

Dry-installed Volute Casing Pump

KWP

50 Hz
Impeller Type O
Impeller Type F
Impeller Type R

Characteristic Curves Booklet



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Characteristic Curves Booklet KWP

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Centrifugal Pumps with Shaft Seal

Dry-installed Volute Casing Pumps

KWP



The Q_{\max} data plotted vertically in some of the characteristic curve diagrams describe Q_{\max} as a function of $v_s = 7.5 \text{ m/s}$, independently of rotational speed.³⁾

Motor rating

The motor ratings given are valid for the following conditions:

- Ambient temperatures of up to 40 °C
- Installation altitude of up to 1000 m above MSL
- Voltages of 230/400 V to 400/690 V

General

Acceptance grade:

characteristic curves to ISO 9906 Grade 2B

NPSH values

The NPSH values indicated in the characteristic curves correspond to a head drop of 3 %. The values indicated are minimum values. They apply to degassed water. For safety reasons, increase the curve values by at least 0.5 m for the application.

NPSH values in part-load conditions

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

Density of the fluid handled

The indicated heads and performance data apply to pumped fluids with a density $\rho = 1.0 \text{ kg/dm}^3$ and a kinematic viscosity of up to 20 mm²/s max. If the density $\neq 1.0$, the performance data must be multiplied by ρ . For viscosities >20 mm²/s the corresponding data for cold water has to be calculated and the impact on the pump's performance has to be determined.

Impeller trimming

Impellers of all diameters can be trimmed right down to the minimum diameter indicated.

Operating limits

Observe the operating limits resulting from the specific materials or designs used.

Unless specified otherwise in the characteristic curves, the following applies:

- Short-time operation
 - $Q_{\min}^{1)} = 0.1 \times Q_{\text{opt}}^{2)}$
- Continuous operation
 - For sizes $\leq \text{DN } 125$: $Q_{\min}^{1)} = 0.2 \times Q_{\text{opt}}^{2)}$
 - For sizes $\geq \text{DN } 150$: $Q_{\min}^{1)} = 0.3 \times Q_{\text{opt}}^{2)}$
 - For 2-pole operation: $Q_{\max} = 1.1 \times Q_{\text{opt}}^{2)}$
 - For 4-pole operation: $Q_{\max} = 1.25 \times Q_{\text{opt}}^{2)}$

1) Minimum permissible flow rate
2) Flow rate at best efficiency point
3) Velocity in the suction-side pipe

Technical data of hydraulic system

Technical data of hydraulic system

Sizes	Bearing bracket	Impeller type O				Impeller type F				Impeller type R			
		Free passage	Number of vanes	Impeller diameter		Free passage	Number of vanes	Impeller diameter		Free passage	Number of vanes	Impeller diameter	
				Max.	Min.			Max.	Min.			Max.	Min.
		[mm]		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]		[mm]	[mm]
065-050-0200	P03ax	30	3	209	160	-	-	-	-	-	-	-	-
065-050-0201	P03ax	-	-	-	-	45	6	209	130	-	-	-	-
080-065-0200	P03ax	30	3	209	160	-	-	-	-	-	-	-	-
080-065-0201	P03ax	-	-	-	-	55	6	209	145	-	-	-	-
080-065-0315	P04ax	25	3	320	230	-	-	-	-	-	-	-	-
100-080-0250	P03ax	36	3	260	170	-	-	-	-	-	-	-	-
100-080-0251	P03ax	-	-	-	-	60	7	260	170	-	-	-	-
100-080-0311	P04ax	-	-	-	-	50	7	320	260	-	-	-	-
100-080-0315	P04ax	-	-	-	-	-	-	-	-	64	3	320	260
100-080-0400	P05ax	25	3	404	280	-	-	-	-	-	-	-	-
125-100-0250	P04ax	37	3	260	180	-	-	-	-	70	2	260	220
125-100-0251	P04ax	-	-	-	-	70	7	260	180	-	-	-	-
125-100-0400	P05ax	35	4	404	280	-	-	-	-	-	-	-	-
150-125-0315	P05ax	-	-	-	-	-	-	-	-	90	2	320	270
150-150-0311	P05ax	-	-	-	-	90	7	320	260	-	-	-	-
150-150-0315	P05ax	38	5	320	260	-	-	-	-	-	-	-	-
200-200-0400	P06x	36	5	404	320	-	-	-	-	119	2	400	325
250-250-0500.2	P08xs, P10ax, P12sx	70	4	504	400	-	-	-	-	-	-	-	-

Overview of sizes

Overview of KWP O sizes

Size	Speed [rpm]		
	2900	1450	960
065-050-200	(⇒ Page 17)	(⇒ Page 22)	(⇒ Page 32)
080-065-200	(⇒ Page 18)	(⇒ Page 23)	(⇒ Page 33)
080-065-315	(⇒ Page 19)	(⇒ Page 24)	(⇒ Page 34)
100-080-250	(⇒ Page 20)	(⇒ Page 25)	(⇒ Page 35)
100-080-400	–	(⇒ Page 26)	(⇒ Page 36)
125-100-250	(⇒ Page 21)	(⇒ Page 27)	(⇒ Page 37)
125-100-400	–	(⇒ Page 28)	(⇒ Page 38)
150-150-315	–	(⇒ Page 29)	(⇒ Page 39)
200-200-400	–	(⇒ Page 30)	(⇒ Page 40)
250-250-500.2	–	(⇒ Page 31)	(⇒ Page 41)

Overview of KWP F sizes

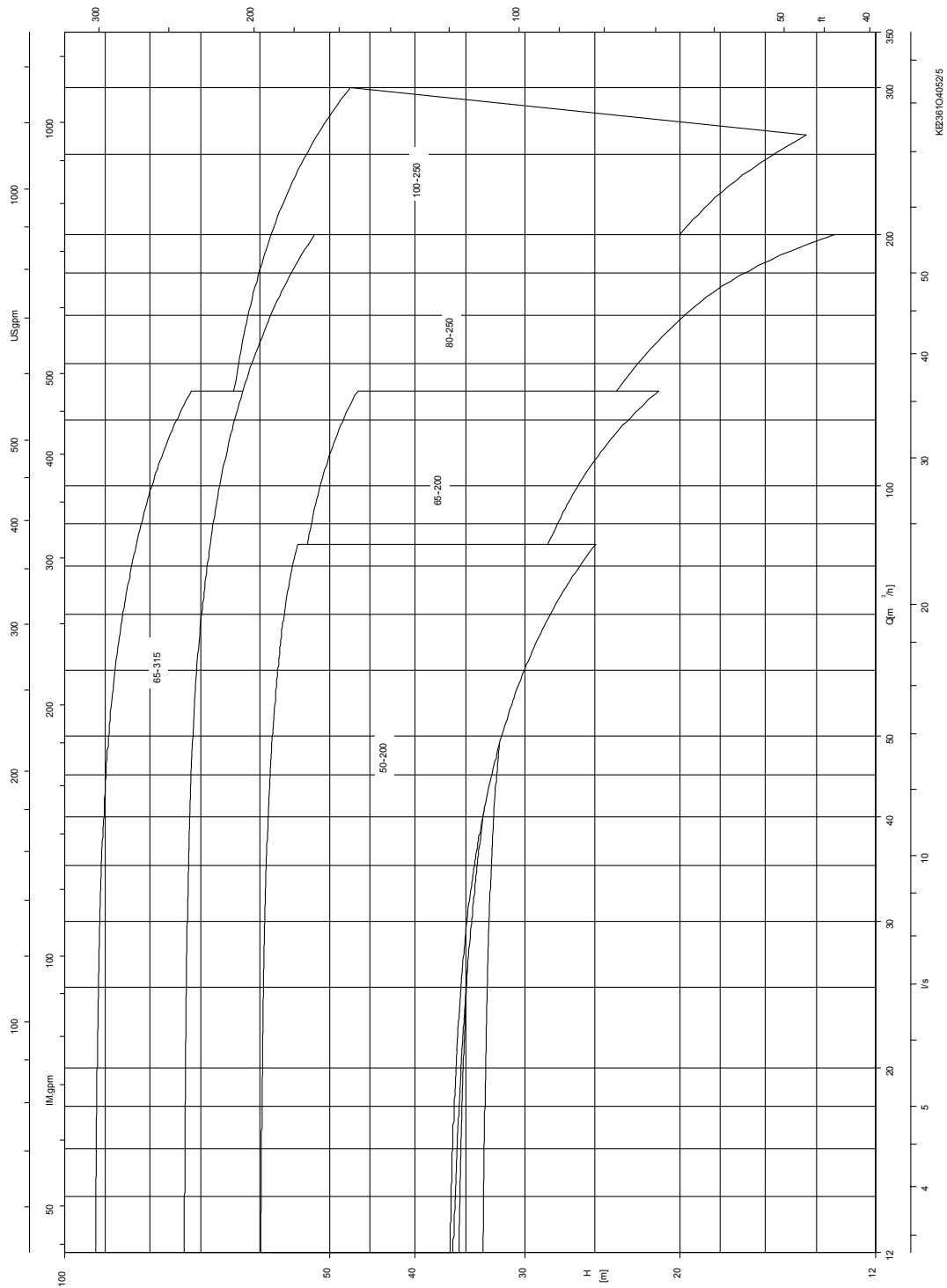
Size	Speed [rpm]		
	2900	1450	960
065-050-201	(⇒ Page 42)	(⇒ Page 46)	(⇒ Page 52)
080-065-201	(⇒ Page 43)	(⇒ Page 47)	(⇒ Page 53)
100-080-251	(⇒ Page 44)	(⇒ Page 48)	(⇒ Page 54)
100-080-311	–	(⇒ Page 49)	(⇒ Page 55)
125-100-251	(⇒ Page 45)	(⇒ Page 50)	(⇒ Page 56)
150-150-311	–	(⇒ Page 51)	(⇒ Page 57)

Overview of KWP R sizes

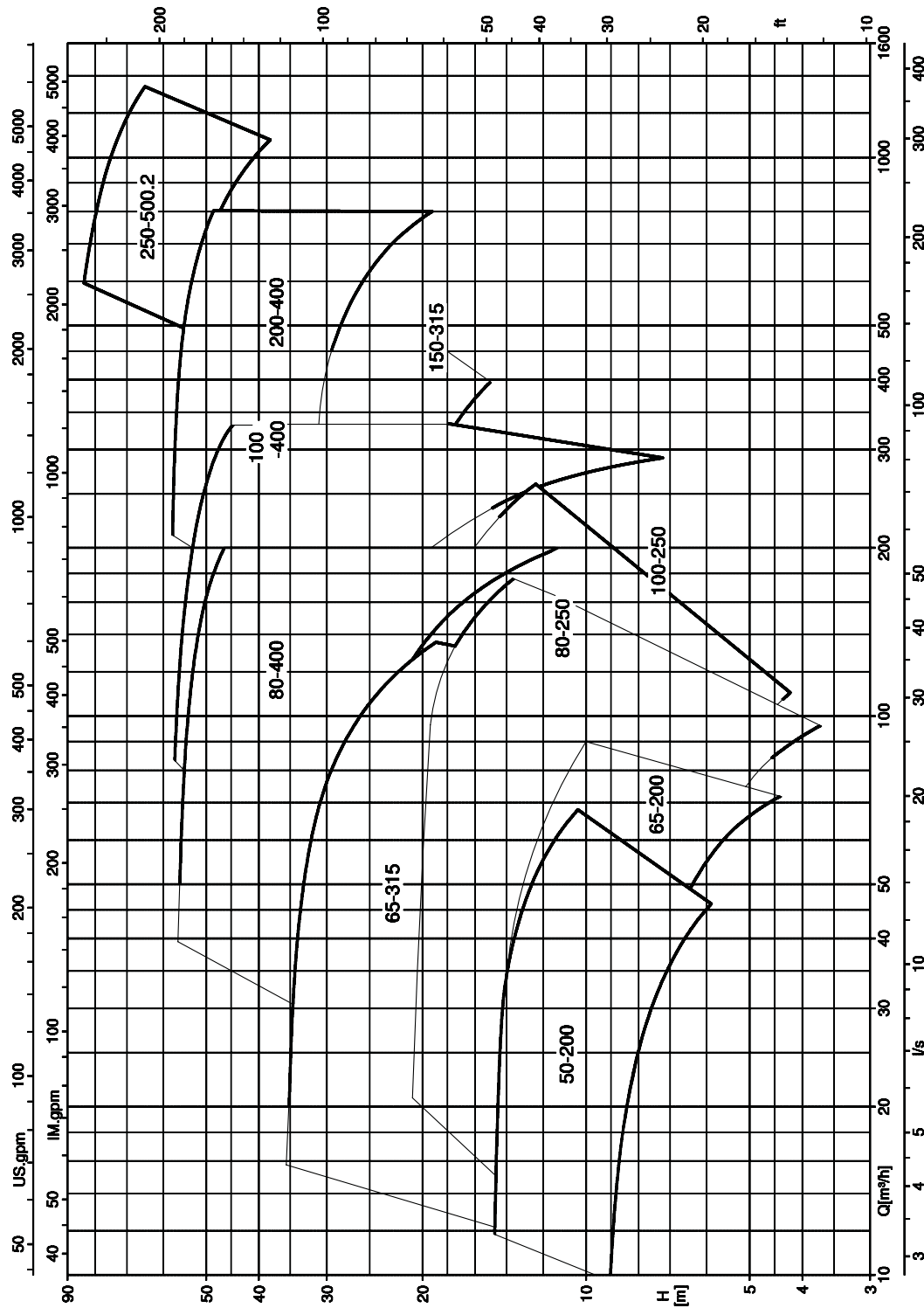
Size	Speed [rpm]			
	2900	1450	960	725
100-080-315	–	(⇒ Page 59)	(⇒ Page 63)	–
125-100-250	(⇒ Page 58)	(⇒ Page 60)	(⇒ Page 64)	–
150-125-315	–	(⇒ Page 61)	(⇒ Page 65)	–
200-200-400	–	(⇒ Page 62)	(⇒ Page 66)	(⇒ Page 67)

Selection charts

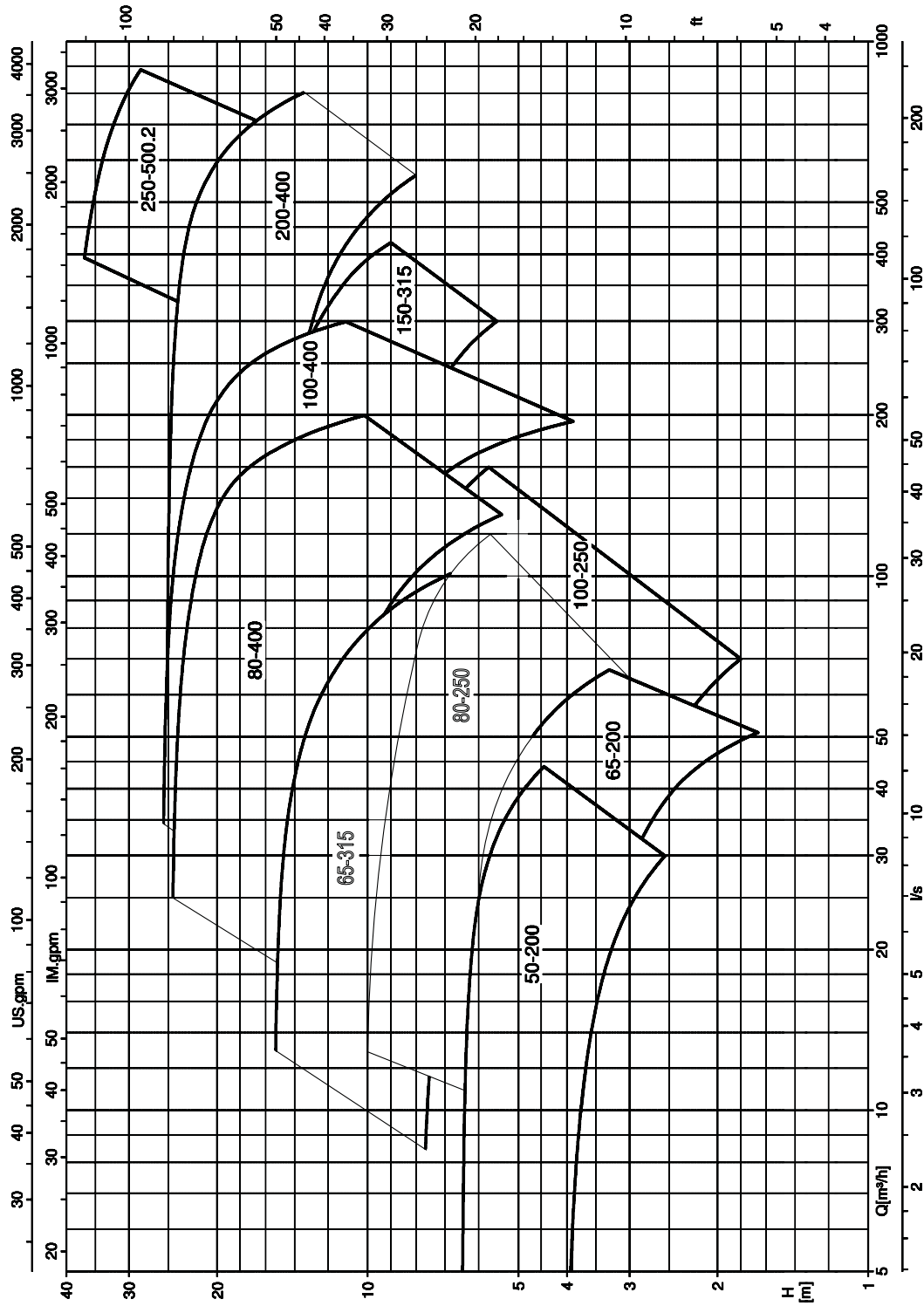
KWP O, n = 2900 rpm



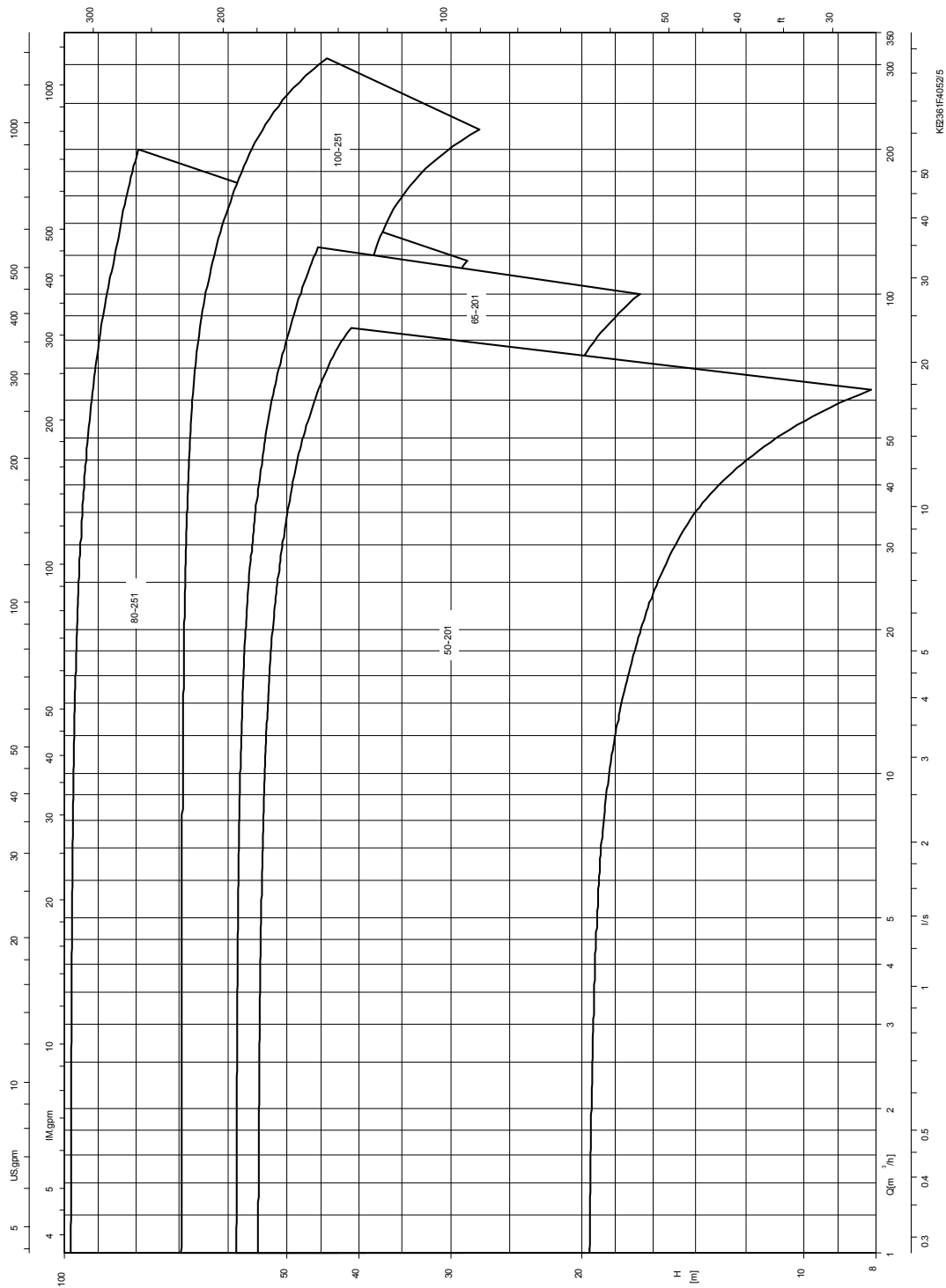
KWP O, n = 1450 rpm



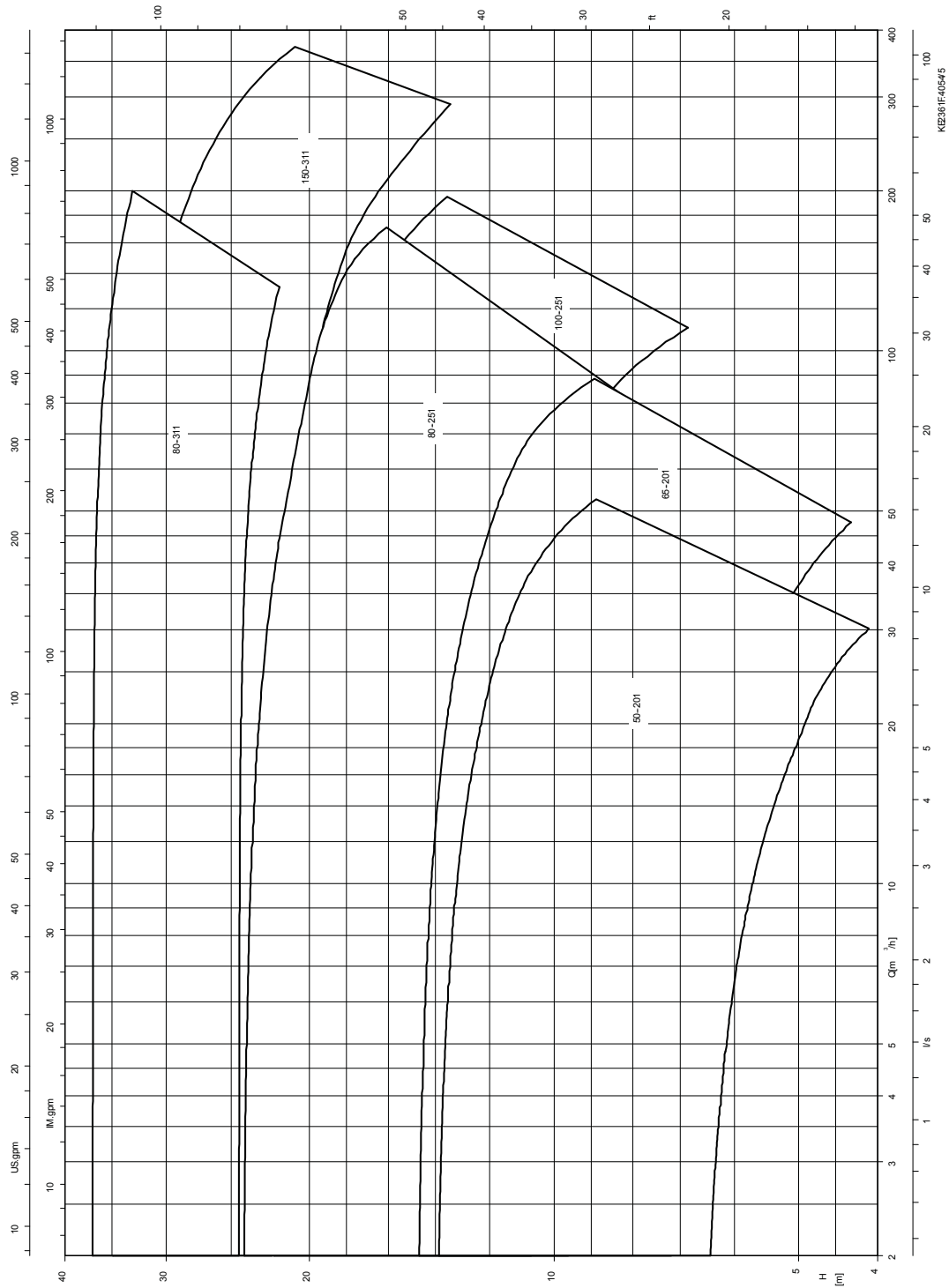
KWP O, n = 960 rpm



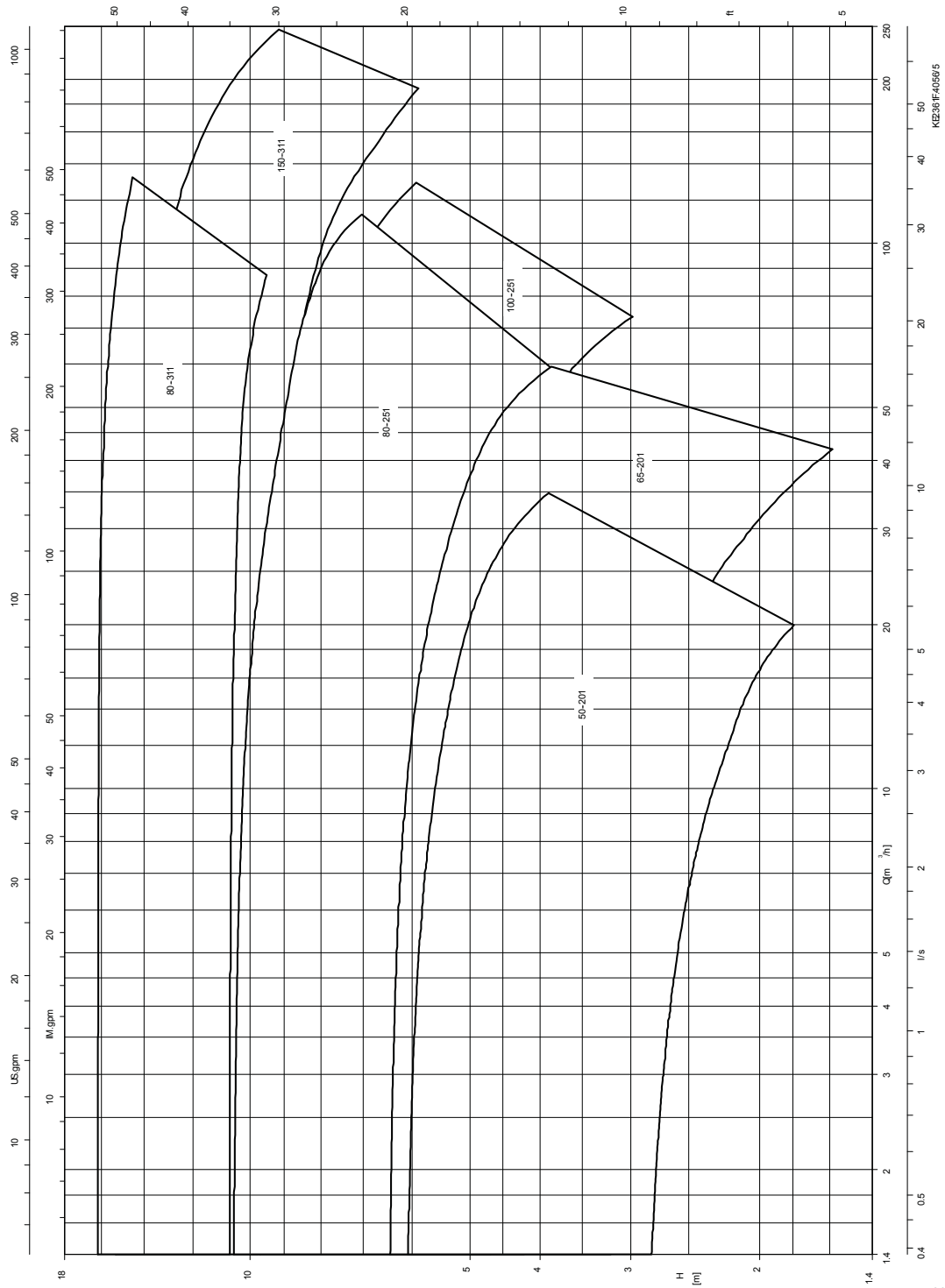
KWP F, n = 2900 rpm



KWP F, n = 1450 rpm

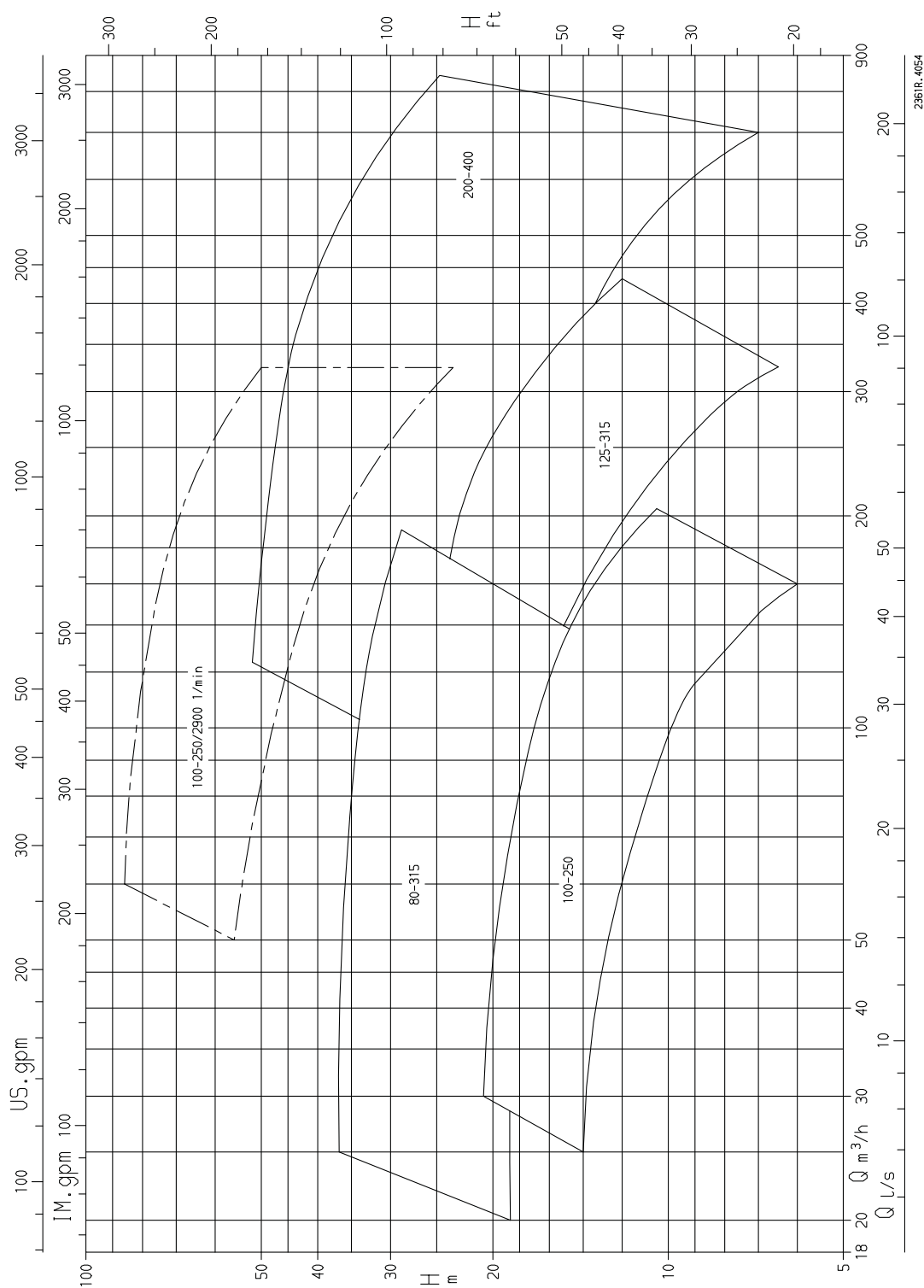


KWP F, n = 960 rpm

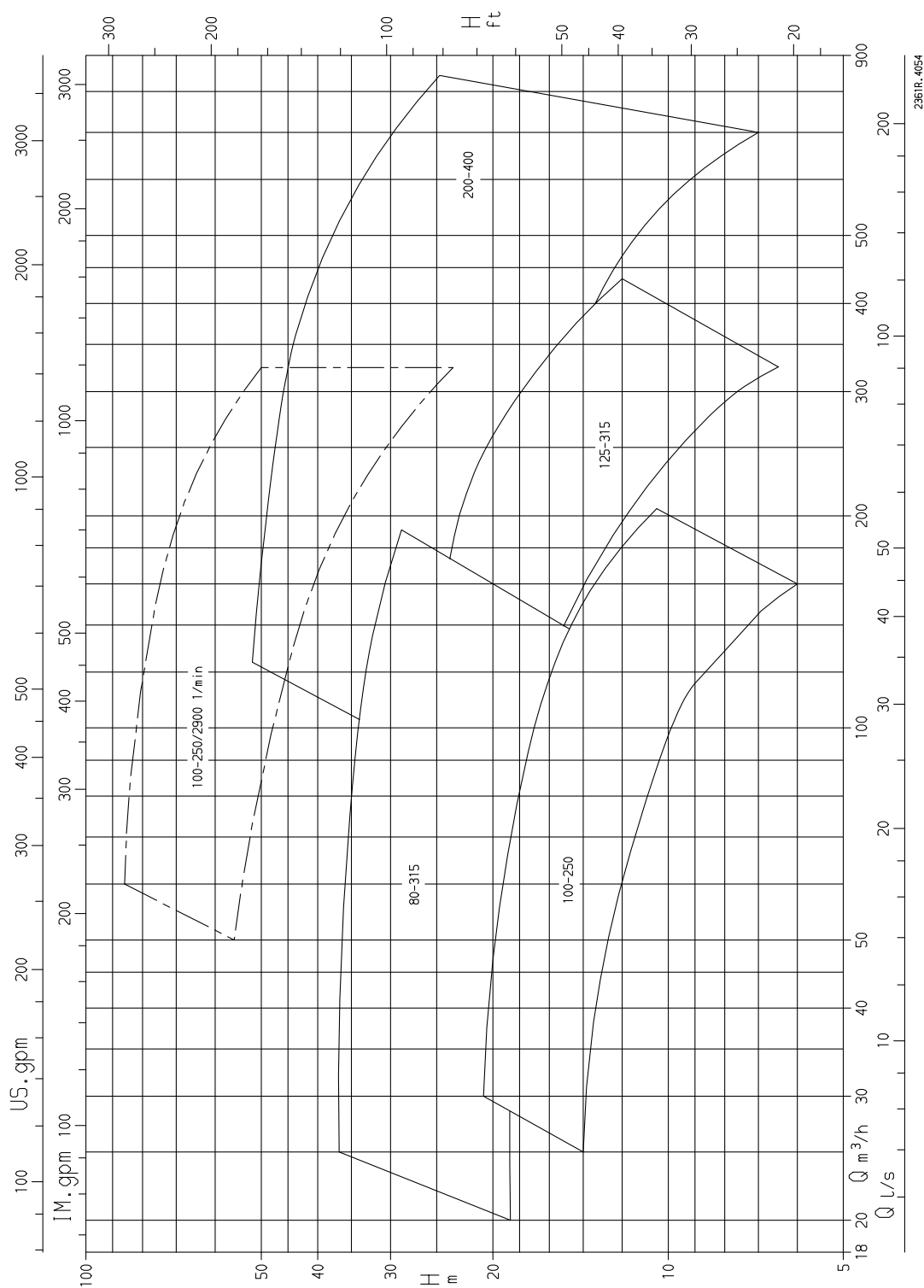


33

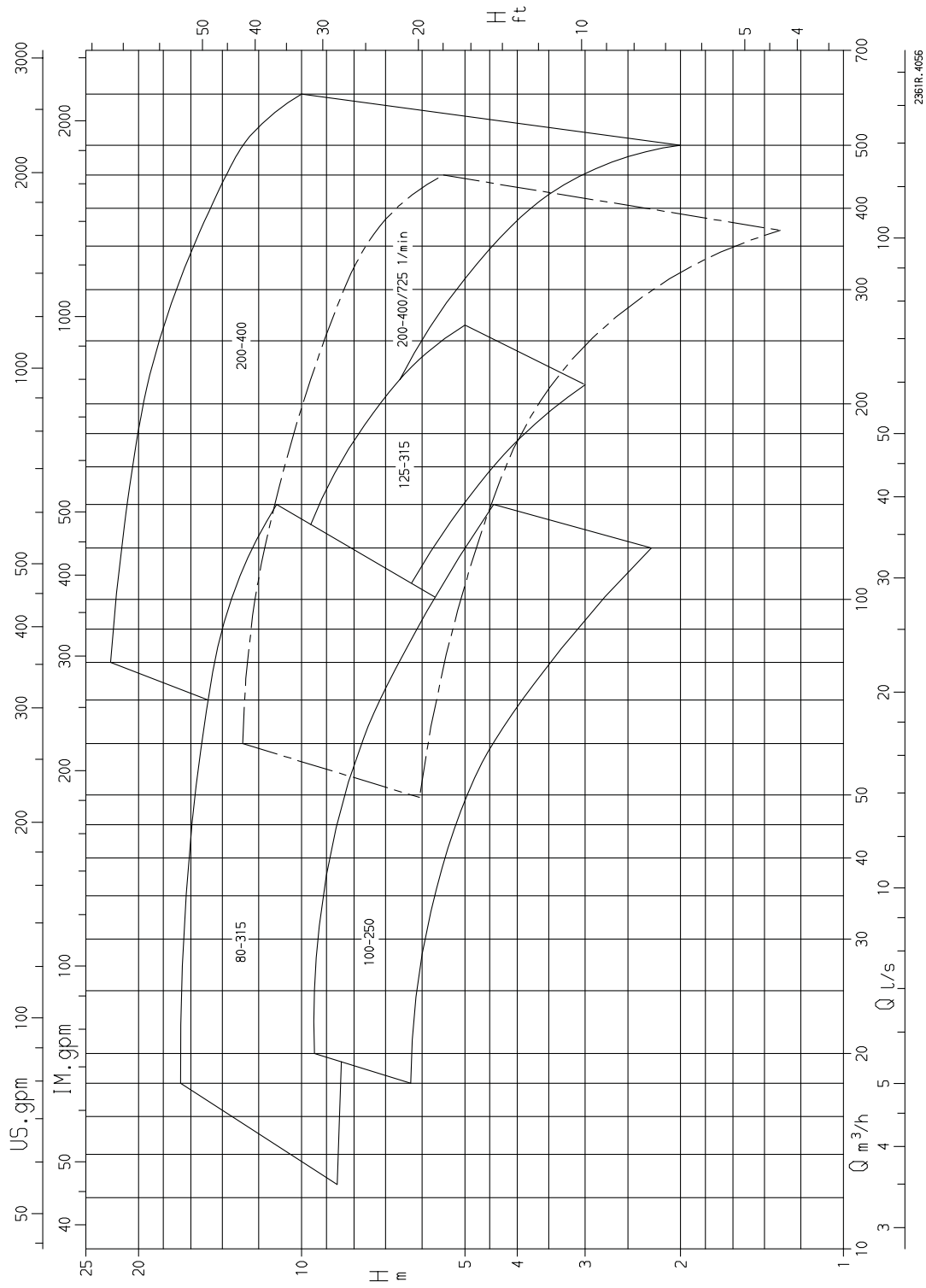
KWP R, n = 2900 rpm



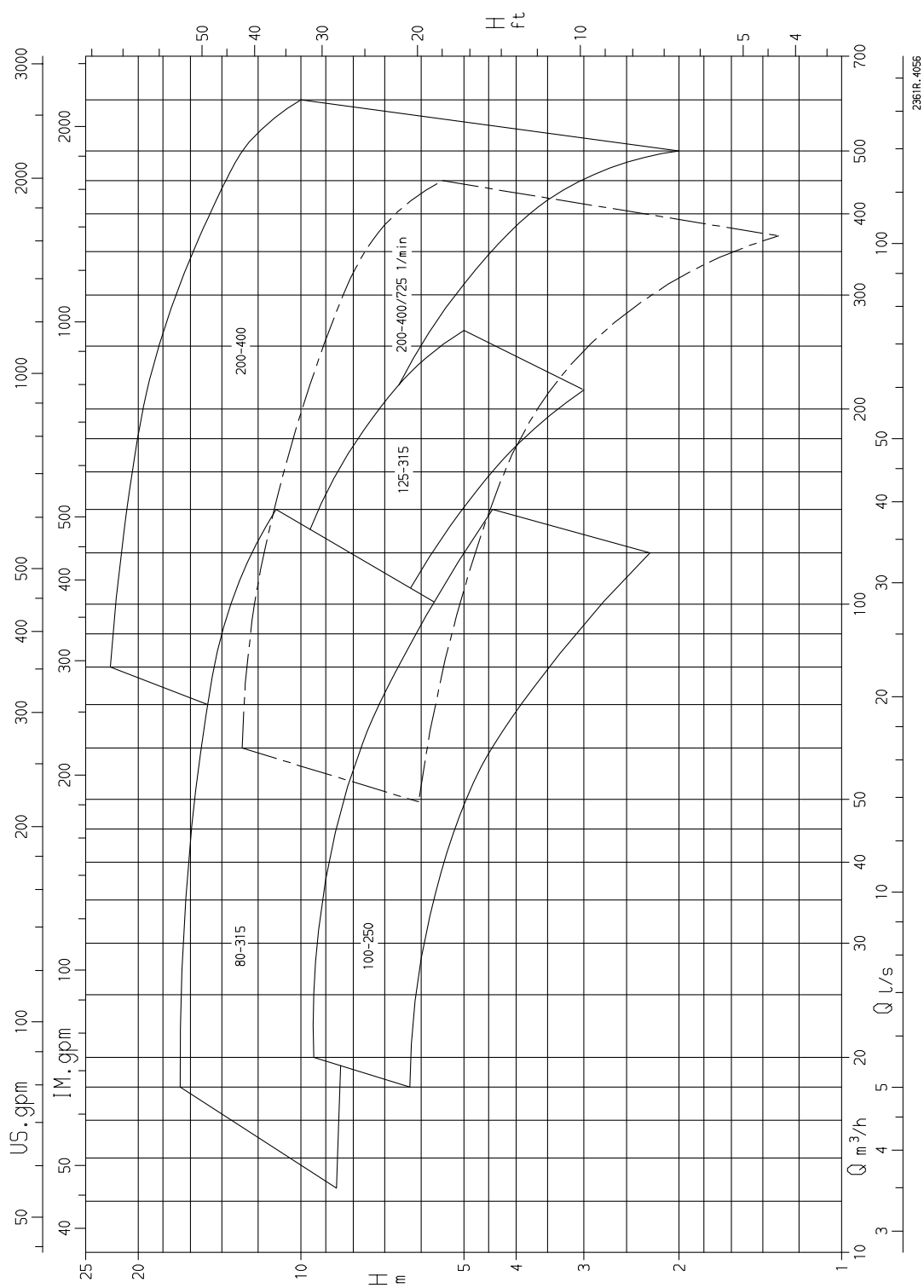
KWP R, n = 1450 rpm



KWP R, n = 960 rpm



KWP R, $n = 725 \text{ rpm}$

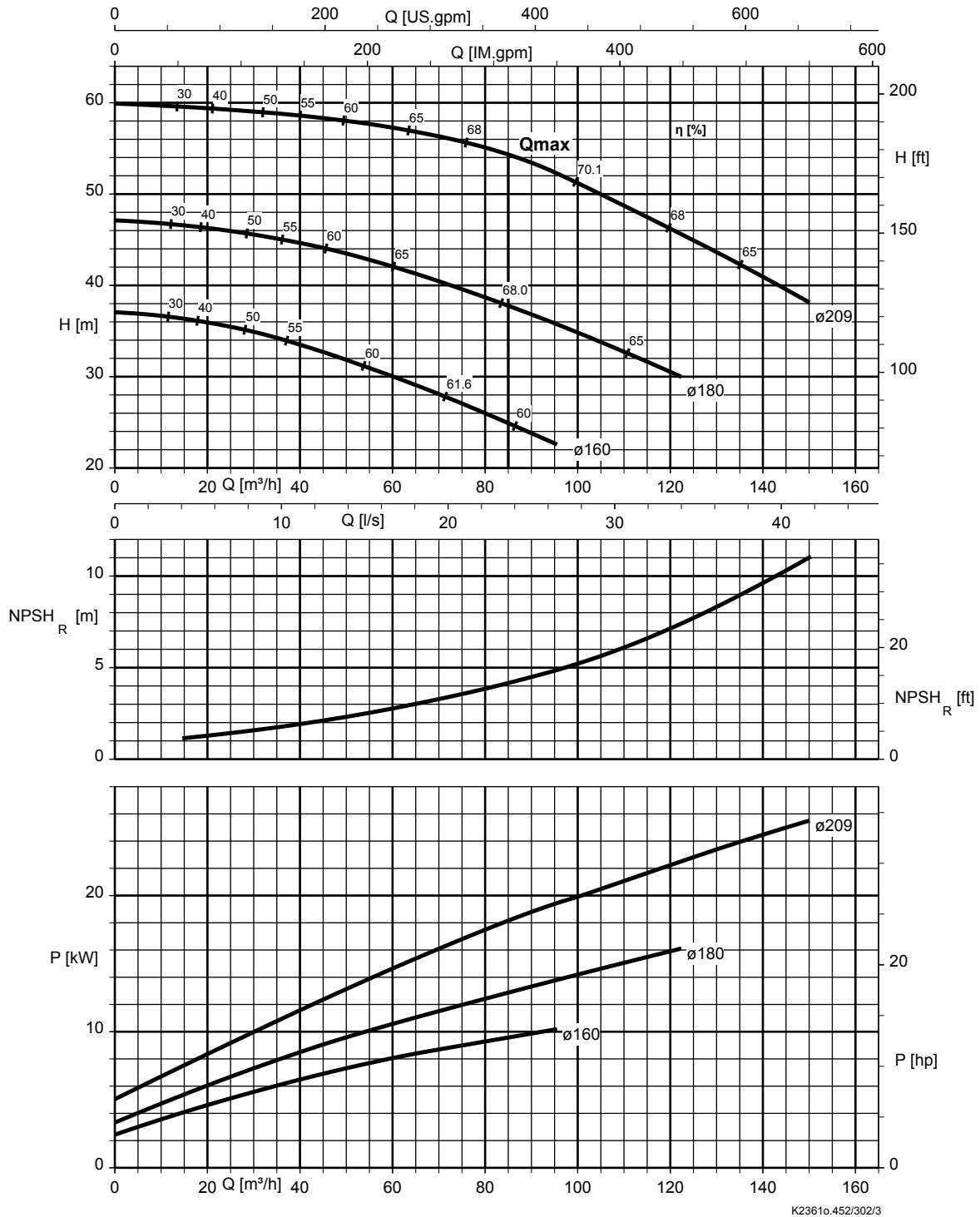


Characteristic curves

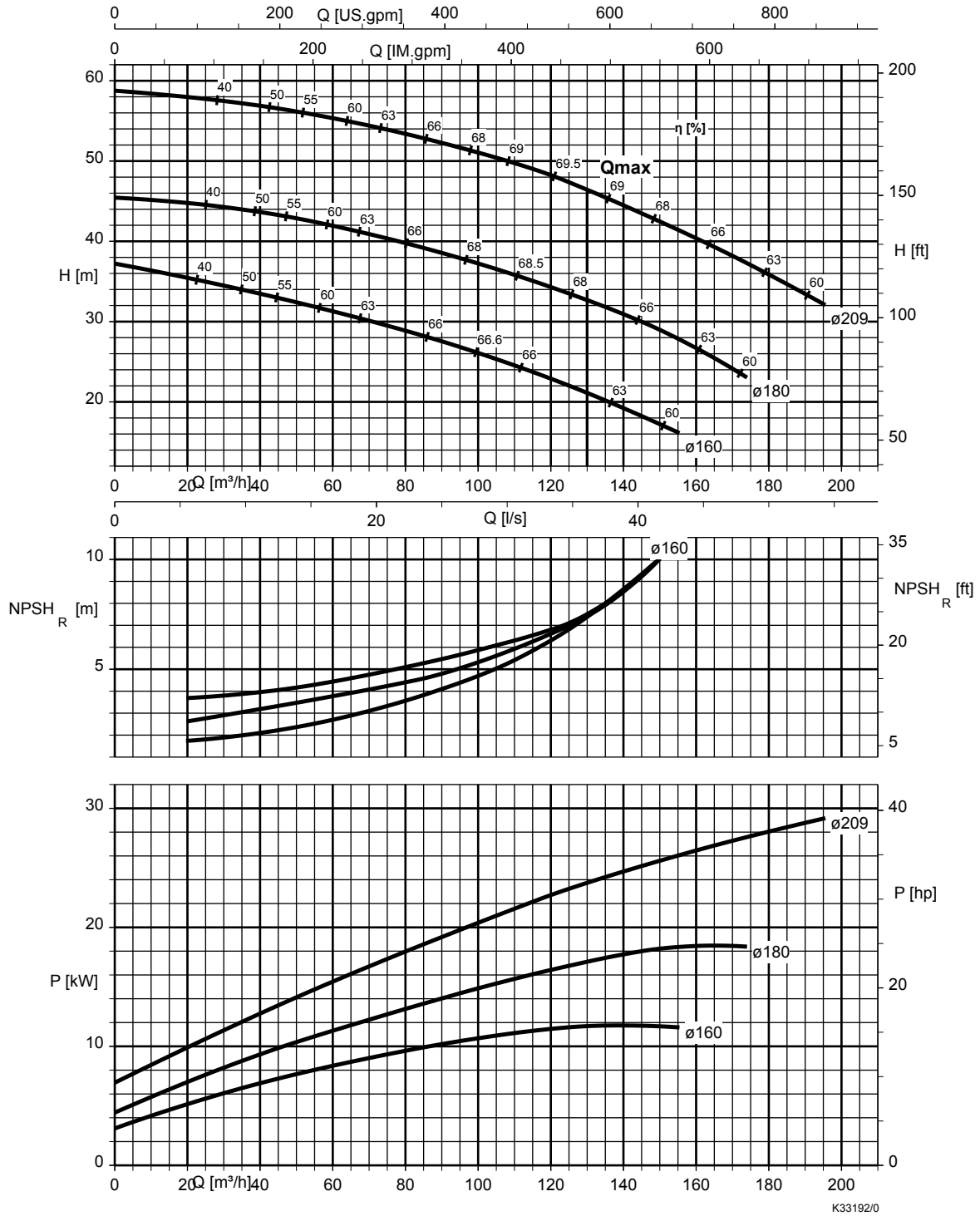
O impeller

$n = 2900 \text{ rpm}$

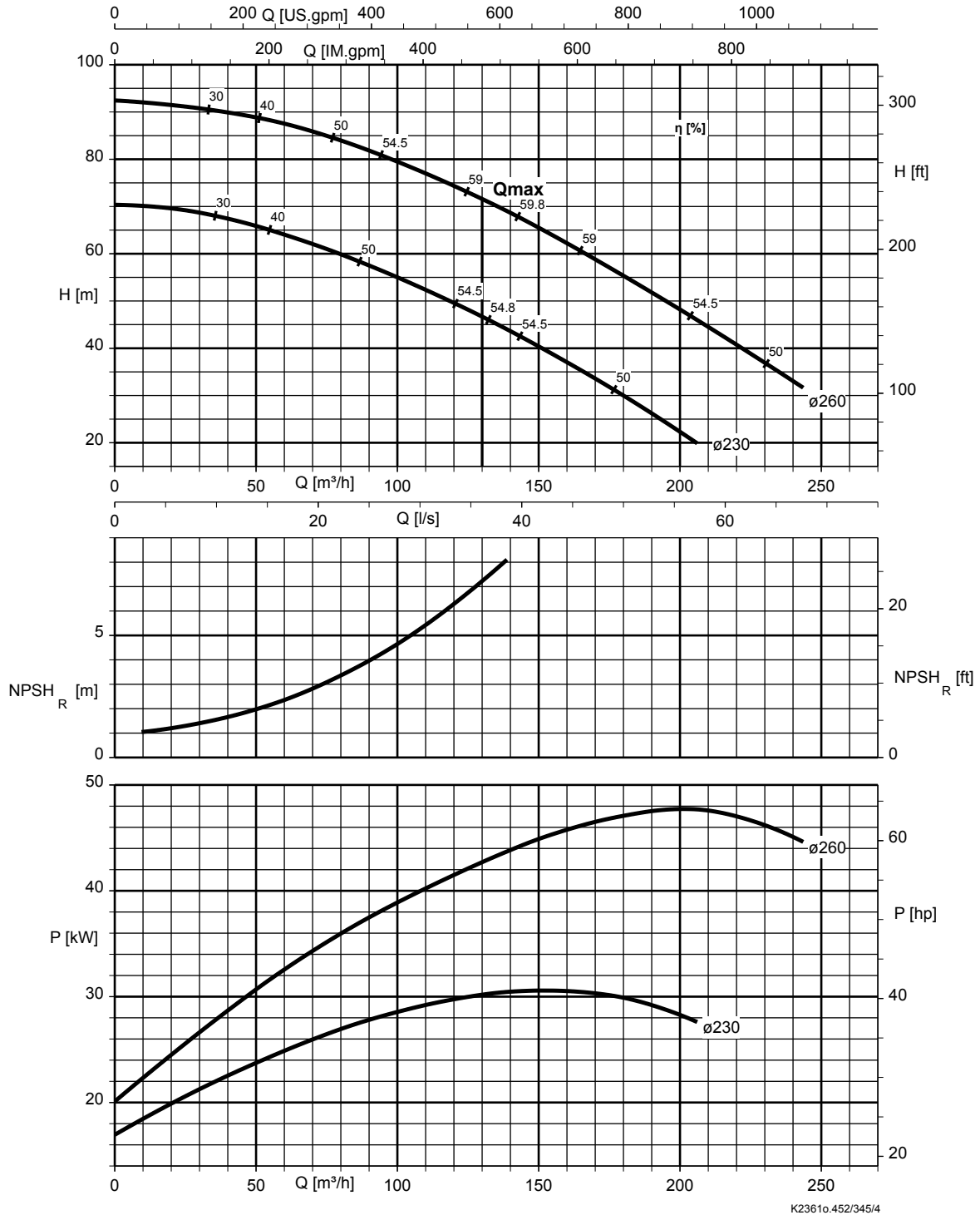
KWP O 065-050-200, $n = 2900 \text{ rpm}$



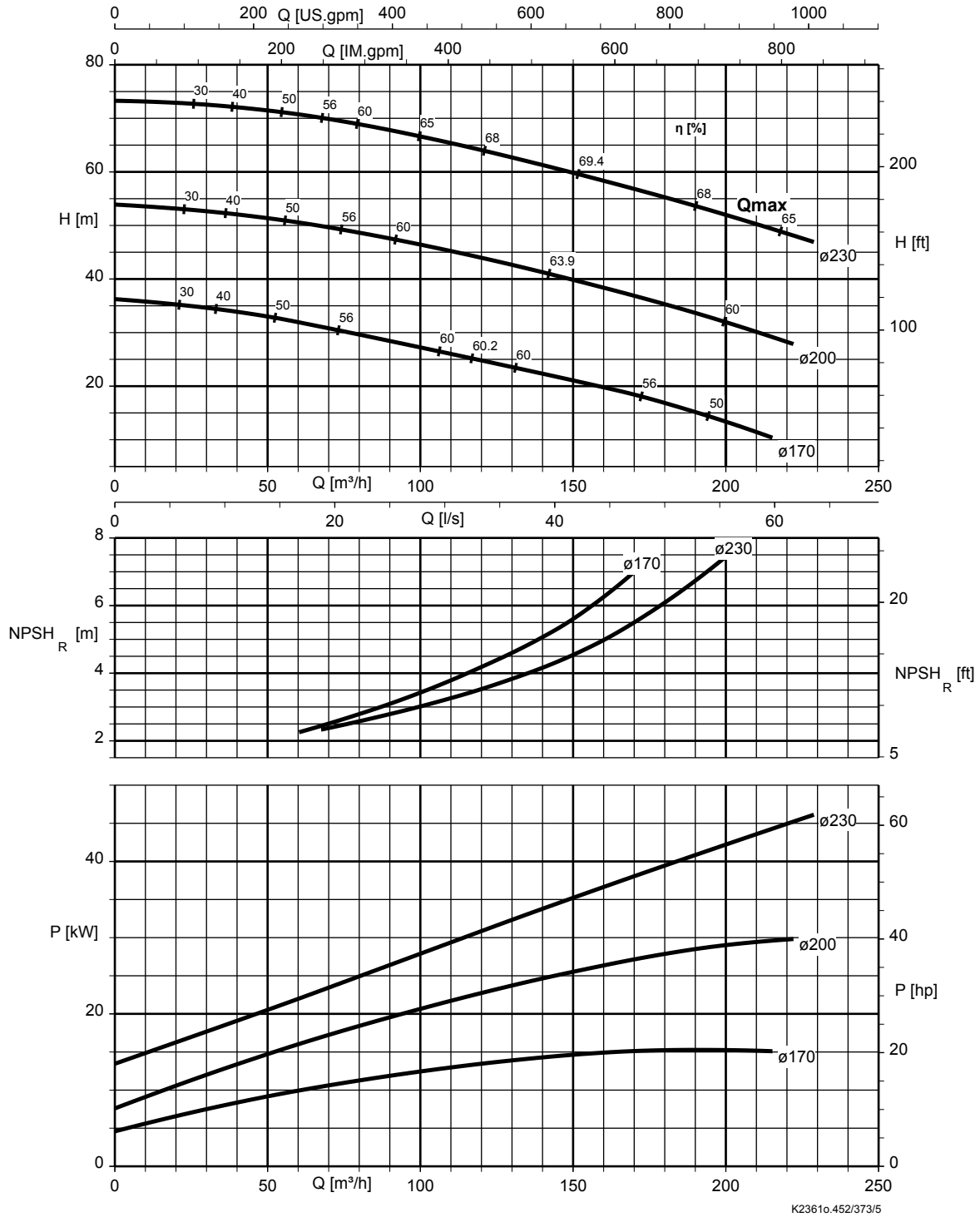
KWP O 080-065-200, n = 2900 rpm



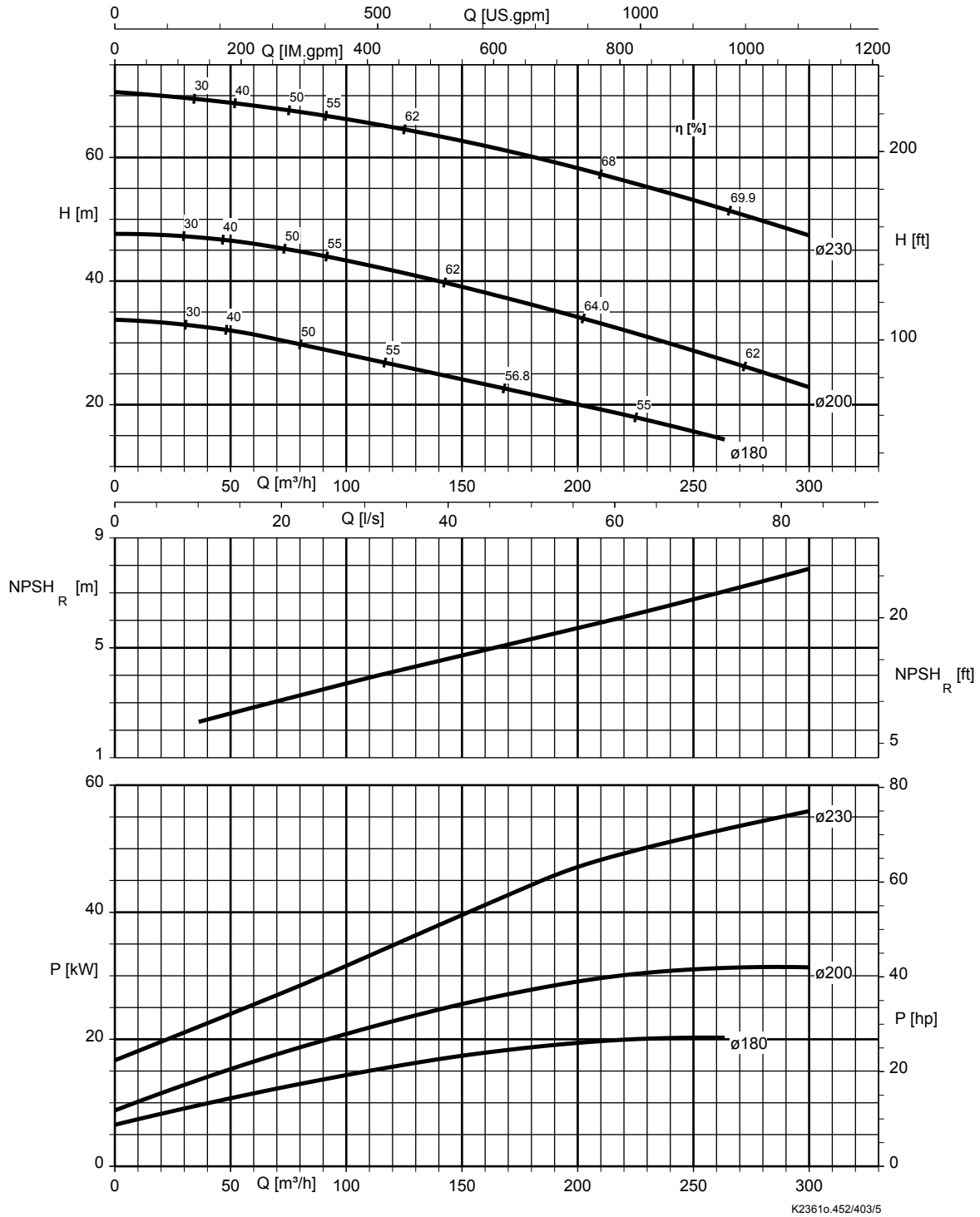
KWP O 080-065-315, $n = 2900$ rpm



KWP O 100-080-250, n = 2900 rpm

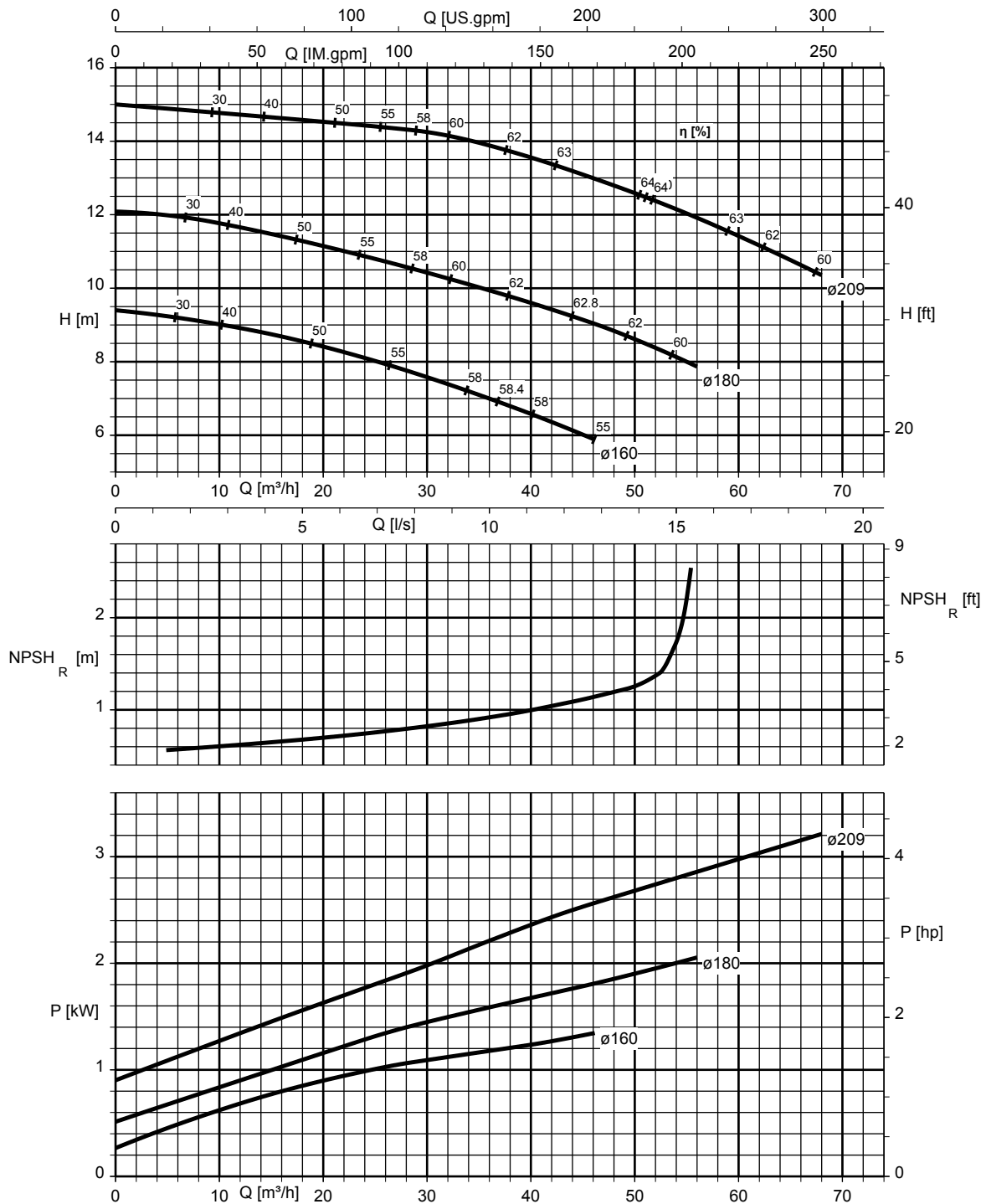


KWP O 125-100-250, n = 2900 rpm



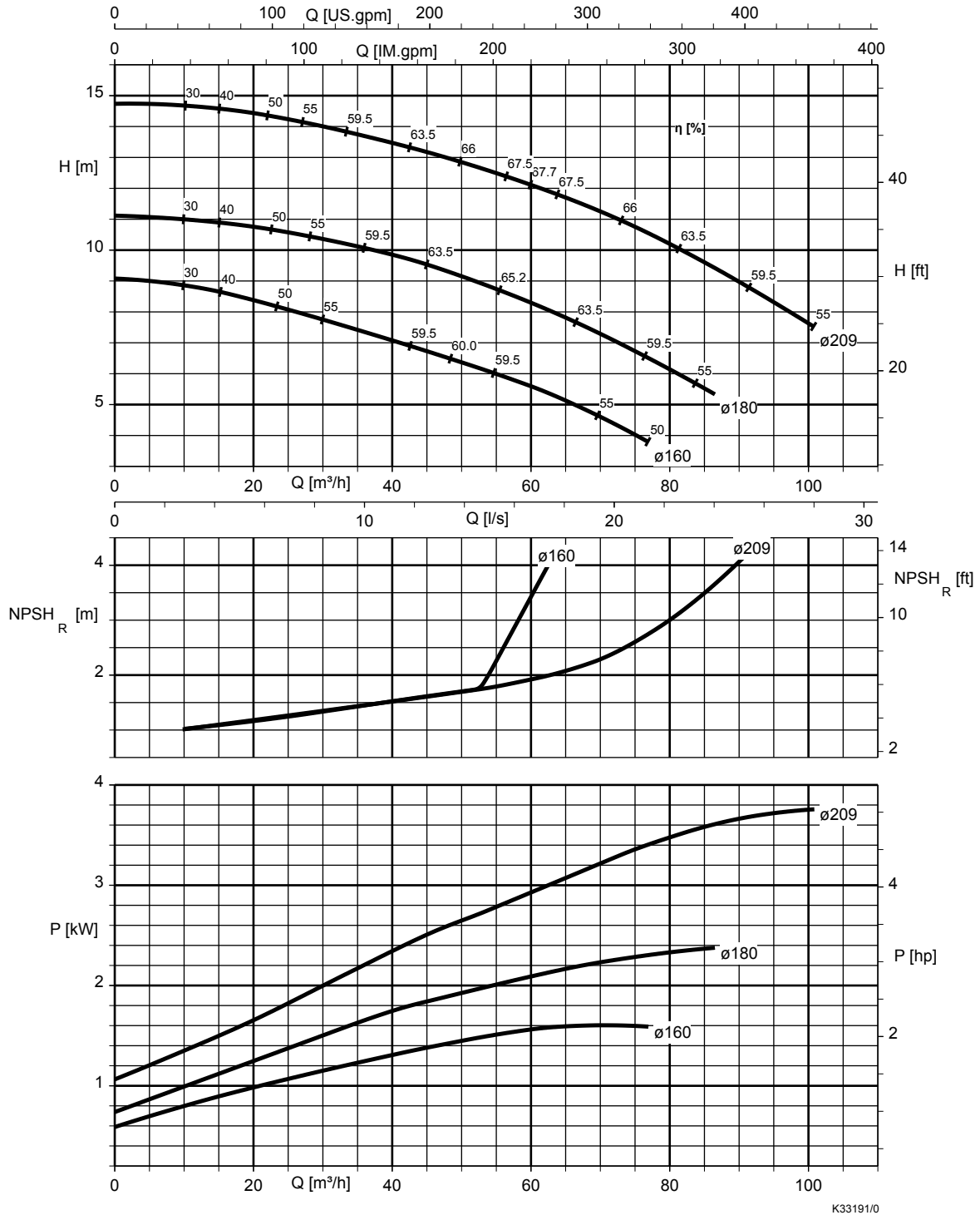
$n = 1450 \text{ rpm}$

KWP O 065-050-200, $n = 1450 \text{ rpm}$

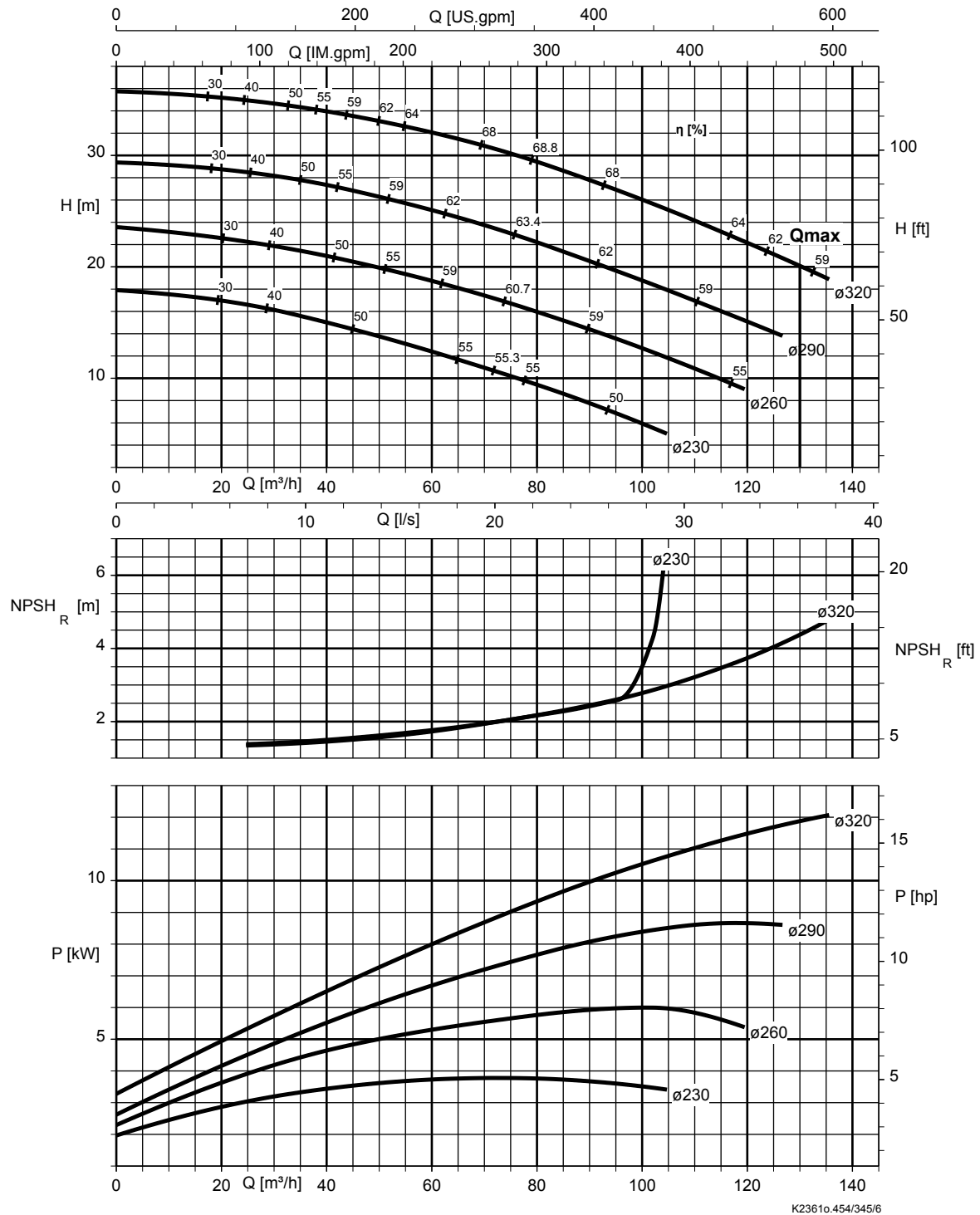


K23610.454/302/2

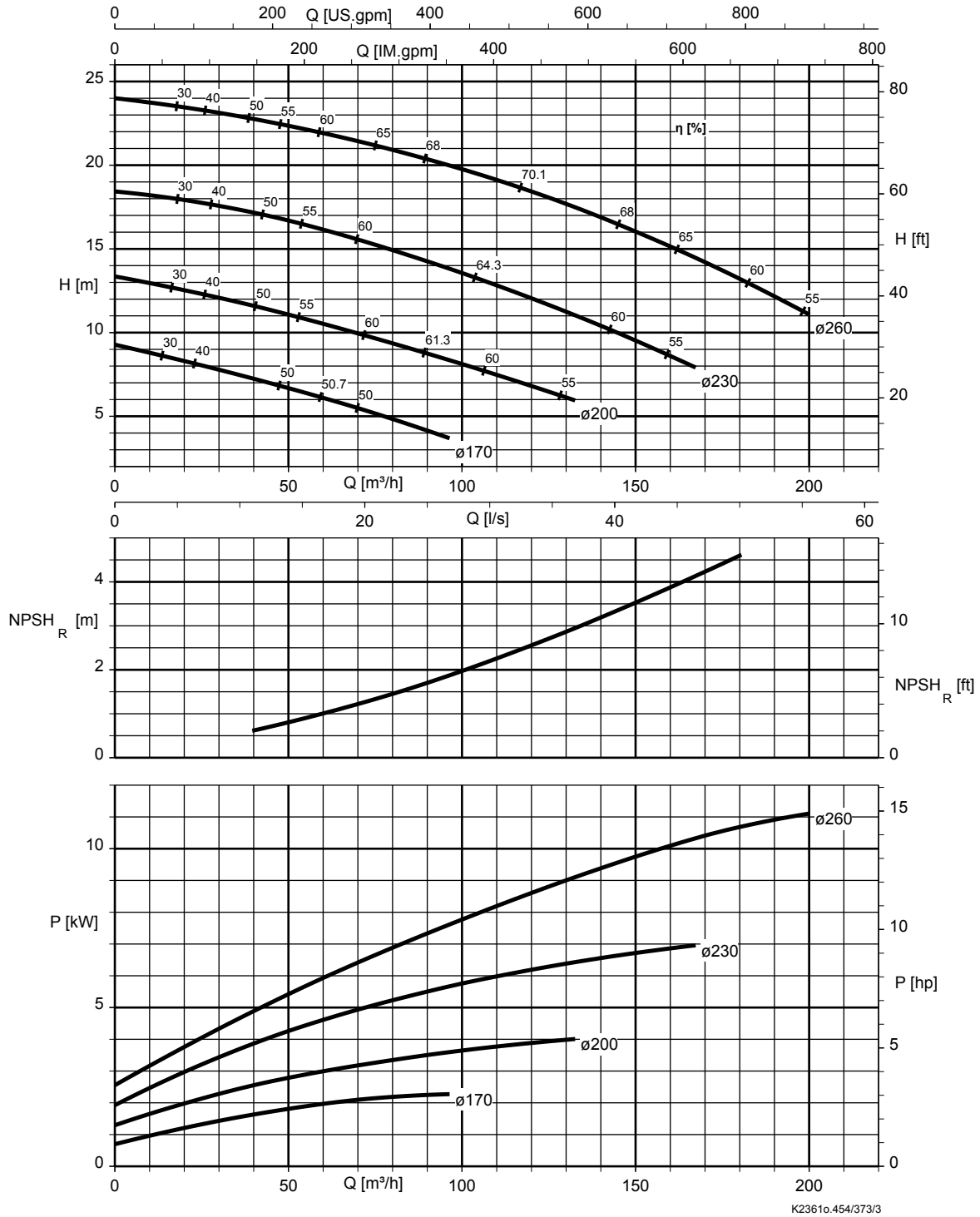
KWP O 080-065-200, n = 1450 rpm



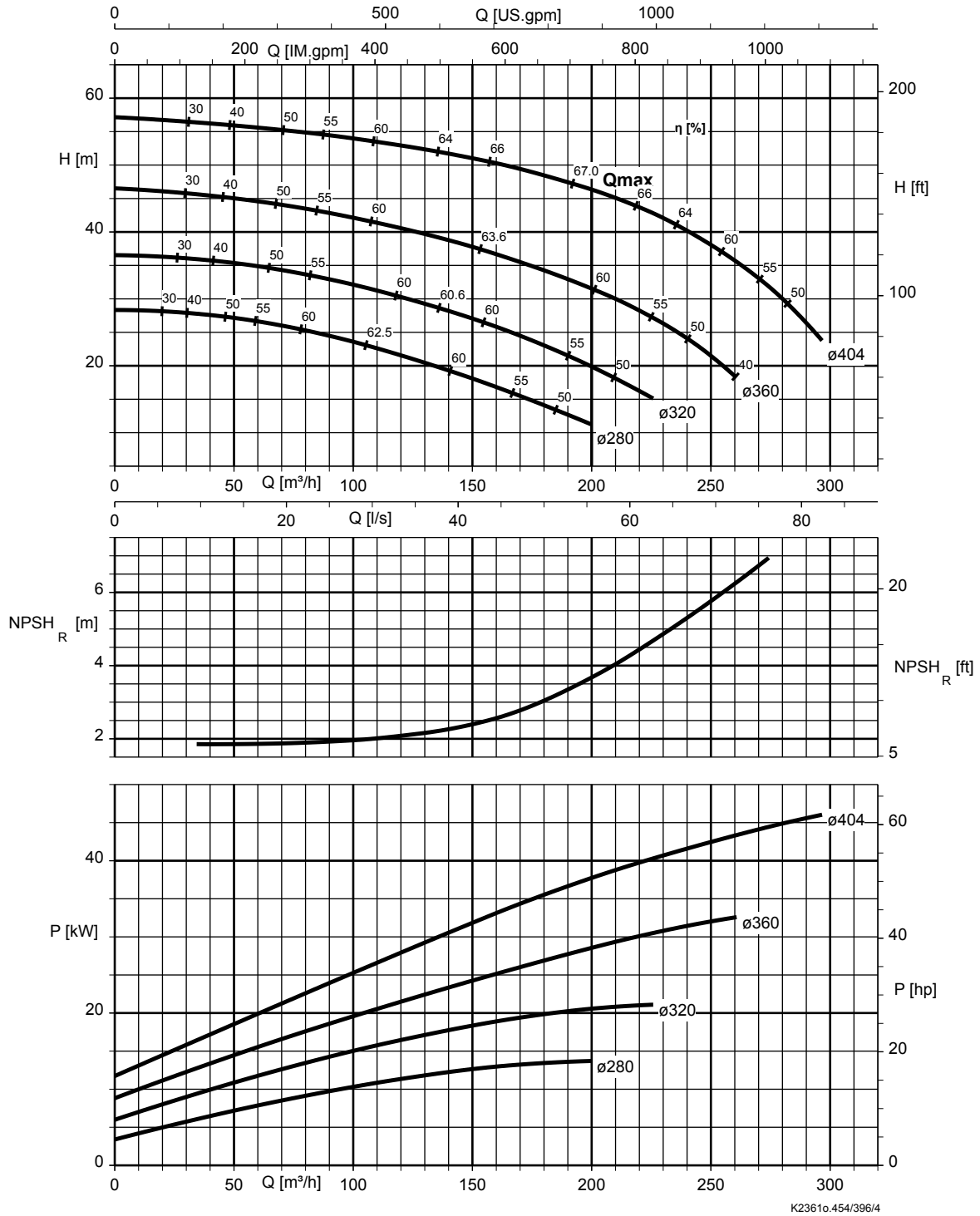
KWP O 080-065-315, n = 1450 rpm



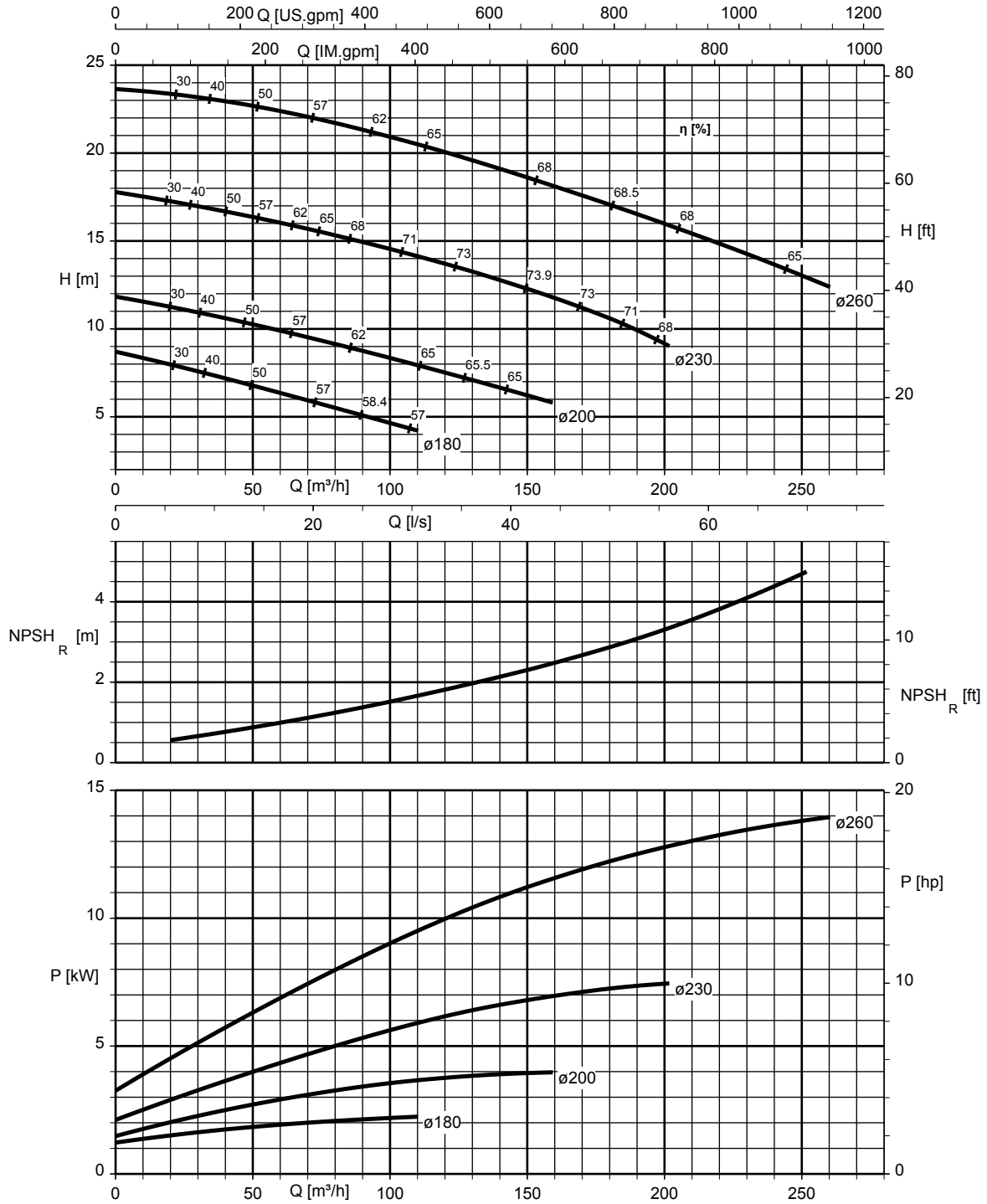
KWP O 100-080-250, n = 1450 rpm



KWP O 100-080-400, n = 1450 rpm

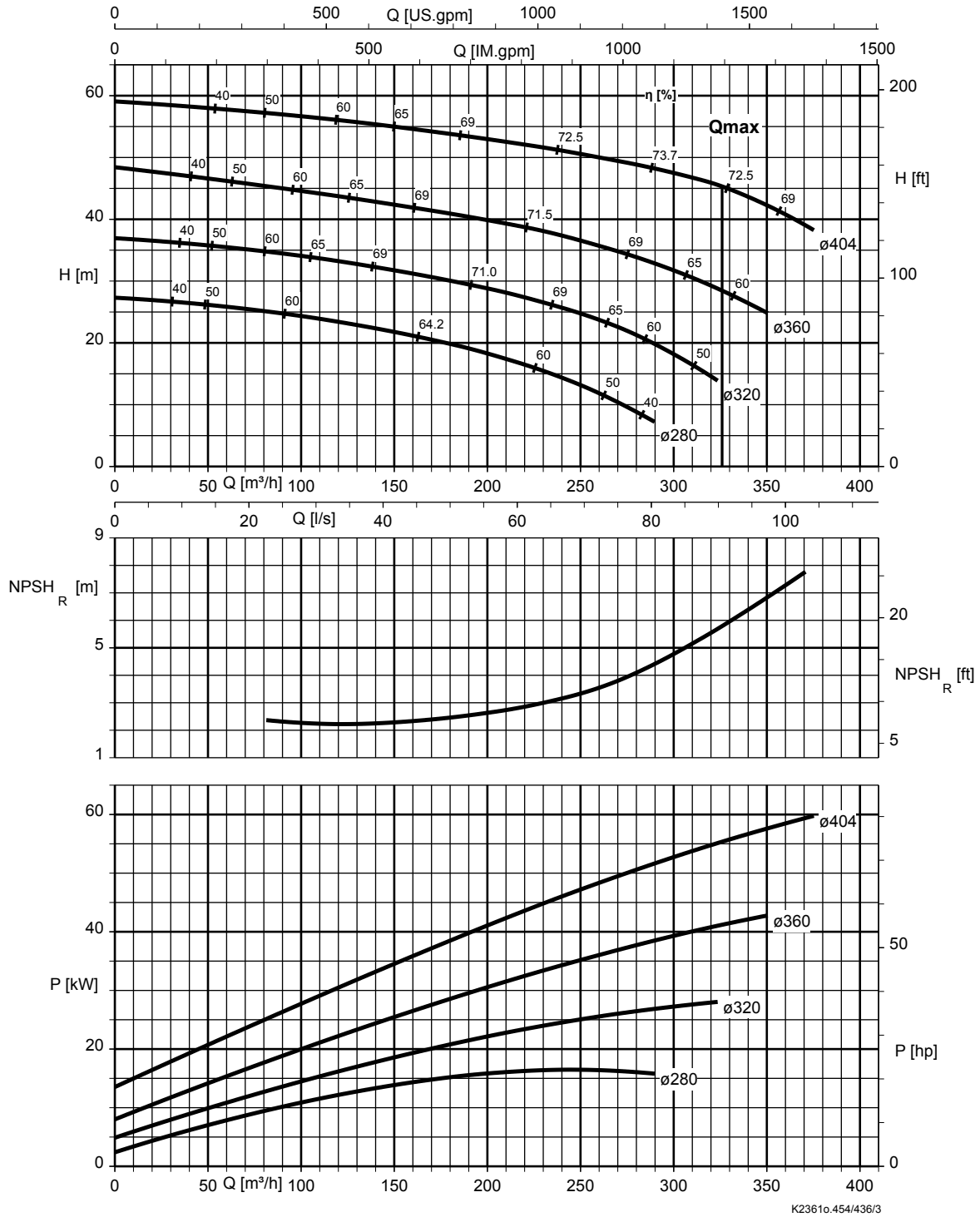


KWP O 125-100-250, n = 1450 rpm

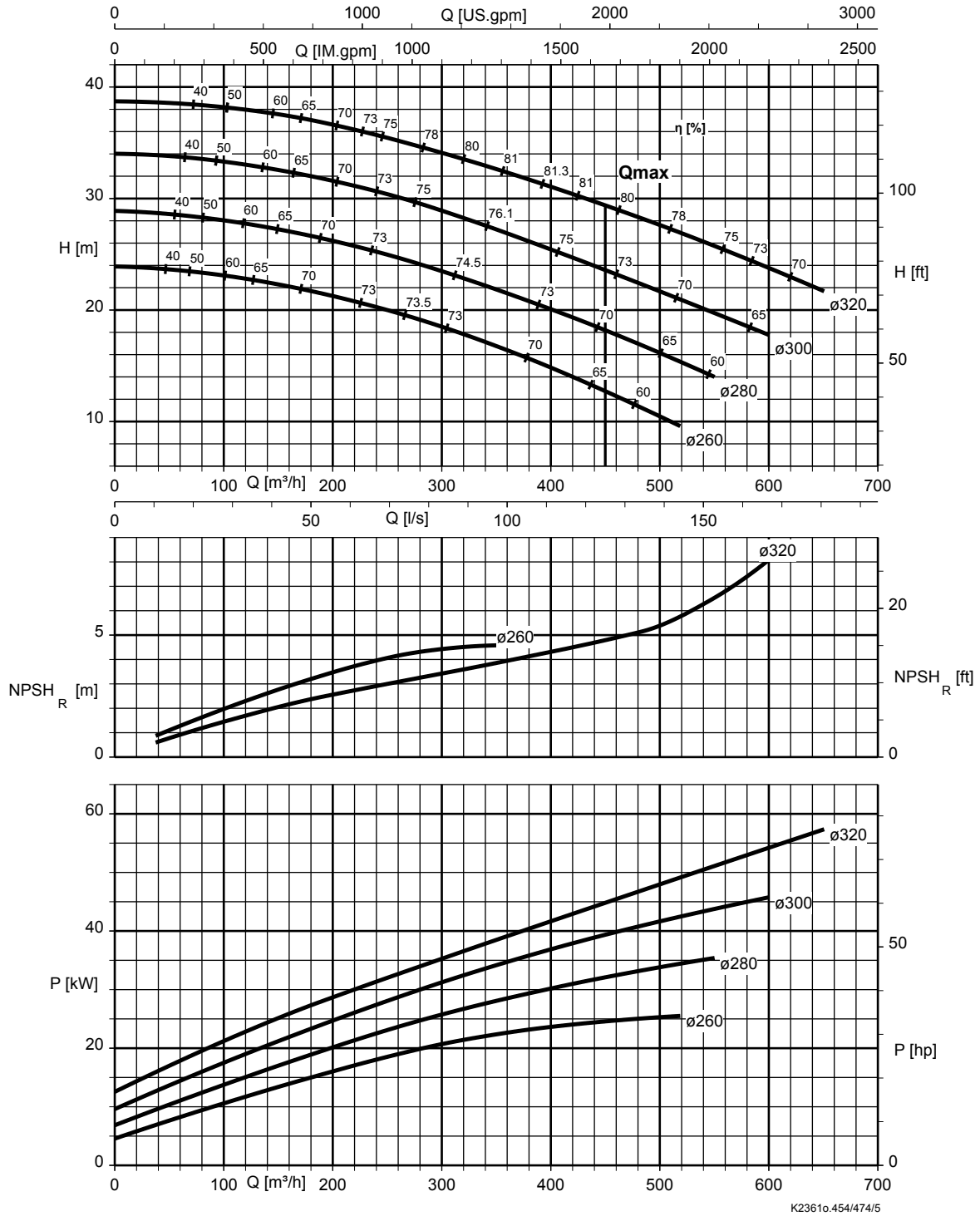


K2361o.454/403/4

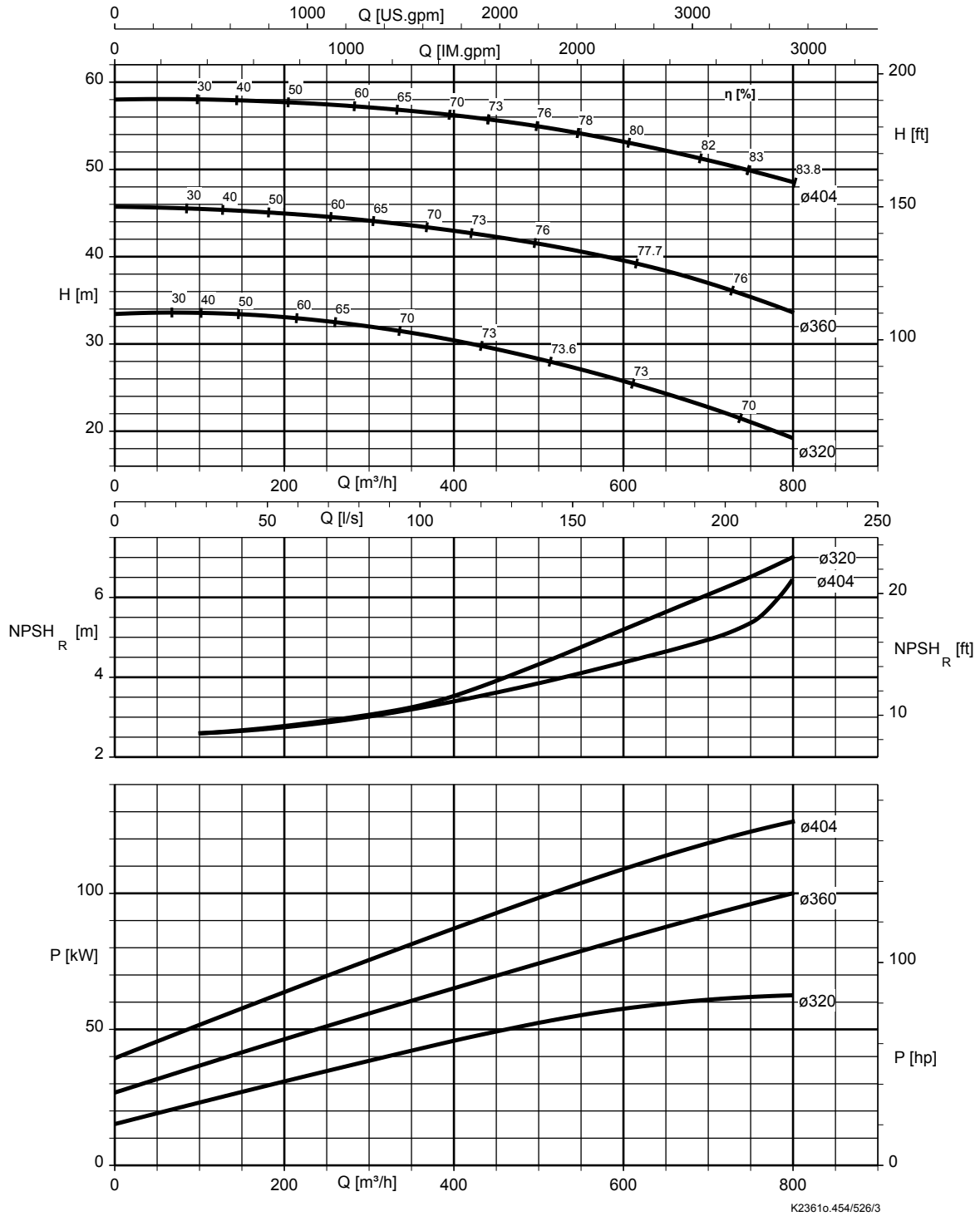
KWP O 125-100-400, n = 1450 rpm



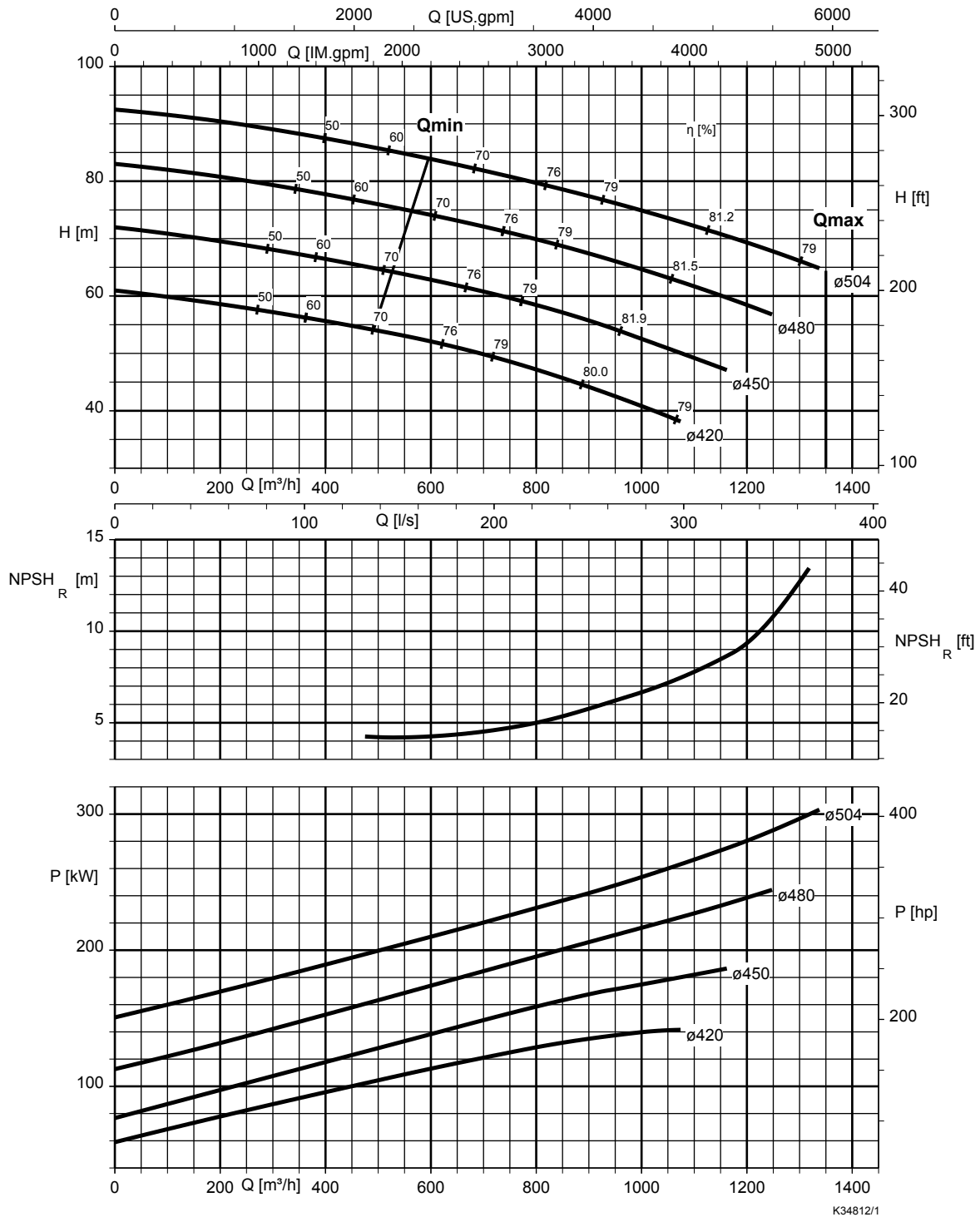
KWP O 150-150-315, n = 1450 rpm



KWP O 200-200-400, n = 1450 rpm

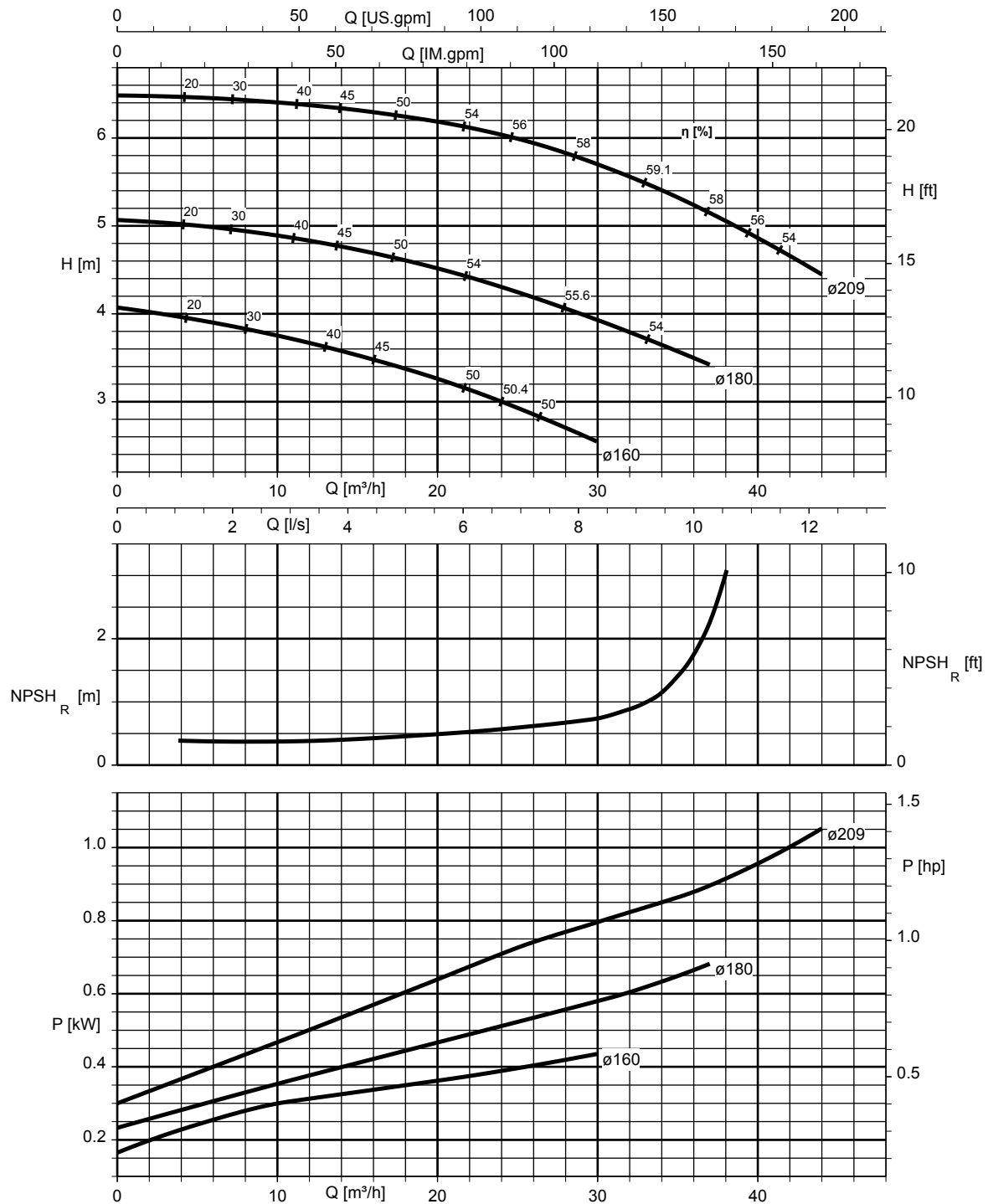


KWP O 250-250-500.2, $n = 1450 \text{ rpm}$



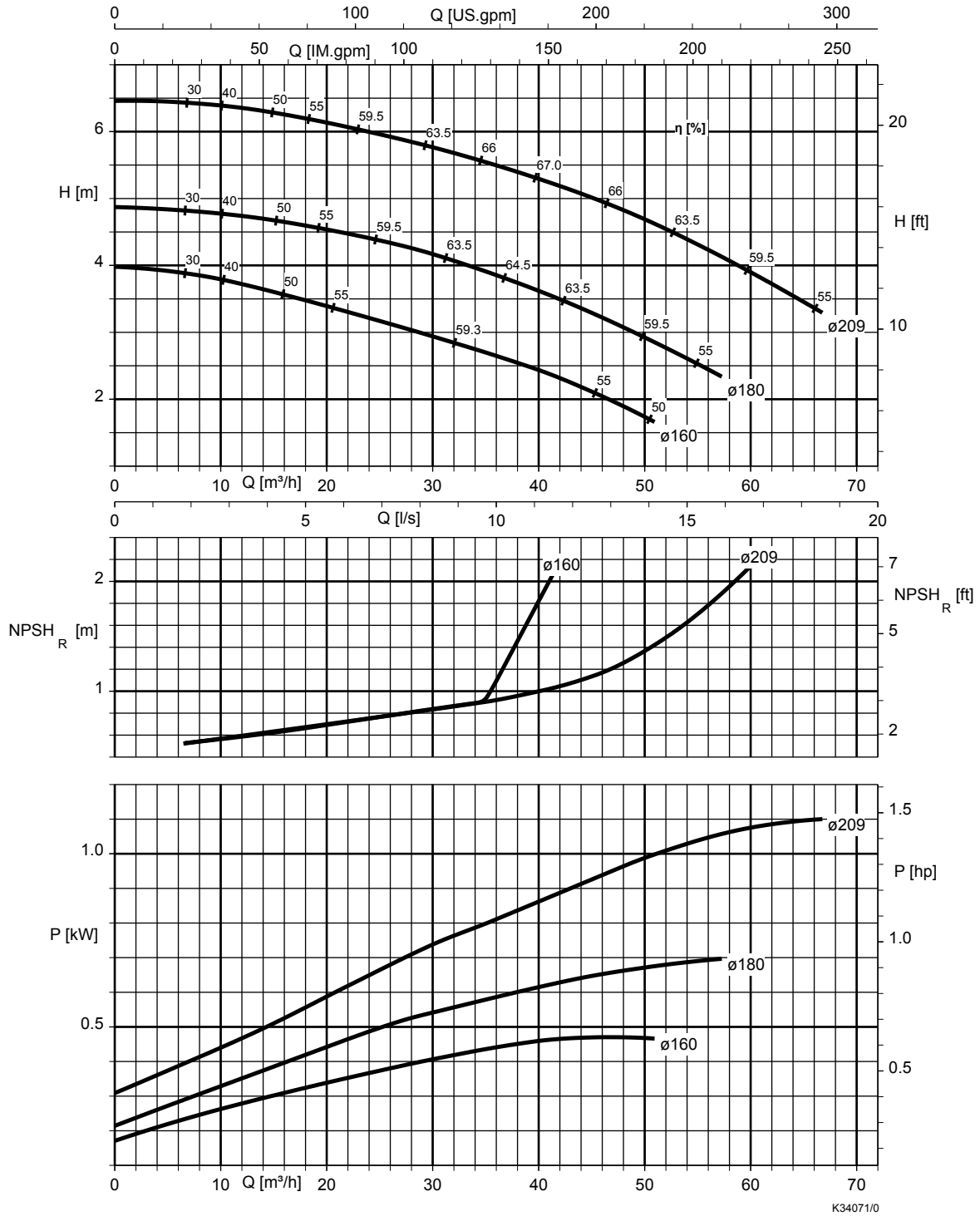
$n = 960 \text{ rpm}$

KWP O 065-050-200, $n = 960 \text{ rpm}$

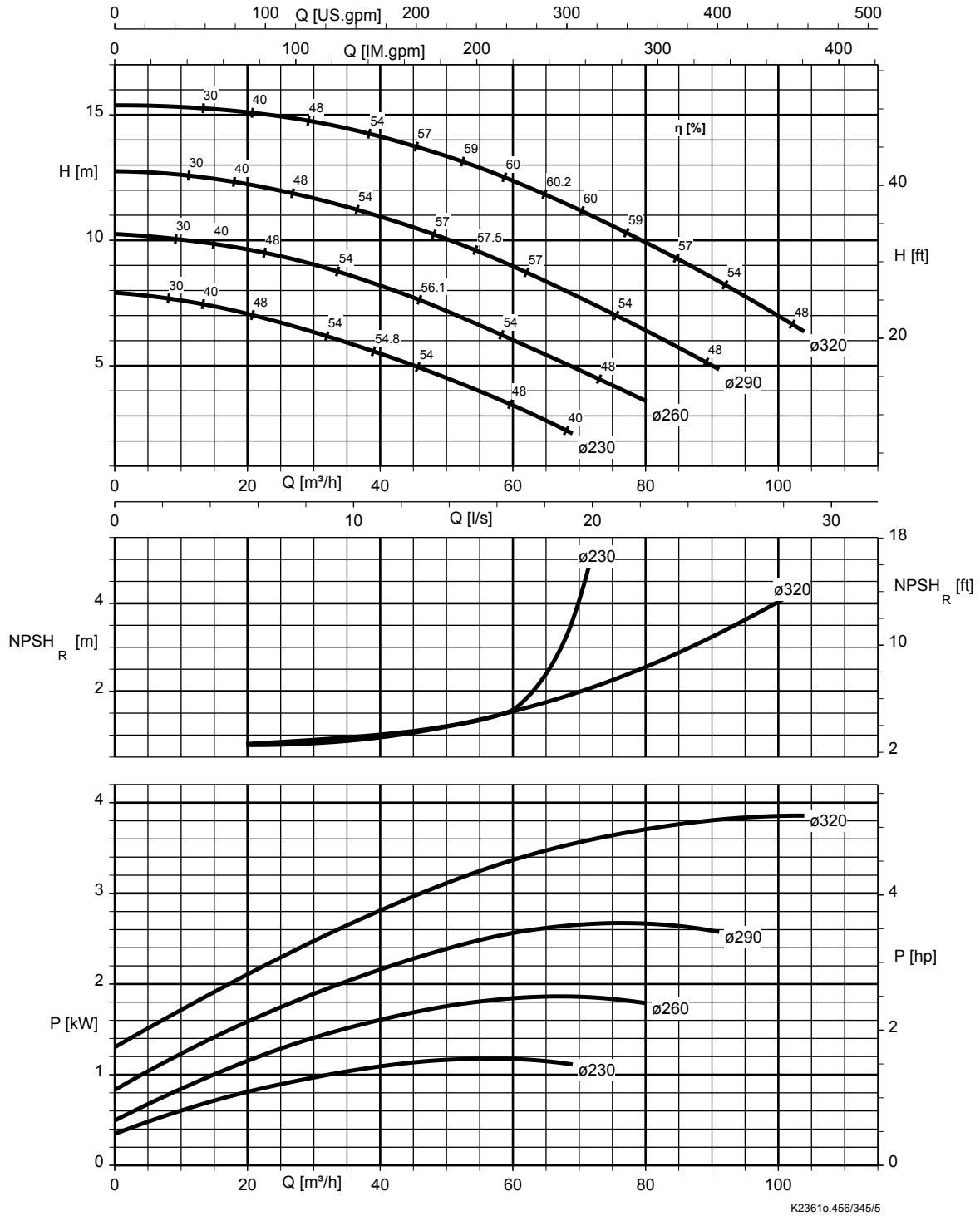


K23610.456/302/2

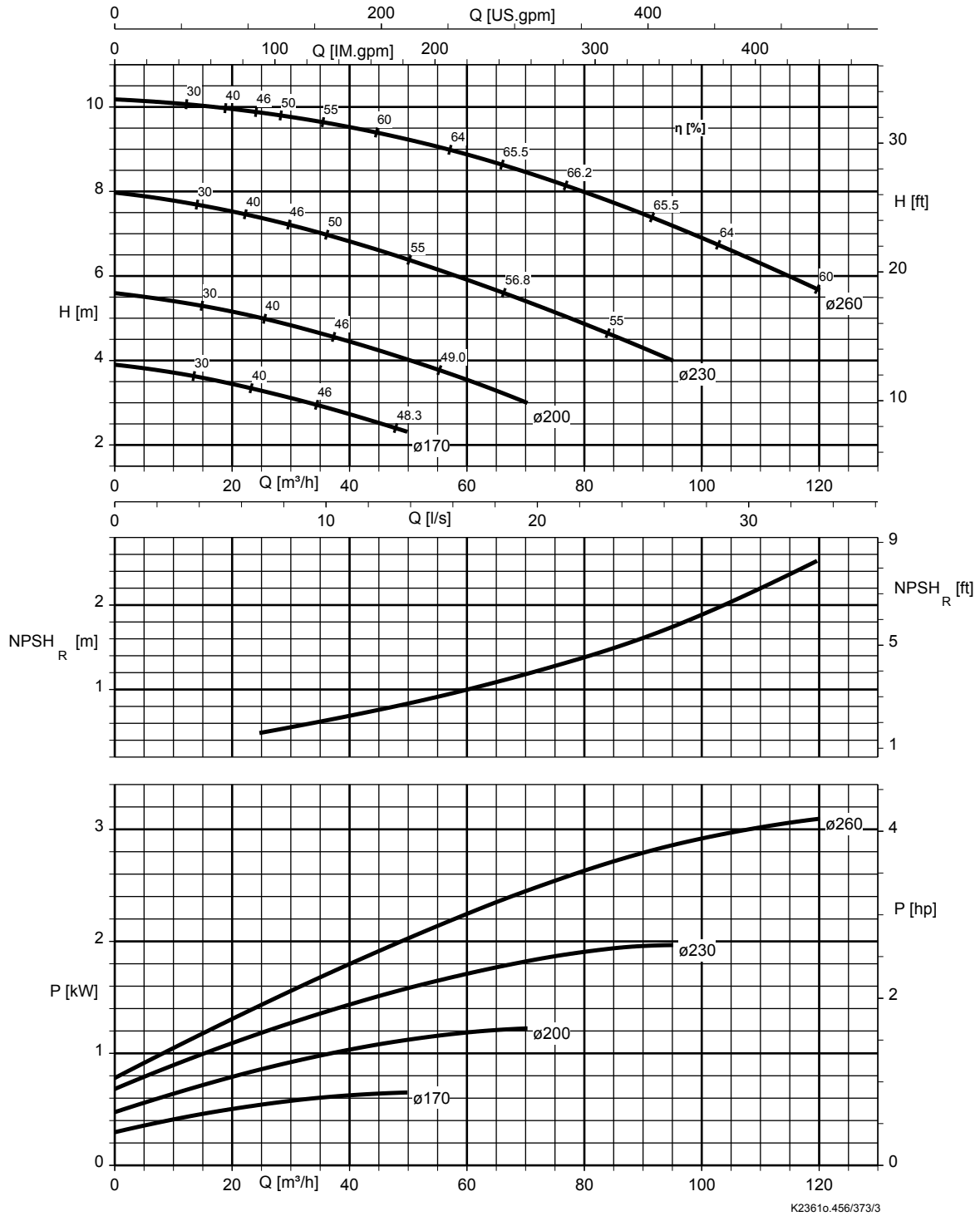
KWP O 080-065-200, n = 960 rpm



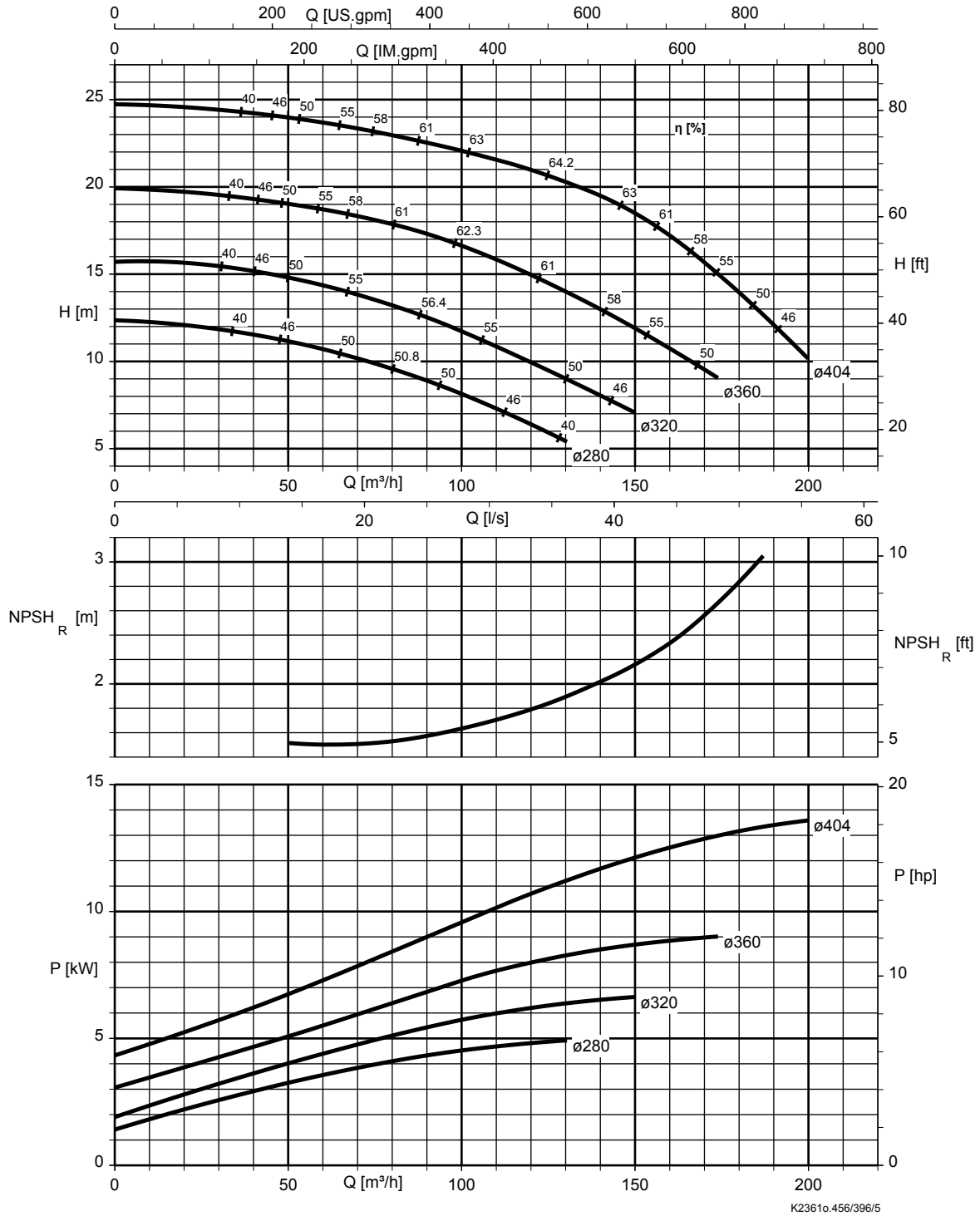
KWP O 080-065-315, n = 960 rpm



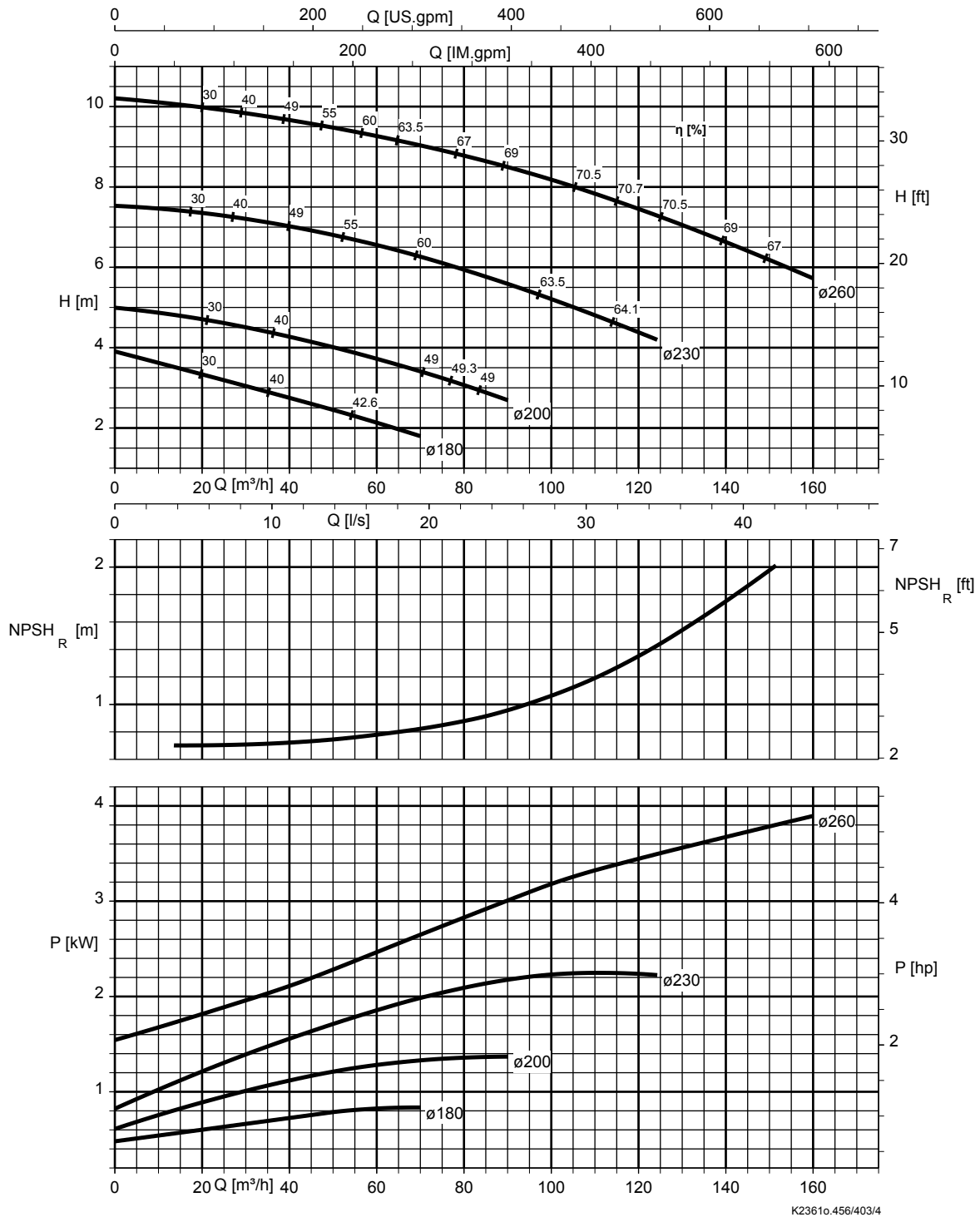
KWP O 100-080-250, n = 960 rpm



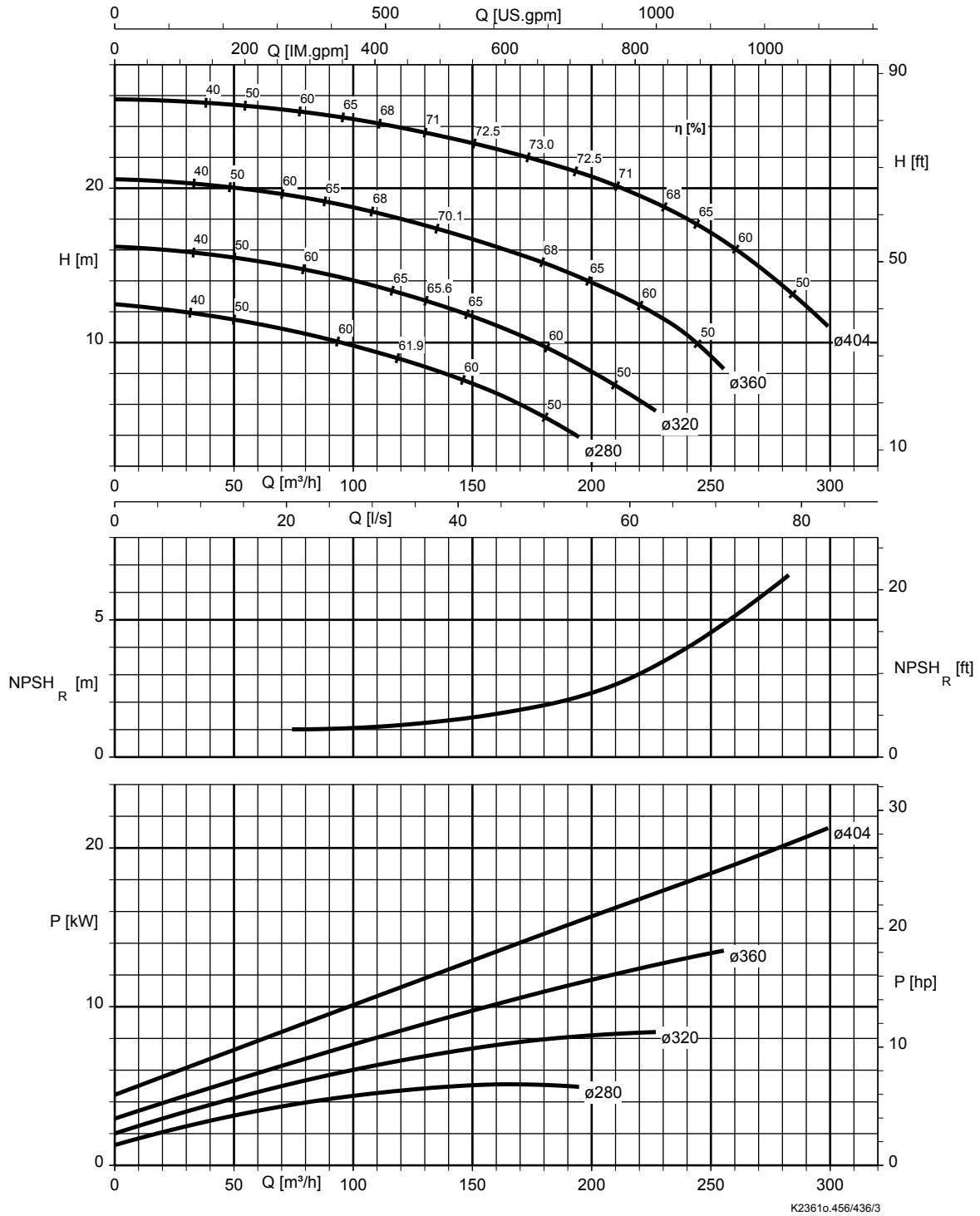
KWP O 100-080-400, n = 960 rpm



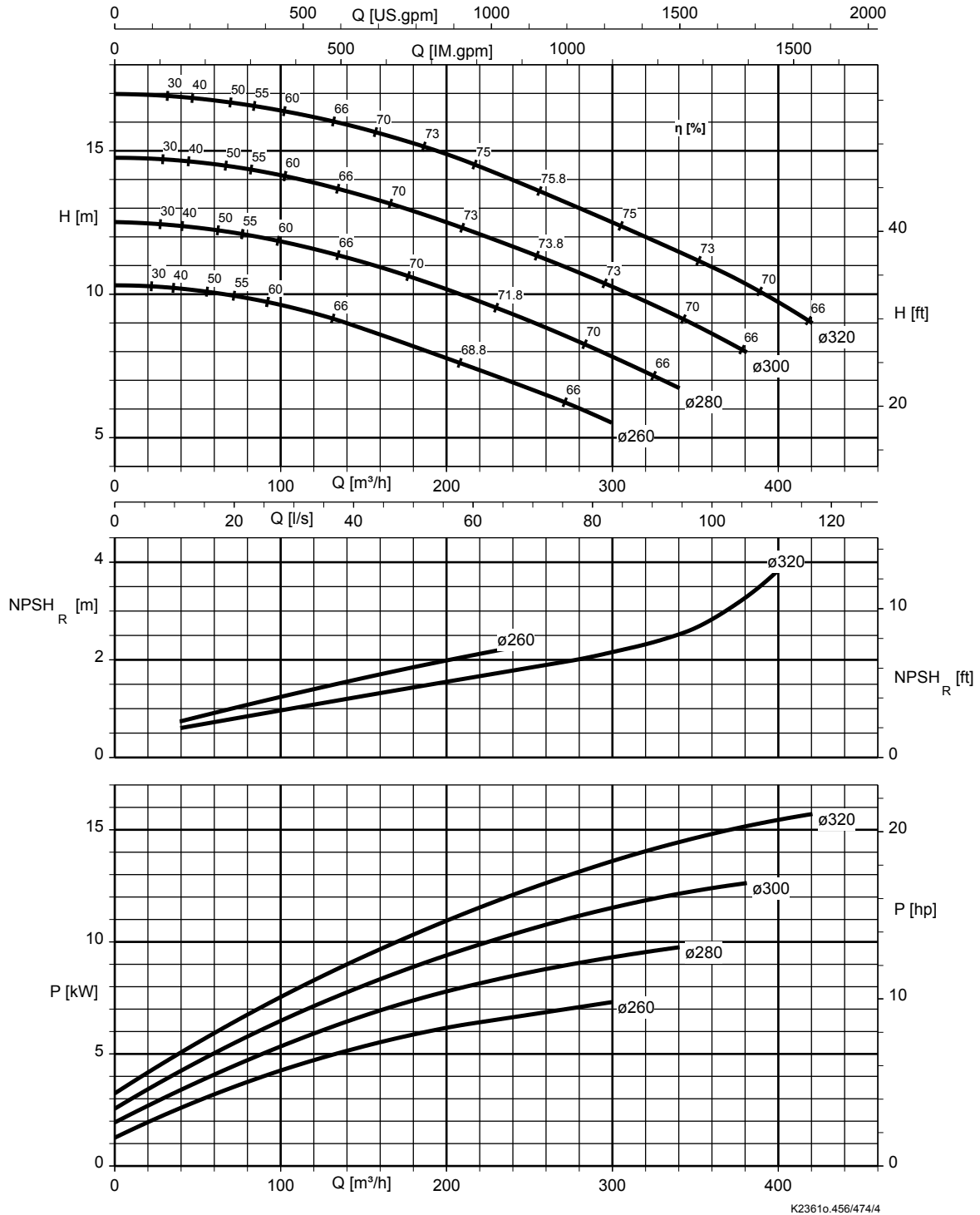
KWP O 125-100-250, n = 960 rpm



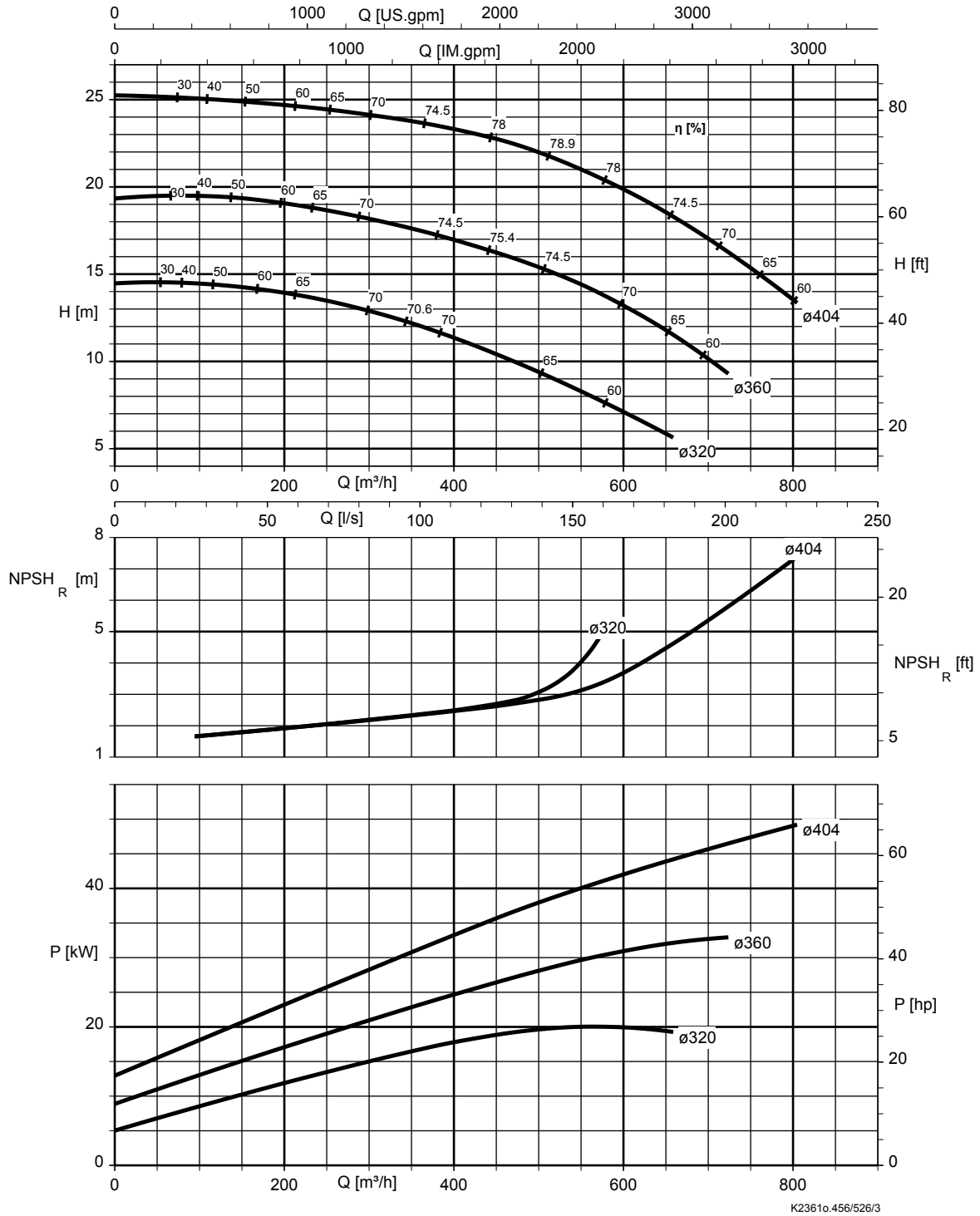
KWP O 125-100-400, n = 960 rpm



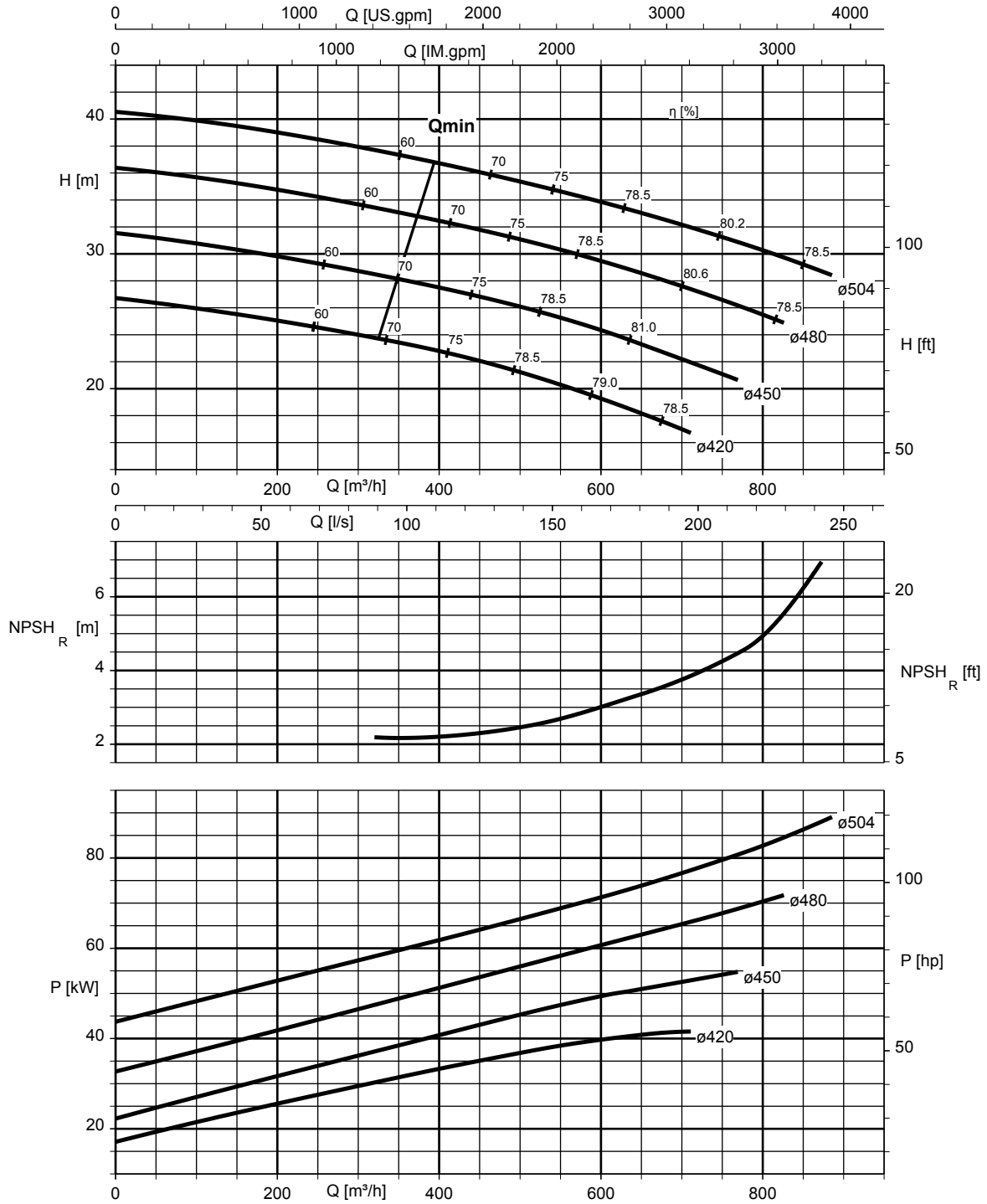
KWP O 150-150-315, n = 960 rpm



KWP O 200-200-400, n = 960 rpm



KWP O 250-250-500.2, $n = 960$ rpm

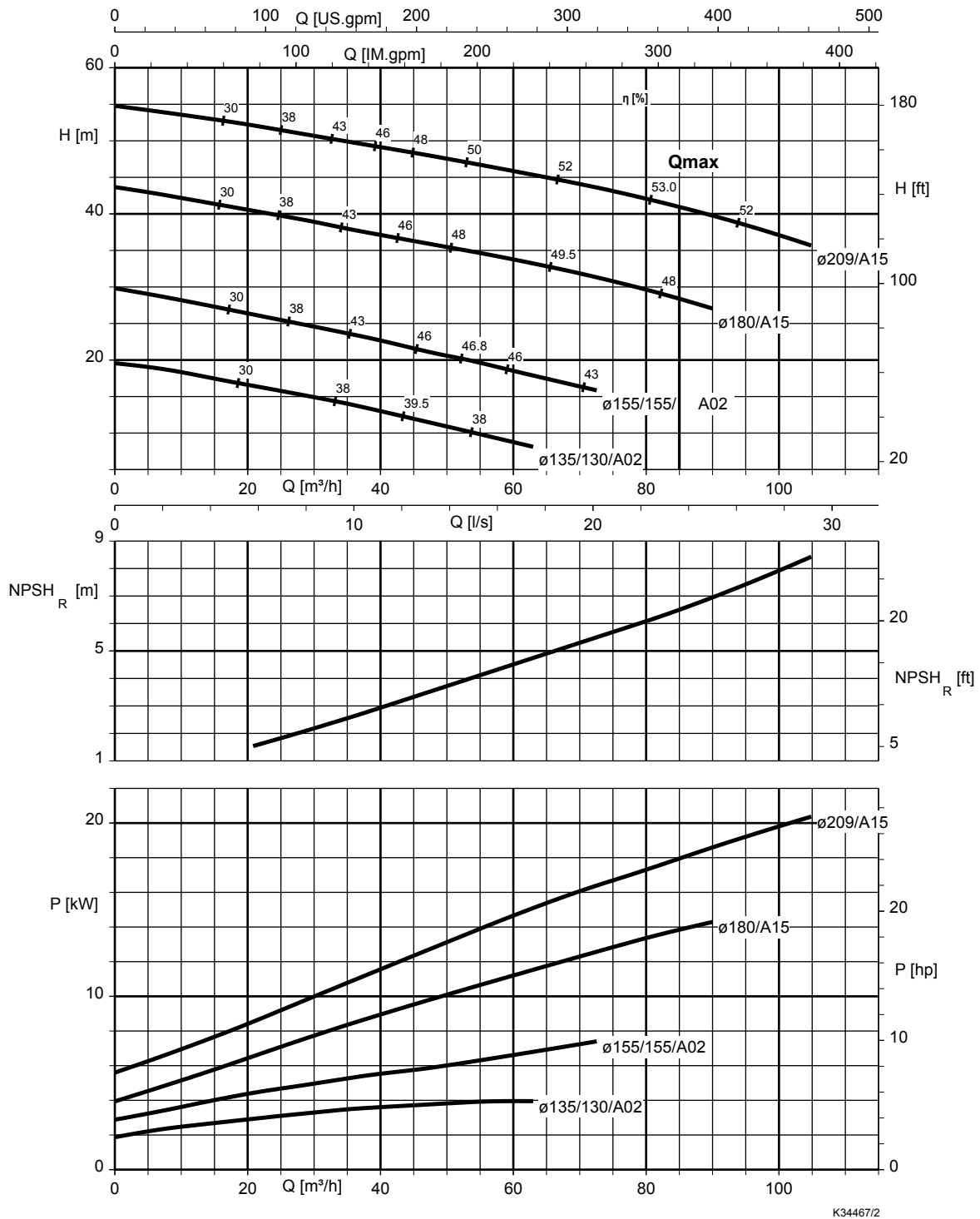


K34895/0

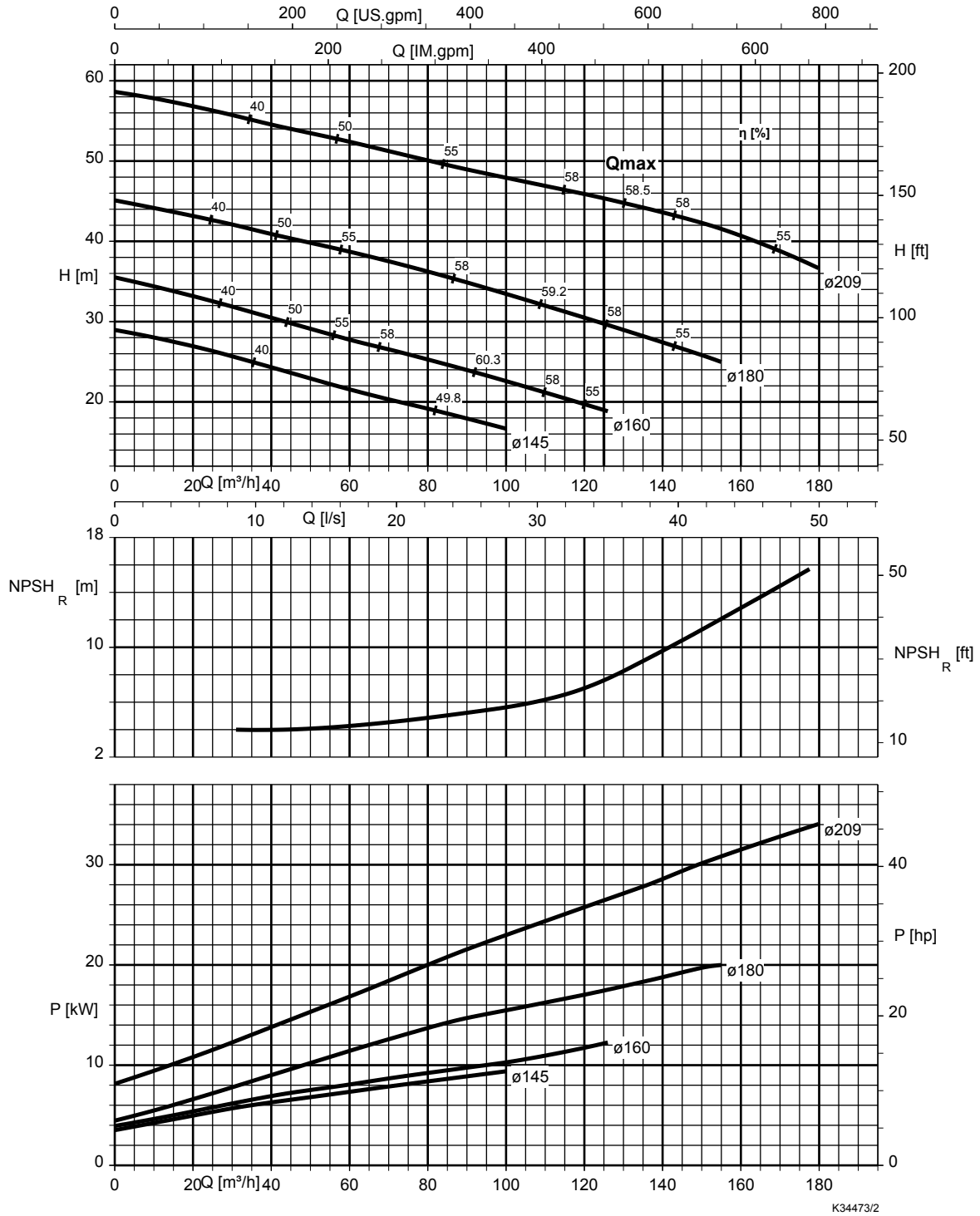
F impeller

$n = 2900$ rpm

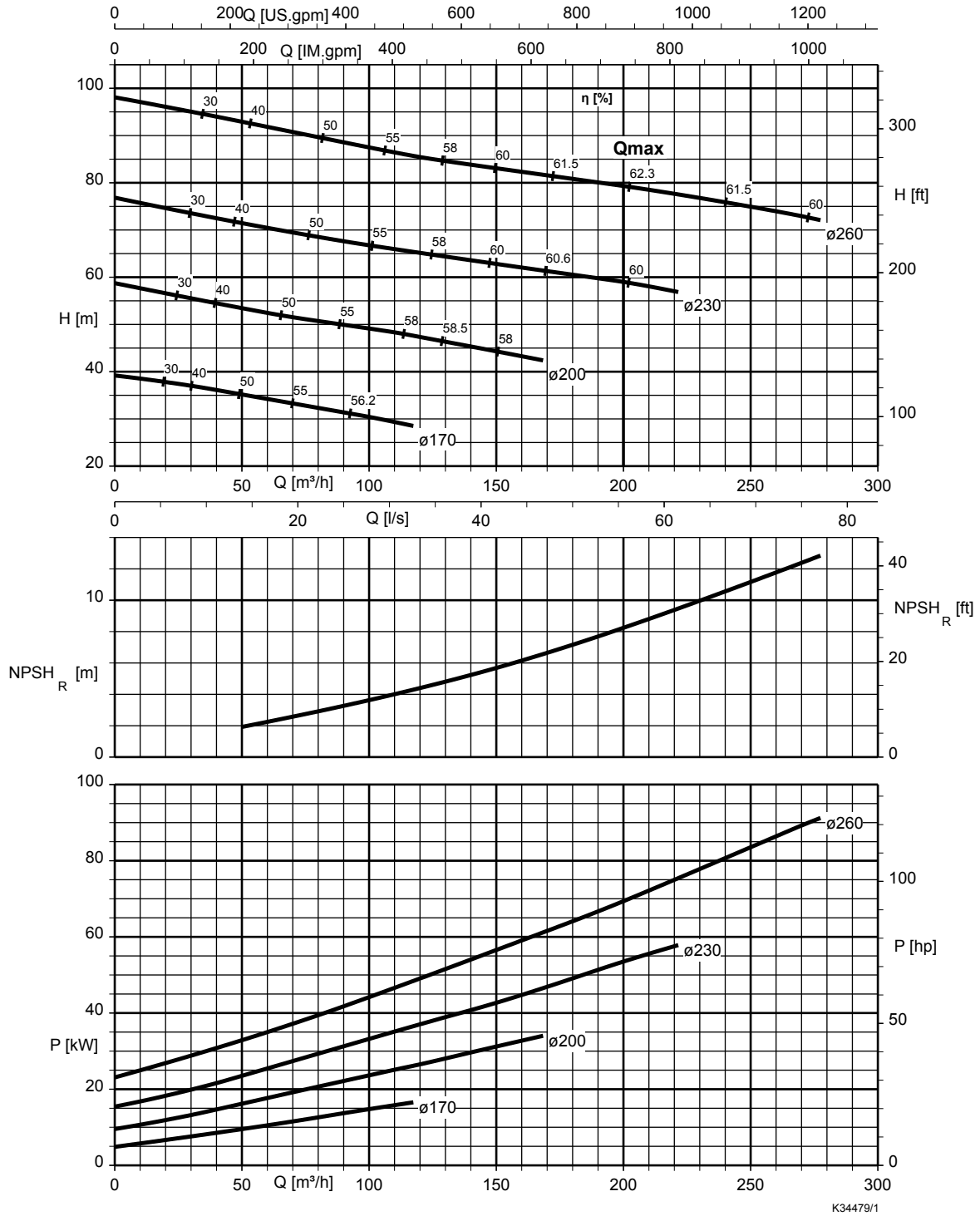
KWP F 065-050-201, $n = 2900$ rpm



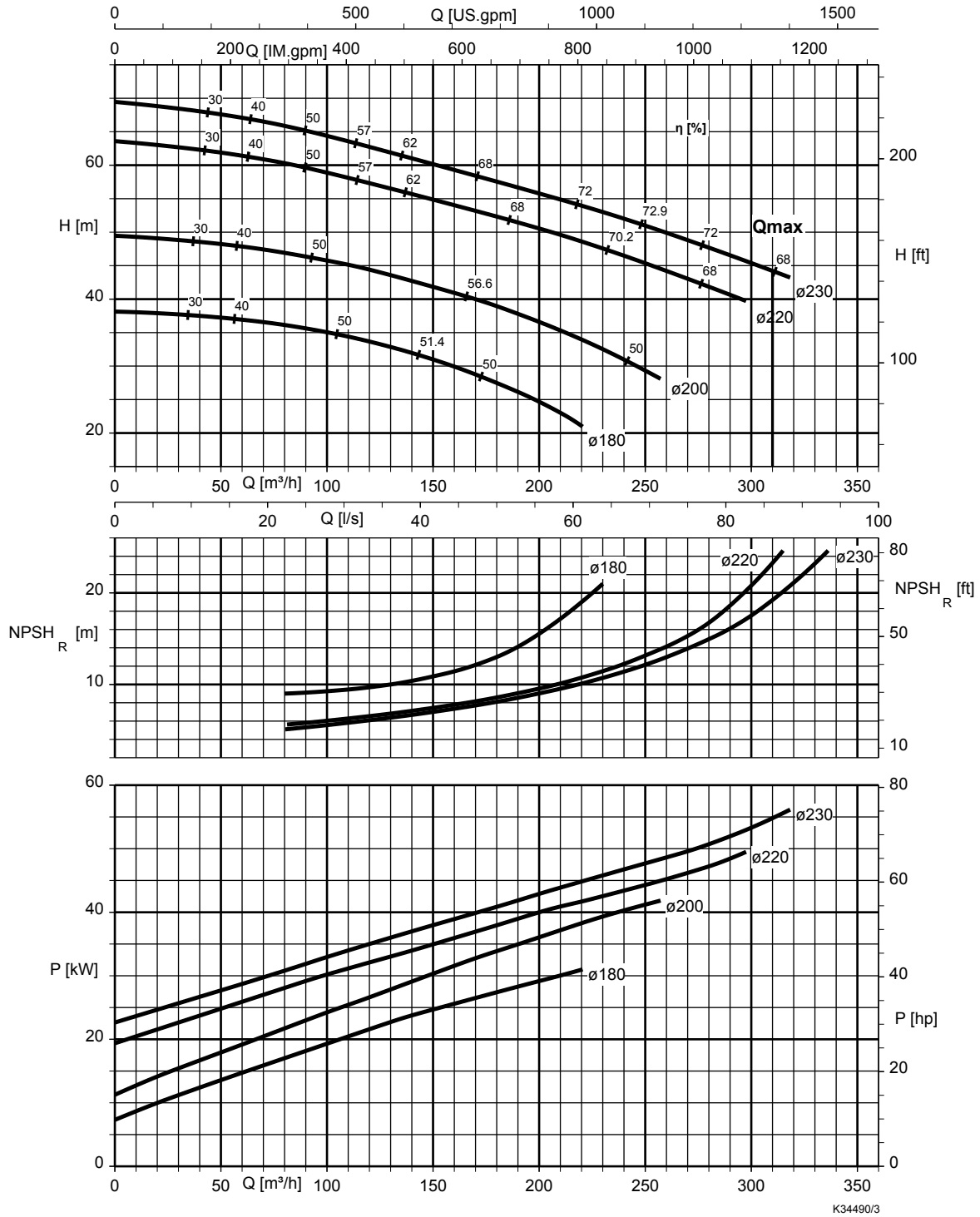
KWP F 080-065-201, n = 2900 rpm



KWP F 100-080-251, $n = 2900 \text{ rpm}$

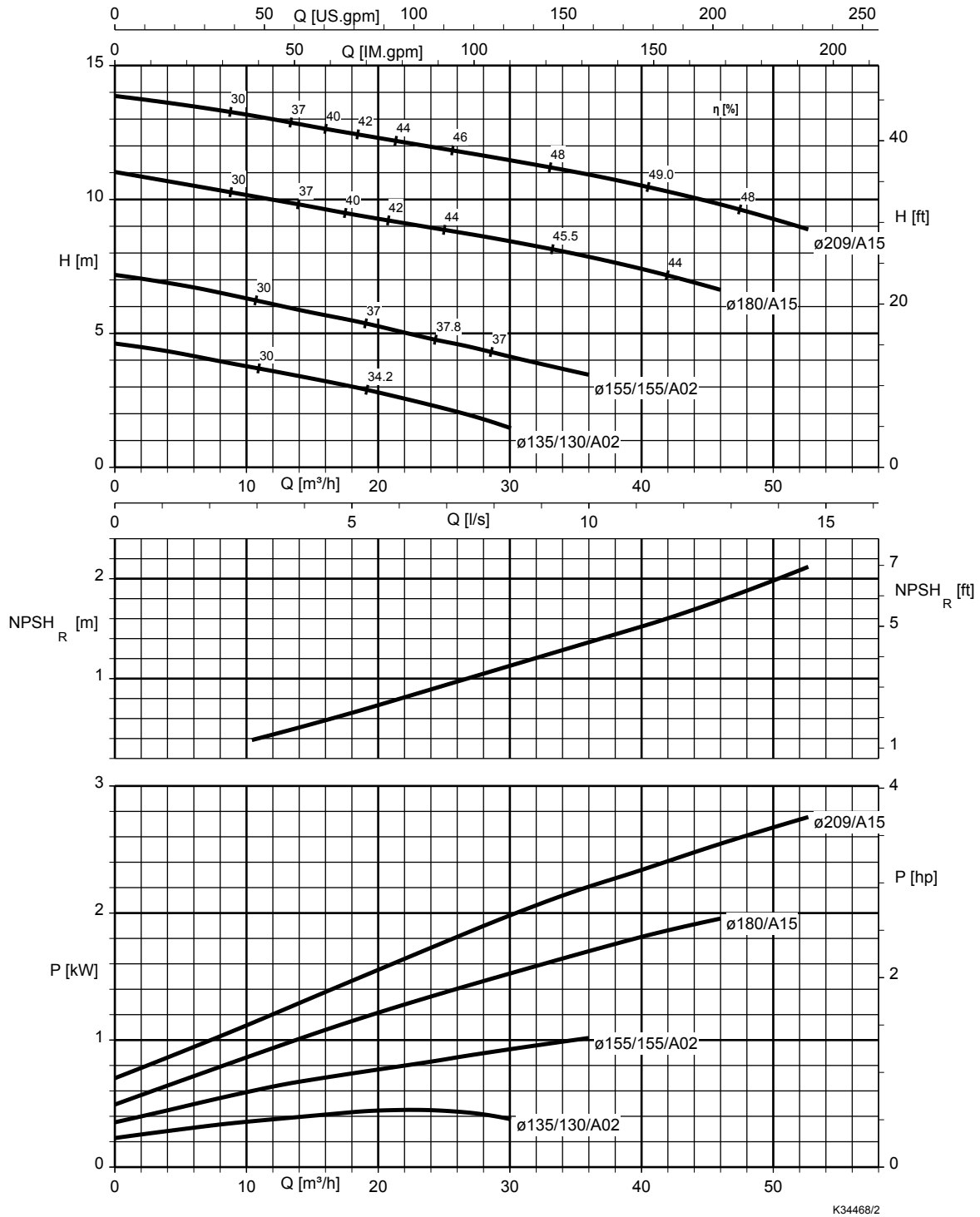


KWP F 125-100-251, n = 2900 rpm

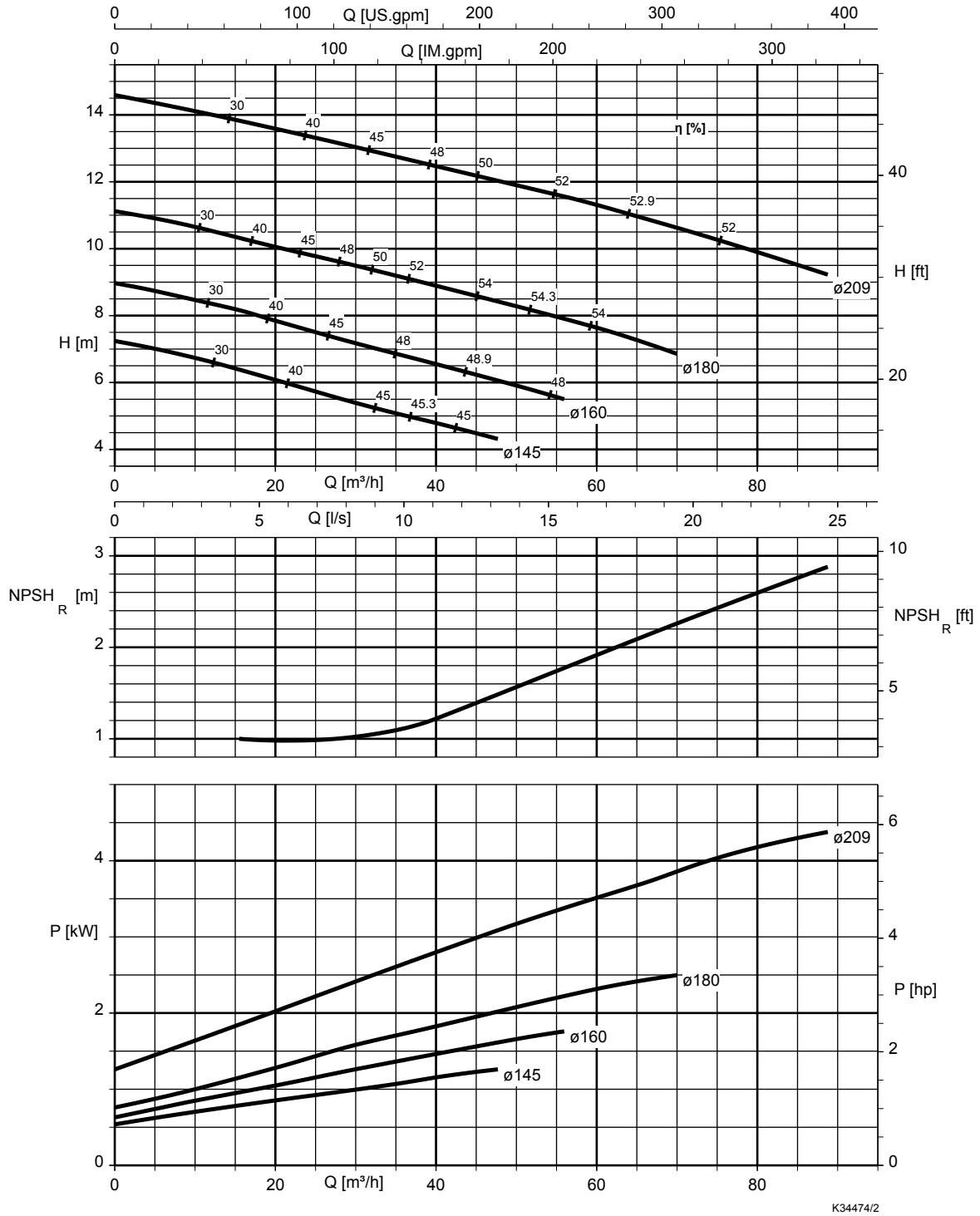


$n = 1450 \text{ rpm}$

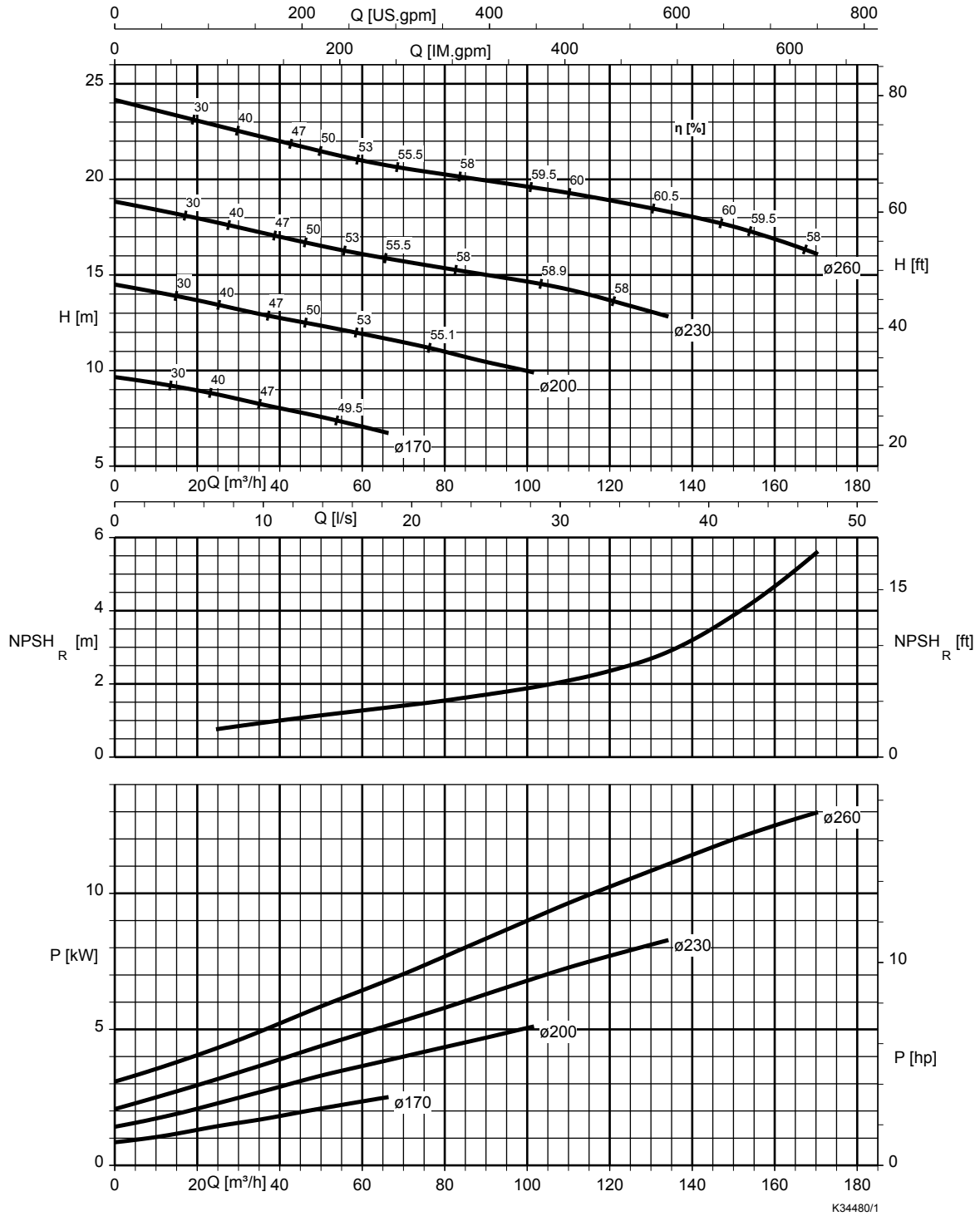
KWP F 065-050-201, $n = 1450 \text{ rpm}$



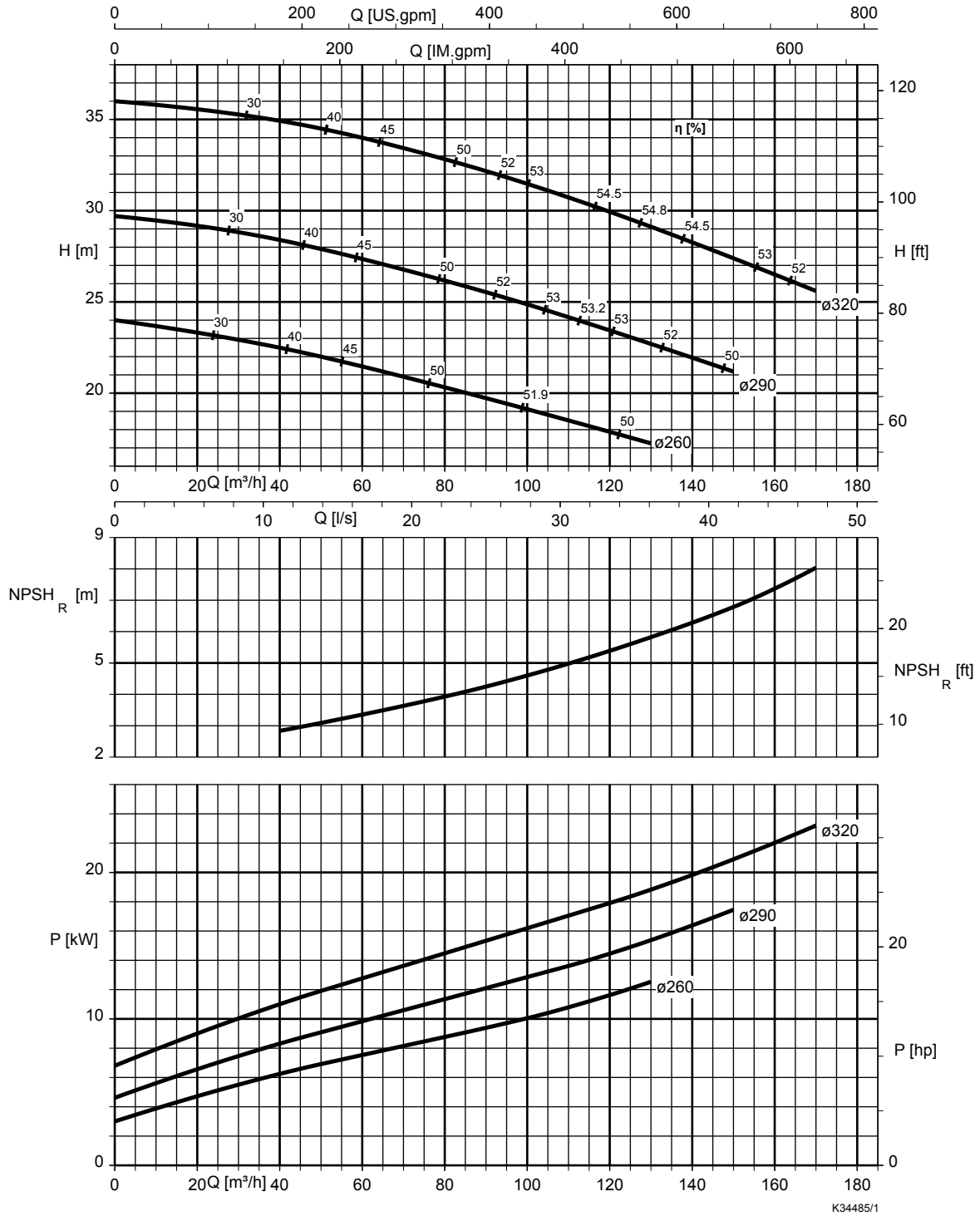
KWP F 080-065-201, n = 1450 rpm



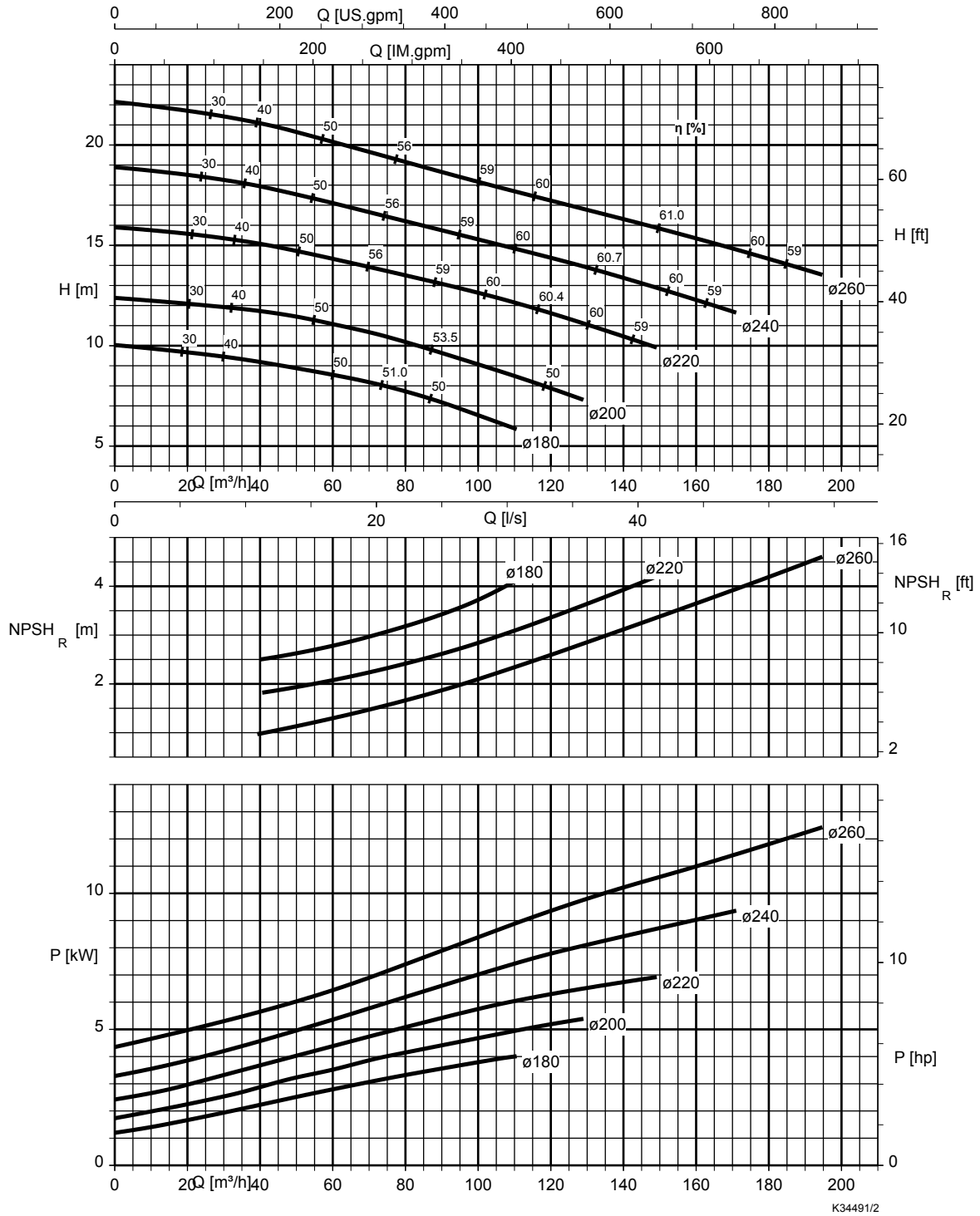
KWP F 100-080-251, n = 1450 rpm



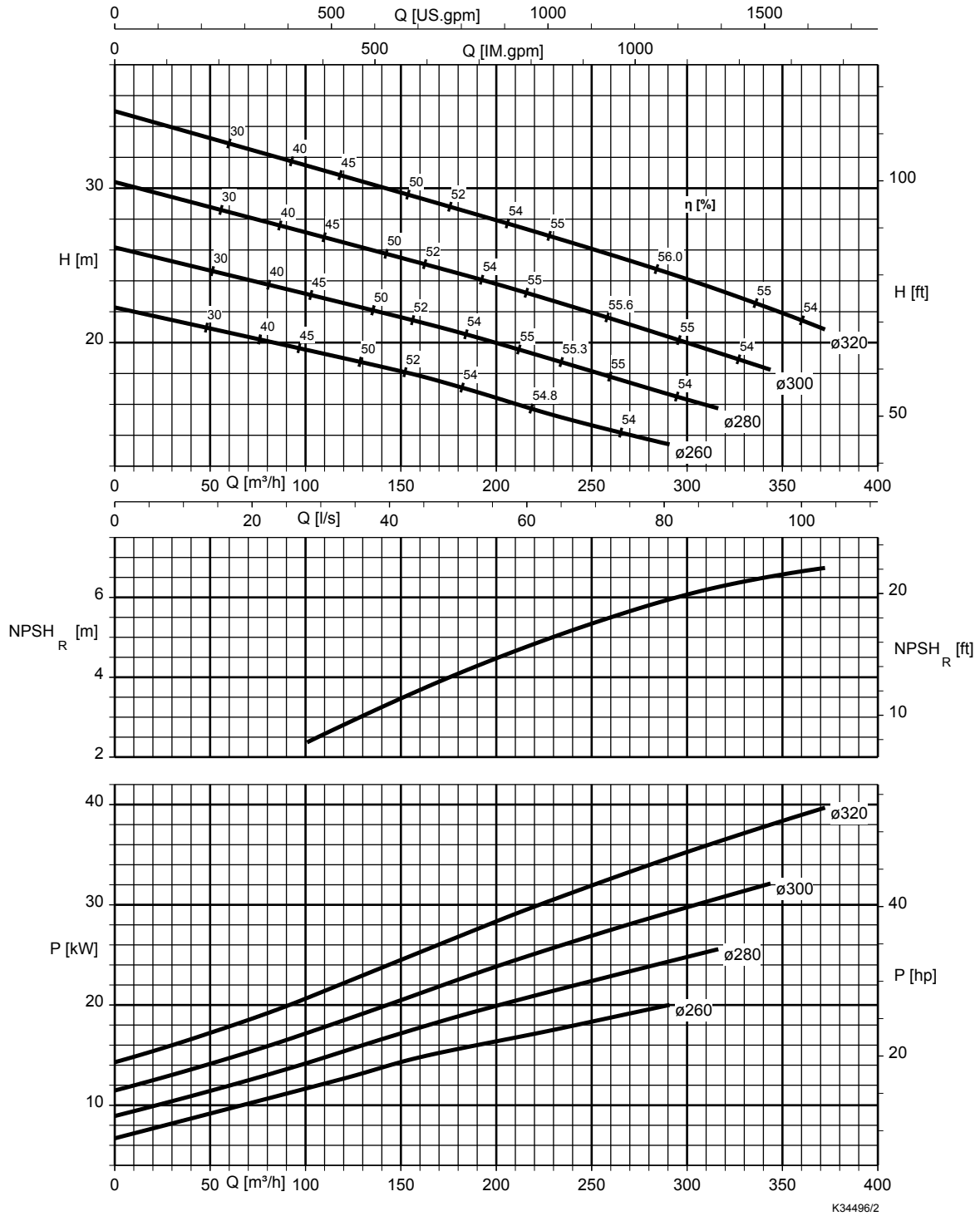
KWP F 100-080-311, n = 1450 rpm



KWP F 125-100-251, $n = 1450$ rpm

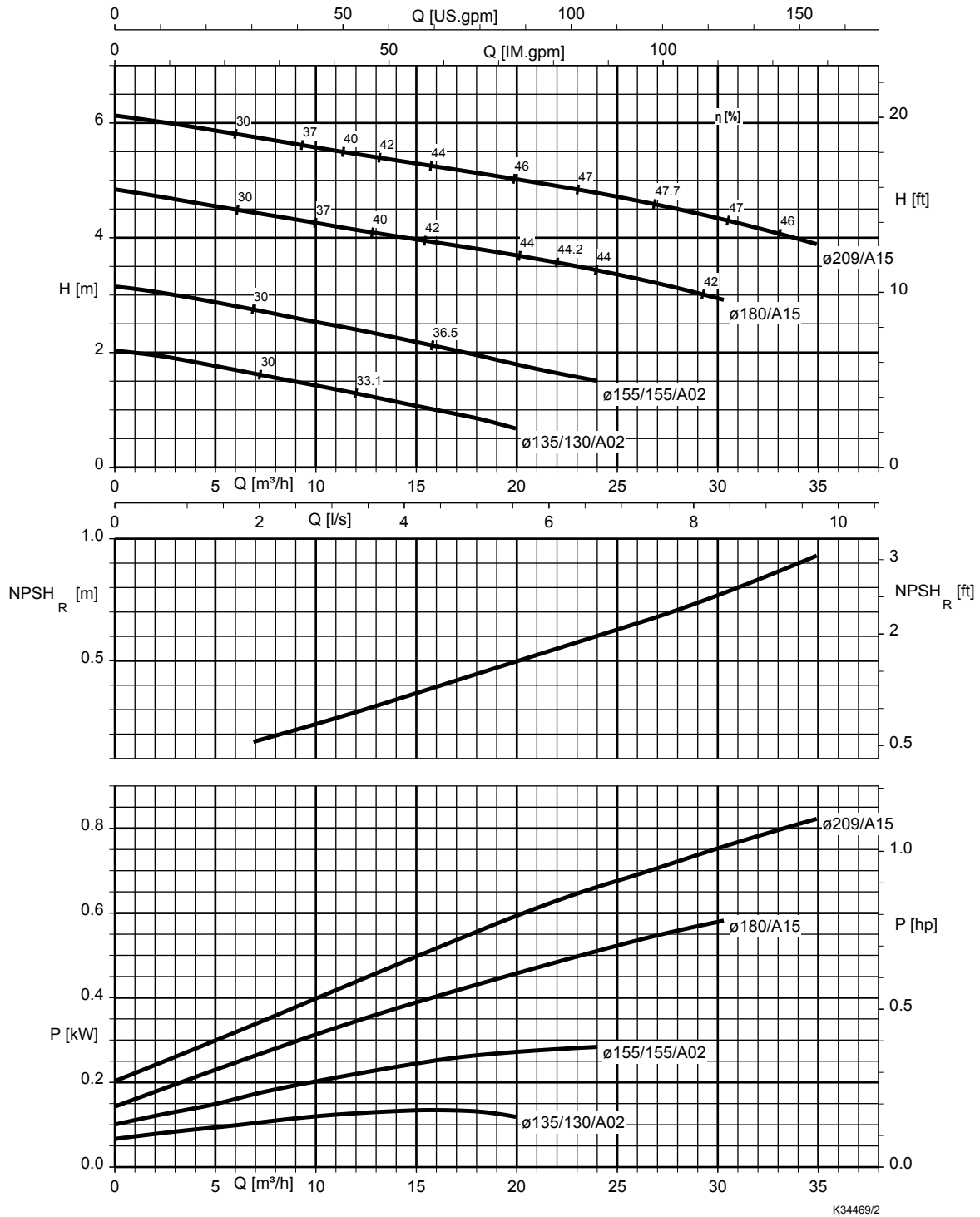


KWP F 150-150-311, $n = 1450 \text{ rpm}$

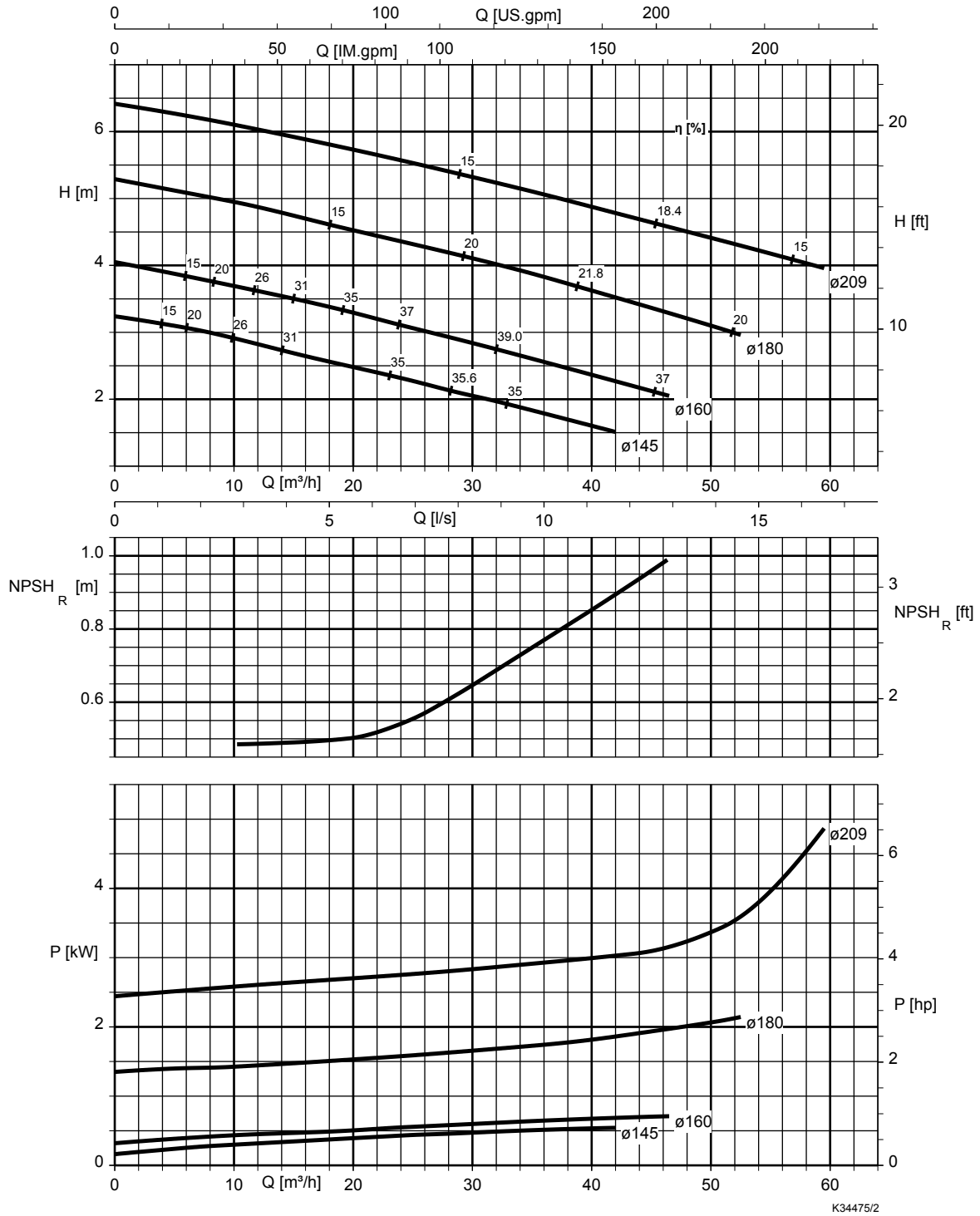


$n = 960 \text{ rpm}$

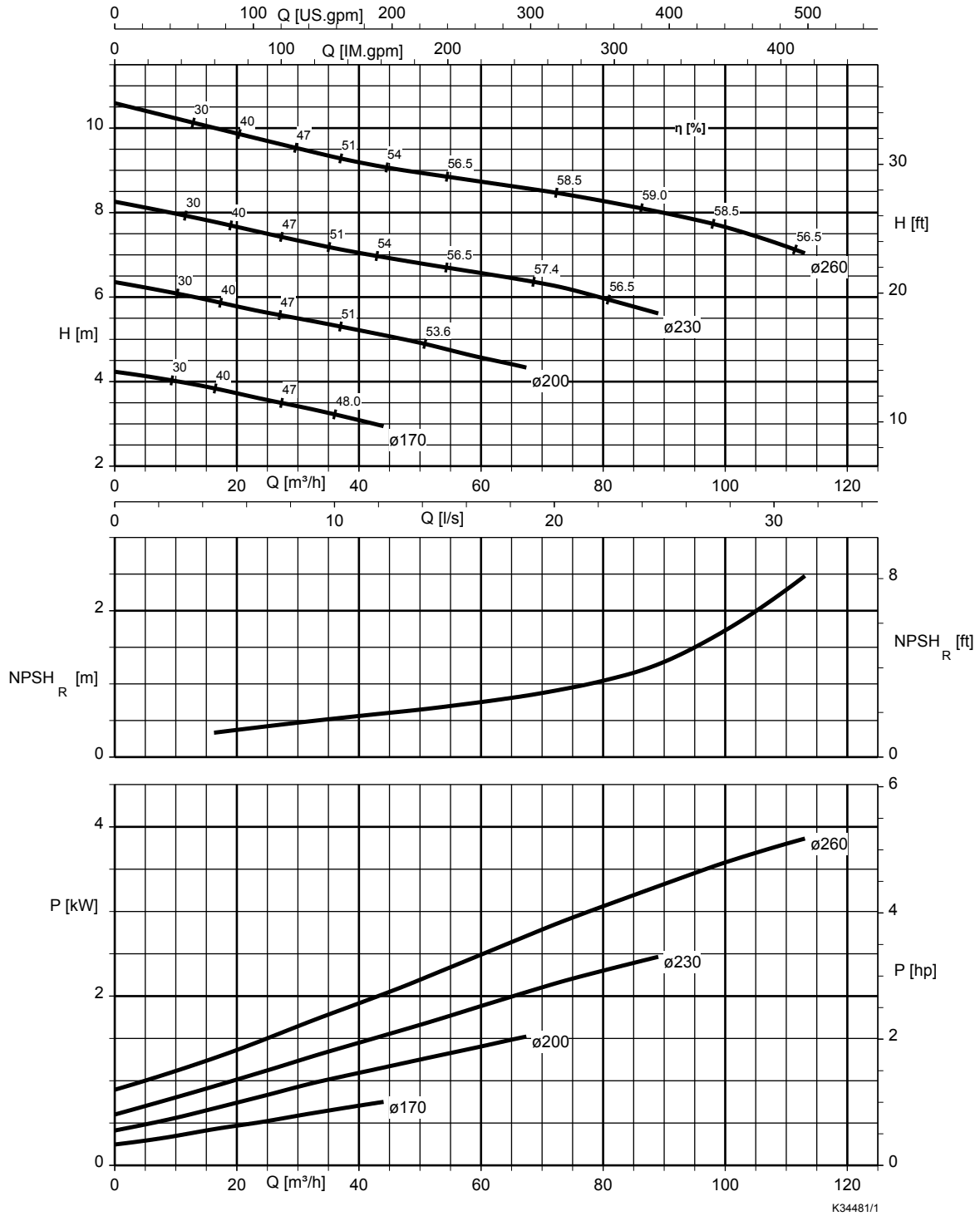
KWP F 065-050-201, $n = 960 \text{ rpm}$



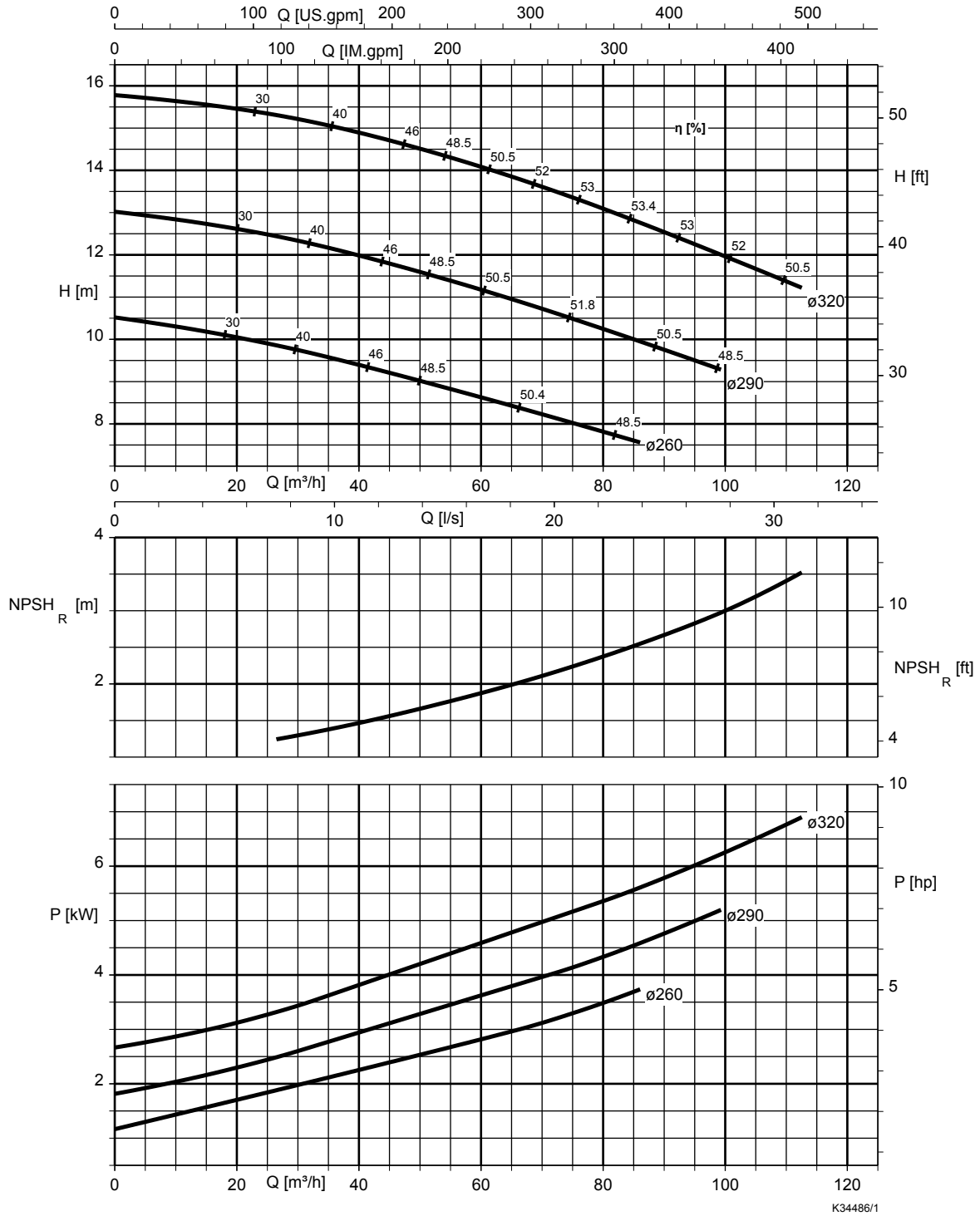
KWP F 080-065-201, n = 960 rpm



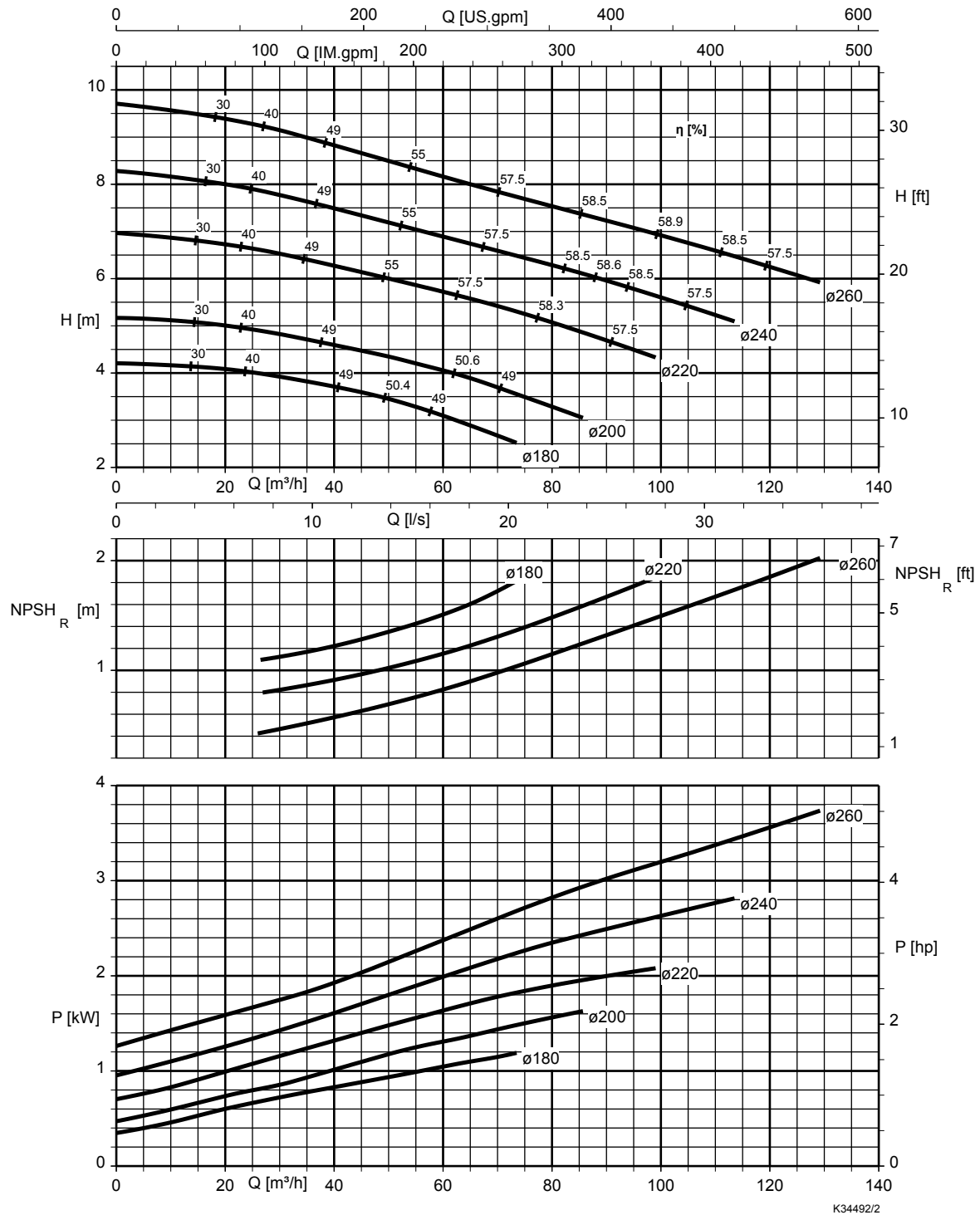
KWP F 100-080-251, n = 960 rpm



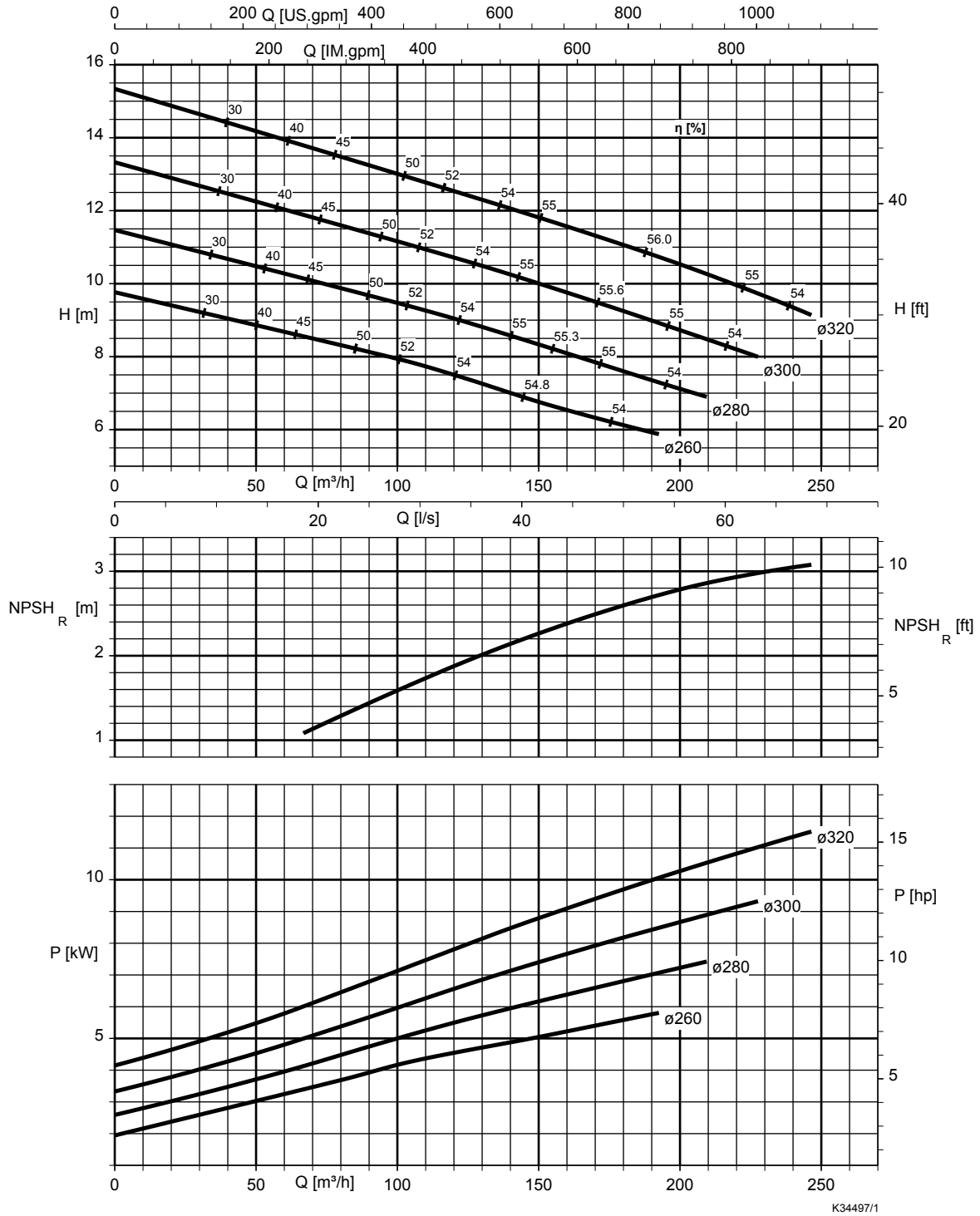
KWP F 100-080-311, n = 960 rpm



KWP F 125-100-251, n = 960 rpm



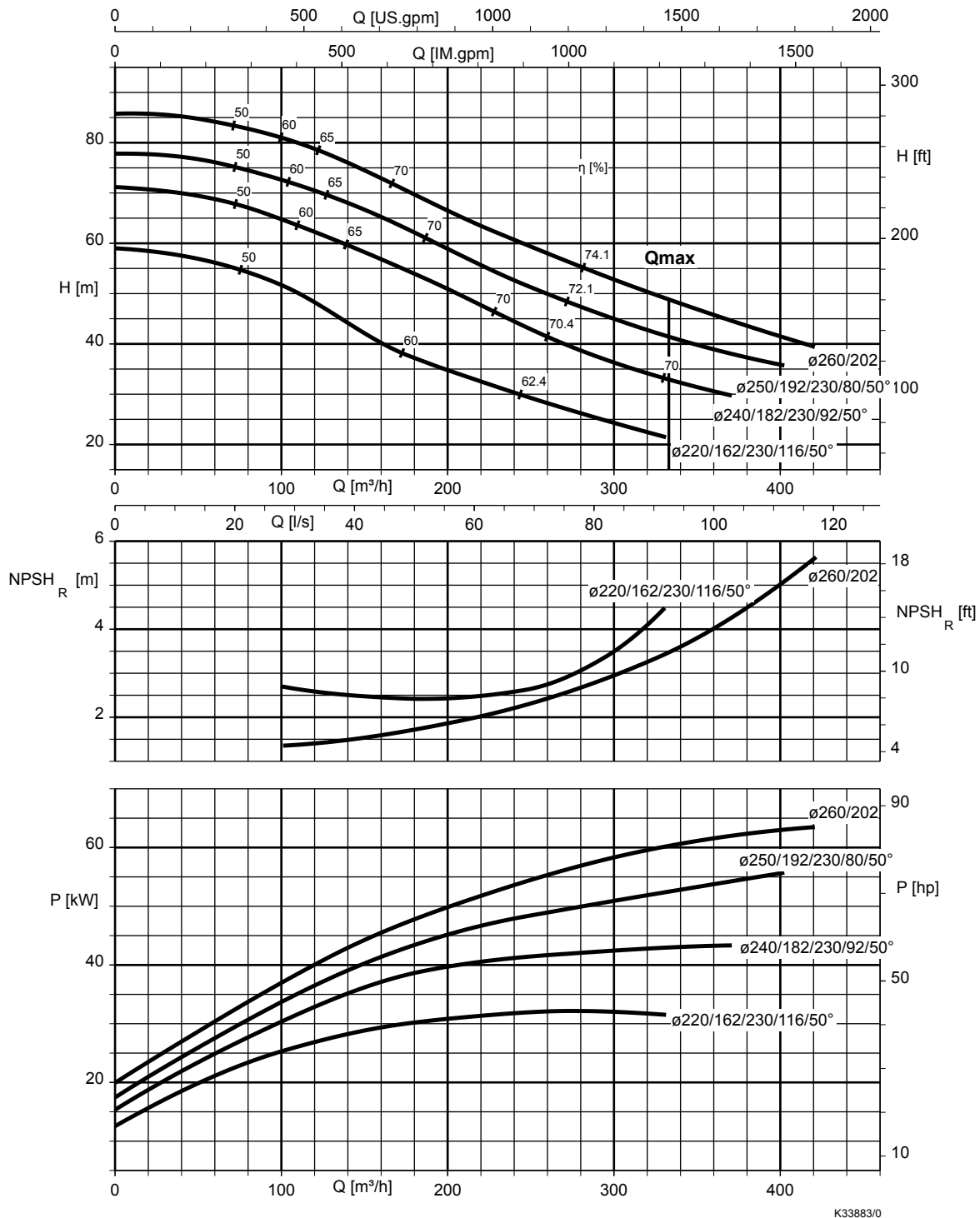
KWP F 150-150-311, n = 960 rpm



R impeller

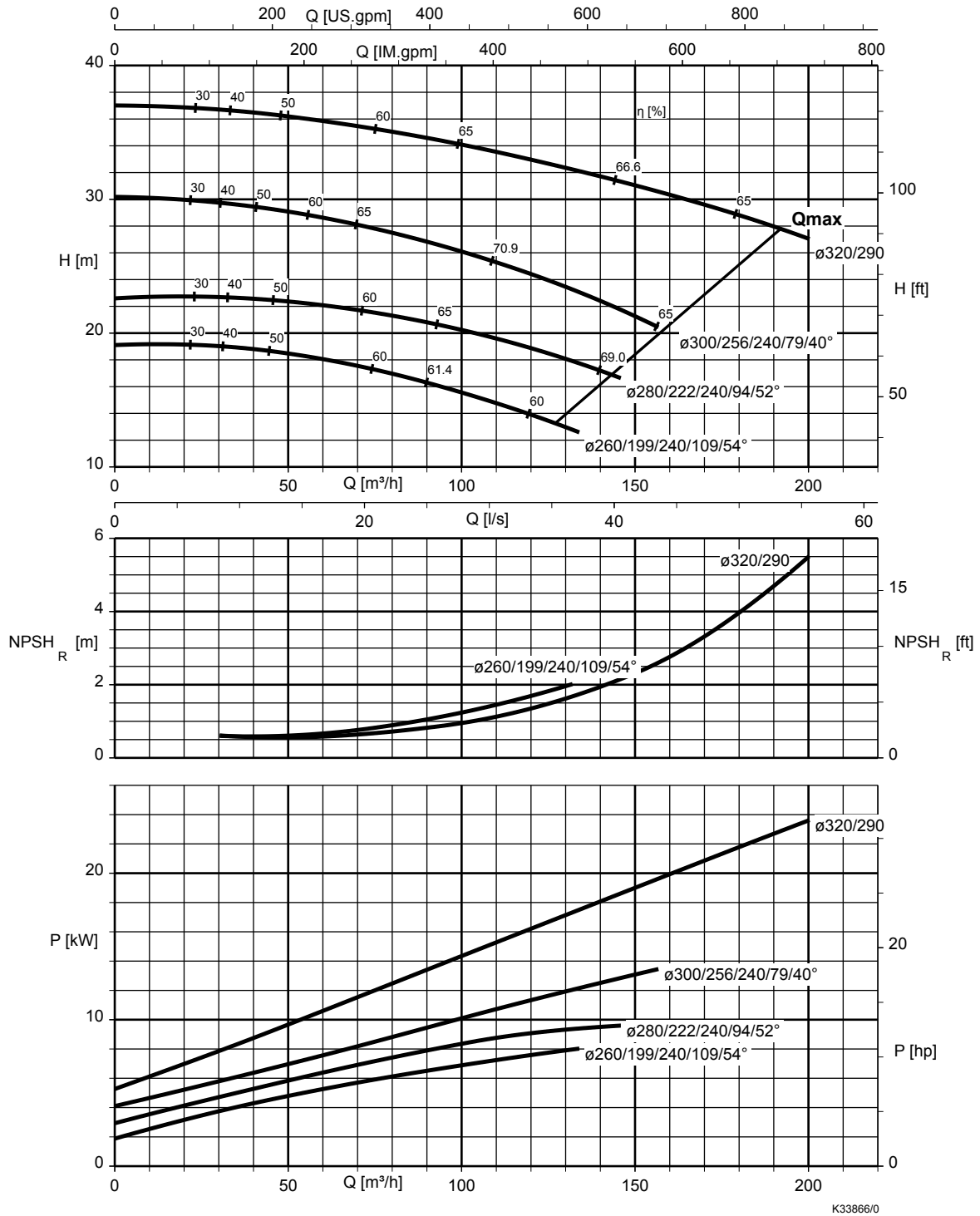
$n = 2900 \text{ rpm}$

KWP R 125-100-250, $n = 2900 \text{ rpm}$

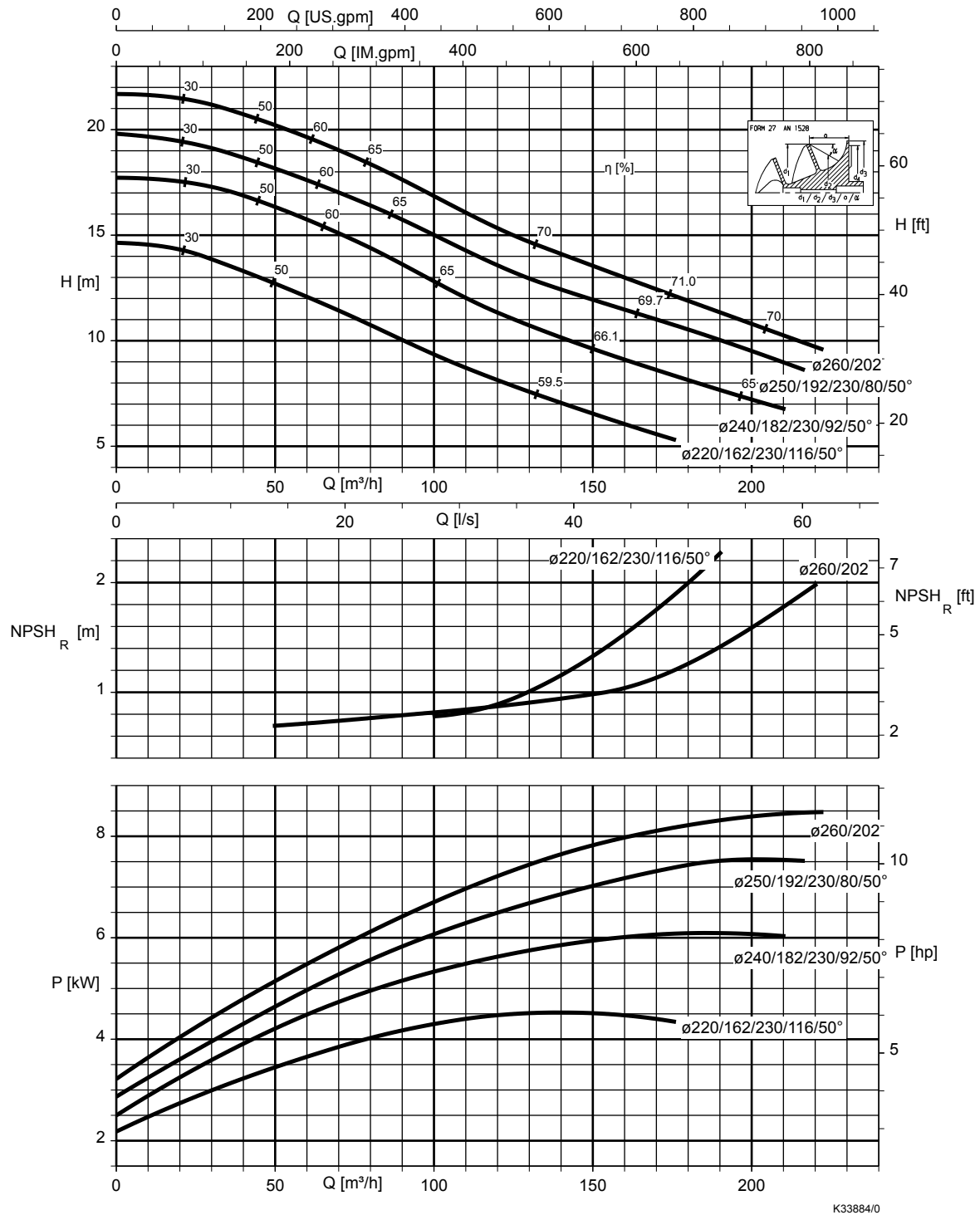


$n = 1450 \text{ rpm}$

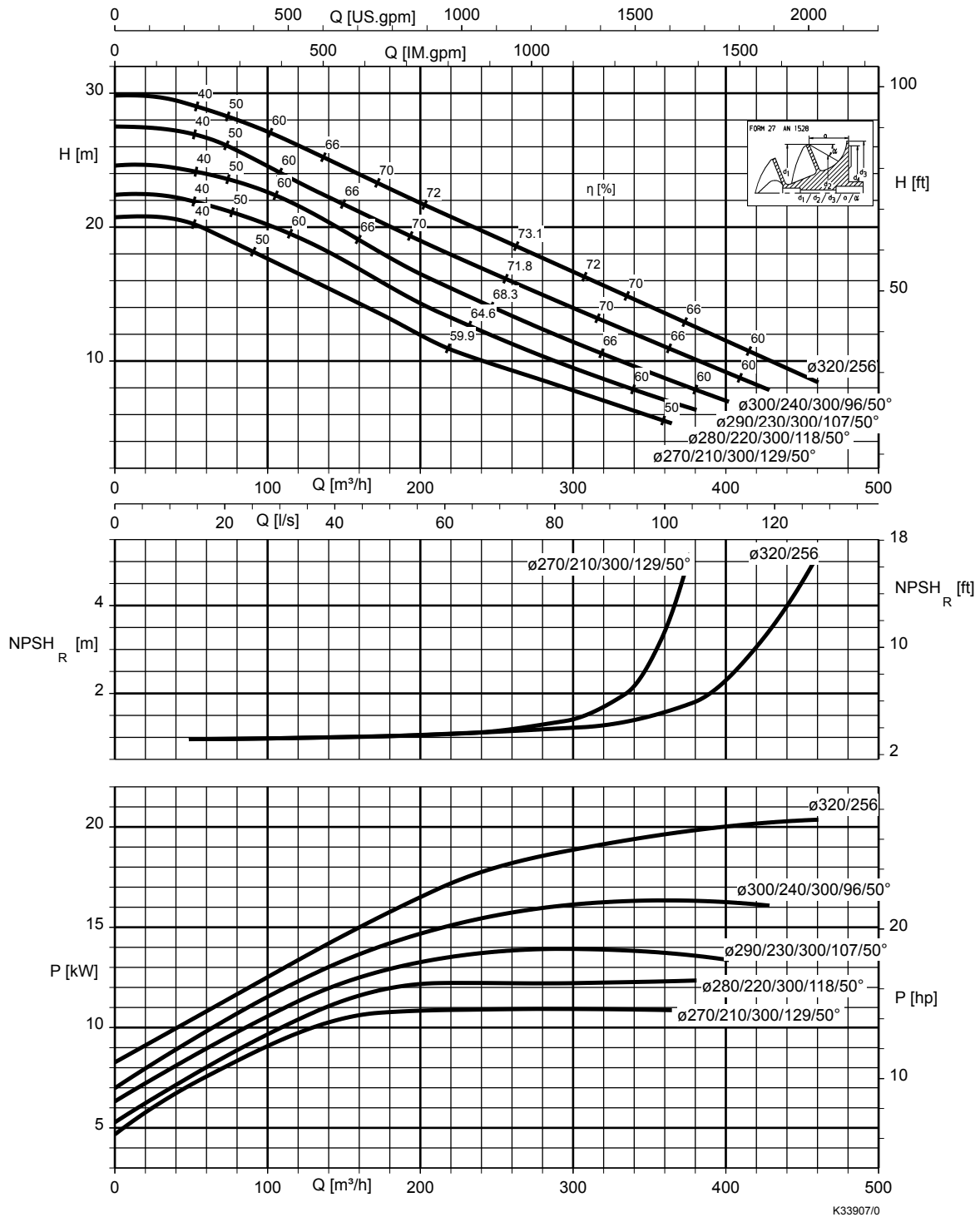
KWP R 100-080-315, $n = 1450 \text{ rpm}$



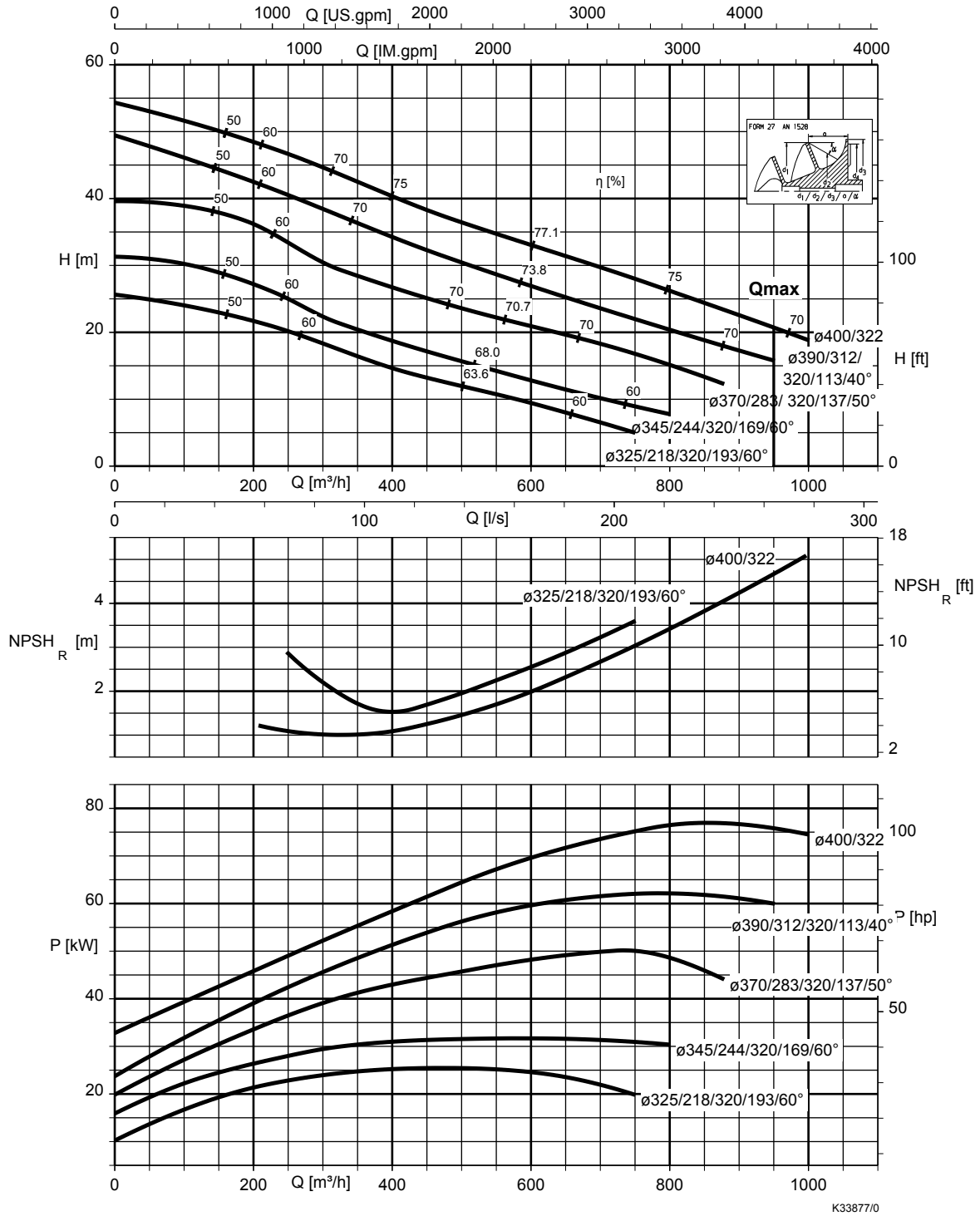
KWP R 125-100-250, n = 1450 rpm



KWP R 150-125-315, n = 1450 rpm

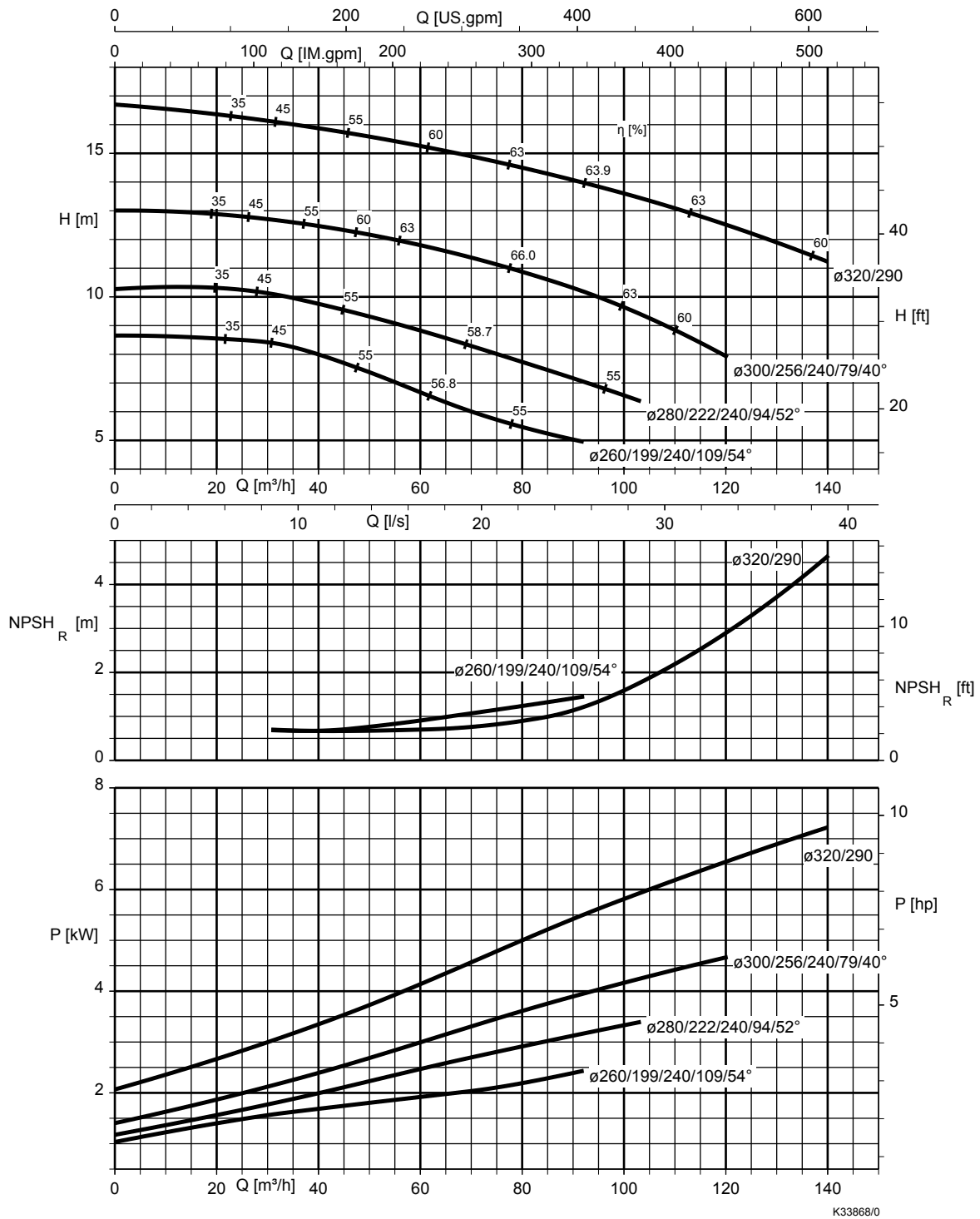


KWP R 200-200-400, n = 1450 rpm



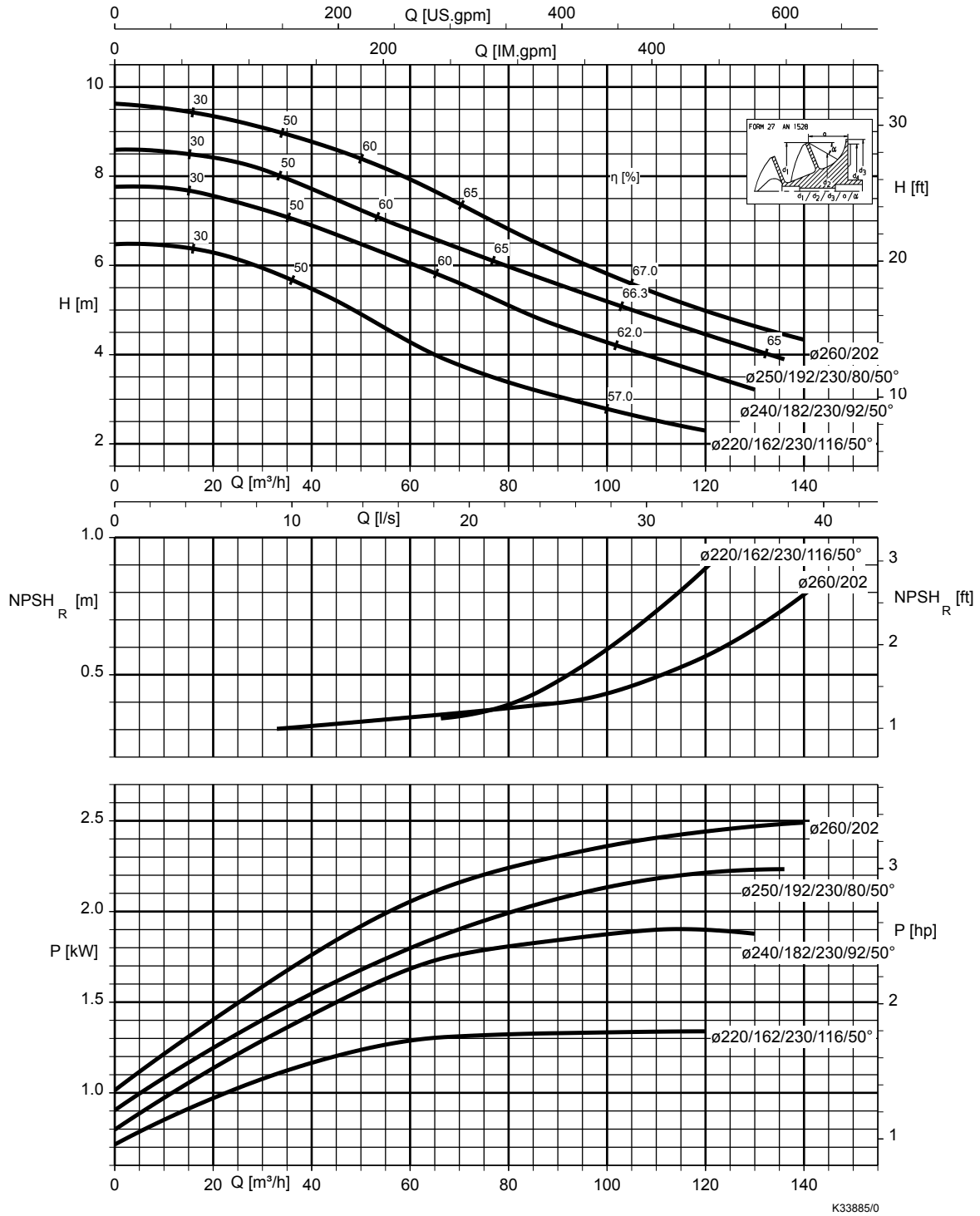
$n = 960 \text{ rpm}$

KWP R 100-080-315, $n = 960 \text{ rpm}$

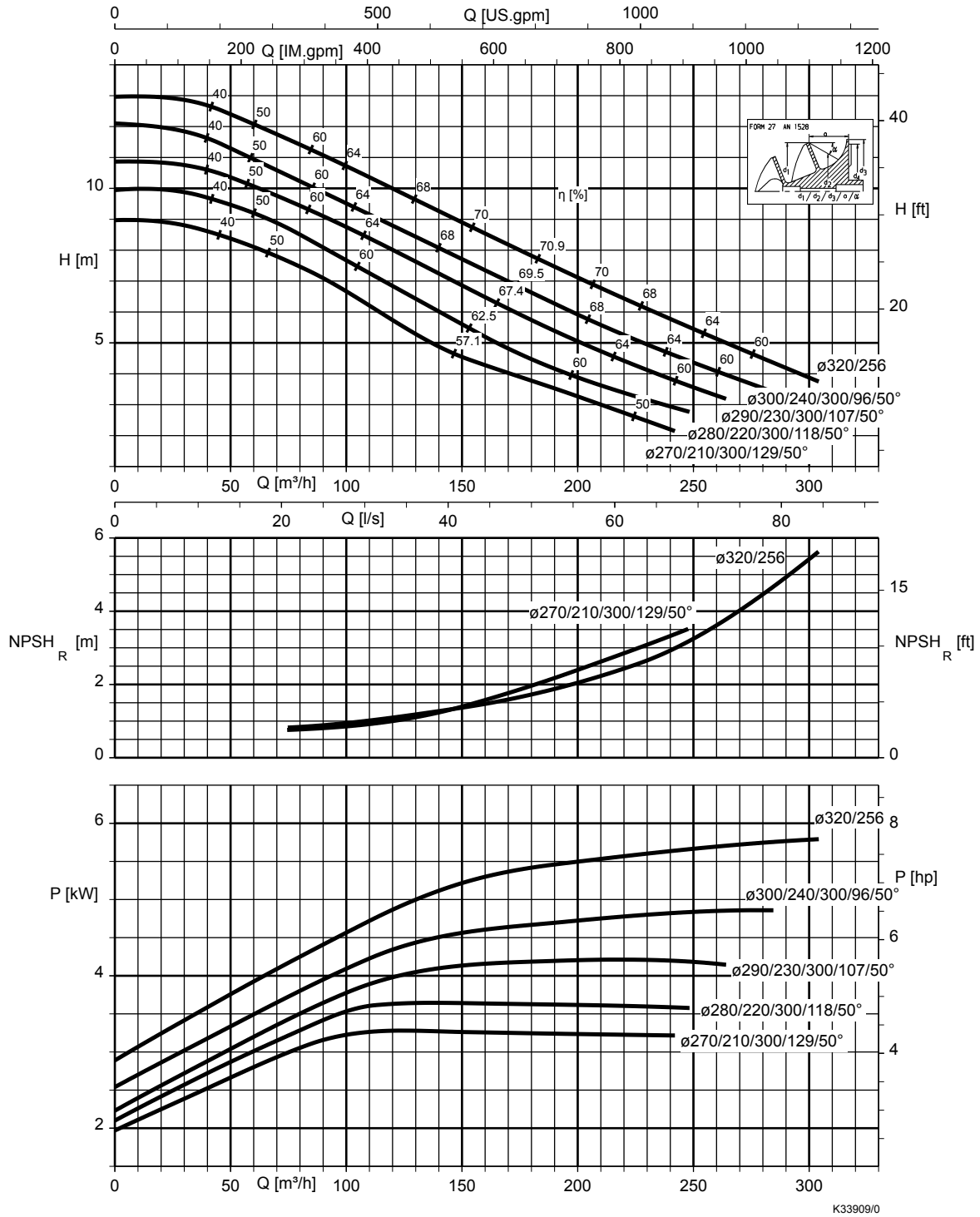


K33868/0

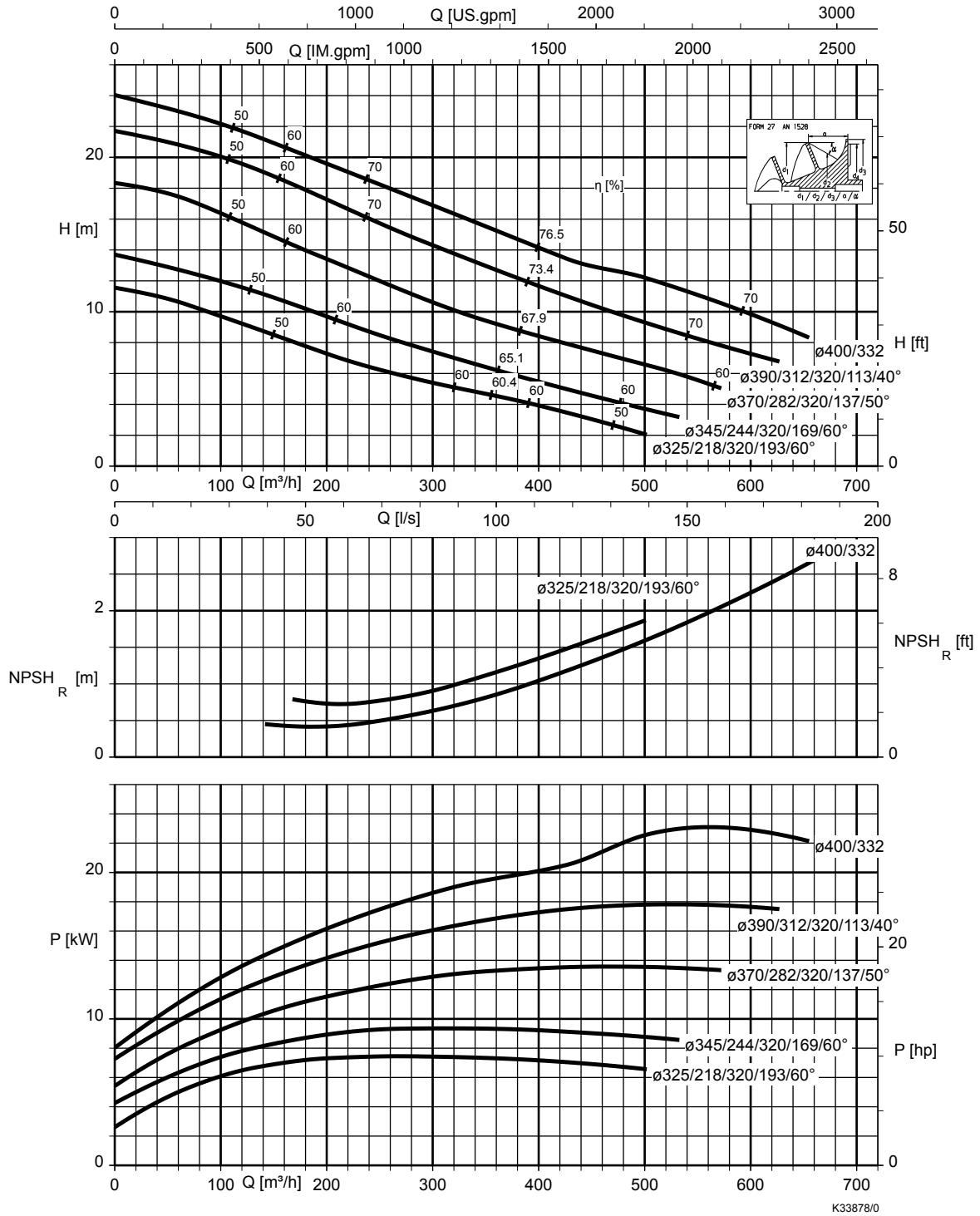
KWP R 125-100-250, n = 960 rpm



KWP R 150-125-315, n = 960 rpm

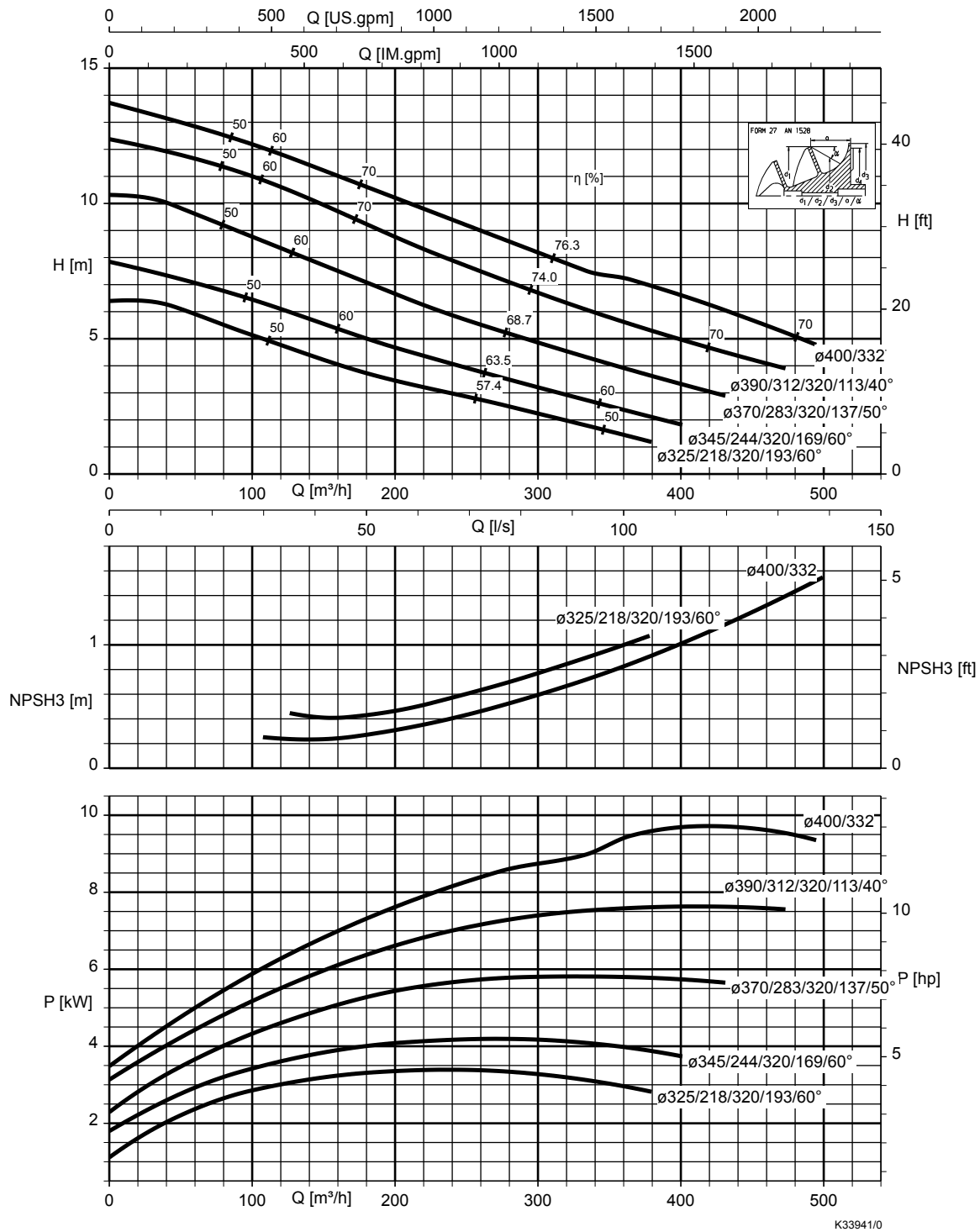


KWP R 200-200-400, n = 960 rpm



$n = 725 \text{ rpm}$

KWP R 200-200-400, $n = 725 \text{ rpm}$





KSB SE & Co. KGaA
Bahnhofplatz 1 • 91257 Pegnitz (Germany)
Tel. +49 9241 71-0
www.ksb.com