

EBARA

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SPECIFICATION

50Hz

Rev. 0

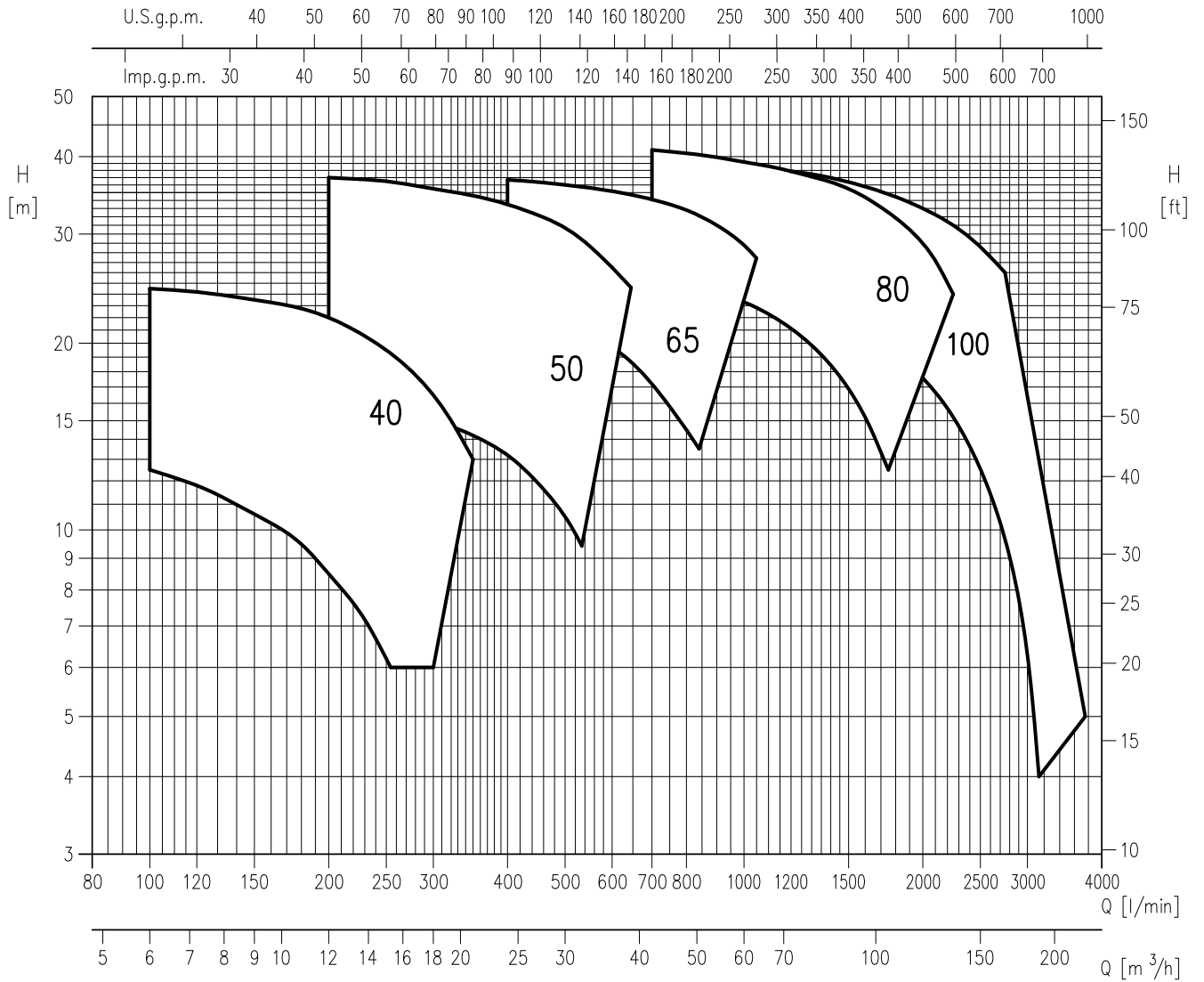
PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	min. -10 max +130
	Viscosity [cSt]	max 38
Maximum ambient temperature [°C]		40 (over ask for details)
Maximum working pressure [MPa]		1.0
Construction	Impeller	Closed centrifugal type
	Shaft seal type	Mechanical seal
	Bearing	On the motor
Pipe Connection	Suction	UNI 2223-29 PN16
	Discharge	UNI 2223-29 PN16
Material	Casing	CAST IRON
	Impeller	CAST IRON
	Casing cover	CAST IRON
	Shaft seal	Carbon/SiC/EPDM (SiC/SiC/NBR optional)
	Shaft	AISI 420
	Bracket	CAST IRON
Applicable standard of test		ISO 9906 – Annex A

MOTOR	
Type	Electric - TEFC Three Phase
Efficiency level (Reg. 640/2009)	IE2
No. of Poles	2
Rotation speed [min ⁻¹]	≈ 2900
Insulation Class	F
Protection degree (CEI EN 60034-5)	IP 55
Power rating [kW]	0.37 ÷ 37
[HP]	0.5 ÷ 55
Frequency [Hz]	50
Voltage [V]	230/400 ±10% up to 4 kW 400/690 ±10% 5.5kW and above
Over load protection	Provided by the user
Casing material	Alluminium (up to MEC 132)

SELECTION CHART

50Hz

Rev. 0



LPCD 2 Poles: 40, 50 Version

Pump type LPCD Three Phase	Power		Capacity														
	[kW]	[HP]	l/min	0	100	125	150	175	200	225	250	300	350	400	450	500	600
			m ³ /h	0	6,0	7,5	9	10,5	12	13,5	15	18	21	24	27	30	36
Metric head in meters																	
LPCD 40-125/0,75R	0,55	0,75	14,1	12,5	11,6	10,6	9,7	8,5	7,4	5,5	-	-	-	-	-	-	-
LPCD 40-125/0,75	0,75	1	16,9	15,3	14,5	13,7	12,8	11,5	10,4	9	6	-	-	-	-	-	-
LPCD 40-125/1,1	1,1	1,5	21,5	20,5	19,7	19,0	18,1	17,1	15,9	14,5	11,2	7,5	-	-	-	-	-
LPCD 40-125/1,5	1,5	2	25	24,5	24,1	23,5	22,9	22,0	20,8	19,5	16,5	13,0	-	-	-	-	-
LPCD 50-125/1,5	1,5	2	16,8	-	-	-	-	16	15,7	15,5	15,0	14,2	13,2	11,9	10,5	7	
LPCD 50-125/2,2	2,2	3	20	-	-	-	-	19,5	19,3	19,1	18,5	17,5	16,6	15,5	14,1	10,5	
LPCD 50-125/3	3	4	25	-	-	-	-	24,7	24,6	24,5	24,2	23,7	23	21,8	20,5	17	
LPCD 50-160/3	3	4	31	-	-	-	-	30,5	30,2	29,9	29	27,8	26,5	24,9	23	18	
LPCD 50-160/4	4	5,5	38	-	-	-	-	37	36,8	36,5	35,5	34,6	33,5	32,2	30,7	26,5	

LPCD 2 Poles: 65, 80, 100 Version

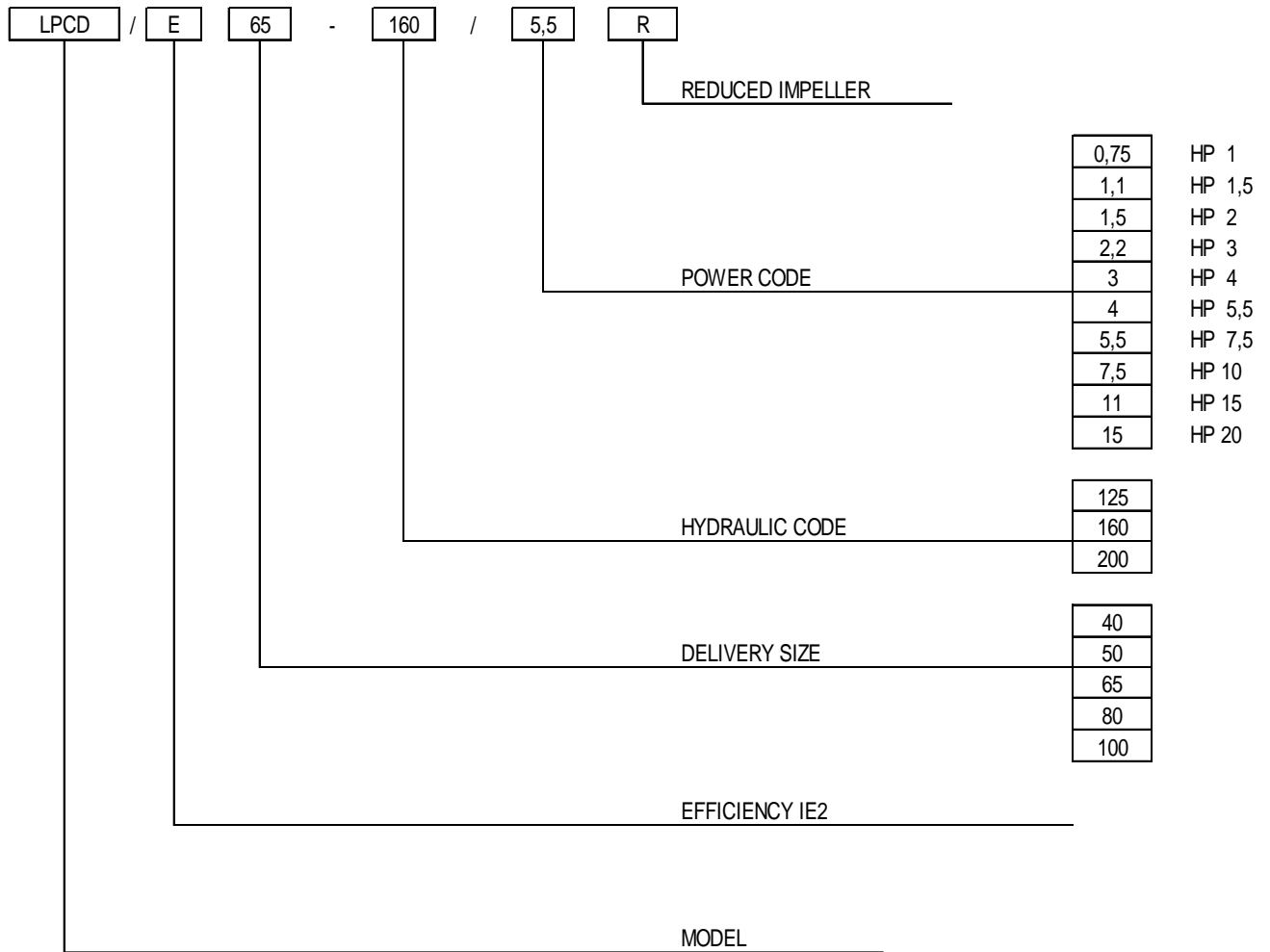
Pump type LPCD Three Phase	Power		Capacity																					
	[kW]	[HP]	l/min	0	350	400	450	500	600	700	800	900	1000	1250	1500	1750	2000	2250	2750	3000	3166	3500	3667	
			m ³ /h	0	21	24	27	30	36	42	48	54	60	75	90	105	120	135	165	180	190	210	220	
Metric head in meters																								
LPCD 65-160/3	3	4	24	23	22,5	22	21,3	19,7	17,2	14,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LPCD 65-160/4	4	5,5	27,5	27	26,6	26	25,5	24,2	22,5	20,2	17,6	-	-	-	-	-	-	-	-	-	-	-	-	-
LPCD 65-160/5,5	5,5	7,5	33	-	32,3	32	31,5	30,8	29,5	28	25,8	23,5	-	-	-	-	-	-	-	-	-	-	-	-
LPCD 65-160/7,5	7,5	10	37	-	36,7	36,4	36	35,2	34,1	32,8	31	28,8	27	-	-	-	-	-	-	-	-	-	-	-
LPCD 80-160/7,5	7,5	10	26,2	-	-	-	-	25,5	25,2	24,7	24	23,3	20,5	16,9	12,5	-	-	-	-	-	-	-	-	-
LPCD 80-160/11	11	15	31	-	-	-	-	30,5	30	29,5	29	27	24	20,2	16	-	-	-	-	-	-	-	-	-
LPCD 80-160/15R	12,5	17	37	-	-	-	-	36	35,5	35	34,5	32,8	30	27	23	19	-	-	-	-	-	-	-	-
LPCD 80-160/15	15	20	42	-	-	-	-	41	40,5	39,9	39,2	37,5	35,5	32,5	29	24	-	-	-	-	-	-	-	-
LPCD 100-200/11	11	15	25,5	-	-	-	-	-	-	-	-	24,5	23,5	22	20,5	18,5	16,0	10,5	7	4	-	-	-	-
LPCD 100-200/15R	15	20	29,5	-	-	-	-	-	-	-	-	28	27	26	24,5	23,2	20,5	15,5	12,5	11	7	5	-	-
LPCD 100-200/15	15	20	39	-	-	-	-	-	-	-	-	38,5	37,5	36,5	35	33	31	26	-	-	-	-	-	-

TYPE KEY AND CURVE SPECIFICATION

50Hz

Rev. 0

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)

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

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

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

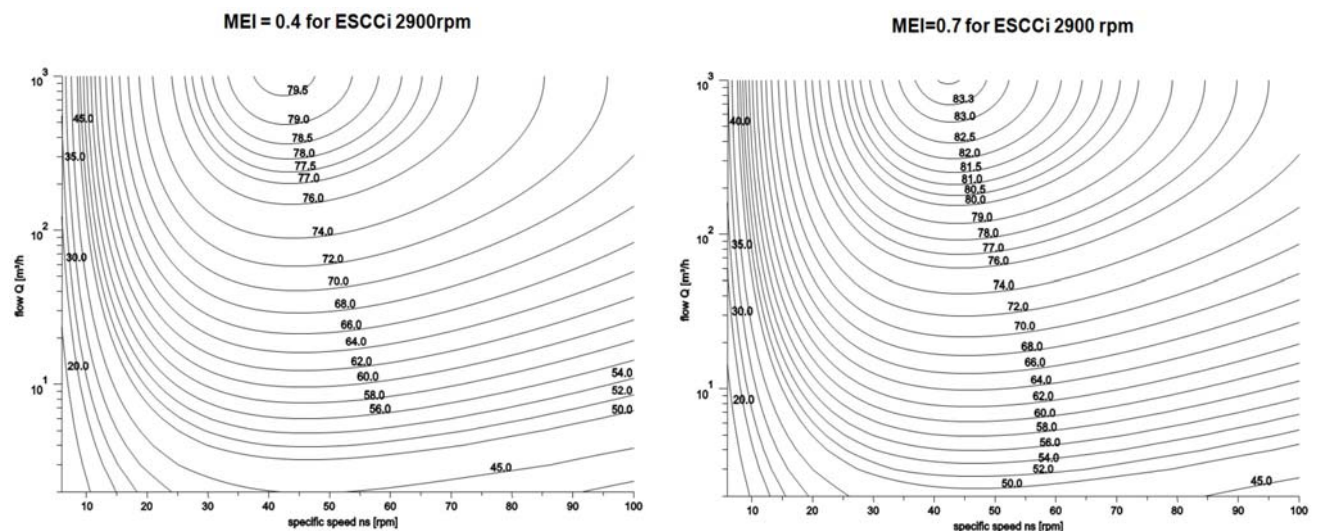
Symbols explanation:

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

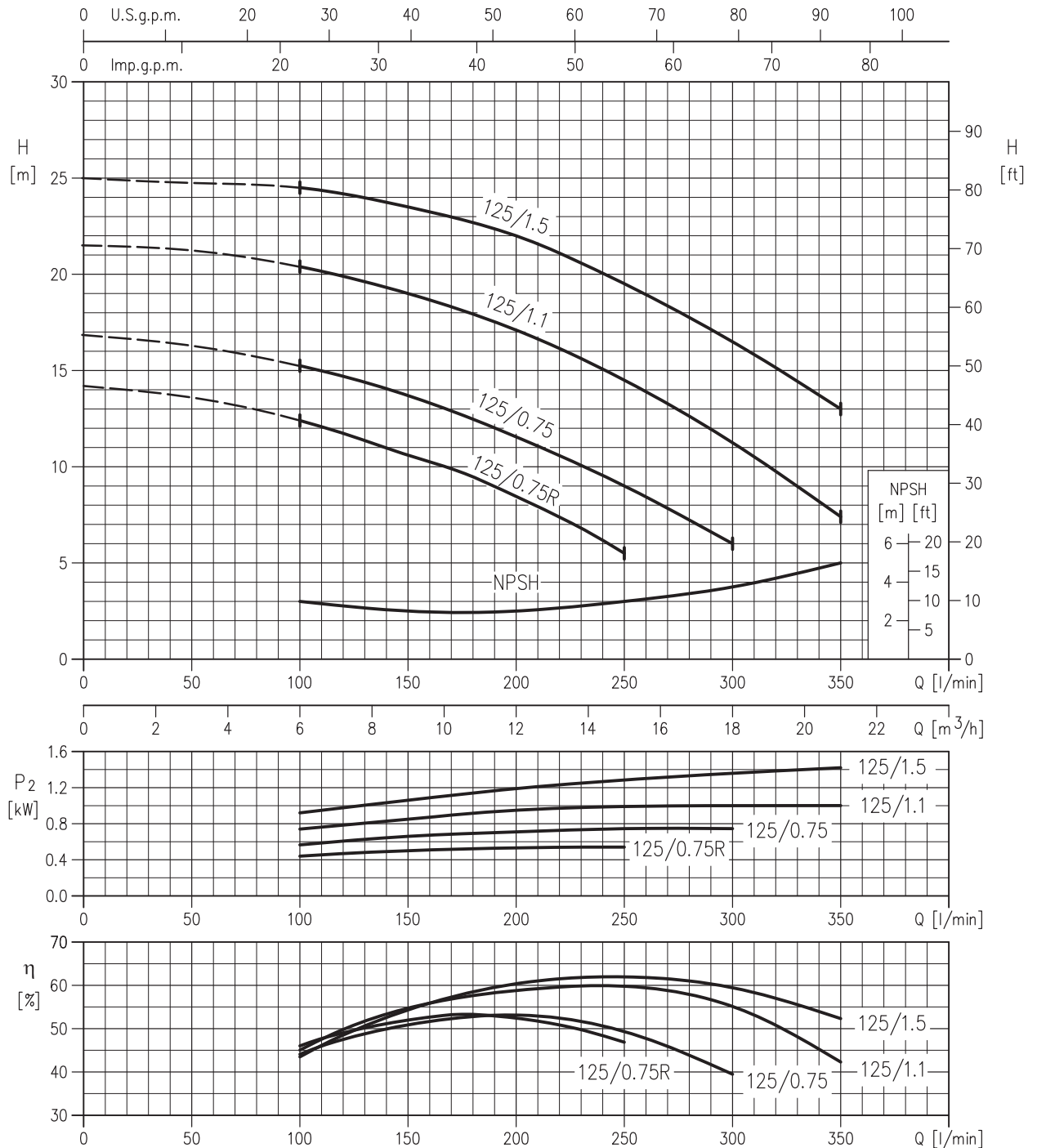
The minimum efficiency index (MEI) is a measure of the quality of a pump size in respect to its mean efficiency. The minimum efficiency index is based on the hydraulic efficiency and on the head at the best efficiency point.

The efficiency of a pump with trimmed impeller is usually lower than that of a pump with the full impeller diameter. The trimming of the impeller will adapt the pump to a fixed duty point, leading to reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.

The operation of these water pumps with variable duty points may be more efficient and economic when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.

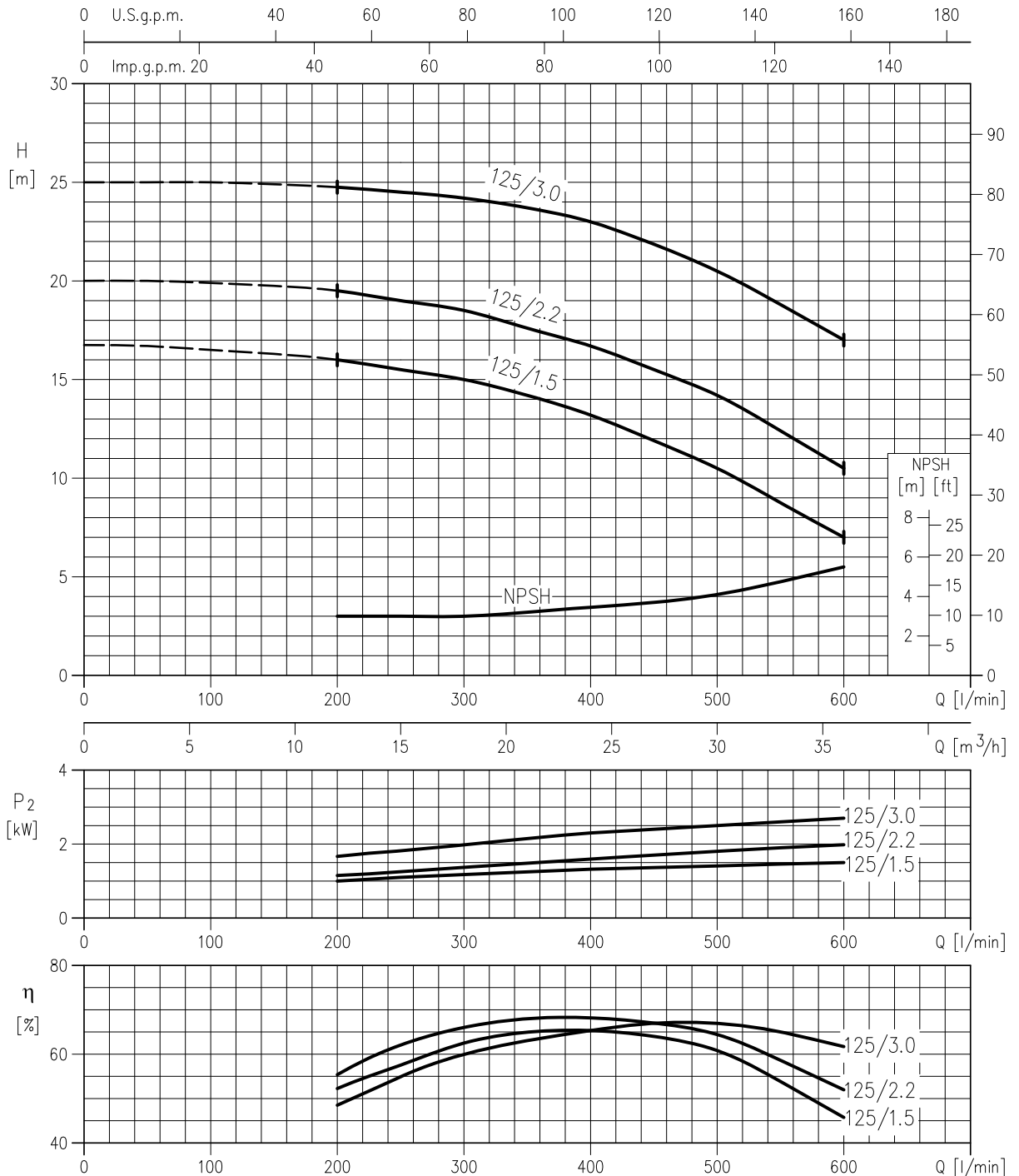


LPCD 40-125/0.75R (0.75 kW) MEI > 0.70 - Impeller diameter = 125 mm
 LPCD 40-125/0.75 (0.75 kW) MEI > 0.70 - Impeller diameter = 125 mm
 LPCD 40-125/1.1 (1.1 kW) MEI > 0.70 - Impeller diameter = 125 mm
 LPCD 40-125/1.5 (1.5 kW) MEI > 0.70 - Impeller diameter = 125 mm



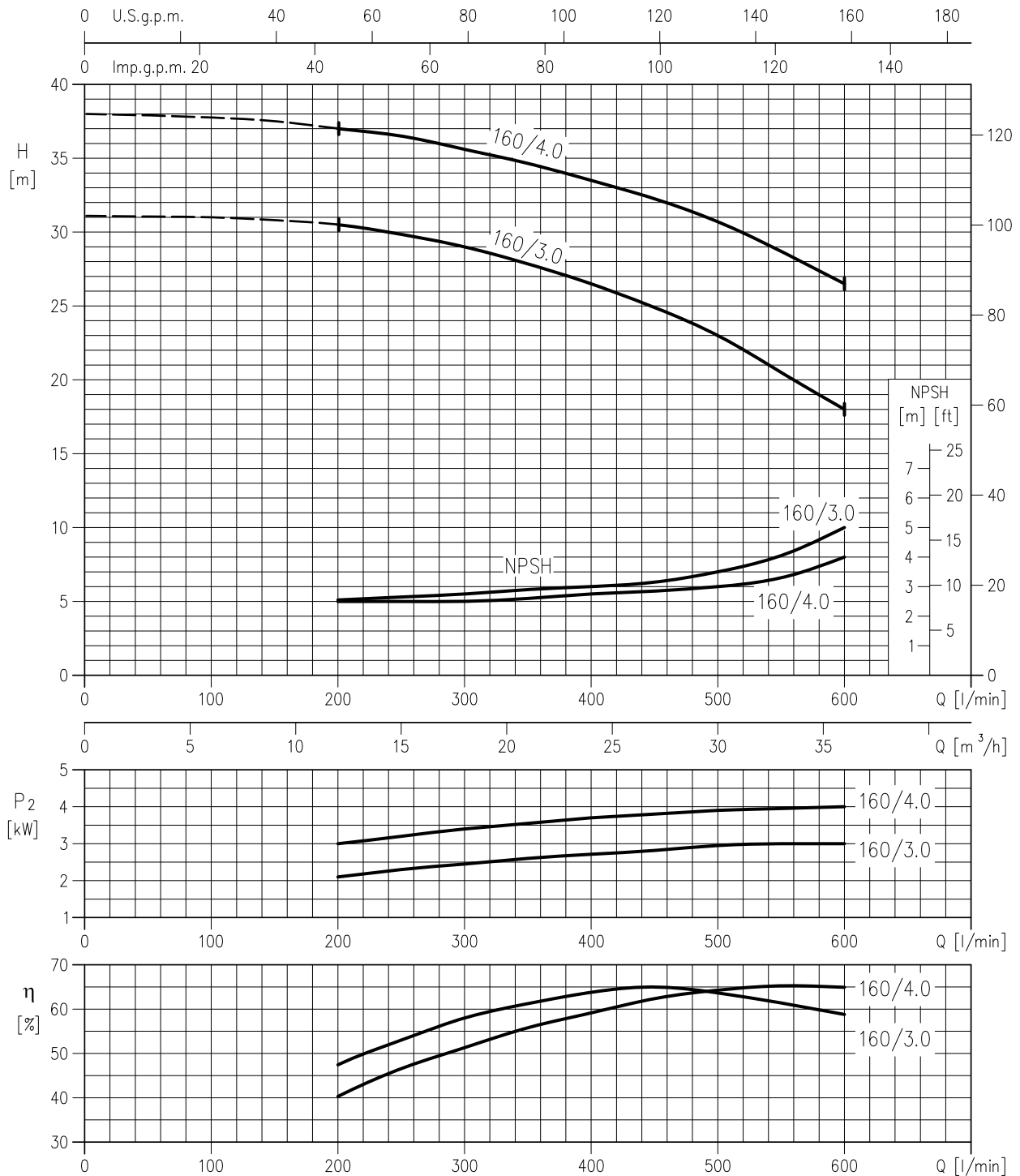
Rotation speed ≈ 2900 min⁻¹
 Test standard: ISO 9906 – Annex A

LPCD 50-125/1.5 (1.5 kW) MEI > 0.50 - Impeller diameter = 125 mm
 LPCD 50-125/2.2 (2.2 kW) MEI > 0.50 - Impeller diameter = 125 mm
 LPCD 50-125/3.0 (3.0 kW) MEI > 0.50 - Impeller diameter = 125 mm



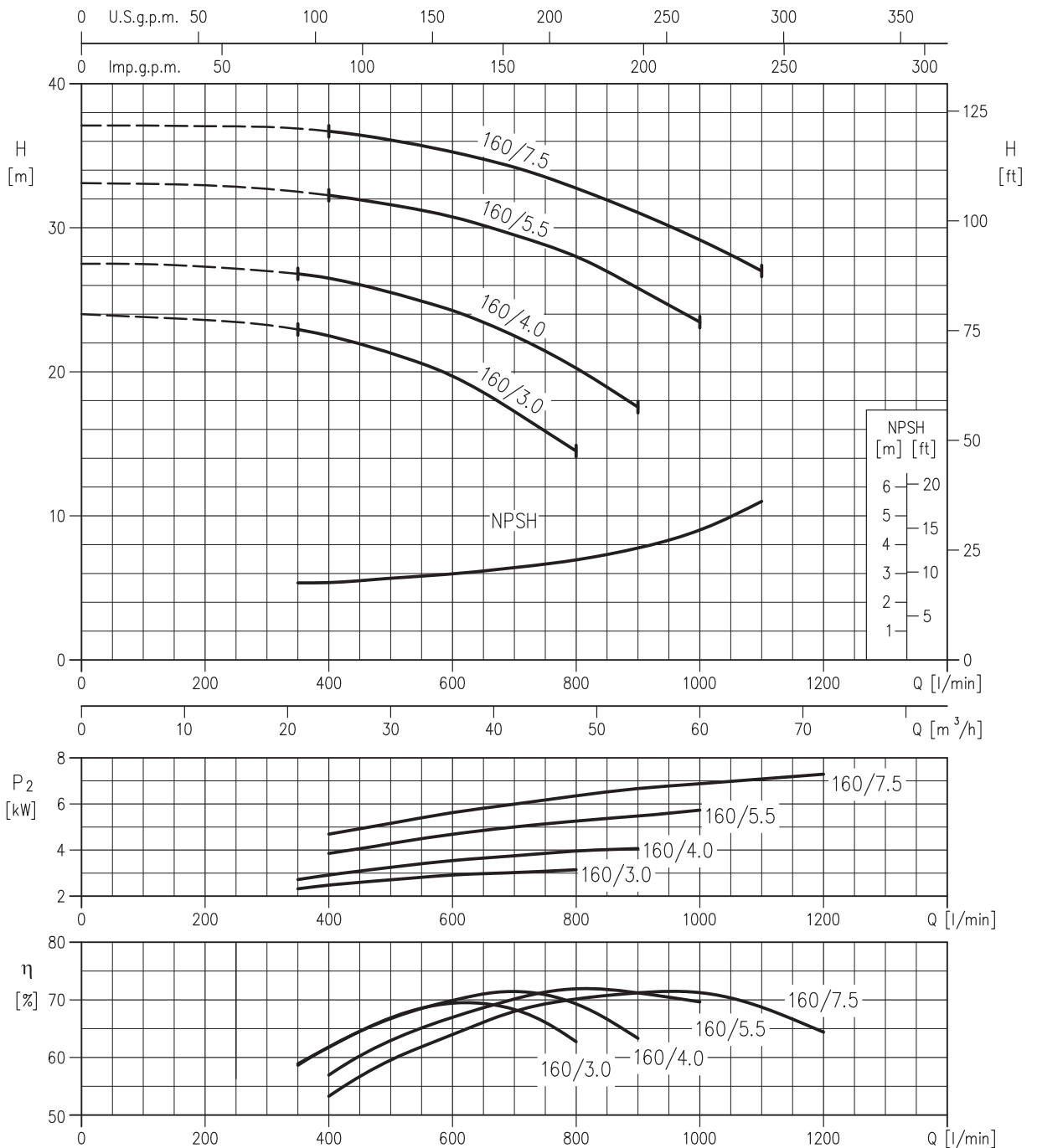
Rotation speed ≈ 2900 min⁻¹
 Test standard: ISO 9906 – Annex A

LPCD 50-160/3.0 (3.0 kW) MEI > 0.50 - Impeller diameter = 160 mm
 LPCD 50-160/4.0 (4.0 kW) MEI > 0.50 - Impeller diameter = 160 mm



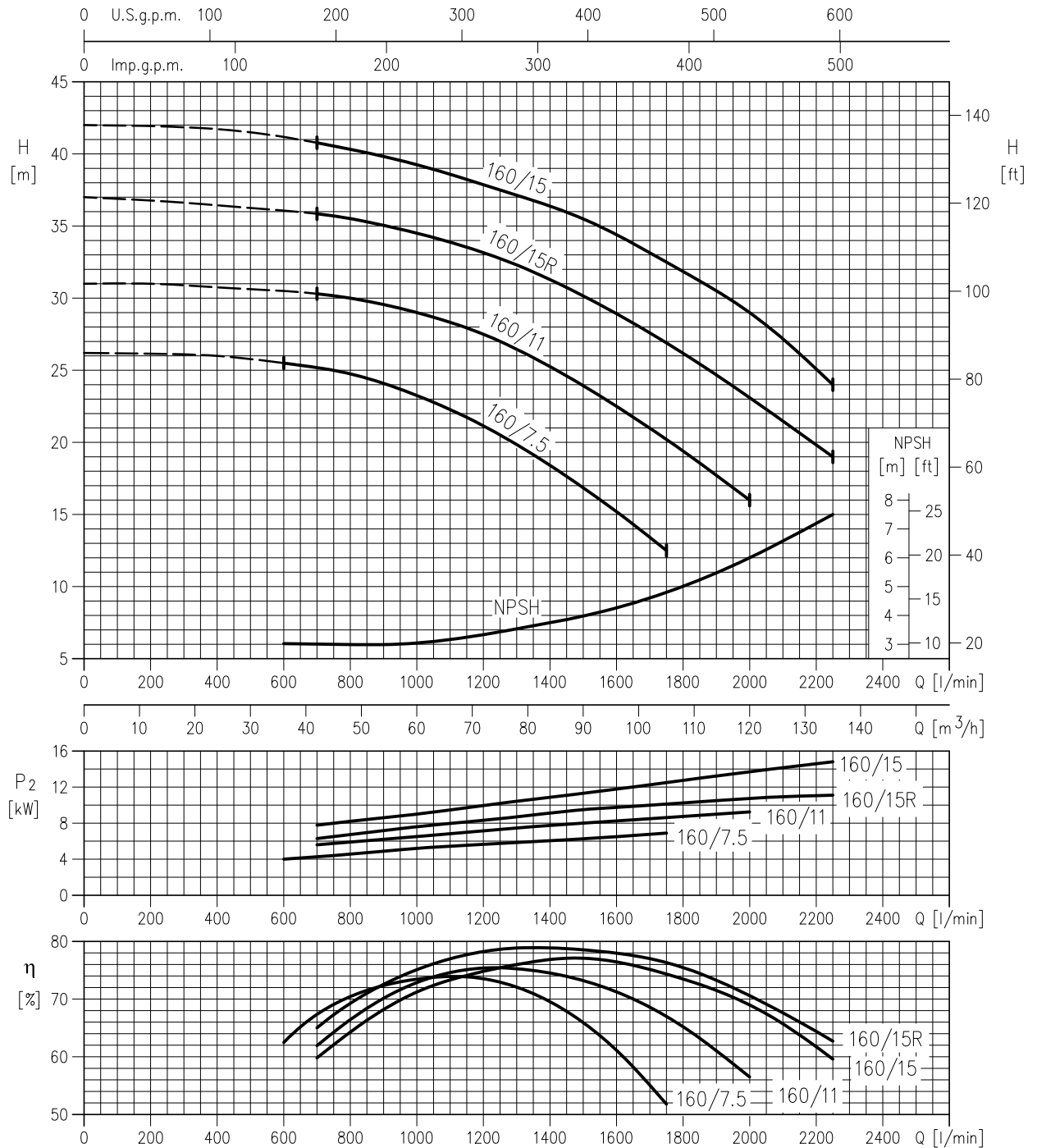
Rotation speed ≈ 2900 min⁻¹
 Test standard: ISO 9906 – Annex A

LPCD 65-160/3.0 (3.0 kW) MEI > 0.50 - Impeller diameter = 160 mm
 LPCD 65-160/4.0 (4.0 kW) MEI > 0.50 - Impeller diameter = 160 mm
 LPCD 65-160/5.5 (5.5 kW) MEI > 0.50 - Impeller diameter = 160 mm
 LPCD 65-160/7.5 (7.5 kW) MEI > 0.50 - Impeller diameter = 160 mm



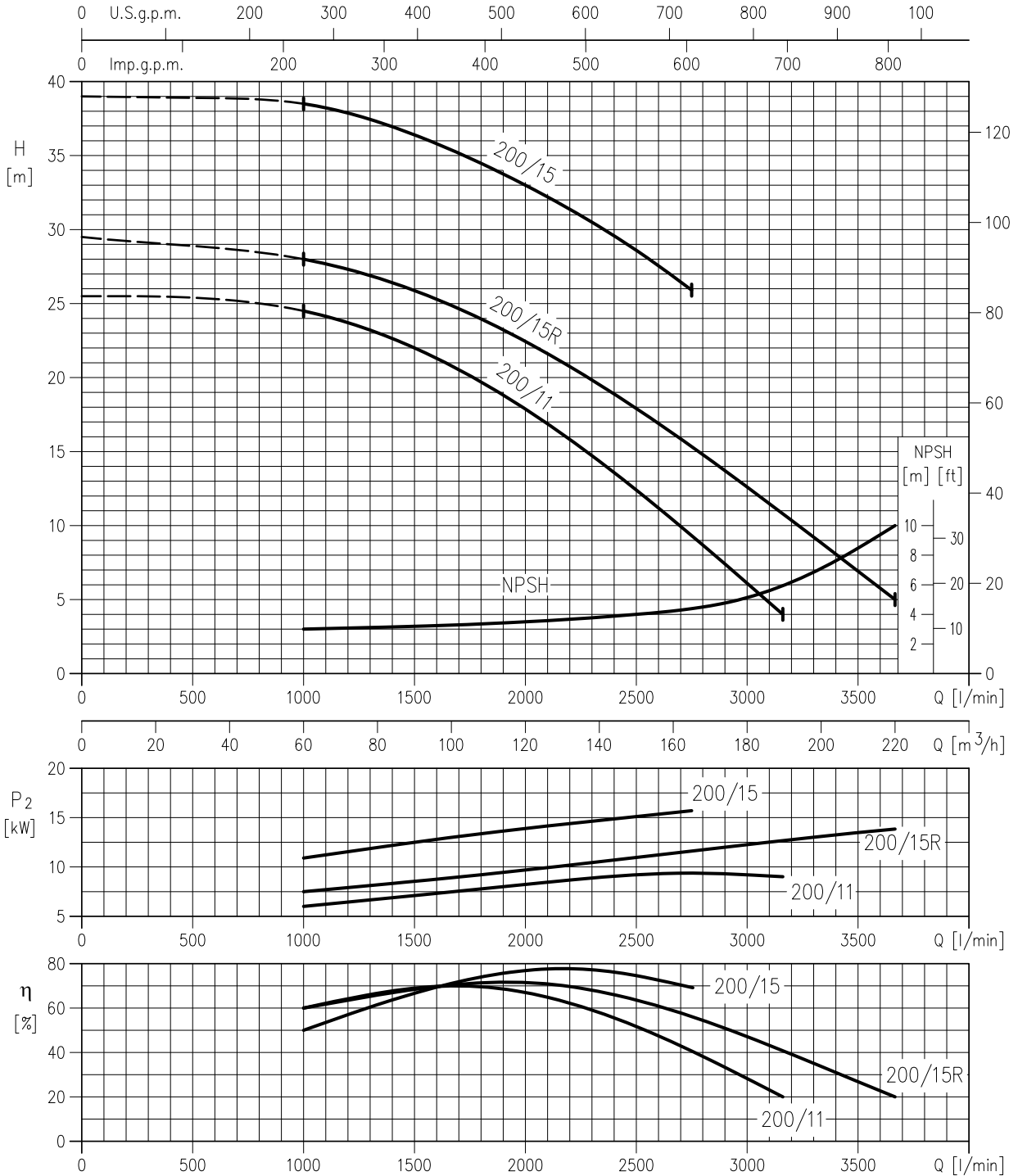
Rotation speed ≈ 2900 min⁻¹
 Test standard: ISO 9906 – Annex A

LPCD 80-160/7.5 (7.5 kW) MEI > 0.60 - Impeller diameter = 160 mm
 LPCD 80-160/11 (11 kW) MEI > 0.60 - Impeller diameter = 160 mm
 LPCD 80-160/15R (15 kW) MEI > 0.60 - Impeller diameter = 160 mm
 LPCD 80-160/15 (15 kW) MEI > 0.60 - Impeller diameter = 160 mm



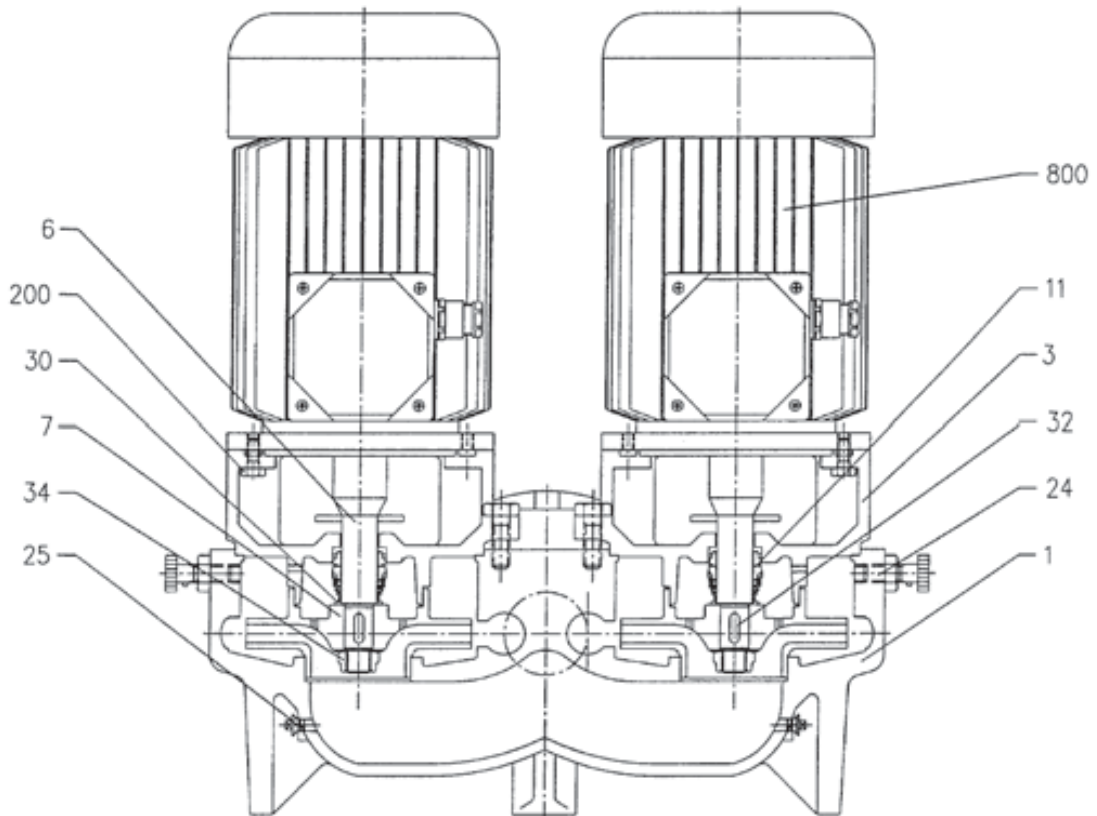
Rotation speed $\approx 2900 \text{ min}^{-1}$
 Test standard: ISO 9906 – Annex A

LPCD 100-200/15R (15 kW) MEI > 0.30 - Impeller diameter = 200 mm
 LPCD 100-200/11 (11 kW) MEI > 0.30 - Impeller diameter = 200 mm
 LPCD 100-200/15 (15 kW) MEI > 0.30 - Impeller diameter = 200 mm



Rotation speed ≈ 2900 min⁻¹
 Test standard: ISO 9906 – Annex

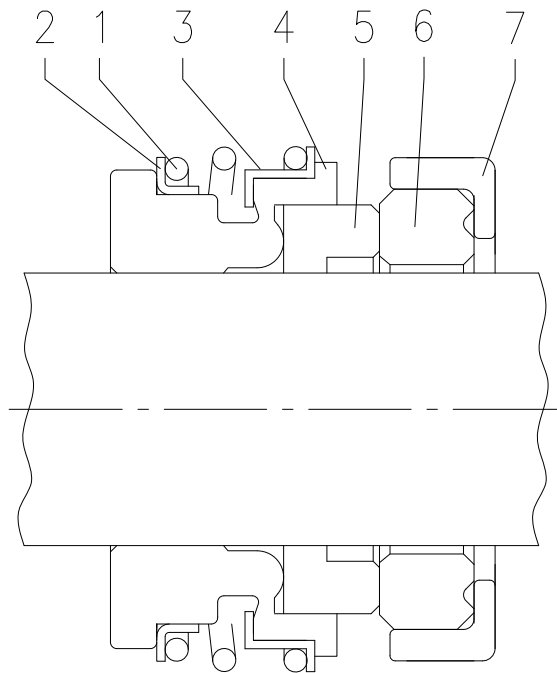
SECTIONAL VIEW DRAWING



N°	PART NAME	MATERIAL
1	Casing	Cast Iron
3	Motor bracket	Cast Iron
6	Shaft with rotor	AISI 420
7	Impeller	Cast Iron
11	Mechanical seal [1]	Carbon/SiC/EPDM
24	Priming plug	Stainless steel
25	Drain plug	Stainless steel
30	Spacer	Stainless steel
32	Key	Stainless steel
34	Impeller nut	Stainless steel
200	Screw	Stainless steel
800	Motor frame with stator	Alluminum (up to MEC 132)

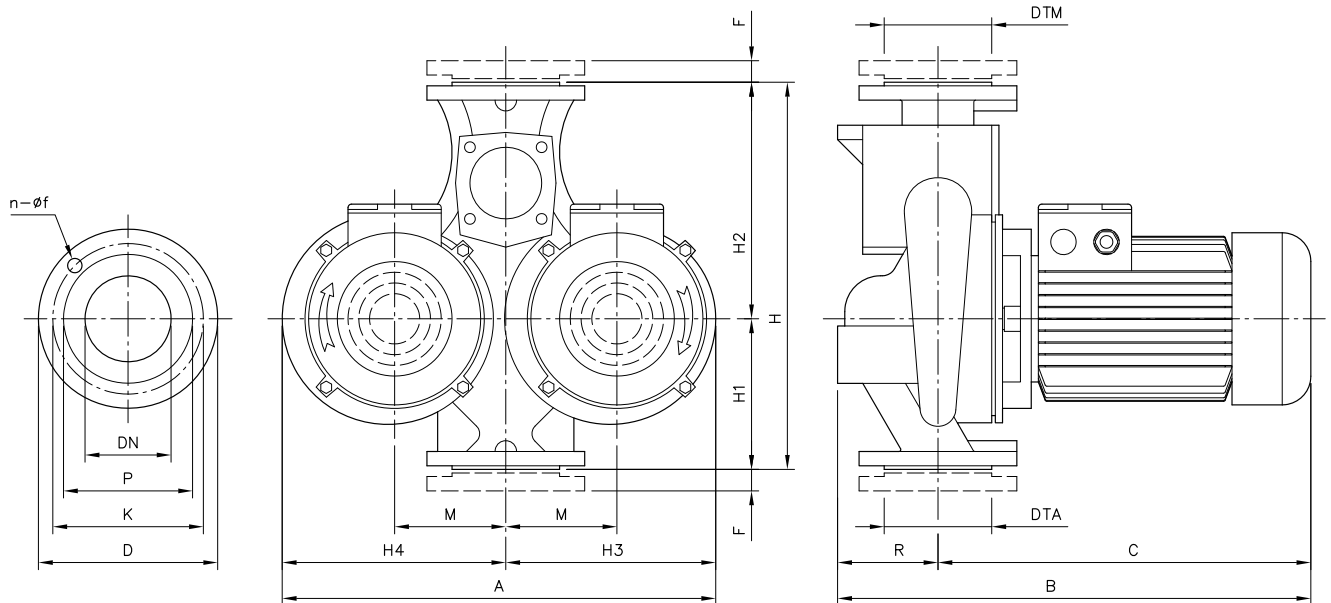
[1] Sic/Sic/NBR optional

MECHANICAL SEAL



REF	PART NAME	MATERIAL	
		Standard version Max temperature: 90°C	Optional Max temperature: 110°C
1	Spring	AISI 316	AISI 316
2	O Ring	EPDM	NBR
3	Frame	AISI 316	AISI 316
4	O Ring	EPDM	NBR
5	Rotating part	Carbon	SiC
6	Fixed part	SiC	SiC
7	Rubber cover	EPDM	NBR

PUMP LPCD



Model	Dimensions (mm)																			Weight (kgf)
	DTA/M	DNA/M	n	f	P	K	D	H	H1	H2	H3	H4	M	R	F	A	B	C		
LPCD 40-125/0,75R	G 1 1/2	40PN16	4	18	88	110	150	340	130	210	197	200	100	100	20	397	469	369	74	
LPCD 40-125/0,75	G 1 1/2	40PN16	4	18	88	110	150	340	130	210	197	200	100	100	20	397	469	369	60	
LPCD 40-125/1,1	G 1 1/2	40PN16	4	18	88	110	150	340	130	210	197	200	100	100	20	397	469	369	60	
LPCD 40-125/1,5	G 1 1/2	40PN16	4	18	88	110	150	340	130	210	197	200	100	100	20	397	514	414	67	
LPCD 50-125/1,5	G 2	50PN16	4	18	102	125	165	365	145	220	210	217	105	110	22	427	524	414	69	
LPCD 50-125/2,2	G 2	50PN16	4	18	102	125	165	365	145	220	210	217	105	110	22	427	524	414	76	
LPCD 50-125/3	G 2	50PN16	4	18	102	125	165	365	145	220	210	217	105	110	22	427	564	454	89	
LPCD 50-160/3	G 2	50PN16	4	18	102	125	165	410	170	240	235	245	120	110	22	480	564	454	90	
LPCD 50-160/4	G 2	50PN16	4	18	102	125	165	410	170	240	235	245	120	110	22	480	584	474	105	
LPCD 65-160/3	G 2 1/2	65PN16	4	18	122	145	185	450	180	270	268	275	140	130	22	543	584	454	104	
LPCD 65-160/4	G 2 1/2	65PN16	4	18	122	145	185	450	180	270	268	275	140	130	22	543	604	474	120	
LPCD 65-160/5,5	G 2 1/2	65PN16	4	18	122	145	185	450	180	270	268	275	140	130	22	543	644	514	139	
LPCD 65-160/7,5	G 2 1/2	65PN16	4	18	122	145	185	450	180	270	268	275	140	130	22	543	644	514	152	
LPCD 80-160/7,5	G 3	80PN16	4	18	138	160	200	510	205	305	270	280	135	150	24	550	664	514	175	
LPCD 80-160/11	G 3	80PN16	4	18	138	160	200	510	205	305	270	280	135	150	24	550	804	654	264	
LPCD 80-160/15R	G 3	80PN16	4	18	138	160	200	510	205	305	270	280	135	150	24	550	804	654	281	
LPCD 80-160/15	G 3	80PN16	4	18	138	160	200	510	205	305	270	280	135	150	24	550	804	654	277	
LPCD 100-200/15R	G 4	100PN16	8	18	188	180	220	630	240	390	345	325	165	180	26	670	846	666	320	
LPCD 100-200/11	G 4	100PN16	8	18	188	180	220	630	240	390	345	325	165	180	26	670	846	666	302	
LPCD 100-200/15	G 4	100PN16	8	18	188	180	220	630	240	390	345	325	165	180	26	670	846	666	320	

MOTOR DATA

Pump type Three Phase	Power		Efficiency Three Phase	Efficiency (%) Three phase η %			Input [kW]	Full load current [A]			Locked rotor current [A]		
	[kW]	[HP]		50%	75%	100%		230 V	400 V	690 V	230 V	400 V	690 V
	LPCD 40-125/0,75R	0,75		1,0	IE2	77,3		78,5	80,5	0,92	2,9	1,7	-
LPCD 40-125/0,75	0,75	1,0	IE2	77,3	78,5	80,5	0,92	2,9	1,7	-	24,7	14,3	-
LPCD 40-125/1,1	1,1	1,5	IE2	79,5	81,2	81,5	1,35	4,3	2,5	-	29,4	17,0	-
LPCD 40-125/1,5	1,5	2,0	IE2	81,0	82,8	82,8	1,77	5,5	3,2	-	44,9	25,9	-
LPCD 50-125/1,5	1,5	2,0	IE2	81,0	82,8	82,8	1,77	5,5	3,2	-	44,9	25,9	-
LPCD 50-125/2,2	2,2	3,0	IE2	82,5	84,0	84,0	2,59	7,6	4,4	-	64,8	37,4	-
LPCD 50-125/3	3,0	4,0	IE2	84,1	85,8	85,5	3,43	10,2	5,9	-	81,8	47,2	-
LPCD 50-160/3	3,0	4,0	IE2	84,1	85,8	85,5	3,43	10,2	5,9	-	81,8	47,2	-
LPCD 50-160/4	4,0	5,5	IE2	85,5	87,0	86,8	4,63	13,2	7,6	-	140,8	81,3	-
LPCD 65-160/3	3,0	4,0	IE2	84,1	85,8	85,5	3,43	10,2	5,9	-	81,8	47,2	-
LPCD 65-160/4	4,0	5,5	IE2	85,5	87,0	86,8	4,63	13,2	7,6	-	140,8	81,3	-
LPCD 65-160/5,5	5,5	7,5	IE2	86,0	88,0	87,9	6,29	-	10,2	5,9	-	87,7	50,6
LPCD 65-160/7,5	7,5	10,0	IE2	86,3	88,6	88,4	8,51	-	13,8	7,9	-	122,8	70,9
LPCD 80-160/7,5	7,5	10,0	IE2	86,3	88,6	88,4	8,51	-	13,8	7,9	-	122,8	70,9
LPCD 80-160/11	11,0	15,0	IE2	88,9	90,2	90,0	12,29	-	20,4	11,8	-	189,7	109,5
LPCD 80-160/15R	15,0	20,0	IE2	90,0	91,0	90,8	16,58	-	27,2	15,7	-	206,7	119,3
LPCD 80-160/15	15,0	20,0	IE2	90,0	91,0	90,8	16,58	-	27,2	15,7	-	206,7	119,3
LPCD 100-200/15R	15,0	20,0	IE2	90,0	91,0	90,8	16,58	-	27,2	15,7	-	206,7	119,3
LPCD 100-200/11	11,0	15,0	IE2	88,9	90,2	90,0	12,29	-	20,4	11,8	-	189,7	109,5
LPCD 100-200/15	15,0	20,0	IE2	90,0	91,0	90,8	16,58	-	27,2	15,7	-	206,7	119,3

NOISE DATA

Pump type Three Phase	Power		L_{pA} - dB(A) *
	[kW]	[HP]	
LPCD 40-125/0,75R	0,55	0,75	<70
LPCD 40-125/0,75	0,75	1	
LPCD 40-125/1,1	1,1	1,5	
LPCD 40-125/1,5	1,5	2	
LPCD 50-125/1,5	1,5	2	
LPCD 50-125/2,2	2,2	3	
LPCD 50-125/3	3	4	72
LPCD 50-160/3	3	4	78
LPCD 50-160/4	4	5,5	
LPCD 65-160/3	3	4	72
LPCD 65-160/4	4	5,5	78
LPCD 65-160/5,5	5,5	7,5	
LPCD 65-160/7,5	7,5	10	80
LPCD 80-160/7,5	7,5	10	
LPCD 80-160/11	11	15	
LPCD 80-160/15R	12,5	17	
LPCD 80-160/15	15	20	
LPCD 100-200/15R	11	15	
LPCD 100-200/11	15	20	
LPCD 100-200/15	15	20	

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