KRUGER

BNB

PLENUM FAN

with Backward Curved Wheels

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BNB Series

PLENUM FAN with Backward Curved Wheels

Kruvent Industries (M) Sdn Bhd certifies that the **BNB Series** shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures preformed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

BNB Series

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

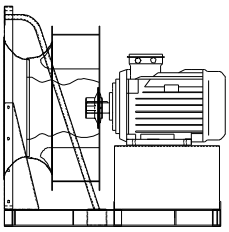
- Fan operation class -- I & II
- Drive mode --'D' - Direct Driven
  'B' - Belt Driven
- Fan model
- Fan type -- R, P, Q

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.

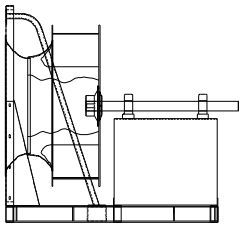
The BNB series is available in Direct Driven and Belt Driven as follow:



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 1,400
Volume : 1,000 to 150,000 m^3/h
Total Pressure : up to 2,500 Pa

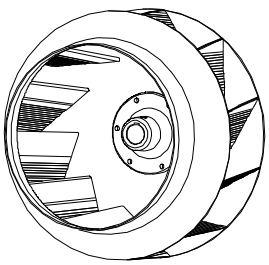


Belt Driven 'B'

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

Fan Size : 315 to 1,400
Volume : 1,000 to 150,000 m^3/h
Total Pressure : up to 2,500 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

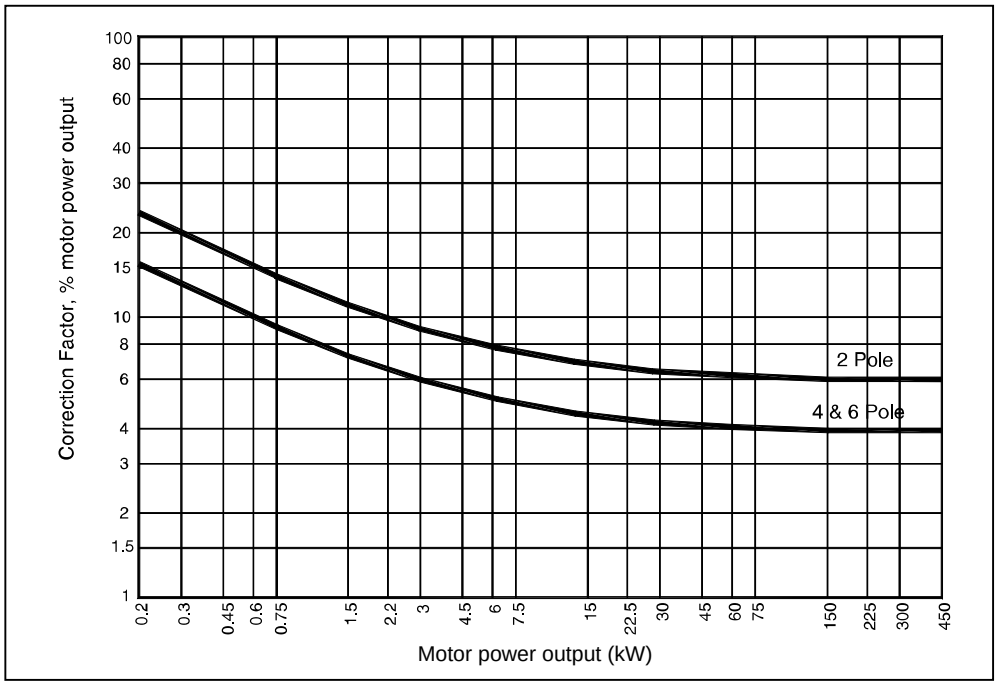
Inlet guards may be a requirement in some industrial safety regulations. These are available upon request.

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.



Fan performance calculated with this correction factor is not licensed by AMCA International.

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).

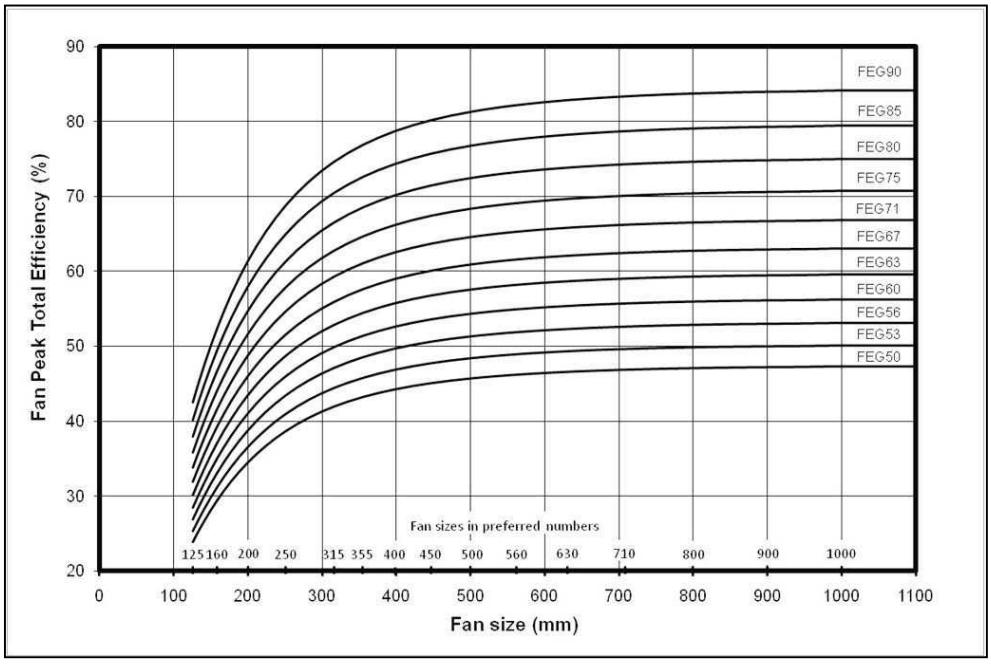
Ratings refer to standard air density with the total pressure as a function of the air volume, using logarithmic scale.

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): Lw (A) as catalogue
- Octave band spectrum: Lw = Lw(A) + Lw rel. dB [refer to Kruger for more details]
- Sound pressure level:

a) free field
$Lp(A) = Lw(A) - (20\log_{10}d) - 11$

b) room conditions
$Lp(A) = Lw(A) - (20\log_{10}d) - 8$

where d = distance of fan (m)

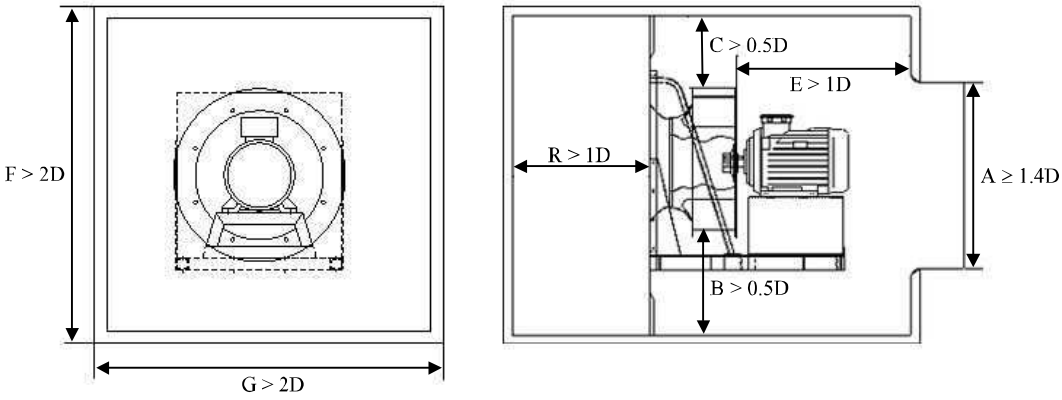
SELECTION GUIDELINES

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

MINIMUM DISTANCE

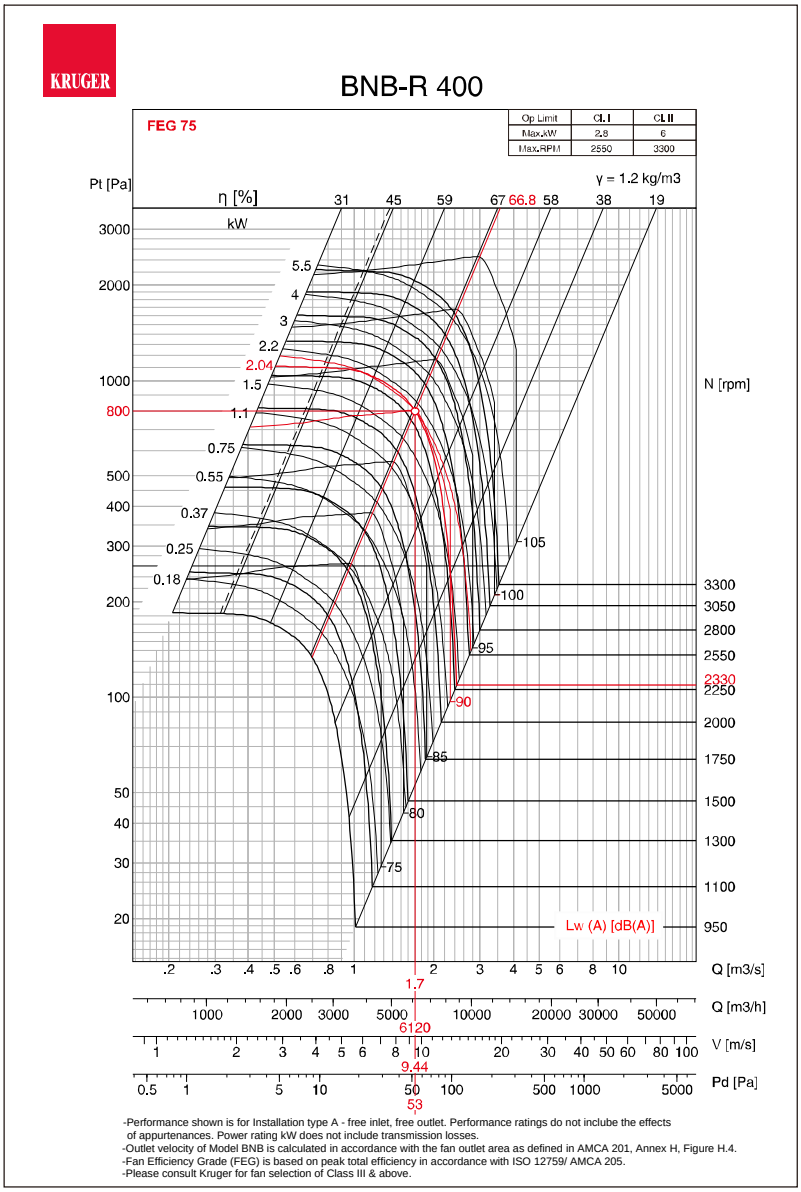
Recommended minimum distance values for correct plenum fan installation are as follow.

D = Impeller Diameter



Example of Selection

Air Volume	Q = 6120 m^3/h
Outlet Velocity	V = 9.44 m/s
Dynamic Pressure	Pd = 53Pa
Total Pressure	Pt = 800Pa
Fan Speed	N = 2330rpm
Absorbed Power	W = 2.04 kW
Total Efficiency	η = 66.8 %
Sound Power Level	Lw(A) = 90 dB(A)



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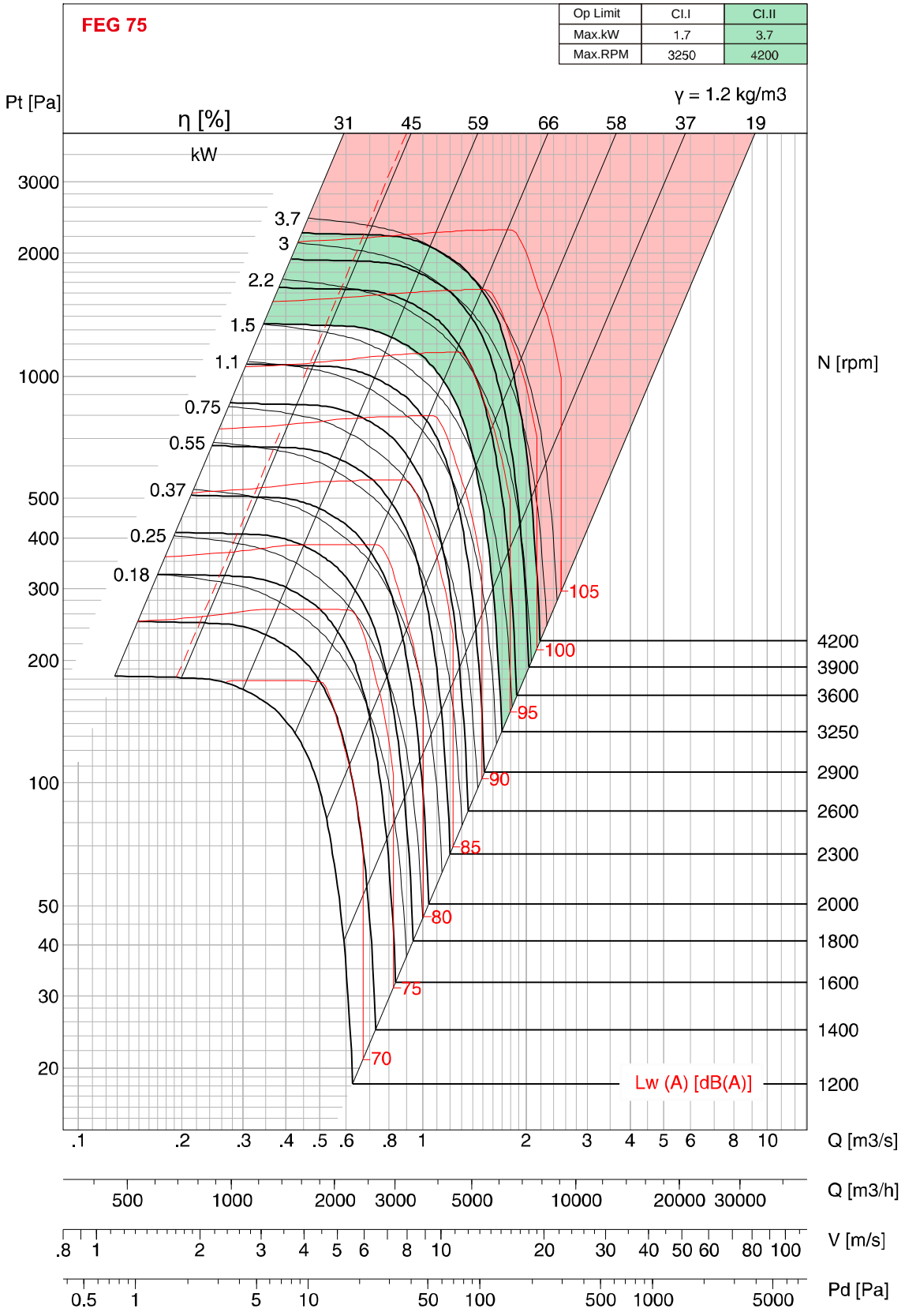
BNB-R 315



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

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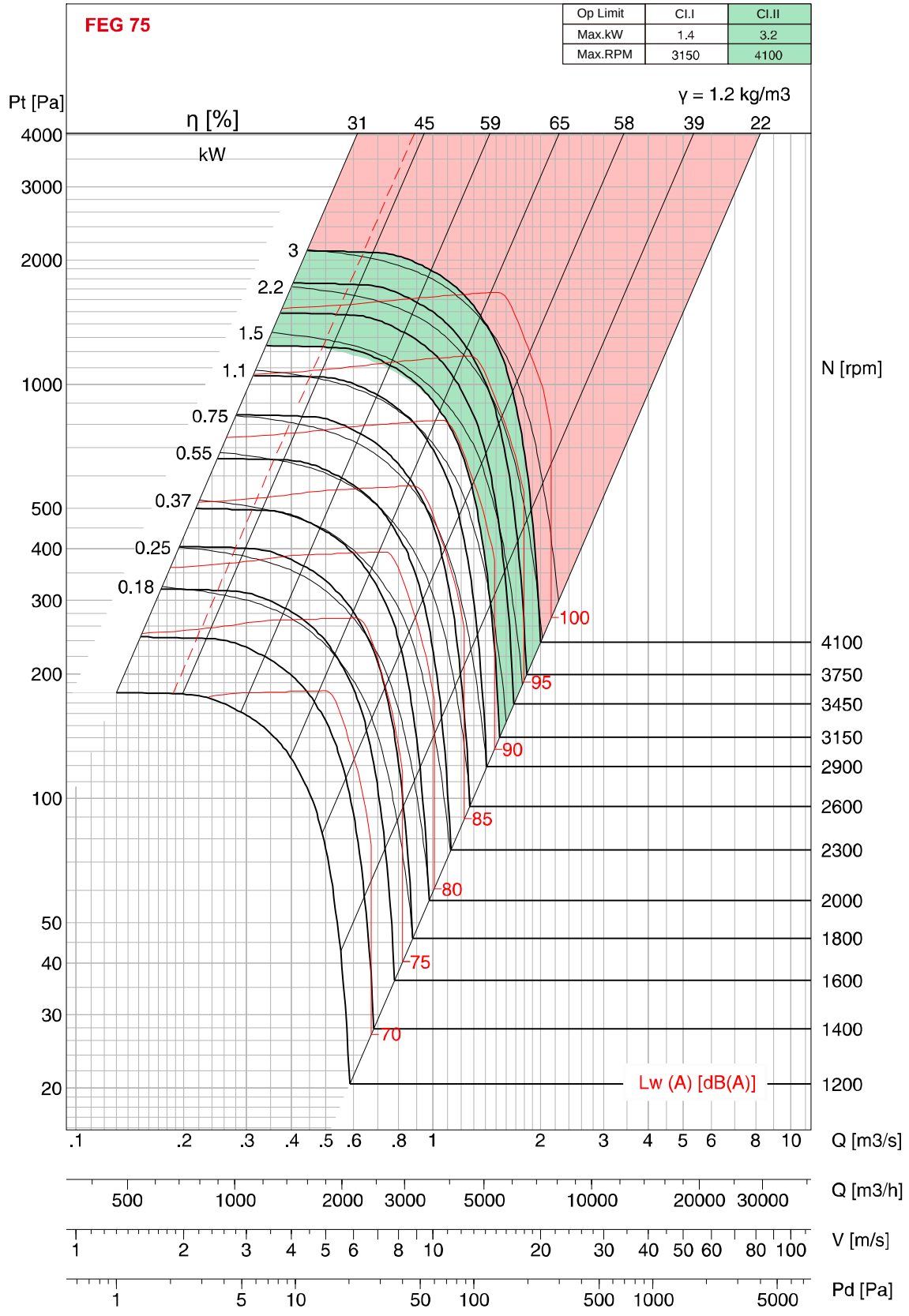
BNB-P 315



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

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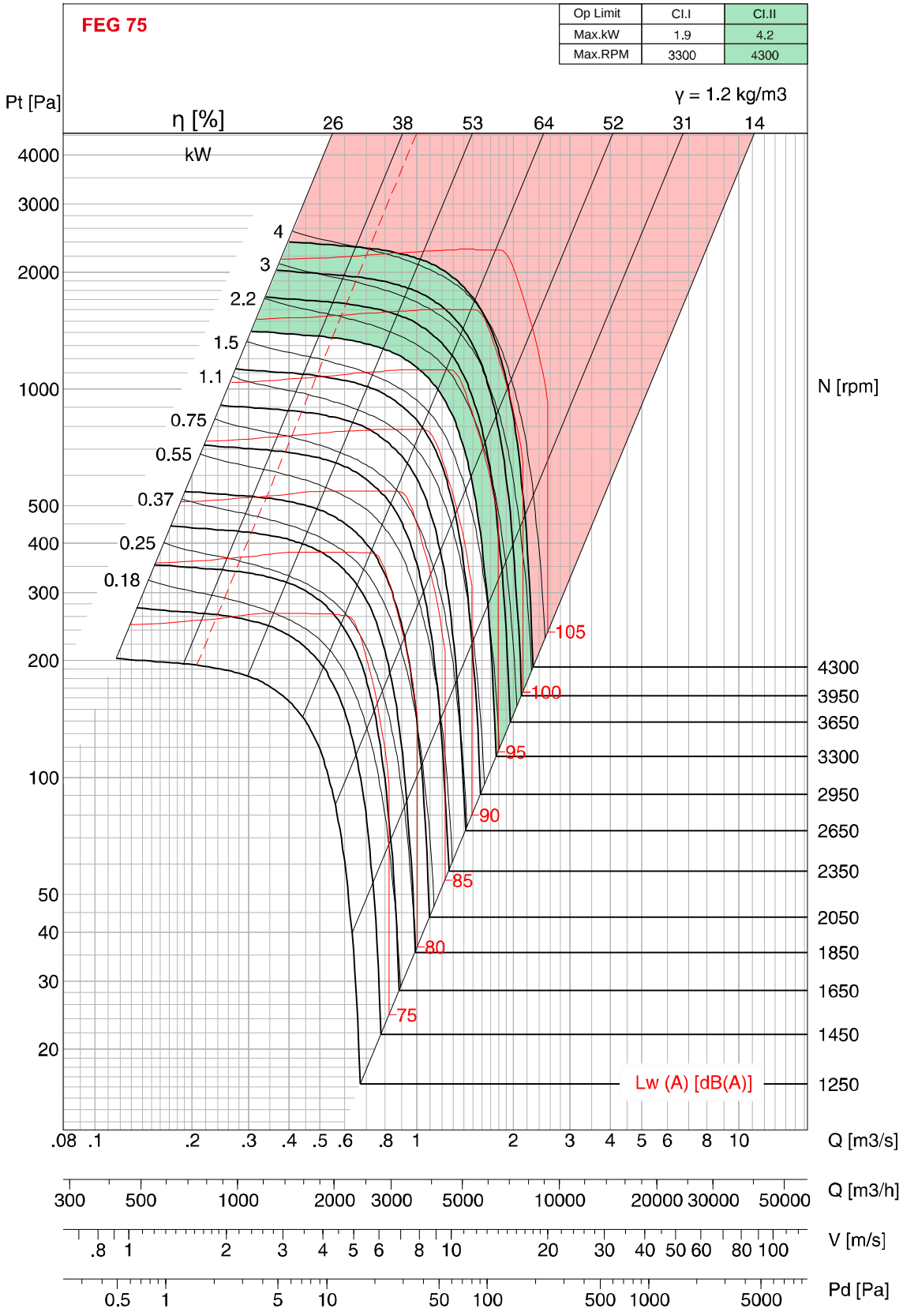
BNB-Q 315



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

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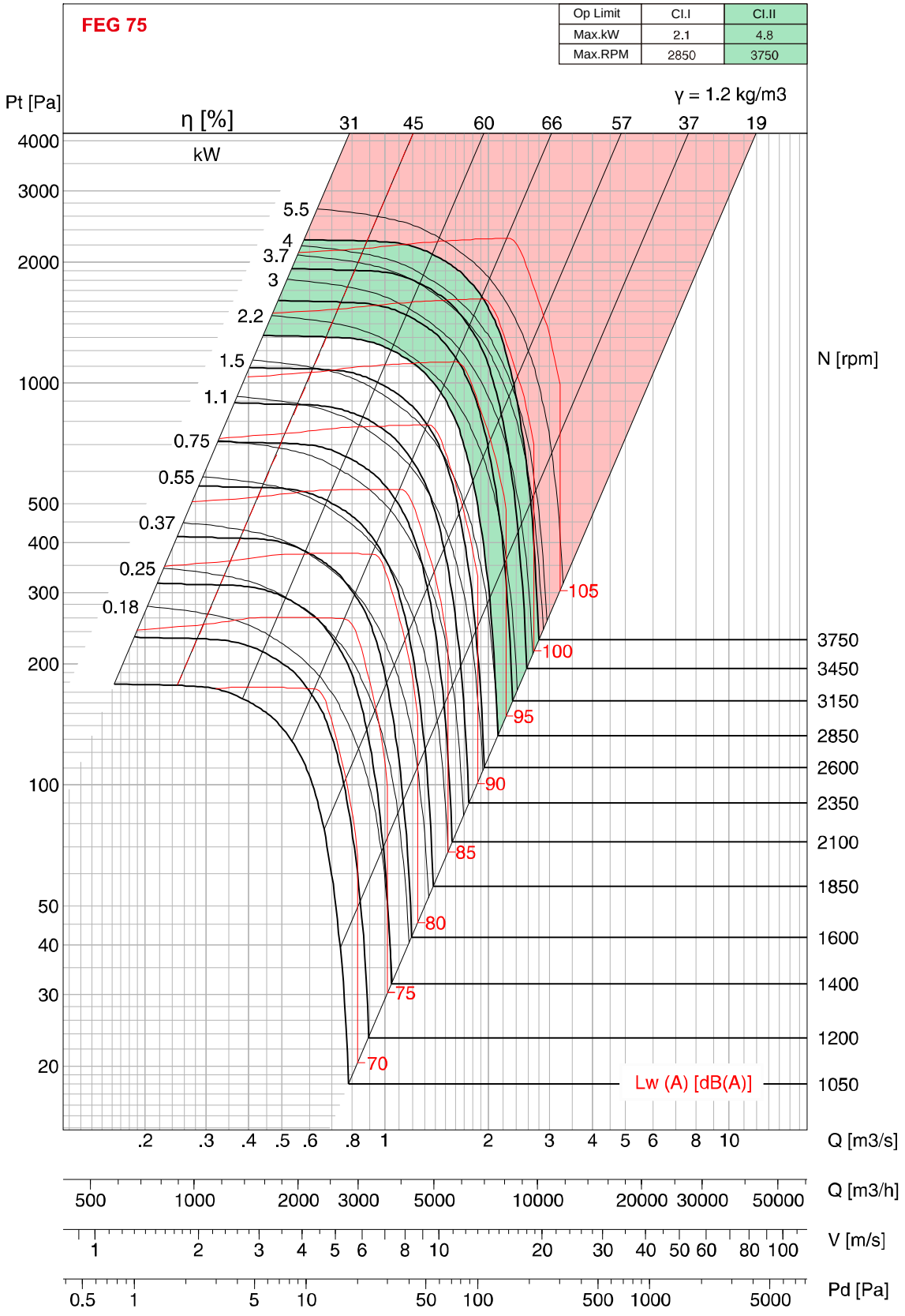
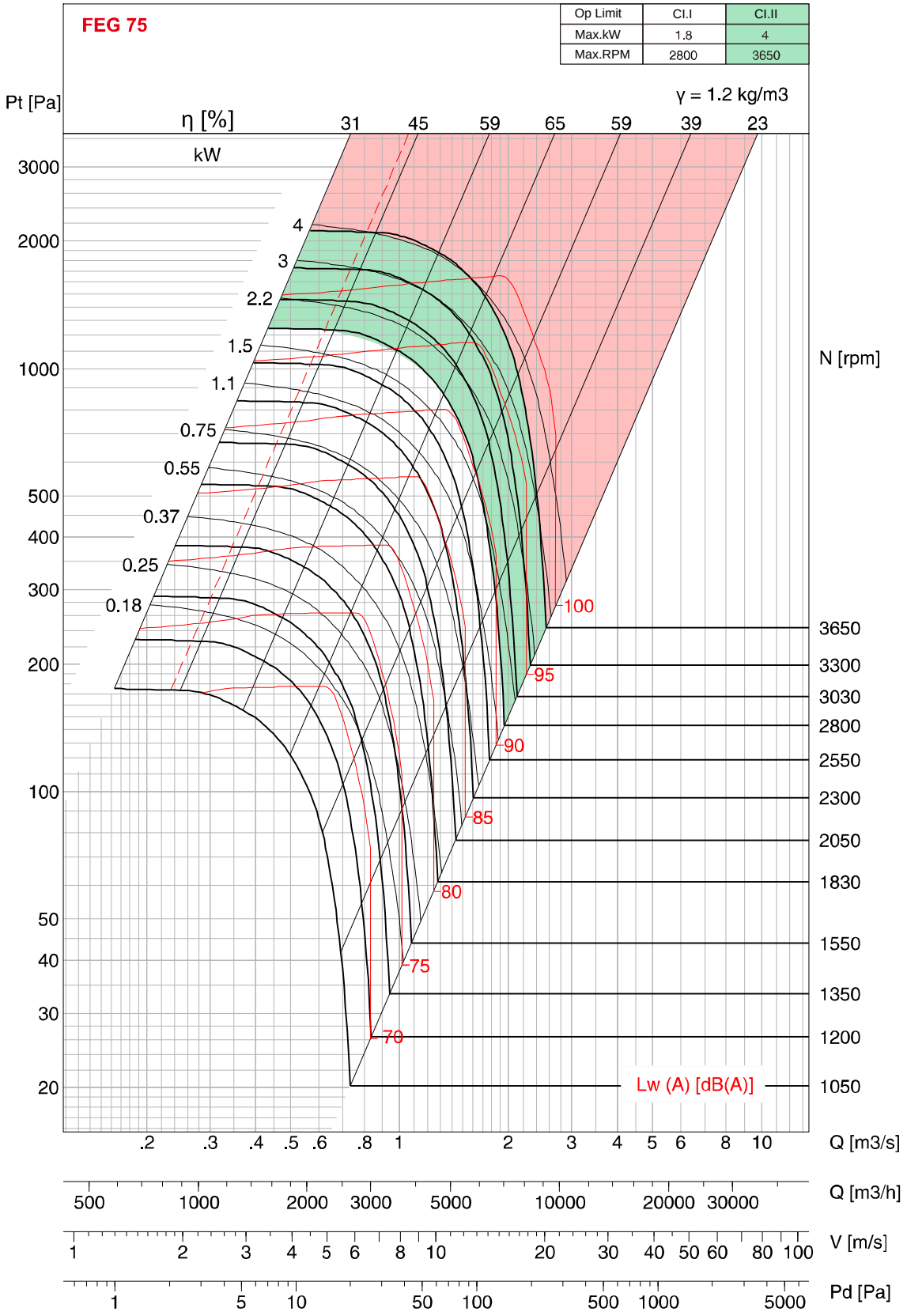
BNB-R 355



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

BNB-P 355



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

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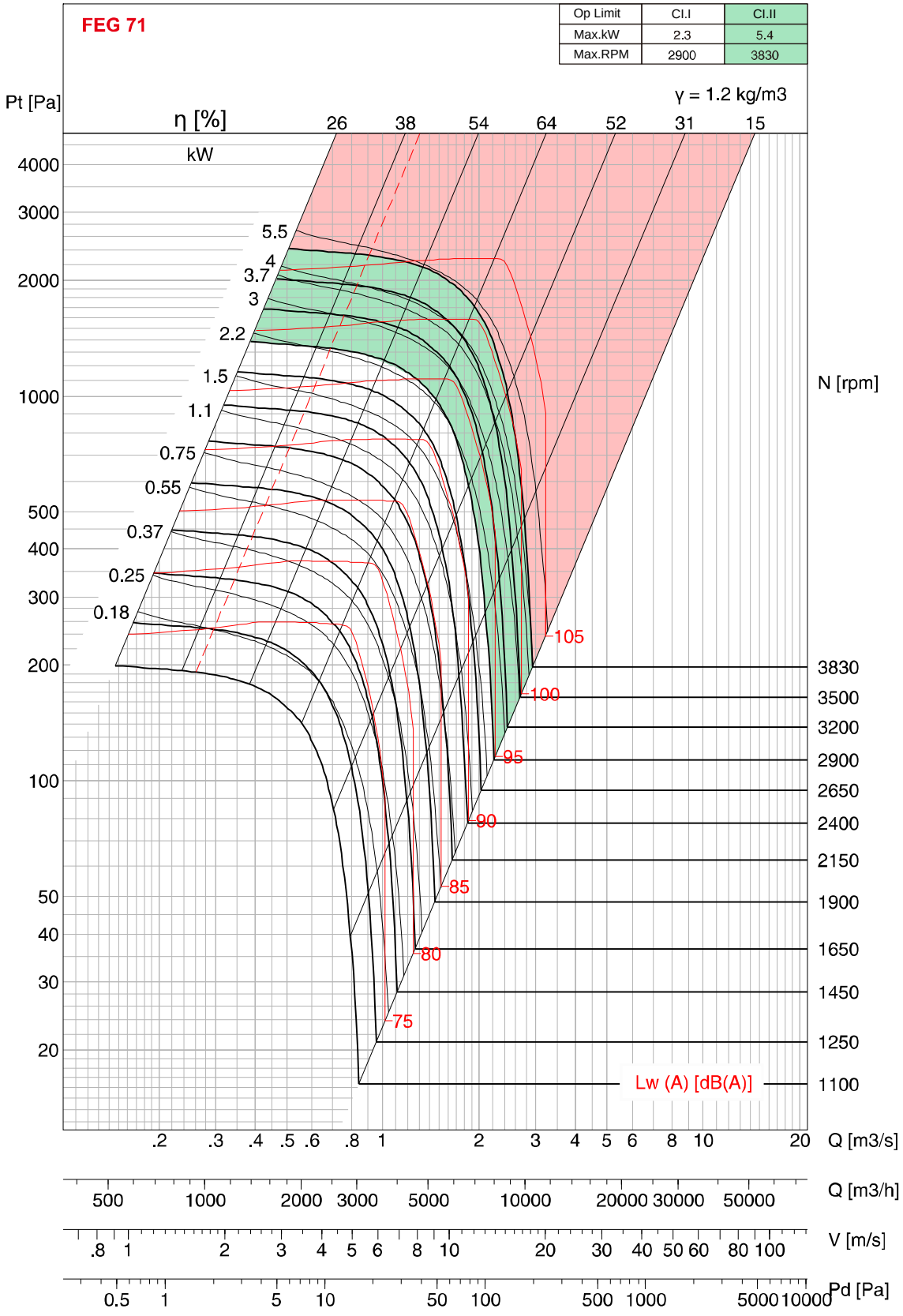
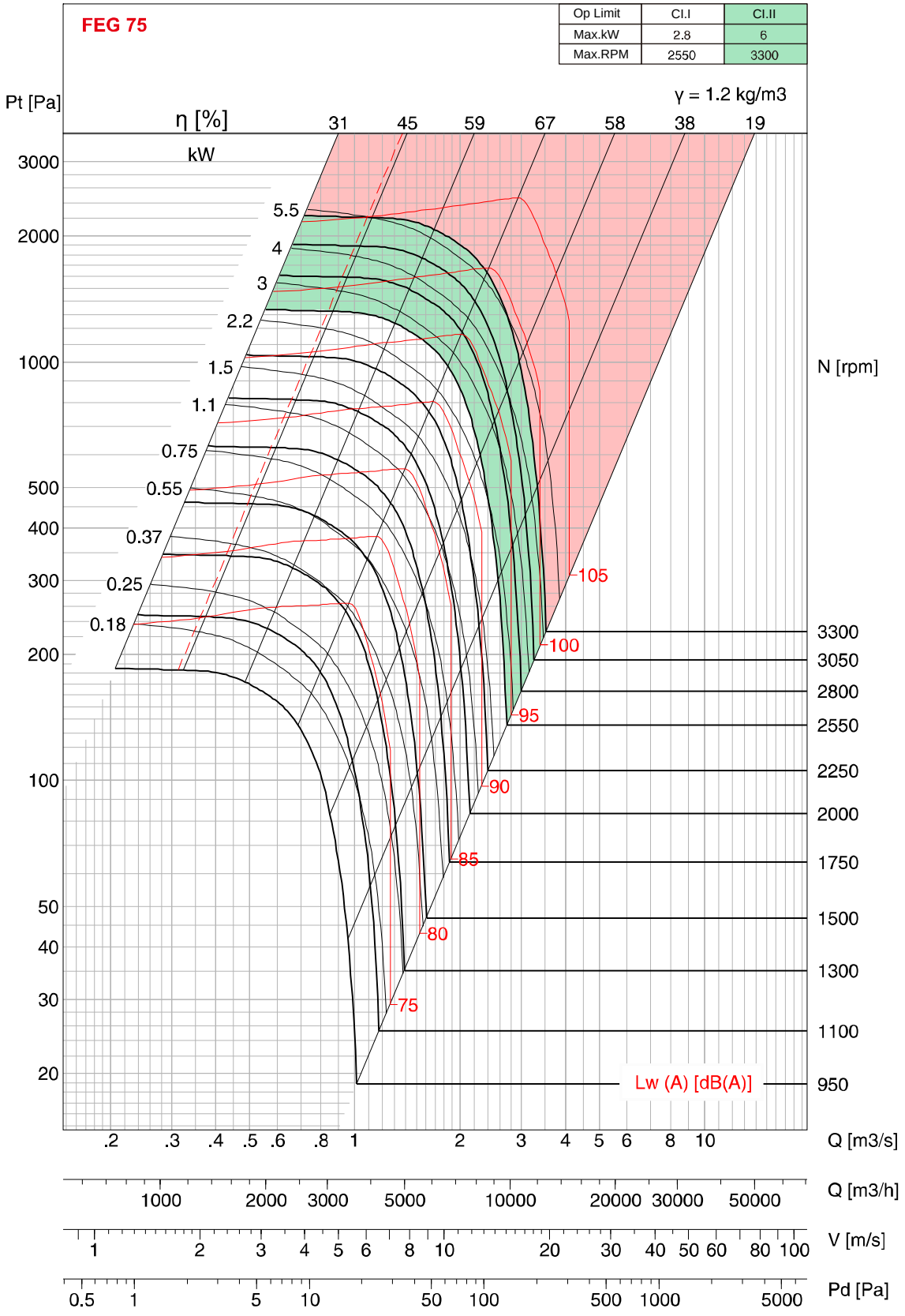
BNB-Q 355



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

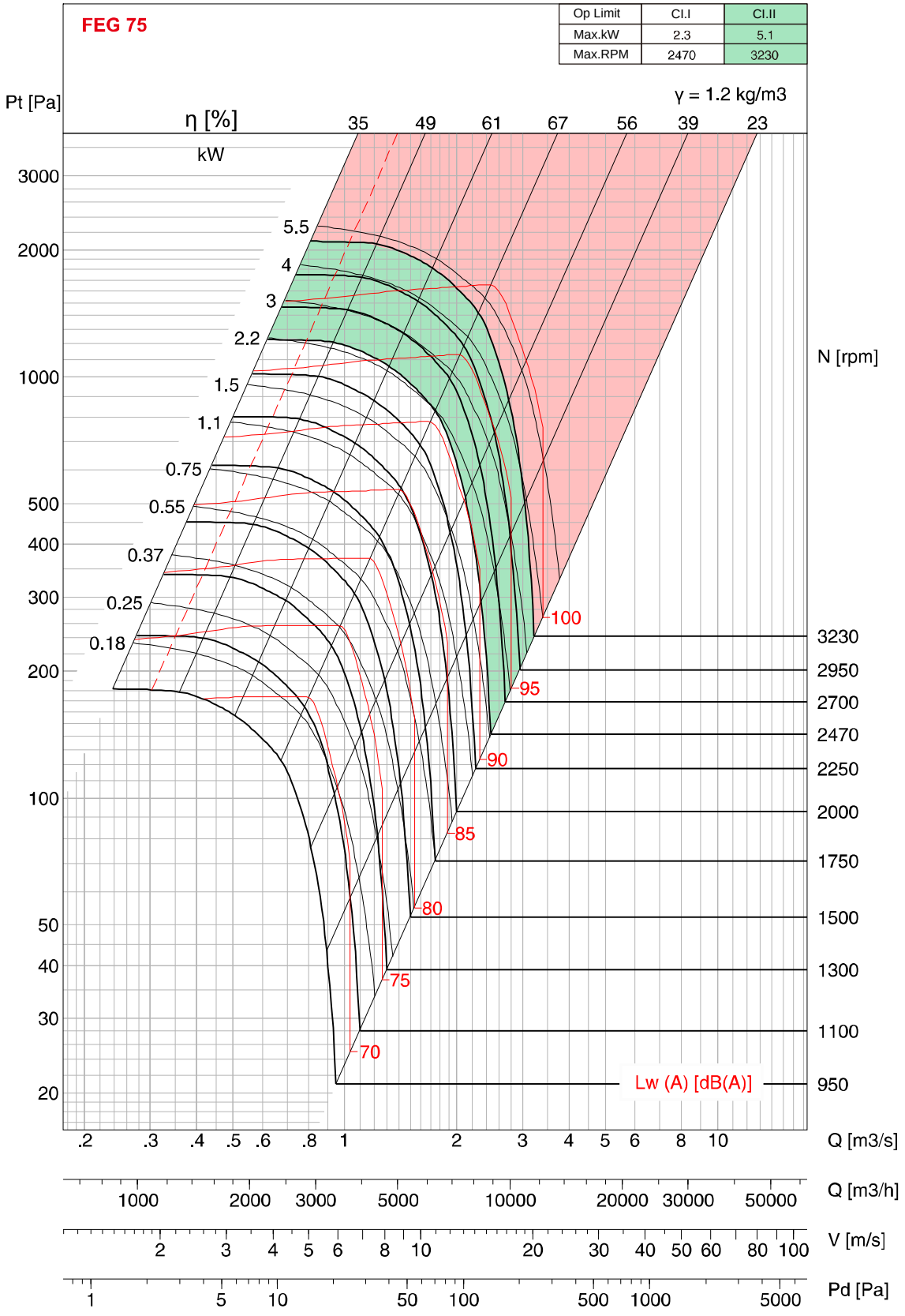
BNB-R 400



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

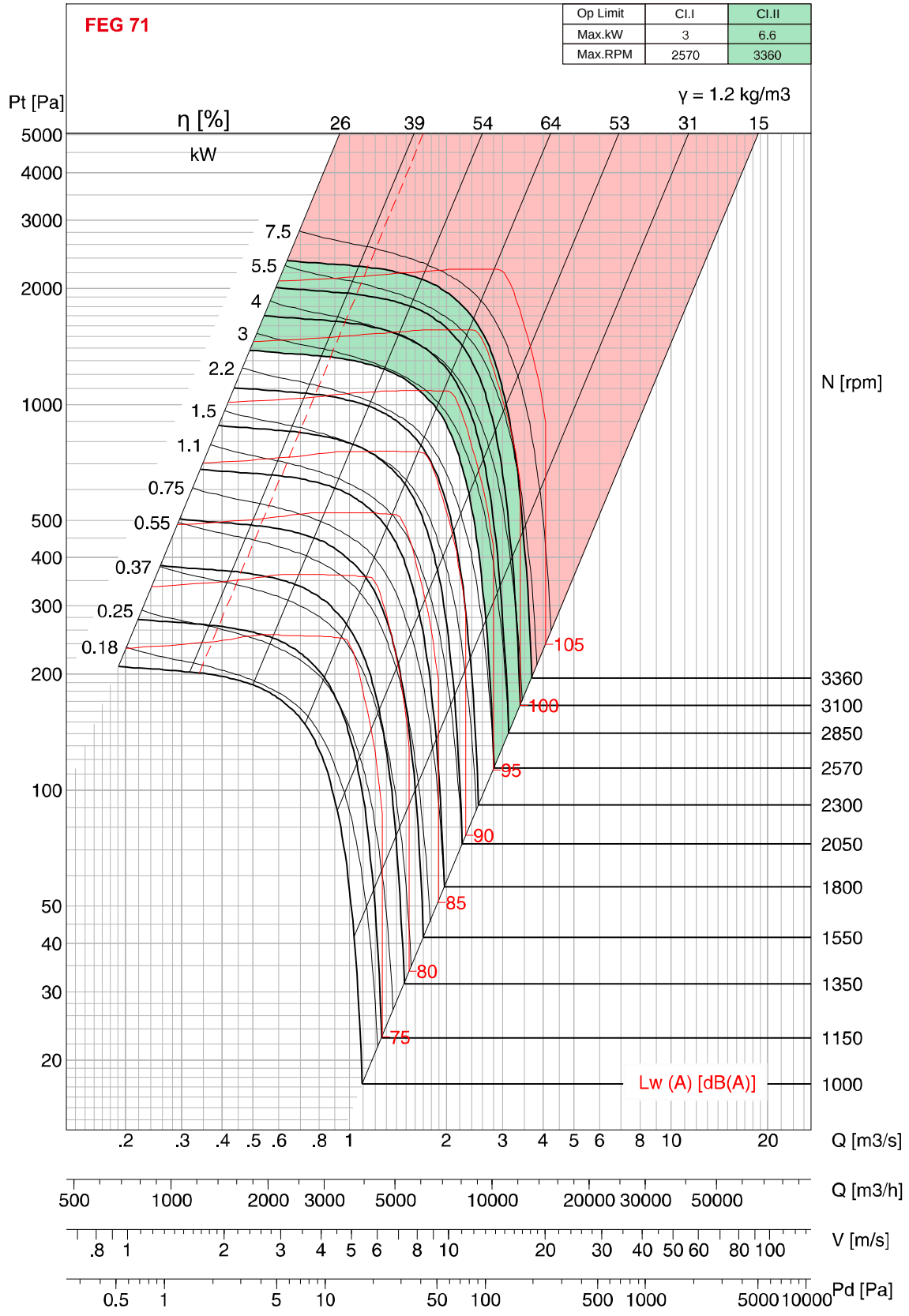
KRUGER

BNB-P 400



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

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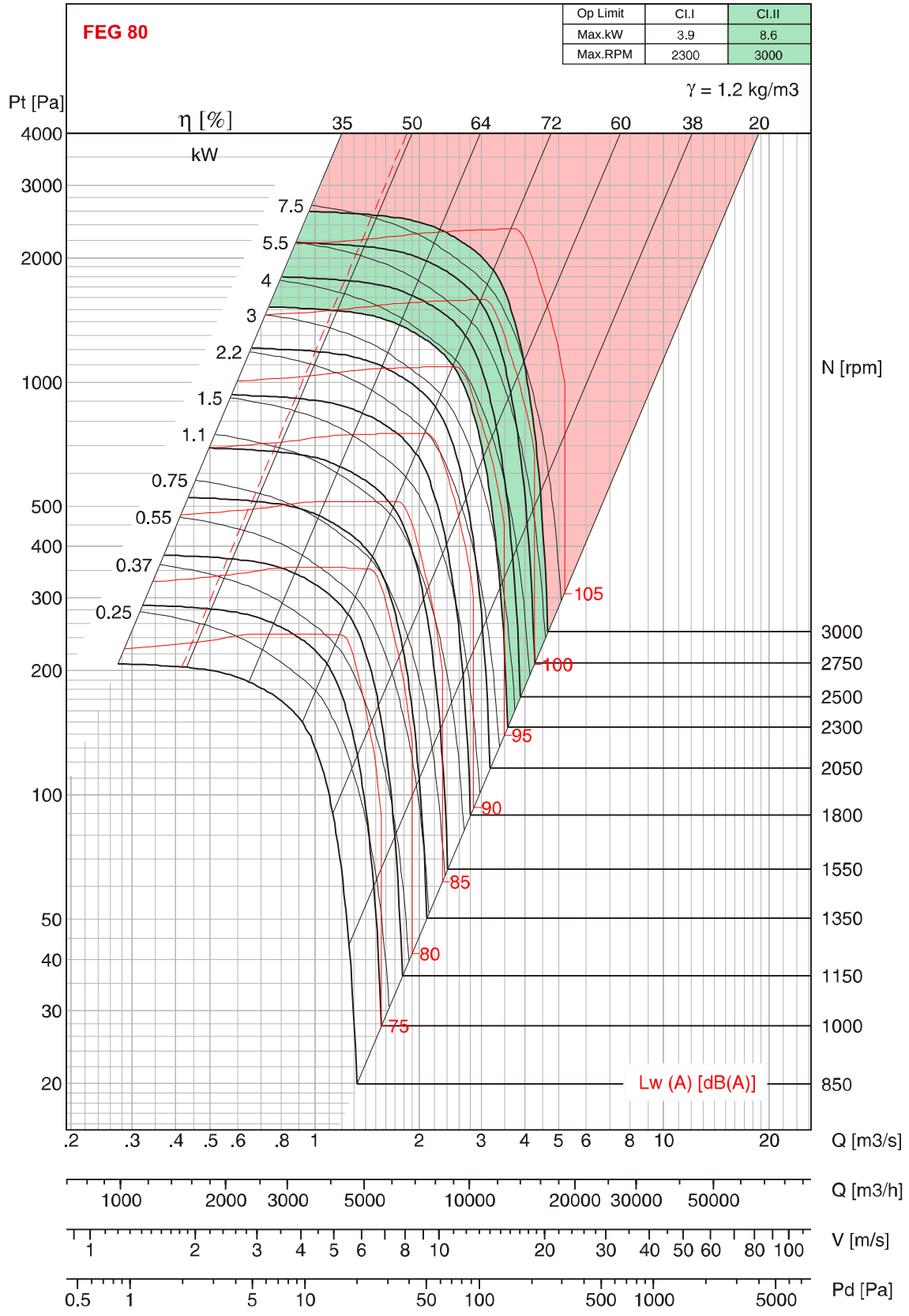
BNB-R 450



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

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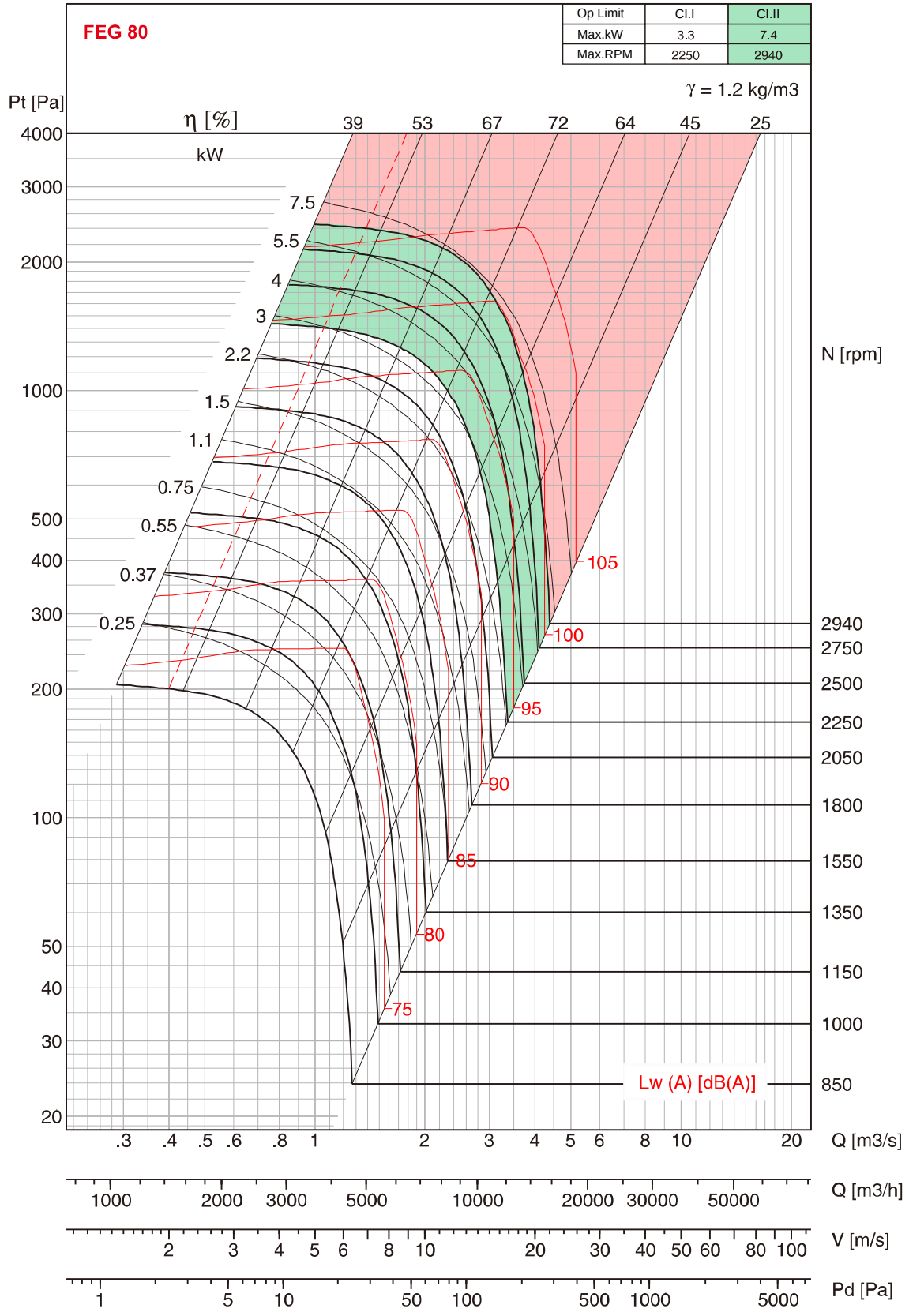
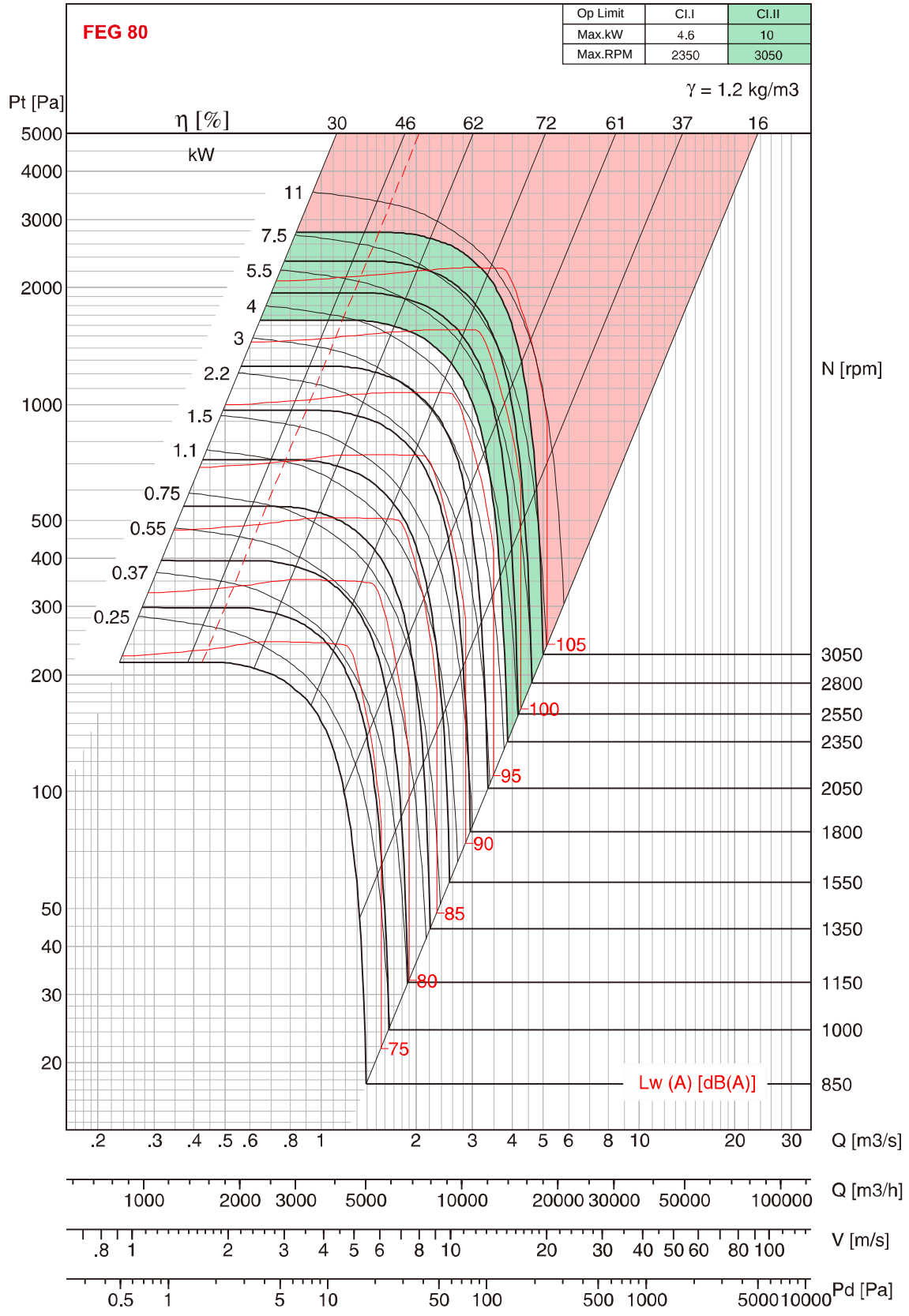
BNB-P 450



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

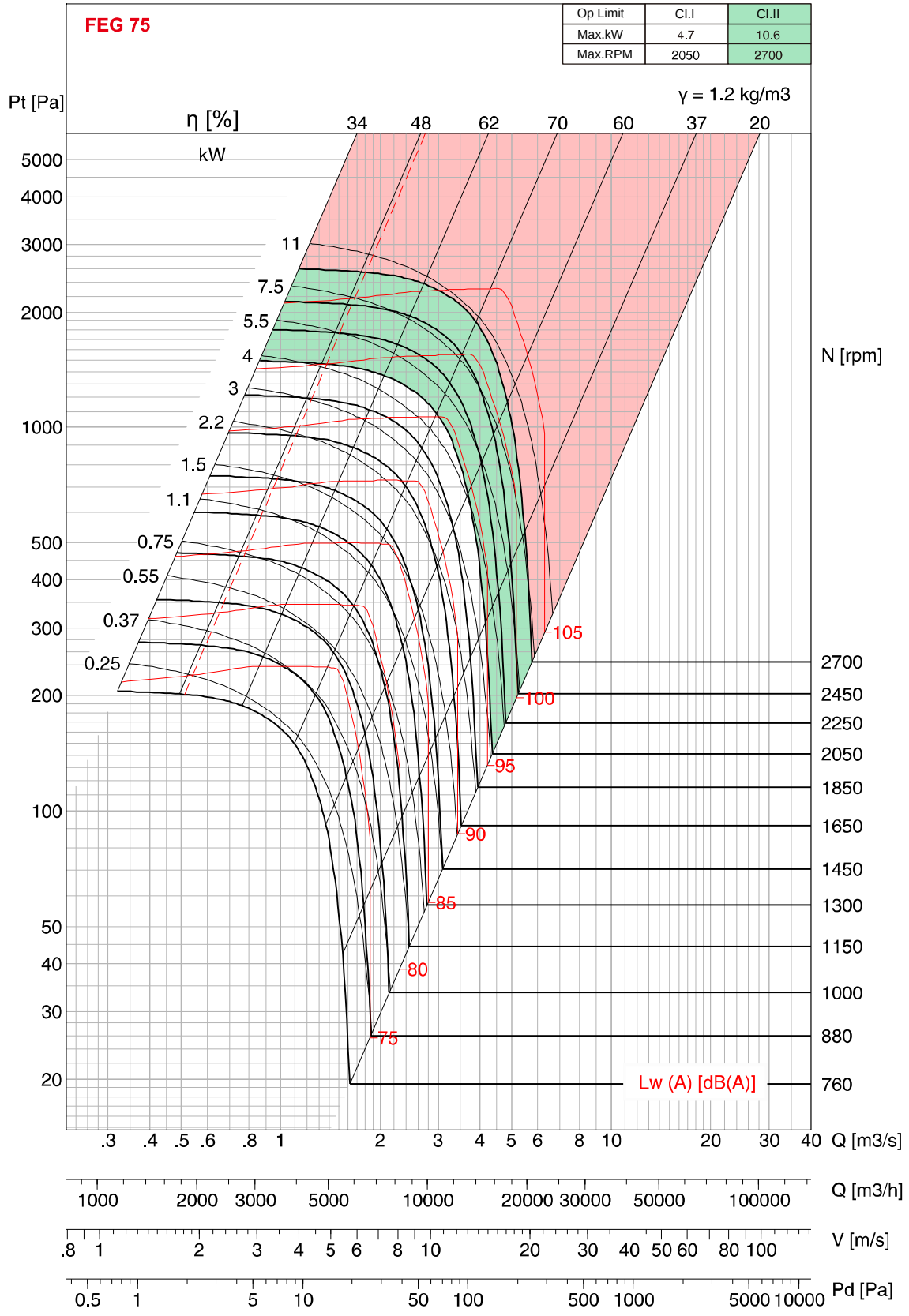
BNB-Q 450



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

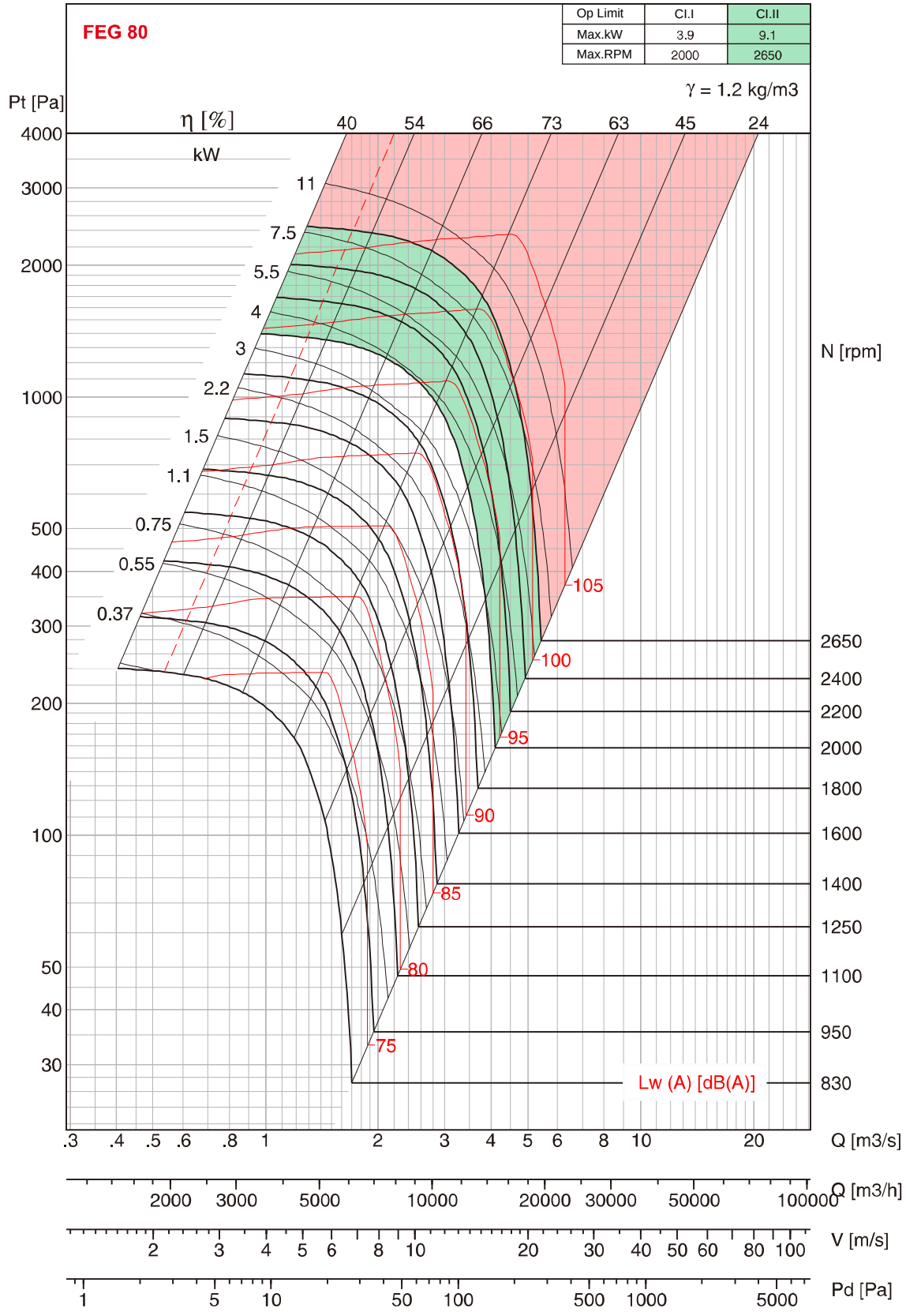
BNB-R 500



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

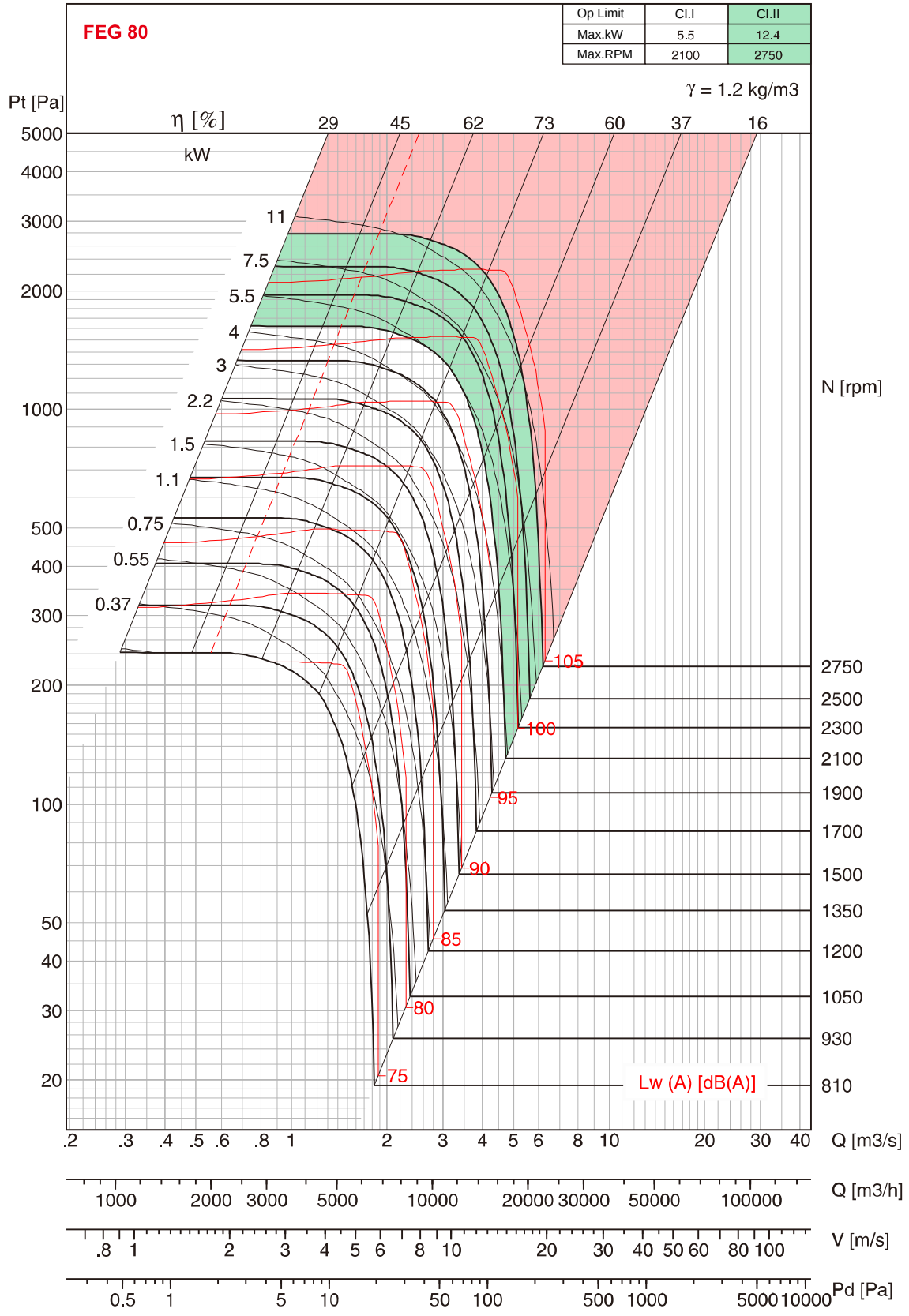
BNB-P 500



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

BNB-Q 500



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

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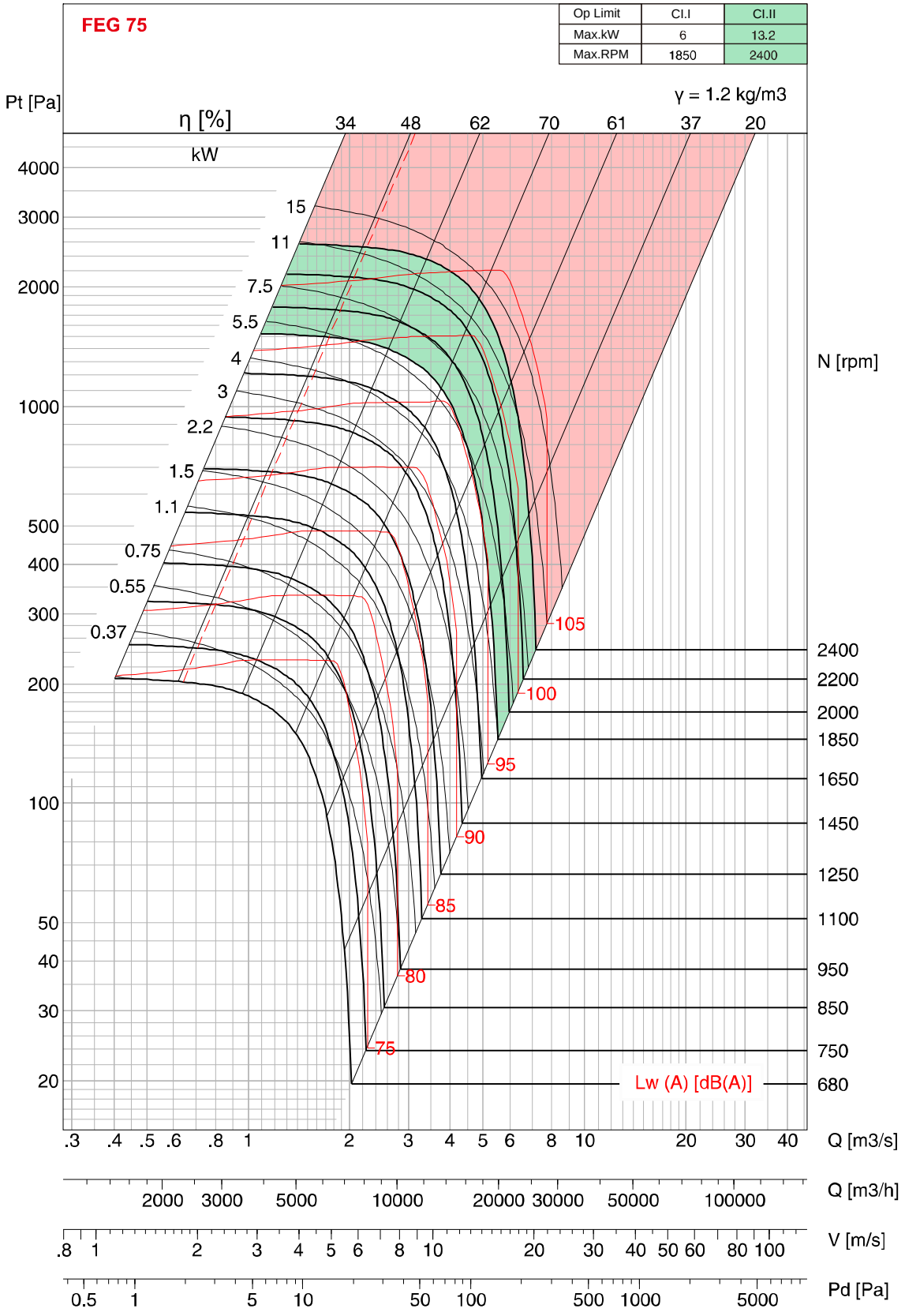
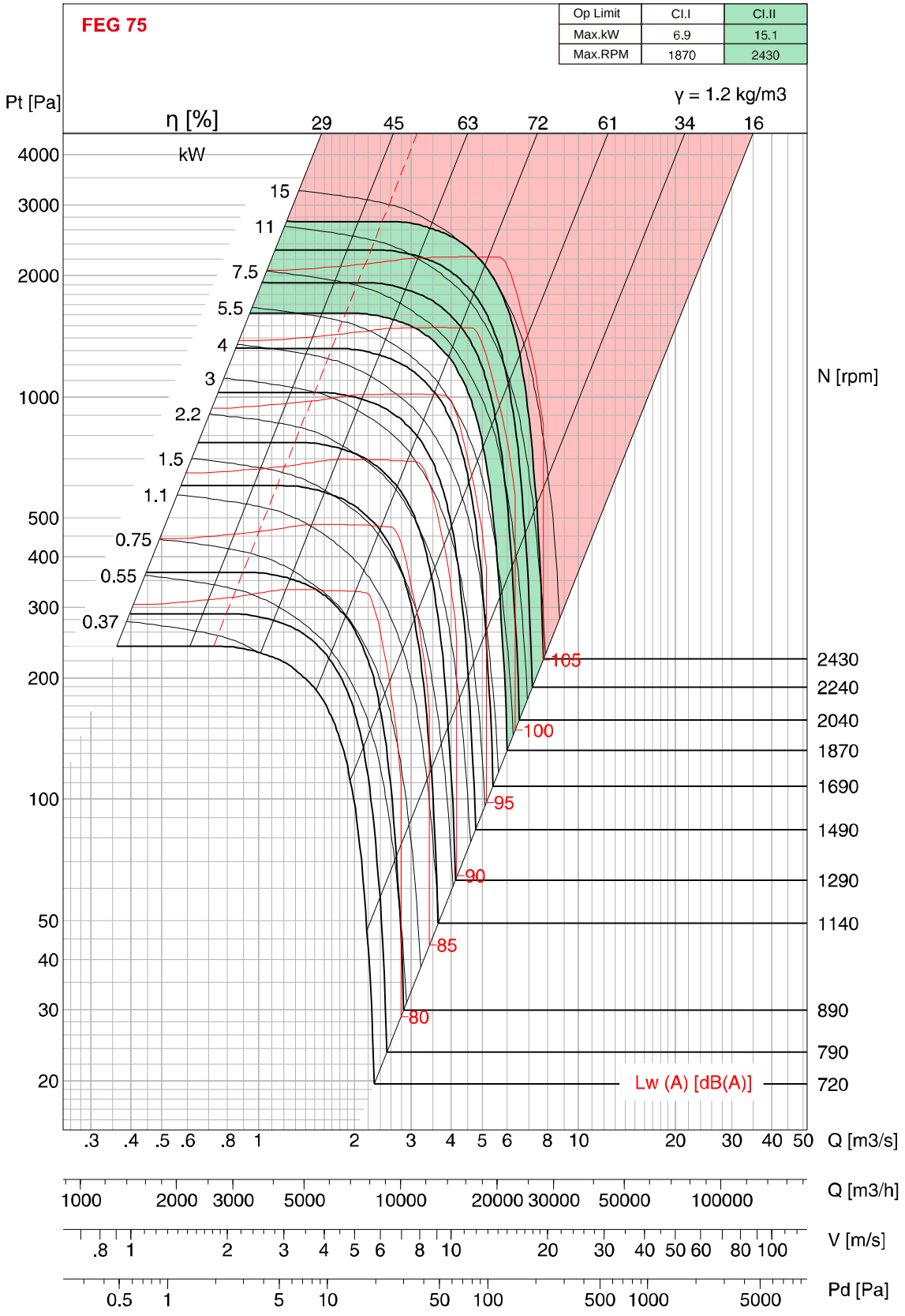
BNB-R 560



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

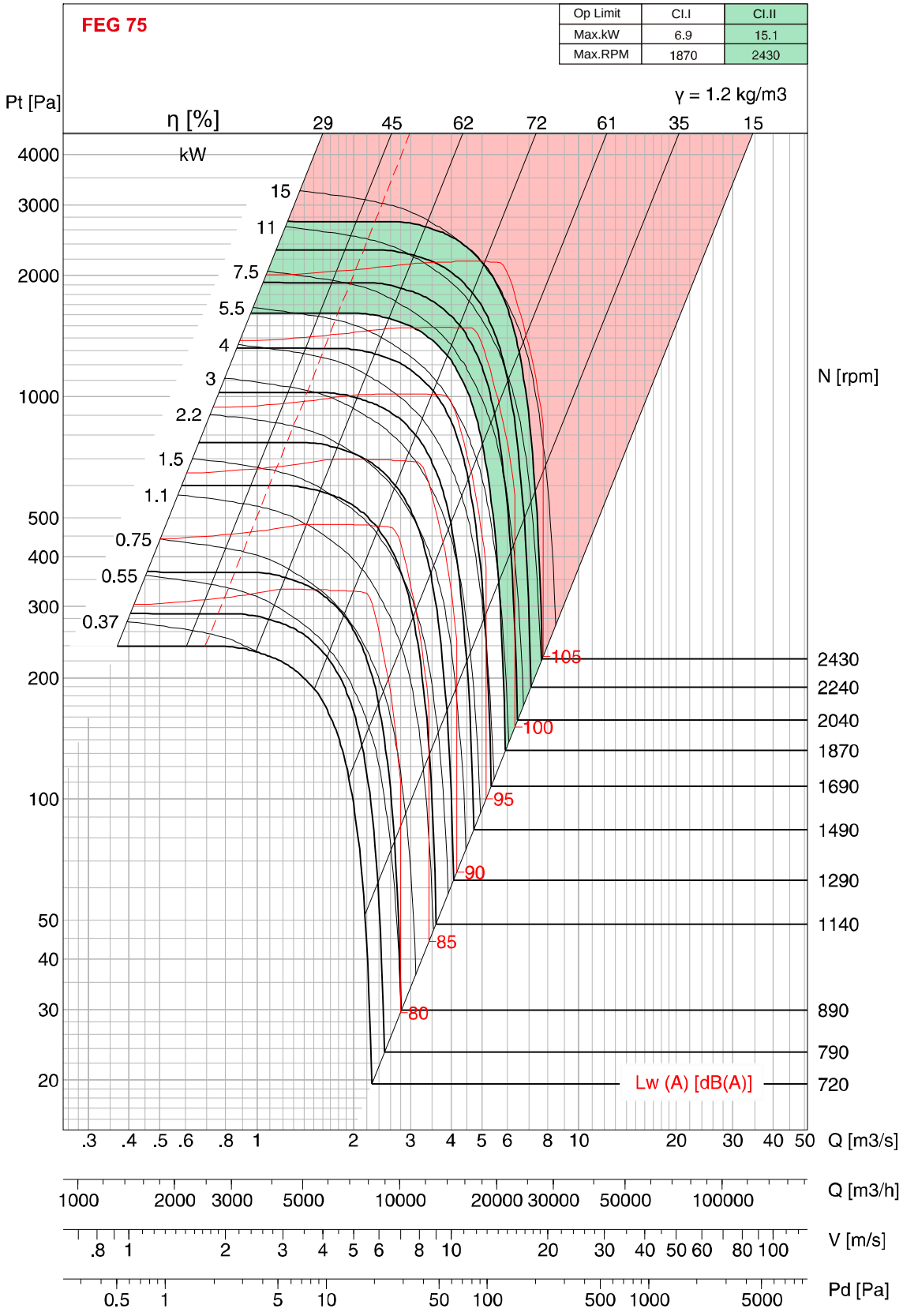
BNB-Q 560



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

BNB-Q 560



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

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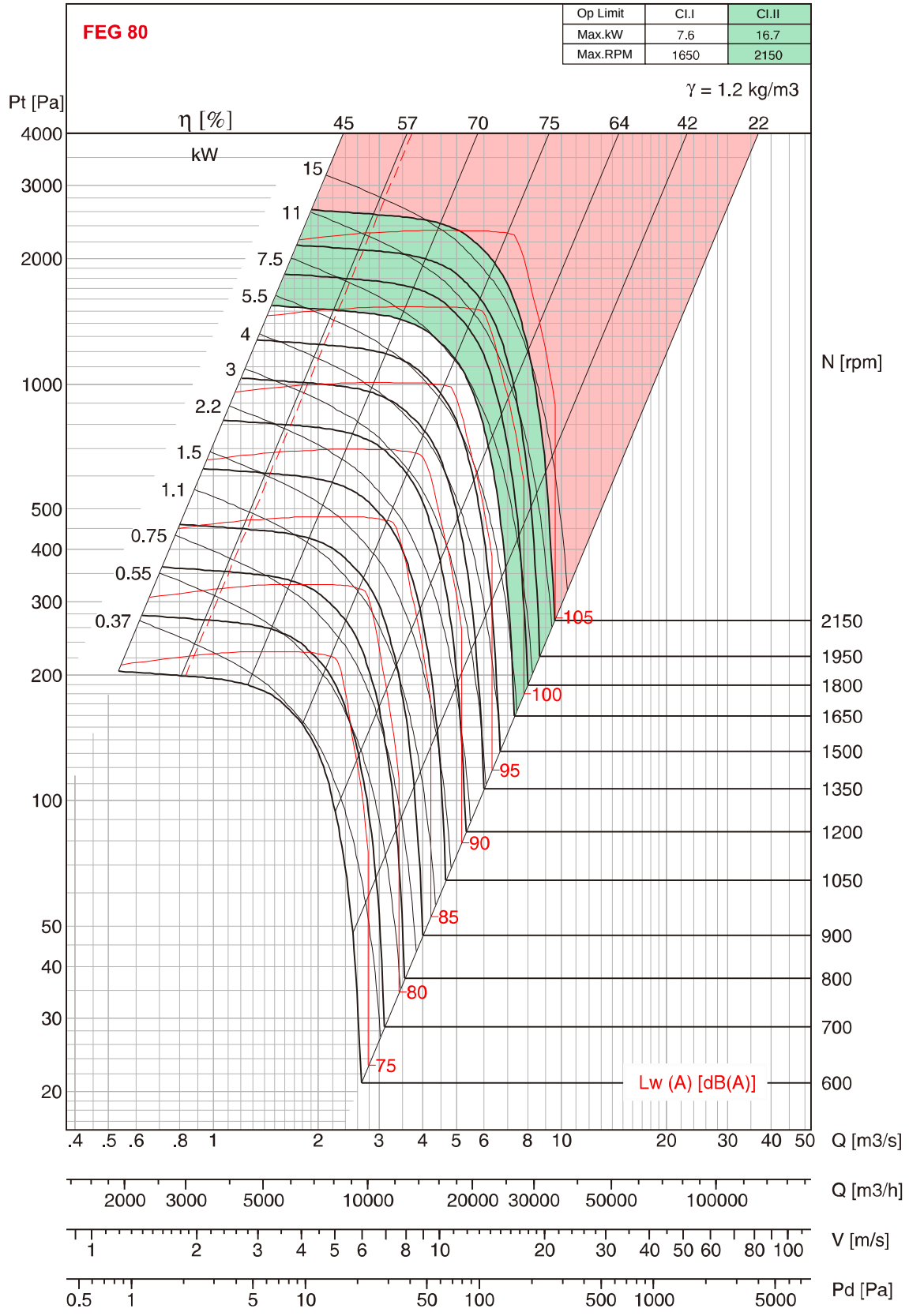
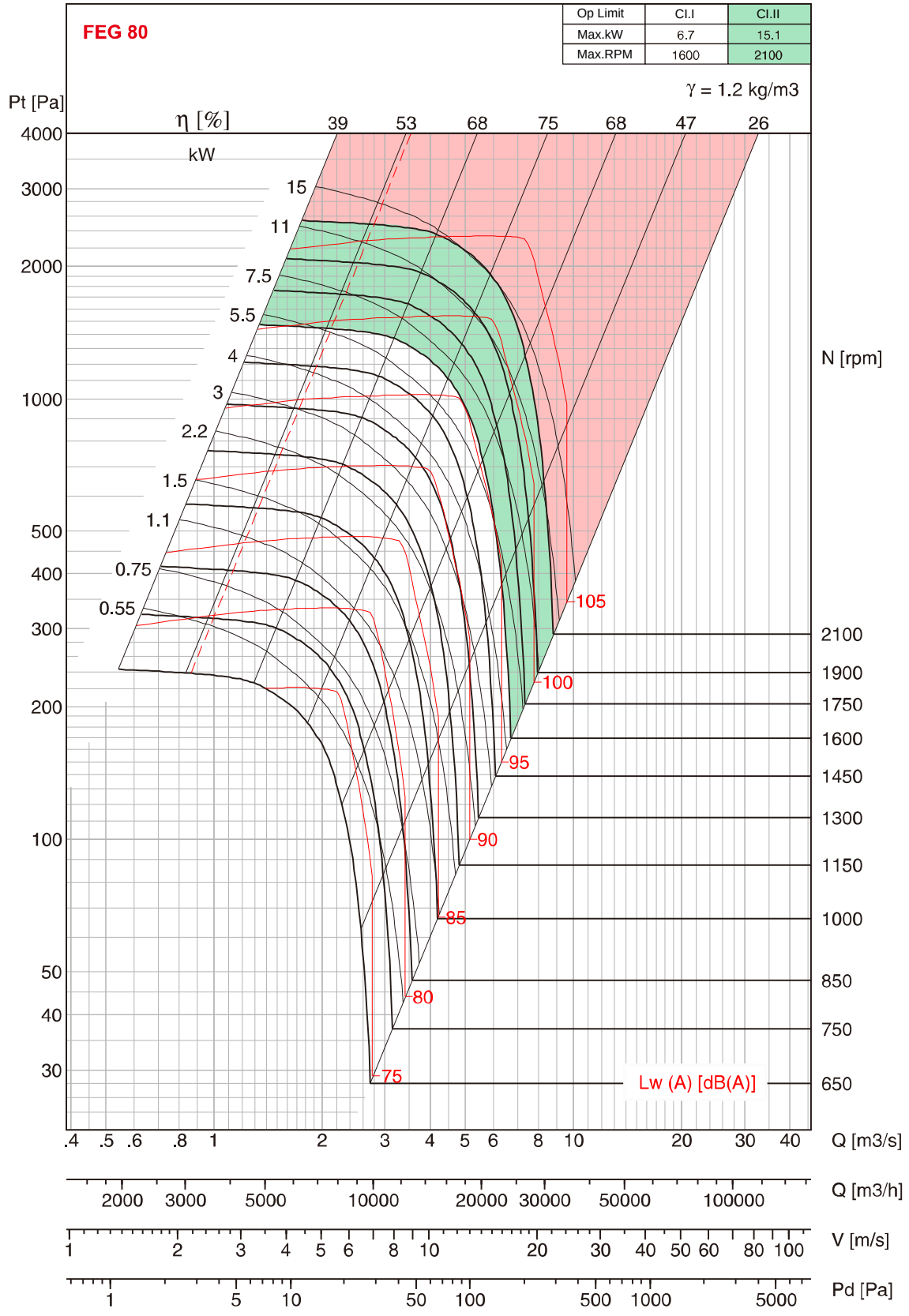
BNB-R 630



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

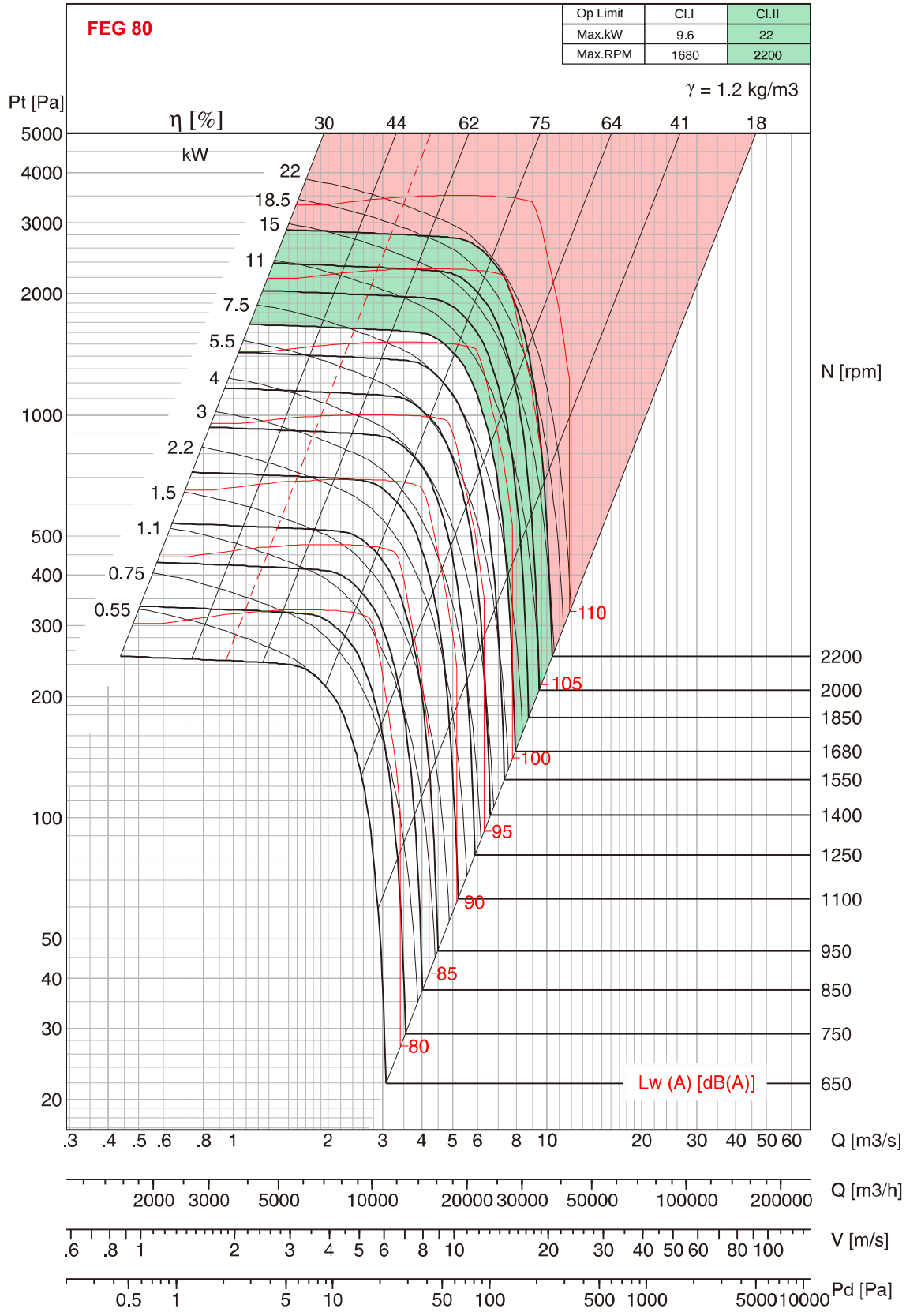
BNB-P 630



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

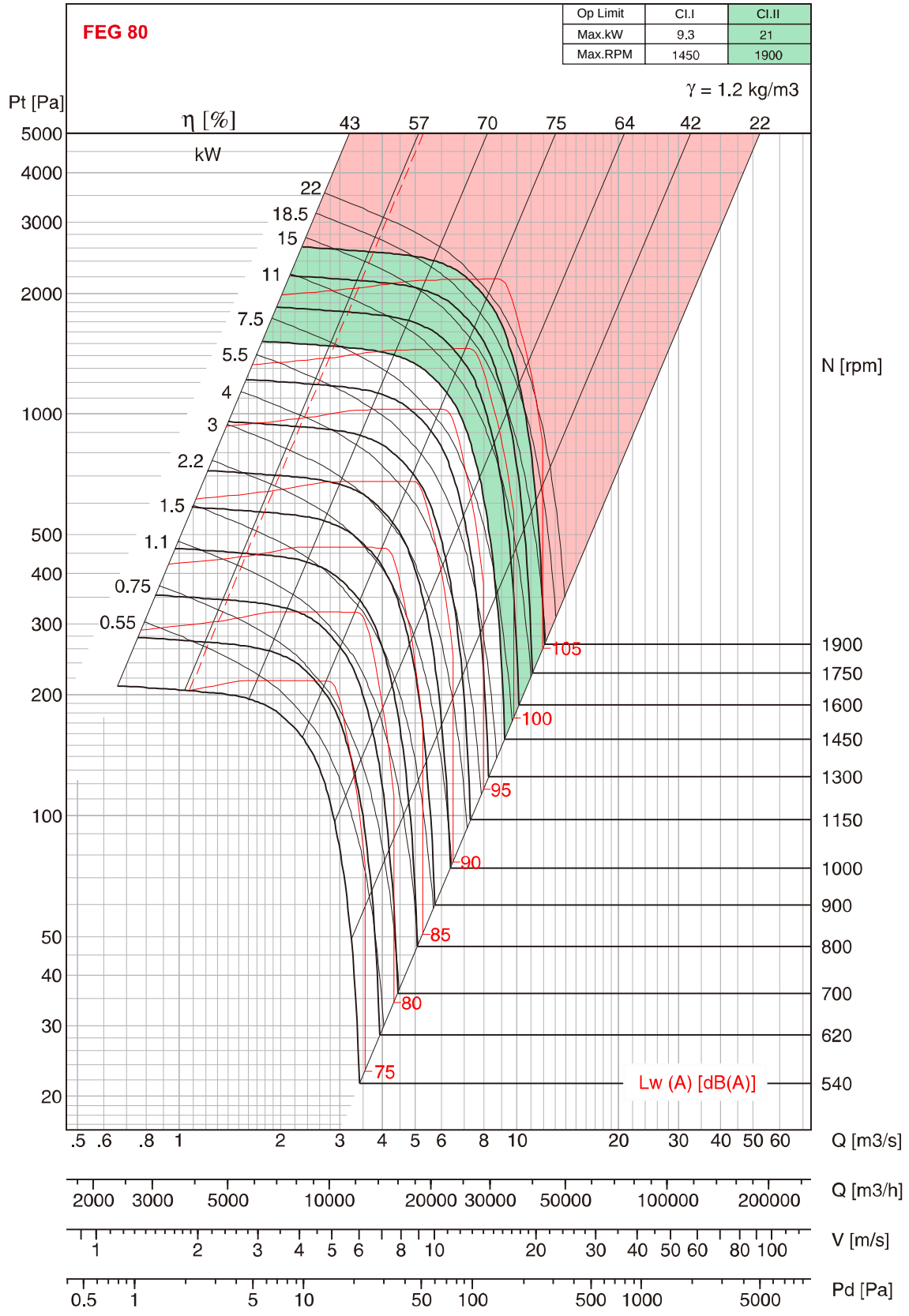
BNB-Q 630



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

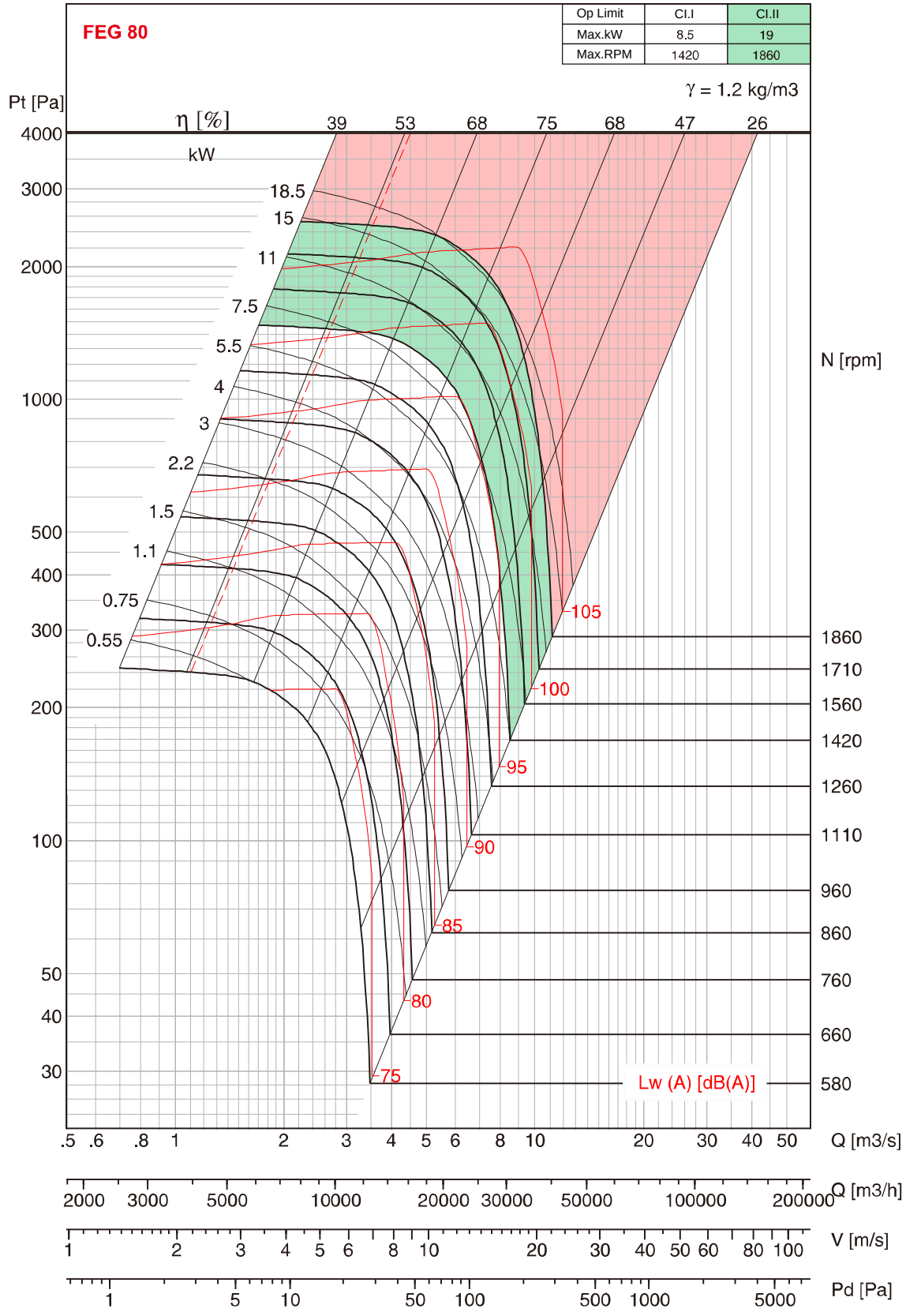
BNB-R 710



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

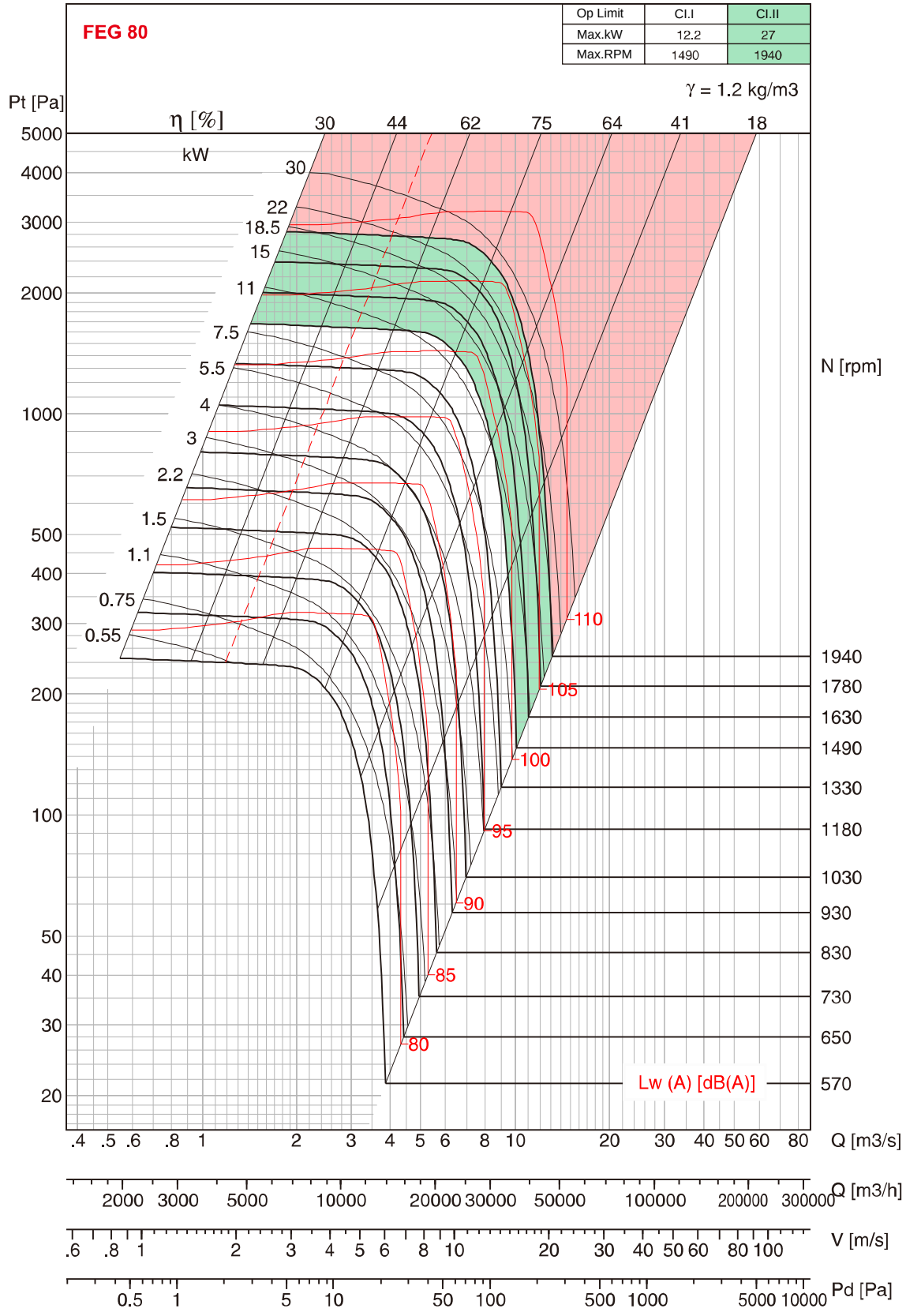
BNB-P 710



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

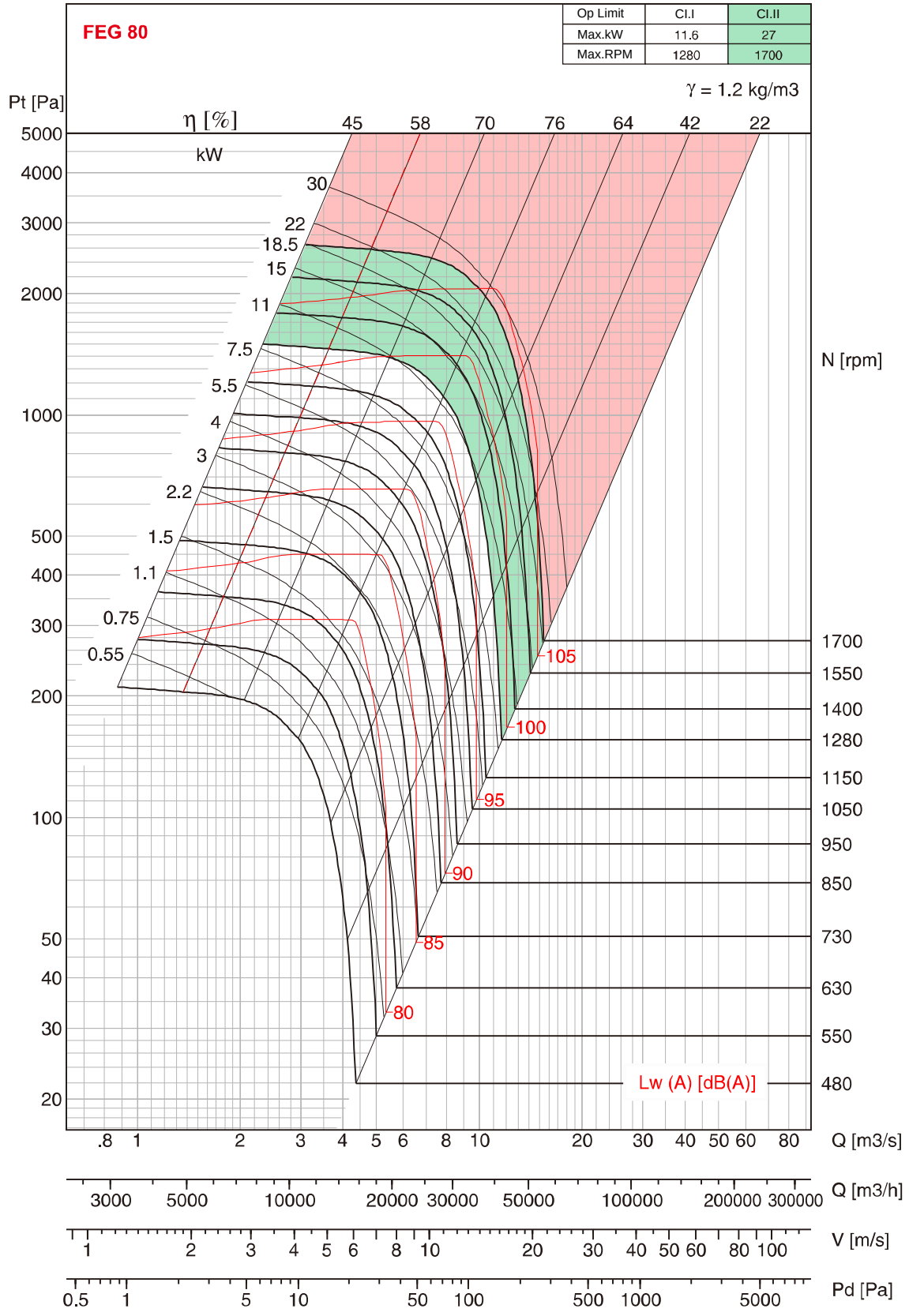
BNB-Q 710



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

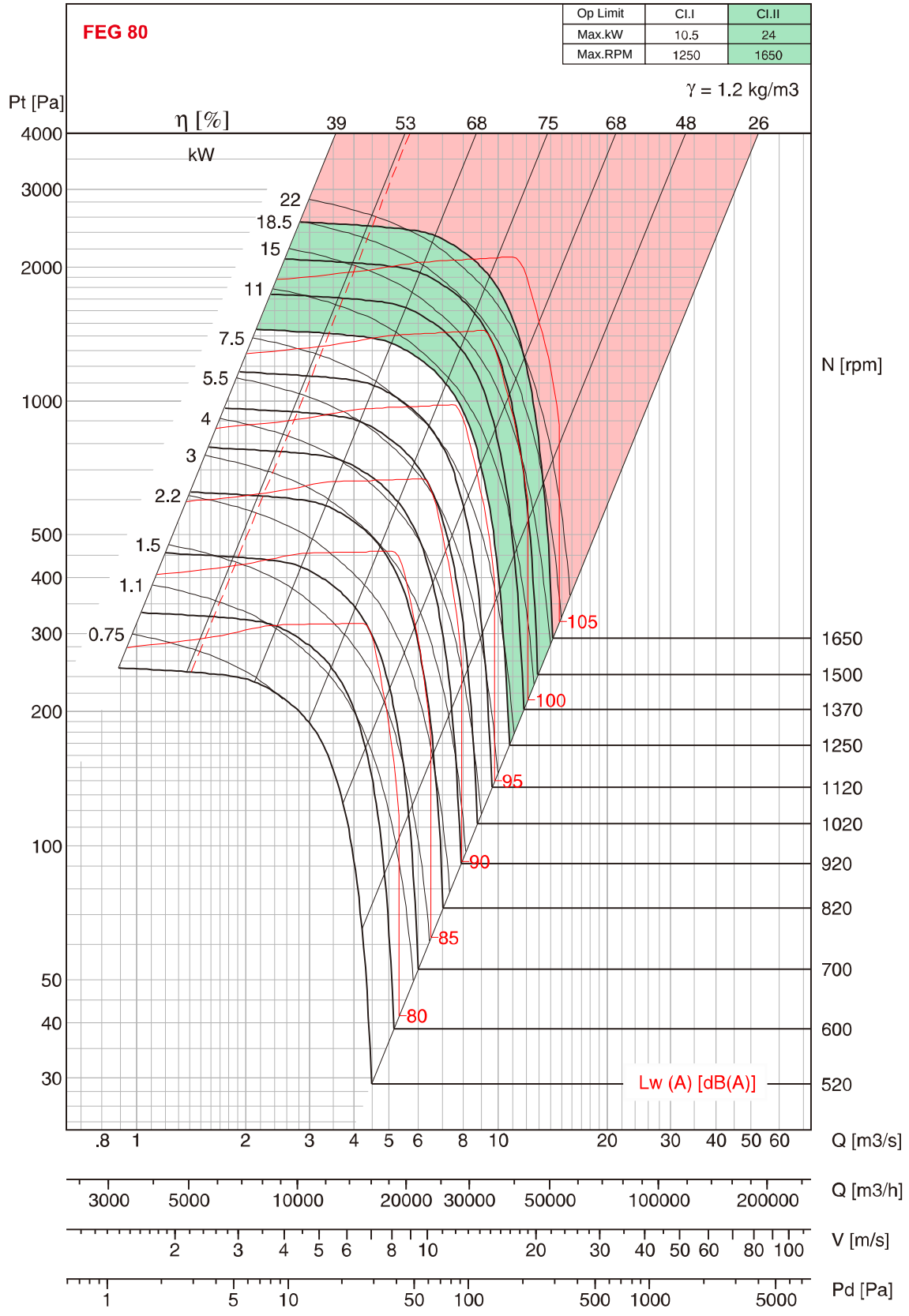
BNB-R 800



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances in the airsteam. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

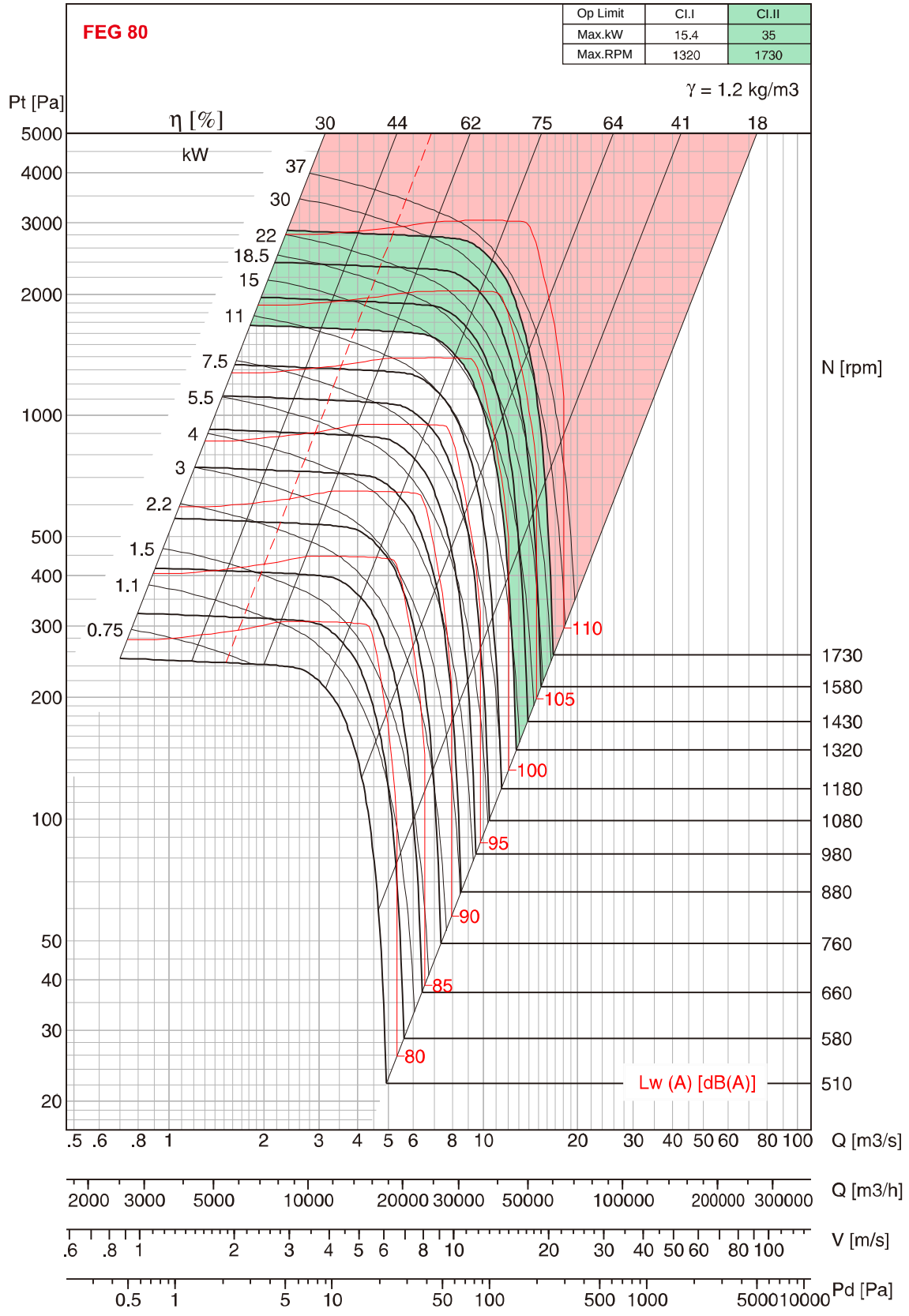
BNB-P 800



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

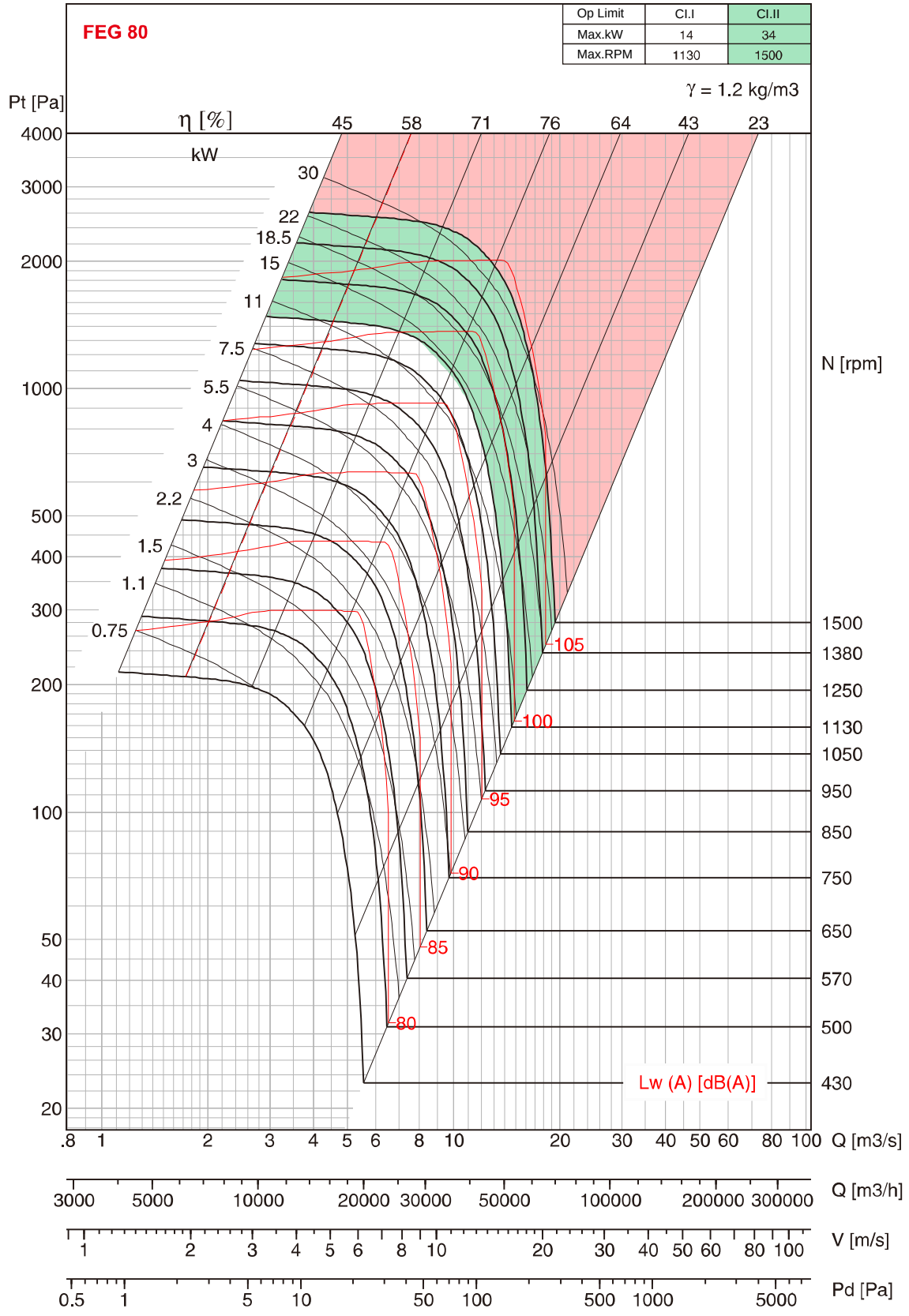
BNB-Q 800



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

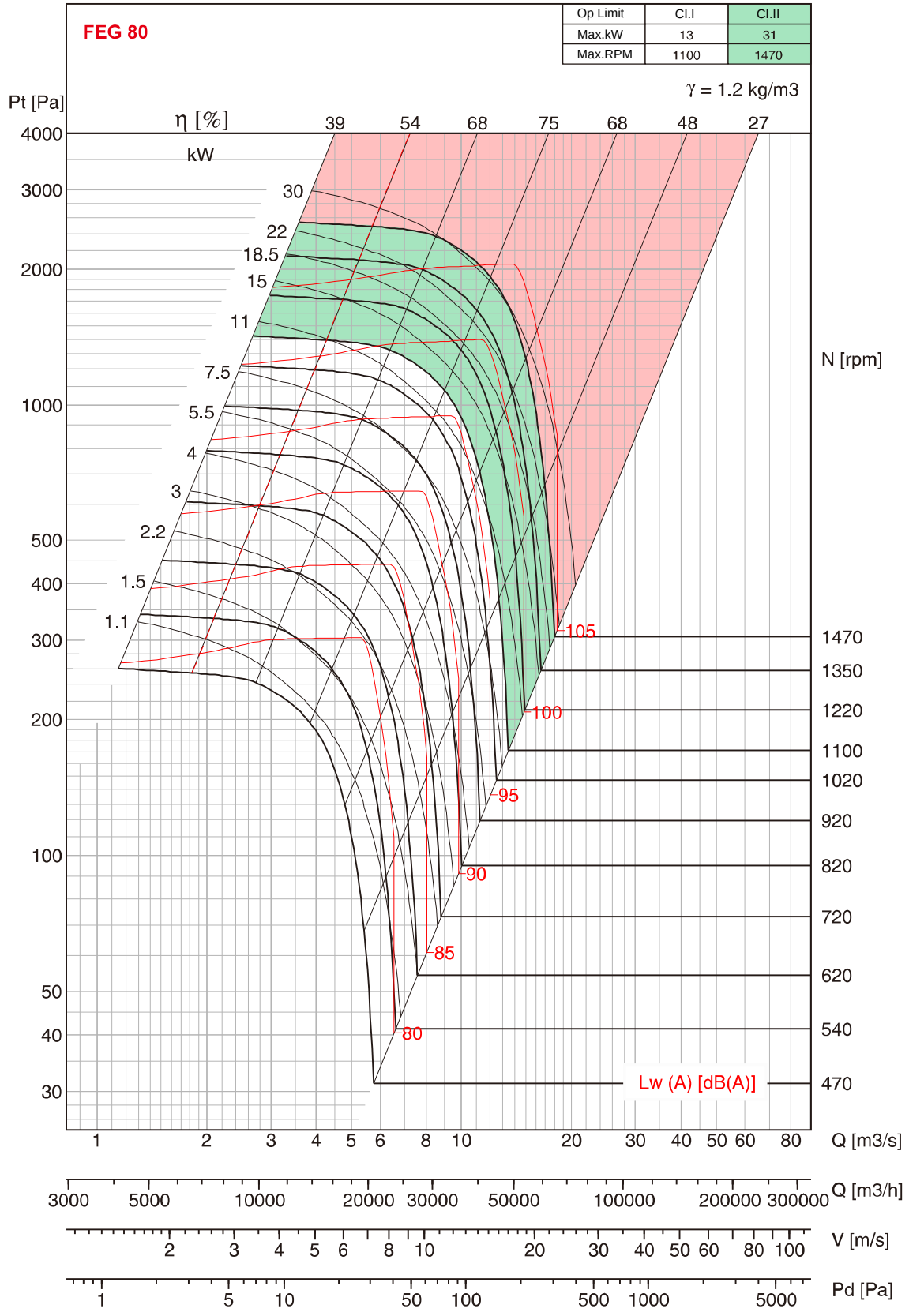
BNB-R 900



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

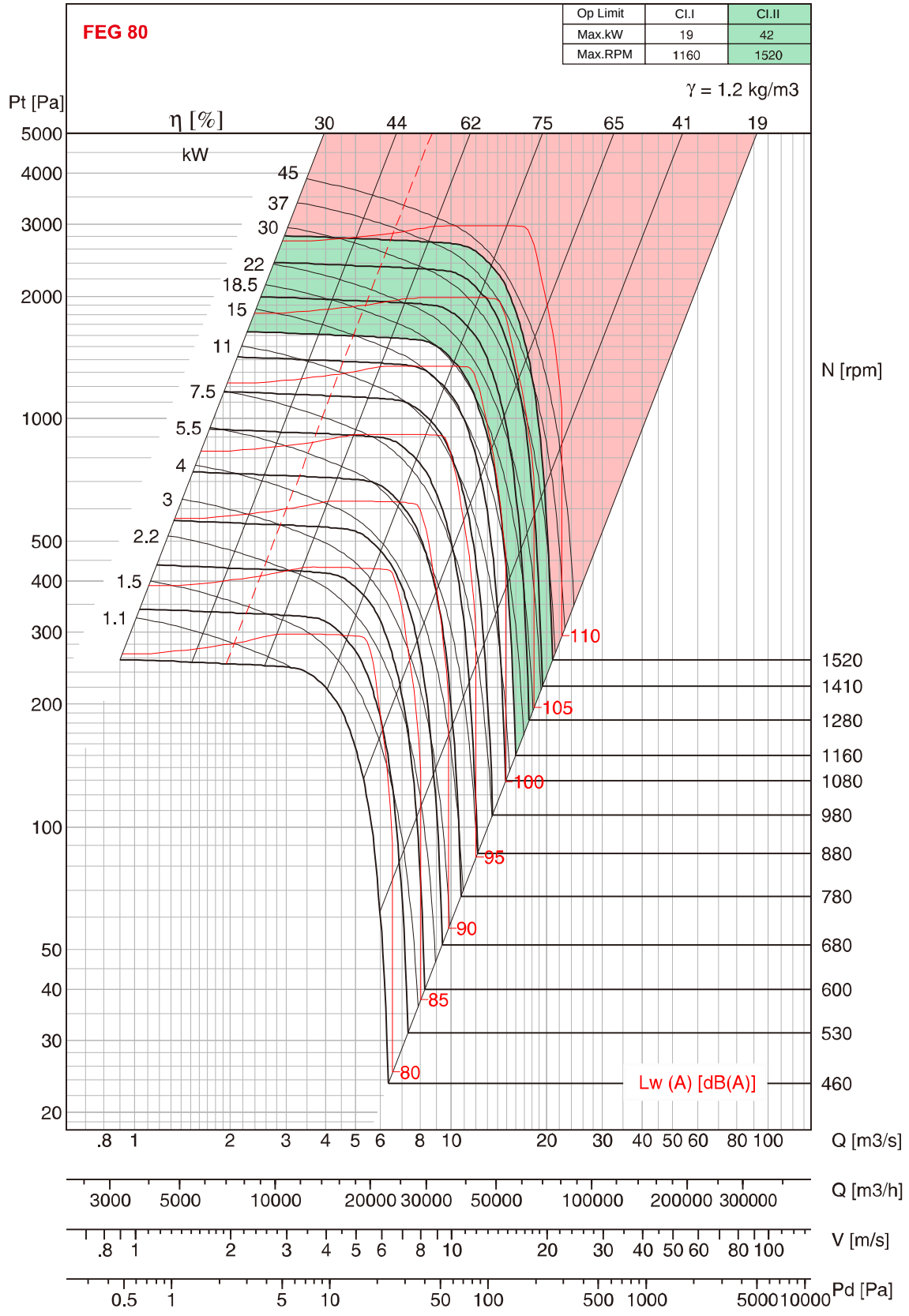
BNB-P 900



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

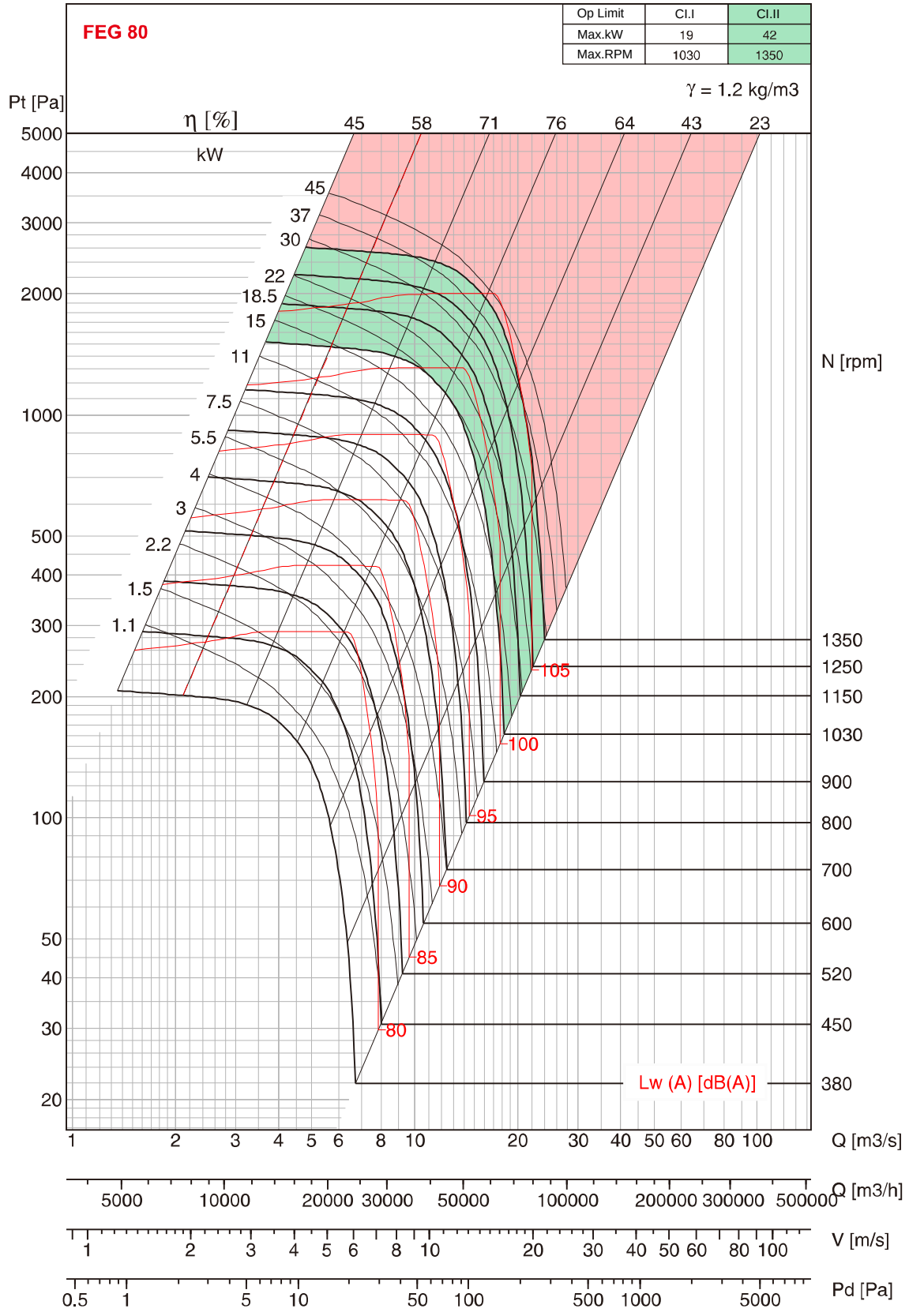
BNB-Q 900



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

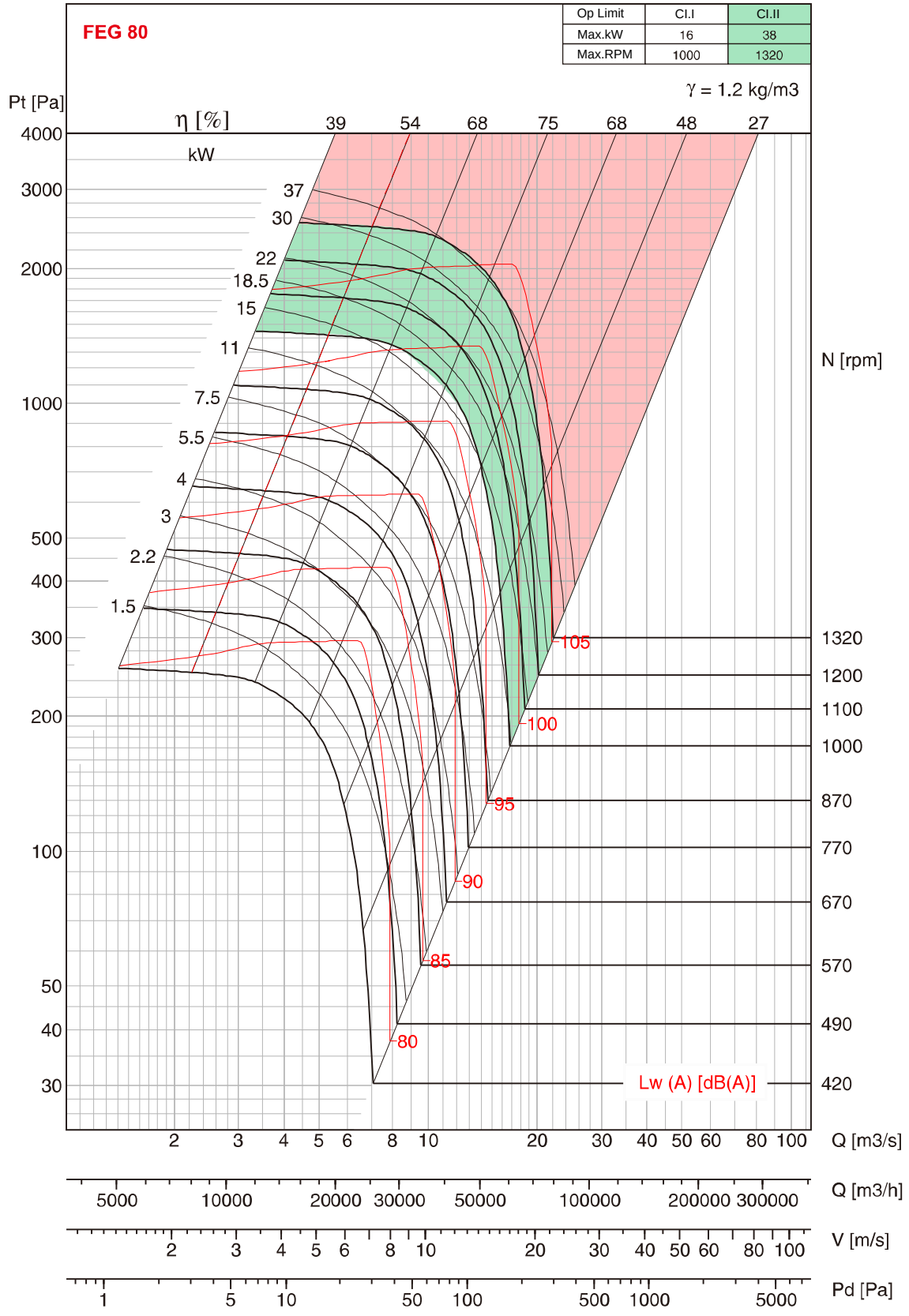
BNB-R 1000



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

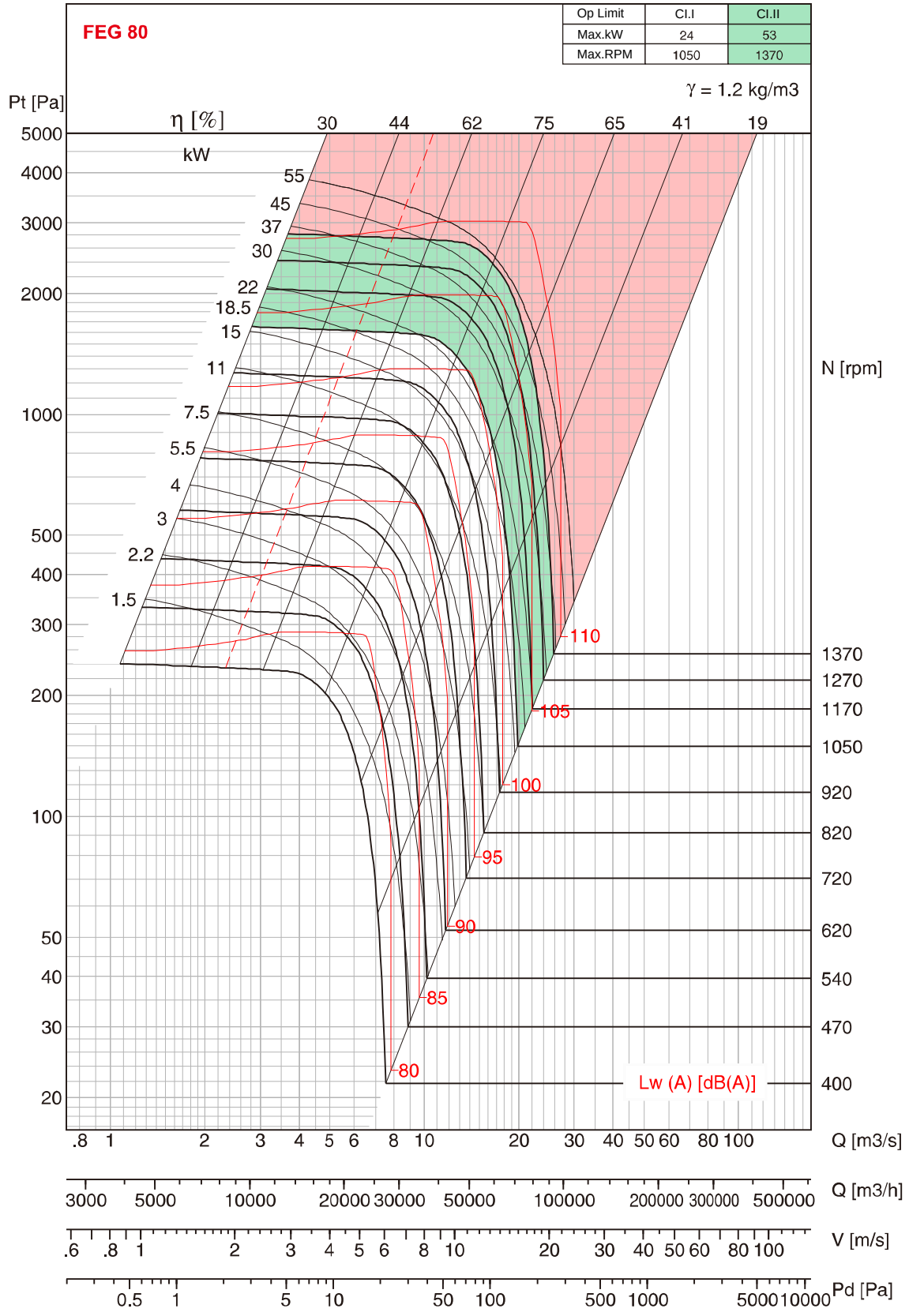
BNB-P 1000



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

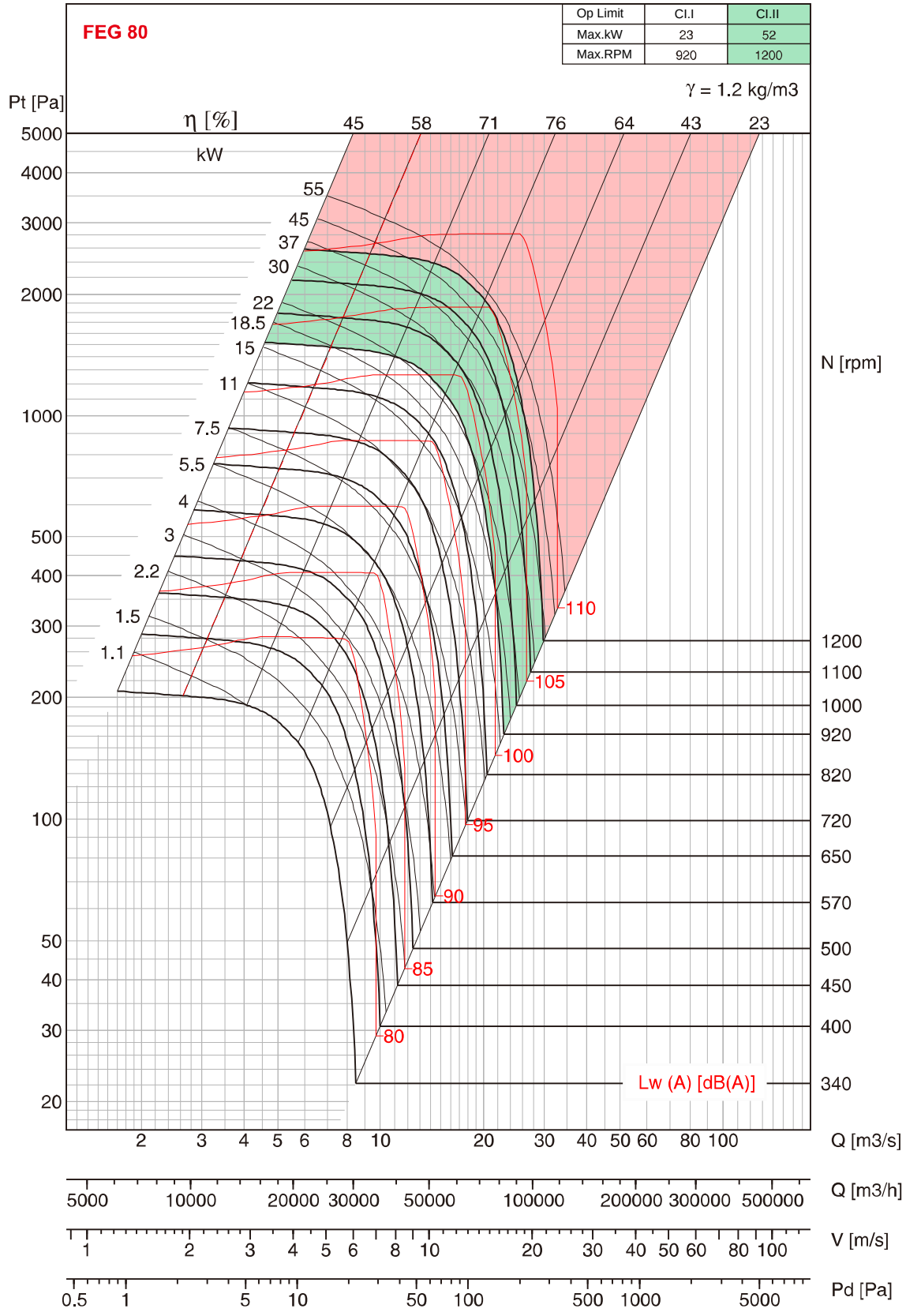
BNB-Q 1000



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

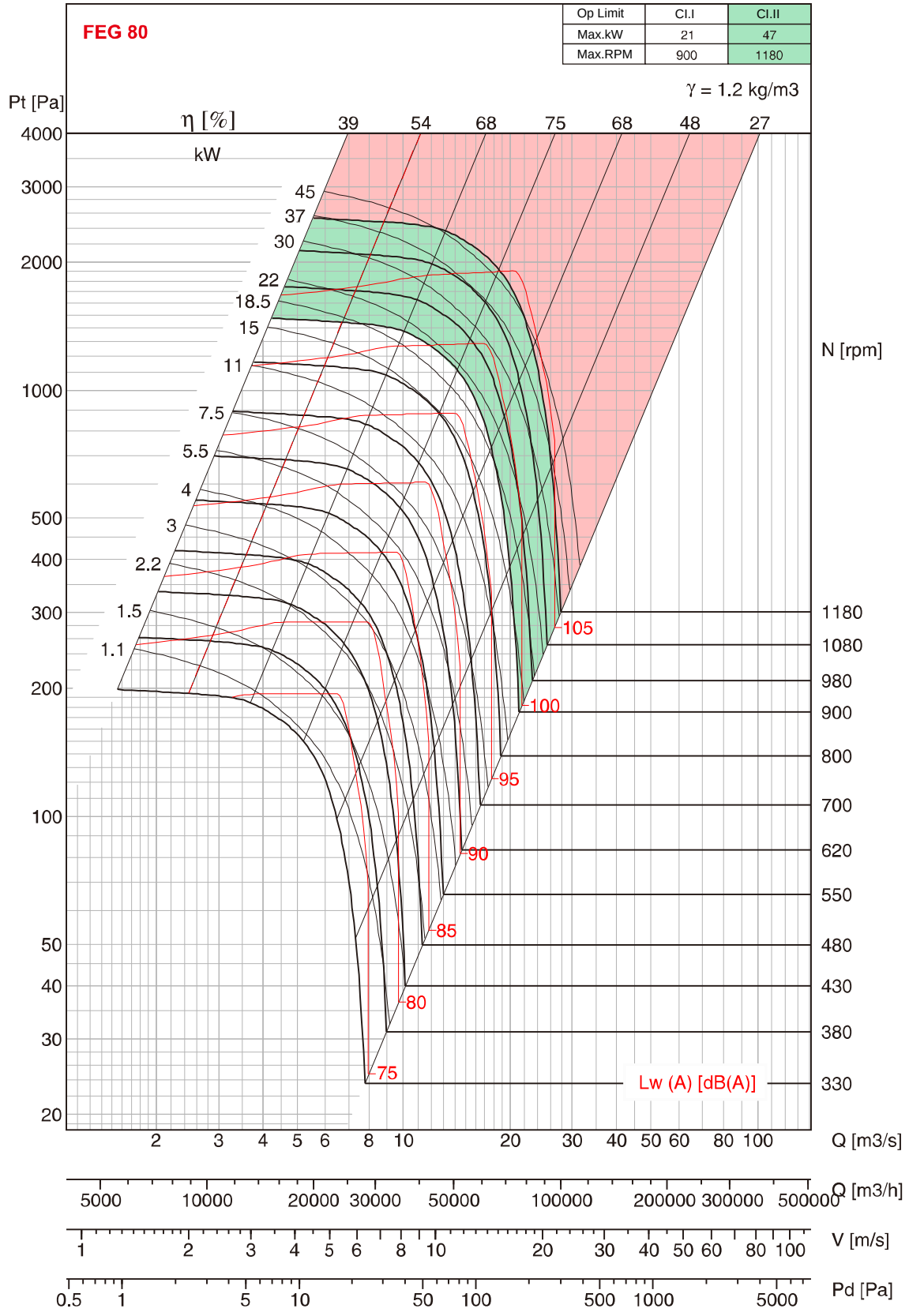
BNB-R 1120



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

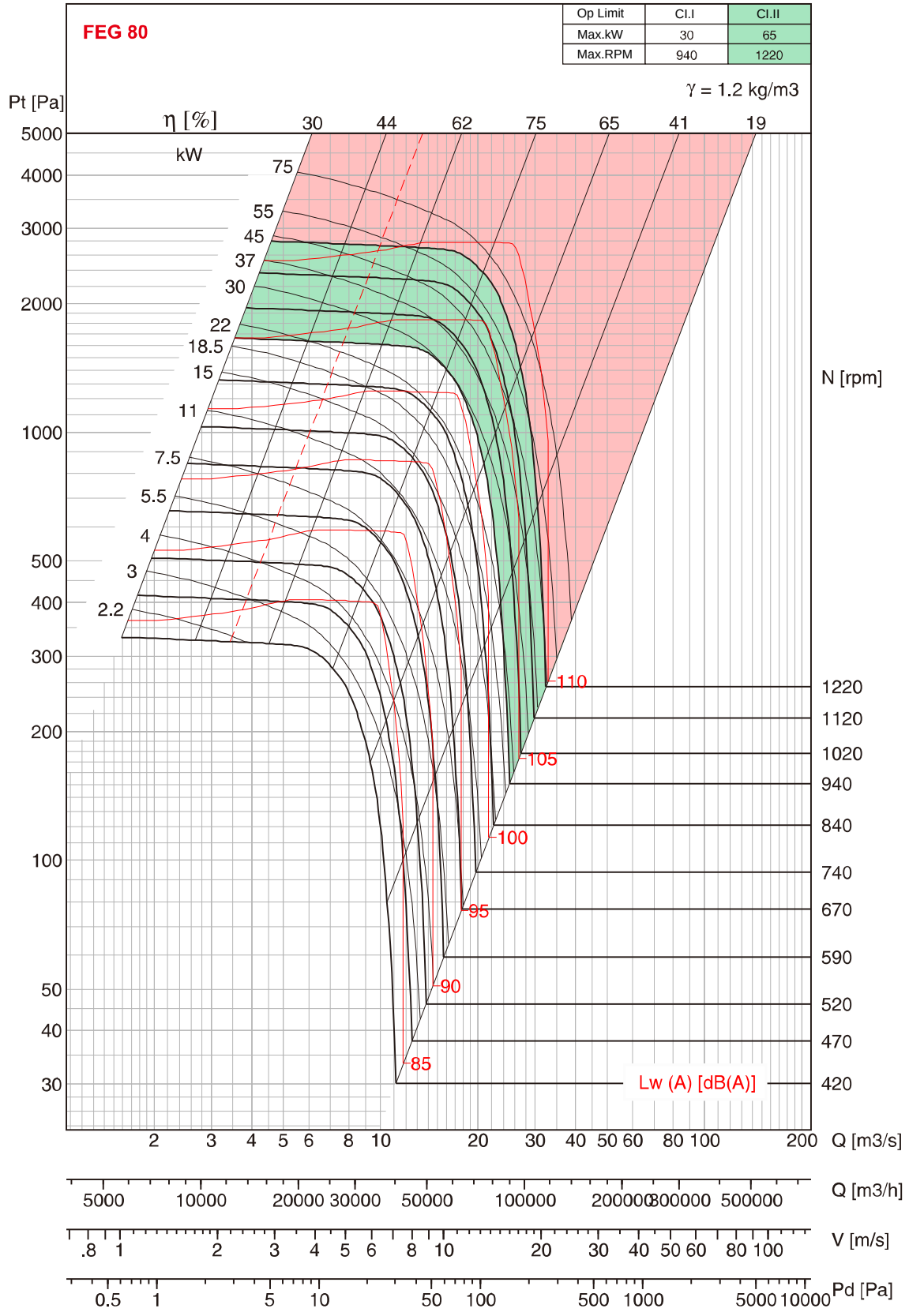
BNB-P 1120



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

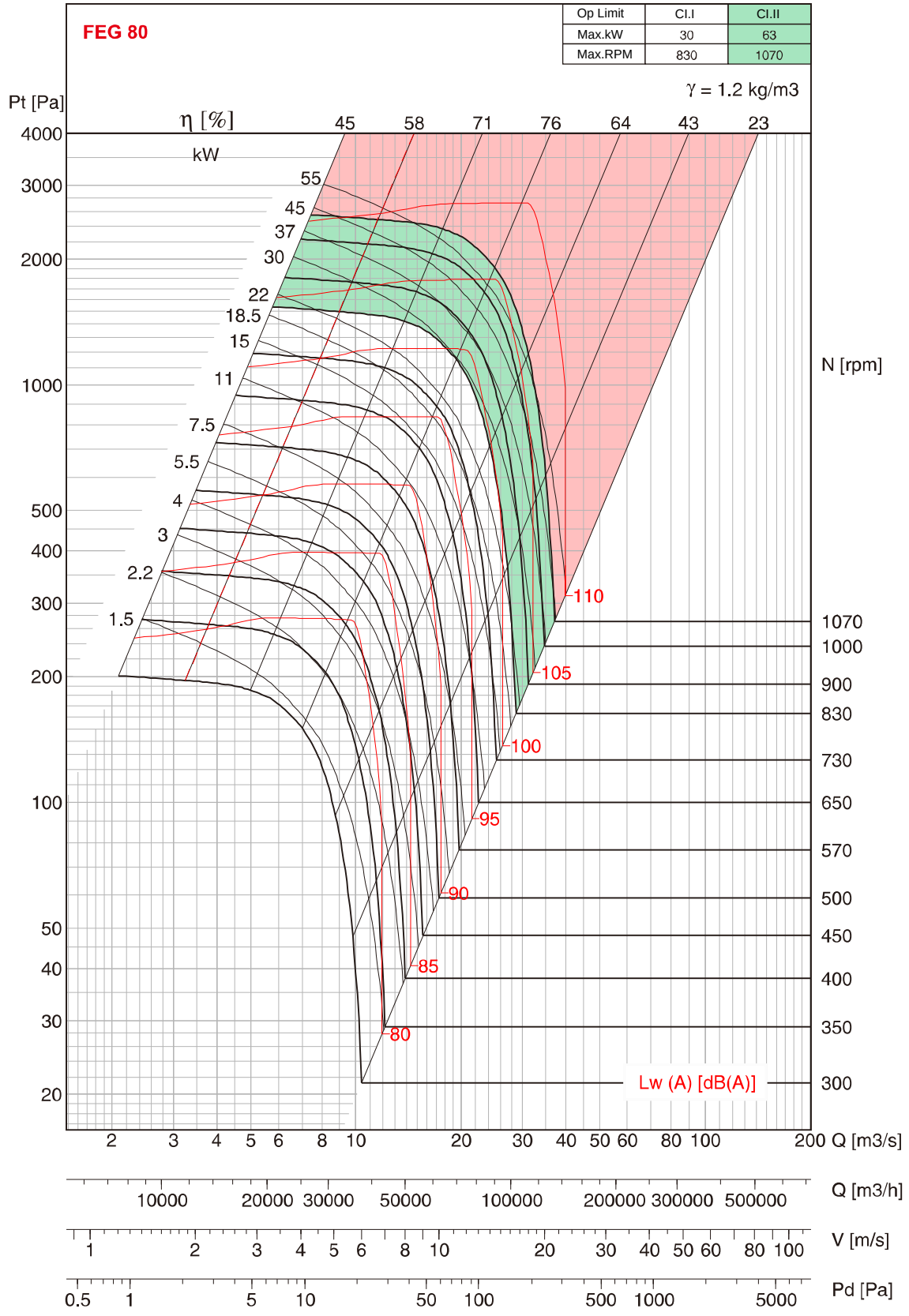
BNB-Q 1120



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

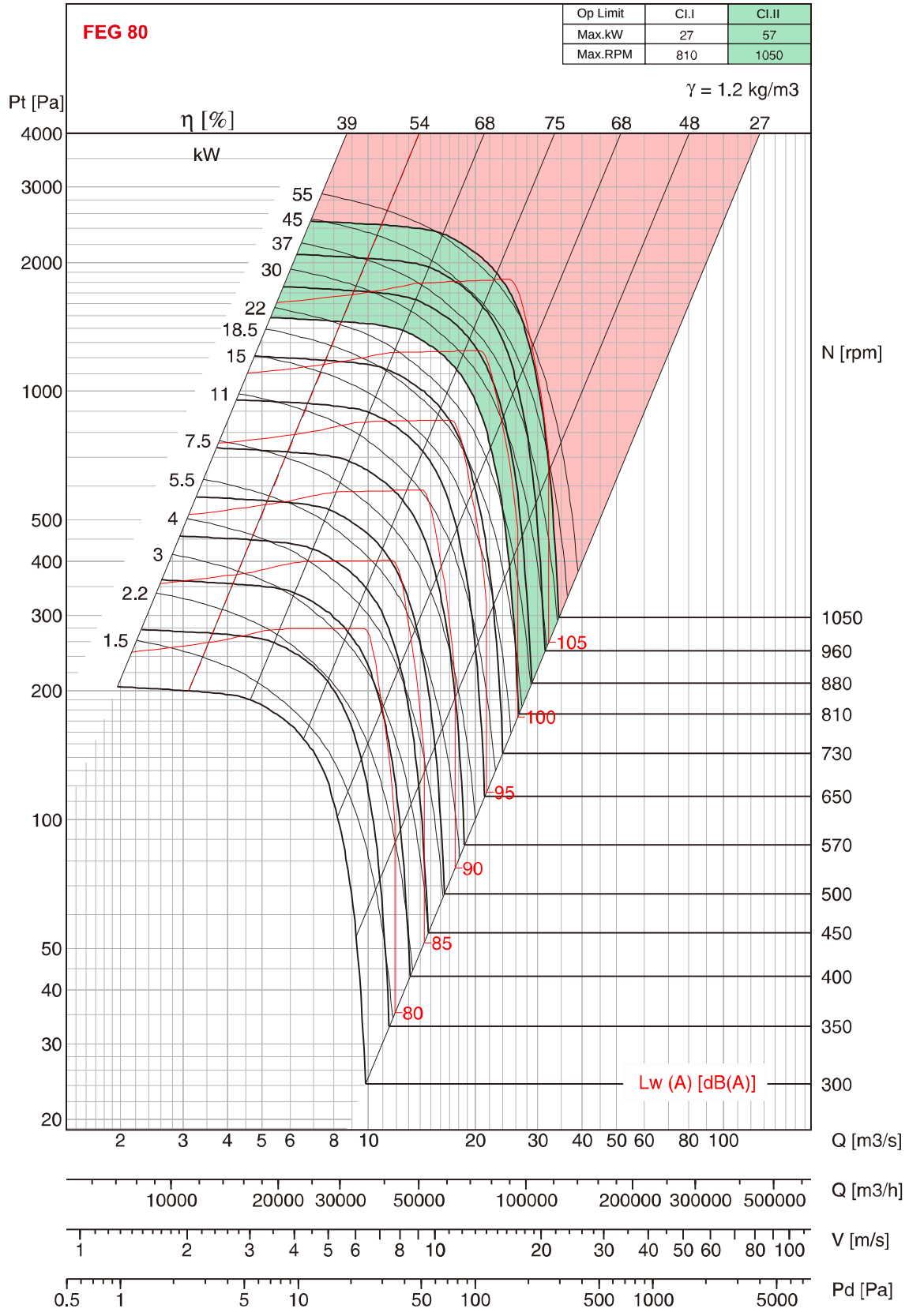
BNB-R 1250



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

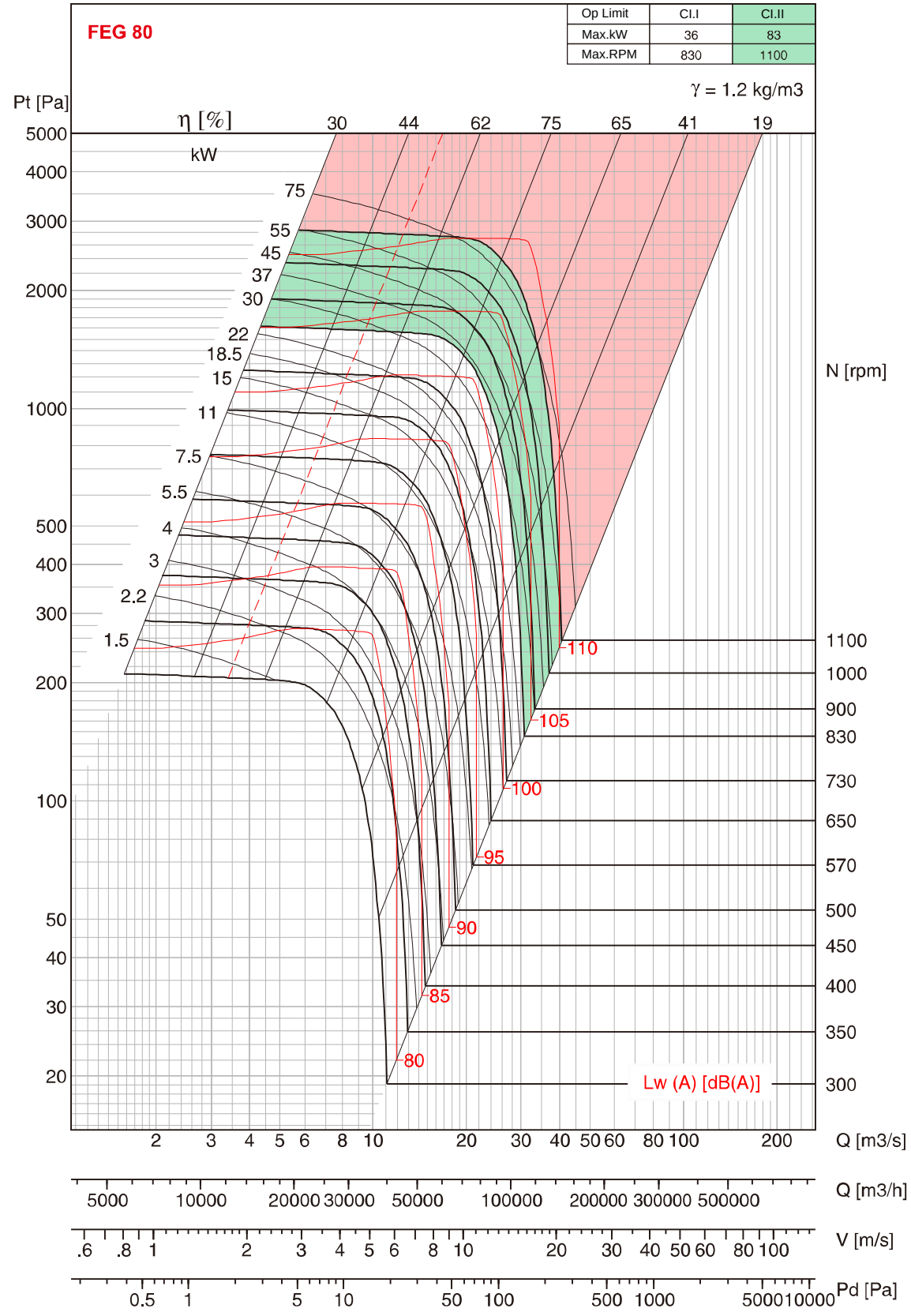
KRUGER

BNB-P 1250



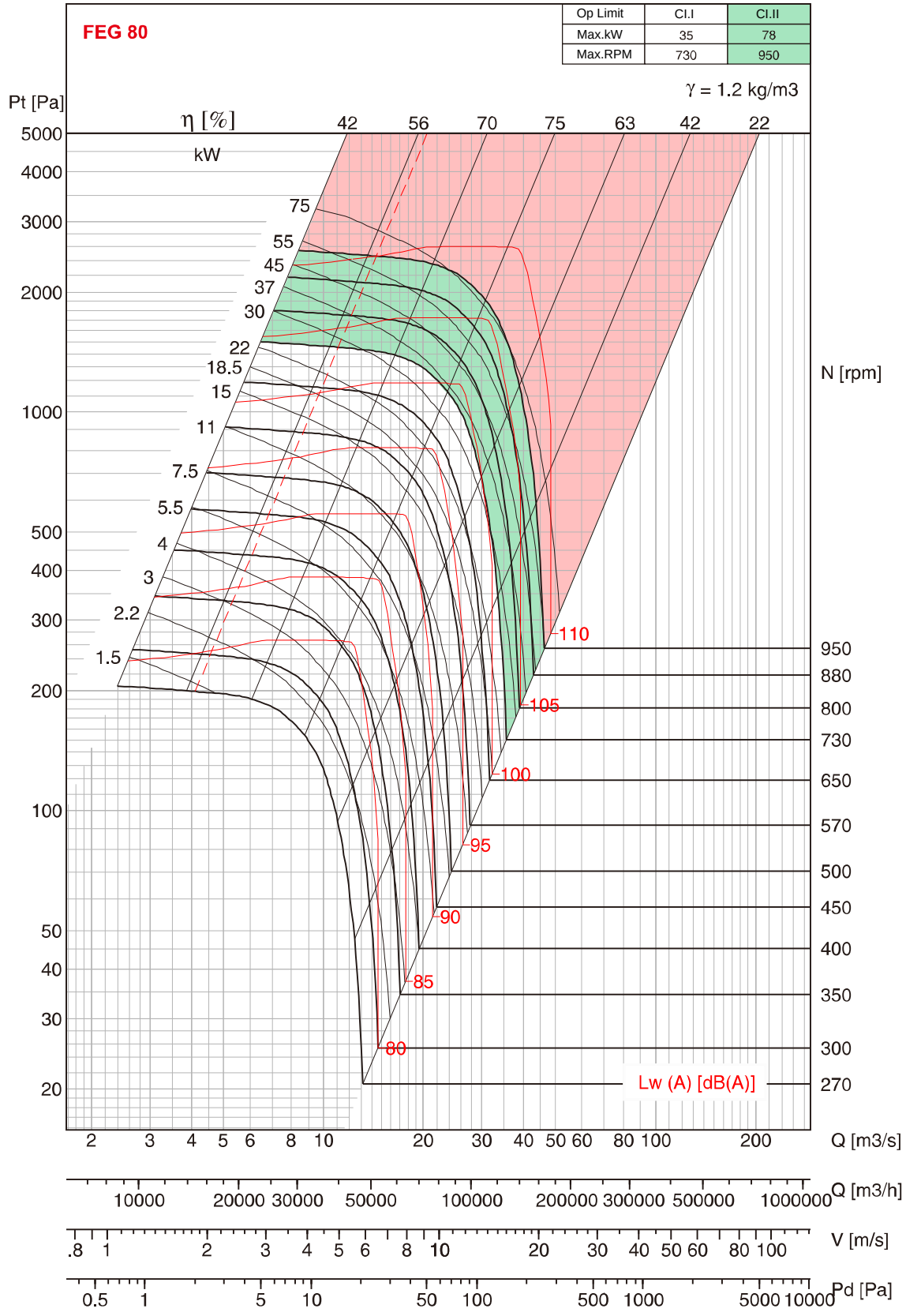
-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

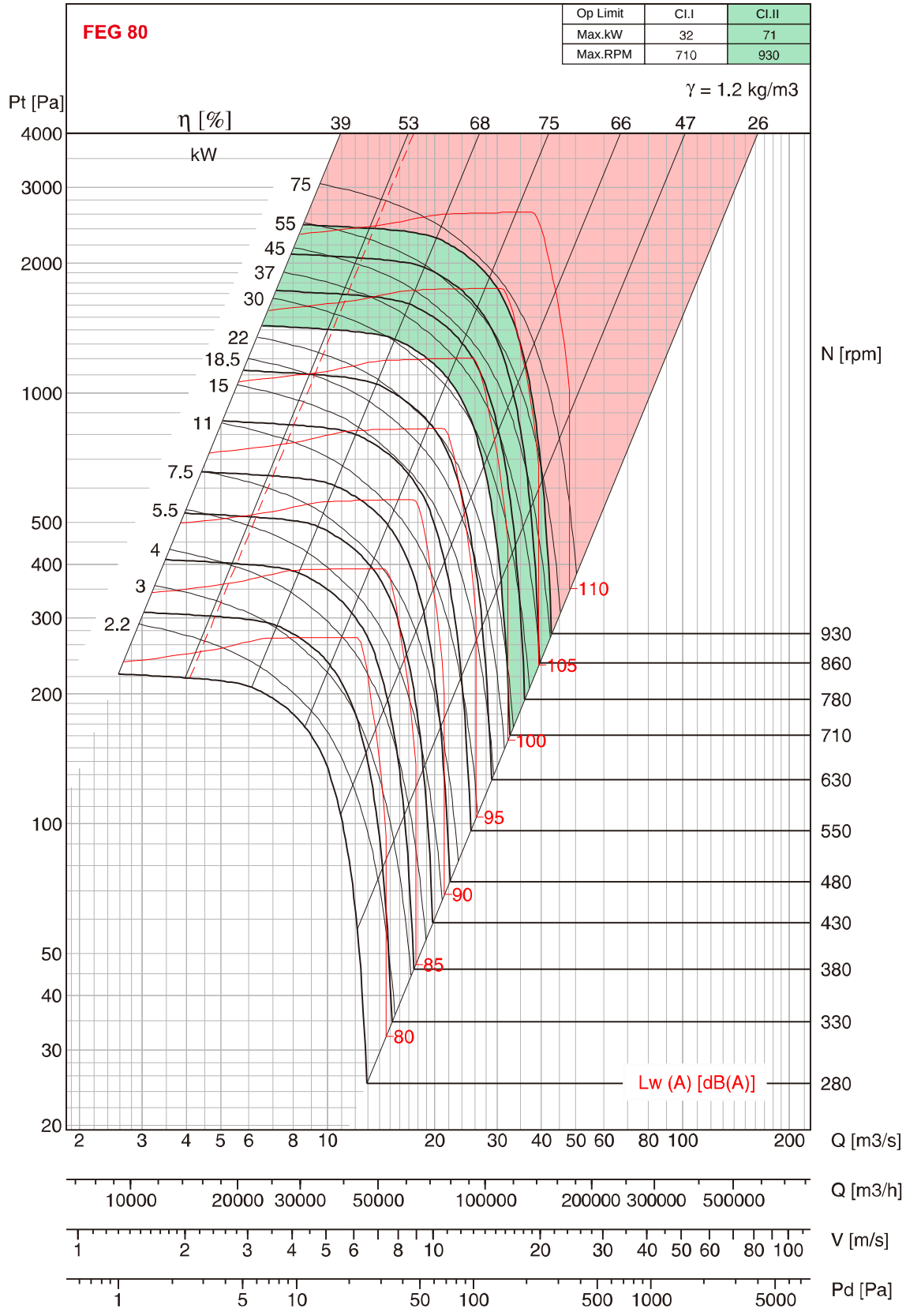
BNB-R 1400



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

KRUGER

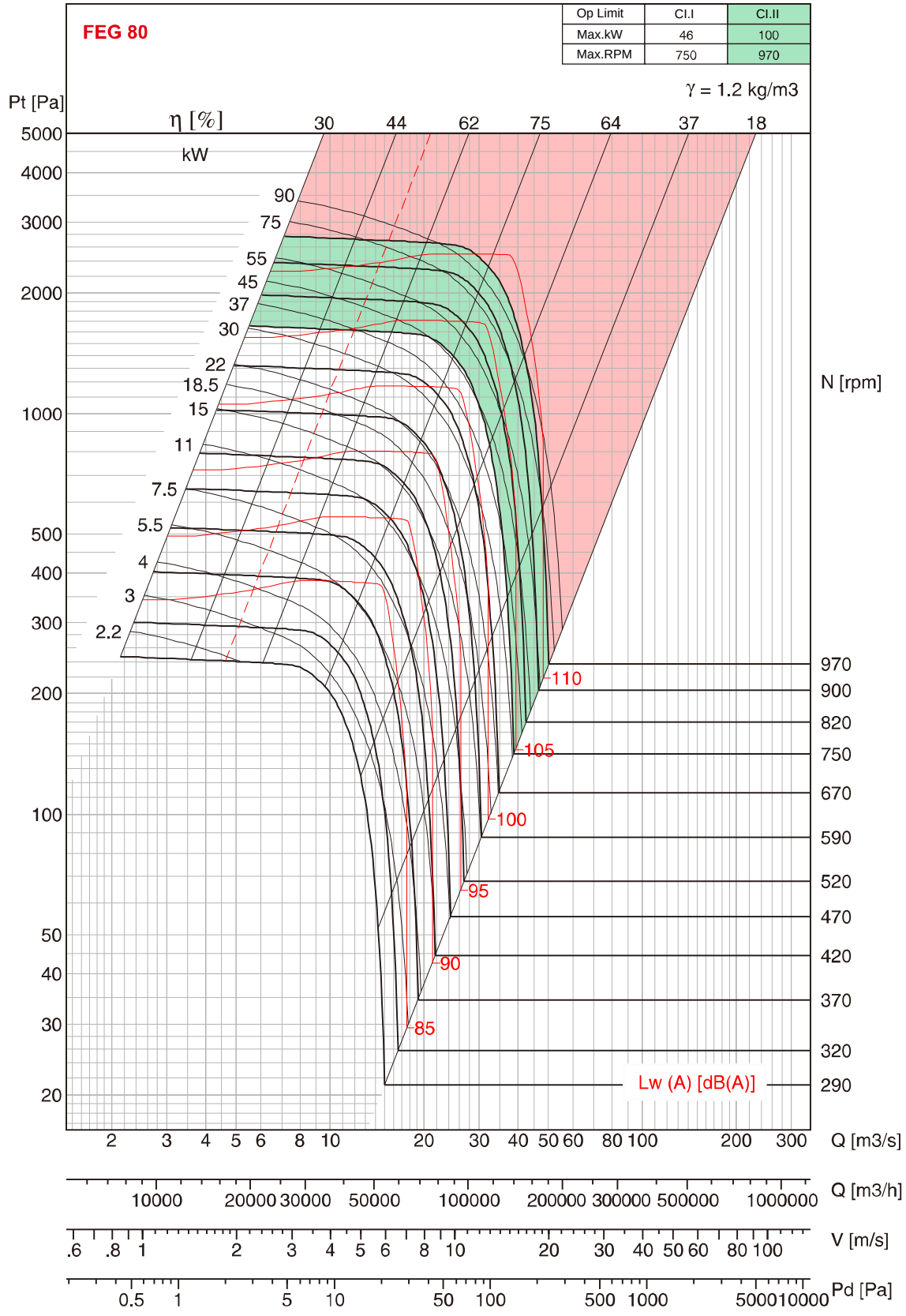
BNB-P 1400



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

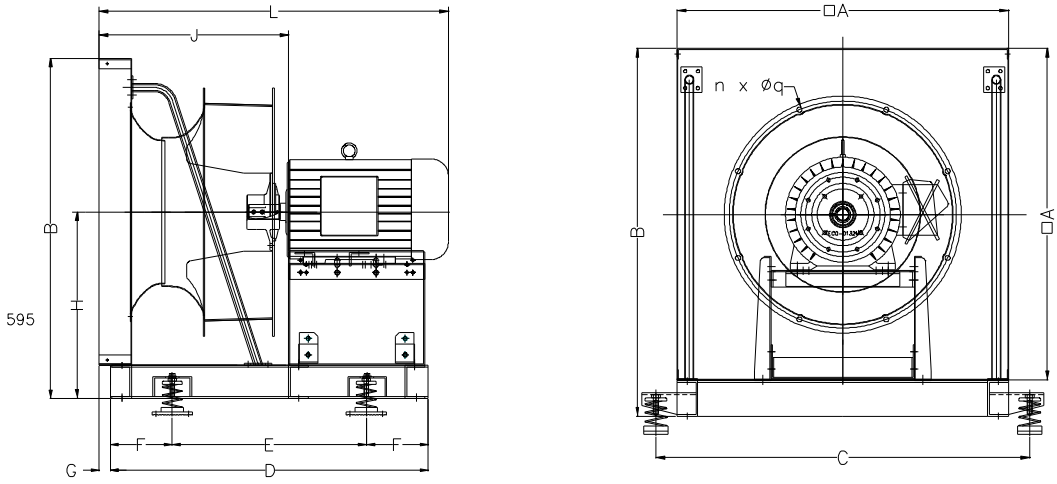
KRUGER

BNB-Q 1400



-Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not inclube the effects of appurtenances. Power rating kW does not include transmission losses.
-Outlet velocity of Model BNB is calculated in accordance with the fan outlet area as defined in AMCA 201, Annex H, Figure H.4.
-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.

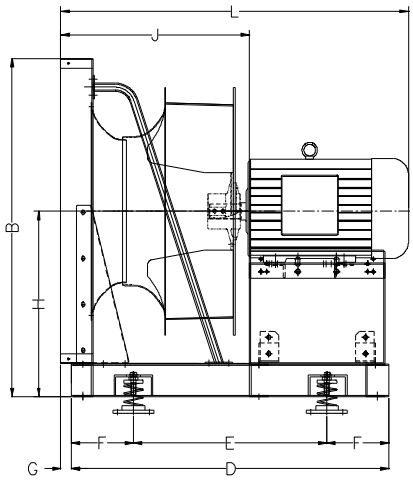
BNB 315 ~ 630 'D'

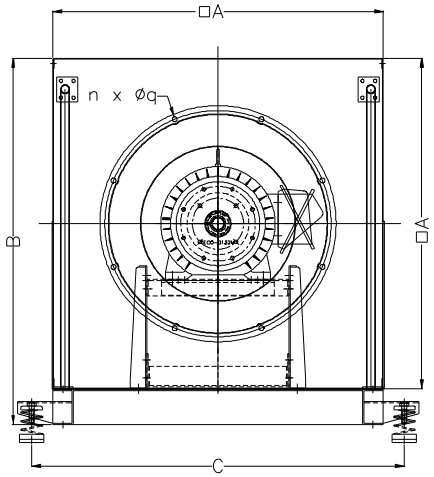


Model	A	B	C	D	E	n × Φq	L			Frame Size	F	G	H	J			Wt (Kg) w/o motor
							Fan Type							Fan Type			
							P	R	Q					P	R	Q	
315	490	555	588	525	325	6 × 9	514	525	538	71	100	28	310	267	278	291	20
							544	555	568	80							
							589	600	613	90							
				565	365		604	615	628	100							
							644	655	668	112							
355	530	595	628	580	340	6 × 9	563	575	589	80	120	28	330	290	303	317	29
							608	620	634	90							
							623	635	649	100							
				650	410		708	720	734	112							
							868	880	894	132							
400	580	645	678	613	353	8 × 9	631	645	661	90	130	28	355	324	338	354	38
							676	690	706	100							
							686	700	716	112							
				803	543		781	795	811	132							
							941	955	971	160							
450	630	715	730	673	393	8 × 12	669	685	703	90	140	28	400	360	376	394	50
							714	730	748	100							
							729	745	763	112							
				863	583		799	815	833	132							
							974	990	1008	160							
500	700	785	800	714	434	8 × 12	708	725	745	90	140	28	435	394	412	432	60
							748	765	785	100							
							768	785	805	112							
				904	624		863	880	900	132							
							1023	1040	1060	160							
560	790	875	890	820	500	8 × 12	770	790	812	100	160	28	480	433	452	475	76
							785	805	827	112							
							885	905	927	132							
				990	670		1035	1055	1077	160							
							1065	1085	1107	180							
630	890	990	1000	865	545	8 × 12	828	850	875	100	160	28	545	474	496	522	95
							843	865	890	112							
							928	950	975	132							
				1035	715		1068	1090	1115	160							
							1093	1115	1140	180							

All dimensions in mm.

BNB 710 ~ 1400 'D'





Model	A	B	C	D	E	n × Φq	L			Frame Size	F	G	H	J			Wt (Kg) w/o motor
							Fan Type							Fan Type			
							P	R	Q					P	R	Q	
710	1000	1100	1100	938	618	6 × 9	890	915	943	112	160	28	600	524	549	577	112
							985	1010	1038	132							
				1128	808		1125	1150	1178	160							
							1150	1175	1203	180							
							1225	1250	1278	200							
800	1120	1220	1230	1130	810	6 × 9	1027	1055	1087	132	160	28	660	578	606	638	151
							1162	1190	1222	160							
							1197	1225	1257	180							
				1230	910		1265	1295	1330	200							
							1340	1370	1405	225							
900	1240	1340	1350	1252	912	8 × 9	1229	1260	1296	160	170	28	720	634	666	702	209
							1259	1290	1326	180							
							1329	1360	1396	200							
				1342	1002		1394	1425	1461	225							
							1459	1490	1526	250							
1000	1390	1515	1520	1334	874	8 × 12	1295	1330	1370	160	230	28	820	717	752	792	261
							1325	1360	1400	180							
							1395	1430	1470	200							
				1434	974		1450	1485	1525	225							
							1520	1555	1595	250							
1120	1550	1700	1660	1450	900	8 × 12	1416	1455	1500	180	275	28	925	813	852	897	333
							1486	1525	1570	200							
				1600	1050		1521	1560	1605	225							
							1601	1640	1685	250							
							1711	1750	1795	280							
1250	1700	1850	1810	1540	940	8 × 12	1501	1545	1595	180	300	28	1000	879	923	973	408
							1571	1615	1665	200							
				1690	1090		1606	1650	1700	225							
							1671	1715	1765	250							
							1796	1840	1890	280							
1400	1900	2050	2010	1612	1012	8 × 12	1571	1620	1676	180	300	28	1100	960	1009	1065	408
							1641	1690	1746	200							
				1780	1180		1686	1735	1791	225							
							1751	1800	1856	250							
							1876	1925	1981	280							

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	kW	2	2.5	3.2	4	4.5	6	7.5	9	11	14	18	22	28	34
	CL.II	kW	4.5	5.5	7	8.5	10.5	13	16	20	26	32	40	50	60	75
Maximum Fan Speed	CL.I	rpm	3250	2850	2550	2300	2050	1850	1650	1450	1280	1130	1030	920	830	730
	CL.II	rpm	4200	3750	3300	3000	2700	2400	2150	1900	1700	1500	1350	1200	1070	950
Temperature Range / Min. -20°C	CL.I - CL.II	Max.°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55

Operational Limits - BNB-P

			315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400
Maximum Absorbed Power	CL.I	kW	1.8	2.2	2.7	4	4	5	6	7.8	9.5	12	16	19	24	29
	CL.II	kW	3.9	5	6	7.5	9	10.5	14	17	22	28	35	43	53	65
Maximum Fan Speed	CL.I	rpm	3150	2800	2470	2250	2000	1700	1600	1420	1250	1100	1000	900	810	710
	CL.II	rpm	4100	3650	3230	2950	2650	2200	2100	1860	1650	1470	1320	1180	1050	930
Temperature Range / Min. -20°C	CL.I - CL.II	Max.°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55

Operational Limits - BNB-Q

			315	355	400	450	500	560	630	710	800	900	1000	1120	1250	1400
Maximum Absorbed Power	CL.I	kW	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	kW	5.2	6.5	8	9.5	12.1	15	18.5	23	30	36	45	56	70	85
Maximum Fan Speed	CL.I	rpm	3300	2900	2570	2350	2100	1870	1680	1490	1320	1160	1050	940	830	750
	CL.II	rpm	4300	3830	3360	3050	2750	2430	2200	1940	1730	1520	1370	1220	1100	970
Temperature Range / Min. -20°C	CL.I - CL.II	Max.°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55

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