ENGINEERING FLOW SOLUTIONS

HMS DeLium

DOUBLE SUCTION PUMPS

TECHNICAL CATALOGUE

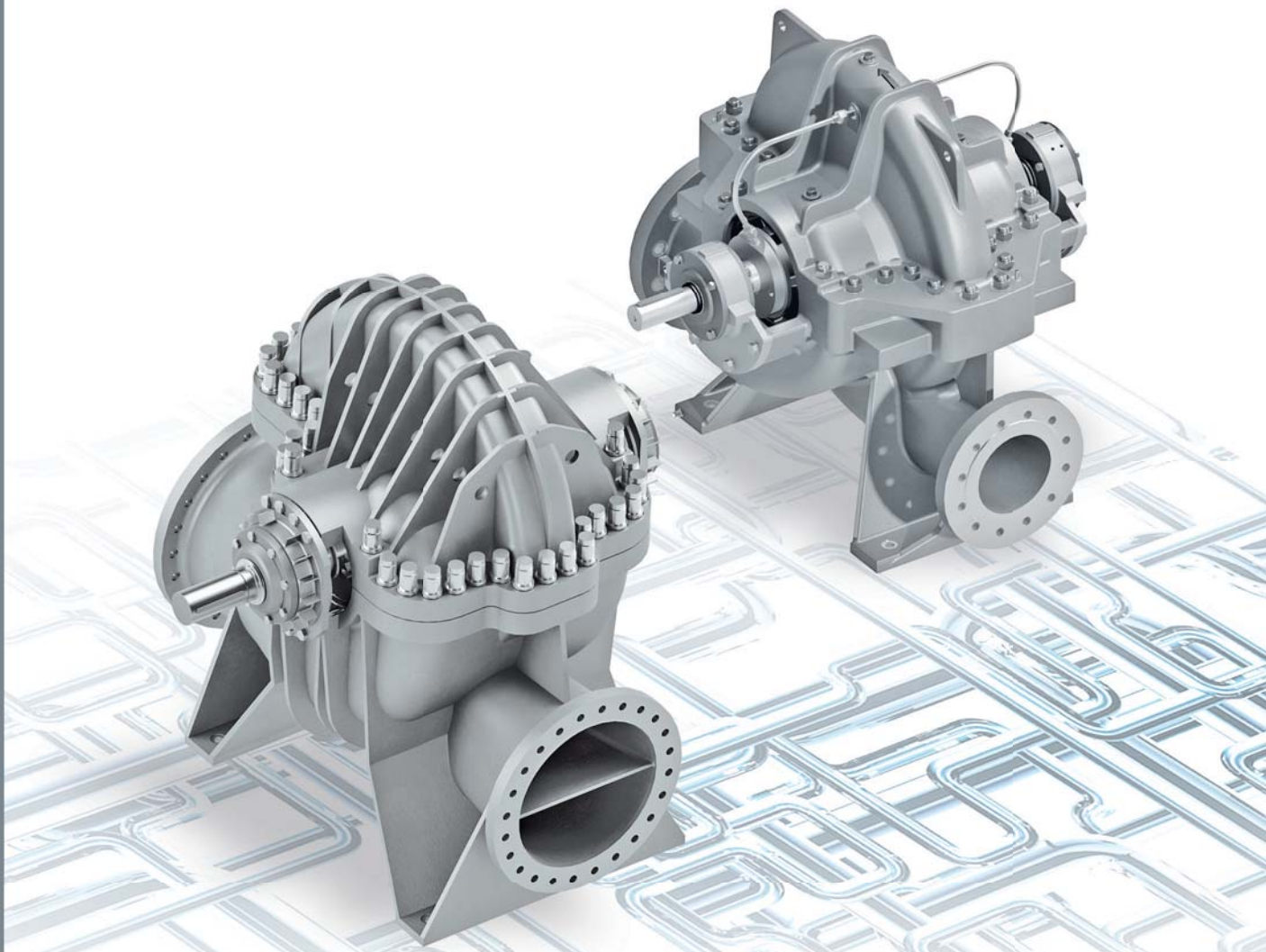


TABLE OF CONTENT

* Characteristics are given for pump range up to model D350-530. Characteristics for other models are available by request.

HMS DeLium
Double Suction Pumps

GENERAL DESCRIPTION

HMS DeLium is a new series of single-stage pumps with axially split volute casing and double-suction radial impeller. The pumps have been designed considering the latest requirements to energy consumption and reliability, for operation in severe conditions. Hydraulics of pumps is engineered using contemporary computer modeling methods.

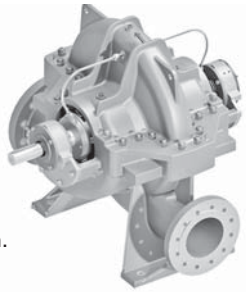
All parts, including precise casting of the pump casing and impellers, are manufactured and tested solely by HMS Livgidromash (HMS Group) – a leading pumps manufacturing company in Russia.

A wide model range (over 45 models) with at least two interchangeable impellers for one casing size enables to select the most suitable pump within 80 - 10,000 m³/h capacity range and within 5 - 200 m pressure head.

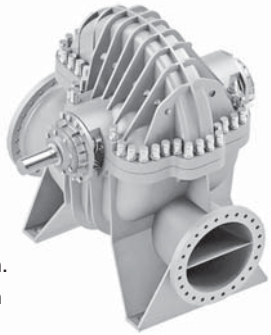
High degree of unification of the main parts for different pump models reduces significantly the cost of their maintenance. Vertical installation of pumps, as a standard option, is used in confined spaces where application of a similar horizontal pump is impossible (Fig. 1, 2, 3). Vertical installation also protects the motor in the event of accidental flooding the machinery room.

The HMS DeLium pumps can operate in parallel and with variable speed drives.

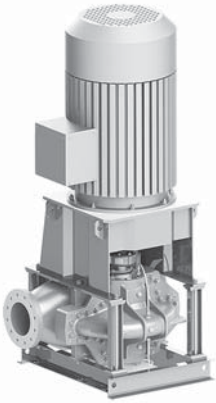
The pumps are designed for operation at ambient temperature from -60 °C to +60 °C.



HMS DeLium pumps
with capacity up to 3500 m³/h.
Fig.1. Horizontal installation



HMS DeLium pumps
with capacity over 3500 m³/h.
Fig. 2. Horizontal installation



HMS DeLium pumps
Fig. 3. Vertical installation

APPLICATION

- Water supply, treatment and heating systems
- HVAC systems
- Oil & Gas
- Nuclear & Thermal power
- Chemical industry
- Pulp & Paper
- General industrial processes
- Agriculture & Irrigation
- Firefighting
- Desalination
- Shipbuilding

PUMPED LIQUIDS

Water and similar liquids

Temperature..... +1…+120 °C
(up to 150 °C as option)

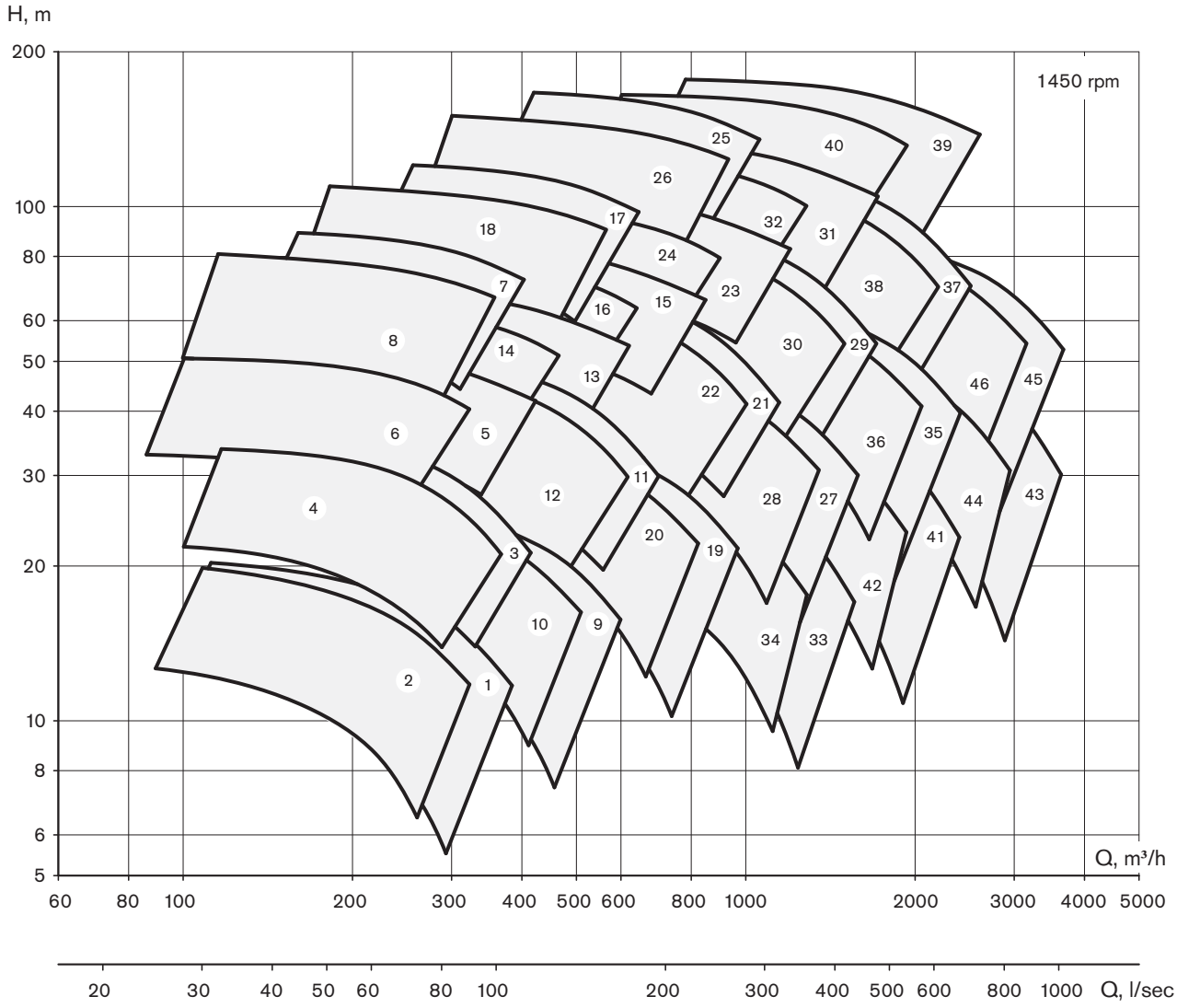
Oil and petroleum products

Temperature ..... +1…+105 °C
Density ..... 700...1050 kg/m³
Viscosity..... 100 cSt

Chemically active liquids

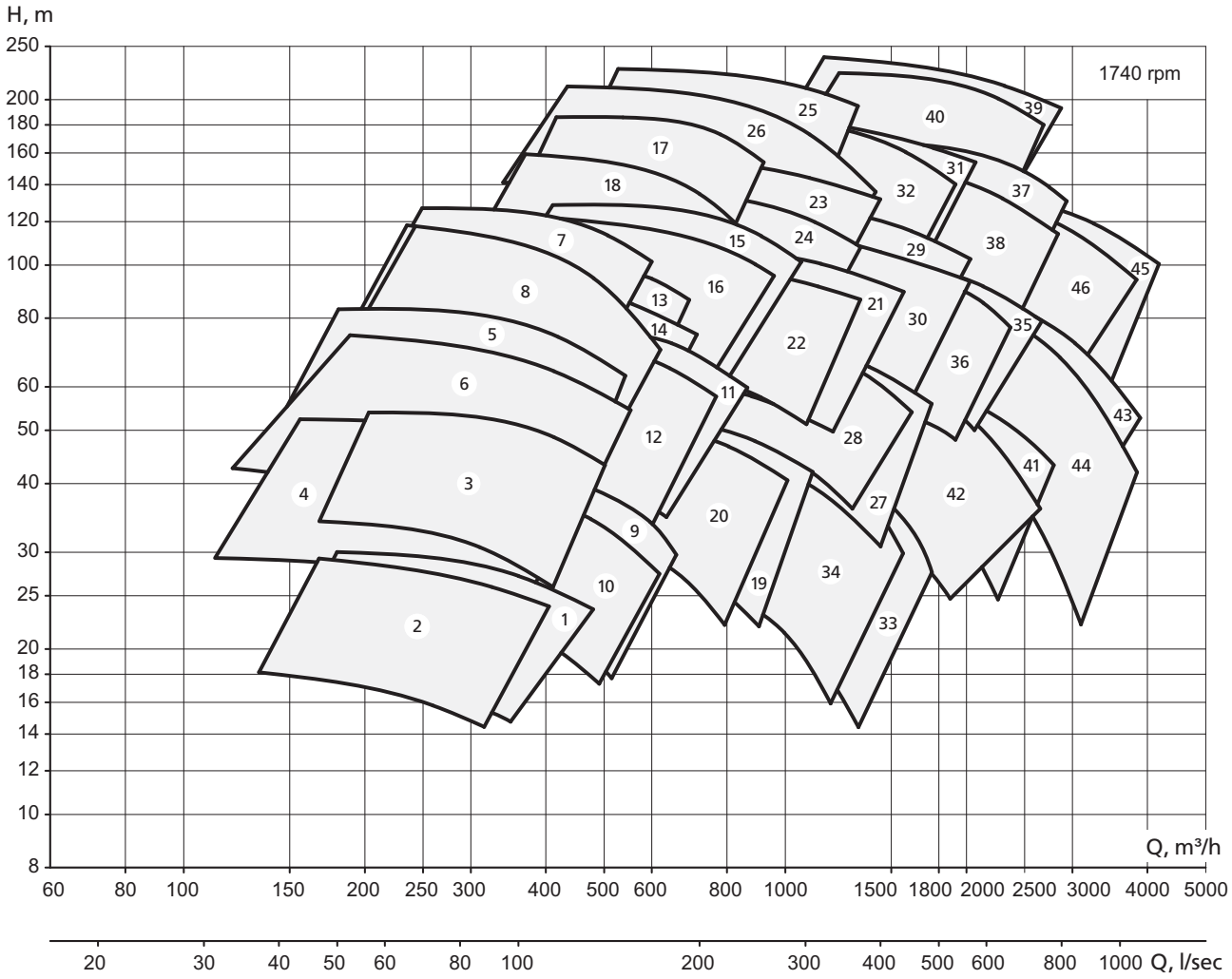
pH..... 1...11
Temperature ..... +1...+85 °C

PERFORMANCE RANGE
PUMPS WITH CAPACITY UP TO 3500 m³/h (50 Hz)



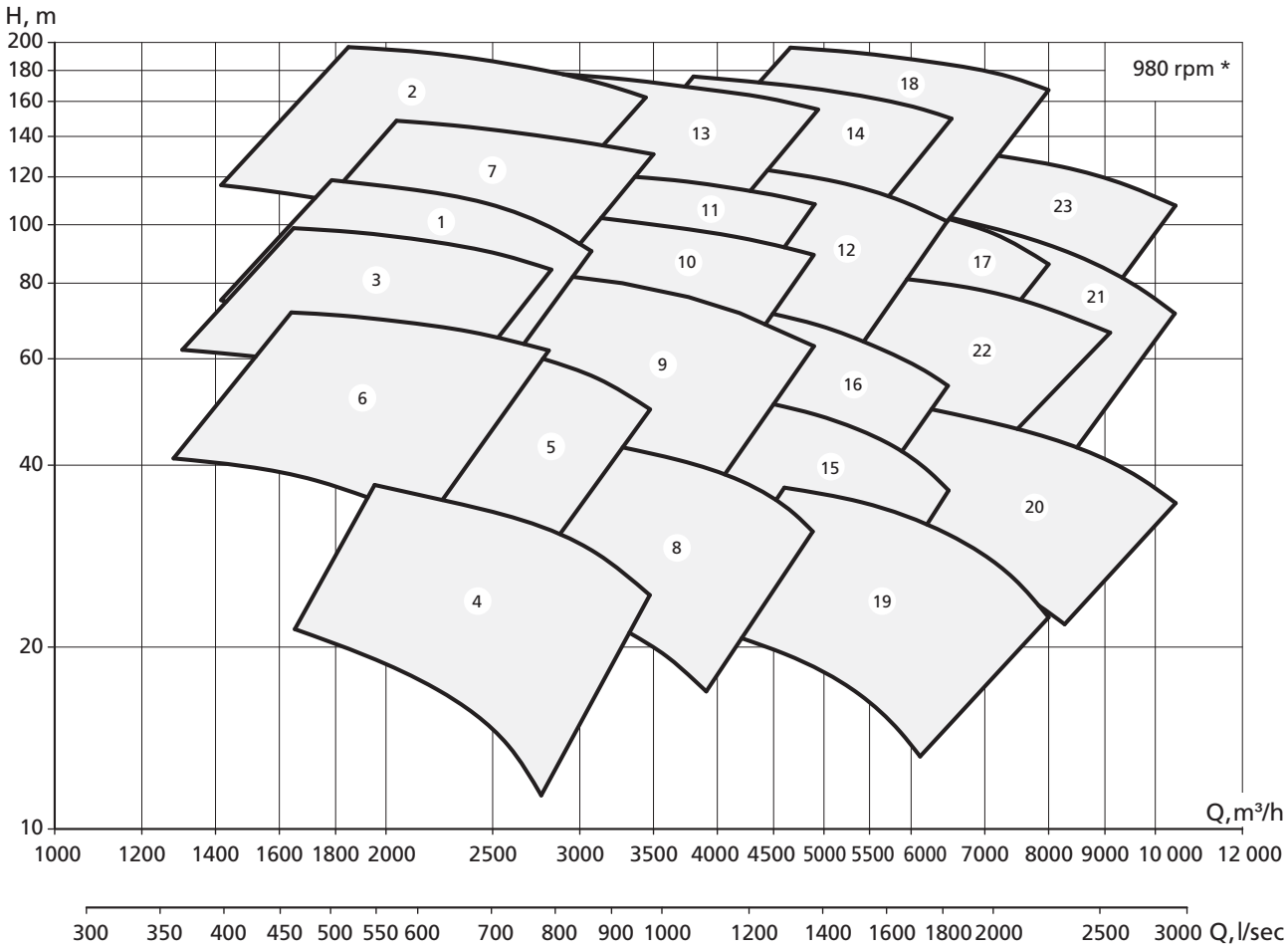
1 - D125-250A
2 - D125-250B
3 - D125-320A
4 - D125-320B
5 - D125-400A
6 - D125-400B
7 - D125-480A
8 - D125-480B
9 - D150-290A
10 - D150-290B
11 - D150-380A
12 - D150-380B
13 - D150-450A
14 - D150-450B
15 - D200-500A
16 - D200-500B
17 - D150-560A
18 - D150-560B
19 - D200-340A
20 - D200-340B
21 - D200-450A
22 - D200-450B
23 - D200-560A
24 - D200-560B
25 - D200-660A
26 - D200-660B
27 - D250-400A
28 - D250-400B
29 - D250-510A
30 - D250-510B
31 - D250-630A
32 - D250-630B
33 - D300-340A
34 - D300-340B
35 - D300-460A
36 - D300-460B
37 - D300-580A
38 - D300-580B
39 - D300-720A
40 - D300-720B
41 - D350-390A
42 - D350-390B
43 - D350-450A
44 - D350-450B
45 - D350-530A
46 - D350-530B

PERFORMANCE RANGE
PUMPS WITH CAPACITY UP TO 3500 m³/h (60 Hz)



1 - D125-250A
2 - D125-250B
3 - D125-320A
4 - D125-320B
5 - D125-400A
6 - D125-400B
7 - D125-480A
8 - D125-480B
9 - D150-290A
10 - D150-290B
11 - D150-380A
12 - D150-380B
13 - D150-450A
14 - D150-450B
15 - D200-500A
16 - D200-500B
17 - D150-560A
18 - D150-560B
19 - D200-340A
20 - D200-340B
21 - D200-450A
22 - D200-450B
23 - D200-560A
24 - D200-560B
25 - D200-660A
26 - D200-660B
27 - D250-400A
28 - D250-400B
29 - D250-510A
30 - D250-510B
31 - D250-630A
32 - D250-630B
33 - D300-340A
34 - D300-340B
35 - D300-460A
36 - D300-460B
37 - D300-580A
38 - D300-580B
39 - D300-720A
40 - D300-720B
41 - D350-390A
42 - D350-390B
43 - D350-450A
44 - D350-450B
45 - D350-530A
46 - D350-530B

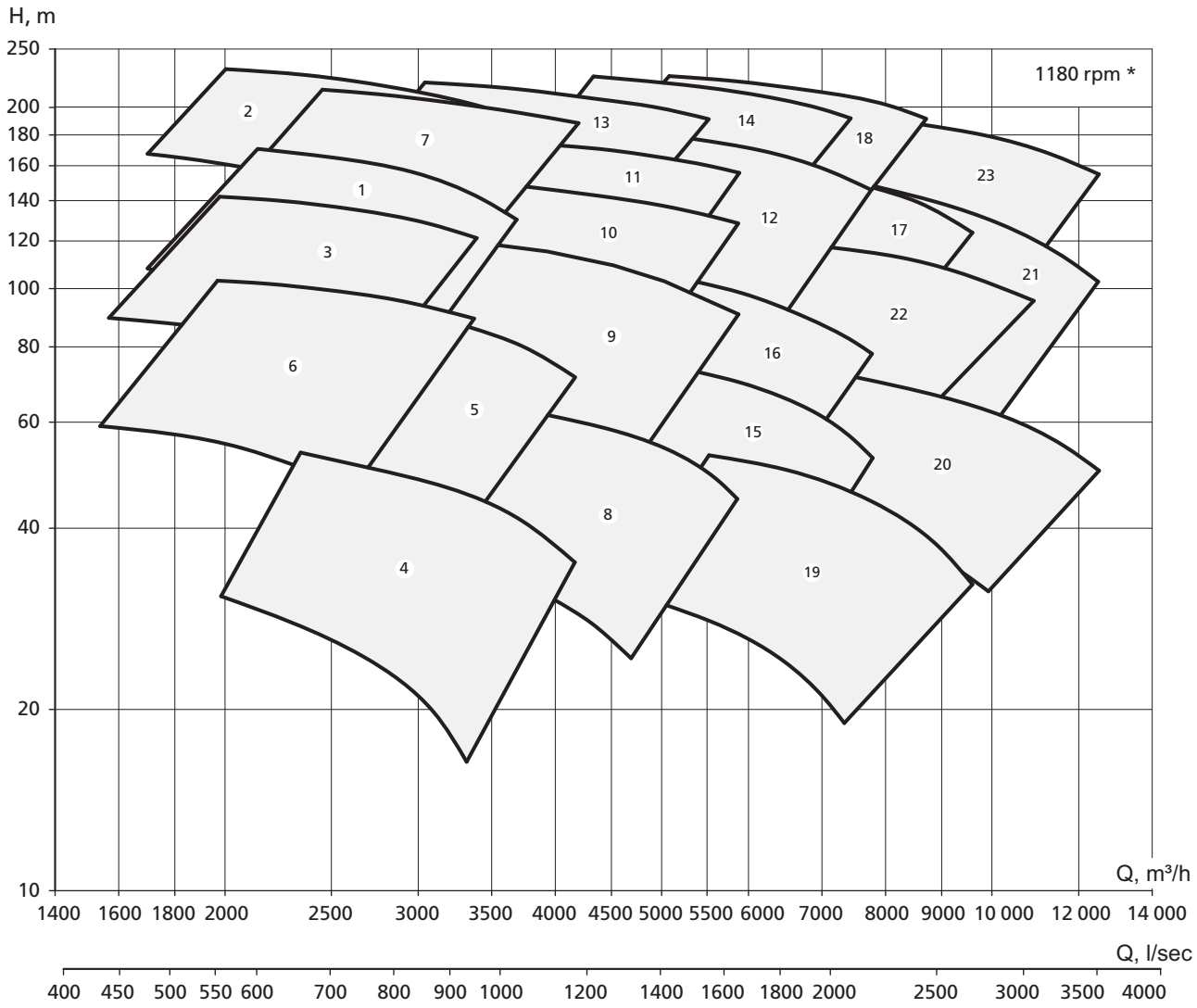
PERFORMANCE RANGE
PUMPS WITH CAPACITY OVER 3500 m³/h (50 Hz)



* except for some models

1 - D350-580 (1485 rpm)
2 - D350-725 (1485 rpm)
3 - D350-800
4 - D400-520
5 - D400-660
6 - D400-700
7 - D400-990
8 - D500-580
9 - D500-735
10 - D500-825
11 - D500-875A
12 - D500-875B
13 - D500-1050
14 - D500-1070
15 - D600-635
16 - D600-720
17 - D600-870
18 - D600-1135
19 - D700-700 (740 rpm)
20 - D700-780 (740 rpm)
21 - D700-850
22 - D700-1000A (740 rpm)
23 - D700-1000B

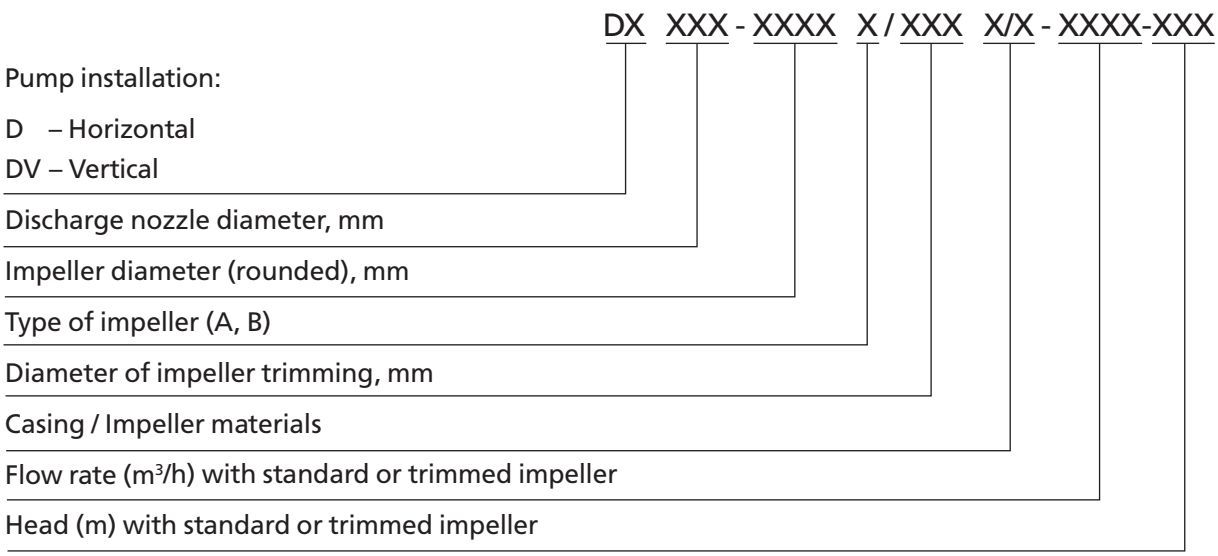
PERFORMANCE RANGE
PUMPS WITH CAPACITY OVER 3500 m³/h (60 Hz)



* except for some models

1 - 350-580 (1740 rpm)
2 - 350-725 (1740 rpm)
3 - 350-800
4 - 400-520
5 - 400-660
6 - 400-700
7 - 400-990
8 - 500-580
9 - 500-735
10 - 500-825
11 - 500-875A
12 - 500-875B
13 - 500-1050
14 - 500-1070
15 - 600-635
16 - 600-720
17 - 600-870
18 - 600-1135
19 - 700-700 (880 rpm)
20 - 700-780 (880 rpm)
21 - 700-850
22 - 700-1000A (880 rpm)
23 - 700-1000B

SERIES DESIGNATION

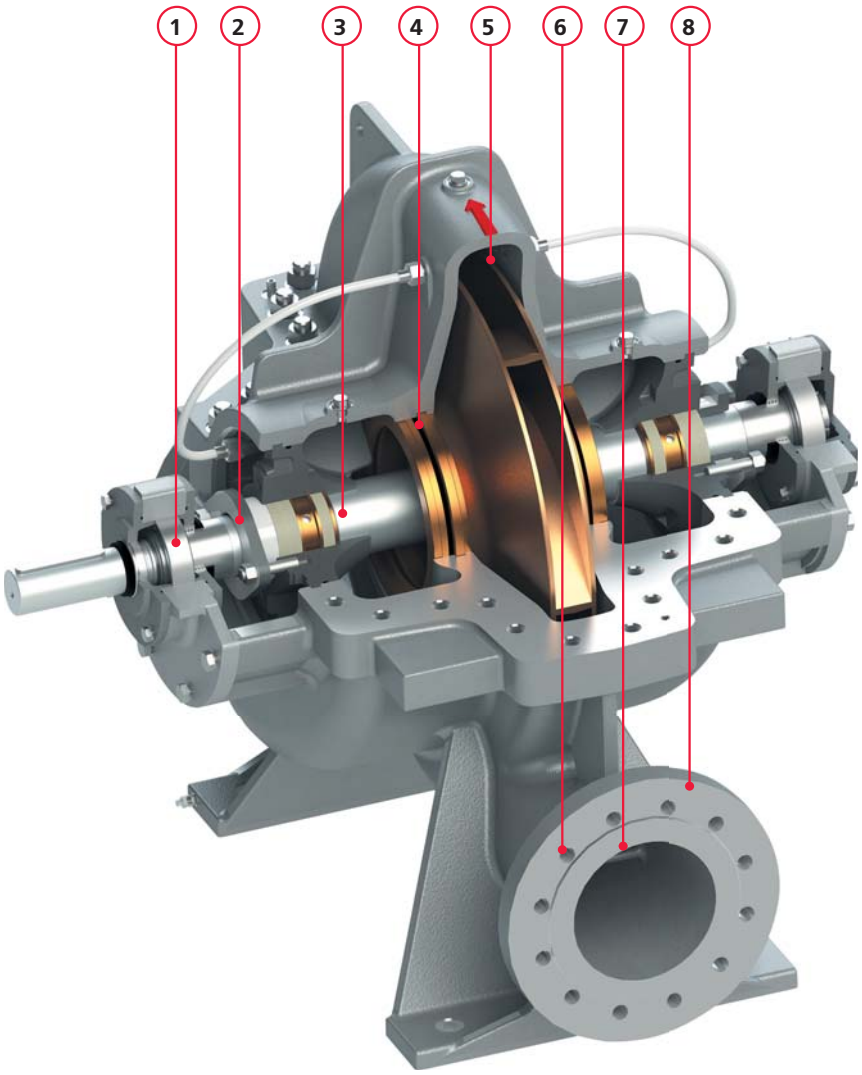


MATERIAL OPTIONS

Material combinations*	Volute casing	Impeller	Casing wear ring	Impeller wear ring (optional)	Shaft
G / G	JL 1040	JL 1040	JL 1040	JL 1040	1.4028
G / B	JL 1040	Bronze	Bronze	Bronze	
SC / B	JS 1030	Bronze	Bronze	Bronze	
S / B	GX10CrNi18-8	Bronze	Bronze	Bronze	
CS / CS	1.1120/1.1133	1.1120/1.1133	1.1120/1.1133	1.1120/1.1133	
S / S	GX10CrNi18-8	GX10CrNi18-8	X20CrNi72	X20CrNi72	
SC / C	JS 1030	Duplex/Super Duplex	Duplex/Super Duplex	Duplex/Super Duplex	Duplex/ Super Duplex
C / C	Duplex/Super Duplex	Duplex/Super Duplex	Duplex/Super Duplex	Duplex/Super Duplex	

* abbreviations for casing and impeller materials

DESIGN FEATURES



1. Standard or heavy duty bearings with reduced distance between
2. Gland seal or single/double mechanical seal
3. Shaft is completely isolated from the pumped liquid
4. Version with replaceable impeller's wearing rings
5. New hydraulics for better performance
6. Inline-type suction & discharge nozzles
7. Double volute casing for low radial load
8. DIN, ANSI, ISO design flanges

The casing cover is sealed by a liquid sealant.

BEARINGS

Bearing service life is over 100 000 hours

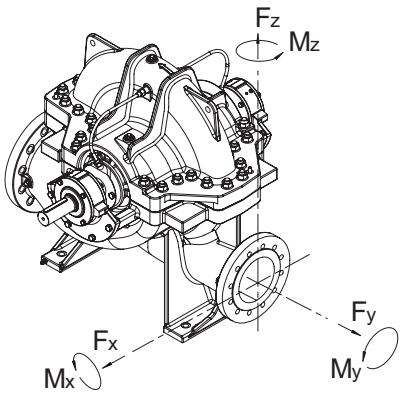
Lubrication options:

- grease
- oil bath lubrication including version with oil cooling

SHAFT SEAL

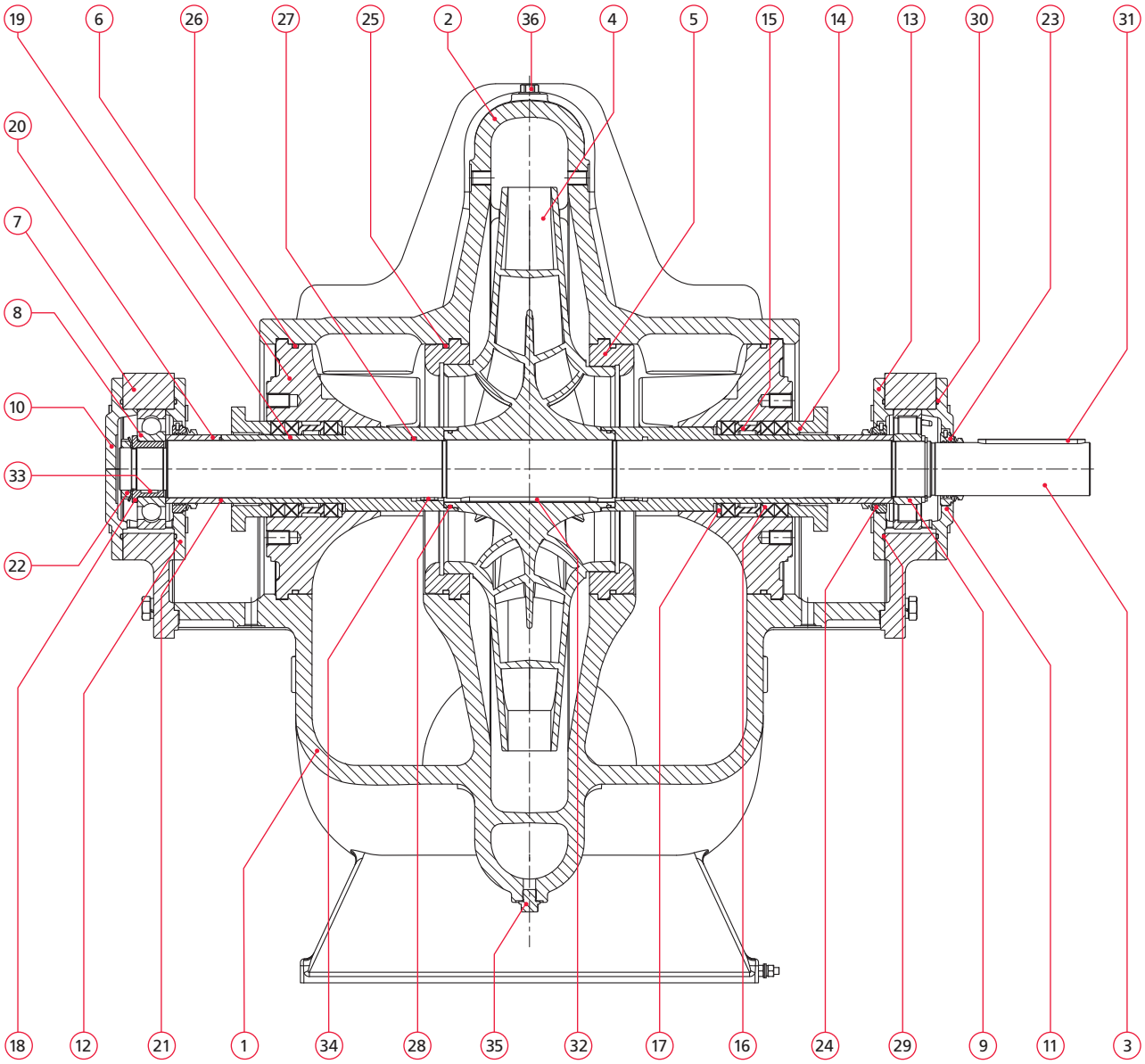
- Stuffing box
- Single-acting, unbalanced mechanical seal for operating pressure < 16 bar
- Balanced mechanical seal for operating pressure > 16 bar
- Double-acting mechanical seal of a cartridge type

FLANGES ADMISSIBLE LOAD



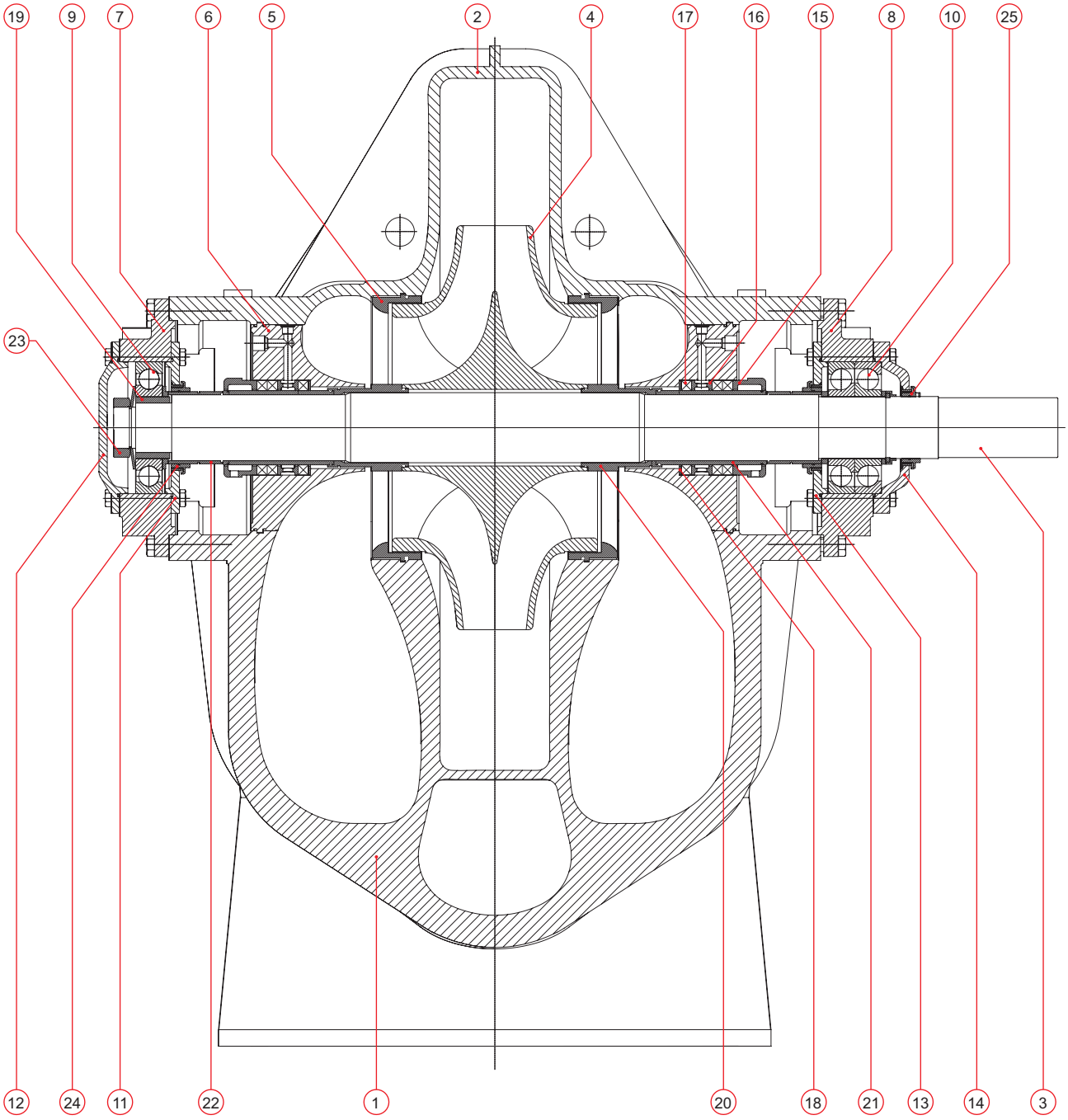
	Admissible load by axis, N Fx, Fy, Fz		Admissible force moments, N∗m Mx, My, Mz	
	Cast Iron	Ductile cast iron, Steel, Duplex Steel	Cast Iron	Ductile cast iron, Steel, Duplex Steel
D125-250	2000	2800	1500	2100
D125-320				
D125-400				
D125-480				
D150-290	2500	3500	2000	2800
D150-380				
D150-450				
D150-560				
D200-340	4000	5600	2750	3850
D200-450				
D200-500				
D200-560				
D200-660				
D250-400				
D250-510				
D250-630				
D300-340			3000	4200
D300-460				
D300-580				
D300-720				
D350-390	5000	7000		
D350-450				
D350-530				
D350-580	5000	5900	3300	4600
D350-725				
D400-520	6900	9700	3800	5300
D400-660				
D400-700				
D400-800				
D400-990				
D500-580	8800	12300	4900	6900
D500-735				
D500-825				
D500-1050				
D600-635				
D600-720				
D500-875	10700	15000	6000	8400
D500-1070				
D600-870				
D600-1135				
D700-850	12600	17600	7100	9900
D700-1000				

CROSS–SECTION DRAWING
PUMPS WITH CAPACITY UP TO 3500 m³/h
HORIZONTAL INSTALLATION

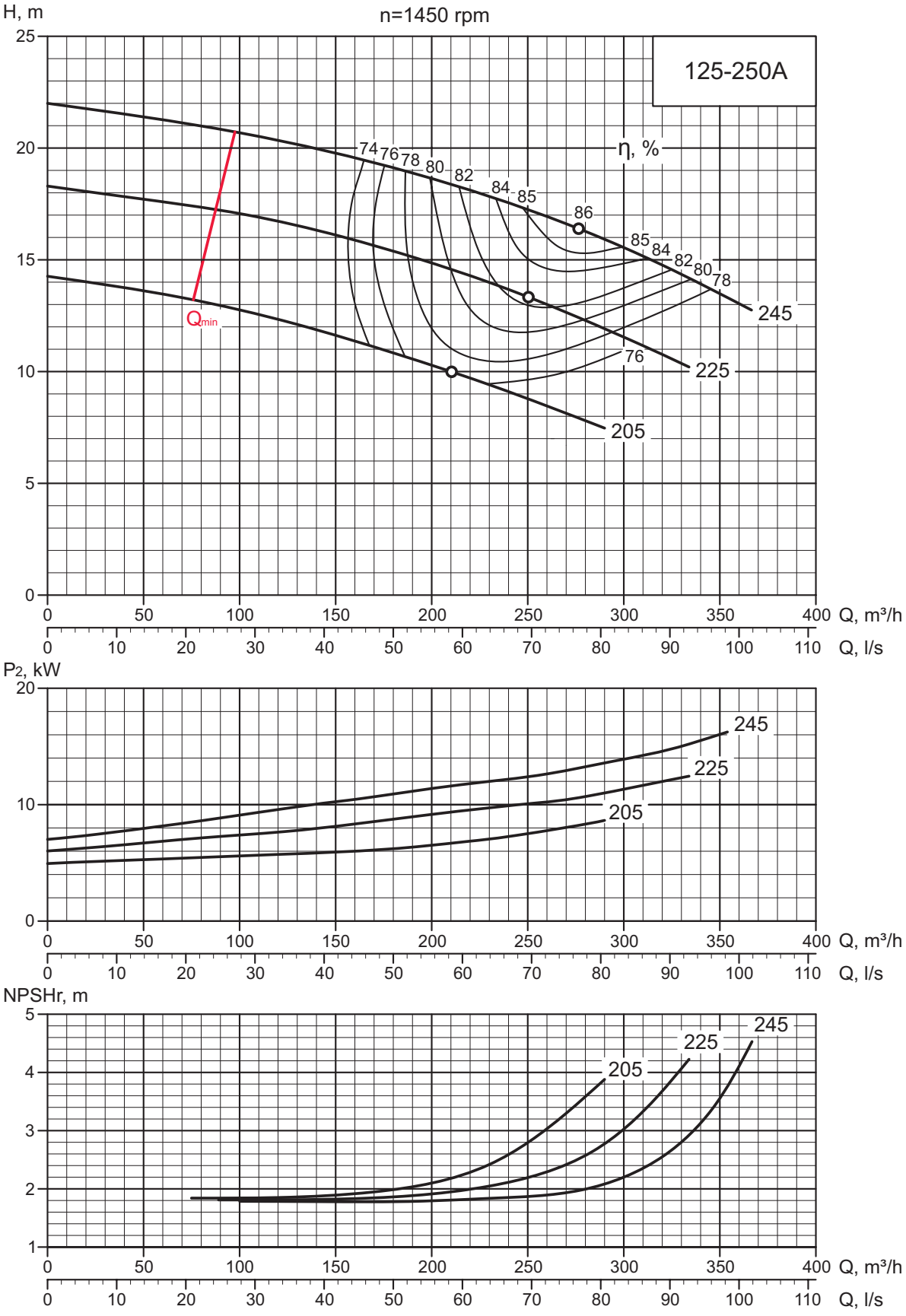


1. Casing
2. Casing cover
3. Shaft
4. Impeller
5. Impeller groove (gap) seal
6. Seal casing
7. Bearings casing
8. Ball bearing
9. Roller bearing
10-13. Bearing casing cover
14. Gland seal casing cover
15. Gland bushing
16. Gland seal stuffing
17. Gland ring
18. Bushing
19-20. Shaft bushing
21. O - ring
22. Clamping nut
23-24. Labyrinth seal
25-30. O - ring
31-34. Pin
35-36. Plug

CROSS-SECTION DRAWING
PUMPS WITH CAPACITY OVER 3500 m³/h
HORIZONTAL INSTALLATION

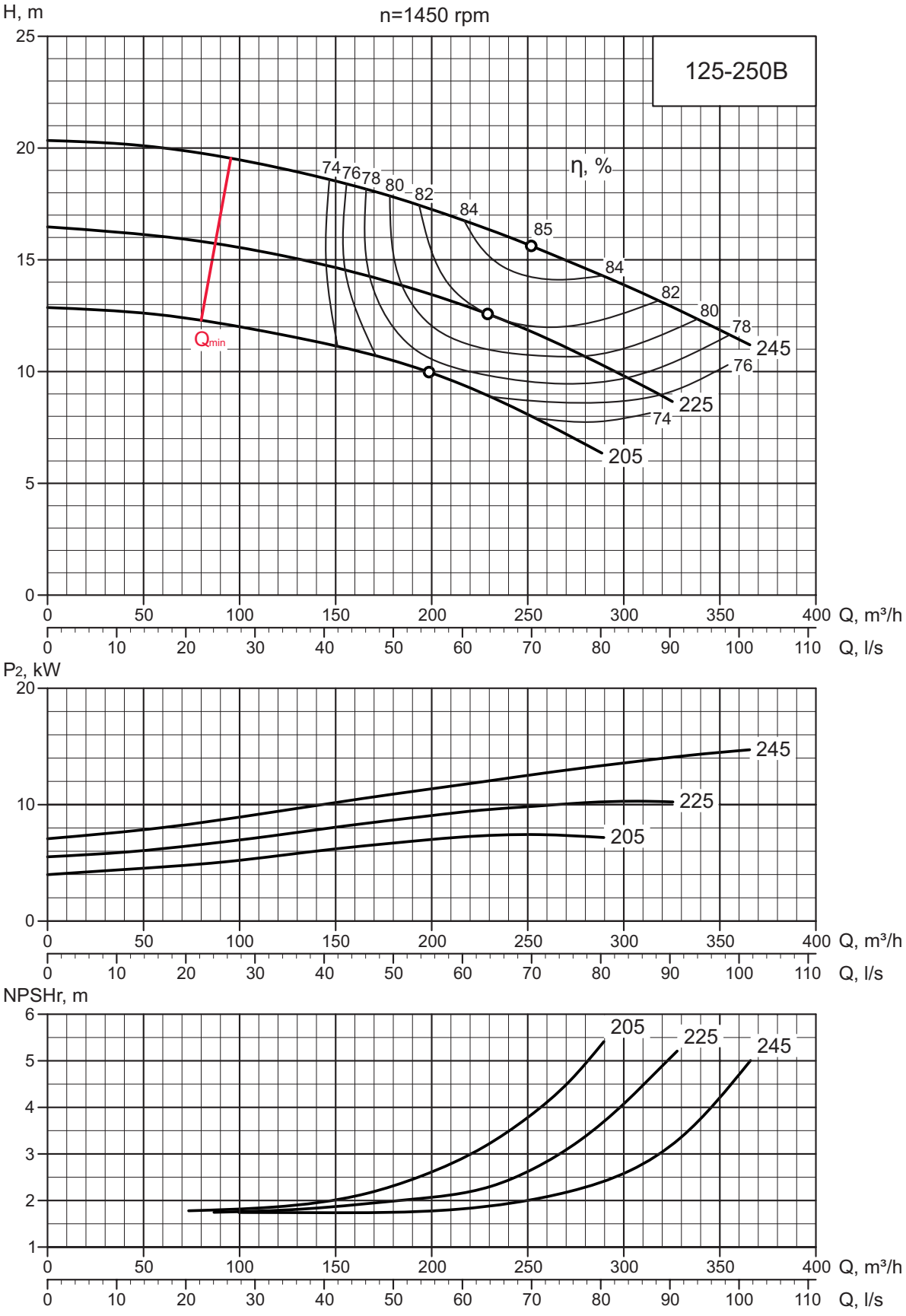


1. Casing
2. Casing Cover
3. Shaft
4. Impeller
5. Impeller groove (gap) seal
6. Seal casing
7-8. Bearing casing
9. Roller bearing
10. Radial-thrust bearing
11-14. Bearing casing cover
15. Gland seal casing cover
16. Gland bushing
17. Gland seal stuffing
18. Gland ring
19. Bushing
20-22. Shaft bushing
23. Clamping nut
24-25. Labyrinth seal



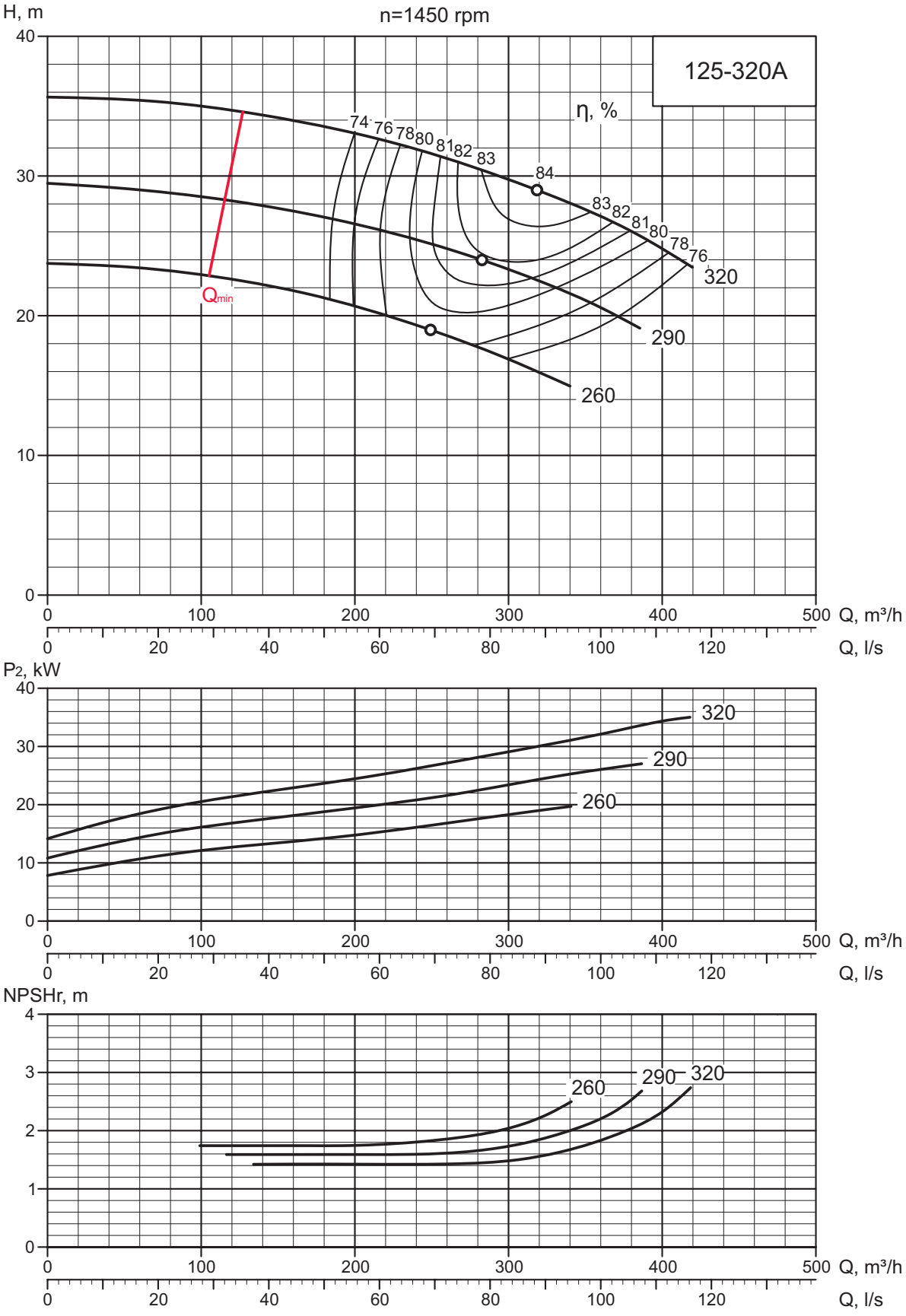
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



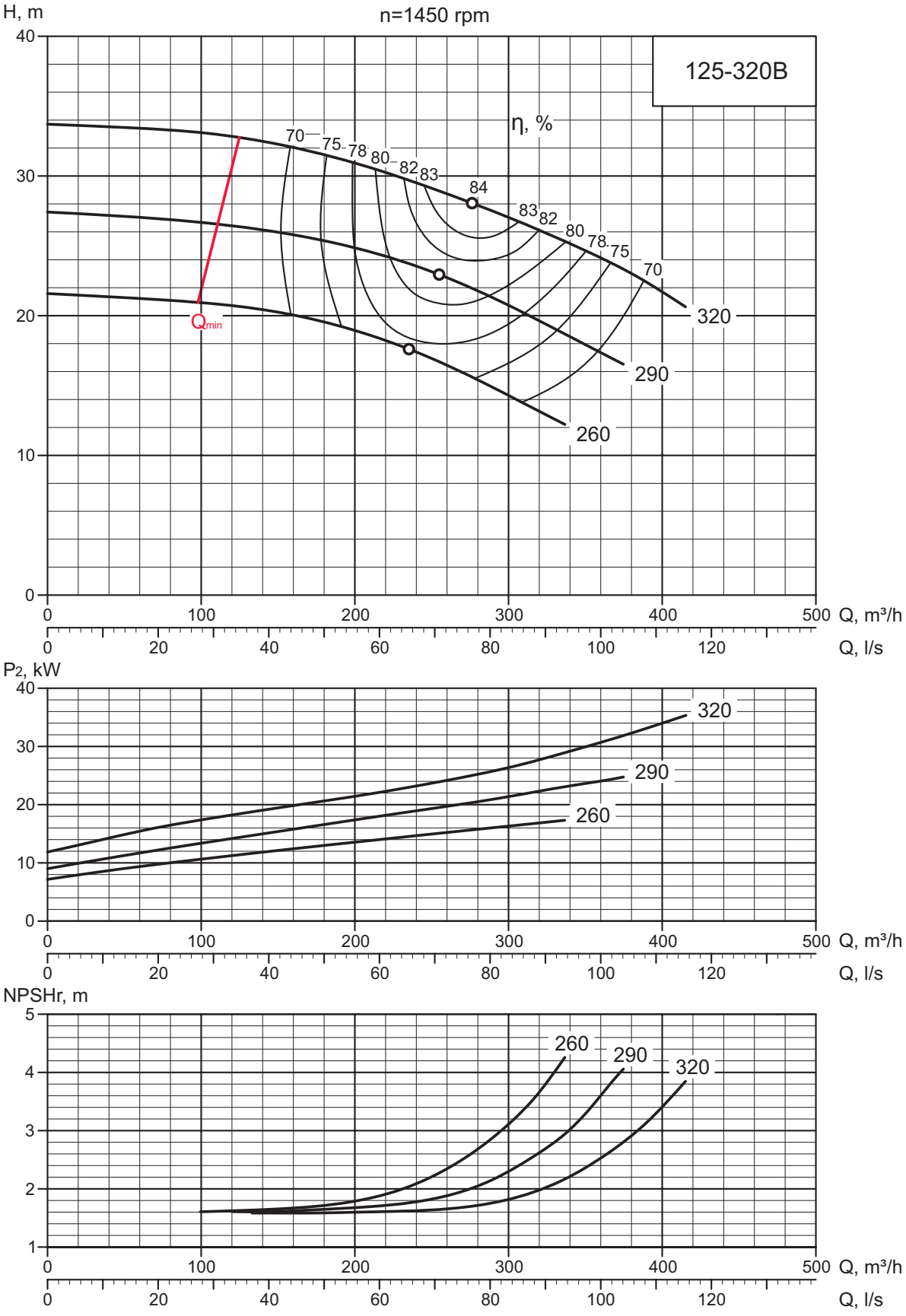
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



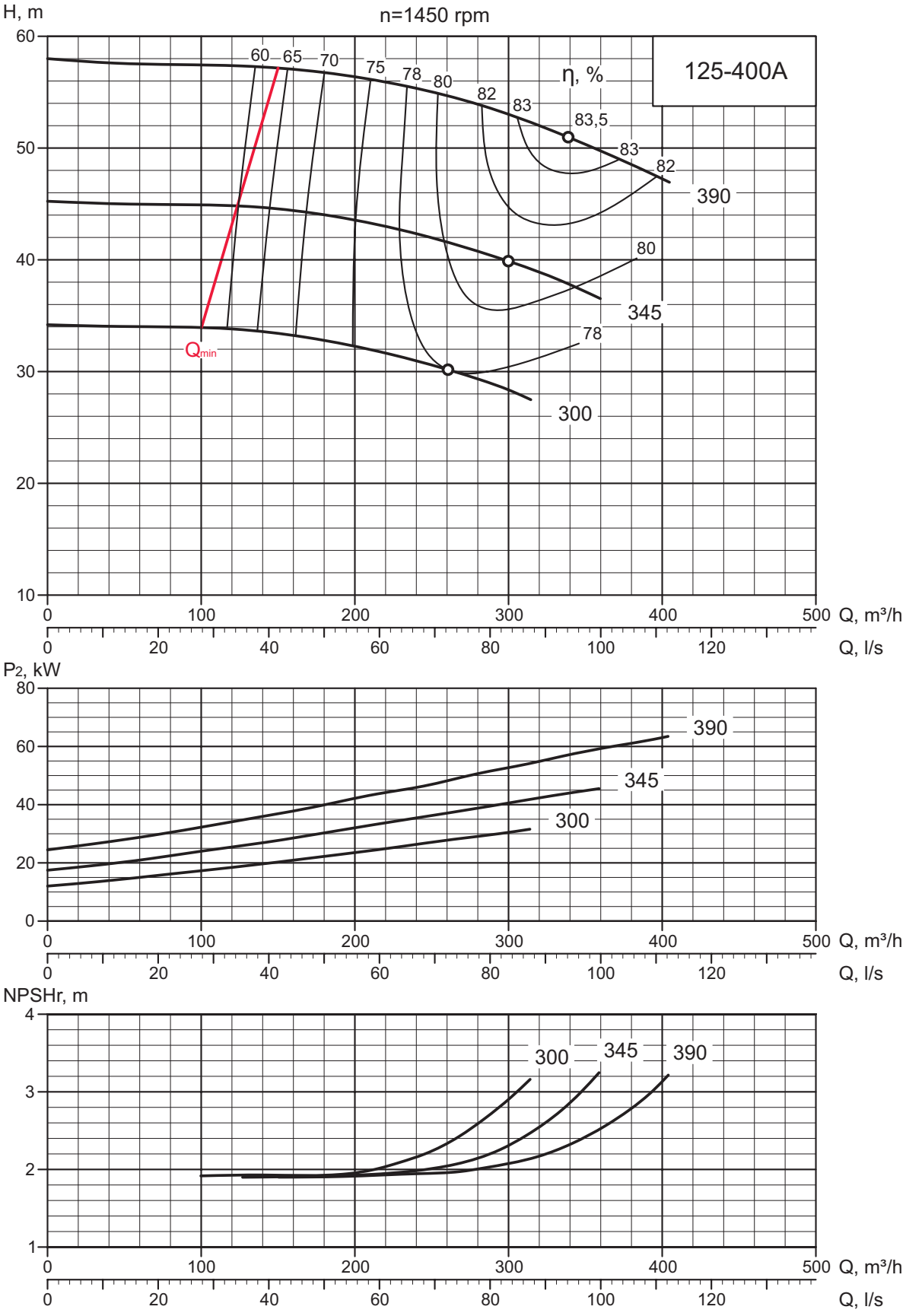
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



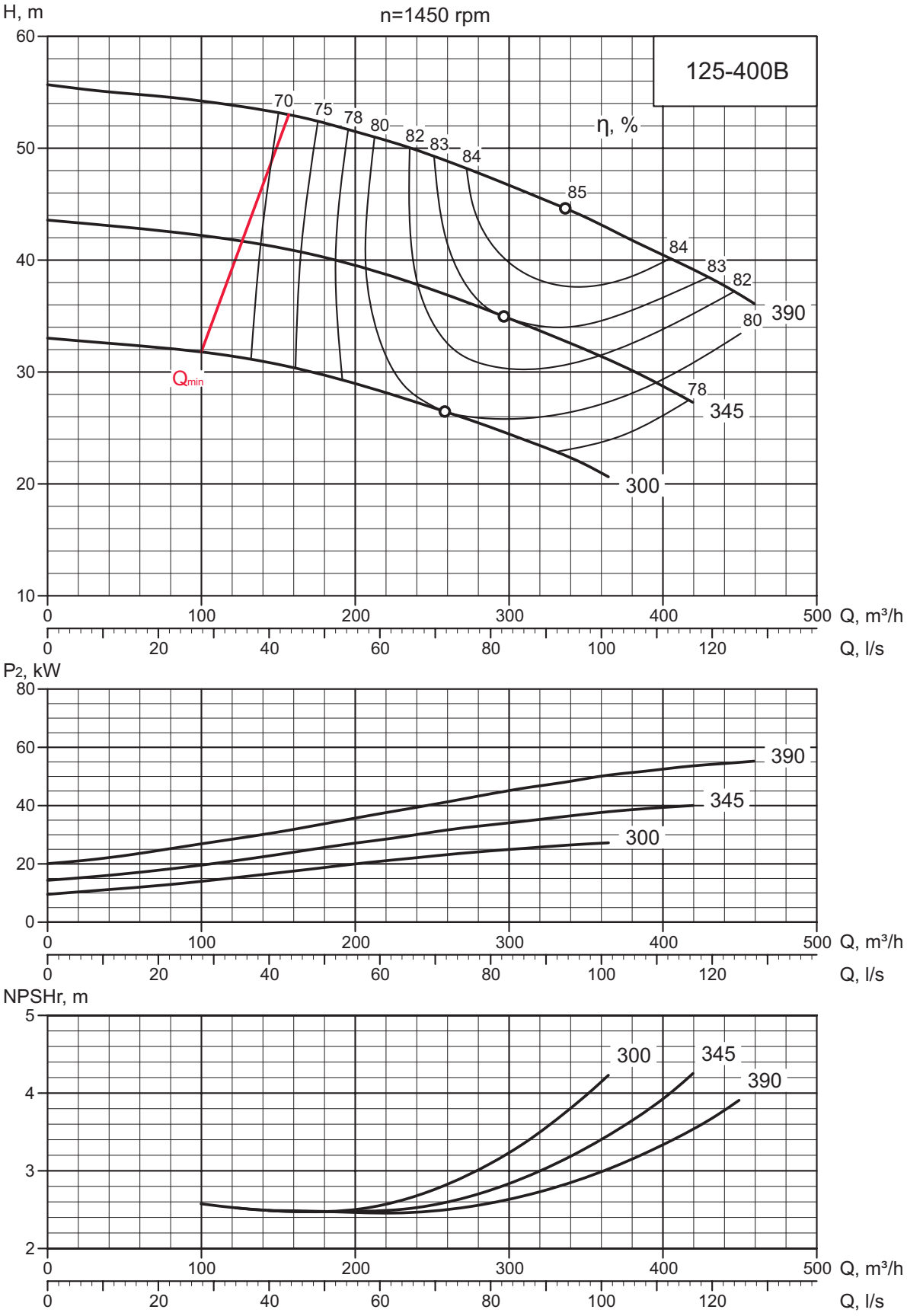
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



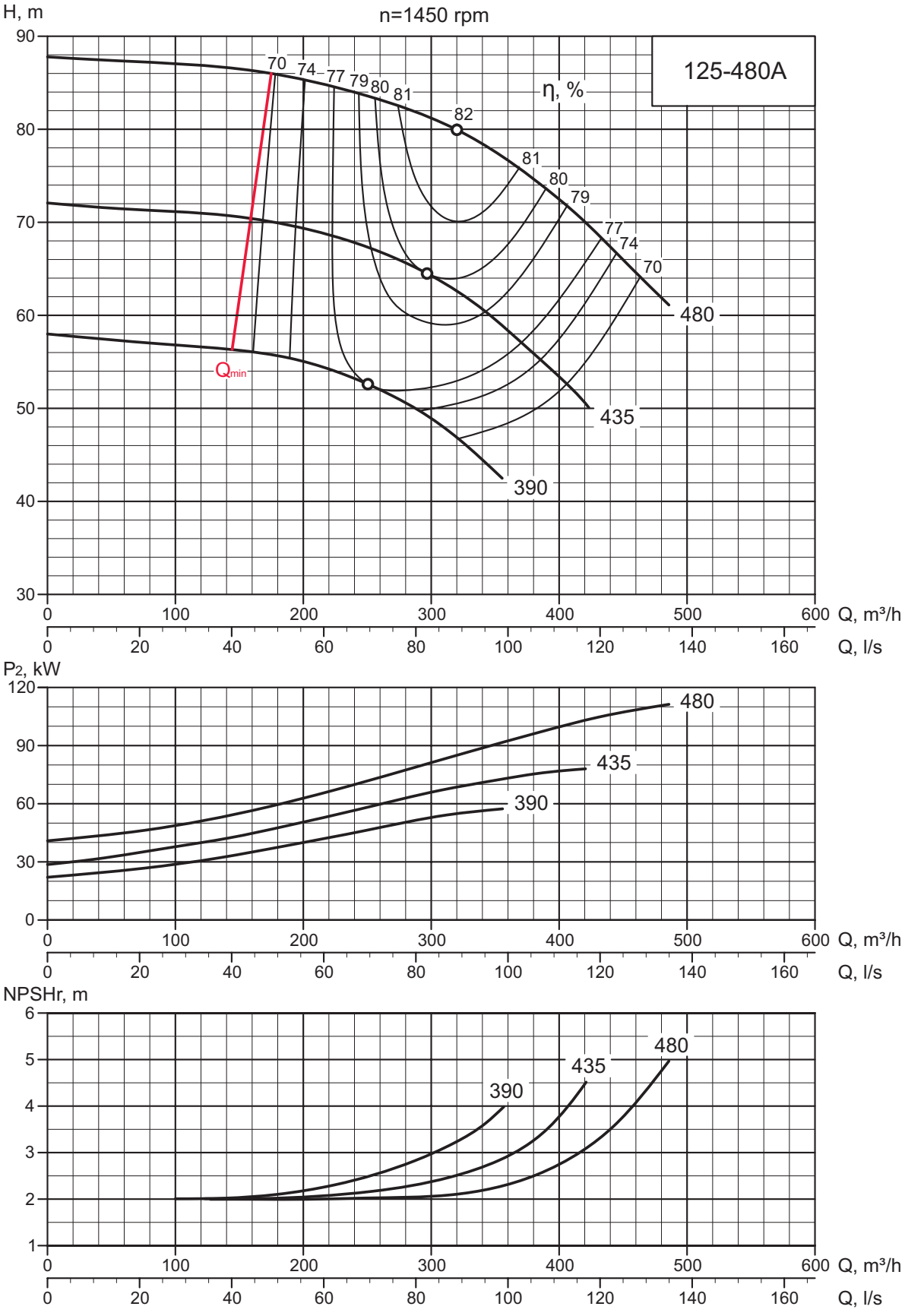
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



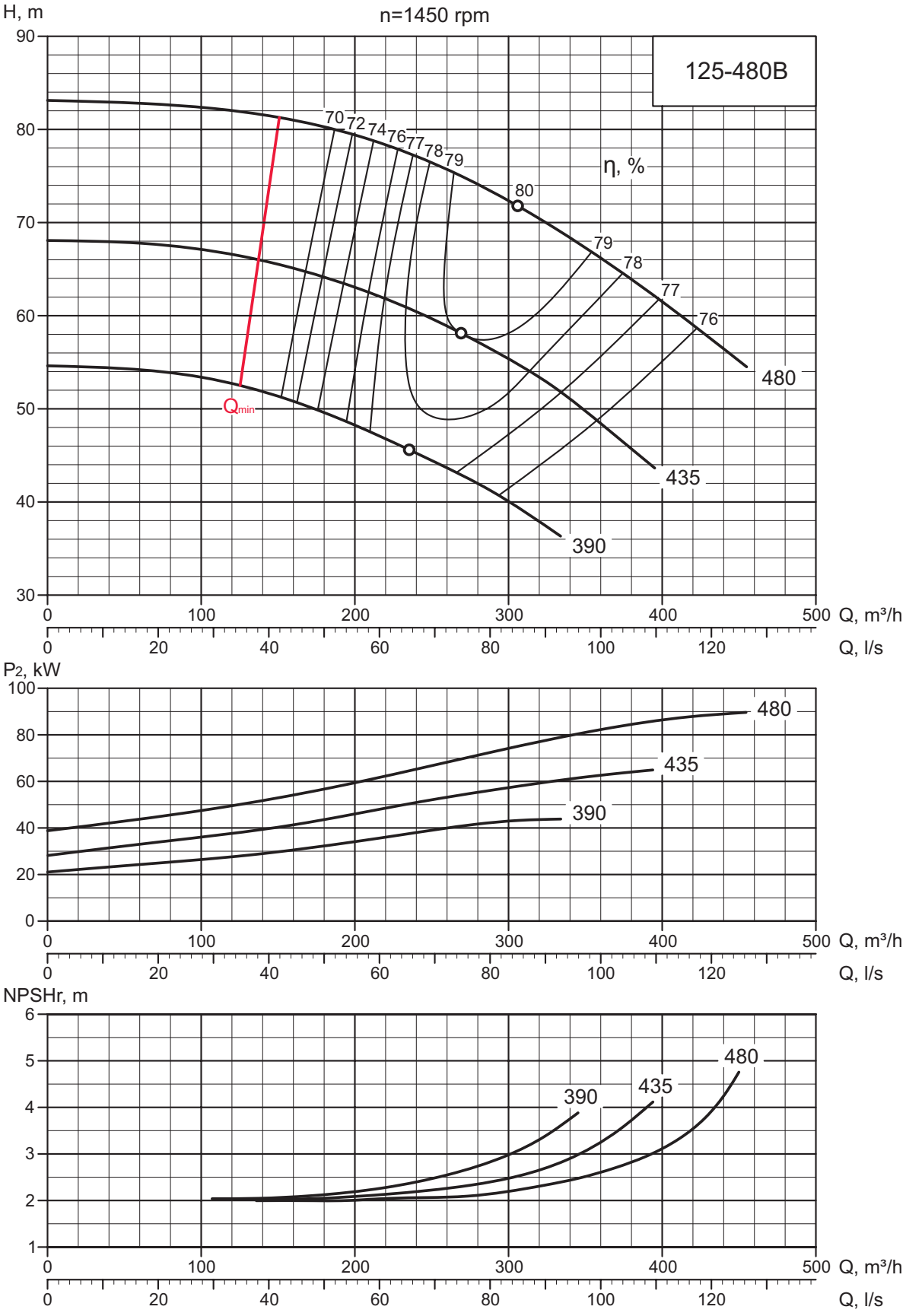
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



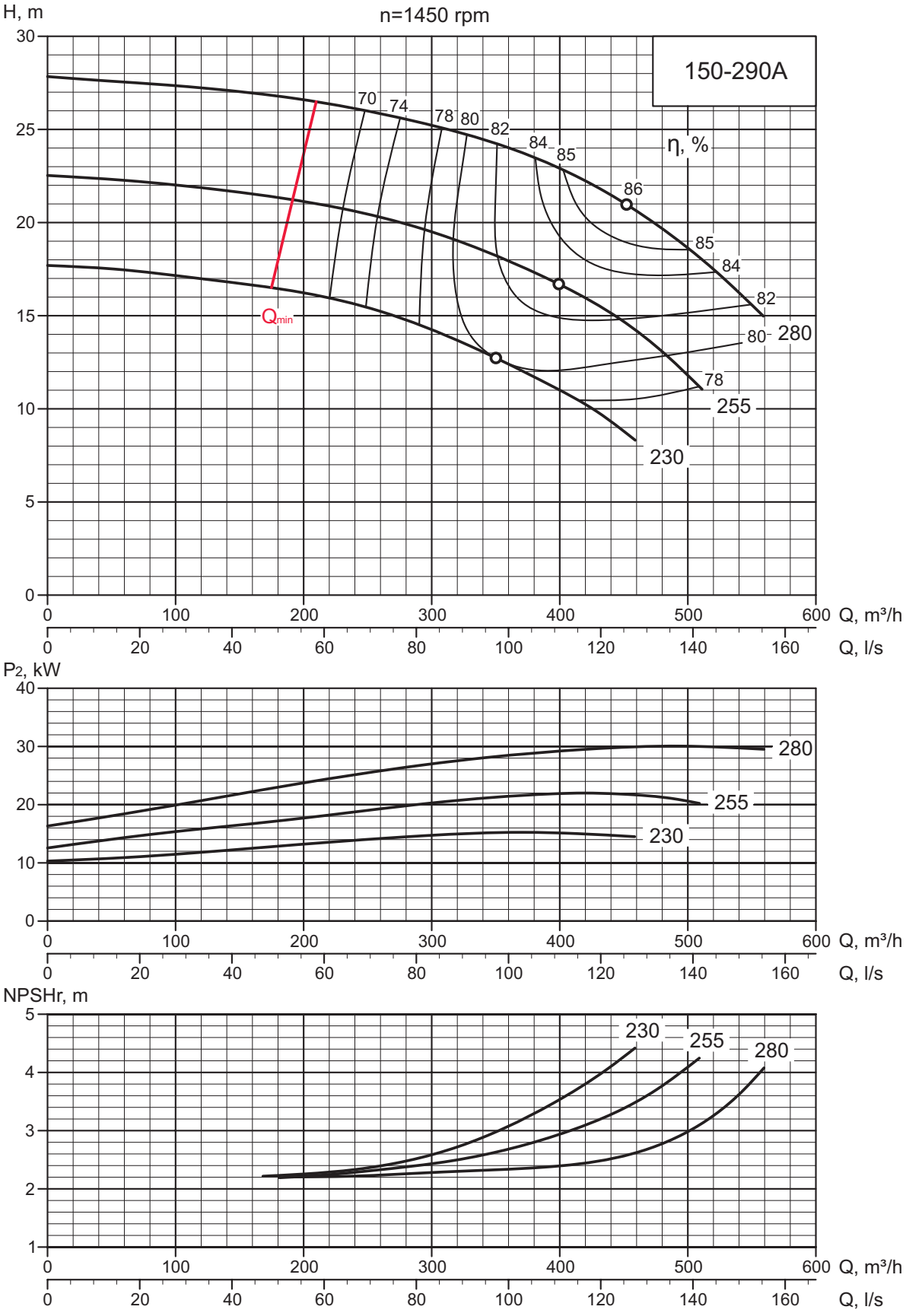
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



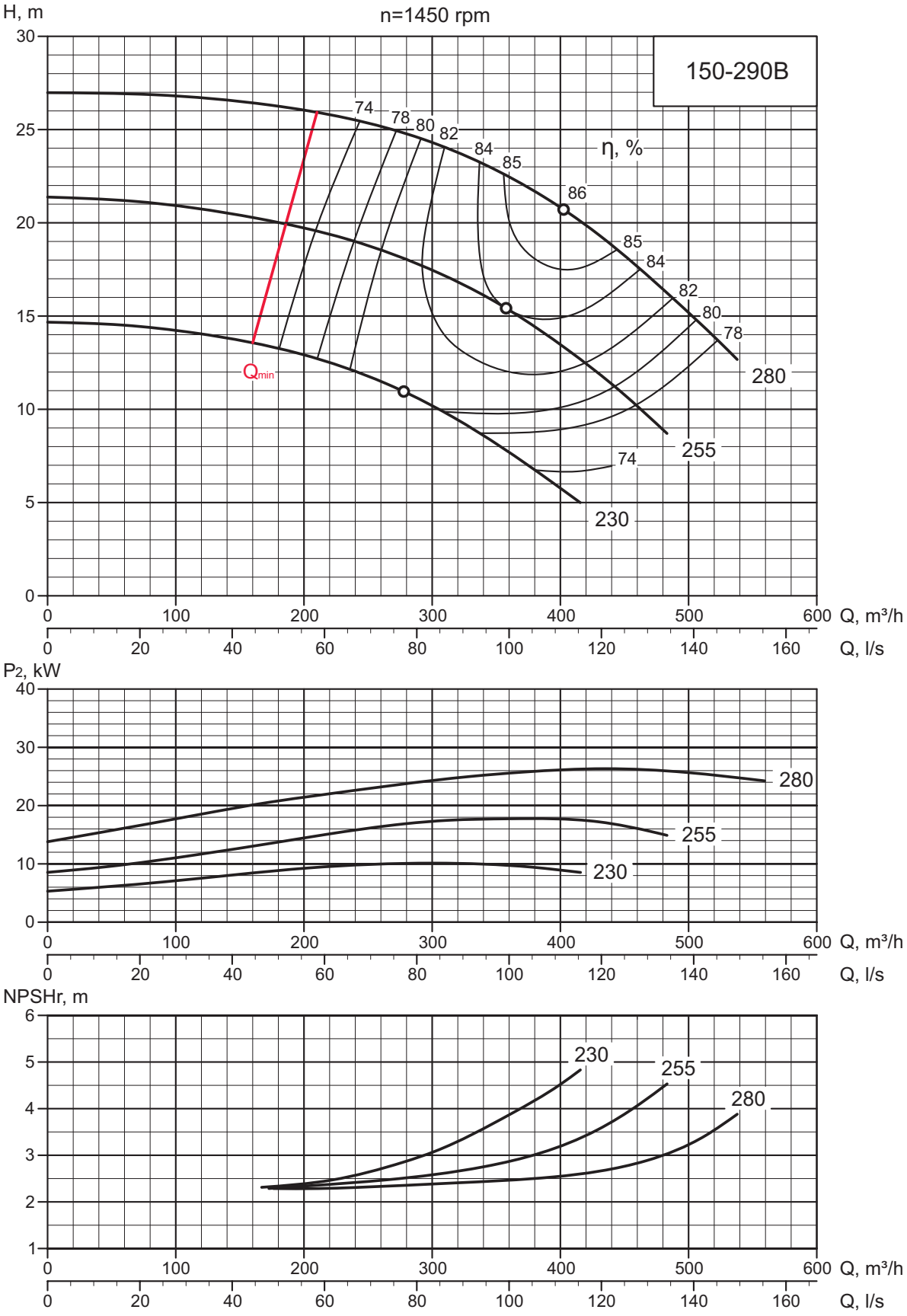
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



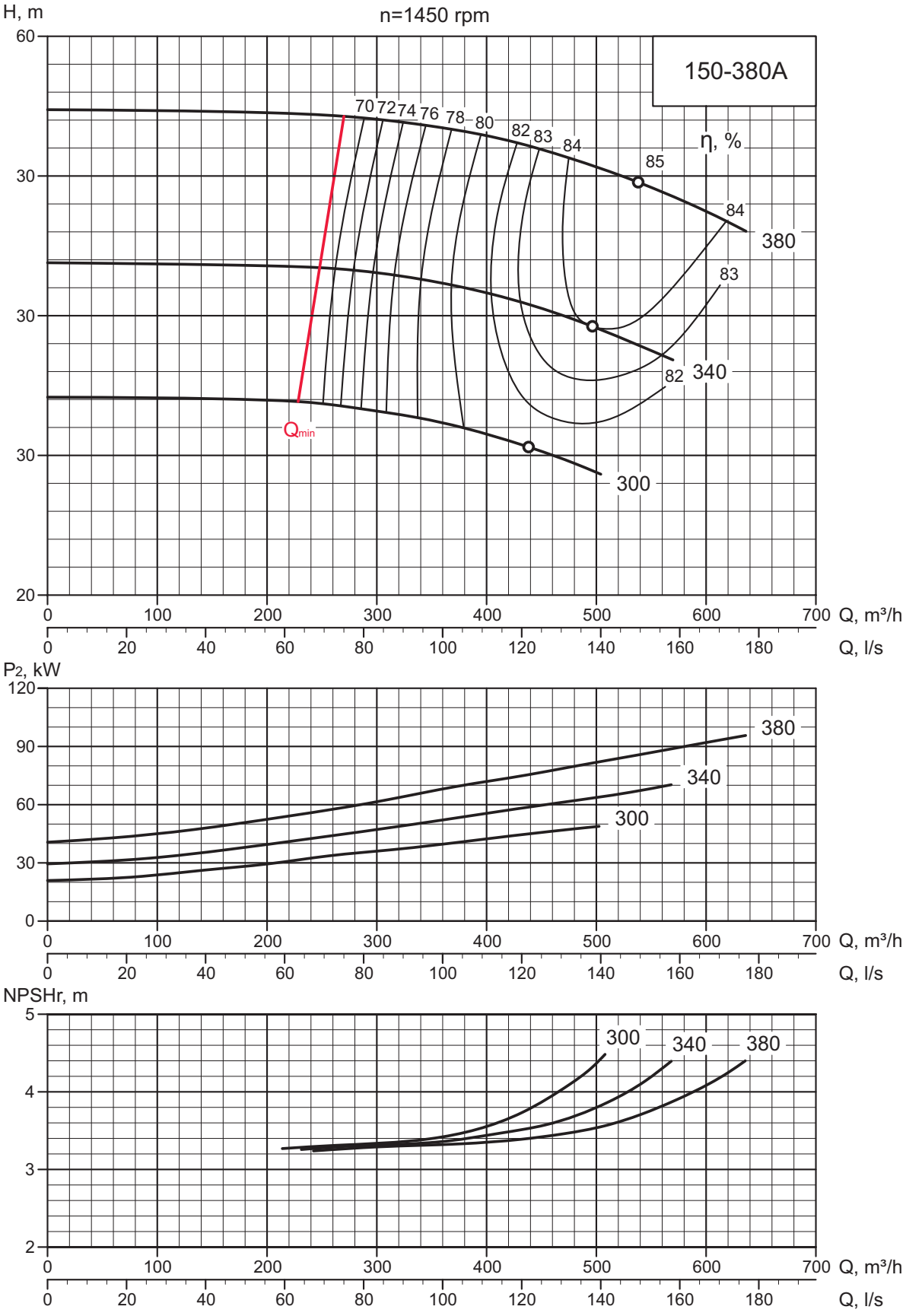
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



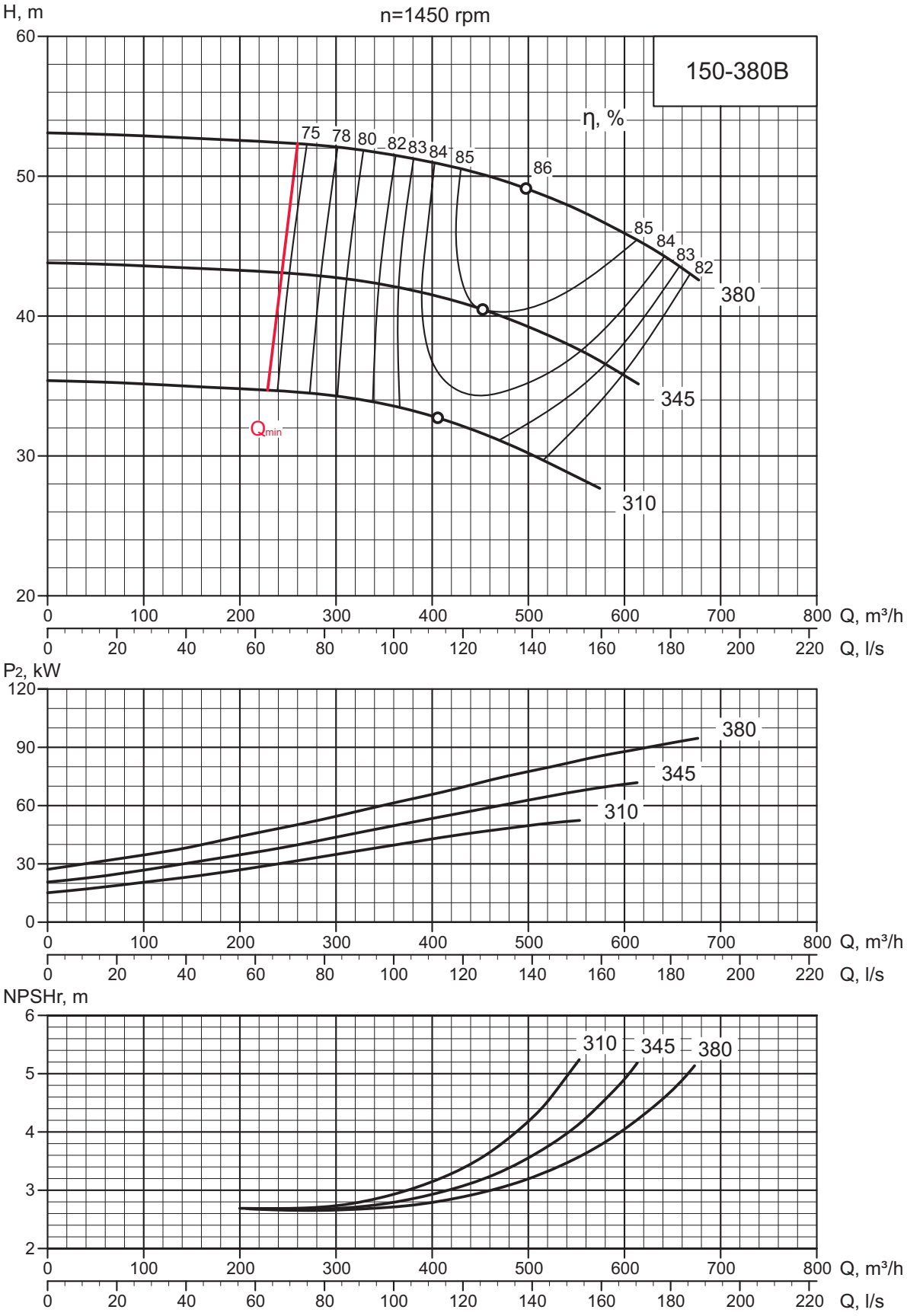
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



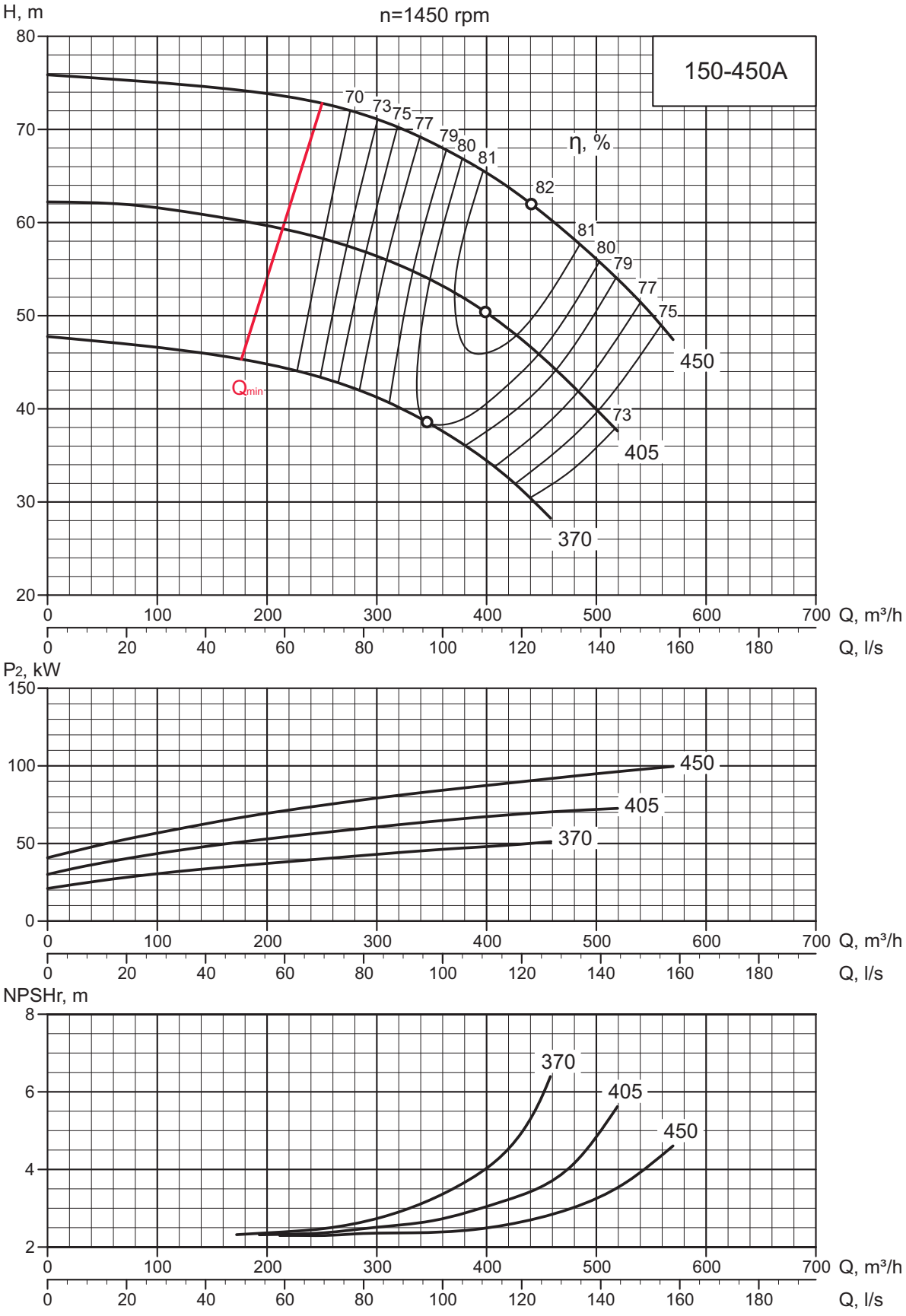
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



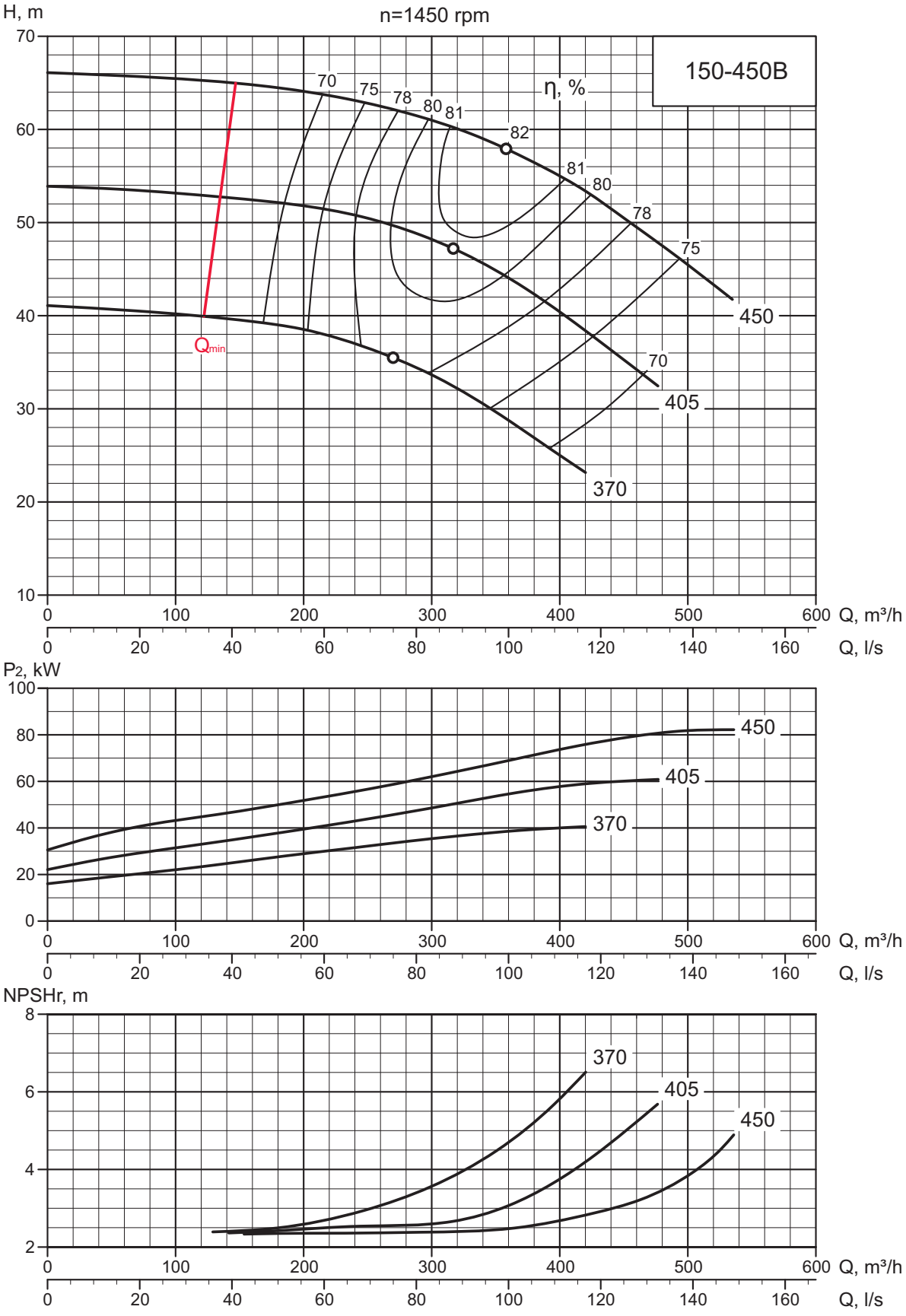
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



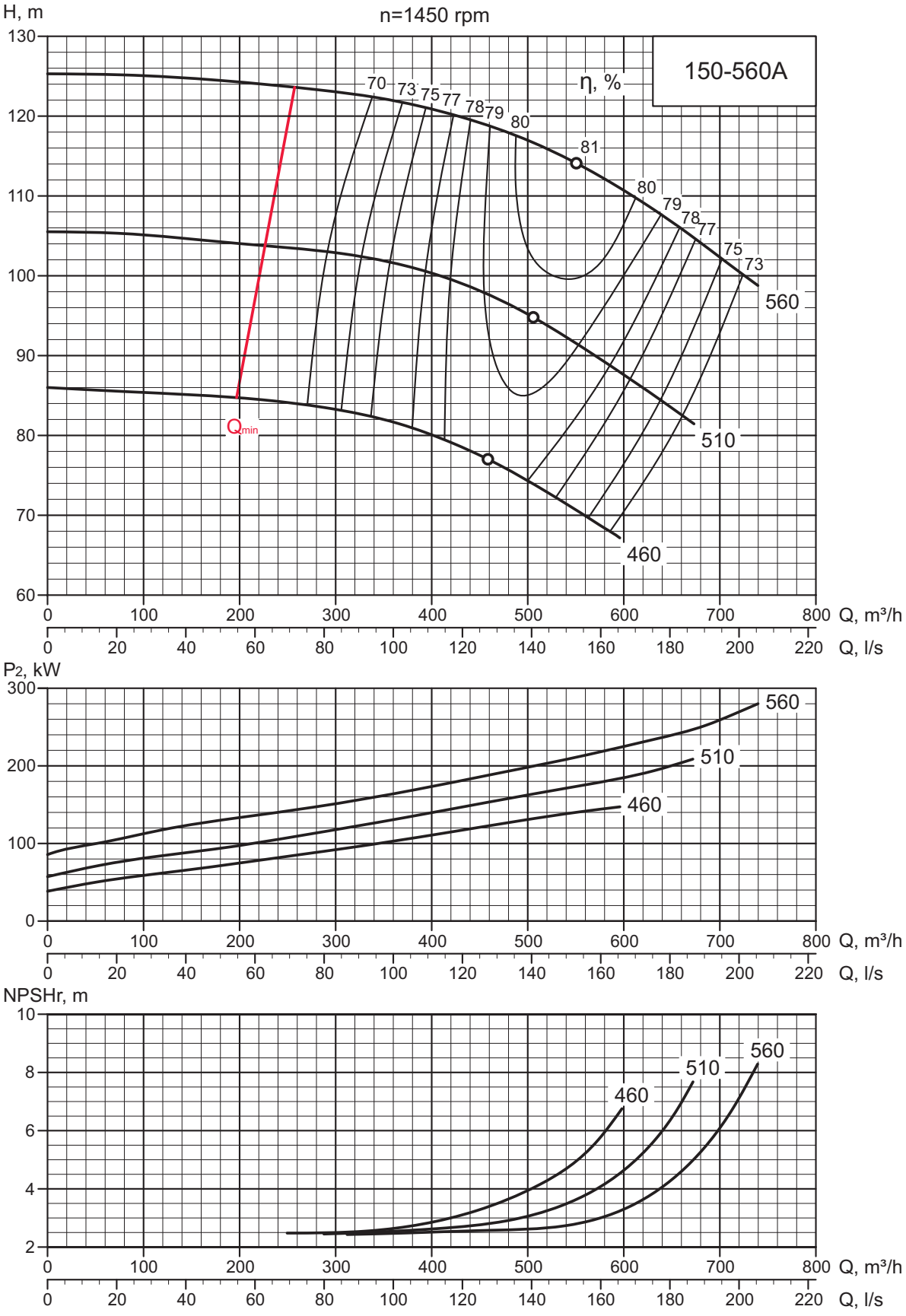
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



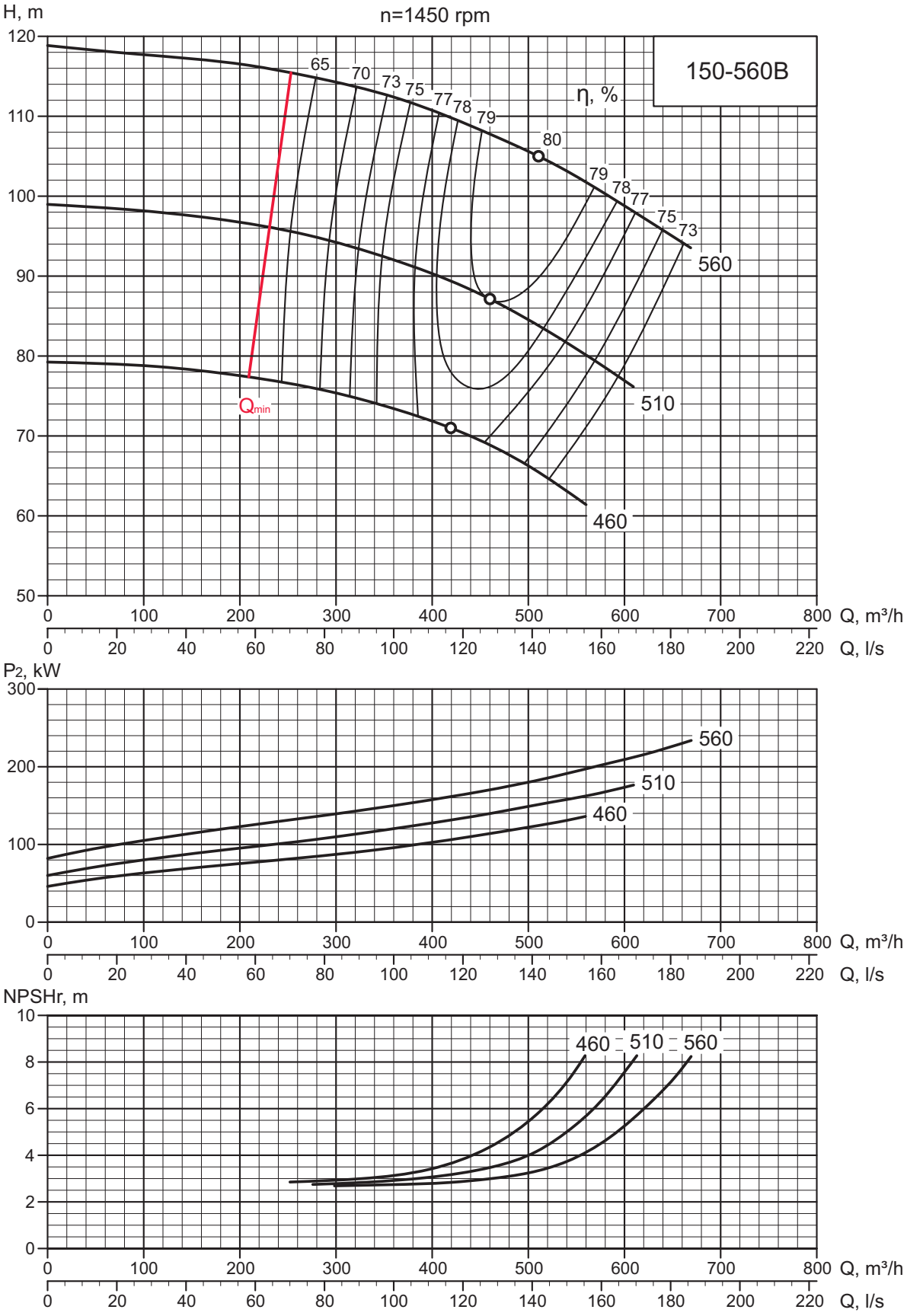
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



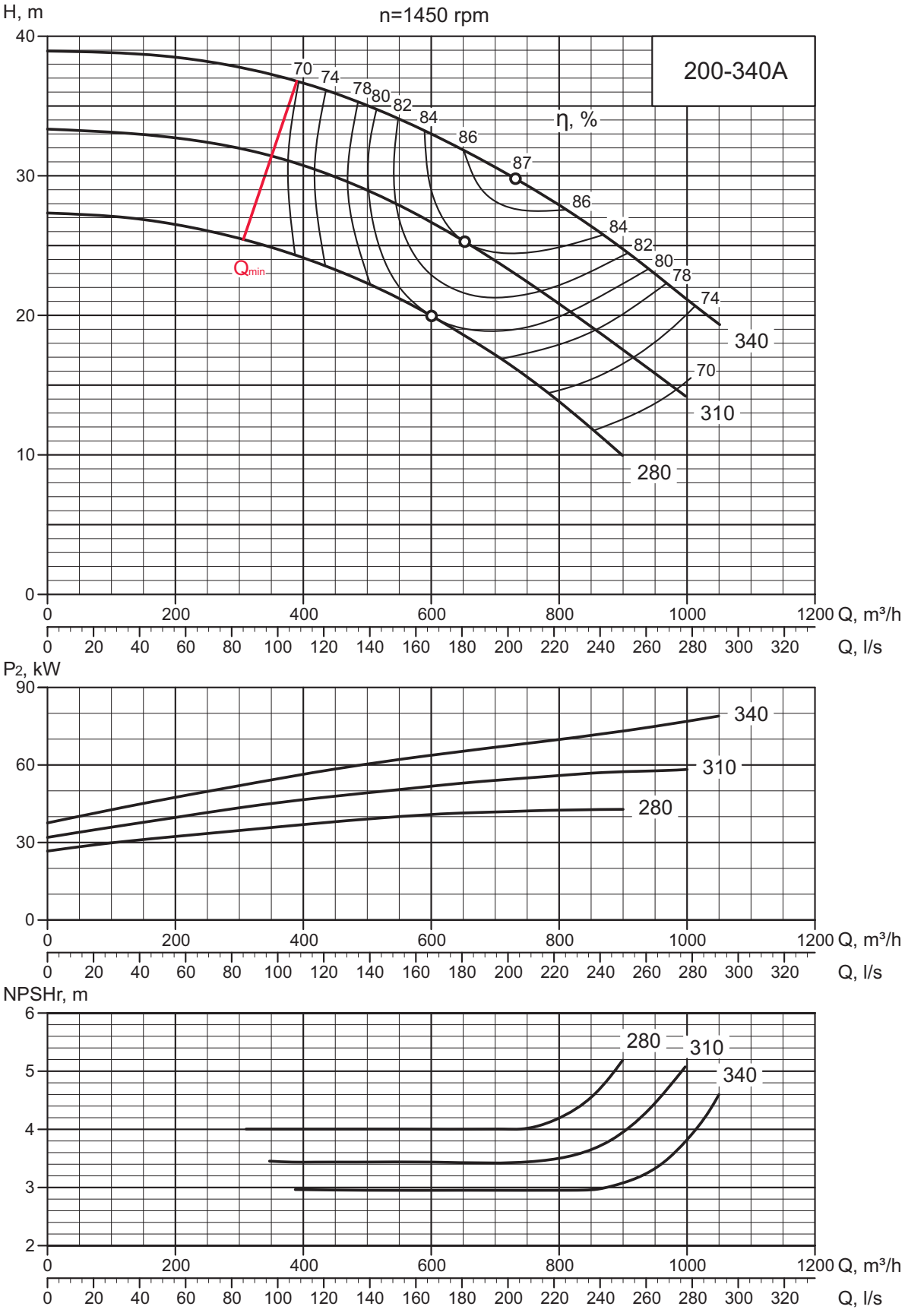
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



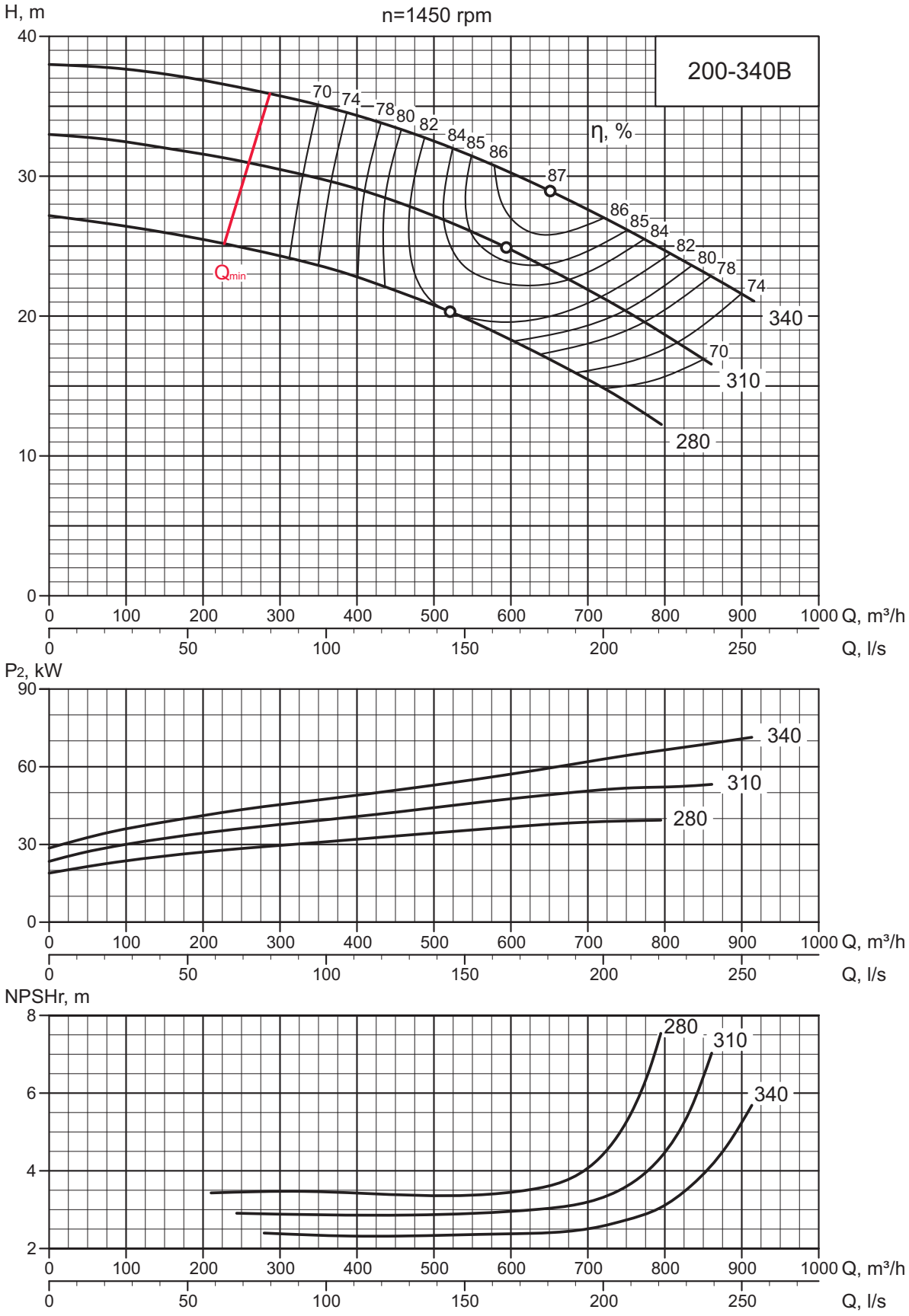
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



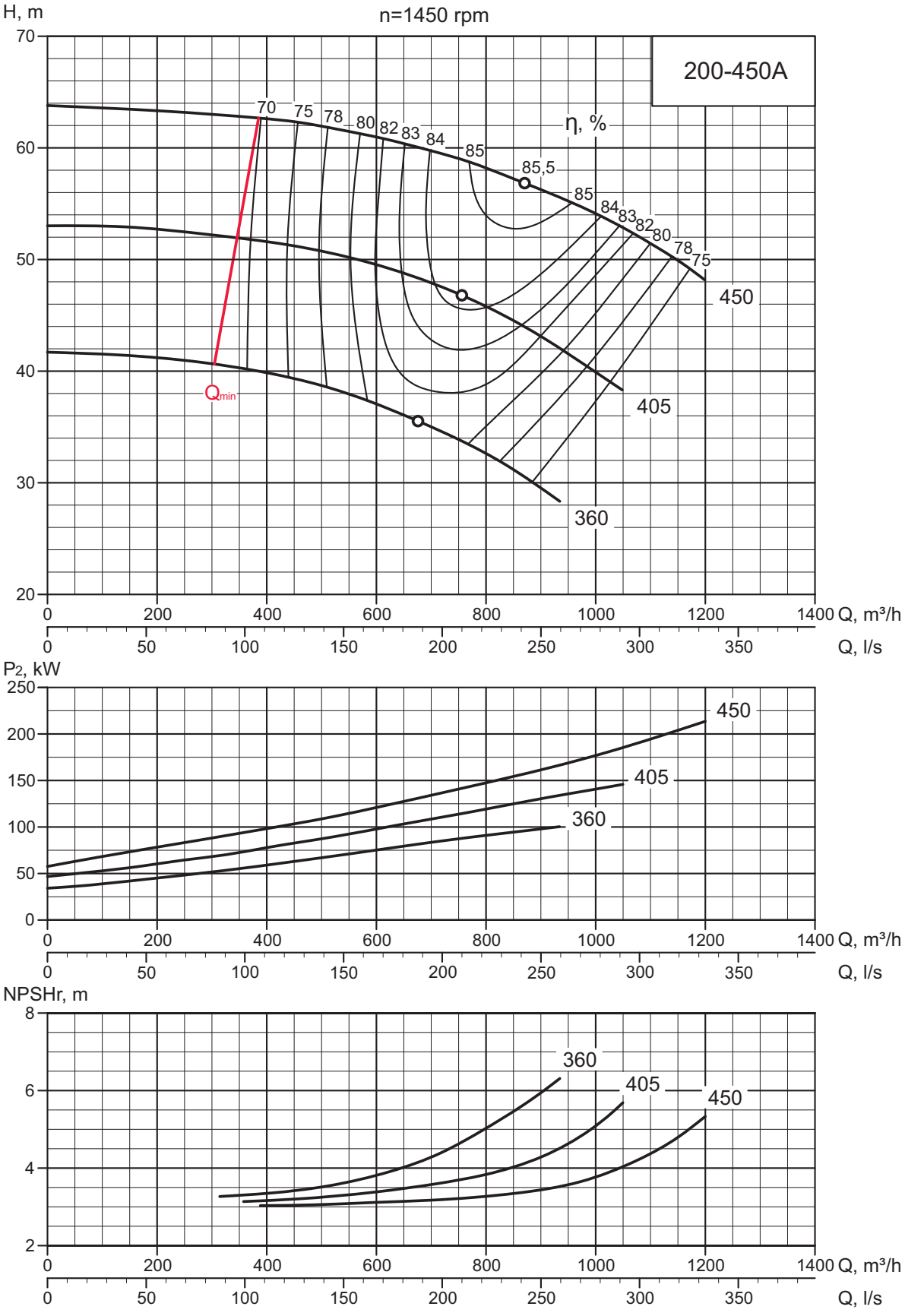
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



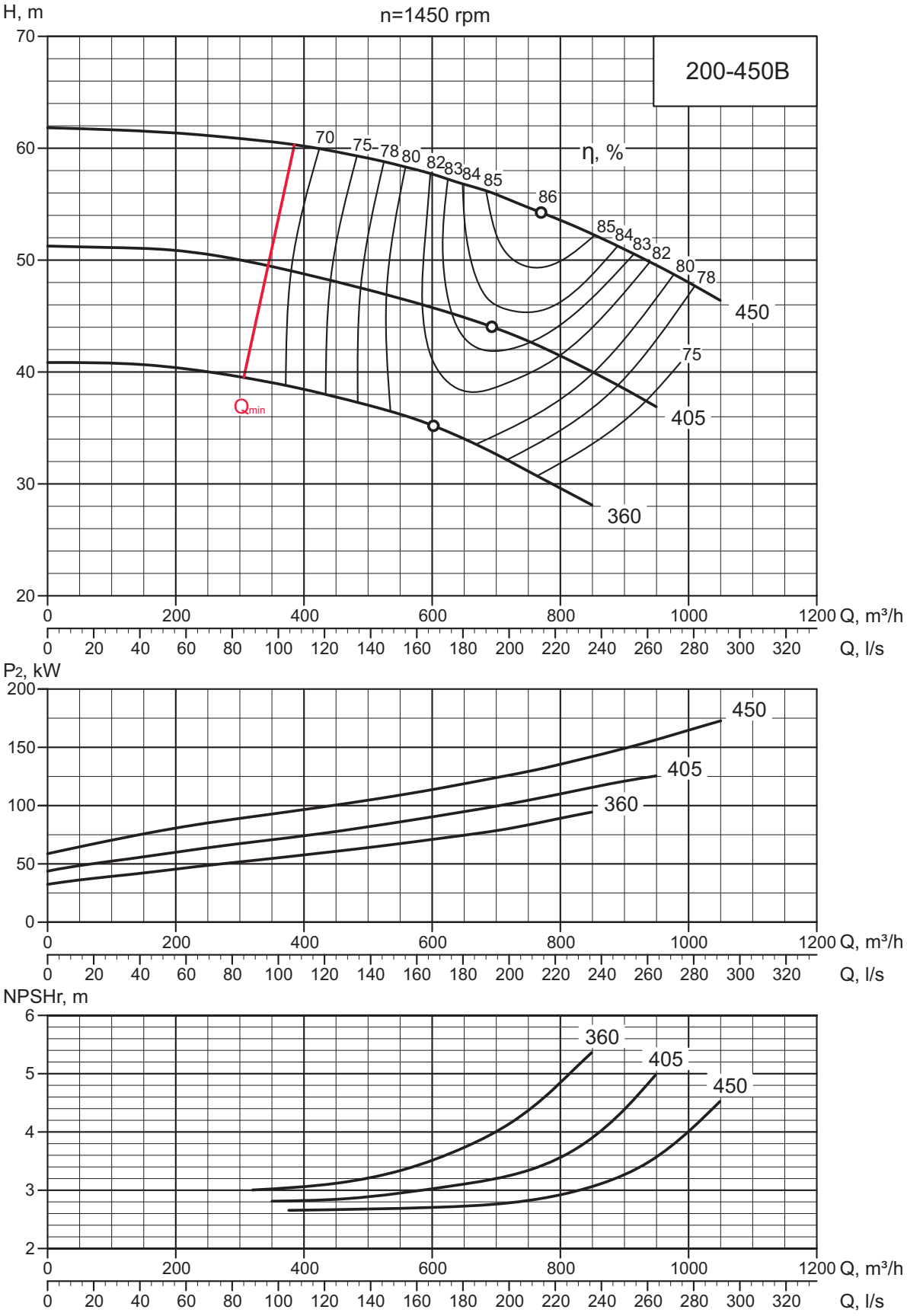
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



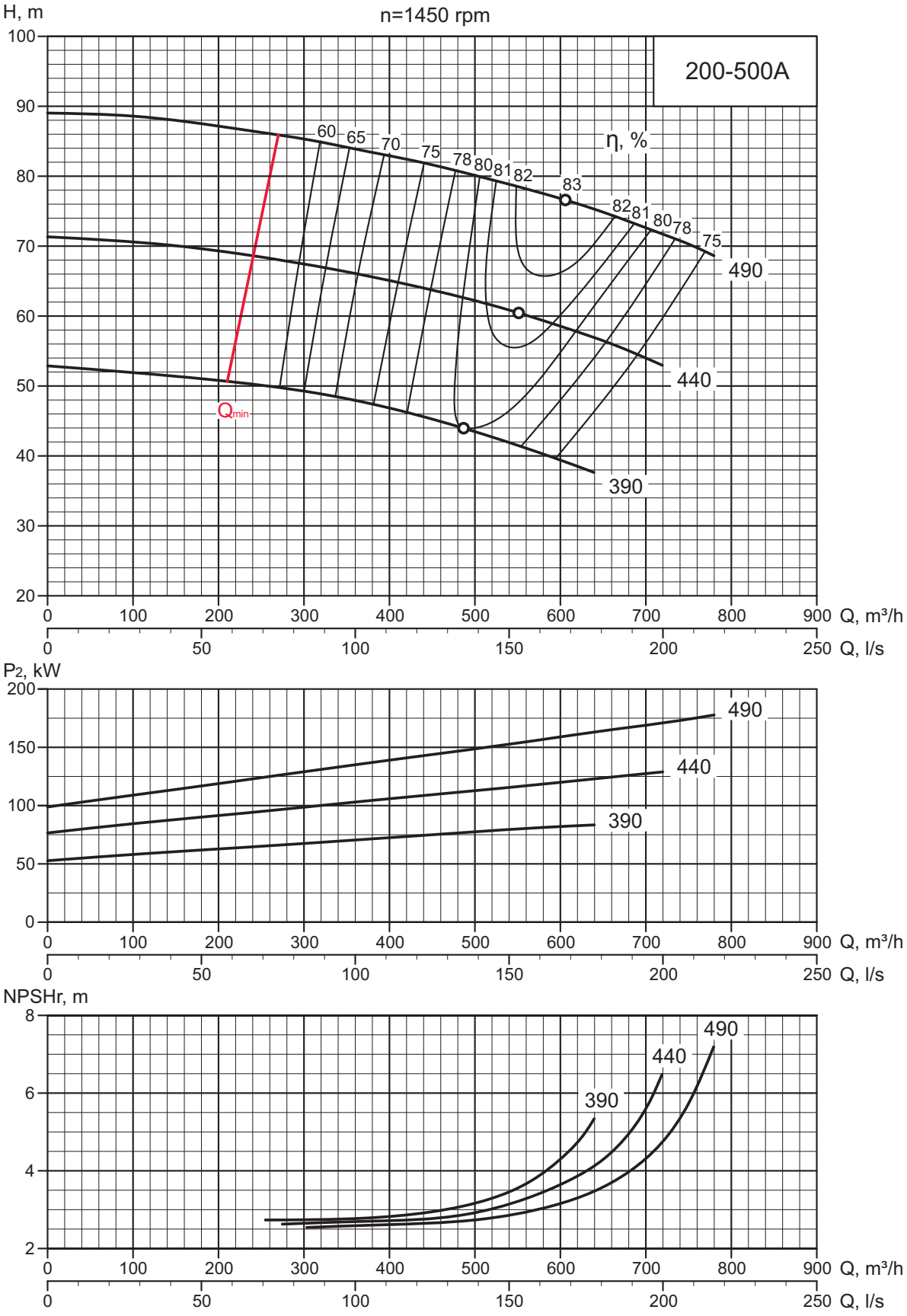
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



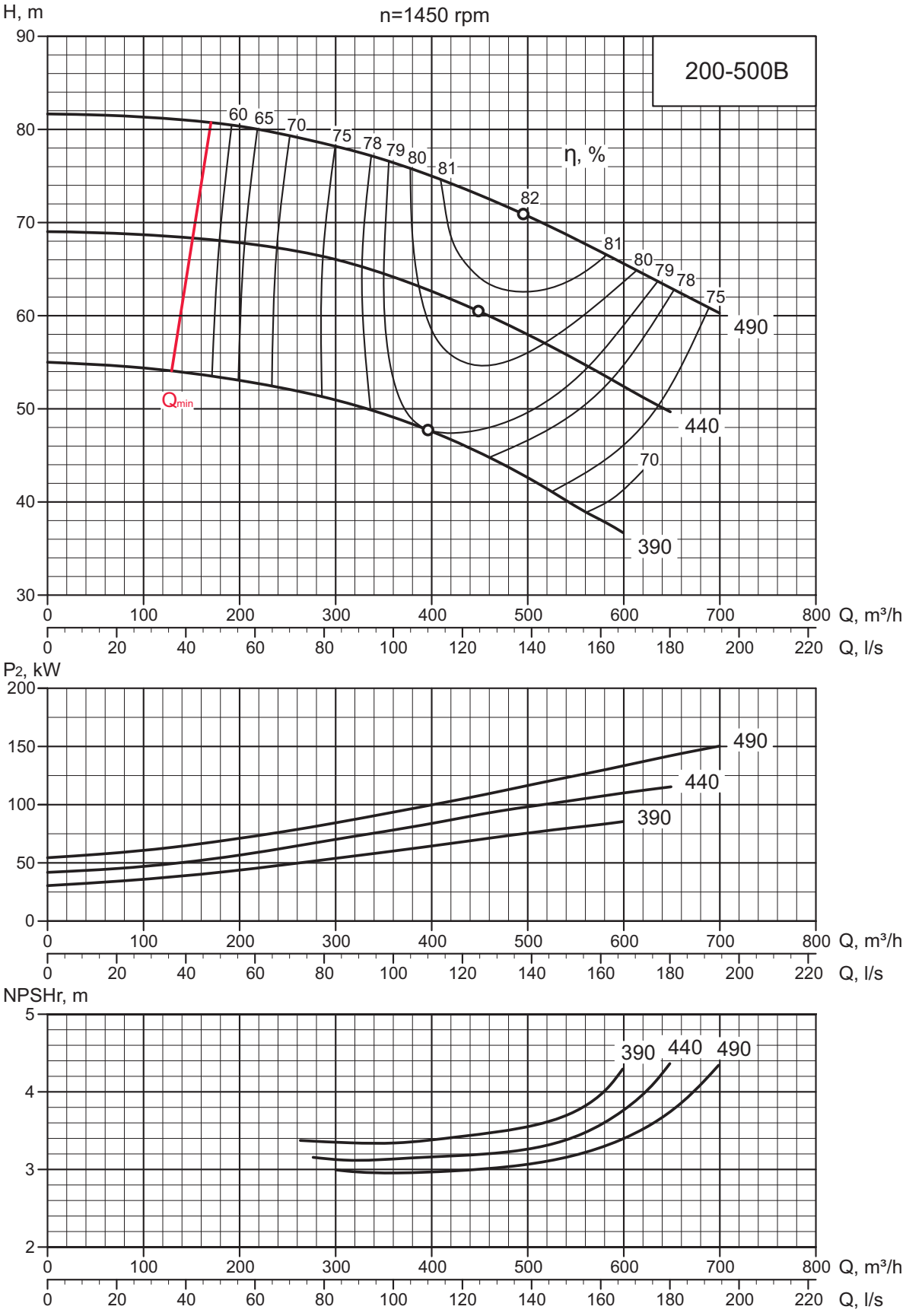
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



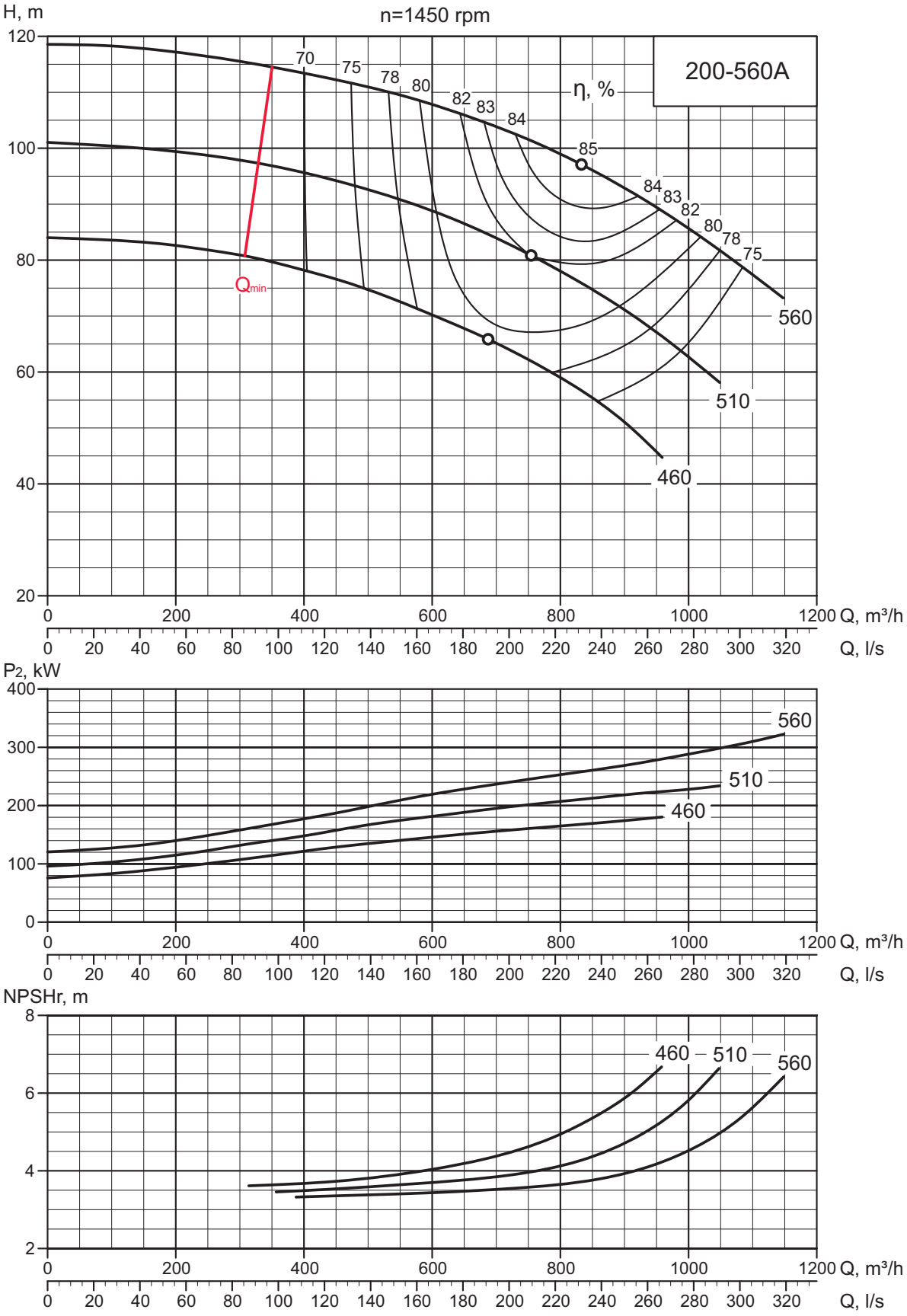
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



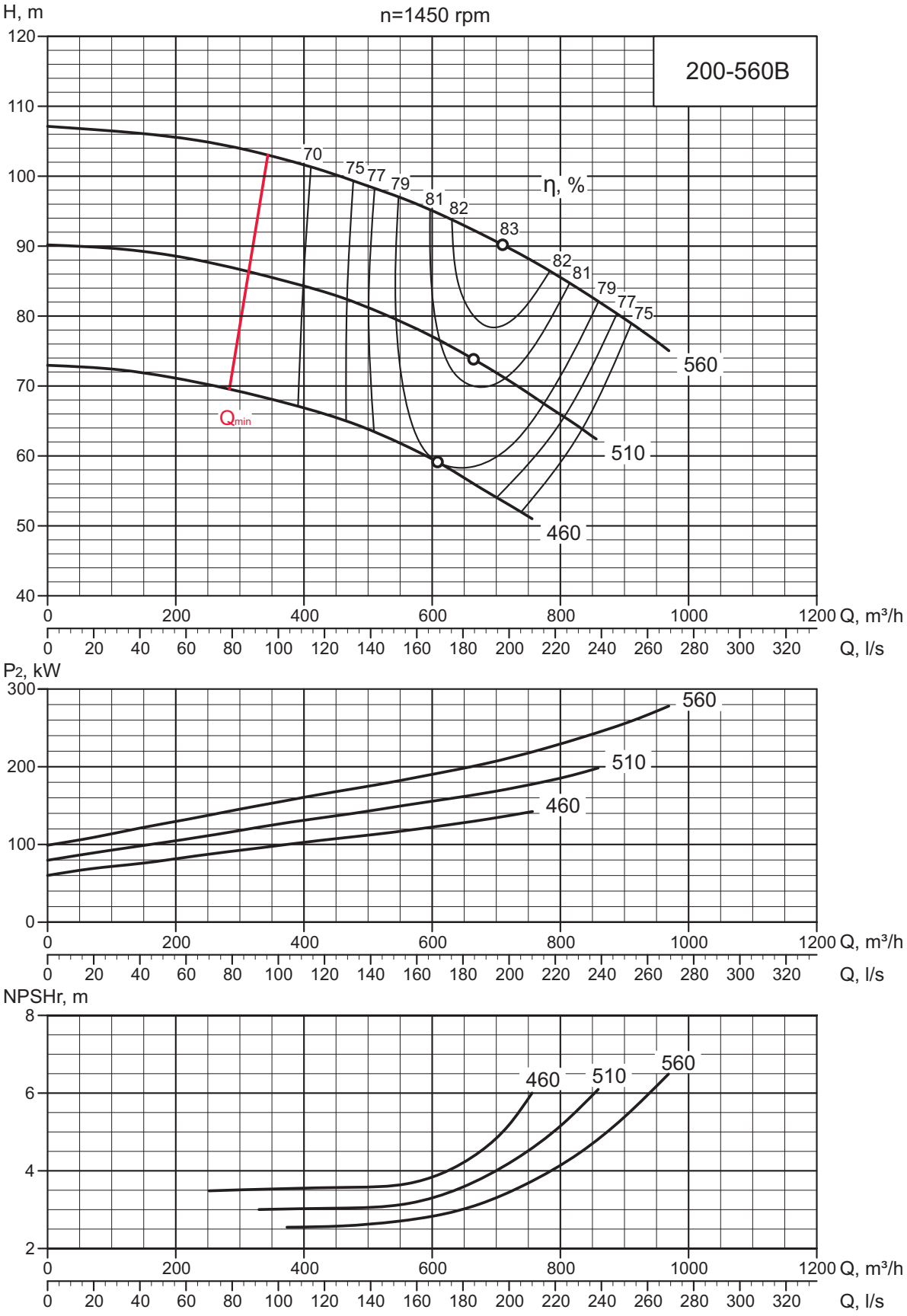
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



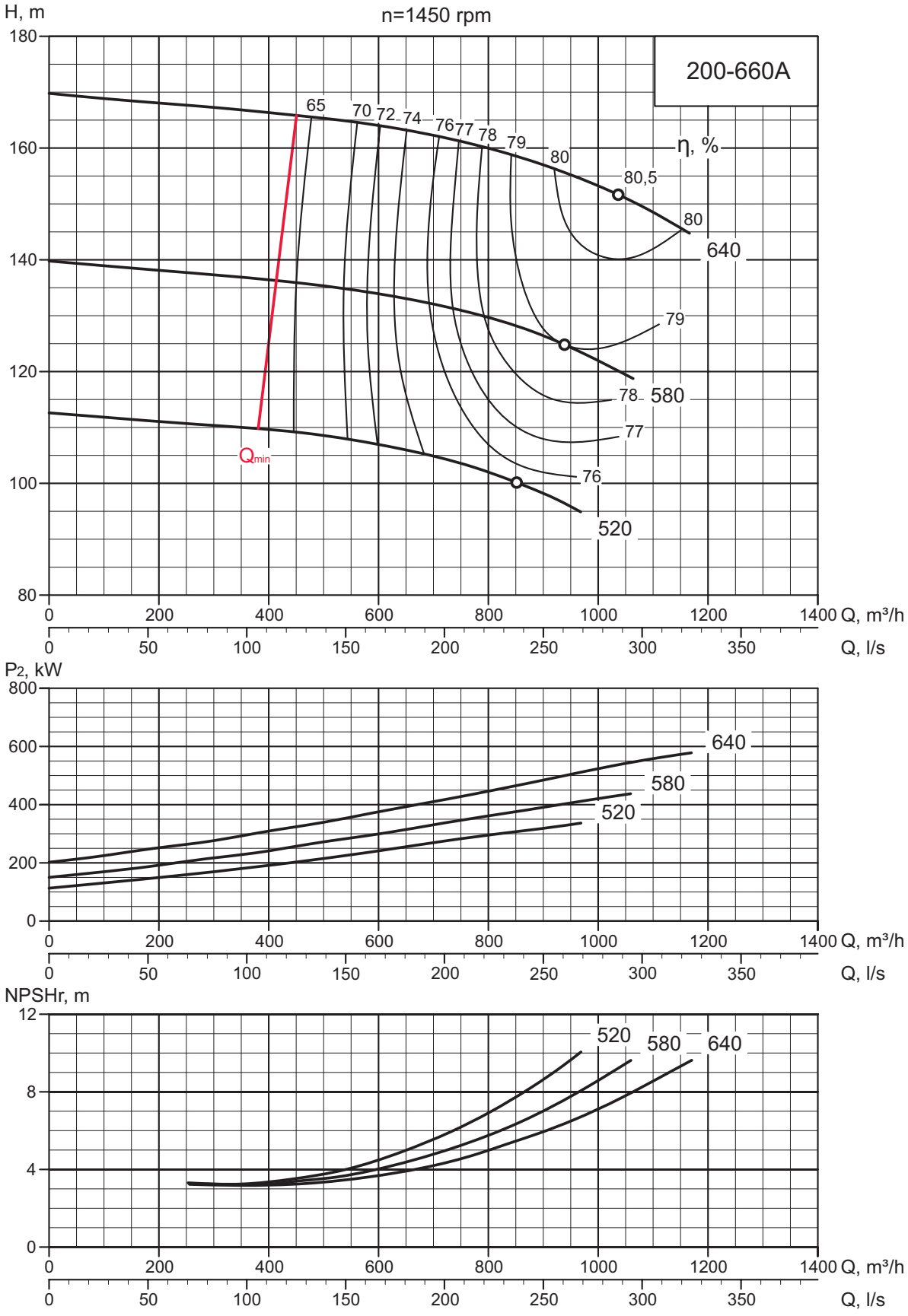
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



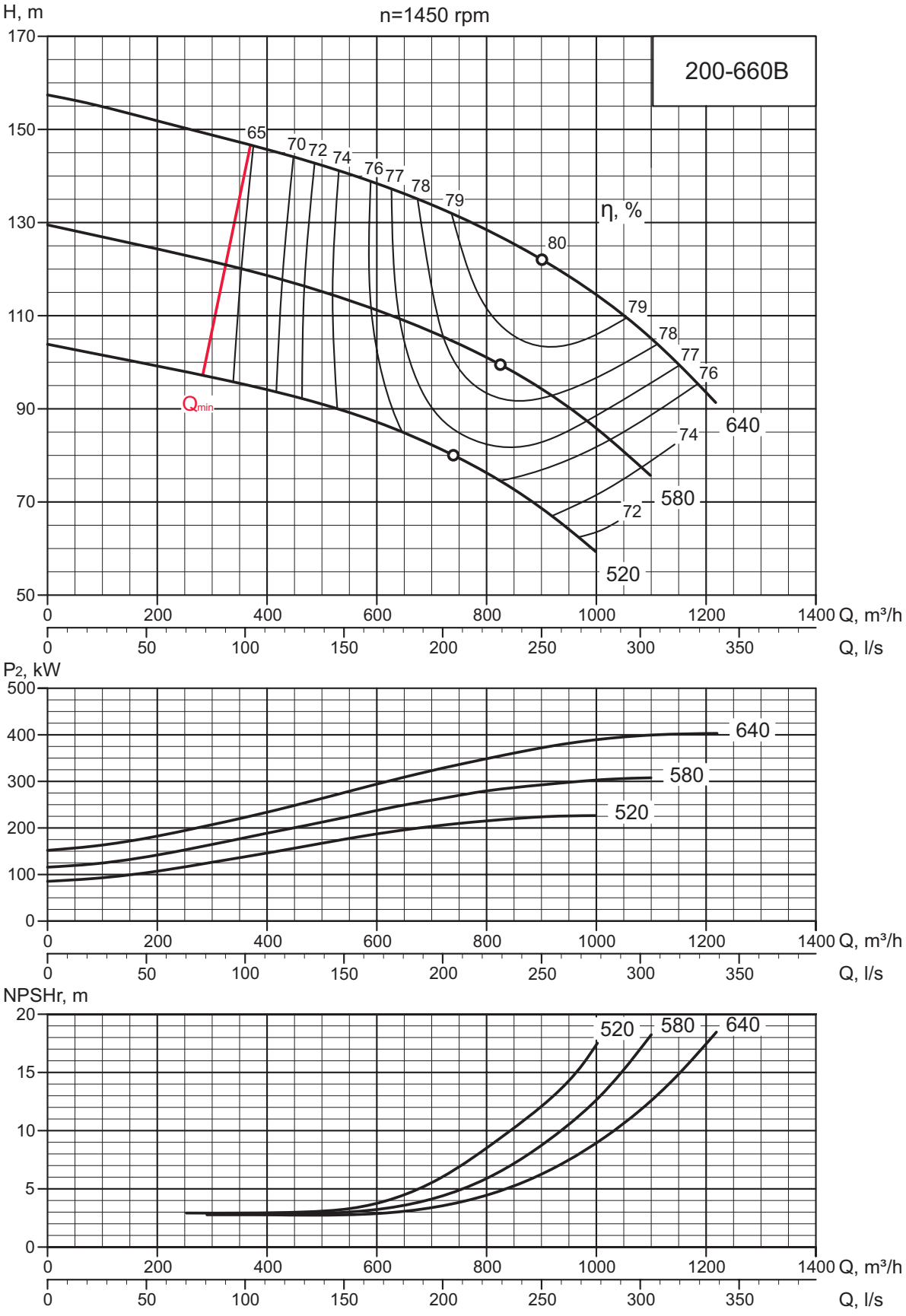
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



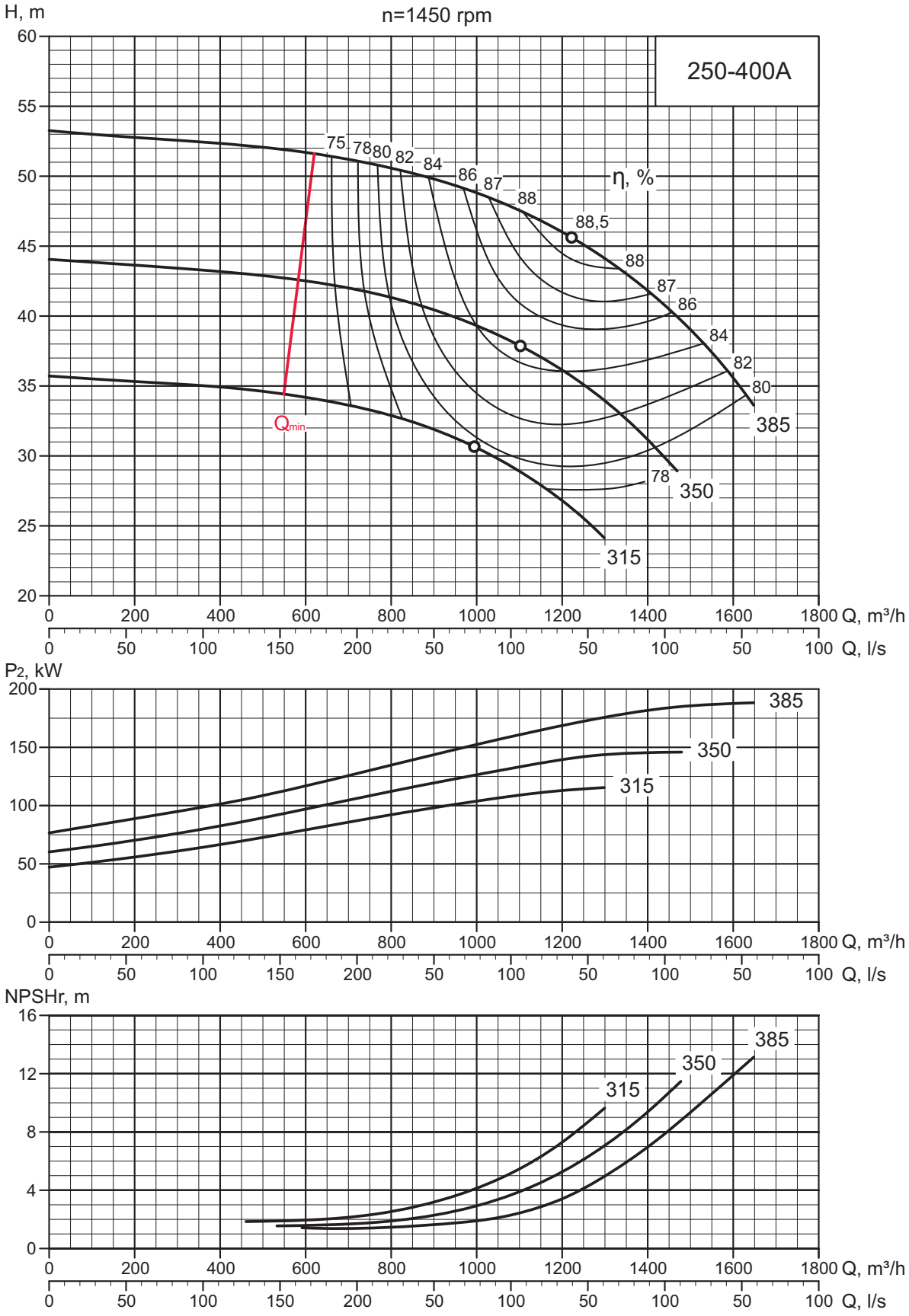
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



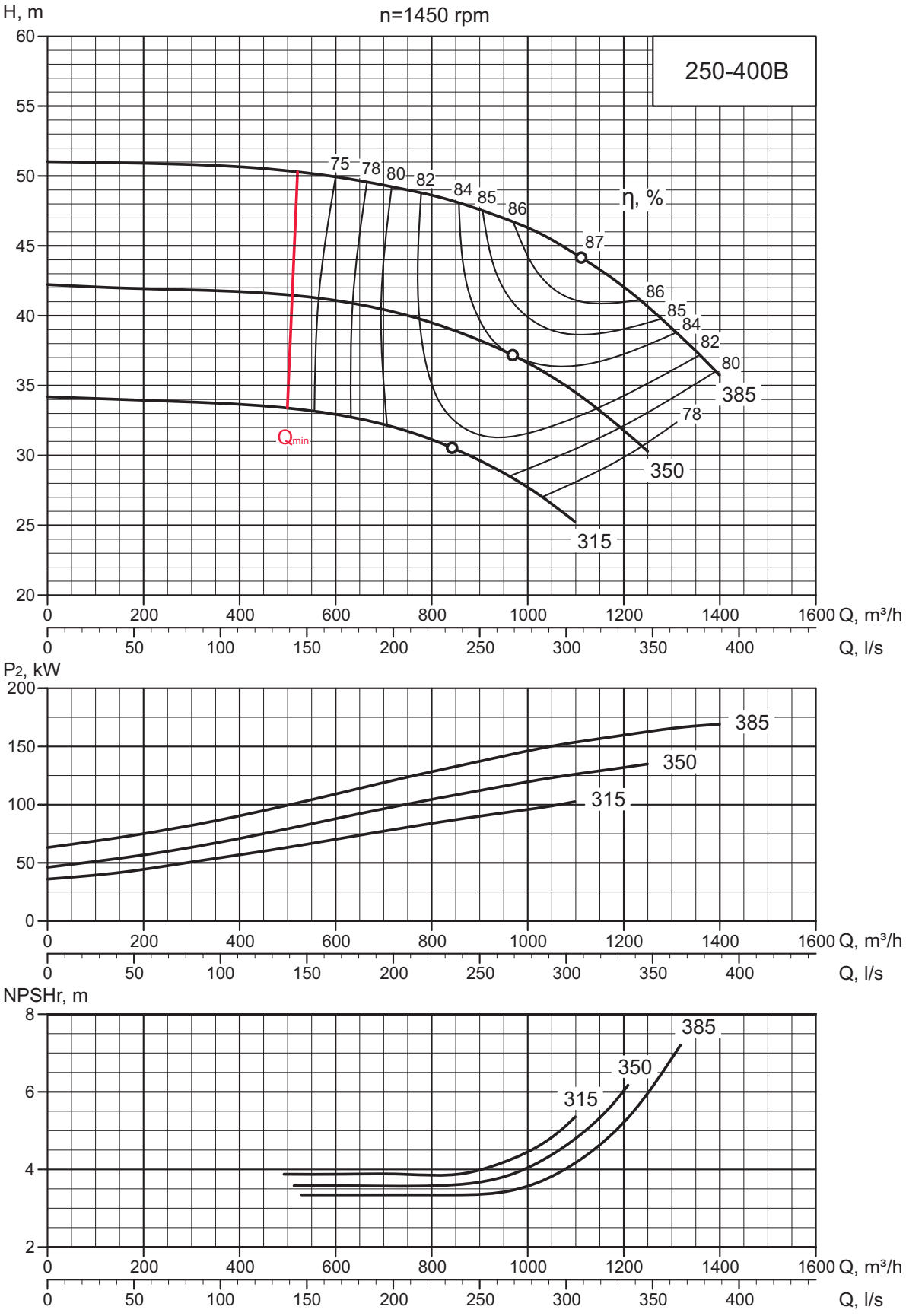
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



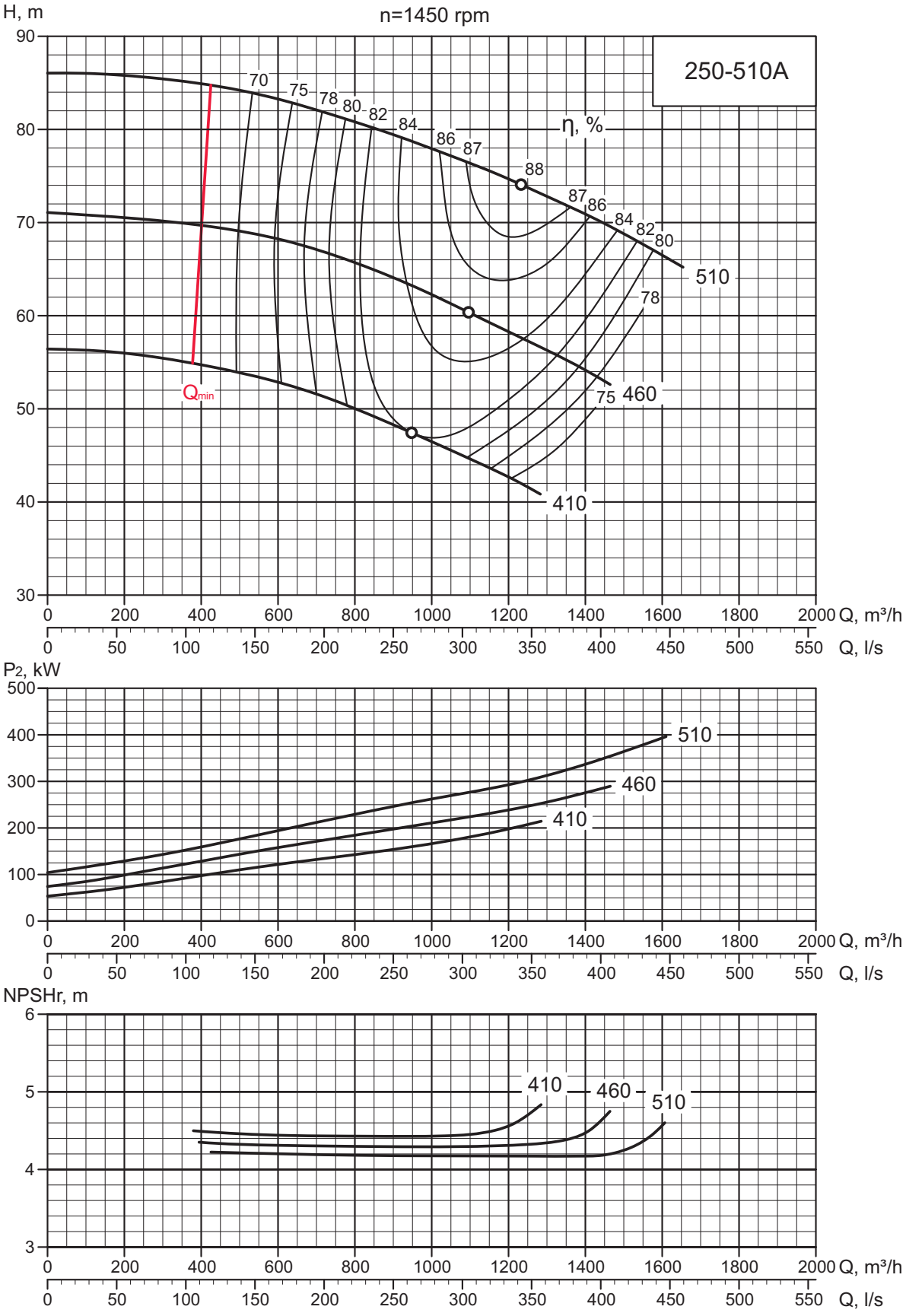
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



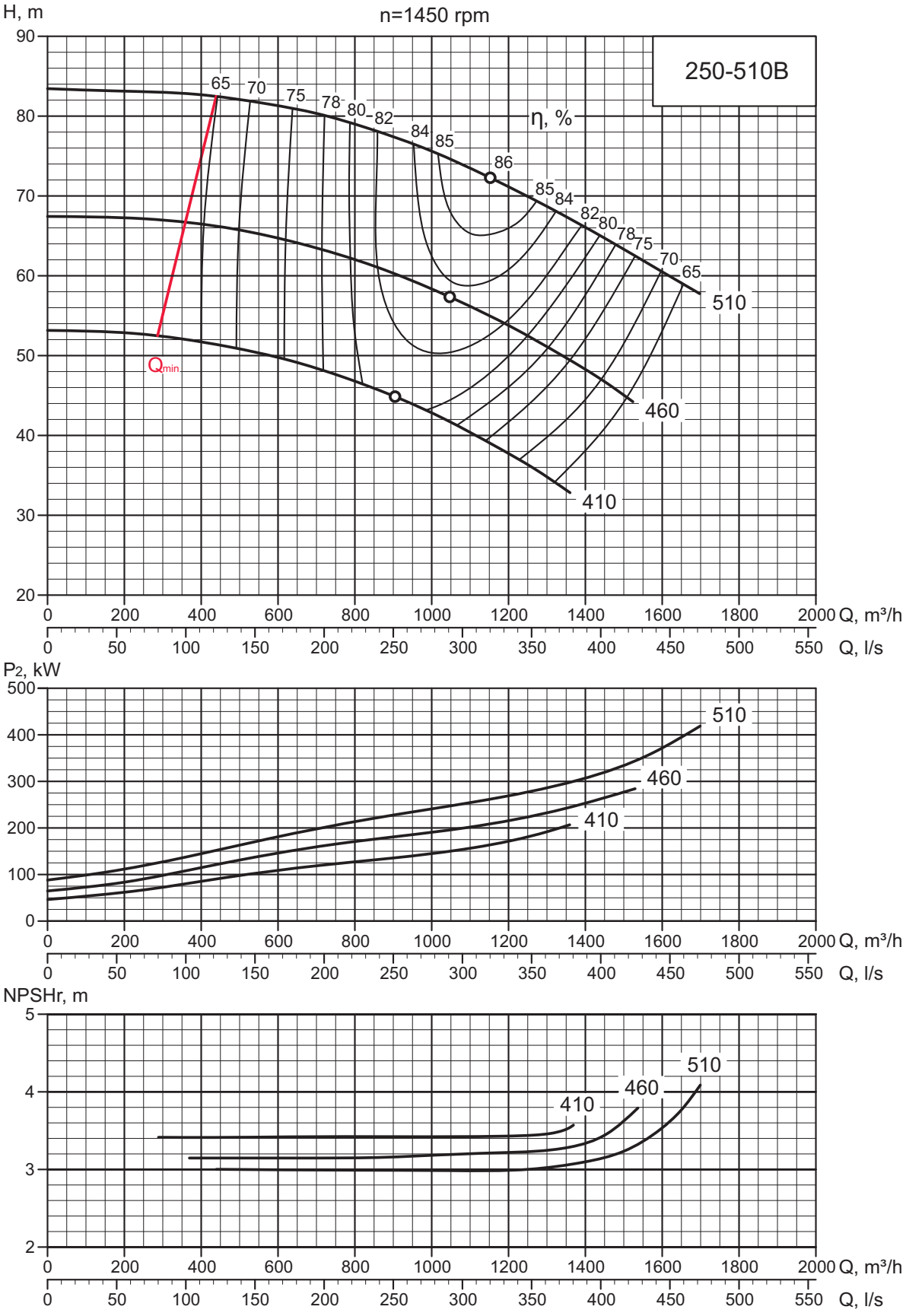
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



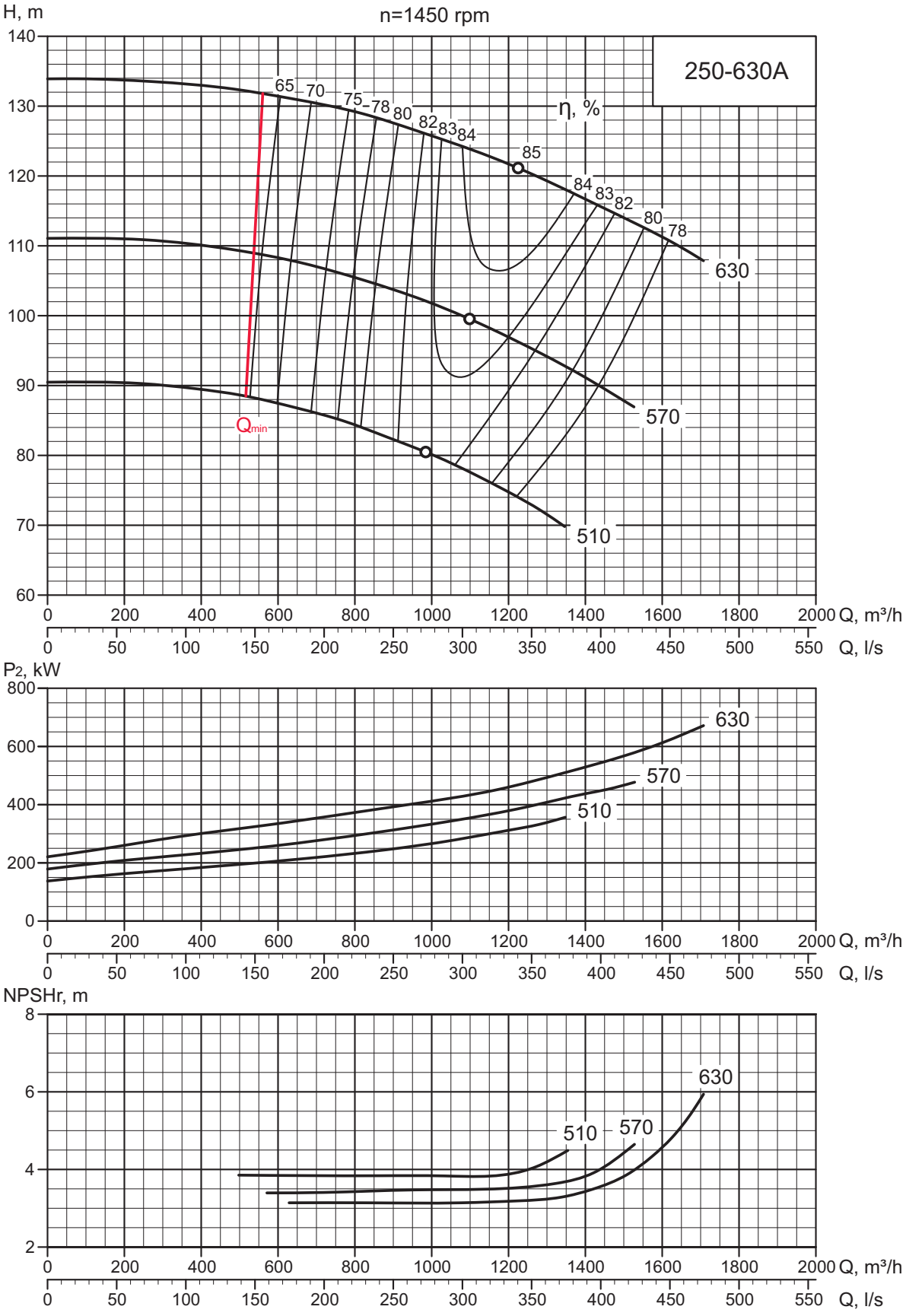
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



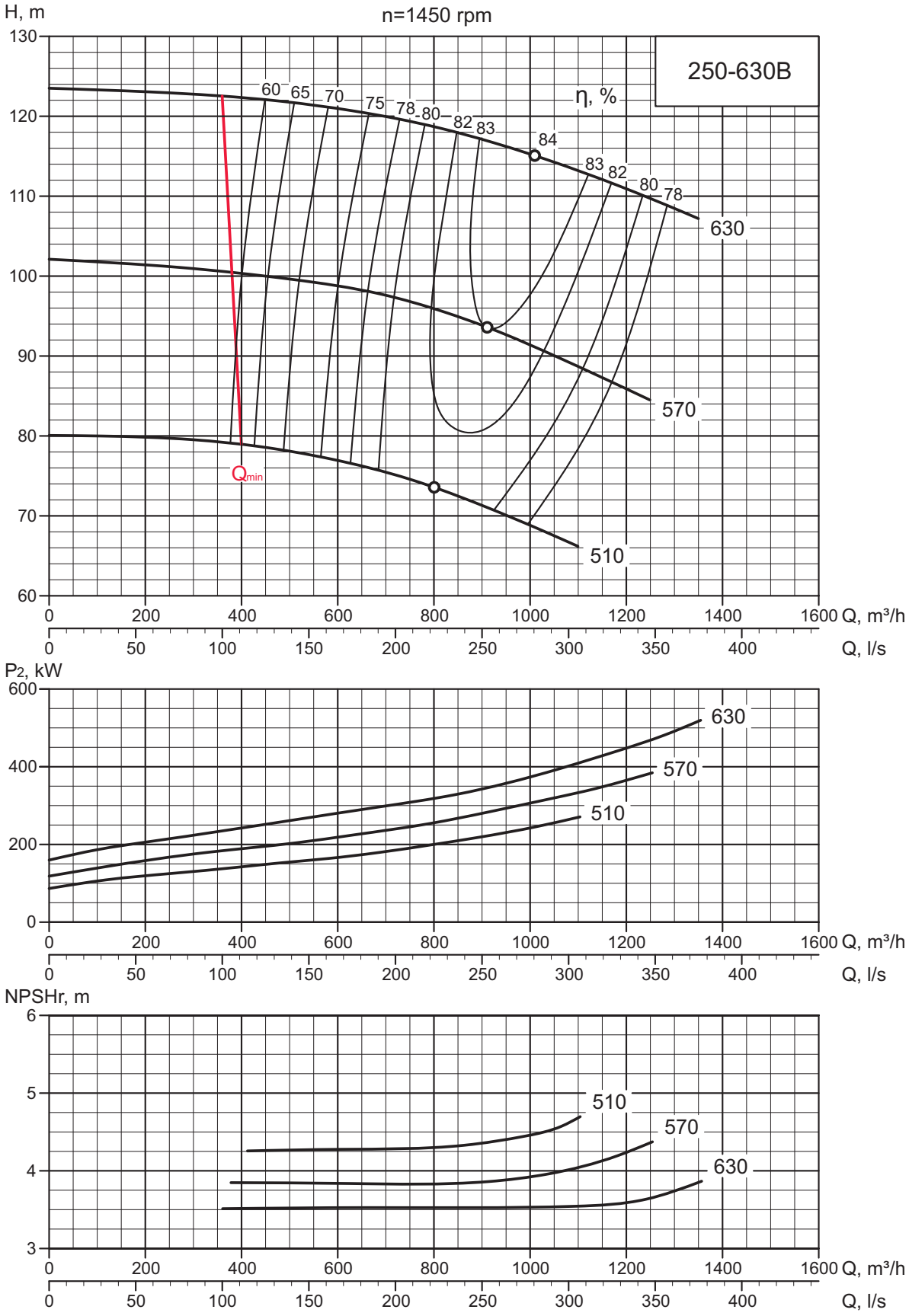
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



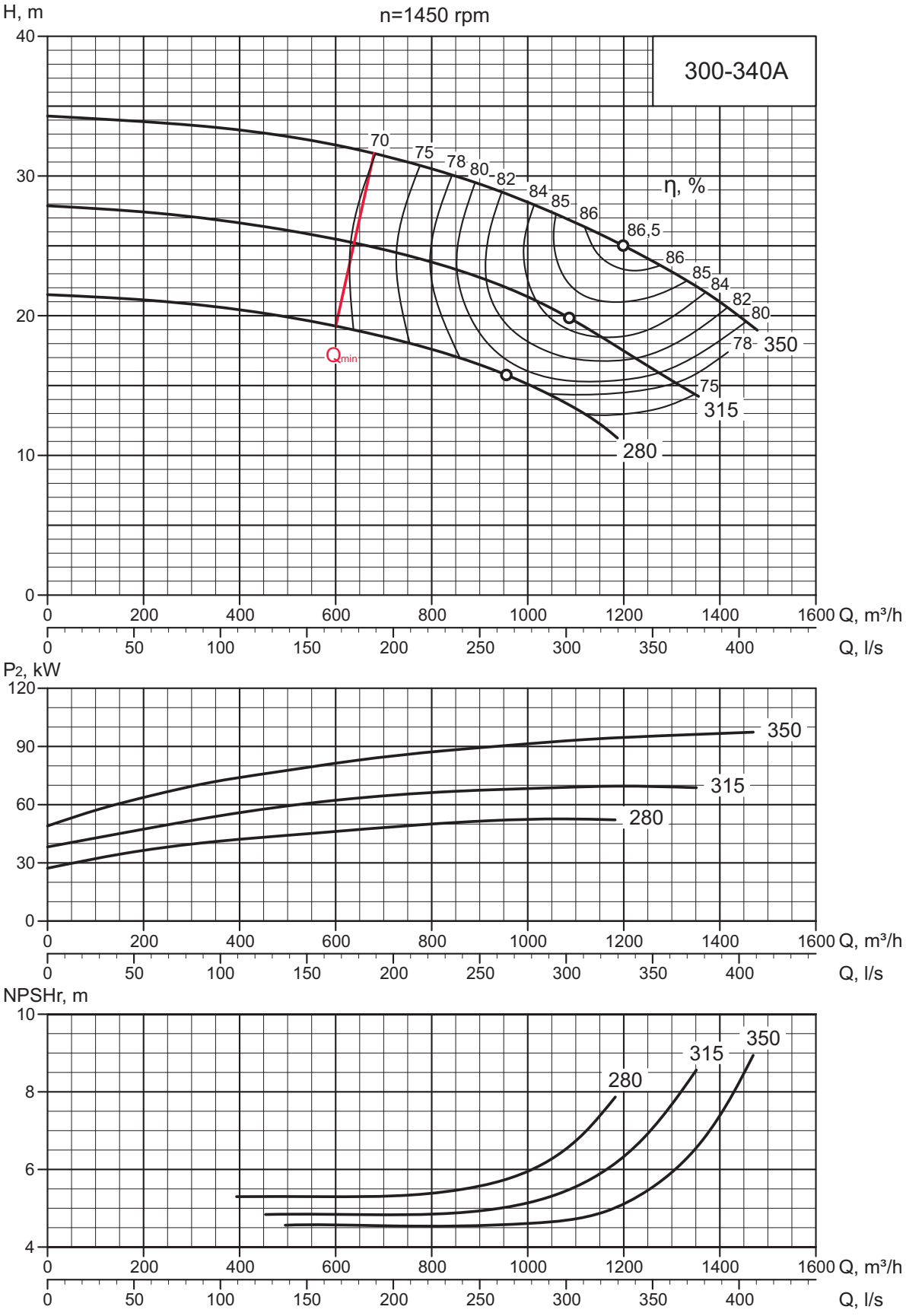
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



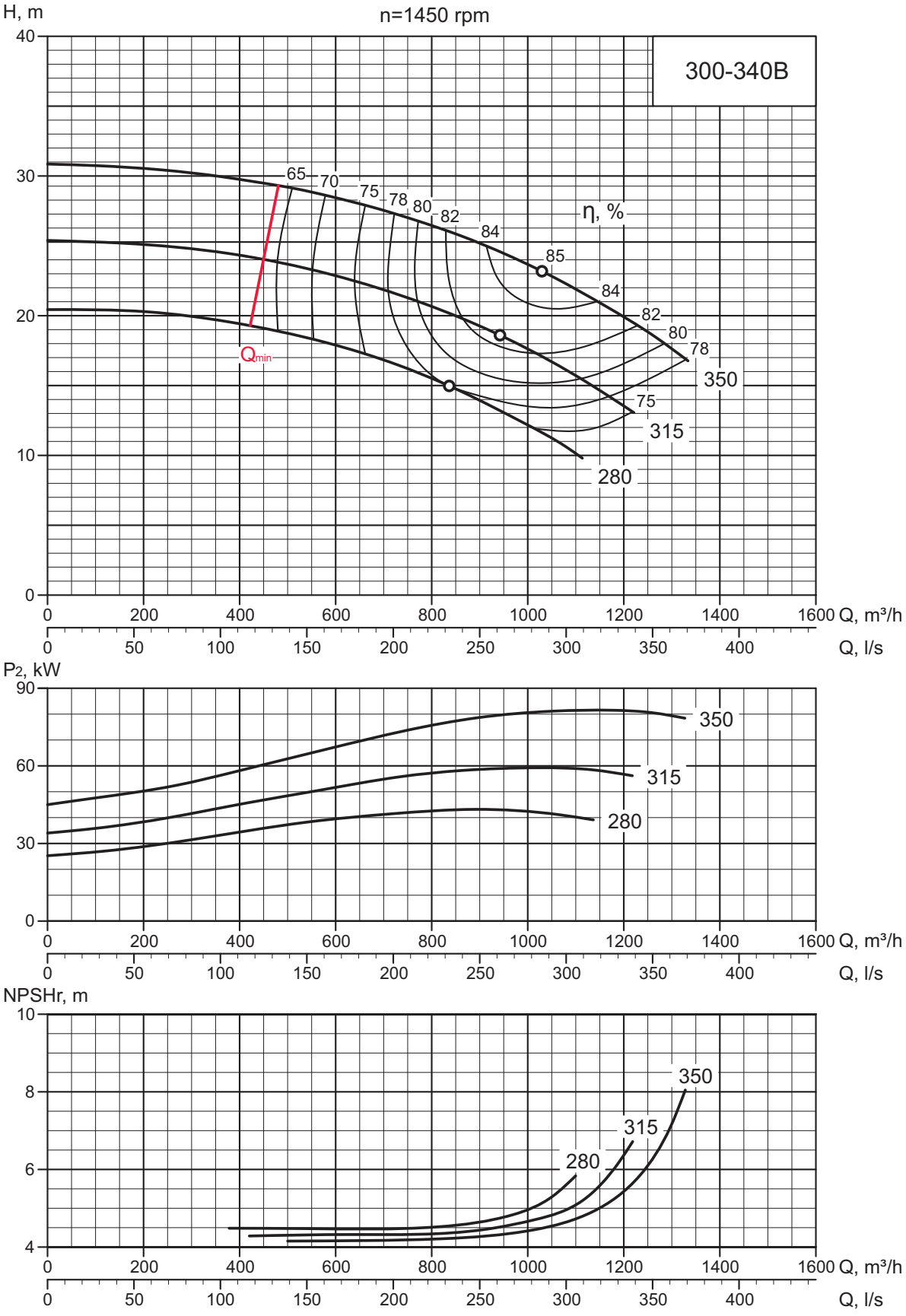
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



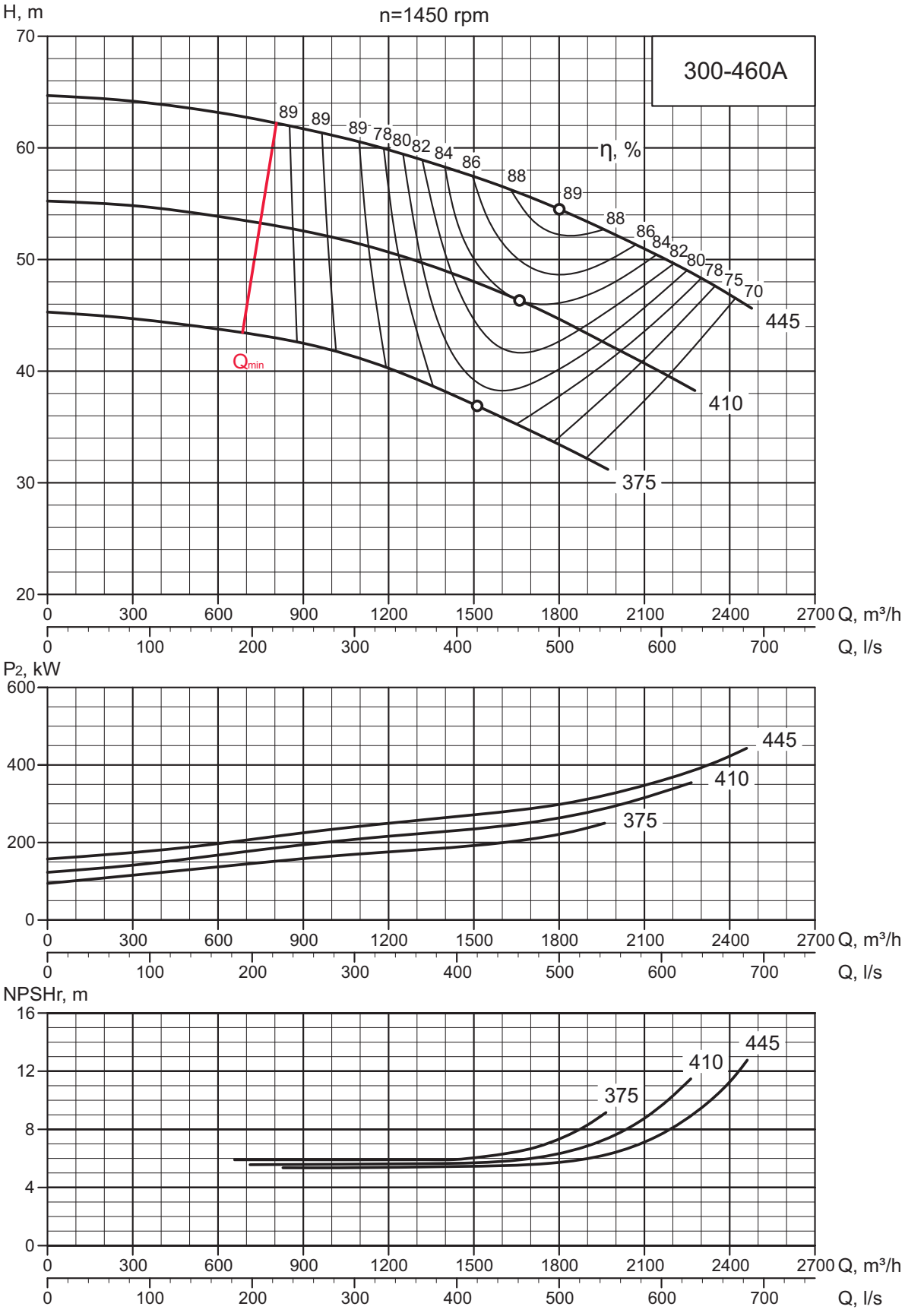
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



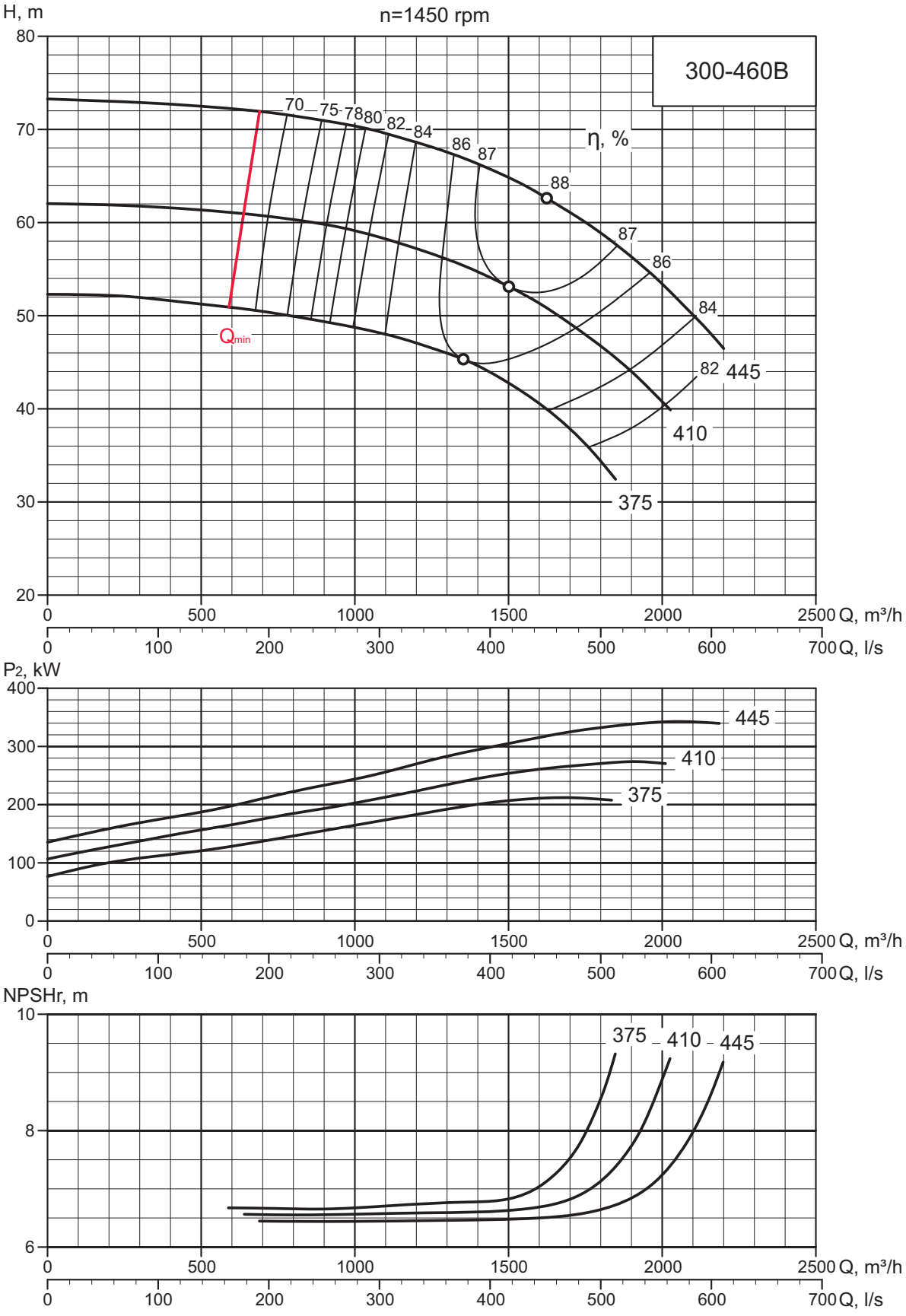
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



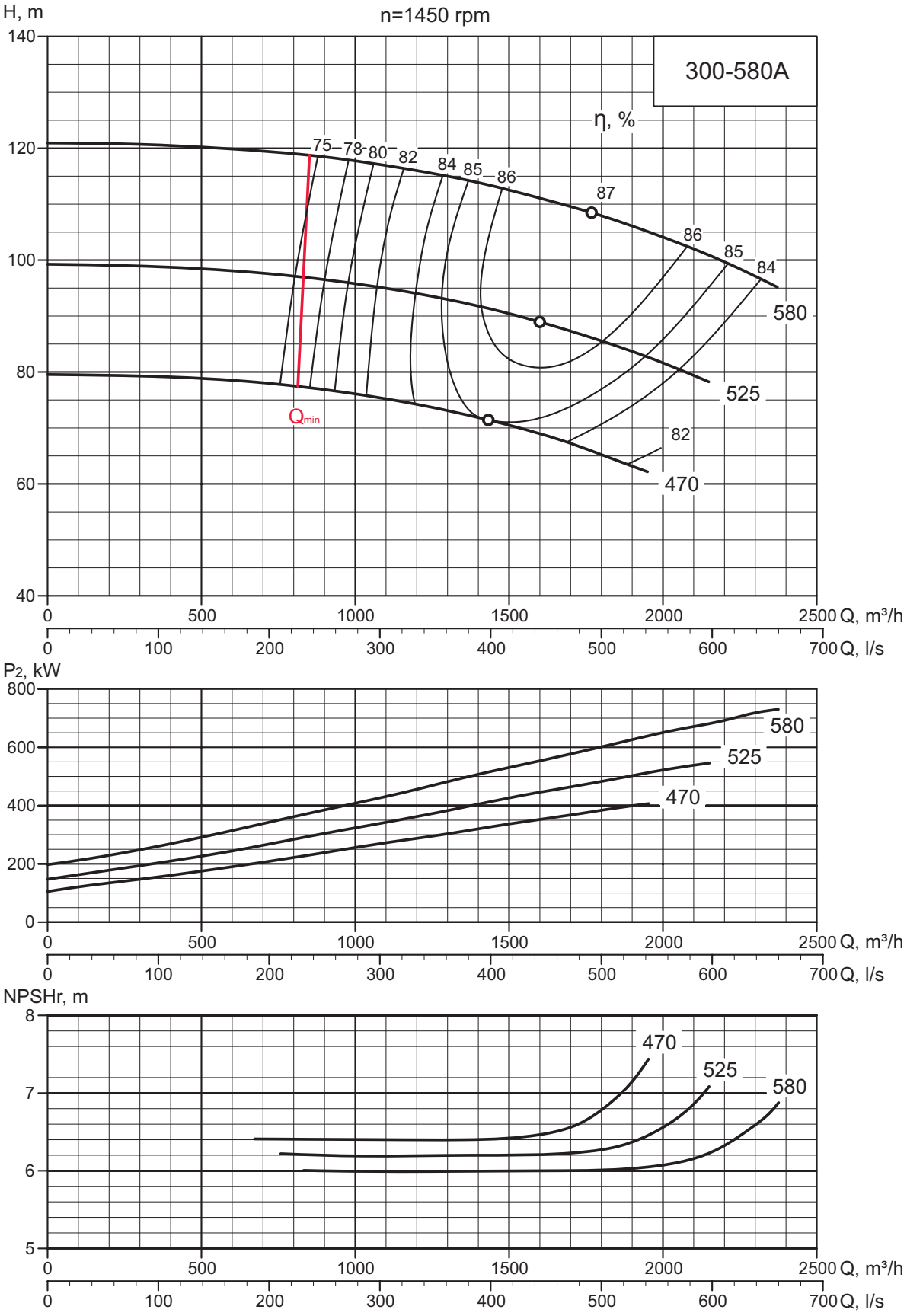
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



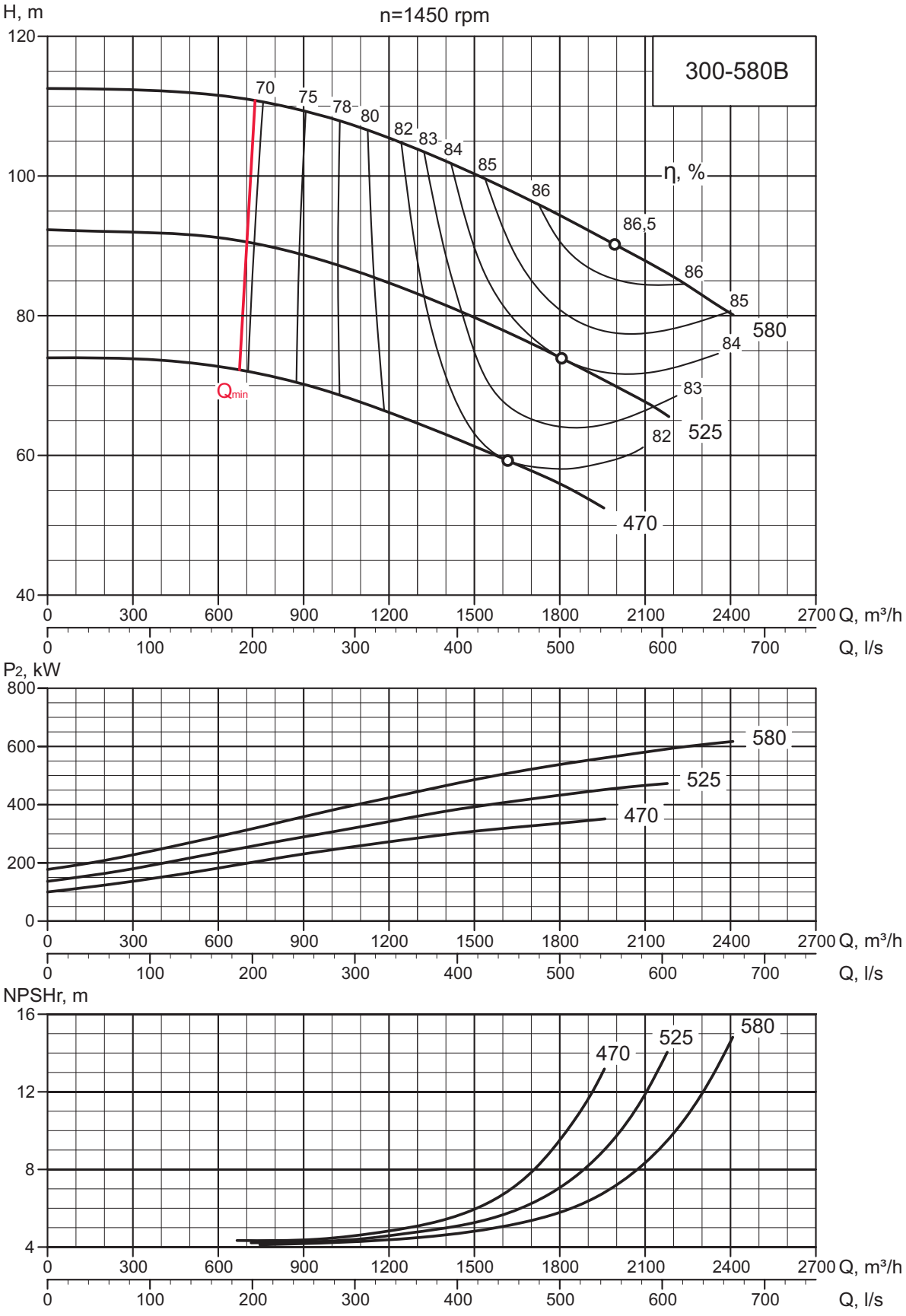
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



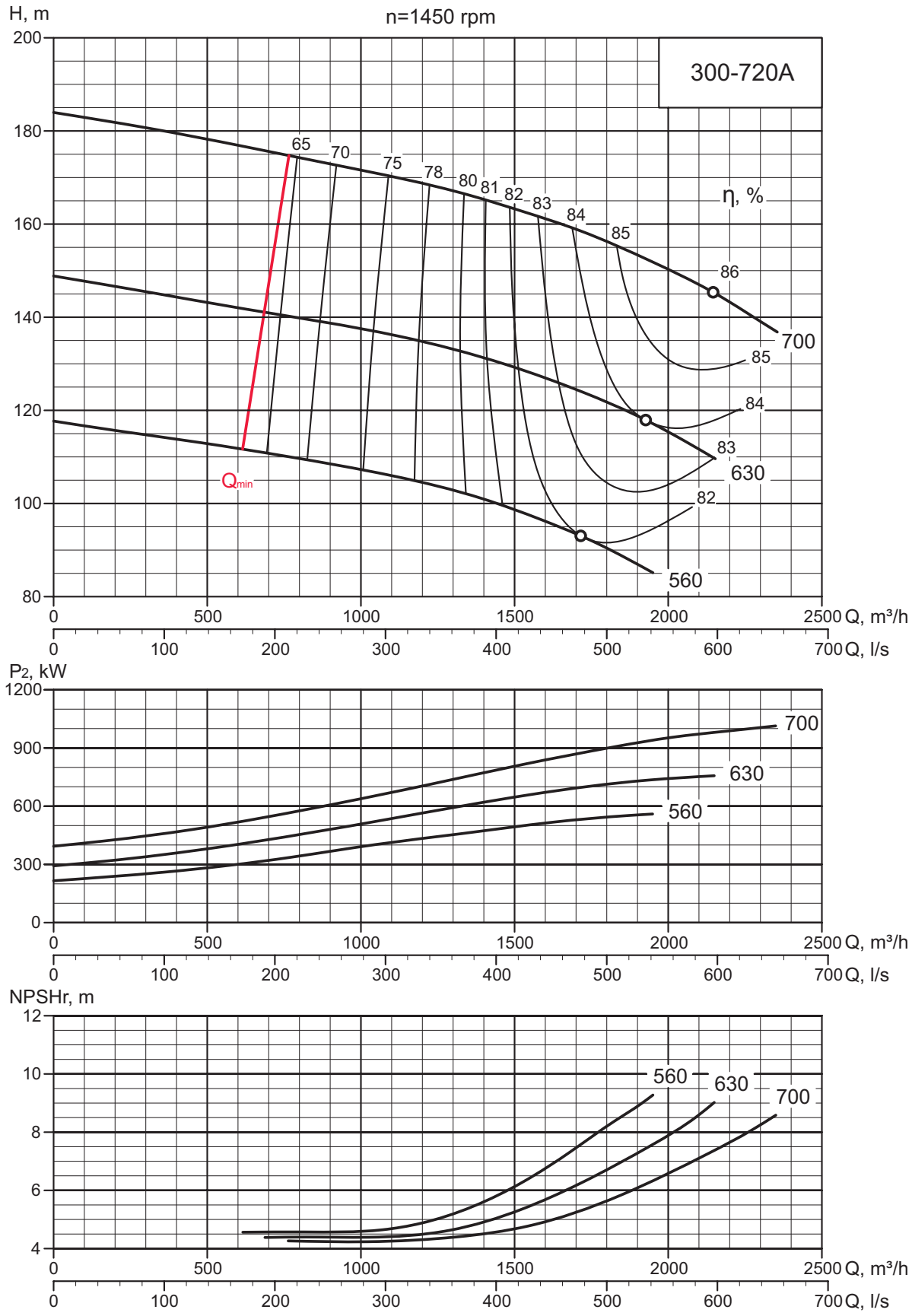
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



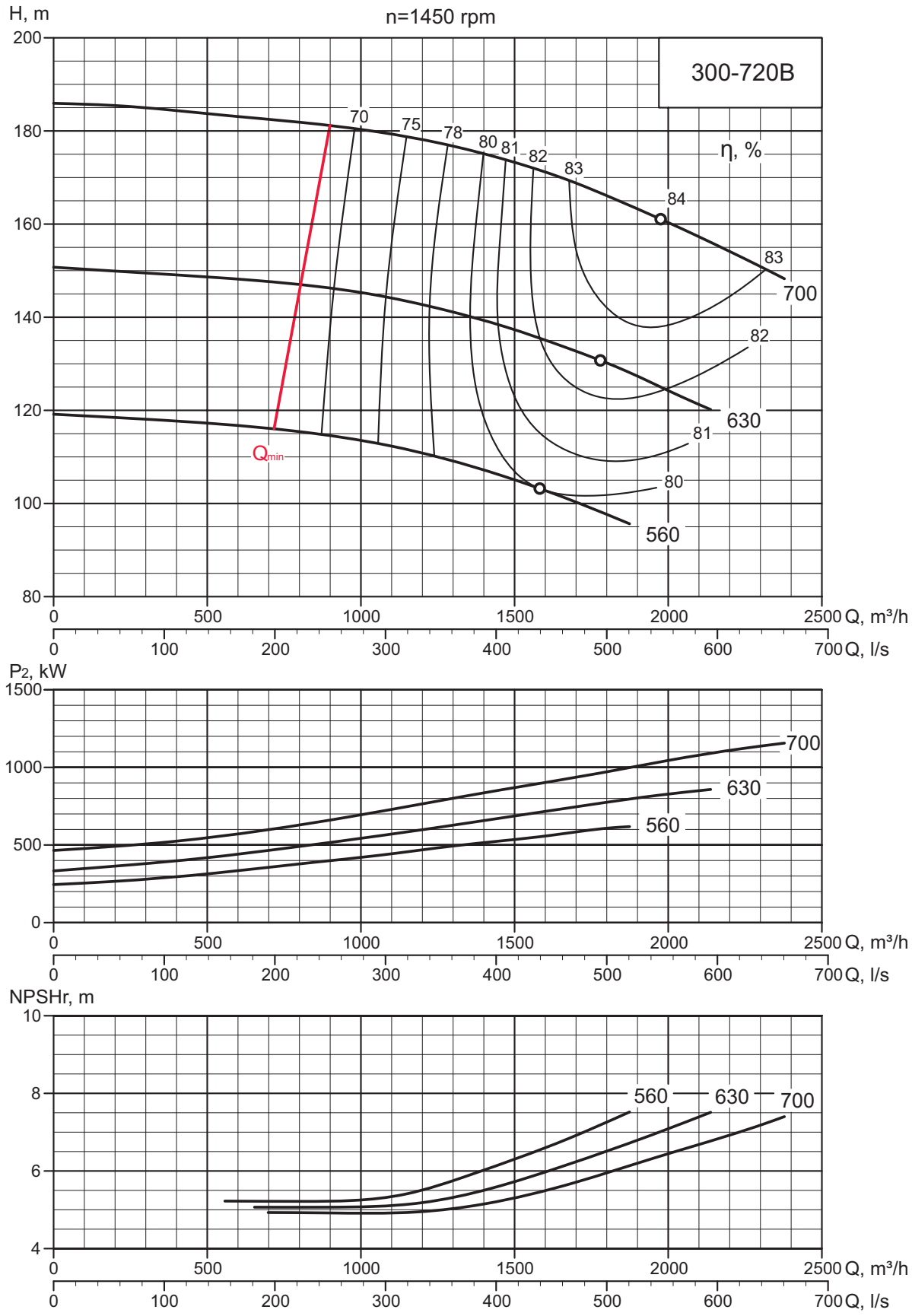
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



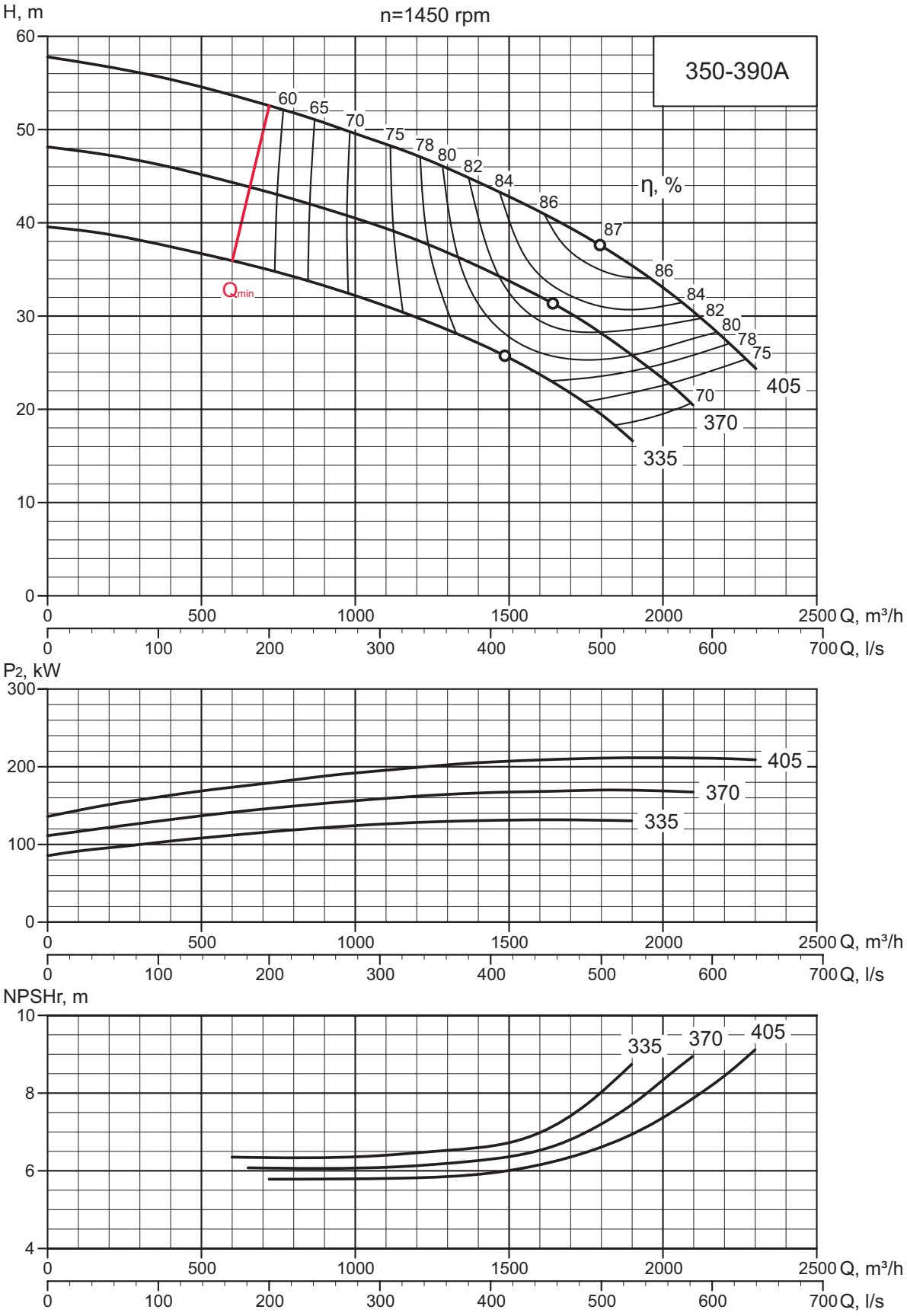
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



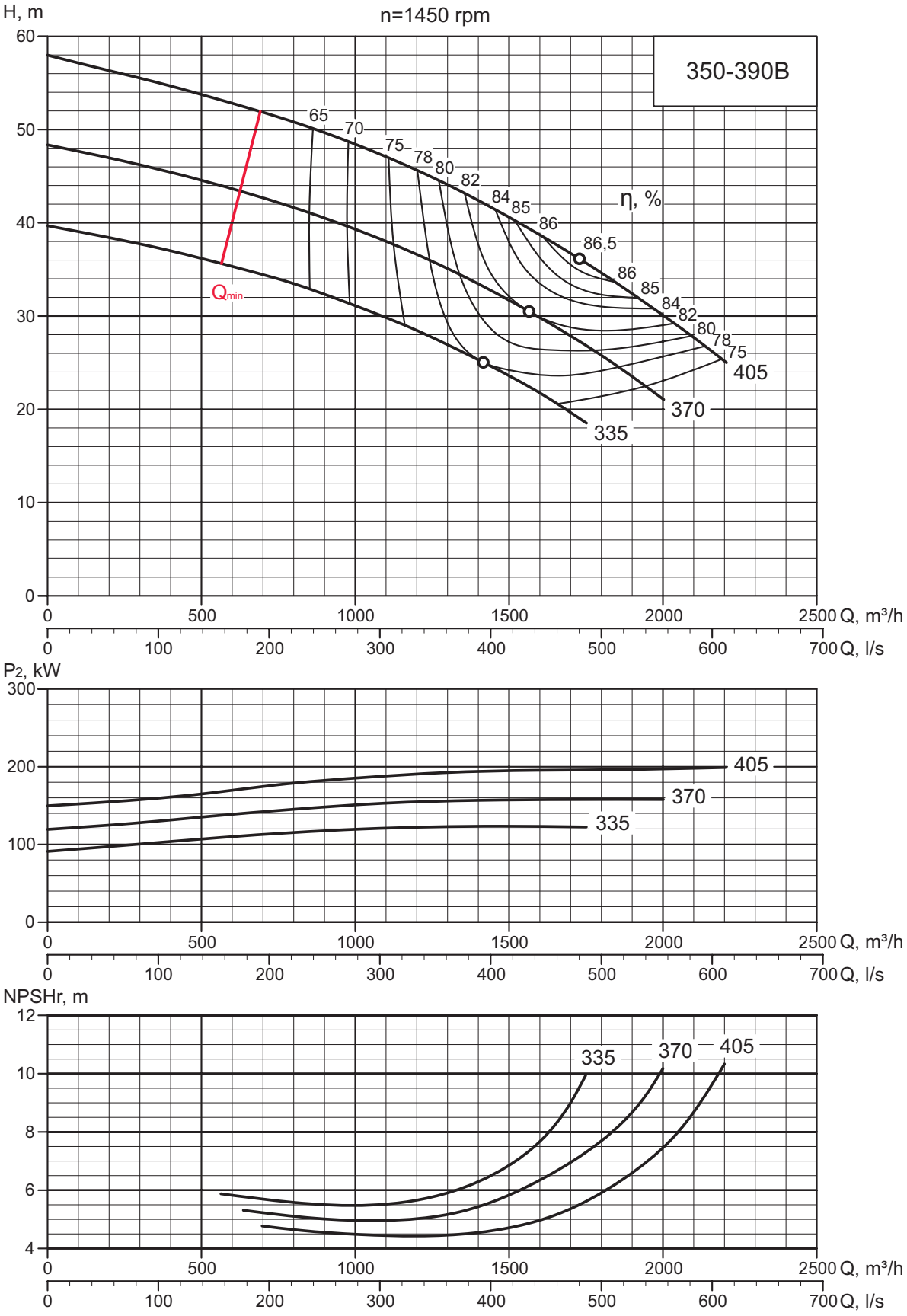
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



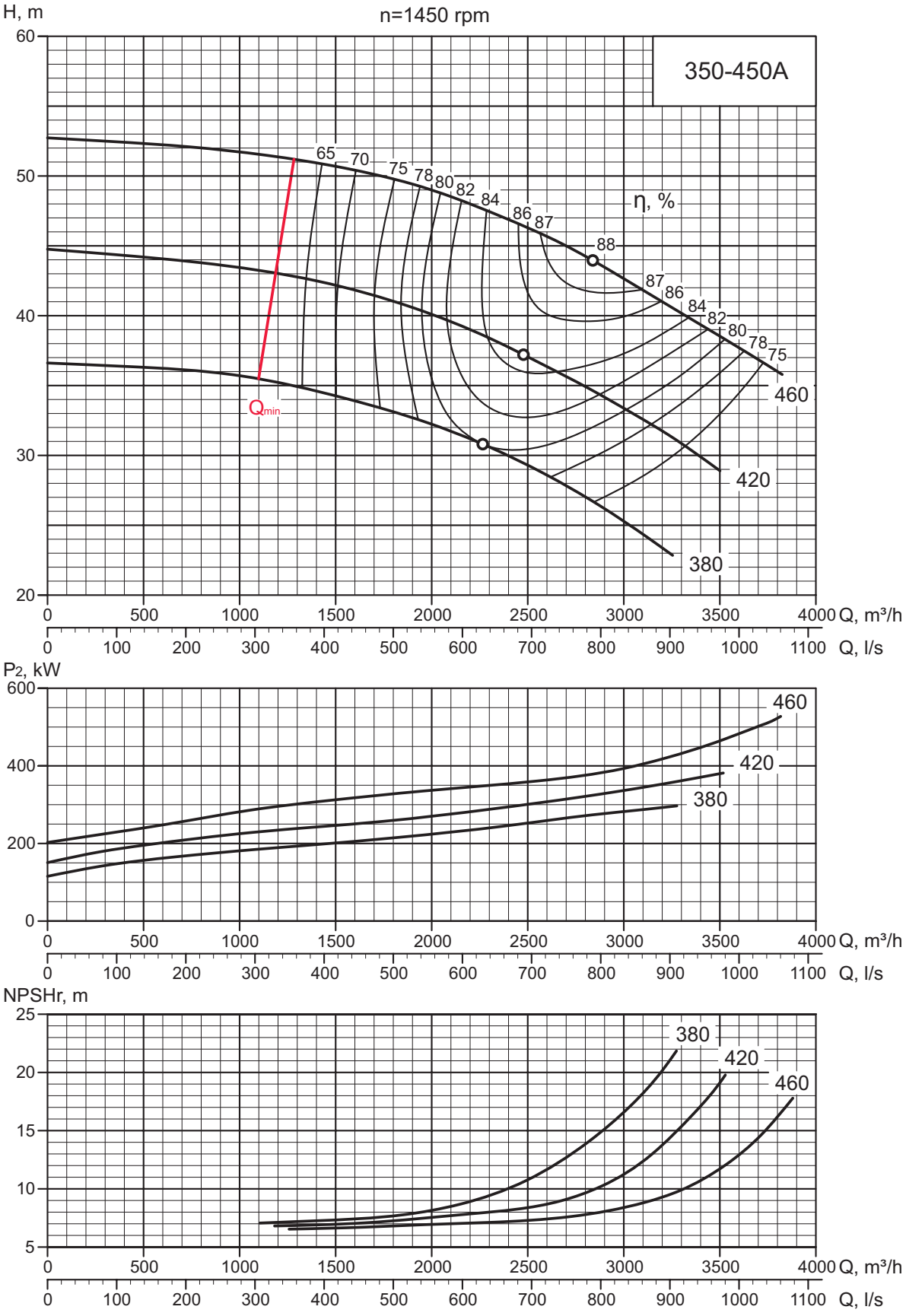
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



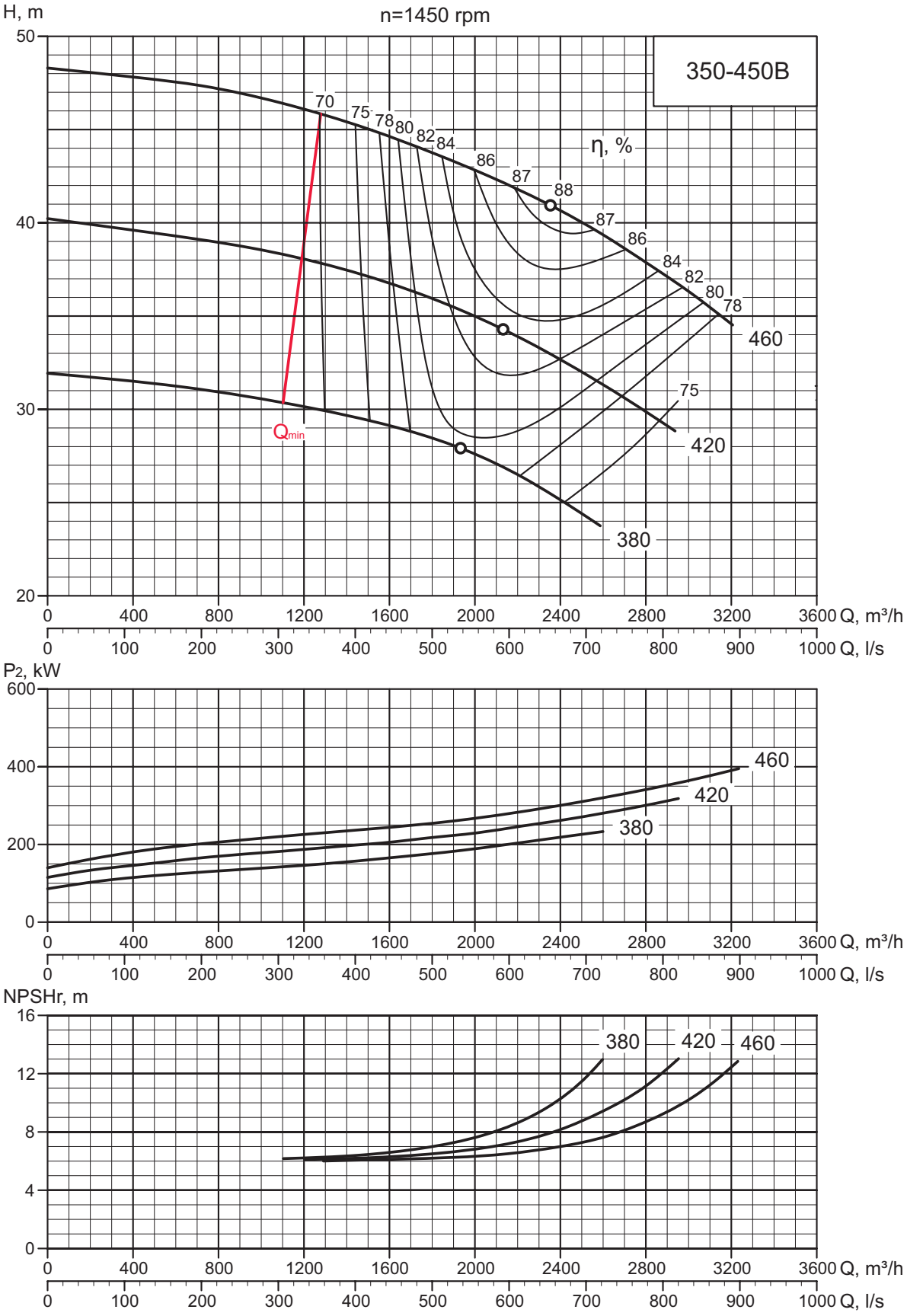
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



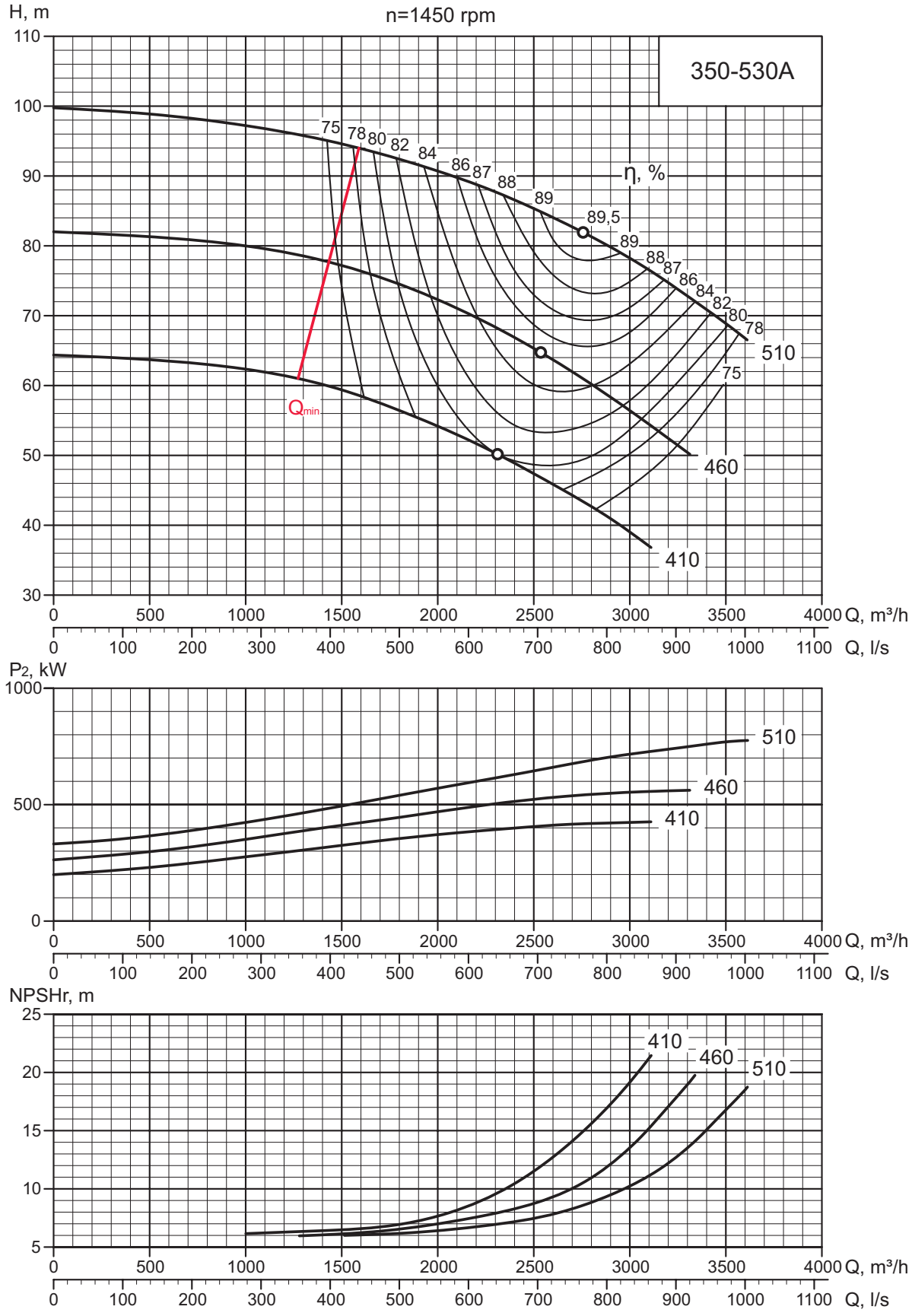
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



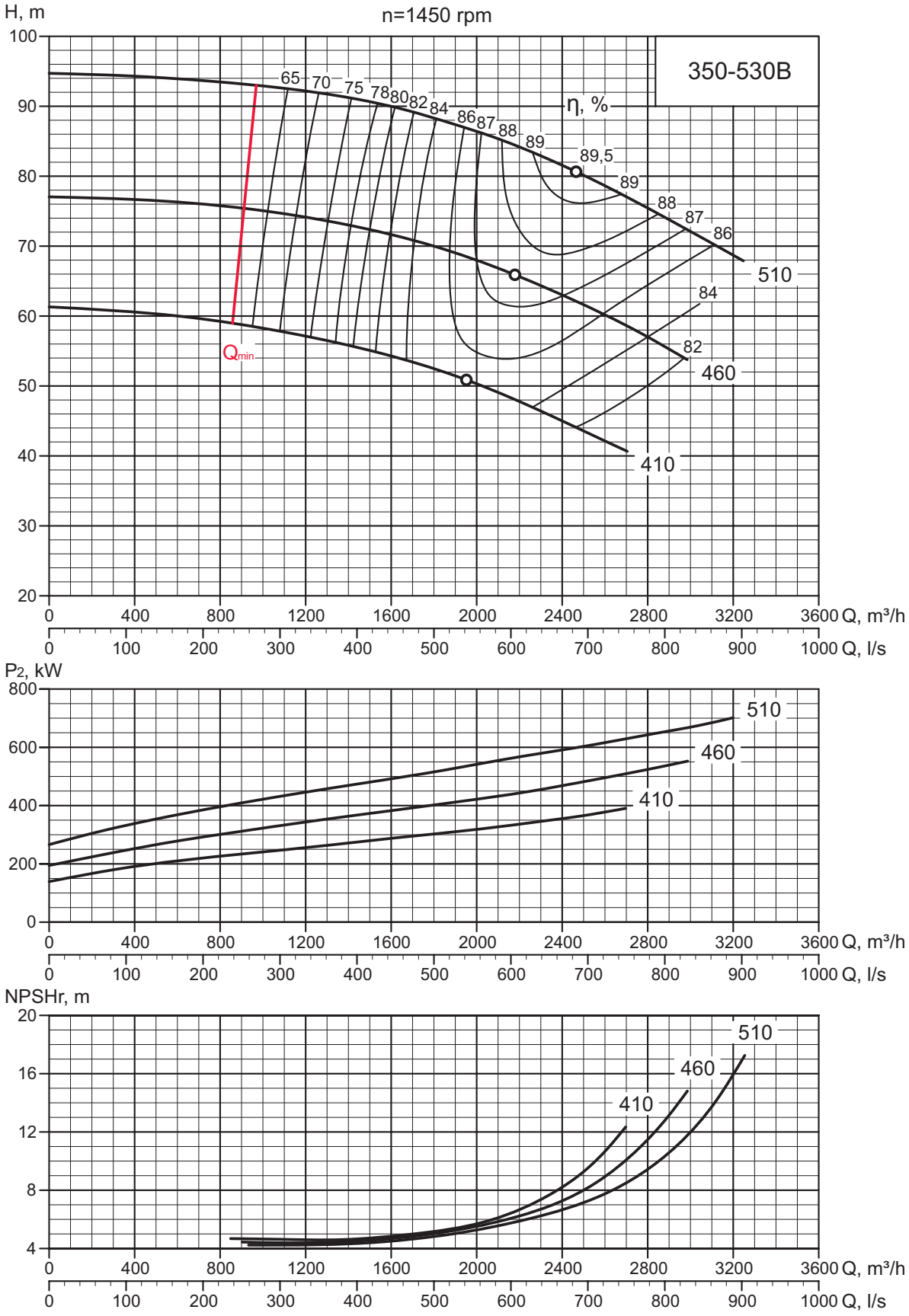
ISO 9906:2012 Class 2B

The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



ISO 9906:2012 Class 2B

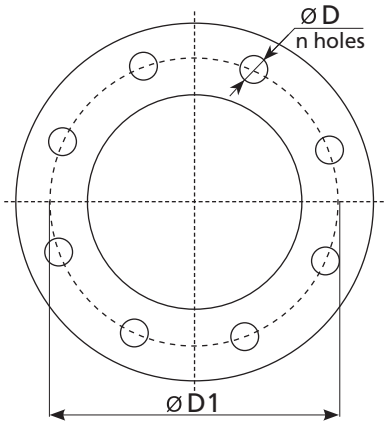
The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.



ISO 9906:2012 Class 2B

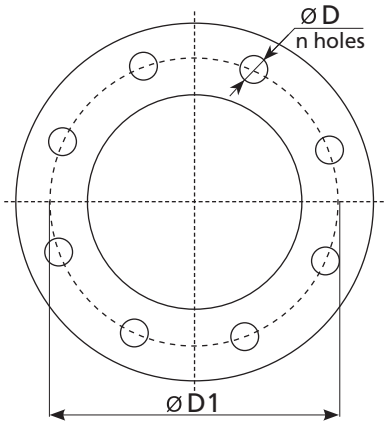
The hydraulic characteristics are guaranteed according to ISO standard 9906, acceptance grade 1B.

FLANGES DIMENSIONS
PUMPS WITH CAPACITY UP TO 3500 m³/h



Flanges		DIN2501 ISO7005/2			BS4504			ANSI B 16.1		GOST 12815-80		
		PN10	PN16	PN25	Table 10/11	Table 16/11	Table 25/11	Class 125	Class 250	Pset 1.0	Pset 1.6	Pset 2.5
DN125	D	19	19	28	19	19	28		23	18	18	26
	D1	210	210	220	210	210	220		235	210	210	220
	n	8	8	8	8	8	8		8	8	8	8
DN150	D	23	23	28	23	23	28		23	22	22	26
	D1	240	240	250	240	240	250		270	240	240	250
	n	8	8	8	8	8	8		12	8	8	8
DN200	D	23	23	28	23	23	28	23	28	22	22	26
	D1	295	295	310	295	295	310	299	330	295	295	310
	n	8	12	12	8	12	12	8	12	8	12	12
DN250	D	23	28	31	23	28	31	28	28	22	26	30
	D1	350	355	370	350	355	370	362	387	350	335	370
	n	12	12	12	12	12	12	12	16	12	12	12
DN300	D	23	28	31	23	28	31	28	31	22	26	30
	D1	400	410	430	400	410	430	432	451	400	410	430
	n	12	12	16	12	12	16	12	16	12	12	16
DN350	D	23	28	34	23	28	34	28	31	22	26	33
	D1	460	470	490	460	470	490	476	514	460	470	490
	n	16	16	16	16	16	16	12	20	16	16	16
DN400	D	28	31	37	28	31	37	28	34	26	30	36
	D1	515	525	550	515	525	550	540	572	515	525	550
	n	16	16	16	16	16	16	16	20	16	16	16
DN450	D	28	31	37	28	31	37	31	34	26	30	36
	D1	565	585	600	565	585	600	578	629	565	585	600
	n	20	20	20	20	20	20	16	24	20	20	20

FLANGES DIMENSIONS
PUMPS WITH CAPACITY OVER 3500 m³/h



Flanges		DIN2501 ISO7005/2		BS4504		ASME 16.1	ASME 16.5	ASME 16.47	GOST 12815-80	
		PN16	PN25	Table 16/11	Table 25/11	Class 250	Class 300	Class 300	Pset 1.6	Pset 2.5
DN350	D	27	34	27	34	32	32	–	26	33
	D1	470	490	470	490	514	514	–	470	490
	n	16	16	16	16	20	20	–	16	16
DN400	D	31	37	31	37	35	35	–	30	36
	D1	525	550	525	550	572	572	–	525	550
	n	16	16	16	16	20	20	–	16	16
DN500	D	33	37	33	37	35	35	–	33	36
	D1	650	660	650	660	686	686	–	650	660
	n	20	20	20	20	24	24	–	20	20
DN600	D	37	39	37	39	42	42	–	36	39
	D1	770	770	770	770	813	813	–	770	770
	n	20	20	20	20	24	24	–	20	20
DN700	D	37	42	37	42	–	–	940	36	42
	D1	840	875	840	875	–	–	45	840	875
	n	24	24	24	24	–	–	28	24	24
DN800	D	39	49	39	49	–	–	1054	39	48
	D1	950	990	950	990	–	–	51	950	990
	n	24	24	24	24	–	–	28	24	24

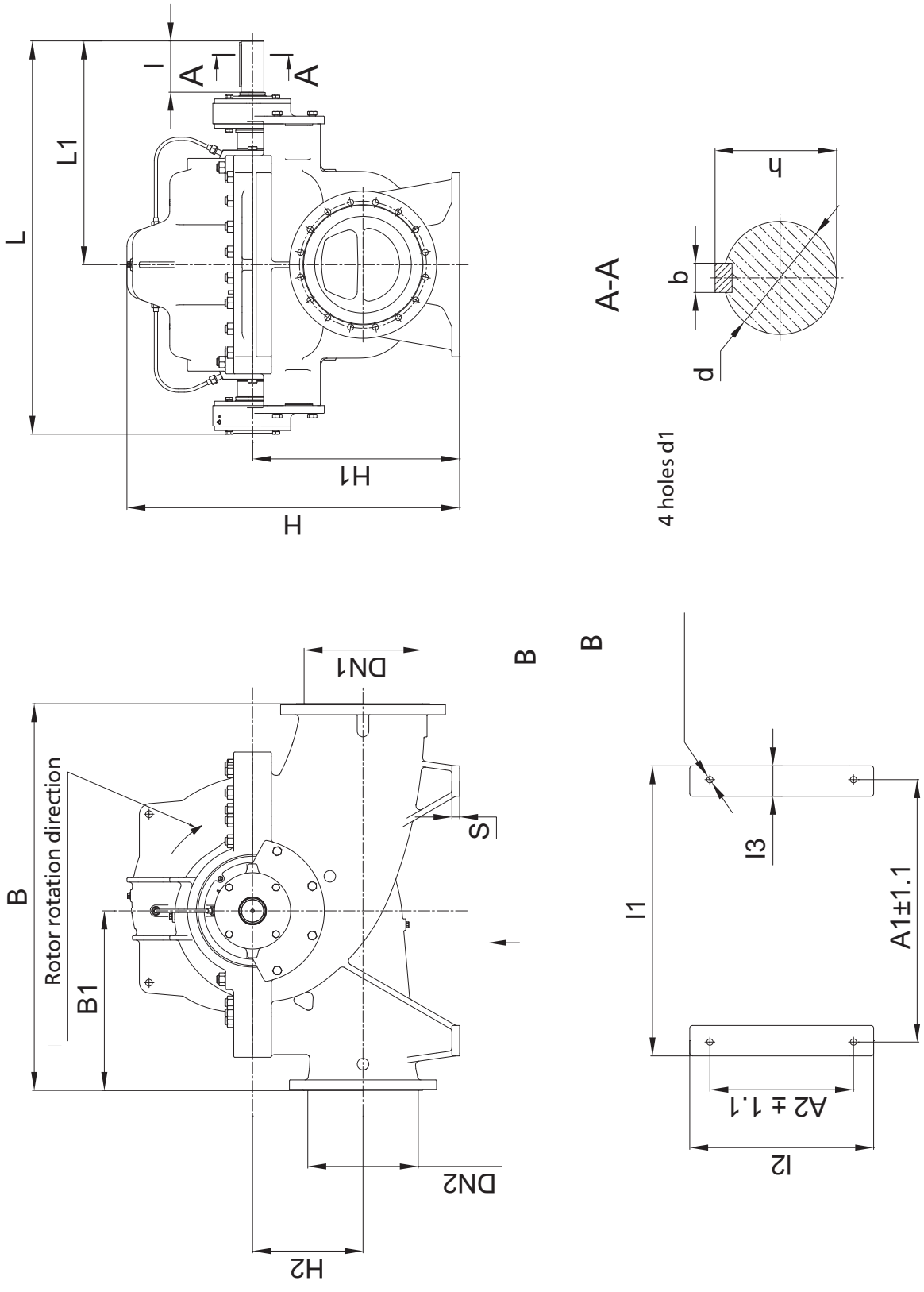
FLANGES CORRESPONDENCE TO INTERNATIONAL STANDARDS

Pump	Cast Iron, Ni-resist				Ductile cast iron, Duplex, Stainless Steel			
	DIN2501 ISO7005/2	BS4504	ANSI B 16.1	GOST 12815-80	DIN2501 ISO7005/2	BS4504	ANSI B 16.1	GOST 12815-80
D125-250	PN16	Table 16/11	Class 250	Table 5	PN25	Table 25/11	Class 250	Table #6
D125-320				Table 5				
D125-400				Table 5				
D125-480				Table 5				
D150-290	PN16	Table 16/11	Class 250	Table 5				
D150-380				Table 5				
D150-450				Table 5				
D150-500				Table 5				
D150-560	PN25	Table 25/11						
D200-340	PN16	Table 16/11	Class 250	Table 5				
D200-450				Table 5				
D200-560				Table 5				
D200-660	PN25	Table 25/11						
D250-400	PN10	Table 10/11	Class 125	Table 4				
D250-510	PN16	Table 16/11	Class 250	Table 5				
D250-630	PN25	Table 25/11						
D300-340	PN10	Table 10/11	Class 125	Table 4				
D300-460				Table 4				
D300-580	PN16	Table 16/11	Class 250	Table 5				
D300-720	PN25	Table 25/11						
D350-390	PN10	Table 10/11	Class 125	Table 4				
D350-450				Table 4				
D350-530				Table 4				

FLANGES CORRESPONDENCE TO INTERNATIONAL STANDARDS

Pump	Cast Iron, Ni-resist				Ductile cast iron, Duplex, Stainless Steel			
	DIN2501 ISO7005/2	BS4504	ASME 16.1	GOST 12815-80	DIN2501 ISO7005/2	BS4504	ASME 16.5/ 16.47	GOST 12815-80
D350-580	PN16	Table 16/11	Class 250	Pset 1.6	PN25	Table 25/11	Class 250 ASME 16.5	Pset 2.5
D350-725	PN25	Table 25/11		Pset 2.5				
D400-520	PN16	Table 16/11		Pset 1.6				
D400-660								
D400-700								
D400-800	PN16	Table 16/11		Pset 1.6				
D400-990	PN25	Table 25/11		Pset 2.5				
D500-580	PN16	Table 16/11		Pset 1.6				
D500-735								
D500-825	PN25	Table 25/11		Pset 2.5				
D500-875								
D500-1050								
D500-1070								
D600-635	PN16	Table 16/11		Pset 1.6			Class 300 ASME 16.5/16.47	
D600-720								
D600-870	PN25	Table 25/11		Pset 2.5				
D600-1135								
D700-850	PN16	Table 16/11		Pset 1.6			Class 300 ASME 16.47	
D700-1000	PN25	Table 25/11		Pset 2.5				

OVERALL DIMENSIONS
PUMPS WITH CAPACITY UP TO 3500 m³/h

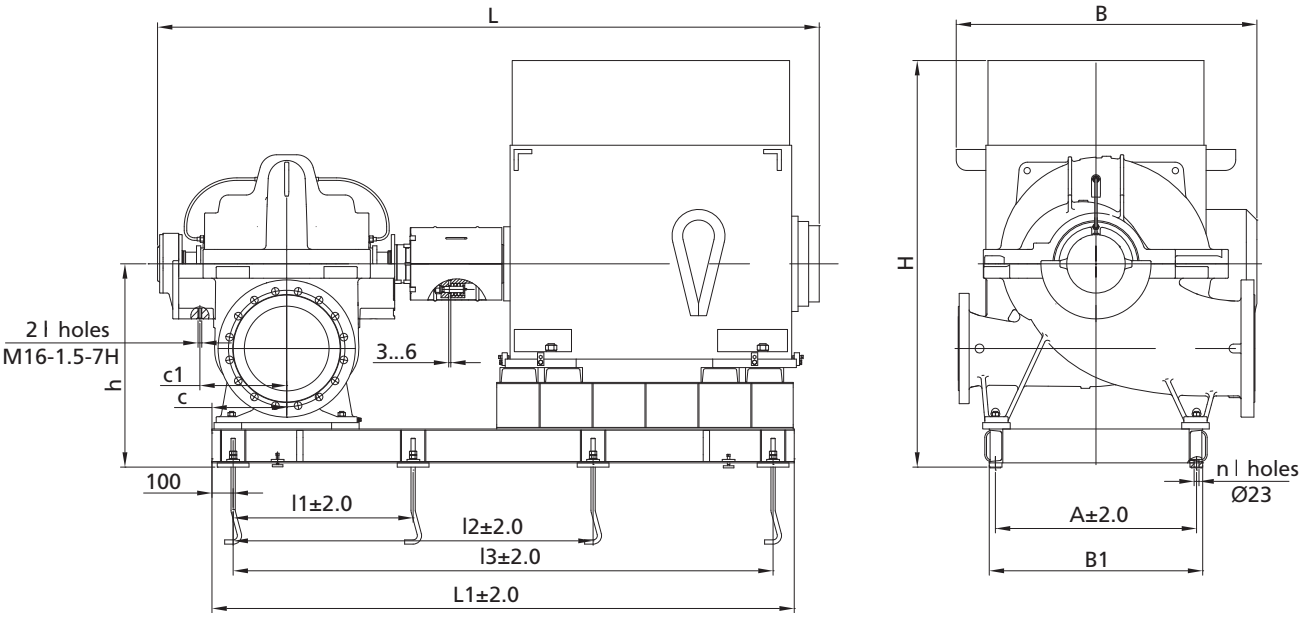


OVERALL DIMENSIONS
PUMPS WITH CAPACITY UP TO 3500 m³/h

Pump	Dimensions, mm																	Flanges*				Pump weight, kg
	L	L_1	l	l_1	l_2	l_3	B	B_1	b	H	H_1	H_2	h	d	d_1	A_1	A_2	s	Inlet		Outlet		
																			DN1, mm	PN, bar	DN2, mm	PN, bar	
D125-250	915	515	110	520	444	75	740	370	12	630	400	200	45	42	18	450	340	22	200	16	125	16	335
D125-320																							365
D125-400						80	770			700								20					395
D125-480				630	430		900	450		740								22					475
D150-290				520	444		800	400		660								20			150		410
D150-380							820			700													420
D150-450	1040	590		630	535		900	450	14	705	400		54.5	52		560	430	22	250	16	200	16	520
D150-560				770			1100	500		890	500	300				700							735
D200-340				630	530		900	450		806		240				560							575
D200-450					535		1000	500		875	520	260											690
D200-500				700	564		1000	450		926	560	280				630							750
D200-560	1155	655	140	800	535	110	1100	500	18	970		300	66	62	23	700	400	28	300	10	250	10	785
D200-660							1200	550		1050	600	350								25**		25**	1160
D250-400					532		1000	500		950		300											1345
D250-510	1290	730	160		656		1150	550	20	1005	630	350	76.5	72			520						1120
D250-630							1200			1085													1230
D300-340	1155	655	140		480		1100	500	18	990		300	66	62			400		350	10	300	10	1525
D300-460	1290	730	160		656		1200	550	20	1070	670	350	76.5	72			520						1525
D300-580	1425	810	170	1050	666	120	1350	650	22	1160	710		88	82		950			400	16	300	16	1830
D300-720						110	1400			1270	750	400								25**	300	25**	1120
D350-390	1290	730	160	800	656		1200	550	20	1080	670	350	76.5	72		700				10	350	10	1250
D350-450	1425	810	170	1050	600		1400	650	22	1215	750	400	88	82		950							1620
D350-530					666					1205													

*Flange sizes are given for cast iron version. Any pump size is available in steel version with flanges in accordance with PN25.
**Only for steel version pumps.

UNIT OVERALL DIMENSIONS
PUMPS WITH CAPACITY UP TO 3500 m³/h



Pump	Dimensions, mm												n	Electric Motor			Unit weight, kg
	L	L_1	l_1	l_2	l_3	B	B_1	A	H	h	c	c_1		Power, kW	Voltage, V	Weight, kg	
D125-250A	1550	1330	565	1130	-	740	750	695	750	520	230	265	6	22	220/380	170	659
D125-250A-a	1590													15	220/380	127	616
D125-250A-b	1420													11	220/380	83.5	573
D125-250B	1620													18.5	220/380	140	629
D125-250B-a	1590													15	220/380	127	616
D125-250B-b	1420													11	220/380	83.5	573
D125-320A	1731								815					45	220/380	270	783
D125-320A-a	1785								815					37	220/380	230	743
D125-320A-b	1600								780					30	220/380	190	700
D125-320B	1785								815					37	220/380	230	743
D125-320B-a	1785								815					37	220/380	230	742
D125-320B-b	1600								780					30	220/380	190	700
D125-400A	1855	1540	670	1340		770	750	695	900	520	230	265	6	75	220/380	480	990
D125-400A-a	1785								820					55	220/380	345	855
D125-400A-b	1685								820					37	220/380	230	740
D125-400B	1855								900					75	220/380	480	990
D125-400B-a	1785								820					55	220/380	345	855
D125-400B-b	1685								820					37	220/380	230	740
D125-480A	2100	1820	810	1620		900	750	695	955	520	230	265	6	110	380/660	742	1390
D125-480A-a	1885								925					90	220/380	515	1153
D125-480A-b	1855													75	220/380	480	1118
D125-480B	2100								955					110	380/660	742	1390
D125-480B-a	1885								925					90	220/380	515	1153
D125-480B-b	1785								880					55	220/380	345	983

Permissible deviation of the pump weight is + 2%. The deviation in the opposite direction is not defined.

UNIT OVERALL DIMENSIONS
PUMPS WITH CAPACITY UP TO 3500 m³/h

Pump	Dimensions, mm												n	Electric motor			Unit weight, kg
	L	L_1	l_1	l_2	l_3	B	B_1	A	H	h	c	c_1		Power, kW	Voltage, V	Weight, kg	
D150-290A	1730	1540	670	1340	-	800	750	695	815	520	230	265	6	45	220/380	270	850
D150-290A-a	1685								815					37	220/380	230	810
D150-290A-b	1600								780					22	220/380	170	750
D150-290B	1730								815					45	220/380	270	850
D150-290B-a	1685								815					37	220/380	230	810
D150-290B-b	1550								780					22	220/380	170	750
D150-380A	2100	1540	670	1340		820	750	695	900	520	230	265	6	132	380/660	855	1435
	2100								900					110	380/660	742	1325
D150-380A-a	1855								900					90	220/380	515	1095
D150-380A-b	1855								900					75	220/380	480	1060
D150-380B	2100								900					110	380/660	742	1325
D150-380B-a	1855								900					90	220/380	515	1095
D150-380B-b	1855								900					75	220/380	480	1060
D150-450A	2225	1870	835	1670		900	750	700	960	580	230	265	6	132	380/660	855	1540
D150-450A-a	2010								930					90	220/380	515	1500
D150-450A-b	1980								930					75	220/380	480	1465
D150-450B	2010								930					90	220/380	515	1500
D150-450B-a	1980								930					75	220/380	480	1465
D150-450B-b	1980								930					75	220/380	480	1465
D150-560A	2075	2170	985	1970		1100	750	700	1181	680	275	295	6	250	380/660	990	1975
D150-560A-a	2205								1130					200	380/660	1150	2135
D150-560A-b	2205								1130					160	380/660	1057	2042
D150-560B	2075								1181					250	380/660	990	1975
D150-560B-a	2205								1130					200	380/660	1150	2135
D150-560B-b	2155								1070					132	380/660	855	1840
D200-340A	2010	1870	835	1670		900	750	700	1060	680	275	300	6	90	220/380	515	1325
D200-340A-a	2010								1060					75	220/380	480	1290
D200-340A-b	1910								995					55	220/380	345	1155
D200-340B	2010								1060					90	220/380	515	1325
D200-340B-a	2010								1060					75	220/380	480	1290
D200-340B-b	1910								995					55	220/380	345	1155
D200-450A	2335	1970	885	1770		1000	750	700	1150	680	325	295	6	200	380/660	1150	2125
D200-450A-a	2225								1080					160	380/660	835	1810
D200-450A-b	2225								1080					110	380/660	742	1325
D200-450B	2335								1150					200	380/660	1150	2125
D200-450B-a	2225								1080					132	380/660	855	1830
D200-450B-b	2010								1080					90	220/380	515	1490
D200-500A	2335	1870	835	1670		1100	750	700	1240	740	230	295	6	200	380/660	1150	1950
D200-500A-a	2335								1240					160	380/660	1057	1860
D200-500A-b	2225								960					132	380/660	855	1655

Permissible deviation of the pump weight is + 2%. The deviation in the opposite direction is not defined.

UNIT OVERALL DIMENSIONS
PUMPS WITH CAPACITY UP TO 3500 m³/h

Pump	Dimensions, mm												n	Electric motor			Unit weight, kg
	L	L_1	l_1	l_2	l_3	B	B_1	A	H	h	c	c_1		Power, kW	Voltage, V	Weight, kg	
D200-500B	2335								1240					160	380/660	1057	1860
D200-500B-a	2225	1870	835	1670		1100	750	700	960	740	230	295	6	132	380/660	855	1655
D200-500B-b	2010								960					90	220/380	515	1315
D200-560A	2330								1285					315	380/660	1290	2447
D200-560A-a	2195								1241					250	380/660	990	2147
D200-560A-b	2445								1190					200	380/660	1150	2307
D200-560B	2330	1980	885	1770		1100	750	700	1285	740	275	325	6	315	380/660	1290	2447
	2195								1241					250	380/660	990	2147
D200-560B-a	2445								1190					200	380/660	1150	2307
D200-560B-b	2445								1190					160	380/660	1057	2214
D200-660A	2855								1680					630	6000	2290	3650
D200-660A-a	2755								1680					500	6000	2070	3430
D200-660A-b	2755								1680					400	6000	1930	3290
D200-660B	2755	2320	1060	2120	-	1320	750	700	1680	780	275	325	6	500	6000	2070	3430
D200-660B-a	2755								1680					400	6000	1930	3290
D200-660B-b	2245								1281					250	380/660	990	2350
D250-400A	2445								1230					200	380/660	1150	2170
D250-400A-a	2445								1230					160	380/660	1057	2127
D250-400A-b	2335								1160					132	380/660	855	2055
D250-400B	2445	1980	885	1770		1000	750	700	1230	780	275	325	6	200	380/660	1150	2170
D250-400B-a	2335								1160					132	380/660	855	2055
D250-400B-b	2120								1160					90	220/380	515	1715
D250-510A	2845	2450	750	1500		1320			1680					500	6000	2070	3569
														400	6000	1930	3428
D250-510A-a	2470					1150			1325					315	380/660	1290	2880
D250-510A-b	2585				2250		750	700	1230	800	410	370	8	200	380/660	1150	2650
D250-510B	2845	2450	750	1500		1320			1680					400	6000	1930	3428
D250-510B-a	2470					1150			1325					315	380/660	1290	2880
D250-510B-b	2475								1160					132	380/660	855	2354
D250-630A	2945					1320			1730					630	6000	2290	3973
D250-630A-a	2845													500	6000	2070	3755
D250-630A-b	2470					1200			1375					315	380/660	1290	2972
D250-630B	2945	2450	750	1500	2250	1320	750	700	1730	830	338	370	8	500	6000	2070	3755
D250-630B-a	2845													400	6000	1930	3615
D250-630B-b	2470					1200			1375					315	380/660	1290	2972
D300-340A	2305													132	380/660	855	2267
D300-340A-a	2235													110	380/660	742	2154
D300-340A-b	2090													90	220/380	515	1928
D300-340B	2235	1870	835	1670	-	1100	750	700	1190	810	275	325	8	110	380/660	742	2154
D300-340B-a	2090													90	220/380	515	1928
D300-340B-b	2060													75	220/380	480	1892

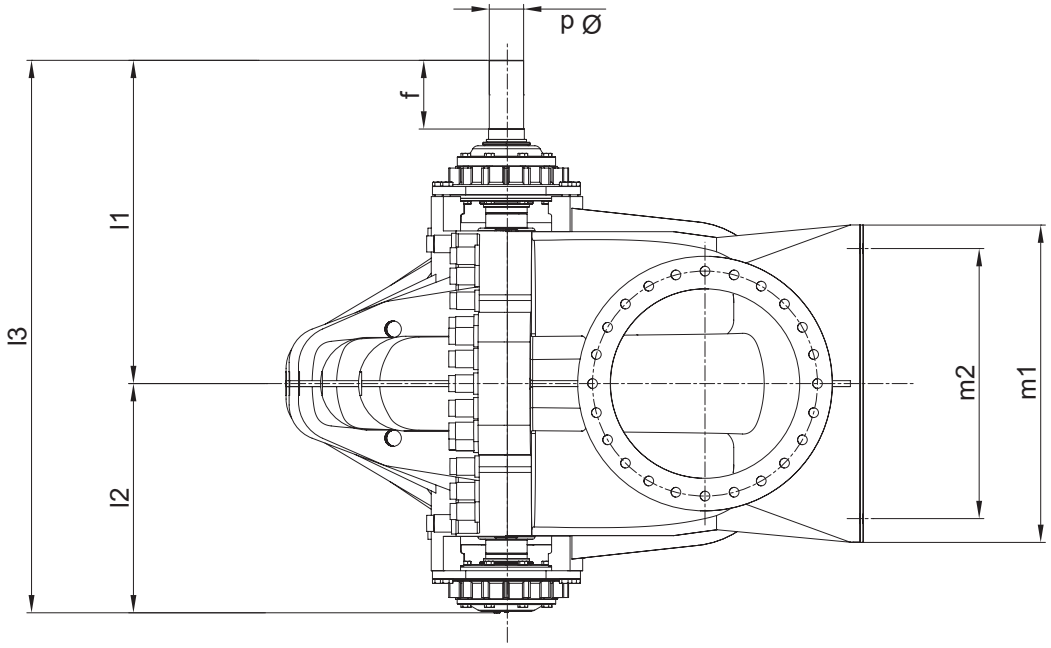
Permissible deviation of the pump weight is + 2%. The deviation in the opposite direction is not defined.

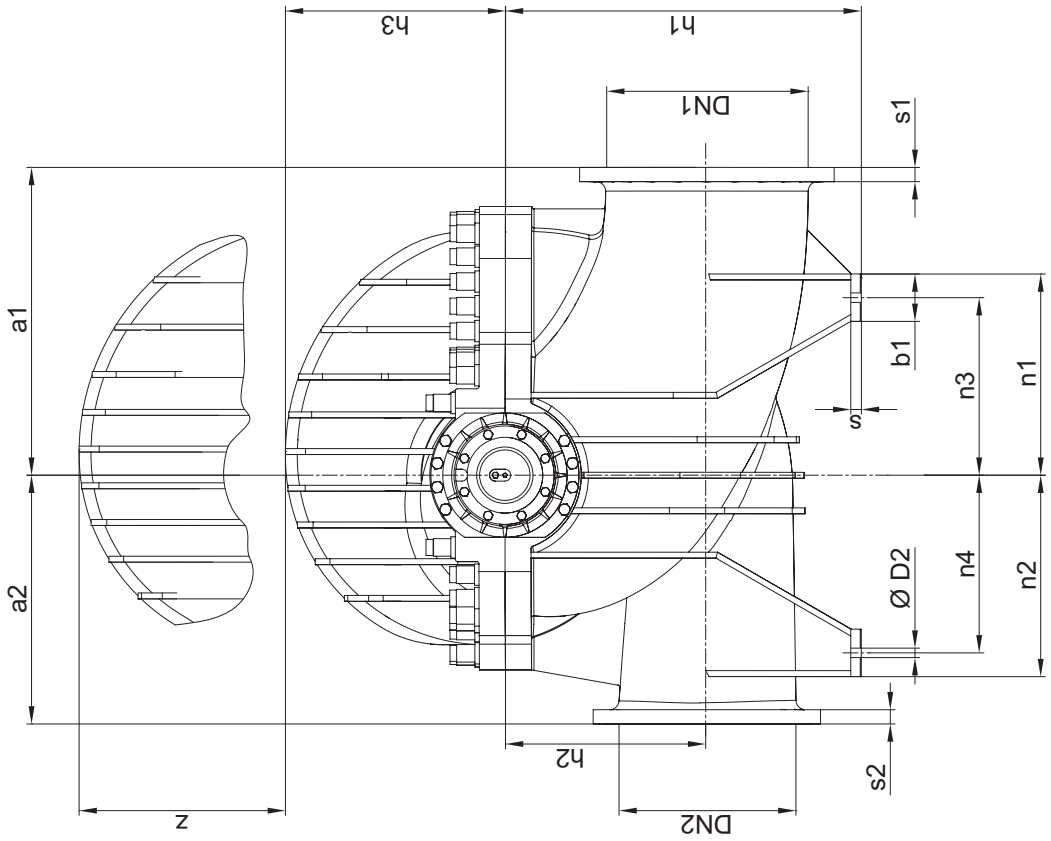
UNIT OVERALL DIMENSIONS
PUMPS WITH CAPACITY UP TO 3500 m³/h

Pump	Dimensions, mm												n	Electric Motor			Unit weight, kg
	L	L_1	l_1	l_2	l_3	B	B_1	A	H	h	c	c_1		Power, kW	Voltage, V	Weight, kg	
D300-460A	2845	2100	950	1900	-	1320	750	700	1770	870	338	375	6	400	6000	1930	3510
D300-460A-a	2470								1415					315	380/660	1290	2870
D300-460A-б	2335								1400					250	380/660	990	2570
D300-460B	2470								1415					315	380/660	1290	2870
D300-460B-a	2335								1400					250	380/660	990	2570
D300-460B-б	2585													200	380/660	1150	2730
D300-580A	3030	2750	850	1700	2550	1420	1010	950	1870	910	343	395	8	800	6000	2580	4510
D300-580A-a	3080					1360			1810					630	6000	2290	4220
D300-580A-б	2980					1360								400	6000	1930	3860
D300-580B	3080													630	6000	2290	4220
D300-580B-a	2980													500	6000	2070	4000
D300-580B-б	2980													400	6000	1930	3860
D300-720A	3620					1600			2265	950		410		1250	3000/6000	5140	7440
D300-720A-a	3130					1420			1920					1000	6000	2890	5190
D300-720A-б	3030													800	6000	2580	4880
D300-720B	3130	2750	850	1700	2550	1420	1010	950	1920	950	343	410	8	1000	6000	2890	5190
D300-720B-a	3030													800	6000	2580	4880
D300-720B-б	3080					1400			1860					630	6000	2290	4590
D350-390A	2335	2100	950	1900	-	1200	750	700	1371	870	328	375	6	250	380/660	990	2430
D350-390A-a	2585								1320					200	380/660	1150	2590
D350-390A-б														160	380/660	1057	2497
D350-390B														200	380/660	1150	2590
D350-390B-a														160	380/660	1057	2497
D350-390B-б	2475								1280					132	380/660	855	2295
D350-450A	2900	2390	730	1460	2190	1400	1010	950	1850	950	343	400	8	400	6000	1930	3585
D350-450A-a	2525								1495					315	380/660	1290	2945
D350-450A-б	2390								1451					250	380/660	990	2645
D350-450B	2900								1850					400	6000	1930	3585
D350-450B-a	2525								1495					315	380/660	1290	2945
D350-450B-б	2390								1451					250	380/660	990	2645
D350-530A	3030	2750	850	1700	2550	1430	1010	950	1970	950	343	400	8	800	6000	2580	4620
D350-530A-a	3080	2540	780	1560	2340	1400			1850					630	6000	2290	4310
D350-530A-б	2980	2390	730	1460	2190				1850					500	6000	2070	4090
D350-530B	3080	2540	780	1560	2340				1850					630	6000	2290	4310
	3030	2750	850	1700	2550	1430			1970					800	6000	2580	4620
D350-530B-a	3080	2540	780	1560	2340	1400			1850					500	6000	2070	4090
	3080	2540	780	1560	2340									630	6000	2290	4310
D350-530B-б	2980	2390	730	1460	2190				1850					400	6000	1930	3965

Permissible deviation of the pump weight is + 2%. The deviation in the opposite direction is not defined.

OVERALL DIMENSIONS
PUMPS WITH CAPACITY OVER 3500 m³/h





OVERALL DIMENSIONS
PUMPS WITH CAPACITY OVER 3500 m³/h

Pump	Flange rated diameter		Dimensions, mm																		Weight, kg
	DN1	DN2	d	f	a1	a2	l1	l2	l3	h1	h2	h3	b1	D2	m1	m2	n1	n2	n3	n4	s	z	
D350-580	400	350	95	210	900	700	956	720	1676	900	475	550	150	35	780	630	560	560	485	485	35	1100	2600
D350-725	400	350	95	210	900	750	956	720	1676	900	475	550	150	35	780	630	560	560	485	485	35	1100	2750
D400-520	500	400	105	210	750	700	998	747	1745	900	475	550	150	35	890	740	560	560	485	485	35	1100	2400
D400-660	500	400	105	210	1000	750	998	747	1745	1000	525	620	150	35	890	740	560	560	485	485	35	1240	3200
D400-700	500	400	95	210	900	800	956	720	1676	900	450	570	150	35	750	630	640	640	565	565	35	1140	2800
D400-800	500	400	95	210	900	800	956	720	1676	1000	550	620	150	35	840	690	640	640	565	565	35	1300	3200
D400-990	500	400	95	210	1050	1000	956	720	1676	1000	550	650	150	35	840	690	640	640	565	565	35	1300	3100
D500-580	600	500	105	210	1100	800	1098	847	1945	1100	550	680	150	35	1050	900	640	640	565	565	35	1360	4400
D500-735	600	500	105	210	1100	00	1098	847	1945	1100	575	670	150	35	1050	900	640	640	565	565	35	1340	4300
D500-825	600	500	125	250	1150	1100	1166	872	2038	1100	575	690	200	42	1070	870	850	850	750	750	40	1380	4760
D500-875	600	500	125	250	1200	900	1166	872	2038	1200	700	775	200	42	1070	870	725	725	625	625	40	1550	5000
D500-1050	600	500	125	250	1200	1100	1166	872	2038	1200	725	750	200	42	1070	870	850	850	750	750	40	1500	5500
D500-1070	600	500	125	250	1250	1100	1166	872	2038	1200	700	800	200	42	1070	870	850	850	750	750	40	1600	5680
D600-635	700	600	105	210	1200	900	1098	847	1945	1200	675	770	200	35	1070	870	725	725	625	625	40	1540	4900
D600-720	700	600	105	210	1150	1000	1098	847	1945	1100	575	715	200	35	1090	870	725	725	625	625	40	1430	4700
D600-870	700	600	145	290	1300	1100	1280	926	2206	1300	750	790	200	42	1070	870	850	850	750	750	40	1580	5600
D600-1135	700	600	145	290	1250	1200	1280	926	2206	1300	750	850	200	42	1150	950	850	850	750	750	40	1700	5800
D700-850	800	700	145	290	1300	1050	1365	977	2342	1300	750	790	200	42	1340	1140	850	850	750	750	40	1700	7000
D700-1000	800	700	145	290	1300	1050	1365	977	2342	1500	850	930	200	42	1340	1140	850	850	750	750	40	1800	7700

SCOPE OF SUPPLY

Supply of pump

- Pump
- Coupling
- Coupling guard
- Pump base plate (frame)

Options

- Set of commissioning tools
- Set of instrumentation
- Set of commissioning parts

Supply of pumping unit (pump with motor)

- Pump (including items listed in the scope of supply for pump)
- Electric motor
- Common base plate (frame)

Options

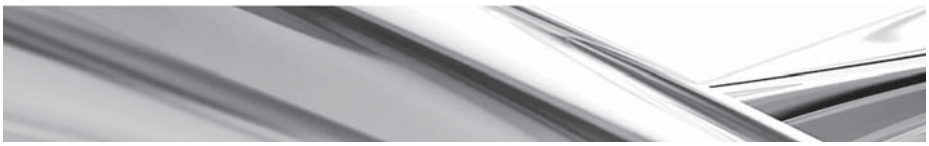
- Frequency converter (AC)
- Control panel
- Spare parts for repair / overhaul
- Bearings temperature sensors
- Vibration velocity sensors

REQUEST FOR QUOTATION (ORDER FORM)
HMS DeLium Pumps

Please forward the completed order form to **HMS Group Moscow. International Sales Department**:
7, Chayanova Str., Moscow, 125047, Russia. Tel: + 7 (495) 730 6601, ext. 2112. Fax: +7 (495) 730 6602
E-mail: export@hms.ru www.hms.biz

№	Parameter	Units	Customer requirements
1	**Functional**		
1.1	Capacity	m^3/h	
1.2	Head	m	
1.3	Maximum discharge pressure	bar	
1.4	NPSHR	m	
2	**Pumped media**		
2.1	Pumped liquid name and description		
2.2	Solids volume concentration	%	
2.3	pH factor		
2.4	Total mineralization	mg/l	
2.5	Solids size (abrasive/non-abrasive)	mm	
2.6	Temperature of pumped liquid	°C	
2.7	Cinematic viscosity at operation temperature	cSт	
2.8	Density at operation temperature	kg/m^3	
2.9	Absolute pressure of saturated steam	bar	
3	**Materials of main components**		
	Casing / Cover Impeller Shaft		
4	**Shaft sealing**		
4.1	Single/double gland sealing		
4.2	Single/double mechanical sealing		
5	**Site installation conditions**		
5.1	Outside temperature	°C	
5.2	Explosion proof demand		
5.3	Humidity	%	
6	**Sensors**		
	Bearing housing vibration	yes / no	
	Bearing housing temperature	yes / no	
7	**Drive**		
7.1	Voltage, number of phases		
7.2	Frequency		
8	**Appendixes:** (installation scheme, other requirements)		

Name _____ Position _____ Company _____
Address _____
Phone _____ Fax _____



HMS Group

HMS Group is the leading in Russia and CIS manufacturer of pumps, compressors, and skid-mounted & modular equipment as well as the integrated solutions provider for oil & gas, nuclear & thermal energy, water & utilities.

Key Facts and Figures

- HMS Group foundation – 1993
- Manufacturing facilities in Russia, CIS and Europe
- Over 15 000 employees
- Widespread dealer network

Main Business Activities

Pumps

- Oil & gas industry applications (including API 610 pumps)
- Termal & nuclear energy applications
- Water supply & sewage disposal
- Steel, mining and other industries

Compressors

- Compressors
- Compressor systems
- Complete compressor stations

Oil & Gas equipment

- Modular and skid-mounted units
- Mobile & stationary cement storages
- Downhole equipment
- Tanks, pressure vessels, heat exchangers
- Flow meters

Integrated Client Support

Project Audit

- Technical audit
- Scope of works definition
- Project scheduling and budgeting

Engineering, Procurement, Manufacture, Testing

- Design and engineering dossier
- Manufacturing of main process equipment (pumps, compressors, pressure vessels, heat exchangers)
- Outsourcing of auxiliaries
- Factory assembly
- Factory Acceptance Test

Supply and Site Services

- Shipment
- Site installation
- Pre-commissioning
- Site Performance Tests
- Site Supervision and on-the-job training
- After sales servicing and counseling

Quality

HMS Group Quality Management System complies with ISO 9001:2008. The equipment is manufactured in accordance with internationally recognized ISO, ANSI, DIN, ASME, ATEX and API standards and in accordance with the customer specifications as well.

Global Presence

The HMS Group reference list includes the international projects in Russia and the CIS, Western and Eastern Europe, Iraq, Indonesia, India, China, the USA and other countries.

HMS Group Moscow
International Sales Department

Phone: + 7 (495) 730 6601 (ext. 2112)
Fax: + 7 (495) 730 6602
E-mail: export@hms.ru
www.grouphms.com www.hms.biz

Sales Office in Dubai

Phone: + 971 (552) 152-725
E-mail: rajrazdan@hms.ru

HMS 127E 07092016 ENG