FPS

50 Hz VR SERIES

Vertical Multi-Stage Pumps

1 thru 10 m^3h

Franklin Electric

franklinwater.com.au

50 HZ VR SERIES VERTICAL MULTI-STAGE PUMPS

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VR SERIES Vertical Multi-Stage Pumps

FEATURES

- All stainless steel hydraulics for superior durability, efficiency, and performance over a wide variety of applications.
- Rugged motor mounting with oversized ball bearings ensure long operating life in the toughest jobs. Heavy-duty motor bearing not required.
- Standard mechanical seal provides superior sealing between water end and motor; balanced version available (30-45-65-95 VR).
- Removal of the mechanical seal without dismounting the motor (for motors ≥ 4 kW, 2 piece coupling).
- Removal of the mechanical seal with motor removal and without pump disassembly (for 0.37 to ≤ 4 kW)
- In-line suction and discharge with round flanges fit the widest range of applications and provide convenient, compact installation.
- Rugged IEC mount electric motors produced to European and AU/NZ market standards.
- Replaceable stainless steel wear ring in the neck of the impeller (30-45-65-95 VR).
- Three-phase motors conforming to high efficiency standards for Europe, North America, and Australia. IE2 code High Efficiency.
- Made in Italy.

TYPES & OPTIONS*

- G-type Cast Iron pump casing and AISI 304 (30-45-65-95 VR)
- H-type AISI304 versions (1-3-6-10-15-20-30-45-65-95 VR)
- N-type AISI 316 versions (1-3-6-10-15-20-30-45-65-95 VR)
- *Special materials for seals, gaskets, and elastomers
- *Oval flange (T), Victaulic (V) and Clamp (C) available (1-3-6-10-15-20 VR)
- IE2 code High Efficiency (comparable to EFF1) available

** May require special order; consult Franklin for details.*

APPLICATIONS

- Pressure boosting
- Boiler feed
- Water supply and treatment
- Reverse osmosis
- Wash down units
- Hot/cold water circulation for HVAC systems
- Irrigation

H-N version G version

PUMP SPECIFICATIONS

- Standard AISI 304 SS hydraulics
- Capacities up to 120 m^3/h
- Heads up to 30 Bar
- Liquid temperature range of -15 °C to +120 °C
- Standard round flanges on body type PN25 (30-45-65-95 VR); counter flanges and fastener kits available upon request
- Materials suitable for handling drinking water (WRAS certified)
- Hydraulic characteristics are according to ISO Standard 9906, grade 3
- PPS (1-3-6-10 VR) PTFE (15-20-30-45-65-95 VR) WRAS certified replacement floating neck ring for cost effective maintenance and long-lasting performance
- Tungsten carbide intermediate bearing to control and eliminate vibration and stabilize the rotor with a large number of stages
- Diffuser bushing made of carbon for durability against dry running (30-45-65-95 VR)
- Shaft bearing and journal sleeve made of tungsten carbide
- Replaceable stainless steel wear ring in the neck of the impeller (30-45-65-95 VR)
- Conforms to pump curve standards MEI ≥ 0.70, under Minimum Efficiency Index EU 547/2012

PUMP VERSIONS

Versions	Pump Body/ Hydraulics	1 VR	3 VR	6 VR	10 VR	15 VR	20 VR	30 VR	45 VR	65 VR	95 VR
G	CAST IRON/AISI 304	-	-	-	-	-	-	X	X	X	X
H	AISI 304/AISI 304	X	X	X	X	-	-	X	X	X	X
N	AISI 316/AISI 316	X	X	X	X	X	X	X	X	X	X

MAXIMUM WORKING PRESSURE

Models	1 VR	3 VR	6 VR	10 VR	15 VR	20 VR	30 VR	45 VR	65 VR	95 VR
T-Version (Oval)	16	16	16	16	16	16	-	-	-	-
F-/V-/C-Version	26	26	26	26	26	26	-	-	-	-
F-Version (PN16)	-	-	-	-	-	-	16	16	16	16
F-Version (PN25/40)	-	-	-	-	-	-	32	32	25	25
Maximum Inlet Pressure (HI)	Refer to hydraulic performance tables									

NOTES: The inlet pressure of the pump plus the pressure of the water inside the pump cannot exceed the maximum working pressure. All pressure values are in bar.

COUNTER-FLANGE KITS

Item	Description	PN Rating	For Use With
14261004	Kit Counter-Flanges F DN50 Zinc Plated	PN 25	15-20 VR
14262004	Kit Counter-Flanges F DN50 AISI 304	PN 25	15-20 VR
14262014	Kit Counter-Flanges F DN50 AISI 316	PN 25	15-20 VR
14262050	Kit Counter-Flanges T DN16 AISI 304*	PN 16	15-20 VR
14262051	Kit Counter-Flanges T DN16 AISI 304**	PN 16	15-20 VR
14261007	Kit Counter-Flanges F DN65 Zinc Plated	PN 16	30 VR
14262017	Kit Counter-Flanges F DN65 AISI 316	PN 16	30 VR
14261010	Kit Counter-Flanges F DN65 AISI 316 To Be Welded	PN 25/40	30 VR
14261008	Kit Counter-Flanges F DN80 Zinc Plated	PN 16	45 VR
14262018	Kit Counter-Flanges F DN80 AISI 316	PN 16	45 VR
14261011	Kit Counter-Flanges F DN80 AISI 316 To Be Welded	PN 25/40	45 VR
14261009	Kit Counter-Flanges F DN100 Zinc Plated	PN 16	65-95 VR
14262019	Kit Counter-Flanges F DN100 AISI 316	PN 16	65-95 VR
14261012	Kit Counter-Flanges F DN100 AISI 316 To Be Welded	PN 25/40	65-95 VR

NOTE: Counter-flange kits include: flanges (2), gaskets (2), bolts/nuts (16)

** = Thread GAS male*

*** = Thread female*

MOTOR SPECIFICATIONS

- Squirrel cage, TEFC, induction motors
- Clockwise rotation when looking at the pump from above
- 71 frame aluminum alloy and the larger sizes are cast iron (3-phase)
- Performance in compliance with MEPS AS/NZS1359.5-2004 to Table B2 where applicable (3-phase)
- Ambient temperature of -20 °C to +40 °C
- External thermal overload protection for motors up to 7.5 kW. 11 kW and above have thermistors fitted
- IP55 protection
- Class F Insulation; Class B temperature rise
- Voltage: 230 V 50 Hz (1-phase); 230/400 V Up to 3 kW, 400/690 V from 4 kW and above (3-phase)
- Conforming to the latest higher efficiency standards for Europe, North America, and Australia. IE3 code = Premium Efficiency and IE2 code = High Effiecieny (comparable to EFF1) available

NOTE: Specifications subject to change without prior notice.

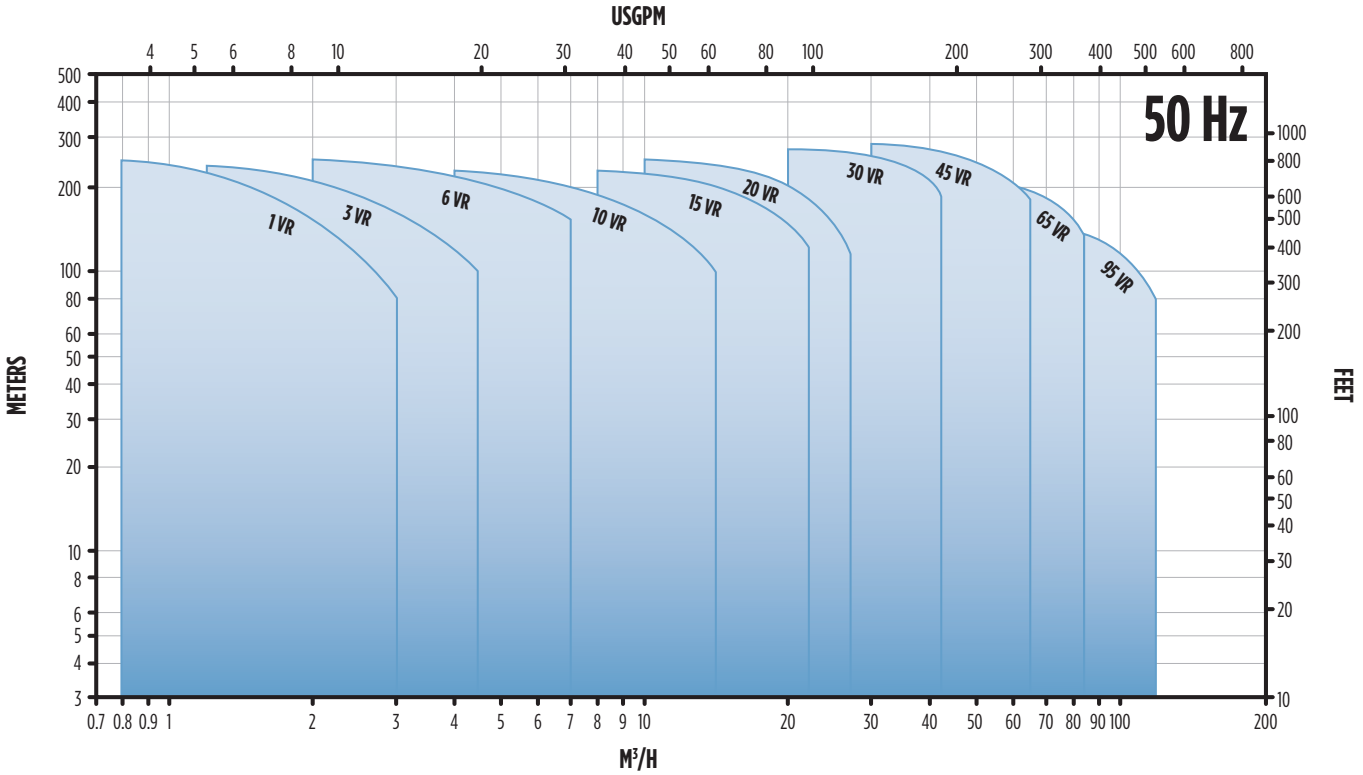
ORDERING INFORMATION

Order No.	Description	kW	HP	PH	50 Hz Volts*	60 Hz Volts*	Wiring		Size	Mounting
							Standard 380-415	Optional 220-240		
106618104	VR Motor-1.1/50/1	1.1	1.5	1	240	-	-	-	80	B14
106618105	VR Motor-1.5/50/1	1.5	2	1	240	-	-	-	90	B14
106618106	VR Motor-2.2/50/1	2.2	3	1	240	-	-	-	90	B14
106618304	VR Motor-1.1/50/3	1.1	1.5	3	230/400	440/460	Star	Delta	80	B14
106618305	VR Motor-1.5/50/3	1.5	2	3	230/400	440/460	Star	Delta	90	B14
106618306	VR Motor-2.2/50/3	2.2	3	3	230/400	440/460	Star	Delta	90	B14
106618307	VR Motor-3.0/50/3	3	4	3	230/400	440/460	Star	Delta	100	B14
106618308	VR Motor-4.0/50/3	4	5.5	3	400/690	440/460	Delta	-	112	B14
106618309	VR Motor-5.5/50/3	5.5	7.5	3	400/690	440/460	Delta	-	132	B5
106618310	VR Motor-7.5/50/3	7.5	10	3	400/690	440/460	Delta	-	132	B5
106618311	VR Motor-9.2/50/3	9.2	12.5	3	400/690	440/460	Delta	-	132	B5
106618312	VR Motor-11.0/50/3	11	15	3	400/690	440/460	Delta	-	160	B5
106618313	VR Motor-15.0/50/3	15	20	3	400/690	440/460	Delta	-	160	B5
106618314	VR Motor-18.5/50/3	18.5	25	3	400/690	440/460	Delta	-	160	B5
106618315	VR Motor-22.0/50/3	22	30	3	400/690	440/460	Delta	-	180	B5
106618316	VR Motor-30.0/50/3	30	40	3	400/690	440/460	Delta	-	200	B5
106618317	VR Motor-37.0/50/3	37	50	3	400/690	440/460	Delta	-	200	B5
106618318	VR Motor-45.0/50/3	45	60	3	400/690	440/460	Delta	-	225	B5

** Three-phase motors are dual voltage/dual frequency, 50/60 Hz.*

** SWER (Single Phase Earth Return) motors available to order with price adder.*

FAMILY CURVE



VR MODEL NOMENCLATURE

Code for Pump End

XX VR XX - XX - X - X

Construction
G = Standard
H = 304 / 316SS
N = 316SS

Connections*
F = Round Flange
T = Oval Flange
V = Victaulic
C = Clamp

Reduced impeller trim type
00 = No Trim
1A = Trim (30, 45, 65, and 95 only)
2A = Trim (30, 45, 65, and 95 only)

Total number of stages (2 characters)

Pump Series
VR - VR Series

Nominal Flow

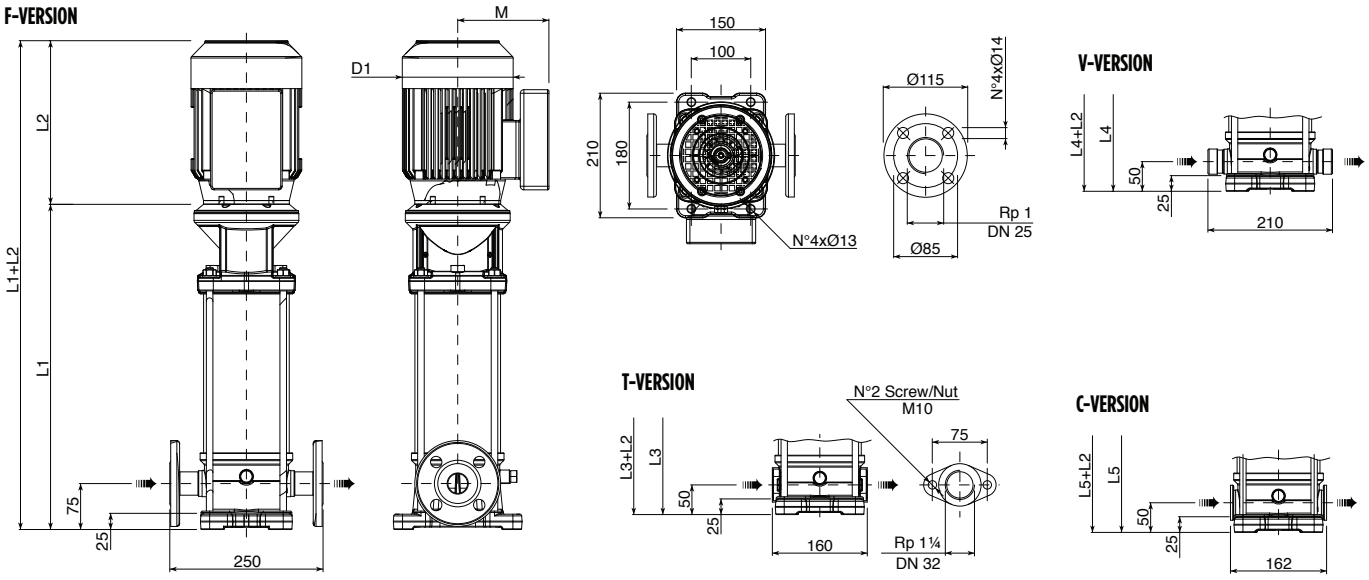
1 = 1 m³/h	15 = 15 m³/h	45 = 45 m³/h
3 = 3 m³/h	20 = 20 m³/h	65 = 65 m³/h
6 = 6 m³/h	30 = 30 m³/h	95 = 95 m³/h
10 = 10 m³/h		

* T, V, C Connections only on 1-3-6-10-15-20VR

1 VR - HYDRAULIC PERFORMANCE

Pump Type	Rated Power		H1	Stages	Delivery					
					l/min - 0	8.3	16.7	25.0	33.3	42
	kW	HP	Bar		m^3/h - 0	0.5	1	1.5	2	2.5
					H = Total Head Column of Water (Meters)					
1VR02	0.37	0.5	20	2	14.5	13.5	12.5	11.5	9.5	7.5
1VR03	0.37	0.5		3	21.5	20	19	17	14	11
1VR04	0.37	0.5		4	28	26.5	24.5	22	18.5	14
1VR05	0.37	0.5		5	35	33	30.5	27	22.5	17
1VR06	0.37	0.5		6	41.5	39	36	32	26.5	19.5
1VR07	0.37	0.5		7	48	45	41.5	36.5	30	22
1VR08	0.55	0.75		8	55	52	48	42.5	35	26
1VR09	0.55	0.75		9	61.5	58	53	47	39	28.5
1VR10	0.55	0.75		10	68	64	58.5	51.5	43	31.5
1VR11	0.55	0.75		11	74.5	69.5	64	56.5	46.5	34
1VR12	0.75	1		12	83	78.5	72	64	53	39.5
1VR13	0.75	1		13	89.5	84.5	77.5	68.5	57	42
1VR14	0.75	1		14	96	90.5	83	73	60.5	44.5
1VR15	0.75	1		15	102.5	96	88	78	64	47
1VR17	1.1	1.5		17	118	111.5	103	91.5	76	56.5
1VR19	1.1	1.5		19	131	123.5	114	101	84	62
1VR22	1.1	1.5		22	150.5	141.5	130	115	95	69.5
1VR23	1.5	2		23	160.5	152	140	124.5	104	77.5
1VR25	1.5	2		25	174	164	151.5	134.5	112	83.5
1VR27	1.5	2		27	187	176.5	162.5	144	120	88.5
1VR30	1.5	2		30	206.5	194.5	179	158	131	96.5
1VR32	2.2	3		32	224.5	213	197	175.5	147.5	110.5
1VR34	2.2	3		34	238	225.5	208.5	185.5	155.5	116.5
1VR37	2.2	3		37	258	244	225.5	200.5	167.5	125

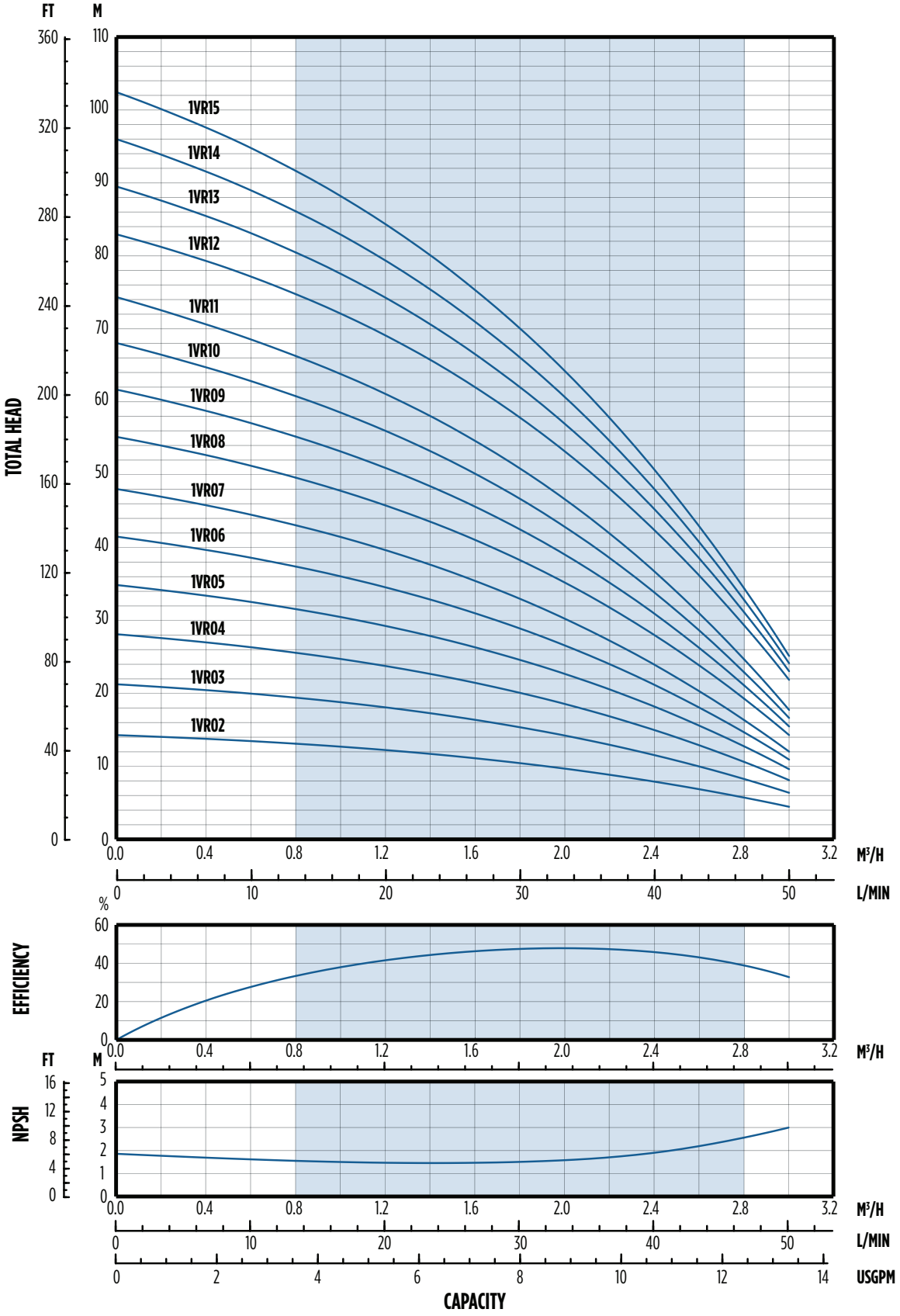
1 VR - DIMENSIONS



F-Version: Round flanges on body type PN25; pump is supplied without counter-flanges (optional accessories, including bolts and joints).
T-Version: Oval flanges on body type PN16; pump is supplied without threaded oval counter-flanges (optional accessories, including bolts and joints).
V-Version: Connections with rapid fittings type "Victaulic"; pump is supplied without the collars (optional accessories).
C-Version: Connections with round fittings type Clamp-FlexiClamp; pump is supplied without collars (optional accessories).

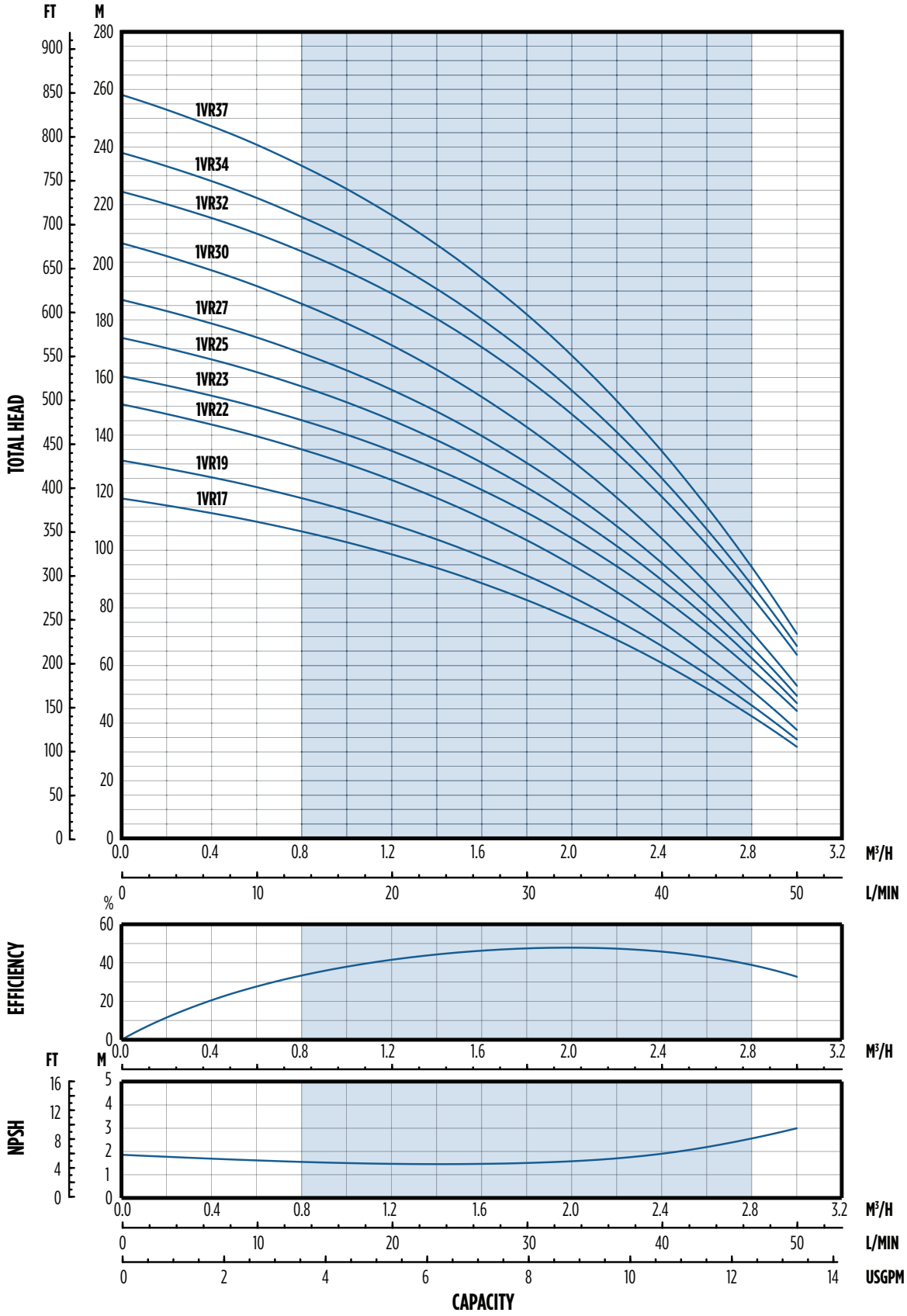
Pump Model	Motor				Dimensions (mm)									Weight (kg)		
	Rated Power		Size	MTG	L1	L2		L1+L2	M		D1		D2	PE	Motor	PMA
	kW	HP				1-PH	3-PH		1-PH	3-PH	1-PH	3-PH				
1VR02	0.37	0.5	71	B14	312.5	215	215	527.5	129	112	142	142	170	15	5.8	20.8
1VR03	0.37	0.5	71		335	215	215	550	129	112	142	142	170	15	5.8	20.8
1VR04	0.37	0.5	71		357.5	215	215	572.5	129	112	142	142	170	15.5	5.8	21.3
1VR05	0.37	0.5	71		380	215	215	595	129	112	142	142	170	16	5.8	21.8
1VR06	0.37	0.5	71		402.5	215	215	617.5	129	112	142	142	170	16.5	5.8	22.3
1VR07	0.37	0.5	71		425	215	215	640	129	112	142	142	170	17	5.8	22.8
1VR08	0.55	0.75	71		447.5	215	215	662.5	129	112	142	142	170	17.5	6.2	23.7
1VR09	0.55	0.75	71		470	215	215	685	129	112	142	142	170	18	6.2	24.2
1VR10	0.55	0.75	71		492.5	215	215	707.5	129	112	142	142	170	18.5	6.2	24.7
1VR11	0.55	0.75	71		515	215	215	730	129	112	142	142	170	19	6.2	25.2
1VR12	0.75	1	80		537.5	232	232	769.5	150	129	160	160	170	19.5	9.5	29
1VR13	0.75	1	80		560	232	232	792	150	129	160	160	170	20	9.5	29.5
1VR14	0.75	1	80		582.5	232	232	814.5	150	129	160	160	170	20.5	9.5	30
1VR15	0.75	1	80		605	232	232	837	150	129	160	160	170	21	9.5	30.5
1VR17	1.1	1.5	80		650	232	232	882	150	129	160	160	170	22	11.1	33.1
1VR19	1.1	1.5	80		695	232	232	927	150	129	160	160	170	22.5	11.1	33.6
1VR22	1.1	1.5	80		762.5	232	232	994.5	150	129	160	160	170	24	11.1	35.1
1VR23	1.5	2	90		795	267	267	1062	160	138	180	180	170	25	14	39
1VR25	1.5	2	90		840	267	267	1107	160	138	180	180	170	26	14	40
1VR27	1.5	2	90		885	267	267	1152	160	138	180	180	170	27	14	41
1VR30	1.5	3	90		952.5	267	267	1219.5	160	138	180	180	170	28.5	14	42.5
1VR32	2.2	3	90		997.5	267	267	1264.5	160	138	180	180	170	29	16	45
1VR34	2.2	3	90		1042.5	267	267	1309.5	160	138	180	180	170	30	16	46
1VR37	2.2	3	90		1110	267	267	1377	160	138	180	180	170	31.5	16	47.5

1 VR - PERFORMANCE CURVE



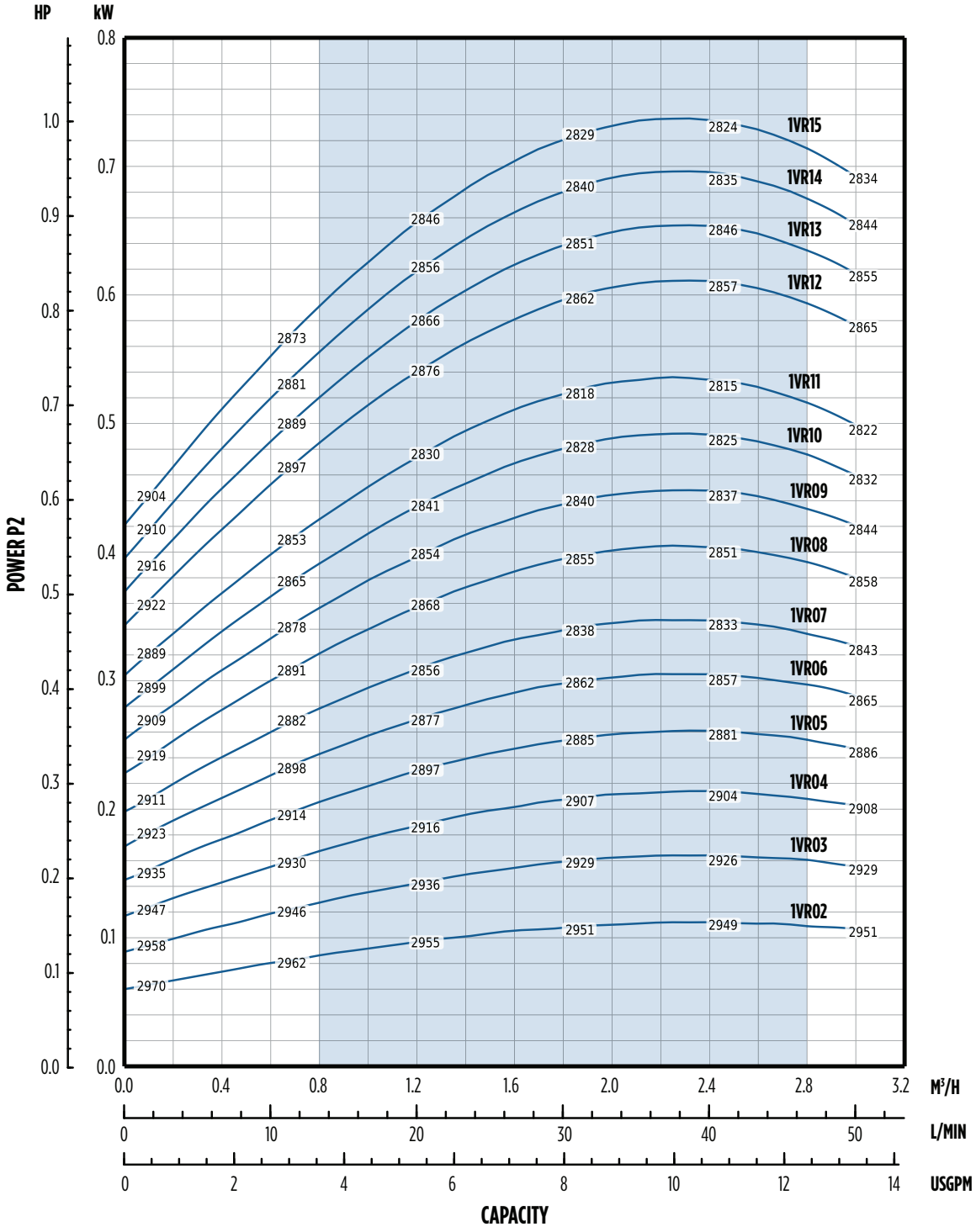
NOTES: Specifications subject to change without prior notice. Hydraulic characteristics are according to ISO standard 9906, Annex A.

1VR - PERFORMANCE CURVE



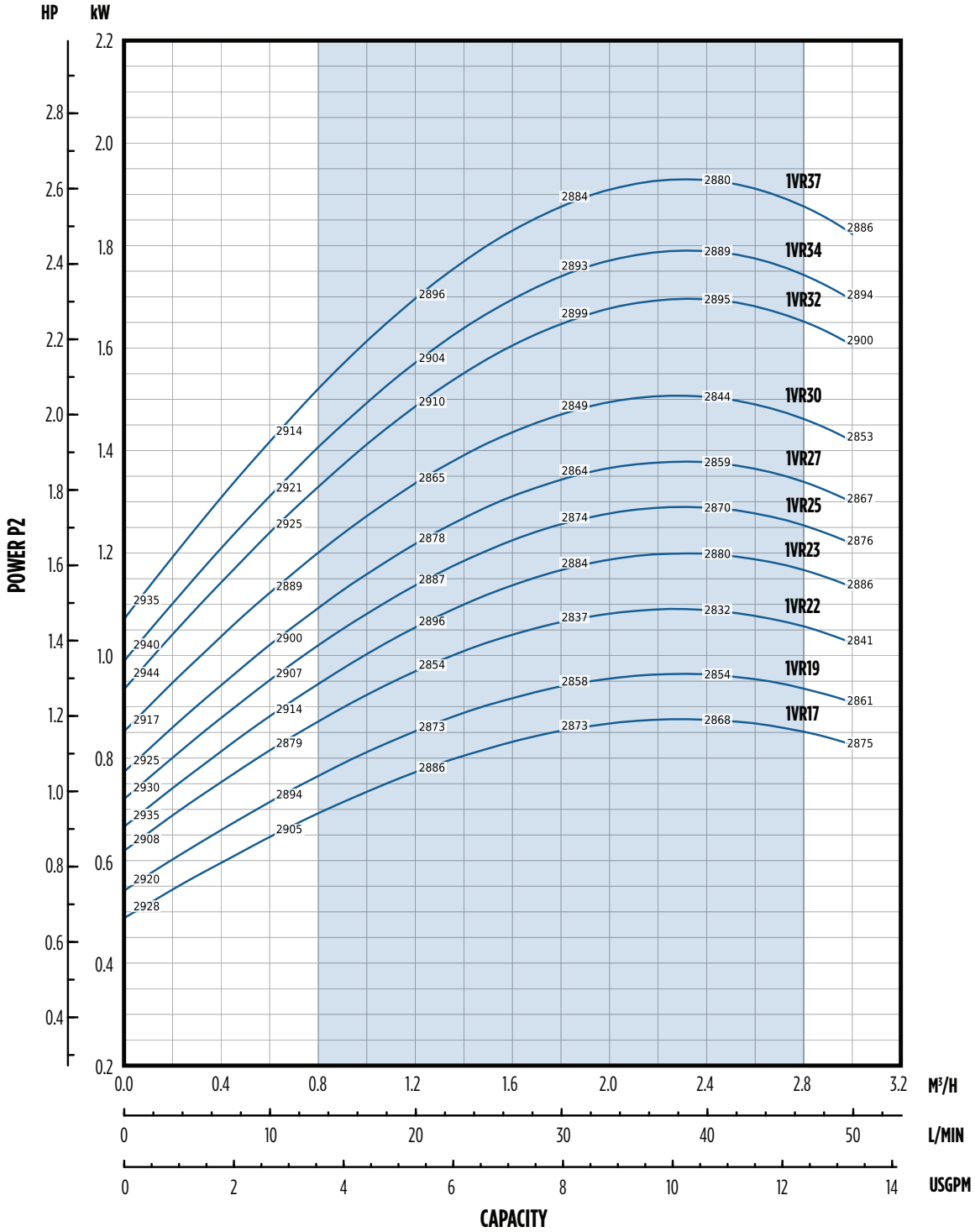
NOTES: Specifications subject to change without prior notice. Hydraulic characteristics are according to ISO standard 9906, Annex A.

1 VR - POWER CURVE



NOTE: Specifications subject to change without prior notice.

1 VR - POWER CURVE



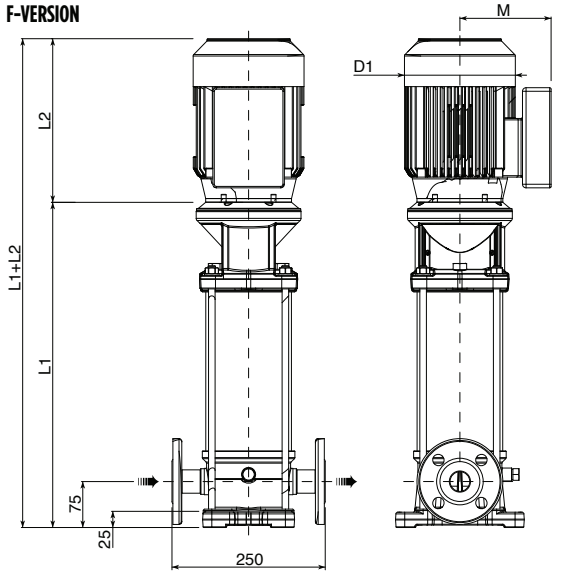
NOTE: Specifications subject to change without prior notice.

3 VR - HYDRAULIC PERFORMANCE

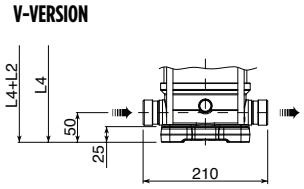
Pump Type	Rated Power		H1	Stages	Delivery								
					l/min - 0	16.7	25.0	33.3	42	50	58.3	67	75
	kW	HP	Bar		m^3/h - 0	1	1.5	2	2.5	3	3.5	4	4.5
					H = Total Head Column of Water (Meters)								
3VR02	0.37	0.5	20	2	15	15	14.5	13.5	12.5	11.5	10	8	6
3VR03	0.37	0.5		3	22.5	22	21	20	18.5	17	14.5	12	8.5
3VR04	0.37	0.5		4	30	28.5	27.5	26	24	21.5	18.5	15	10.5
3VR05	0.55	0.75		5	37.5	36	34.5	32.5	30	27	23.5	18.5	13
3VR06	0.55	0.75		6	44.5	42.5	40.5	38.5	35.5	32	27	21.5	15
3VR07	0.75	1		7	52.5	50.5	48.5	46	43	38.5	33	26.5	19
3VR08	0.75	1		8	59.5	57.5	55	52	48	43.5	37	29.5	21
3VR09	0.75	1		9	67	64	61.5	58	53.5	48	41	32.5	22.5
3VR10	1.1	1.5		10	75	72.5	70	66.5	61.5	55.5	48	38.5	27.5
3VR11	1.1	1.5		11	82.5	79.5	76.5	72.5	67	60.5	52	42	29.5
3VR12	1.1	1.5		12	89.5	86	83	78.5	72.5	65	56	45	31.5
3VR13	1.1	1.5		13	96.5	93	89	84.5	78	70	60	47.5	33.5
3VR14	1.5	2		14	105.5	102	98.5	93.5	86.5	78	67.5	54.5	39.5
3VR15	1.5	2		15	112.5	109	105	99.5	92.5	83	71.5	58	41.5
3VR16	1.5	2		16	120	115.5	111.5	105.5	98	88	76	61	43.5
3VR17	1.5	2		17	127	122.5	118	111.5	103.5	93	80	64	45.5
3VR18	2.2	3		18	136.5	132.5	128	121.5	113.5	102.5	89	72.5	53
3VR19	2.2	3		19	144	139.5	134.5	128	119	107.5	93.5	76	55.5
3VR21	2.2	3		21	158.5	153.5	148	140.5	130.5	118	102	83	60
3VR23	2.2	3		23	173	167.5	161.5	153	142	128	110.5	89.5	64.5
3VR25	2.2	3		25	187.5	181	174.5	165.5	153.5	138	119	96	68.5
3VR27	3	4		27	205.5	199.5	193	184	171.5	155	135	110.5	81
3VR29	3	4		29	220	213.5	206.5	196.5	183.5	166	144	117.5	86
3VR31	3	4		31	235	228	220.5	209.5	195	176.5	153	124.5	91
3VR33	3	4		33	249.5	242	234	222	206.5	187	162	131.5	95.5

3 VR - DIMENSIONS

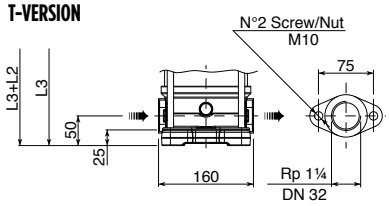
F-VERSION



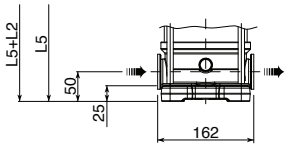
V-VERSION



T-VERSION



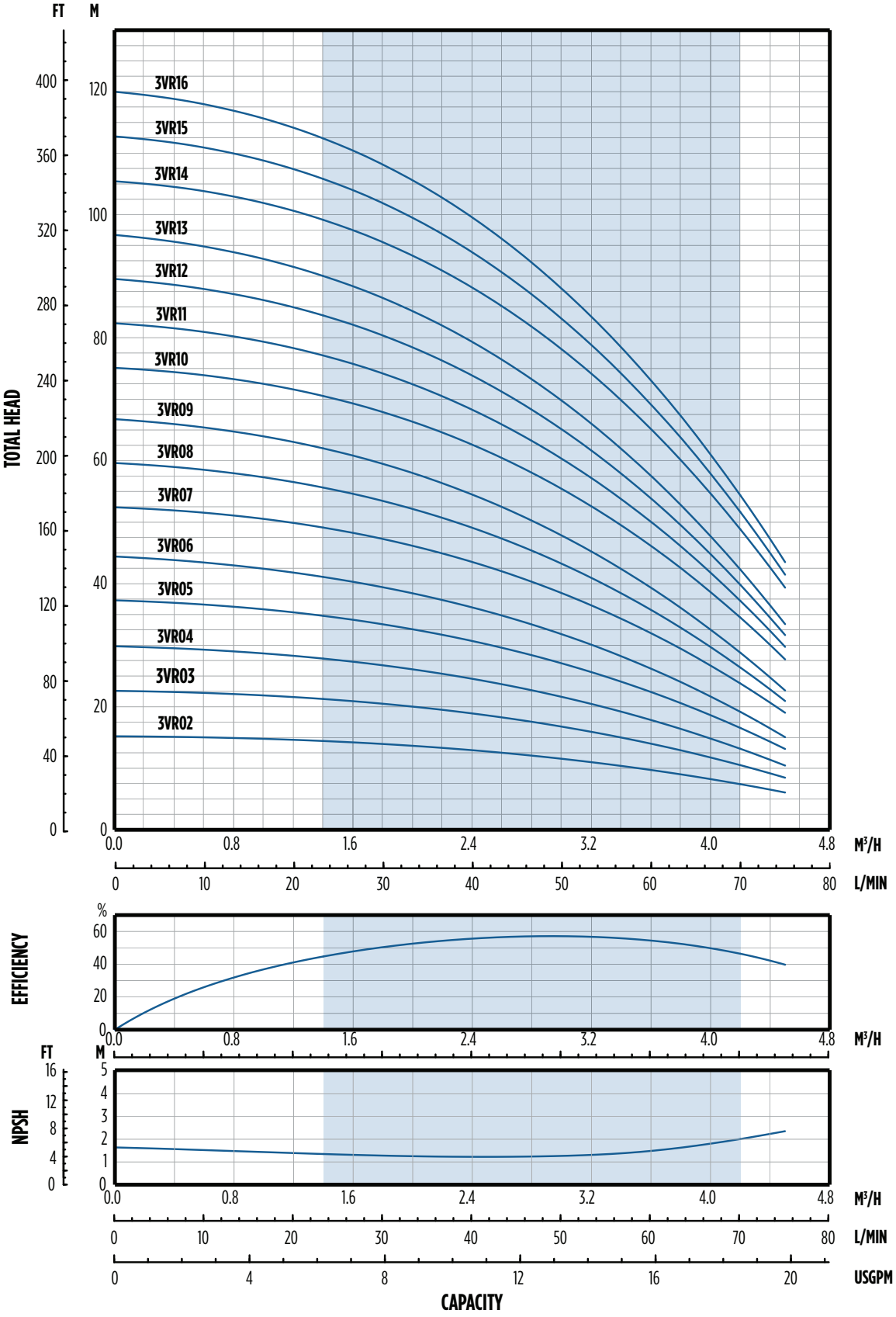
C-VERSION



F-Version: Round flanges on body type PN25; pump is supplied without counter-flanges (optional accessories, including bolts and joints).
T-Version: Oval flanges on body type PN16; pump is supplied without threaded oval counter-flanges (optional accessories, including bolts and joints).
V-Version: Connections with rapid fittings type "Victaulic"; pump is supplied without the collars (optional accessories).
C-Version: Connections with round fittings type Clamp-FlexiClamp; pump is supplied without collars (optional accessories).

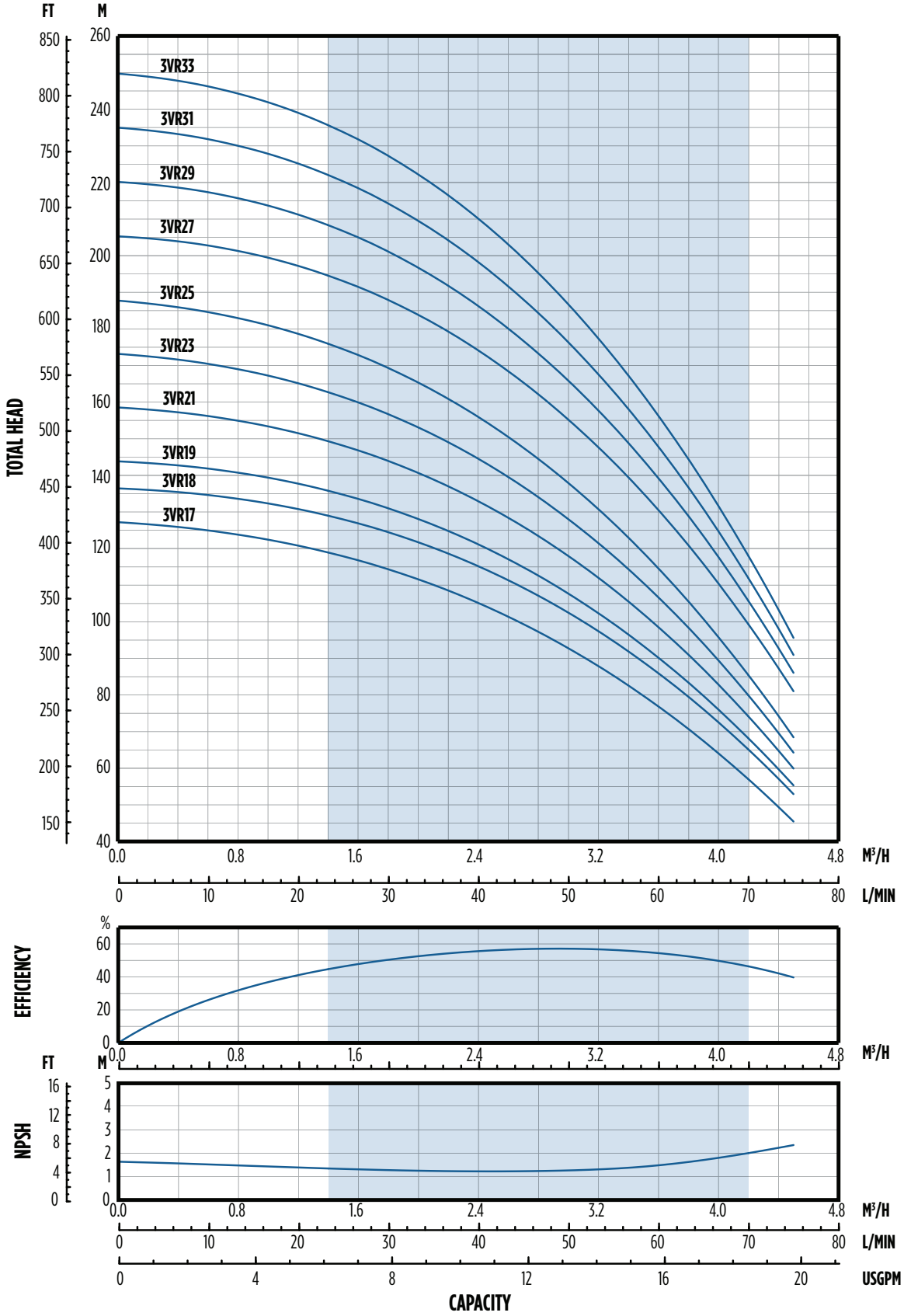
Pump Model	Motor				Dimensions (mm)									Weight (kg)		
	Rated Power		Size	MTG	L1	L2		L1+L2	M		D1		D2	PE	Motor	PMA
	kW	HP				1-PH	3-PH		1-PH	3-PH	1-PH	3-PH				
3VR02	0.37	0.5	71	B14	312.5	215	215	527.5	129	112	142	142	170	15	5.8	20.8
3VR03	0.37	0.5	71		335	215	215	550	129	112	142	142	170	15	5.8	20.8
3VR04	0.37	0.5	71		357.5	215	215	572.5	129	112	142	142	170	15.5	5.8	21.3
3VR05	0.55	0.75	71		380	215	215	595	129	112	142	142	170	16	6.2	22.2
3VR06	0.55	0.75	71		402.5	215	215	617.5	129	112	142	142	170	16.5	6.2	22.7
3VR07	0.75	1	80		425	232	232	657	150	129	160	160	170	17	9.5	26.5
3VR08	0.75	1	80		447.5	232	232	679.5	150	129	160	160	170	17.5	9.5	27
3VR09	0.75	1	80		470	232	232	702	150	129	160	160	170	18	9.5	27.5
3VR10	1.1	1.5	80		492.5	232	232	724.5	150	129	160	160	170	18.5	11.1	29.6
3VR11	1.1	1.5	80		515	232	232	747	150	129	160	160	170	19	11.1	30.1
3VR12	1.1	1.5	80		537.5	232	232	769.5	150	129	160	160	170	19.5	11.1	30.6
3VR13	1.1	1.5	80		560	232	232	792	150	129	160	160	170	20	11.1	31.1
3VR14	1.5	2	90		592.5	267	267	859.5	160	138	180	180	170	21	14	35
3VR15	1.5	2	90		615	267	267	882	160	138	180	180	170	21.5	14	35.5
3VR16	1.5	2	90		637.5	267	267	904.5	160	138	180	180	170	22	14	36
3VR17	1.5	2	90		660	267	267	927	160	138	180	180	170	22.5	14	36.5
3VR18	2.2	3	90		682.5	267	267	949.5	160	138	180	180	170	23	16	39
3VR19	2.2	3	90		705	267	267	972	160	138	180	180	170	23.5	16	39.5
3VR21	2.2	3	90		750	267	267	1017	160	138	180	180	170	24	16	40
3VR23	2.2	3	90		795	267	267	1062	160	138	180	180	170	25	16	41
3VR25	2.2	3	90		840	267	267	1107	160	138	180	180	170	26	16	42
3VR27	3	4	100		895	-	290	1185	-	138	-	180	170	27.5	18	45.5
3VR29	3	4	100		940	-	290	1230	-	138	-	180	170	28.5	18	46.5
3VR31	3	4	100		985	-	290	1275	-	138	-	180	170	29.5	18	47.5
3VR33	3	4	100		1030	-	290	1320	-	138	-	180	170	30.5	18	48.5

3 VR - PERFORMANCE CURVE



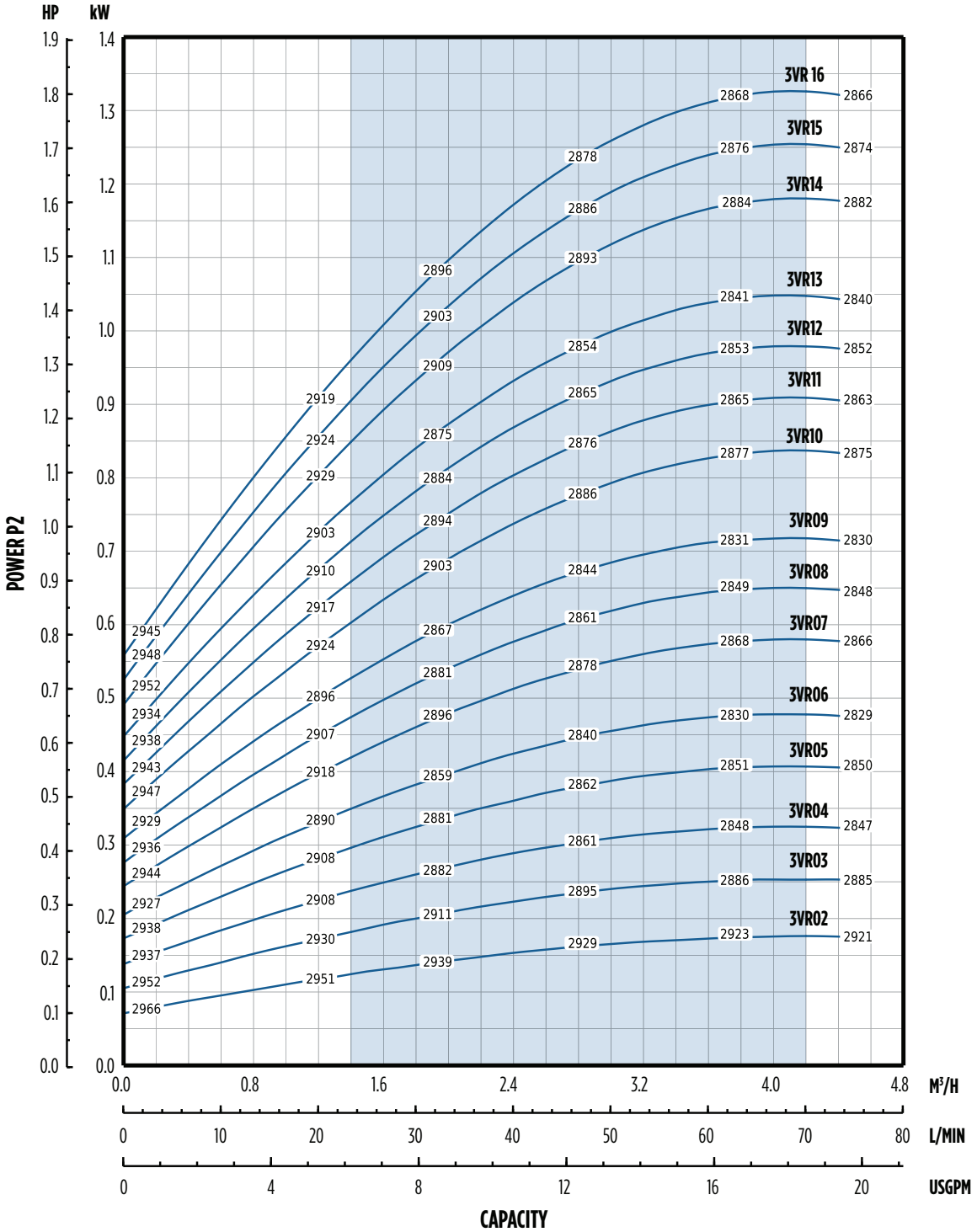
NOTES: Specifications subject to change without prior notice. Hydraulic characteristics are according to ISO standard 9906, Annex A.

3 VR - PERFORMANCE CURVE



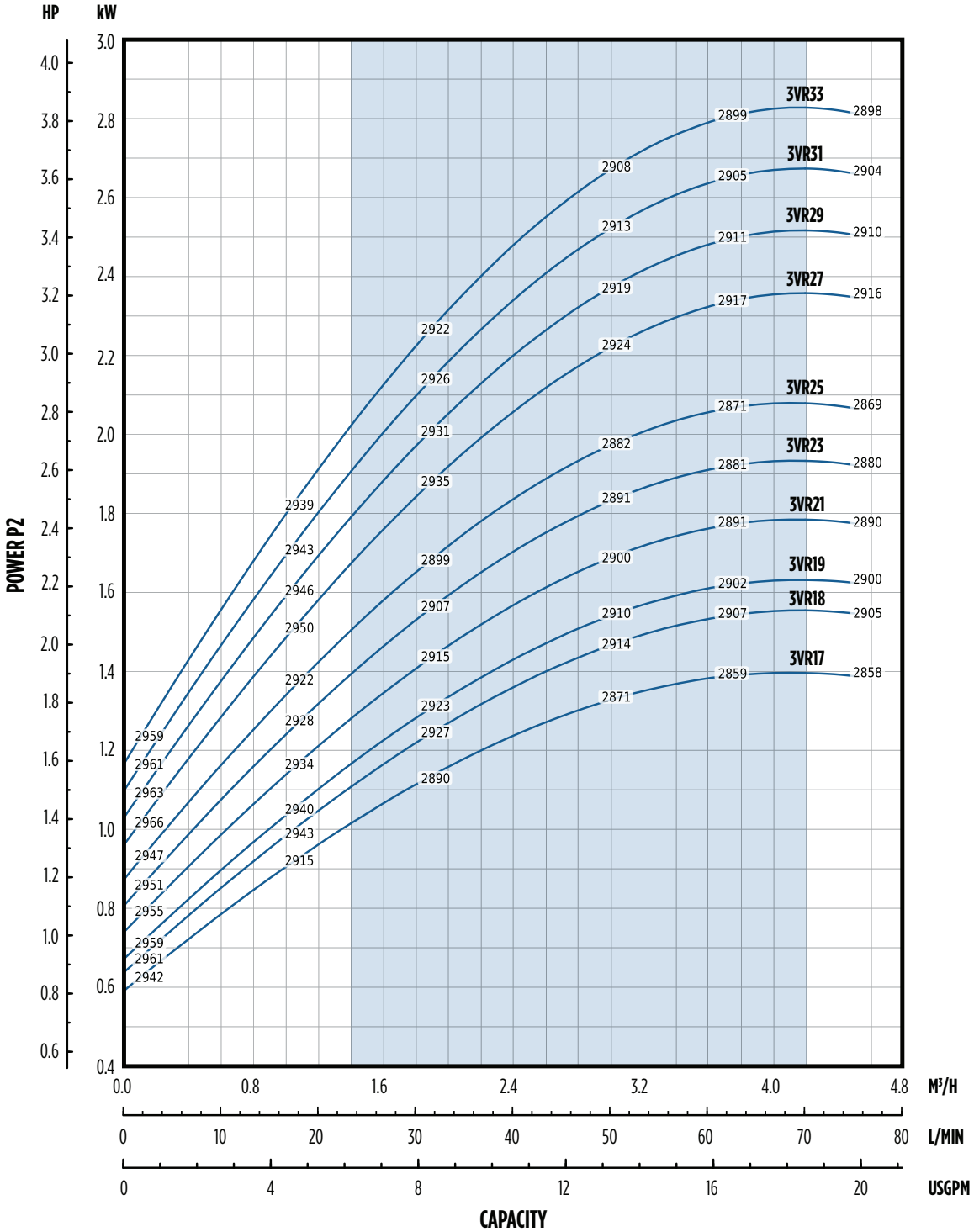
NOTES: Specifications subject to change without prior notice. Hydraulic characteristics are according to ISO standard 9906, Annex A.

3 VR - POWER CURVE



NOTE: Specifications subject to change without prior notice.

3 VR - POWER CURVE



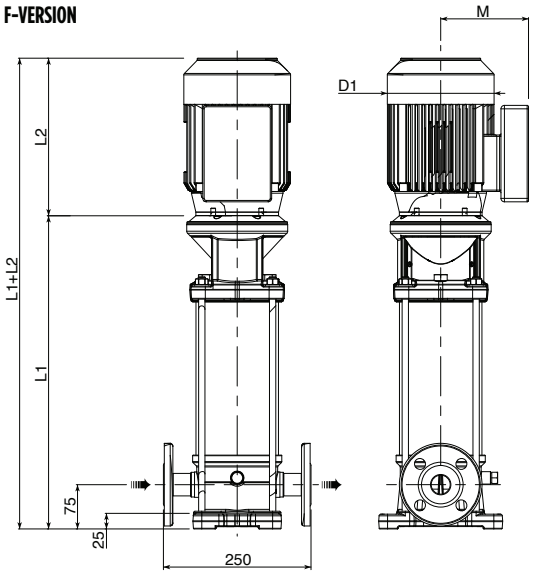
NOTE: Specifications subject to change without prior notice.

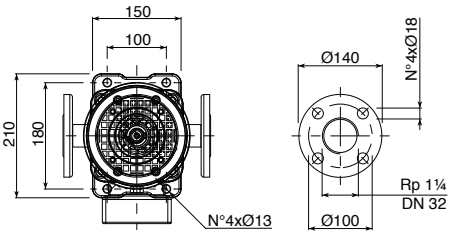
6 VR - HYDRAULIC PERFORMANCE

Pump Type	Rated Power		H1	Stages	Delivery												
					l/min - 0	16.7	25.0	33.3	42	50.0	58.3	67	75.0	83.3	90	100.0	116.7
	kW	HP	Bar		m^3/h - 0	1	1.5	2	2.5	3	3.5	4	4.5	5	5.4	6	7
					H = Total Head Column of Water (Meters)												
6VR02	0.37	0.5		2	15	15	15	14.5	14	13.5	13	12.5	12	11	10.5	9.5	7
6VR03	0.37	0.5		3	22.5	22	21.5	21	20.5	19.5	19	18	17	16	15	13.5	10
6VR04	0.55	0.75		4	29.5	29	29	28	27	26	25	23.5	22.5	21	20	17.5	13.5
6VR05	0.75	1		5	37.5	37	36.5	35.5	34.5	33.5	32	30.5	29	27	25.5	23	17.5
6VR06	0.75	1		6	44.5	44	43.5	42.5	41	39.5	37.5	36	34	31.5	30	26.5	20
6VR07	1.1	1.5		7	52.5	52	51.5	50.5	49	47	45	43	40.5	38.5	36	32.5	25
6VR08	1.1	1.5		8	60	59	58.5	57	55.5	53.5	51	48.5	46	43	40.5	36.5	27.5
6VR09	1.1	1.5		9	67	66	65	63.5	61.5	59.5	56.5	54	51	47.5	45	40	30.5
6VR10	1.5	2		10	75.5	74.5	73.5	72	70	67.5	65	61.5	58.5	55	52	46.5	35.5
6VR11	1.5	2		11	82.5	81.5	80.5	79	76.5	74	70.5	67	63.5	60	56.5	50.5	38.5
6VR12	1.5	2		12	90	88.5	87.5	85.5	83	80	76.5	72.5	69	64.5	61	54.5	41.5
6VR13	1.5	2		13	97	95.5	94.5	92	89.5	86	82	78	74	69	65	58.5	44
6VR14	2.2	3	20	14	106	105	103.5	101.5	99	95.5	91.5	87.5	83	78	73.5	66.5	51
6VR15	2.2	3		15	113.5	112	110.5	108.5	105.5	102	97.5	93	88	83	78.5	70.5	54
6VR16	2.2	3		16	121	119.5	118	115.5	112.5	108.5	103.5	98.5	93.5	88	83	74.5	57
6VR17	2.2	3		17	128	126.5	124.5	122	119	114.5	109.5	104.5	98.5	93	87.5	78.5	60
6VR18	2.2	3		18	135.5	133.5	131.5	129	125.5	120.5	115.5	110	104	97.5	92	82.5	63
6VR19	2.2	3		19	142.5	140.5	138.5	135.5	131.5	127	121.5	115.5	109	102.5	96.5	86.5	65.5
6VR20	3	4		20	152.5	151	149	146.5	142.5	138	132.5	126.5	120	113	107	96.5	74.5
6VR21	3	4		21	159.5	158	156.5	153.5	149.5	144.5	138.5	132	125.5	118	112	101	78
6VR23	3	4		23	174.5	172.5	170.5	167.5	163	157.5	151	144	136.5	128.5	121.5	109.5	84.5
6VR25	3	4		25	189.5	187	185	181	176.5	170	163	155.5	147	138.5	131	118	90.5
6VR28	4	5.5		28	214	212.5	210	206.5	201.5	194.5	187	178.5	169.5	160	151.5	137	106.5
6VR30	4	5.5		30	229	227	224.5	220.5	215	208	199.5	190.5	180.5	170.5	161	145.5	113
6VR33	4	5.5		33	251.5	249	246	242	235.5	227.5	218	208	197	185.5	175.5	158.5	122.5

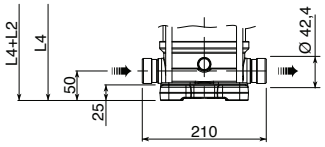
6 VR - DIMENSIONS

F-VERSION

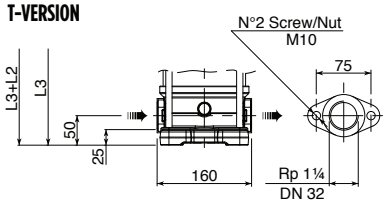




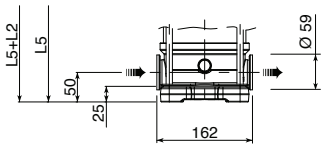
V-VERSION



T-VERSION



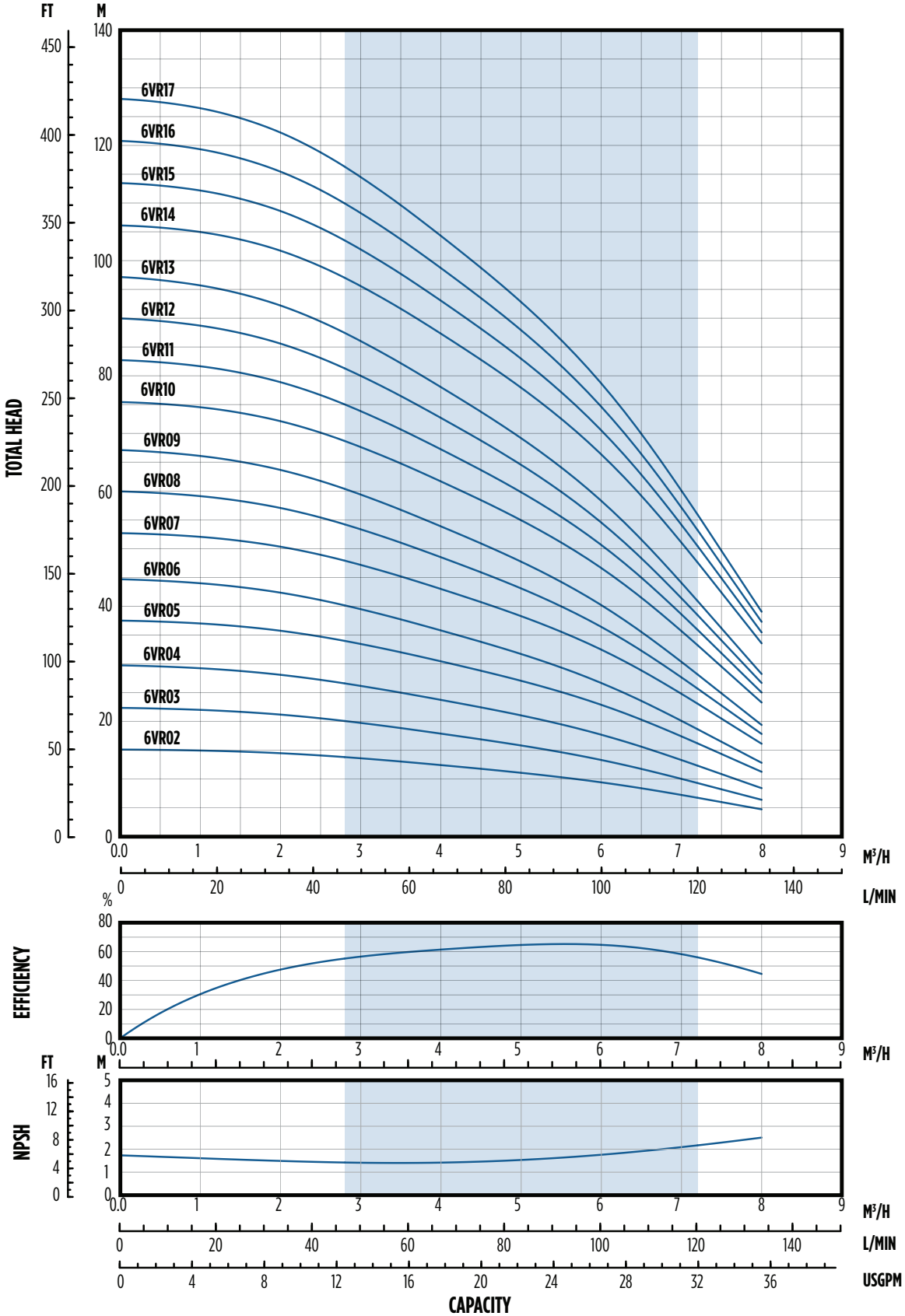
C-VERSION



F-Version: Round flanges on body type PN25; pump is supplied without counter-flanges (optional accessories, including bolts and joints).
T-Version: Oval flanges on body type PN16; pump is supplied without threaded oval counter-flanges (optional accessories, including bolts and joints).
V-Version: Connections with rapid fittings type "Victaulic"; pump is supplied without the collars (optional accessories).
C-Version: Connections with round fittings type Clamp-FlexiClamp; pump is supplied without collars (optional accessories).

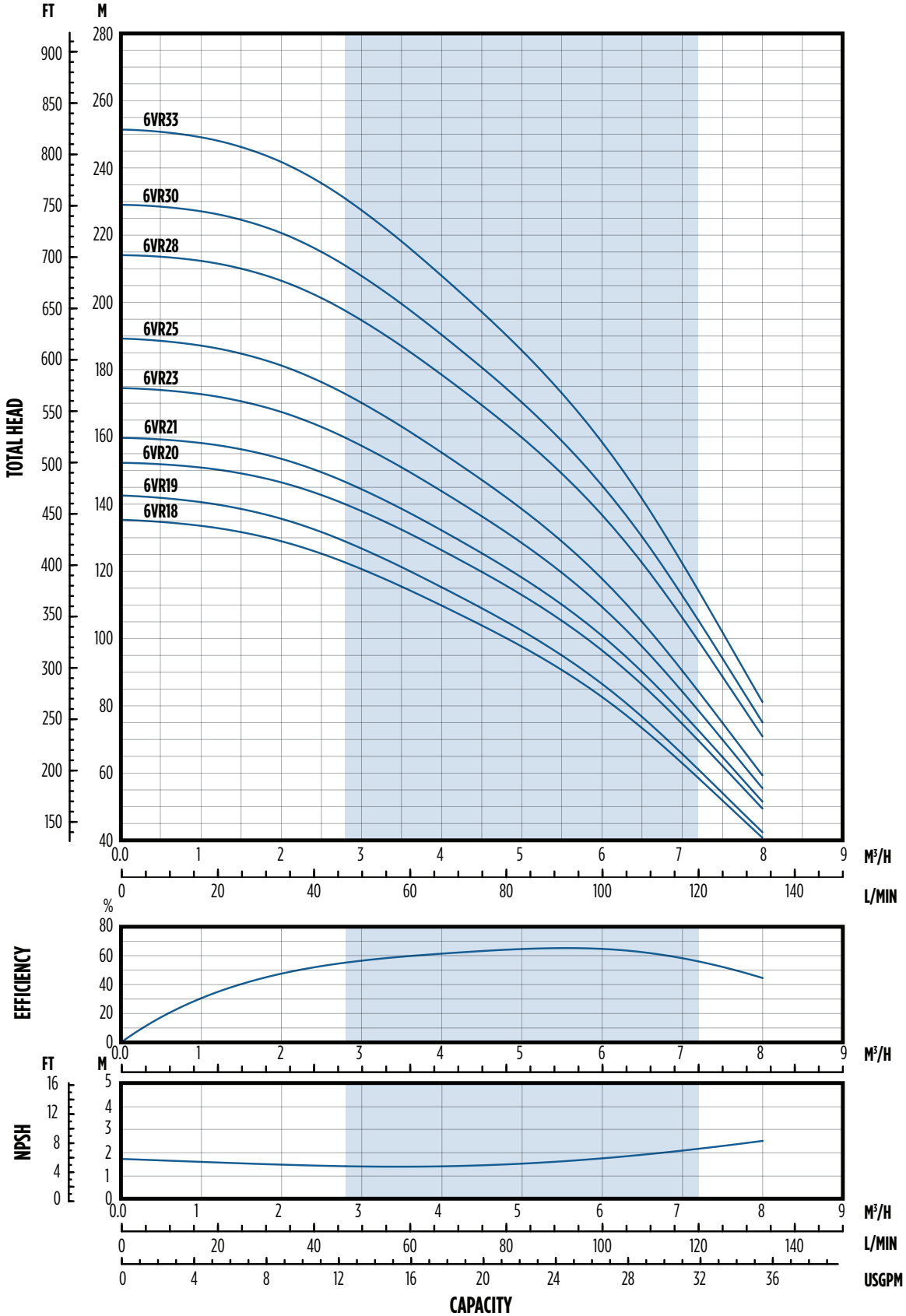
Pump Model	Motor				Dimensions (mm)									Weight (kg)		
	Rated Power		Size	MTG	L1	L2		L1+L2	M		D1		D2	PE	Motor	PMA
	kW	HP			F	1-PH	3-PH		1-PH	3-PH	1-PH	3-PH				
6VR02	0.37	0.5	71	B14	319.5	215	215	534.5	129	112	142	142	170	15	5.8	20.8
6VR03	0.37	0.5	71		345.5	215	215	560.5	129	112	142	142	170	15.5	5.8	21.3
6VR04	0.55	0.75	71		371.5	215	215	586.5	129	112	142	142	170	16	6.2	22.2
6VR05	0.75	1	80		397.5	232	232	629.5	150	129	160	160	170	16.5	9.5	26
6VR06	0.75	1	80		423.5	232	232	655.5	150	129	160	160	170	17.5	9.5	27
6VR07	1.1	1.5	80		449.5	232	232	681.5	150	129	160	160	170	18	11.1	29.1
6VR08	1.1	1.5	80		475.5	232	232	707.5	150	129	160	160	170	18.5	11.1	29.6
6VR09	1.1	1.5	80		501.5	232	232	733.5	150	129	160	160	170	19	11.1	30.1
6VR10	1.5	2	90		537.5	267	267	804.5	160	138	180	180	170	20	14	34
6VR11	1.5	2	90		563.5	267	267	830.5	160	138	180	180	170	20.5	14	34.5
6VR12	1.5	2	90		589.5	267	267	856.5	160	138	180	180	170	21	14	35
6VR13	1.5	2	90		615.5	267	267	882.5	160	138	180	180	170	21.5	14	35.5
6VR14	2.2	3	90		641.5	267	267	908.5	160	138	180	180	170	22	16	38
6VR15	2.2	3	90		667.5	267	267	934.5	160	138	180	180	170	22.5	16	38.5
6VR16	2.2	3	90		693.5	267	267	960.5	160	138	180	180	170	23	16	39
6VR17	2.2	3	90		719.5	267	267	986.5	160	138	180	180	170	23.5	16	39.5
6VR18	2.2	3	90		745.5	267	267	1012.5	160	138	180	180	170	24	16	40
6VR19	2.2	3	90		771.5	267	267	1038.5	160	138	180	180	170	24.5	16	40.5
6VR20	3	4	100		807.5	-	290	1097.5	-	138	-	180	170	25.5	18	43.5
6VR21	3	4	100		833.5	-	290	1123.5	-	138	-	180	170	26	18	44
6VR23	3	4	100		885.5	-	290	1175.5	-	138	-	180	170	27	18	45
6VR25	3	4	100		937.5	-	290	1227.5	-	138	-	180	170	28.5	18	46.5
6VR28	4	5.5	112		1015.5	-	306	1321.5	-	145	-	196	170	30	26.5	56.5
6VR30	4	5.5	112		1067.5	-	306	1373.5	-	145	-	196	170	31	26.5	57.5
6VR33	4	5.5	112		1145.5	-	306	1451.5	-	145	-	196	170	32.5	26.5	59

6 VR - PERFORMANCE CURVE



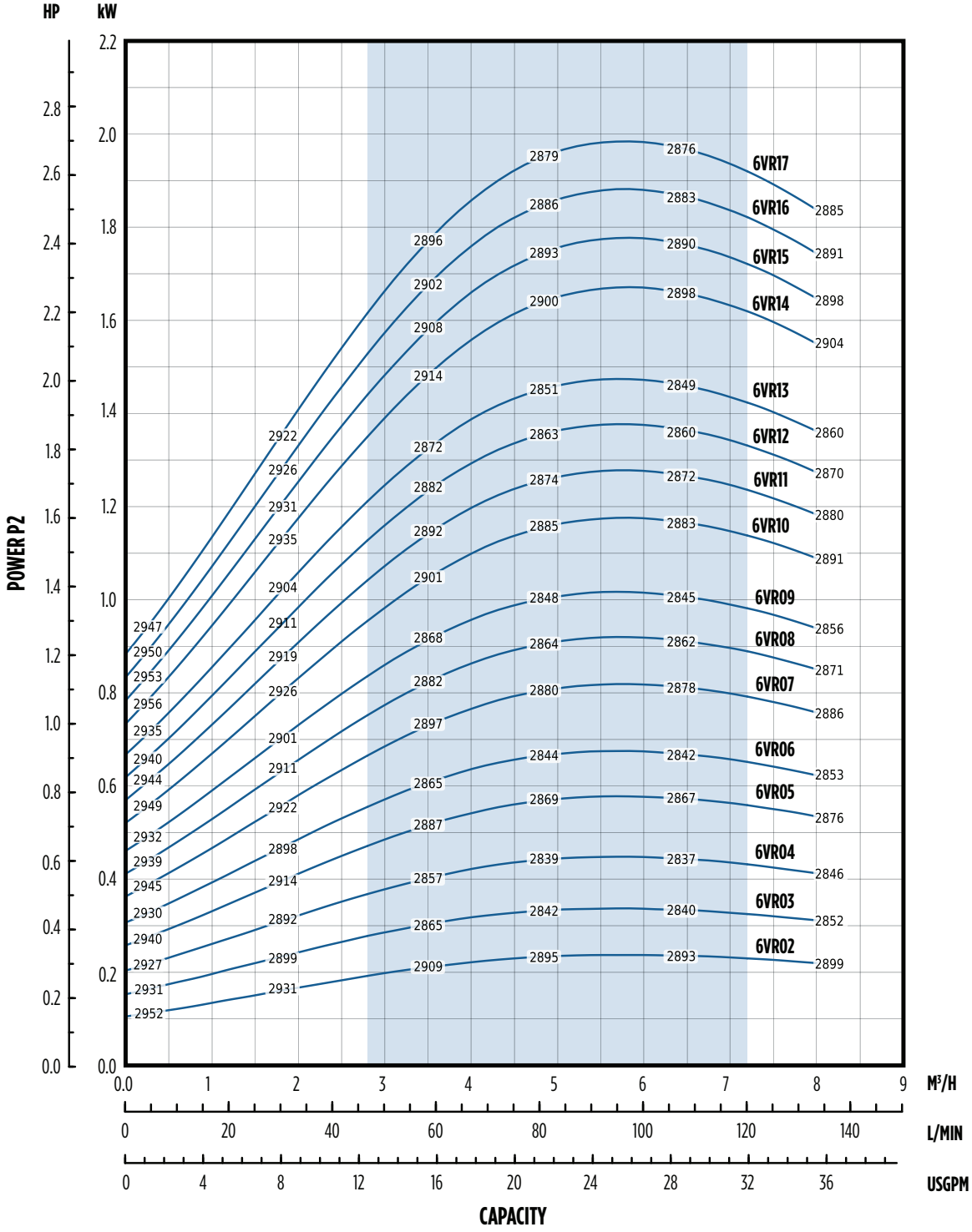
NOTES: Specifications subject to change without prior notice. Hydraulic characteristics are according to ISO standard 9906, Annex A.

6 VR - PERFORMANCE CURVE



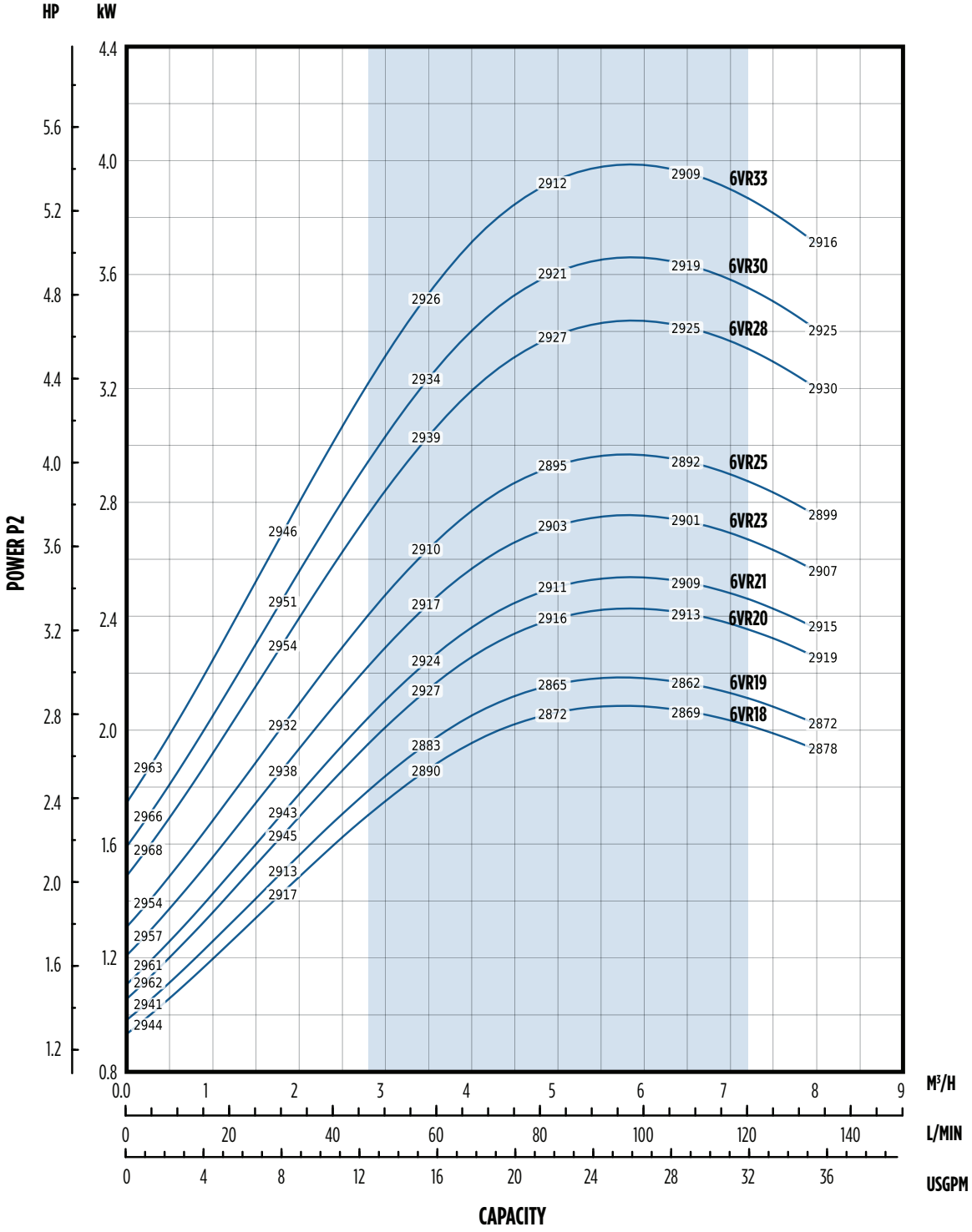
NOTES: Specifications subject to change without prior notice. Hydraulic characteristics are according to ISO standard 9906, Annex A.

6 VR - POWER CURVE



NOTE: Specifications subject to change without prior notice.

6 VR - POWER CURVE



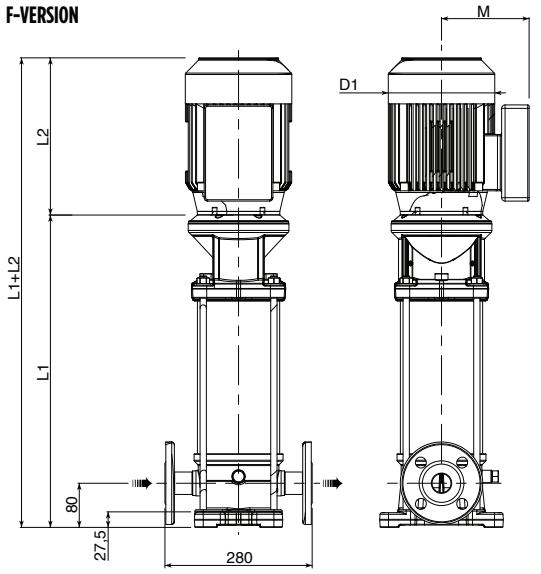
NOTE: Specifications subject to change without prior notice.

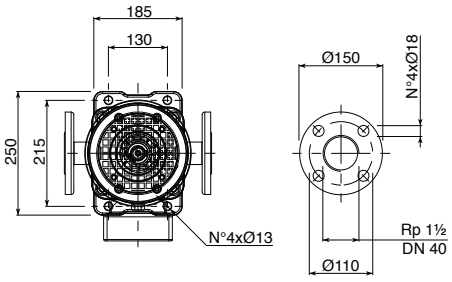
10 VR - HYDRAULIC PERFORMANCE

Pump Type	Rated Power		H1	Stages	Delivery													
					l/min - 0	50.0	58.3	67	75.0	83.3	90	100.0	116.7	133	150.0	166.7	183	233.3
	kW	HP	Bar		m3/h - 0	3	3.5	4	4.5	5	5.4	6	7	8	9	10	11	14
					H = Total Head Column of Water (Meters)													
10VR02	0.75	1	20	2	20	20	19.5	19.5	19	19	18.5	18.5	17.5	17	16	15	13.5	9
10VR03	1.1	1.5		3	30	30	29.5	29.5	29	28.5	28	27.5	26.5	25.5	24	22.5	20.5	13.5
10VR04	1.5	2		4	40.5	40	39.5	39.5	39	38.5	38	37	35.5	34	32.5	30.5	28	18
10VR05	1.5	2		5	50.5	49.5	49	48.5	48	47	46.5	45.5	43.5	41.5	39.5	37	33.5	21.5
10VR06	2.2	3		6	61	60.5	60	59	58.5	57.5	57	56	54	51.5	49	46	42	27.5
10VR07	2.2	3		7	70.5	70	69	68.5	67.5	66.5	66	64.5	62	59.5	56	52.5	48	31
10VR08	3	4		8	81.5	81	80.5	80	79	78	77	75.5	73	70	66.5	62.5	57.5	38
10VR09	3	4		9	91.5	91	90.5	89.5	88.5	87.5	86	84.5	81.5	78	74	69.5	64	42
10VR10	4	5.5		10	102.5	102.5	102	101	100	99	97.5	96	93	89	84.5	79.5	73.5	49
10VR11	4	5.5		11	113	112.5	111.5	111	109.5	108	107	105	101.5	97.5	92.5	87	80.5	53.5
10VR12	4	5.5		12	123	122.5	121.5	120.5	119	117.5	116.5	114	110	105.5	100.5	94	87	57.5
10VR13	4	5.5		13	133	132	131	130	128.5	127	125.5	123	118.5	113.5	108	101	93.5	61.5
10VR15	5.5	7.5		15	153.5	153	152	150.5	149	147	145.5	142.5	138	132	125.5	118	109	72
10VR17	5.5	7.5		17	173.5	172.5	171.5	169.5	168	165.5	163.5	160.5	155	148.5	141	132.5	122	80.5
10VR19	7.5	10		19	195	194.5	193.5	191.5	189.5	187.5	185.5	182	176	169	160.5	151	139.5	93
10VR21	7.5	10		21	215.5	214.5	213	211	209	206	204	200	193.5	185.5	176.5	166	153	101.5
10VR23	7.5	10		23	235.5	234	232.5	230.5	228	225	222.5	218.5	211	202	192	180.5	166.5	110
10VR24	11	15		24	248	248.5	247	245.5	243	240.5	238	234	227	218	208	196	182	122.5

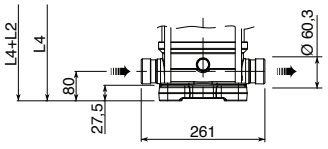
10 VR - DIMENSIONS

F-VERSION

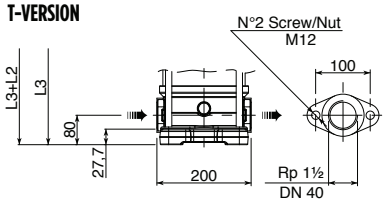




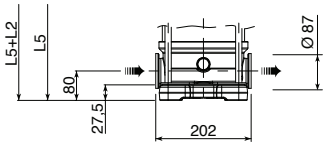
V-VERSION



T-VERSION



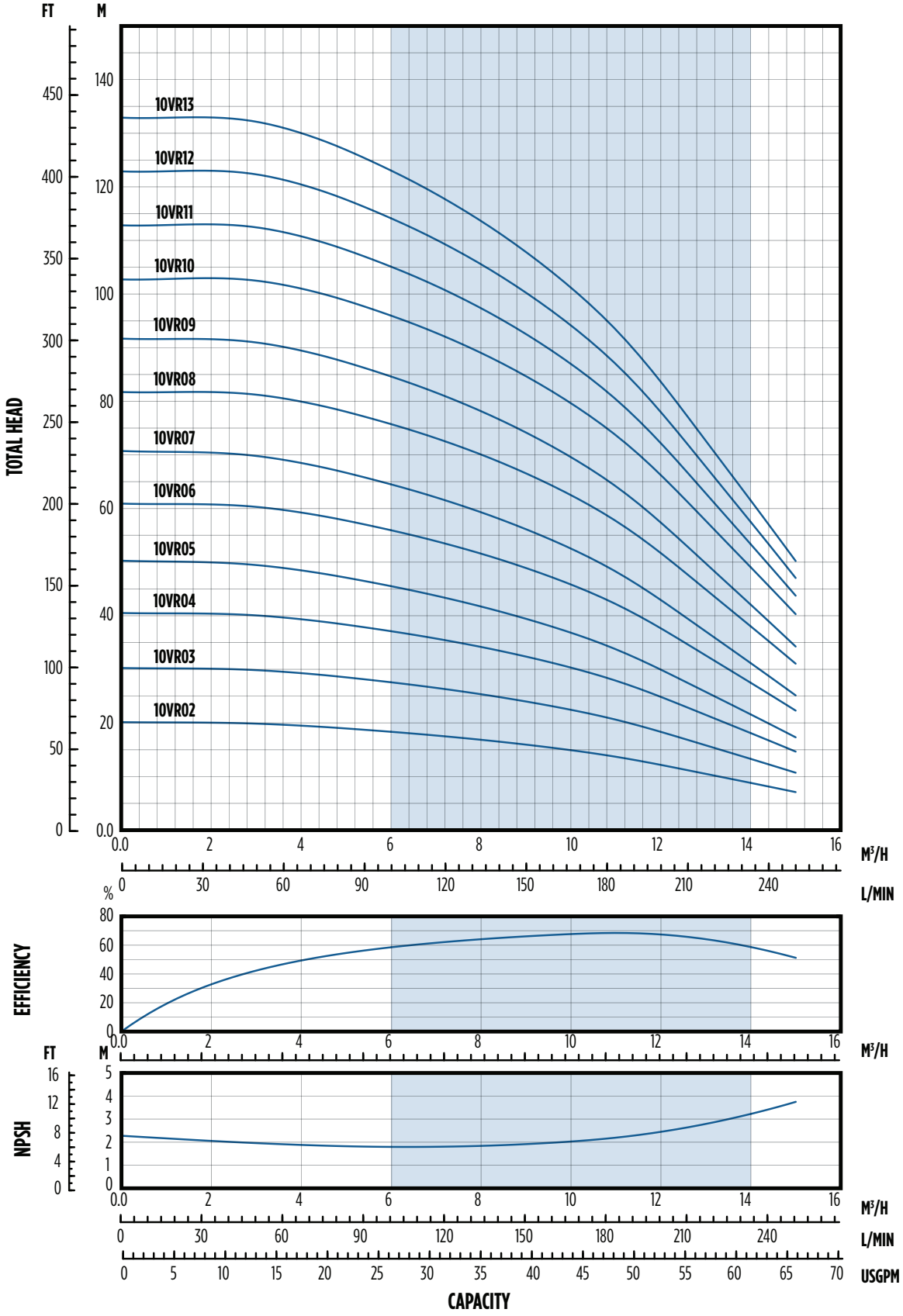
C-VERSION



F-Version: Round flanges on body type PN25; pump is supplied without counter-flanges (optional accessories, including bolts and joints).
T-Version: Oval flanges on body type PN16; pump is supplied without threaded oval counter-flanges (optional accessories, including bolts and joints).
V-Version: Connections with rapid fittings type "Victaulic"; pump is supplied without the collars (optional accessories).
C-Version: Connections with round fittings type Clamp-FlexiClamp; pump is supplied without collars (optional accessories).

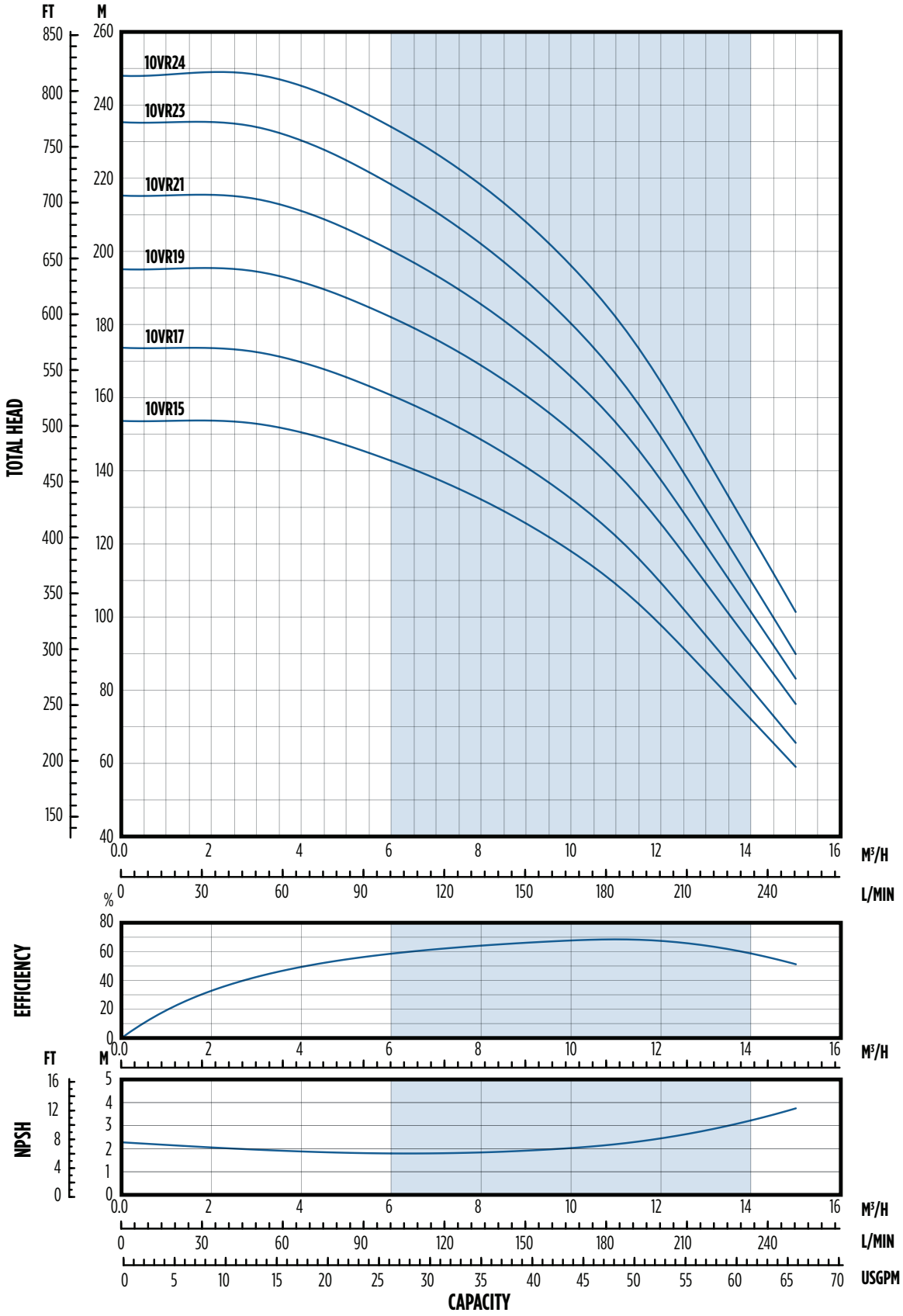
Pump Model	Motor				Dimensions (mm)									Weight (kg)		
	Rated Power		Size	MTG	L1	L2		L1+L2	M		D1		D2	PE	Motor	PMA
	kW	HP				1-PH	3-PH		1-PH	3-PH	1-PH	3-PH				
10VR02	0.75	1	80	B14	347.5	232	232	579.5	150	129	160	160	170	17.5	9.5	27
10VR03	1.1	1.5	80	B14	377.5	232	232	609.5	150	129	160	160	170	18	11.1	29.1
10VR04	1.5	2	90	B14	417.5	267	267	684.5	160	138	180	180	170	19.5	14	33.5
10VR05	1.5	2	90	B14	447.5	267	267	714.5	160	138	180	180	170	20	14	34
10VR06	2.2	3	90	B14	477.5	267	267	744.5	160	138	180	180	170	20.5	16	36.5
10VR07	2.2	3	90	B14	507.5	267	267	774.5	160	138	180	180	170	21	16	37
10VR08	3	4	100	B14	547.5	-	290	837.5	-	138	-	180	170	22.5	18	40.5
10VR09	3	4	100	B14	577.5	-	290	867.5	-	138	-	180	170	23	18	41
10VR10	4	5.5	112	B14	607.5	-	306	913.5	-	145	-	196	170	24	26.5	50.5
10VR11	4	5.5	112	B14	637.5	-	306	943.5	-	145	-	196	170	24.5	26.5	51
10VR12	4	5.5	112	B14	667.5	-	306	973.5	-	145	-	196	170	25	26.5	51.5
10VR13	4	5.5	112	B14	697.5	-	306	1003.5	-	145	-	196	170	26	26.5	52.5
10VR15	5.5	7.5	132	B5	933	-	328	1261	-	161	-	225	300	46.5	33.6	80.1
10VR17	5.5	7.5	132	B5	993	-	328	1321	-	161	-	225	300	48	33.6	81.6
10VR19	7.5	10	132	B5	1053	-	350	1403	-	161	-	225	300	49	36	85
10VR21	7.5	10	132	B5	1113	-	350	1463	-	161	-	225	300	50.5	36	86.5
10VR23	7.5	10	132	-	1173	-	350	1523	-	161	-	225	300	52	36	88
10VR24	11	15	160	-	1223	-	425	1648	-	198	-	248	350	55	59	114

10 VR - PERFORMANCE CURVE



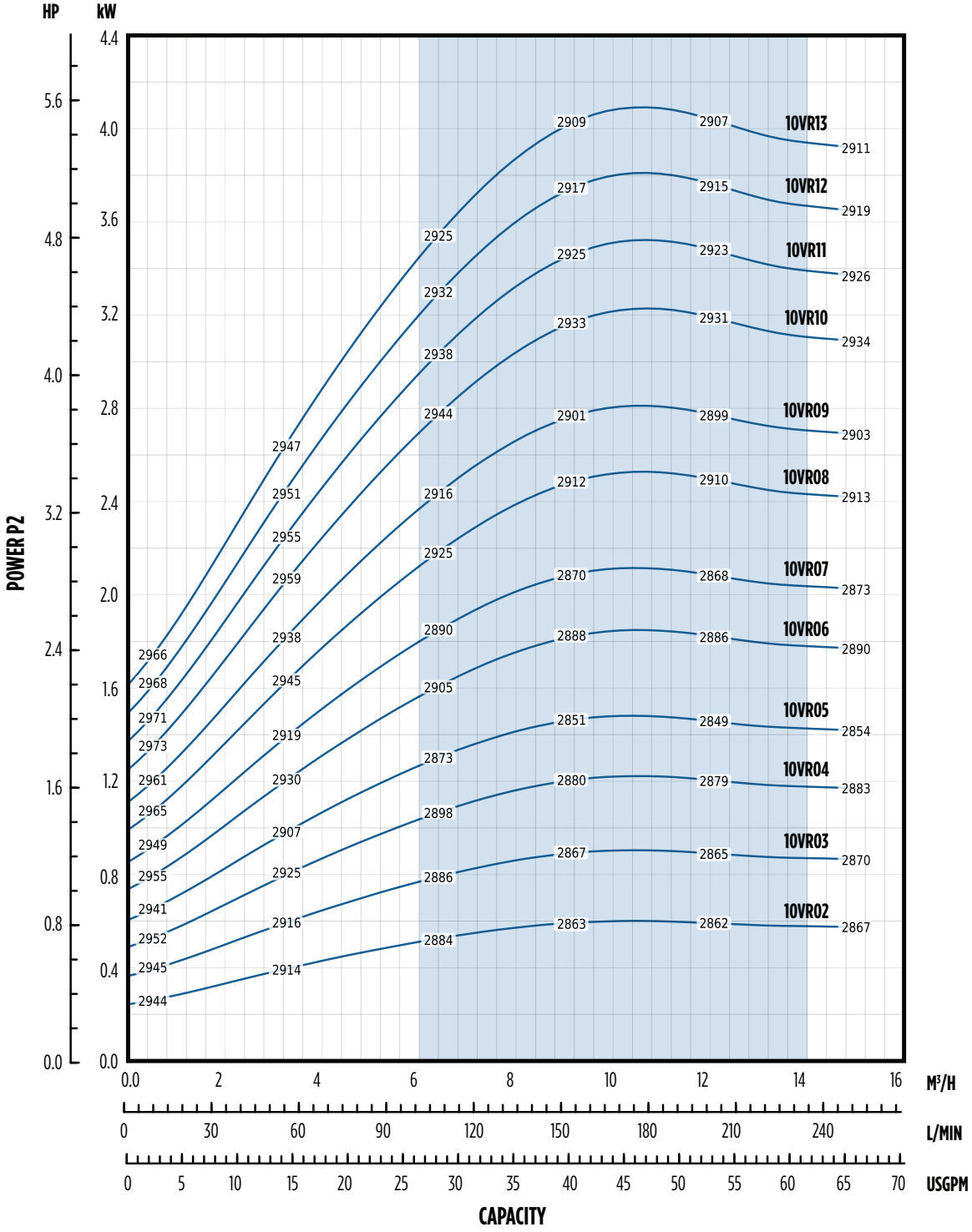
NOTES: Specifications subject to change without prior notice. Hydraulic characteristics are according to ISO standard 9906, Annex A.

10 VR - PERFORMANCE CURVE



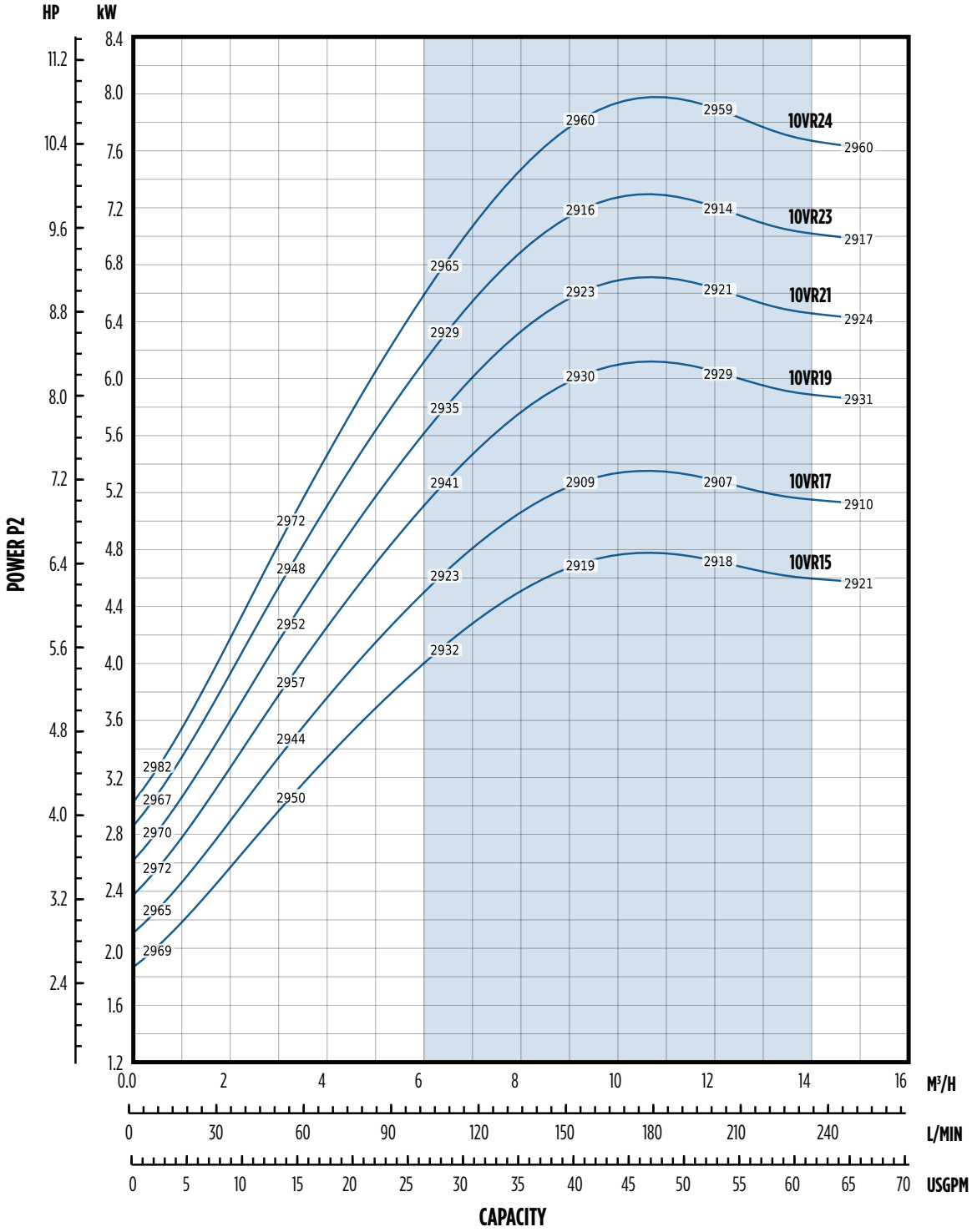
NOTES: Specifications subject to change without prior notice. Hydraulic characteristics are according to ISO standard 9906, Annex A.

10 VR - POWER CURVE



NOTE: Specifications subject to change without prior notice.

10 VR - POWER CURVE



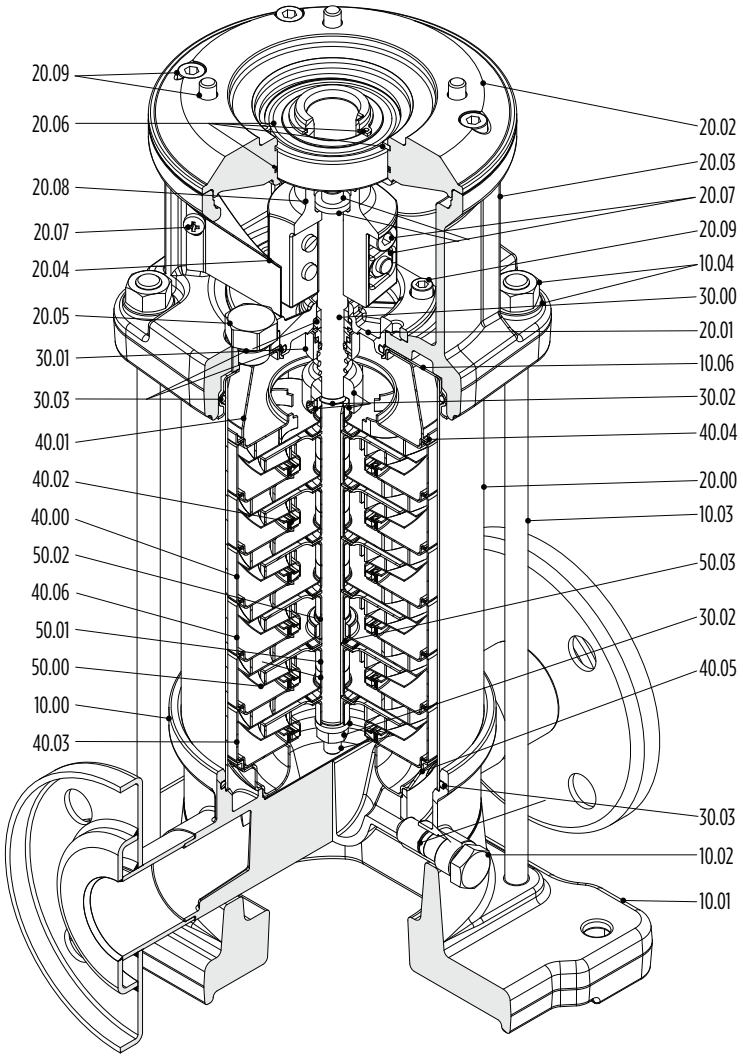
NOTE: Specifications subject to change without prior notice.

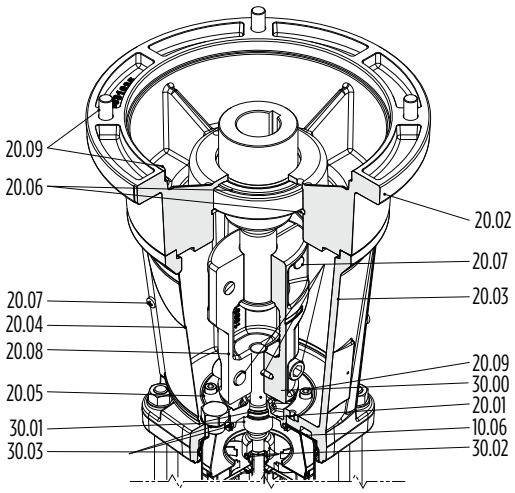
1-3-6-10 VR - MATERIALS

Ref. No.	Part Description	MATERIAL						
		Type	G - Standard version		H - 304 SS version		N - 316 SS version	
			ASTM/AISI	DIN/EN	ASTM/AISI	DIN/EN	ASTM/AISI	DIN/EN
10.00	Pump Casing	Cast Iron (G Ver.)/ Stainless Steel (H/N Ver.)	-	-	CF 8/AISI 304	1.4308	CF 8M/AISI 316	1.4408
10.02	Draining and Priming Cap	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
10.06	Upper Flange	Cast Iron (G Ver.)/ Stainless Steel (H/N Ver.)	-	-	CF 8/AISI 304	1.4308	CF 8M/AISI 316	1.4408
20.00	Outer Case	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
20.01	Mechanical Seal Housing	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
20.05	Filling Plugs	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
30.00	Pump Shaft	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
30.01	Kit Mechanical Seal	Silicon Carbide SiC, Carbon Graphite, EPDM, Stainless Steel	-	-	-	-	-	-
30.02	Kit Mechanical Seal Fastening Kit	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
30.03	Kit O-ring	EPDM	-	-	-	-	-	-
40.00	Stage Housing and Diffuser	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
40.01	Stage Centering Outlet	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
40.02	Floating Neck Ring	PTFE	-	-	-	-	-	-
40.03	Initial Stage Housing	-	-	-	AISI 304	1.4301	AISI 316	1.4401
40.04	Last Stage with Diffuser	-	-	-	AISI 304	1.4301	AISI 316	1.4401
40.05	Stage Centering Inlet	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
40.06	Stage Housing and Diffuser w/ Bearing	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
50.00	Impeller	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
51.01	Split Cone	Stainless Steel	-	-	AISI 304	1.4301	AISI 316	1.4401
51.02	Intermediary Sleeve Nut	Stainless Steel, Tungsten Carbide WC	-	-	AISI 304	-	AISI 316	1.4401
51.03	Journal Sleeve	Stainless Steel, Tungsten Carbide WC	-	-	AISI 304	1.4301	AISI 316	1.4401

'G' version only available for 30, 45, 65 and 95 VR

1-3-6-10 VR - MAIN COMPONENTS



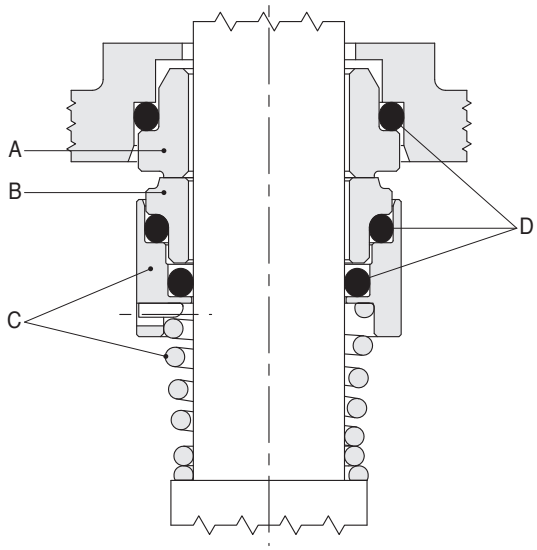


Ref. No.	Description
10.00	Pump Casing
10.01	Pump Fixing Plate
10.02	Filling and Draining Plug
10.03	Tie Bolt
10.04	Kit Nuts and Washers
10.06	Upper Flange
20.00	Outer Case
20.01	Mechanical Seal Housing
20.02	Motor Flange
20.03	Motor Bracket
20.04	Coupling Guard
20.05	Filling Plugs
20.06	Circlips And Bearings, and O-ring
20.07	Coupling Fasteners
20.08	Coupling
20.09	Kit Motor Screws

Ref. No.	Description
30.00	Pump Shaft
30.01	Kit Mechanical Seal
30.02	Mechanical Seal Fastening Kit
30.03	Kit O-rings
40.00	Stage Housing and Diffuser
40.01	Stage Centering Outlet
40.02	Floating Neck Ring
40.03	Initial Stage Housing
40.04	Last Stage with Diffuser
40.05	Stage Centering Inlet
40.06	Stage Housing and Diffuser with Bearing
50.00	Impeller
50.01	Impeller Spacer
50.02	Intermediary Sleeve
50.03	Intermediary Sleeve Spacer

MECHANICAL SEAL SPECIFICATIONS

Type U – Unbalanced



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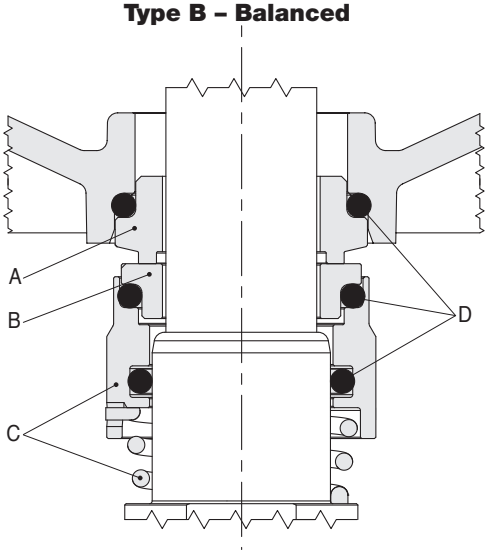
1-3-6-10-15-20 VR*

Type B – Balanced



00114115 02/2015

30-45-65-95 VR

Standard version

Model	Type				Position A Stationary part	Position B Rotating part	Position C Other components	Position D Elastomers	Temperature
E1	B	Q1	G	E	Graphite	Silicon carbide	AISI 316	EPDM	-30°C +120°C

Available on request

Model	Type				Position A Stationary part	Position B Rotating part	Position C Other components	Position D Elastomers	Temperature (°C)
E2	Q1	Q1	G	E	Silicon carbide	Silicon carbide	AISI 316	EPDM	-10°C +120°C
V3	Q1	Q1	G	V	Silicon carbide	Silicon carbide	AISI 316	FKM	-10°C +120°C
V4	B	Q1	G	V	Graphite	Silicon carbide	AISI 316	FKM	-10°C +120°C
E5	U	U	G	E	Tungsten carbide	Tungsten carbide	AISI 316	EPDM	-10°C +120°C

Type	Material
B	Graphite
E	EPDM
G	AISI 316
Q1	Silicon carbide
V	FKM
U	Tungsten carbide

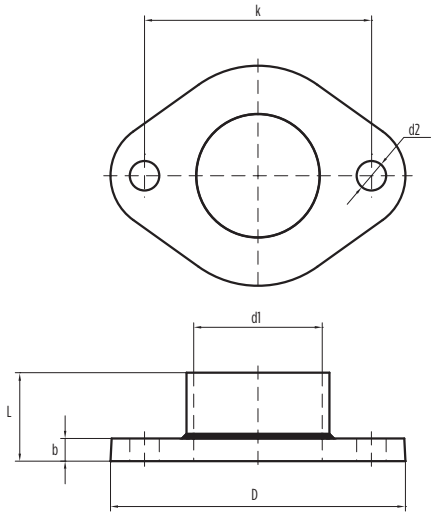
* Balanced mechanical seal is available on request

COMPATIBILITY FLUID / SEAL MATERIALS

Liquids (aqueous solutions)	Concentration (%)	Temperature Min/Max (°C)	VR models		
			G	H	N
Acetic acid	10 ÷ 40	+18 +70		E1	E1
Aluminium sulfate	10 ÷ 25	+5 +50			E2
Ammonia in water	25	-20 +50		E1	E1
Ammonium sulfate	10	+5 +60			E2
Benzoic acid	4	+20 +80		V4	V4
Caustic soda	25	+5 +70		E2	E2
Chloroform	100	-10 +30		V4	V4
Citric acid	5	+5 +70		E1	E1
Copper sulfate	1 ÷ 20	+5 +30			V3
Deionised, demineralised water	100	+5 +110		E1	E1
Diathermic oil	100	+90 +120	V4	V4	V4
Emulsion oil and water any	10 ÷ 50	+15 +90	V4	V4	V4
Ethylene glycol	10 ÷ 30	-18 +120		E1	E1
ferrous sulfate and ferric sulfate	10	+5 +30			E1
Formic acid	5	+5 +25		E1	E1
Glycerine	100	+90 +120	E1	E1	E1
Hydrochloric acid	2 max	+5 +25			V3
Mineral oil	100	+90 +120	V4	V4	V4
Nitric acid	40	+5 +30		V3	V3
Perchloroethylene	100	-10 +30	V4	V4	V4
Phosphates-polyphosphates	10	+5 +90			E1
Phosphoric acid	5	+5 +30			E1
Propylene glycol	30	-10 +100	V3	V3	V3
Sea water	max 35 ppm	+2 +60			E1
Sodium bicarbonate (Baking soda)	6	+5 +60			E1
Sodium hypochlorite	1	+5 +25			V3
Sodium nitrate	10	+5 +60	E1		E1
Sodium sulfate	15	+5 +40	E2	E2	E2
Sulphuric acid	2	+5 +25			V4
Tannic acid	20	+5 +50			E1
Tartaric acid	50	+5 +25		V3	V3
Trichloroethylene	100	-10 +40	V4	V4	V4
Vegetable oil	100	+70 +110	E1	E1	E1
Water	100	+5 +120	E1	E1	E1

The table is to be considered as a general guide. It is important to consider the specific working conditions; in particular to consider the concentration of the pumped liquid, the specific weight of the liquid and/or the viscosity, the liquid temperature and pressure. All these conditions are relevant for the motor and pump performance. When pumping dangerous liquids, it is recommended to take safety precautions. For further details, please contact us.

Dimensions of oval counterflanges

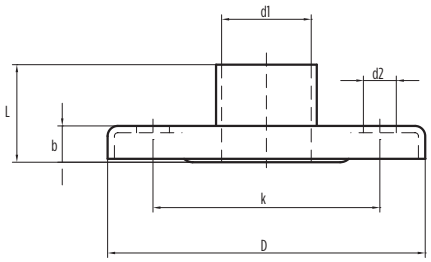


0004101 11/2013

OVAL COUNTERFLANGES								
DN	DIMENSIONS [mm]					HOLES		PN
	D	d1	k	L	b	d2	N°	
32	99	Rp 1" ¼	75	33	8	11	2	16
		NPT1" ¼						
40	130	Rp 1" ½	100	35	10	13		
		NPT1" ½						
50		Rp 2"		39				
		NPT 2"						

Kit round counterflanges available on request; AISI 304

Dimensions of round threaded counterflanges according to EN 1092-1

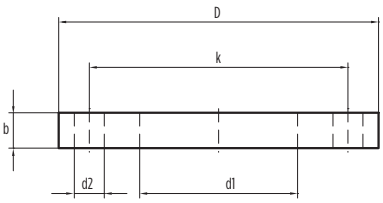


0004101 11/2013

ROUND THREADED COUNTERFLANGES								
DN	DIMENSIONS [mm]					HOLES		PN
	D	d1	k	L	b	d2	N°	
25	115	Rp 1"	85	43	16	14	4	25
		NPT 1"						
32	140	Rp 1" ¼	100			18		
		NPT 1" ¼						
40	150	Rp 1" ½	110					
		NPT 1" ½						
50	165	Rp 2"	127		18	19	8	
		NPT 2"						
65	185	Rp 2" ½	145	32	18	18	8	16
		NPT 2" ½						
80	200	Rp 3"	160	34	20			
		NPT 3"						
100	220	Rp 4"	180	40				
		NPT 4"						

Kit round counterflanges available on request:
DN 25-32-40-50: zinc plated, AISI 304, AISI 316L
DN 65-80-100: zinc plated, AISI 316

Dimensions of welding round counterflanges according to EN 1092-1



0004101 11/2013

WELDING ROUND COUNTERFLANGES								
DN	DIMENSIONS [mm]					HOLES		PN
	D	d1	k	L	b	d2	N°	
65	185	77,5	145	-	22	18	8	25/40
80	200	90,5	160		24			
100	235	116	190		26	22		

Kit round counterflanges available on request; AISI 316

MINIMUM EFFICIENCY INDEX (MEI)

ACCORDING TO COMMISSION REGULATION (EU) NO 547/2012

In order to achieve a comparable efficiency threshold-value across all legally covered water pumps, an index of pump size, specific speed, and rotational speed has been created: the MEI (Minimum Efficiency Index).

MEI covers best point (BEP), part load (PL), and overload (OL) efficiencies as water pumps may be chosen with safety margins and hence do not run at best efficiency point.

This ensures high and flat efficiency curves and consequently an efficient operation in real life. MEI means the dimensionless scale unit for hydraulic pump efficiency at BEP, PL and OL. MEI is a measure for the quality of a pump size in respect to the efficiency.

The higher the value of the MEI is, the better is the pump size in respect to efficiency and the lower is the yearly energy consumption if pumps of this size are installed.

The upper limit of values of the MEI is principally open and depends only on physical and technological constraints. MEI is based on the full impeller diameter.

The operation of this water pump 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.

The efficiency of a pump with a 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. For benchmark efficiency graphs, go to www.europump.org/efficiencycharts.

Benchmark MEI $\geq$ 0.70.

BOOSTER AND PRESSURE SYSTEMS

We can build to order single, dual, triplex and quad booster and pressure systems or supply off the shelf systems.
Available for all sizes: 1-3-6-10-15-20-30-45-65-95 VR

Notes

Franklin Electric

Franklin Electric (Aust) Pty Ltd
106-110 Micro Circuit
Dandenong South, Vic 3175
Tel: +61 3 9799 5000

Toll Free: 1300 FRANKLIN
1300 372 655
franklinwater.com.au

UNITED STATES
Franklin Electric Co., Inc.
9255 Coverdale Road,
Fort Wayne, Indiana 46809 USA
Tel: +1.260.824.2900
Fax: +1.260.824.2909