Certified to
NSF/ANSI Standard 50

HERBORNER PUMPS

herborner.F-N®

100% COATING = 0% CORROSION!

Data sheet

Coated close-coupled centrifugal pump:
Powerful, versatile and compact all at once

ENERGY EFFICIENCY made in Germany

www.herborner-pumps.com

herborner.F-N

HERBORNER PUMPS

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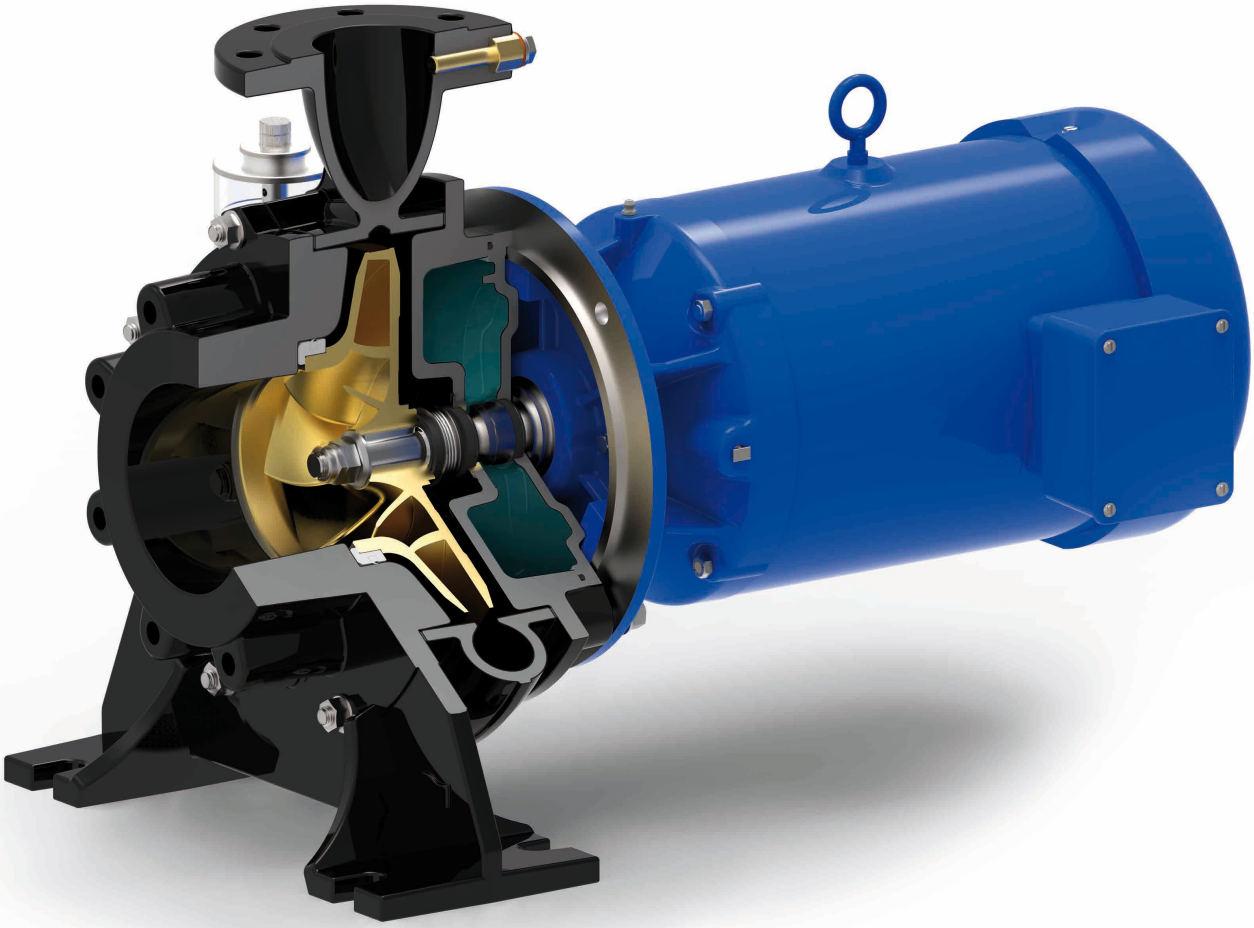


Use

With its 100% coating, the herborner.F-N is particularly well suited for to use in swimming pool leisure centers, water parks and amusement parks. In addition, they can be used for any application where a perfect and clean environment is required and the pump cannot introduce corrosive substances to the medium. These include industrial areas and water treatment facilities. Since the coating is approved for swimming pools and drinking water, it can be used practically anywhere.

The coating thickness of up to 3.9 x 10^{-2} inches provides an extremely smooth surface. Hydraulic efficiency is thus improved by up to 10%, saving energy over years.

Coating

A 100% coating of all necessary, medium-contacting parts and susceptible parts prevents corrosion and protects against corrosive substances. Corrosion damage to the pump and system components is then avoided.

Impeller protector

Special impeller protectors made of durable plastic prevent the impeller from rusting (after shutdown) and ensure quiet operation.

The version with a very small gap allows for high efficiency.

Mechanical seal protector

The mechanical seal seat is 100% protected against corrosion. Corrosion wells are prevented in the intermediate casing around the O-ring seat of the mechanical seal. This improvement in corrosion stability leads to a reduction in life cycle costs.

X-Lock system

The X-Lock system allows internal threads to be 100% coated in cast parts to prevent corrosion in the threads.

Service and maintenance

Only stainless steel screw connections are used, keeping the components easy to maintain for years.

Seal Guard system (option)

In general, a mechanical seal breaks after just a few seconds of dry running. The innovative and maintenance-free Seal Guard system greatly exceeds this time by offsetting lack of lubrication with a media reservoir. The primary mechanical seal is thus effectively protected against dry running.

Impeller

Dynamically balanced impellers ensure vibration-free running and contribute significantly to the long service life of the pump. By correcting the diameter, all impellers can reach any operating point within the characteristic diagram.

Closed multi vane impellers are used for clean to lightly contaminated pumped media.

Construction

The robust and stable type of construction continues to be used consistently. The rear pull-out design allows the interchangeable module to be easily replaced. Variable flange positions in 45° increments also offer optimum design possibilities.

Economic efficiency

Generously dimensioned shafts and bearings prolong the lifetime of the pump. The motors also come with a relubrication unit starting from 1.5 HP.

These technological improvements over standard motors considerably reduce the life cycle cost of the pump.

Motor shaft

The high-alloy, stainless steel motor shaft with high bending stiffness ensures minimum deflection. This minimizes leaks in the sealing, increasing the lifetime of the motor shaft.

Shaft seal

The shaft seal is a maintenance-free, bidirectional mechanical seal made of wear-resistant silicon carbide (SiC).

With the Seal Guard system version, a mechanical seal made from wear-resistant silicium carbide (SiC) seals at the pump side and another mechanical seal made of carbon/chrome molybdenum casting seals on the drive side. To lubricate and cool the mechanical seals, the intermediate casing is filled with NSF H1 lubricant. This oil seal even allows for short-term dry running.

All motors are equipped on the pump side with a special sealing against splash water.

By-pass channel

This ensures that the mechanical seal is optimally flushed with pumped medium. The sliding surfaces receive the necessary lubricating and cooling medium, which effectively increase the lifetime of the mechanical seal.

Installation

The pumps are delivered in horizontal and vertical installations with the “motor facing up”.

Horizontal installation of the pump

Vertical installation of the pump

Performance range

Speed	Q_{max} [US.gpm]	H_{max} [ft]
1,800 rpm	2,450	258

Noise

The noise is determined by complex factors such as size, materials, operating and installation conditions. Already during development, hydraulic measures and a solid construction were implemented to influence noise behavior. The maximum sound pressure level is mostly determined by the drive motors from air, magnetic and bearing noise. Lowest noise development levels is during operation near to $Q_{optimal}$ (best efficiency).

Motor

A surface-cooled three-phase motor with squirrel-cage is used, which corresponds to energy-efficiency class NEMA Premium.

Design	C-Face
Speed	1,800 rpm
Frequency	60 Hz
Voltage	208-230 V/ 460 V
Service factor	1.15
Number of phases	3

The motors have a PTC thermistor ex-works.

The motor can be ordered with an external frequency converter. Using a frequency converter is recommended.

Frequency control of the pumps is possible depending on the operating conditions.
- from 30 to 60 Hz

General data

- Media temperature range from +23 to 140 °F; higher temperatures by request
- Explosion-proof version from +23 to +104 °F
- Ambient temperature range: +23 to +104 °F
- Pumped medium H_2S-free, up to 1000 oz/gal chloride ions
- Density of the pumped medium up to maximum 8.76 lb/gal
- Viscosity of the pumped medium up to maximum 1.88 x 10^{-5} sq ft/s

Output can be adjusted for different operating conditions according to customer specifications.

Special configurations

- Different voltage and/or mains frequency
- Different insulation class
- Elevated ambient temperature
- Higher protection type
- Enhanced tropical and moisture protection
- Special materials
- Special paint finish for all uncoated components
- Permanent magnet motors with the highest efficiency (**herborner.F-N-PM**)
- Heat exchanger motor with diffusion of motor waste heat to the medium (**herborner.F-N-C**)
- Explosion-proof version (ATEX)
- Customer-specific solutions

Model designation

FN032-200A-A-0074N-W2B-V-EX

1 2 3 4 5 6 7 8 9 10 11

Number	Name	Type key identification	Meaning
1	Design	FN	herborner.F-N
2	Nominal diameter pressure flange	032	1 ¼
		040	1 ½
		050	2
		065	2 ½
		080	3
		100	4
		125	5
		150	6
		200	8
3	Design dimension	200	Design dimension
4	Version	A-Z	Type
5	Type	A	ANSI Standard
6	Motor power	007	0.75 HP
		010	1 HP
		015	1.5 HP
		020	2 HP
		030	3 HP
		050	5 HP
		075	7.5 HP
		100	10 HP
		150	15 HP
		200	20 HP
		250	25 HP
		300	30 HP
		400	40 HP
		500	50 HP
		600	60 HP
		750	75 HP
		1000	100 HP
7	Speed	4	1800 rpm
8	Motor type	N	NEMA Premium with reinforced bearings
9	Type of material	W2B	See type of material
		W30	See type of material
10	Flange position	V	Front (standard)
		FL	Center between front and left
		L	Left
		FR	Center between front and left
		R	Right
11	Permitted use		Standard
		EX	Explosion protection

Type of material

[1]	Individual parts	W2B [2]	W30 [2]
025	Impeller protector	POM/FKM	POM
101	Pump casing	EN-GJL-250 [3] (EN-JL1040)	CuSN10 (CC480K)
113	Intermediate casing	EN-GJL-250 [3] (EN-JL1040)	CuSN10 (CC480K)
161	Casing cover	EN-GJL-250 [3] (EN-JL1040)	CuSN10 (CC480K)
230	Impeller	CuAl10Fe5Ni5-C (CC333G)	CuAl10Fe5Ni5-C (CC333G)
433.1	Mechanical seal	SiC/SiC/FKM	SiC/SiC/FKM
433.2	Mechanical seal	Carbon/CrMo casting/NBR	Carbon/CrMo casting/NBR
471	Seal cover	EN-GJL-250 (EN-JL1040)	EN-GJL-250 (EN-JL1040)
819	Motor shaft	X6CrNiMoTi17-12-2 (1.4571)	X6CrNiMoTi17-12-2 (1.4571)
	Mechanical seal protector	CuSn12-C (CC483K)	CuSn12-C (CC483K)

Flange position [4]

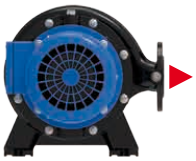
Picture L

Picture VL

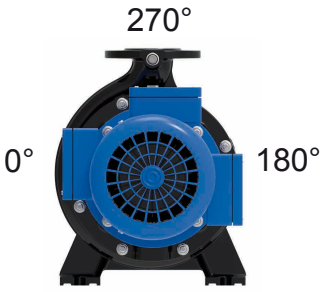
Picture V (Standard)

Picture VR

Picture R



Junction box position



Junction box position for standard version on the fan of the motor seen left (0°).

[1] See exploded view (page 37)

[2] Other material pairings by request

[3] With thick-film coating

[4] See versions (page 8)

1800 rpm

Type	P_2 [HP]	Type			Flange position					Accessories	
		with blind hole thread	with flange	with base rail	L	FL	V	FR	R	Seal Guard System	Frequency converter (Wall-mounted)
											
FN032-200A	1	●	-	-	O	O	●	O	O	O	O
FN032-200A	1.5	●	-	-	O	O	●	O	O	O	O
FN032-200A	2	●	-	-	O	O	●	O	O	O	O
FN032-200A	3	●	-	-	O	O	●	O	O	O	O
FN032-250A	3	●	-	-	O	O	●	O	O	O	O
FN032-250A	5	●	-	-	O	O	●	O	O	O	O
FN040-160A	0.75	●	-	-	O	O	●	O	O	O	O
FN040-160A	1	●	-	-	O	O	●	O	O	O	O
FN040-160A	1.5	●	-	-	O	O	●	O	O	O	O
FN040-220A	2	●	-	-	O	O	●	O	O	O	O
FN040-220A	3	●	-	-	O	O	●	O	O	O	O
FN040-270A	5	●	-	-	O	O	●	O	O	O	O
FN040-270A	7.5	●	-	-	O	O	●	O	O	O	O
FN040-270A	10	●	-	-	O	O	●	O	O	O	O
FN050-140A	1	●	-	-	O	O	●	O	O	O	O
FN050-140A	1.5	●	-	-	O	O	●	O	O	O	O
FN050-140A	2	●	-	-	O	O	●	O	O	O	O
FN050-160A	0.75	●	-	-	O	O	●	O	O	O	O
FN050-160A	1	●	-	-	O	O	●	O	O	O	O
FN050-160A	1.5	●	-	-	O	O	●	O	O	O	O
FN050-160A	2	●	-	-	O	O	●	O	O	O	O
FN050-190A	3	●	-	-	O	O	●	O	O	O	O
FN050-190A	5	●	-	-	O	O	●	O	O	O	O
FN050-240A	3	●	-	-	O	O	●	O	O	O	O
FN050-240A	5	●	-	-	O	O	●	O	O	O	O
FN050-240B	5	●	-	-	O	O	●	O	O	O	O
FN065-200A	2	●	-	-	O	O	●	O	O	O	O
FN065-200A	3	●	-	-	O	O	●	O	O	O	O
FN065-200A	5	●	-	-	O	O	●	O	O	O	O
FN065-220A	5	●	-	-	O	O	●	O	O	O	O
FN065-220A	7.5	●	-	-	O	O	●	O	O	O	O
FN065-240A	5	●	-	-	O	O	●	O	O	O	O
FN065-240A	7.5	●	-	-	O	O	●	O	O	O	O
FN065-270A	7.5	●	-	-	O	O	●	O	O	O	O
FN065-270A	10	●	-	-	O	O	●	O	O	O	O
FN065-270C	10	●	-	-	O	O	●	O	O	O	O
FN065-300B	15	●	-	-	O	O	●	O	O	O	O
FN065-300B	20	●	-	-	O	O	●	O	O	O	O
FN080-170A	2	-	●	-	O	O	●	O	O	O	O
FN080-170A	3	-	●	-	O	O	●	O	O	O	O
FN080-170A	5	-	●	-	O	O	●	O	O	O	O
FN080-210A	5	●	-	-	O	O	●	O	O	O	O
FN080-210A	7.5	●	-	-	O	O	●	O	O	O	O
FN080-210A	10	●	-	-	O	O	●	O	O	O	O
FN080-210A	15	●	-	-	O	O	●	O	O	O	O

● Standard O Option - not executable

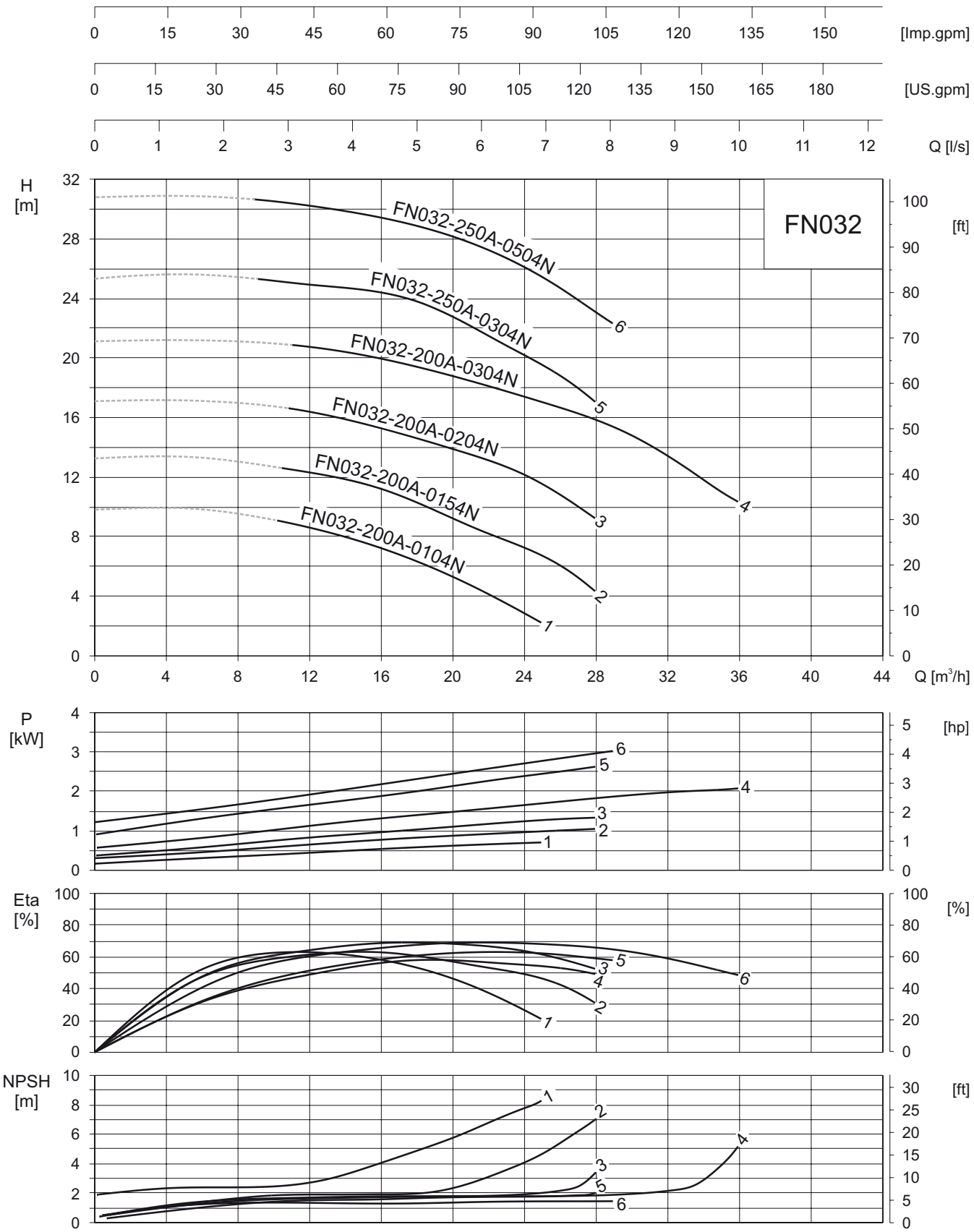
Type	P_2 [HP]	Type			Flange position					Accessories	
		with blind hole thread	with flange	with base rail	L	FL	V	FR	R	Seal Guard System	Frequency converter (Wall-mounted)
											
FN080-255A	5	●	-	-	○	○	●	○	○	○	○
FN080-255A	7.5	●	-	-	○	○	●	○	○	○	○
FN080-255A	10	●	-	-	○	○	●	○	○	○	○
FN080-330A	20	●	-	-	○	○	●	○	○	○	○
FN080-330A	25	●	-	-	○	○	●	○	○	○	○
FN080-330A	30	●	-	-	○	○	●	○	○	○	○
FN080-330A	40	●	-	-	○	○	●	○	○	○	○
FN100-180A	5	-	●	-	-	-	●	○	○	○	○
FN100-180A	7.5	-	●	-	○	○	●	○	○	○	○
FN100-210A	10	-	●	-	○	○	●	○	○	○	○
FN100-210A	15	-	●	-	○	○	●	○	○	○	○
FN100-240A	10	●	-	-	○	○	●	○	○	○	○
FN100-240A	15	●	-	-	○	○	●	○	○	○	○
FN100-270A	10	●	-	-	○	○	●	○	○	○	○
FN100-270A	15	●	-	-	○	○	●	○	○	○	○
FN100-330A	30	●	-	-	○	○	●	○	○	○	○
FN100-330A	40	●	-	-	○	○	●	○	○	○	○
FN100-330C	20	●	-	-	○	○	●	○	○	○	○
FN100-330C	25	●	-	-	○	○	●	○	○	○	○
FN125-250A	5	-	●	-	○	○	●	○	○	○	○
FN125-250A	7.5	-	●	-	○	○	●	○	○	○	○
FN125-250A	10	-	●	-	○	○	●	○	○	○	○
FN125-270A	15	●	-	-	○	○	●	○	○	○	○
FN125-270A	20	●	-	-	○	○	●	○	○	○	○
FN125-270A	25	●	-	-	○	○	●	○	○	○	○
FN125-270B	20	●	-	-	-	-	●	○	○	○	○
FN125-270B	25	●	-	-	-	-	●	○	○	○	○
FN125-270B	30	●	-	-	-	-	●	○	○	○	○
FN125-270B	40	●	-	-	-	-	●	○	○	○	○
FN125-330A	40	●	-	-	○	○	●	○	○	○	○
FN125-330A	50	●	-	-	○	○	●	○	○	○	○
FN150-250A	10	-	●	-	-	-	●	-	-	○	○
FN150-250A	15	-	●	-	-	-	●	-	-	○	○
FN150-250A	20	-	●	-	-	-	●	-	-	○	○
FN150-270B	25	-	●	-	-	-	●	-	-	○	○
FN150-270B	30	-	●	-	-	-	●	-	-	○	○
FN150-270B	40	-	●	-	-	-	●	-	-	○	○
FN150-300A	25	-	●	-	-	-	●	-	-	○	○
FN150-300A	30	-	●	-	-	-	●	-	-	○	○
FN150-300A	40	-	●	-	-	-	●	-	-	○	○
FN150-400A	60	●	-	●	○	○	●	○	○	○	○
FN150-400A	75	●	-	●	○	○	●	○	○	○	○
FN150-400A	100	●	-	●	○	○	●	○	○	○	○
FN200-250A	15	-	●	-	-	-	●	-	-	○	○
FN200-250A	20	-	●	-	-	-	●	-	-	○	○

● Standard ○ Option - not executable

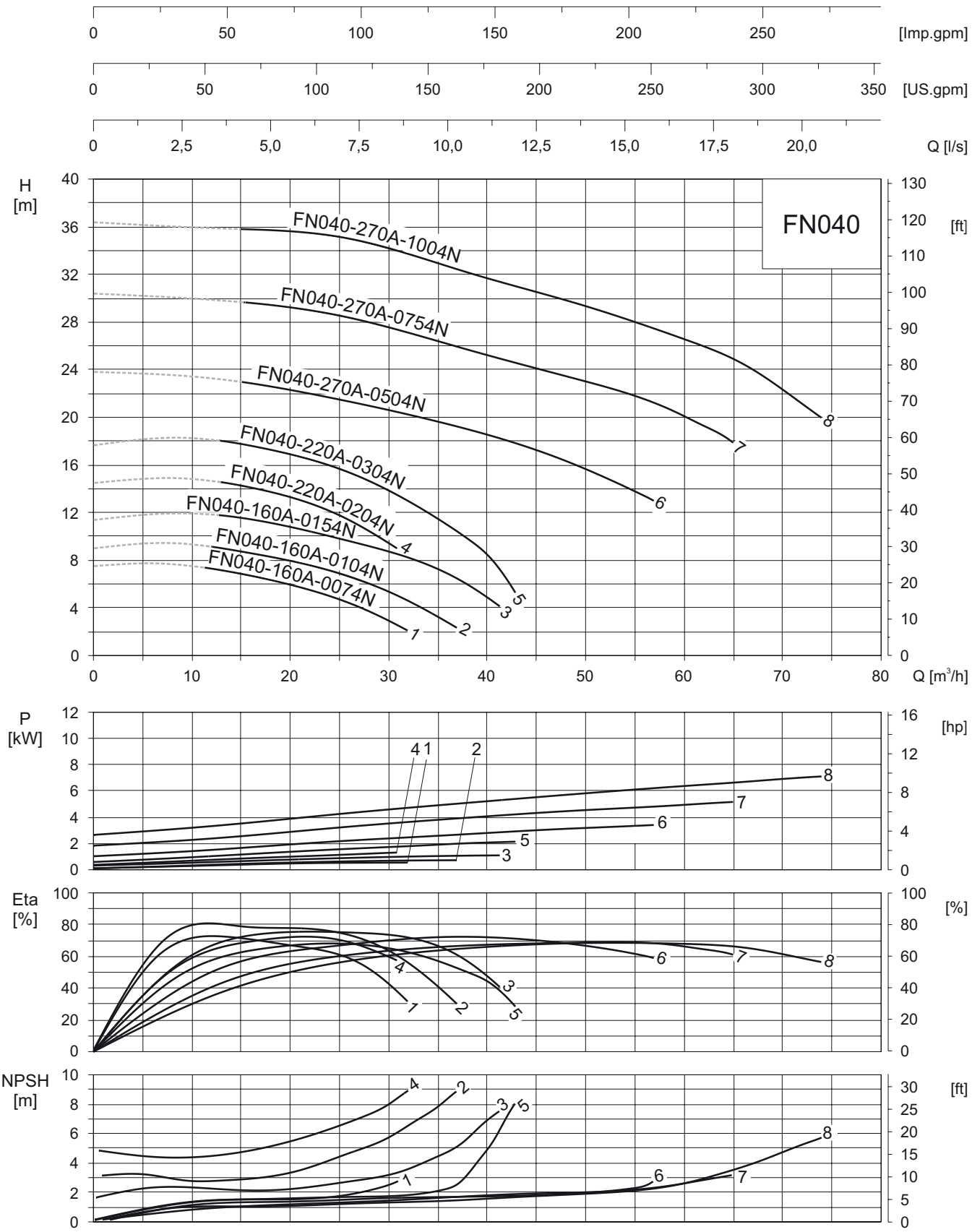
Type	P_2 [HP]	Type			Flange position					Accessories	
		with blind hole thread	with flange	with base rail	L	FL	V	FR	R	Seal Guard System	Frequency converter (Wall-mounted)
											
FN200-250A	25	-	●	-	-	-	●	-	-	○	○
FN200-270B	20	-	●	-	-	-	●	○	○	○	○
FN200-270B	30	-	●	-	-	-	●	○	○	○	○
FN200-270B	40	-	●	-	-	-	●	○	○	○	○
FN200-350A	50	-	●	-	-	-	●	○	○	○	○
FN200-350A	60	-	●	●	-	-	●	○	○	○	○
FN200-350A	75	-	●	●	-	-	●	○	○	○	○
FN200-350A	100	-	●	●	-	-	●	○	○	○	○

● Standard ○ Option - not executable

1,800 rpm (460 V - 60 Hz)



1,800 rpm (460 V - 60 Hz)



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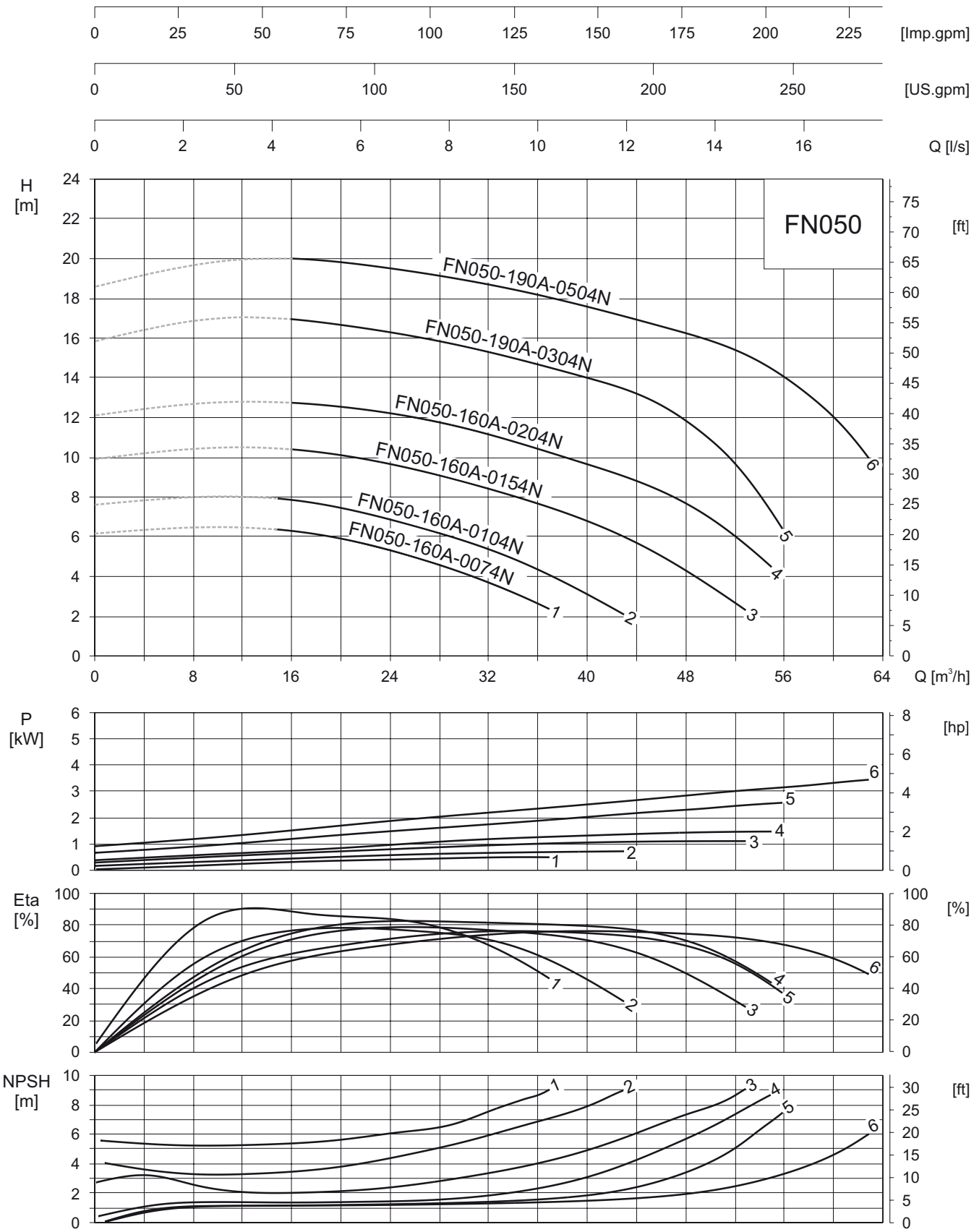
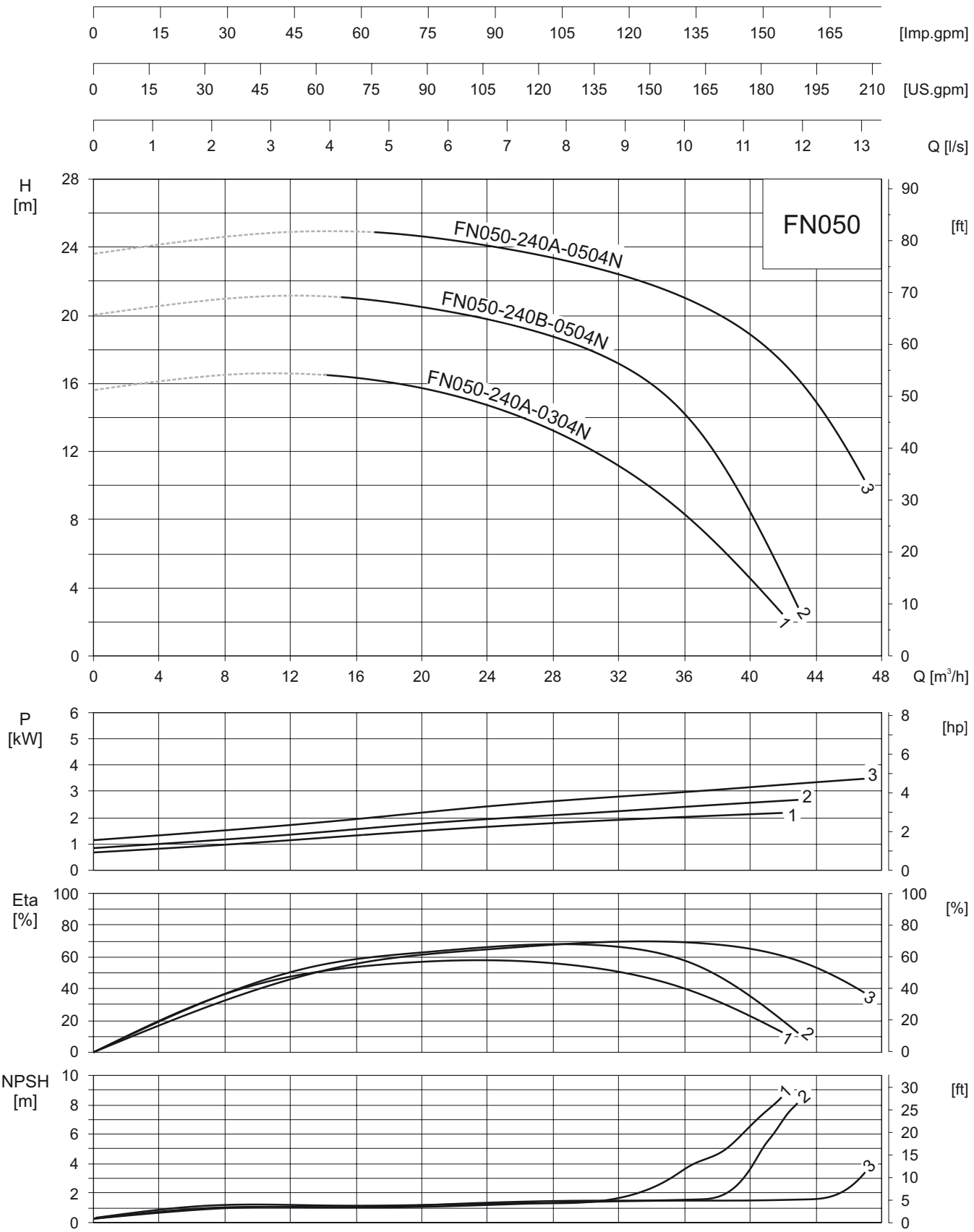


1,800 rpm (460 V - 60 Hz)



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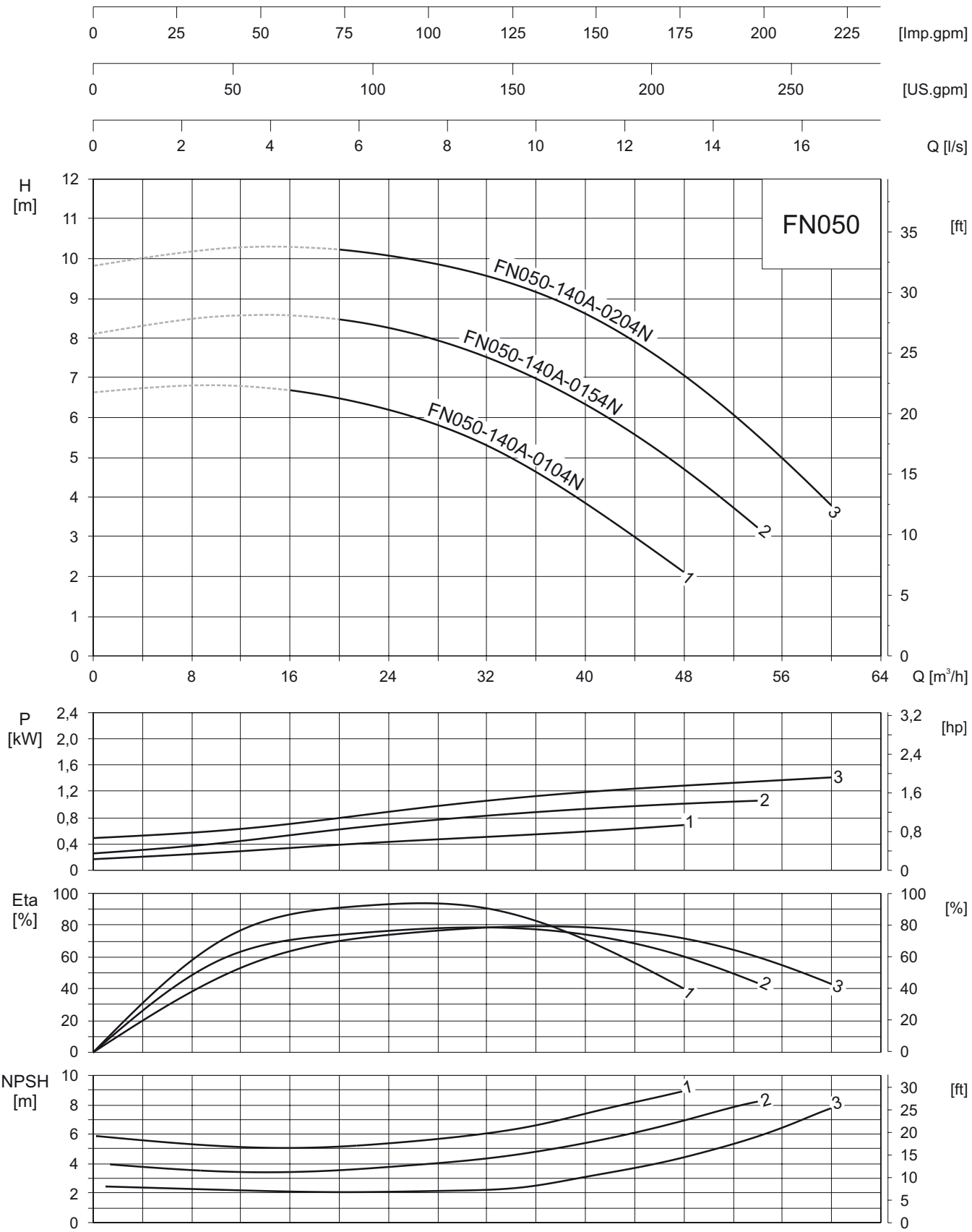
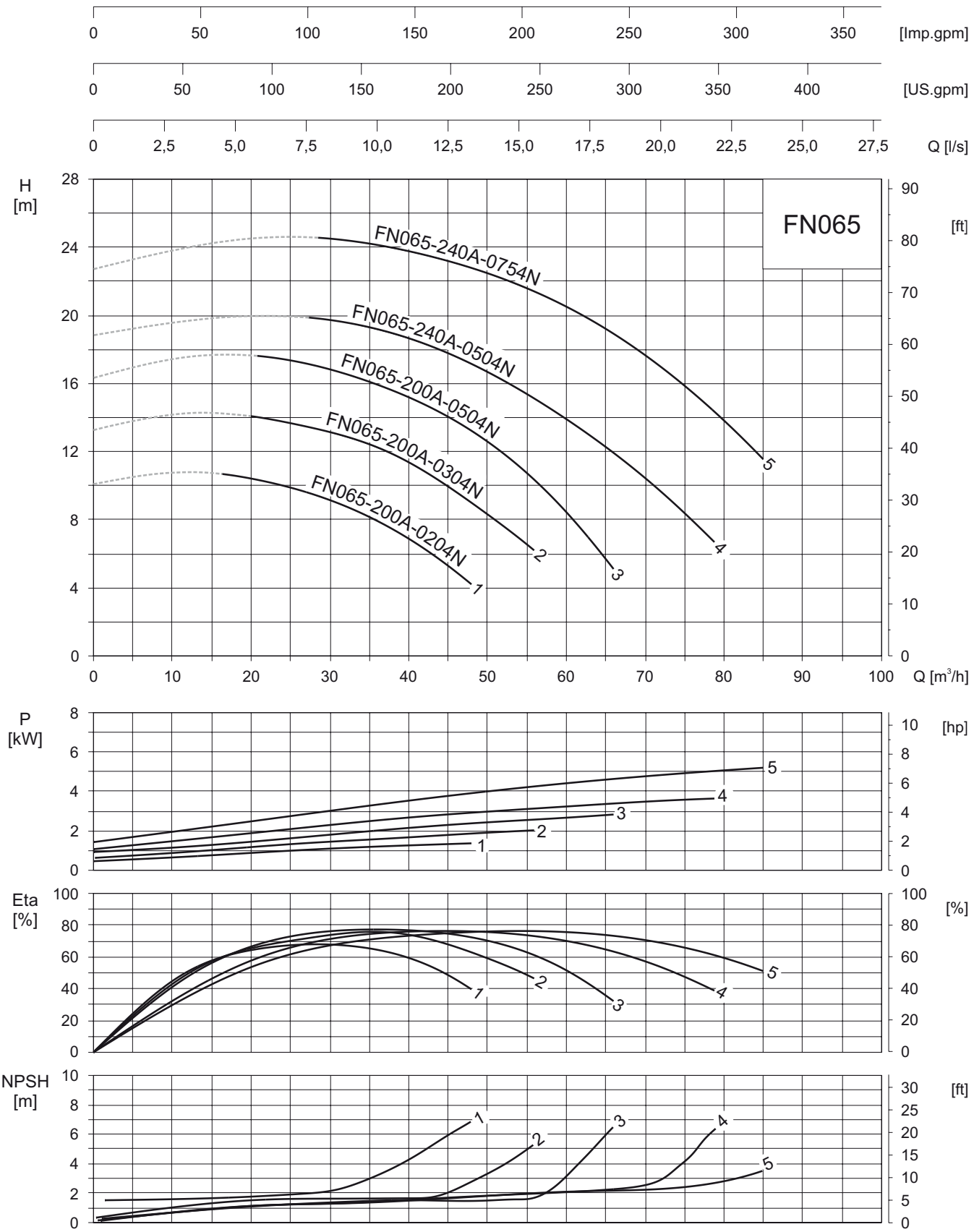
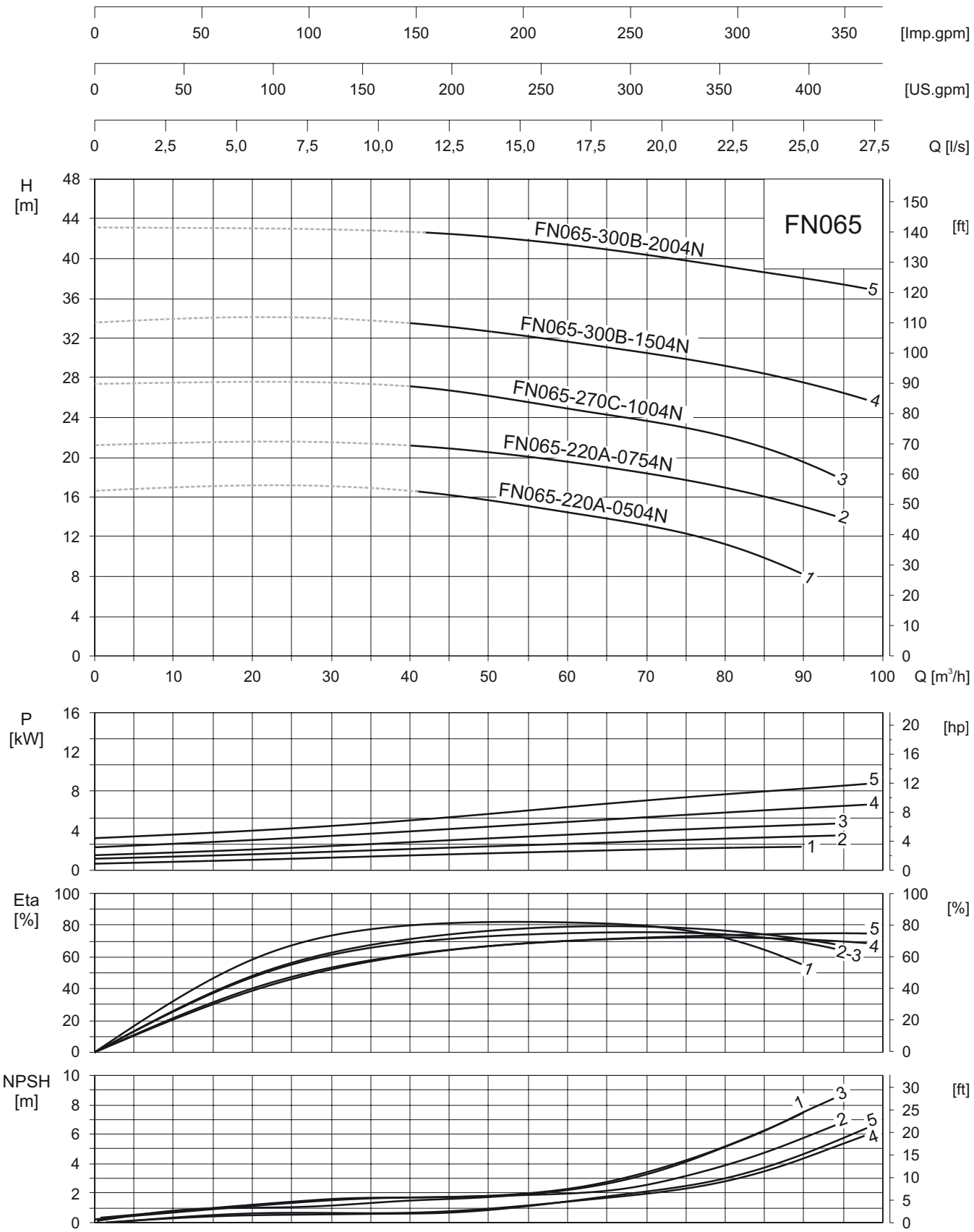


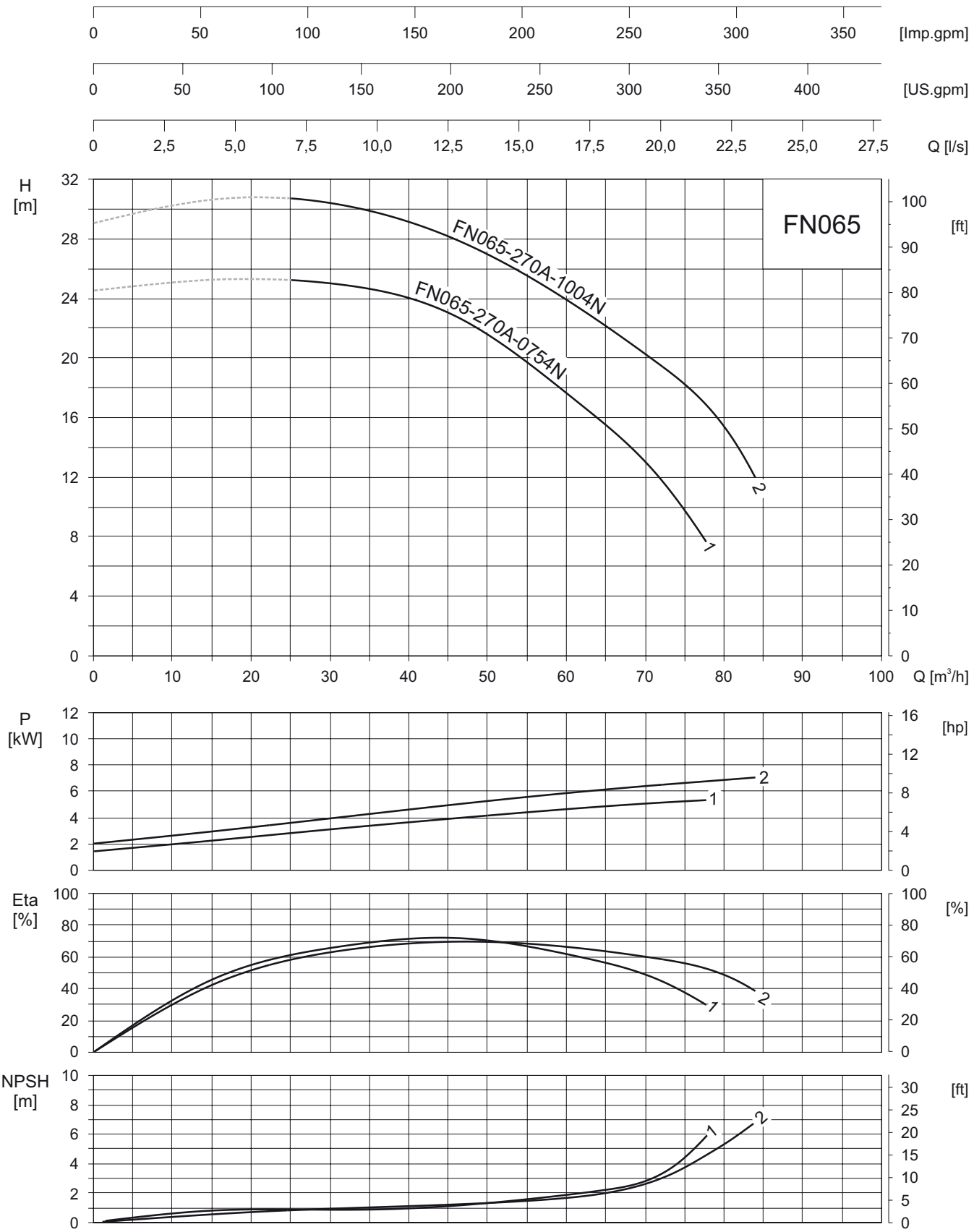
1,800 rpm (460 V - 60 Hz)



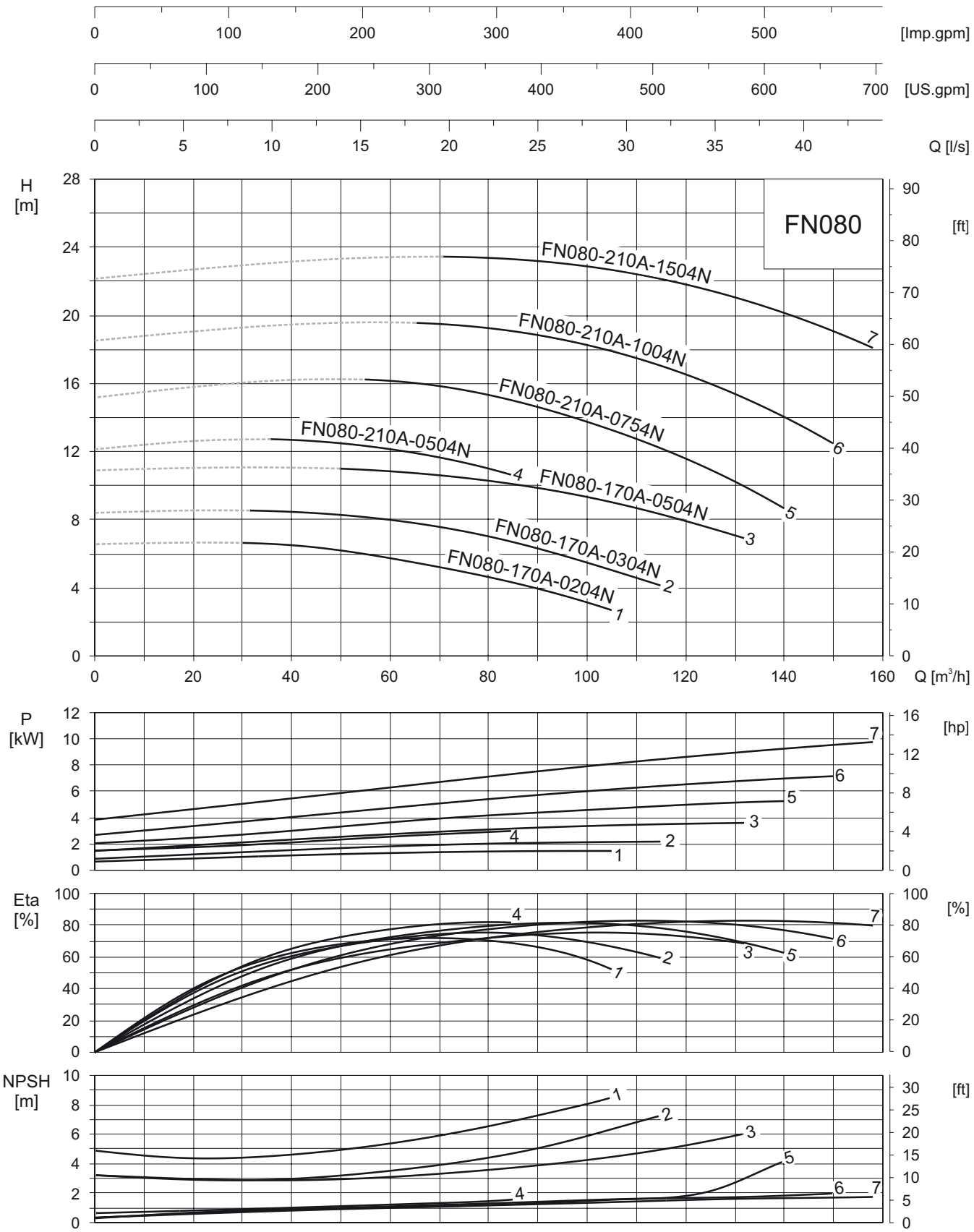
1, 800 rpm (460 V - 60 Hz)



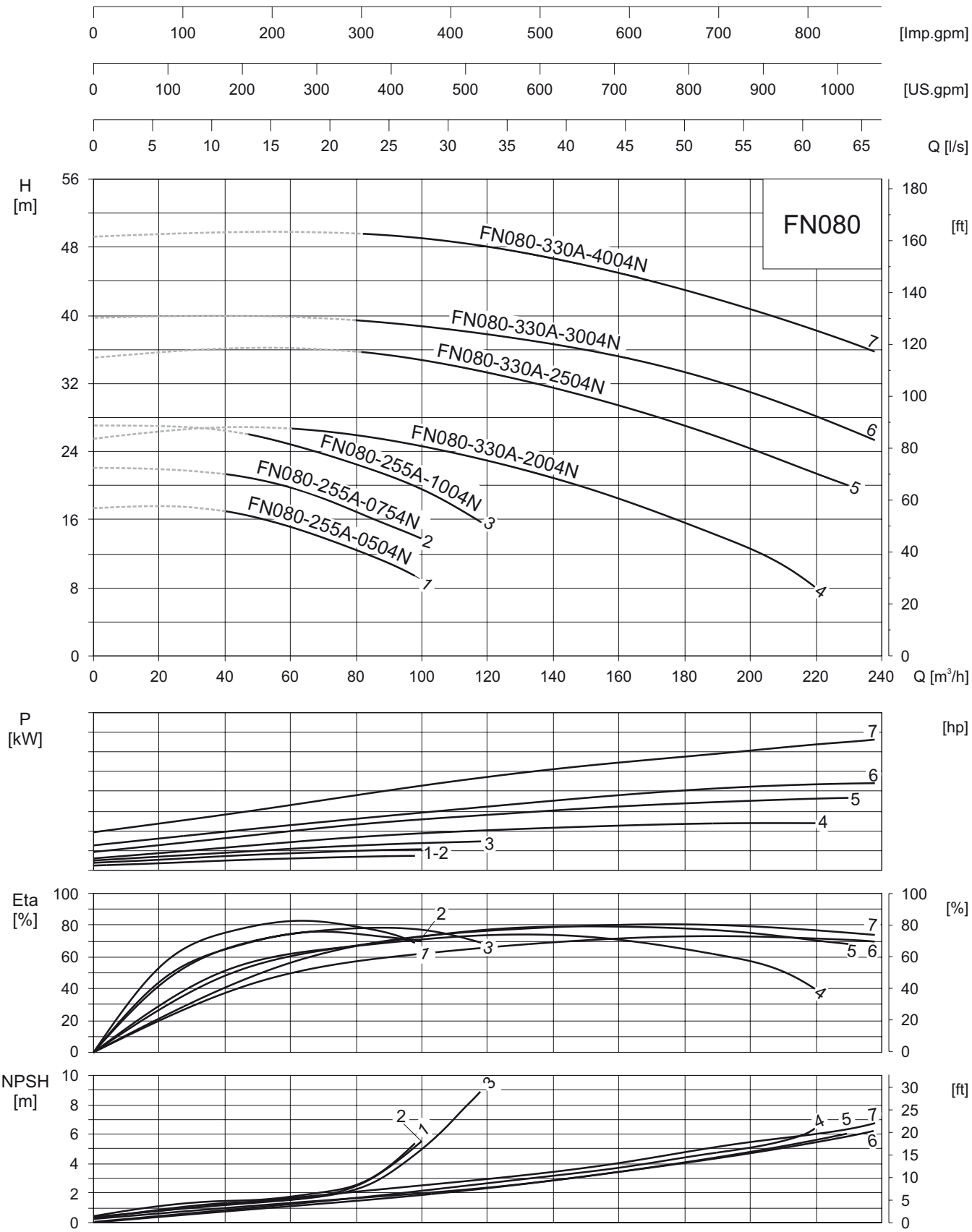
1,800 rpm (460 V - 60 Hz)



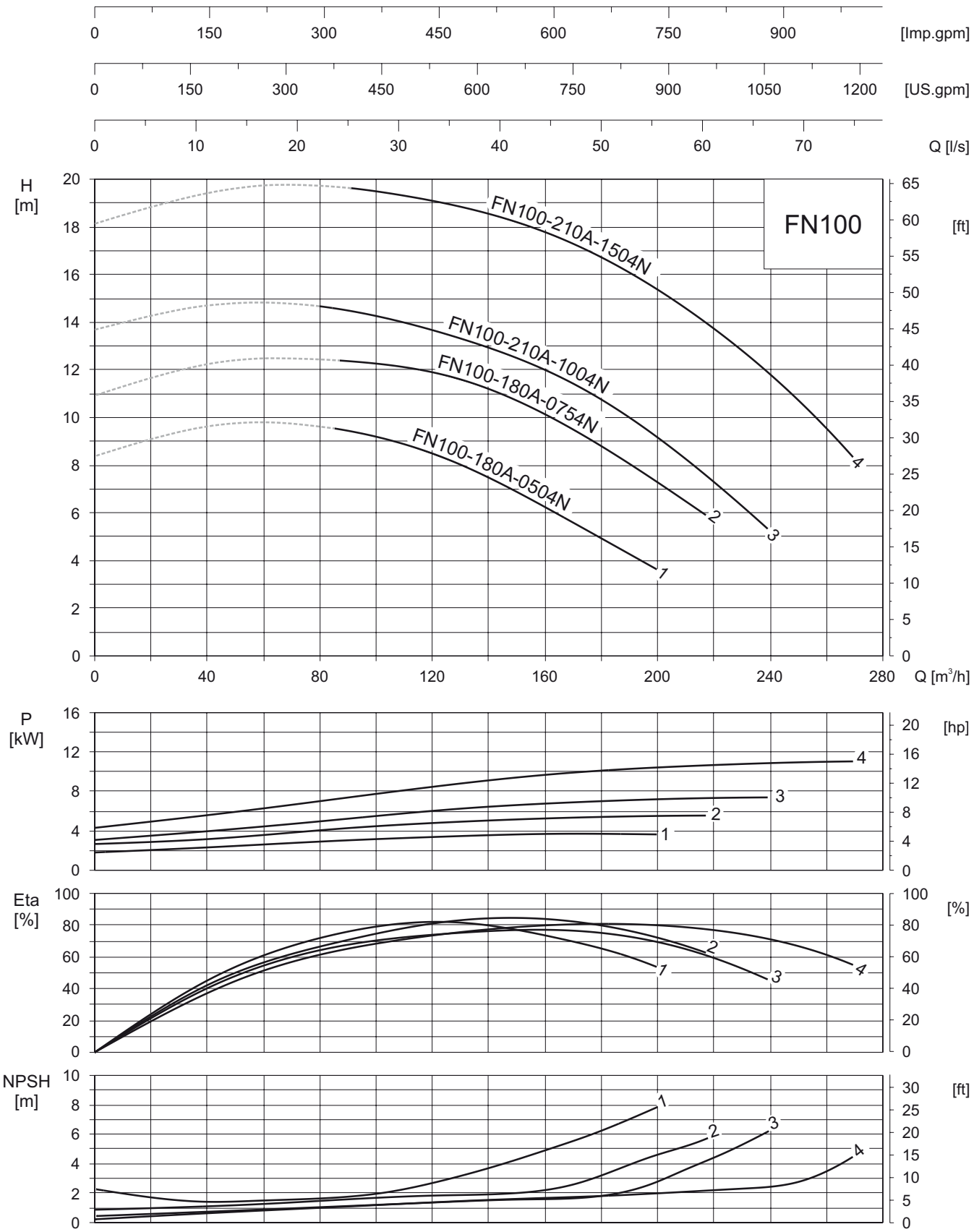
1,800 rpm (460 V - 60 Hz)



1,800 rpm (460 V - 60 Hz)



1,800 rpm (460 V - 60 Hz)



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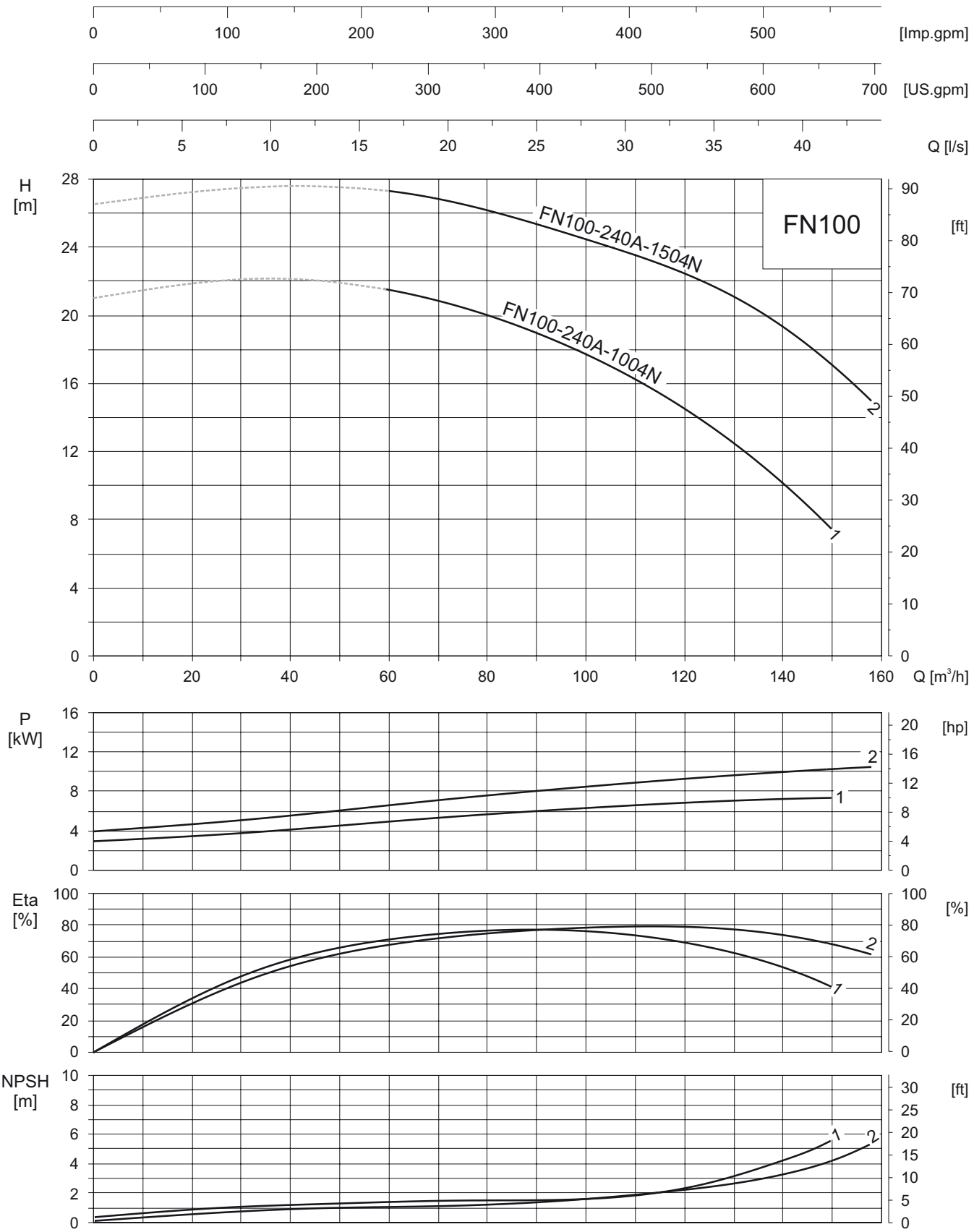

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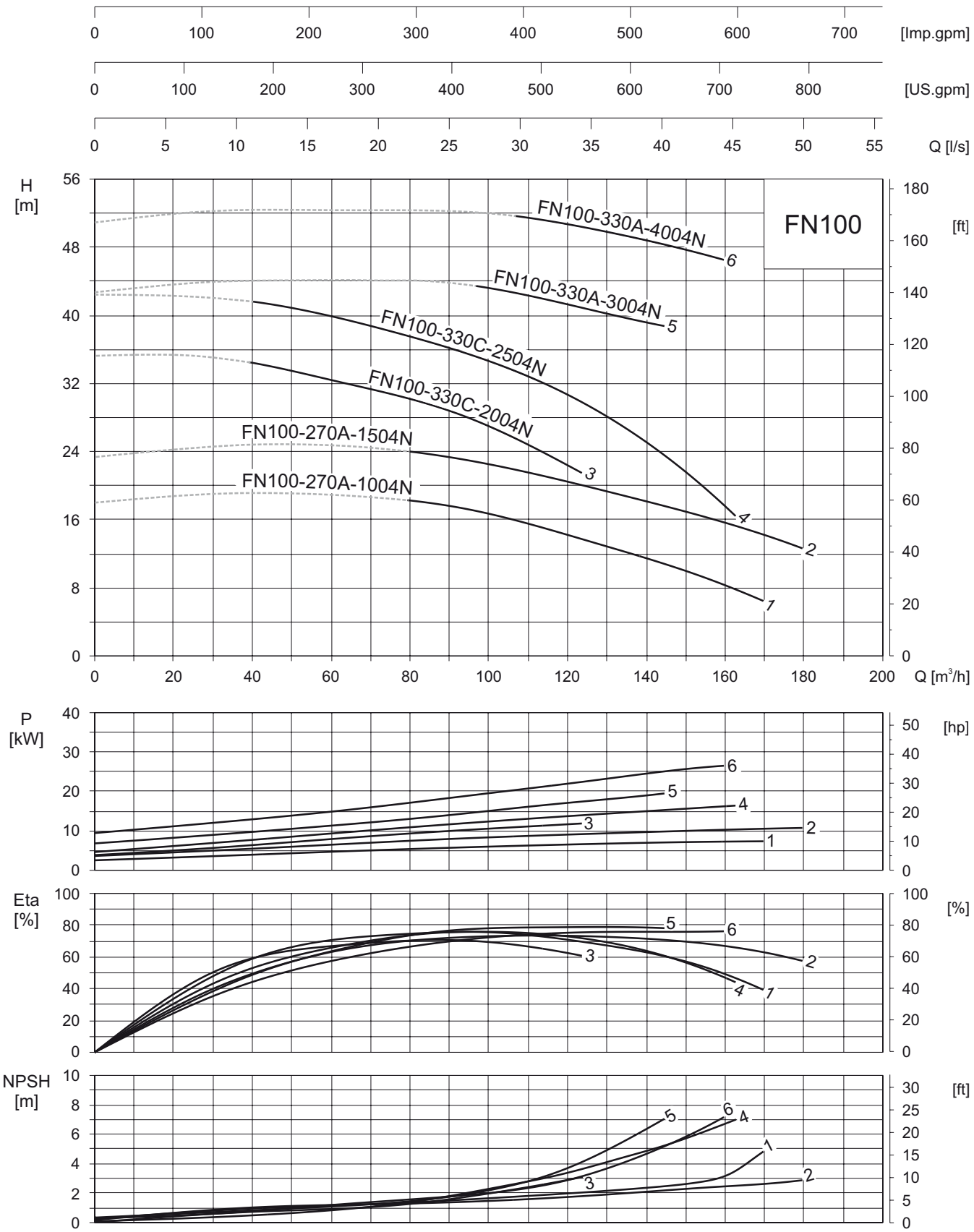
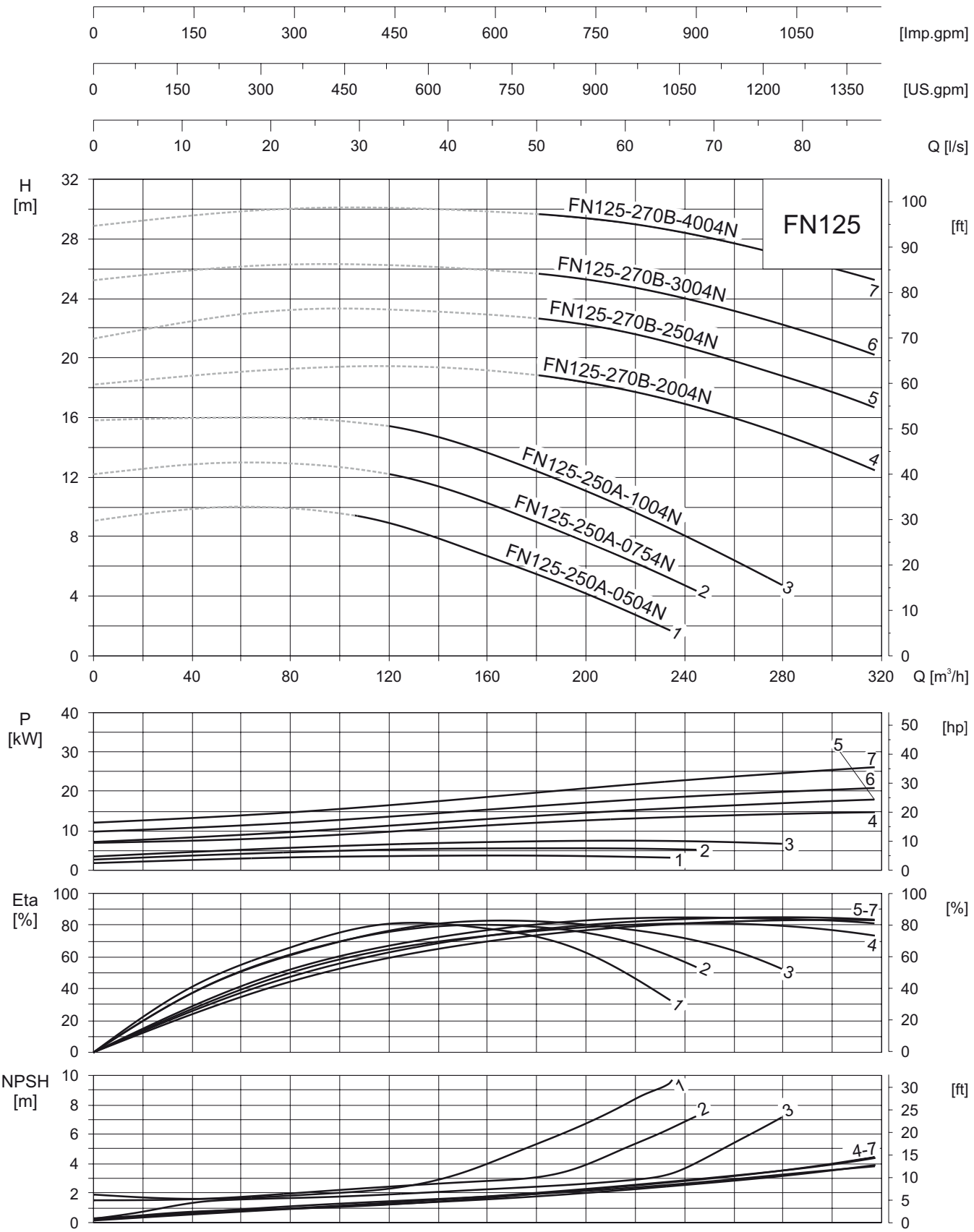
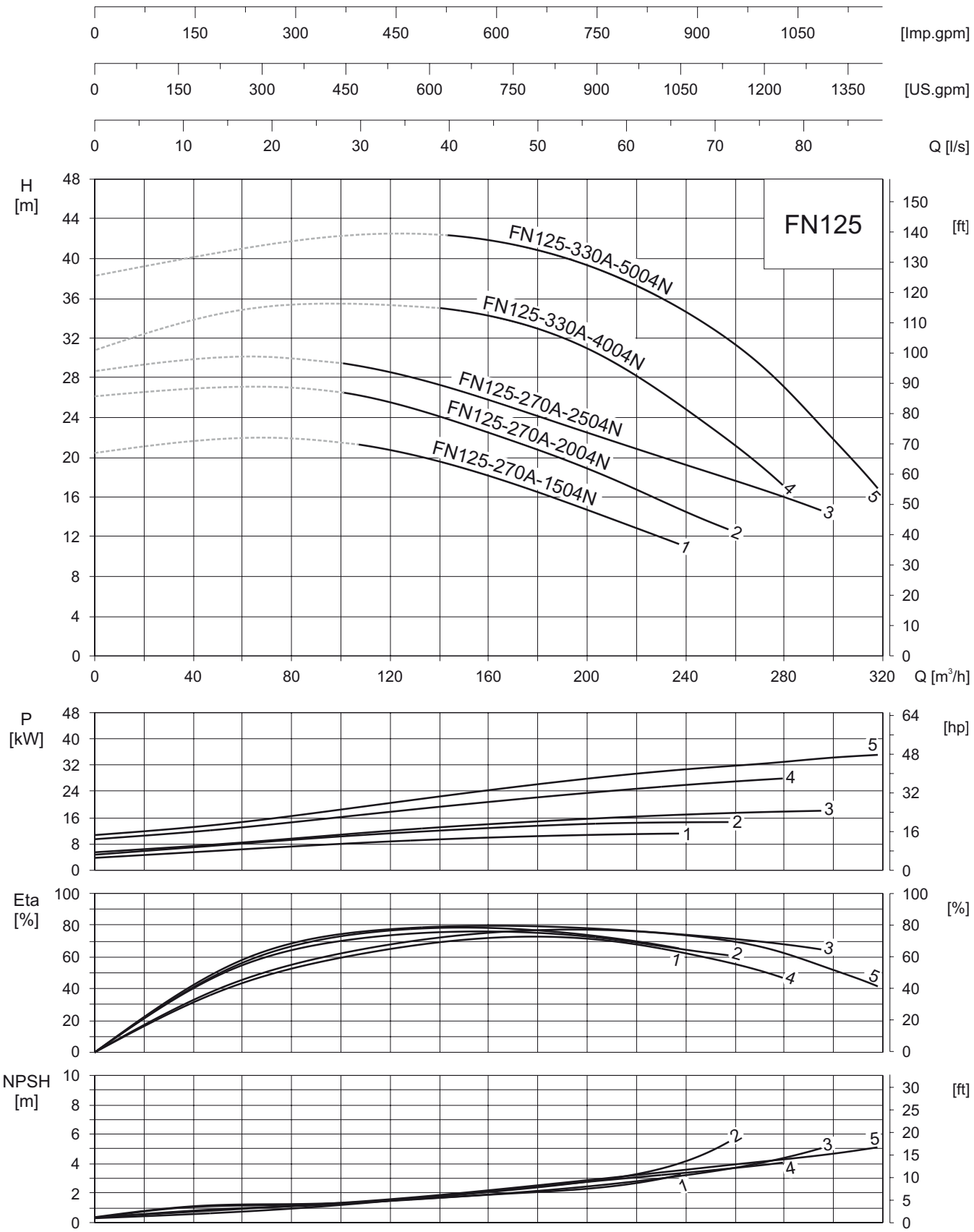


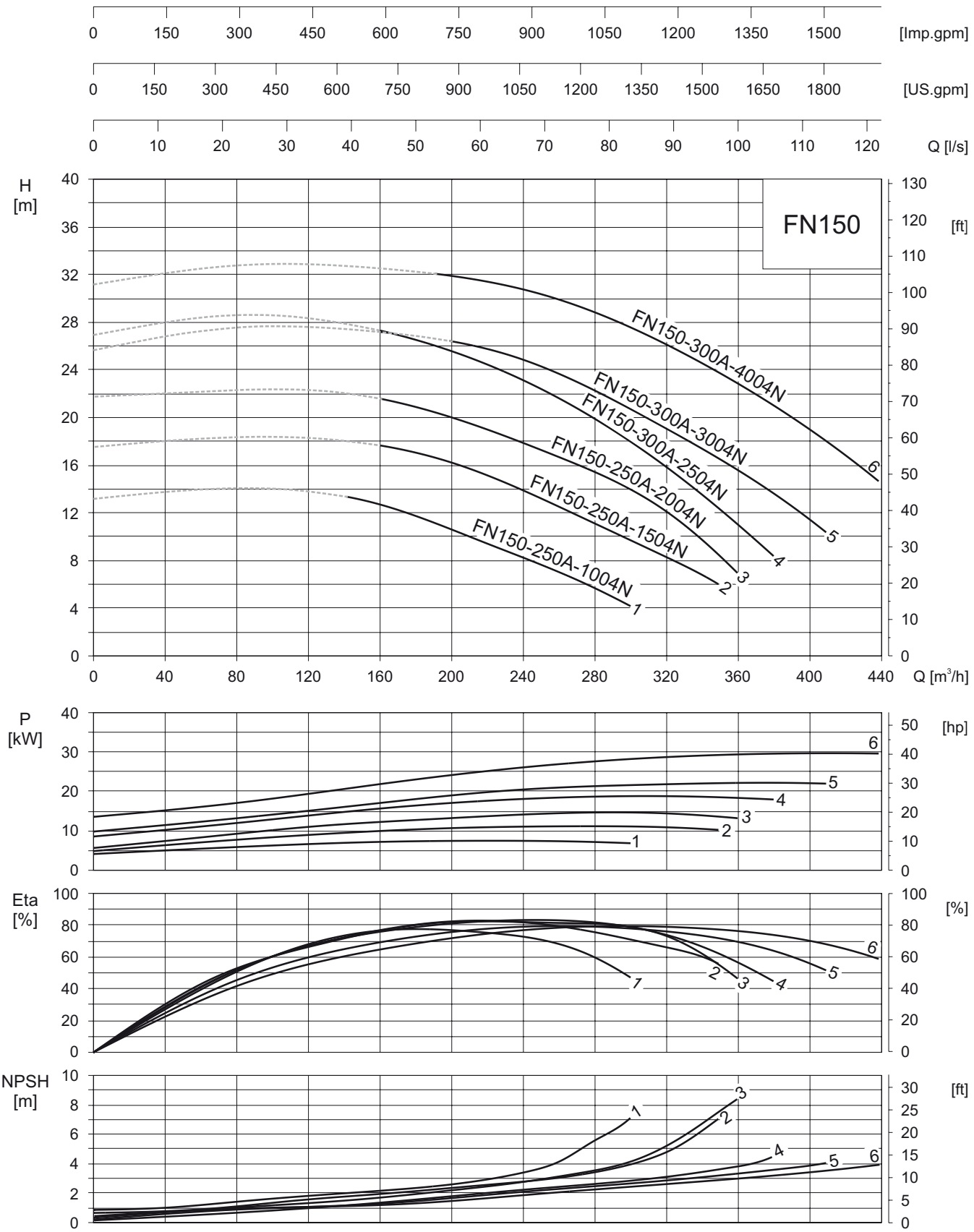
1,800 rpm (460 V - 60 Hz)



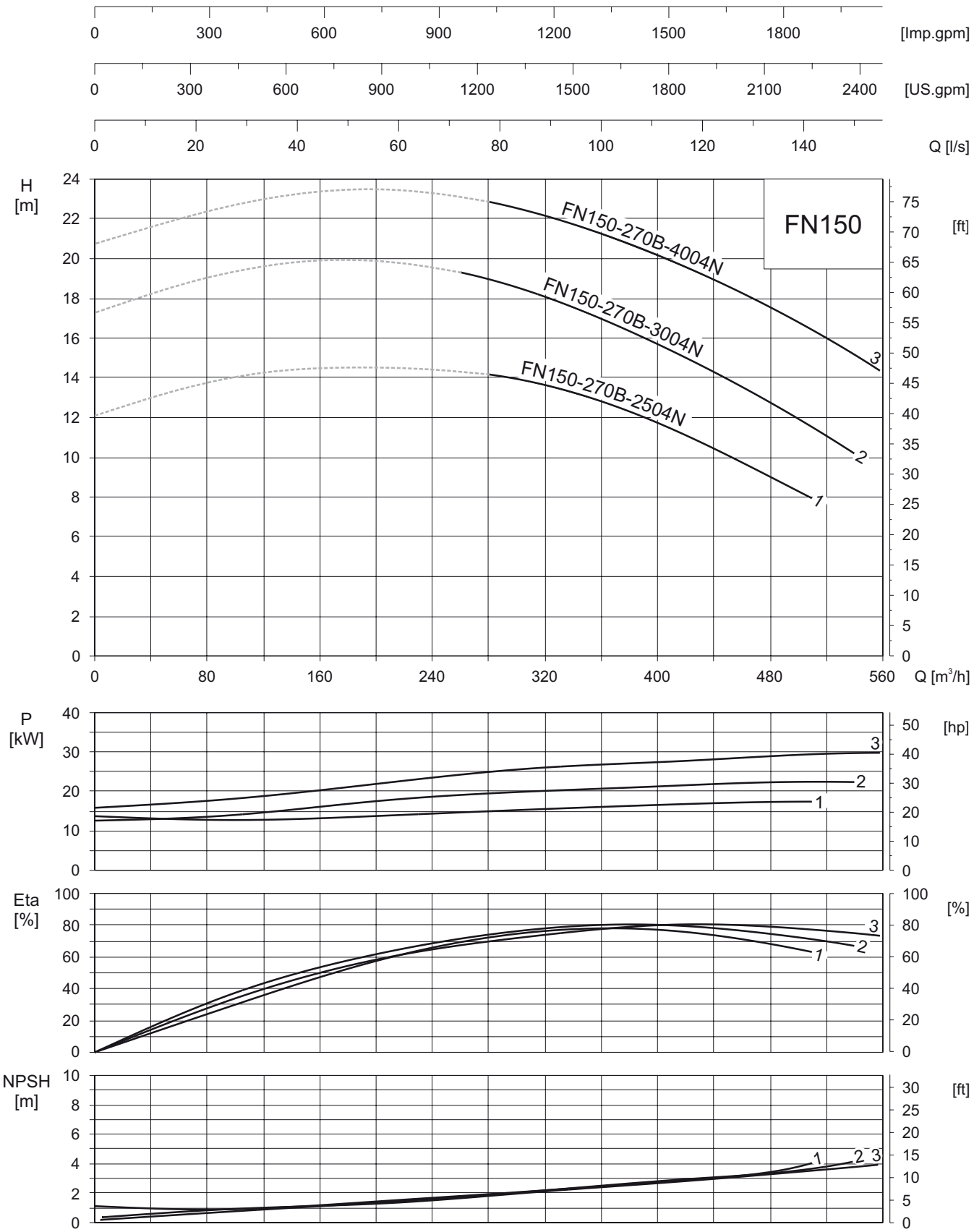
1,800 rpm (460 V - 60 Hz)



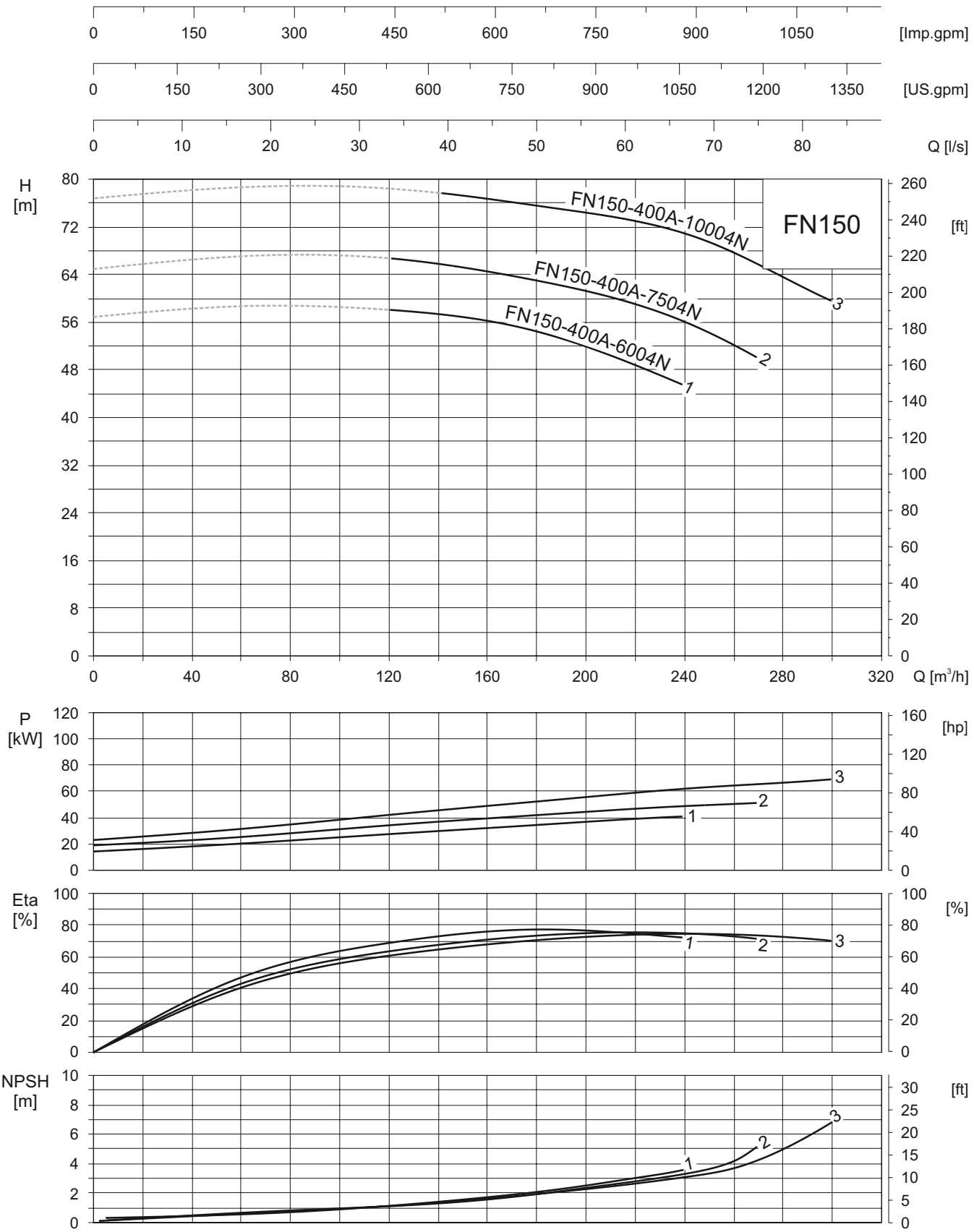
1,800 rpm (460 V - 60 Hz)



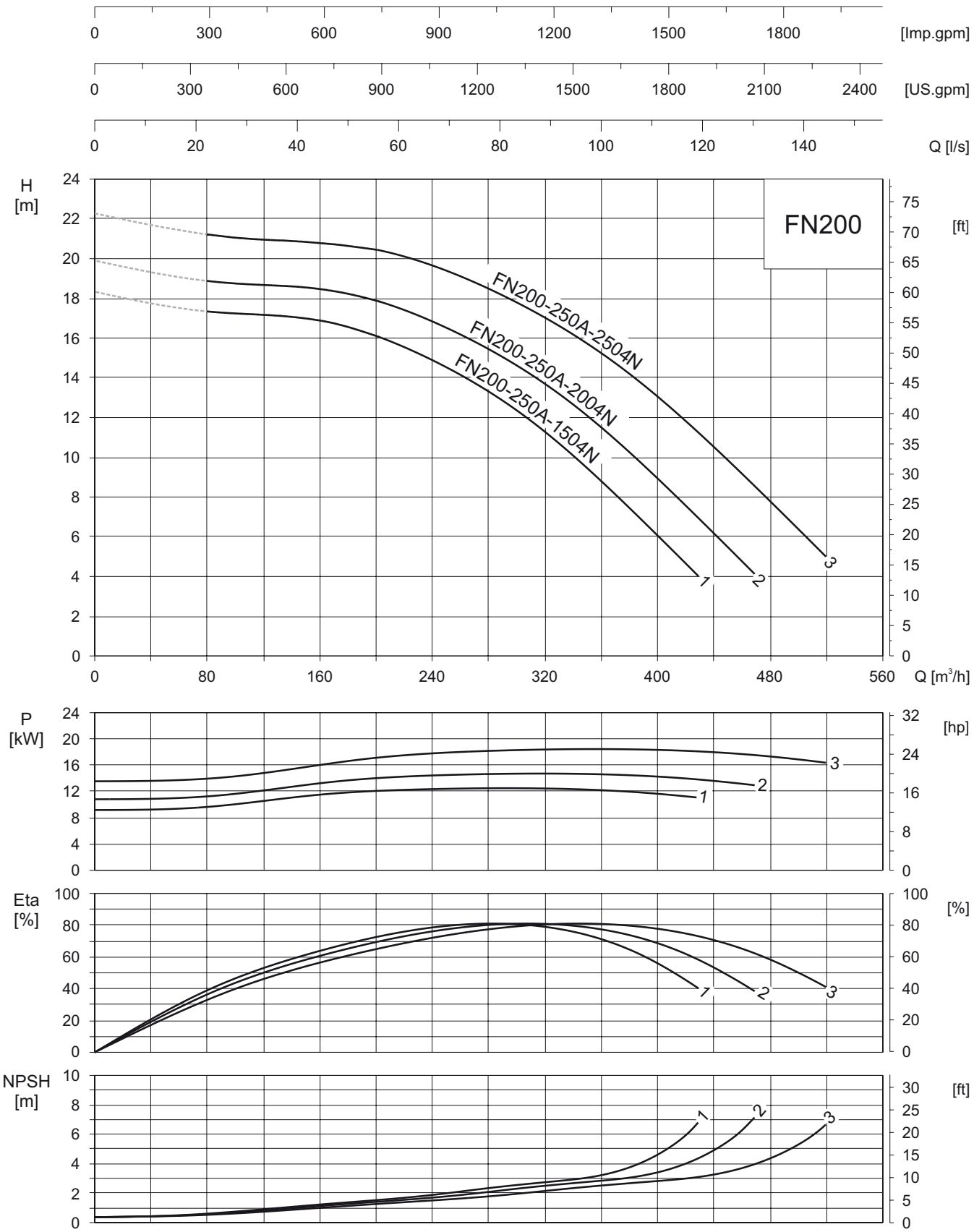
1,800 rpm (460 V - 60 Hz)



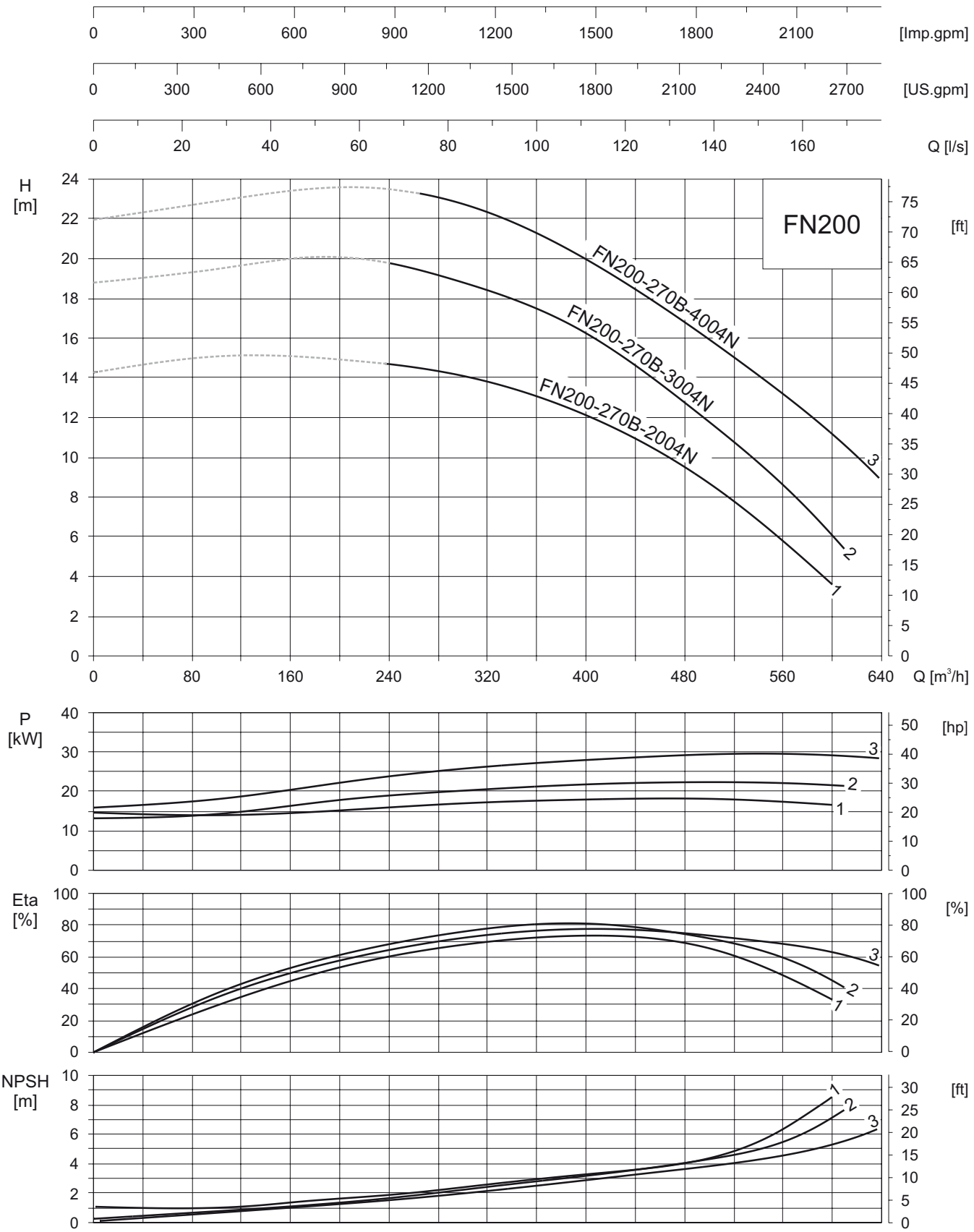
1,800 rpm (460 V - 60 Hz)



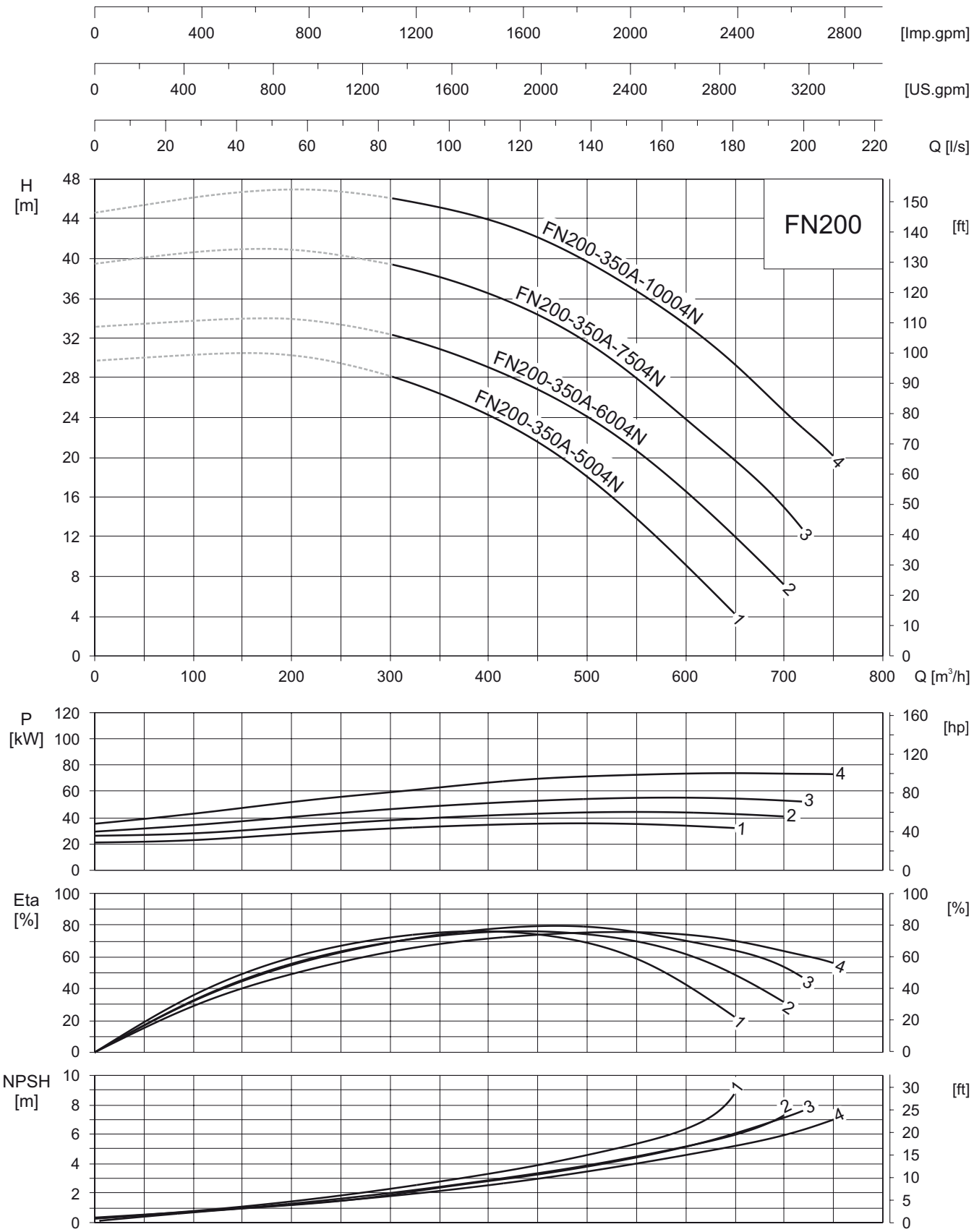
1,800 rpm (460 V - 60 Hz)



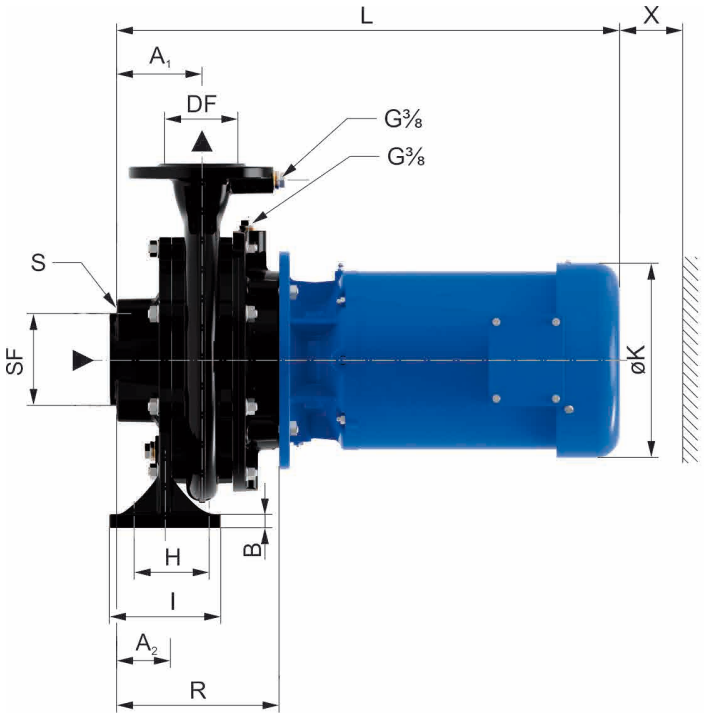
1,800 rpm (460 V - 60 Hz)

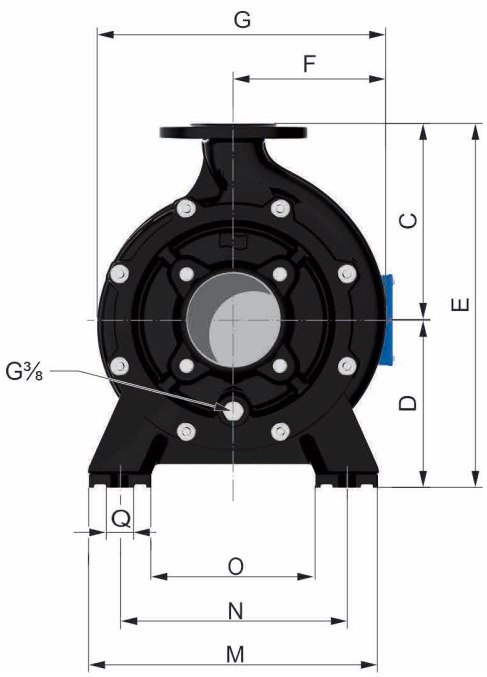


1,800 rpm (460 V - 60 Hz)

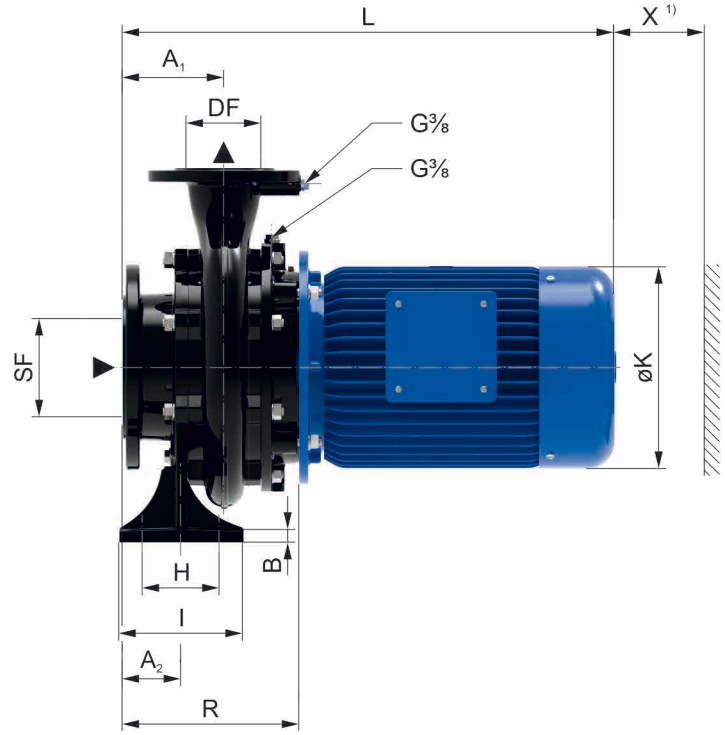


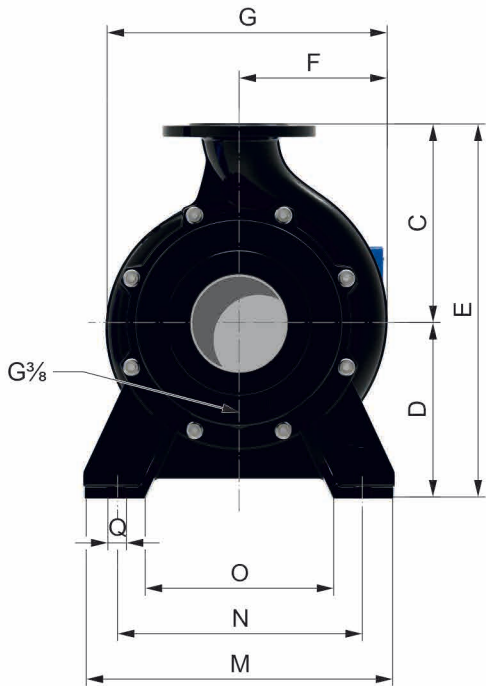
Version with blind hole thread





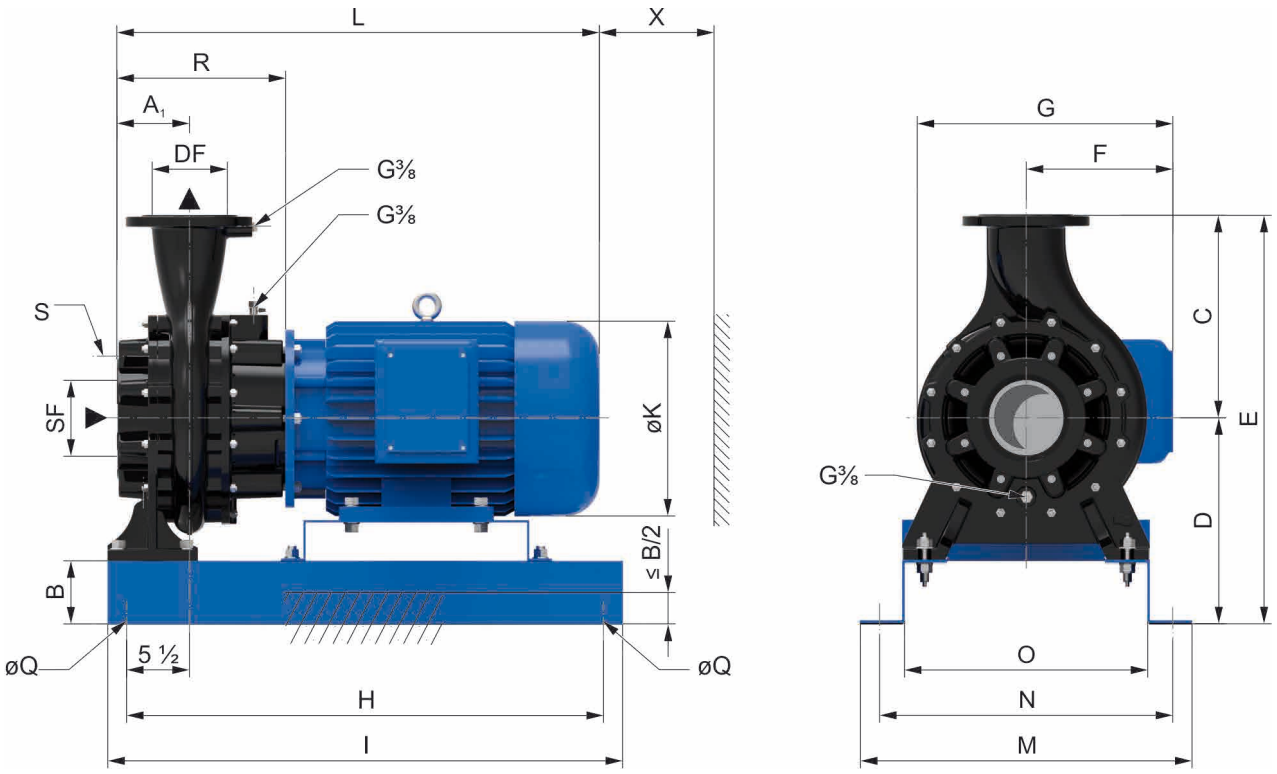
Version with flange



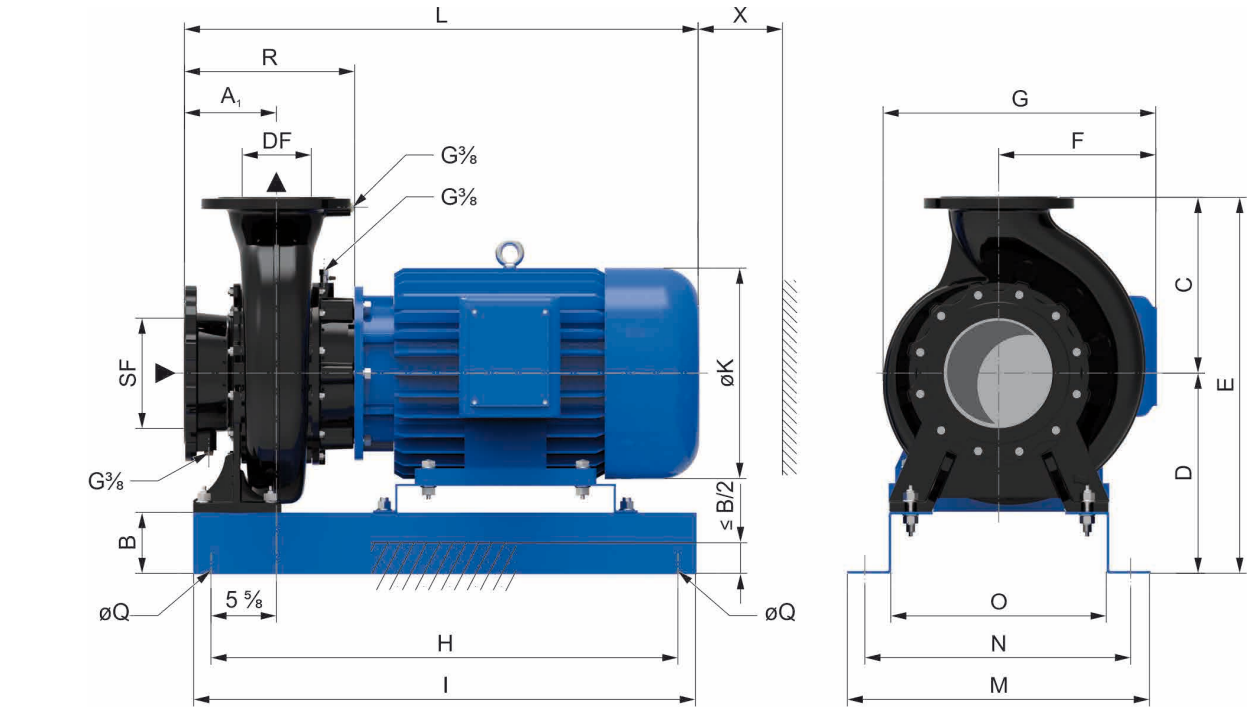


Flange connection dimensions according to ANSI B 16.5 Class 150

Version with blind hole thread and base rail (> 50 HP)



Version with flange and base rail (> 50 HP)



Flange connection dimensions according to ANSI B 16.5 Class 150

Type	HP	DF	SF	L	a1	a2	b	c	d	e	f	g	h	i	Øk	m	n	o	q	r	s	x_{min}	m[1] [lb]
FN032-200A [2]	1	1 1/4	2	18 1/3	3 1/8	1 1/2	1/2	7	6 1/4	13 1/2	5 1/3	10 1/4	2 3/4	4	7 1/4	9 1/2	7 1/2	5 1/2	1/2	6 1/3	4x 5/8	6	95
FN032-200A [2]	1,5	1 1/4	2	19 1/3	3 1/8	1 1/2	1/2	7	6 1/4	13 1/2	5 1/3	10 1/4	2 3/4	4	7 1/4	9 1/2	7 1/2	5 1/2	1/2	6 1/3	4x 5/8	6	100
FN032-200A [2]	2	1 1/4	2	19 1/4	3 1/8	1 1/2	1/2	7	6 1/4	13 1/2	5 1/3	10 1/4	2 3/4	4	7 1/4	9 1/2	7 1/2	5 1/2	1/2	6 1/2	4x 5/8	6	105
FN032-200A [2]	3	1 1/4	2	19 1/4	3 1/8	1 1/2	1/2	7	6 1/4	13 1/2	5 1/3	10 1/4	2 3/4	4	7	9 1/2	7 1/2	5 1/2	1/2	6 1/2	4x 5/8	6	115
FN032-250A [2]	3	1 1/4	2	19 1/4	3 7/8	1 3/4	1/2	8 3/4	7 1/8	16	6 1/8	10 1/4	3 3/4	5	8 1/2	12 5/8	9 3/4	7 1/2	1/2	4	4x 5/8	6	140
FN032-250A [2]	5	1 1/4	2	22 5/8	3 7/8	1 3/4	1/2	8 3/4	7 1/8	16	6 1/8	12	3 3/4	5	8 1/2	12 5/8	9 3/4	7 1/2	1/2	7 1/3	4x 5/8	6	160
FN040-160A [2]	0,75	1 1/2	2 1/2	16 3/4	3 1/8	1 1/8	1/2	6 1/4	5 1/4	11 1/2	4 3/4	9	2 3/4	4	6 1/4	9 1/2	7 1/2	5 1/2	1/2	6 1/2	4x 5/8	6	90
FN040-160A [2]	1	1 1/2	2 1/2	18 1/2	3 1/8	1 1/8	1/2	6 1/4	5 1/4	11 1/2	4 3/4	9	2 3/4	4	7 1/4	9 1/2	7 1/2	5 1/2	1/2	6 1/2	4x 5/8	6	85
FN040-160A [2]	1,5	1 1/2	2 1/2	19 1/2	3 1/8	1 1/8	1/2	6 1/4	5 1/4	11 1/2	4 3/4	9	2 3/4	4	7 1/4	9 1/2	7 1/2	5 1/2	1/2	6 1/2	4x 5/8	6	90
FN040-220A [2]	2	1 1/2	2 1/2	20 3/8	3 7/8	2 1/4	1/2	7 7/8	6 1/4	14 1/4	6 1/8	11 1/2	2 3/4	4	7 1/4	10 3/8	8 1/3	6 1/2	1/2	7 2/3	4x 5/8	6	125
FN040-220A [2]	3	1 1/2	2 1/2	23	3 7/8	2 1/4	1/2	7 7/8	6 1/4	14 1/4	6 1/8	11 1/2	2 3/4	4	8 1/2	10 3/8	8 1/3	6 1/2	1/2	7 2/3	4x 5/8	6	135
FN040-270A [2]	5	1 1/2	2 1/2	22 3/4	3 7/8	2	1/2	9 1/4	7 1/8	16 1/4	6 1/8	11 1/2	3 3/4	5	8 1/2	12 5/8	9 3/4	7 1/2	1/2	7 1/2	4x 5/8	6	170
FN040-270A [2]	7,5	1 1/2	2 1/2	25	3 7/8	2	1/2	9 1/4	7 1/8	16 1/4	7	13 1/2	3 3/4	5	10 1/4	12 5/8	9 3/4	7 1/2	1/2	7 3/4	4x 5/8	6	250
FN040-270A [2]	10	1 1/2	2 1/2	26 1/8	3 7/8	2	1/2	9 1/4	7 1/8	16 1/4	7	13 1/2	3 3/4	5	10 1/4	12 5/8	9 3/4	7 1/2	1/2	7 7/8	4x 5/8	6	270
FN050-140A [2]	1	2	2 1/2	17 3/4	5	3 1/8	2/3	6 1/4	5 1/4	11 1/2	5 1/4	9 3/4	3 3/4	5	6 1/4	9 1/2	7 1/2	5 1/2	1/2	8 1/2	4x 5/8	6	120
FN050-140A [2]	1,5	2	2 1/2	17 3/4	5	3 1/8	2/3	6 1/4	5 1/4	11 1/2	5 1/4	9 3/4	3 3/4	5	6 1/4	9 1/2	7 1/2	5 1/2	1/2	8 1/2	4x 5/8	6	125
FN050-140A [2]	2	2	2 1/2	22 2/3	5	3 1/8	2/3	6 1/4	5 1/4	11 1/2	5 1/8	9 3/4	3 3/4	5	6 1/4	9 1/2	7 1/2	5 1/2	1/2	8 3/4	4x 5/8	6	125
FN050-160A [2]	0,75	2	2 1/2	16 3/4	3 7/8	2 1/8	5/8	7 1/8	6 1/4	13 3/8	5 1/4	9 7/8	2 3/4	4	6 1/8	10 3/8	8 3/8	6 1/2	1/2	7 3/8	4x 5/8	6	100
FN050-160A [2]	1	2	2 1/2	16 1/2	3 7/8	2 1/8	5/8	7 1/8	6 1/4	13 3/8	5 1/4	9 7/8	2 3/4	4	6 1/8	10 3/8	8 3/8	6 1/2	1/2	7 3/8	4x 5/8	6	100
FN050-160A [2]	1,5	2	2 1/2	20 1/2	3 7/8	2 1/8	2/3	7 1/8	6 1/4	13 3/8	5 1/4	9 3/4	2 3/4	4	7 1/4	10 3/8	8 3/8	6 1/2	1/2	7 1/2	4x 5/8	6	105
FN050-160A [2]	2	2	2 1/2	20 1/2	3 7/8	2 1/8	2/3	7 1/8	6 1/4	13 3/8	5 1/4	9 3/4	2 3/4	4	7 1/4	10 3/8	8 3/8	6 1/2	1/2	7 3/4	4x 5/8	6	105
FN050-190A [2]	3	2	2 1/2	21 1/4	3 3/4	2 1/8	5/8	7 7/8	6 1/4	14 1/4	5 7/8	11	2 3/4	4	7	10 3/8	8 3/8	6 1/2	1/2	7 1/2	4x 5/8	6	125
FN050-190A [2]	5	2	2 1/2	22 1/8	3 3/4	2 1/8	5/8	7 7/8	6 1/4	14 1/4	6 1/8	11 1/8	2 3/4	4	7 3/4	10 3/8	8 3/8	6 1/2	1/2	7 1/2	4x 5/8	6	135
FN050-240A [2]	3	2	2 1/2	22 5/8	3 7/8	2 1/4	2/3	8 2/3	7 1/8	15 3/4	6 2/3	12 1/2	3 3/4	5	8 1/2	12 5/8	9 3/4	7 1/2	1/2	7 1/3	4x 5/8	6	140
FN050-240A [2]	5	2	2 1/2	22 5/8	3 7/8	2 1/4	2/3	8 2/3	7 1/8	15 3/4	6 2/3	12 1/2	3 3/4	5	8 1/2	12 5/8	9 3/4	7 1/2	1/2	7 1/3	4x 5/8	6	150
FN050-240B [2]	5	2	2 1/2	22 5/8	3 7/8	2 1/4	2/3	8 2/3	7 1/8	15 3/4	6 2/3	12 1/2	3 3/4	5	8 1/2	12 5/8	9 3/4	7 1/2	1/2	7 3/4	4x 5/8	6	150
FN065-200A [2]	2	2 1/2	3	21	3 7/8	1 1/3	2/3	8 3/4	7 1/8	16	6	11 1/4	3 3/4	5	7 1/4	12 5/8	9 3/4	6 2/3	1/2	8 1/4	4x 5/8	6	135
FN065-200A [2]	3	2 1/2	3	23 1/2	3 7/8	1 1/3	2/3	8 3/4	7 1/8	16	6	11 1/4	3 3/4	5	8 1/2	12 5/8	9 3/4	6 2/3	1/2	8 1/4	4x 5/8	6	150
FN065-200A [2]	5	2 1/2	3	23	3 7/8	1 1/3	2/3	8 3/4	7 1/8	16	6	11 1/4	3 3/4	5	8 1/2	12 5/8	9 3/4	6 2/3	1/2	7 3/4	4x 5/8	6	155
FN065-220A [2]	5	2 1/2	3	23	3 7/8	2	1/2	9 3/4	7 1/8	17	6 2/3	12 1/2	3 3/4	5	8 1/2	12 5/8	9 3/4	7 1/2	1/2	7 2/3	4x 5/8	6	155
FN065-220A [2]	7,5	2 1/2	3	25	3 7/8	2	1/2	9 3/4	7 1/8	17	6 2/3	12 1/2	3 3/4	5	10 1/4	12 5/8	9 3/4	7 1/2	1/2	7 2/3	4x 5/8	6	240
FN065-240A [2]	5	2 1/2	3	23 1/8	3 7/8	2 1/8	2/3	9 3/4	7 7/8	17 3/4	7 1/4	13 1/2	4 3/4	6 1/4	8 1/2	14 1/8	11	7 7/8	3/4	7 7/8	4x 5/8	6	175
FN065-240A [2]	7,5	2 1/2	3	25 1/8	3 7/8	2 1/8	2/3	9 3/4	7 7/8	17 3/4	7 1/4	13 1/2	4 3/4	6 1/4	10 1/4	14 1/8	11	7 7/8	3/4	7 7/8	4x 5/8	6	255
FN065-270A [2]	7,5	2 1/2	3	25	3 7/8	2	2/3	9 1/2	7 7/8	17 1/4	7 1/4	13 1/2	4 3/4	6 1/4	10 1/4	14 1/8	11	7 7/8	3/4	7 3/4	4x 5/8	6	265
FN065-270A [2]	10	2 1/2	3	26	3 7/8	2	2/3	9 1/2	7 7/8	17 1/4	7 1/4	13 1/2	4 3/4	6 1/4	10 1/4	14 1/8	11	7 7/8	3/4	7 3/4	4x 5/8	6	275
FN065-270C [2]	10	2 1/2	3	26 1/4	3 7/8	2 1/4	2/3	9 3/4	7 7/8	17 3/4	7 1/2	14 1/4	4 3/4	6 1/4	10 1/4	14 1/8	11	7 7/8	3/4	8	4x 5/8	6	280
FN065-300B [2]	15	2 1/2	3	54	4 7/8	2 1/2	1/2	10 3/4	8 7/8	19 3/4	8 1/3	15 3/4	4 3/4	6 1/4	11 1/2	15 3/4	12 1/2	9 1/2	3/4	9 1/4	4x 5/8	6	415
FN065-300B [2]	20	2 1/2	3	31 1/2	4 7/8	2 1/2	1/2	10 3/4	8 7/8	19 3/4	8 1/3	15 3/4	4 3/4	6 1/4	13 1/2	15 3/4	12 1/2	9 1/2	3/4	9 1/4	4x 5/8	6	490
FN080-170A [3]	2	3	4	22	5 1/2	3 1/4	3/4	8 3/4	7 1/8	16	6 1/2	11 7/8	4 3/4	6 1/4	7 1/4	12 5/8	9 3/4	9 3/4	3/4	9 1/4	-	6	135
FN080-170A [3]	3	3	4	24 1/2	5 1/2	3 1/4	3/4	8 3/4	7 1/8	16	6 1/2	11 7/8	4 3/4	6 1/4	8 1/2	12 5/8	9 3/4	9 3/4	3/4	9 1/4	-	6	145
FN080-170A [3]	5	3	4	25	5 1/2	3 1/4	3/4	8 3/4	7 1/8	16	6 1/2	11 7/8	4 3/4	6 1/4	8 1/2	12 5/8	9 3/4	9 3/4	3/4	9 3/4	-	6	155
FN080-210A [2]	5	3	4	24	4 7/8	2 3/4	3/4	9 3/4	7 1/2	17 1/4	7 1/2	13 3/4	3 3/4	5	8 1/2	13 5/8	11	8 1/2	1/2	8 3/4	8x 5/8	6	170
FN080-210A [2]	7,5	3	4	26	4 7/8	2 3/4	3/4	9 3/4	7 1/2	17 1/4	7 1/2	13 3/4	3 3/4	5	10 1/4	13 5/8	11	8 1/2	1/2	8 3/4	8x 5/8	6	250
FN080-210A [2]	10	3	4	27	4 7/8	2 3/4	3/4	9 3/4	7 1/2	17 1/4	7 1/2	13 3/4	3 3/4	5	10 1/4	13 5/8	11	8 1/2	1/2	8 3/4	8x 5/8	6	270
FN080-210A [2]	15	3	4	31	4 7/8	2 3/4	3/4	9 3/4	7 1/2	17 1/4	7 1/2	13 3/4	3 3/4	5	10 1/4	13 5/8	11	8 1/2	1/2	8 3/4	8x 5/8	6	365
FN080-255A [2]	5	3	4	24	4 7/8	2 2/3	2/3	11	7 7/8	19	7 1/2	14	4 3/4	6 1/4	8 1/2	15 3/4	12 1/2	9 1/2	3/4	8 3/4	8x 5/8	6	195
FN080-255A [2]	7,5	3	4	26	4 7/8	2 2/3	2/3	11	7 7/8	19	7 1/2	14	4 3/4	6 1/4	10 1/4	15 3/4	12 1/2	9 1/2	3/4	8 3/4	8x 5/8	6	280
FN080-255A [2]	10	3	4	27	4 7/8	2 2/3	2/3	11	7 7/8	19	7 1/2	14	4 3/4	6 1/4	10 1/4	15 3/4	12 1/2	9 1/2	3/4	8 3/4	8x 5/8	6	285
FN080-330A [2]	20	3	4	32	4 7/8	2 1/8	1/2	12 1/2	9 7/8	22 1/4	9 3/4	18 1/4	4 3/4	6 1/4	13 1/2	15 3/4	12 1/2	9 1/2	3/4	9 3/4	8x 5/8	6	540
FN080-330A [2]	25	3	4	32	4 7/8	2 1/8	1/2	12 1/2	9 7/8	22 1/4	9 3/4	18 1/4	4 3/4	6 1/4	13 1/2	15 3/4	12 1/2	9 1/2	3/4	9 3/4	8x 5/8	6	575
FN080-330A [2]	30	3	4	38	4 7/8	2 1/8	1/2	12 1/2	9 7/8	22 1/4	9 3/4	18 1/4	4 3/4	6 1/4	14 3/4	15 3/4	12 1/2	9 1/2	3/4	11 3/4	8x 5/8	6	600

[1] Total weight of the pump

[2] Version with blind hole thread

[3] Version with flange

Flange connection dimensions according to ANSI B 16.5 Class 150

Type	HP	DF	SF	L	a1	a2	b	c	d	e	f	g	h	i	Øk	m	n	o	q	r	s	x_{min}	m[1] [lb]
FN080-330A [2]	40	3	4	38	4 7/8	2 1/8	1/2	12 1/2	9 7/8	22 1/4	9 3/4	18 1/4	4 3/4	6 1/4	14 3/4	15 3/4	12 1/2	9 1/2	3/4	11 3/4	8x 5/8	6	695
FN100-180A [3]	5	4	5	25 3/4	5 7/8	3 1/8	3/4	11	7 7/8	19	7 1/4	12 3/4	4 3/4	6 1/4	8 1/2	14 1/8	11	7 7/8	3/4	10 1/2	-	6	200
FN100-180A [3]	7,5	4	5	27 3/4	5 7/8	3 1/8	3/4	11	7 7/8	19	7 1/4	12 3/4	4 3/4	6 1/4	10 1/4	14 1/8	11	7 7/8	3/4	10 1/2	-	6	280
FN100-210A [3]	10	4	5	28 7/8	5 7/8	3 2/3	3/4	11	7 7/8	19	7 3/4	14 1/4	4 3/4	6 1/4	10 1/4	15 3/4	12 1/2	9 1/2	3/4	10 5/8	-	6	270
FN100-210A [3]	15	4	5	55 3/8	5 7/8	3 2/3	3/4	11	7 7/8	19	7 3/4	14 1/4	4 3/4	6 1/4	11 1/2	15 3/4	12 1/2	9 1/2	3/4	10 5/8	-	6	365
FN100-240A [2]	10	4	5	27 1/2	5 1/2	3 1/3	1/2	11	8 7/8	20	8	14 1/2	4 3/4	6 1/4	10 1/4	15 3/4	12 1/2	9 1/2	3/4	9 1/4	8x 5/8	6	310
FN100-240A [2]	15	4	5	54	5 1/2	3 1/3	1/2	11	8 7/8	20	8	14 1/2	4 3/4	6 1/4	11 1/2	15 3/4	12 1/2	9 1/2	3/4	9 1/4	8x 5/8	6	405
FN100-270A [2]	10	4	5	27 1/2	5 1/2	3 1/2	1/2	10 5/8	8 7/8	19 1/2	7 3/4	14 1/2	4 3/4	6 1/4	10 1/4	15 3/4	12 1/2	9 1/2	3/4	9 1/4	8x 5/8	6	305
FN100-270A [2]	15	4	5	54	5 1/2	3 1/2	1/2	10 5/8	8 7/8	19 1/2	7 3/4	14 1/2	4 3/4	6 1/4	11 1/2	15 3/4	12 1/2	9 1/2	3/4	9 1/4	8x 5/8	6	400
FN100-330A [2]	30	4	5	37 3/4	5 1/2	3	2/3	12 1/2	9 7/8	22 1/4	9 1/4	17 1/2	4 3/4	6 1/4	14 3/4	15 3/4	12 1/2	9 1/2	3/4	11 1/2	8x 5/8	6	620
FN100-330A [2]	40	4	5	37 3/4	5 1/2	3	2/3	12 1/2	9 7/8	22 1/4	9 1/4	17 1/2	4 3/4	6 1/4	14 3/4	15 3/4	12 1/2	9 1/2	3/4	11 1/2	8x 5/8	6	715
FN100-330C [2]	20	4	5	35 3/4	5 1/2	3 1/4	3/4	12 1/2	9 7/8	22 1/4	8 3/4	16 3/4	4 3/4	6 1/4	13 1/2	15 3/4	12 1/2	9 1/2	3/4	13 1/2	8x 5/8	6	550
FN100-330C [2]	25	4	5	35 3/4	5 1/2	3 1/4	3/4	12 1/2	9 7/8	22 1/4	8 3/4	16 3/4	4 3/4	6 1/4	13 1/2	15 3/4	12 1/2	9 1/2	3/4	13 1/2	8x 5/8	6	585
FN125-250A [3]	5	5	6	24 1/2	5 1/2	5 1/2	1/2	14	12 1/2	26 1/2	10 1/4	17 2/3	4 3/4	6 1/4	8 1/2	15 3/4	12 1/2	9 1/2	3/4	9 1/3	-	6	215
FN125-250A [3]	7,5	5	6	26 1/2	5 1/2	5 1/2	1/2	14	12 1/2	26 1/2	10 1/4	17 2/3	4 3/4	6 1/4	10 1/4	15 3/4	12 1/2	9 1/2	3/4	9 1/3	-	6	300
FN125-250A [3]	10	5	6	27 1/2	5 1/2	5 1/2	1/2	14	12 1/2	26 1/2	10 1/4	17 2/3	4 3/4	6 1/4	10 1/4	15 3/4	12 1/2	9 1/2	3/4	9 1/3	-	6	310
FN125-270A [2]	15	5	6	54 1/2	5 1/2	3	1/2	14	9 7/8	23 3/4	8 1/4	15 1/3	4 3/4	6 1/4	11 1/2	15 3/4	12 1/2	9 1/2	3/4	9 2/3	8x 5/8	6	435
FN125-270A [2]	20	5	6	32	5 1/2	3	1/2	14	9 7/8	23 3/4	8 1/4	15 1/3	4 3/4	6 1/4	13 1/2	15 3/4	12 1/2	9 1/2	3/4	9 2/3	8x 5/8	6	510
FN125-270A [2]	25	5	6	32	5 1/2	3	1/2	14	9 7/8	23 3/4	8 1/4	15 1/3	4 3/4	6 1/4	13 1/8	15 3/4	12 1/2	9 1/2	3/4	9 3/4	8x 5/8	6	545
FN125-270B [2]	20	5	6	32 3/8	5 1/2	2 3/4	2/3	14	9 7/8	23 3/4	10 1/4	18 1/2	4 3/4	6 1/4	13 1/2	15 3/4	12 1/2	9 1/2	3/4	10 1/8	8x 5/8	6	515
FN125-270B [2]	25	5	6	32 3/8	5 1/2	2 3/4	2/3	14	9 7/8	23 3/4	10 1/4	18 1/2	4 3/4	6 1/4	13 1/8	15 3/4	12 1/2	9 1/2	3/4	10 1/8	8x 5/8	6	550
FN125-270B [2]	30	5	6	36 3/4	5 1/2	2 3/4	2/3	14	9 7/8	23 3/4	10 1/4	18 1/2	4 3/4	6 1/4	14 3/4	15 3/4	12 1/2	9 1/2	3/4	10 1/2	8x 5/8	6	575
FN125-270B [2]	40	5	6	36 3/4	5 1/2	2 3/4	2/3	14	9 7/8	23 3/4	10 1/4	18 1/2	4 3/4	6 1/4	15 3/4	15 3/4	12 1/2	9 1/2	3/4	10 1/2	8x 5/8	6	670
FN125-330A [2]	40	5	6	37 3/4	5 1/2	3	1/2	14	11	25	10	18 1/2	6	7 7/8	15 3/4	19 5/8	15 3/4	11 3/4	1	11 1/2	8x 5/8	6	740
FN125-330A [2]	50	5	6	40 1/4	5 1/2	3	1/2	14	11	25	10	18 1/2	6	7 7/8	17	19 5/8	15 3/4	11 3/4	1	11 1/2	8x 5/8	6	850
FN150-250A [3]	10	6	8	28 3/4	6 1/4	6 1/4	1/2	15	11	26	11	18 7/8	6	7 7/8	10 1/4	21 5/8	17 3/4	13 3/4	1	10 1/2	-	6	340
FN150-250A [3]	15	6	8	55 1/4	6 1/4	6 1/4	1/2	15	11	26	11	18 7/8	6	7 7/8	11 1/2	21 5/8	17 3/4	13 3/4	1	10 1/2	-	6	435
FN150-250A [3]	20	6	8	33	6 1/4	6 1/4	1/2	15	11	26	11	18 7/8	6	7 7/8	13 1/2	21 5/8	17 3/4	13 3/4	1	10 3/4	-	6	520
FN150-270B [3]	25	6	8	33 1/4	6 1/4	6 1/4	1/2	14 1/2	12 1/2	27	12 1/3	22	6	7 7/8	13 1/8	21 5/8	17 3/4	13 3/4	1	11	-	6	570
FN150-270B [3]	30	6	8	37 5/8	6 1/4	6 1/4	1/2	14 1/2	12 1/2	27	12 1/3	22	6	7 7/8	14 3/4	21 5/8	17 3/4	13 3/4	1	11 3/8	-	6	595
FN150-270B [3]	40	6	8	37 5/8	6 1/4	6 1/4	1/2	14 1/2	12 1/2	27	12 1/3	22	6	7 7/8	15 3/4	21 5/8	17 3/4	13 3/4	1	11 3/8	-	6	690
FN150-300A [3]	25	6	8	32 3/4	6 1/4	6 1/4	1/2	13	11	24	10 1/2	18 7/8	6	7 7/8	13 1/8	21 5/8	17 3/4	13 3/4	1	10 1/2	-	6	575
FN150-300A [3]	30	6	8	38 3/4	6 1/4	6 1/4	1/2	13	11	24	10 1/2	18 7/8	6	7 7/8	14 3/4	21 5/8	17 3/4	13 3/4	1	12 1/2	-	6	620
FN150-300A [3]	40	6	8	38 3/4	6 1/4	6 1/4	1/2	13	11	24	10 1/2	18 7/8	6	7 7/8	15 3/4	21 5/8	17 3/4	13 3/4	1	12 1/2	-	6	710
FN150-400A [4]	60	6	8	46	6 1/4	-	5 1/2	17 3/4	17 7/8	35 3/4	10 5/8	20 1/4	41 3/8	45	19 2/3	29	25 1/2	21 1/4	3/4	16	8x 5/8	6	1495
FN150-400A [4]	75	6	8	46	6 1/4	-	5 1/2	17 3/4	17 7/8	35 3/4	10 5/8	20 1/4	41 3/8	45	19 2/3	29	25 1/2	21 1/4	3/4	16	8x 5/8	6	1550
FN150-400A [4]	100	6	8	49 1/4	6 1/4	-	5 1/2	17 3/4	17 7/8	35 3/4	10 5/8	20 1/4	41 3/8	45	22 2/3	29	25 1/2	21 1/4	3/4	16	8x 5/8	6	1910
FN200-250A [3]	15	8	10	55 1/2	6 1/4	6 1/4	1/2	13 3/4	11	24 3/4	10 1/2	18 7/8	6	7 7/8	11 1/2	21 5/8	17 3/4	13 3/4	3/4	10 3/4	-	6	435
FN200-250A [3]	20	8	10	33 3/8	6 1/4	6 1/4	1/2	13 3/4	11	24 3/4	10 1/2	18 7/8	6	7 7/8	13 1/2	21 5/8	17 3/4	13 3/4	3/4	11 1/8	-	6	525
FN200-250A [3]	25	8	10	33 3/8	6 1/4	6 1/4	1/2	13 3/4	11	24 3/4	10 1/2	18 7/8	6	7 7/8	13 1/8	21 5/8	17 3/4	13 3/4	3/4	11 1/8	-	6	565
FN200-270B [3]	20	8	10	34 3/4	6 3/4	3 2/3	3/4	14 1/2	11	25 1/2	11 1/4	20	6	7 7/8	13 1/2	19 5/8	15 3/4	11 3/4	1	12 1/2	-	6	580
FN200-270B [3]	30	8	10	39 1/2	6 3/4	3 2/3	3/4	14 1/2	11	25 1/2	11 1/4	20	6	7 7/8	14 3/4	19 5/8	15 3/4	11 3/4	1	13 1/4	-	6	650
FN200-270B [3]	40	8	10	39 1/2	6 3/4	3 2/3	3/4	14 1/2	11	25 1/2	11 1/4	20	6	7 7/8	15 3/4	19 5/8	15 3/4	11 3/4	1	13 1/4	-	6	745
FN200-350A [5]	50	8	10	43 3/8	8 1/4	4 3/4	3/4	14 1/2	12 1/2	28 1/4	13 1/8	23 1/2	6	7 7/8	17	19 5/8	15 3/4	11 3/4	1	14 7/8	-	6	1145
FN200-350A [5]	60	8	10	46 2/3	8 1/4	-	5 1/2	15 3/4	17 7/8	33 3/4	13 1/8	23 1/2	41 3/8	45	19 2/3	27 1/8	23 5/8	19 1/4	3/4	16 5/8	-	6	1460
FN200-350A [5]	75	8	10	46 2/3	8 1/4	-	5 1/2	15 3/4	17 7/8	33 3/4	13 1/8	23 1/2	41 3/8	45	19 2/3	27 1/8	23 5/8	19 1/4	3/4	16 5/8	-	6	1515
FN200-350A [5]	100	8	10	49 7/8	8 1/4	-	5 1/2	15 3/4	17 7/8	33 3/4	13 1/8	23 1/2	41 3/8	45	22 2/3	27 1/8	23 5/8	19 1/4	3/4	16 5/8	-	6	1875

1) Total weight of the pump

2) Version with blind hole thread

3) Version with flange

4) Version with blind hole thread and base rail

5) Version with flange and base rail

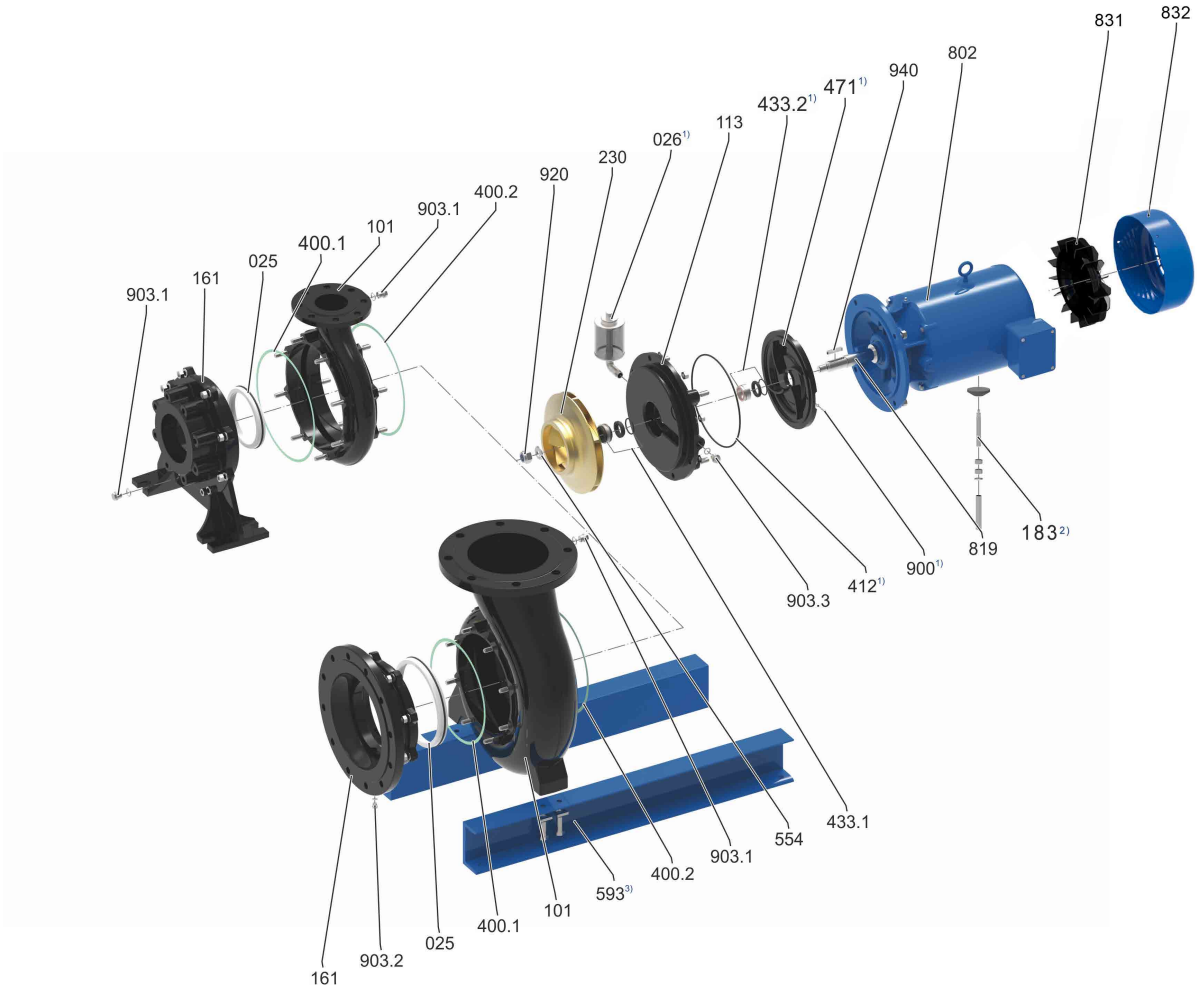
Flange connection dimensions according to ANSI B 16.5 Class 150

60 Hz: 1,800 rpm (460 V)

P_2 [HP]	I [A]	I_A/I_N	dB(A)
0.75	1.5	6.7	50
1	1.6	8.3	54
1.5	2.4	7.9	54
2	3.1	7.7	54
3	4.1	7.9	54
5	6.8	7	54
7.5	10.1	7.7	76
10	13.5	7.9	76
15	18.1	6.9	74
20	24	6.3	74
25	30	7.2	74
30	37	5.9	74
40	47	6.4	74
50	59	6.1	78
60	68	6.3	82
75	85.9	6.3	82
100	112	6.5	83

Explanation:

P_2: Rated output
I: Rated current
I_A/I_N: Pull-in current to rated current
dB(A): Sound pressure level of the entire pump. Tolerance ± 3 dB(A)



Individual parts

025	Impeller protector	433.2 [1]	Mechanical seal
026 [1]	Seal Guard system	471 [1]	Seal cover
101	Pump casing	554	Washer
113	Intermediate casing	593 [3]	Rail
161	Casing cover	802	Block motor
183 [2]	Support foot	819	Motor shaft
230	Impeller	831	Fan
320.1	Anti-friction bearing (non drive side)	832	Fan hood
320.2	Anti-friction bearing (drive side)	900 [1]	Screw
400.1	Gasket	903.1	Screwed plug
400.2	Gasket	903.2	Screwed plug
412 [1]	O-ring	903.3	Screwed plug
420	Shaft seal ring	920	Nut
433.1	Mechanical seal	940	Key

[1] Special model/accessories

[2] from 30 to 50 HP

[3] from 60 HP

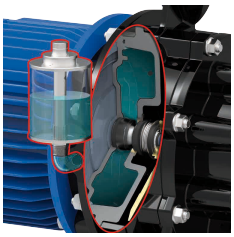
Frequency converter (FC)

Frequency converters are used to electronically control the speed of motors and can produce significant energy savings. They also extend the service life of the plant and reduce repair and maintenance costs.

The primary advantage of a frequency converter is that controlling pump speed enables the operating point to be adjusted to best suit the system requirements (e.g., reduced night-time operation in swimming pools), which significantly improves energy use over earlier technical solutions and options.

Used in wall or control cabinet mounting methods (all performance variables).

Seal Guard system



The Seal Guard system uses a media reservoir to prevents the mechanical seal from dry running.

A soon as there is no medium on the primary mechanical seal of the pump, which leads to dry running, the lack of lubrication is offset by the media reservoir. The media reservoir is automatically replenished by a supply container. This container can also be used to detect primary mechanical seal leakage. Except for refilling the media reservoir, the system is entirely maintenance-free.

Using a media reservoir to protect the mechanical seal against dry running saves costs and, in turn, reduces life cycle costs.

Long Life set

The Long Life set consists of a grease gun with high-performance grease. Keeping the motor bearings lubricated increases their lifetime considerably and therefore improves the life cycle costs of the pump.

Analog pressure sensor unit

The analog pressure sensor unit is used to display the pressure on the pressure side of the pump. This makes it easy to check how the pump is functioning.

Digital pressure sensor unit

The digital pressure sensor unit records the pressure on the pump's pressure side. The value is shown via the optional digital display.