BNB
PLENUM FAN
with Backward Curved Wheels
Kruger Ventilation Industries Asia Co., Ltd certifies that the BNB Series shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed 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 1

- 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 to 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 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.

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
  \[ L_p(A) = L_w(A) - (20 \log_{10} d) - 11 \]
  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.

\[ D = \text{Impeller Diameter} \]
Example of Selection

Air Volume \( Q = 6120 \text{ m}^3/\text{h} \)

Outlet Velocity \( V = 9.44 \text{ m/s} \)

Dynamic Pressure \( P_d = 53 \text{ Pa} \)

Total Pressure \( P_t = 800 \text{ Pa} \)

Fan Speed \( N = 2330 \text{ rpm} \)

Absorbed Power \( W = 2.04 \text{ kW} \)

Total Efficiency \( \eta = 66.8\% \)

Sound Power Level \( L_w(A) = 90 \text{ dB(A)} \)
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of aperturizations. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103/AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A, free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210:2009/AMCA 215.
- Please consult Kruger for fan selection of Class III & above.
Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of aspirating losses. Power rating kW does not include transmission losses.

Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H-4.

Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210: AMCA 205.

Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of aperturerecesses. 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 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12739/AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
**BNB-Q 355**

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- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of accessor sides. 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 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 121039: AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 121039 AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.

Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.

Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103/AMCA 210.

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 include 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 210, Annex H, Figure H.4.

Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12101-2 AMCA 210.

Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12101-2 AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 121039 AMCA 215.
- Please consult Kruger for fan selection of Class III & above.
Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of aperturcances. Power rating kW does not include transmission losses.

Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.

Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103/AMCA 205.

Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103-1 AMCA 215.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of apertural losses. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO *2759* AMCA 215.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free intake, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12101-1, AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of aperturaneous. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNG is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan efficiency grade (FEG) is based on peak total efficiency in accordance with ISO 1210 and AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.

Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex I, Figure H.4.

Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210:91 AMCA 215.

Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of accessories. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210:1995 AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of apertural losses. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12101-3/AMCA 215.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of apertures, Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210:1999 AMCA 215.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of apertures. 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 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12756/ AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
Performance shown is for installation type A+ free inlet, free outlet. Performance ratings do not include 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 210, Annex H, Figure H.4.

- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210:0 AMCA 210.
- Please consult Kruger for fan selection of Class III & above.
BNB-P 710

**FEG 80**

- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of aperturerness. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103-1 AMCA 209.
- Please consult Krueger for fan selection of Class III & above.
- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include 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 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103. AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
The graph shows the performance characteristics of the BNB-R 800 fan. The graph includes the following information:

- **Power (kW)**: The graph indicates the power requirement for different flow rates (Q) and pressure levels (Pt). The power values range from 11.5 kW (Class I) to 27 kW (Class II).
- **Efficiency (η [%])**: Efficiency values are marked along the graph, with values ranging from 42% to 78%.
- **Speed (N [rpm])**: The speed values range from 1280 rpm (Class I) to 1700 rpm (Class II).
- **Flow Rate (Q [m³/s])**: The flow rate values range from 0.5 m³/s to 80 m³/s.
- **Volume Flow Rate (Q [m³/h])**: The volume flow rate values range from 1 m³/h to 30,000 m³/h.
- **Velocity (V [m/s])**: The velocity values range from 0.5 m/s to 100 m/s.
- **Sound Pressure Level (Pd [Pa])**: The sound pressure levels range from 0 dB(A) to 105 dB(A).

The graph also includes annotations for sound levels (Lw(A) [dB(A)]) with values ranging from 80 dB(A) to 105 dB(A).

Additional notes:
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103/AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103/AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
BNB-Q 800

FEG 80

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<td>Max. RPM</td>
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<td>1730</td>
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\( \gamma = 1.2 \text{ kg/m}^3 \)

- Performance shown is for installation type A+ free inlet, free outlet. Performance ratings do not include 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 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12105/AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
* Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of aperturiances. Power rating kW does not include transmission losses.
* Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
* Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103-2 AMCA 205.
* Please consult Kruger for fan selection of Class III & above.
Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12101 AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A+ free inlet, free outlet. Performance ratings do not include the effects of aperturiances. Power rating kW does not include transmission losses.

- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H.4.

- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12101 AMCA 206.

- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A – free inlet, free outlet. Performance ratings do not include the effects of a spirals and impellers. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 27631-1 AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of aperturaneous. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex II, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12101-1: AMCA 210.
- Please consult Kruger for fan selection of Class III & above.
Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of aerodynamics. 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 210, Annex H, Figure H.4.

Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210:98 AMCA 210.

Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A - free inlet, free outlet. Performance ratings do not include the effects of spurious losses. 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 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103-1 AMCA 206.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for installation type A+ free inlet, free outlet. Performance ratings do not include 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 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103 and AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103-2 AMCA 206.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A+ free inlet, free outlet. Performance ratings do not include the effects of aperturizations. 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 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103-1 AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12101-1:1995.
- Please consult Kruger for fan selection of Class III & above.
BNB-R 1400

**FEG 80**

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<td>Max. RPM</td>
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\[ Y = 1.2 \text{ kg/m}^3 \]

**Graph Key:**
- Performance shown is for Installation type A - free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210:99 AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
Performance shown is for installation type A+ free inlet, free outlet. Performance ratings do not include the effects of appurtenances. Power rating kW does not include transmission losses.

Outlet velocity of Model BNS is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.

Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 1210: AMCA 205.

Please consult Kruger for fan selection of Class III & above.
- Performance shown is for Installation type A – free inlet, free outlet. Performance ratings do not include the effects of aperturunesses. Power rating kW does not include transmission losses.
- Outlet velocity of Model BNN is calculated in accordance with the fan outlet area as defined in AMCA 210, Annex H, Figure H.4.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12103-1 AMCA 205.
- Please consult Kruger for fan selection of Class III & above.
## BNB 315 ~ 630 ‘D’

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<th>D</th>
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Wuqing District, Tianjin, China
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