

In-line Pump

## Etaline L

Fixed Speed / Variable Speed  
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 systems<sup>1)</sup>

#### Fluids handled

- Fluids not chemically or mechanically aggressive to the materials

#### Further information on fluids handled

Overview of fluids handled (⇒ Page 9)

#### Related documents

Information/documents

Document	Reference number
Type series booklet	4074.5
PumpDrive 2 / PumpDrive 2 Eco	

#### Operating data

Operating properties

Characteristic		Value
Flow rate	Q [m <sup>3</sup> /h]	≤ 95
	Q [l/s]	≤ 26,3
Head	H [m]	≤ 21
Fluid temperature	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
- Fixed speed version (without PumpDrive) / variable speed version (with PumpDrive)

##### Pump casing

- Radially split volute casing
- In-line design

##### Drive (fixed speed version)

- Surface-cooled squirrel-cage motor to KSB standard
- Efficiency class IE3 to IEC 60034-30 (≥ 0.75 kW)
- Rated voltage (50 Hz) 1~ 220 - 240 V / 3~ 220 - 240 V  
3~ 380 - 420 V ≤ 1.1 kW
- Rated voltage (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

##### Drive (variable speed version)

- Surface-cooled squirrel-cage motor to KSB standard prepared for mounting a PumpDrive 2 Eco
- Efficiency class IE2 to IEC 60034-30 (≥ 0.75 kW)
- Rated voltage (50 Hz) 3~ 220 - 240 V / 3~ 380 - 420 V
- Type of construction IM B14
- Enclosure IP55
- Duty cycle: continuous duty S1
- Thermal class F

PumpDrive 2 Eco:

- Self-cooling frequency inverter of modular design for the continuously variable speed control of asynchronous reluctance motors and synchronous reluctance motors by means of analog standard signals or the control panel
- Mains voltage 3~ 380 V AC -10 % to 480 V AC +10 %
- Mains voltage 1~ 220 V AC -10 % to 240 V AC +10 %
- Mains frequency 50 Hz to 60 Hz ± 2 %

1) No drinking water in acc. with UBA (German drinking water regulations to German Environment Agency)

**Shaft seal**

- KSB mechanical seal

**Bearings**

- Radial ball bearings in the motor housing
- Grease lubrication

**Impeller type**

- Closed radial impeller

**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 ≥ -15 - ≤ +120 [°C]
	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 <sub>N</sub> [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

Position	Code	Description
32	-	
33	Product generation	
	A	Etaline L / Etaline DL
34-36	Motor manufacturer	
	ATB	ATB
37-39	Efficiency class	
40-43	Design	
	-	Fixed speed version, without PumpDrive 2 Eco
	PD2E	Variable speed version, with PumpDrive 2 Eco

## Materials

### Symbols key

Symbol	Description
<b>x</b>	Standard
<b>o</b>	Optional
-	Version not available / not feasible

### Overview of available materials

Part No. (⇒ Page 46)	Description	Material	Material variant <sup>2)</sup>			
			GG	GP	BB	BP
102	Volute casing	Grey cast iron EN-GJL 200 / EN-GJL 250 <sup>3)</sup>	<b>x</b>	<b>x</b>	-	-
		Bronze CC491K	-	-	<b>x</b>	<b>x</b>
230	Impeller	Grey cast iron EN-GJL-150	<b>x</b>	-	-	-
		Bronze G-CuSn10Zn	-	-	<b>x</b>	-
		Polysulphone PSU-GF30	-	<b>x</b>	-	<b>x</b>
341	Drive lantern	Aluminium AC-46500	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>
412.50	O-ring	EPDM	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>
554.03	Washer	CW508L	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>
580	Cap, conical	Polyamide 66	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>
		Polysulphone PSU-GF30	<b>o</b> <sup>4)</sup>	<b>o</b> <sup>4)</sup>	<b>o</b> <sup>4)</sup>	<b>o</b> <sup>4)</sup>
914.21	Hexagon socket head cap screw	A4	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>

- 
- 2) Dependent on size  
 3) DN 80  
 4) Optional design with additional code P
-

### 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.
- PumpDrive perfectly matched to pump and motor by default factory parameter settings
- Space-saving owing to motor-mounted variable speed system

### Product information

#### Product information as per Regulation No. 1907/2006 (REACH)

For information as per chemicals Regulation (EC) No 1907/2006 (REACH), see <http://www.ksb.com/reach>.

#### 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  $MEI \geq 0.70$ .
- 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.



## Overview of product features / selection tables

## Overview of fluids handled

## KSB EasySelect, selection software for all applications



KSB EasySelect is a comprehensive selection tool for all applications. It guides users to an optimal solution for their projects by offering a fast, easy and user-friendly way to select and configure pumps and valves. All that is required are some project-specific criteria and a few minutes' time. The tool systematically guides the user through KSB's wide range of products to the right product for the application at hand.

Other fluids upon request.

## Symbols key

Symbol	Description
X	Standard
-	Version not available / not feasible

Excerpt from the overview of fluids handled with associated material variants

Fluid handled	T <sup>5)</sup>		Material variant				Seal code		Comments
			Grey cast iron / grey cast iron	Grey cast iron / polysulphone	Tin bronze / tin bronze	Tin bronze / polysulphone	BQ <sub>1</sub> EGG	Q <sub>5</sub> Q <sub>1</sub> EGG	
	Min.	Max.	GG	GP	BB	BP	11	14 <sup>6)</sup>	
[°C]									
Service water	-	-	X	X	-	-	X	-	-
Heating water <sup>7)</sup>	-	-	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	≥ -15	≤ +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	≥ -15	≤ +25	X	X	-	-	X	-	-
Water with antifreeze, pH ≥ 7.5	≥ -15	≤ +60	X	X	-	-	X	-	-
Water with antifreeze, pH ≥ 7.5	≥ +60	≤ +120	X	X	-	-	-	X	-

5) T = fluid temperature

6) Special design

7) Treatment to VdTÜV 1466; additional requirement: O<sub>2</sub> t < 0.02 mg/l

## Overview of functions

Overview of PumpDrive 2 Eco functions

Functions / firmware	PumpDrive 2 Eco
<b>Protective functions</b>	
Thermal motor protection	X
Mains voltage monitoring	X
Phase failure, motor side	X
Short-circuit monitoring, motor side (phase to phase and phase to earth)	X
Dynamic overload protection by speed limitation ( $I^2t$ control)	X
Resonant frequency suppression	X
Broken wire detection (live zero)	X
Dry running protection (external control signal)	X
Operating point estimation and characteristic curve control	X
<b>Open-loop control</b>	
Open-loop control mode	X
<b>Closed-loop control</b>	
Closed-loop control mode via integrated PID controller	X
Pressure control / differential pressure control ( $\Delta p$ const)	X
Pressure control / differential pressure control with dynamic pressure compensation ( $\Delta p$ var)	X
Flow rate control	X
Sensorless differential pressure control ( $\Delta p$ const) in a single-pump configuration	X
Sensorless differential pressure control with dynamic pressure compensation ( $\Delta p$ var) in a single-pump configuration	X
Sensorless flow rate control	X
Level control	X
Temperature control	X
<b>Operation and monitoring (display)</b>	
Measured value display (pressure, head, speed, electric power, motor voltage, motor current, torque)	X
Fault history	X
Operating hours counter	X
Fault reporting via relay	X
<b>Frequency inverter functions</b>	
Programmable start ramps and stop ramps	X
Field-oriented control (vector control), V/f control	X
Configurable motor control method (asynchronous motor, KSB SuPremE)	X
Automatic motor adaptation (AMA)	X
Motor standstill heater	X
Manual-0-automatic mode	X
External OFF	X
External minimum speed	X
Sleep mode (stand-by mode)	X
<b>Pump functions</b>	
Flow rate estimation	X
M12 module with PumpMeter bus connection	X
M12 module for dual-pump configuration	X
Functional check run	X
Integrated dual-pump configuration (1x100 % with redundant pump or 2x50 % without redundant pump)	X
<b>Operation</b>	
Control panel	X <sup>8)</sup>
Service interface	X

8) Some functions can only be parameterised and/or displayed using the KSB ServiceTool (see operating manual).

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

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

**Pressure limits and temperature limits**

Pressure limits and temperature limits as a function of material variant

Material variant	T <sup>9)</sup>	Test pressure <sup>10)</sup>	Operating pressure
	[°C]	[bar]	[bar]
GG, GP, BB, BP	-15 to +120	≤ 15	≤ 10

**Technical data**
**Motor (fixed speed version), n = 2900 rpm**

50 Hz, technical data of the motor, n = 2900 rpm (fixed speed version)

Etaline L	P <sub>2</sub>	P <sub>N</sub>	I <sub>N</sub>	I <sub>N</sub>	I <sub>N</sub>	Motor	[kg]
	Max. <sup>11)</sup>	IE3 <sup>12)</sup>	1~230 V	3~230 V	3~400 V		
	IE3 <sup>12)</sup>						
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
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	35,8
065-065-100	1,30	1,10	6,90	-	-	80	32

11) Continuous duty S1

12) ≥ 0,75 kW = IE3

Etaline L	P <sub>2</sub>	P <sub>N</sub>	I <sub>N</sub>	I <sub>N</sub>	I <sub>N</sub>	Motor	[kg]
	Max. <sup>11)</sup>	IE3 <sup>12)</sup>	1~230 V	3~230 V	3~400 V		
	IE3 <sup>12)</sup>						
n = 2900 rpm	[kW]	[kW]	[A]	[A]	[A]		
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

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

50 Hz, technical data of the motor, n = 1450 rpm (fixed speed version)

Etaline L	P <sub>2</sub>	P <sub>N</sub>	I <sub>N</sub>	I <sub>N</sub>	I <sub>N</sub>	Motor	[kg]
	Max. <sup>13)</sup>	IE3 <sup>14)</sup>	1~230 V	3~230 V	3~400 V		
	IE3 <sup>14)</sup>						
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

13) Continuous duty S1

14) ≥ 0,75 kW = IE3

**Motor (variable speed version), n = 2900 rpm**

50 Hz, technical data of the motor, n = 2900 rpm (variable speed version)

Etaline L PumpDrive 2 Eco	P <sub>2</sub>	P <sub>N</sub>	I <sub>N</sub>	I <sub>N</sub>	Motor	[kg]
	Max. <sup>15)</sup>	IE2 <sup>16)</sup>	1~230 V	3~400 V		
	IE2 <sup>16)</sup>					
n = 2900 rpm	[kW]	[kW]	[A]	[A]		
025-025-063	0,30	0,25	-	0,76	63	13,4
025-025-063	0,30	0,25	2,00	-	63	13
025-025-070.1	0,21	0,18	-	1,60	63	13
025-025-070.1	0,14	0,12	1,20	-	63	13
025-025-071	0,30	0,25	-	0,76	63	12,17
025-025-071	0,30	0,25	2,00	-	63	13,6
025-025-080	0,30	0,25	-	0,76	63	13
025-025-080	0,30	0,25	2,00	-	63	13
025-025-080	0,44	0,37	-	0,92	63	13
025-025-085	0,21	0,18	-	0,60	63	14
025-025-105	0,44	0,37	-	0,92	63	15,5
032-032-063	0,30	0,25	-	0,76	63	12,4
032-032-071	0,30	0,25	-	0,76	63	12,4
032-032-080	0,30	0,25	-	0,76	63	13
032-032-080	0,30	0,25	2,00	-	63	13
032-032-080	0,44	0,37	-	0,92	63	13
032-032-100	0,30	0,25	-	0,76	63	18,9
032-032-100	0,30	0,25	2,00	-	63	19,2
032-032-105	0,66	0,55	-	1,60	63	20,1
032-032-105	0,66	0,55	4,20	-	63	20,5
032-032-125	0,90	0,75	-	1,60	71	24,8
032-032-125	0,90	0,75	4,75	-	71	25,2
040-040-060	0,30	0,25	-	0,76	63	19
040-040-060	0,30	0,25	2,00	-	63	19,2
040-040-060	0,44	0,37	-	0,92	63	22,1
040-040-090	0,66	0,55	-	1,60	63	21,8
040-040-090	0,66	0,55	4,20	-	63	23
040-040-090	0,90	0,75	-	1,60	71	22
040-040-100	0,90	0,75	-	1,60	71	23
040-040-100	0,90	0,75	4,75	-	71	25,4
050-050-090	0,66	0,55	-	1,60	63	25,2
050-050-090	0,66	0,55	4,20	-	63	24,7
050-050-100	0,90	0,75	-	1,60	71	27,7
050-050-100	0,90	0,75	4,75	-	71	25
050-050-110	1,30	1,10	-	2,25	80	29
050-050-110	1,30	1,10	6,90	-	80	28,8
050-050-110	2,20	1,80	-	3,40	90S	31
050-050-125	2,20	1,80	-	3,40	90S	36,8
065-065-100	1,30	1,10	-	2,25	80	36
065-065-100	1,30	1,10	6,90	-	80	36
065-065-115	2,20	1,80	-	3,40	90S	39
065-065-125	3,40	3,00	-	5,60	90L	43
080-080-105	1,30	1,10	-	2,25	80	45,9
080-080-105	1,30	1,10	6,90	-	80	46,5
080-080-115	2,20	1,80	-	3,40	90S	50,6
080-080-125	3,40	3,00	-	5,60	90L	57,3

15) Continuous duty S1

16) ≥ 0,75 kW = IE2

**Motor (variable speed version), n = 1450 rpm**

50 Hz, technical data of the motor, n = 1450 rpm (variable speed version)

Etaline L PumpDrive 2 Eco	P <sub>2</sub>	P <sub>N</sub>	I <sub>N</sub>	I <sub>N</sub>	Motor	[kg]
	Max. <sup>17)</sup>	IE2 <sup>18)</sup>	1~230 V	3~400 V		
	IE2 <sup>18)</sup>					
n = 1450 rpm	[kW]	[kW]	[A]	[A]		
025-025-080	0,14	0,12	-	0,48	63	12,6
025-025-080	0,14	0,12	1,20	-	63	12,9
032-032-080	0,14	0,12	-	0,48	63	12
032-032-080	0,14	0,12	1,20	-	63	12,5
032-032-125	0,14	0,12	-	0,48	63	18,6
032-032-125	0,14	0,12	1,20	-	63	19
040-040-100	0,14	0,12	-	0,48	63	21
040-040-100	0,14	0,12	1,20	-	63	21,3
050-050-100	0,14	0,12	-	0,48	63	21
050-050-100	0,14	0,12	1,20	-	63	21,4
050-050-125	0,21	0,18	-	0,66	63	26,6
050-050-125	0,21	0,18	1,60	-	63	25,4
050-050-160	0,90	0,75	-	1,71	80	40,2
050-050-160	0,90	0,75	5,75	-	80	40
065-065-125	0,44	0,37	-	1,25	63	34
065-065-125	0,44	0,37	3,20	-	63	34
080-080-125	0,44	0,37	-	1,25	63	37,5
080-080-125	0,44	0,37	3,20	-	63	38

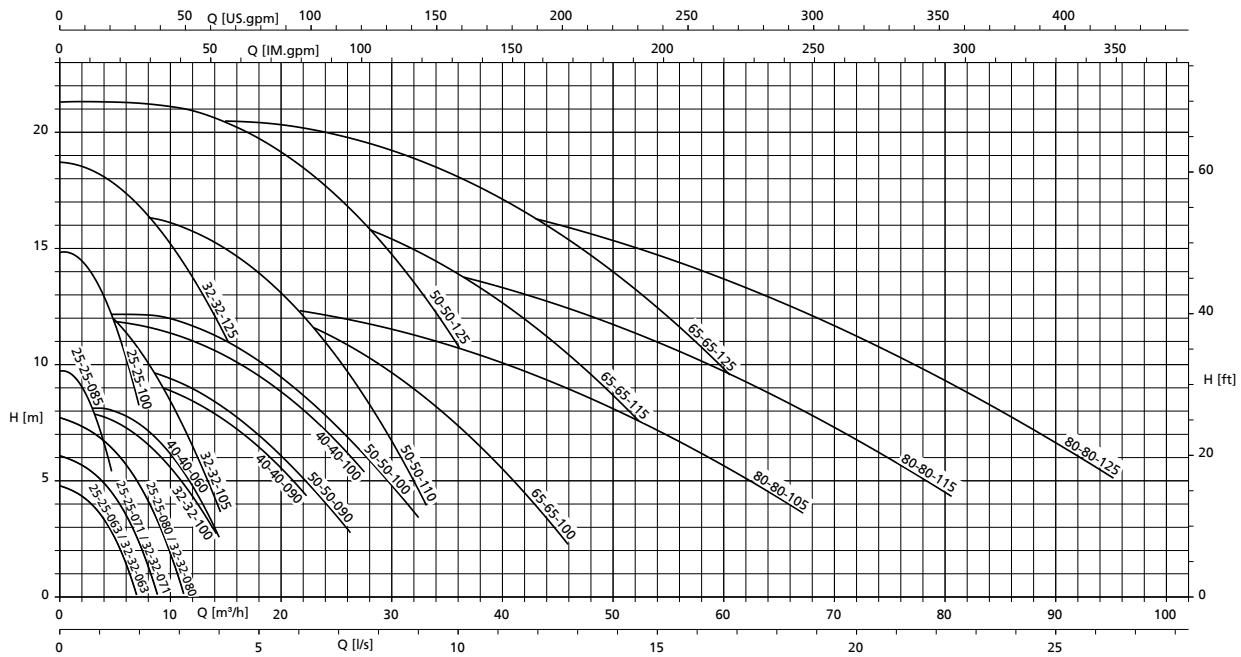
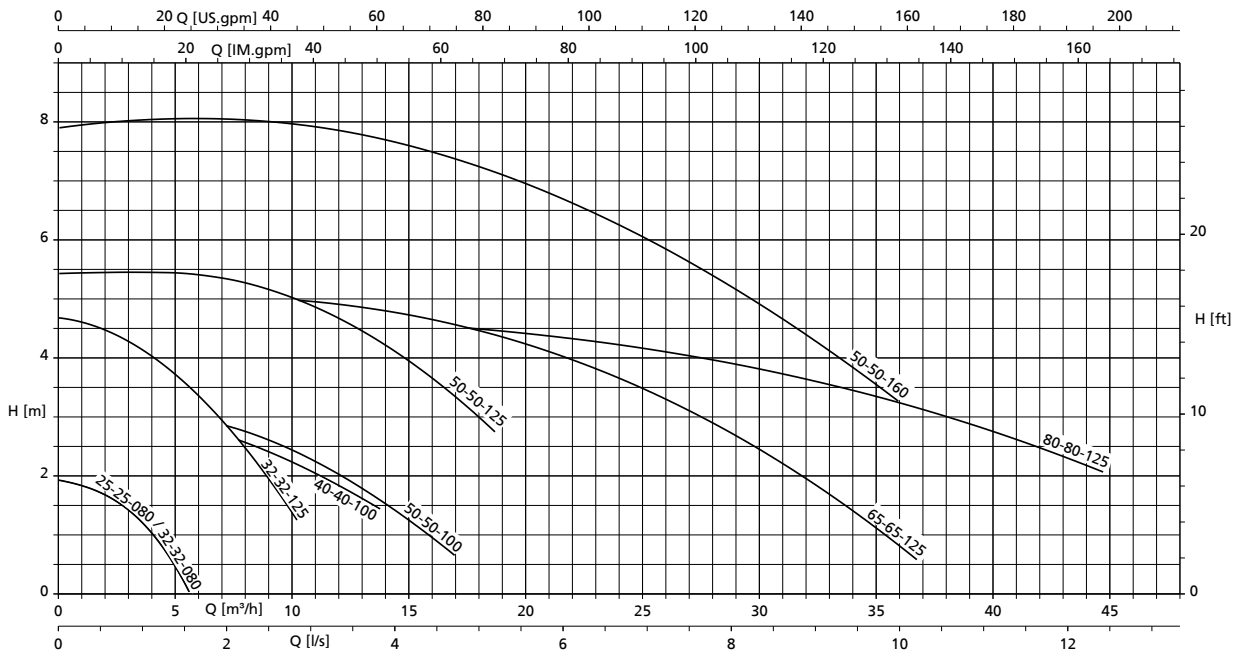
17) Continuous duty S1

18) ≥ 0,75 kW = IE2

**Pump**

Technical data of the pump

Etaline L	Shaft unit	Impeller diameter	Speed limit	
			Minimum	Maximum
		[mm]	[rpm]	[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
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 (fixed speed version), n = 2900 rpm**

**Etaline L (fixed speed version), n = 1450 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  $Q = 0.3 \times Q_{BEP}$  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  $\rho$ . 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.

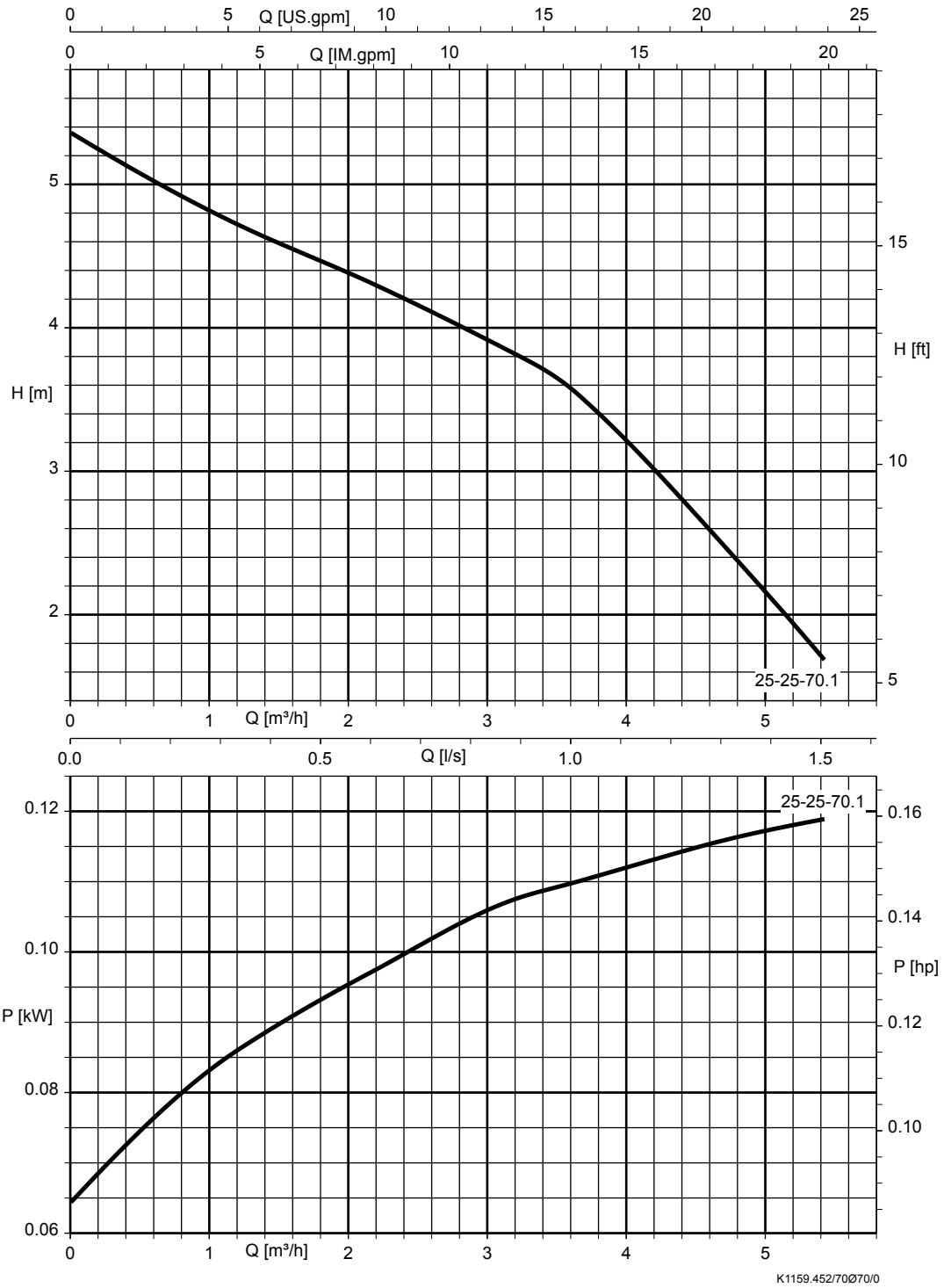
**Correction factors**

The characteristic curves apply to pumps with cast iron impellers, plastic impellers and bronze impellers.

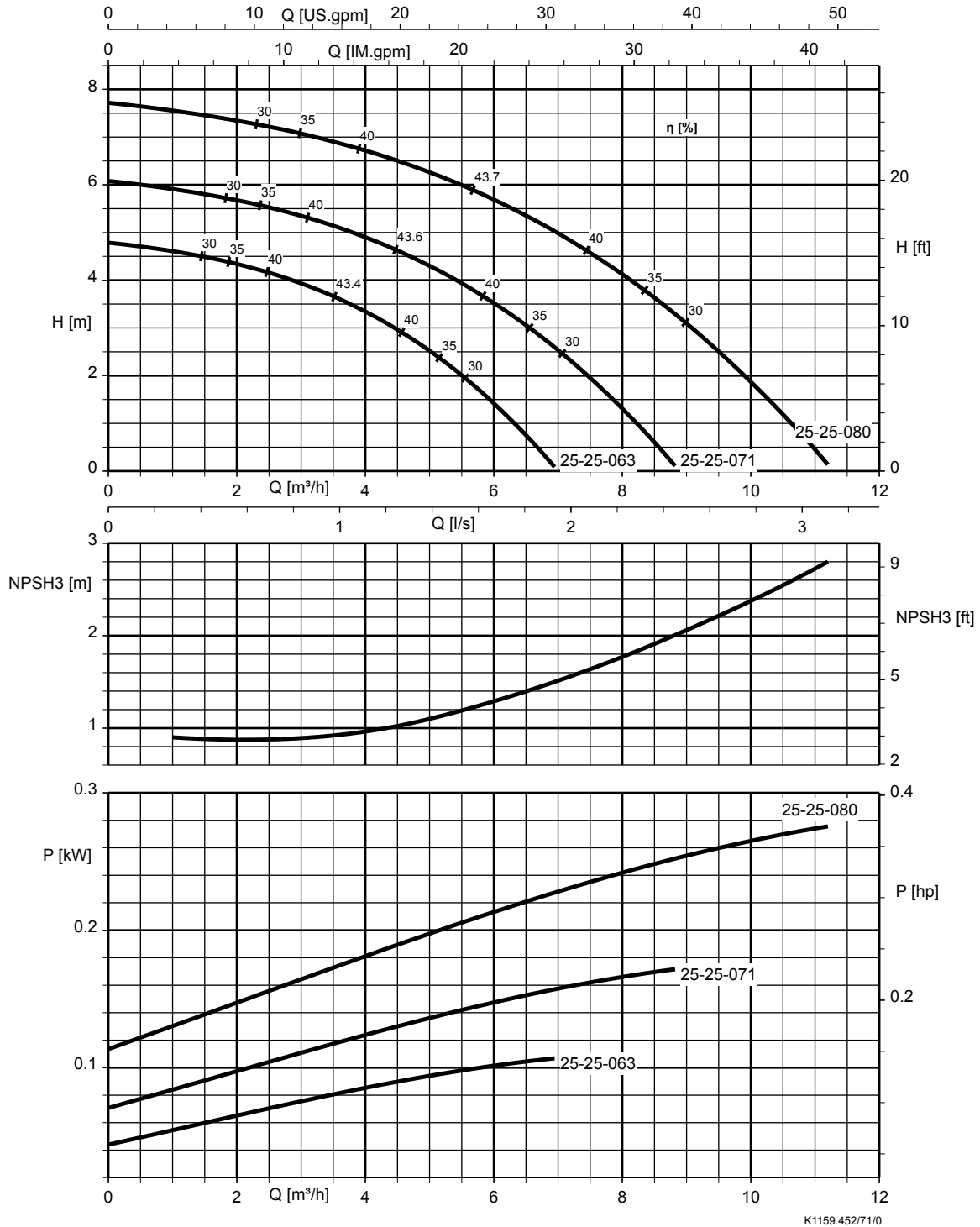


Etaline L (fixed speed version), n = 2900 rpm

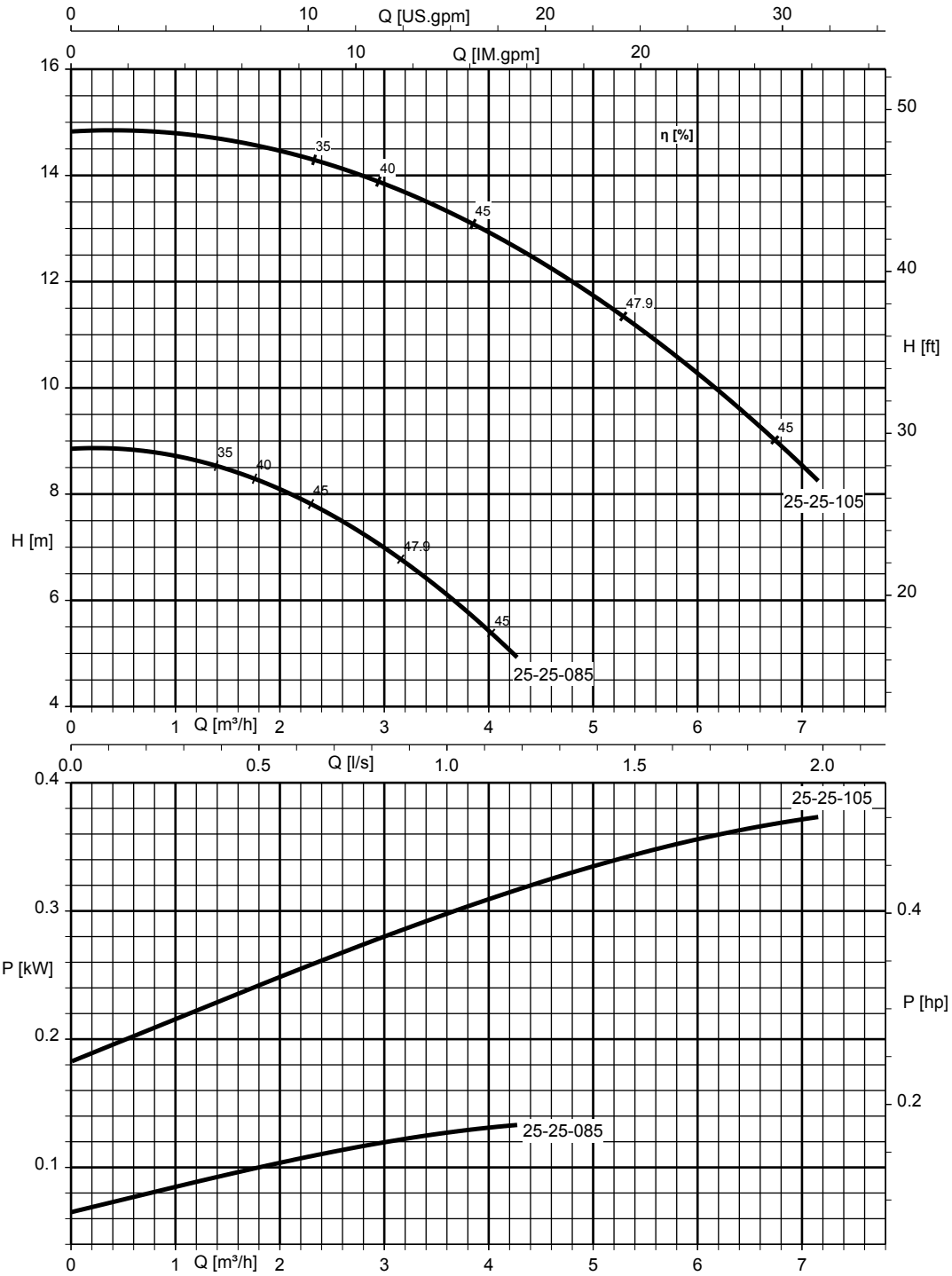
Etaline L 025-025-070.1, n = 2900 rpm



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

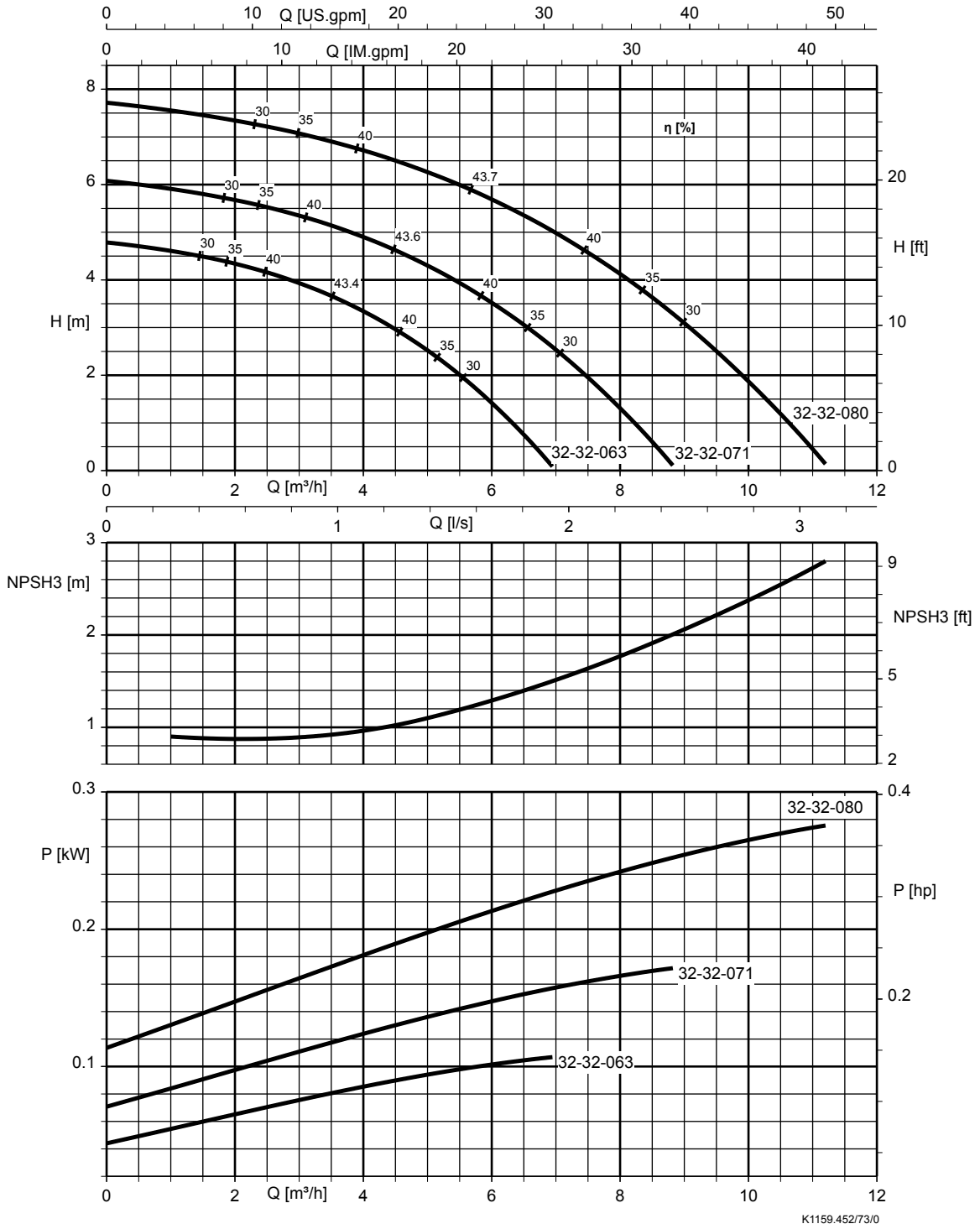


Etaline L 025-025-085/105, n = 2900 rpm



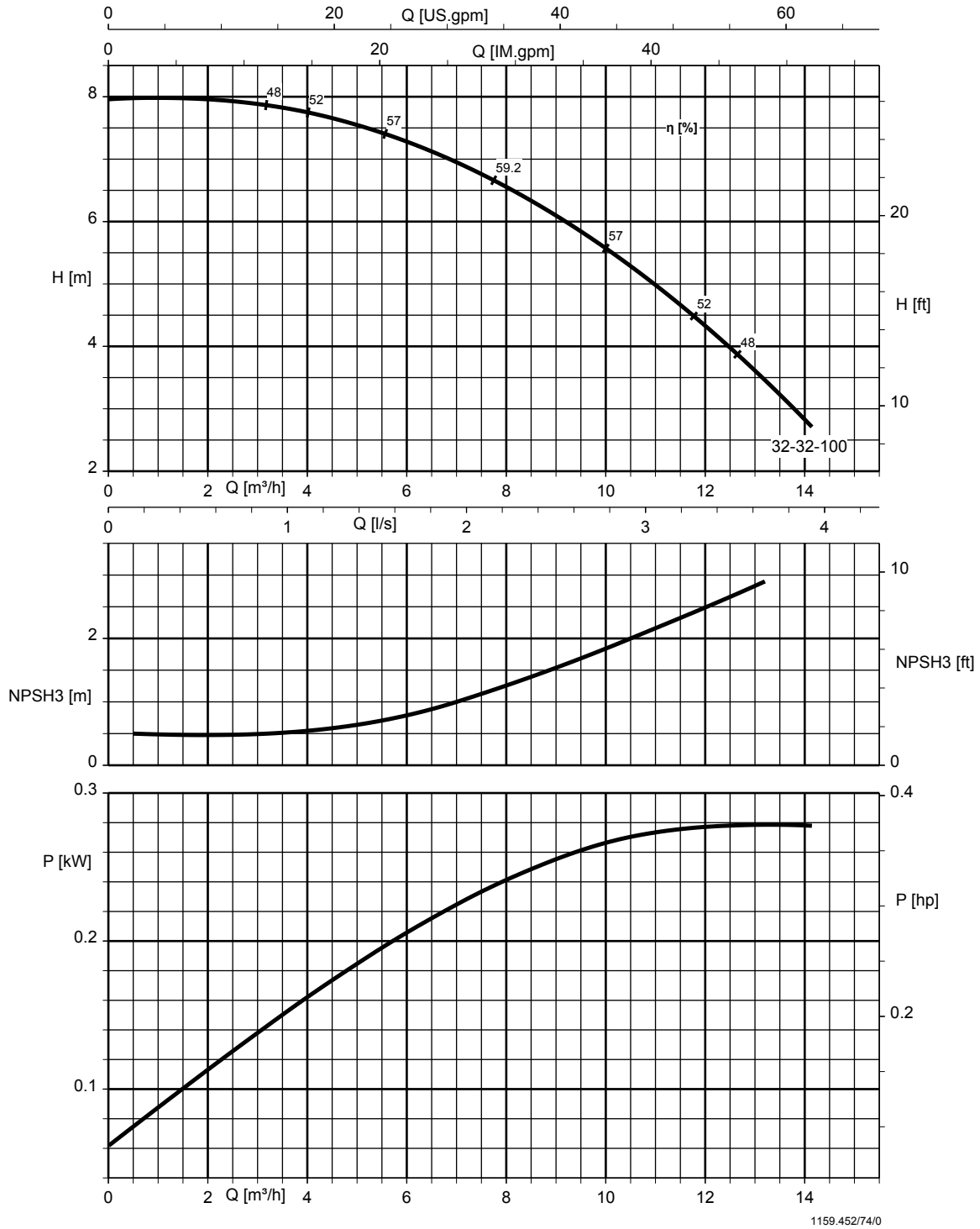
K1159.452/72/0

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

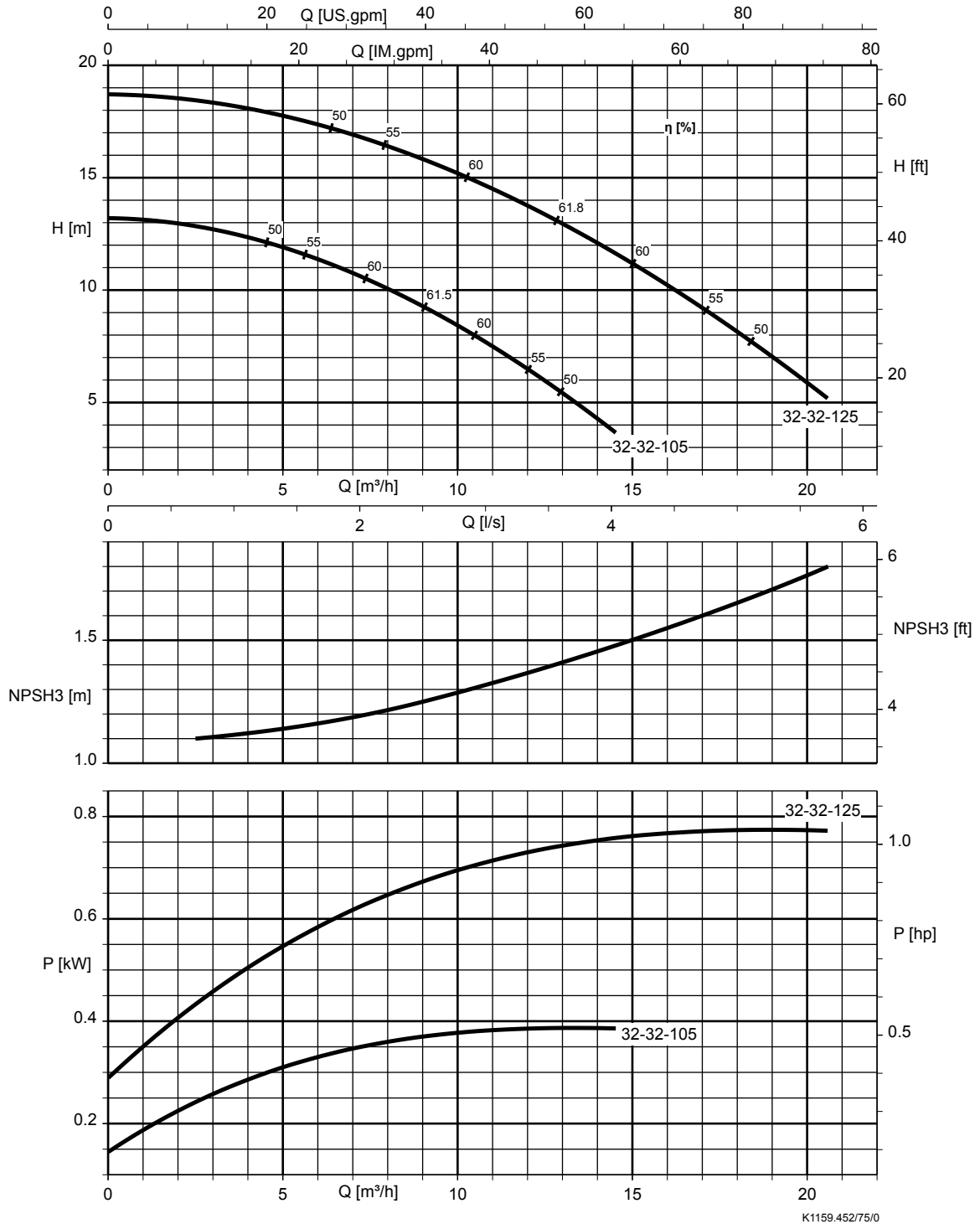


K1159.452/73/0

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

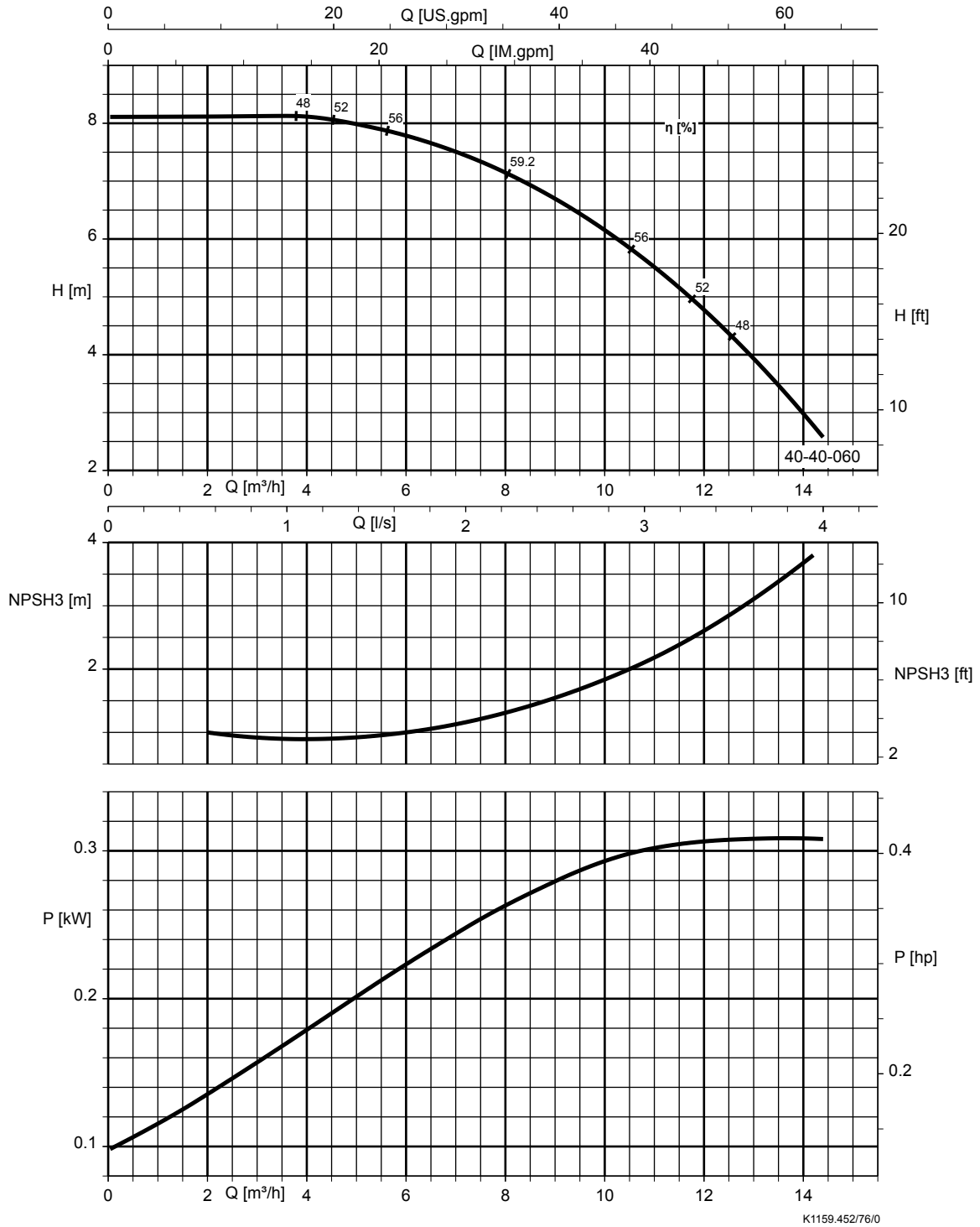


**Etaline L 032-032-105/125, n = 2900 rpm**

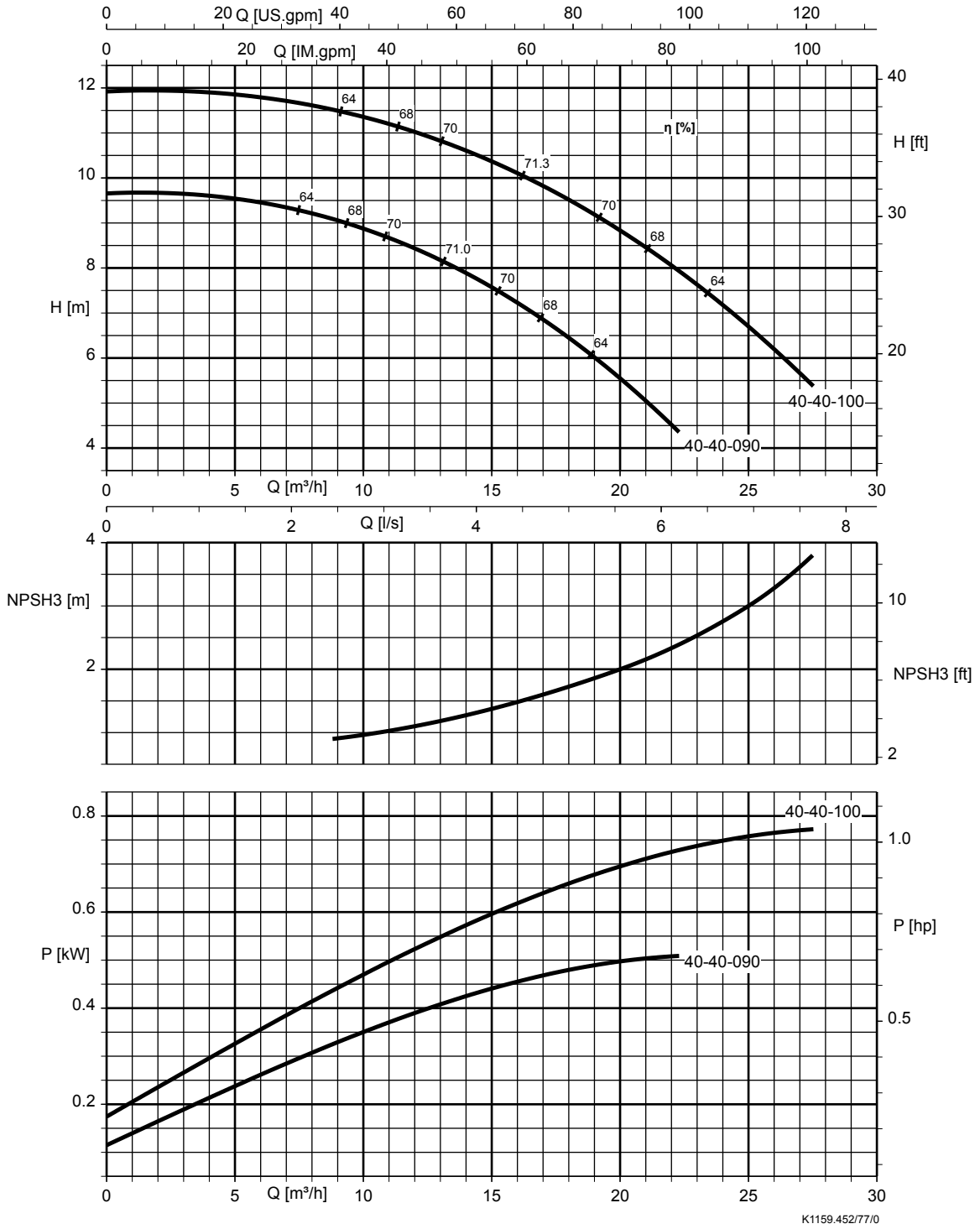


K1159.452/75/0

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



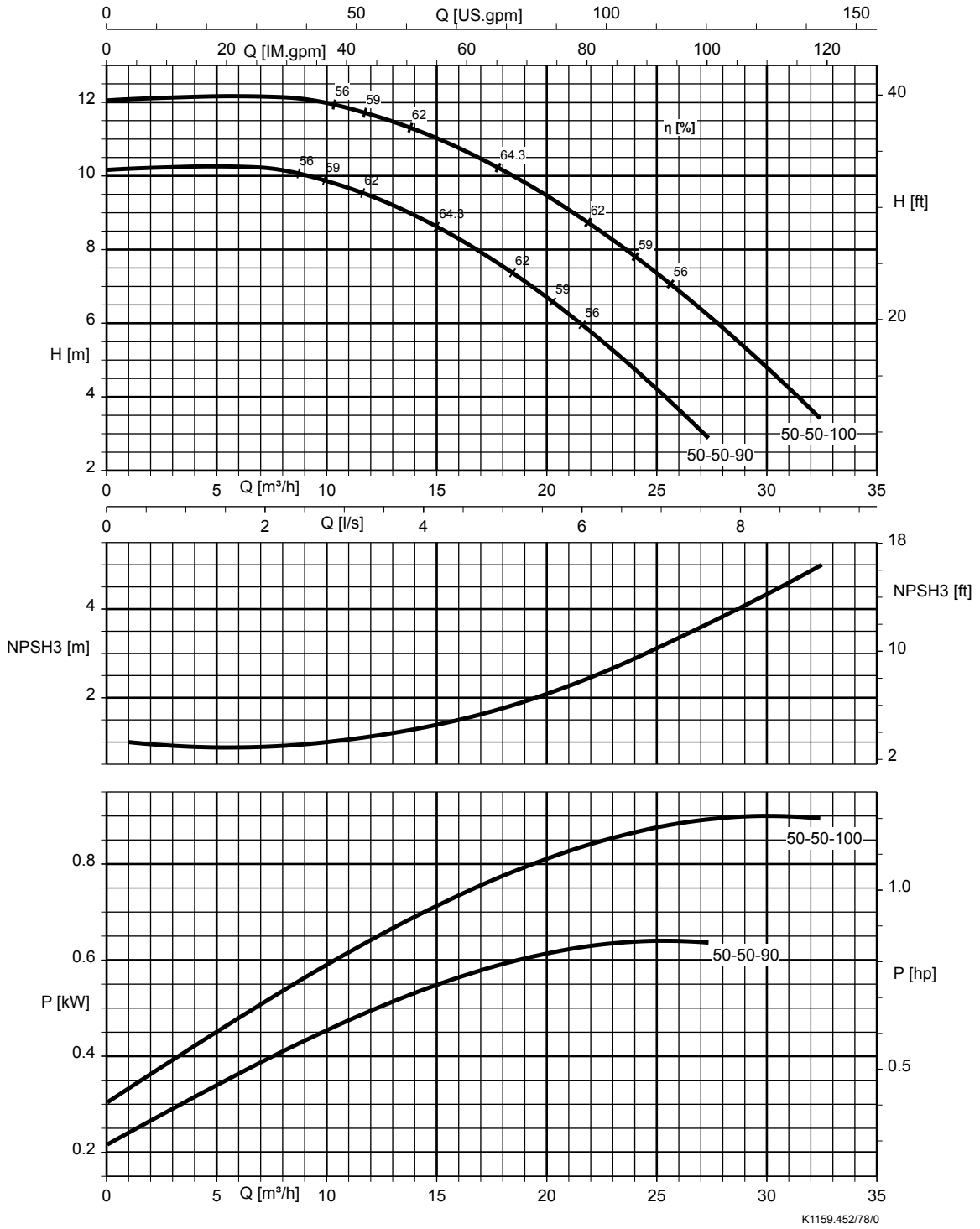
**Etaline L 040-040-090/100, n = 2900 rpm**



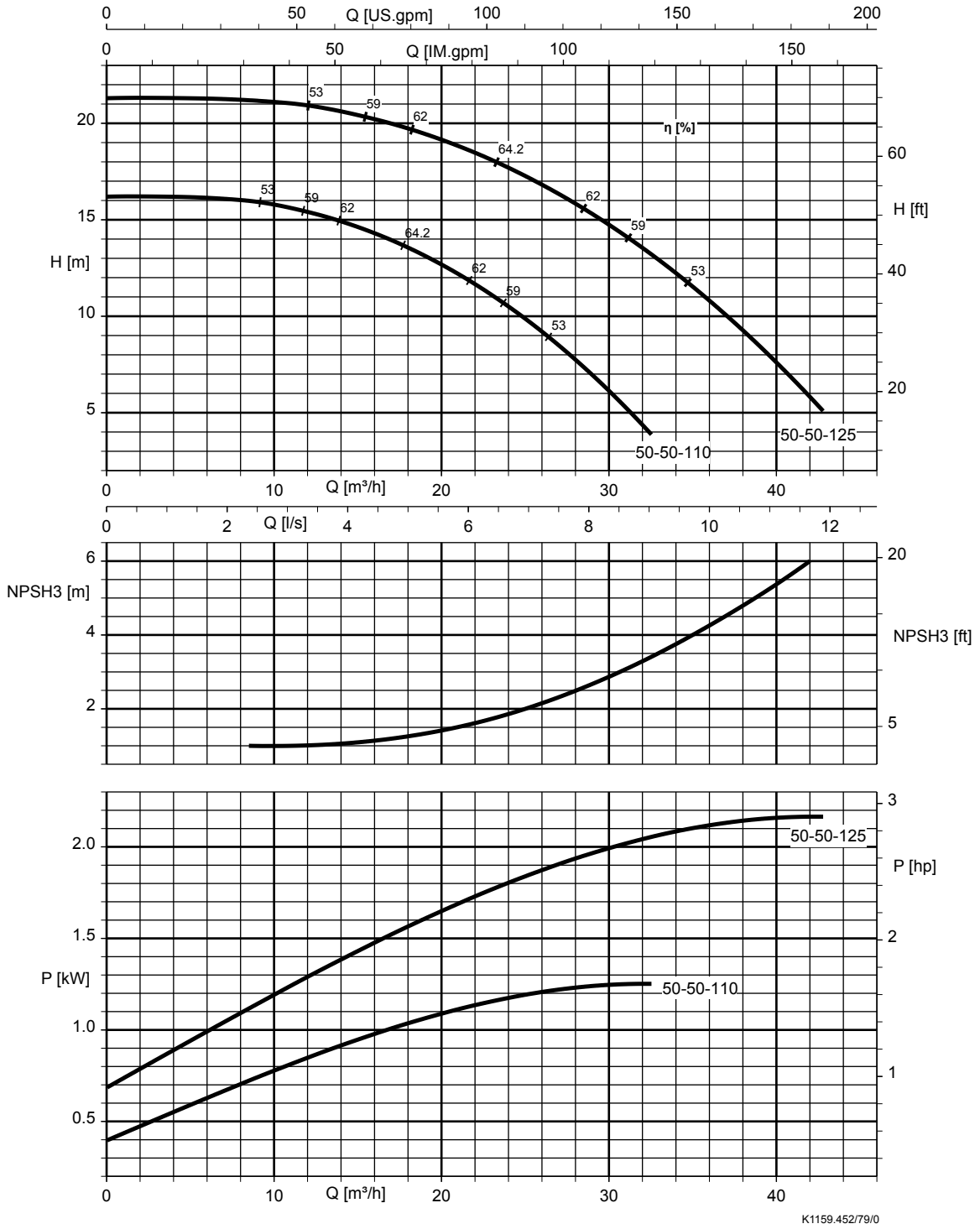
K1159.452/77/0



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

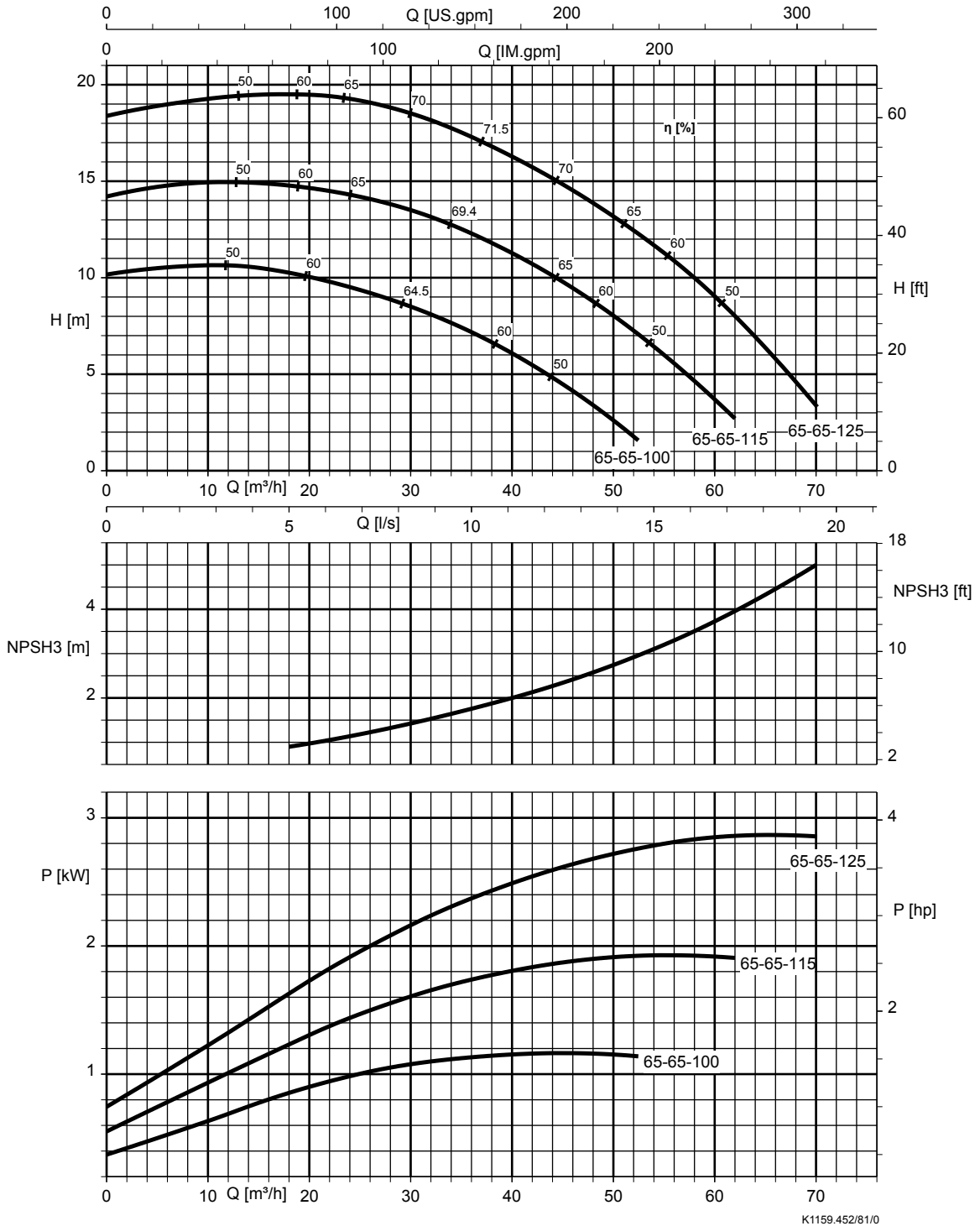


**Etaline L 050-050-110/125, n = 2900 rpm**



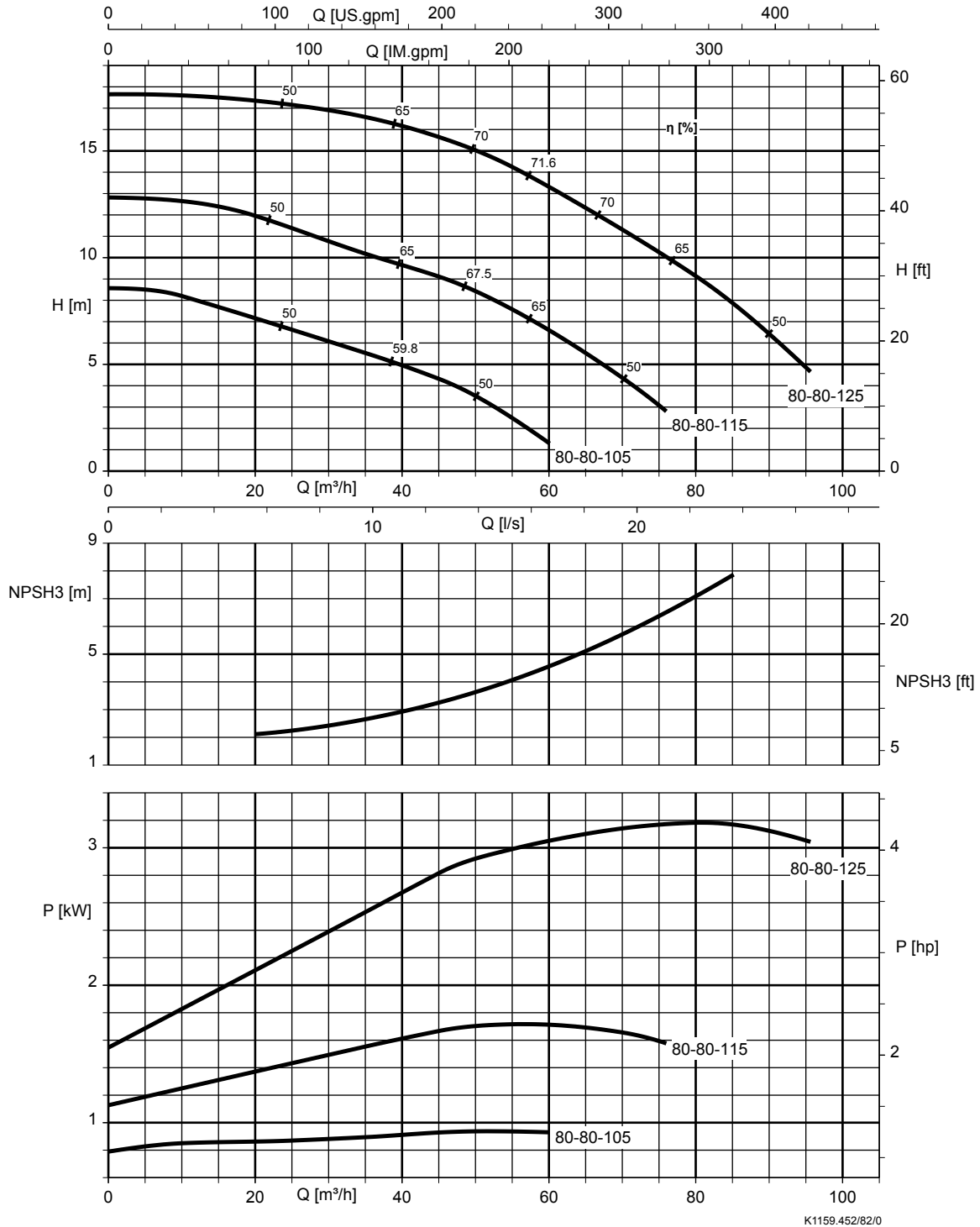
K1159.452/79/0

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



K1159.452/81/0

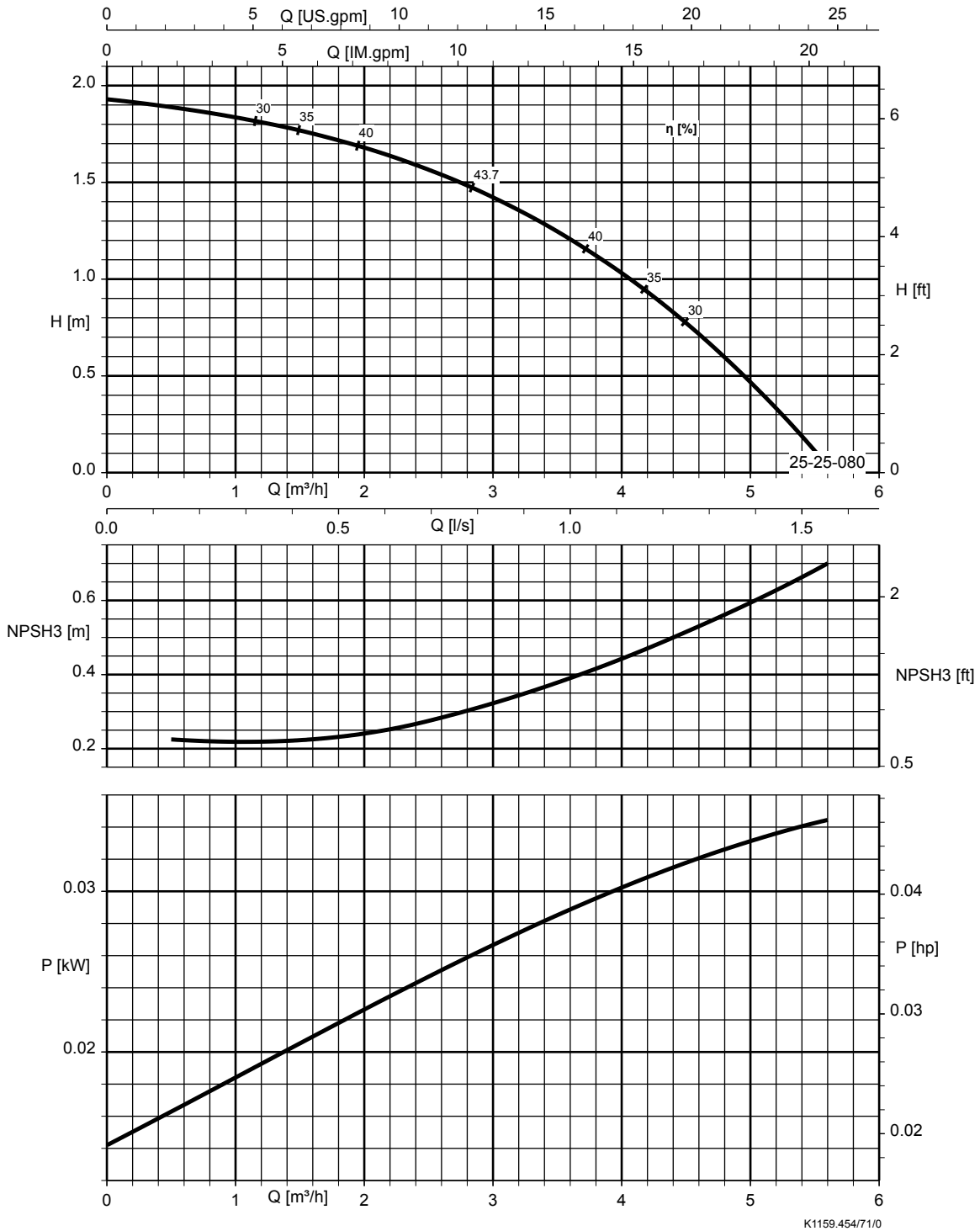
Etaline L 080-080-105/115/125, n = 2900 rpm



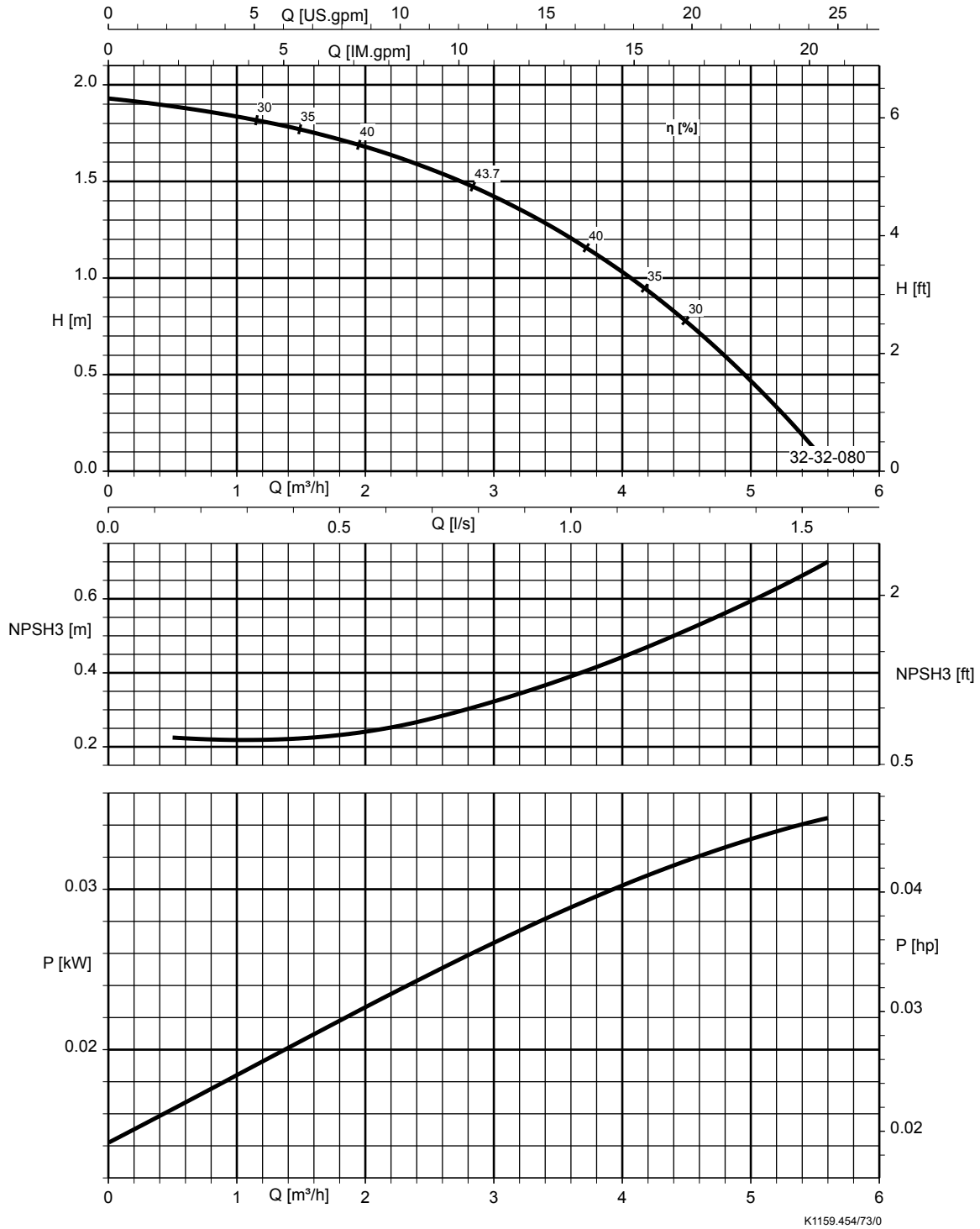
K1159.452/82/0

**Etaline L (fixed speed version), n = 1450 rpm**

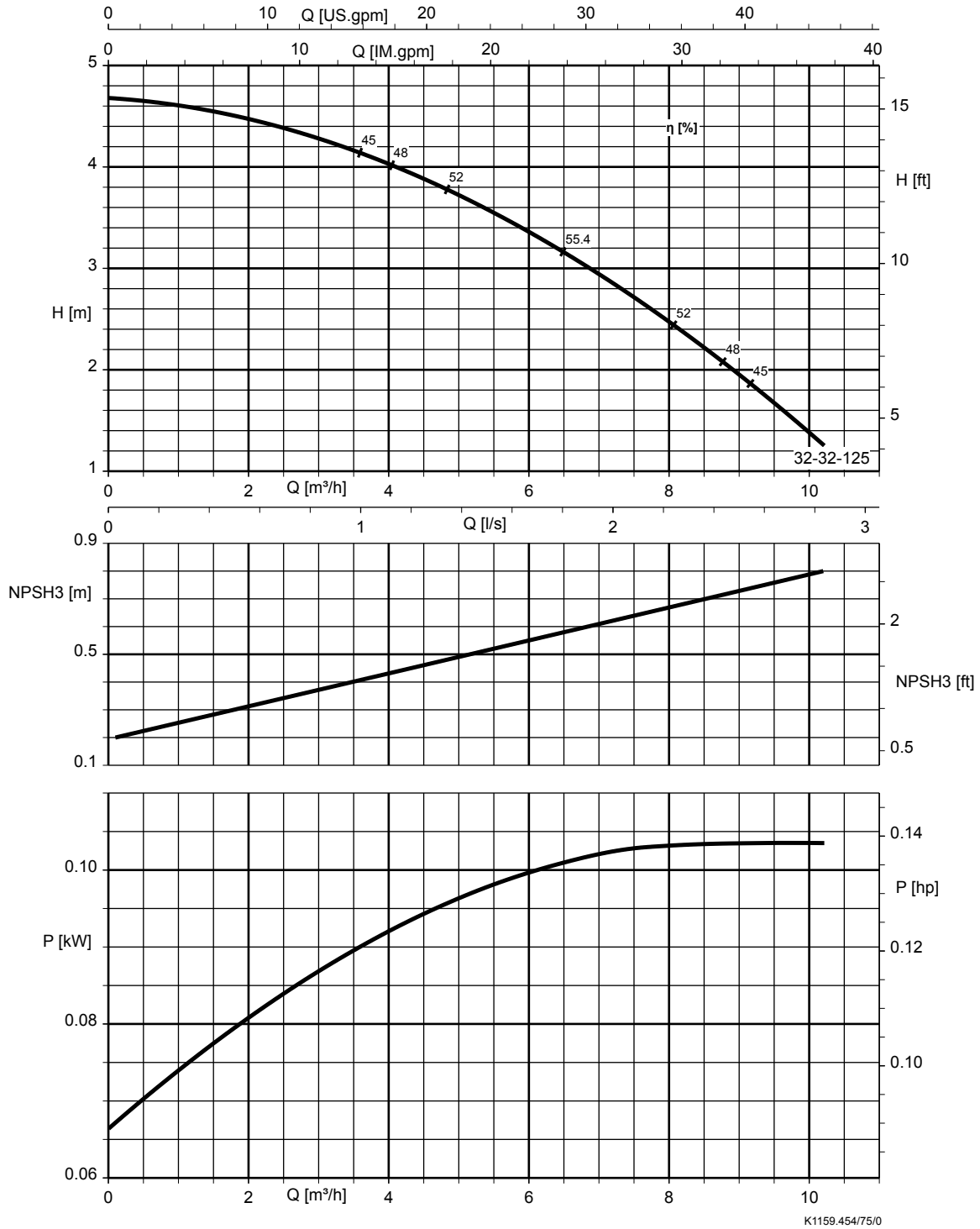
**Etaline L 025-025-080, n = 1450 rpm**



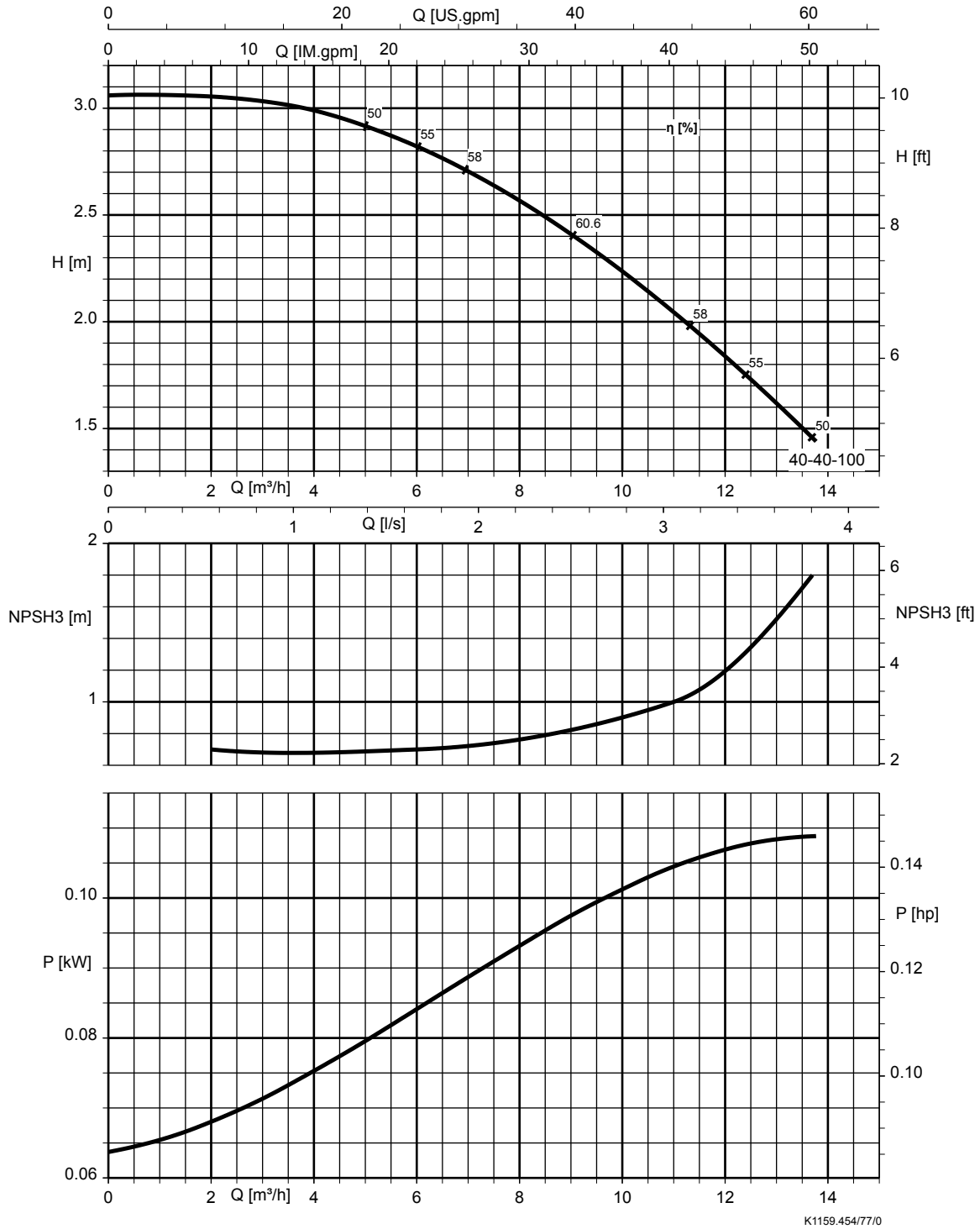
**Etaline L 032-032-080, n = 1450 rpm**



Etaline L 032-032-125, n = 1450 rpm

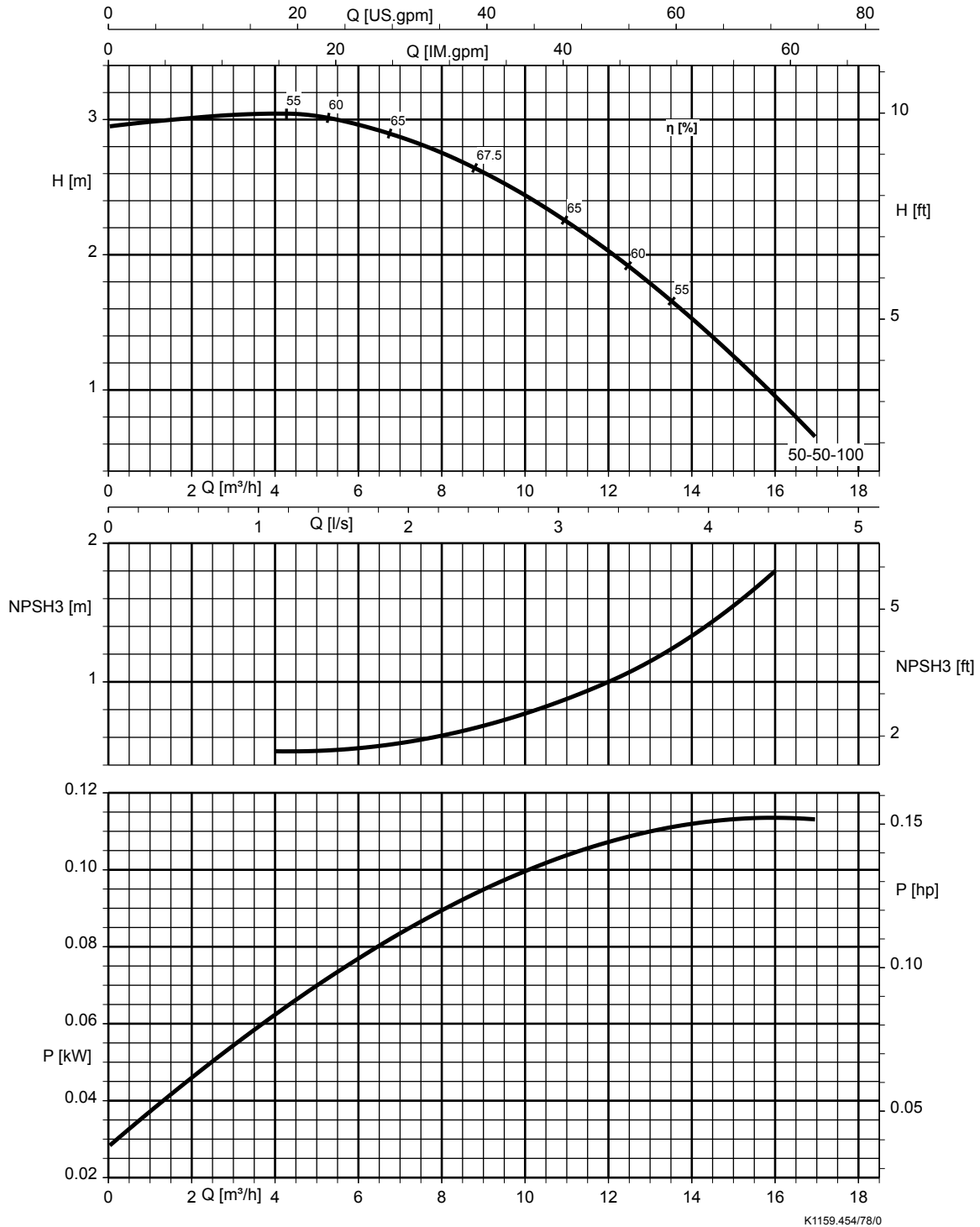


Etaline L 040-040-100, n = 1450 rpm



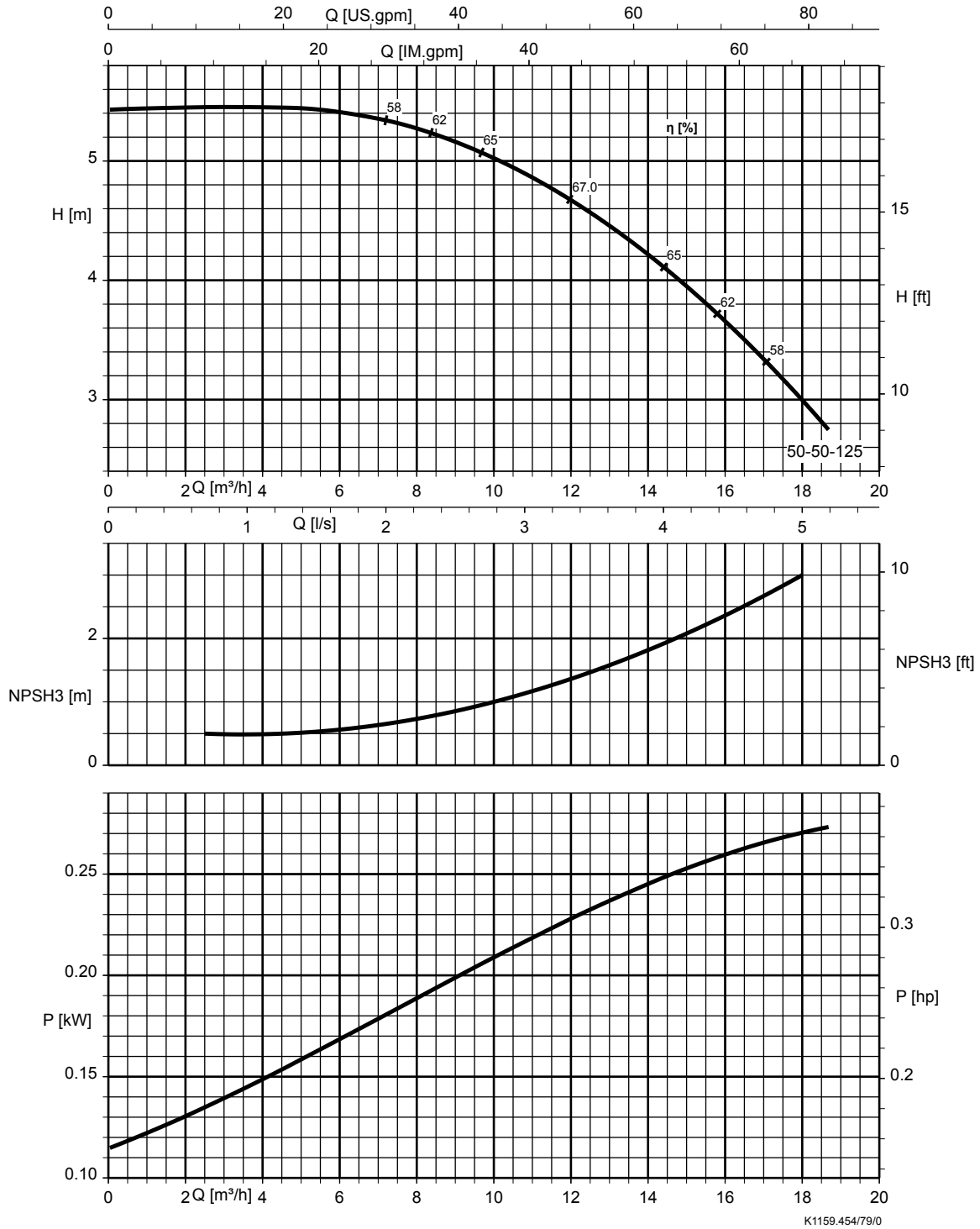


Etaline L 050-050-100, n = 1450 rpm



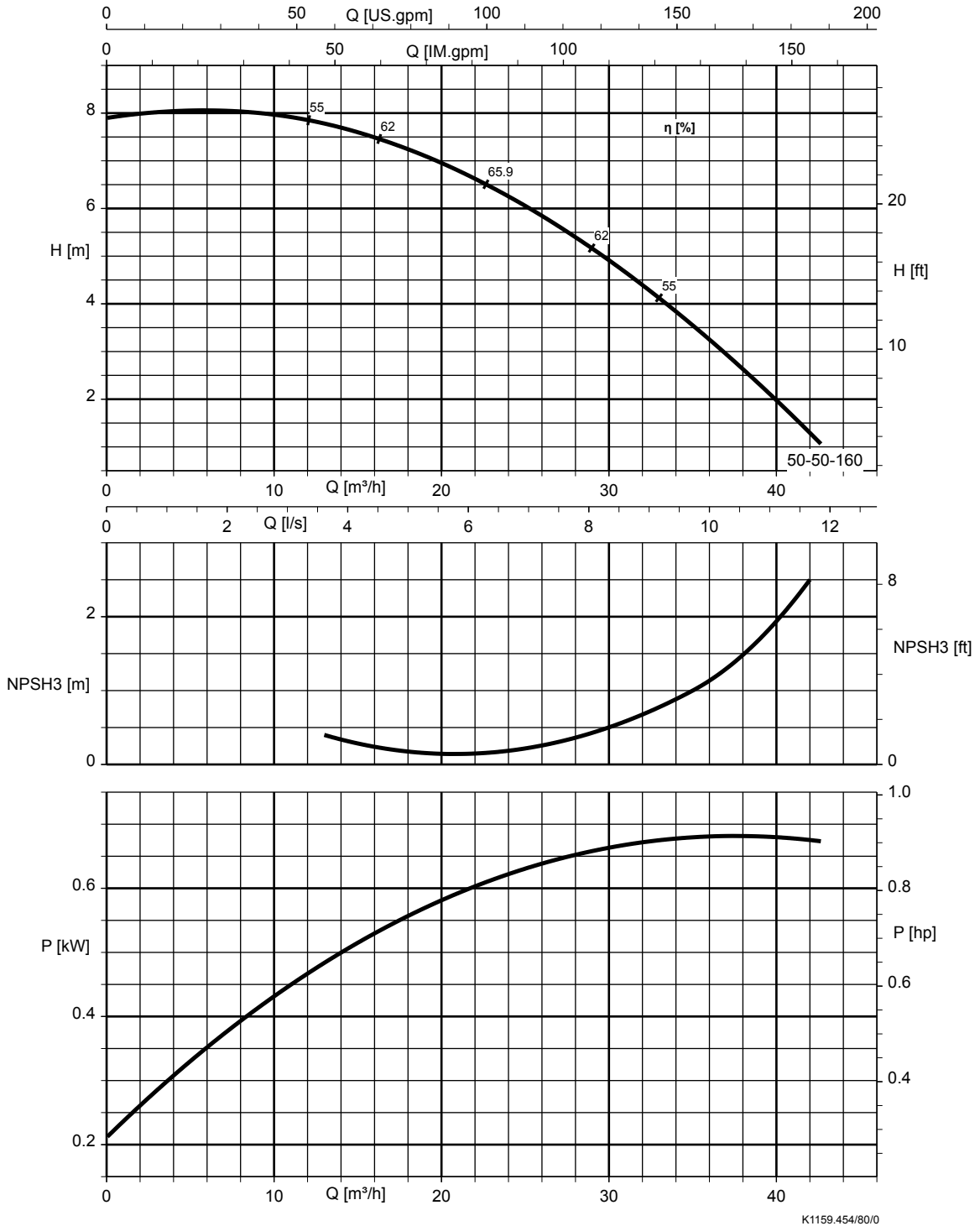
K1159.454/78/0

Etaline L 050-050-125, n = 1450 rpm

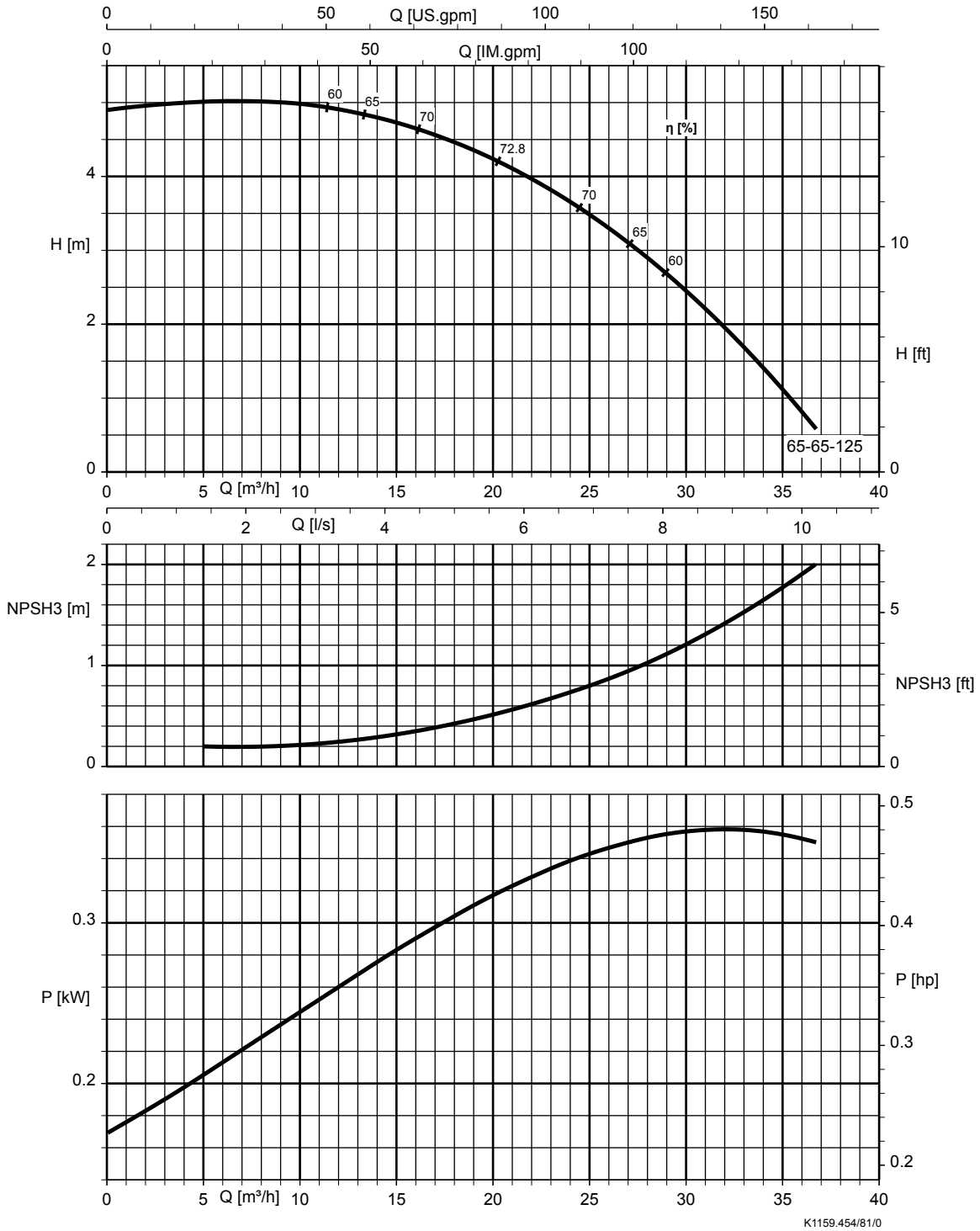


K1159.454/79/0

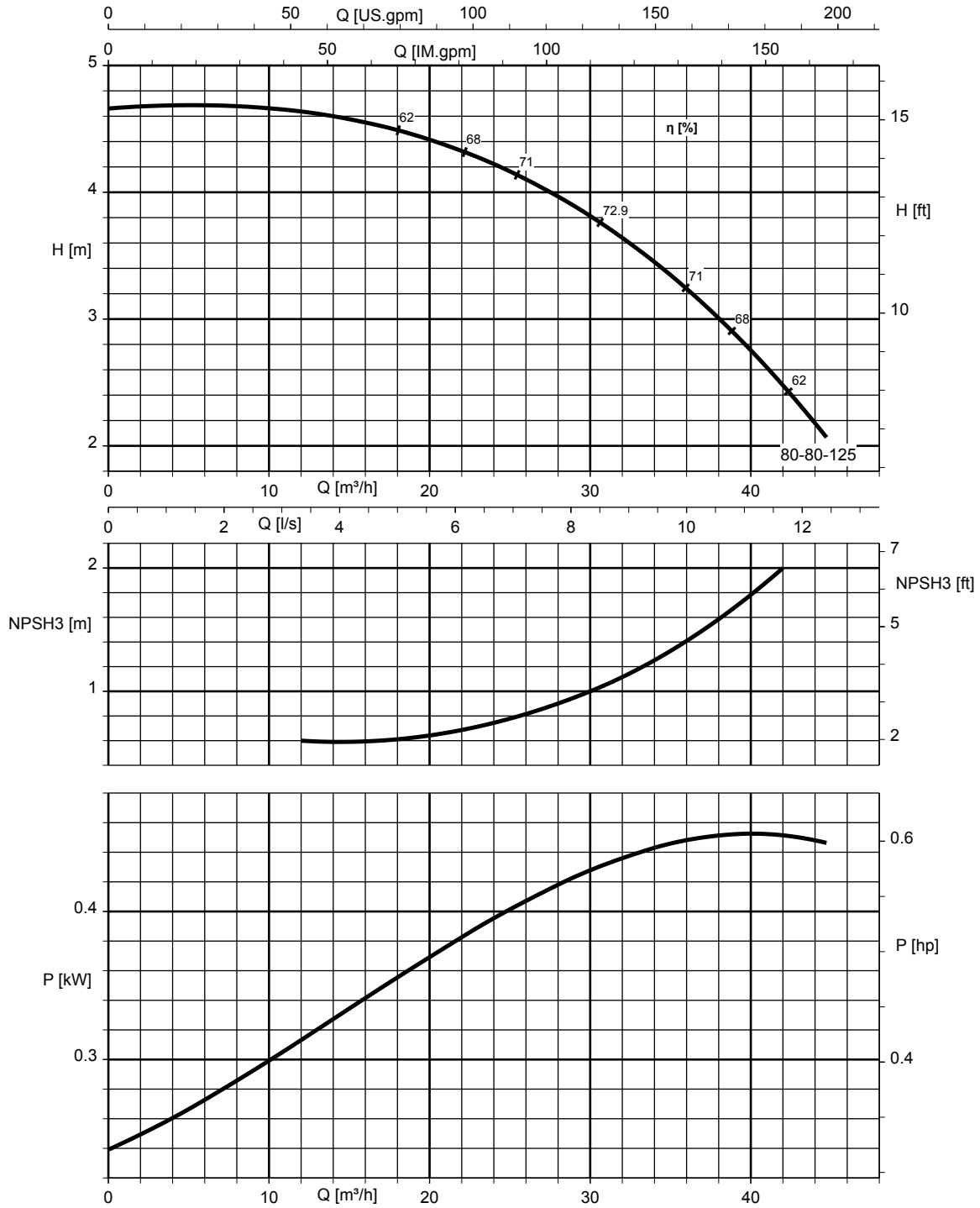
Etaline L 050-050-160, n = 1450 rpm



Etaline L 065-065-125, n = 1450 rpm



Etaline L 080-080-125, n = 1450 rpm



K1159.454/82/0

## Dimensions

## Pump set dimensions (fixed speed version)

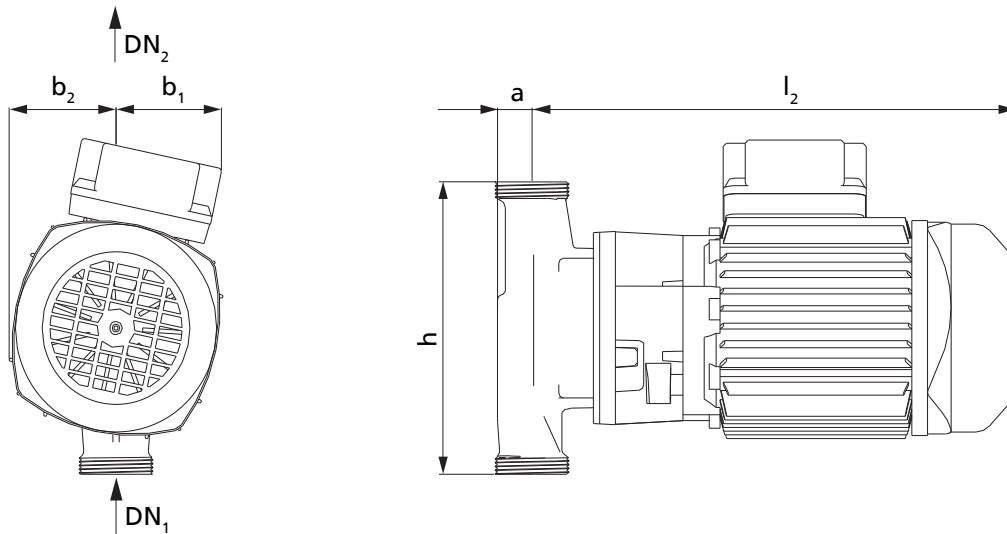
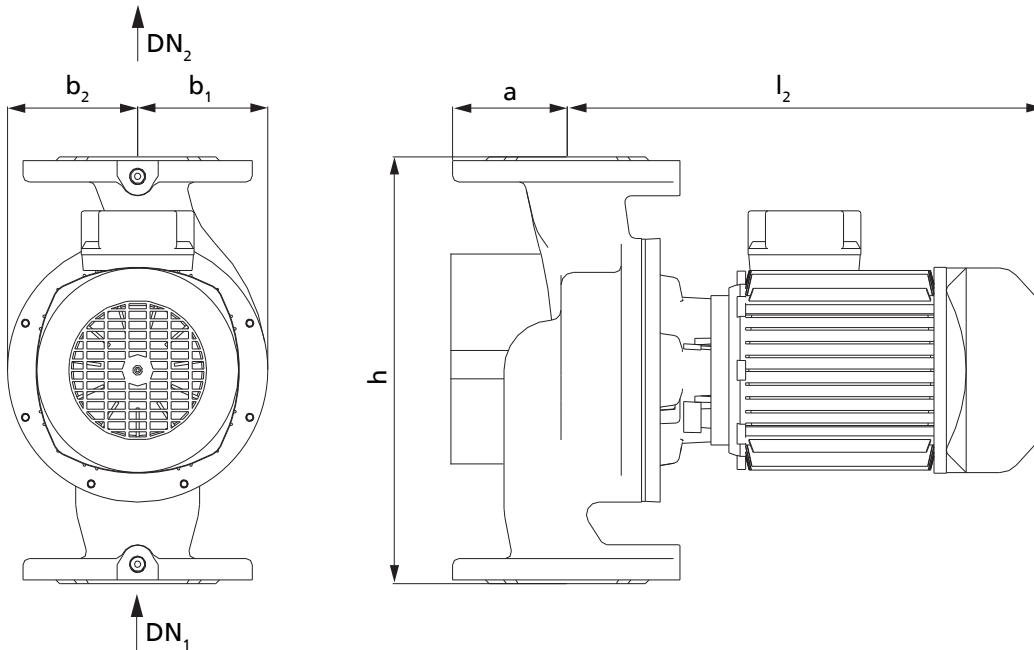


Fig. 1: Dimensions of screw-ended pump set, size &lt; 032-032-100


 Fig. 2: Dimensions of flanged pump set, size  $\geq$  032-032-100

 Pump set dimensions (fixed speed version),  $n = 2900$  rpm

Etaline L	$P_2$	$P_N$	DN	Connection	a	h	$b_1$	$b_2$	$l_2$
	Max. <sup>19)</sup>								
$n = 2900$ rpm	[kW]	[kW]	[mm]	Thread	[mm]	[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

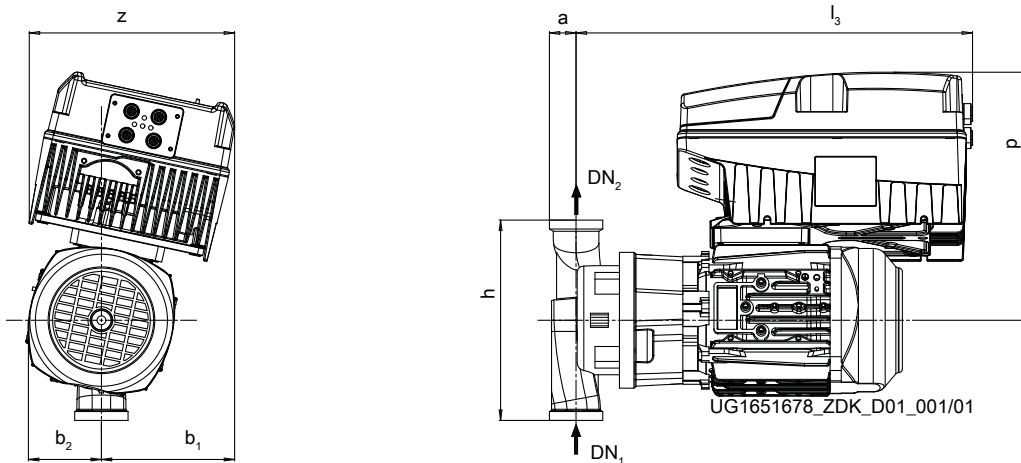
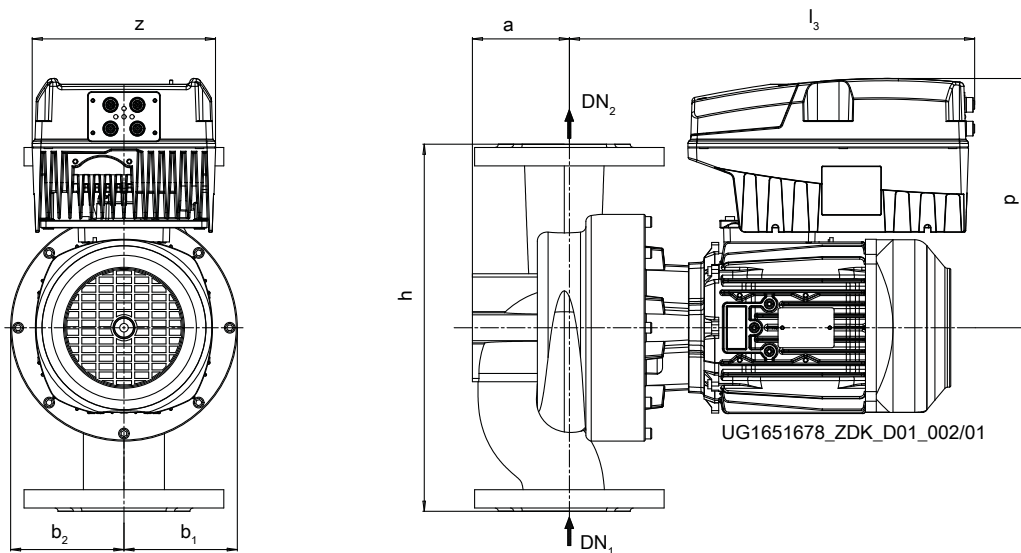
19) Continuous duty S1

Etaline L	P <sub>2</sub>	P <sub>N</sub>	DN	Connection	a	h	b <sub>1</sub>	b <sub>2</sub>	l <sub>2</sub>
	Max. <sup>19)</sup>								
n = 2900 rpm	[kW]	[kW]	[mm]	Thread	[mm]	[mm]	[mm]	[mm]	[mm]
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
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

Pump set dimensions (fixed speed version), n = 1450 rpm

Etaline L	P <sub>2</sub>	P <sub>N</sub>	DN	Connection	a	h	b <sub>1</sub>	b <sub>2</sub>	l <sub>2</sub>
	Max. <sup>20)</sup>								
n = 1450 rpm	[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	-	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

20) Continuous duty S1

**Pump set dimensions (variable speed version)**

**Fig. 3:** Dimensions of screw-ended pump set with PumpDrive 2 Eco, size < 032-032-100

**Fig. 4:** Dimensions of flanged pump set with PumpDrive 2 Eco, size ≥ 032-032-100

 Dimensions of pump set with PumpDrive 2 Eco (variable speed version),  $n = 2900$  rpm

Etaline L PumpDrive 2 Eco	$P_2$	$P_N$	DN	Connection	a	$b_1$	$b_2$	h	$l_3$	$p^{21)}$	z
	Max. <sup>22)</sup>										
n = 2900 rpm	[kW]	[kW]	[mm]	Thread	[mm]						
025-025-063	0,30	0,25	25	G 1 1/2	30	123	68	180	368	224	171
025-025-070.1	0,14	0,12	25	G 1 1/2	24	123	75	180	368	224	171
025-025-070.1	0,21	0,18	25	G 1 1/2	24	123	75	180	368	224	171
025-025-071	0,30	0,25	25	G 1 1/2	30	123	68	180	368	224	171
025-025-080	0,30	0,25	25	G 1 1/2	30	123	68	180	368	224	171
025-025-080	0,44	0,37	25	G 1 1/2	30	123	68	180	368	224	171
025-025-085	0,21	0,18	25	G 1 1/2	35	85	105	200	376	215	171
025-025-105	0,44	0,37	25	G 1 1/2	35	85	105	200	376	215	171
032-032-063	0,30	0,25	32	G 2	30	123	68	180	364	224	171
032-032-071	0,30	0,25	32	G 2	30	123	68	180	364	224	171
032-032-080	0,30	0,25	32	G 2	30	123	68	180	364	224	171
032-032-080	0,44	0,37	32	G 2	30	123	68	180	364	224	171
032-032-100	0,30	0,25	32	-	70	85	105	220	368	215	171
032-032-105	0,66	0,55	32	-	70	88	105	260	365	215	171

21) For angular position (12°) dimension p is greater

22) Continuous duty S1

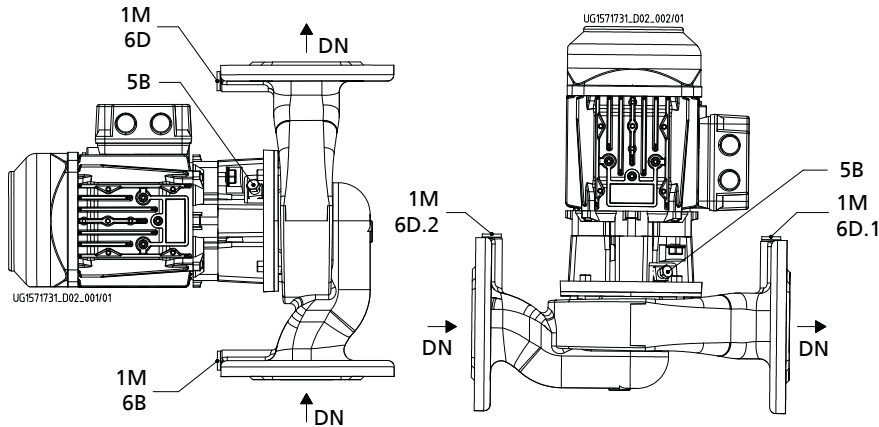


Etaline L PumpDrive 2 Eco	$P_2$	$P_N$	DN	Connection	a	$b_1$	$b_2$	h	$l_3$	$p^{21)}$	z
	Max. <sup>22)</sup>										
n = 2900 rpm	[kW]	[kW]	[mm]	Thread	[mm]						
032-032-125	0,90	0,75	32	-	70	88	85	260	365	223	171
040-040-060	0,30	0,25	40	-	70	123	75	250	367	224	171
040-040-060	0,44	0,37	40	-	70	123	75	250	367	224	171
040-040-090	0,66	0,55	40	-	75	85	105	250	368	215	171
040-040-090	0,90	0,75	40	-	75	85	85	250	368	223	171
040-040-100	0,90	0,75	40	-	75	85	85	250	368	223	171
050-050-090	0,66	0,55	50	-	85	86	105	280	355	215	171
050-050-100	0,90	0,75	50	-	85	86	85	280	355	223	171
050-050-110	1,30	1,10	50	-	85	94	85	280	362	232	171
050-050-110	2,20	1,80	50	-	85	94	105	280	389	245	171
050-050-125	2,20	1,80	50	-	85	94	105	280	389	245	171
065-065-100	1,30	1,10	65	-	95	105	105	340	370	232	171
065-065-115	2,20	1,80	65	-	95	105	105	340	397	245	171
065-065-125	3,40	3,00	65	-	95	105	118	340	397	246	186
080-080-105	1,30	1,10	80	-	105	130	105	360	377	232	171
080-080-115	2,20	1,80	80	-	105	130	105	360	404	245	171
080-080-125	3,40	3,00	80	-	105	130	118	360	404	246	186

Dimensions of pump set with PumpDrive 2 Eco (variable speed version), n = 1450 rpm

Etaline L PumpDrive 2 Eco	$P_2$	$P_N$	DN	Connection	a	$b_1$	$b_2$	h	$l_3$	p	z
	Max. <sup>23)</sup>										
n = 1450 rpm	[kW]	[kW]	[mm]	Thread	[mm]						
025-025-080	0,14	0,12	25	G 1 1/2	30	123	68	180	368	224	171
032-032-080	0,14	0,12	32	G 2	30	123	68	180	364	215	171
032-032-125	0,14	0,12	32	-	70	88	105	260	365	215	171
040-040-100	0,14	0,12	40	-	75	85	105	250	368	215	171
050-050-100	0,14	0,12	50	-	85	86	105	280	355	215	171
050-050-125	0,21	0,18	50	-	85	94	105	280	362	215	171
050-050-160	0,90	0,75	50	-	87	155	105	340	370	232	171
065-065-125	0,44	0,37	65	-	95	105	105	340	370	215	171
080-080-125	0,44	0,37	80	-	105	130	105	360	377	215	171

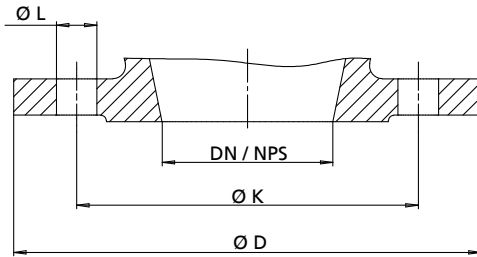
23) Continuous duty S1

**Connections**

**Fig. 5: Connections**
**Connections**

Connection	Description	Configuration	Position
1M	Connection for pressure gauge	Drilled and closed	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
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

**Flange design**

**Fig. 6:** 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 <sup>24)</sup>	Adapter flange PN6/ PN10
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	-	-	-	-	-

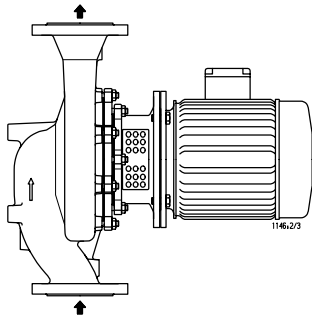
**Flange design by materials**

Material variant	Standard	Nominal size	Pressure class
GG, GP, BB, BP	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

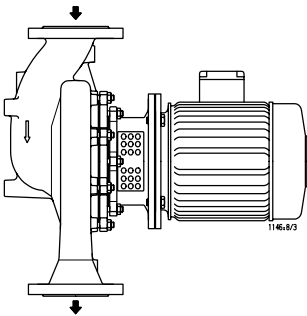
24) For sizes &lt; 032-032-100 only

## Installation types

### Horizontal installation

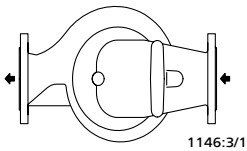
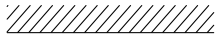


**Fig. 7:** Horizontal installation, direction of flow from bottom to top



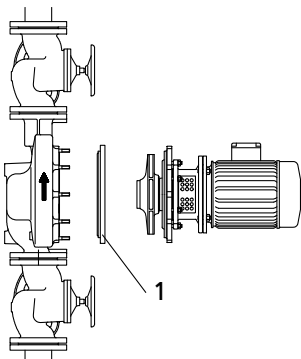
**Fig. 8:** Horizontal installation, direction of flow from top to bottom

**i** 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.



**Fig. 9:** Horizontal installation (for example under the ceiling)

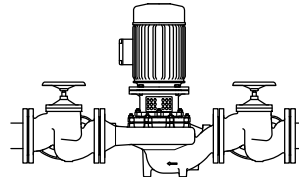
**i** The volute casing and/or back pull-out unit must be turned by 90° so that the terminal box remains in its current position on top.



**Fig. 10:** Horizontal installation with blind flange (1 = blind flange, accessories)

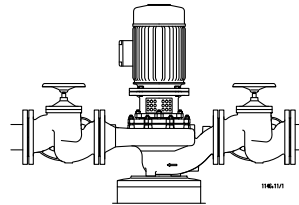
**i** If one of the pumps needs to be serviced, the pump chamber can be shut off by a blind flange so that the system remains operational.

### Vertical installation



**Fig. 11:** Vertical installation/fastening without pump foot

**i** Installed directly in the piping. Always anchor the pipelines in close proximity to the pump in this case.

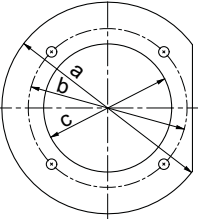


**Fig. 12:** Vertical installation/fastening with pump foot (accessories, available on request)

## Accessories

## Pump accessories

Overview of pump accessories

Component	Ø a / Ø b / Ø c	For size	Mat. No.	[kg]
	[mm]			
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		
		040-040-090		
	140 / 122 / 101,8	032-032-100	01734727	0,9
		040-040-100		
		050-050-090		
		050-050-100		
		050-050-110		
	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				
050-050-110				
050-050-125				
210 / 171,5 / 160,8	050-050-160	01734723	3,2	
210 / 196 / 126,5	065-065-100	01734724	2,6	
	065-065-115			
	065-065-125			
	080-080-105			
	080-080-115			
	080-080-125			
Pump foot		On request		

General assembly drawings

General assembly drawing with list of components

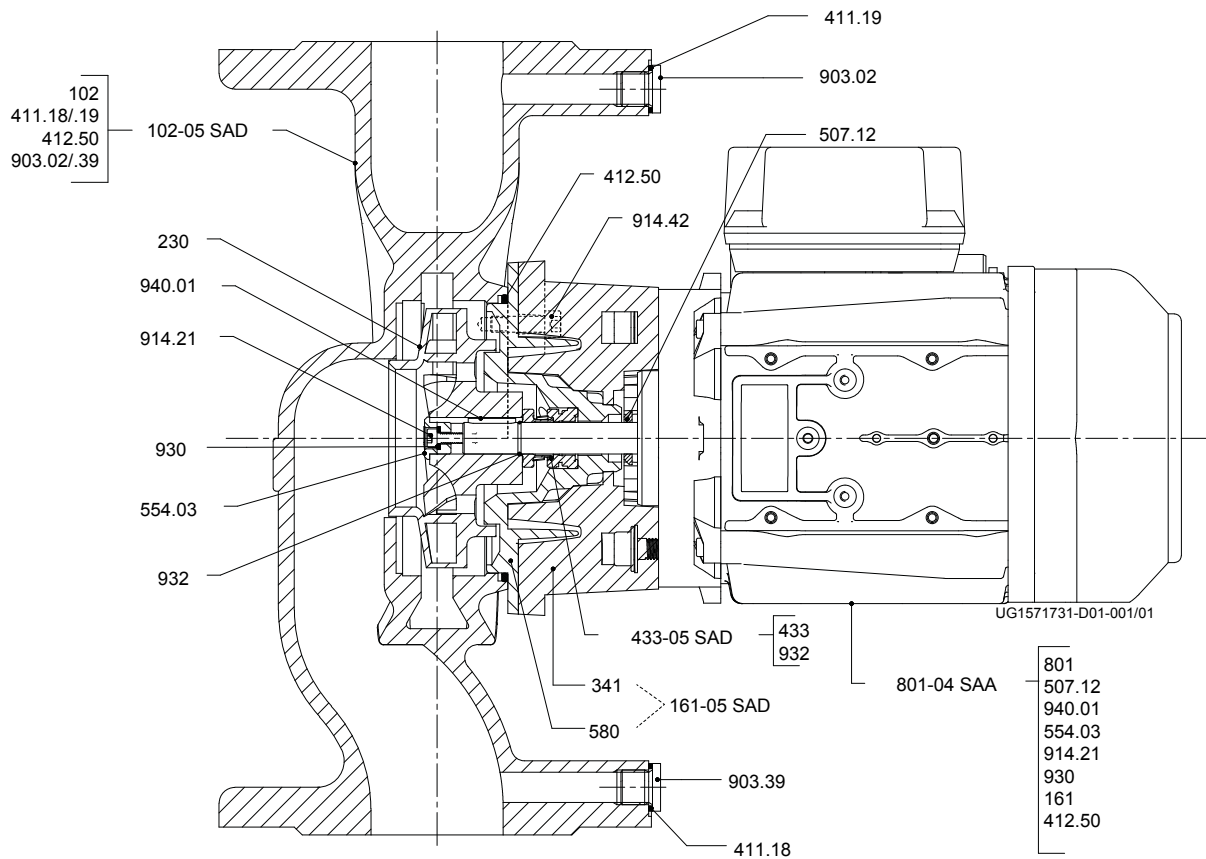


Fig. 13: General assembly drawing

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

Spare parts kits

Part No.	Description	Part No.	Description
102-05 SAD	Volute casing	102	Volute casing
		411.18/.19	Joint ring
		412.50	O-ring
		903.02/.39	Screw plug
161-05 SAD	Casing cover	341	Drive lantern
		580	Cap
230	Impeller	230	Impeller
433-05 SAD	Shaft seal	433	Mechanical seal
		932	Circlip
801-04 SAA	Motor	161	Casing cover
		412.50	O-ring
		507.12	Thrower
		554.03	Washer

Part No.	Description	Part No.	Description
801-04 SAA	Motor	801	Flanged motor
		914.21	Hexagon socket head cap screw
		930	Safety device
		940.01	Key

## Glossary

### Close-coupled design

Motor directly fitted to the pump via a flange or a drive lantern

### IE2

Efficiency class to IEC 60034-30: 2 = High Efficiency (IE = International Efficiency)

### IE3

Efficiency class to IEC 60034-30: 3 = Premium Efficiency (IE = International Efficiency)

### In-line design

A pump whose suction and discharge nozzle are arranged opposite each other and have the same nominal diameter.

### WRAS

Approved by all water suppliers in the UK (WRAS = Water Regulations Advisory Scheme)











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