Induced Flow Fans

- direct driven
- belt driven

AMCA 260 Tested!
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Subject to change without prior notice.
High Plume / Induced Flow Fan ensures high efficiency and reliability in dispersion of fumes.

Designers and engineers to specify the required dispersion height.

To prevent the plume down wash and limit exposure level that may be detrimental to the health.

Suitable for use in hospitals, schools, waste treatment plants, restaurants, test and research laboratories etc.

Figure 1 - Conventional stack  Figure 2 - Wolter fume jet system  Figure 3 - Fume Jet SE30
Role
Wolter’s CHEMCO with over 30 years of manufacturing experience has become one of the world’s leading Chemical Resistant Plastic Fan and Ventilator manufacturers.

The years of experience and know-how in the areas of fan engineering and its designing capabilities enable Wolter’s CHEMCO to develop a complete range of both steel and plastic induced flow fan with axial, centrifugal or mixed flow impellers with high efficient fume jet dispersion stack.

Products and Performance
Wolter offers a complete range of high-quality induced flow fan with either centrifugal or mixed flow impellers for superior performance.

With recent technical improvements, the induced flow fan now incorporates an “extended diffuser mixed-flow effect (EDME)” impeller design that offers a non-overloading power characteristic, higher efficiencies, good aerodynamic performance and lower noise emissions.

The PF-WMX series of fans impellers are extremely reliable, ensuring maintenance-free operation as well as excellent corrosion resistance.

Different materials i.e. Stainless steel, epoxy coated steel and thermo plastics materials can be processed in order to meet the demands of a multitude applications in the chemical industry and to convey different types of process air or gases. All fans are tested and rated in accordance with ISO 5801, AMCA 210, AMCA 260 and AMCA 300.

Fume Jet Nozzles
The Fume Jet nozzles are characterized by a vertical taper nozzle mounted which is mounted on the fan housing outlet for dispersion of fumnes to the atmosphere to prevent the contamination from settling and plugging.

The Fume Jet nozzle is extremely rigid to ensure that it is free of vibration or drumming during operation. It is developed to give low noise level and trouble-free service.

The nozzles come with 2 series. The “SE” series of single wind-band offer significant entrainment with low pressure losses. The “HE” series of single and double wind-band design offers superior higher plume and entrainment capability. Each series comes with 13 difference sizes capable of handling airflows up to 91,000 cmh, static pressure up to 2,200 Pa and dispersion height up to 35 meter at 16 km/hr or 10 mph wind speed.

The wind-band is designed to induce draft by up to 270 ~ 300% of the exhaust flow volume.

The Fume Jet nozzle is also designed to provide adequate exit velocities that will help prevent plume downwash. Usually it is 1.5 times the maximum expected wind speed at the nozzle exit (U.S. EPA, 1985).
Dispersion Height
The flow rate, the minimum nozzle velocity and the wind speed determine the dispersion height. The wind dictates the speed and direction in which the bulk of the plume moves, and wind also affects the amount of dispersion that takes place.

The height to ensure that emissions do not result in excessive concentrations of the pollutant can be referred to (GEP) in 40 CFR 51 Section.

Casing
The Fan casing is either made of PP, PE, PVC, PVDF, GRP, epoxy coated galvanized steel or stainless steels and offers superior corrosion & UV resistance quality.

Impellers
Wolter’s induced flow fan of “EDME” centrifugal impeller design has a non-overloading power characteristic capable of achieving better efficiencies, higher pressure and lower noise emissions over both the conventional mixed flow and centrifugal types of impeller.

Depending on the type of application, these impellers can be constructed of stainless steel, high-grade steel or aluminum alloy with epoxy coated for high temperature and anti corrosive resistance.

For adverse chemical resistance application, materials such as PA, PC, PVC, PVDF or GRP are used.

For flame-retardant properties, special reinforced compound materials with UV durability or protection against electrostatic discharge are used as well.

Each impeller is statically and dynamically balanced in two planes in accordance with Q2.5 of VDI 2060. All impellers are balanced to ANSI/AMCA Standard 204-05 BV level 4 standard, ISO 1940 & ISO 14694 international standards.

The impellers are designed for use with taper-bushes and are made of high-grade cast aluminum disks capable of running at high peripheral speeds.

Fan Base and Support
The supporting steel stands and fan bases are manufactured from heavy gauge mild steel and are hot-dip galvanised or epoxy powder coated to provide protection even in the most adverse conditions. Special surface treatments can be applied on request.

Drive
For Belt driven applications, precisely balanced pulleys with tension sleeve are used. All belts comply with ISO 1081:2013. The belt-drive and all other rotating parts are fitted with a protection guard.

Motor
If the application requires, motors of different protection classes can be supplied. On direct-driven fans, B5 flange-type motors are mounted. All motors are totally enclosed and air-cooled. Single-phase motors or motors with non-standard voltages can be supplied upon request.

Standard Colours
> All PP fans - PANTONE Warm Grey 1C
> All GRP fans - PANTONE 430

If required, other colors can be supplied.

Ancillary Equipment
> Spring anti-vibration mounts
> Condensate drain plug
> Fan and motor support base frame
> Shaft and bearing cover
> Inlet flanges, flexible connections with clamps
> Splinter shield

Service
Wolter’s CHEMCO always strive to offer the best “value for money” and to maintain its primary objective of ensuring that all our products are safe, easy to use, whilst offering reliable quality with the latest in design technology, incorporating all useful and practical features, leaving the customers with superior products and service.
Dongguan Wolter Chemco Ventilation Ltd. certifies that the Series PF-WMX-SE30 and PF-WMX-HE50 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. The series PF-WMX-HDE90 is not licensed to bear the AMCA certified Ratings Seal.

AMCA Induced Flow Licensed
The Air Movement and Control Association (AMCA) International, Inc. has introduced AMCA Standard 260, “Laboratory Methods of Testing Induced Flow Fans for Rating.” Induced flow fans, also known as high plume dilution blowers, are used to dilute hazardous laboratory exhaust and disperse the exhaust high into the atmosphere, away from possible re-entrainment zones. AMCA Standard 260 can provide consulting and facility engineers independent performance verification for critical laboratory exhaust applications that they insist on for other fans and blowers used in general HVAC applications.

The AMCA Induced Flow Fan seal encompasses the following AMCA test standards:
- AMCA Standard 260, “Laboratory Methods of Testing Induced Flow Fans for Rating”
- AMCA Standard 300, “Reverberant Room Method for Sound Testing of Fans”

Quality, Testing and Certification
The Fume Jets are produced to strict quality standards. Only the best quality materials are used. Our assembly, logistic and R&D centre has been certified in accordance to ISO 9001-2008 ensuring that all our products meet the highest standards of quality and each item is carefully inspected before shipment to ensure customer satisfaction.

Our testing facilities include the latest state-of-the-art equipments. Fans mounted with Fume Jet are rated and tested in accordance to ISO 5801 and AMCA 210, 260 and 300 standards. In many cases, factory acceptance tests (FAT) are arranged prior to delivery to ensure that all specifications and standards are met.
Technical Description

**AMCA 260 Air Test Procedure**

The following illustrations describe the procedure for determining the total laboratory exhaust fan discharge flow. The total discharge flow is the sum of inlet airflow and entrained airflow. The inlet airflow is determined first by using AMCA 210 Figure 15. Next, the key requirement to AMCA 260 is the variable resistance box. This box allows the measurement of total discharge flow ($P_s = 0$ Pa) to simulate discharging the fan to atmosphere) at all points along its fan curve. Without the variable resistance box, the entrained airflow can only be measured at the free air point of its fan curve. The entrained airflow obtained can be used to calculate an effective plume height. Therefore, AMCA 260 certification is necessary to ensure the laboratory exhaust fan specified is providing the plume rise and entrainment submitted.

**Performance Curves**

The performance curves have been established using the inlet test method in the test chamber according to AMCA 210 installation type C (duct inlet, free outlet). The curves indicate as a function of the volume flow:

- fan inlet airflow: the static pressure increase $p_s$ for constant speed (heave black lines)
- windband outlet airflow: the static pressure increase $p_s$ for constant speed (heave green lines)
- constant lines of shaft power $P_w$ (red lines)

All values relate to an air density: $\rho = 1.2$ kg/m$^3$ at 20°C. The nozzle outlet velocity $c_1$ stated in the diagrams refer to the airflow of fan inlet and the outlet diameter of nozzle. The windband outlet velocity $c_2$ stated in the diagrams refer to the airflow of windband outlet and the outlet diameter of windband;
Technical Description

Selection Example
1) Inlet flow curve
   Required duty point:
   - Volume airflow: 4,500 m³/h
   - Static pressure: 992 Pa

   Using the fan curve:
   - Having chosen a fan with adequate performance range for the required duty point, see the figure 4, plot volume flow and pressure. At the point of intersection, the following data can be read:
     - Fan Speed: 3,000 rpm
     - Shaft power: 3.36 kW
     - Nozzle outlet velocity c₁: 28.1 m/s
     - Sound power level: ≈ a₁ = 89 dB(A)

2) Outlet flow curve
   Each fan has two performance curves associated with each rpm: the black curve is the fan inlet airflow curve and the green curve directly to the right is the windband outlet airflow curve. These curves have been connected with shading in grey color.
   - Determining windband outlet volume, see the figure 5; a. Find the duty point. Draw a horizontal line to the right from "X" to the green curve "Y".
   - b. The windband outlet volume is determined by "Y", so the windband outlet volume is 7,095 m³/h.
   - Windband outlet average velocity c₂ can be read by using the windband outlet volume: 13.7 m/s
   - Entrainment ratio: Windband outlet volume / Fan inlet volume = 7,095 (m³/h) / 4,500 (m³/h) = 158%

Sound Levels
In order to make possible an assessment of sound projection adequate to the human ear the A-assessed description of sound levels has been chosen. The ascertaining of the sound power level follows the reverberant room method according to AMCA 300. The sound power levels shown on each performance curve, outlet LwoA, refer to the overall sound power "A-Weighted" levels. The computed sound power levels were converted into A-Weighted levels using adjustments to the octave band spectrum as follows:

<table>
<thead>
<tr>
<th>Centre Frequency Hz</th>
<th>63</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-Weighted Adjustment dB(A)</td>
<td>-26.2</td>
<td>-16.1</td>
<td>-8.6</td>
<td>-3.2</td>
<td>0.0</td>
<td>+1.2</td>
<td>+1.0</td>
<td>-1.1</td>
</tr>
</tbody>
</table>

The overall sound pressure levels, LpoA, can be calculated from the overall sound power levels as follows:
1) Free Field Conditions: LpoA = LwoA - (20 log₁₀ d) - 11
2) Room Conditions: LpoA = LwoA - (20 log₁₀ d) - 7
Where: d = distance from fan in meters
Technical Description

Laboratory Exhaust System

- **Bypass Air** ($Q_B$)
  Ambient air that is drawn through the bypass air plenum and mixed with the lab exhaust to increase dilution and plume rise. Bypass air is primarily used in variable volume applications to maintain a constant discharge volume but can also be used to increase overall exhaust volume and dilution.

- **Dilution Ratio** ($D.R.$)
  The ratio of the total fan outlet volume to the lab exhaust volume. (Total Volume / Lab Exhaust Air Volume). Value includes any additional bypass air in the calculation.

- **Entrainment Air** ($Q_E$)
  Air that is entrained (induced flow) through the windband and fan housing, mixed with the laboratory exhaust to increase the dilution ratio and plume rise.

- **Entrainment Ratio** ($E.R.$)
  The ratio of the total fan outlet volume to the fan inlet volume. (Total Volume / Fan Inlet Volume).

- **Total Airflow** ($Q_T$)
  The total airflow exiting the windband including fume exhaust, bypass air, and entrainment air. (See diagram to right).

\[
Q_T = Q_F + Q_E
\]

\[
Q_F = Q_B + Q_L
\]

\[
Q_T = Q_B + Q_L + Q_E
\]

Dilution Ratio:

\[
D.R. = \frac{Q_T}{Q_L}
\]

Entrainment Ratio:

\[
E.R. = \frac{Q_T}{Q_F}
\]
Effective Plume Height Calculation
When studying laboratory exhaust design issues, it is important to consider effective stack height. This is the physical height of the equipment plus the plume height. The following explains how this is calculated.

\[ h_e = h_r + h_s \]

where: \( h_e \) = fan height (dimensions section of this catalog); \( h_r \) = plume rise, (m); \( V \) = stack discharge velocity, (m/s); \( d \) = effective stack diameter, (m); \( U^* \) = cross wind velocity [m/s]

* From ASHRAE Laboratory Design Guide, Equation 9-2
** Plume rises shown on performance pages are calculated with a 10 mph (4.47 m/s) crosswind.

Pressure Loss and Effective Plume Height Selection
Example:
Flow volume at 4,500 m³/h with system static pressure 992 pa. Minimal height from floor is 8 meter. Max. fan rpm at 3000.
1) Refer to the Wolter’s CHEMCO fan curve, select a fan to meet the above specification.
2) Base on fan curve PF-WMX-HE50 400 can perform the job.
3) Air flowing through Fume Jet will encounters resistance to flow due to friction losses and turbulence losses.
   Refer to the graph "Pressure Loss due to Jet Action (HE50 / HDE90 Type)" on page 24 for the actual fan pressure.
   So the pressure loss caused by nozzle is 436 pa, actual fan static pressure = 992 + 436 = 1428 pa
4) Fan data: PF-WMX-HE50 400 with RPM at 3,000, 3.36kW shaft power;
5) Refer to graph "Effective Plume Rise \( h_r \) - HE50 Series, Fan Sizes 315 to 630" on page 26. From 4,500 m³/h intersect size 400 curve result \( h_r = 5.480 \) m.
6) Refer to Wolter’s CHEMCO Fume Jet dimensions chart for PF-WMX-HE50 400 total height from floor level:
   \( h_s = 3.166 \) m

Total effective plume height \( h_e = 5.480 + 3.025 = 8.505 \) meters.
Performance Curve

PF-WMX-SE30 315
PF-WMX-HE50 315
PF-WMX-HDE90 315

Inlet Airflow

Outlet Airflow

The A-weighted Sound Power Levels

Fan test laboratory AMCA 210, 260 & 301. Performance certified is for installation type C - Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 315 is not licensed to bear the AMCA certified rating seal. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet LwWA sound power levels for installation Type C: ducted inlet, free outlet.
The A-weighted Sound Power Levels

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C - Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 355 is not licensed to bear the AMCA certified rating seal.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet Lwa sound power levels for installation Type C: ducted inlet, free outlet.
Performance Curve

Inlet Airflow

Outlet Airflow

The A-weighted Sound Power Levels

<table>
<thead>
<tr>
<th>Type</th>
<th>a1</th>
<th>a2</th>
<th>a3</th>
<th>b1</th>
<th>b2</th>
<th>b3</th>
<th>c1</th>
<th>c2</th>
<th>c3</th>
<th>c4</th>
<th>c5</th>
<th>Density</th>
<th>a4</th>
<th>a5</th>
<th>b4</th>
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<th>c6</th>
<th>d6</th>
<th>e6</th>
<th>f6</th>
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<td>93</td>
<td>94</td>
<td>95</td>
<td>85</td>
<td>88</td>
<td>88</td>
<td>88</td>
<td>78</td>
<td>78</td>
<td>81</td>
<td>1.2 kg/m³</td>
<td>82</td>
<td>73</td>
<td>76</td>
<td>76</td>
<td>78</td>
<td>67</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>HE 50</td>
<td>89</td>
<td>91</td>
<td>91</td>
<td>91</td>
<td>83</td>
<td>85</td>
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<td>1.2 kg/m³</td>
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<td>73</td>
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<td>HDE 90</td>
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<td>84</td>
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<td>85</td>
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<td>78</td>
<td>78</td>
<td>1.2 kg/m³</td>
<td>78</td>
<td>70</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>64</td>
<td>66</td>
<td>66</td>
</tr>
</tbody>
</table>

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C: Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 400 is not licensed to bear the AMCA certified rating seal.
The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet LwA sound power levels for installation Type C: ducted inlet, free outlet.
Performance Curve

PF-WMX-SE30 450
PF-WMX-HE50 450
PF-WMX-HDE90 450

The A-weighted Sound Power Levels

| Lwo(A) | a1 | b1 | c1 | d1 | a2 | b2 | c2 | d2 | a3 | b3 | c3 | d3 | a4 | b4 | c4 | d4 | a5 | b5 | c5 | d5 | a6 | b6 | c6 | d6 |
|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| SE 30  | 93 | 96 | 97 | 97 | 88 | 91 | 92 | 93 | 81 | 84 | 85 | 86 | 78 | 79 | 80 | 81 | 70 | 73 | 74 | 75 | 66 | 69 | 70 | 71 |
| HE 50  | 91 | 94 | 94 | 94 | 87 | 89 | 89 | 89 | 80 | 82 | 82 | 82 | 74 | 76 | 76 | 77 | 68 | 71 | 71 | 71 | 64 | 66 | 66 | 66 |
| HDE 90 (non-AMCA) | 90 | 93 | 93 | 93 | 86 | 88 | 88 | 88 | 79 | 81 | 81 | 81 | 73 | 75 | 75 | 76 | 67 | 70 | 70 | 70 | 63 | 65 | 65 | 65 |

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C - Ducted inlet. Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of inlets/ outlets (accessories).

NB: PF-WMX-HDE 90 450 is not licensed to bear the AMCA certified rating seal. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet Lwo(A) sound power levels for installation Type C: ducted inlet, free outlet.
The A-weighted Sound Power Levels

<table>
<thead>
<tr>
<th>Lw0A</th>
<th>a1</th>
<th>b1</th>
<th>c1</th>
<th>d1</th>
<th>b2</th>
<th>c2</th>
<th>a2</th>
<th>b3</th>
<th>c3</th>
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</tbody>
</table>

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C - Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 500 is not licensed to bear the AMCA certified rating seal.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet Lw0A sound power levels for installation Type C: ducted inlet, free outlet.
The A-weighted Sound Power Levels

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C: Ducted inlet. Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of apertures (accessories).

NB: PF-WMX-HDE 90 560 is not licensed to bear the AMCA certified rating seal. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet LwA sound power levels for installation Type C: ducted inlet, free outlet.

Inlet Airflow

Outlet Airflow

Performance Curve

SE 30

HE 50

HDE 90 (non-AMCA)
Performance Curve

**Inlet Airflow**

- **SE 30**
- **HE 50**
- **HDE 90 (non-AMCA)**

**Outlet Airflow**

- **SE 30**
- **HE 50**
- **HDE 90 (non-AMCA)**

**The A-weighted Sound Power Levels**

<table>
<thead>
<tr>
<th>Model</th>
<th>Lw[A]</th>
<th>a1</th>
<th>a2</th>
<th>b1</th>
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<td>HE 50</td>
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<td>HDE 90</td>
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Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C - Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 630 is not licensed to bear the AMCA certified rating seal.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet Lw[A] sound power levels for installation Type C - ducted inlet, free outlet.
Performance Curve

Outlet Airflow

The A-weighted Sound Power Levels

Lwo(A)  a1  b1  c1  d1  a2  b2  c2  d2  a3  b3  c3  d3  a4  b4  c4  d4  a5  b5  c5  d5  a6  b6  c6  d6
SE 30  95  96  98  96  100  90  92  93  96  84  86  87  90  77  78  80  82  72  73  75  78  85  67  69  72
HE 50  93  93  94  95  88  88  89  90  82  82  83  84  74  75  75  77  69  70  70  72  63  64  64  65
HDE 90  92  92  93  94  87  87  88  89  81  81  82  83  73  74  74  76  68  69  69  70  62  63  63  64

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C: Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 710 is not licensed to bear the AMCA certified rating seal. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet LwoA sound power levels for installation Type C: ducted inlet, free outlet.

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Performance Curve

Inlet Airflow

Outlet Airflow

The A-weighted Sound Power Levels

| Low[A] | a1 | b1 | c1 | d1 | a2 | b2 | c2 | a3 | b3 | c3 | d3 | a4 | b4 | c4 | d4 | a5 | b5 | c5 | d5 | a6 | b6 | c6 | d6 |
|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| SE 30  | 93 | 95 | 96 | 99 | 87 | 89 | 90 | 93 | 80 | 81 | 83 | 86 | 75 | 76 | 78 | 81 | 90 | 70 | 72 | 75 | 63 | 65 | 67 | 70 |
| HE 50  | 91 | 91 | 92 | 93 | 85 | 86 | 86 | 87 | 77 | 78 | 78 | 80 | 72 | 73 | 74 | 75 | 66 | 67 | 69 | 69 | 61 | 62 | 64 |
| HDE 90 | 90 | 90 | 91 | 92 | 84 | 85 | 85 | 86 | 76 | 77 | 77 | 79 | 71 | 72 | 73 | 74 | 65 | 66 | 68 | 60 | 61 | 61 | 63 |

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C: Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 800 is not licensed to bear the AMCA certified rating seal.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet LwA sound power levels for installation Type C: ducted inlet, free outlet.
Performance Curve

Inlet Airflow

Outlet Airflow

The A-weighted Sound Power Levels

Lw(A) a1 b1 c1 d1 a2 b2 c2 d2 a3 b3 c3 d3 a4 b4 c4 d4 a5 b5 c5 d5 a6 b6 c6 d6
SE 30 96 98 99 102 91 92 94 97 83 85 86 89 78 80 81 84 72 74 75 78 67 68 70 74
HE 50 94 94 95 96 88 89 90 91 81 81 82 83 76 76 77 78 70 71 72 65 66 66 67
HDE 90 93 93 94 95 87 88 89 90 80 80 81 82 75 75 76 77 69 69 70 71 64 64 65 66

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C - Ducted inlet. Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 900 is not licensed to bear the AMCA certified rating seal.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet Lw(A) sound power levels for installation Type C: ducted inlet, free outlet.
Performance Curve

Inlet Airflow

Outlet Airflow

The A-weighted Sound Power Levels

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Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C - Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet Lw0A sound power levels for installation Type C: ducted inlet, free outlet.

PF-WMX-HE50 1000
PF-WMX-HDE90 1000

Note: PF-WMX-HDE 90/1000 is not licensed to bear the AMCA certified rating seal.
Performance Curve

PF-WMX-SE30 1120  
PF-WMX-HE50 1120  
PF-WMX-HDE90 1120

Outlet Airflow

The A-weighted Sound Power Levels

LwoA  a1  b1  c1  d1  a2  b2  c2  d2  a3  b3  c3  d3  a4  b4  c4  d4  a5  b5  c5  d5  a6  b6  c6  d6
SE 30  98  100  101  104  91  92  94  97  86  87  89  92  80  81  83  86  74  76  78  81  68  69  71  75
HE 50  96  96  97  98  88  89  91  83  84  84  86  77  78  78  80  72  73  73  75  66  67  67  68
HDE 90  95  96  96  97  87  88  88  90  82  83  83  85  76  77  77  79  71  72  72  74  65  66  66  67

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C - Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 is not licensed to bear the AMCA certified rating seal. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet LwoA sound power levels for installation Type C: ducted inlet, free outlet.
Performance Curve

PF-WMX-SE30 1250
PF-WMX-HE50 1250
PF-WMX-HDE90 1250

The A-weighted Sound Power Levels

| Lw(A) | a1 | b1 | c1 | d1 | a2 | b2 | c2 | a3 | b3 | c3 | d3 | a4 | b4 | c4 | d4 | a5 | b5 | c5 | d5 | a6 | b6 | c6 | d6 |
|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| SE 30 | 94 | 95 | 97 | 100 | 99 | 96 | 93 | 86 | 88 | 89 | 80 | 81 | 82 | 83 | 75 | 76 | 77 | 78 | 69 | 70 | 72 | 63 | 63 | 64 | 65 |
| HE 50 | 91 | 92 | 93 | 94 | 96 | 89 | 90 | 92 | 96 | 83 | 84 | 86 | 89 | 88 | 90 | 80 | 81 | 82 | 83 | 75 | 76 | 77 | 78 | 69 | 70 | 72 | 63 | 63 | 64 | 65 |
| HDE 90 | 91 | 91 | 92 | 93 | 85 | 86 | 87 | 88 | 79 | 80 | 81 | 82 | 83 | 75 | 76 | 77 | 78 | 69 | 70 | 72 | 63 | 63 | 64 | 65 |

Fan test laboratory AMCA 210, 260 & 300. Performance certified is for installation type C - Ducted inlet, Free outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of cross winds. Performance ratings do not include the effects of appurtenances (accessories).

NB: PF-WMX-HDE 90 1250 is not licensed to bear the AMCA certified rating seal.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for outlet LwA sound power levels for installation Type C: ducted inlet, free outlet.
Pressure Loss due to Jet Action (SE30 Type)
Fan Sizes 315 to 1250
Pressure Loss due to Jet Action (HE50 / HDE90 Type)
Fan Sizes 315 to 1250
Effective Plume Rise $h_r$
- SE30 Series, Fan Sizes 315 to 630

Cross wind velocity = 4.47 m/s (10 mph)

Effective Plume Rise $h_r$
- SE30 Series, Fan Sizes 710 to 1250

Cross wind velocity = 4.47 m/s (10 mph)
Plume Rise

Effective Plume Rise $h_r$
- HE50 Series, Fan Sizes 315 to 630

Cross wind velocity = 4.47 m/s (10 mph)

Effective Plume Rise $h_r$
- HE50 Series, Fan Sizes 710 to 1250

Cross wind velocity = 4.47 m/s (10 mph)
Various type of preferred plenum layout system

1FP Series

Damper
### Plenum Layout System

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<th>H(SE30) [mm]</th>
<th>H(HE50) [mm]</th>
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* Damper fully open area.

We reserve the right to alter measurements without notice in case of technical improvements.
## SE30 Series

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We reserve the right to alter measurements without notice in case of technical improvements.
## Nozzle Dimension

### HE50 Series

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*We reserve the right to alter measurements without notice in case of technical improvements*
# Nozzle Dimension

## HDE90 Series

![Diagram of HDE90 Series Fan](image)

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Wolter Sales Network

Inland
Ing. Günther Rößler
D-07619 Schölen
Tel. (+49) 03 66 94 / 22 359
Fax (+49) 03 66 94 / 22 357
guenther.roessler@wolterfans.de

Mattias Industrievertr gownungen
D-16259 Bad Freienwalde
Tel. (+49) 03344/301984
Fax (+49) 03344/301986
thomas.mattias@wolterfans.de

Industrieservice Dre xer
D-49080 Osnabrück
Tel. (+49) 0 541 / 20 04 88 3
Fax (+49) 0 541 / 20 04 88 4
wolfgang.drexler@wolterfans.de

Burkhardt Projekt GmbH
D-67583 Guntersblum
Tel. (+49) 0 62 49 / 82 01
Fax (+49) 0 62 49 / 88 58
info@bp-wolter.de

Friedrich Glock
D-97980 Bad Mergentheim
Tel. (+49) 0 79 31 / 37 44
Fax (+49) 0 79 31 / 28 58
friedrich.glock@wolterfans.de

Burkhardt Projekt GmbH
D-67583 Guntersblum
Tel. (+49) 0 62 49 / 82 01
Fax (+49) 0 62 49 / 88 58
info@bp-wolter.de

info@wolter.com.hk
Fax (+852) 0 2456 0290
Wolter Asia Ltd.
Hongkong:
Fax (+86) 0 576 / 26 56 830
Tel. (+86) 0 576 / 26 22 666  (26 52 888)
Taizhou City, Zhejiang
Hengjie, Luqiao District
Taizhou Wolter Ventilation Co. Ltd.
info@wolterfans.com
Tel. (+86) 0 769 / 8655 7298
Shipai, Dongguan City, Guangdong
Chemco Building, Miao Bian Wang Ind.
China Mainland:

India:
Wolter Ventilators India Pvt. Ltd.
867 D, Block-A, Sushant Lok, Phase-I,
Gurgaon - 122009 (Haryana)
Tel. +91 124 2577797, 4261001-3
sales@wolterindia.in

Middle East and North Africa
Israel:
Pach Taas (Ashkelon) Ltd.
Tel. (+972) 0 8 / 67 19 770
Fax (+972) 0 8 / 67 19 771
info@pachtaas.com

UAE, Qatar, Lebanon, Jordan, Saudi Arabia:

Energy International Co.
UAE-Sharjah, P.O. Box 3562
Tel. (+971) 06 / 53 43 477
Fax (+971) 06 / 53 43 756
fsal@energysales.ae

Energy International Co.
P.O. Box 45217 Abu Dhabi, UAE
Tel. (+971) 2 67 11 10 8
Fax (+971) 2 67 69 669
amohsen@energymnt.ae

Energy International Co.
(Pool 3562 Sharjah, UAE)
Tel. (+971) 65 54 34 77
Fax (+971) 65 34 37 56
fsal@energysales.ae

Energy International Corporation
Malaz Area, Siler Highway Beside BANK
ALBLAD Riyadh, Saudi Arabia
Tel. (+966) 14 15 39 59
msheer@energymnt.com

Energy International Corporation
P.O. Box 37643 Doha, Qatar
Tel. (+974) 48 51 875
Fax (+974) 48 51 812
aas@energymnt.com

Energy International Corporation
234 Babeschi Btg 2nd floor Al-Madinah,
Al Munawarah St Amman, Jordan
Tel. (+962) 65 67 19 15
Fax (+962) 65 67 19 16
eabuzahra@energymnt.com

Energy International Corporation
Mar Roukoz Center-Block B - First Floor,
Hazmieh, Lebanon
Tel. (+961) 54 50 61 0
Fax (+961) 54 51 16 9
msheer@energymnt.com

Energy International
The Sydney Fan Company.
NSW 2147, Sydney, Australia
Tel. (+61) 2 / 9624 4000
Fax (+61) 2 / 9624 4100
sales@wolterfans.com.au

Australia
The Sydney Fan Company.
NSW 2147, Sydney, Australia
Tel. (+61) 2 / 9624 4000
Fax (+61) 2 / 9624 4100
sales@thesydneyfancompany.com