BNC
PLENUM FAN
with Backward Curved Wheels
BNC Series

PLENUM FAN with Backward Curved Wheels

Kruger Ventilation Industries (North India) Pvt Ltd certifies that the BNC 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 AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.
**BNC 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 BNC Series, i.e. BNC-R (regular type), BNC-P (high pressure ratio type), BNC-Q (high volume ratio type).

**NOMENCLATURE**

**MODEL:** BNC-R 450 / D I

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

**TYPE / OPERATING LIMIT**

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

The operating limit of BNC series is set according to the requirement of class I, II and III limit as defined in AMCA standard 99.

The BNC series is available in Direct Driven and Belt Driven, Type D, B 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 1,800
- Volume: 3,000 to 300,000 m$^3$/h
- Total Pressure: up to 4,500 Pa

**Belt Driven 'B'**

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

- Fan Size: 315 to 1,800
- Volume: 3,000 to 300,000 m$^3$/h
- Total Pressure: up to 4,500 Pa

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

**TECHNICAL SPECIFICATION**

**Wheel**

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

**Shaft**

Shasfts 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

Bearing 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, BNC series can be classify as FEG 80 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**
  
  $L_p(A) = L_w(A) - (20 \log_{10} d) - 7$

  where $d$ = distance of fan (m)
Example of Selection

Air Volume \( Q = 5000 \text{m}^3/\text{h} \)

Outlet Velocity \( V = 8.8 \text{m/s} \)

Dynamic Pressure \( P_d = 48 \text{Pa} \)

Total Pressure \( P_t = 900 \text{Pa} \)

Fan Speed \( N = 2200 \text{rpm} \)

Absorbed Power \( W = 1.7 \text{kW} \)

Total Efficiency \( \eta = 72\% \)

Sound Power Level \( L_w(A) = 92.5 \text{dB(A)} \)
### Performance Data

**FEG 80**

<table>
<thead>
<tr>
<th>Op Limit</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>D1</td>
<td>DII</td>
<td>DIII</td>
</tr>
<tr>
<td>M.kW</td>
<td>2.2</td>
<td>5</td>
<td>9.7</td>
</tr>
<tr>
<td>M.RPM</td>
<td>3500</td>
<td>4600</td>
<td>5800</td>
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</table>

*γ = 1.2 kg/m³*

### Fan Characteristics

<table>
<thead>
<tr>
<th>Q [m³/s]</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>5000</th>
<th>10000</th>
</tr>
</thead>
<tbody>
<tr>
<td>V [m/s]</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>500</td>
<td>1000</td>
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<tr>
<td>Lw (A) [dB(A)]</td>
<td>75</td>
<td>80</td>
<td>85</td>
<td>90</td>
<td>95</td>
</tr>
<tr>
<td>N [rpm]</td>
<td>1450</td>
<td>1600</td>
<td>1750</td>
<td>1900</td>
<td>2100</td>
</tr>
<tr>
<td>Pd [Pa]</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw (A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
**BNC-Q 315**

**FEG 80**

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
### BNC-P 355

#### Performance Certification

**FEG 80**

- **Op Limit:**
  - Cl. I
  - Cl. II
  - Cl. III

<table>
<thead>
<tr>
<th>Type</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
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</thead>
<tbody>
<tr>
<td>M.kW</td>
<td>3</td>
<td>6</td>
<td>11.5</td>
</tr>
<tr>
<td>M.RPM</td>
<td>3100</td>
<td>4000</td>
<td>5000</td>
</tr>
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</table>

**γ = 1.2 kg/m³**

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#### Performance Certifications

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
BNC-R 355

FEG 80

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.

- Performance certiﬁed 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
### BNC-Q 355

**FEG 80**

<table>
<thead>
<tr>
<th>Op Limit</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>DI</td>
<td>DII</td>
<td>DIII</td>
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<tr>
<td>M.kW</td>
<td>4</td>
<td>8.6</td>
<td>17</td>
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<tr>
<td>M.RPM</td>
<td>3370</td>
<td>4370</td>
<td>5500</td>
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</table>

\[ \gamma = 1.2 \text{ kg/m}^3 \]

### Performance Certifications
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
<table>
<thead>
<tr>
<th>Type</th>
<th>Op Limit</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
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<tbody>
<tr>
<td>DI</td>
<td>3.3</td>
<td>2750</td>
<td>3550</td>
<td>4450</td>
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<tr>
<td>DII</td>
<td>7.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIII</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \gamma = 1.2 \text{ kg/m}^3 \]

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw (A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
### Performance Data

<table>
<thead>
<tr>
<th>Cl.</th>
<th>D1</th>
<th>DII</th>
<th>DIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Op Limit</td>
<td>M.kW</td>
<td>M.RPM</td>
</tr>
<tr>
<td>Cl. I</td>
<td>Cl. II</td>
<td>Cl. III</td>
<td></td>
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<tr>
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<td>2850</td>
</tr>
<tr>
<td></td>
<td></td>
<td>23.2</td>
<td>3600</td>
</tr>
</tbody>
</table>

\( \gamma = 1.2 \text{ kg/m}^3 \)

**BNC-P 500**

**FEG 80**

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
**FEG 80**

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.

Values shown are for outlet Lw (A) sound power levels for Installation Type A: free inlet, free outlet.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
### BNC-R 560

<table>
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<th>Cl. I</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>DI</td>
<td>DII</td>
</tr>
<tr>
<td>M.kW</td>
<td>7.1</td>
<td>15.6</td>
</tr>
<tr>
<td>M.RPM</td>
<td>1950</td>
<td>2540</td>
</tr>
</tbody>
</table>

\[ \gamma = 1.2 \text{ kg/m}^3 \]

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw (A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- Fan Efficiency Grade (FEG) is based on peak total efficiency in accordance with ISO 12755/AMCA 205.
- Please consult Kruger for fan selection of class III.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
### Performance Data

<table>
<thead>
<tr>
<th>Type</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
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</thead>
<tbody>
<tr>
<td>Op Limit</td>
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<tr>
<td>M.kW</td>
<td>7.4</td>
<td>16</td>
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<tr>
<td>M.RPM</td>
<td>1700</td>
<td>2200</td>
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\( \gamma = 1.2 \text{ kg/m}^3 \)

#### FEG 80

<table>
<thead>
<tr>
<th>Pt [Pa]</th>
<th>( \eta ) [%]</th>
<th>N [rpm]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>80</td>
<td>60</td>
<td>105</td>
</tr>
</tbody>
</table>

#### Lw (A) [dB(A)]

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw(A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
BNC-P 710

FEG 80

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo sound levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
<table>
<thead>
<tr>
<th>Op Limit</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>D1</td>
<td>DII</td>
<td>DIII</td>
</tr>
<tr>
<td>M.kW</td>
<td>18</td>
<td>39</td>
<td>78</td>
</tr>
<tr>
<td>M.RPM</td>
<td>1210</td>
<td>1570</td>
<td>1980</td>
</tr>
</tbody>
</table>

γ = 1.2 kg/m³

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.

---

**BNC-R 900**

**FEG 80**

<table>
<thead>
<tr>
<th>Pt [Pa]</th>
<th>η [%]</th>
<th>N [rpm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>3000</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>

- | 46 | 56 | 67 | 76 | 66 | 47 | 29 |

<table>
<thead>
<tr>
<th>N [rpm]</th>
<th>Q [m³/s]</th>
<th>V [m/s]</th>
<th>Pd [Pa]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
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</tr>
<tr>
<td>1750</td>
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<td></td>
</tr>
<tr>
<td>1570</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1450</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1210</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1100</td>
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<td></td>
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<td>950</td>
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<td>800</td>
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<td></td>
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<td>700</td>
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<td>600</td>
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<td>400</td>
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<tr>
<td>300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
### Table

<table>
<thead>
<tr>
<th>Type</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Op Limit</td>
<td>kW</td>
<td>RPM</td>
<td></td>
</tr>
<tr>
<td>DI</td>
<td>22.2</td>
<td>1250</td>
<td></td>
</tr>
<tr>
<td>DII</td>
<td>46.5</td>
<td>1600</td>
<td></td>
</tr>
<tr>
<td>DIII</td>
<td>97.7</td>
<td>2050</td>
<td></td>
</tr>
</tbody>
</table>

\[ \gamma = 1.2 \text{ kg/m}^3 \]

### Diagram

- **BNC-Q 900**

- **FEG 80**

<table>
<thead>
<tr>
<th>Pt [Pa]</th>
<th>( \eta ) [%]</th>
<th>N [rpm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>44</td>
<td>5000</td>
</tr>
<tr>
<td>30</td>
<td>54</td>
<td>6000</td>
</tr>
<tr>
<td>40</td>
<td>66</td>
<td>7000</td>
</tr>
<tr>
<td>50</td>
<td>75</td>
<td>8000</td>
</tr>
<tr>
<td>60</td>
<td>83</td>
<td>9000</td>
</tr>
<tr>
<td>70</td>
<td>90</td>
<td>10000</td>
</tr>
<tr>
<td>80</td>
<td>95</td>
<td>11000</td>
</tr>
<tr>
<td>90</td>
<td>105</td>
<td>12000</td>
</tr>
<tr>
<td>100</td>
<td>110</td>
<td>13000</td>
</tr>
</tbody>
</table>

- Outlet Velocity of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
BNC-P 1000

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
<table>
<thead>
<tr>
<th>Cl.</th>
<th>Type</th>
<th>M.kW</th>
<th>M.RPM</th>
<th>γ</th>
<th>η [%]</th>
<th>V [m/s]</th>
<th>Q [m³/s]</th>
<th>Q [m³/h]</th>
<th>Pd [Pa]</th>
<th>Pt [Pa]</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>D1</td>
<td>21.4</td>
<td>1080</td>
<td>-</td>
<td>46</td>
<td>1</td>
<td>5000</td>
<td>20000</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>II</td>
<td>DII</td>
<td>47</td>
<td>1400</td>
<td>1.2</td>
<td>56</td>
<td>5</td>
<td>10000</td>
<td>30000</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>III</td>
<td>DIII</td>
<td>94</td>
<td>1770</td>
<td>1.2</td>
<td>67</td>
<td>10</td>
<td>50000</td>
<td>200000</td>
<td>40</td>
<td>60</td>
</tr>
</tbody>
</table>

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw (A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.

Values shown are for outlet Lw(A) sound power levels for Installation Type A: free inlet, free outlet.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw(A) sound power levels for Installation Type A, free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw(A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw (A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw(A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw (A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
### BNC-Q 1400

**Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw0 A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.

#### Table

<table>
<thead>
<tr>
<th>Type</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.kW</td>
<td>53</td>
<td>113</td>
<td>227</td>
</tr>
<tr>
<td>M.RPM</td>
<td>800</td>
<td>1030</td>
<td>1300</td>
</tr>
</tbody>
</table>

#### Diagram

- \( \gamma = 1.2 \text{ kg/m}^3 \)

- **FEG 80**

- **\( N \) [rpm]**
  - 400
  - 450
  - 500
  - 550
  - 600
  - 700
  - 800
  - 950
  - 1030
  - 1150
  - 1300

- **\( Pd \) [Pa]**
  - 30
  - 40
  - 50
  - 60
  - 70
  - 80
  - 95
  - 100
  - 110
  - 115
  - 120
  - 125
  - 130
  - 150
  - 175

- **\( Lw (A) \) [dB(A)]**
  - -110
  - -105
  - -100
  - -95
  - -90
  - -85
  - -80
  - -75
  - -70
  - -65
  - -60
  - -55
  - -50
  - -45
  - -40
  - -35
  - -30
  - -25
  - -20
  - -15
  - -10
  - -5
  - 0

- **\( Q \) [m³/s]**
  - 2
  - 3
  - 4
  - 5
  - 6
  - 8
  - 10
  - 20
  - 30
  - 40
  - 50
  - 60
  - 80
  - 100

- **\( V \) [m/s]**
  - 4
  - 6
  - 50
  - 100
  - 500
  - 1000
  - 5000
  - 10000

- **\( Pd \) [Pa]**
  - 2000
  - 3000
  - 4000
  - 5000
  - 6000
  - 7000
  - 8000
  - 9000
  - 10000

- **\( Q \) [m³/h]**
  - 50000
  - 100000
  - 200000
  - 300000
  - 500000
  - 1000000

- **\( Lw (A) \) [dB(A)]**
  - 44
  - 54
  - 66
  - 75
  - 63
  - 54
  - 44
  - 34
  - 24
  - 14
  - 4
  - 0
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
FEG 80

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwa sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.

BNC-R 1600

<table>
<thead>
<tr>
<th>Op Limit</th>
<th>Cl. I</th>
<th>Cl. II</th>
<th>Cl. III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>D1</td>
<td>DII</td>
<td>DIII</td>
</tr>
<tr>
<td>M.kW</td>
<td>56</td>
<td>121.5</td>
<td>244</td>
</tr>
<tr>
<td>M.RPM</td>
<td>680</td>
<td>880</td>
<td>1110</td>
</tr>
</tbody>
</table>

\( \gamma = 1.2 \text{ kg/m}^3 \)
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw (A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lw(A) sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
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$\gamma = 1.2 \text{ kg/m}^3$

**BNC-Q 1800**

**FEG 80**

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**Lw (A) [dB(A)]**

- Performance certified 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 of Model BNC is calculated in accordance with the fan outlet area as defined in AMCA 210 Annex H, Figure H.4.
- Values shown are for outlet Lwo A sound power levels for Installation Type A: free inlet, free outlet.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- 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.
## BNC 315~630'D'

### Dimensions

All Dimensions in mm

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<th>D</th>
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<th>R</th>
<th>Q</th>
<th>L (mm)</th>
<th>Fram e Size</th>
<th>F</th>
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### Model Types

#### Fan Type

- **Fram e**: P 20, 29, 38, 266, 279, 289; R 365, 389, 412, 434; Q 431, 452, 476

#### Wt (Kg) w/o

- **Model**: 400, 500, 560, 630

---

All Dimensions in mm

55
### BNC 'D'

#### BNC 710~1000'D'

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All Dimensions in mm
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All Dimensions in mm
Operational Limits - BNC-P

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<th>Maximum Fan Speed</th>
<th>Temperature Range/ Min. -20°C</th>
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\[ J = \frac{PD^2}{4} \] kgm²

Operational Limits - BNC-R

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<th>Wheel</th>
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<th>Maximum Fan Speed</th>
<th>Temperature Range/ Min. -20°C</th>
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</thead>
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<tr>
<td>CL.I</td>
<td>315 355 400 450 500 560 630 710 800 900 1000 1120 1250 1400 1600 1800</td>
<td>kW 2.4 3 4.6 6 7.1 9 11 14.6 18 21.4 27.5 34 42 56 66 93</td>
<td>rpm 3550 3180 3000 2470 2220 1950 1720 1530 1370 1210 1080 970 870 770 680 600</td>
<td>Max.˚C 55 55 55 55 55 55 55 55 55 55 55 55 55 55 55 55</td>
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<tr>
<td>CL.II</td>
<td>5.2 6.8 10 10.6 13 15.6 19 25 31.5 39 47 58.5 75 91.5 121.5 152</td>
<td>rpm 4600 4150 3890 3800 3700 3200 2880 2540 2230 1990 1770 1570 1400 1250 1130 1000 880 780</td>
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<tr>
<td>CL.III</td>
<td>kW 10.4 13.3 20 21.5 27 31.5 38 49 62 78 94 118 145 187 244 302</td>
<td>rpm 5800 5200 4900 4000 3650 3200 2800 2500 2220 1980 1770 1580 1420 1270 1110 980</td>
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\[ J = \frac{PD^2}{4} \] kgm²

Operational Limits - BNC-Q

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<td>kW 3 4 5 6.1 7.6 9 11 13.8 18.7 22.2 27 34 42 53 69 87</td>
<td>rpm 3700 3370 2900 2600 2350 2050 1800 1600 1450 1250 1120 1000 890 800 700 620</td>
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<td>CL.II</td>
<td>6.5 8.6 11 13.6 16.7 20.5 24 31.2 38.8 46.5 59 74.5 94 113 147 193</td>
<td>rpm 4800 4370 3750 3400 3050 2700 2350 2100 1850 1600 1450 1300 1170 1030 900 810</td>
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<td>CL.III</td>
<td>kW 13 17 22 27.5 33.5 40.8 50 62.7 79.4 97.7 122 152 183 227 306 385</td>
<td>rpm 6100 5500 4750 4300 3850 3400 3000 2650 2350 2050 1850 1650 1460 1300 1150 1020</td>
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The company is always improving and developing its products, therefore the company reserves the right of making changes to the illustrated products.

Certified dimension can be provided upon request.