COMMERCIAL DUTY PLUG
TYPE PLENUM FANS
EPLFN | EPLQN
Twin City Fan & Blower’s models EPLFN and EPLQN commercial duty plug type plenum fans incorporate the same performance and quality characteristics of the E-Series plug type plenum fans, but in a lighter duty, more economical design. The EPLFN and EPLQN offer a competitive cost advantage over full-framed plug type plenum fan designs in light to medium duty applications with static pressures of 2100 Pa or less.

The compact direct drive EPLFN and EPLQN offers reduced maintenance by eliminating shafts, bearings and V-belt drives, thereby providing an energy efficient solution. The EPLFN and EPLQN are a great choice for applications requiring clean airstreams as there is no belt residue in the airstream. The arrangement 4 configuration offers space savings with a reduced fan footprint. Different performance points can be achieved either through impeller width reduction or varying motor speeds. Models EPLFN and EPLQN are AMCA certified for Sound and Air.

**EPLFN**
The model EPLFN features a highly efficient and cost effective, 9-bladed aerofoil impeller design. The high efficiency of the EPLFN will often allow the use of smaller fans without increasing power requirements.

**EPLQN**
The Better Sound Quality model EPLQN features a 12-bladed aerofoil impeller design that flattens the sound spectrum and reduces the dominance of pure tones.

**Capabilities & Features**
- 14 sizes from 315 mm to 1250 mm impeller diameters
- High efficient 9 and 12 bladed aerofoil impellers
- Class II construction
- Arrangement 4 direct drive
- Volume flow from 0.5 to 32 m³/sec
- Static pressures to 2100 Pa

Twin City Fan & Blower certifies that the Model EPLFN and Model EPLQN Plenum Fans shown herein are 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.

Refer to Catalogue 475 for sound power levels.
Impellers
High efficiency, non-overloading aerofoil impellers are provided on all EPLFN and EPLQN fan sizes. Aluminium impellers are standard on all sizes. All impellers balanced to level G6.3 (3.8 mm/s rms).

Inlet Cones
Heavy-gauge spun steel inlet cones are closely matched to the impeller intake rim to ensure efficient and quiet operation.

Inlet Plate
Fan inlet cones shall mount to heavy-gauge steel inlet plate. A steel lip suitable for attachment of a boot connector shall surround the unit.

Frame
Models EPLFN and EPLQN feature heavy-gauge galvanized or finish painted steel mounting rails and motor mount for strength and rigidity in direct drive applications.

Mechanical Run Test
All fans are assembled for a mechanical run test and final balance prior to shipment. Vibration readings are taken in the axial, horizontal and vertical direction at the specified speed. Fans are balanced to Balance Quality Grade G6.3 (3.8 mm/s rms) peak or less.

AMCA Sound, Air, & FEG Certification
Models EPLFN and EPLQN have been tested per AMCA standards. The AMCA logo provides assurance that sound and air performances are achieved, and fan efficiency grades met.

Arrangement 4 (Horizontal)
Direct drive Arrangement 4 mounts the fan impeller directly onto the motor shaft. This arrangement provides a compact fan/motor unit which eliminates belt residue and requires less maintenance than other arrangements.

For these reasons, Arrangement 4 plug type plenum fans are widely used in cleanroom, pharmaceutical, and other critical applications.

Fans can be selected with varying impeller widths to provide desired performance at direct drive motor speeds. Performance changes in the field are usually achieved by means of a VFD.

Benefits of a Plug type Plenum Fan
Saves Space – There are no housings, transitions, or diffusers within the air handling unit.

Efficiency – Plug type plenum fans can be as efficient, or more efficient than scroll type fans at specific operating points towards the bottom of the fan curve. Particularly direct drive versions such as these as there are no associated drive losses.

Lower cost – Plug type plenum fans are less expensive than many scroll type fans.
Protective Enclosure
Grille style protective enclosure completely encloses all sides and the back of the fan impeller to protect personnel from moving fan parts. The panels are individually removable to provide access to the impeller for service or inspection. Protective enclosures are plated wire.

Inlet Screen
Heavy-gauge screen mounted to fan inlet for easy removal.

Vibration Isolation Pads
Spring type vibration isolation mounting pads are available to reduce the transmission of fan vibration in 25 mm or 50 mm deflection.

Piezometer Ring
(Airflow Measuring System)
A piezometer ring is available on plug type plenum fans, as well as other Twin City Fan housed fans, as part of an airflow measuring system, based on the principle of a flow nozzle. The inlet cone of the fan is used as the flow nozzle. The flow can be calculated by measuring the pressure drop through the inlet cone. No tubes or sensors are inserted in the high velocity airstream which could obstruct airflow.

The system consists of a piezometer ring mounted at the throat and a static pressure tapping mounted on the face of the inlet cone. A differential pressure transducer and digital display can also be provided.

The pressure drop is measured from the tapping located on the face of the inlet cone to the piezometer ring in the throat. The inlet tapping is connected to the high-pressure side of the transducer and the piezometer ring is connected to the low-pressure side. See diagram below.

Based on Twin City Fan laboratory tests, the system was determined to be accurate within +/-5%.

Refer to Twin City Fan Engineering Supplement ES-105.

NOTE: Twin City Fan does not recommend placement of flow measuring probes inside the fan inlet cone in the path of airflow. These devices create disturbances and unpredictable performance losses. Twin City Fan will not be responsible for loss of performance due to such devices.
To achieve the air velocity in the discharge duct and overcome the loss associated with the air entering the ductwork, additional resistance must be added to the external static pressure (ESP) requirements of the fan. Different types of duct entrances and locations will require varying correction factors. Therefore, prior to selecting a fan, make the following correction, depending upon the type of duct and its location.

### ADDITIONAL DUCT ENTRANCE LOSS TO BE ADDED TO FAN ESP

<table>
<thead>
<tr>
<th>DISCHARGE TYPE</th>
<th>CORRECTION FACTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Radial and ducted with bellmouth</td>
<td>1.1 x Duct Velocity Pressure</td>
</tr>
<tr>
<td>• Radial and ducted without bellmouth</td>
<td>1.4 x Duct Velocity Pressure</td>
</tr>
<tr>
<td>• Radial without duct or bellmouth</td>
<td>1.8 x Duct Velocity Pressure</td>
</tr>
<tr>
<td>• Flow parallel to shaft and ducted with bellmouth</td>
<td>1.6 x Duct Velocity Pressure</td>
</tr>
<tr>
<td>• Flow parallel to shaft and ducted without bellmouth</td>
<td>1.9 x Duct Velocity Pressure</td>
</tr>
<tr>
<td>• Flow parallel to shaft without duct or bellmouth</td>
<td>2.4 x Duct Velocity Pressure</td>
</tr>
</tbody>
</table>

**Example:** A system requires 14.15 m³/sec at 1250 Pa static pressure at standard air density with one 1250 mm diameter duct with bell-mouth placed in a radial discharge. Determine RPM and absorbed power:

\[
\text{Duct area} = \frac{(1.25^2 \times \pi)}{4} = 1.227 \text{ m}^2
\]

\[
\text{Duct velocity} = \frac{14.15}{1.227} = 11.53 \text{ m/s}
\]

Duct velocity pressure @ std. cond. = \( \frac{p}{\gamma} \) \( \frac{v^2}{2} \) = 0.6 \times (11.53)^2 = 80 \text{ Pa}

Entrance loss correction factor = 1.1 \times \text{duct velocity pressure} = 1.1 \times 80 = 88 \text{ Pa}

Thus, select the fan for = 1250 + 88 = 1338 \text{ Pa static pressure}
**Fan Selection Recommendations**

1. System effect losses (see AMCA 201) and plenum losses should be estimated and added to the required static pressure, prior to making selections. Refer to AMCA Publication 201 at www.amca.org and Twin City Fan Engineering Data Letter “Fan Performance Troubleshooting Guide” (FE-100) at www.tcf.com.

2. Fans should be selected so that the point of operation is approximately between 55% and 90% of the free delivery point on the fan curve.

3. Avoid selections over 4000 RPM. A narrow width, larger size impeller can be used to avoid this.

4. Where flow monitoring is required, use a piezometer ring or externally mounted flow measurement station. Fan performance may be substantially affected by flow measurement probes mounted directly in the fan inlet cone. Refer to page 4.

5. For direct drive fans without speed control (or where speed control cannot exceed 50 Hz), select fans at 3 – 5% below the nominal speed of the motor. This will normally cover the uncertainties associated with the system and air balancer’s measurements. Select motors loaded no closer than 90% of the maximum loading of the motor.

6. For multiple fans in a plenum, alternate CW and CCW rotation fans to minimize losses. If fans are not counter-rotating, install walls between each fan to create cells in the outlet plenum.

7. Add losses for duct take-offs per the chart above to pressure requirements of the fan. Bellmouth entries will always reduce losses and are recommended.

**Location and Placement of Fans in Air Handlers**

1. Centre the fan inlets in both the horizontal and vertical planes.

2. For inlet clearance, see Figure 1 (page 7). The flow should converge at an angle not greater than 45° when approaching the opening for the fan inlet. A minimum of one fan impeller diameter clearance is recommended.

3. In the fan outlet plenum, a minimum wall clearance of one-half fan impeller diameter to the periphery of the fan impeller is recommended.

4. Figure 1 (page 7) shows that the minimum clearance between the back of the fan impeller and the nearest component downstream (Dim. E) should be one impeller diameter. Small clearances do not allow the flow to equalize behind the fan impeller and the pressure drop of the downstream component is increased.

5. When the flow enters the inlet plug type plenum perpendicular to the fan/motor shaft, large system effect losses can occur. See Figure 2 (page 7) for a recommended flow baffle or a vortex breaker that may help preserve rated fan performance.

6. When two or more fans are installed in a plenum, divide the plenum into imaginary cells of equal area. Centre the fan inlets on each cell. See Figure 3 (page 7).

**Installation Recommendations**

1. Install the fan so the flexible connector on the inlet remains un-collapsed during operation.

2. Install thrust restraints (snubbers) to maintain the axial position of the fan when it is generating pressure.

3. Peripheral equipment, such as electrical components, inverters, control panels, etc., should be positioned away from the high velocity air entering or leaving the fan.

4. Adjust springs on the isolation base so that spring deflection is approximately equal for all isolators.

5. Follow safety, installation, start-up, and maintenance instructions supplied with each fan.
**Figure 1. Recommended Location of Fan in Plenum**

- **A** - D/2, but not less than 'D'
- **E** - Minimum = 'D'
- **H** - Minimum = 2D
- **W** - Minimum = 4D

**NOTE:** 'D' = Impeller diameter

**Figure 2. Flow Baffle and Vortex Spin Breaker Location**

- **BAFFLE**
- **AIRFLOW**

**Figure 3. Location of Counter-Rotating Fans**

**TWO FANS**

- **H**
- **H/2**
- **D/2**
- **W**

- **W/4**
- **W**

- **'H' MINIMUM = 2D**
- **'W' MINIMUM = 4D**

**THREE FANS**

- **H**
- **H/2**
- **D/2**
- **W**

- **W/6**
- **W/2**

- **W**

- **W/6**

- **W**

- **W**

- **W**

- **'H' MINIMUM = 2D**
- **'W' MINIMUM = 6D**

**NOTE:**
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
**Notes:**

1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
NOTES:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
**EPLQN 150**

**Notes:**
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.

**Fan Efficiency Grade = FEG 71**
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
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EPLQN 165

q_v - Flow (m³/sec)

P_f - Fan Total Pressure (Pa)

P_d - Fan Velocity Pressure (Pa)

Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
EPLFN 182

Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.

Fan Efficiency Grade = FEG 75
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.

Fan Efficiency Grade = FEG 75
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
EPLQN 222

**Notes:**
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
EPLQN 245

**Notes:**
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet Lw(A) sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
**Notes:**
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
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5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.

Fan Efficiency Grade = FEG 80
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
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6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
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EPLFN 330

Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
Fan Efficiency Grade = FEG 80

Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
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3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
EPLQN 365

Fan Efficiency Grade = FEG 80

Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
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6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
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3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
5. Values shown are for inlet Lwa sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.

Fan Efficiency Grade = FEG 80
Notes:
1. Performance certified is for Installation Type A: Free inlet, Free outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound power level ratings shown are in decibels, referred to 10 E-12 watts calculated per AMCA Standard 301.
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7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
**Notes:**
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6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
**Notes:**
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5. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, Free outlet.
6. Ratings do not include the effects of duct end correction.
7. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.
**Arrangement 4**

**NOTES:**
1. Horizontal applications only.
2. ‘CW’ rotation is standard, ‘CCW’ rotation is optional. Rotation is determined by viewing the drive end.
3. Fan guard available as option.
4. Inlet guard available as option.

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**DIMENSIONAL DATA**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>MOTOR FRAME (IEC)</th>
<th>MOTOR RATING (kW)</th>
<th>DIMENSIONS (mm UNLESS SPECIFIED)</th>
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<tbody>
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<td>80M TO 90L</td>
<td>0.5 - 2.2</td>
<td>A 648 B 51 C 635 D 508 E 254 F 76 G 596 H 161 J 355</td>
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<td>150</td>
<td>80M TO 90S</td>
<td>0.5 - 1.5</td>
<td>A 601 B 51 C 613 D 559 E 279 F 76 G 646 H 166 J 364</td>
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<td>165</td>
<td>80M TO 112M</td>
<td>0.5 - 4.0</td>
<td>A 704 B 51 C 665 D 610 E 305 F 76 G 696 H 169 J 417</td>
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<td>182</td>
<td>80M TO 112M</td>
<td>0.5 - 4.0</td>
<td>A 802 B 51 C 766 D 660 E 330 F 76 G 748 H 169 J 499</td>
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<tr>
<td>200</td>
<td>80M TO 112M</td>
<td>0.5 - 4.0</td>
<td>A 835 B 51 C 785 D 737 E 368 F 76 G 824 H 169 J 505</td>
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<td>365</td>
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**NOTES:**
- Horizontal applications only.
- ‘CW’ rotation is standard, ‘CCW’ rotation is optional.
- Rotation is determined by viewing the drive end.
- Fan guard available as option.
- Inlet guard available as option.
Fans shall be Model EPLFN or EPLQN cost effective centrifugal plug type plenum (plug) type, as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

**PERFORMANCE** — Performance ratings shall conform to AMCA Standard 205 (fan efficiency grade), 211 (air performance) and 311 (sound performance). Fans shall be tested in accordance with ANSI/AMCA Standard 210 (air performance) and 300 (sound performance) in an AMCA accredited laboratory. Fans shall be licensed to bear the AMCA certified ratings seal for both sound and air, and fan efficiency grade (FEG).

Fans shall have a sharply rising pressure characteristic extending through the operating range and continuing to rise beyond the peak efficiency to ensure quiet and stable operation. Fans shall have a non-overloading design with self-limiting horsepower characteristics and shall reach a peak in the normal selection area. All fans shall be capable of operating over the minimum pressure class limits as specified in AMCA Standard 99.

**CONSTRUCTION** — Fans shall be un-housed and incorporate a non-overloading type backward inclined aerofoil blade impeller, heavy-gauge galvanized or finish painted steel frame and inlet plate.

**FRAME AND INLET PANEL** — Inlet plates shall be of heavy-gauge galvanized or finish painted steel construction. The inlet plate incorporates a removable spun inlet cone designed for smooth airflow into the accompanying inlet retaining ring of the fan impeller. A square, formed lip suitable for attachment of a boot connector shall surround the unit.

**IMPELLER** — Impellers shall have a spun non-tapered style blade retaining ring on the inlet side to allow higher efficiencies over the performance range of the fan. All impellers on direct drive arrangement 4 fans shall have aerofoil shaped, extruded aluminium blades. All impellers shall be continuously welded around all edges. EPLFN impellers shall have nine blades for high efficiencies. EPLQN impellers shall have twelve blades for better sound quality. All impellers shall be statically and dynamically balanced on precision electronic balancers to a level of G6.3 (3.8 mm/s rms) or better.

**FINISH AND COATING** — Fan shall be constructed of corrosion resistant galvanized or finish painted steel. Aluminium components shall be unpainted.

**ACCESSORIES** — When specified, accessories shall be provided by Twin City Fan & Blower to maintain one source responsibility.

**FACTORY RUN TEST** — All fans prior to shipment shall be completely assembled and test run as a unit at the specified operating speed or maximum RPM allowed for the particular construction type. Each impeller shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Balance Quality Grade G6.3 (3.8 mm/s rms). Balance readings shall be taken by electronic type equipment in the axial, vertical, and horizontal directions. Records shall be maintained and a written copy shall be available upon request.

**GUARANTEE** — The manufacturer shall guarantee the workmanship and materials for its EPLFN or EPLQN fans for at least twelve (12) months from start-up or eighteen (18) months from shipment, whichever occurs first.

### Typical Specifications

<table>
<thead>
<tr>
<th>IMPELLER SIZE</th>
<th>DIAMETER (MM)</th>
<th>MAX RPM (20°C)</th>
<th>WR² (kg·m²)</th>
<th>IMPELLER WEIGHT (kg)</th>
<th>BARE FAN WEIGHT (kg)</th>
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<tr>
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INDUSTRIAL PROCESS AND COMMERCIAL VENTILATION SYSTEMS

CENTRIFUGAL FANS | UTILITY SETS | PLENUM & PLUG FANS | INLINE CENTRIFUGAL FANS
MIXED FLOW FANS | TUBEAXIAL & VANEAXIAL FANS | PROPELLER WALL FANS | PROPELLER ROOF VENTILATORS
CENTRIFUGAL ROOF & WALL EXHAUSTERS | CEILING VENTILATORS | GRAVITY VENTILATORS | DUCT BLOWERS
RADIAL BLADED FANS | RADIAL TIP FANS | HIGH EFFICIENCY INDUSTRIAL FANS | PRESSURE BLOWERS
LABORATORY EXHAUST FANS | FILTERED SUPPLY FANS | MANCOOLERS | FIBERGLASS FANS | CUSTOM FANS