



LIFE FORCE
Pumps | Motors

ISO 9001:2015 & CE Certified Company

Stainless Steel Submersible Pumps

60Hz Catalogue



PUMPS | PIPES | CABLES | SOLAR PUMPS



ISO 9001:2015 & CE Certified Company

Stainless Steel Submersible Pumps



The Company

We are manufacturers innovative **LIFE FORCE PUMPS**, top-quality water pumps world-wide in different versions. Our very wide range of pumps can be used in many aspects of daily life.

The **LIFE FORCE PUMPS** is structured in such a way that allows individual attention of the client, whilst adapting to changes on the fast-moving market.

LIFE FORCE Pumps - Saga of technique start with notion to satisfy our God – our customers to the domestic & exports market as well.

LIFE FORCE – Group of seasoned corporate is based on strategic objectives.

More than a decades R&D has given Life force a total solutions for need of water.

Mission

To point solution to the need of the customers – Life force has immersed in stream of the pump manufacturers with distinct feature to join hands for eternal relationship.

Endless efforts we commit to put forward to retain the valuable relationship, which is the only 'Asset' we possess.

Every effort – total solution to need of Customer = eternal asset.

Quality Approval

We are the ISO-9001:2015 & CE Certified Company



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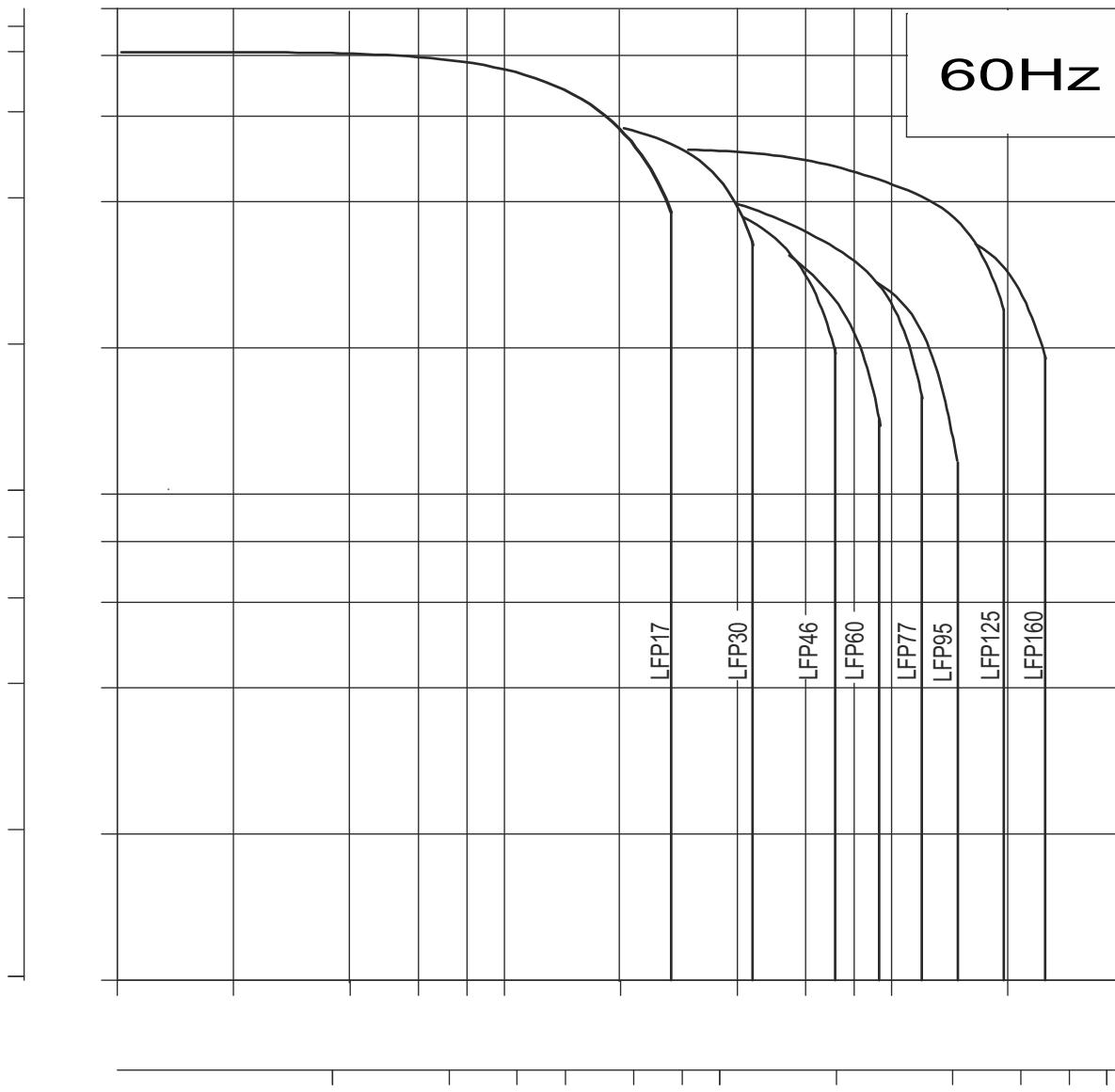
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PERFORMANCE RANGE OF LFP SERIES

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SUBMERSIBLE PUMP- LFP SERIES

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Pump Range

Type	LFP 17	LFP 30	LFP 46	LFP 60	LFP 77	LFP 95	LFP 125	LFP 160
Steel: AISI SS 304	+	+	+	+	+	+	+	+
Connection: Rp (Inches) BSP Thread	2.5"	3"	4"	4"	5"	5"	6"	6"
	3"	3"	4"	4"	5"	5"	6"	6"
Flange Connection					5"	5"	6"	6"

Motor Range

Motor Output (kW)	3.0	4.0	5.5	7.5	9.2	11	13	15	18.5	22	26	30	37	45	55	75	93	110
Three Phase	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Rewindable Motors	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Steel: AISI 304 & Cast Iron	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Direct on Line starting is recommended up to 7.5 kW.

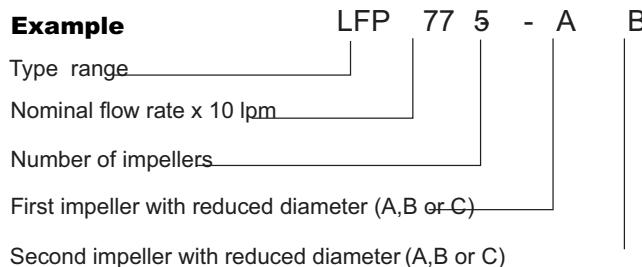
Softstarter or autotransformer is recommended above 7.5 kW.



Applications

- The pumps are suitable for the following applications:
- raw water supply
 - irrigation systems
 - groundwater lowering
 - pressure boosting
 - industrial applications
- Curve tolerance according to ISO 9906, Annex A
- The performance curves show pump performance at actual speed cf. standard motor range.
- The speed of the motors is approximately :
- 4" and 6" motors : n=3450 min-1
 - 8" to 12" motors : n=3500 min-1

Type Key



Pumped Liquids

Clean, thin, non-aggressive liquids without solid particles or fibres. The max. sand content is 50 mg/lit.

Operating Conditions

Flow rate Q Maximum: 10 - 216 m³/h

Head H: max. 810m

Curve Conditions

- The measurements were made with airless water at a temperature of 20°C. The curves apply to a kinematic viscosity of 1mm²/s. When pumping liquids with density higher than that of water, motors with correspondingly higher outputs must be used.
- The bold curves indicate the recommended performance range.
- The performance curves are inclusive of possible losses such as non-return valve loss.

Table of Head Losses

LFP 17, LFP 30, LFP 46, LFP 60, LFP 77, LFP 95, LFP 125, LFP 160 Curves

- Q/H : The curves are inclusive of valve and inlet losses at the actual speed.
- Operation without non-return valve (NRV) will increase the actual head at nominal performance by 0.5 - 1.0 m.
- NPSHR The curve is inclusive of suction case and shows required inlet pressure.
- Power Curve: It shows pump power input at the actual speed for each individual pump size.
- Efficiency Curve : Efficiency shows pump stage efficiency.

Motor	Installation		
	Flow Velocity Past Motor	Vertical	Horizontal
6" & 8"	0.15 m/s	40°C	40°C

Operating pressure: Maximum 810m (81 bar)



FEATURES AND BENEFITS

A WIDE PUMP RANGE

We offer submersible pumps with energy efficient duty point ranging from 10m³/hrs to 204m³/hrs. The pump range consists of many pump sizes and each pump size is available with an optional number of stages to match and duty point.

HIGH PUMP EFFICIENCY

Often pump efficiency is a neglected factor compared to the price. However, the observant user will notice that price variations are without importance to water supply economics compared to the importance of pump and motor efficiencies.

EXAMPLE

When pumping 125m³/hrs with a head of 200m for a period of 10 years \$60,000 will be saved if pumps and motors having a 10% higher efficiency are chosen and the price is \$0.10 per kWh.

Bearings with Sand Channels

All bearings are water-Lubricated and have a squared shape enabling sand particles, if any, to leave the pump together with the pumped liquid.

Inlet Strainer

The inlet strainer prevents particles over a certain size from entering the pump

Non-Return Valve (NRV)

All pumps are equipped with a reliable non-return valve in the valve casing preventing back flow in connection with pump stoppage.

Furthermore, the short closing time of the non-return valve means that the risk of destructive water hammer is reduced to a minimum.

The valve casing is designed for optimum hydraulic properties, to minimize the pressure loss across the valve and thus contributes to the high efficiency of the pump.

Stop Ring and Spacing Washer

The stop ring prevents damage to the pump during transport and in case of up-thrust in connection with start-up.

The stop ring, which is designed as a thrust bearing limits axial movements of the pump shaft.

Example: LFP 30 and LFP 46

The stationary part of the stop ring (A) is secured in the top bowl (Upper intermediate chamber).

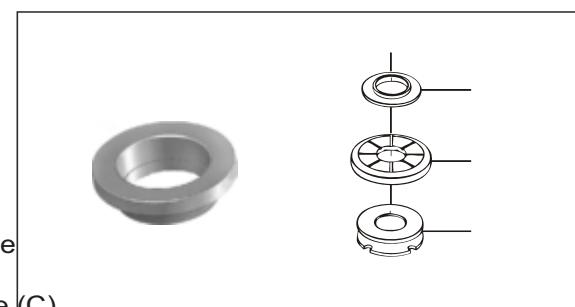
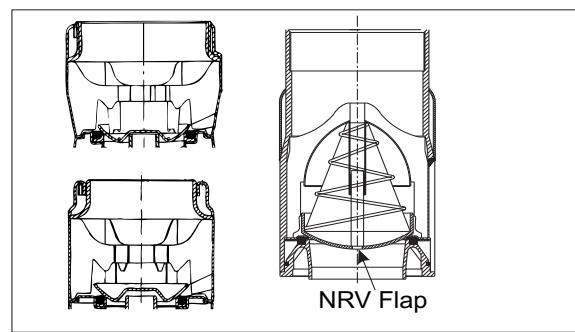
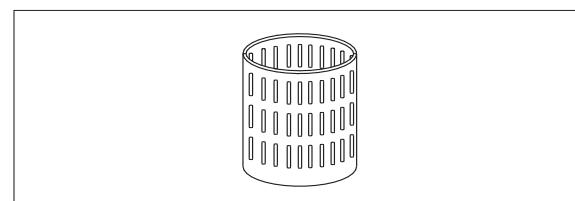
The rotating part (B) is fitted above the cullet split cone (C).

APPLICATION

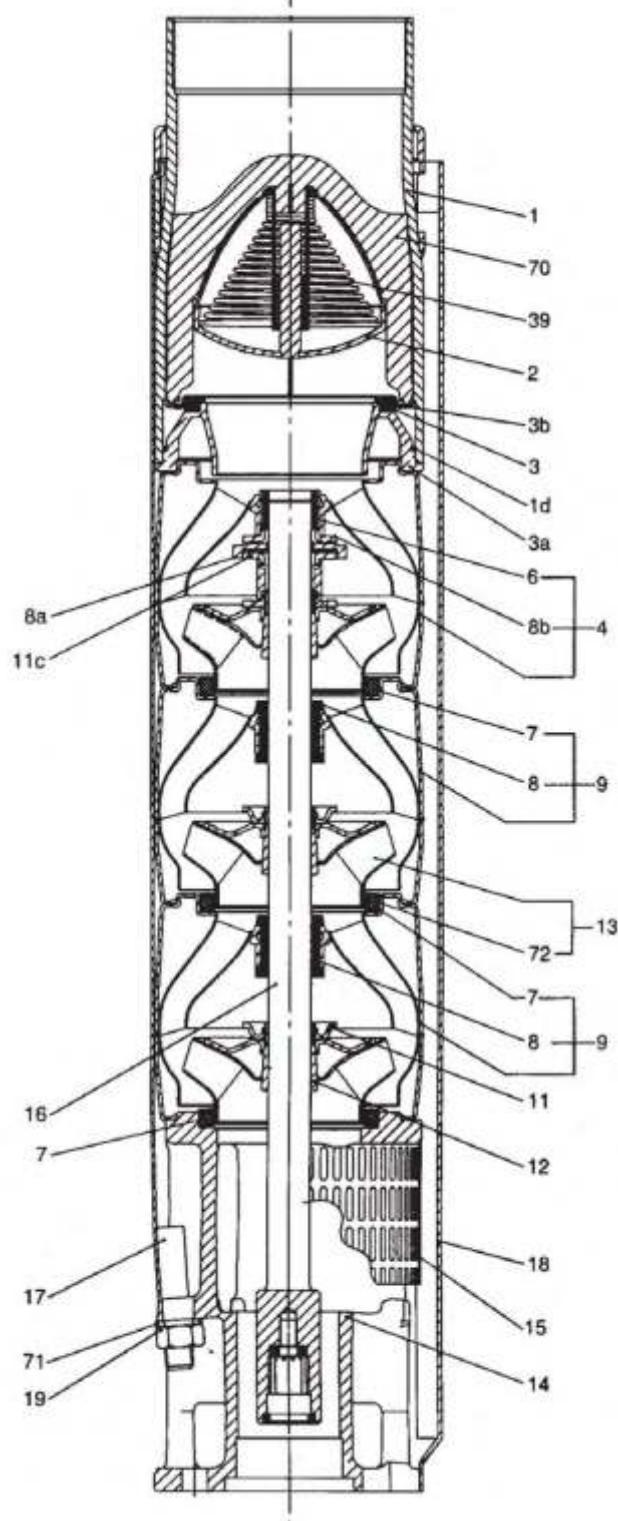
We offer a complete range of pumps and motors which as a standard are made completely of stainless steel AISI-304. This provides for good wear resistance and a reduced risk of corrosion when pumping ordinary cold water with a minor content of chloride.

LOW INSTALLATION COSTS

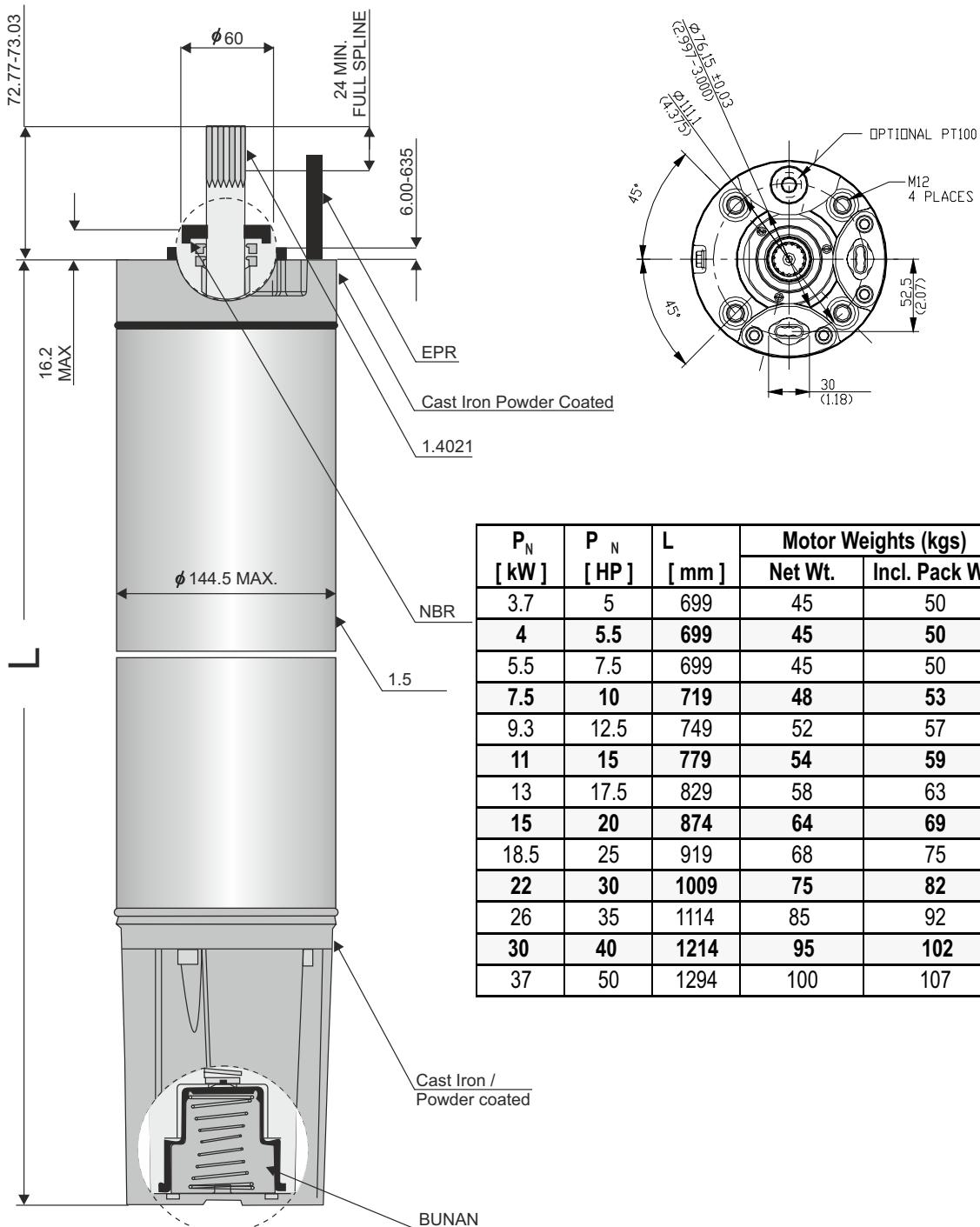
Stainless steel means low weight facilitating the handling of pumps and resulting in low equipment costs and reduced installation and service time. In addition pumps will be as new after service due to the high wear resistance of stainless steel



SUBMERSIBLE PUMP MODEL LFP 77



Pos.	COMPONENTS	MATERIAL	STANDARD	N-VERSION
1	VALVE CASING	STAINLESS STEEL	304	316
1d	O-RING	NBR		
2	VALVE CUP	STAINLESS STEEL	304	316
3	VALVE SEAT	STAINLESS STEEL	304	316
3a	LOWER VALVE SEAT RETAINER	STAINLESS STEEL	304	316
3b	UPPER VALVE SEAT RETAINER	STAINLESS STEEL	304	316
4	TOP CHAMBER	STAINLESS STEEL	304	316
6	UPPER BEARING	STAINLESS STEEL NBR	304	316
7	NECKING	NBR/PPS		
8	BEARING	NBR		
8a	WASHER FOR STOP RING	CABRON/GRAFITE HY22 IN PTFE MASS		
8b	STOP RING	STAINLESS STEEL	316	316
9	CHAMBER	STAINLESS STEEL	304	316
11	SPLIT CONE NUT	STAINLESS STEEL	304	316
11c	NUT FOR STOP RING	STAINLESS STEEL	316	316
12	SPLIT CONE	STAINLESS STEEL	304	316
13	IMPELLER	STAINLESS STEEL	304	316
14	SUCTION INTERCONNECTOR	STAINLESS STEEL	304	316
15	STRAINER	STAINLESS STEEL	304	316
16	SHAFT COMPLETE	STAINLESS STEEL	431	316
17	STRAP	STAINLESS STEEL	304	316
18	CABLE GUARD	STAINLESS STEEL	304	316
19	NUT FOR STRAP	STAINLESS STEEL	304	316
39	SPRING FOR VALVE CUP	STAINLESS STEEL	304	316
70	VALVE GUIDE	STAINLESS STEEL	304	316
71	WASHER	STAINLESS STEEL	316	316
72	WEAR RING	STAINLESS STEEL	304	316

6" Rewindable LFP150 : 4 – 37 kW / 5.5 - 50 HP
Thrust Rating : 15500 - 27500
LFP 6" Outline


Technical changes without notice

6" Rewindable LFP150 : 4 – 37 kW / 5.5 - 50 HP

Thrust Rating : 15500 - 27500

6" Rewindable Motor Product Information

Application

6" Rewindable motors are built for dependable operation in 6" diameter or larger water wells. Water lubricated thrust and radial bearings enable a maintenance free operation. The motors are ready to operate, providing frost protection down to - 15°C. Fill and check valve, as well as a preloaded special diaphragm, ensure pressure compensation inside the motor. (inside pressure 0,5 - 0,7 bar)

Other Product advantages:

- ✉ Cable material according to drinking water regulations
- ✉ Sand slinger and shaft seal for high performance in sand
- ✉ High efficiency electrical design for low operation cost
- ✉ All motors prefilled and 100% tested
- ✉ Design for retrofittable PT100 sensor

Material

Part	Material AISI
	304 (Standard)
Shell	(SS AISI 304)
Endbell, Diaphragm cover	Cast Iron / powder coated
Housing thrust bearing	Cast Iron / powder coated
Seals	BUNA N
Seal Cover	(SS AISI 304)
Shaft Seal	SiC
Shaft end 4kW – 22kW / 5.5 HP - 30 HP	(SS AISI 410)
Shaft end 26kW – 37kW / 35 HP - 50 HP	(SS AISI 410)
Diaphragm	EPDM
Lead	EPR

Technical Specification

Standard Motor

- ✉ 6" NEMA – flange with Studs (M 12).
- ✉ Protection: IP 68
- ✉ Starts per hour: max. 20
- ✉ Installation position: vertical / horizontal
- ✉ Motor Lead in 4m length
- ✉ Voltage tolerance: +6% / -10%
(Standard: 415 + 6% = 440V, 380 – 10% = 342V)
- ✉ Motor protection : Select Thermal overload
- ✉ Standard motor with Taping winding insulation for max. ambient of 30° with a min. Cooling flow :
- 3.7 kW - 15 kW / 5 HP - 20 HP V = 20 cm/s
- 18.5 kW - 37 kW / 25 HP - 50 HP V = 50 cm/s

Optional

- ✉ PT 100 temperature sensor (sold separately)
- ✉ Drop cable in different lengths up to 50m

Technical changes without notice



6" Rewindable LFP150 : 4 – 37 kW / 5.5 - 50 HP

Thrust Rating : 15500 - 27500

LFP 150 - Rewindable Motor Performance Data 60 Hz

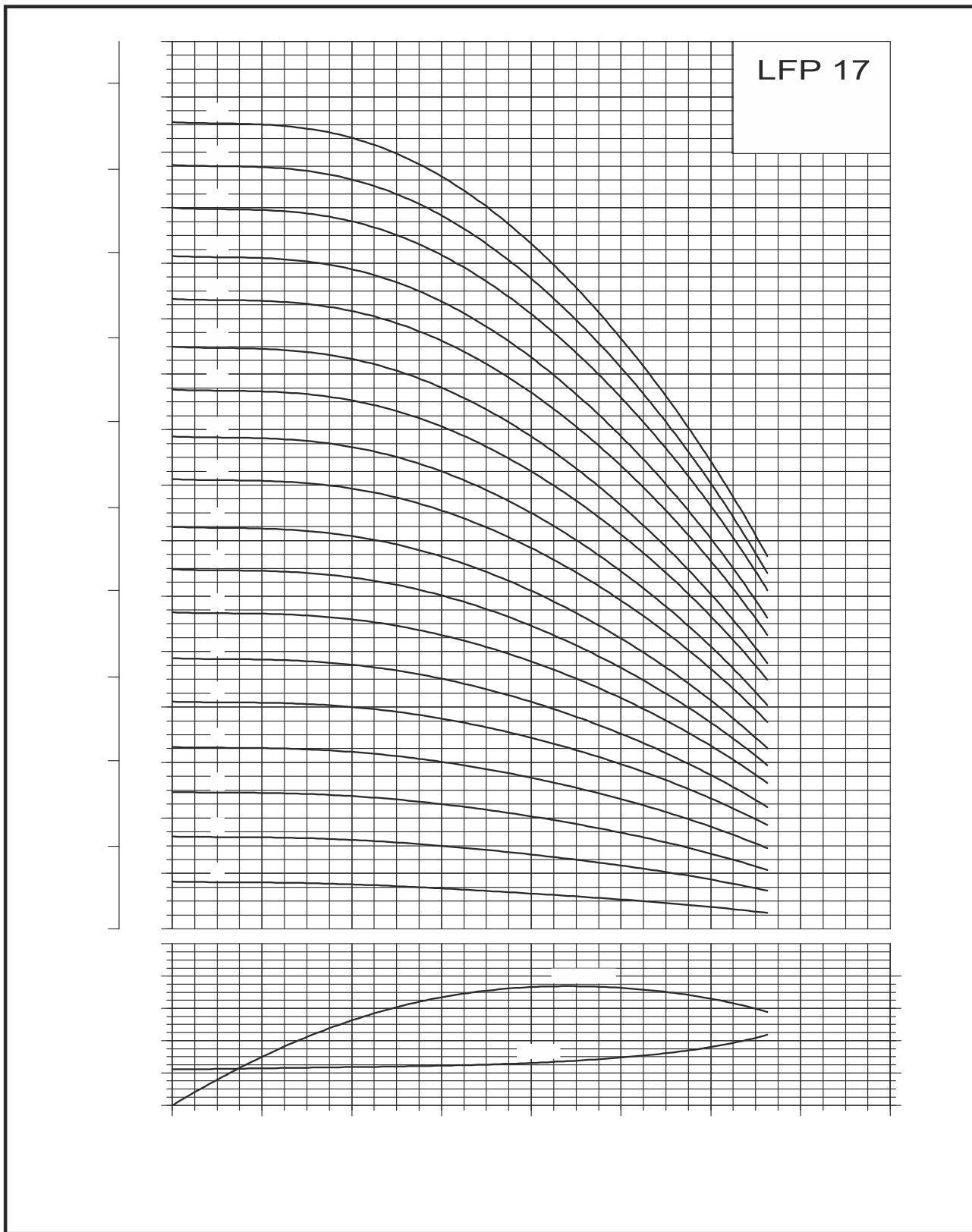
P _N HP/kW	P _{max} [kW]	Thrust F [N]	U _N [V]	n _{max} [min ⁻¹]	I _{max} [A]	I _A [A]	η _{max} (Eff.) [%] at % load			cos φ _{max} (Pf.) at % load			T _{max} [Nm]	T _A [Nm]
							50	75	100	50	75	100		
5.5 / 4	4,6	15500	230	3520	21,0	106	0,70	0,75	0,77	0,52	0,64	0,73	12,5	18,6
			380	3530	13,3	61	0,66	0,72	0,77	0,51	0,63	0,71	12,4	15,0
			460	3520	10,1	51	0,70	0,76	0,78	0,56	0,67	0,75	12,5	15,3
7.5 / 5,5	6,3	15500	230	3490	26,1	106	0,74	0,78	0,78	0,61	0,73	0,80	17,3	15,9
			380	3480	15,4	61	0,76	0,78	0,78	0,64	0,75	0,81	17,3	15,0
			460	3480	12,9	51	0,74	0,77	0,77	0,65	0,76	0,82	17,3	15,1
10 / 7,5	8,6	15500	230	3490	35,9	146	0,75	0,79	0,79	0,58	0,71	0,78	23,6	22,4
			380	3480	20,8	81	0,76	0,79	0,79	0,64	0,75	0,81	23,6	20,2
			460	3470	17,2	64	0,75	0,78	0,78	0,67	0,77	0,82	23,7	19,4
12.5/ 9,3	10,7	15500	230	3490	44,4	183	0,75	0,79	0,79	0,59	0,71	0,78	29,3	28,9
			380	3470	25,6	100	0,77	0,80	0,80	0,64	0,75	0,81	29,4	25,9
			460	3460	20,8	78	0,78	0,80	0,80	0,67	0,78	0,82	29,4	24,4
15 / 11	12,7	15500	230	3490	51,2	220	0,77	0,80	0,81	0,60	0,72	0,79	34,6	35,6
			380	3490	30,3	129	0,77	0,81	0,81	0,62	0,74	0,80	34,5	34,3
			460	3480	25,0	98	0,78	0,81	0,80	0,68	0,77	0,83	34,7	31,5
17.5 / 13	15,0	15500	230	3500	62,4	288	0,76	0,80	0,81	0,55	0,68	0,76	40,7	50,5
			380	3500	36,3	164	0,77	0,81	0,82	0,59	0,71	0,78	40,7	47,2
			460	3490	29,0	125	0,78	0,81	0,81	0,65	0,76	0,82	40,9	43,3
20 / 15	17,3	15500	230	3500	65,9	325	0,80	0,83	0,83	0,63	0,74	0,81	47,0	59,5
			380	3490	39,1	188	0,81	0,83	0,83	0,66	0,77	0,82	47,2	56,5
			460	3490	32,1	151	0,80	0,83	0,83	0,68	0,78	0,84	47,1	55,6
25 / 18,5	21,3	15500	230	3490	85,4	402	0,77	0,81	0,82	0,59	0,71	0,78	58,1	81,8
			380	3490	52,5	249	0,76	0,80	0,81	0,58	0,70	0,77	58,1	83,6
			460	3480	40,6	184	0,80	0,82	0,82	0,65	0,76	0,81	58,4	74,5
30 / 22	25,3	15500	230	3510	100,2	520	0,82	0,84	0,84	0,65	0,74	0,77	68,8	96,6
			380	3510	59,9	309	0,82	0,84	0,84	0,67	0,75	0,78	68,8	94,9
			460	3500	47,1	232	0,83	0,84	0,84	0,72	0,79	0,82	69,1	85,8
35 / 26	29,9	15500	230	3510	118,3	657	0,83	0,85	0,85	0,63	0,72	0,76	81,3	135,0
			380	3500	67,5	360	0,83	0,85	0,85	0,62	0,74	0,81	81,6	121,4
			460	3500	55,7	287	0,83	0,85	0,85	0,64	0,76	0,84	81,6	117,2
40 / 30	34,5	27500	230	3510	135,7	758	0,78	0,82	0,83	0,58	0,71	0,78	93,8	139,6
			380	3510	79,6	436	0,79	0,83	0,84	0,62	0,74	0,81	93,9	132,9
			460	3500	64,4	346	0,81	0,84	0,84	0,64	0,75	0,82	94,0	126,4
50 / 37	42,6	27500	230	3510	135,7	758	0,78	0,82	0,83	0,58	0,71	0,78	93,8	139,6
			380	3510	102,8	567	0,77	0,81	0,82	0,59	0,71	0,78	115,8	193,6
			460	3500	79,1	430	0,82	0,84	0,85	0,63	0,75	0,81	116,0	177,8

Technical changes without notice



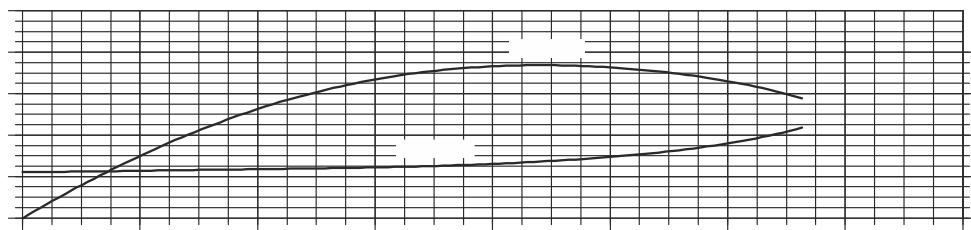
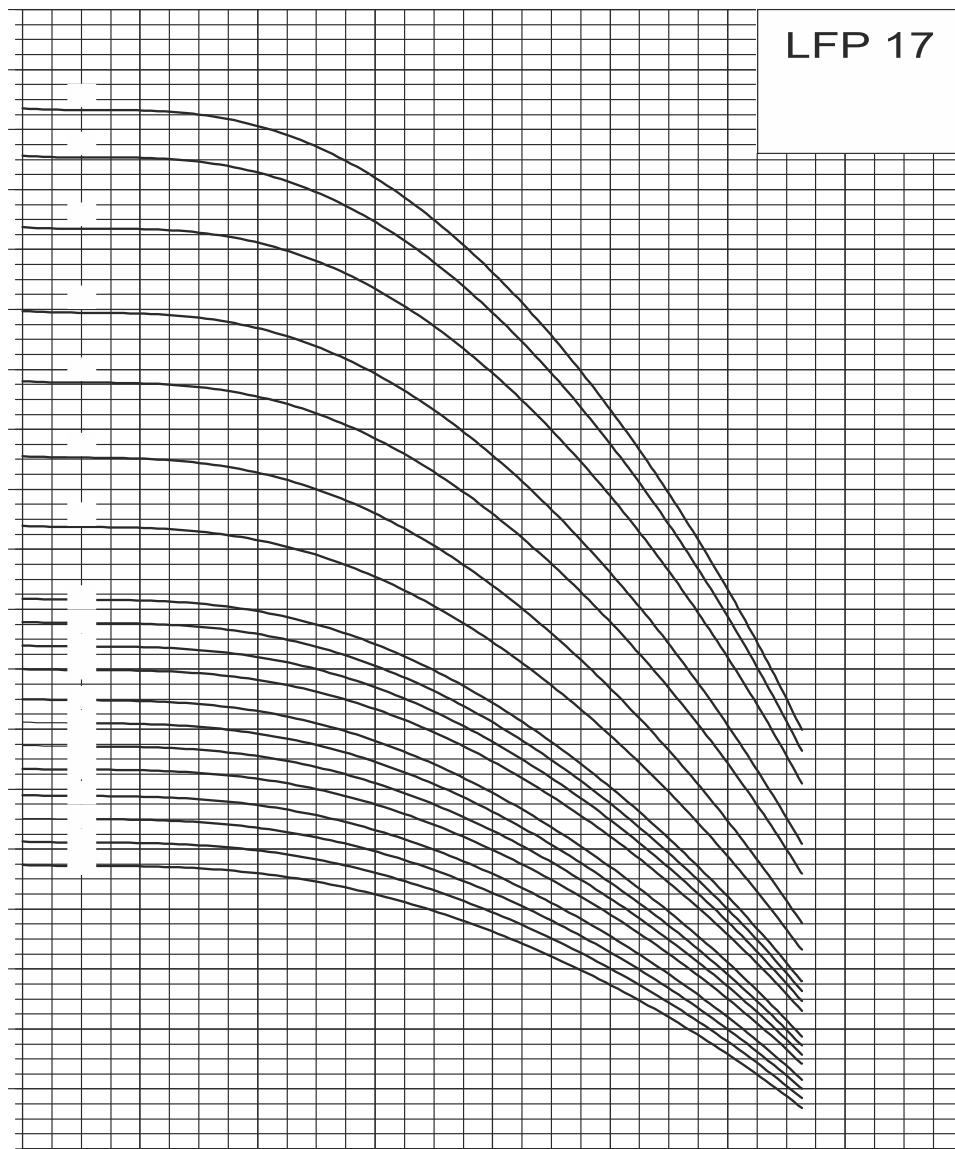
Performance Curve - LFP 17

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Performance Curve - LFP

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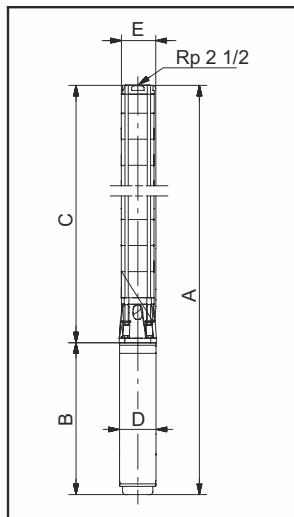


Technical Data - LFP 17

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Dimensions and Weights



LFP17-33 to LFP17-39 are mounted in sleeve for Rp 3 connection.

Pump type	Motor		Dimensions [mm]					Net weight [kg]
	Type Inch/HP	Power [kW/HP]	C	B	A	D	E*	
LFP17-1	LFP4/1.5	1.1 / 1.5	314	413	727	95	131	18
LFP17-2	LFP4/3.0	2.2 / 3.0	374	454	828	95	131	22
LFP17-3	LFP4/4.0	3.0 / 4.0	435	494	929	95	131	24
LFP17-4	LFP4/5.5	4 / 5.5	495	574	1069	95	131	29
LFP17-5	LFP4/7.5	5.5 / 7.5	556	674	1230	95	131	35
LFP17-6	LFP4/7.5	5.5 / 7.5	616	674	1290	95	131	36
LFP17-7	LFP4/10	7.5 / 10	677	773	1450	95	131	43
LFP17-8	LFP4/10	7.5 / 10	737	773	1510	95	131	44
LFP17-9	LFP4/10	7.5 / 10	798	773	1571	95	131	45
LFP17-5	LFP6/7.5	5.5 / 7.5	572	544	1116	138	142	47
LFP17-6	LFP6/7.5	5.5 / 7.5	632	544	1176	138	142	48
LFP17-7	LFP6/10	7.5 / 10	693	574	1267	138	142	50
LFP17-8	LFP6/10	7.5 / 10	753	574	1327	138	142	51
LFP17-9	LFP6/10	7.5 / 10	814	574	1388	138	142	52
LFP17-10	LFP6/12.5	9.2 / 12.5	874	604	1478	138	142	59
LFP17-11	LFP6/12.5	9.2 / 12.5	935	604	1539	138	142	60
LFP17-12	LFP6/15	11 / 15	995	634	1629	138	142	64
LFP17-13	LFP6/15	11 / 15	1056	634	1690	138	142	65
LFP17-14	LFP6/17.5	13 / 17.5	1116	664	1780	138	142	69
LFP17-15	LFP6/17.5	13 / 17.5	1177	664	1841	138	142	71
LFP17-16	LFP6/20	15 / 20	1237	699	1936	138	142	76
LFP17-17	LFP6/20	15 / 20	1298	699	1997	138	142	77
LFP17-18	LFP6/20	15 / 20	1358	699	2057	138	142	78
LFP17-19	LFP6/25	18.5 / 25	1419	754	2173	138	142	85
LFP17-20	LFP6/25	18.5 / 25	1479	754	2233	138	142	87
LFP17-21	LFP6/25	18.5 / 25	1540	754	2294	138	142	88
LFP17-22	LFP6/25	18.5 / 25	1600	754	2354	138	142	89
LFP17-23	LFP6/30	22 / 30	1661	814	2475	138	142	96
LFP17-24	LFP6/30	22 / 30	1721	814	2535	138	142	97
LFP17-25	LFP6/30	22 / 30	1782	814	2596	138	142	99
LFP17-26	LFP6/30	22 / 30	1842	814	2656	138	142	100
LFP17-27	LFP6/35	26 / 35	1903	874	2777	138	142	106
LFP17-28	LFP6/35	26 / 35	1963	874	2837	138	142	107
LFP17-29	LFP6/35	26 / 35	2024	874	2898	138	142	108
LFP17-30	LFP6/35	26 / 35	2084	874	2958	138	142	110
LFP17-33	LFP6/40	30 / 40	2513	944	3457	138	175	155
LFP17-36	LFP6/40	30 / 40	2694	944	3638	138	175	160
LFP17-39	LFP6/50	37 / 50	2876	1405	4281	138	175	203
LFP17-42	LFP8/50	37 / 50	3006	1160	4166	192	192	250
LFP17-45	LFP8/60	45 / 60	3188	1270	4458	192	192	276
LFP17-48	LFP8/60	45 / 60	3369	1270	4639	192	192	281
LFP17-50	LFP8/60	45 / 60	3490	1270	4760	192	192	285

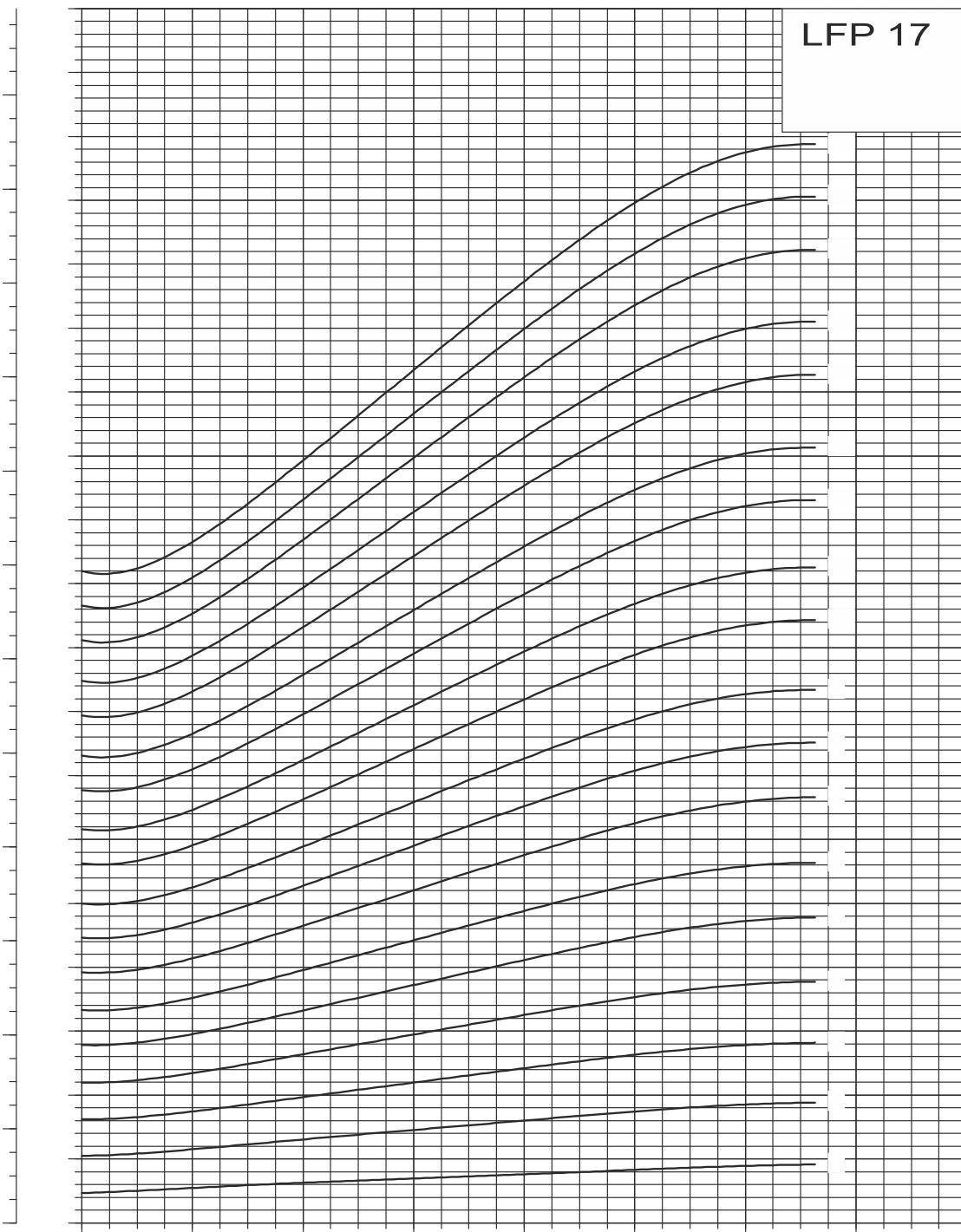
* Maximum diameter of pump with one motor cable.

Also available 45 kW in 6" joining.



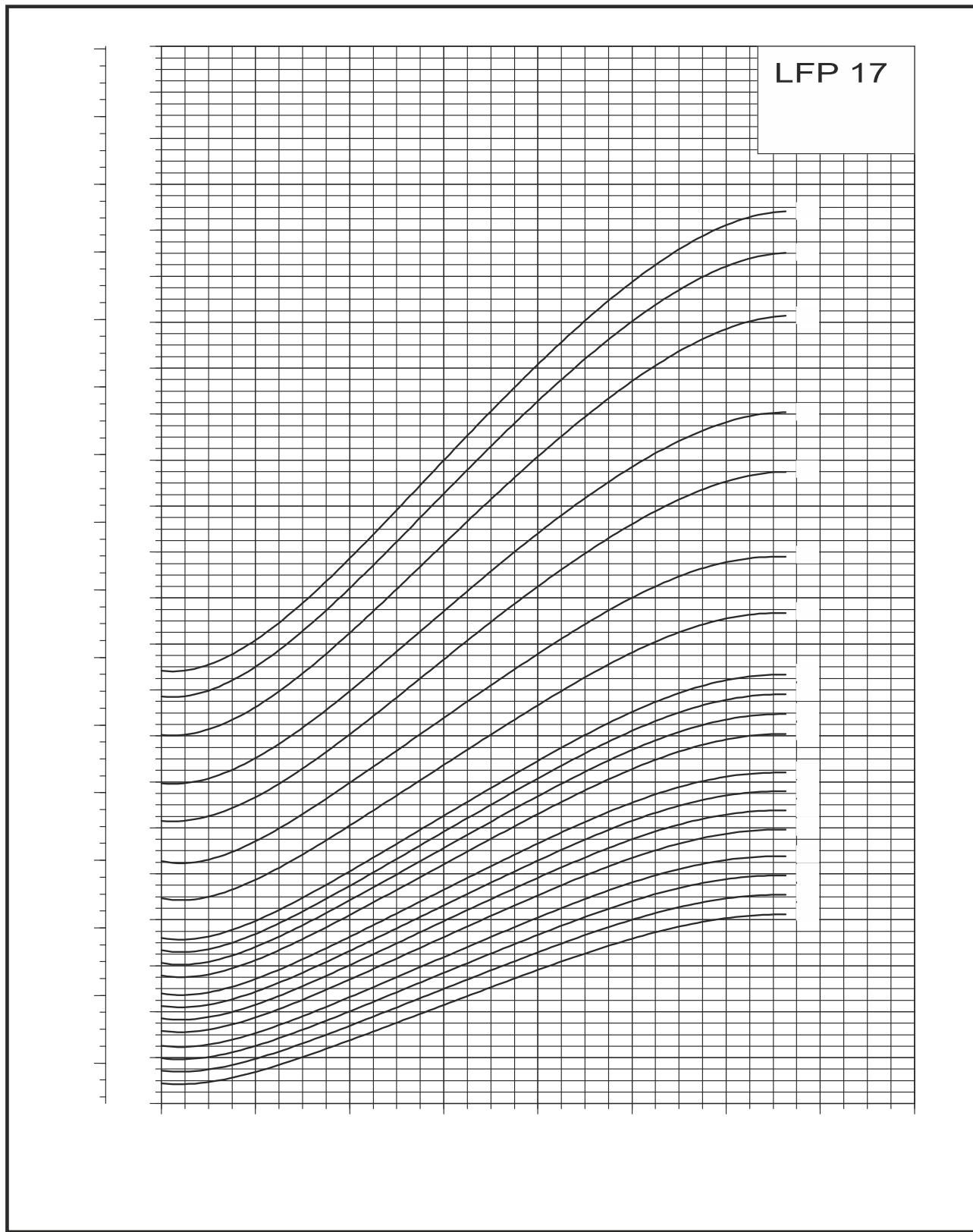
Power Curve - LFP 17

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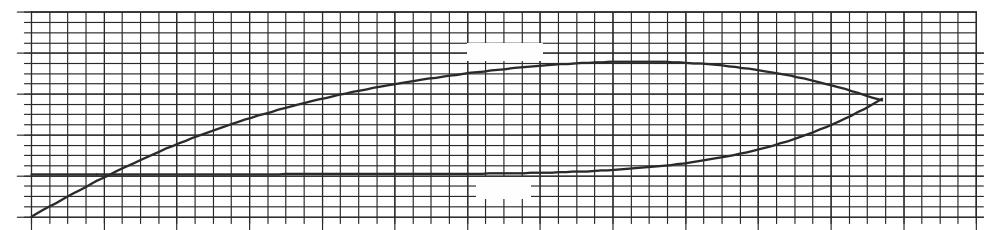
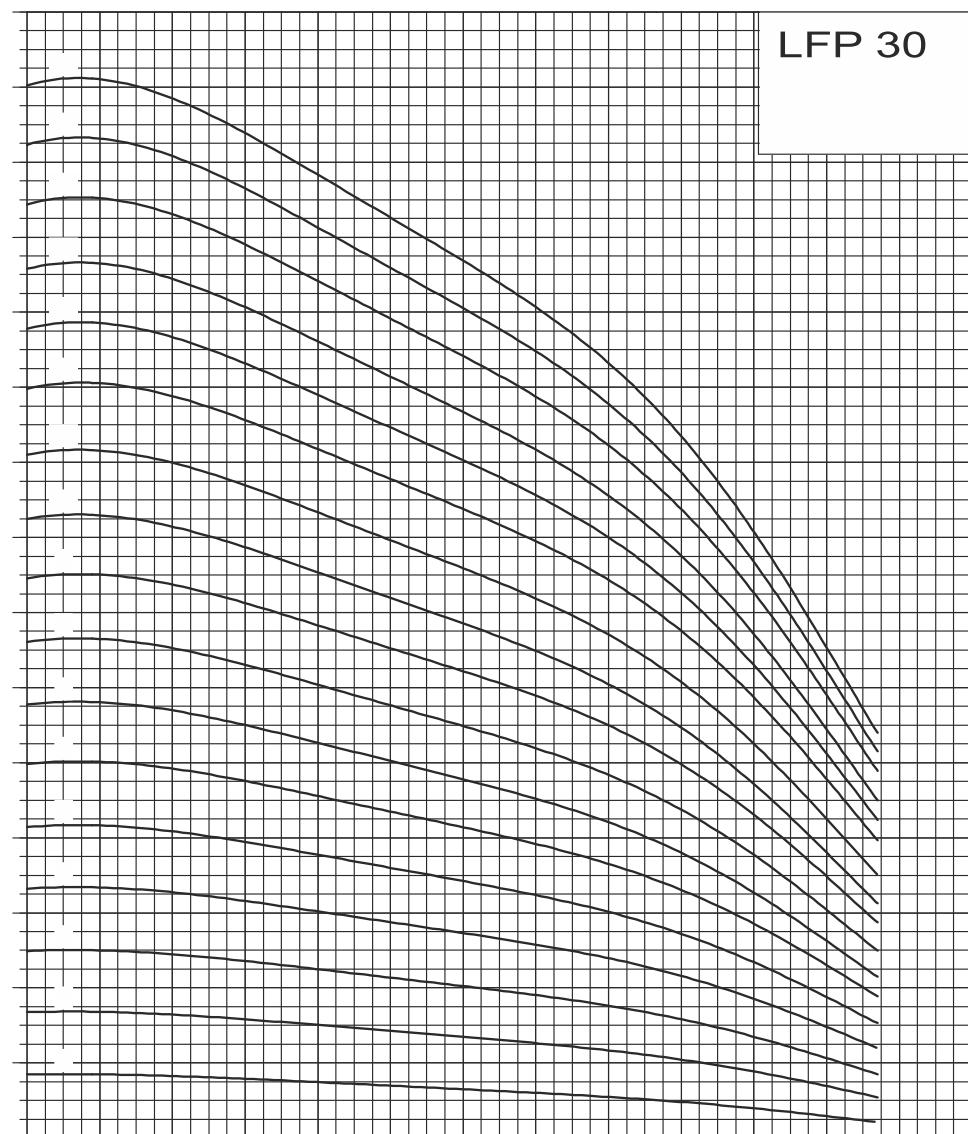
Power Curve - LFP 17

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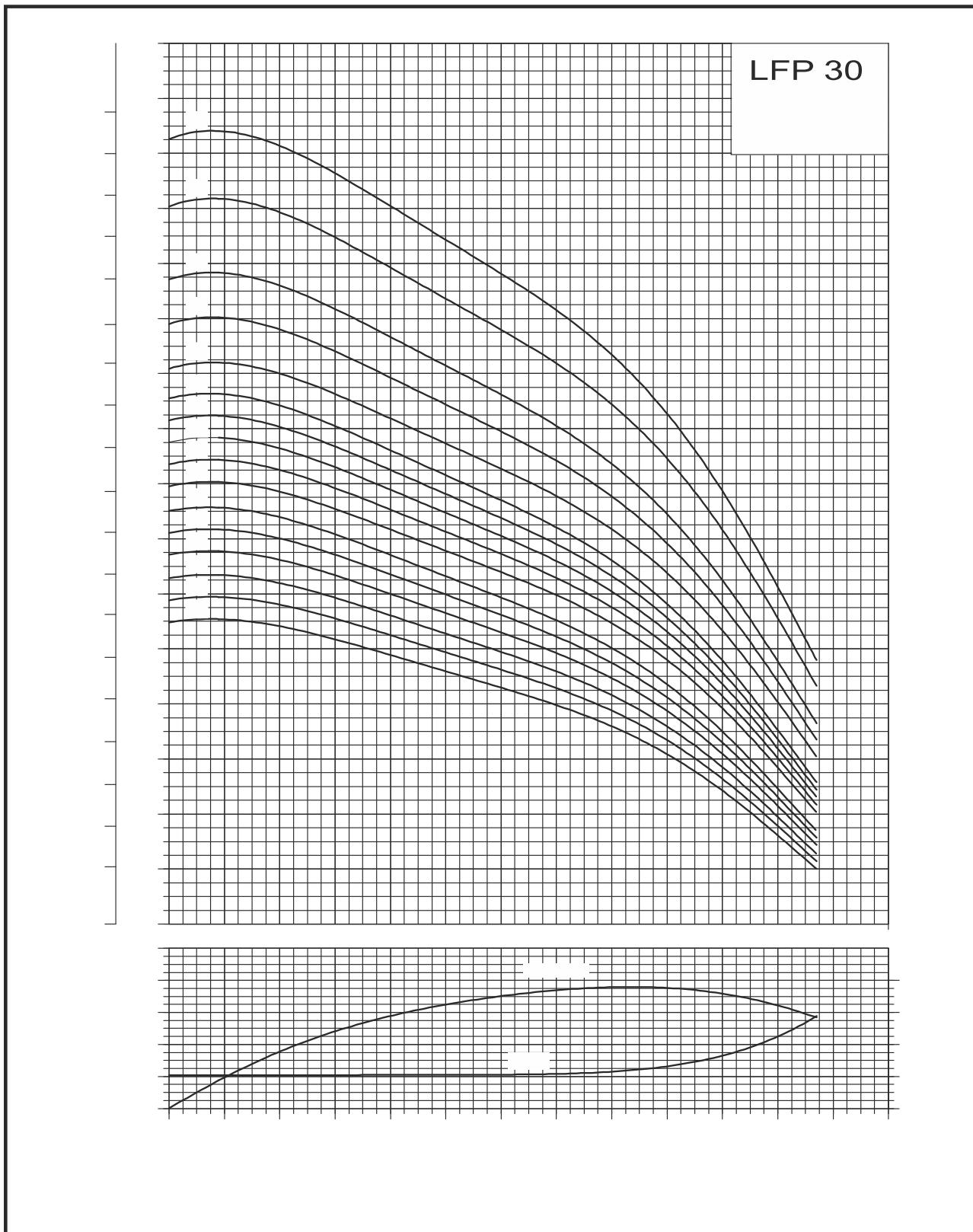
Performance Curve - LFP 30

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Performance Curve - LFP 30

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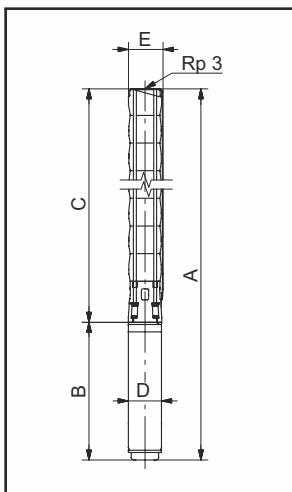


Technical Data - LFP 30

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Dimensions and Weights



LFP30-24 to LFP30-39 are Mounted in sleeve for Rp 3 connection.

Pump type	Motor		Dimensions [mm]						Net weight [kg]	
	Type Inch/HP	Power [kW/HP]								
			C	B	A	D	E*	E**		
LFP3 0-1	LFP4/2.2	1.5 / 2.2	349	413	762	95	131		21	
LFP3 0-2	LFP4/4.0	3.0 / 4.0	445	494	939	95	131		24	
LFP30-3	LFP4/5.5	4.0 / 5.5	541	574	1115	95	131		29	
LFP30-4	LFP4/7.5	5.5 / 7.5	637	674	1311	95	131		36	
LFP30-5	LFP4/10	7.5 / 10	733	773	1506	95	131		43	
LFP30-4	LFP6/7.5	5.5 / 7.5	653	544	1197	138	142	142	47	
LFP30-5	LFP6/10	7.5 / 10	749	574	1323	138	142	142	50	
LFP30-6	LFP6/12.5	9.2 / 12.5	845	604	1449	138	142	142	57	
LFP30-7	LFP6/12.5	9.2 / 12.5	941	604	1545	138	142	142	59	
LFP3 0-8	LFP6/15	11 / 15	1037	634	1671	138	142	142	63	
LFP30-9	LFP6/17.5	13 / 17.5	1133	664	1797	138	142	142	68	
LFP30-10	LFP6/17.5	13 / 17.5	1229	664	1893	138	142	142	70	
LFP30-11	LFP6/20	15 / 20	1325	699	2024	138	142	142	75	
LFP30-12	LFP6/25	18.5 / 25	1421	754	2175	138	142	142	83	
LFP30-13	LFP6/25	18.5 / 25	1517	754	2271	138	142	142	84	
LFP30-14	LFP6/25	18.5 / 25	1613	754	2367	138	142	142	86	
LFP3 0-15	LFP6/30	22 / 30	1709	814	2523	138	142	142	94	
LFP30-16	LFP6/30	22 / 30	1805	814	2619	138	142	142	95	
LFP30-17	LFP6/30	22 / 30	1901	814	2715	138	142	142	97	
LFP30-18	LFP6/35	26 / 35	1997	874	2871	138	142	142	104	
LFP30-19	LFP6/35	26 / 35	2093	874	2967	138	142	142	106	
LFP30-20	LFP6/35	26 / 35	2189	874	3063	138	142	142	108	
LFP30-21	LFP6/40	30 / 40	2285	944	3229	138	144	145	117	
LFP30-22	LFP6/40	30 / 40	2381	944	3225	138	144	145	119	
LFP30-23	LFP6/40	30 / 40	2477	944	3421	138	144	145	121	
LFP30-24	LFP6/50	37 / 50	2573	1425	3998	144	142	142	170	
LFP30-25	LFP6/50	37 / 50	2669	1425	4094	144	142	142	171	
LFP30-26	LFP6/50	37 / 50	2765	1425	4190	144	142	142	173	
LFP30-27	LFP6/50	37 / 50	2861	1425	4286	144	142	142	175	
LFP30-28	LFP6/50	37 / 50	2957	1425	4282	144	142	142	176	
LFP30-29	LFP8/60	45 / 60	3249	1270	4519	192	192	192	280	
LFP30-31	LFP8/60	45 / 60	3441	1270	4711	192	192	192	285	
LFP30-33	LFP8/60	45 / 60	3633	1270	4903	192	192	192	290	
LFP30-36	LFP8/75	55 / 75	3921	1350	5271	192	192	192	131	
LFP30-39	LFP8/75	55 / 75	4209	1350	5559	192	192	192	322	

* Maximum diameter of pump with one motor cable.

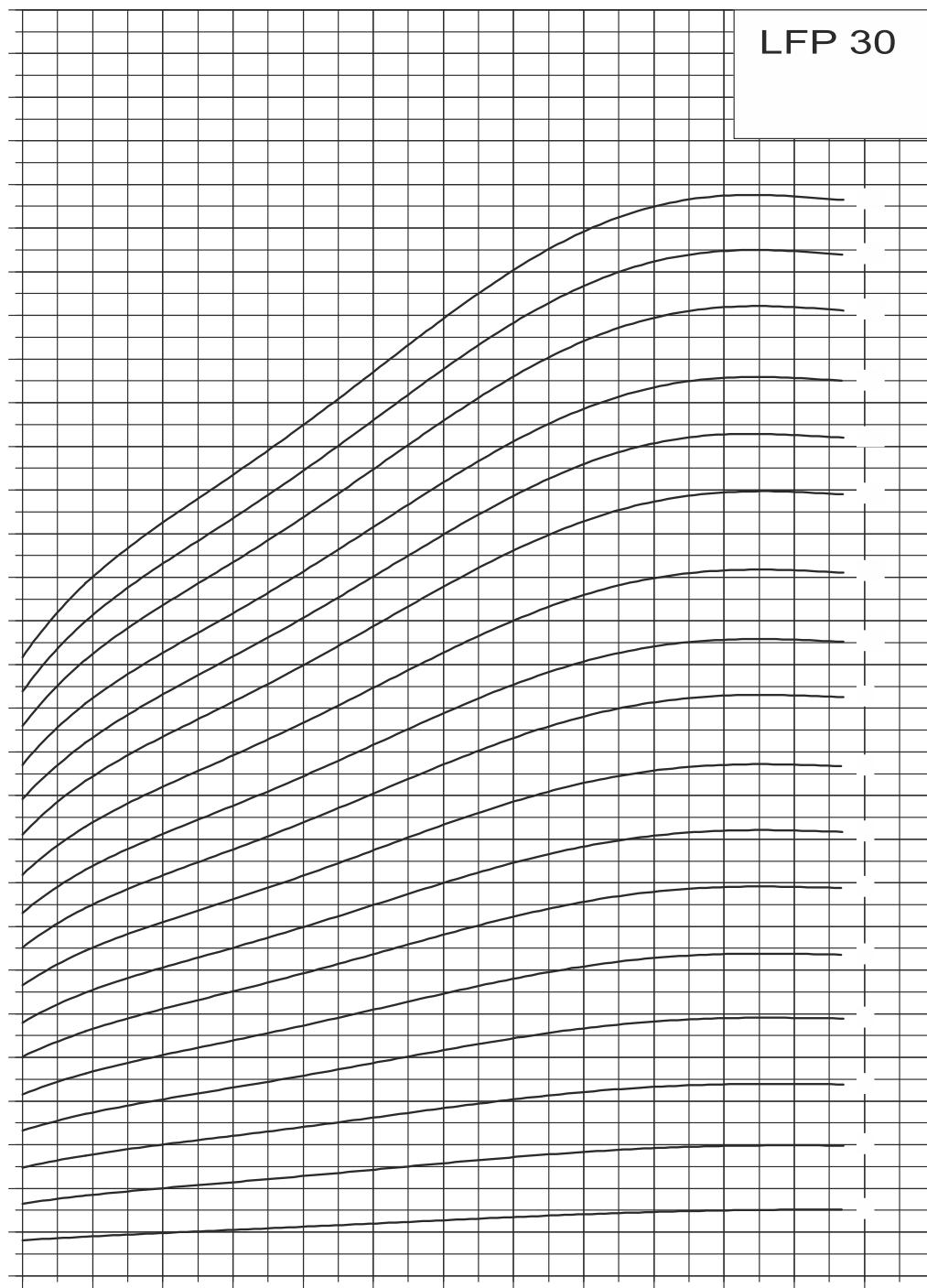
** Maximum diameter of pump with two motor cable.

Also available 45 kW in 6" joining.



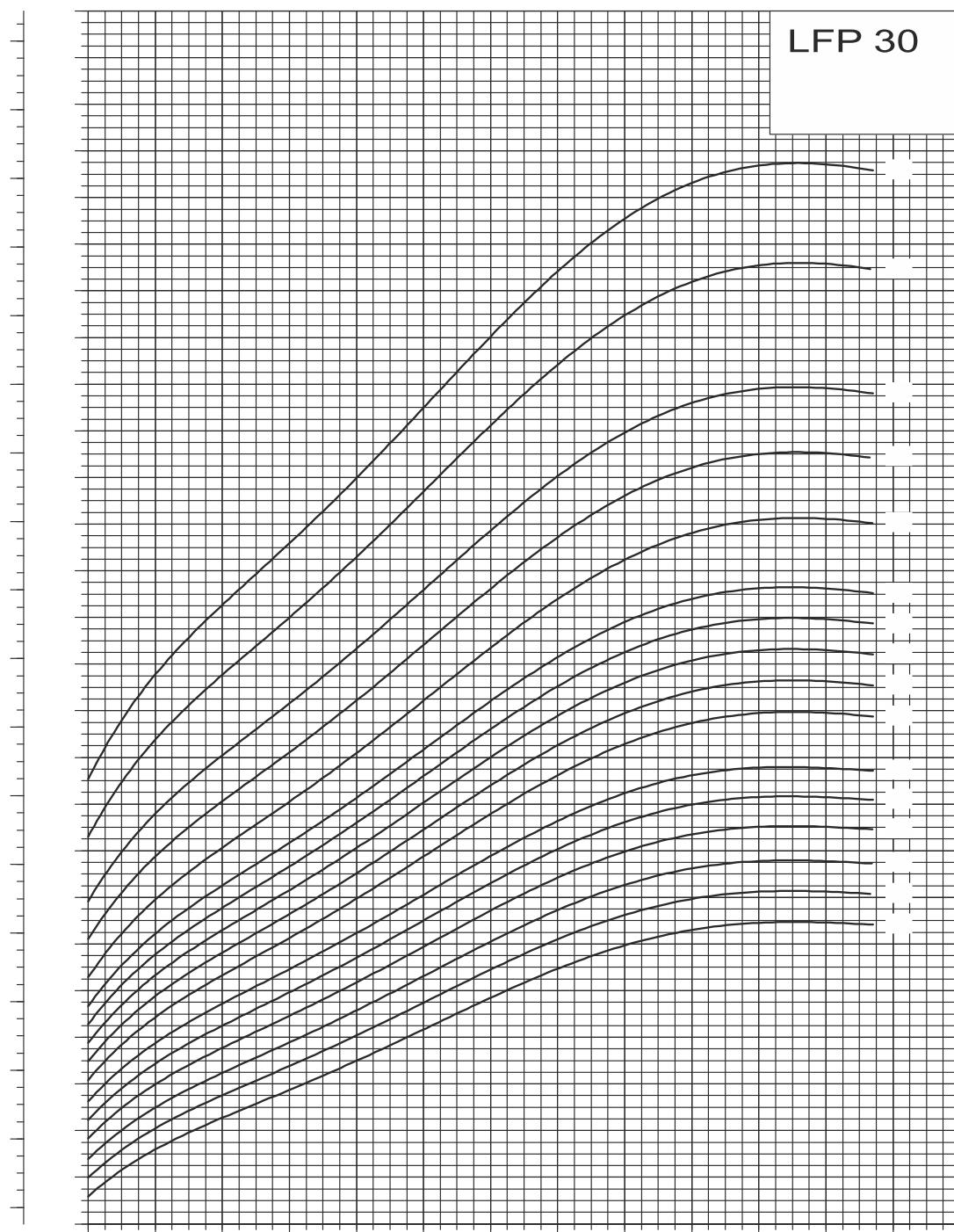
Power Curve - LFP 30

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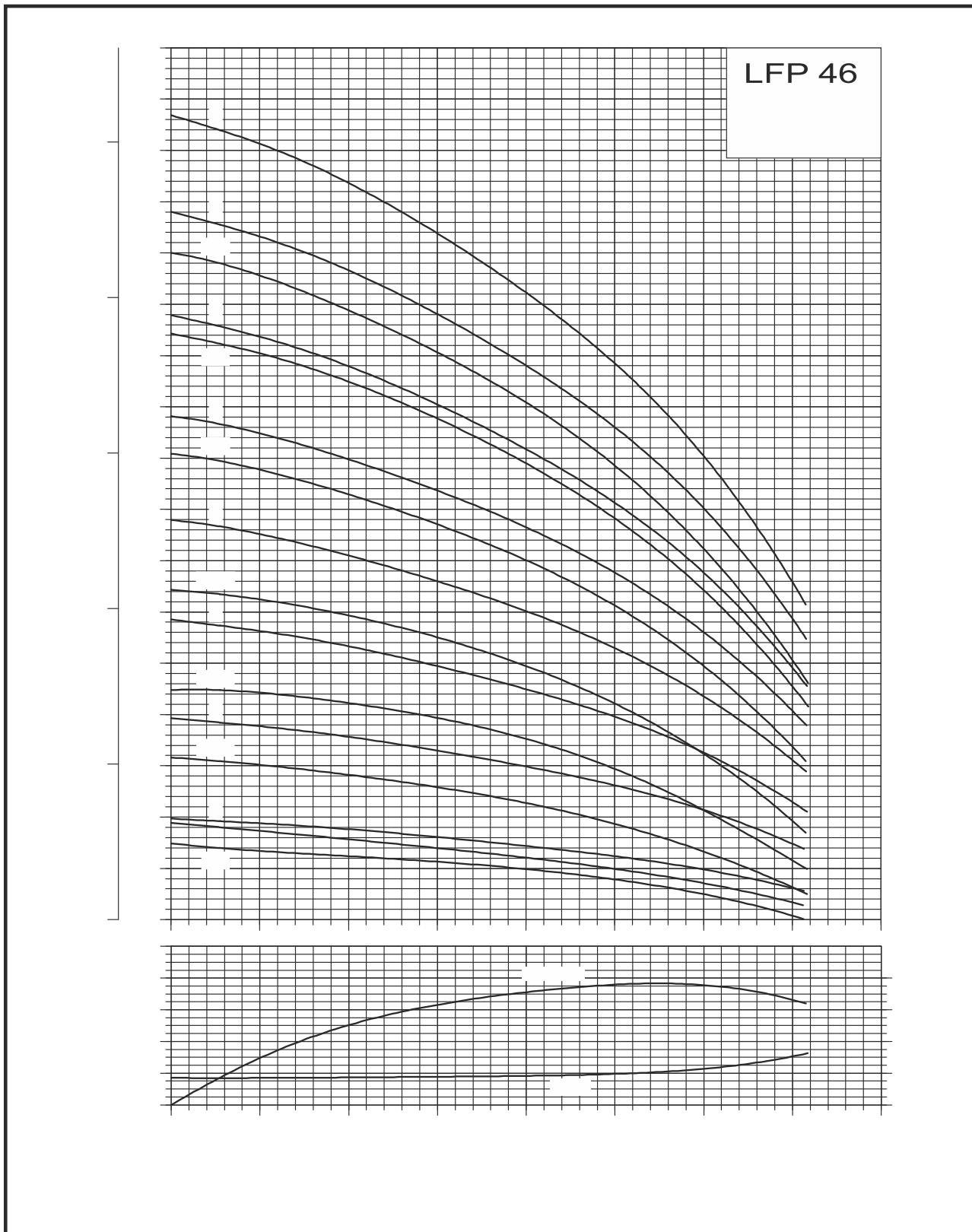
Power Curve - LFP 30

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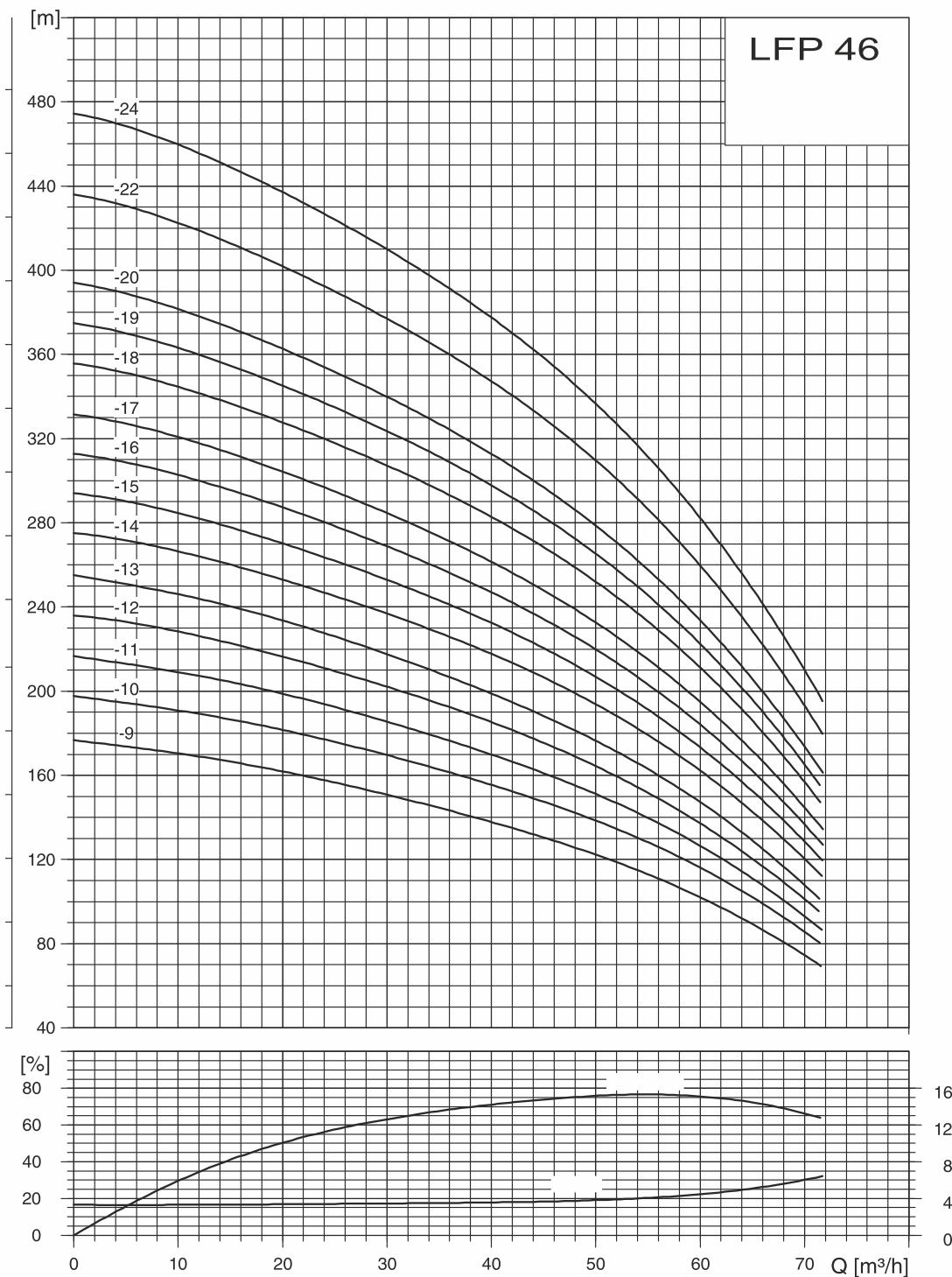
Performance Curve - LFP 46

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Performance Curve - LFP 46

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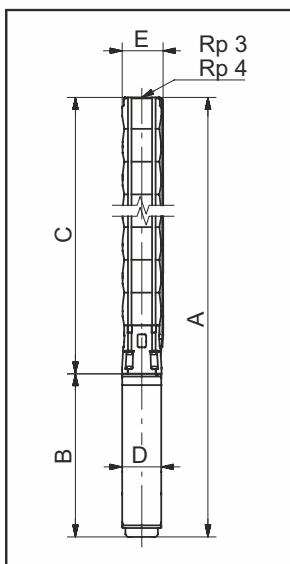


Technical Data Curve - LFP 46

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Dimensions and Weights



LFP 46-20 to LFP 46-24 are mounted in sleeve for Rp 4 connection.

Pump type	Motor		Dimensions [mm]									Net weight [kg]
	Type Inch/HP	Power [kW/HP]	Rp 3" Connection			Rp 4" Connection			B	D		
			A	C	E*	E**	A	C	E*	E**		
LFP46-1B	LFP4/2.2	1.5 / 2.2	780	367	146	148	783	370	146	148	413	95 20
LFP46-1A	LFP4/3.0	2.2 / 3.0	821	367	146	148	824	370	146	148	454	95 22
LFP46-1	LFP4/4.0	3.0 / 4.0	861	367	146	148	864	370	146	148	494	95 23
LFP46-2AB	LFP4/5.5	4.0 / 5.5	974	480	146	148	977	483	146	148	494	95 25
LFP46-2	LFP4/7.5	5.5 / 7.5	1154	480	146	148	1157	483	146	148	674	95 34
LFP46-3BB	LFP4/7.5	5.5 / 7.5	1267	593	146	148	1267	593	146	148	674	95 37
LFP46-3	LFP4/10	7.5 / 10	1367	593	149	152	1370	596	149	152	774	95 42
LFP46-3	LFP6/10	7.5 / 10	1183	609	149	152	1186	612	149	152	574	138 49
LFP46-4BC	LFP6/10	7.5 / 10	1296	722	149	152	1299	725	149	152	574	138 52
LFP46-4	LFP6 12.5	9.2/12.5	1326	722	149	152	1329	725	149	152	604	138 57
LFP46-5C	LFP6/15	11 / 15	1469	835	149	152	1472	838	149	152	634	138 63
LFP46-5	LFP6/17.5	13 / 17.5	1499	835	149	152	1502	838	149	152	664	138 66
LFP46-6A	LFP6/17.5	13 / 17.5	1612	948	149	152	1615	951	149	152	664	138 68
LFP46-6	LFP6/20	15 / 20	1647	948	149	152	1650	951	149	152	699	138 72
LFP46-7C	LFP6/20	15 / 20	1760	1061	149	152	1763	1064	149	152	699	138 75
LFP46-7	LFP6/25	18.5 / 25	1815	1061	149	152	1818	1064	149	152	754	138 80
LFP46-8	LFP6/25	18.5 / 25	1928	1174	149	152	1931	1177	149	152	754	138 73
LFP46-9	LFP6/30	22 / 30	2101	1287	149	152	2104	1290	149	152	814	138 91
LFP46-10	LFP6/30	22 / 30	2214	1400	149	152	2217	1403	149	152	814	138 94
LFP46-11	LFP6/35	26 / 35	2387	1513	149	152	2390	1516	149	152	874	138 102
LFP46-12	LFP6/40	30 / 40	2570	1626	149	152	2573	1629	149	152	944	138 112
LFP46-13	LFP6/40	30 / 40	2683	1739	149	152	2686	1742	149	152	944	138 115
LFP46-14	LFP6/50	37 / 50	3357	1932	149	152	3360	1935	149	152	1425	138 168
LFP46-15	LFP6/50	37 / 50	3470	2045	149	152	3473	2048	149	152	1425	138 170
LFP46-16	LFP6/50	37 / 50	3583	2158	149	152	3586	2161	149	152	1425	138 173
LFP46-17	LFP6/50	37 / 50	3696	2271	149	152	3699	2274	149	152	1425	138 175
LFP46-18	LFP8/60	45 / 60	3603	2333	192	192	3606	2336	192	192	1270	192 228
LFP46-19	LFP8/60	45 / 60	3717	2446	192	192	3719	2449	192	192	1270	1925 231
LFP46-20	LFP8/60	45 / 60	3829	2559	192	192	3832	2562	192	192	1270	1925 234
LFP46-22	LFP8/75	55 / 75	4298	2948	193	195	4301	2951	193	195	1350	192 281
LFP46-24	LFP8/75	55 / 75					4527	3177	193	195	1350	192 287

* Maximum diameter of pump with one motor cable.

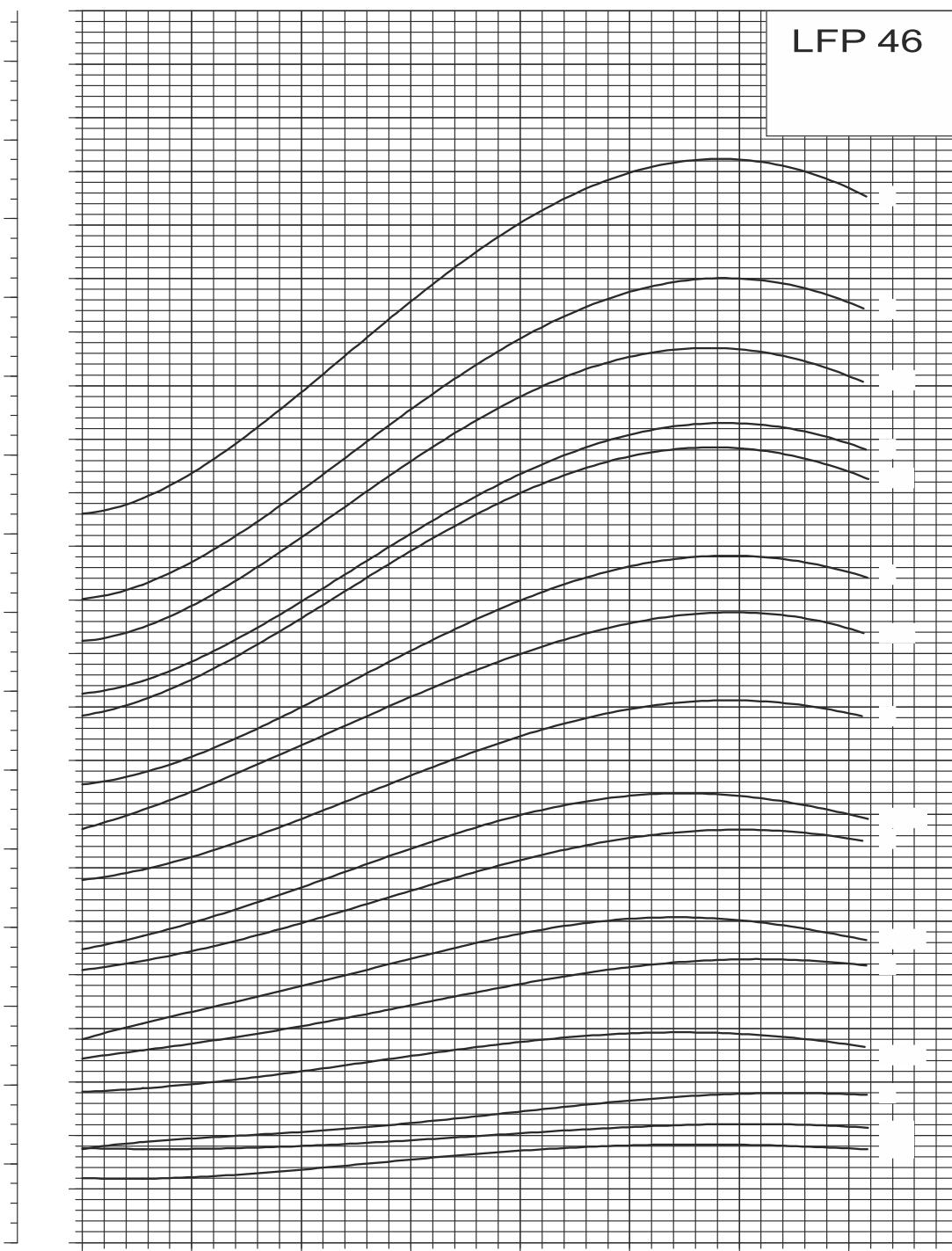
** Maximum diameter of pump with two motor cable.

Also available 45 kW in 6" joining.



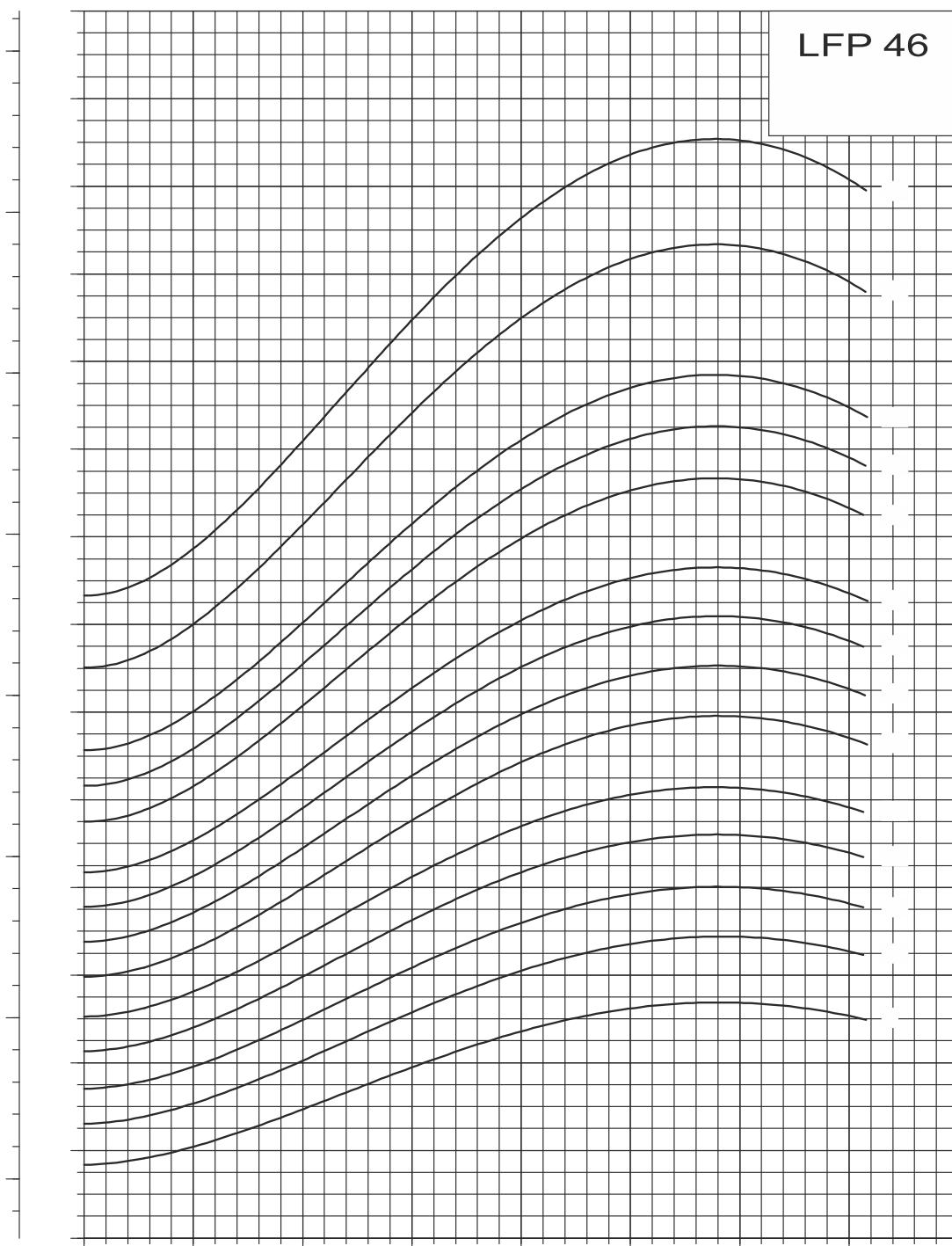
Power Curve - LFP 46

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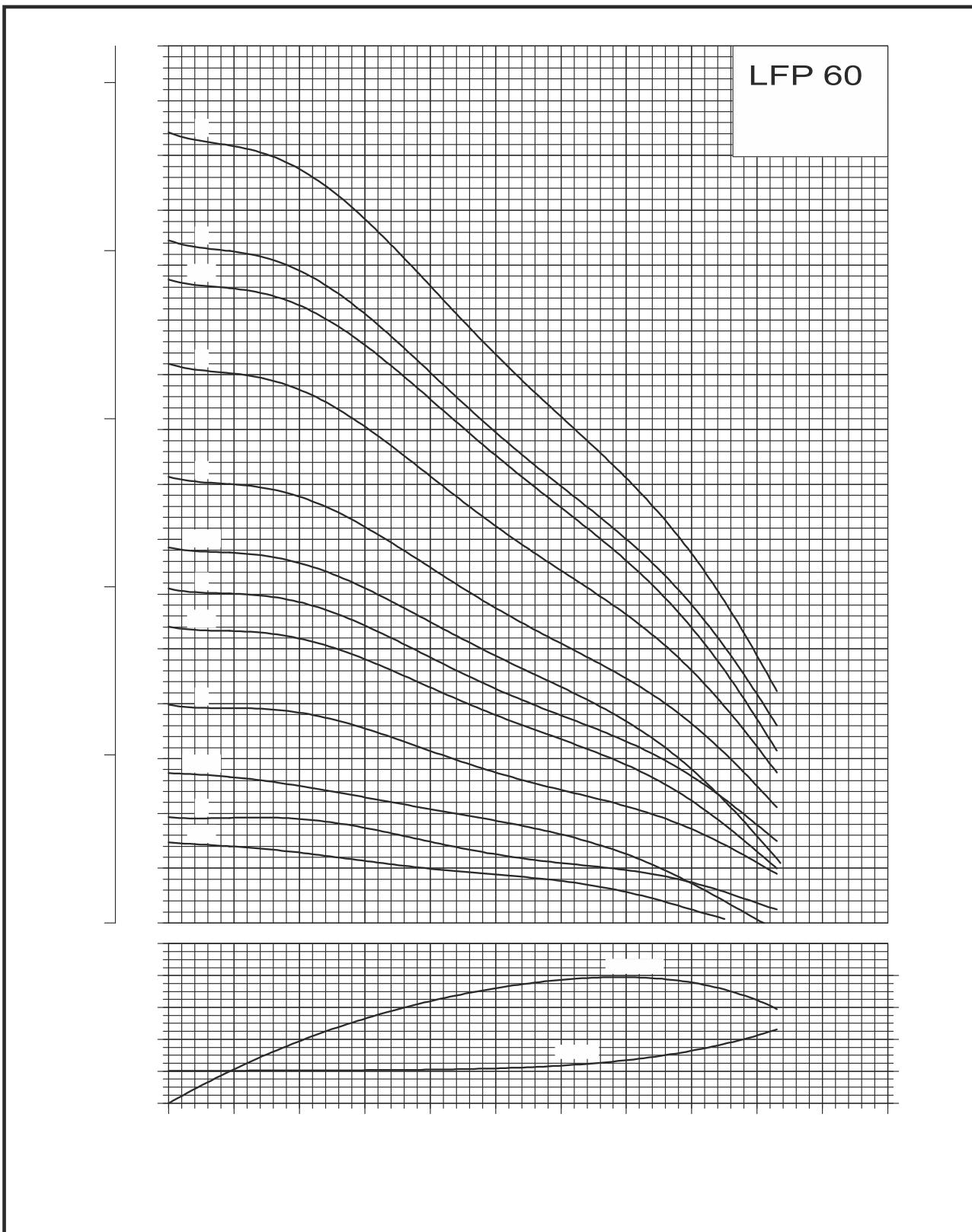
Power Curve - LFP 46

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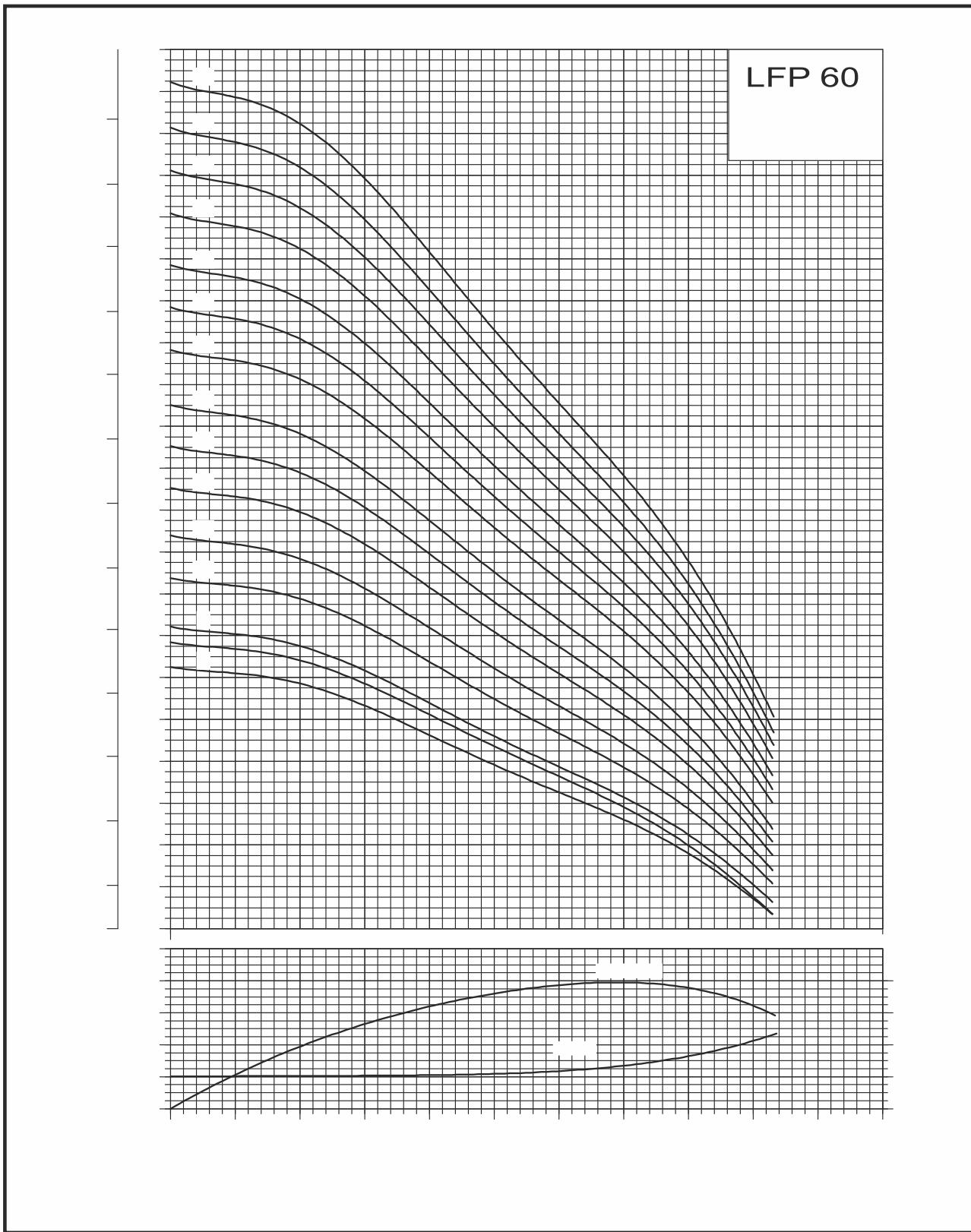
Performance Curve - LFP 60

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Performance Curve - LFP 60

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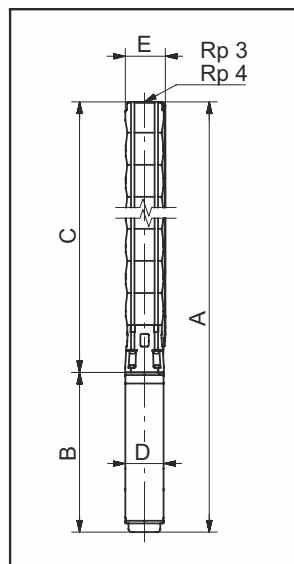


Technical Data - LFP 60

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Dimensions and Weights



Pump type	Motor		Dimensions [mm]								Net weight [kg]		
	Type Inch/HP	Power kW/HP	Rp 3" Connection				Rp 4" Connection						
			A	C	E*	E**	A	C	E*	E**			
LFP60-1-B	LFP4/3.0	2.2 / 3.0	821	367	146	148	824	370	146	148	454	95	22
LFP60-1-A	LFP4/5.5	4 / 5.5	864	367	146	148	864	370	146	148	494	95	23
LFP60-1	LFP4/5.5	4 / 5.5	941	367	146	148	944	370	146	148	574	95	27
LFP60-2-BB	LFP4/5.5	4 / 5.5	974	480	146	148	977	483	146	148	494	95	25
LFP60-2	LFP4//7.5	5.5 / 7.5	1154	480	146	148	157	483	146	148	674	95	34
LFP60-3-A	LFP4/10	7.5 / 10	1367	593	146	148	1370	596	146	148	774	95	39
LFP60-3-A	LFP6/10	7.5 / 10	1183	609	152	156	1186	612	152	156	574	138	49
LFP60-3	LFP 6/12.5	9.2 / 12.5	1213	609	152	156	1216	612	152	156	604	138	55
LFP60-4-AA	LFP 6/12.5	9.2 / 12.5	1326	722	152	156	1329	725	152	156	604	138	57
LFP60-4	LFP 6/15	11 / 15	1356	722	152	156	1359	725	152	156	634	138	60
LFP60-5	LFP 6/17.5	13 / 17.5	1499	835	152	156	1502	838	152	156	664	138	66
LFP60-6-B	LFP 6/20	15 / 20	1647	948	152	156	1650	951	152	156	699	138	72
LFP60-6	LFP 6/25	18.5 / 25	1702	948	152	156	1705	951	152	156	754	138	78
LFP60-7	LFP 6/25	18.5 / 25	1815	1061	152	156	1818	1064	152	156	754	138	80
LFP60-8	LFP 6/30	22 / 30	1988	1174	152	156	1991	1177	152	156	814	138	89
LFP60-9-B	LFP 6/30	22 / 30	2101	1287	152	156	2104	1290	152	156	814	138	91
LFP60-9	LFP 6/35	26 / 35	2161	1287	152	156	2164	1290	152	156	874	138	97
LFP60-10	LFP 6/35	26 / 35	2274	1400	152	156	2277	1403	152	156	874	138	100
LFP60-11	LFP 6/40	30 / 40	2457	1513	152	156	2460	1516	152	156	944	138	110
LFP60-12	LFP 6/50	37 / 50	3131	1706	152	156	3134	1709	152	156	1425	138	163
LFP60-13	LFP 6/50	37 / 50	3244	1819	152	156	3247	1822	152	156	1425	138	165
LFP60-14	LFP 6/50	37 / 50					3360	1935	152	156	1425	138	168
LFP60-15	LFP 8/60	45 / 60					3267	1997	192	192	1270	192	221
LFP60-16	LFP 8/60	45 / 60					3380	2110	192	192	1270	192	223
LFP60-17	LFP 8/60	45 / 60					3493	2223	192	192	1270	192	226
LFP60-18	LFP 8/75	55 / 75					3686	2336	192	192	1350	192	243
LFP60-19	LFP 8/75	55 / 75					3962	2612	193	195	1350	192	272
LFP60-20	LFP 8/75	55 / 75					4075	2725	193	195	1350	192	275
LFP60-21	LFP 8/90	67 / 90					4328	2838	193	195	1490	192	304

* Maximum diameter of pump with one motor cable.

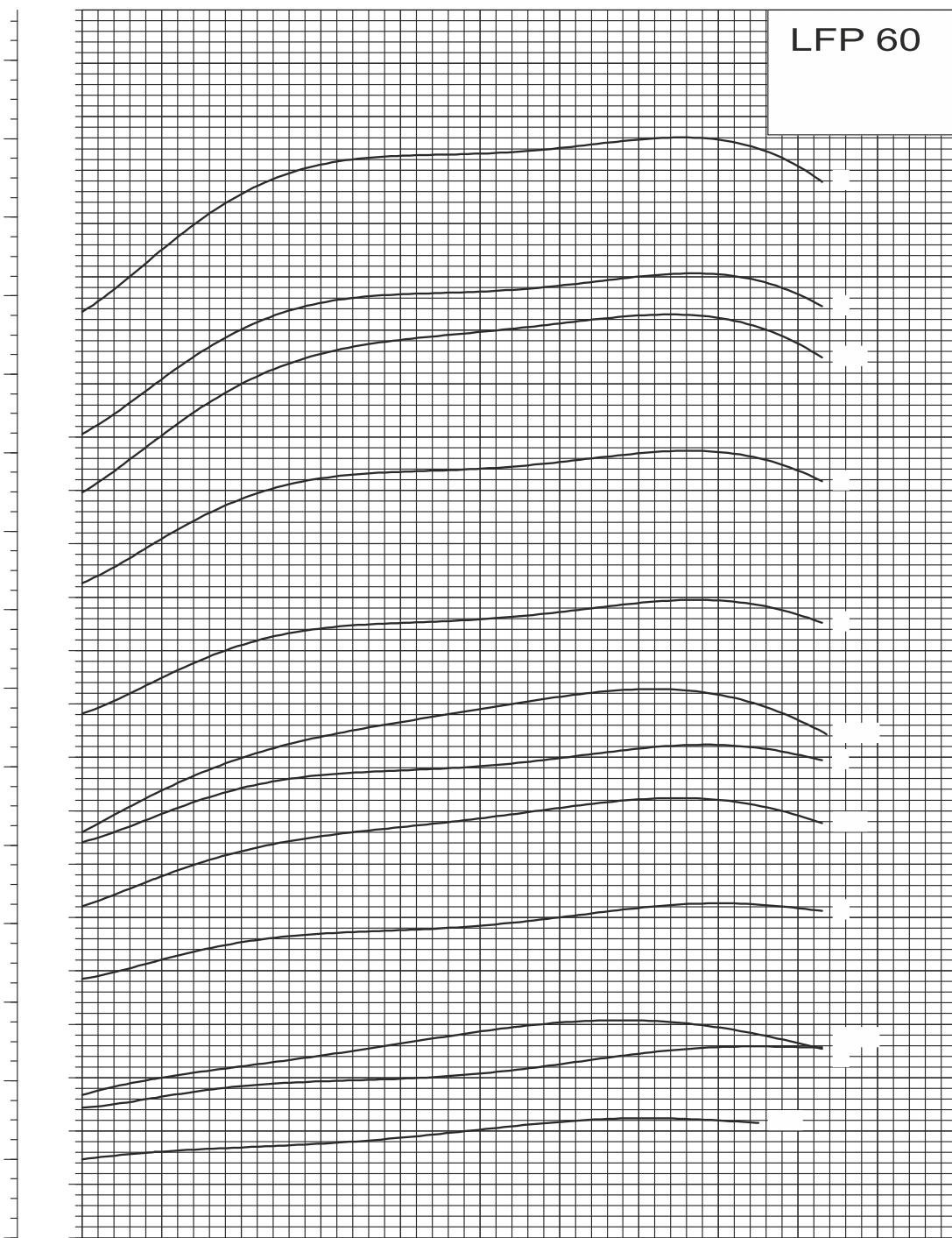
** Maximum diameter of pump with two motor cable.

Also available 45 kW in 6" joining.



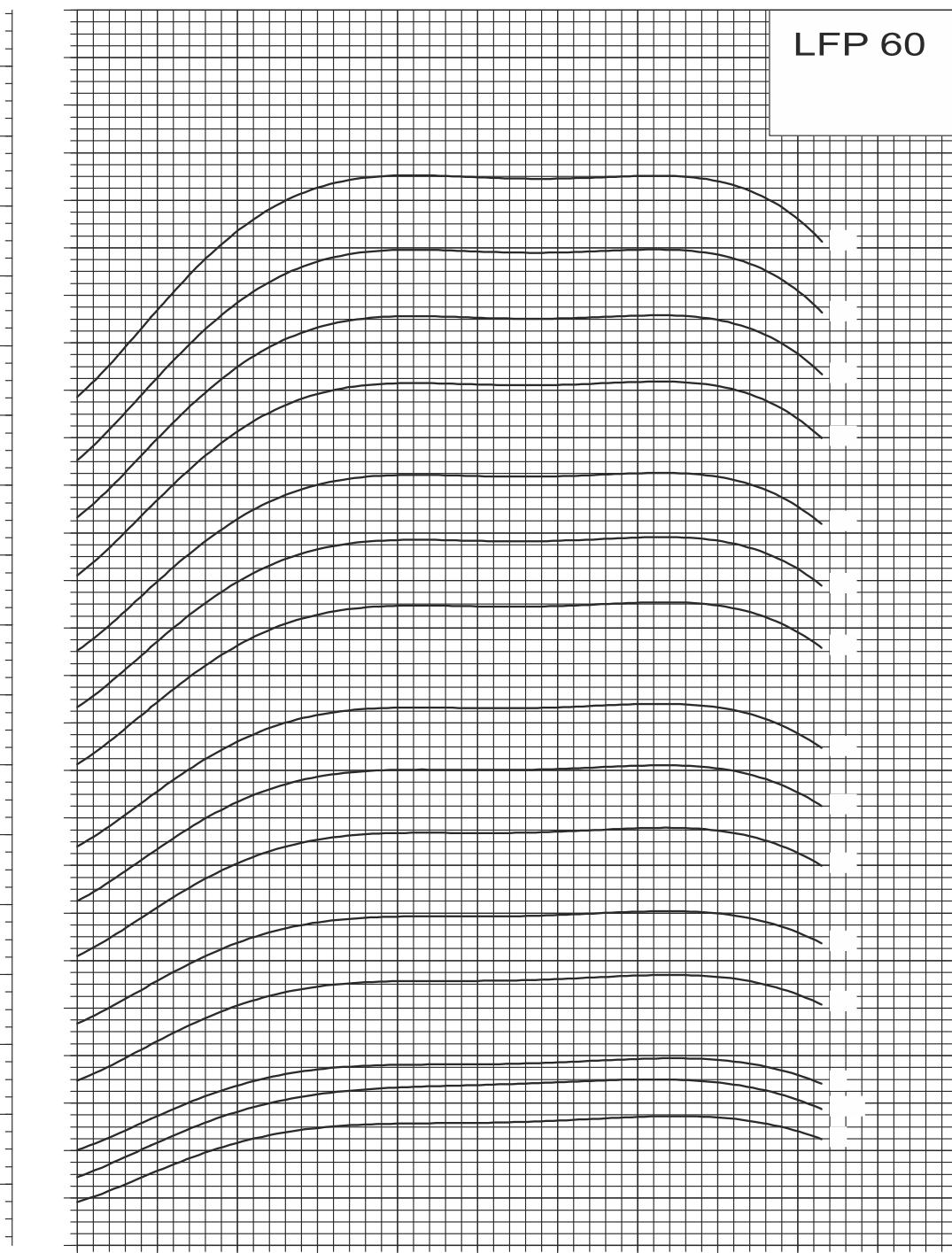
Power Curve - LFP 60

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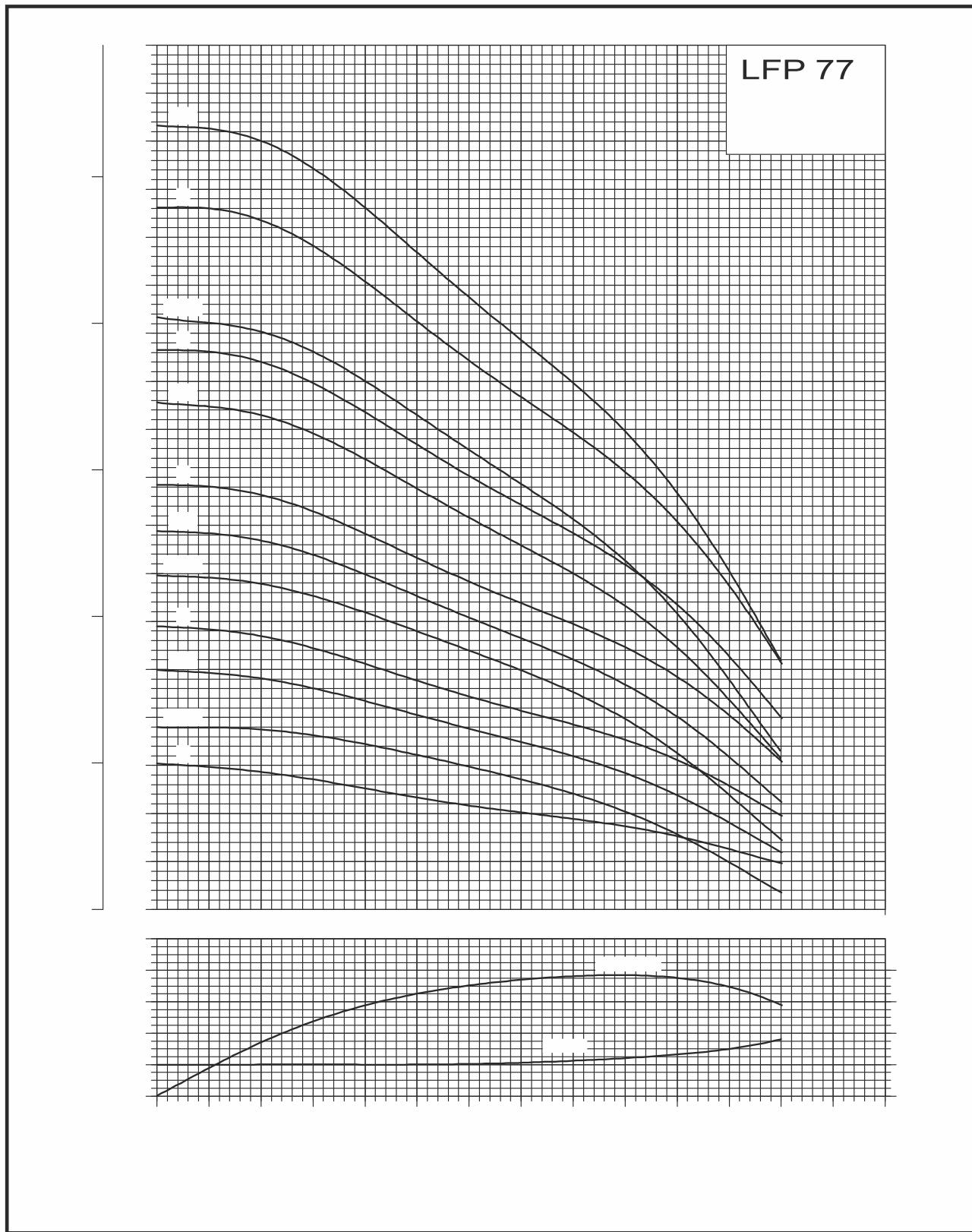
Power Curve - LFP 60

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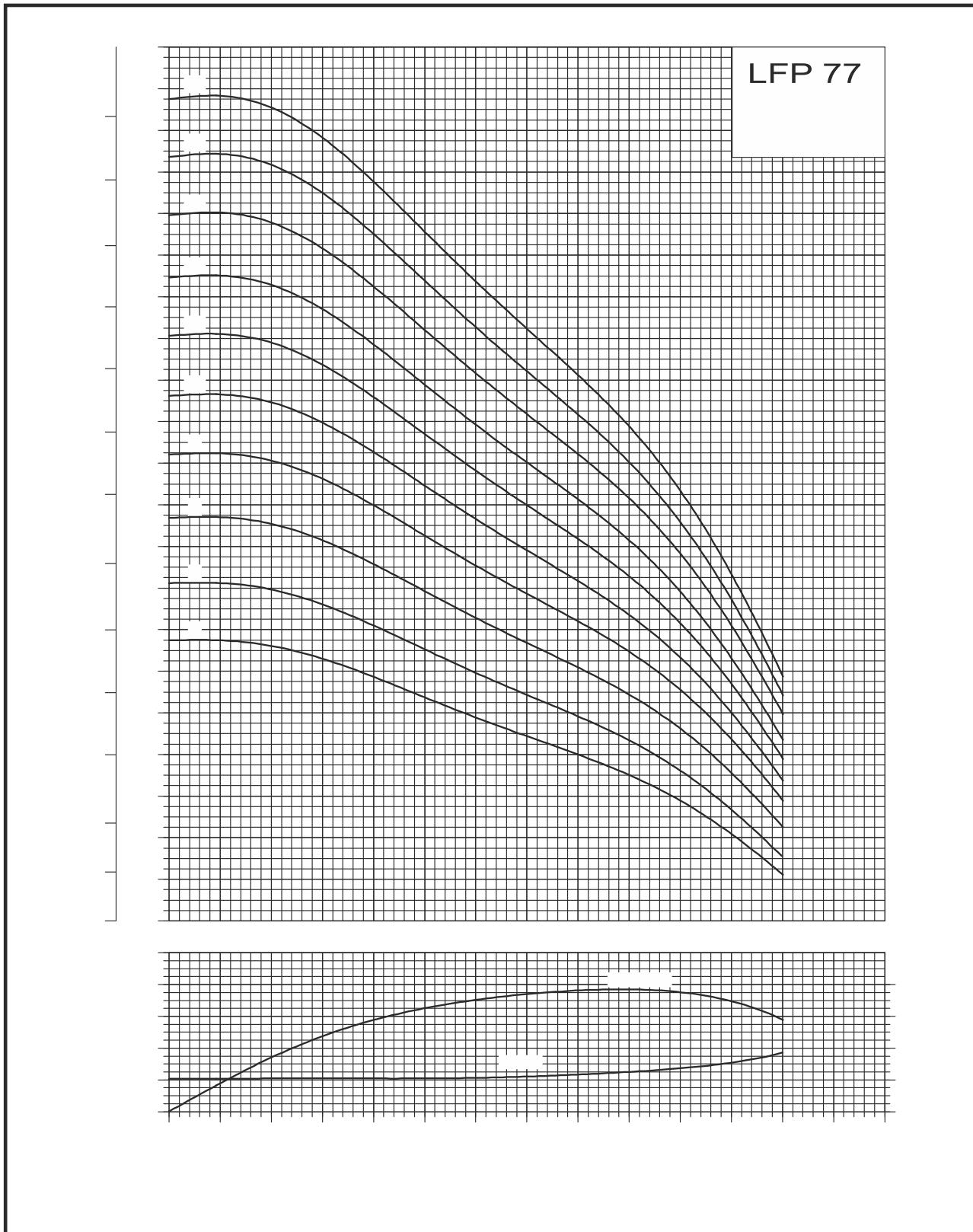
Performance Curve - LFP 77

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Performance Curve - LFP 77

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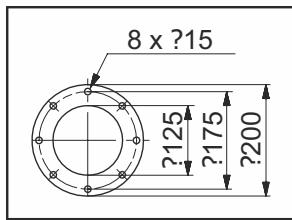
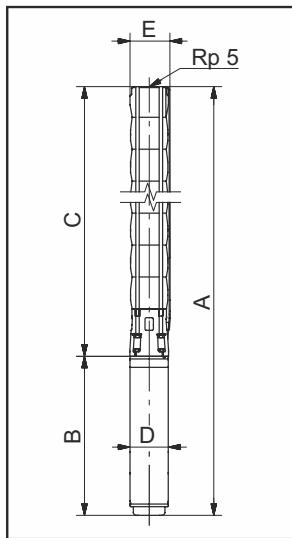


Technical Data - LFP 77

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Dimensions and Weights



Pump type	Motor		Dimensions [mm]								Net weight [kg]		
	Type Inch/HP	Power kW/HP	Rp 5" Connection				Rp 5" Flange						
			A	C	E*	E**	A	C	E*	E**	B	D	
LFP77-1	LFP6/7.5	5.5 / 7.5	1162	618	178	186	1162	618	200	200	544	138	55
LFP77-2BA	LFP6/10	7.5 / 10	1320	746	178	186	1320	746	200	200	574	138	63
LFP77-2A	LFP6/12.5	9.2 / 12.5	1350	746	178	186	1350	746	200	200	604	138	69
LFP77-2	LFP6/15	11 / 15	1380	746	178	186	1380	746	200	200	634	138	71
LFP77-3AA	LFP6/17.5	13 / 17.5	1538	874	178	186	1538	874	200	200	664	138	78
LFP77-3A	LFP6/20	15 / 20	1573	874	178	186	1573	874	200	200	699	138	82
LFP77-3	LFP6/25	18.5 / 25	1628	874	178	186	1628	874	200	200	754	138	87
LFP77-4B	LFP6/25	18.5 / 25	1756	1002	178	186	1756	1002	200	200	754	138	91
LFP77-4	LFP6/30	22 / 30	1816	1002	178	186	1816	1002	200	200	814	138	97
LFP77-5BB	LFP6/30	22 / 30	1944	1130	178	186	1944	1130	200	200	814	138	101
LFP77-5	LFP6/35	26 / 35	2004	1130	178	186	2004	1130	200	200	874	138	106
LFP77-6B	LFP6/40	30 / 40	2202	1258	178	186	2202	1258	200	200	944	138	118
LFP77-6	LFP6/50	37 / 50	2683	1258	178	186	2683	1258	200	200	1425	138	166
LFP77-7	LFP6/50	37 / 50	2811	1386	178	186	2811	1386	200	200	1425	138	169
LFP77-8	LFP8/60	45 / 60	2798	1528	200	204	2798	1528	205	205	1270	192	225
LFP77-9	LFP8/75	55 / 75	3006	1656	200	204	3006	1656	205	205	1350	192	244
LFP77-10	LFP8/75	55 / 75	3134	1784	200	204	3134	1784	205	205	1350	192	248
LFP77-11	LFP8/90	67 / 90	3402	1912	200	204	3402	1912	205	205	1490	192	277
LFP77-12	LFP8/90	67 / 90	3530	2040	200	204	3530	2040	205	205	1490	192	281
LFP77-13	LFP8/100	75 / 100	3758	2168	200	204	3758	2164	205	205	1590	192	304
LFP77-14	LFP8/125	92 / 125	4426	2596	200	202					1830	192	361
LFP77-15	LFP8/125	92 / 125	4554	2724	200	202					1830	192	365

* Maximum diameter of pump with one motor cable.

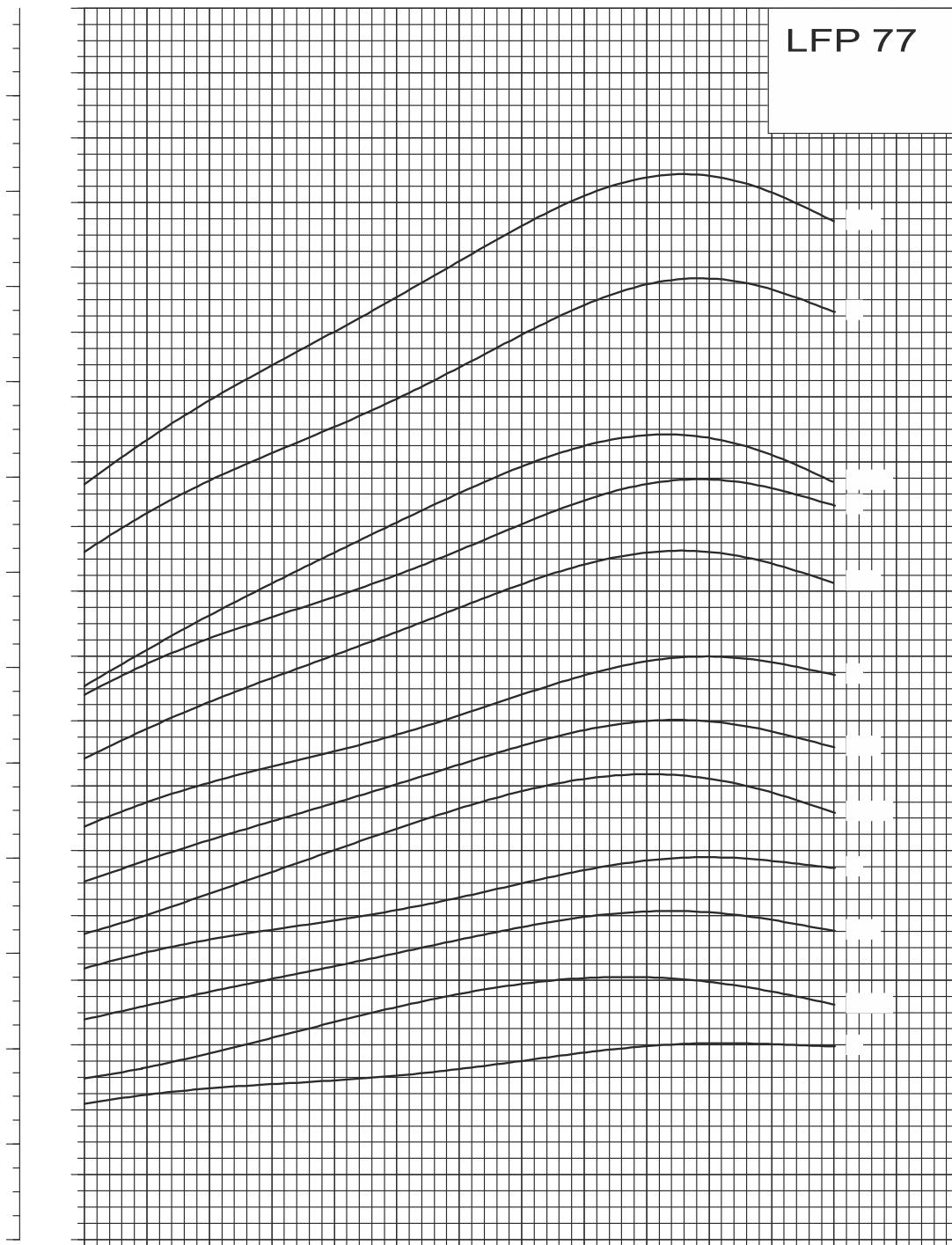
** Maximum diameter of pump with two motor cable.

Also available 45 kW in 6" joining.



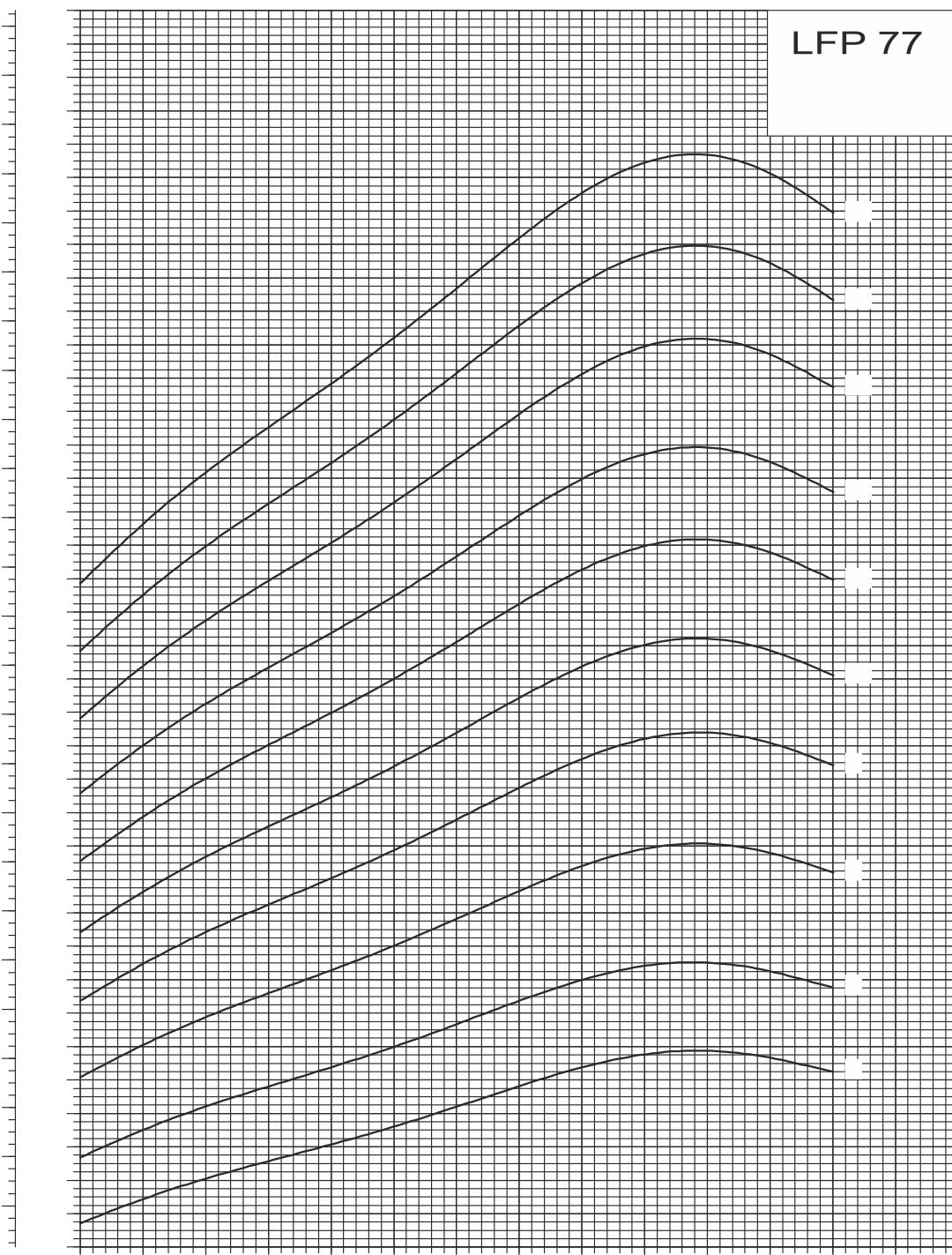
Power Curve - LFP 77

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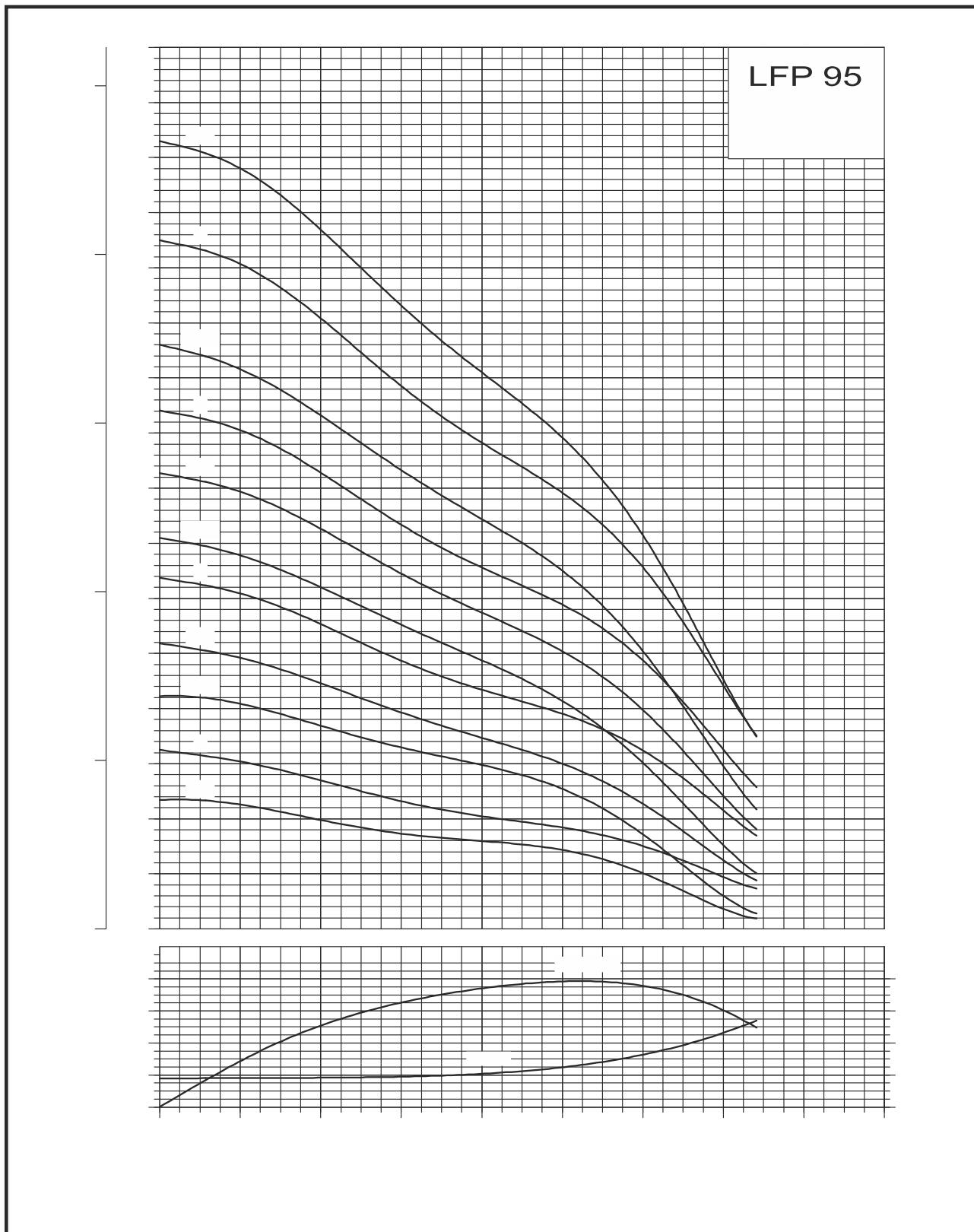
Power Curve - LFP 77

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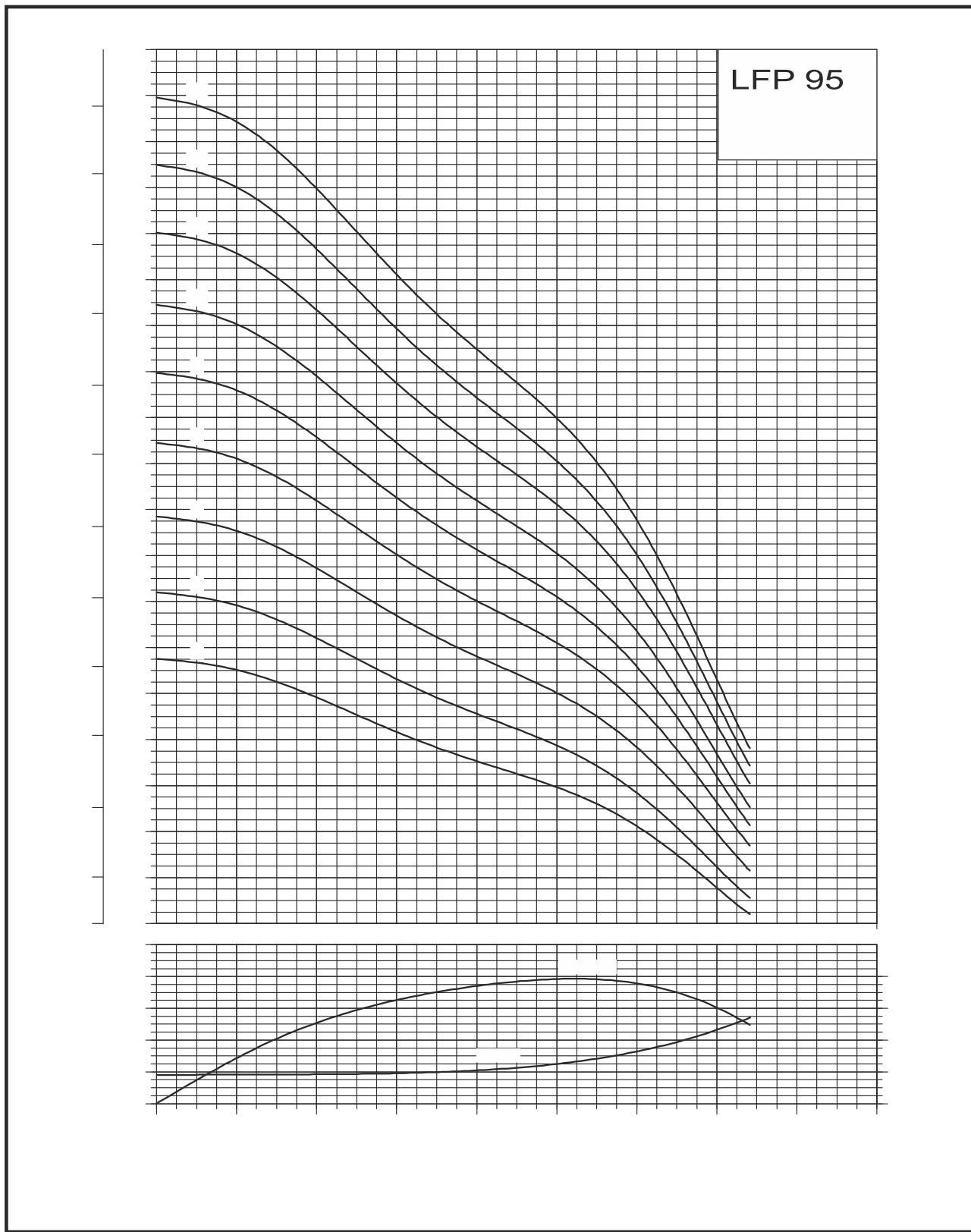
Performance Curve - LFP 95

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Performance Curve - LFP 95

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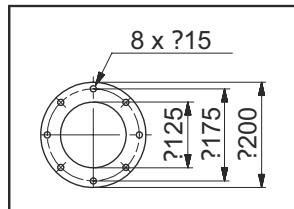
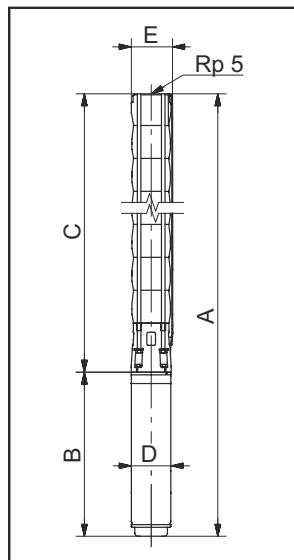


Technical Data - 95

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Dimensions and Weights



Pump type	Motor		Dimensions [mm]								Net weight [kg]		
	Type Inch/HP	Power [kW/HP]	Rp 5" Connection				Rp 5" Flange						
			A	C	E*	E**	A	C	E*	E**			
LFP95-1A	LFP6/ 7.5	5.5 / 7.5	1162	618	179	183	1162	618	200	200	544	138	55
LFP95-1	LFP6/ 10	7.5 / 10	1192	618	179	183	1192	618	200	200	574	138	59
LFP95-2AB	LFP6/12.5	9.2/12.5	1350	746	179	183	1350	746	200	200	604	138	69
LFP95-2B	LFP6/15	11 / 15	1380	746	179	183	1380	746	200	200	634	138	71
LFP95-2	LFP6/17.5	13 / 17.5	1410	746	179	183	1410	746	200	200	664	138	74
LFP95-3BB	LFP6/20	15 / 20	1573	874	179	183	1573	874	200	200	699	138	82
LFP95-3B	LFP6/25	18.5/25	1628	874	179	183	1628	874	200	200	754	138	87
LFP95-3	LFP6/30	22 / 30	1688	874	179	183	1688	874	200	200	815	138	93
LFP95-4AB	LFP6/30	22 / 30	1816	1002	179	183	1816	1002	200	200	814	138	97
LFP95-4	LFP6/35	26 / 35	1876	1002	179	183	1876	1002	200	200	874	138	103
LFP95-5B	LFP6/40	30 / 40	2074	1130	179	183	2074	1130	200	200	944	138	114
LFP95-5	LFP6/50	37 / 50	2555	1130	179	183	2555	1130	200	200	1425	138	162
LFP95-6	LFP6/50	37 / 50	2683	1258	179	183	2683	1258	200	200	1425	138	166
LFP95-7	LFP8/60	45 / 60	2670	1400	205	205	2670	1400	200	200	1270	192	221
LFP95-8	LFP8/75	55 / 75	2878	1528	205	205	2878	1528	200	202	1350	192	240
LFP95-9	LFP8/90	67 / 90	3146	1656	205	205	3146	1656	200	202	1490	192	270
LFP95-10	LFP8/90	67 / 90	3274	1784	205	205	3274	1784	200	202	1490	192	274
LFP95-11	LFP8/100	75 / 100	3502	1912	205	205					1590	192	296
LFP95-12	LFP8/125	92 / 125	3870	2040	205	205					1830	192	346
LFP95-13	LFP8/125	92 / 125	3998	2168	205	205					1830	192	350

* Maximum diameter of pump with one motor cable.

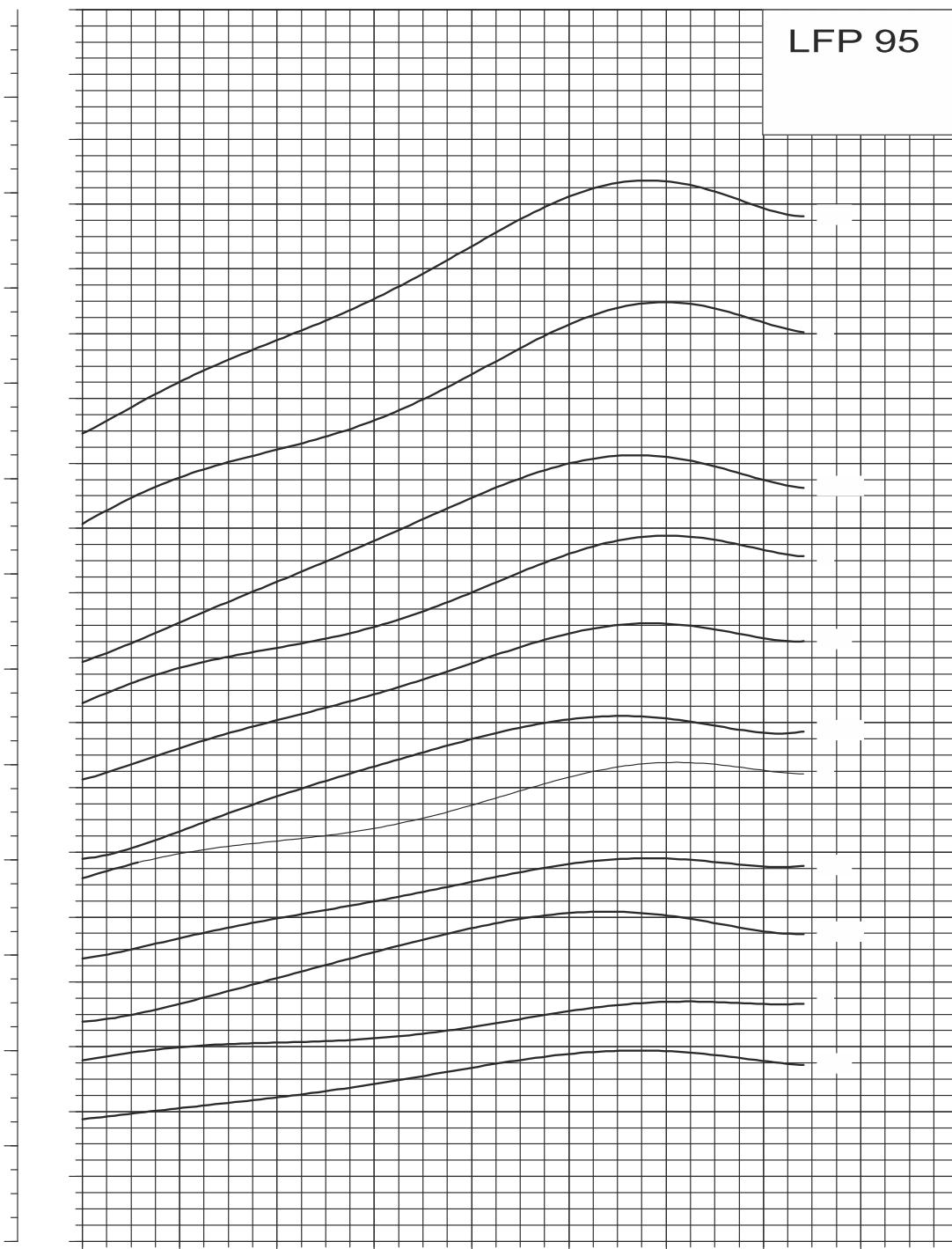
** Maximum diameter of pump with two motor cable.

Also available 45 kW in 6" joining.



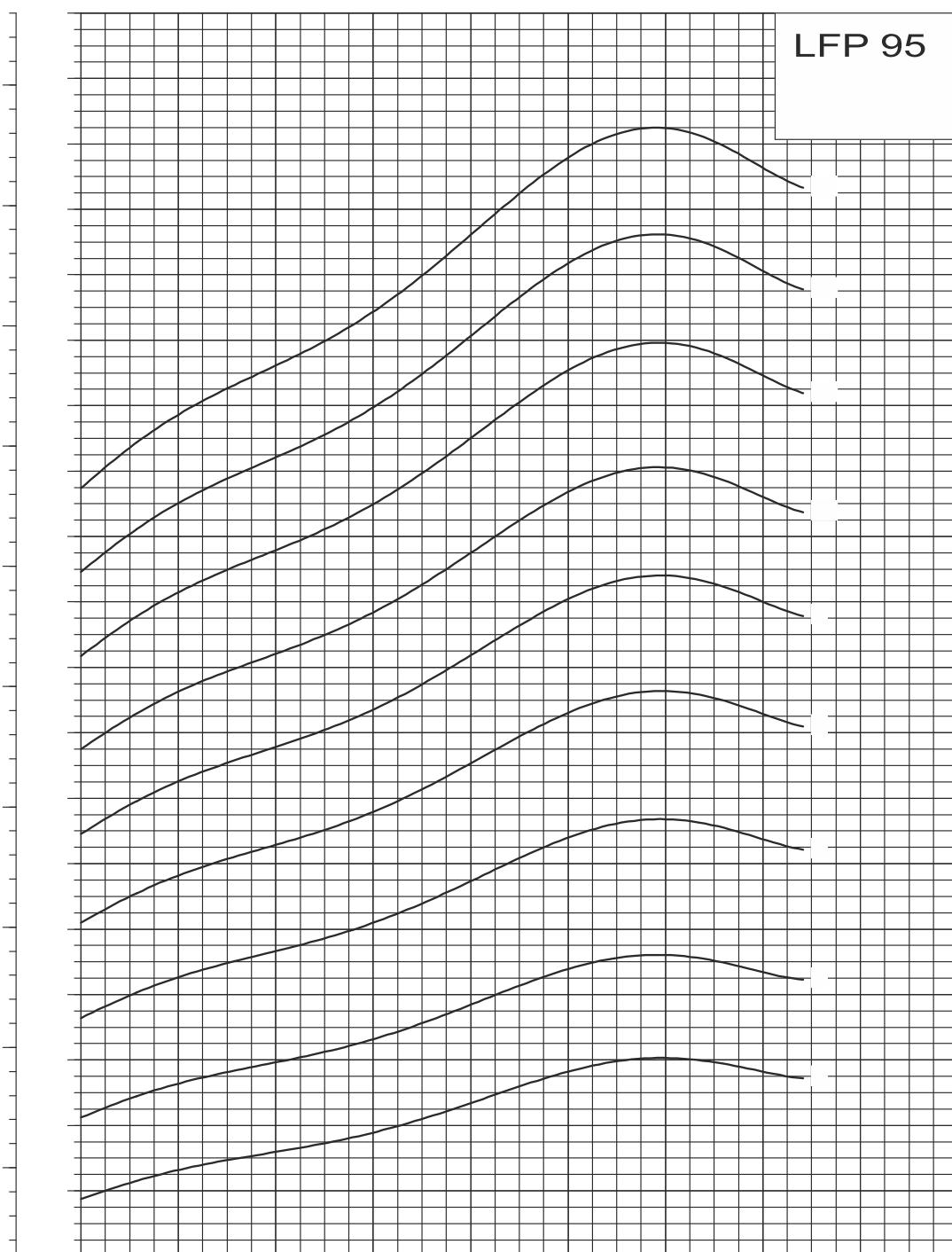
Power Curve - LFP 95

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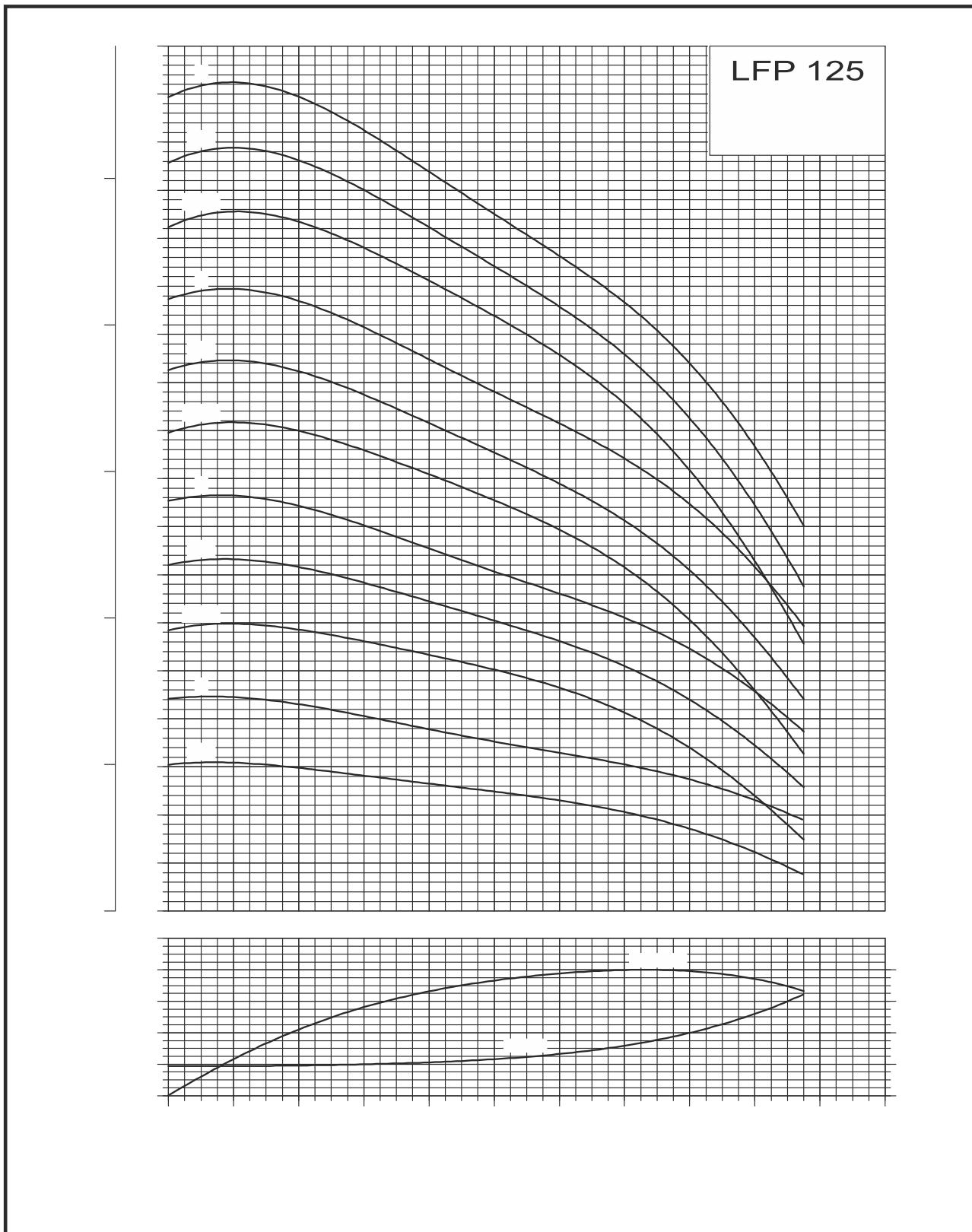
Power Curve - LFP 95

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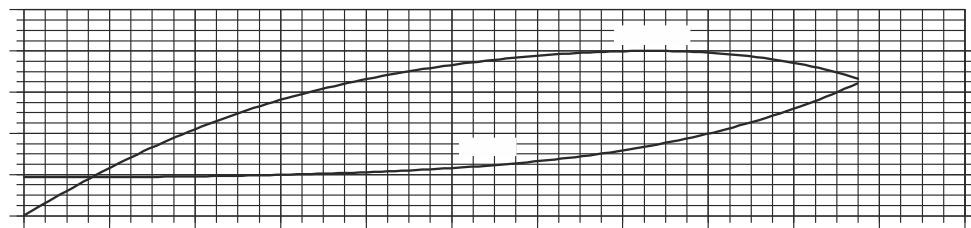
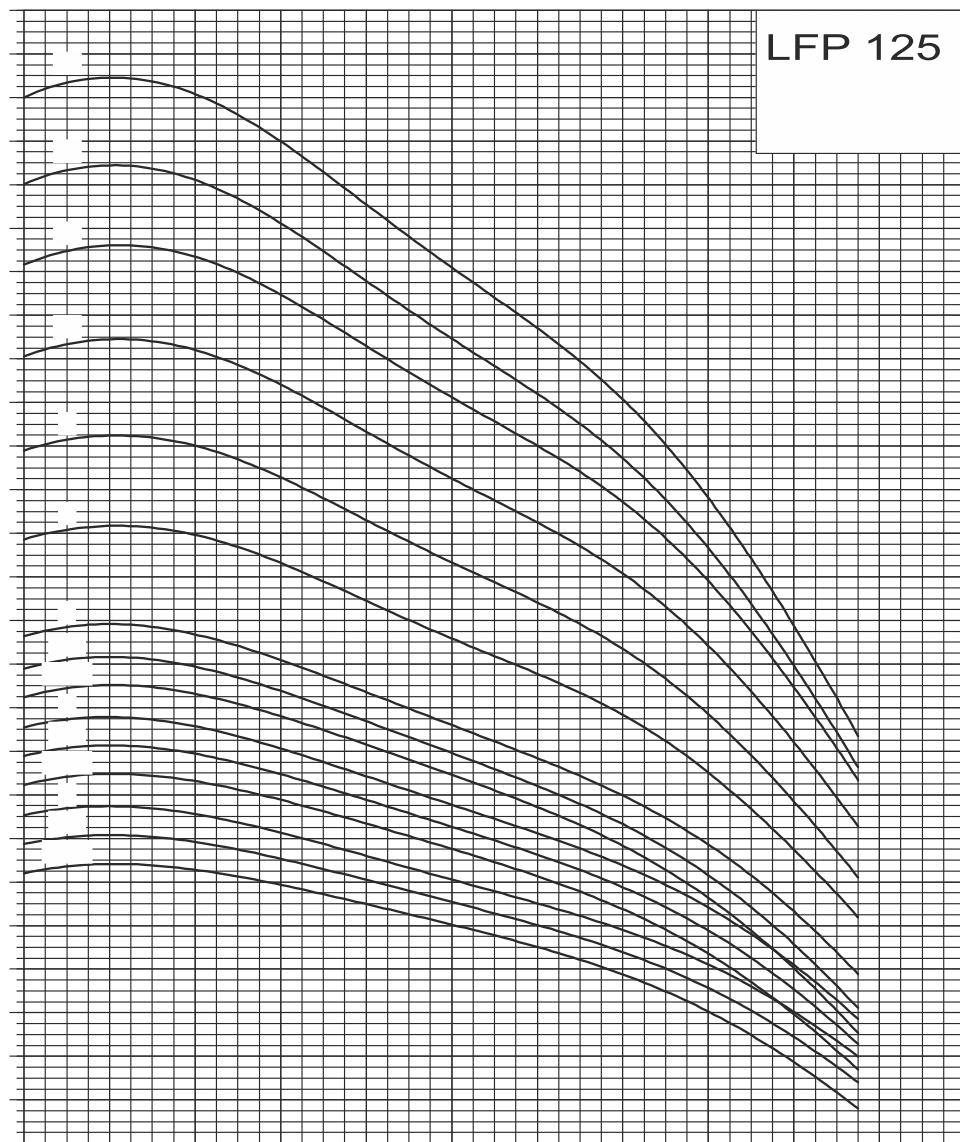
Performance Curve - LFP 125

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Performance Curve - LFP 125

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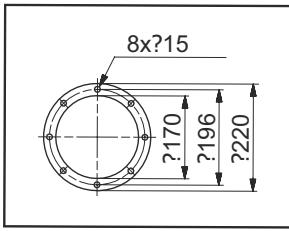
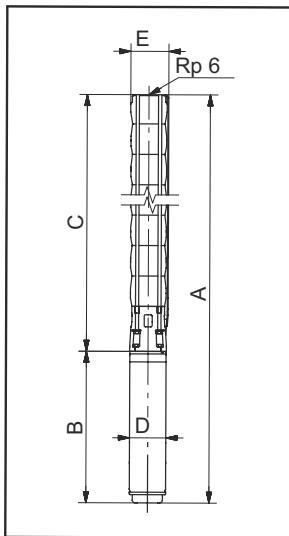


Technical Data - LFP 125

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Dimensions and Weights



Pump type	Motor		Dimensions [mm]								Net weight [kg]		
	Type Inch/HP	Power [kW/HP]	Rp 6" Connection				Rp 6" Flange						
			A	C	E*	E**	A	C	E*	E**	B	D	
LFP125-1A	LFP6/15	11 / 15	1286	652	211	215	1286	652	222	226	634	138	81
LFP125-1	LFP6/25	18.5 / 25	1406	652	211	215	1406	652	222	226	754	138	93
LFP125-2AA	LFP6/30	22 / 30	1621	807	211	215	1621	807	222	226	814	138	105
LFP125-2A	LFP 6/35	26 / 35	1681	807	211	215	1681	807	2522	226	874	138	111
LFP125-2	LFP 6/40	30/40	1751	807	211	215	1751	807	222	226	944	138	119
LFP125-3AA	LFP6/50	37 / 50	2388	963	211	215	2388	963	222	226	1425	138	172
LFP125-3A	LFP 6/50	37/50	2388	963	211	215	2388	963	222	226	1425	138	172
LFP125-3	LFP8/60	45 / 60	2233	963	213	219	2233	963	229	232	1270	192	226
LFP125-4AA	LFP 8/75	55 / 75	2468	1118	213	219	2468	1118	229	232	1350	192	247
LFP125-4A	LFP8/75	55 / 75	2468	1118	213	219	2468	1118	229	232	1350	192	247
LFP125-4	LFP 8/90	67/90	2608	1118	213	219	2608	1118	229	232	1490	192	273
LFP125-5AA	LFP 8/100	75/100	2864	1274	213	219					1590	192	296
LFP125-5A	LFP 8/100	75 / 100	2864	1274	213	219					1590	192	296
LFP125-5	LFP 8/100	75 / 100	2864	1274	213	219					1590	192	296
LFP125-6AA	LFP 8/100	75 / 100	3019	1429	213	219					1590	192	302
LFP125-6A	LFP8/125	92 / 125	3259	1429	213	219					1830	192	348
LFP 125-6	LFP8/125	92 / 125	3259	1429	213	219					1830	192	348
LFP125-7AA	LFP 8/125	92/125	3415	1585	213	219					1830	192	354
LFP125-7A	LFP 8/125	92/125	3415	1585	213	219					1830	192	354
LFP125-7	LFP 10/150	110 / 150	3645	1585	213	219					2060	192	404
LFP125-8	LFP 10/200	147/200	3962	2092	237	237					1870	237	532
LFP12- 9	LFP 10/200	147 / 200	4118	2248	237	237					1870	237	538
LFP125-10	LFP 10/200	147 / 200	4473	2403	237	237					2070	237	609
LFP125-11	LFP10/250	185/250	4779	2559	237	237					2220	237	655
LFP125-12	LFP 10/250	185 / 250	4527	2793	286	286					1734	286	687
LFP125-13	LFP 10/250	185 / 250	4682	2948	286	286					1734	286	693

* Maximum diameter of pump with one motor cable.

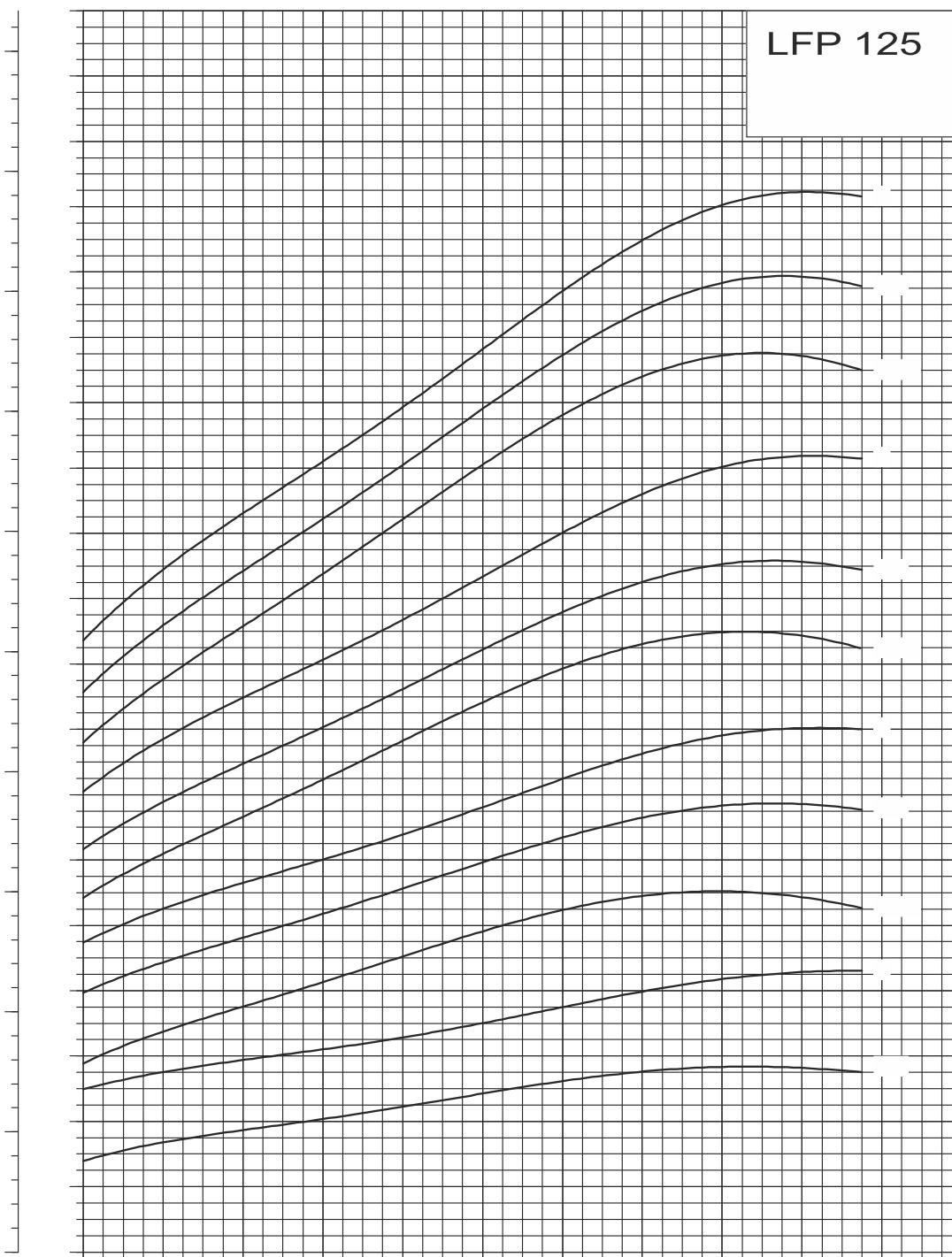
** Maximum diameter of pump with two motor cables.

Also available 45 kW in 6" joining.



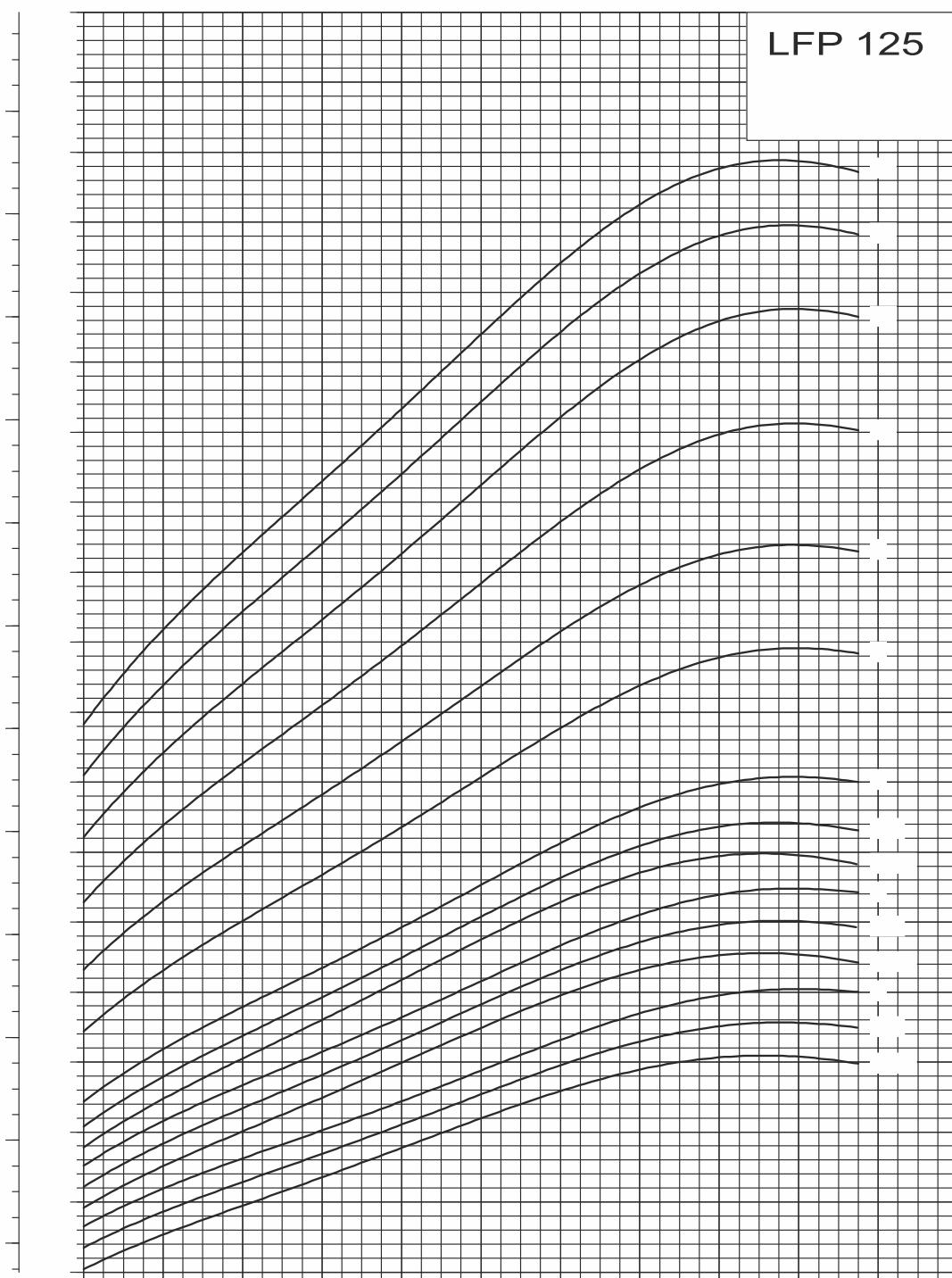
Power Curve - LFP 125

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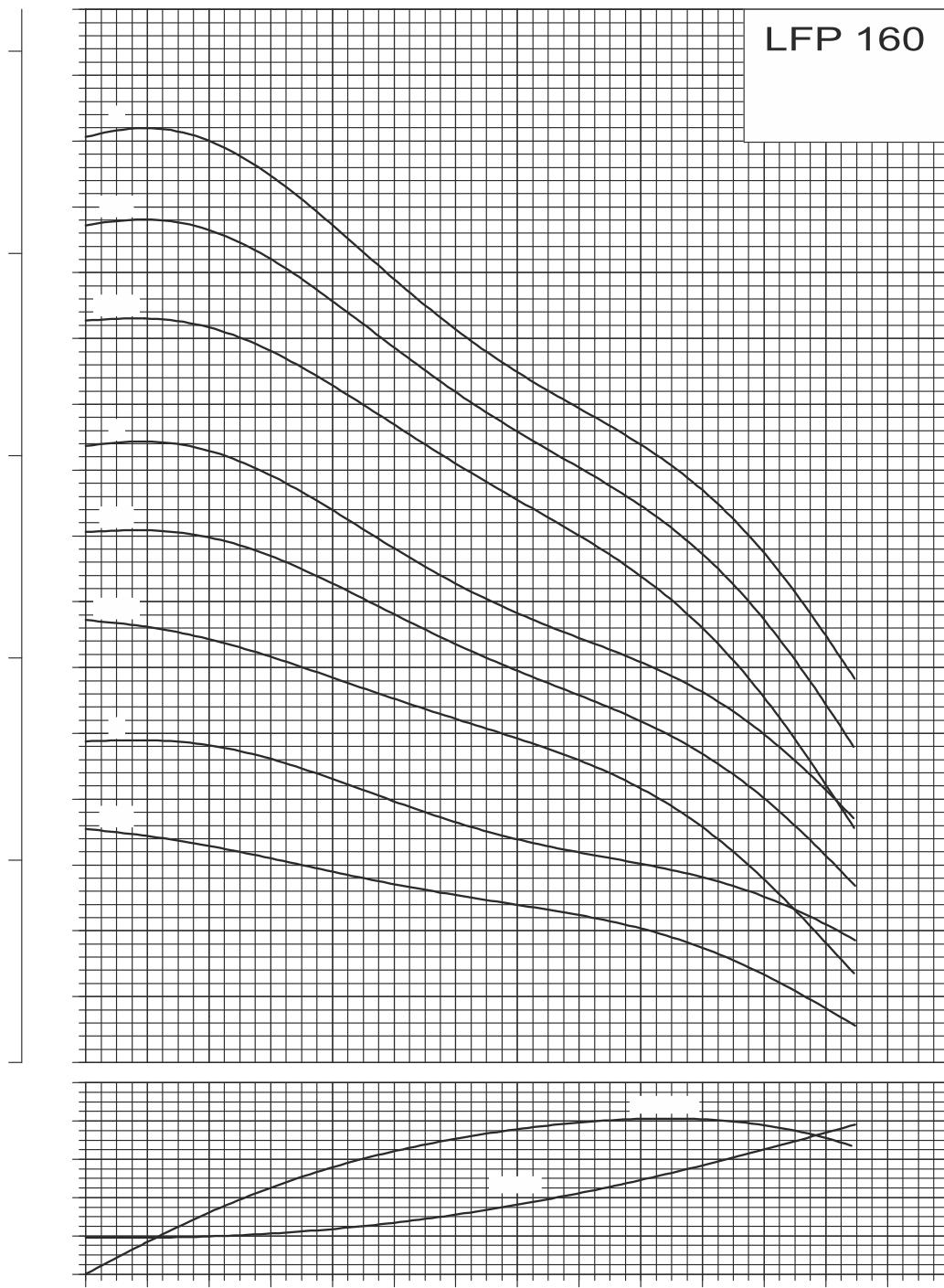
Power Curve - LFP 125

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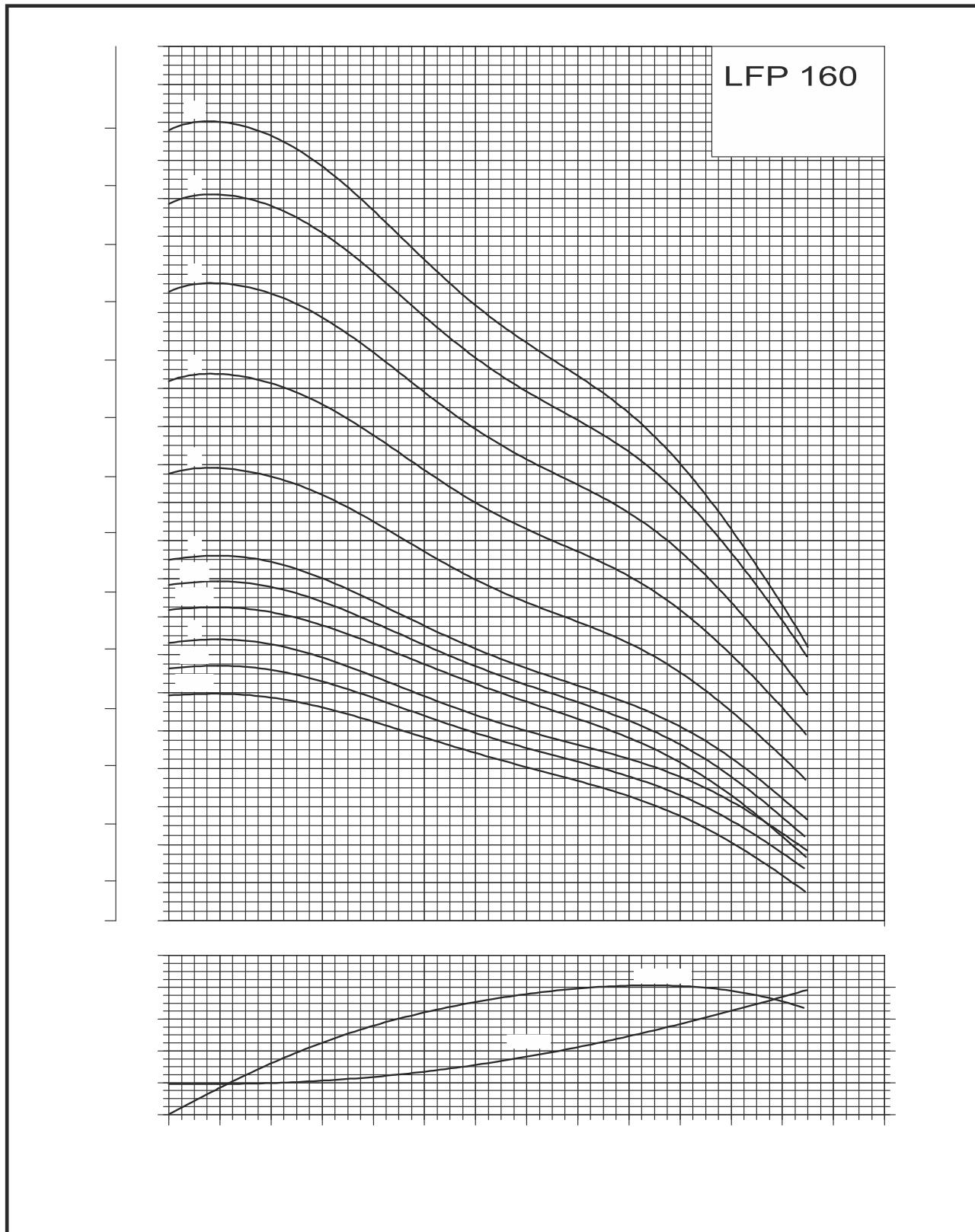
Performance Curve - LFP 160

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Performance Curve - LFP 160

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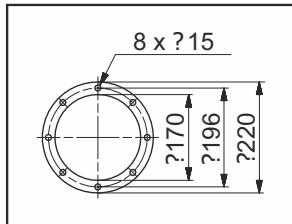
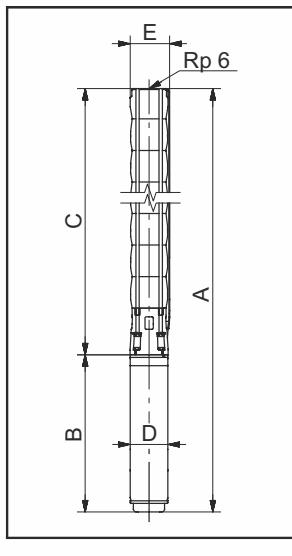


Technical Data - LFP 160

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Dimensions and Weights



Pump type	Motor		Dimensions [mm]								B	D	Net weight [kg]			
	Type Inch/HP	Power [kW/HP]	Rp 6" Connection				Rp 6" Flange									
			A	C	E*	E**	A	C	E*	E**						
LFP160-1A	LFP6/20	15 / 20	1351	652	211	215	1351	652	222	226	699	138	88			
LFP160-1	LFP6/30	22 / 30	1466	652	211	215	1466	652	222	226	814	138	99			
LFP160-2AA	LFP6/35	26 / 35	1681	807	211	215	1681	807	222	226	874	138	111			
LFP160-2A	LFP6/50	37 / 50	2232	807	211	215	2232	807	222	226	1425	138	166			
LFP160-2	LFP6/50	37 / 50	2232	807	211	215	2232	807	222	226	1425	138	166			
LFP160-3AA	LFP8/60	45 / 60	2233	963	213	219	2233	963	229	232	1270	192	226			
LFP160-3A	LFP8/75	55 / 75	2313	963	213	219	2313	963	229	232	1350	192	241			
LFP160-3	LFP8/75	55 / 75	2313	963	213	219	2313	963	229	232	1350	192	241			
LFP160-4AA	LFP8/90	67 / 90	2608	1118	213	219					1490	192	271			
LFP160-4A	LFP8/100	75 / 100	2708	1118	213	219					1590	192	290			
LFP160-4	LFP8/100	75 / 100	2708	1118	213	219					1590	192	290			
LFP160-5AA	LFP8/125	92 / 125	3104	1274	213	219					1830	192	342			
LFP160-5A	LFP8/125	92 / 125	3104	1274	213	219					1830	192	342			
LFP160-5	LFP8/125	92 / 125	3104	1274	213	219					1830	192	342			
LFP160-6	LFP10/150	110 / 150	3789	1729	213	219					2060	192	408			
LFP160-7	LFP10/200	137 / 200	3807	1937	237	237					1870	237	526			
LFP160-8	LFP10/200	147 / 200	4162	2092	237	237					2070	237	597			
LFP160-9	LFP10/250	185 / 250	4468	2248	237	237					2220	237	643			
LFP160-10	LFP10/250	185 / 250	4216	2482	286	286					1734	286	675			

* Maximum diameter of pump with one motor cable.

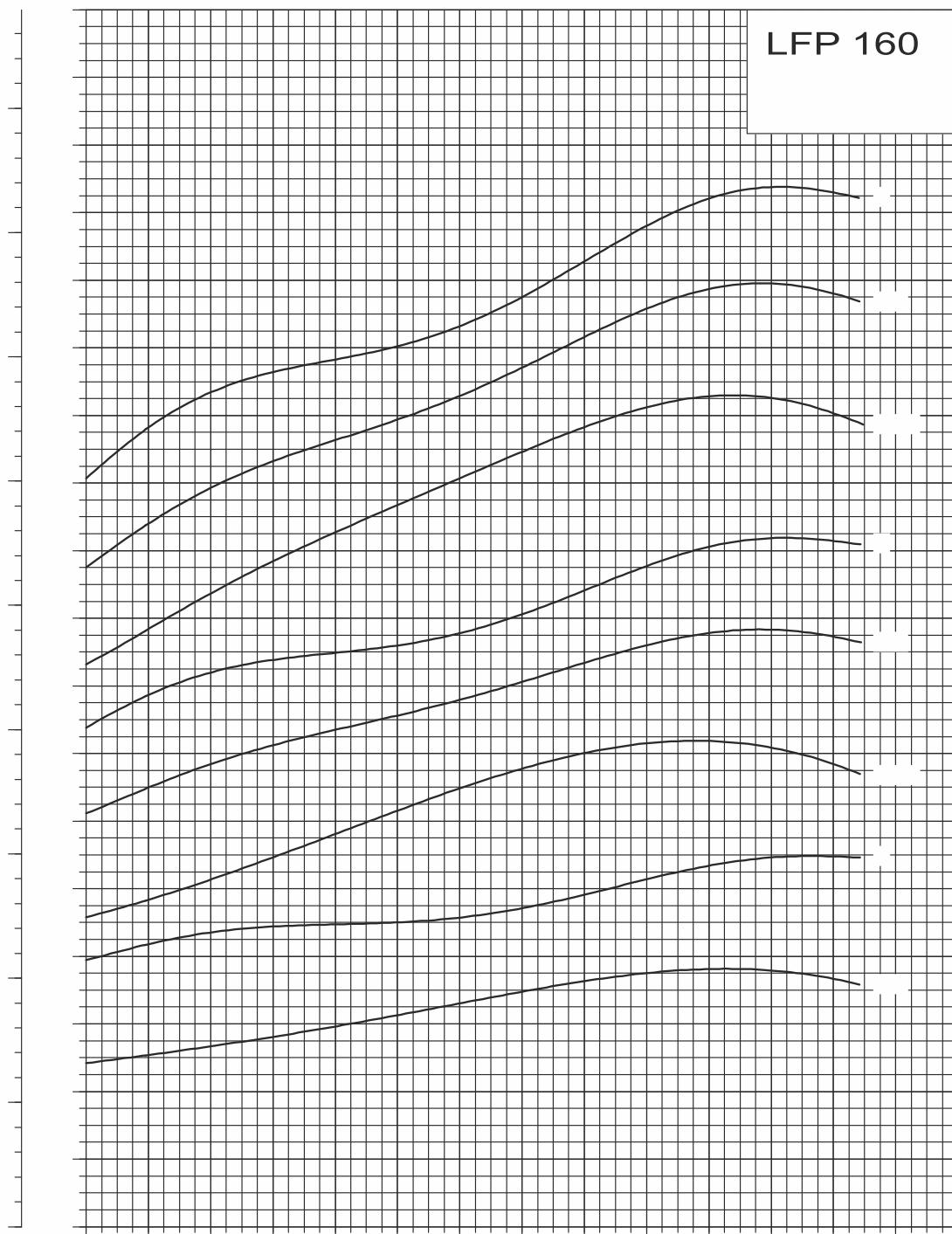
** Maximum diameter of pump with two motor cable.

Also available 45 kW in 6" joining.



Power Curve - LFP 160

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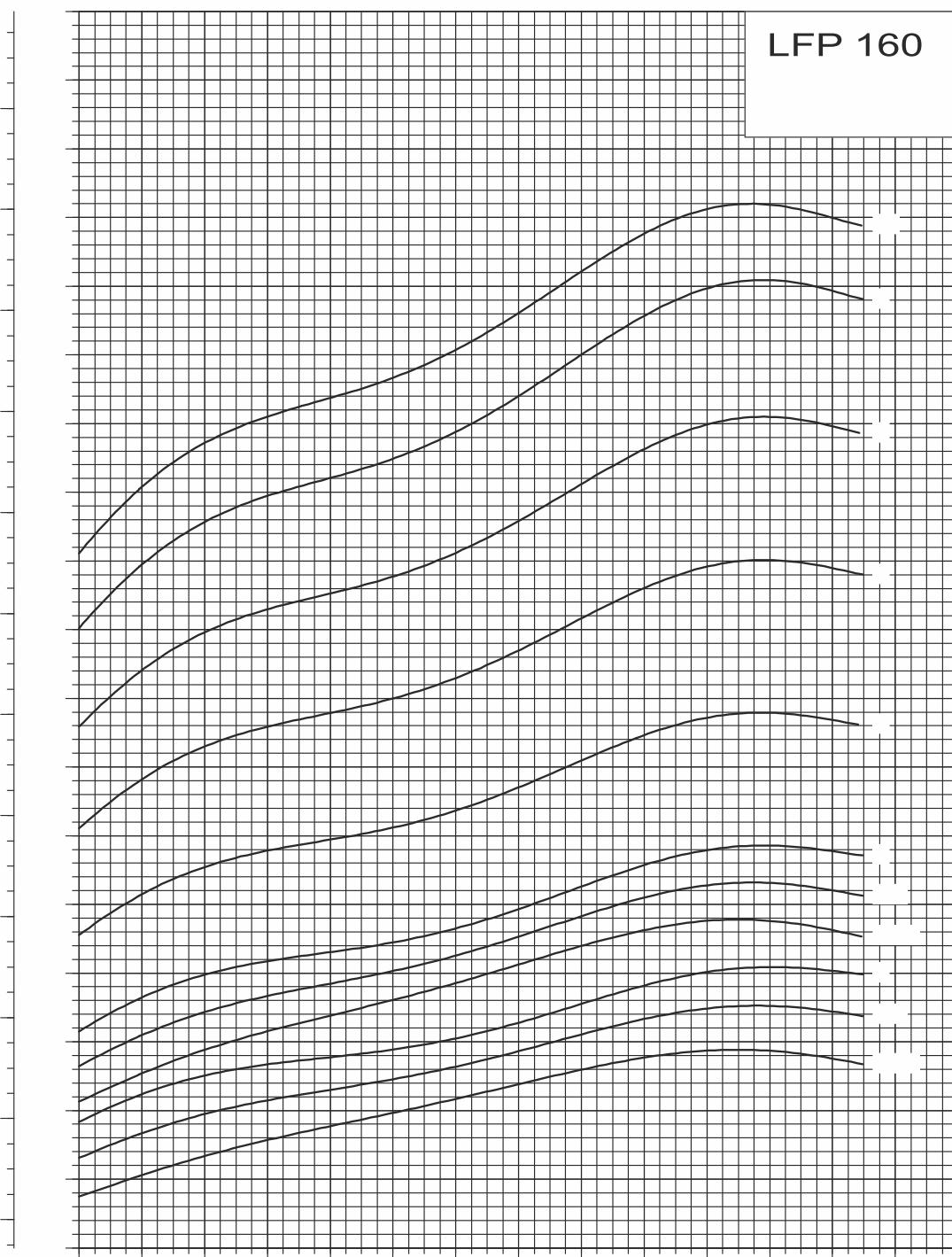


Table of Head Losses in Ordinary Pipes

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Upper figures indicate the velocity of water in m/sec.

Lower figures indicate head in metres per 100 metres of straight pipes

Quantity of Water m^3/h	Head Losses In Ordinary Water Pipes																
	Litres/min.	Litres/sec.	Nominal Pipe Diameter in Inches and Internal Diameter in (mm)														
			1/2" 15.75	3/4" 21.25	1 27.00	1 1/4" 35.75	1 1/2 41.25	2" 52.50	2 1/2" 68.00	3" 80.25	3 1/2" 92.50	4" 105.0	5" 130.0	6" 155.5			
0.6	10	0.16	0.855 9.910	0.470 2.407	0.292 0.784												
0.9	15	0.25	1.282 20.11	0.705 4.862	0.438 1.570	0.249 0.416											
1.2	20	0.33	1.710 33.53	0.940 8.035	0.584 2.588	0.331 0.677	0.249 0.346										
1.5	25	0.42	2.138 49.93	1.174 11.91	0.730 3.834	0.415 1.004	0.312 0.510										
1.8	30	0.50	2.565 69.34	1.409 16.50	0.876 5.277	0.498 1.379	0.374 0.700	0.231 0.223									
2.1	35	0.58	2.993 91.54	1.644 21.75	1.022 6.949	0.581 1.811	0.436 0.914	0.269 0.291									
2.4	40	0.67		1.879 27.66	1.168 8.820	0.664 2.290	0.499 1.160	0.308 0.368									
3.0	50	0.83		2.349 41.40	1.460 3.403	0.830 1.719	0.623 0.544	0.385 0.159	0.229 0.159								
3.6	60	1.00		2.819 57.74	1.751 18.28	0.996 4.718	0.748 2.375	0.462 0.751	0.275 0.218								
4.2	70	1.12		3.288 76.49	2.043 24.18	1.162 6.231	0.873 3.132	0.539 0.988	0.321 0.287	0.231 0.131							
4.8	80	1.33			2.335 30.87	1.328 7.940	0.997 3.988	0.616 1.254	0.367 0.363	0.263 6.164							
5.4	90	1.50			2.627 38.30	1.494 9.828	1.122 4.927	0.693 1.551	0.413 0.449	0.269 0.203							
6.0	100	1.67			2.919 46.49	1.660 11.90	1.247 5.972	0.770 1.875	0.459 0.542	0.329 0.244	0.248 0.124						
7.5	125	2.08			3.649 70.41	2.075 17.93	1.558 8.967	0.962 2.802	0.574 0.809	0.412 0.365	0.310 0.185	0.241 0.101					
9.0	150	2.50				2.490 25.11	1.870 12.53	1.154 3.903	0.668 1.124	0.494 0.506	0.372 0.256	0.289 0.140					
10.5	175	2.92				2.904 33.32	2.182 16.66	1.347 5.179	0.803 1.488	0.576 0.670	0.434 0.338	0.337 0.184					
12	200	3.33				3.319 42.75	2.493 21.36	1.539 6.624	0.918 1.901	0.659 0.855	0.496 0.431	0.385 0.234	0.251 0.084				
15	250	4.17				4.149 64.86	3.117 32.32	1.924 10.03	1.147 2.860	0.823 1.282	0.620 0.646	0.481 0.350	0.314 0.126				
18	300	5.00				3.740 45.52	2.309 14.04	1.377 4.009	0.988 1.792	0.744 0.903	0.577 0.488	0.377 0.175	0.263 0.074				
24	400	6.67				4.987 78.17	3.078 24.04	1.836 6.828	1.317 3.053	0.992 1.530	0.770 0.829	0.502 0.294	0.351 0.124				
30	500	8.33				3.848 36.71	2.295 10.40	1.647 4.622	1.240 2.315	0.962 1.254	0.628 0.445	0.439 0.187					
36	600	10.0					46.18 51.84	2.753 14.62	1.976 6.505	1.488 3.261	1.155 1.757	0.753 0.623	0.526 0.260				
42	700	11.7						3.212 19.52	2.306 8.693	1.736 4.356	1.347 2.345	0.879 0.831	0.614 0.347				
48	800	13.3						3.671 25.20	2.295 11.18	1.984 5.582	1.540 3.009	1.005 1.066	0.702 0.445				
54	900	15.0						4.130 31.51	2.964 13.97	2.232 6.983	1.732 3.762	1.130 1.328	0.790 0.555				
60	1000	16.7						4.589 38.43	3.294 17.06	2.480 8.521	1.925 4.595	1.256 1.616	0.877 0.674				
75	1250	20.8							4.117 26.10	3.100 13.00	2.406 7.010	1.570 2.458	1.097 1.027				
90	1500	25.0							4.941 36.97	3.720 18.42	2.887 9.892	1.883 3.458	1.316 1.444				
105	1750	29.2								4.340 24.76	3.368 13.30	2.197 3.468	1.883 1.934	1.535 1.934			
120	2000	33.3								4.960 31.94	3.850 17.16	2.197 4.665	2.511 2.496	2.193 2.496			
150	2500	41.7									4.812 26.26	5.995	5.995	3.807			
180	3000	50.0										3.139 9.216	2.632 5.417				
240	4000	66.7										3.767 13.05	3.509 8.926				
300	5000	83.3										5.523 22.72	4.386 14.42				
90°C bends slide valves		1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.6	1.7	2.5				
T-pieces, non-return valves		4.0	4.0	4.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	7.0	9.0				

The table is calculated in accordance with H. Lang's new formula $a = 0.02$ and for a water temperature of 10°C

The head loss in bends, slide valves, T-Pieces and non-return valves is equivalent to the metres of straight of straight pipes stated in the last two lines of the table. To find the head loss in foot valves multiply the loss in T-pieces by two.



Table of Head Losses in Plastic Pipes

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Upper figures indicate the velocity of water in m/sec.

Lower figures indicate head in metres of straight pipes

Quantity of Water			PELM/PEH PN 10													
m ³ /h	Litres/min.	Litres/sec.	PELM				PEH									
			25 20.4	32 26.2	40 32.6	50 40.8	63 51.4	75 73.6	90 73.6	110 90.0	125 102.2	140 114.06	160 130.8	180 147.2		
0.6	10	0.16	0.49 1.8	0.30 0.66	0.19 0.27	0.12 0.085										
0.9	15	0.25	0.76 4.0	0.46 1.14	0.3 0.6	0.19 0.18	0.12 0.63									
1.2	20	0.33	1.0 6.4	0.61 2.2	0.39 0.9	0.25 0.28	0.16 0.11									
1.5	25	0.42	1.3 10.0	0.78 3.5	0.5 1.4	0.32 0.43	0.2 0.17	0.14 0.074								
1.8	30	0.50	1.53 13.0	0.93 4.6	0.6 1.9	0.38 0.57	0.24 0.22	0.17 0.092								
2.1	35	0.58	1.77 16.0	1.08 6.0	0.69 2.0	0.44 0.70	0.28 0.27	0.2 0.12								
2.4	40	0.67	2.05 22.0	1.24 7.5	0.80 3.3	0.51 0.93	0.32 0.35	0.23 0.16	0.16 0.063							
3.0	50	0.83	2.54 37.0	1.54 11.0	0.99 4.8	0.63 1.40	0.4 0.50	0.28 0.22	0.2 0.09							
3.6	60	1.00	3.06 43.0	1.85 15.0	1.2 6.5	0.76 1.90	0.48 0.70	0.34 0.32	0.24 0.13	0.16 0.050						
4.2	70	1.12	3.43 50.0	2.08 18.0	1.34 8.0	0.86 2.50	0.54 0.83	0.38 0.38	0.26 0.17	0.18 0.068						
4.8	80	1.33		2.47 25.0	1.59 10.5	1.02 3.00	0.64 1.20	0.45 0.50	0.31 0.22	0.2 0.084						
5.4	90	1.50		2.78 30.0	1.8 12.0	1.15 3.50	0.72 1.30	0.51 0.57	0.35 0.26	0.24 0.092	0.18 0.05					
6.0	100	1.67		3.1 39.0	2.0 16.0	1.28 4.6	0.8 1.80	0.56 0.73	0.39 0.30	0.26 0.12	0.2 0.07					
7.5	125	2.08		3.86 50.0	2.49 24.0	1.59 6.6	1.00 2.50	0.70 1.10	0.49 0.50	0.33 0.18	0.25 1.10	0.20 0.055				
9.0	150	2.50			3.00 33.0	1.91 8.6	1.20 3.5	0.84 1.40	0.59 0.63	0.39 0.24	0.30 0.13	0.24 0.075				
10.5	175	2.92			3.5 38.0	2.23 11.0	1.41 4.3	0.99 1.80	0.69 0.78	0.46 0.30	0.36 0.18	0.28 0.09				
12	200	3.33			3.99 50.0	2.55 14.0	1.60 5.5	1.12 2.40	0.78 1.0	0.52 0.40	0.41 0.22	0.32 0.12	0.25 0.065			
15	250	4.17				3.19 21.0	2.01 8.0	1.41 3.70	0.98 1.50	0.66 0.57	0.51 0.34	0.40 0.18	0.31 0.105	0.25 0.06		
18	300	5.00				3.82 28.0	2.41 10.5	1.69 4.60	1.20 1.95	0.84 0.77	0.61 0.45	0.48 0.25	0.37 0.13	0.29 0.085		
24	400	6.67					3.21 19.0	2.25 8.0	1.57 3.60	1.05 1.40	0.81 0.78	0.65 0.44	0.50 0.23	0.39 0.15		
30	500	8.33					4.01 28.0	2.81 11.5	1.96 5.0	1.0 2.0	1.02 1.20	0.81 0.63	0.62 0.33	0.49 0.21		
36	600	10.0					4.82 37.0	3.38 15.0	2.35 6.6	1.57 2.60	1.22 1.50	0.97 0.82	0.74 0.45	0.59 0.28		
42	700	11.7					5.64 47.0	3.95 24.0	2.75 8.0	1.84 3.50	1.43 1.90	1.13 1.10	0.87 0.60	0.69 0.40		
48	800	13.3						4.49 26.0	3.13 11.0	2.09 4.5	1.62 2.60	1.29 1.40	0.99 0.81	0.78 0.48		
54	900	15.0						5.07 33.0	3.53 13.5	2.36 5.5	1.83 3.20	1.45 1.70	1.12 0.95	0.88 0.58		
60	1000	16.7						5.64 40.0	3.93 16.0	2.63 6.7	2.04 3.90	1.62 2.2	1.24 1.2	0.96 0.75		
75	1250	20.8							4.89 25.0	3.27 9.0	2.54 5.0	2.02 3.0	1.55 1.6	1.22 0.95		
90	1500	25.0							5.88 33.0	3.93 13.0	3.05 8.0	2.42 4.1	1.86 2.3	1.47 1.40		
105	1750	29.2								6.86 44.0	4.59 17.5	3.56 9.7	2.83 5.7	2.17 3.2	1.72 1.9	
120	2000	33.3									5.23 23.0	4.06 13.0	3.23 7.0	2.48 4.0	1.96 2.4	
150	2500	41.7									6.55 34.0	5.08 18.0	4.04 10.5	3.10 6.0	2.45 3.5	
180	3000	50.0									7.86 45.0	6.1 27.0	4.85 14.0	3.72 7.6	2.94 2.4	
240	4000	66.7										8.13 43.0	6.47 24.0	4.96 13.0	3.92 7.5	
300	5000	83.3										8.08 33.0	6.2 18.0	4.89 11.0		4.89

The table is based on a nomogram .

Roughness : K =0.01mm

Water temperature : t =10°C

Subject to alterations





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