

In-line Pump

Etaline L

50 Hz

Type Series Booklet



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Type Series Booklet Etaline L

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Heating / Air-conditioning / Ventilation

In-line Pumps

Etaline L



Main applications

- Service water supply systems
- Heating systems
- Industrial recirculation systems
- Air-conditioning systems
- Cooling circuits
- Swimming pools
- Water supply systems¹⁾

Fluids handled

- Fluids not chemically or mechanically aggressive to the materials

Further information on fluids handled

(⇒ Page 7)

Operating data

Operating properties

Characteristic	Value	
Flow rate	Q [m³/h]	≤ 95
	Q [l/s]	≤ 26,3
Head	H [m]	≤ 21
	T [°C]	≥ -15 ≤ +120
Operating pressure	p [bar]	≤ 10

Design details

Design

- Close-coupled design / in-line design
- Single-stage
- Horizontal installation / vertical installation
- Rigid connection between pump and motor

Pump casing

- Radially split volute casing
- In-line design

Drive

- Surface-cooled squirrel-cage motor to KSB standard
- Efficiency class IE3 to IEC 60034-30 (≥ 0.75 kW)
- Winding 50 Hz, 1~220-240 V / 3~220-240 V / 3~380-420 V ≤ 1.1 kW
- Winding 50 Hz, 3~220-240 V / 3~380-420 V ≥ 1.8 kW
- Type of construction IM B14
- Enclosure IP55
- Duty cycle: continuous duty S1
- Thermal class F

Shaft seal

- KSB mechanical seal

Impeller type

- Closed radial impeller

Bearings

- Radial ball bearings in the motor housing
- Grease lubrication

Automation

Automation options:

- PumpDrive

1) Not suitable for drinking water in accordance with the German Environment Agency

Designation

Designation example

Position																																										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
E	T	L	L	0	2	5	-	0	2	5	-	0	6	3	-	G	G	S	A	V	1	1	D	2	0	0	1	2	2	C	A	A	T	B	I	E	3	P	D	2	E	
See name plate and data sheet																																										

Designation key

Position	Code	Description
1-4	Pump type	
	ETLL	Etaline L
	ETLD	Etaline DL
5-16	Size, e.g.	
	025	Nominal suction nozzle diameter [mm]
	025	Nominal discharge nozzle diameter [mm]
	063	Nominal impeller diameter [mm]
17	Pump casing material	
	B	Bronze CC491K
	G	Grey cast iron EN-GJL-200 / EN-GJL-250
18	Impeller material	
	B	Bronze G-CuSn10Zn
	G	Grey cast iron EN-GJL-150
	P	Polysulphone PSU-GF30
19	Design	
	P	With casing cover made of polysulphone PSU-GF30
	S	Standard
	W	Approved for drinking water to WRAS
	X	Non-standard (BT3D, BT3)
20	Casing cover	
	A	Conical seal chamber
21	Shaft seal type	
	V	Conical seal chamber with vent
22-23	Seal code, single mechanical seal	
	11	BQ1EGG
	12	BQ1PGG Available upon request.
	13	BVPGG Available upon request.
	14	Q5Q1EGG Available upon request.
	15	Q5Q1PGG Available upon request.
24	Scope of supply	
	D	Pump, baseplate, coupling, coupling guard, motor
25	Shaft unit	
	2	Shaft unit 12
	4	Shaft unit 14
	6	Shaft unit 16
26-29	Motor rating P_N [kW] (basis 50 Hz)	
	0012	0,12

	0300	3,00
30	Number of motor poles	
31	Motor design	
	C	3-phase AC motor 230 V / 400 V
	M	1-phase AC motor 230 V
32	-	
33	Product generation	
	A	Etaline L / Etaline DL
34-36	Motor manufacturer	
	ATB	ATB
37-39	Efficiency class	
40-43	PumpDrive	

Position	Code	Description
40-43	PD2E	PumpDrive 2 Eco

Materials

Overview of available materials

Part. No.	Description	Material	Material variant			
			GG	GP	BB	BP
102	Volute casing	Grey cast iron EN-GJL 200 / EN-GJL 250 ²⁾	X	X	-	-
		Bronze CC491K	-	-	X	X
230	Impeller	Grey cast iron EN-GJL-150	X	-	-	-
		Bronze G-CuSn10Zn	-	-	X	-
		Polysulphone PSU-GF30	-	X	-	X
341	Drive lantern	Aluminium AC-46500	X	X	X	X
412.50	O-ring	EPDM	X	X	X	X
554.03	Washer	CW508L	X	X	X	X
580	Cap, conical	Polyamide 66	X	X	X	X
		Polysulphone PSU-GF30	○ ³⁾	○ ³⁾	○ ³⁾	○ ³⁾
914.21	Hexagon socket head cap screw	A4	X	X	X	X

Coating and preservation

- Coating and preservation to manufacturer's standard

Product benefits

- Improved efficiency and NPSHreq by experimentally verified hydraulic design of impellers (vanes)
- Little wear, low vibration levels and excellent smooth running characteristics thanks to good suction performance and virtually cavitation-free operation across a wide operating range
- Casing sealed reliably – even in varying operating conditions – by confined casing gasket
- Optimum match of pump to fluid handled by a large choice of materials for many applications as standard
- Low-noise low-vibration motors specially designed for Etaline L. Also available as 2-pole motors.

Product information as per Regulation No. 547/2012 (for water pumps with a maximum shaft power of 150 kW) implementing "Ecodesign" Directive 2009/125/EC

- Minimum efficiency index: see data sheet
- The benchmark for the most efficient water pumps is MEI ≥ 0.70 .
- Year of construction: see data sheet
- Manufacturer's name or trade mark, commercial registration number and place of manufacture: see data sheet or order documentation
- Product's type and size identifier: see data sheet
- Hydraulic pump efficiency (%) with trimmed impeller: see data sheet

- Pump performance curves, including efficiency characteristics: see documented characteristic curve
- The efficiency of a pump with a trimmed impeller is usually lower than that of a pump with full impeller diameter. 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.
- 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.
- Information relevant for disassembly, recycling or disposal at end of life: see installation/operating manual
- Information on benchmark efficiency or benchmark efficiency graph for MEI = 0.70 (0.40) for the pump based on the model shown in the Figure are available at: <http://www.europump.org/efficiencycharts>

Acceptance tests and warranty

Materials inspection and testing

- Test report 2.2 on request

Hydraulic test

- The duty point of each pump with a delivery address or final destination in Europe is guaranteed to ISO 9906/3B.

- Other inspections/tests on request

Warranty

- Warranties are given within the scope of the valid terms and conditions of sale and delivery.

2) DN 80

3) Optional design with additional code P

4) T = fluid temperature

5) Special design

6) Treatment to VdTÜV 1466; additional requirement: O2 t < 0.02 mg/l

Overview of fluids handled

Combinations of fluids handled and material variants (**X** = standard)

Fluid handled	T ⁴⁾		Material variant				Seal code		Comments
			Grey cast iron/ grey cast iron	Grey cast iron/ polysulphone	Tin bronze/tin bronze	Tin bronze/ polysulphone	BQ ₁ E _{GG}	Q ₅ Q ₁ E _{GG}	
	Min.	Max.	GG	GP	BB	BP	11	14 ⁵⁾	
	[°C]								
Service water	-	-	X	X	-	-	X	-	-
Heating water ⁶⁾	-	-	X	X	-	-	X	-	-
Condensate	-	-	X	X	-	-	X	-	-
Cooling water without antifreeze	-	≤ +60	X	X	-	-	X	-	Open circuit: use material variant BB/ BP.
Cooling water with antifreeze, pH ≥ 7.5	≥ -30	≤ +60	X	X	-	-	X	-	Open circuit: use material variant BB/ BP.
Cooling water with antifreeze, pH ≥ 7.5	≥ +60	≤ +110	X	X	-	-	-	X	Open circuit: use material variant BB/ BP.
Pure water	-	≤ +60	X	X	-	-	X	-	-
Swimming pool water: filtration	-	≤ +40	-	-	X	X	X	-	Use pumps with additional code P.
Swimming pool water, water features without turbulences and/or air content	-	≤ +40	-	-	X	X	X	-	Use pumps with additional code P.
Partly desalinated water	-	≤ +120	X	X	-	-	X	-	-
Fully desalinated (deionised) water, boiler feed water	-	≤ +110	X	X	-	-	X	-	-
Cooling brine, inorganic; pH > 7.5, inhibited	≥ -30	≤ +25	X	X	-	-	X	-	-
Water with antifreeze, pH ≥ 7.5	≥ -30	≤ +60	X	X	-	-	X	-	-
Water with antifreeze, pH ≥ 7.5	≥ +60	≤ +120	X	X	-	-	-	X	-

Pressure limits and temperature limits

Pressure limits and temperature limits as a function of material variant

Material variant	T ⁷⁾ [°C]	Test pressure ⁸⁾		Operating pressure	
		[bar]	[bar]	[bar]	[bar]
GG, GP, BB, BP	-15 to +120	≤ 15		≤ 10	

Technical data

Motor, n = 2900 rpm (fixed-speed version)

50 Hz

Etaline L	P ₂	P _N	I _N	I _N	I _N	Motor	[kg]
	Max. ⁹⁾	IE3 ¹⁰⁾	1~230 V	3~230 V	3~400 V		
	IE3 ¹⁰⁾						
n = 2900 rpm	[kW]	[kW]	[A]	[A]	[A]		
025-025-063	0,30	0,25	-	1,32	0,76	63	8,4
025-025-063	0,30	0,25	2,00	-	-	63	8
025-025-070.1	0,21	0,18	-	1,05	0,60	63	8,5
025-025-070.1	0,14	0,12	1,20	-	-	63	8,6
025-025-071	0,30	0,25	-	1,32	0,76	63	7,7

7) Fluid temperature; for hot water heating systems to DIN 4752, Section 4.5, application limits must be observed.

8) The casing components are checked for leakage by means of internal pressure tests to AN 1897/75-03D00 with water.

9) Continuous duty S1

10) ≥ 0.75 kW = IE3

Etaline L	P ₂	P _N	I _N	I _N	I _N	Motor	[kg]
	Max. ⁹⁾	IE3 ¹⁰⁾	1~230 V	3~230 V	3~400 V		
	IE3 ¹⁰⁾						
n = 2900 rpm	[kW]	[kW]	[A]	[A]	[A]		
025-025-071	0,30	0,25	2,00	-	-	63	8
025-025-080	0,30	0,25	-	1,32	0,76	63	8,7
025-025-080	0,30	0,25	2,00	-	-	63	9
025-025-080	0,44	0,37	-	1,60	0,92	63	8,7
025-025-085	0,21	0,18	-	1,05	0,60	63	10
025-025-105	0,44	0,37	-	1,60	0,92	63	11
032-032-063	0,30	0,25	-	1,32	0,76	63	7,9
032-032-071	0,30	0,25	-	1,32	0,76	63	7,7
032-032-080	0,30	0,25	-	1,32	0,76	63	8,4
032-032-080	0,30	0,25	2,00	-	-	63	9
032-032-080	0,30	0,25	-	1,32	0,76	63	8,1
032-032-080	0,44	0,37	-	1,60	0,92	63	8,7
032-032-100	0,30	0,25	-	1,32	0,76	63	14,9
032-032-100	0,30	0,25	2,00	-	-	63	14,9
032-032-105	0,66	0,55	-	2,80	1,60	63	16,1
032-032-105	0,66	0,55	4,20	-	-	63	15,9
032-032-125	0,90	0,75	-	2,77	1,60	71	17,8
032-032-125	0,90	0,75	4,75	-	-	71	18,7
040-040-060	0,30	0,25	-	1,32	0,76	63	15,3
040-040-060	0,30	0,25	2,00	-	-	63	15,2
040-040-060	0,44	0,37	-	1,60	0,92	63	16
040-040-090	0,66	0,55	-	2,80	1,60	63	15,6
040-040-090	0,66	0,55	4,20	-	-	63	19
040-040-090	0,90	0,75	-	2,77	1,60	71	18,3
040-040-100	0,90	0,75	-	2,77	1,60	71	18,9
040-040-100	0,90	0,75	4,75	-	-	71	21,4
050-050-090	0,66	0,55	-	2,80	1,60	63	17,8
050-050-090	0,66	0,55	4,20	-	-	63	18,5
050-050-100	0,90	0,75	-	2,77	1,60	71	21,1
050-050-100	0,90	0,75	4,75	-	-	71	21
050-050-110	1,30	1,10	-	3,90	2,25	80	28,1
050-050-110	1,30	1,10	6,90	-	-	80	24,8
050-050-110	2,20	1,80	-	5,90	3,40	80	27,4
050-050-125	2,20	1,80	-	5,90	3,40	90S	31,24
065-065-100	1,30	1,10	-	3,90	2,25	80	32
065-065-100	1,30	1,10	6,90	-	-	80	32
065-065-115	2,20	1,80	-	5,90	3,40	90S	39,1
065-065-125	3,40	3,00	-	9,70	5,60	90L	46,1
080-080-105	1,30	1,10	-	3,90	2,25	80	40,3
080-080-105	1,30	1,10	6,90	-	-	80	37,4
080-080-115	2,20	1,80	-	5,90	3,40	90S	44,9
080-080-125	3,40	3,00	-	9,70	5,60	90L	50,9

11) Continuous duty S1
 12) ≥ 0.75 kW = IE3

Motor, n = 1450 rpm (fixed-speed version)

50 Hz

Etaline L	P ₂	P _N	I _N	I _N	I _N	Motor	[kg]
	Max. ¹¹⁾	IE3 ¹²⁾	1~230 V	3~230 V	3~400 V		
	IE3 ¹²⁾						
n = 1450 rpm	[kW]	[kW]	[A]	[A]	[A]		
025-025-080	0,14	0,12	-	0,83	0,48	63	8,5
025-025-080	0,14	0,12	1,20	-	-	63	8,8
032-032-080	0,14	0,12	-	0,83	0,48	63	8
032-032-080	0,14	0,12	1,20	-	-	63	8,5
032-032-125	0,14	0,12	-	0,83	0,48	63	14,6
032-032-125	0,14	0,12	1,20	-	-	63	14
040-040-100	0,14	0,12	-	0,83	0,48	63	15,5
040-040-100	0,14	0,12	1,20	-	-	63	17,3
050-050-100	0,14	0,12	-	0,83	0,48	63	16,7
050-050-100	0,14	0,12	1,20	-	-	63	17
050-050-125	0,21	0,18	-	1,15	0,66	63	20,8
050-050-125	0,21	0,18	1,60	-	-	63	21,4
050-050-160	0,90	0,75	-	2,96	1,71	80	33,8
050-050-160	0,90	0,75	5,75	-	-	80	32,1
065-065-125	0,44	0,37	-	2,15	1,25	63	29,7
065-065-125	0,44	0,37	3,20	-	-	63	30
080-080-125	0,44	0,37	-	2,15	1,25	63	35
080-080-125	0,44	0,37	3,20	-	-	63	34,1

Pump

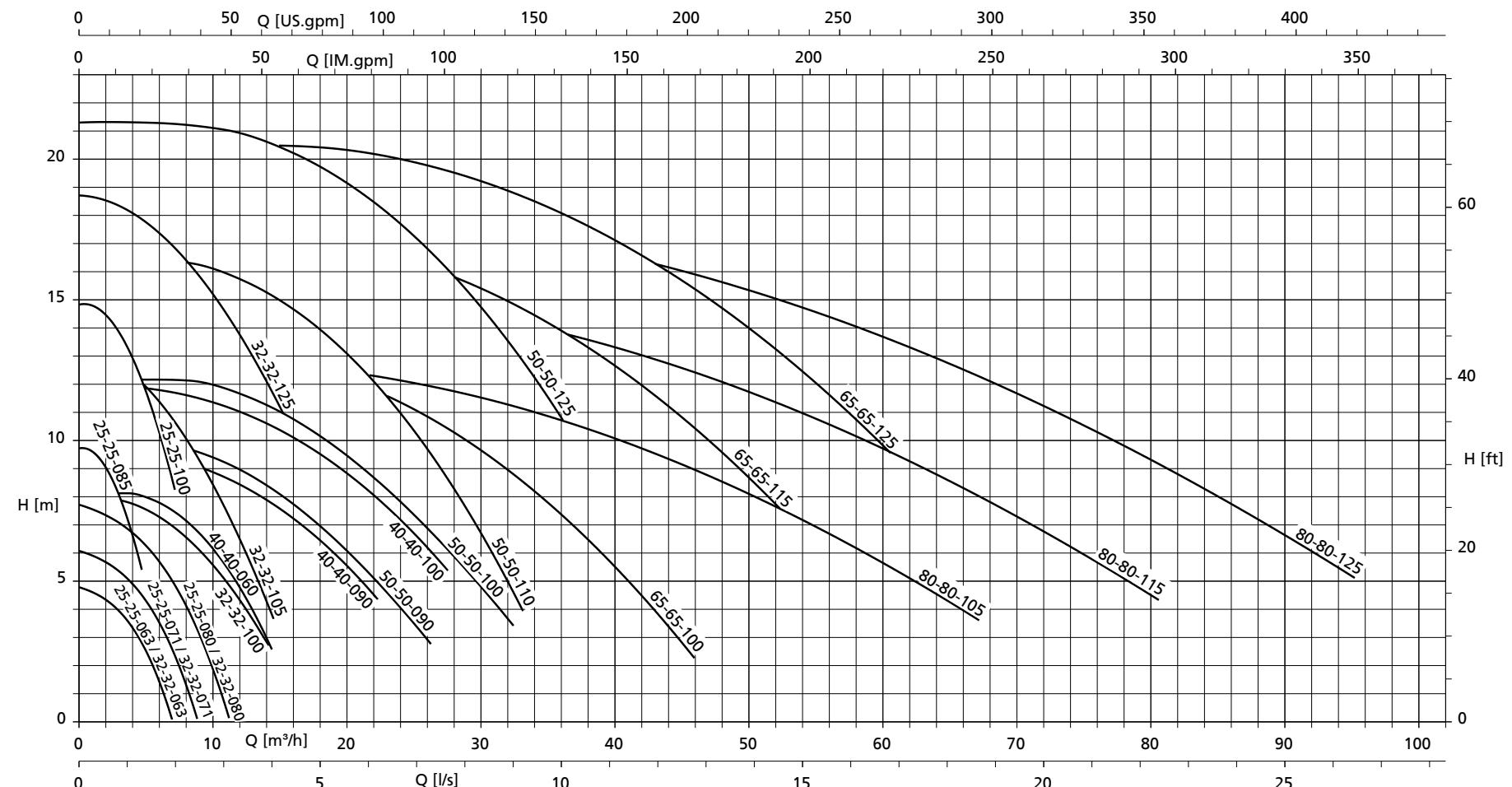
Overview

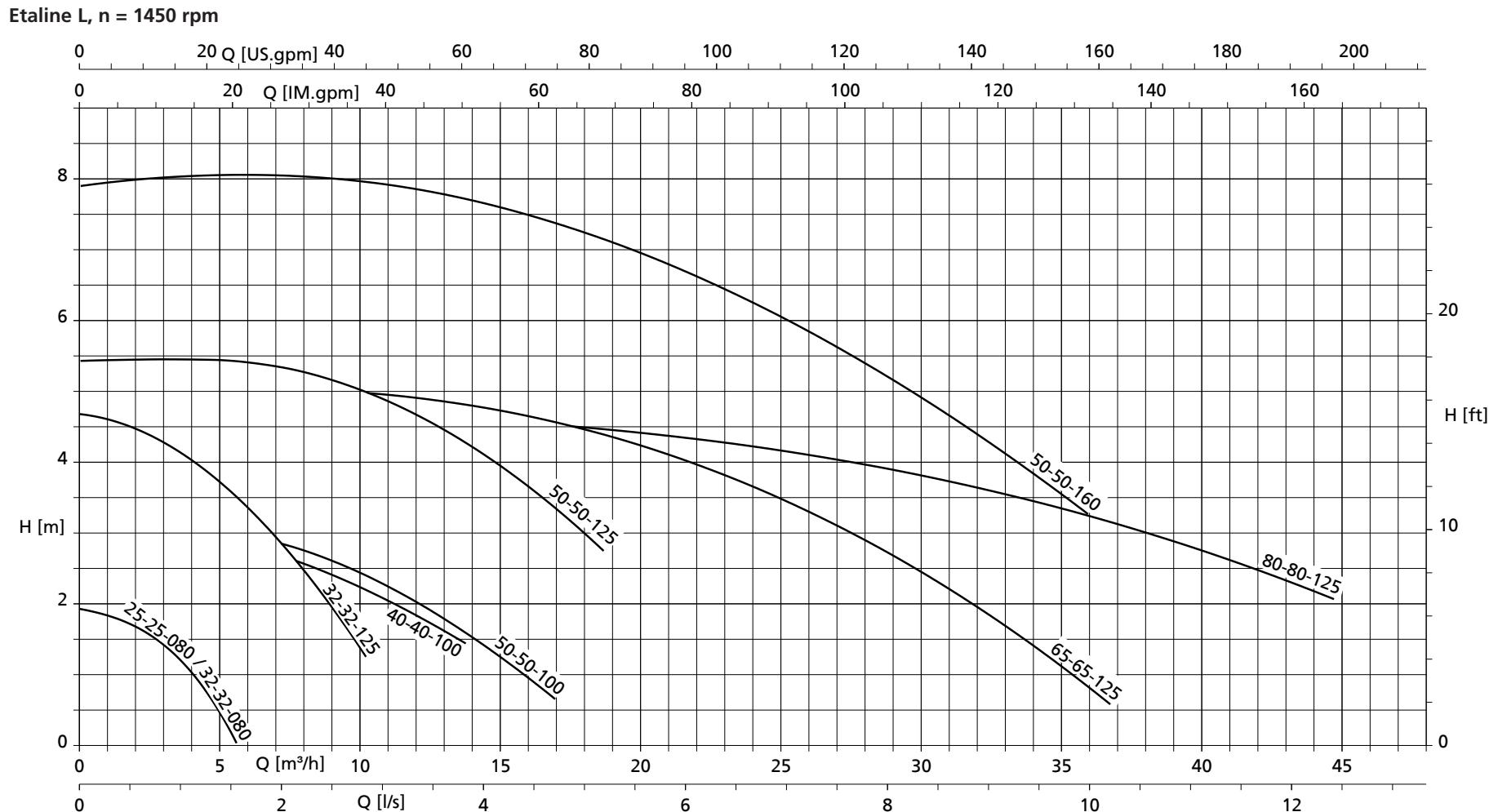
Etaline L	Shaft unit	Impeller diameter	Speed limit	
			Minimum	Maximum
			[mm]	[rpm]
025-025-063	WE 12	63	500	3000
025-025-070.1	WE 12	70	500	3000
025-025-071	WE 12	71	500	3000
025-025-080	WE 12	80	500	3000
025-025-085	WE 12	85	500	3000
025-025-105	WE 12	110	500	3000
032-032-063	WE 12	63	500	3000
032-032-071	WE 12	71	500	3000
032-032-080	WE 12	80	500	3000
032-032-100	WE 12	80	500	3000
032-032-105	WE 12	105	500	3000
032-032-125	WE 12	125	500	3000
040-040-060	WE 12	80	500	3000
040-040-090	WE 12	90	500	3000
040-040-100	WE 12	98	500	3000
050-050-090	WE 12	90	500	3000
050-050-100	WE 12	98	500	3000
050-050-110	WE 14	109	500	3000
050-050-125	WE 12	125	500	3000
050-050-125	WE 16	125	500	3000
050-050-160	WE 14	159	500	3000
050-050-160	WE 16	159	500	3000
065-065-100	WE 14	100	500	3000
065-065-115	WE 16	113	500	3000
065-065-125	WE 12	125	500	3000
065-065-125	WE 16	125	500	3000
080-080-105	WE 14	100	500	3000

Etaline L	Shaft unit	Impeller diameter	Speed limit	
			Minimum	Maximum
			[mm]	[rpm]
080-080-115	WE 16	112	500	3000
080-080-125	WE 12	126,5	500	3000
080-080-125	WE 16	126,5	500	3000

Selection Charts

Etaline L, n = 2900 rpm





Characteristic curves

General

Test class

Characteristic curves to ISO 9906 Class 3B

NPSH values

The NPSH values indicated in the characteristic curves correspond to a head drop of 3 %.

NPSH values in part-load conditions

NPSH values for flow rates below $Q = 0.3 \times Q_{opt}$ can only be measured with intense technical efforts. Evidence of NPSH values in the part-load range cannot be provided.

Density of the fluid handled

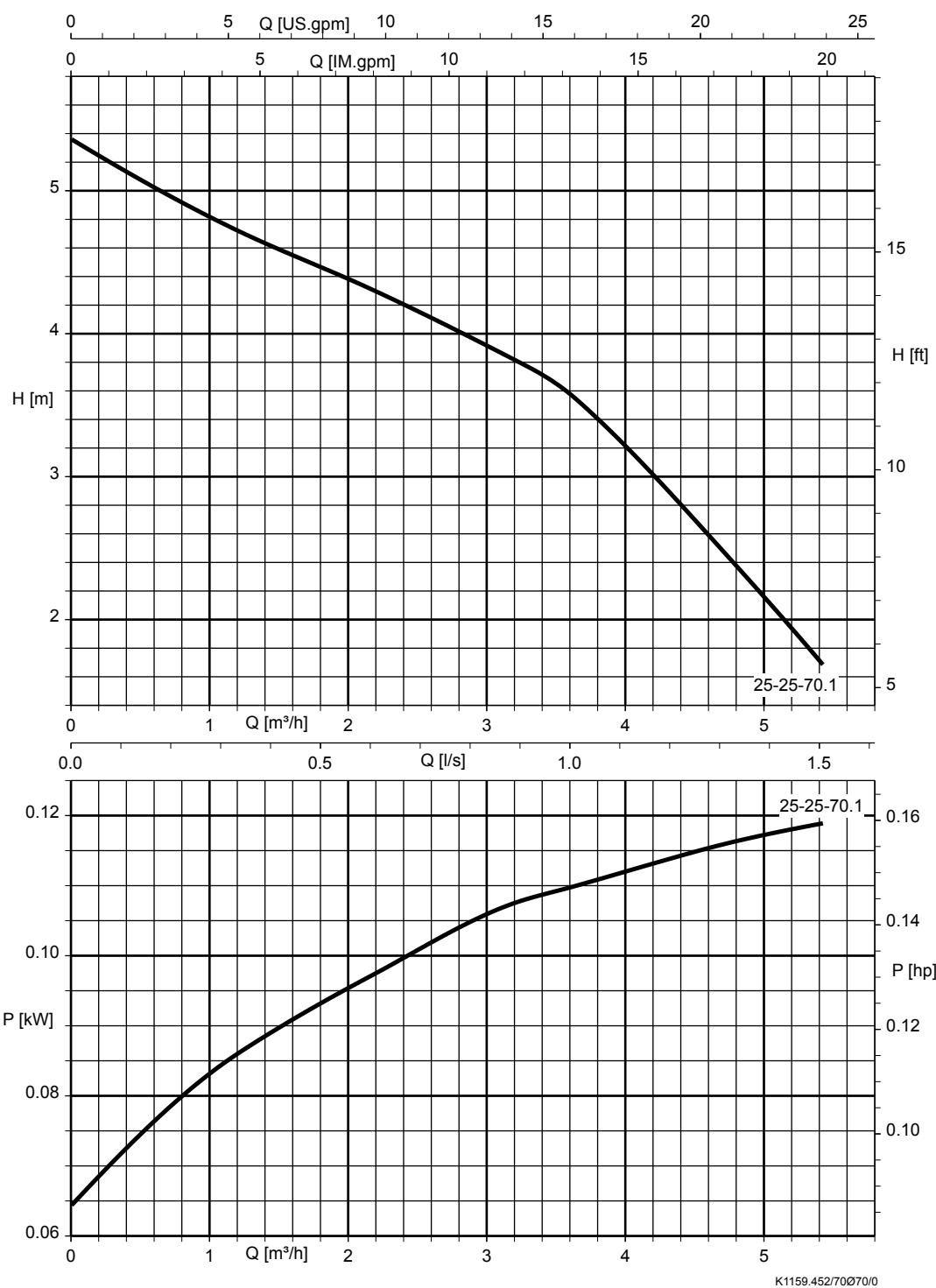
The indicated heads and performance data apply to pumped fluids with a density $\rho = 1.0 \text{ kg/dm}^3$ and a kinematic viscosity of up to $20 \text{ mm}^2/\text{s}$ max. If the density $\neq 1.0$, the performance data must be multiplied by ρ . For a viscosity $> 20 \text{ mm}^2/\text{s}$ the corresponding data for cold water has to be calculated and the impact on the pump's performance has to be determined.

Correction factors

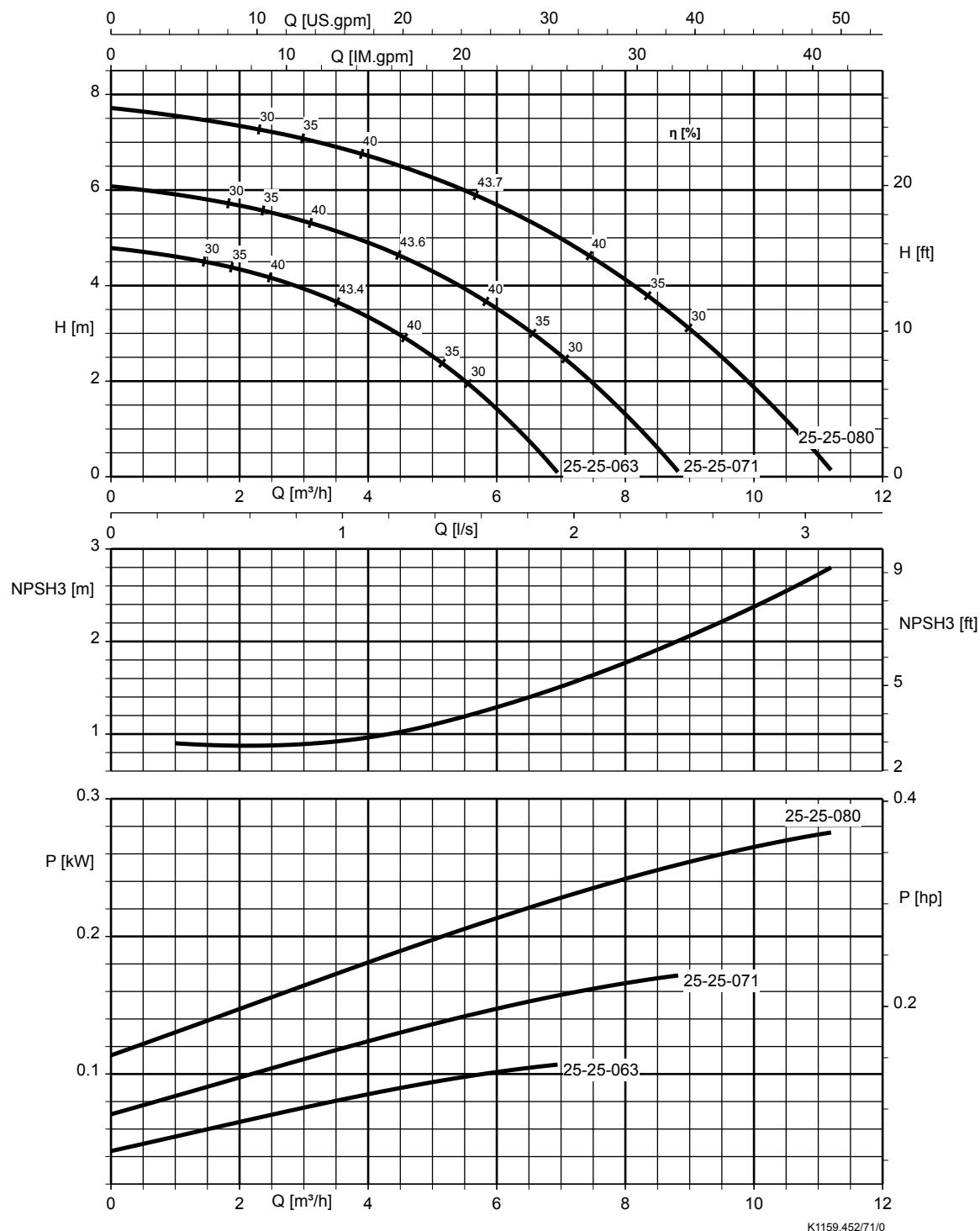
The characteristic curves apply to pumps with cast iron or bronze impellers. When using an impeller made of cast steel materials the efficiency and pump power of the corresponding pump sizes have to be multiplied by the correction factors indicated in the characteristic curves.

Etaline L, n = 2900 rpm

Etaline L 025-025-070.1, n = 2900 rpm

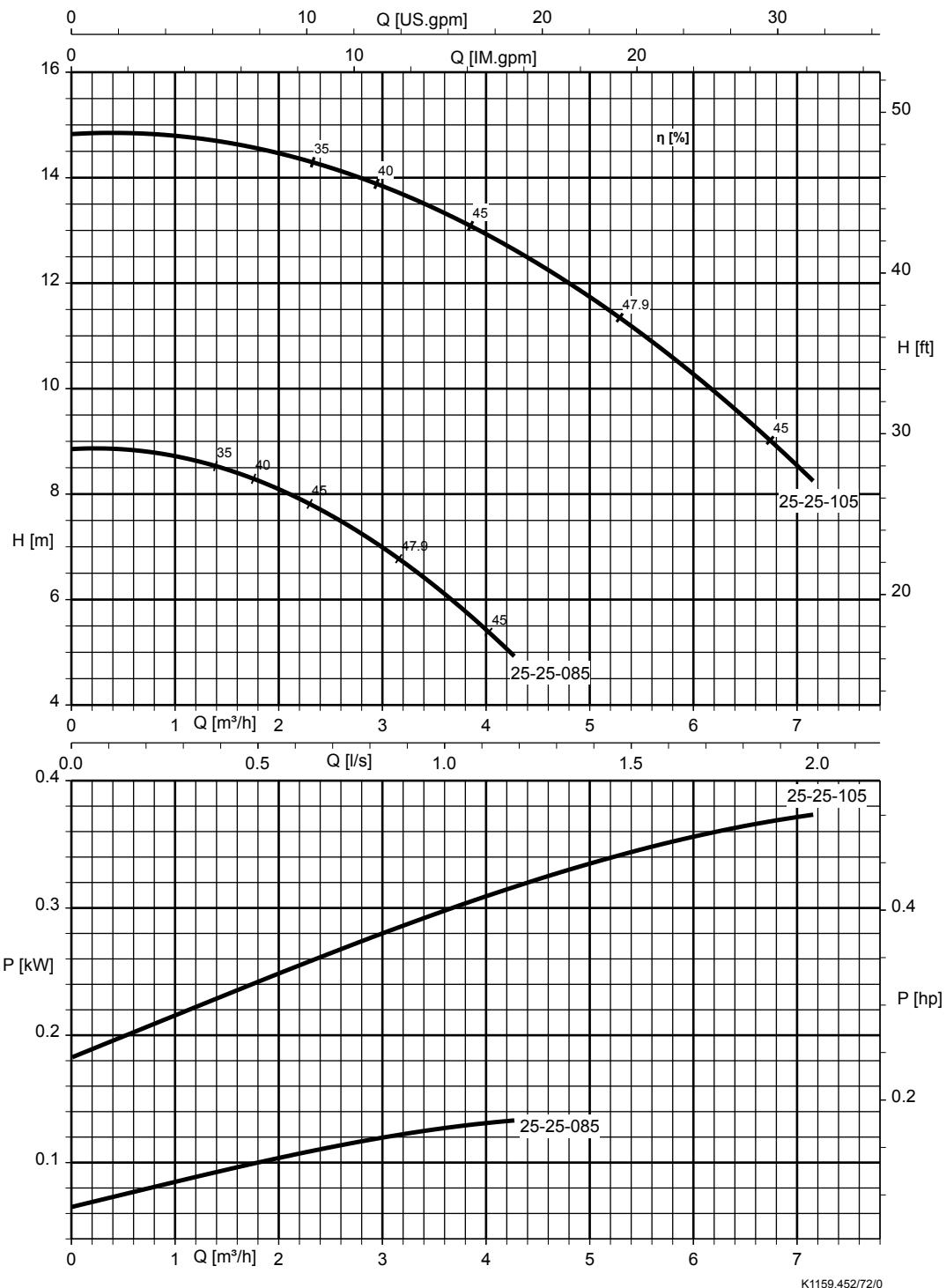


Etaline L 025-025-063/071/080, n = 2900 rpm

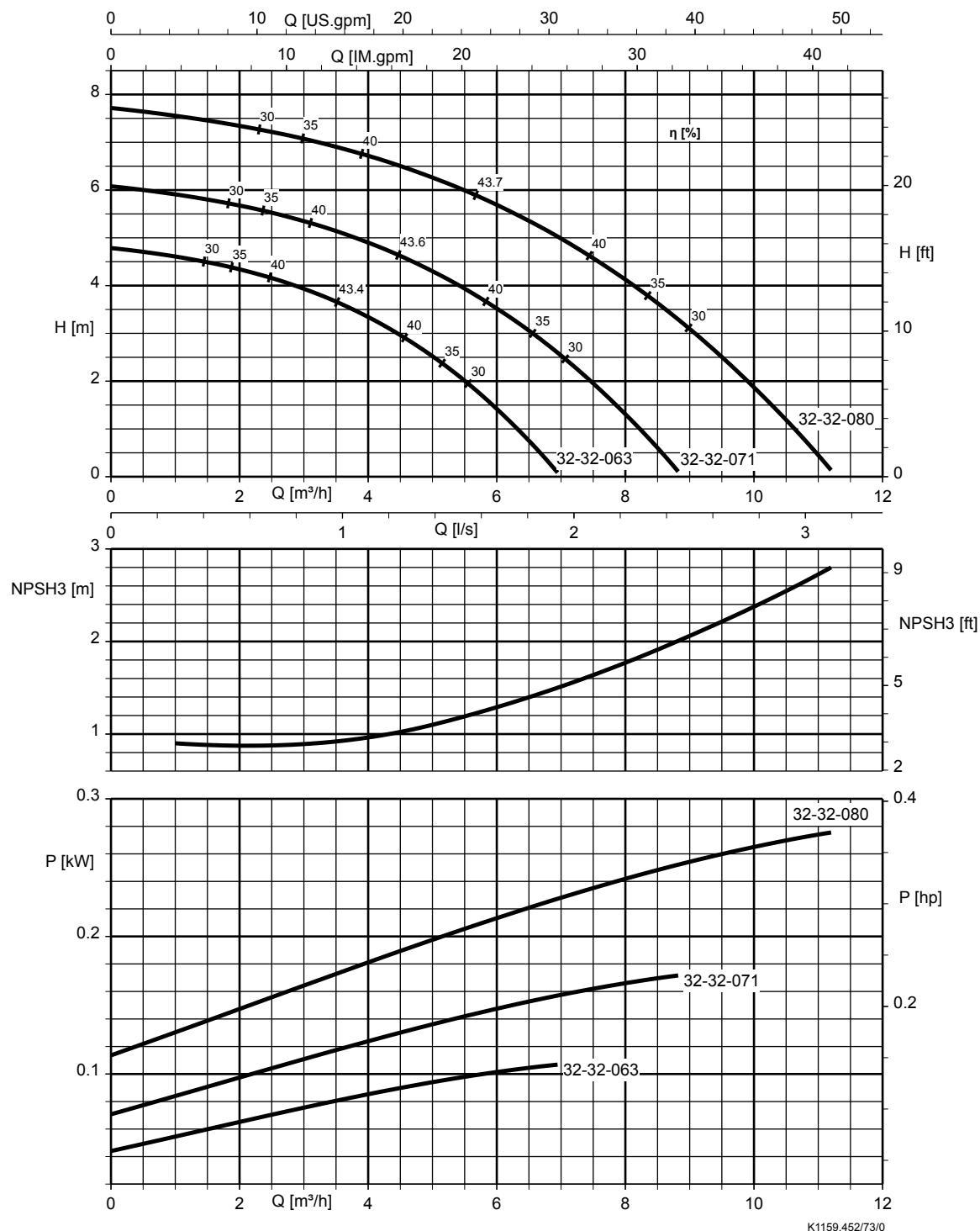


K1159.452/71/0

Etaline L 025-025-085/105, n = 2900 rpm

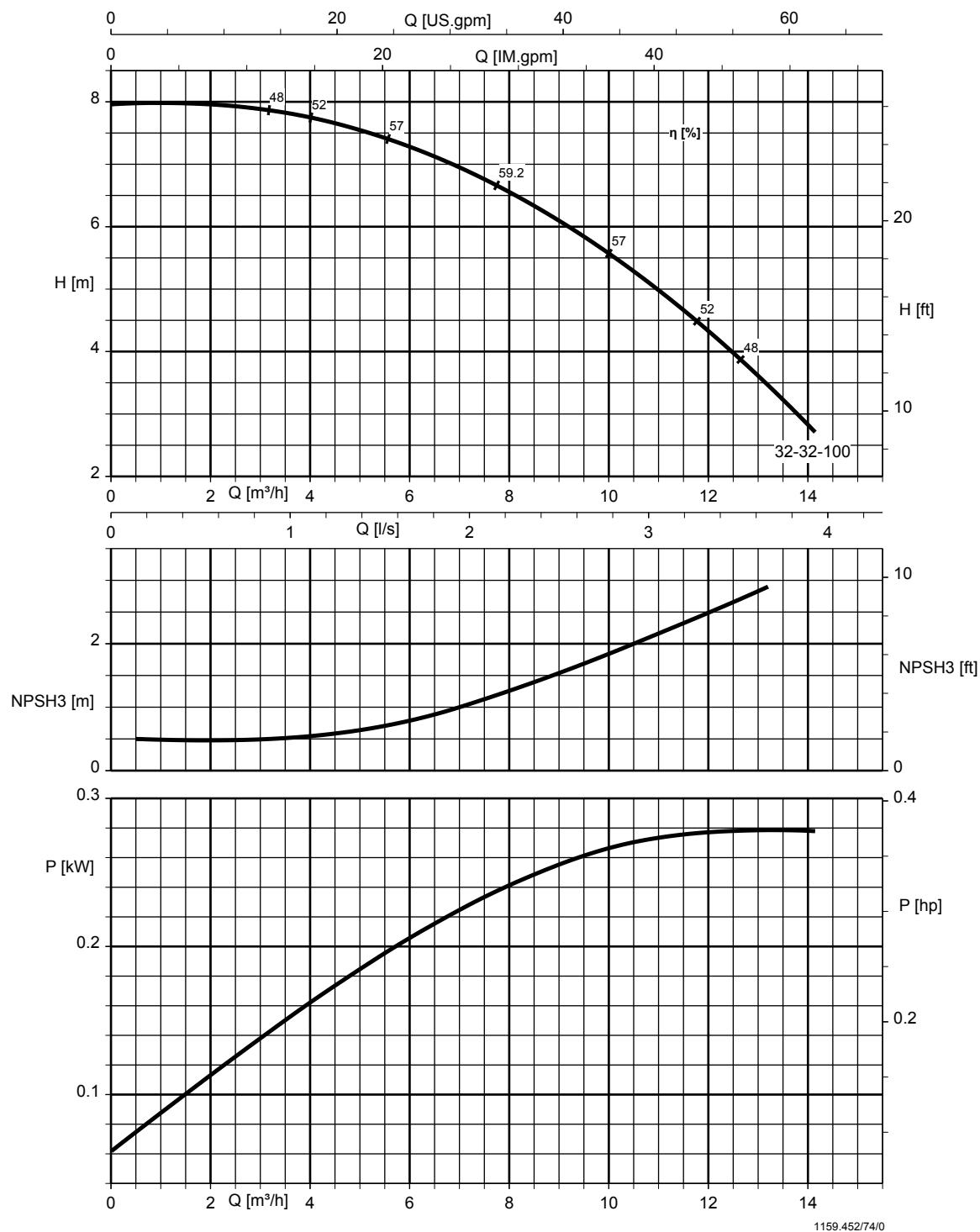


Etaline L 032-032-063/071/080, n = 2900 rpm

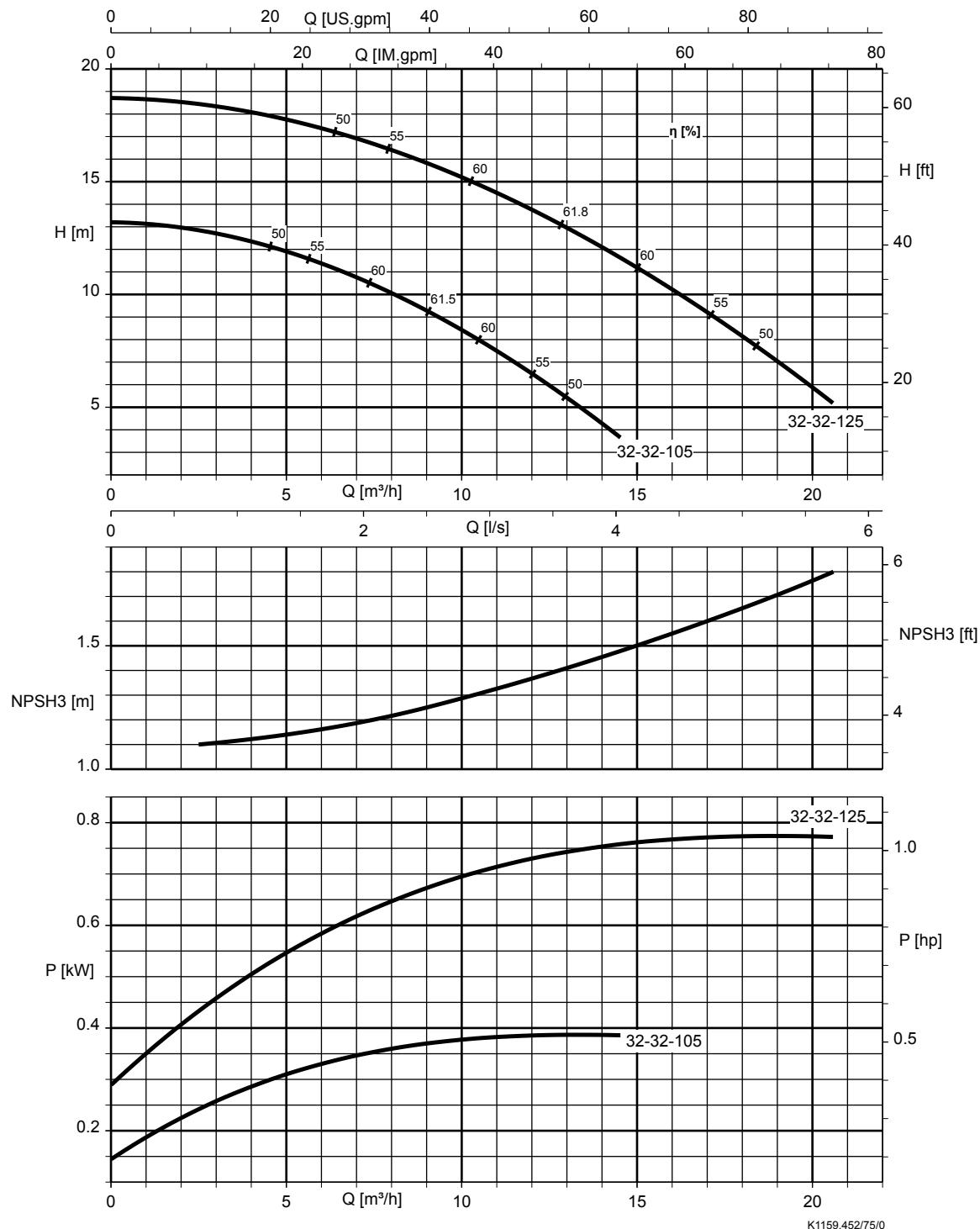


K1159.452/73/0

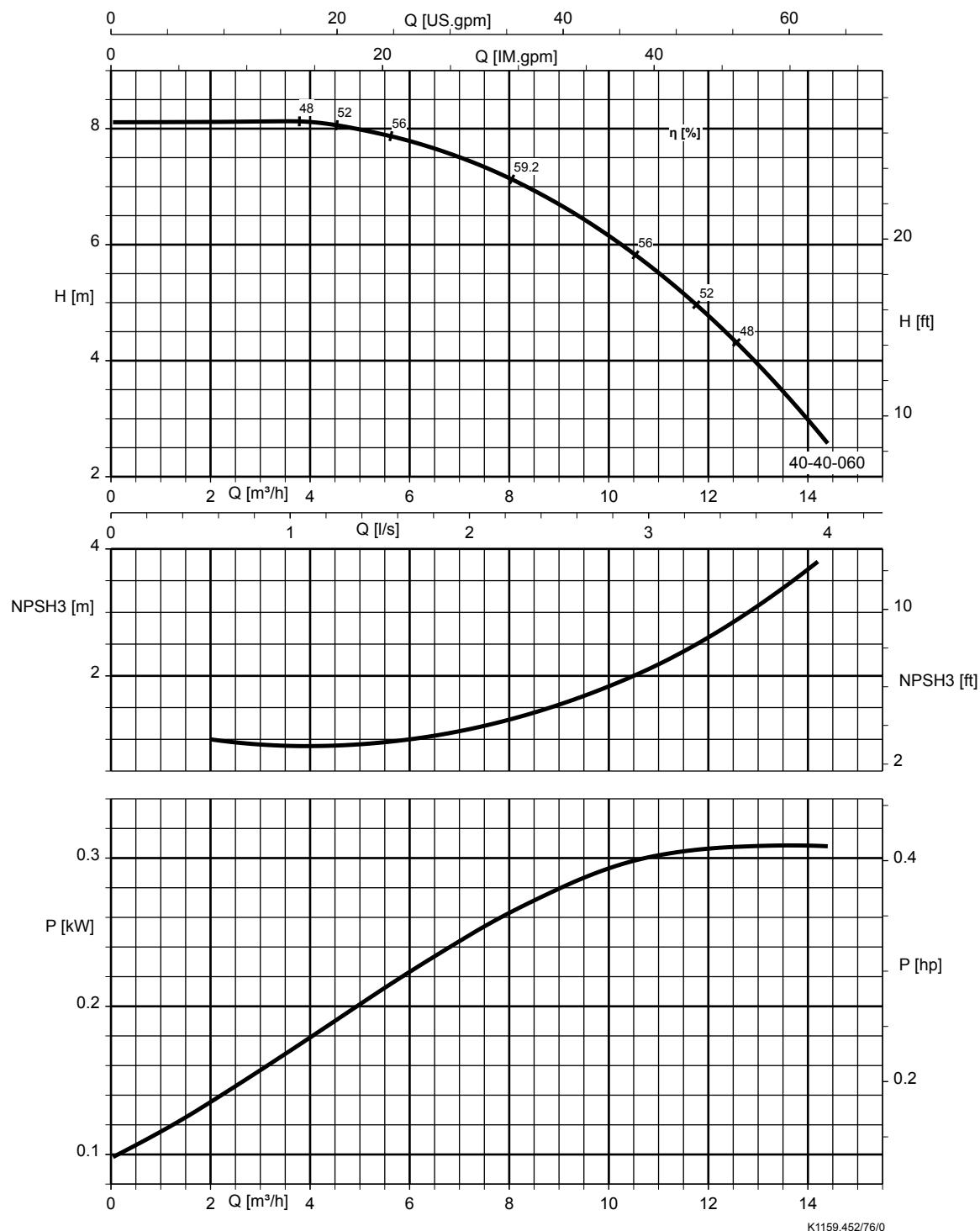
Etaline L 032-032-100, n = 2900 rpm



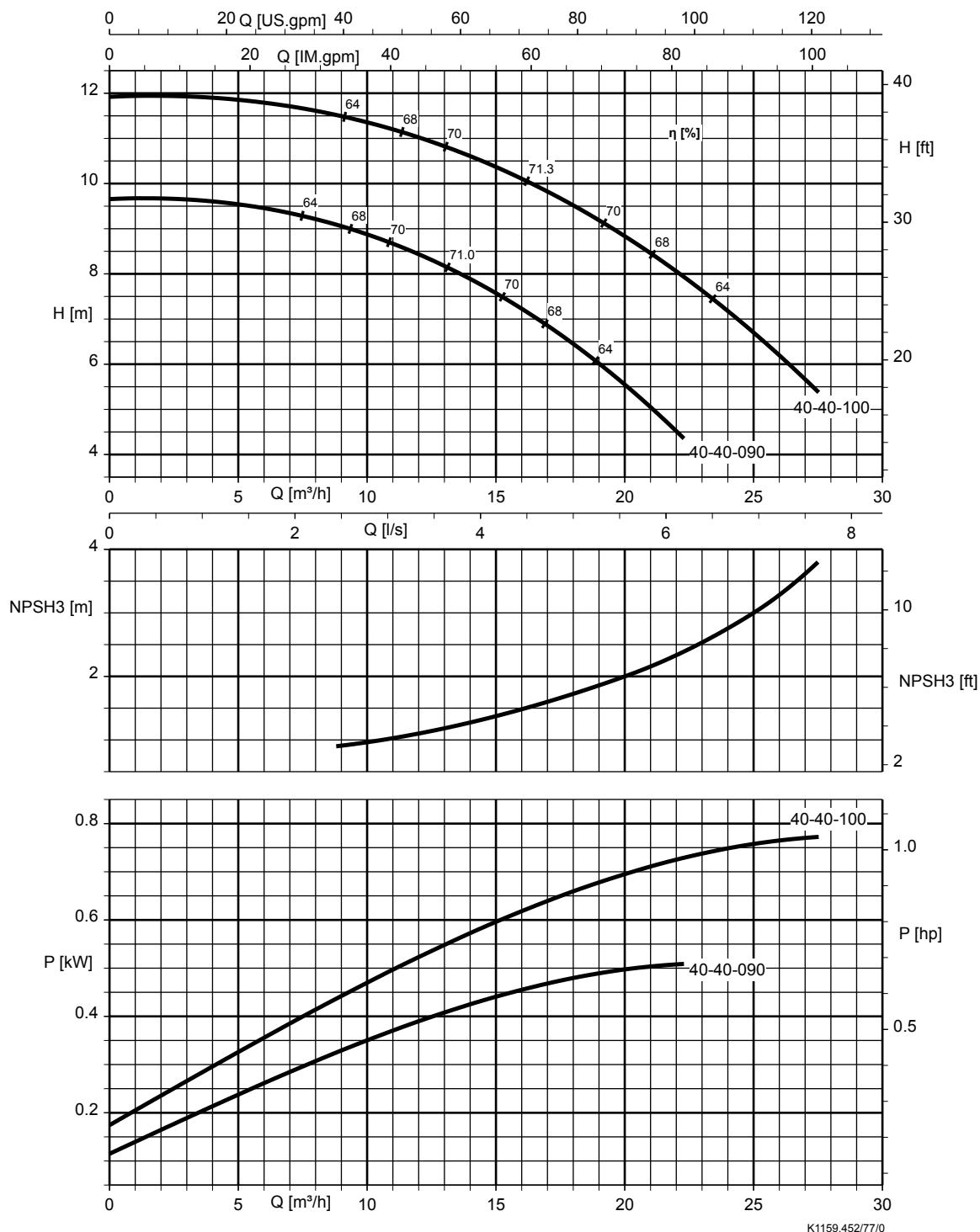
Etaline L 032-032-105/125, n = 2900 rpm



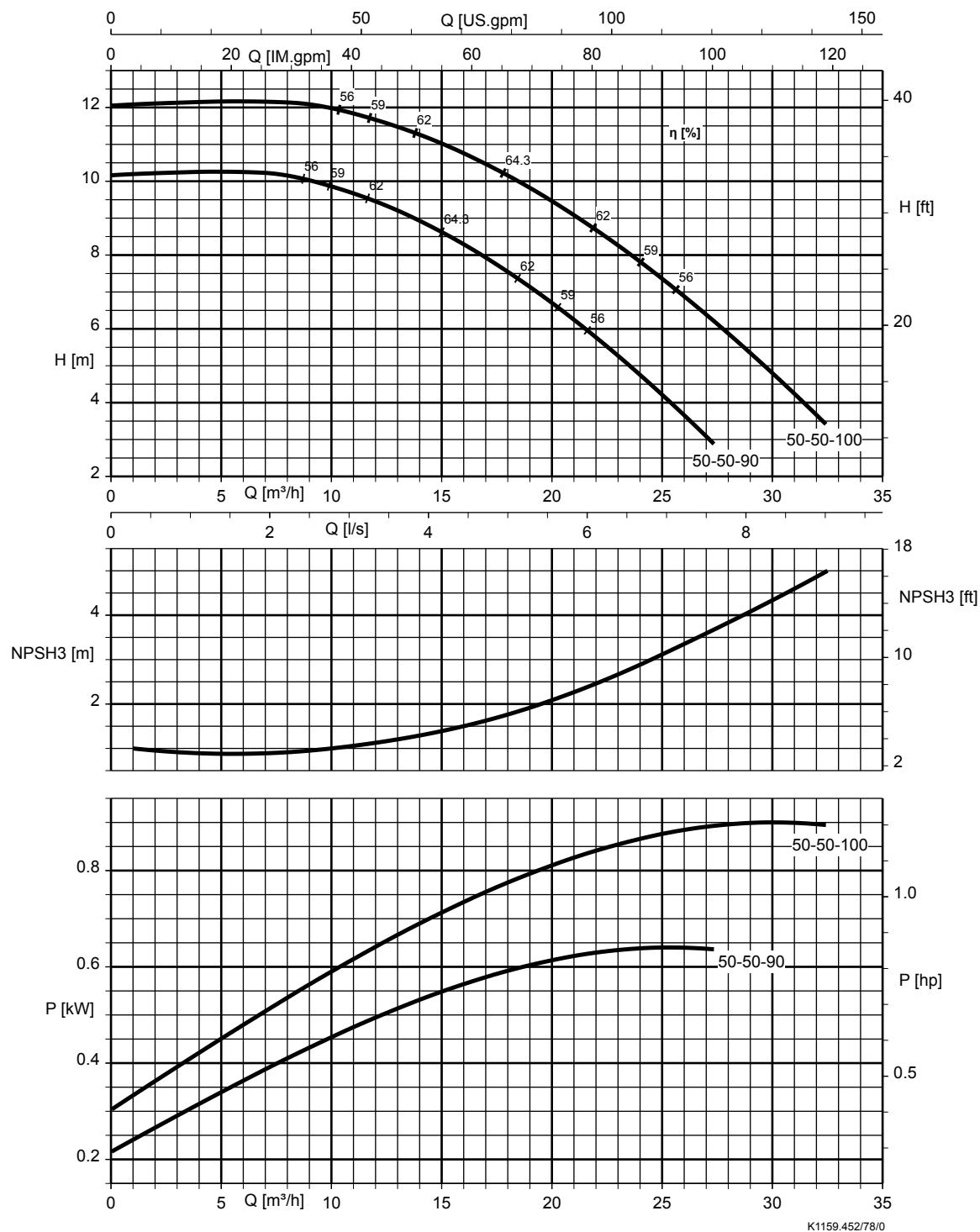
Etaline L 040-040-060, n = 2900 rpm



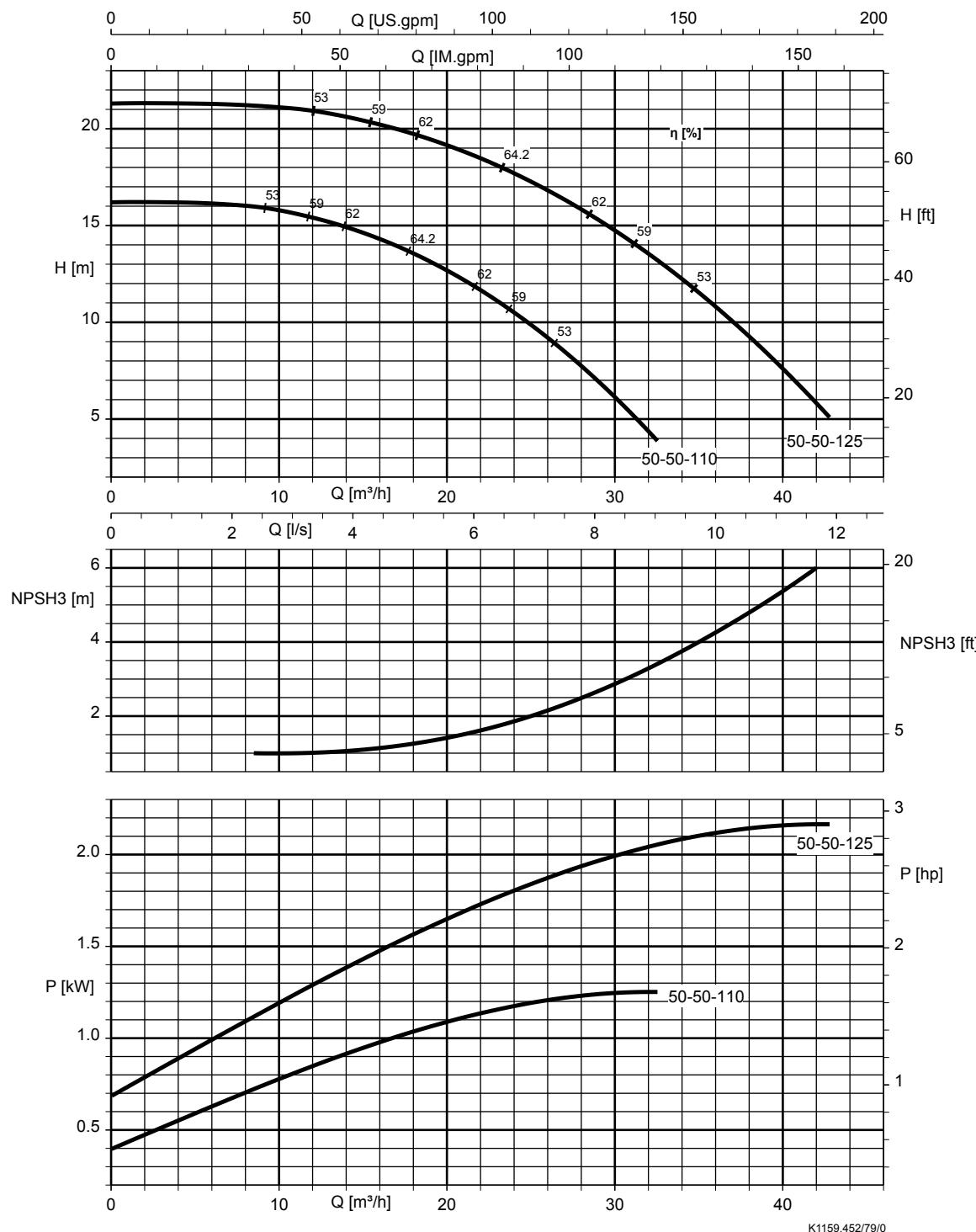
Etaline L 040-040-090/100, n = 2900 rpm



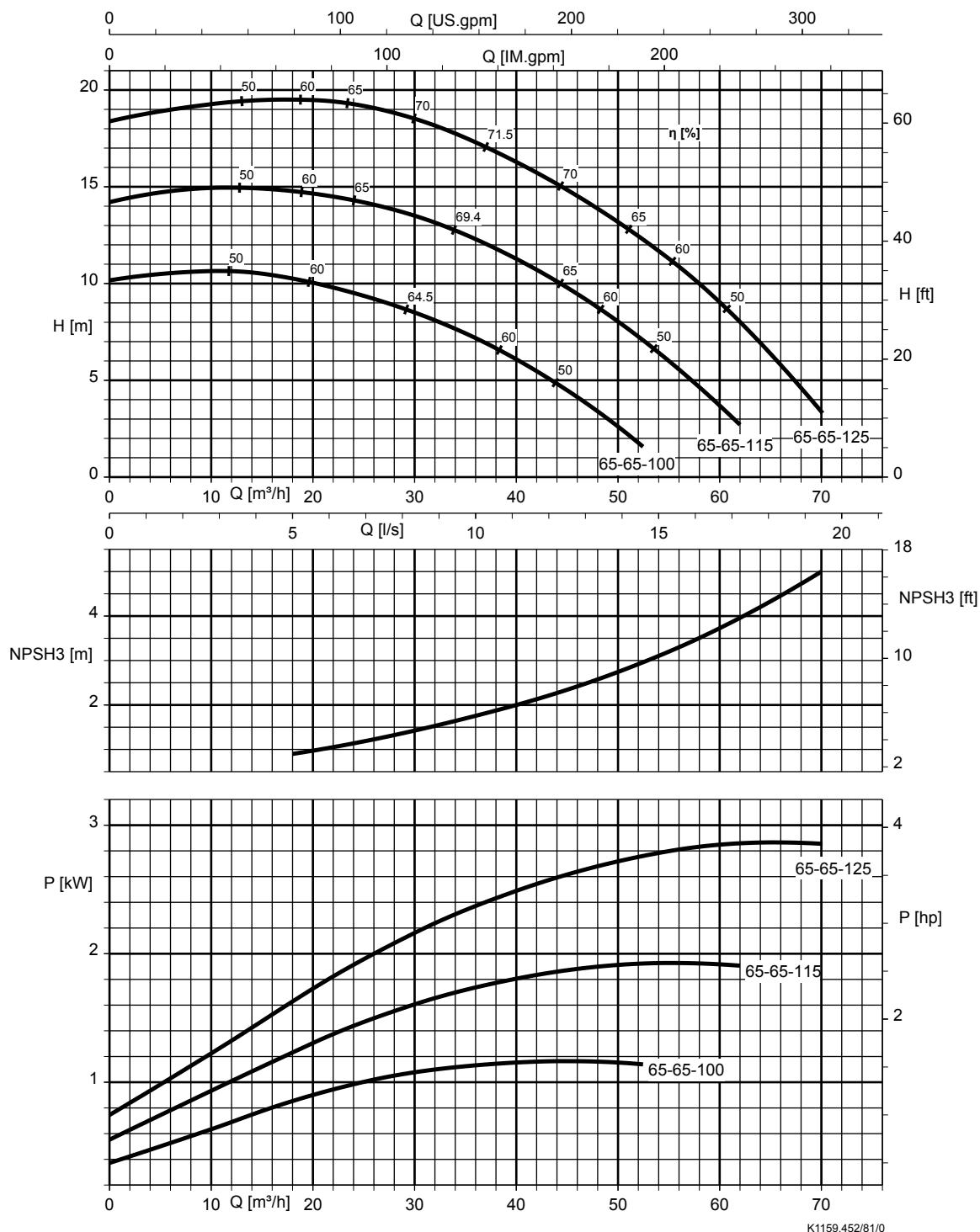
Etaline L 050-050-090/100, n = 2900 rpm



Etaline L 050-050-110/125, n = 2900 rpm

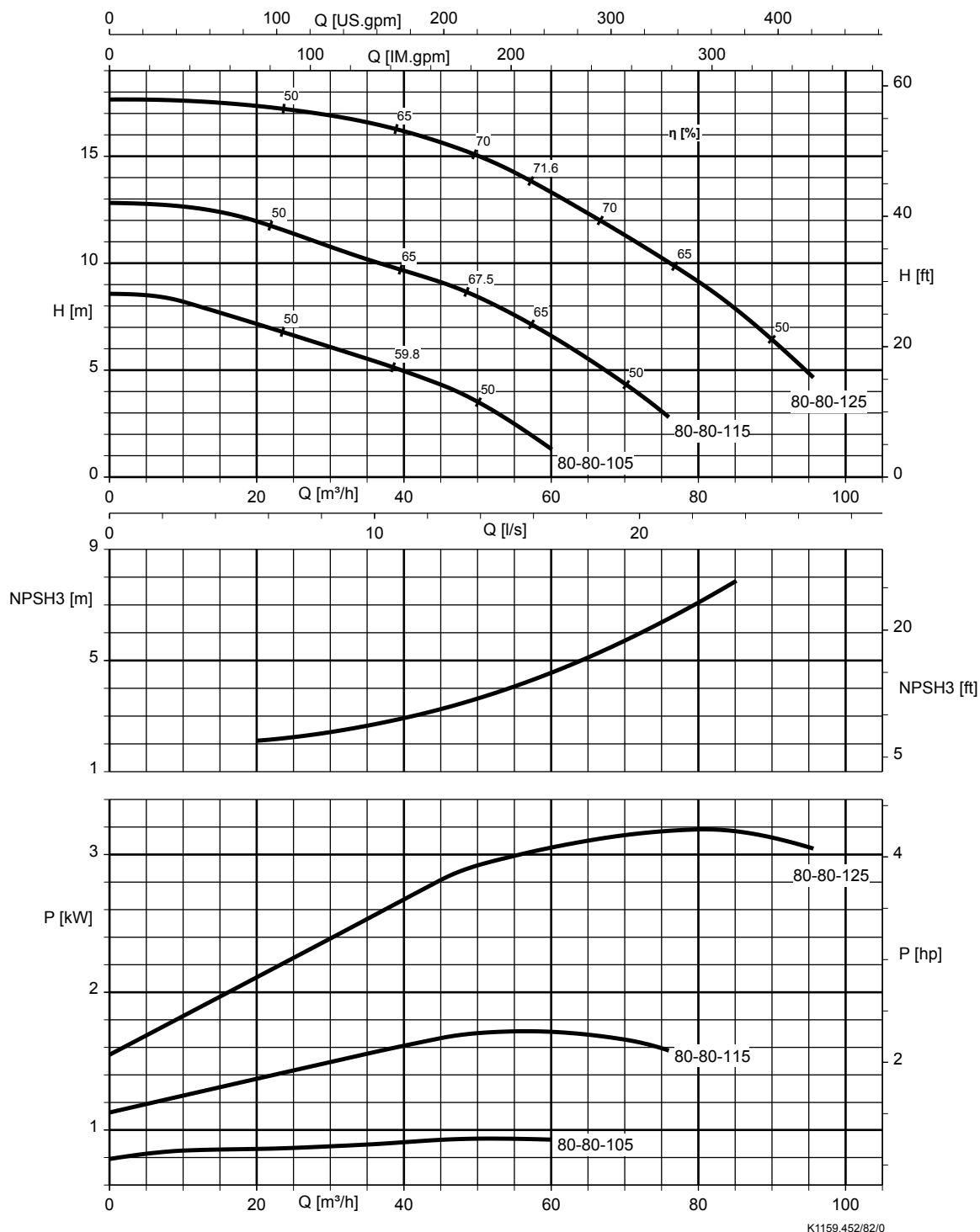


Etaline L 065-065-100/115/125, n = 2900 rpm



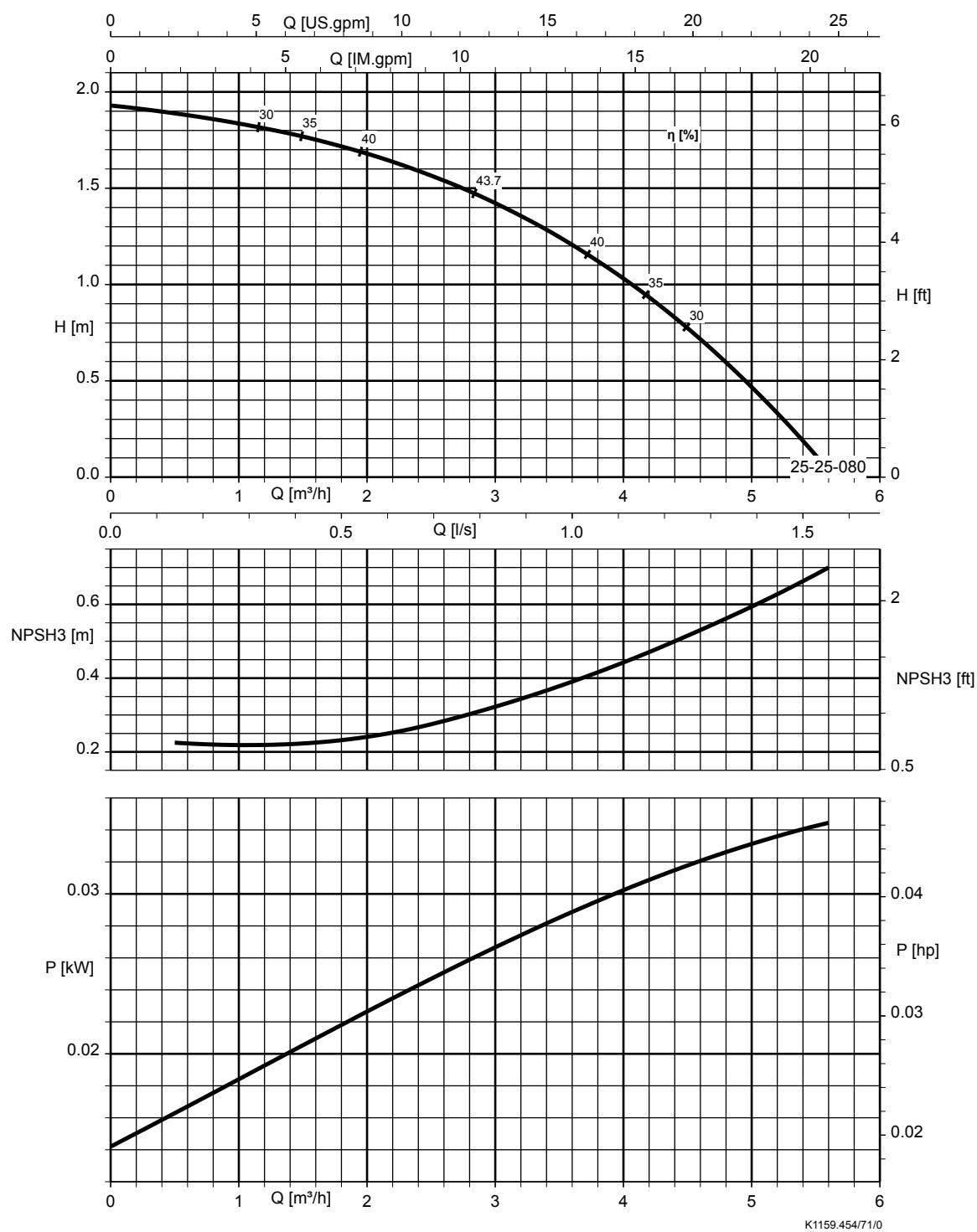
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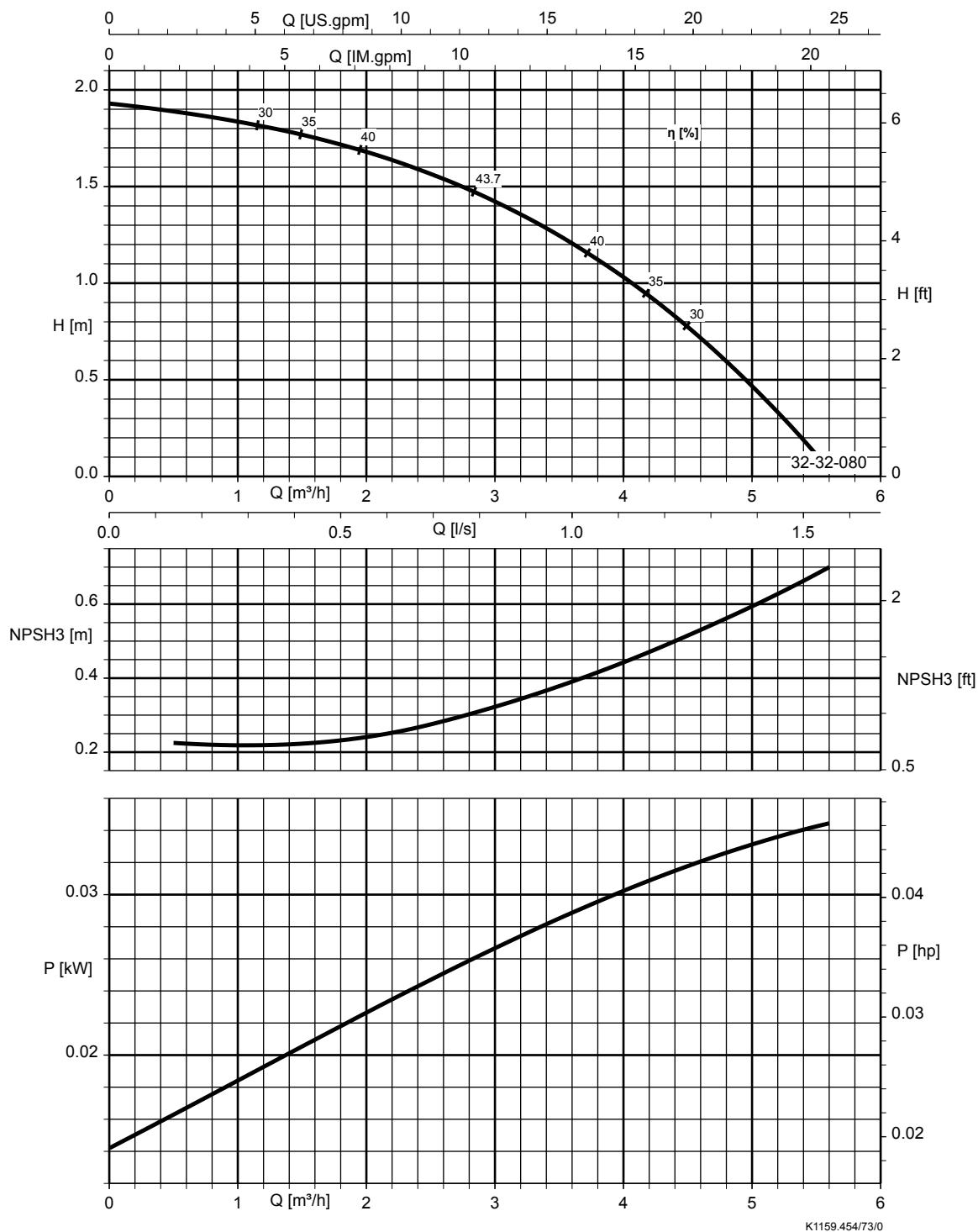


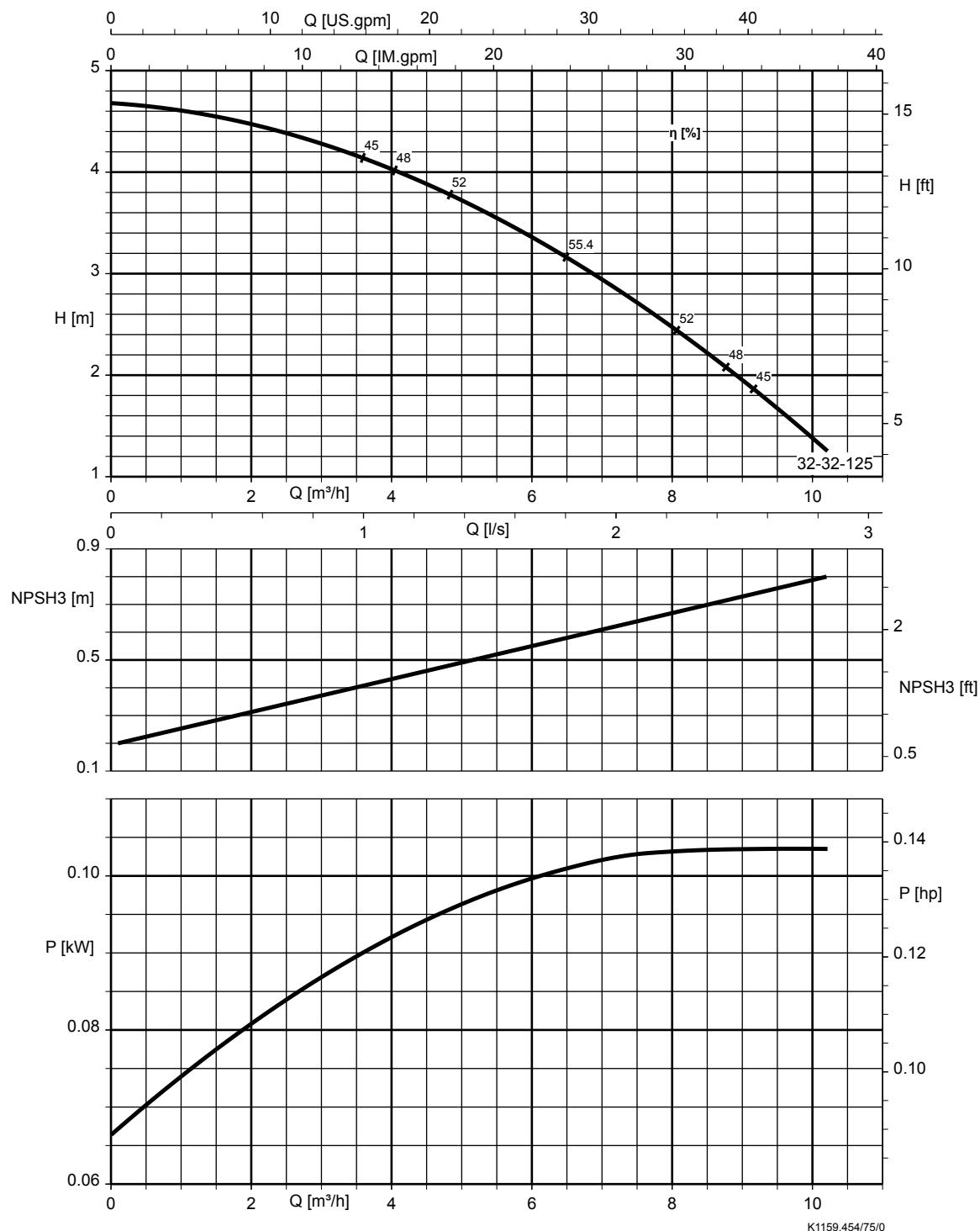
Etaline L, n = 1450 rpm

Etaline L 25-25-080, n = 1450 rpm

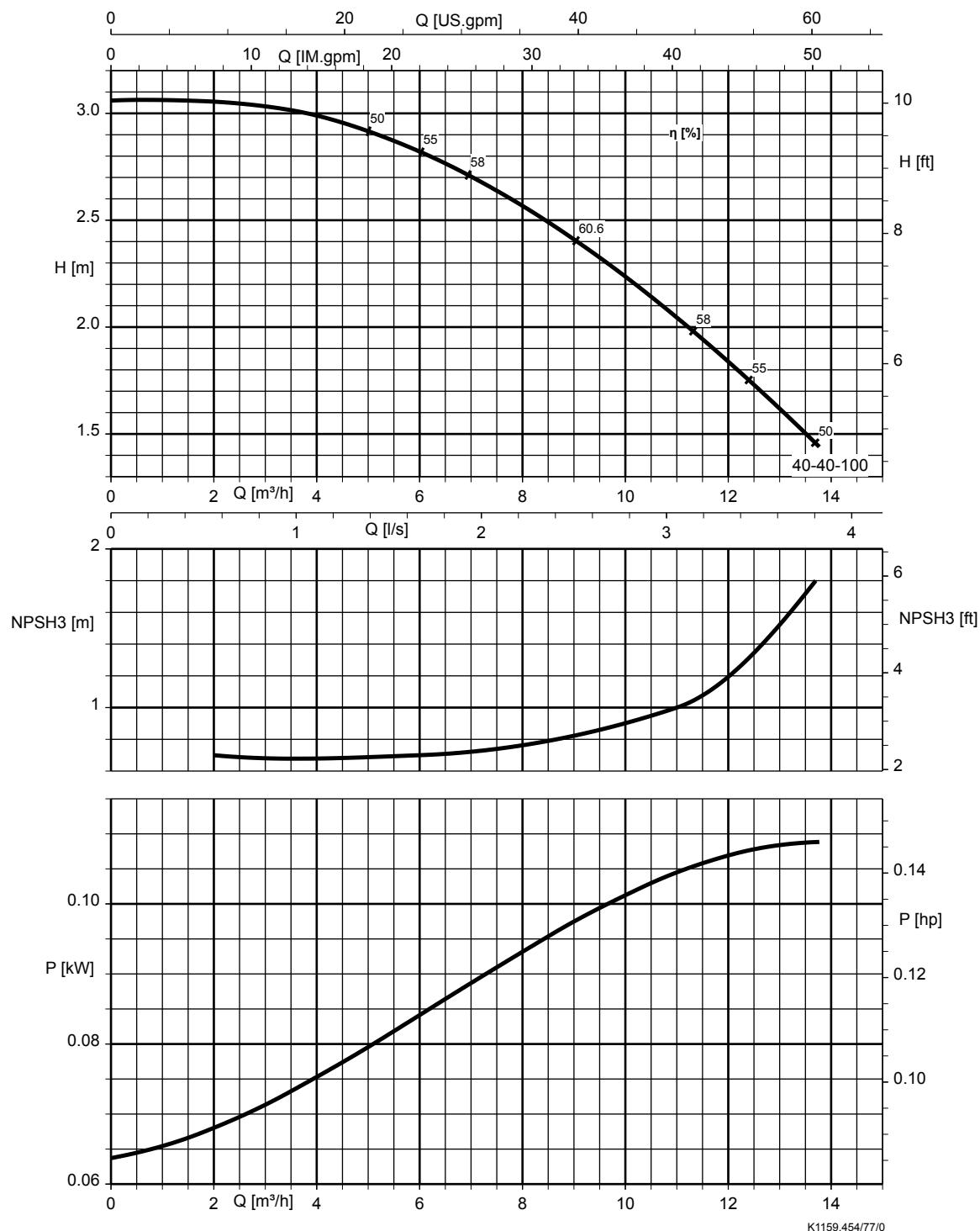


Etaline L 32-32-080, n = 1450 rpm

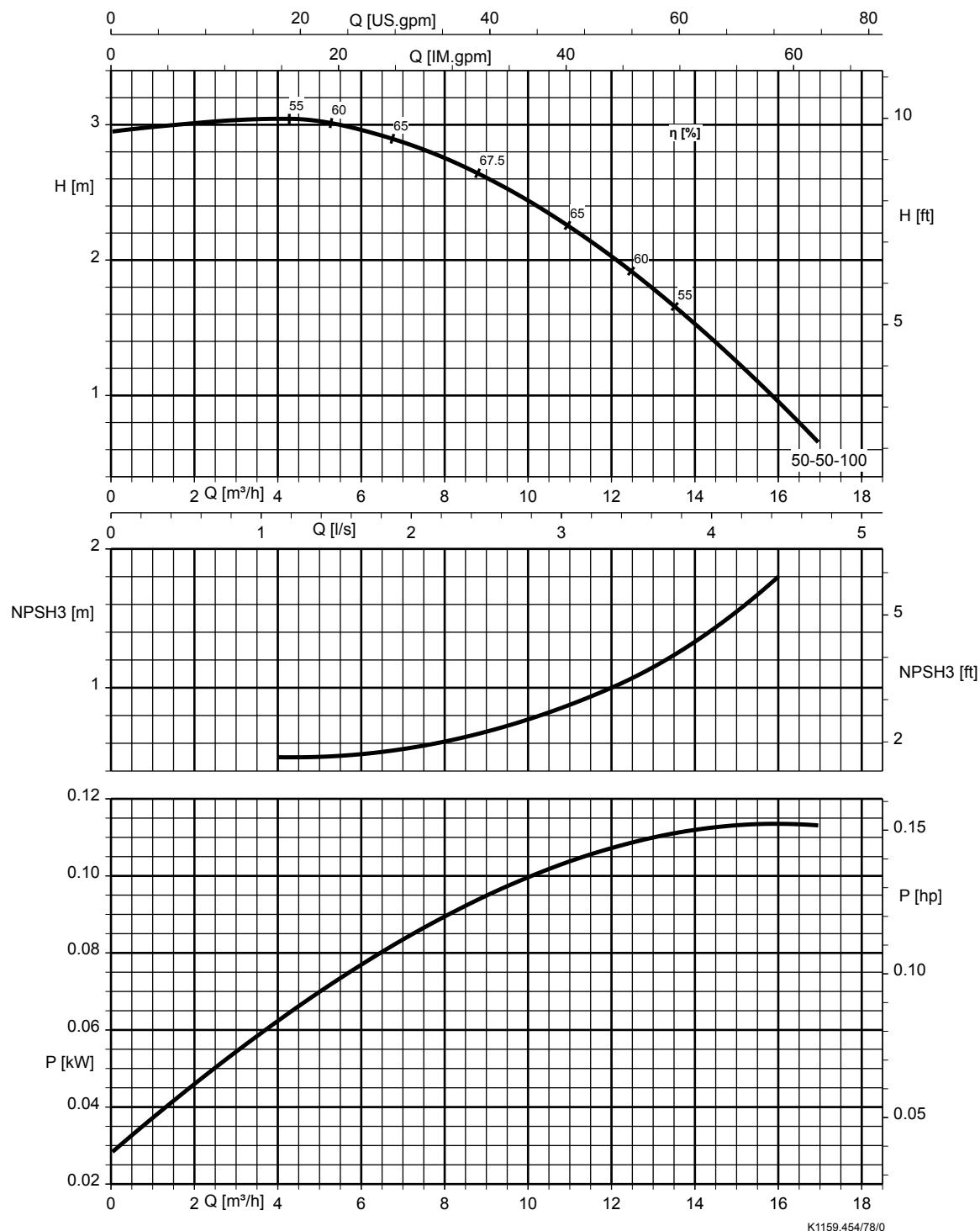


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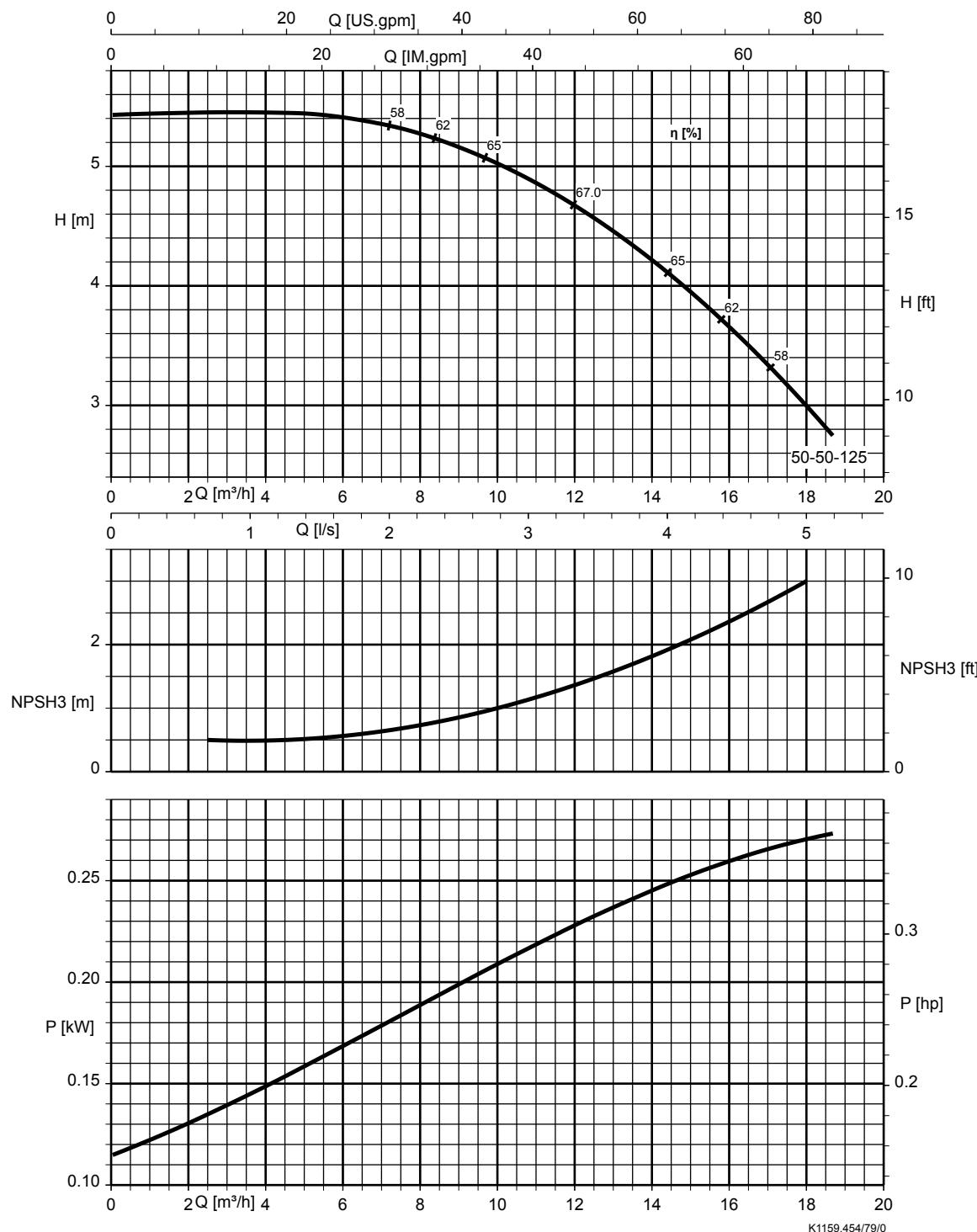
Etaline L 40-40-100, n = 1450 rpm

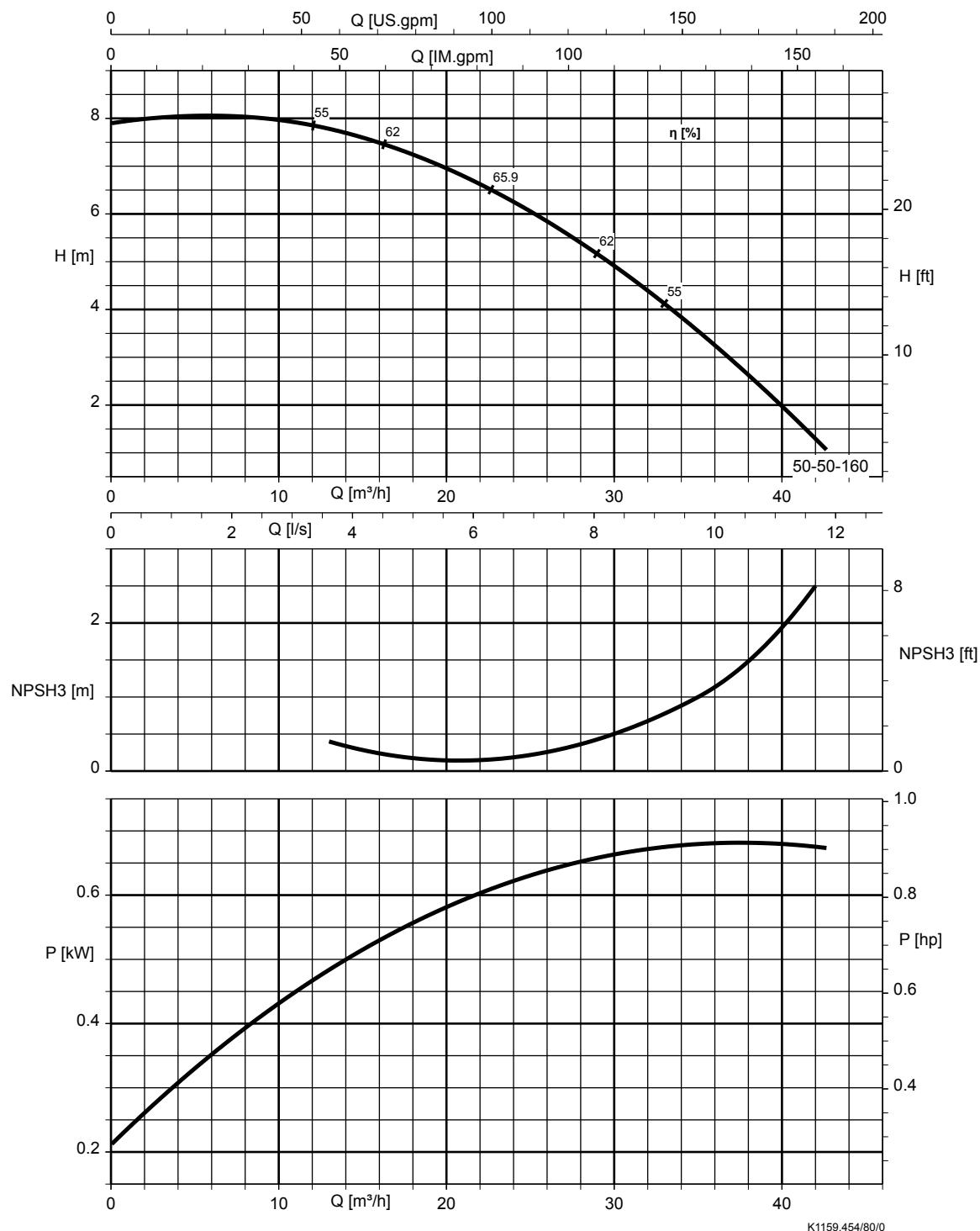


Etaline L 50-50-100, n = 1450 rpm

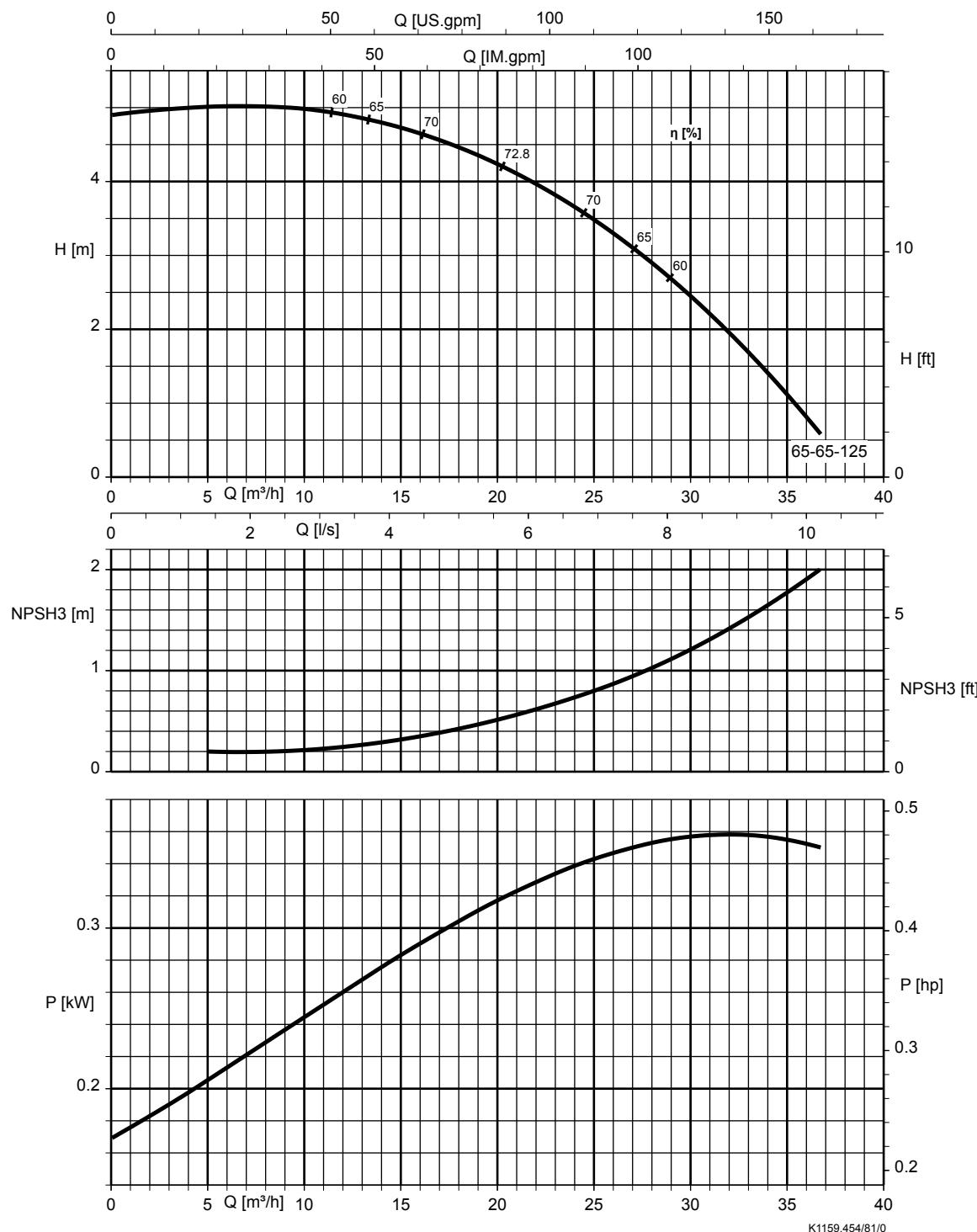


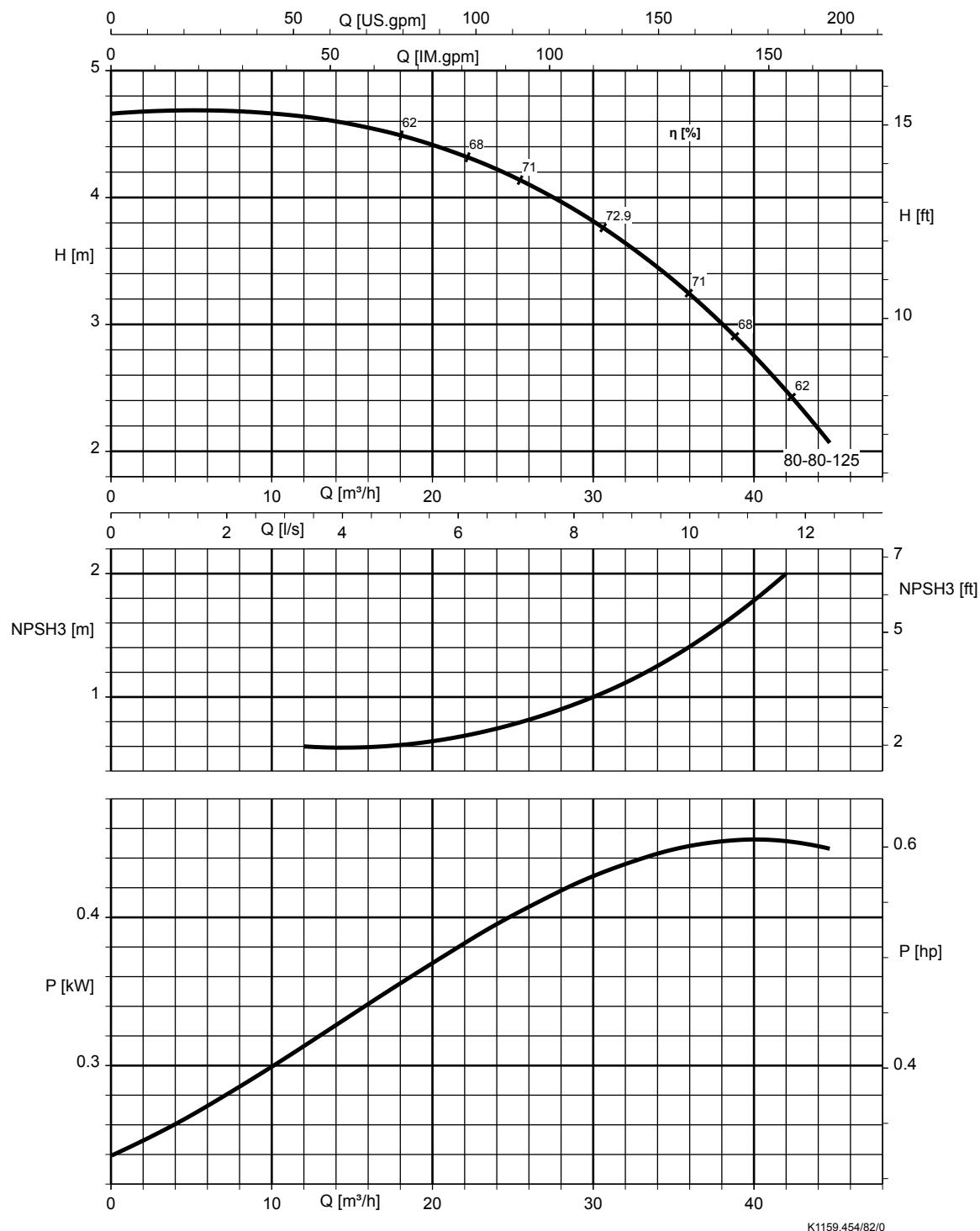
Etaline L 50-50-125, n = 1450 rpm

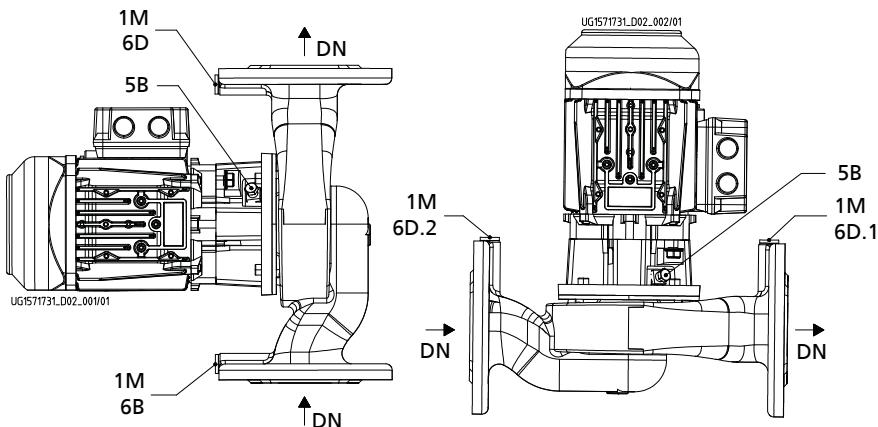


Etaline L 50-50-160, n = 1450 rpm


Etaline L 65-65-125, n = 1450 rpm



Etaline L 80-80-125, n = 1450 rpm


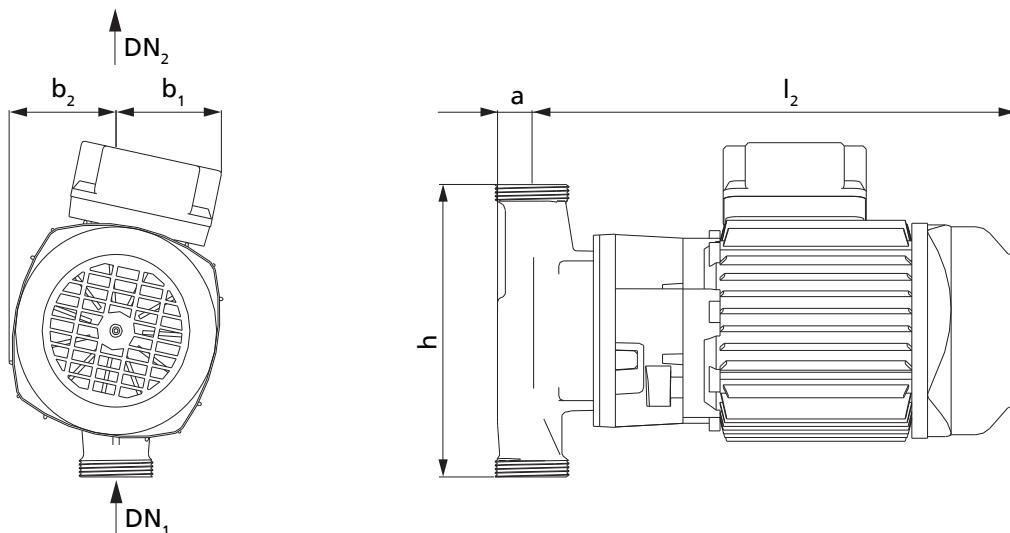
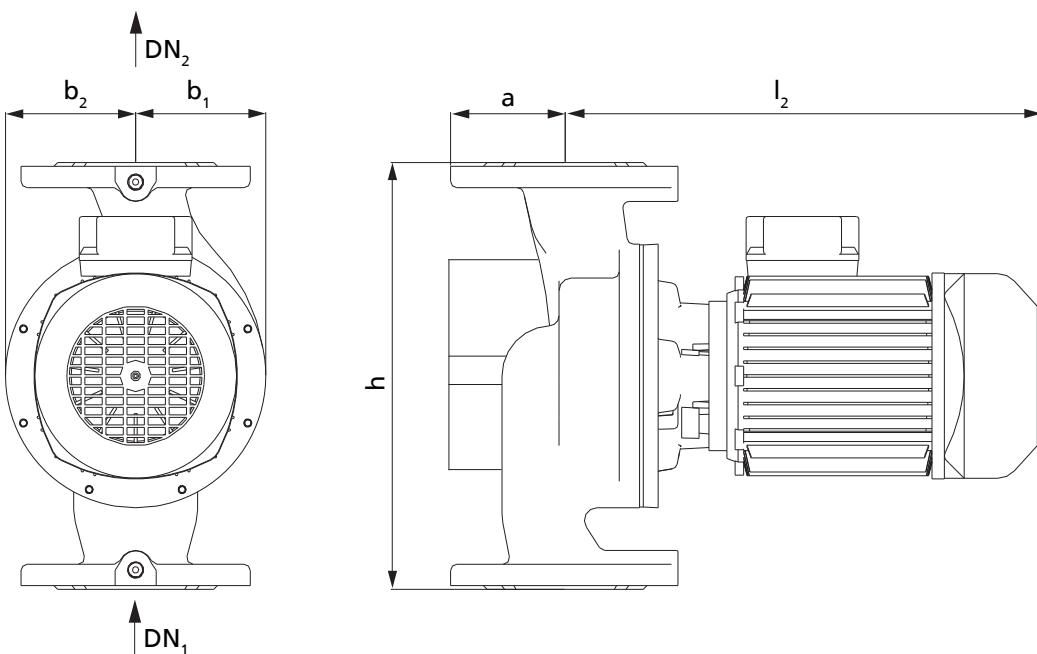
Dimensions and connections
Connections

Fig. 1: Connections
Connection types

Connection	Description	Configuration	Position
1M	Pressure gauge connection	Drilled and closed, or pressure sensor for PumpMeter (if selected)	Suction flange and discharge flange
5B	Vent connection for the mechanical seal chamber	Plugged with vent plug	Casing cover
6B	Fluid drain	Drilled and closed	Volute casing
6D, 6D.1, 6D.2	Fluid priming and venting	Drilled and closed	Volute casing

Connection

Etaline L	1M, 6B, 6D, 6D.1, 6D.2
032-032-100	G 1/4
032-032-105	G 1/4
032-032-125	G 1/4
040-040-060	G 1/4
040-040-090	G 1/4
040-040-100	G 1/4
050-050-090	G 1/4
050-050-100	G 1/4

Etaline L	1M, 6B, 6D, 6D.1, 6D.2
050-050-110	G 1/4
050-050-125	G 1/4
050-050-160	G 1/4
065-065-100	G 1/4
065-065-115	G 1/4
065-065-125	G 1/4
080-080-105	G 1/4
080-080-115	G 1/4
080-080-125	G 1/4

Pump set dimensions (fixed-speed version)

Fig. 2: Dimensions of screw-ended pump set, size < 032-032-100

Fig. 3: Dimensions of flanged pump set, size ≥ 032-032-100

Dimensions, n = 2900 rpm

Etaline L	P_2	P_N	DN	Connection	a	h	b_1	b_2	l_2
	Max. ¹³⁾								
	[kW]	[kW]	[mm]		Thread	[mm]	[mm]	[mm]	[mm]
025-025-063	0,30	0,25	25	G 1 1/2	30	180	67	68	266
025-025-070.1	0,14	0,12	25	G 1 1/2	53	180	68	68	282
025-025-070.1	0,21	0,18	25	G 1 1/2	53	180	68	68	282
025-025-071	0,30	0,25	25	G 1 1/2	30	180	67	68	266
025-025-080	0,30	0,25	25	G 1 1/2	30	180	67	68	266
025-025-080	0,44	0,37	25	G 1 1/2	30	180	67	68	315
025-025-085	0,21	0,18	25	G 1 1/2	35	200	80	84	287
025-025-105	0,44	0,37	25	G 1 1/2	35	200	80	84	287
032-032-063	0,30	0,25	32	G 2	30	180	67	68	266
032-032-071	0,30	0,25	32	G 2	30	180	67	68	266
032-032-080	0,30	0,25	32	G 2	30	180	67	68	266

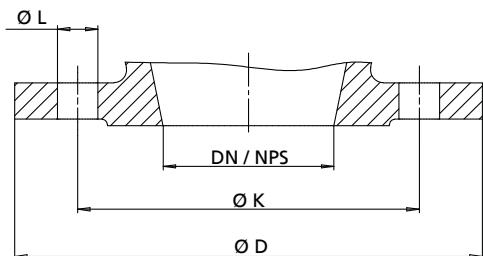
13) Continuous duty S1

Etaline L	P ₂	P _N	DN	Connection	a	h	b ₁	b ₂	I ₂
	Max. ¹³⁾								
	[kW]	[kW]	[mm]	Thread	[mm]	[mm]	[mm]	[mm]	[mm]
032-032-080	0,44	0,37	32	G 2	30	180	67	68	315
032-032-100	0,30	0,25	32	-	70	220	72	70	280
032-032-105	0,66	0,55	32	-	70	260	88	80	302
032-032-125	0,90	0,75	32	-	70	260	88	80	302
040-040-060	0,30	0,25	40	-	70	250	75	75	270
040-040-060	0,44	0,37	40	-	70	250	75	75	295
040-040-090	0,66	0,55	40	-	75	250	75	75	395
040-040-090	0,90	0,75	40	-	75	250	75	75	315
040-040-100	0,90	0,75	40	-	75	250	75	75	315
050-050-090	0,66	0,55	50	-	85	280	86	85	280
050-050-100	0,90	0,75	50	-	85	280	86	85	290
050-050-110	1,30	1,10	50	-	85	280	94	85	325
050-050-125	2,20	1,80	50	-	85	280	94	85	355
065-065-100	1,30	1,10	65	-	95	340	105	105	360
065-065-115	2,20	1,80	65	-	95	340	105	105	390
065-065-125	3,40	3,00	65	-	95	340	105	105	405
080-080-105	1,30	1,10	80	-	105	360	130	105	325
080-080-115	2,20	1,80	80	-	105	360	130	105	360
080-080-125	3,40	3,00	80	-	105	360	130	105	380

Dimensions, n = 1450 rpm

Etaline L	P ₂	P _N	DN	Connection	a	h	b ₁	b ₂	I ₂
	Max. ¹⁴⁾								
	[kW]	[kW]	[mm]	Thread	[mm]	[mm]	[mm]	[mm]	[mm]
025-025-080	0,14	0,12	25	G 1 1/2	30	180	67	68	266
032-032-080	0,14	0,12	32	G 2	30	180	67	68	266
032-032-125	0,14	0,12	32	G 2	70	260	88	80	302
040-040-100	0,14	0,12	40	-	75	250	75	75	295
050-050-100	0,14	0,12	50	-	85	280	86	85	280
050-050-125	0,21	0,18	50	-	85	280	94	85	280
050-050-160	0,90	0,75	50	-	87	340	155	105	355
065-065-125	0,44	0,37	65	-	95	340	105	105	311
080-080-125	0,44	0,37	80	-	105	360	130	105	275

14) Continuous duty S1

Flange dimensions

Fig. 4: Flange dimensions

Flange dimensions [mm]

DN / NPS	Standard						Comment					
	EN 1092-2			DIN EN ISO 228-1								
	Material											
	G, B											
	PN 10		PN 6			Thread						
Ø K	Ø D	Number of holes L	Ø K	Ø D	Number of holes L							
25	-	-	-	-	-	G 1 1/2	-					
32 / NPS1 1/4	100	140	4xØ19	90	140	4xØ14	G 2 ¹⁵⁾					
40 / NPS1 1/2	110	150	4xØ19	100	150	4xØ14	-					
50 / NPS2	125	165	4xØ19	110	165	4xØ14	-					
65 / NPS2 1/2	145	185	4xØ19	130	185	4xØ14	-					
80 / NPS3	160	200	8xØ19	-	-	-	-					

Flange design

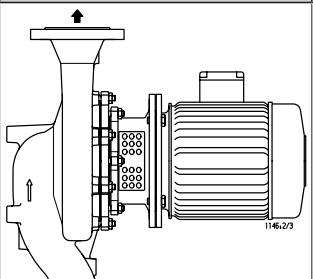
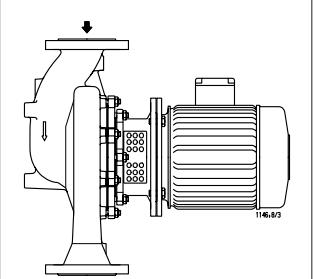
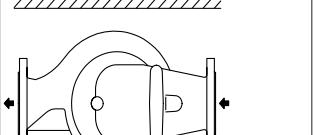
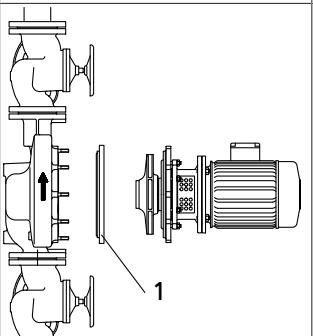
Flange design by materials

Material variant	Standard	Nominal size	Pressure class
GG, GP, BB, GP	DIN EN ISO 228-1	DN 25	PN 10
	DIN EN ISO 228-1	032-032-063 to 032-032-080	PN 10
	Drilled to EN 1092-2	DN 32 - DN 65	PN 6 / PN 10
	EN 1092-2	DN 80	PN 10

15) For sizes < 032-032-100 only

Typical installation positions

Horizontal installation

Example drawing	Special features
 Direction of flow from bottom to top	Direction of flow from bottom to top
 Direction of flow from top to bottom	Direction of flow from top to bottom The volute casing and/or back pull-out unit must be turned by 180° so that the terminal box remains in its current position on top.
 Horizontal installation	Horizontal installation (for example under the ceiling) The volute casing and/or back pull-out unit must be turned by 90° so that the terminal box remains in its current position on top.
 Installation with blind flange	1 = Blind flange (accessories) If one of the pumps needs to be serviced, the pump chamber can be shut off by a blind flange so that the system remains operational.

Vertical installation

Example drawing	Special features
	Mounted without feet Installed directly in the piping. Always anchor the pipes in close proximity to the pump in this case.
	Mounted on pump foot (accessory) Available upon request.

Accessories

Pump accessories (fixed-speed version)

Overview of pump accessories

Component	Ø a / Ø b / Ø c [mm]	For size	Mat. No.	[kg]
Blind flange with sealing element 	140 / 105 / 84,8	025-025-063	01734726	0,8
		025-025-070,1		
		025-025-071		
		025-025-080		
		032-032-063		
		032-032-071		
		032-032-080		
		040-040-060		
	140 / 122 / 101,8	032-032-100	01734727	0,9
		040-040-090		
		040-040-100		
		050-050-090		
		050-050-100		
	161 / 147 / 125,8	025-025-085	01734725	1,6
		025-025-105		
		025-025-110		
		025-025-115		
		025-025-120		
		032-032-105		
		032-032-125		
	210 / 171,5 / 160,8	050-050-110	01734723	3,2
		050-050-125		
		050-050-160		
		065-065-100	01734724	2,6
		065-065-115		
	210 / 196 / 126,5	065-065-125		
		080-080-105		
		080-080-115		
		080-080-125		
Pump foot		On request		

Electrical accessories

Further electrical accessories

Component	Description
PumpDrive 2 Eco	<p>PumpDrive 2 Eco self-cooling frequency inverter PumpDrive 2 Eco is a modular, self-cooling frequency inverter which enables continuously variable speed control of asynchronous motors and synchronous reluctance motors by means of analog standard signals or the control panel.</p> <p>The parts of the PumpDrive 2 Eco housing which are in contact with the atmosphere are free from paint-wetting impairment substances.</p> <p>Installation options:</p> <ul style="list-style-type: none"> ▪ Motor-mounted model ▪ Wall-mounted model ▪ Cabinet-mounted model

General assembly drawing with list of components

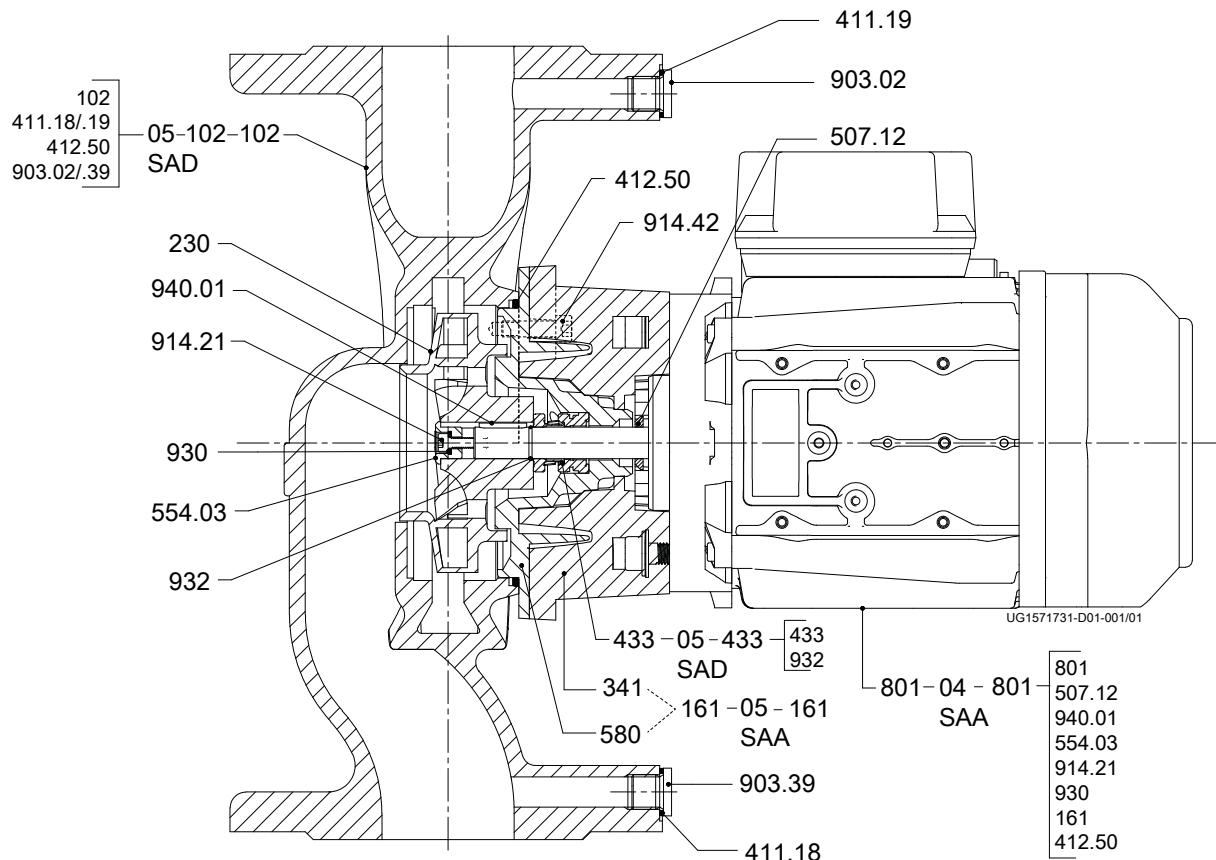


Fig. 5: General assembly drawing

List of components

Part No.	Description	Part No.	Description
102	Volute casing	554.03	Washer
161	Casing cover	580	Cap
230	Impeller	801	Flanged motor
341	Drive lantern	903.02/39	Screw plug
411.18/19	Joint ring	914.21/42	Hexagon socket head cap screw
412.50	O-ring	930	Safety device
433	Mechanical seal	932	Circlip
507.12	Thrower	940.01	Key

The following spare parts kits are available:

Spare parts kits	Part No.	Description
102-05 SAD	102	Volute casing
	411.18/19	Joint ring
	412.50	O-ring
	903.02/29	Screw plug
230	230	Impeller
433-05 SAD	433	Mechanical seal
	932	Circlip
801-04 SAA	161	Casing cover
	412.50	O-ring
	507.12	Thrower
	554.03	Washer
	801	Flanged motor
	914.01	Hexagon socket head cap screw
	930	Safety device
	940.01	Key
161-05 SAD	341	Drive lantern

Spare parts kits	Part No.	Description
161-05 SAD	580	Casing cover



KSB SE & Co. KGaA
Johann-Klein-Straße 9 • 67227 Frankenthal (Germany)
Tel. +49 6233 86-0
www.ksb.com