 13,5	110	21,5
32-160/1,5 (M)	50	32	96	4	-	125	165	16	76	100	140	14	292	132	160	122	139	80	70	190	118	240	254	408	231	PG 13,5	110	24,2
32-160/2,2 (M)	50	32	96	4	-	125	165	16	76	100	140	14	292	132	160	122	139	80	70	190	118	240	254	408	231	PG 13,5	110	27,3
32-200/3,0	50	32	96	4	-	125	165	16	76	100	140	14	340	160	180	122	-	80	70	190	119	240	296	433	256	PG 13,5	110	34,9
32-200/4,0	50	32	96	4	-	125	165	16	76	100	140	14	340	160	180	134	-	80	70	190	119	240	296	458	256	PG 16	110	42,3
32-200/5,5	50	32	96	4	-	125	165	16	76	100	140	14	340	160	180	153	-	80	70	190	119	240	296	477	276	PG 16	110	53,2
32-200/7,5	50	32	96	4	-	125	165	16	76	100	140	14	340	160	180	153	-	80	70	190	119	240	296	520	276	PG 16	110	65
40-125/1,5 (M)	65	40	116	4	-	145	185	16	81	110	150	14	252	112	140	122	139	80	70	160	114	210	213	408	231	PG 13,5	115	22,3
40-125/2,2 (M)	65	40	116	4	-	145	185	16	81	110	150	14	252	112	140	122	139	80	70	160	114	210	213	408	231	PG 13,5	115	24,7
40-160/3,0	65	40	116	4	-	145	185	16	81	110	150	14	292	132	160	122	-	80	70	190	118	240	254	433	255	PG 13,5	115	30
40-160/4,0	65	40	116	4	-	145	185	16	81	110	150	14	292	132	160	134	-	80	70	190	118	240	254	458	255	PG 16	115	37,6
40-200/5,5	65	40	116	4	-	145	185	16	81	110	150	14	340	160	180	153	-	100	70	212	139	265	296	497	278	PG 16	115	54,5
40-200/7,5	65	40	116	4	-	145	185	16	81	110	150	14	340	160	180	153	-	100	70	212	139	265	296	520	224	PG 16	115	61,6
40-200/11	65	40	116	4	-	145	185	16	81	110	150	14	340	160	180	181	-	100	70	212	139	265	296	577	224	PG 21	115	73,8
50-125/2,2 (M)	65	50	116	4	-	145	185	16	96	125	165	16	292	132	160	122	139	100	70	190	138	240	254	428	231	PG 13,5	125	30
50-125/3,0	65	50	116	4	-	145	185	16	96	125	165	16	292	132	160	122	-	100	70	190	138	240	254	453	255	PG 13,5	125	31,5
50-125/4,0	65	50	116	4	-	145	185	16	96	125	165	16	292	132	160	134	-	100	70	190	138	240	254	478	255	PG 16	125	37,6
50-160/5,5	65	50	116	4	-	145	185	16	96	125	165	16	340	160	180	153	-	100	70	212	139	265	296	497	278	PG 16	125	54
50-160/7,5	65	50	116	4	-	145	185	16	96	125	165	16	340	160	180	153	-	100	70	212	139	265	296	520	224	PG 16	125	61,1
50-200/9,2	65	50	116	4	-	145	185	16	96	125	165	16	360	160	200	181	-	100	70	212	139	265	296	582	239	PG 21	125	67,5
50-200/11	65	50	116	4	-	145	185	16	96	125	165	16	360	160	200	181	-	100	70	212	139	265	296	582	239	PG 21	125	73,5
65-125/4	80	65	134	8	4	160	200	18	115	145	185	16	340	160	180	139	-	100	95	212	149,5	280	254	483	253	PG 16	145	40
65-125/5,5	80	65	134	8	4	160	200	18	115	145	185	16	340	160	180	150	-	100	95	212	149,5	280	254	496	275	PG 16	145	52
65-125/7,5	80	65	134	8	4	160	200	18	115	145	185	16	340	160	180	150	-	100	95	212	149,5	280	254	540	275	PG 16	145	58,5
65-160/7,5	80	65	134	8	4	160	200	18	115	145	185	16	360	160	200	150	-	100	95	212	149,5	280	296	540	275	PG 16	145	62
65-160/9,2	80	65	134	8	4	160	200	18	115	145	185	16	360	160	200	177,5	-	100	95	212	149,5	280	296	593	356	PG 21	145	67
65-160/11	80	65	134	8	4	160	200	18	115	145	185	16	360	160	200	177,5	-	100	95	212	149,5	280	296	593	356	PG 21	145	75,6

[1] Standard  
[2] On request