



BNB

PLENUM FAN
with Backward Curved Wheels



BNB Series

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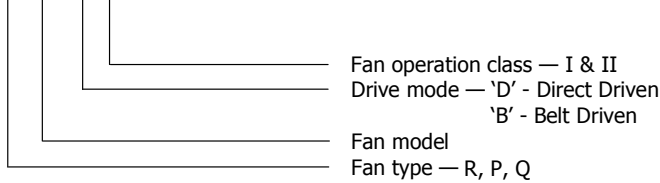
Plenum Fans – Backward curved wheels

Kruger Plenum Fans are designed for air handling application where the fan wheel operates without housing, inside a plenum. This results in saving of space normally occupied by the fan housing, transition and diffusers. The fan wheel pressurizes the entire plenum in which the fan is installed. This allows air ducts to be directly connected from any direction to the plenum. The compact size of the plenum fan makes it an excellent selection for retrofit and replacement application and for variable air volume systems.

There are three types of BNB Series, i.e. BNB-R (regular type), BNB-P (high pressure ratio type), BNB-Q (high volume ratio type).

NOMENCLATURE

MODEL: BNB-R 450 D I

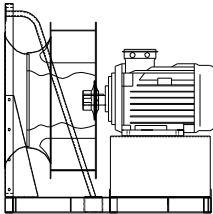


TYPE / OPERATING LIMIT

Each fan type has its maximum operating speed and power due to its mechanical design.

The operating limit of BNB series is set according with the requirement of class I and II limit as defined in AMCA standard 99-2408-69.

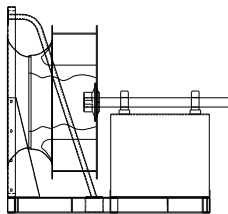
The BNB series is available in Direct Driven and Belt Driven as follow:



Direct Driven 'D'

This type is supplied with no belts nor pulley and therefore minimal maintenance is required. It is a compact, space saving design with motor directly connected to wheel. This construction is mainly for cleanroom, with or without VFD, since there is an absence of belt residue which may contaminate the airstreams.

Fan Size : 315 to 1400
 Volume : 1000 to 150,000 m³/h
 Total Pressure : up to 2500 Pa



Belt Driven 'B'

No bearings in the fan inlet to affect performance. Separate base for motor mounting is required.

Fan Size : 315 to 1400
 Volume : 1000 to 150,000 m³/h
 Total Pressure : up to 2500 Pa

Drawings and dimension data of belt driven are available upon request.

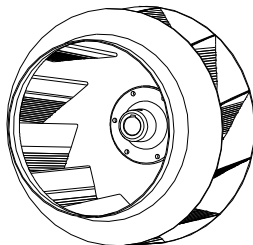
TECHNICAL SPECIFICATION

Wheel

The wheels of BNB series have backward curved blades manufactured in mild steel with polyester powder coating finish.

Shaft

Shafts are manufactured from C45 carbon steel using an automatic process for positioning and cutting of the keyways. All dimensional tolerances of the shaft are fully checked to ensure a precision fit. All shafts are then coated with an anti-corrosion varnish after assembly.



Bearing

Bearings used are either deep groove ball bearings with an adapter sleeve, or spherical roller bearings sealed at both sides for different duty application.

The bearings are lubricated for life and maintenance-free. If re-lubrication is necessary, it is recommended to use lithium base grease suitable for all temperatures within the operational limits.

Balancing Quality

All wheels are statically and dynamically balanced to ISO1940 and AMCA 204 – G2.5 standard.

All fans after assembly are trim-balanced to ISO1940 and AMCA 204 - G2.5 standard.

Other standard rather than G2.5 is available upon request.

ACCESSORIES

Inlet Guard

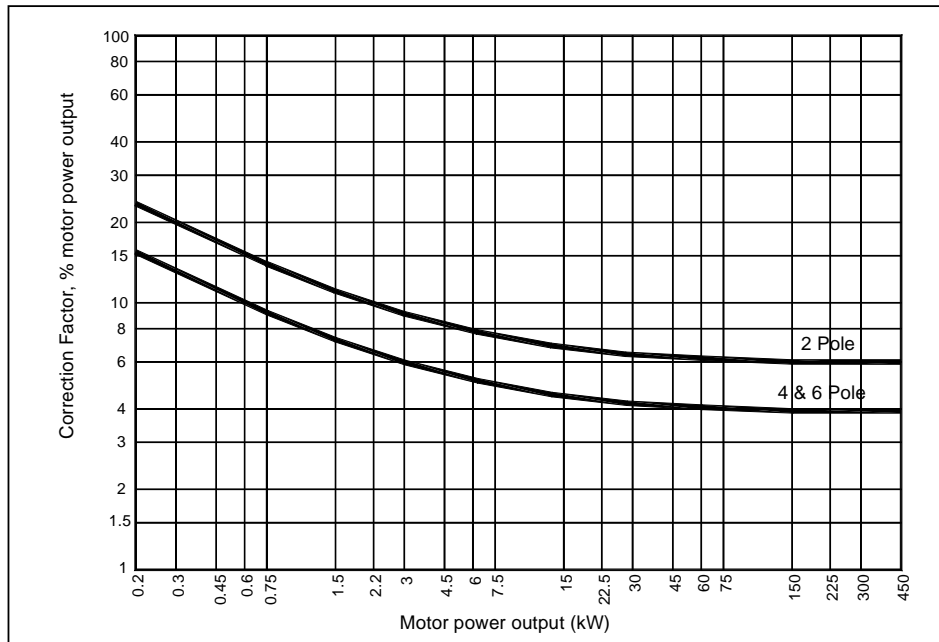
Inlet guards may be a requirement in some industrial safety regulations. These are available upon request.

Motor Selection

The power curves shown on each performance graph represents the absorbed power at the shaft of the fan measured in kW.

To determine the power of the motor to be installed, a correction factor should be applied to compensate for the transmission loss.

For conversion to horsepower (HP), use multiplying factor 1.34.



PERFORMANCE

The performance data shown on each diagram is derived from tests conducted in accordance with AMCA Standard 210- Fig 15- Installation type A (free inlet and free outlet condition).

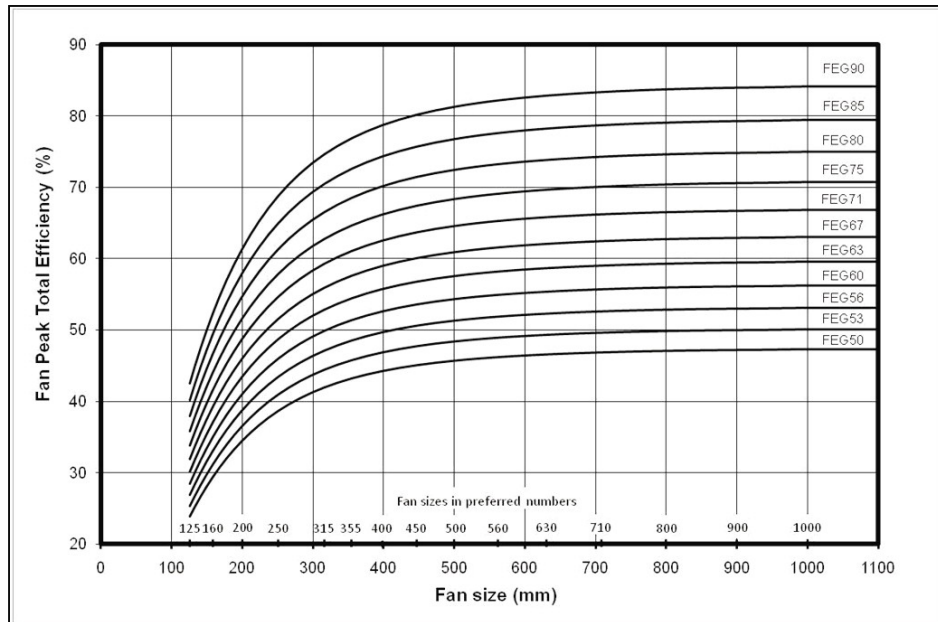
Ratings refer to standard air density with the total pressure as a function of the air volume, using logarithmic scale.

It is essential that, the same installation type and test standards are used at all times, when comparing fan performance.

According to ISO 12759/AMCA 205, BNB series can be classify as FEG 85 based on fan peak efficiency. The following is the explanation of FEG classification:

1. Fan size is the impeller diameter in mm.
2. The fan peak efficiency shall be calculated from the fan (total) pressure.
3. If this method is used for a direct driven fan, the fan efficiency is the impeller efficiency.
4. The FEG label for a given fan size is assigned when the fan peak efficiency is equal or lower than the efficiency at the grade upper limit and higher than efficiency at the grade upper limit of the next lower grade for the fan size.
5. For any fan sizes larger than 1016 mm, the values of the grade upper limits are the same as for a size of 1016 mm.
6. No labels are considered for the fans with the fan peak total efficiency below FEG50.
7. The values of efficiencies are calculated for fan sizes in the preferred R40 Series.
8. Not all fan sizes in preferred numbers shown.

Fan Efficiency Grades (FEG) for Fans without Drives (SI) – ISO 12759/ AMCA 205



NOISE

The noise levels shown on each diagram refer to the sound power, "A-weighted" values and the data are obtained at the outlet side from tests conducted in accordance to AMCA Standard 300. The noise levels are determined as follow:

- Sound power level - ("A" scale): $L_w(A)$ as catalogue
- Octave band spectrum: $L_w = L_w(A) + L_w \text{ rel. dB}$ [refer to Kruger for more details]
- Sound pressure level:
 - a) free field
 $L_p(A) = L_w(A) - (20 \log_{10} d) - 11$
 - b) room conditions
 $L_p(A) = L_w(A) - (20 \log_{10} d) - 8$
 where d = distance of fan (m)

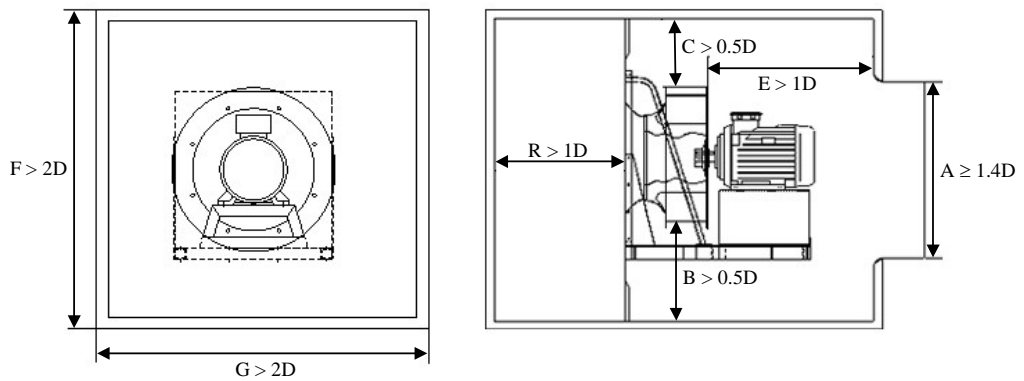
SELECTION GUIDELINES

To obtain optimum performance, the following guidelines should be adhered to in the plenum fan selection.

MINIMUM DISTANCE

Recommended minimum distance values for correct plenum fan installation are as follow.

D = Impeller Diameter



Example of Selection

Air Volume $Q = 6100 \text{ m}^3/\text{h}$

Outlet Velocity $V = 8.5 \text{ m/s}$

Dynamic Pressure $P_d = 42 \text{ Pa}$

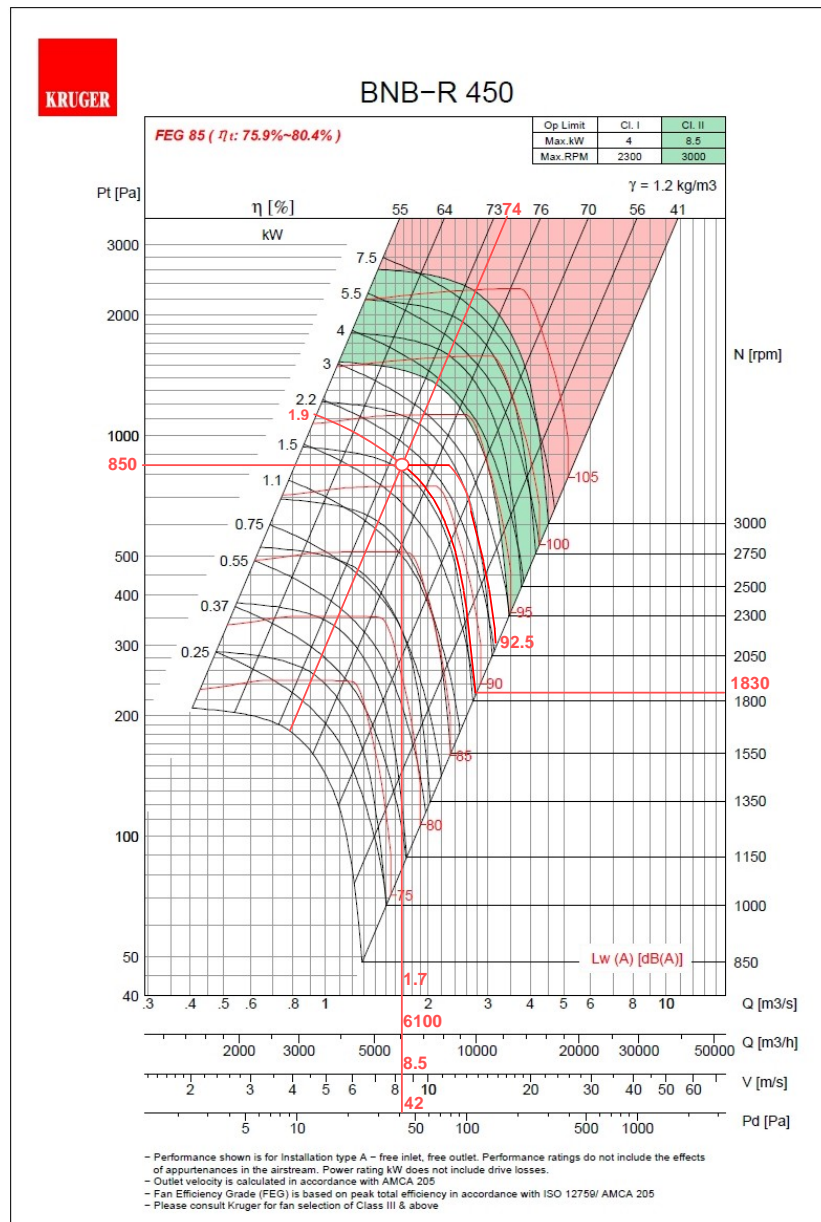
Total Pressure $P_t = 850 \text{ Pa}$

Fan Speed $N = 1830 \text{ rpm}$

Absorbed Power $W = 1.9 \text{ kW}$

Total Efficiency $\eta_t = 74\%$

Sound Power Level $L_w(A) = 92.5 \text{ dB(A)}$

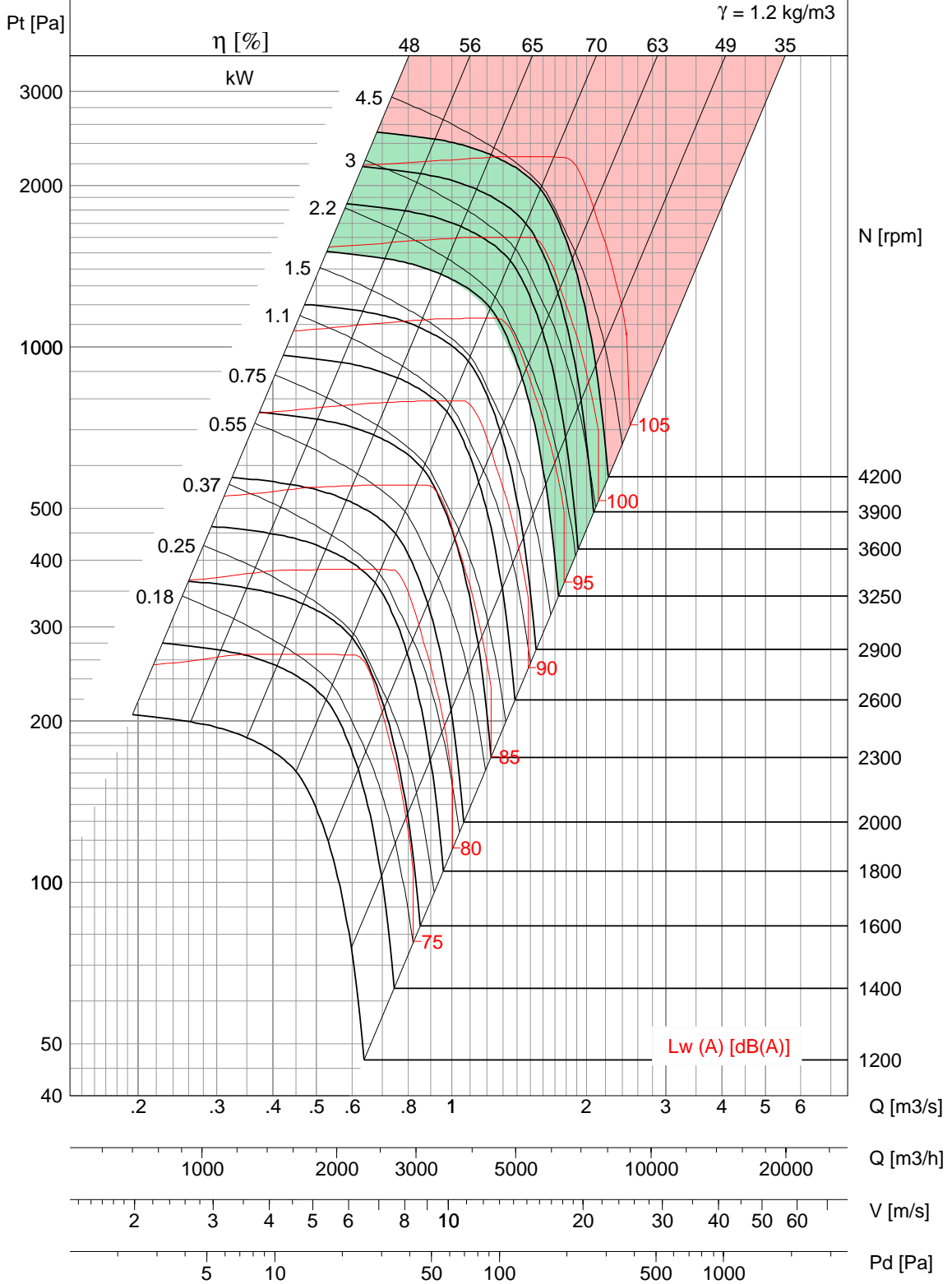




BNB-R 315

FEG 85 (η : 70.4%~74.6%)

Op Limit	Cl. I	Cl. II
Max.kW	2	4.5
Max.RPM	3250	4200



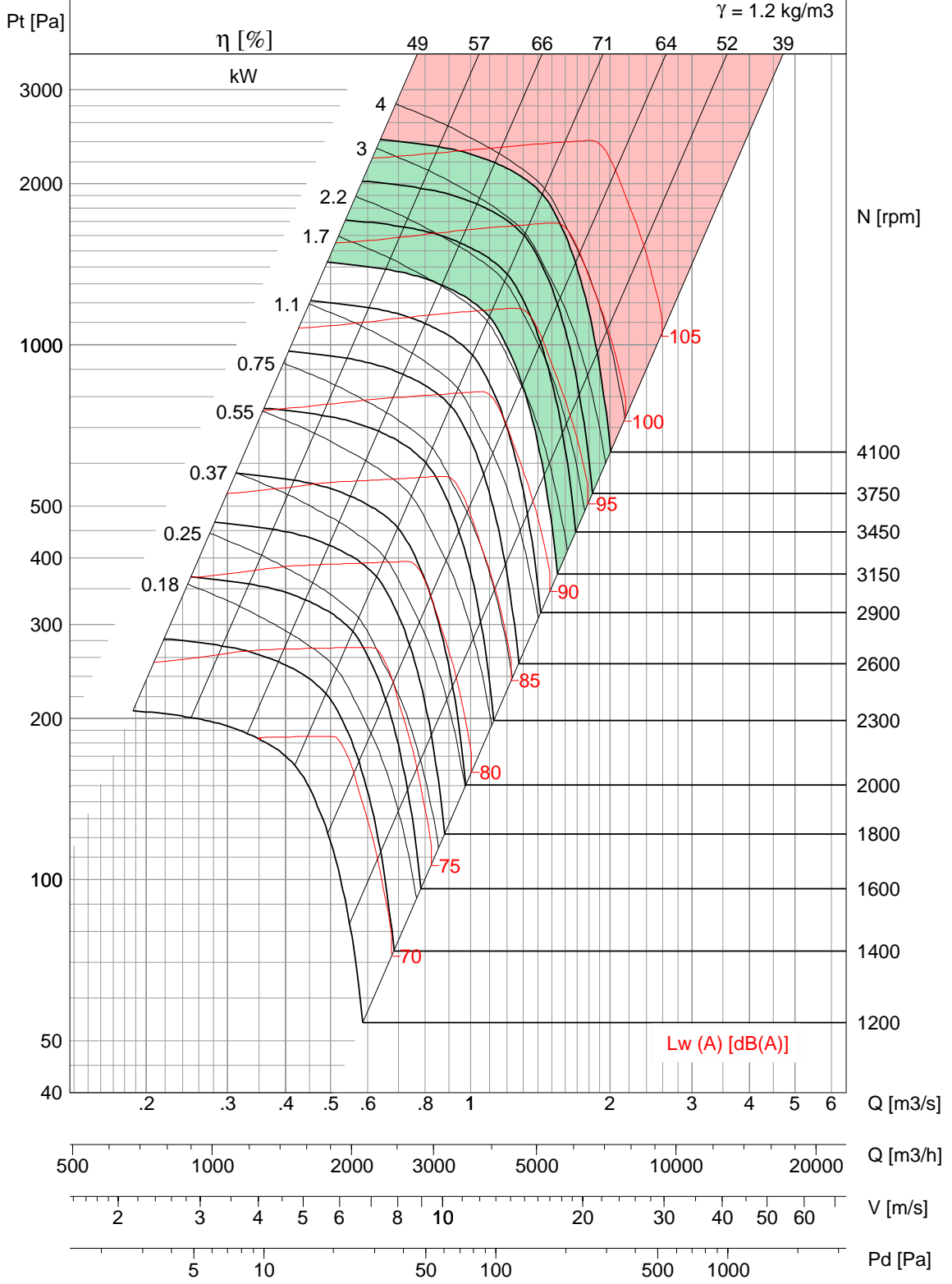
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 315

FEG 85 (η : 70.4%~74.6%)

Op Limit	Cl. I	Cl. II
Max.kW	1.8	3.9
Max.RPM	3150	4100



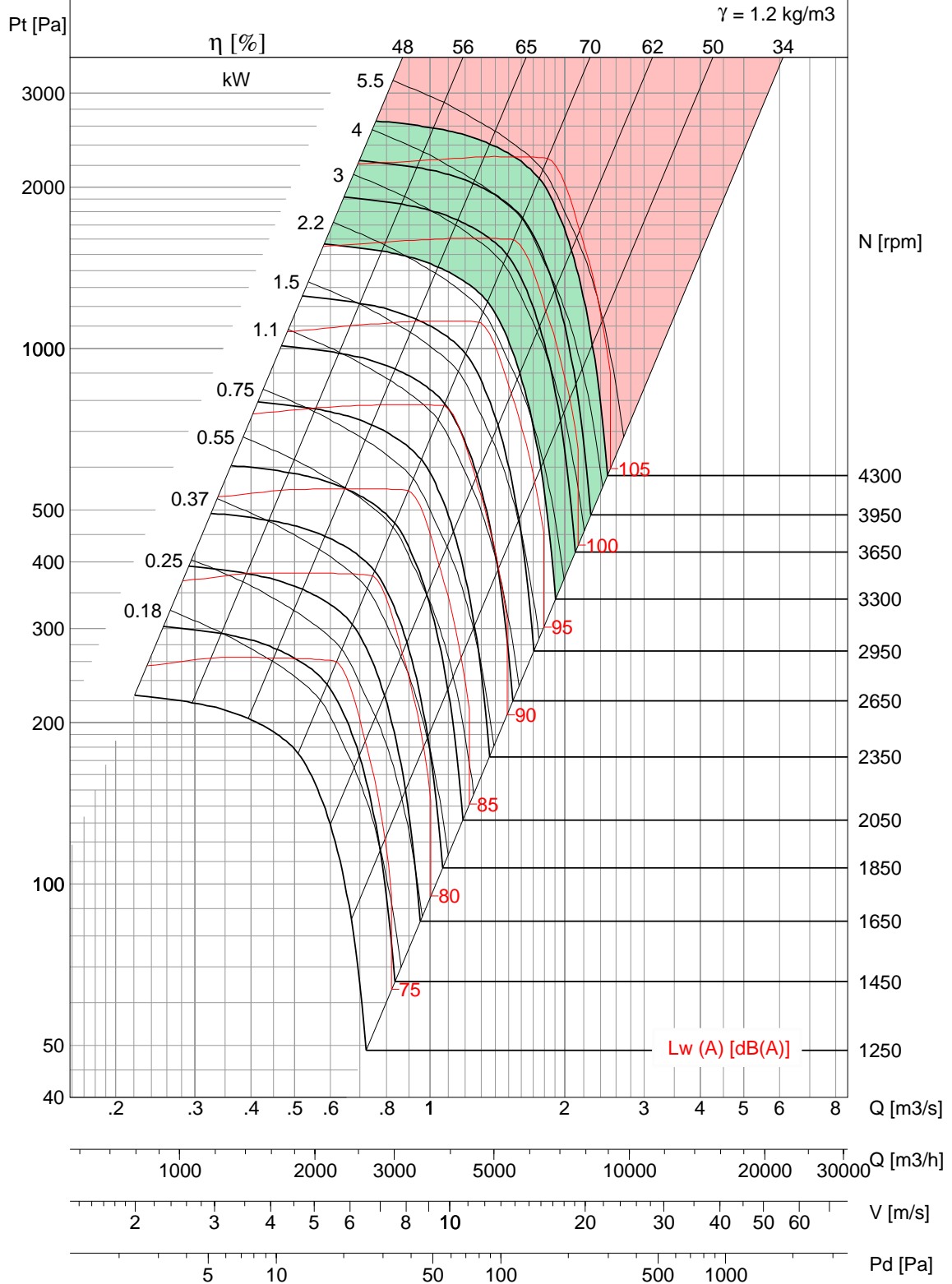
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
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- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 315

FEG 85 (η : 70.4%~74.6%)

Op Limit	Cl. I	Cl. II
Max.kW	2.4	5.2
Max.RPM	3300	4300



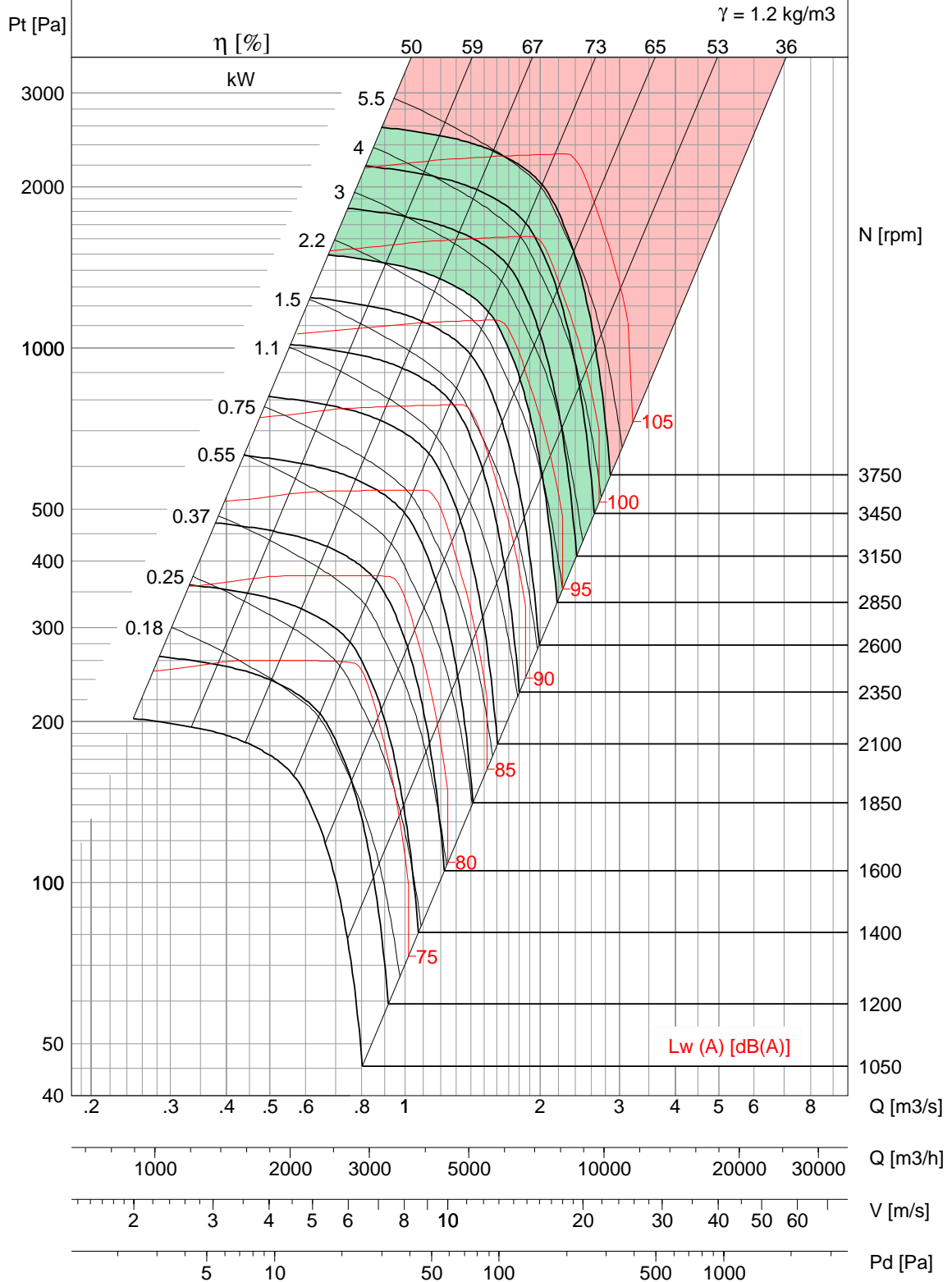
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 355

FEG 85 (η : 72.7%~77.0%)

Op Limit	Cl. I	Cl. II
Max.kW	2.5	5.5
Max.RPM	2850	3750



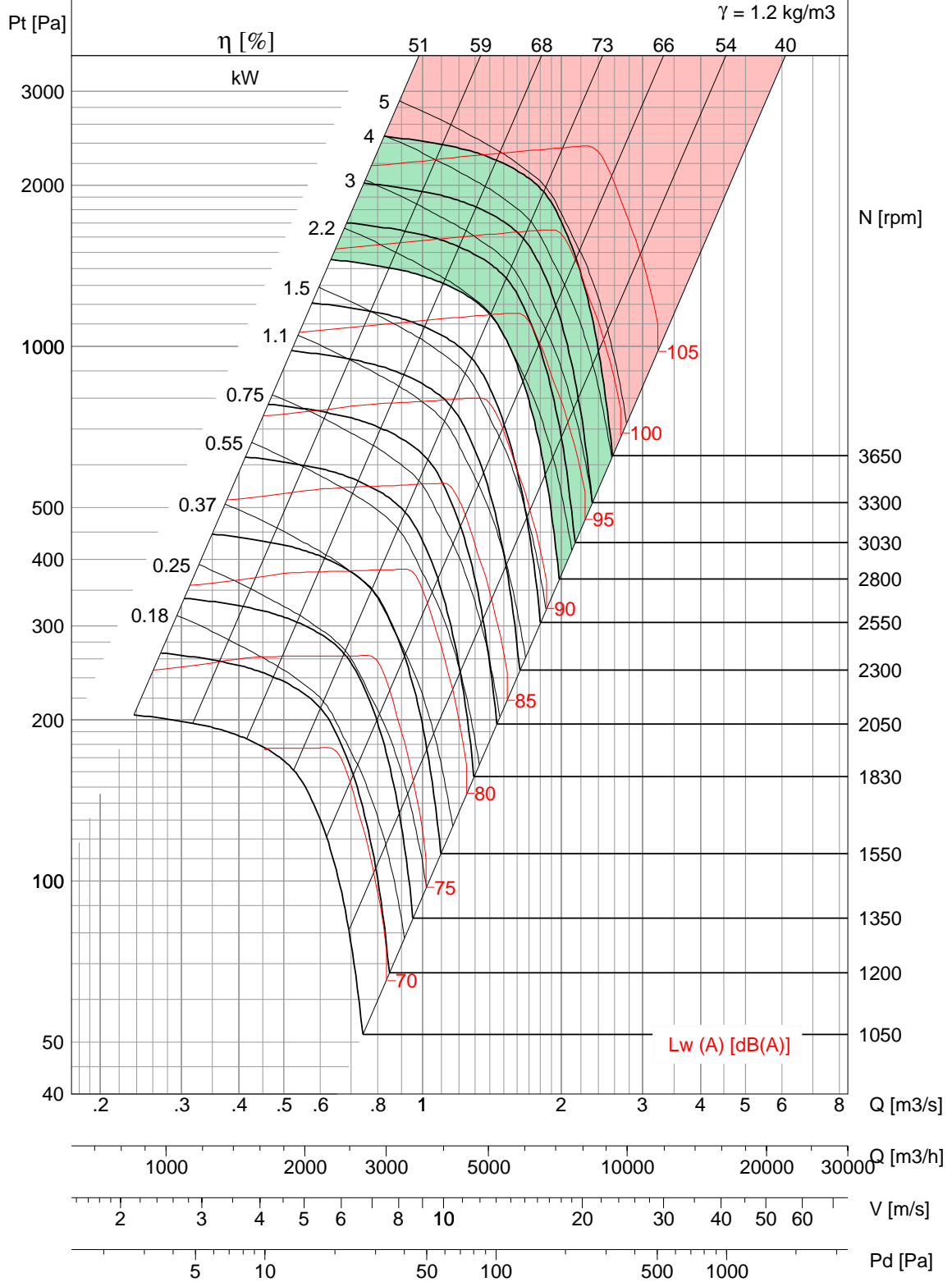
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 355

FEG 85 (η : 72.7%~77.0%)

Op Limit	Cl. I	Cl. II
Max.kW	2.2	5
Max.RPM	2800	3650



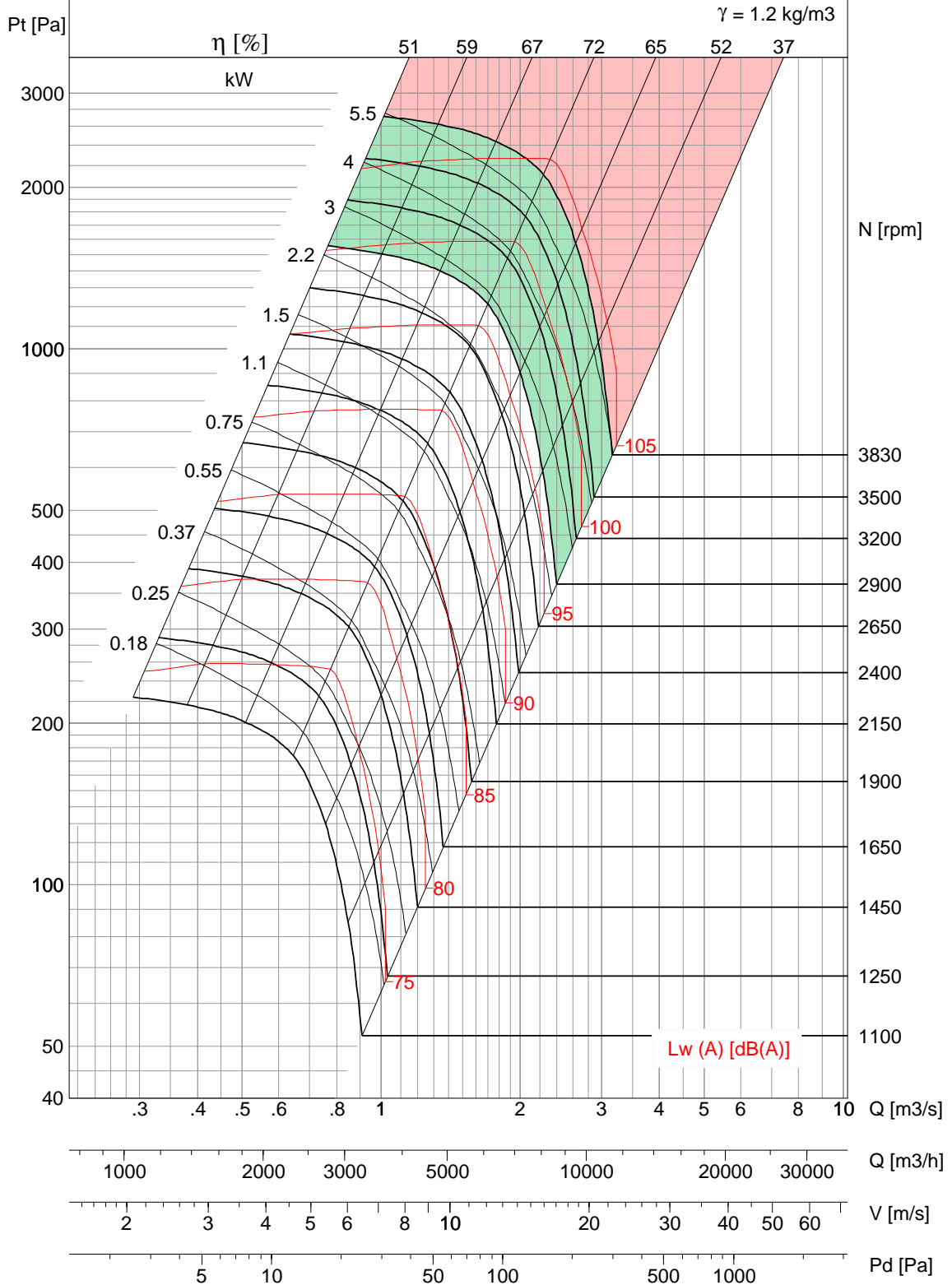
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 355

FEG 85 (η : 72.7%~77.0%)

Op Limit	Cl. I	Cl. II
Max.kW	2.9	6.5
Max.RPM	2900	3830



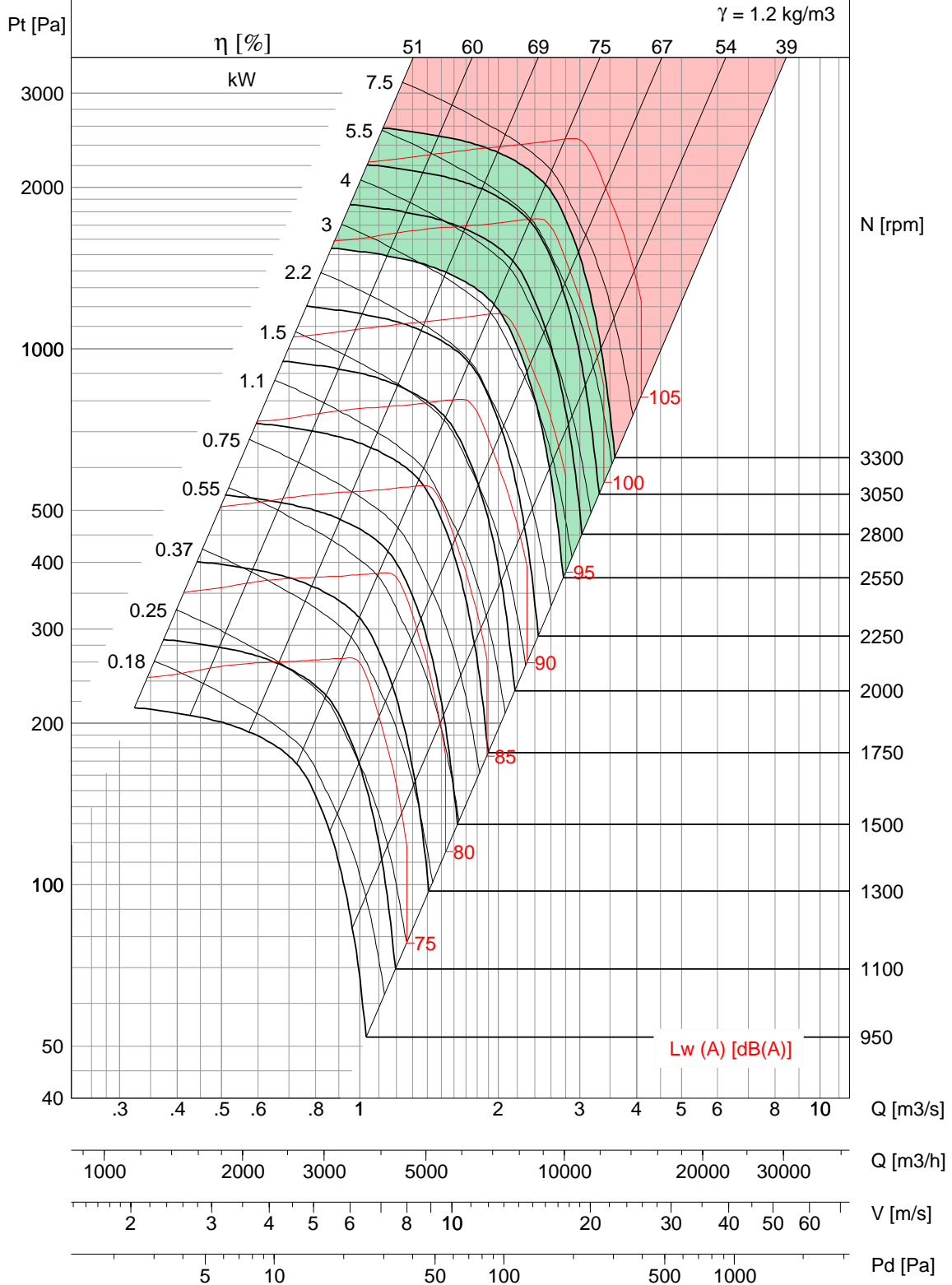
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
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- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 400

FEG 85 (η : 74.5%~78.9%)

Op Limit	Cl. I	Cl. II
Max.kW	3.2	7
Max.RPM	2550	3300



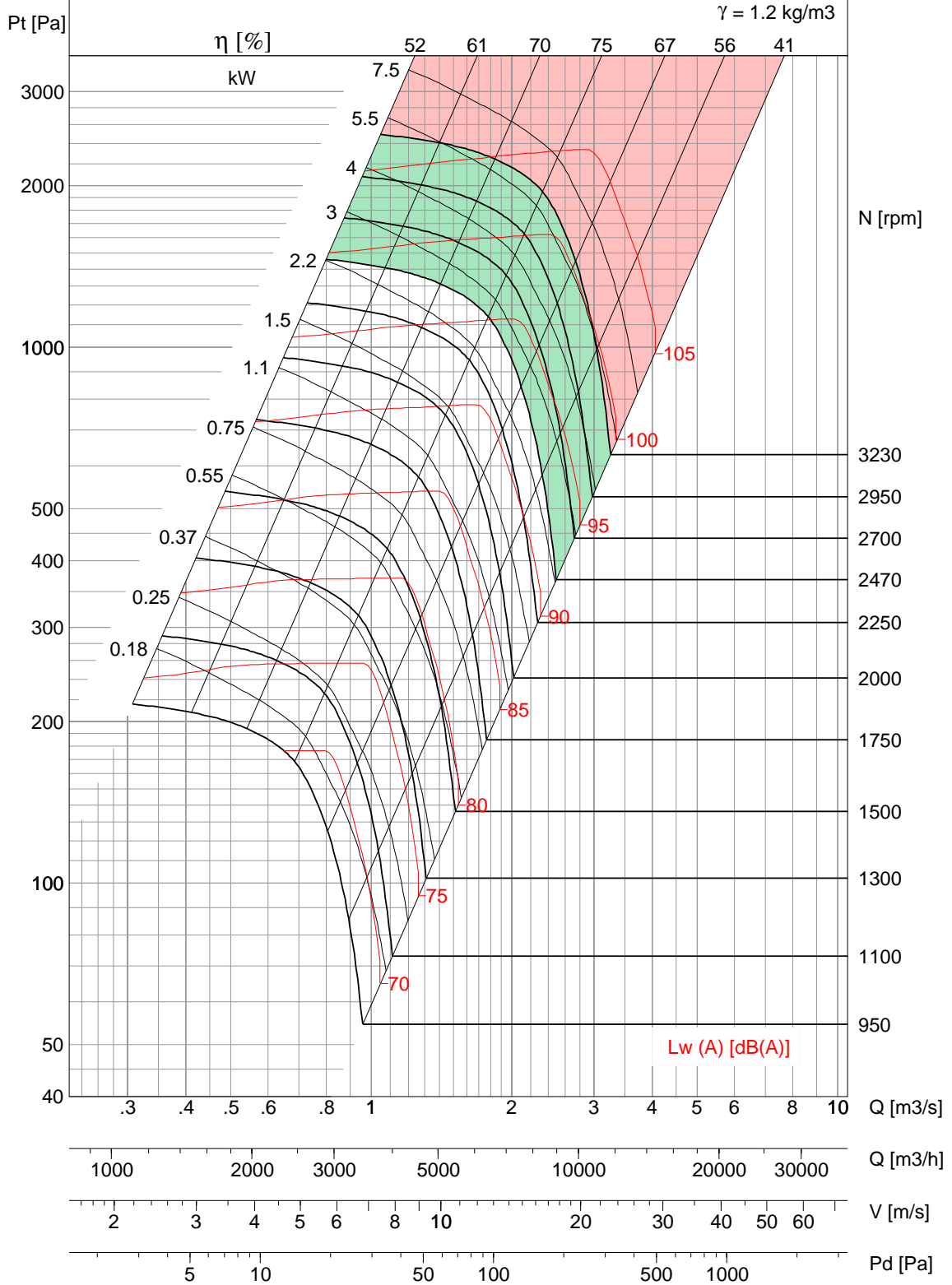
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 400

FEG 85 (η : 74.5%~78.9%)

Op Limit	Cl. I	Cl. II
Max.kW	2.7	6
Max.RPM	2470	3230



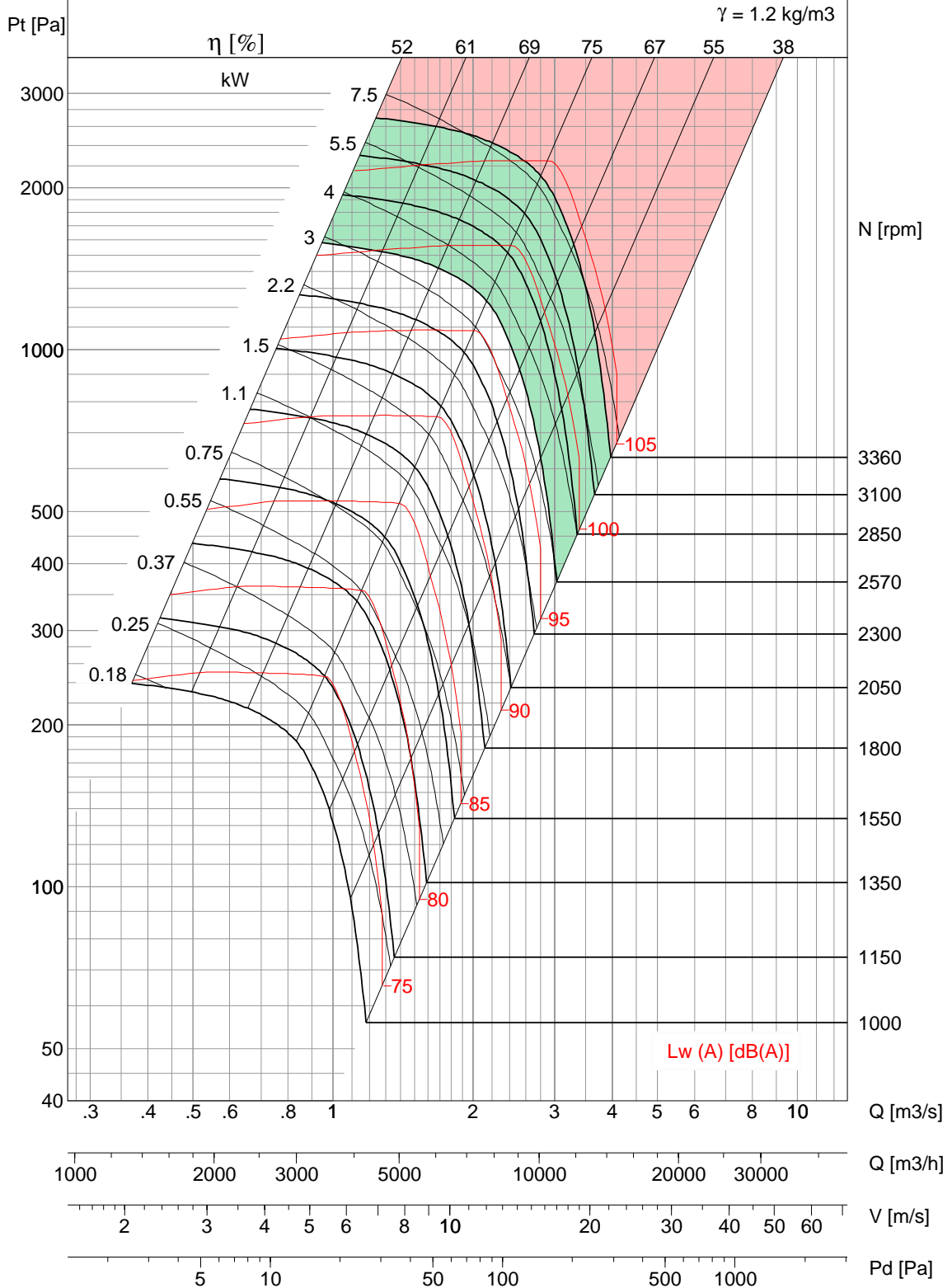
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 400

FEG 85 (η : 74.5%~78.9%)

Op Limit	Cl. I	Cl. II
Max.kW	3.6	8
Max.RPM	2570	3360



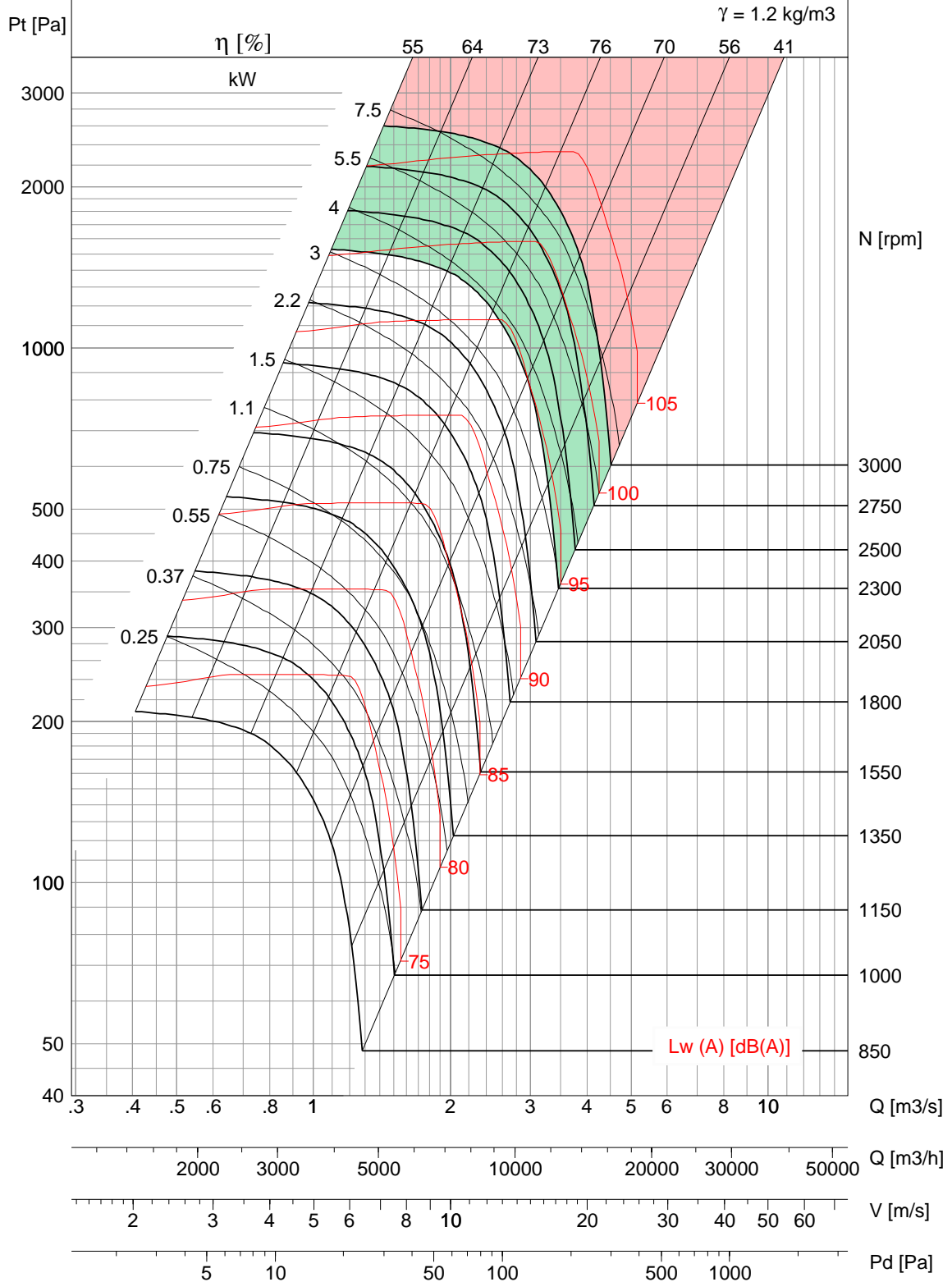
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 450

FEG 85 (η : 75.9%~80.4%)

Op Limit	Cl. I	Cl. II
Max.kW	4	8.5
Max.RPM	2300	3000



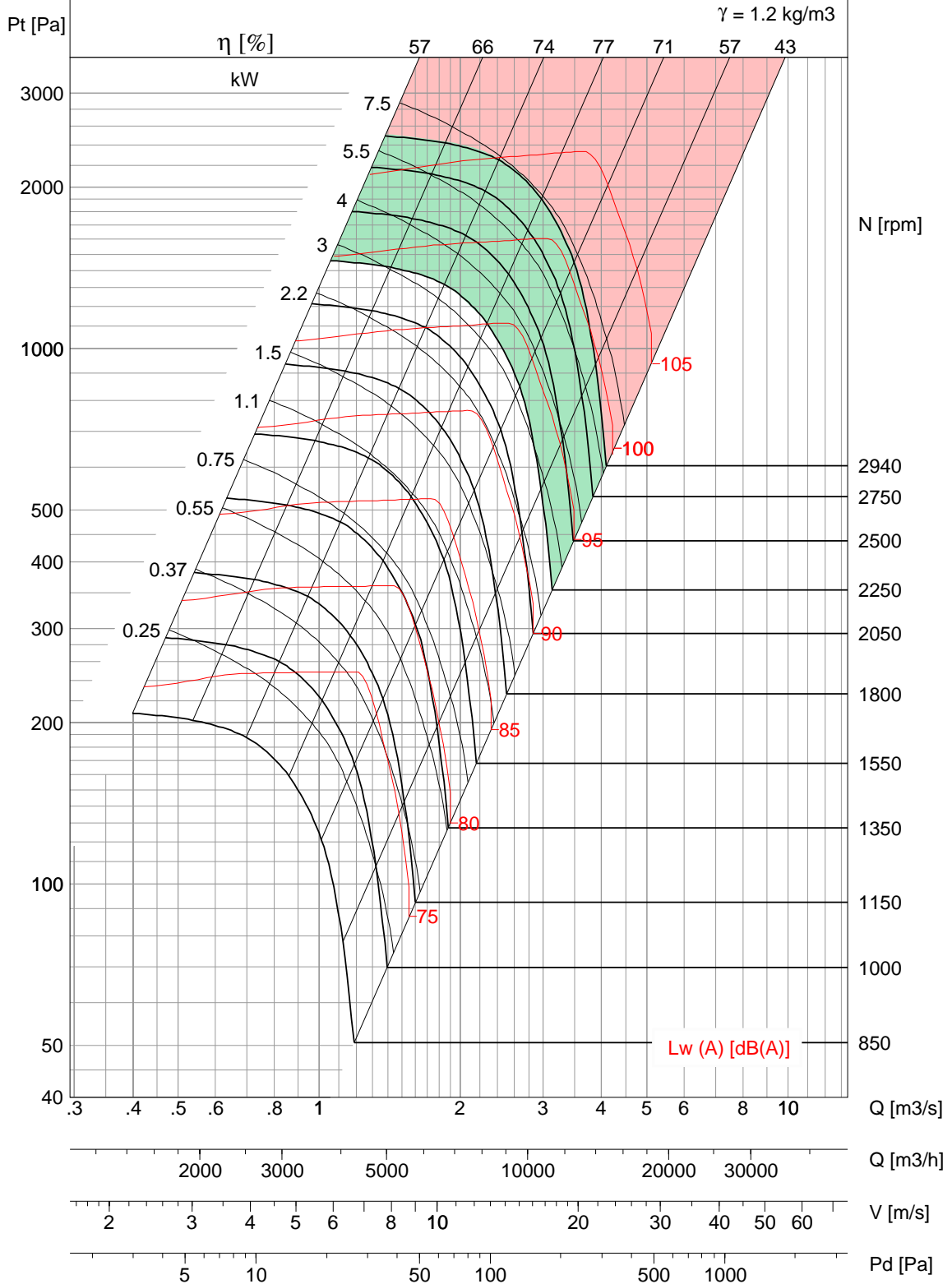
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 450

FEG 85 (η t: 75.9%~80.4%)

Op Limit	Cl. I	Cl. II
Max.kW	4	7.5
Max.RPM	2250	2950



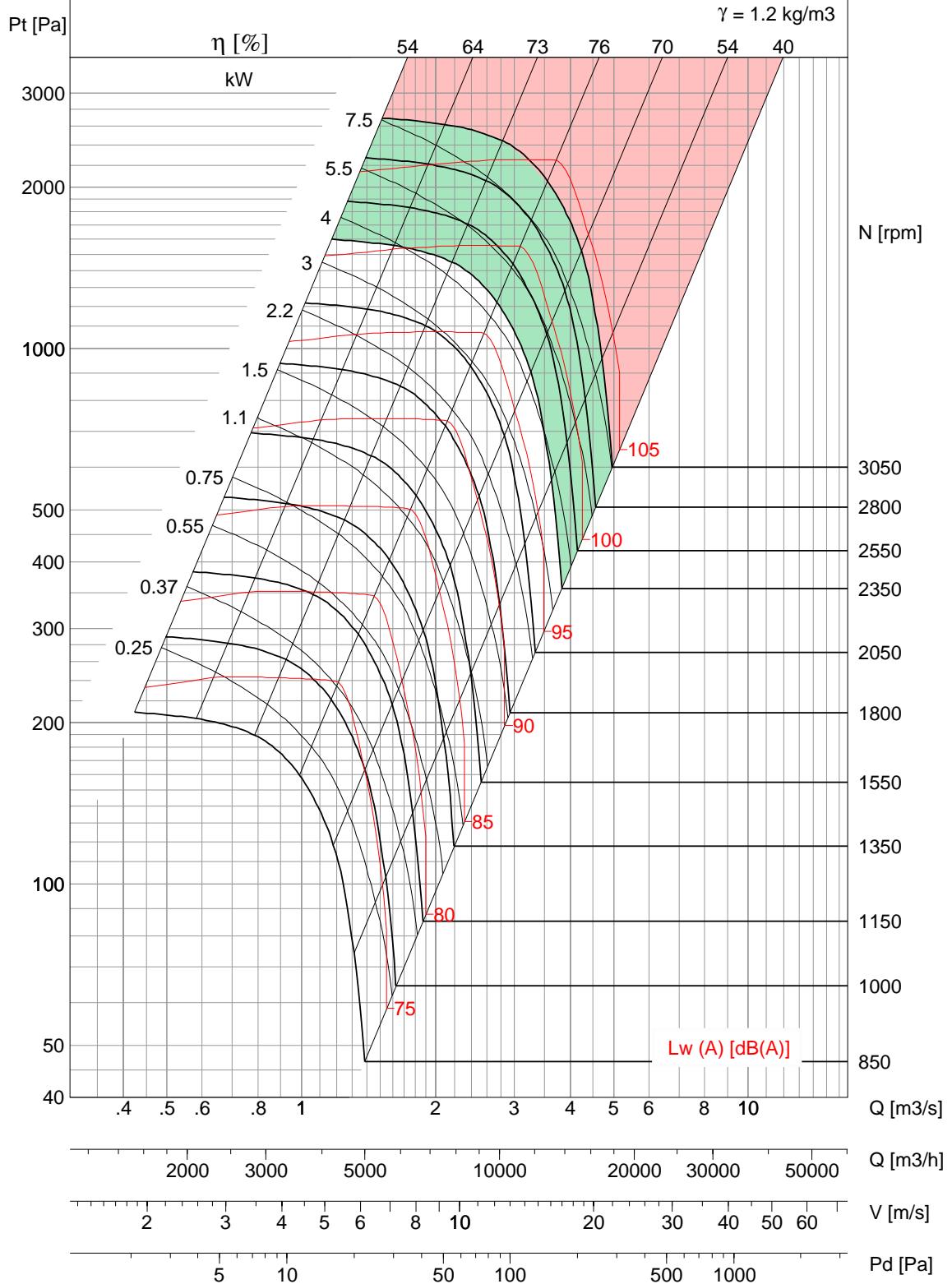
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 450

FEG 85 (η : 75.9%~80.4%)

Op Limit	Cl. I	Cl. II
Max.kW	4.5	9.5
Max.RPM	2350	3050



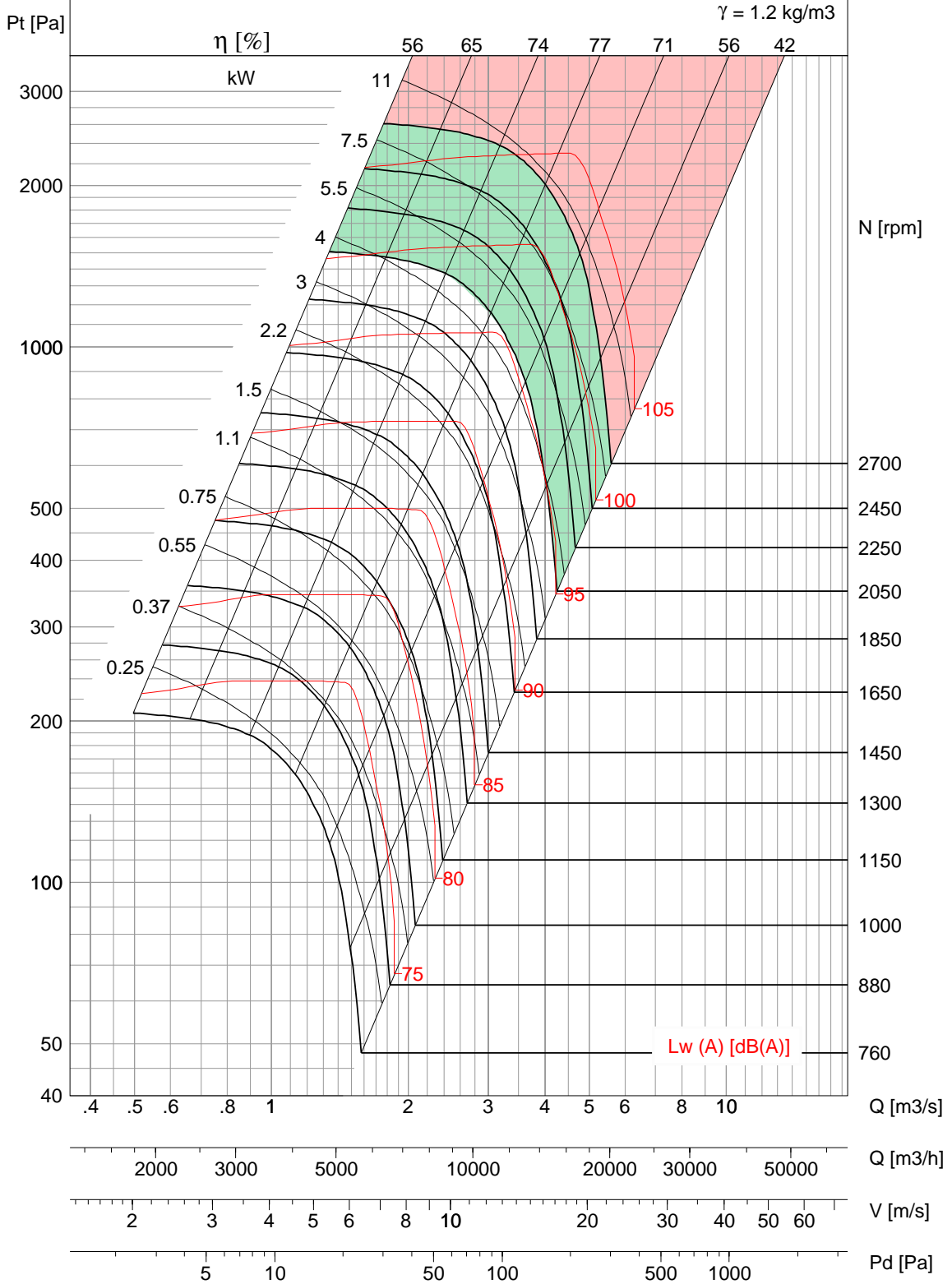
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
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- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 500

FEG 85 (η : 76.9%~81.5%)

Op Limit	Cl. I	Cl. II
Max.kW	4.5	10.5
Max.RPM	2050	2700



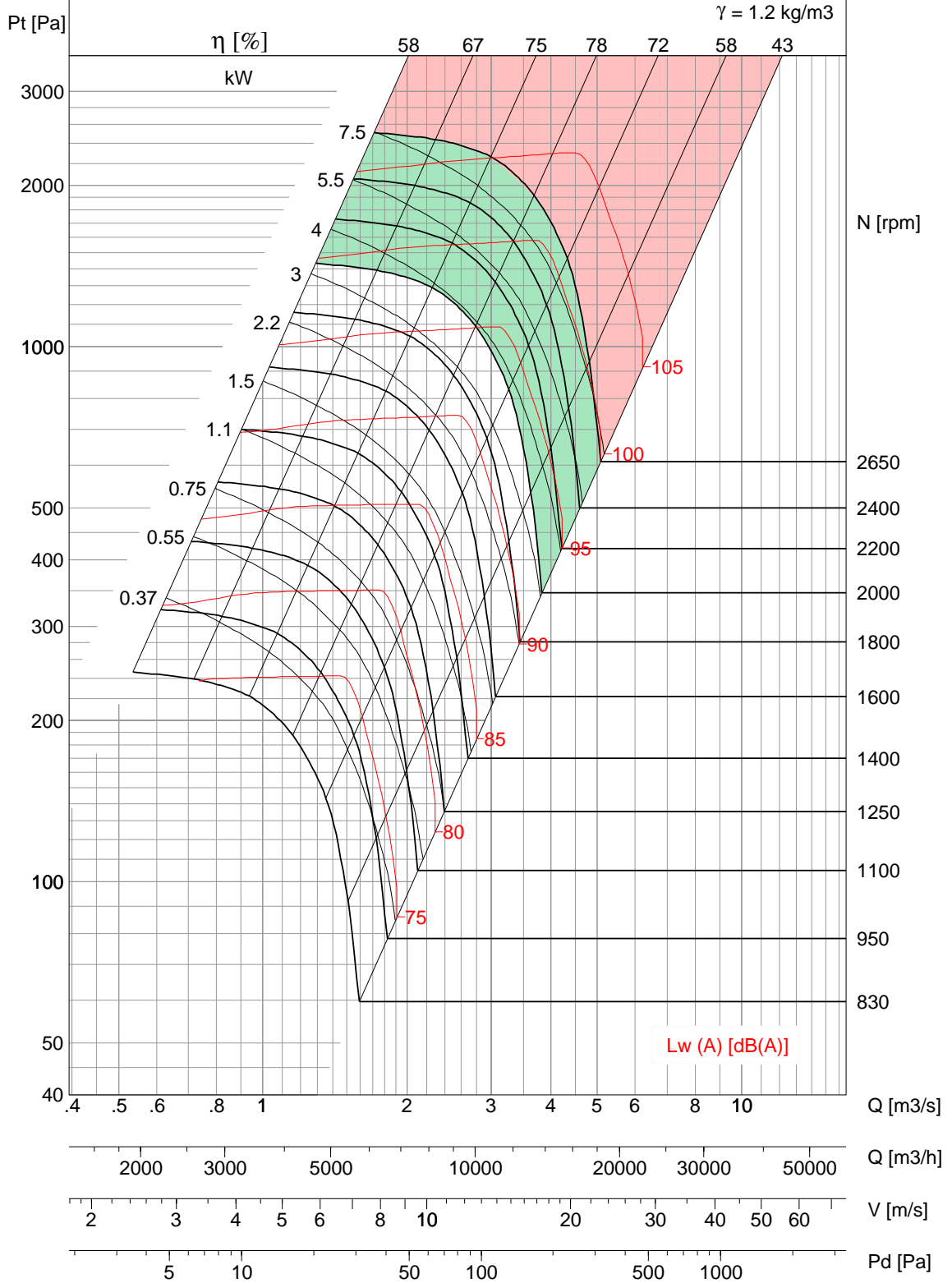
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 500

FEG 85 (η : 76.9%~81.5%)

Op Limit	Cl. I	Cl.II
Max.kW	4	9
Max.RPM	2000	2650



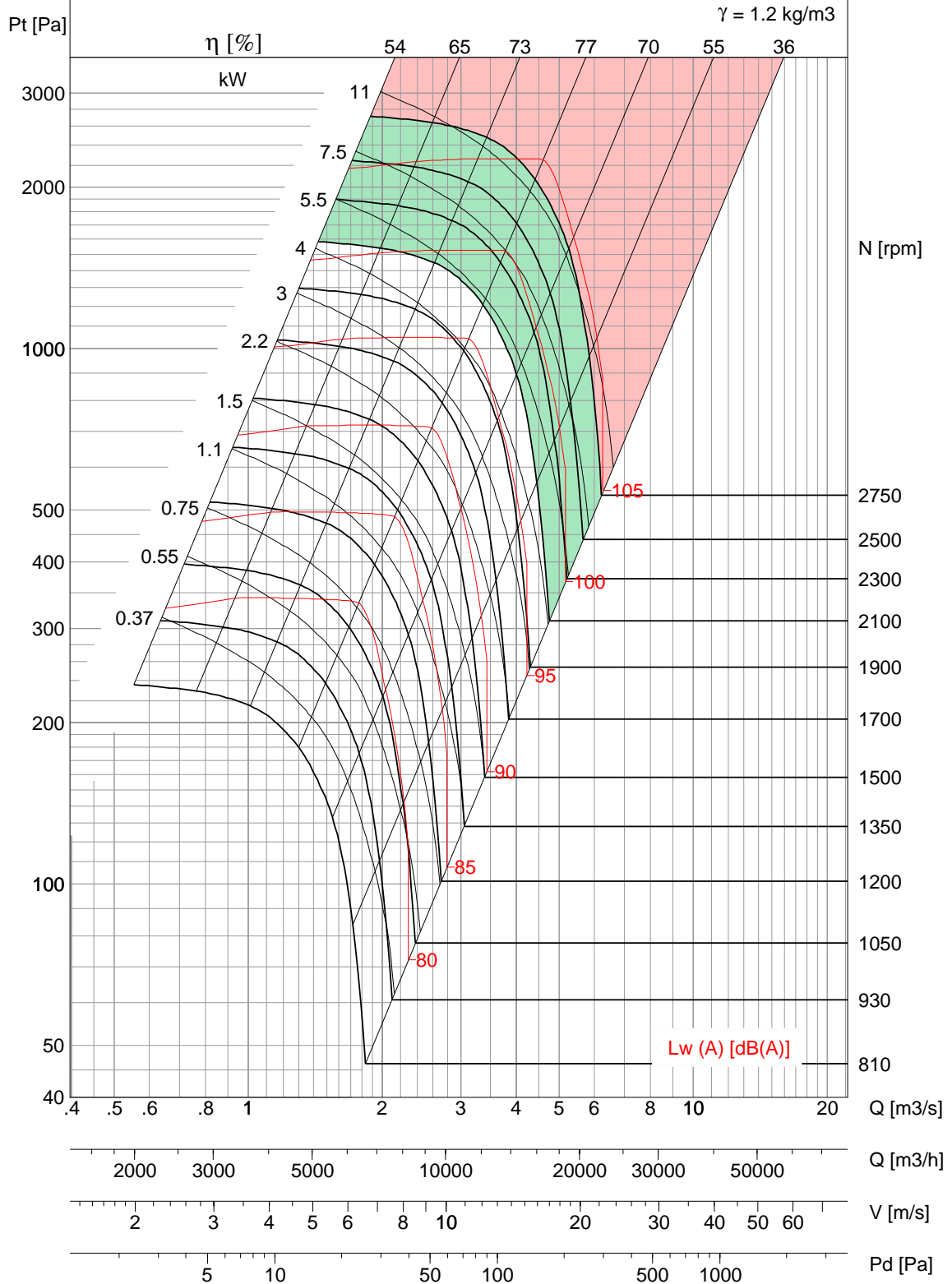
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 500

FEG 85 (η : 76.9%~81.5%)

Op Limit	Cl. I	Cl. II
Max.kW	5.3	12.1
Max.RPM	2100	2750



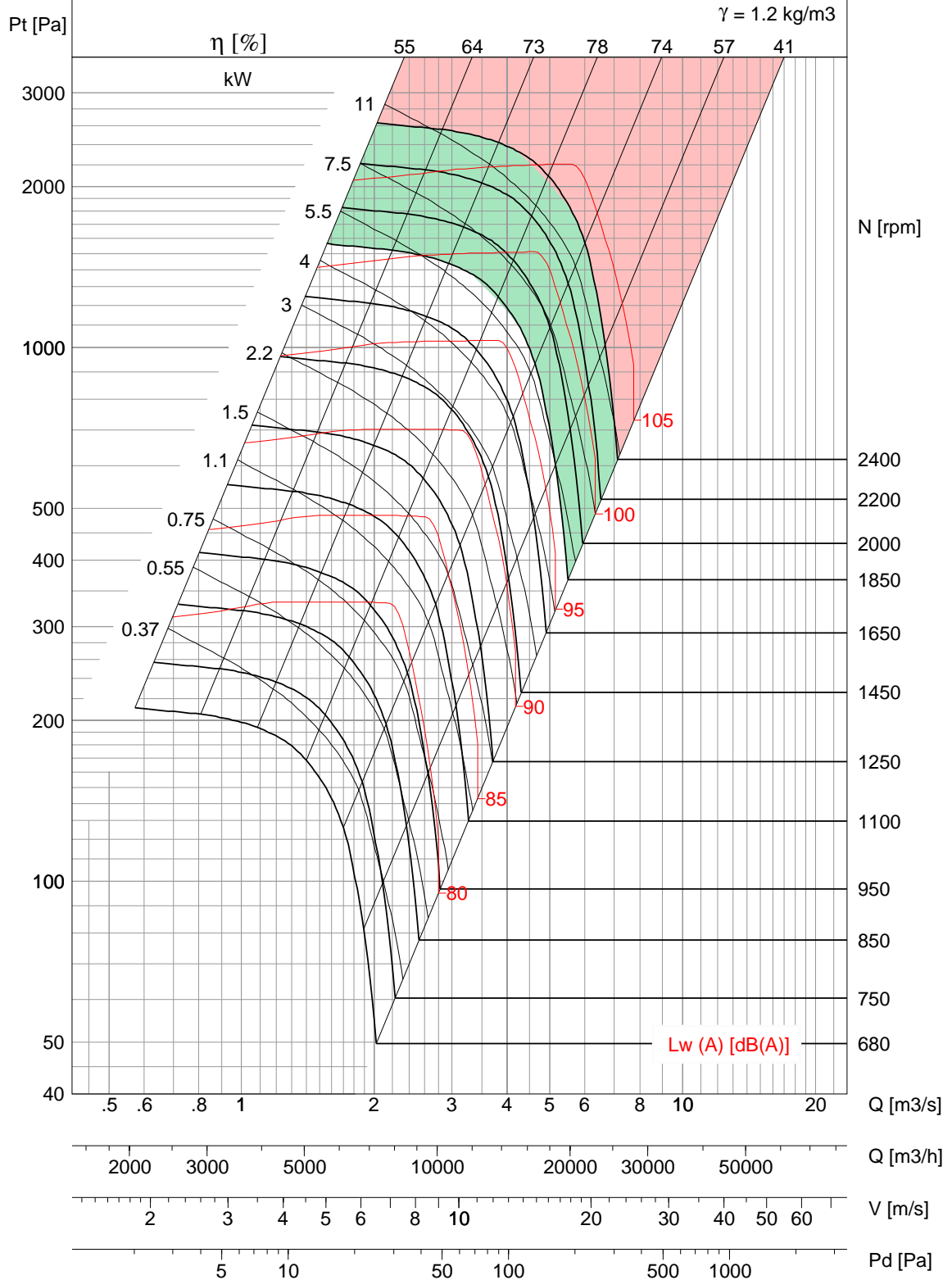
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 560

FEG 85 (η : 77.7%~82.3%)

Op Limit	Cl. I	Cl.II
Max.kW	6	13
Max.RPM	1850	2400



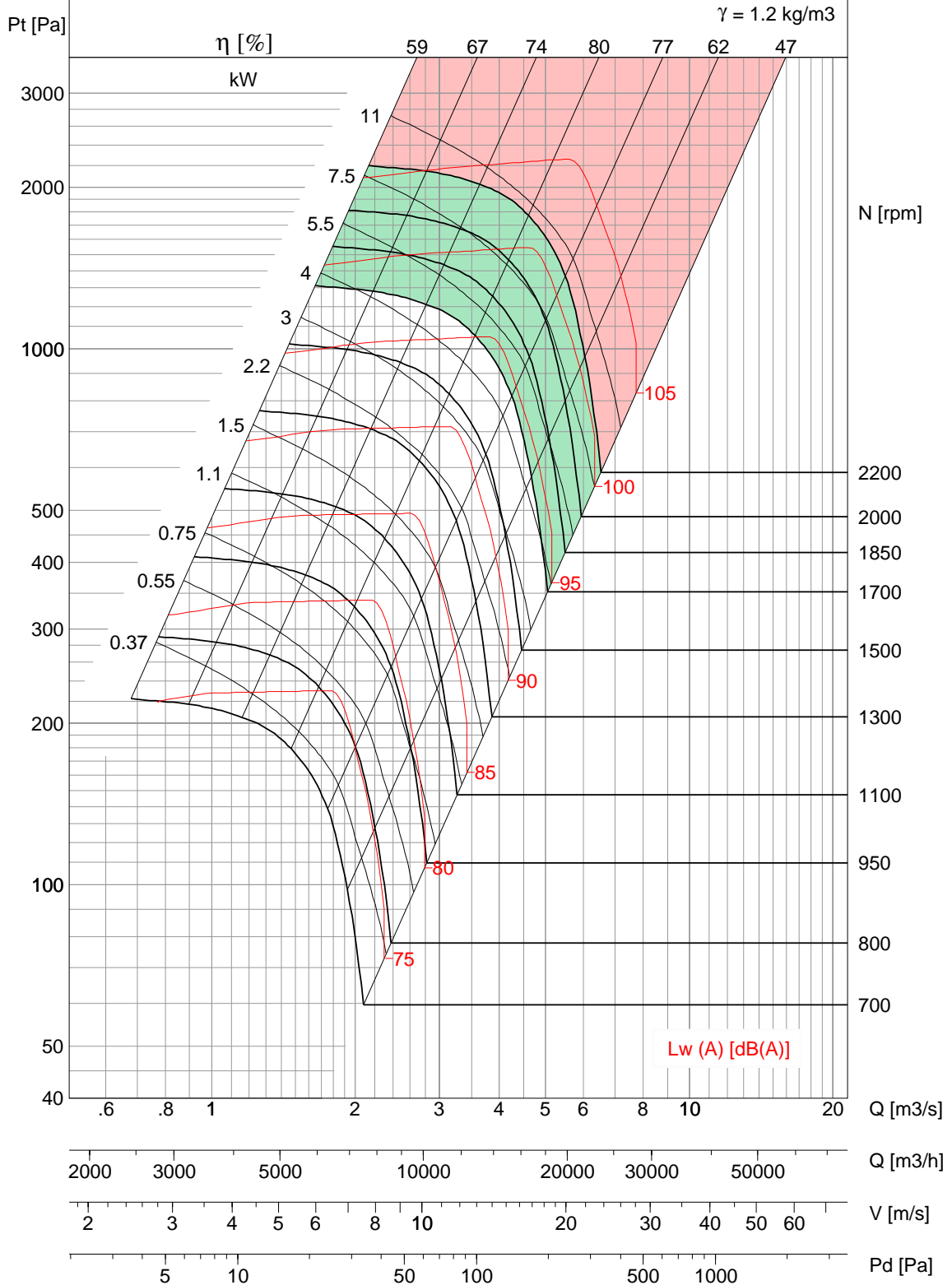
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 560

FEG 85 (η : 77.7%~82.3%)

Op Limit	Cl. I	Cl.II
Max.kW	5	10.5
Max.RPM	1700	2200



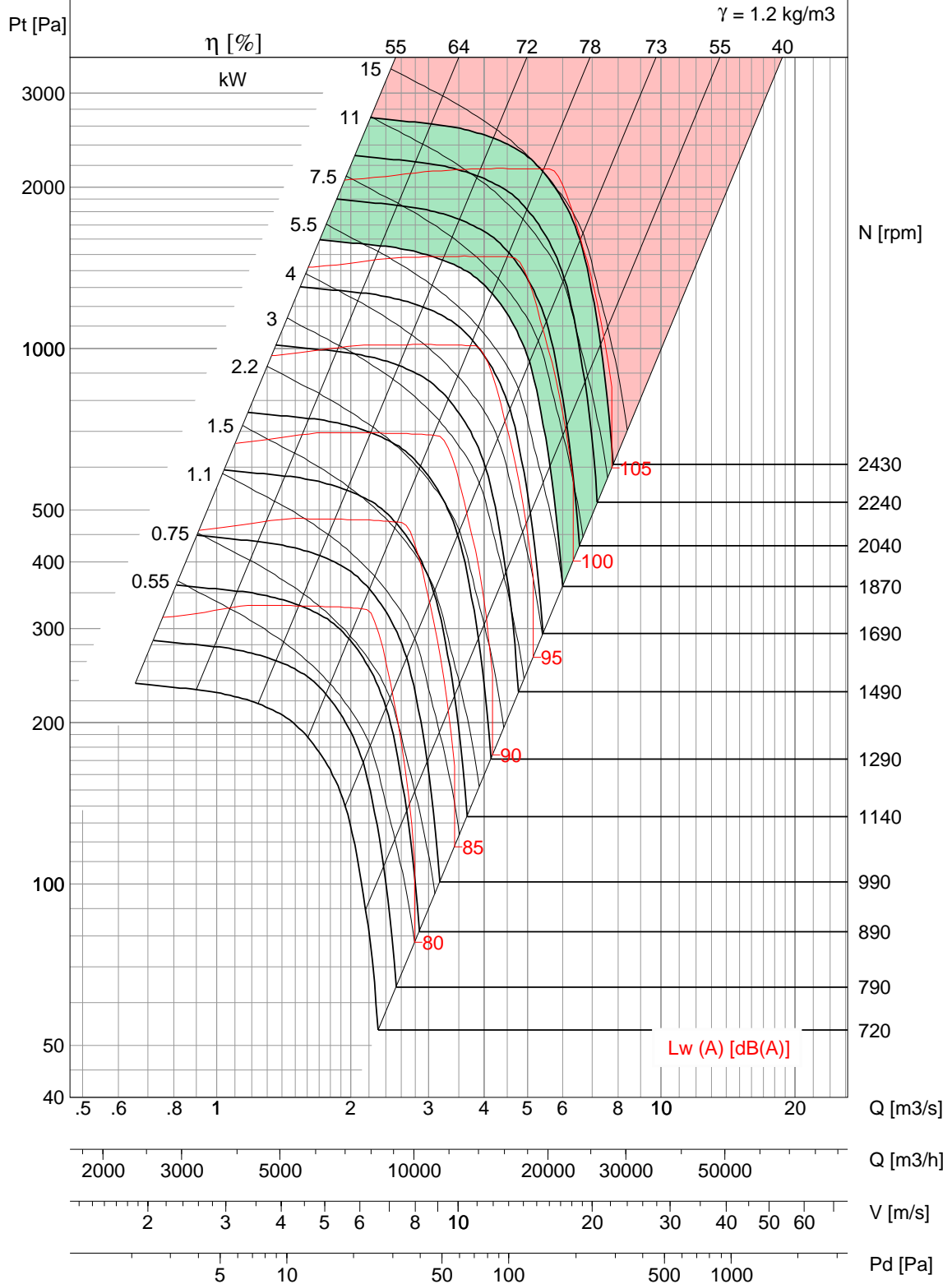
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 560

FEG 85 (η : 77.7%~82.3%)

Op Limit	Cl. I	Cl.II
Max.kW	6.8	15
Max.RPM	1870	2430



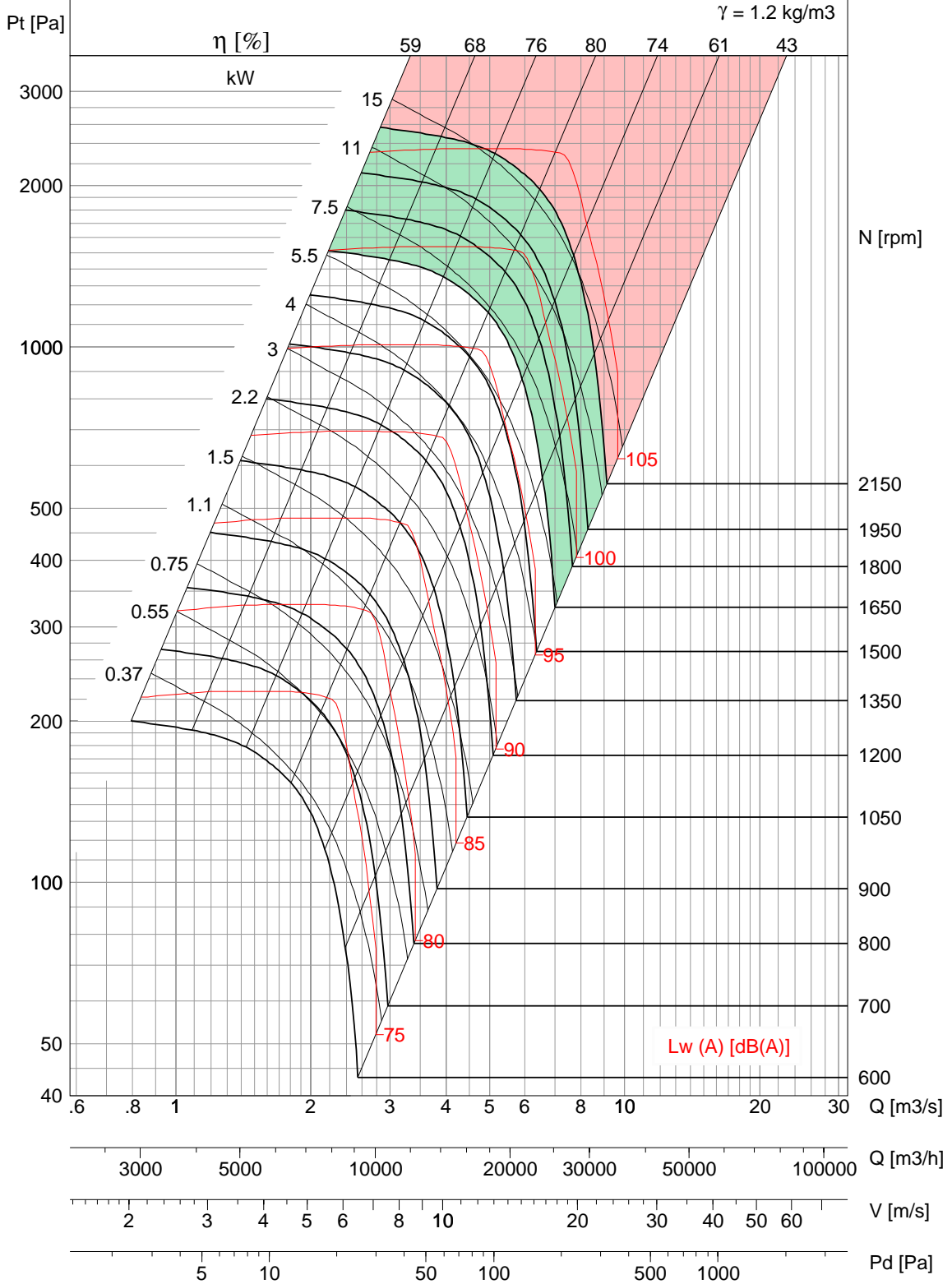
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 630

FEG 85 (η : 78.4%~83.0%)

Op Limit	Cl. I	Cl.II
Max.kW	7.5	16
Max.RPM	1650	2150



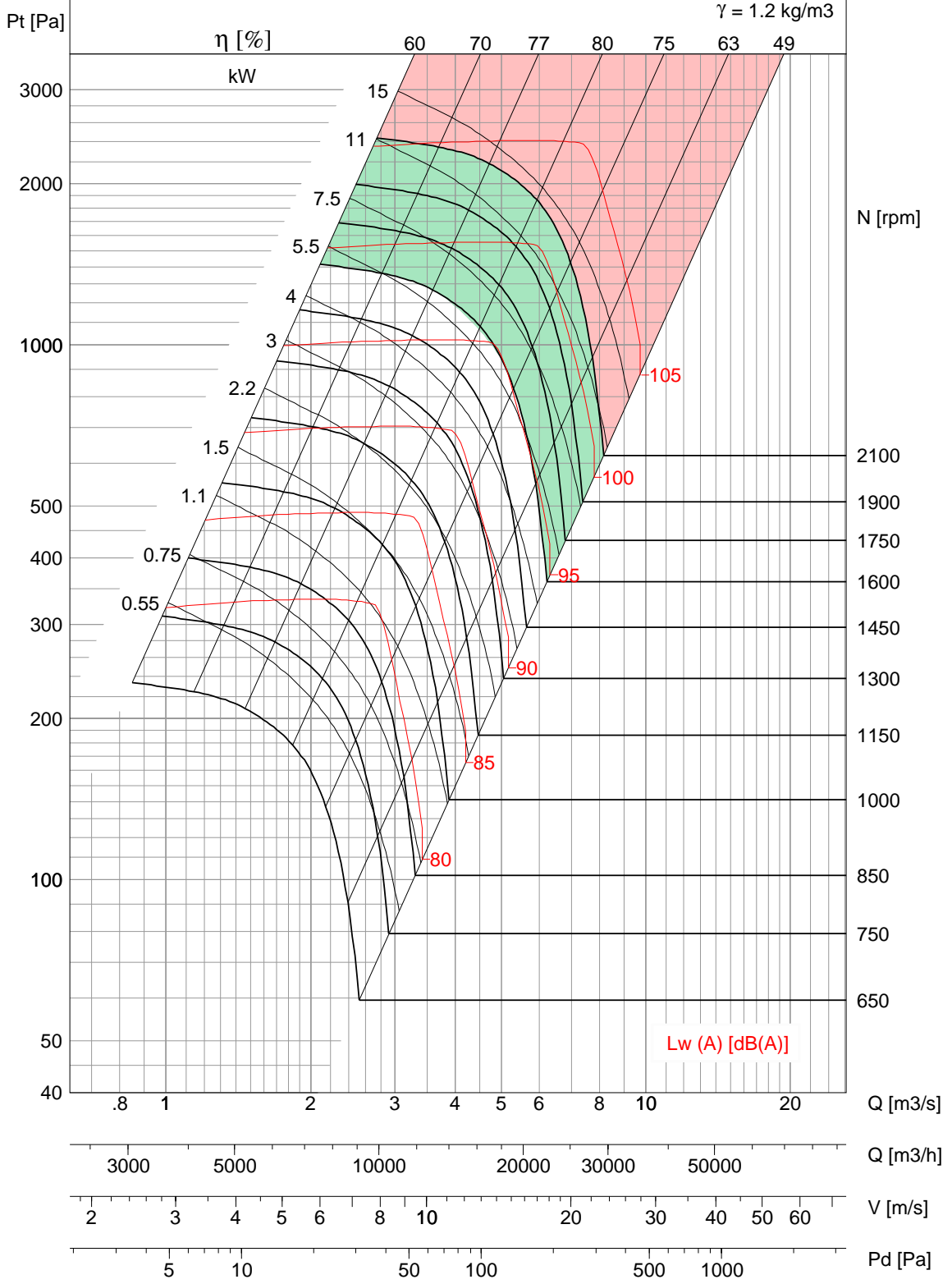
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 630

FEG 85 (η : 78.4%~83.0%)

Op Limit	Cl. I	Cl.II
Max.kW	6	14
Max.RPM	1600	2100



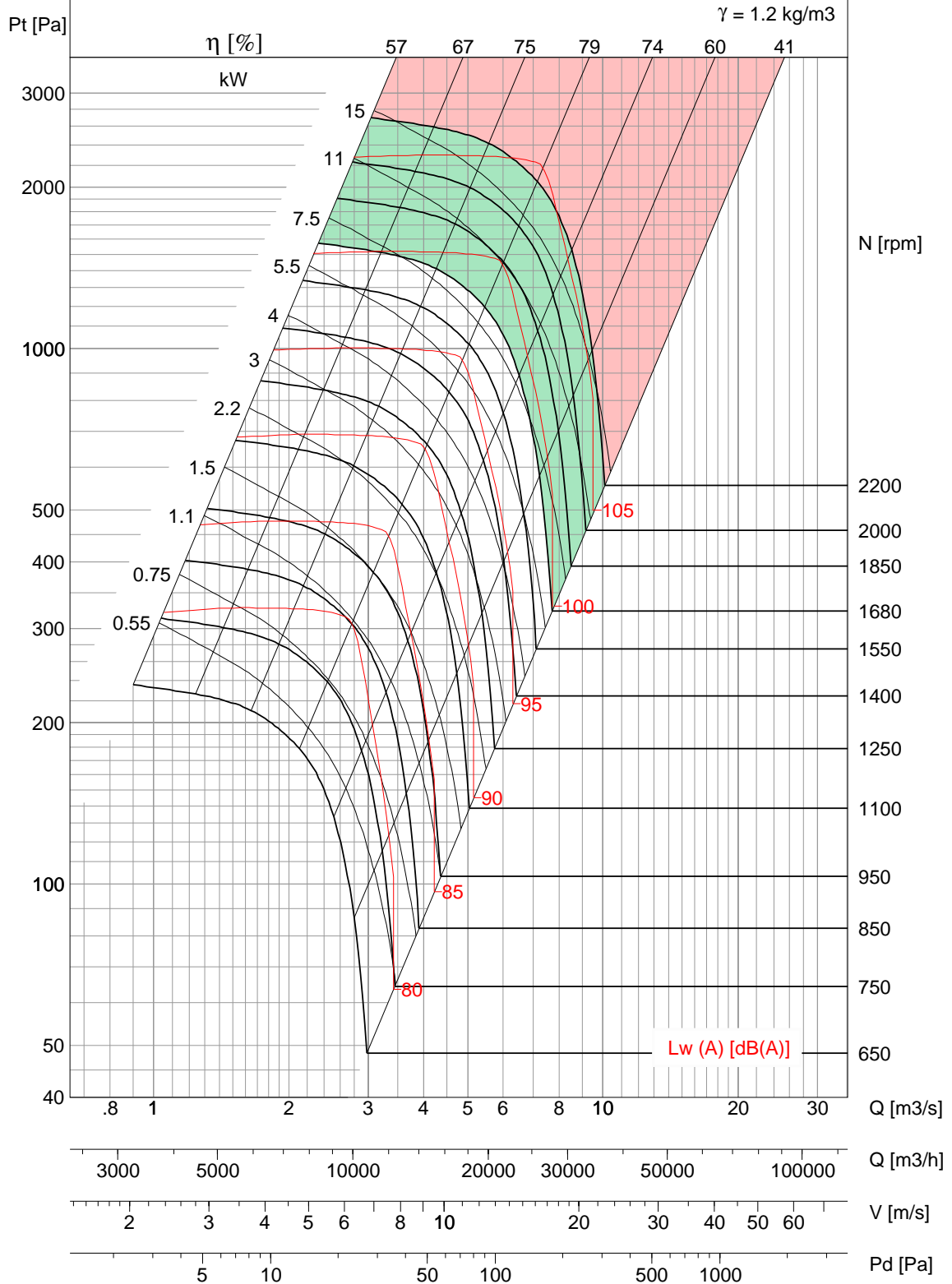
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 630

FEG 85 (η : 78.4%~83.0%)

Op Limit	Cl. I	Cl. II
Max. kW	8.4	18.5
Max. RPM	1680	2200



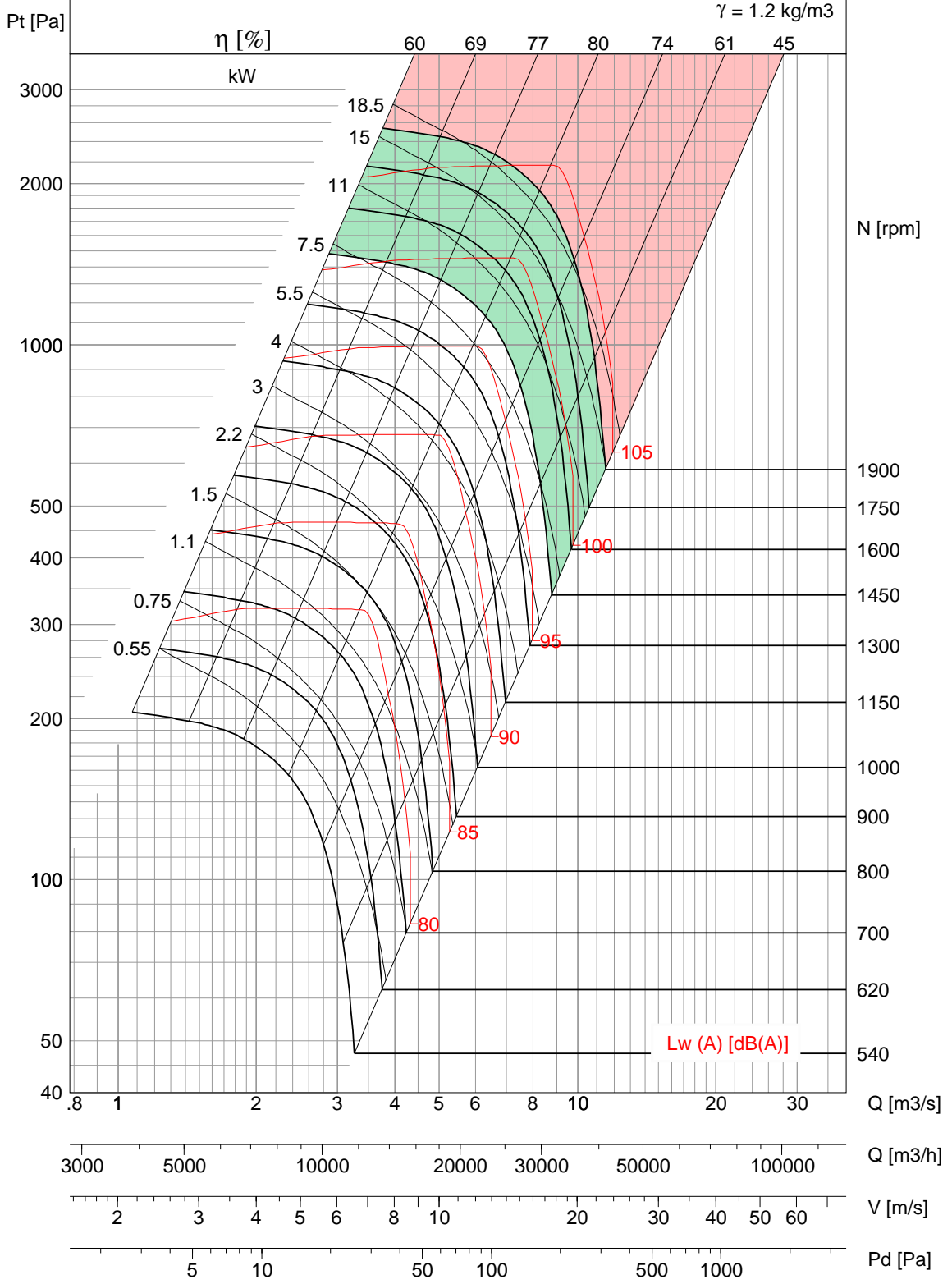
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
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- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 710

FEG 85 (η : 78.8%~83.5%)

Op Limit	Cl. I	Cl. II
Max.kW	9	20
Max.RPM	1450	1900



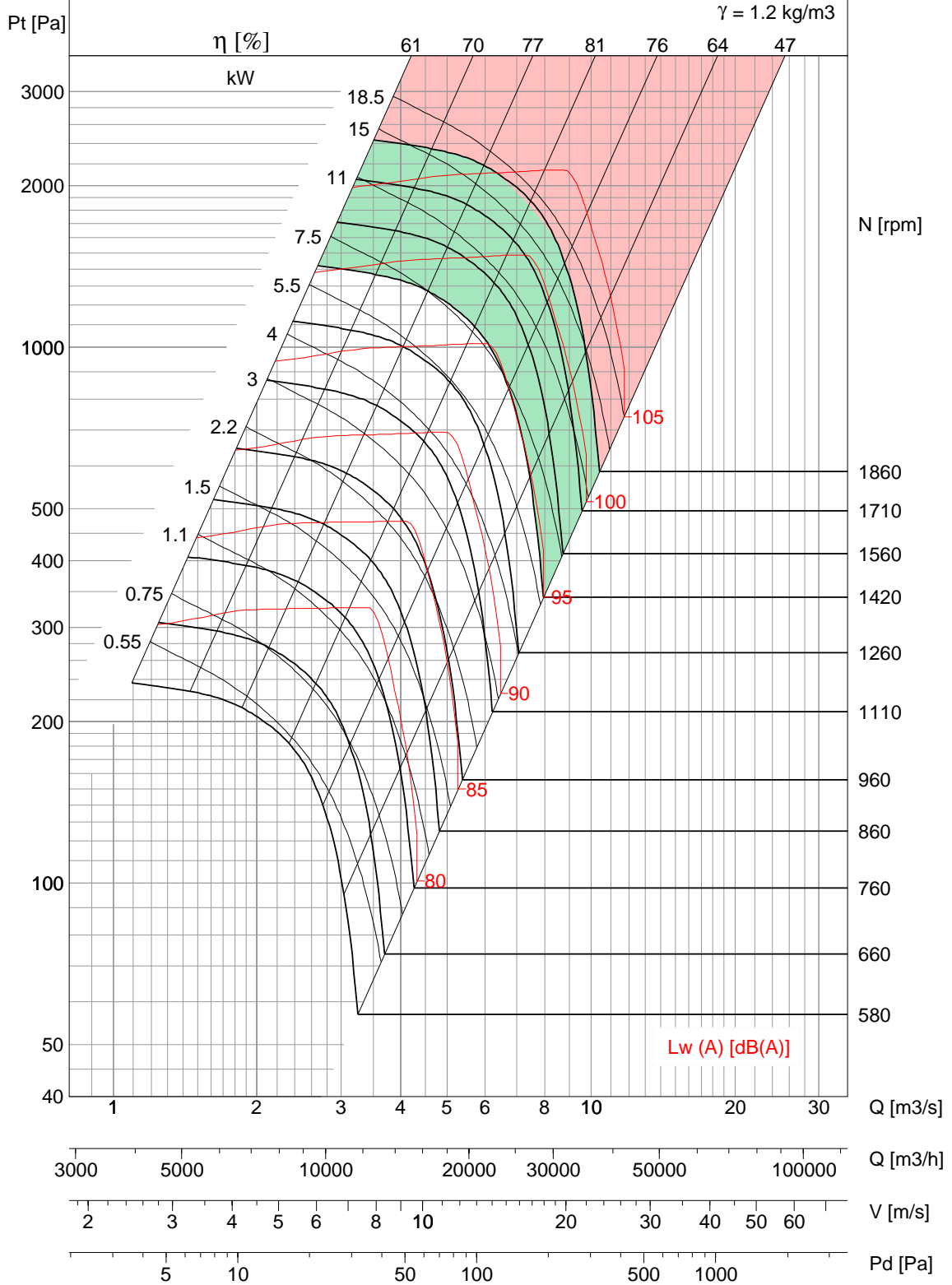
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 710

FEG 85 (η : 78.8%~83.5%)

Op Limit	Cl. I	Cl. II
Max.kW	7.8	17
Max.RPM	1420	1860



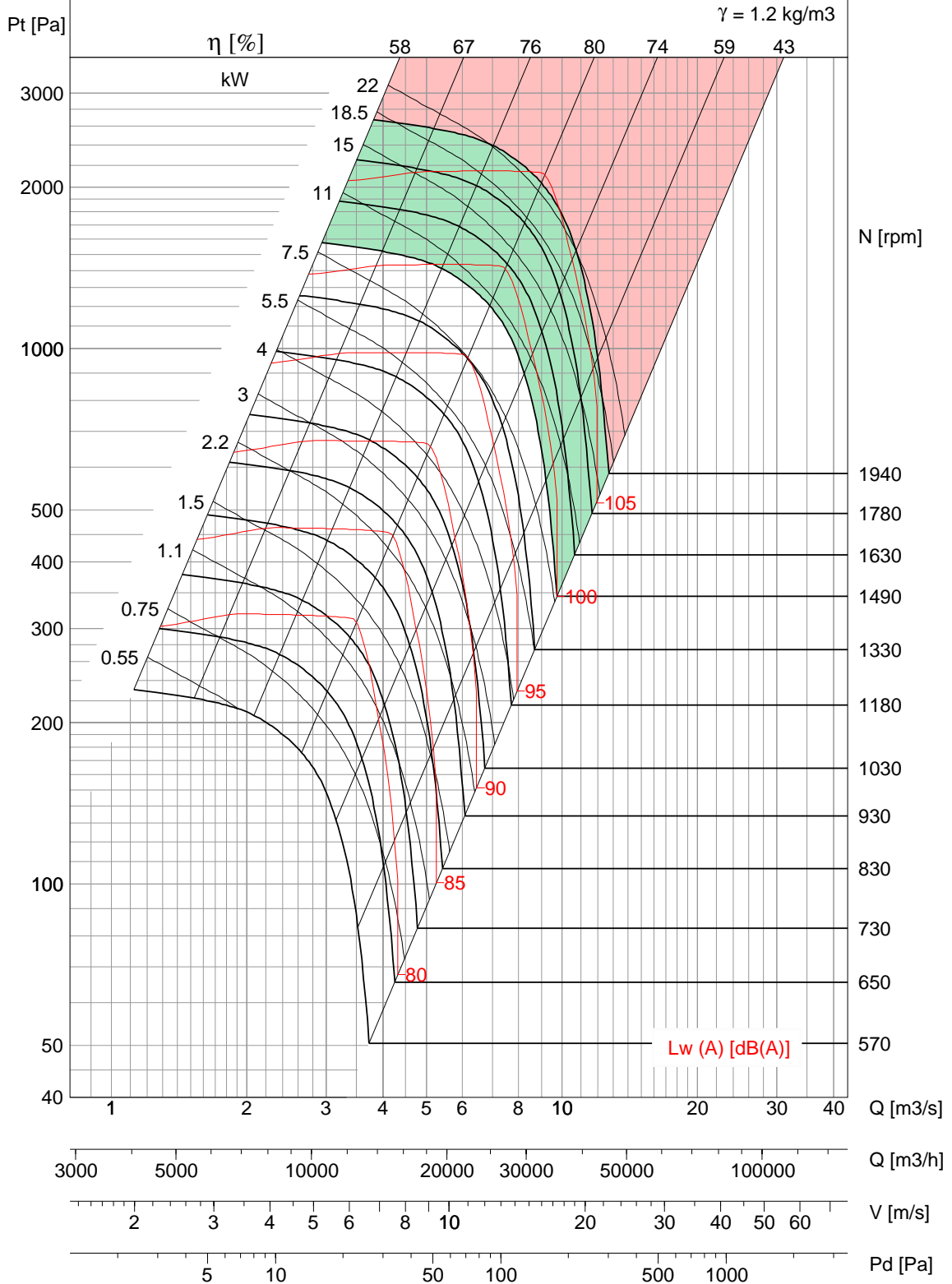
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 710

FEG 85 (η : 78.8%~83.5%)

Op Limit	Cl. I	Cl. II
Max.kW	10.5	23
Max.RPM	1490	1940



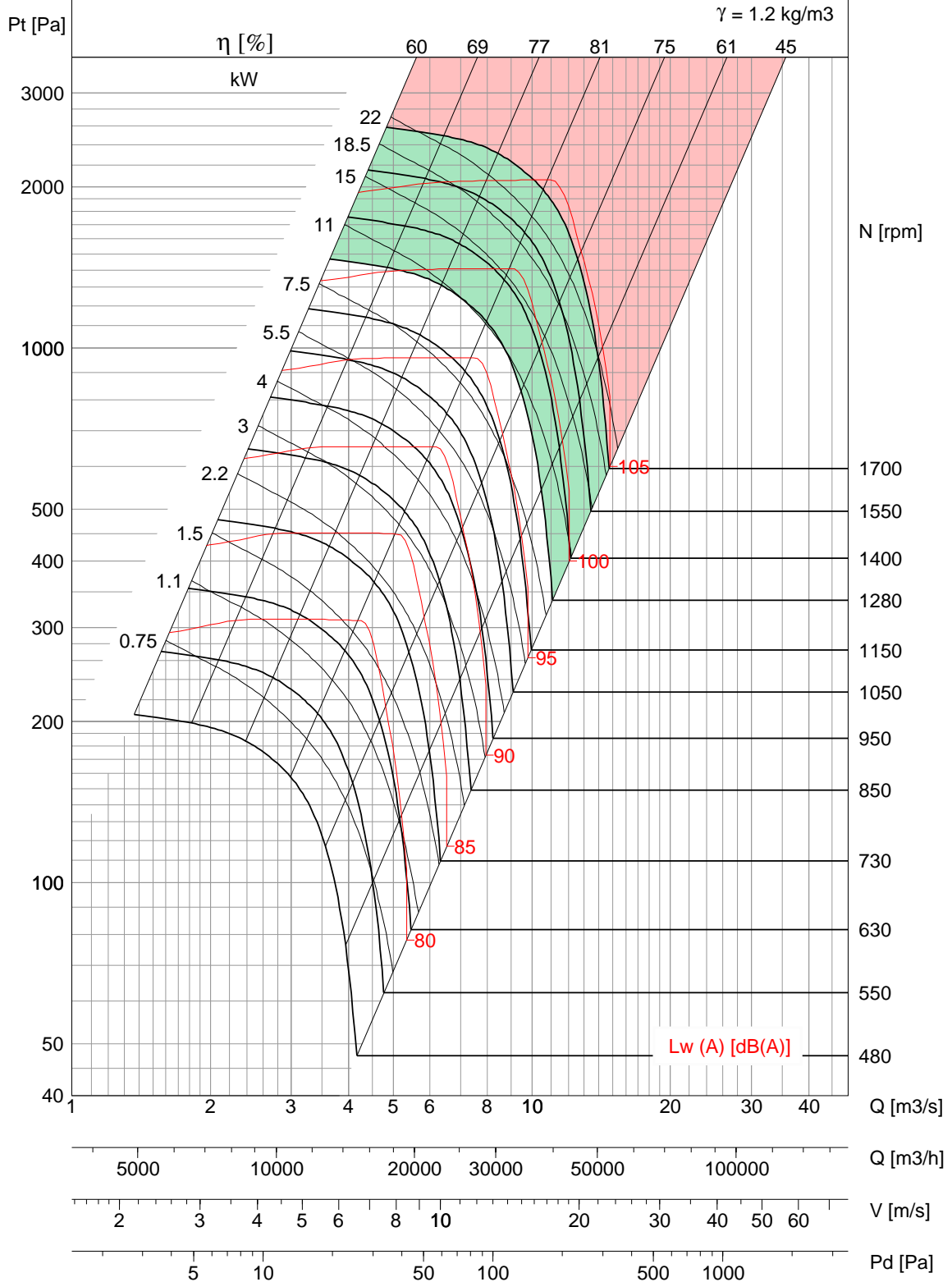
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 800

FEG 85 (η : 79.1%-83.8%)

Op Limit	Cl. I	Cl. II
Max.kW	11	26
Max.RPM	1280	1700



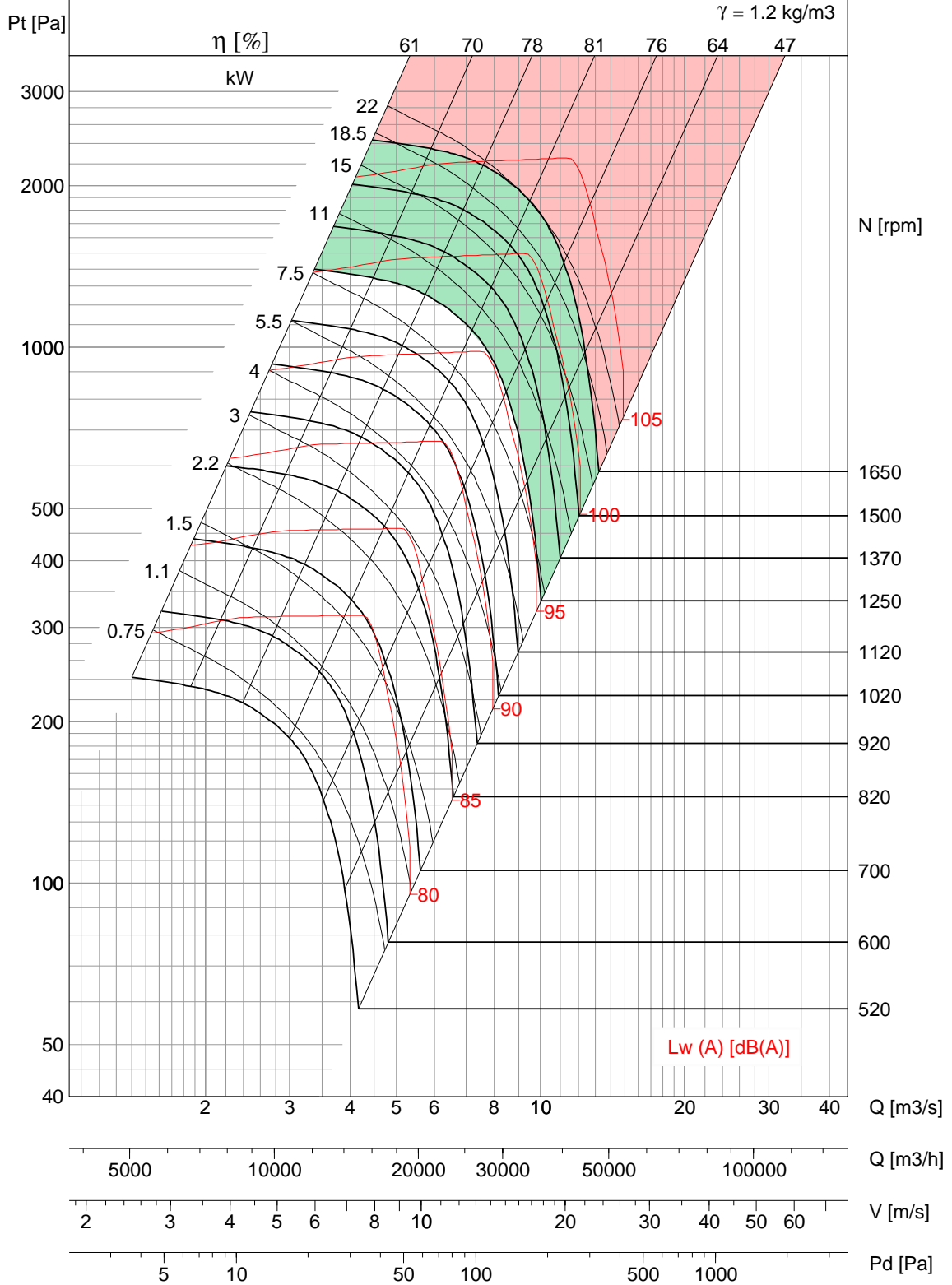
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 800

FEG 85 (η : 79.1%~83.8%)

Op Limit	Cl. I	Cl. II
Max.kW	9.5	22
Max.RPM	1250	1650



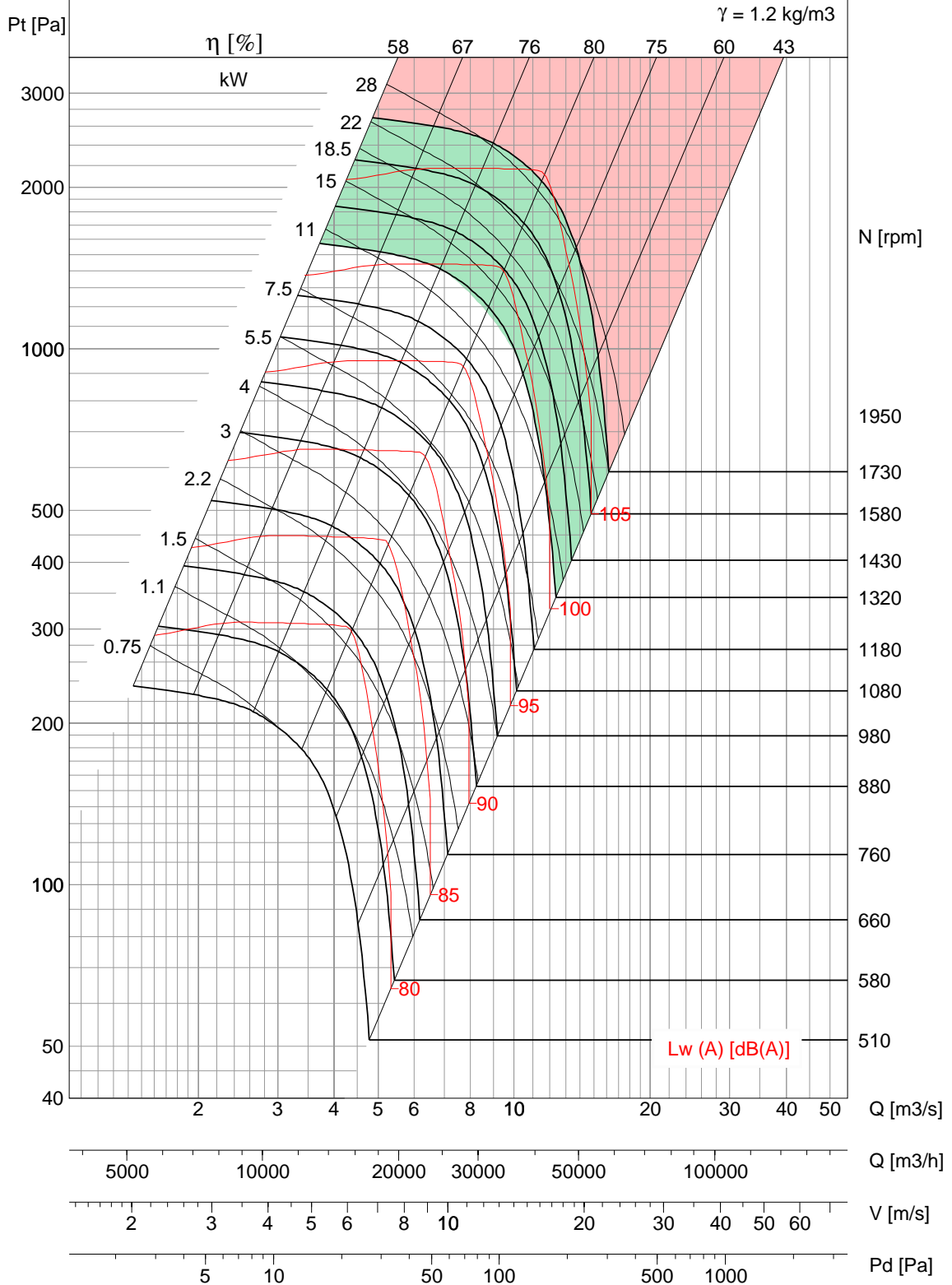
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 800

FEG 85 (η : 79.1%~83.8%)

Op Limit	Cl. I	Cl. II
Max.kW	12.8	30
Max.RPM	1320	1730



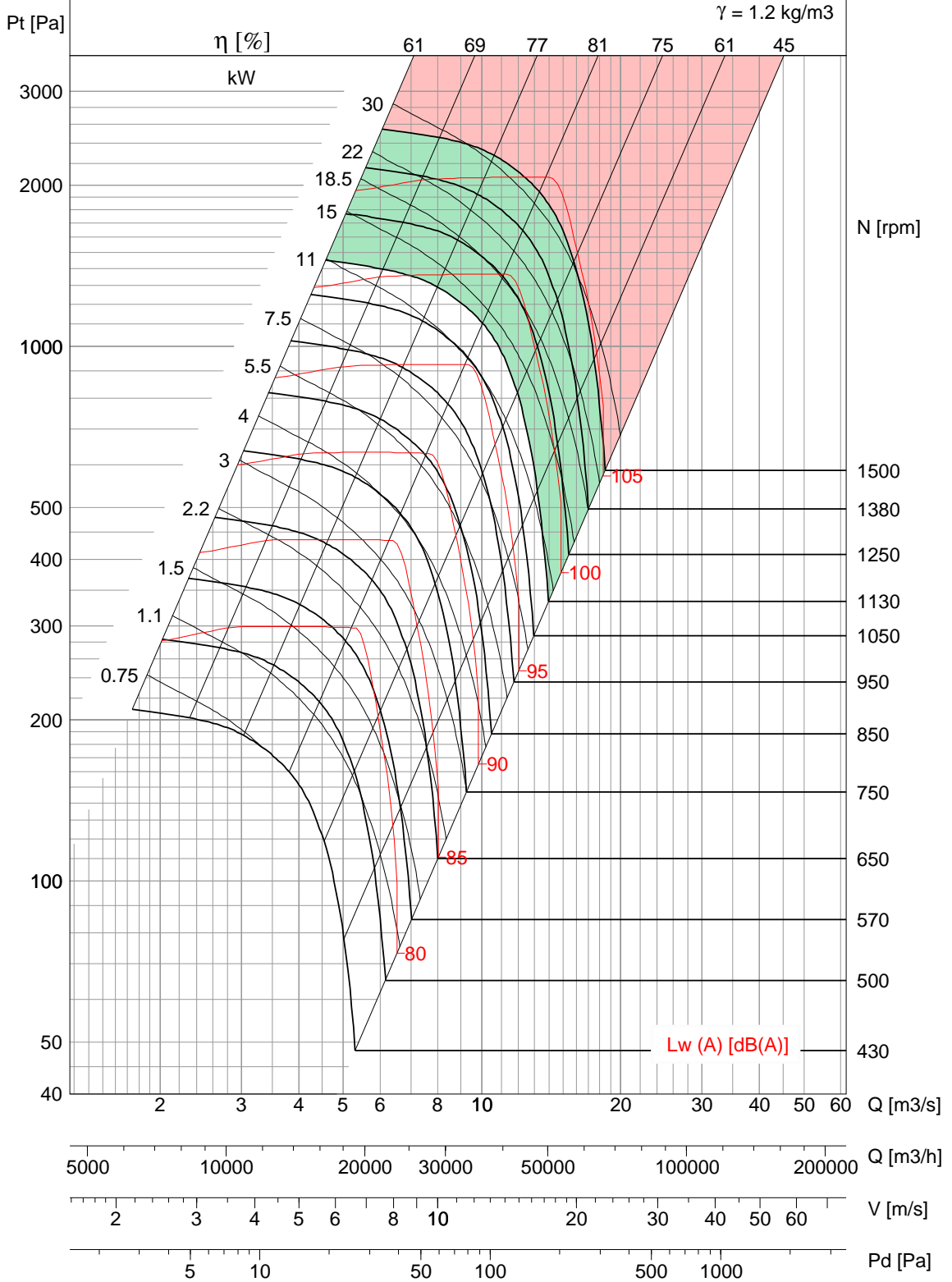
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 900

FEG 85 (η : 79.3%~84.1%)

Op Limit	Cl. I	Cl. II
Max.kW	14	32
Max.RPM	1130	1500



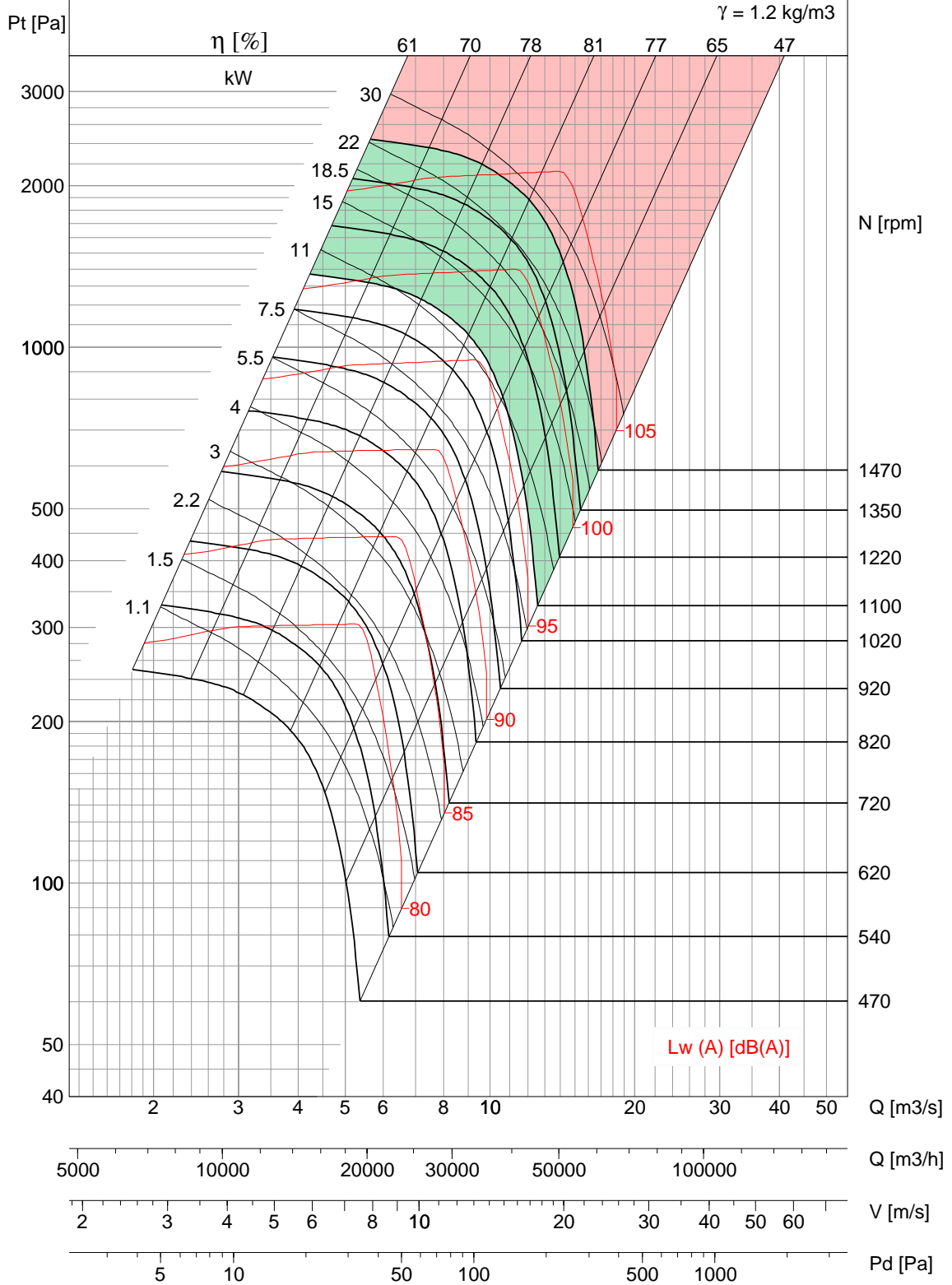
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 900

FEG 85 (η : 79.3%~84.1%)

Op Limit	Cl. I	Cl. II
Max.kW	12	28
Max.RPM	1100	1470



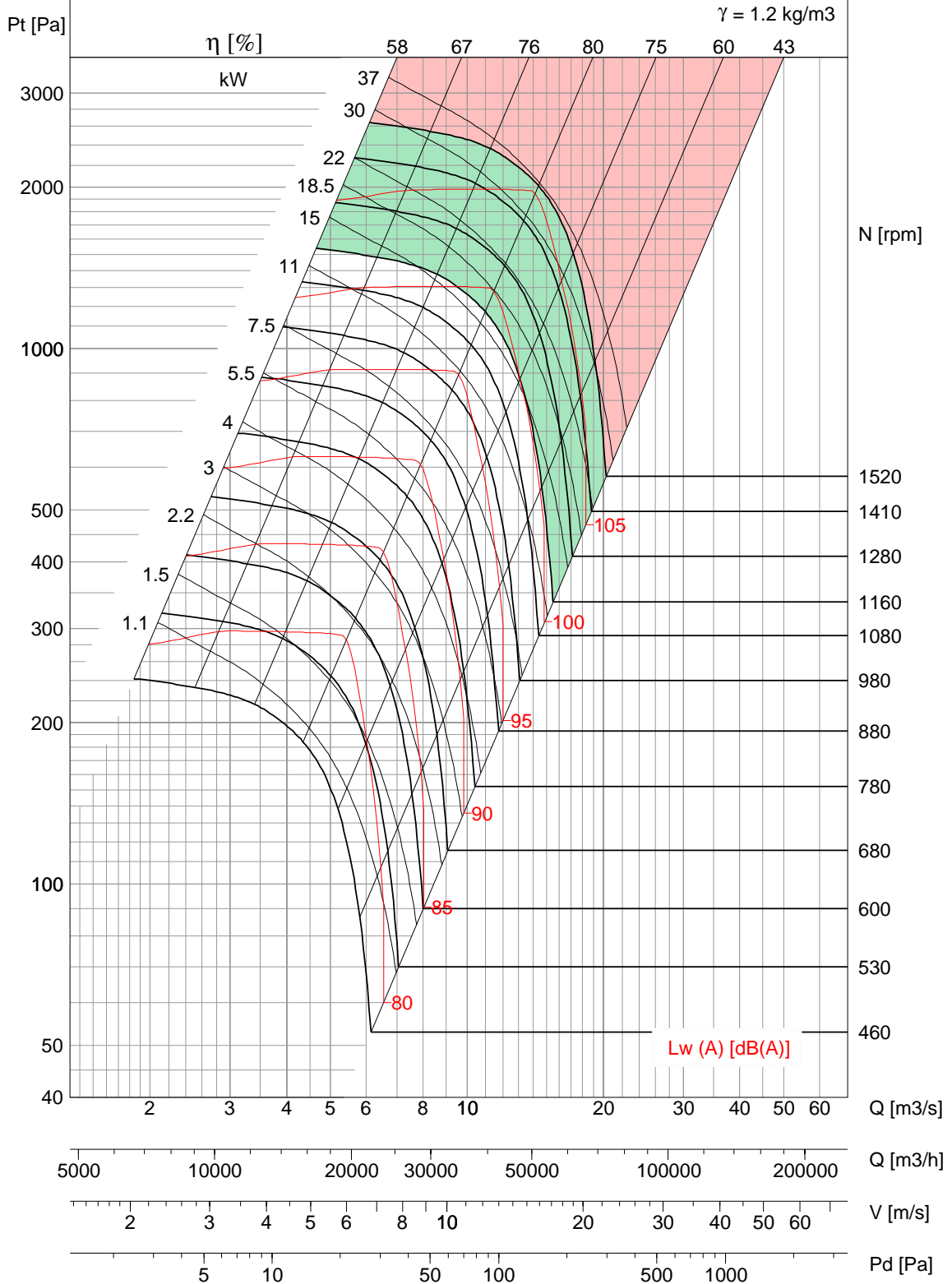
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 900

FEG 85 (η : 79.3%~84.1%)

Op Limit	Cl. I	Cl. II
Max.kW	16	36
Max.RPM	1160	1520



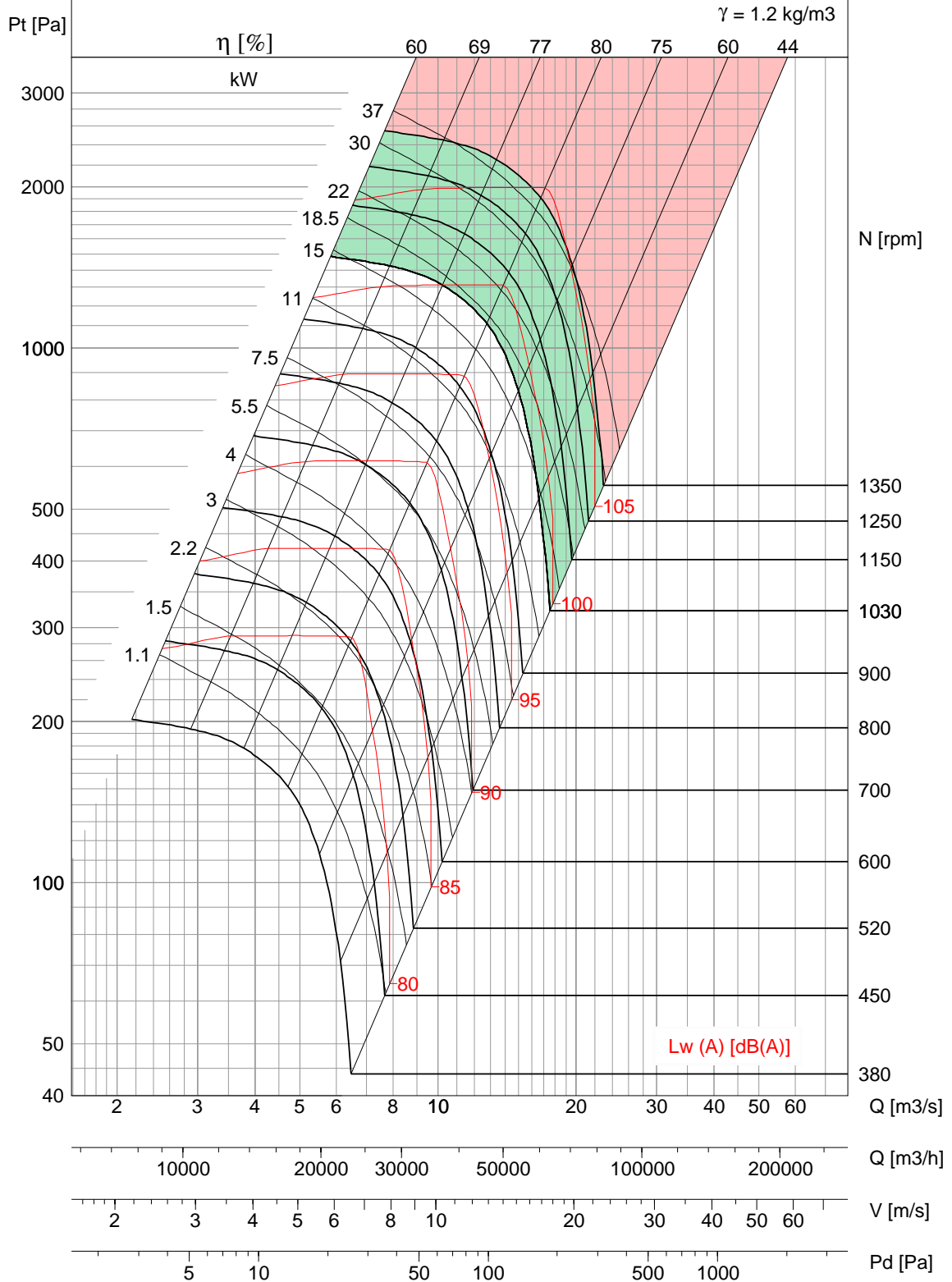
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 1000

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl.II
Max.kW	18	40
Max.RPM	1030	1350



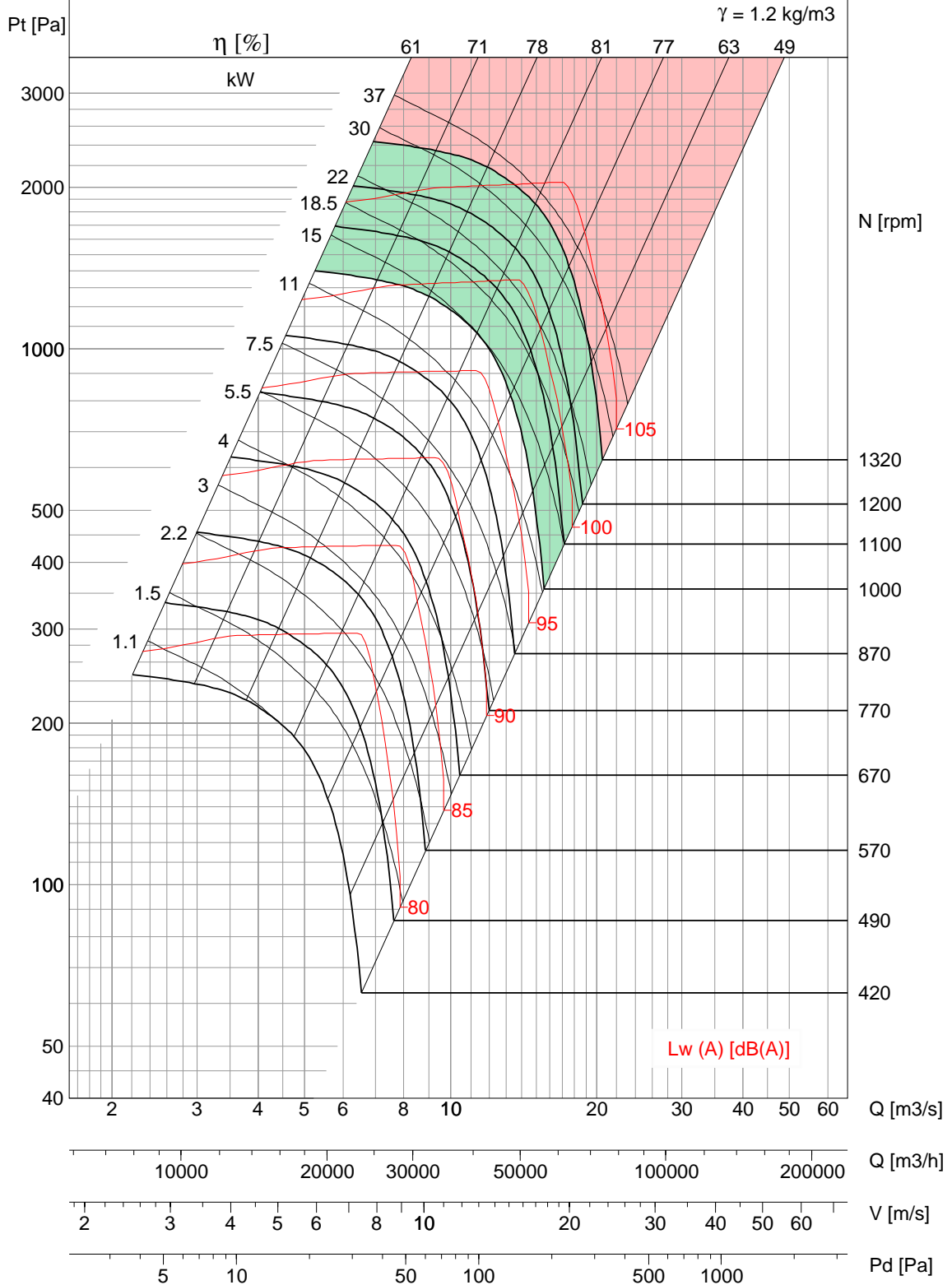
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 1000

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl.II
Max.kW	16	35
Max.RPM	1000	1320



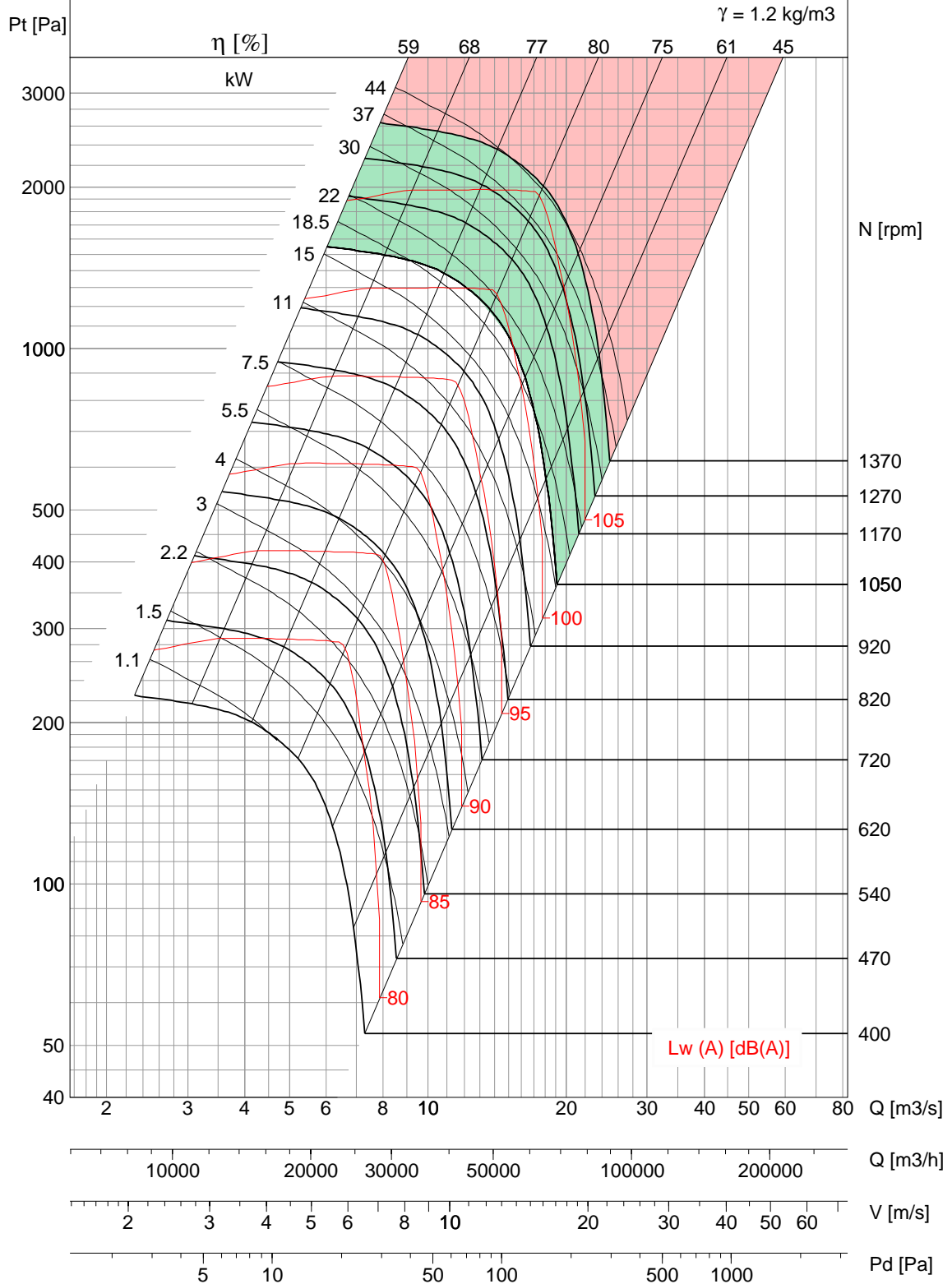
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- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 1000

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl. II
Max.kW	20	45
Max.RPM	1050	1370



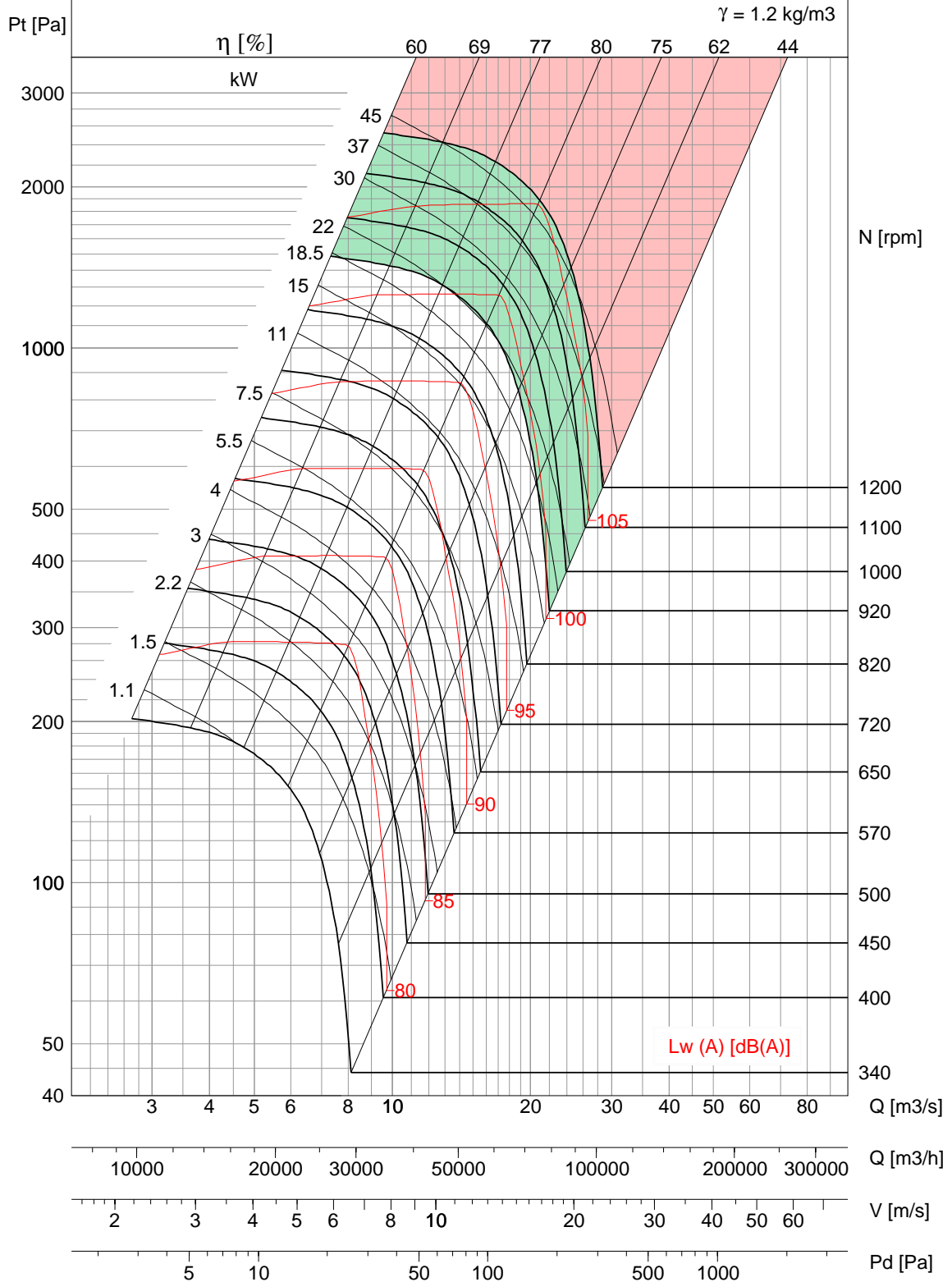
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BNB-R 1120

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl. II
Max.kW	22	50
Max.RPM	920	1200



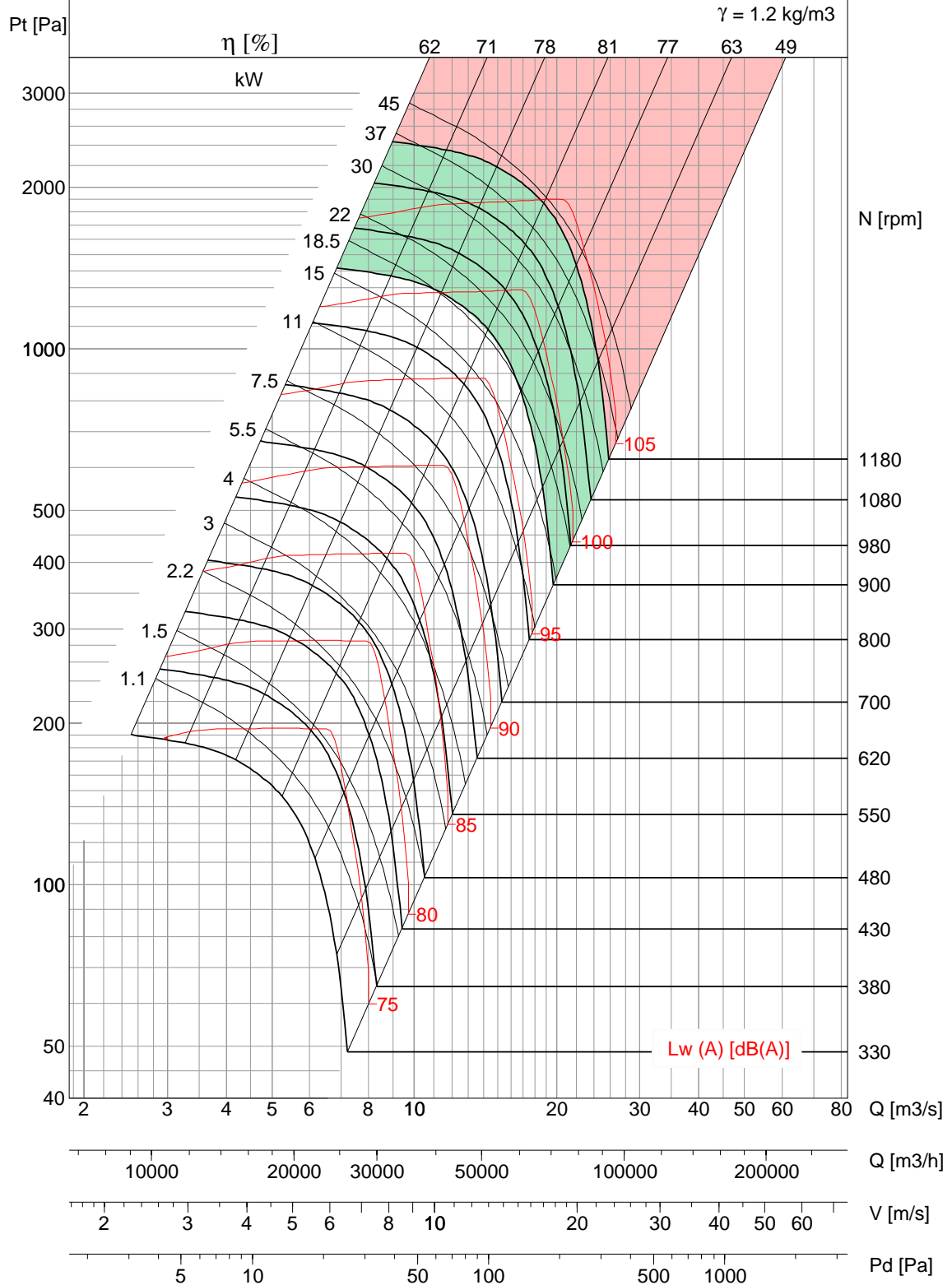
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- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 1120

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl.II
Max.kW	19	43
Max.RPM	900	1180



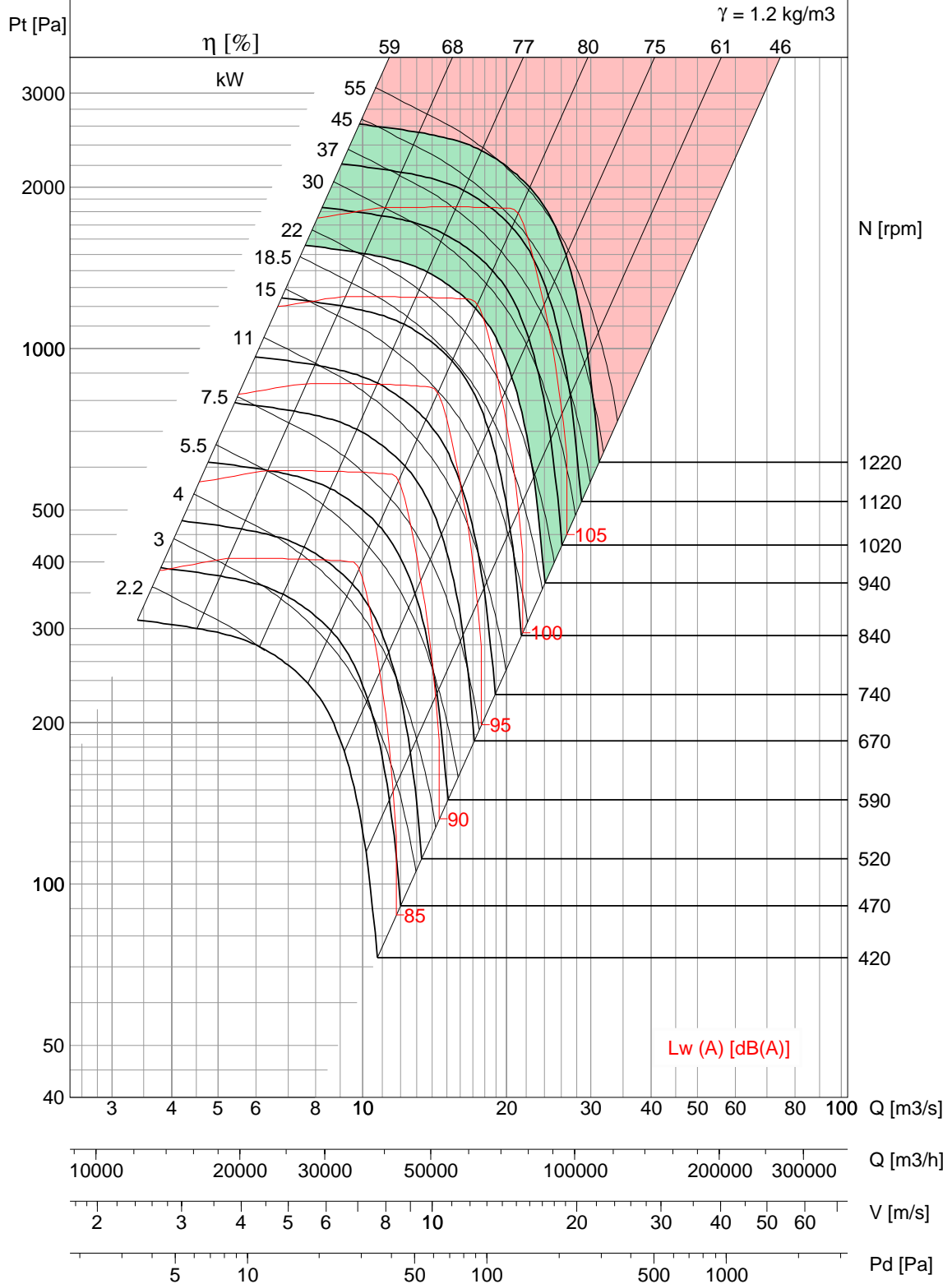
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 1120

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl.II
Max.kW	26	56
Max.RPM	940	1220



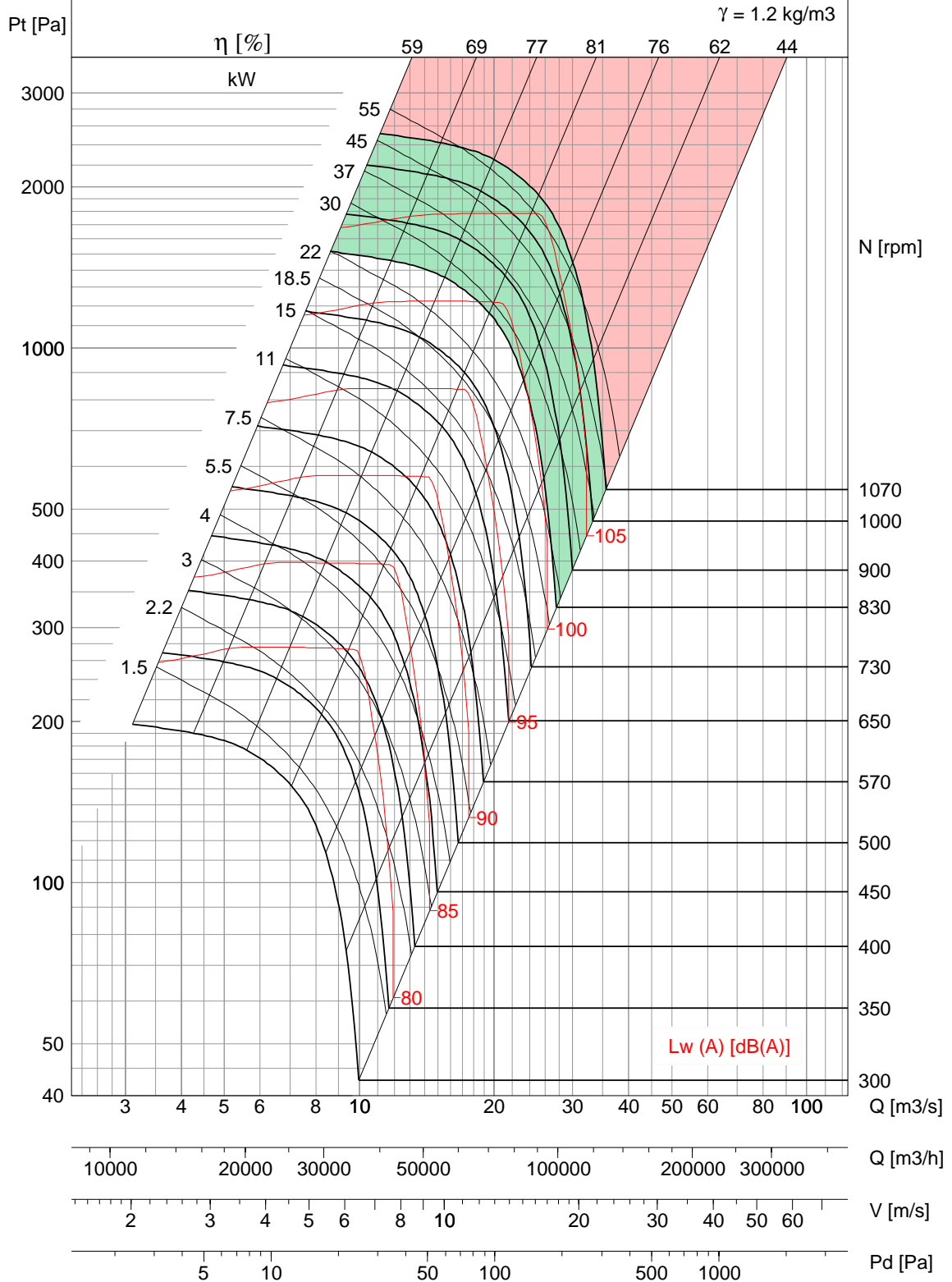
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 1250

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl.II
Max.kW	28	60
Max.RPM	830	1070



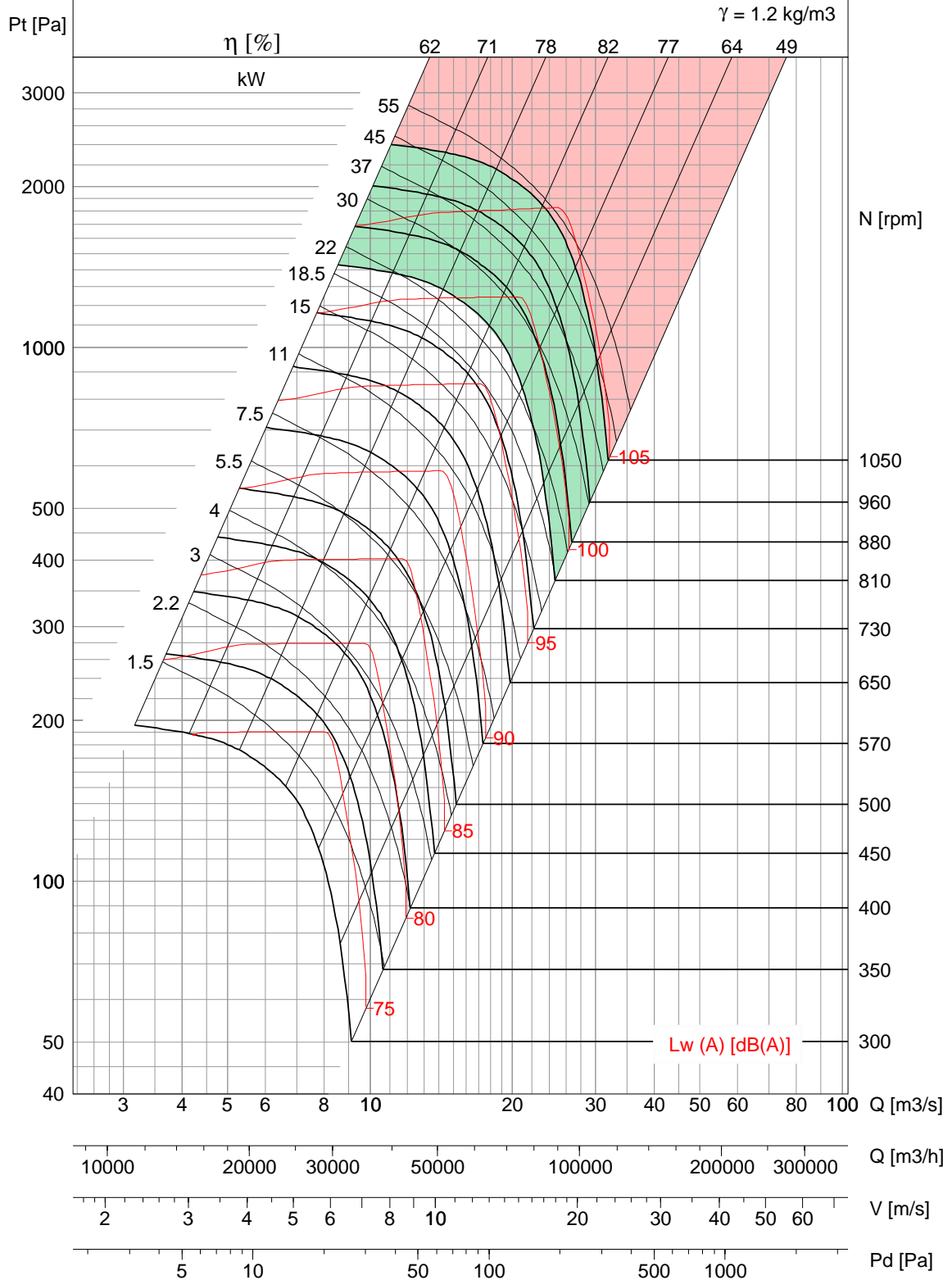
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 1250

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl.II
Max.kW	24	53
Max.RPM	810	1050



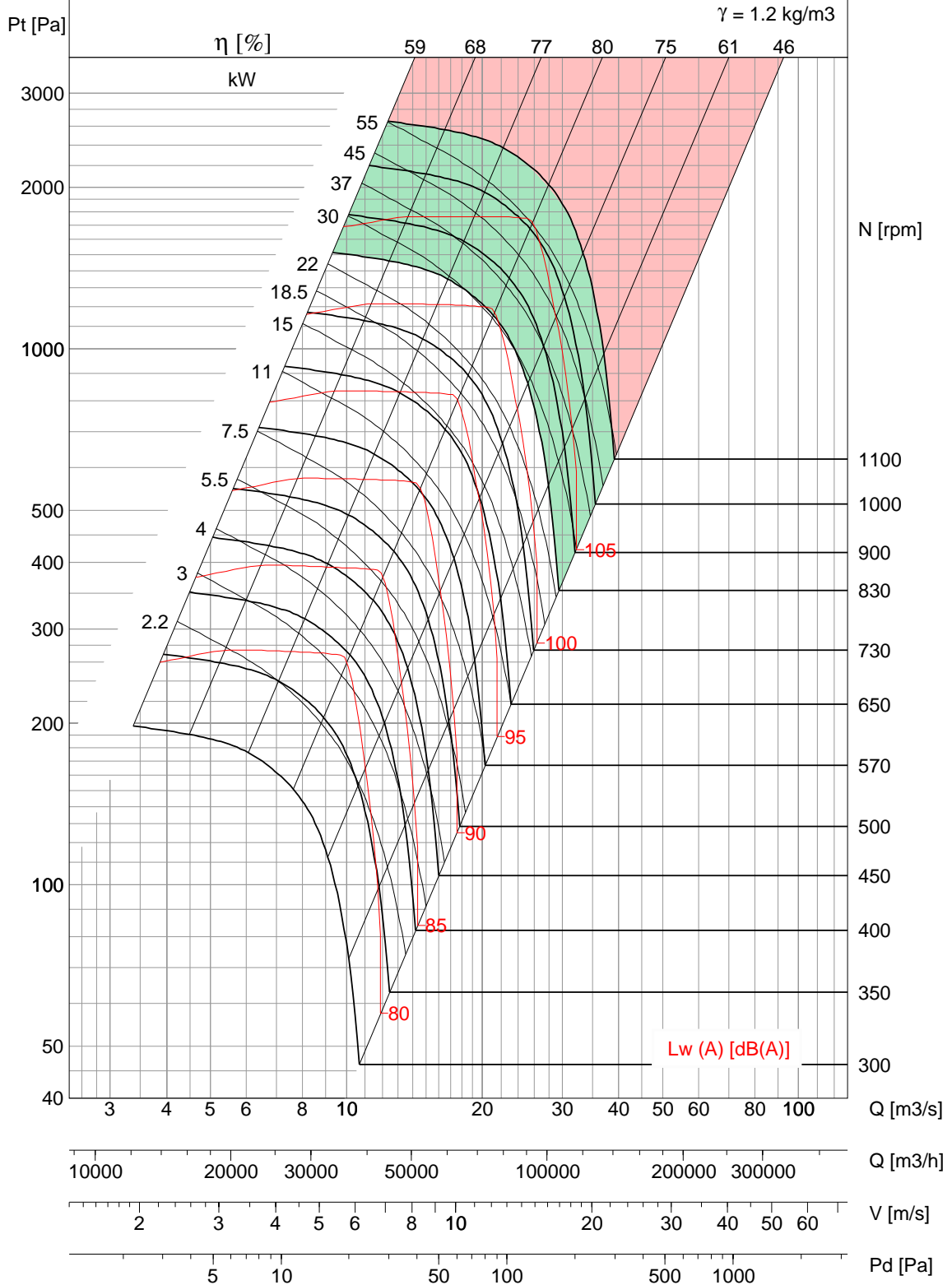
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 1250

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl.II
Max.kW	31	70
Max.RPM	830	1100



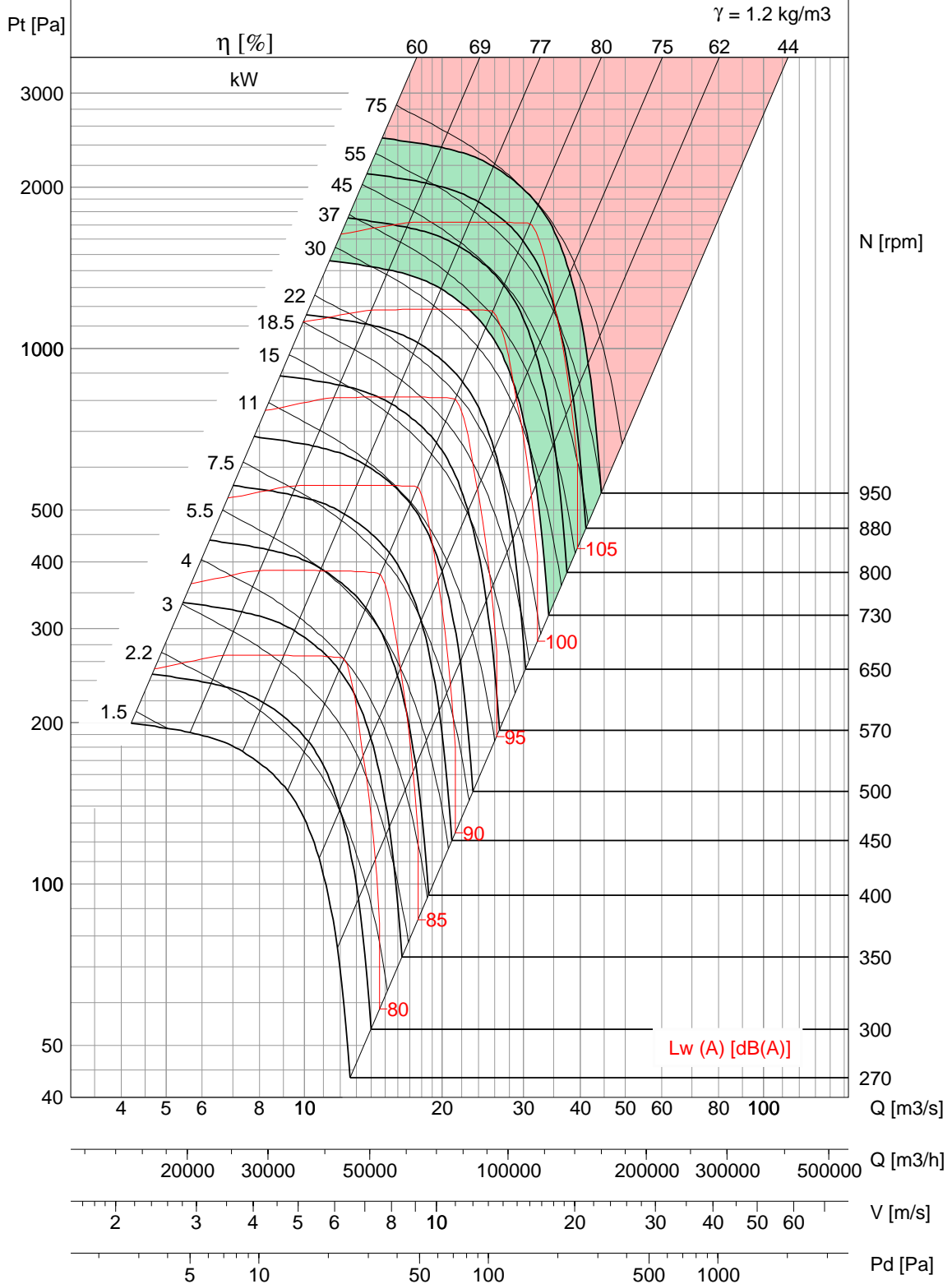
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-R 1400

FEG 85 (η t: 79.4%~84.1%)

Op Limit	Cl. I	Cl. II
Max.kW	34	75
Max.RPM	730	950



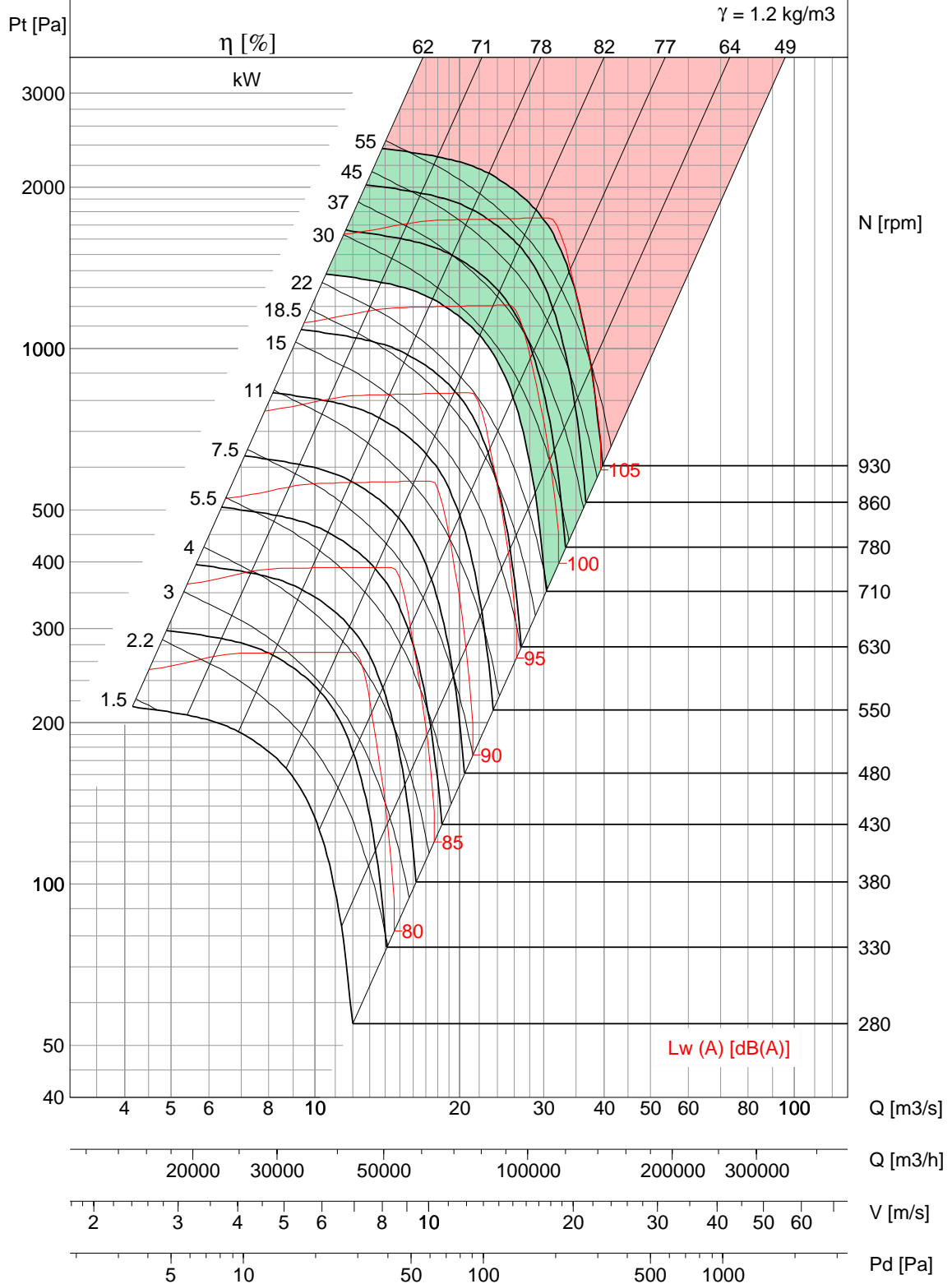
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-P 1400

FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl. II
Max.kW	29	65
Max.RPM	710	930



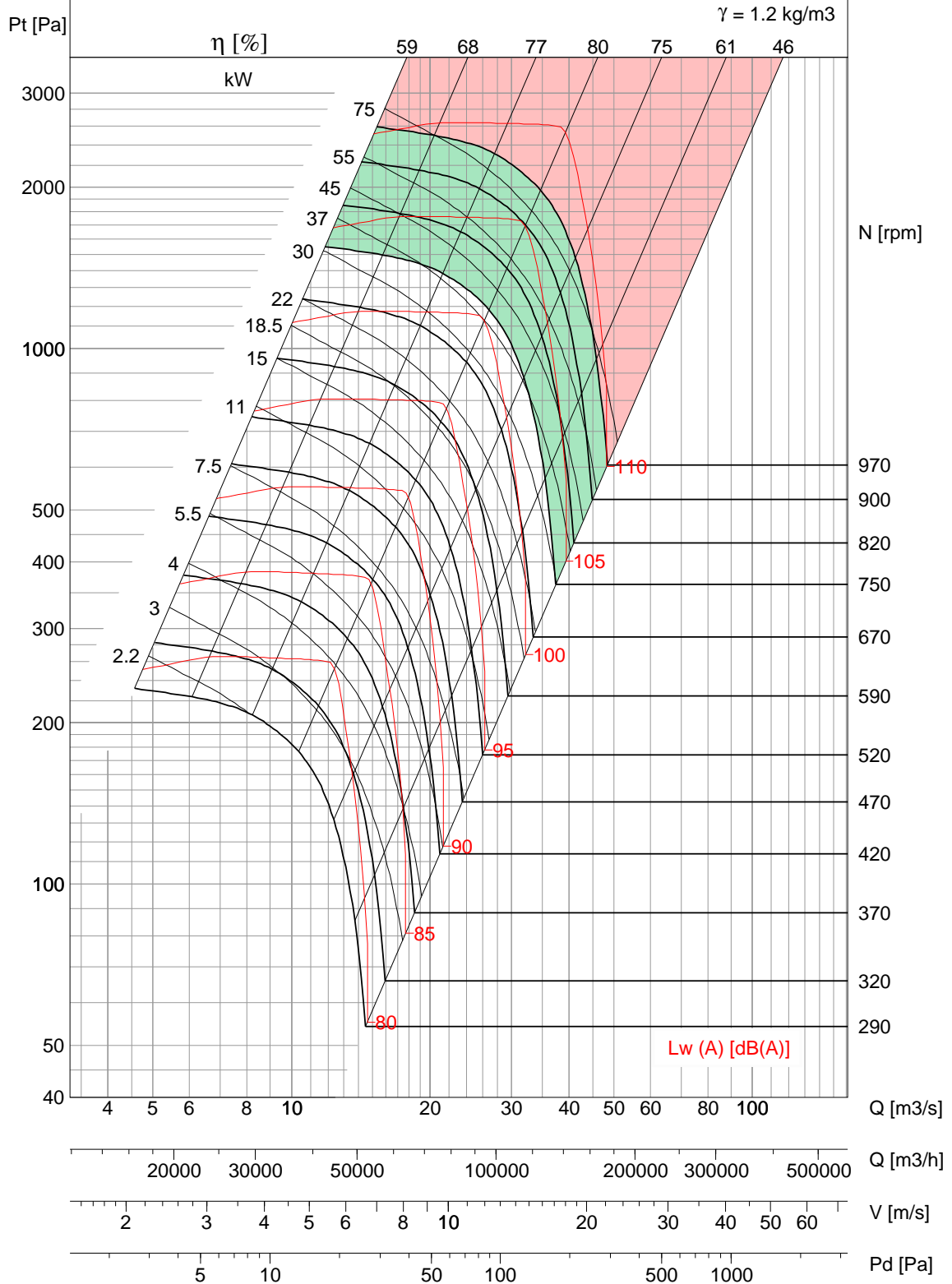
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12759/ AMCA 205
- Please consult Kruger for fan selection of Class III & above



BNB-Q 1400

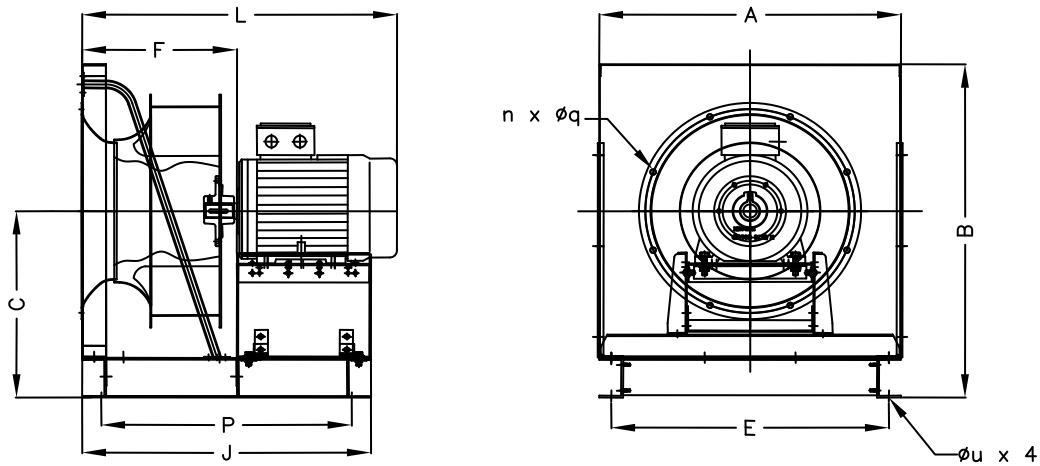
FEG 85 (η : 79.4%~84.1%)

Op Limit	Cl. I	Cl. II
Max.kW	40	85
Max.RPM	750	970



- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating kW does not include transmission losses.
- Outlet velocity is calculated in accordance with AMCA 205
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- Please consult Kruger for fan selection of Class III & above

BNB 315 ~ 630 'D'

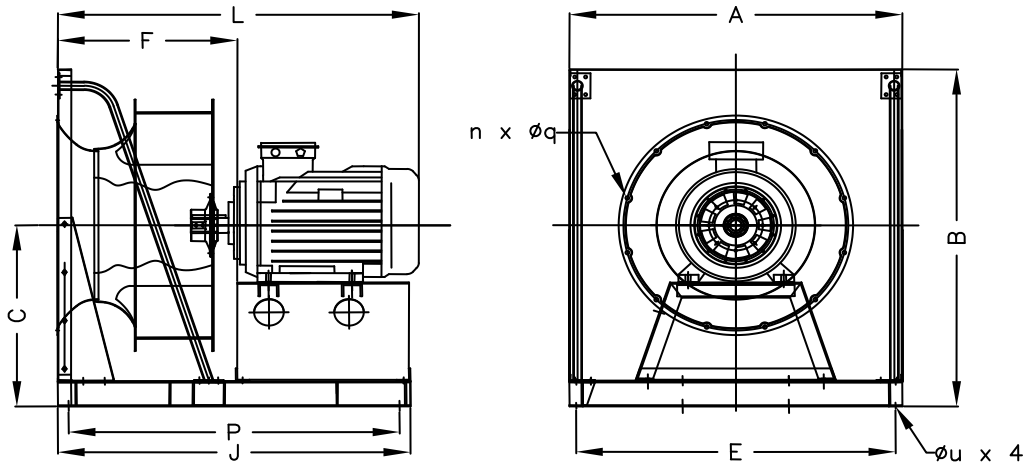


Model	A	B	C	E	F	n x Øq	Øu	P	J	L*	Frame Size	Wt (Kg) w/o motor
315	490	490	310	450	235	6 x 9	12	405	475	450	71	20
										490	80	
										520	90	
										565	100	
								445	515	580	112	
355	530	530	330	490	255	6 x 9	12	455	525	525	80	29
										555	90	
										600	100	
										615	112	
								540	610	655	132	
400	580	580	355	540	300	8 x 9	12	500	570	575	90	38
										620	100	
										635	112	
										720	132	
								740	810	880	160	
450	630	630	400	580	330	8 x 12	12	530	610	595	90	50
										640	100	
										655	112	
										795	132	
								760	870	955	160	
500	700	700	435	650	370	8 x 12	12	570	650	645	90	60
										690	100	
										705	112	
										800	132	
								770	850	960	160	
560	790	790	480	740	430	8 x 12	12	700	780	715	100	76
										730	112	
										840	132	
										955	160	
								870	950	1025	180	
630	890	890	545	840	470	8 x 12	12	740	820	760	100	95
										775	112	
										885	132	
										1005	160	
								910	990	1075	180	

* Dimension L is based on Q type. For P&R type, please consult the nearest Kruger office.

All Dimensions in mm.

BNB 710 ~ 1400 'D'



Model	A	B	C	E	F	n x Øq	Øu	P	J	L*	Frame Size	Wt (Kg) w/o motor
710	1000	1000	600	950	530	8 x 12	12	810	890	830	112	112
										940	132	
										1080	160	
										1150	180	
800	1120	1120	660	1070	585	8 x 12	12	1005	1085	1180	200	151
										975	132	
										1135	160	
										1205	180	
900	1240	1240	720	1190	670	12 x 12	12	1185	1265	1235	200	209
										1310	225	
										1190	160	
										1260	180	
1000	1390	1390	820	1325	725	12 x 12	12	1185	1085	1290	200	261
										1380	225	
										1445	250	
										1265	160	
1120	1550	1550	925	1475	830	12 x 12	12	1260	1400	1335	180	333
										1365	200	
										1590	225	
										1420	200	
1250	1700	1700	1000	1625	905	14 x 14	12	1535	1675	1495	180	408
										1600	225	
										1665	250	
										1495	225	
1400	1900	1900	1100	1825	995	16 x 16	12	1625	1765	1540	180	490
										1615	200	
										1690	225	
										1775	1915	
										1755	250	
										1880	280	

* Dimension L is based on Q type. For P&R type, please consult the nearest Kruger office.

All Dimensions in mm.

Operational Limits - BNB-R

		315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400
Maximum Absorbed Power	CL.I	2	2.5	3.2	4	4.5	6	7.5	9	11	14	18	22	28	34
	CL.II	4.5	5.5	7	8.5	10.5	13	16	20	26	32	40	50	60	75
Maximum Fan Speed	CL.I	3250	2850	2550	2300	2050	1850	1650	1450	1280	1130	1030	920	830	730
	CL.II	4200	3750	3300	3000	2700	2400	2150	1900	1700	1500	1350	1200	1070	950
Temperature Range / Min. -20°C	CL.I-CL.II	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Operational Limits - BNB-P

		315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400
Maximum Absorbed Power	CL.I	1.8	2.2	2.7	4	4	5	6	7.8	9.5	12	16	19	24	29
	CL.II	3.9	5	6	7.5	9	10.5	14	17	22	28	35	43	53	65
Maximum Fan Speed	CL.I	3150	2800	2470	2250	2000	1700	1600	1420	1250	1100	1000	900	810	710
	CL.II	4100	3650	3230	2950	2650	2200	2100	1860	1650	1470	1320	1180	1050	930
Temperature Range / Min. -20°C	CL.I-CL.II	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Operational Limits - BNB-Q

		315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400
Maximum Absorbed Power	CL.I	2.4	2.9	3.6	4.5	5.3	6.8	8.4	10.5	12.8	16	20	26	31	40
	CL.II	5.2	6.5	8	9.5	12.1	15	18.5	23	30	36	45	56	70	85
Maximum Fan Speed	CL.I	3300	2900	2570	2350	2100	1870	1680	1490	1320	1160	1050	940	830	750
	CL.II	4300	3830	3360	3050	2750	2430	2200	1940	1730	1520	1370	1220	1100	970
Temperature Range / Min. -20°C	CL.I-CL.II	100	100	100	100	100	100	100	100	100	100	100	100	100	100

NOTES

A large grid of graph paper for taking notes. The grid consists of 20 columns and 25 rows of small squares. The word "NOTES" is centered at the top of the page, above the grid.

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