# Performance test

The performance test is carried out by measuring the pressure difference between the inlet and outlet of the fans. Subsequently, the pressure difference is used to read the airflow through the curve in the figure or to calculate the airflow using the equations respect to the type of air handling unit.

We highly recommend following the performance test procedure in Airlinq® Service Tool.

Before the measurement of the pressure difference is carried out it is important that:

- There are new clean filters in the air handling unit
- The air handling unit is operating at 100 % airflow and the control voltages are stabilised. Be aware, of that the stabilisation can take a few minutes
- The air handling unit is not in any system condition such as Low Temp. process or Condensation process, because it influences the airflow.

## AM/AMC 150 – generation 2 (9000100102/9040100102)

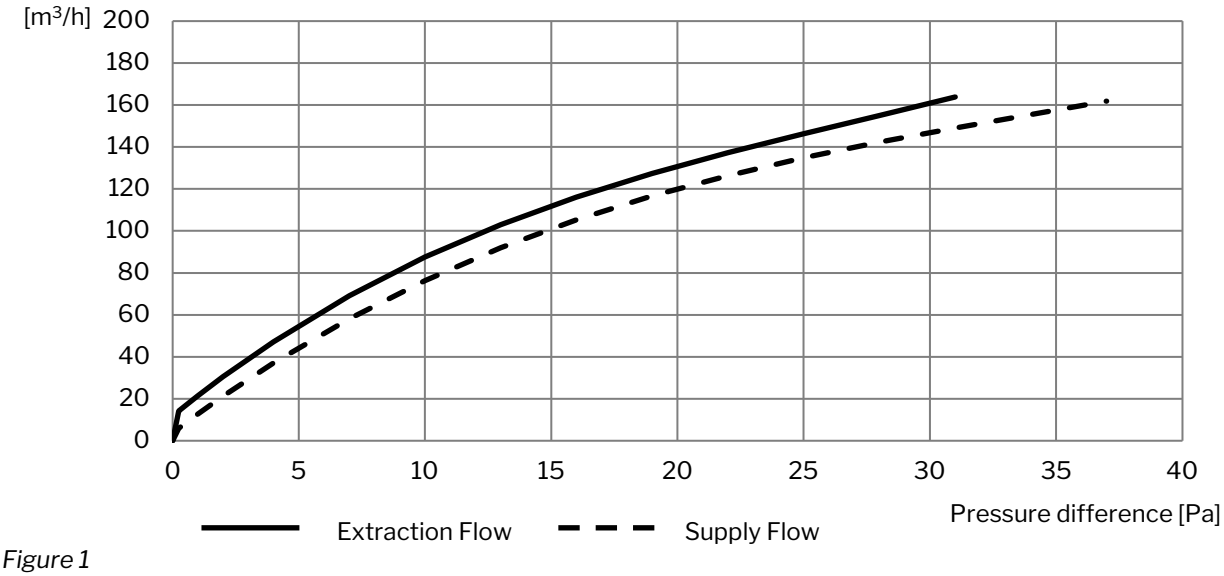



*Figure 1*

In equation 1.1 and 1.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 1.1: | $\dot{V} = 29.8 * (\Delta p)^{0.5}$ | $\dot{V} = 27.6 * (\Delta p)^{0.5}$ | [m³/h] |
| 1.2: | $\dot{V} = 8.3 * (\Delta p)^{0.5}$ | $\dot{V} = 7.7 * (\Delta p)^{0.5}$ | [l/s] |

If you have an AM150 or AMC150 generation 2 where the fans have been replaced to a newer type, please use the data for generation 3 or 4 given below depending on fan type.

## AM150 – generation 3 (9000100103)

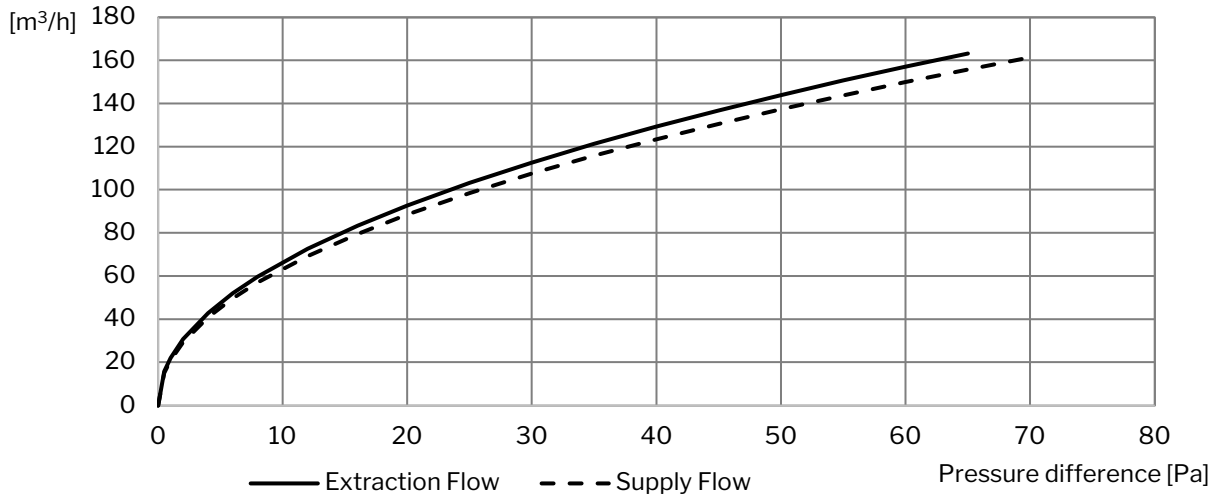



*Figure 2*

In equation 2.1 and 2.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 2.1: | $\dot{V} = 22.0 * (\Delta p)^{0.48}$ | $\dot{V} = 21.0 * (\Delta p)^{0.48}$ | [m³/h] |
| 2.2: | $\dot{V} = 6.11 * (\Delta p)^{0.48}$ | $\dot{V} = 5.83 * (\Delta p)^{0.48}$ | [l/s] |

## AMC 150 – generation 3 (9040100103)

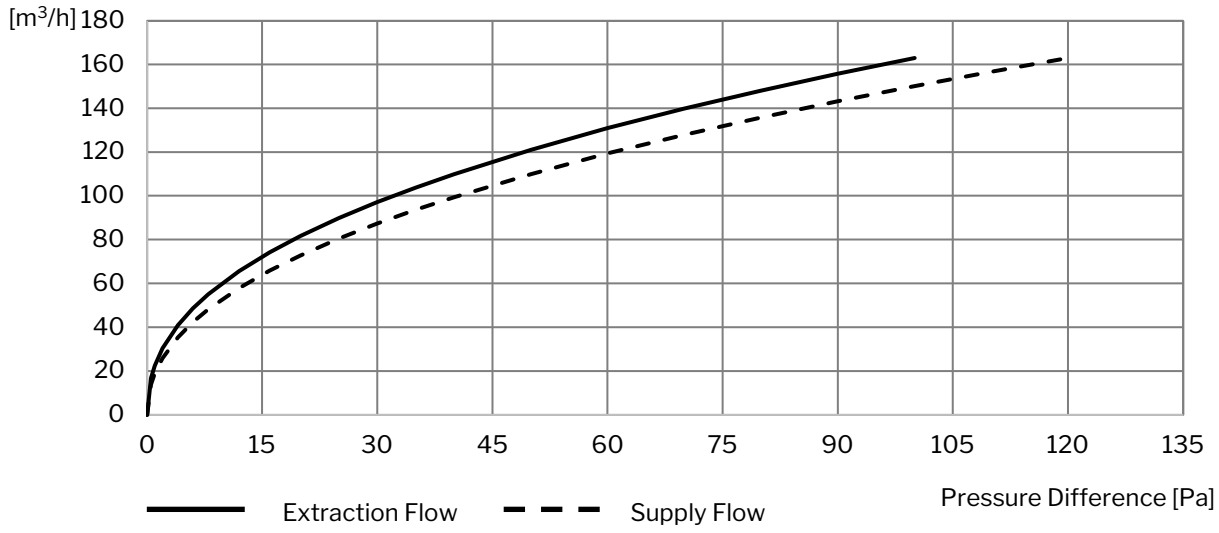



*Figure 3*

In equation 3.1 and 3.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 3.1: | $\dot{V} = 22.5 * (\Delta p)^{0.43}$ | $\dot{V} = 18.9 * (\Delta p)^{0.45}$ | [m$^3$/h] |
| 3.2: | $\dot{V} = 6.25 * (\Delta p)^{0.43}$ | $\dot{V} = 5.25 * (\Delta p)^{0.45}$ | [l/s] |

## AM 150 – generation 4 (9000150104), without CC150

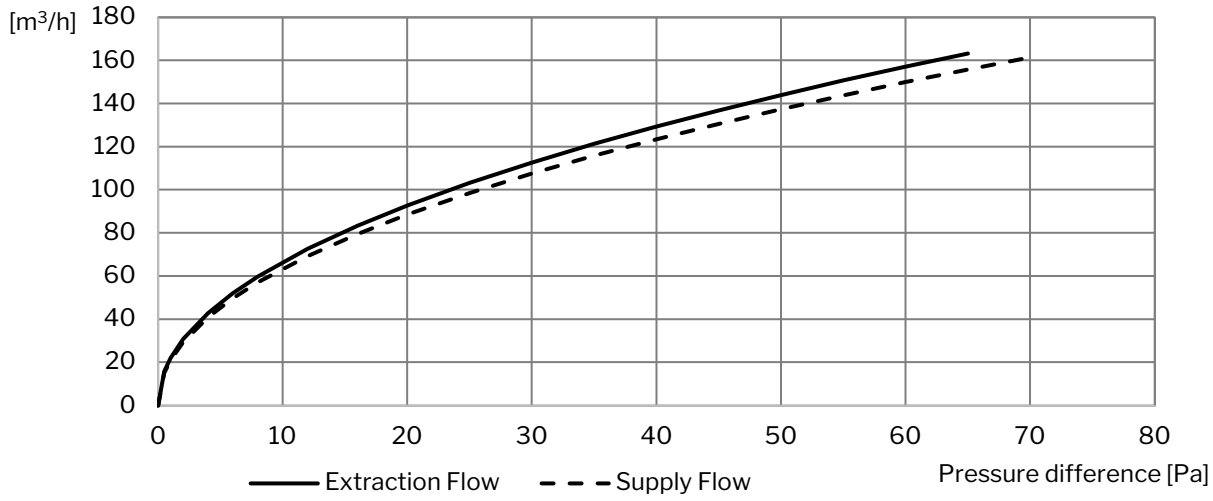



*Figure 4*

In equation 4.1 and 4.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 4.1: | $\dot{V} = 22.0 * (\Delta p)^{0.48}$ | $\dot{V} = 21.0 * (\Delta p)^{0.48}$ | [m³/h] |
| 4.2: | $\dot{V} = 6.11 * (\Delta p)^{0.48}$ | $\dot{V} = 5.83 * (\Delta p)^{0.48}$ | [l/s] |

## AM 150 – generation 4 (9000150104), with CC150

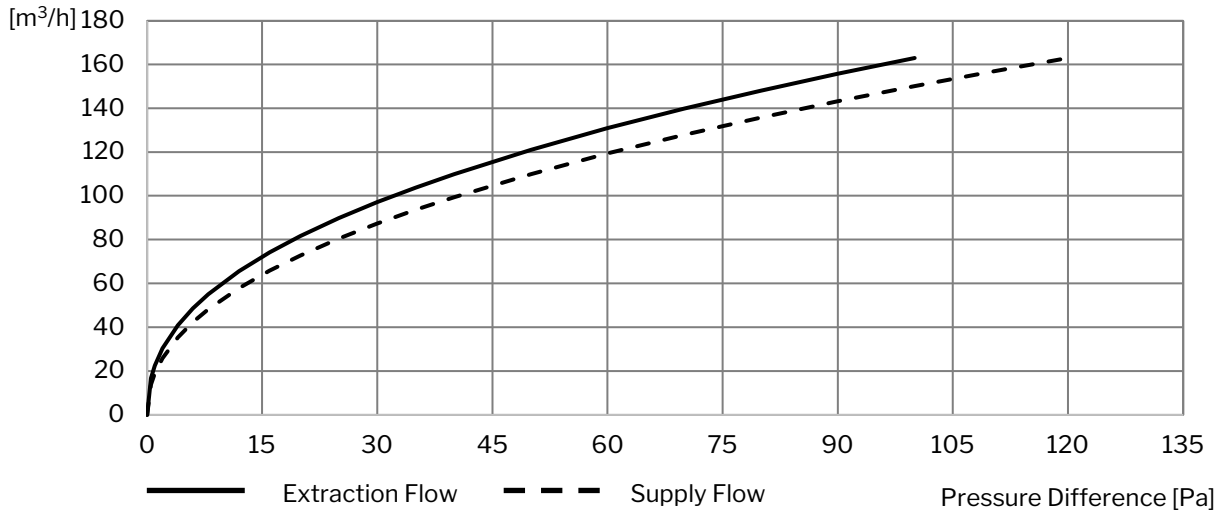



*Figure 5*

In equation 5.1 and 5.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 5.1: | $\dot{V} = 22.5 * (\Delta p)^{0.43}$ | $\dot{V} = 18.9 * (\Delta p)^{0.45}$ | [m³/h] |
| 5.2: | $\dot{V} = 6.25 * (\Delta p)^{0.43}$ | $\dot{V} = 5.25 * (\Delta p)^{0.45}$ | [l/s] |

## AM 150 – generation 6 (9000150106), without CC150

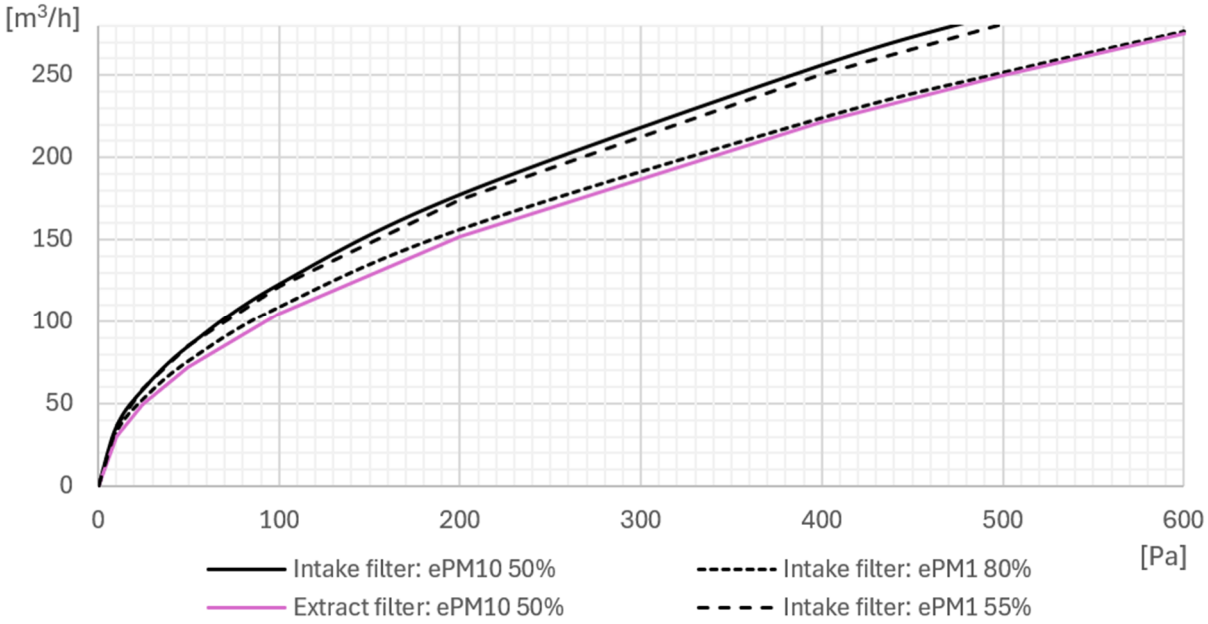



*Figure 6*

In equation 6.1 to 6.6, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

Filter configuration (extract + intake): ePM10 50% + ePM10 50%

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 6.1: | $\dot{V} = 8.7 * (\Delta p)^{0.54}$ | $\dot{V} = 10.7 * (\Delta p)^{0.53}$ | [m³/h] |
| 6.2: | $\dot{V} = 2.4 * (\Delta p)^{0.54}$ | $\dot{V} = 3.74 * (\Delta p)^{0.53}$ | [l/s] |

Filter configuration (extract + intake): ePM10 50% + ePM1 55%

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 6.3: | $\dot{V} = 8.7 * (\Delta p)^{0.54}$ | $\dot{V} = 11.1 * (\Delta p)^{0.52}$ | [m³/h] |
| 6.4: | $\dot{V} = 2.4 * (\Delta p)^{0.54}$ | $\dot{V} = 3.08 * (\Delta p)^{0.52}$ | [l/s] |

Filter configuration (extract + intake): ePM10 50% + ePM1 80%

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 6.5: | $\dot{V} = 8.7 * (\Delta p)^{0.54}$ | $\dot{V} = 9.93 * (\Delta p)^{0.52}$ | [m³/h] |
| 6.6: | $\dot{V} = 2.4 * (\Delta p)^{0.54}$ | $\dot{V} = 2.76 * (\Delta p)^{0.52}$ | [l/s] |

## AM 150 – generation 6 (9000150106), with CC150

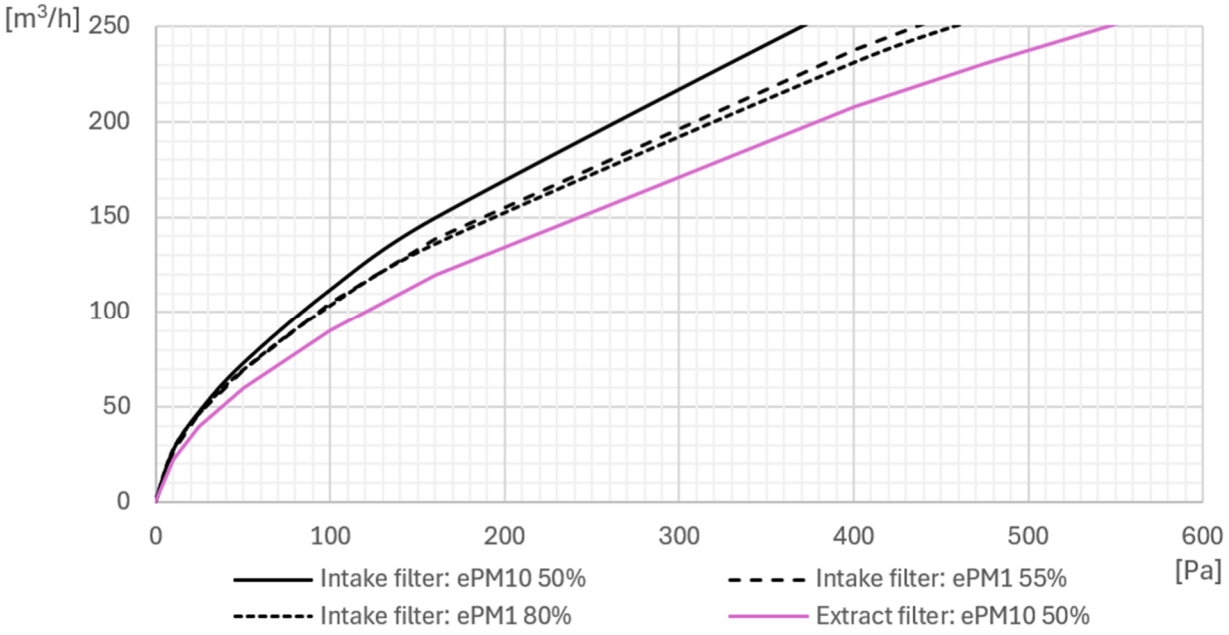



*Figure 7*

In equation 7.1 to 7.6, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

Filter configuration (extract + intake): ePM10 50% + ePM10 50%

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 7.1: | $\dot{V} = 5.7 * (\Delta p)^{0.60}$ | $\dot{V} = 6.42 * (\Delta p)^{0.62}$ | [m³/h] |
| 7.2: | $\dot{V} = 1.6 * (\Delta p)^{0.60}$ | $\dot{V} = 1.78 * (\Delta p)^{0.62}$ | [l/s] |

Filter configuration (extract + intake): ePM10 50% + ePM1 55%

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 7.3: | $\dot{V} = 5.7 * (\Delta p)^{0.60}$ | $\dot{V} = 6.93 * (\Delta p)^{0.59}$ | [m³/h] |
| 7.4: | $\dot{V} = 1.6 * (\Delta p)^{0.60}$ | $\dot{V} = 1.93 * (\Delta p)^{0.59}$ | [l/s] |

Filter configuration (extract + intake): ePM10 50% + ePM1 80%

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 7.5: | $\dot{V} = 5.7 * (\Delta p)^{0.60}$ | $\dot{V} = 7.14 * (\Delta p)^{0.58}$ | [m³/h] |
| 7.6: | $\dot{V} = 1.6 * (\Delta p)^{0.60}$ | $\dot{V} = 1.98 * (\Delta p)^{0.58}$ | [l/s] |

## AM 300 H/V – generation 2 (9010300102 / 9010300202)

The following figure and equations for AM 300 H/V are applicable for both extraction and supply.

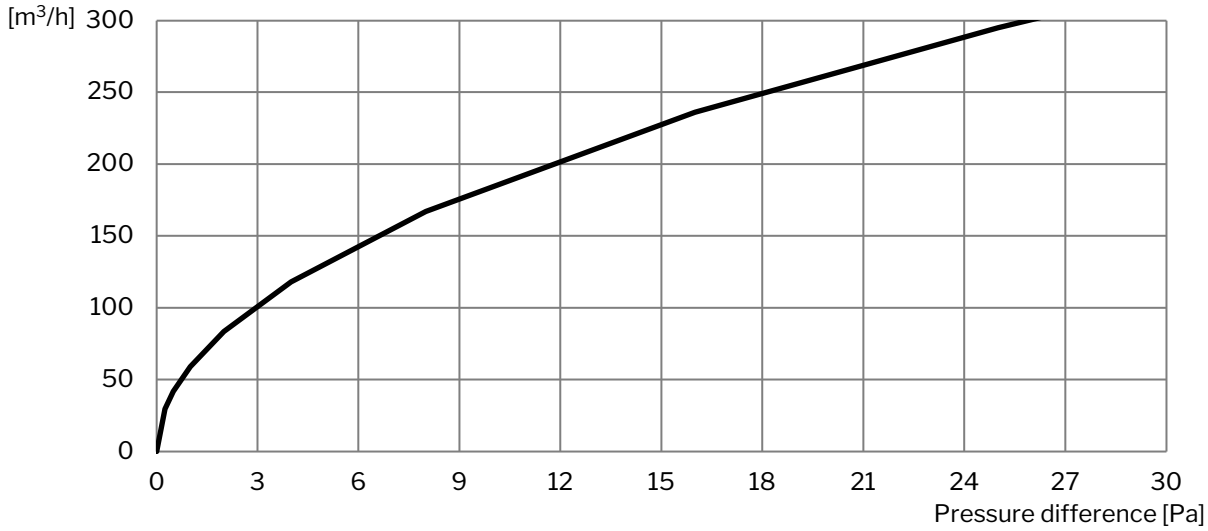



*Figure 8*

In equation 8.1 and 8.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

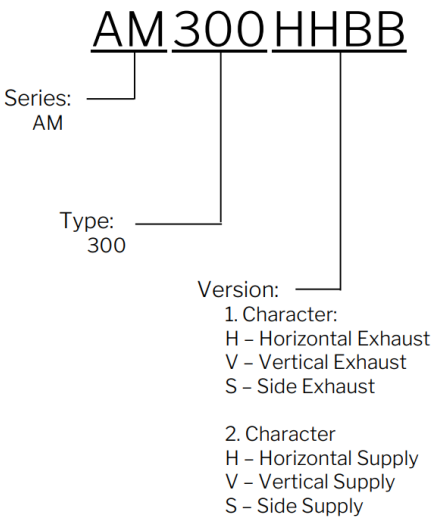
8.1: $\dot{V} = 59.0 * (\Delta p)^{0.5}$ [m³/h]

8.2: $\dot{V} = 16.4 * (\Delta p)^{0.5}$ [l/s]

## AM 300 (9000300001) with serial number from 3000551 or below

Figure 9.1 and equation 9.1 to 9.6 for AM 300 are applicable extraction flow depending on position of exhaust connection.

Figure 9.2 and equation 9.7 to 9.12 for AM 300 are applicable supply flow depending on position of supply connection.



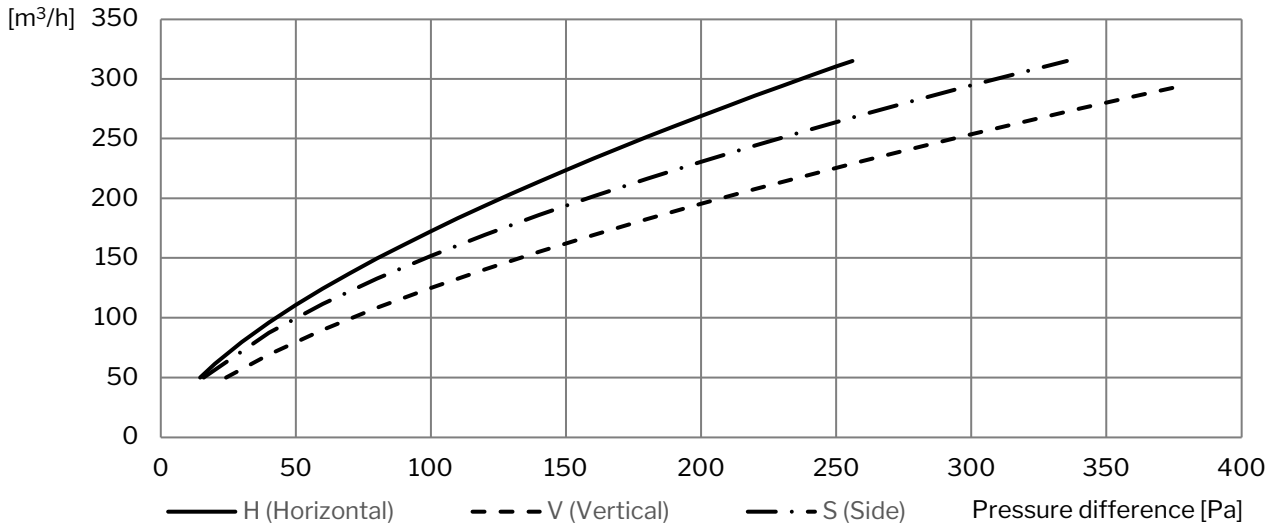



*Figure 9.1: Extraction flow depending on pressure difference and position of exhaust connection (H, V, S).*

In equation 9.1 to 9.6, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | | Extraction flow: | |
|---|---|---|---|
| 9.1: | For H (Horizontal) exhaust: | $\dot{V} = 9.01 * (\Delta p)^{0.641}$ | [m³/h] |
| 9.2: | For H (Horizontal) exhaust: | $\dot{V} = 2.502 * (\Delta p)^{0.641}$ | [l/s] |
| 9.3: | For V (Vertical) exhaust: | $\dot{V} = 6.44 * (\Delta p)^{0.644}$ | [m³/h] |
| 9.4: | For V (Vertical) exhaust: | $\dot{V} = 1.789 * (\Delta p)^{0.644}$ | [l/s] |
| 9.5: | For S (Side) exhaust: | $\dot{V} = 9.45 * (\Delta p)^{0,603}$ | [m³/h] |
| 9.6: | For S (Side) exhaust: | $\dot{V} = 2.625 * (\Delta p)^{0.603}$ | [l/s] |

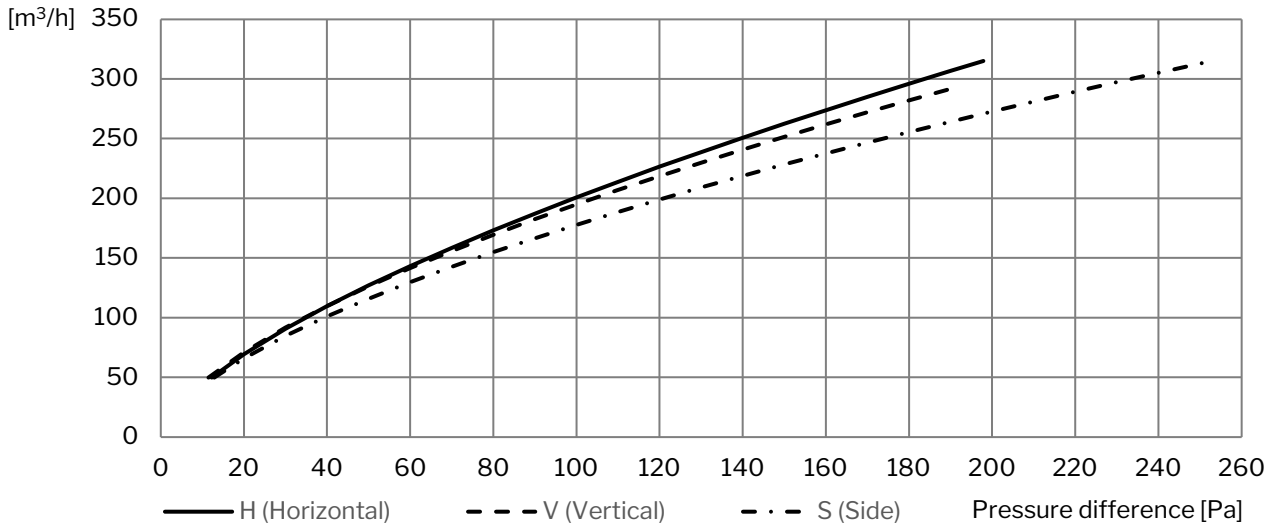



*Figure 9.2: Supply flow depending on pressure difference and position of supply connection (H, V, S).*

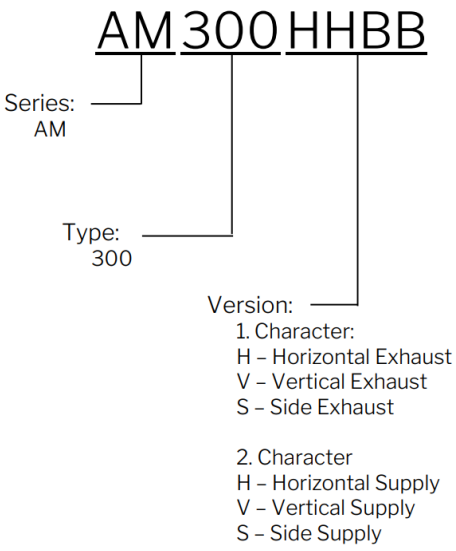
In equation 9.7 to 9.12, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | | Supply flow: | |
|---|---|---|---|
| 9.7: | For H (Horizontal) supply: | $\dot{V} = 9.56 * (\Delta p)^{0.661}$ | [m³/h] |
| 9.8: | For H (Horizontal) supply: | $\dot{V} = 2.656 * (\Delta p)^{0.661}$ | [l/s] |
| 9.9: | For V (Vertical) supply: | $\dot{V} = 10.81 * (\Delta p)^{0.628}$ | [m³/h] |
| 9.10: | For V (Vertical) supply: | $\dot{V} = 3.003 * (\Delta p)^{0.628}$ | [l/s] |
| 9.11: | For S (Side) supply: | $\dot{V} = 10.37 * (\Delta p)^{0,617}$ | [m³/h] |
| 9.12: | For S (Side) supply: | $\dot{V} = 2.881 * (\Delta p)^{0.617}$ | [l/s] |

## AM 300 (9000300001) with serial number from 3000552 or higher

Figure 10.1 and equation 10.1 to 10.6 for AM 300 are applicable extraction flow depending on position of exhaust connection.

Figure 10.2 and equation 10.7 to 10.12 for AM 300 are applicable supply flow depending on position of supply connection.



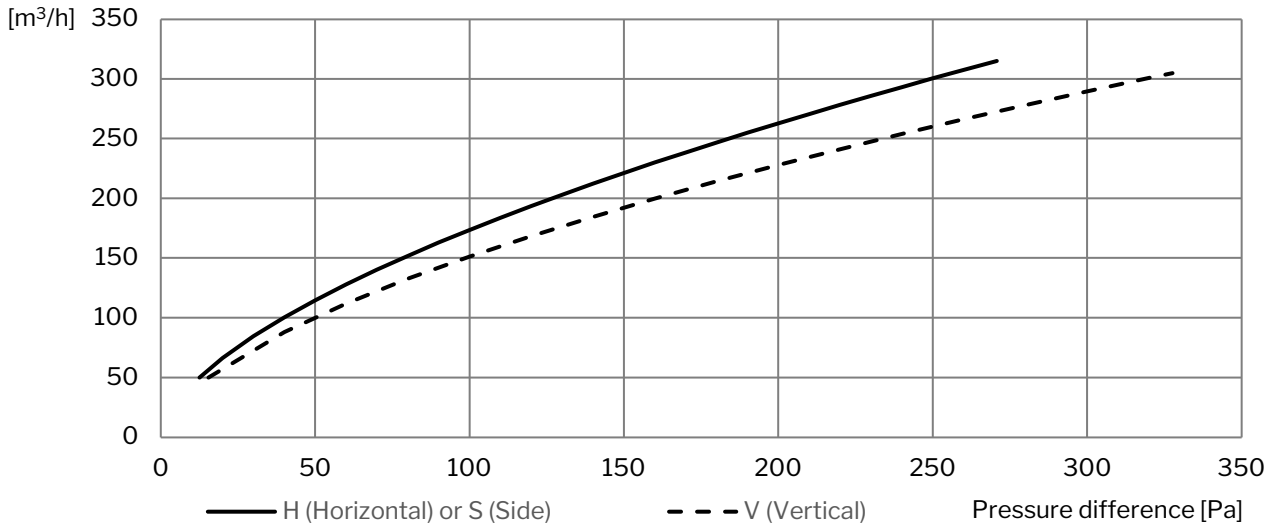



*Figure 10.1: Extraction flow depending on pressure difference and position of exhaust connection (H, V, S).*

In equation 10.1 to 10.6, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference. in Pa

| | | Extraction flow: | |
|---|---|---|---|
| 10.1: | For H (Horizontal) exhaust: | $\dot{V} = 10.997 * (\Delta p)^{0.599}$ | [m³/h] |
| 10.2: | For H (Horizontal) exhaust: | $\dot{V} = 3.055 * (\Delta p)^{0.599}$ | [l/s] |
| 10.3: | For V (Vertical) exhaust: | $\dot{V} = 9.948 * (\Delta p)^{0.591}$ | [m³/h] |
| 10.4: | For V (Vertical) exhaust: | $\dot{V} = 2.763 * (\Delta p)^{0.591}$ | [l/s] |
| 10.5: | For S (Side) exhaust: | $\dot{V} = 10.997 * (\Delta p)^{0,599}$ | [m³/h] |
| 10.6: | For S (Side) exhaust: | $\dot{V} = 3.055 * (\Delta p)^{0.599}$ | [l/s] |

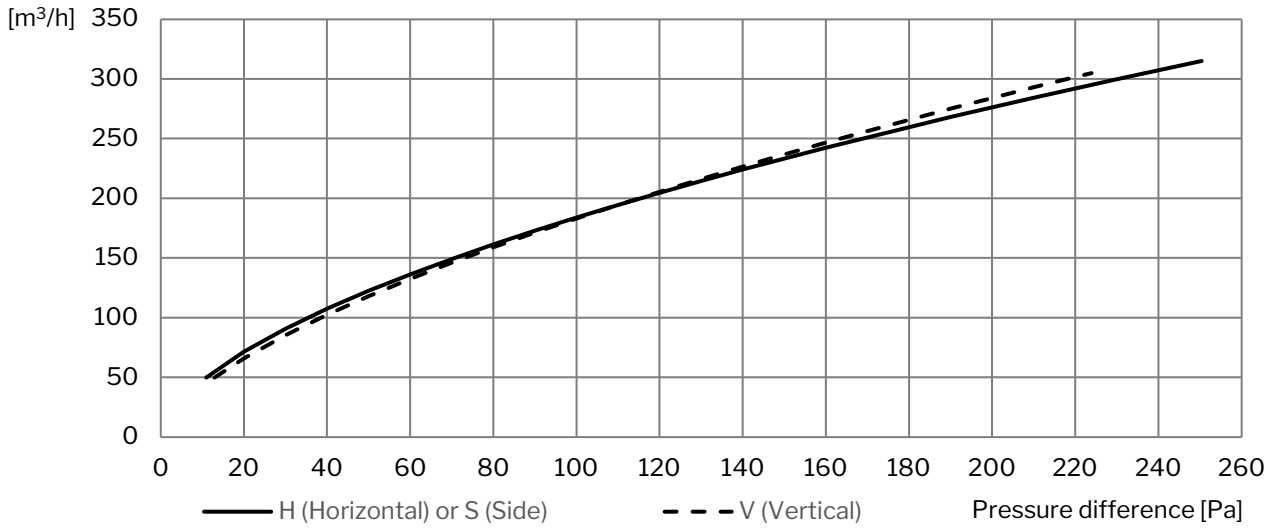



*Figure 10.2: Supply flow depending on pressure difference and position of supply connection (H, V, S).*

In equation 10.7 to 10.12, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | | Supply flow: | |
|---|---|---|---|
| 10.7: | For H (Horizontal) supply: | $\dot{V} = 12.313 * (\Delta p)^{0.587}$ | [m³/h] |
| 10.8: | For H (Horizontal) supply: | $\dot{V} = 3.420 * (\Delta p)^{0.587}$ | [l/s] |
| 10.9: | For V (Vertical) supply: | $\dot{V} = 9.872 * (\Delta p)^{0.634}$ | [m³/h] |
| 10.10: | For V (Vertical) supply: | $\dot{V} = 2.742 * (\Delta p)^{0.634}$ | [l/s] |
| 10.11: | For S (Side) supply: | $\dot{V} = 12.313 * (\Delta p)^{0,587}$ | [m³/h] |
| 10.12: | For S (Side) supply: | $\dot{V} = 3.420 * (\Delta p)^{0.587}$ | [l/s] |

**AM 500 H**

The following figure and equations for AM 500 H are applicable for both extraction and supply.

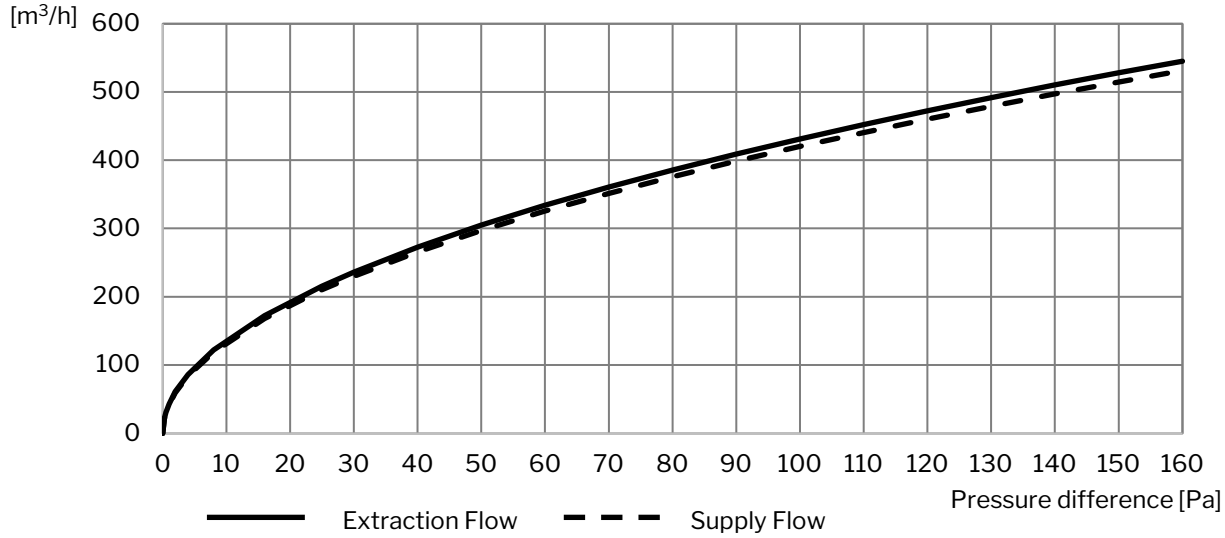



*Figure 11*

In equation 11.1 and 11.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 11.1: | $\dot{V} = 43.1 * (\Delta p)^{0.5}$ | $\dot{V} = 42.0 * (\Delta p)^{0.5}$ | [m³/h] |
| 11.2: | $\dot{V} = 12.0 * (\Delta p)^{0.5}$ | $\dot{V} = 11.6 * (\Delta p)^{0.5}$ | [l/s] |

**AM 500 V**

The following figure and equations for AM 500 V are applicable for both extraction and supply.

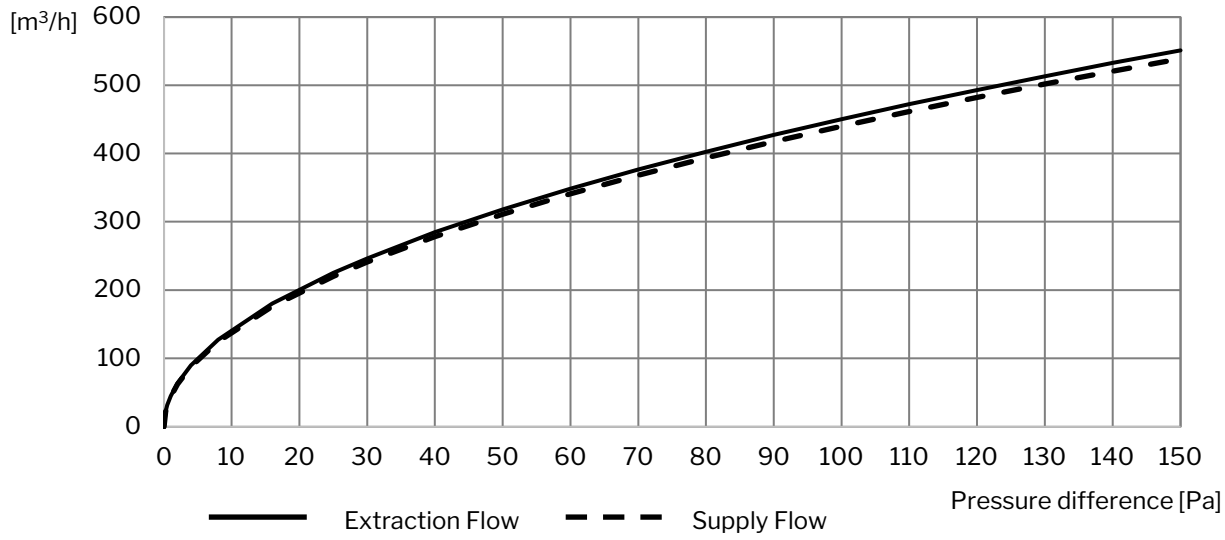



*Figure 12*

In equation 12.1 and 12.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 12.1: | $\dot{V} = 45.0 * (\Delta p)^{0.5}$ | $\dot{V} = 44.0 * (\Delta p)^{0.5}$ | [m³/h] |
| 12.2: | $\dot{V} = 12.5 * (\Delta p)^{0.5}$ | $\dot{V} = 12.2 * (\Delta p)^{0.5}$ | [l/s] |

**AM 800 H/V**

The following figure and equations for AM 800 H/V are applicable for both extraction and supply.

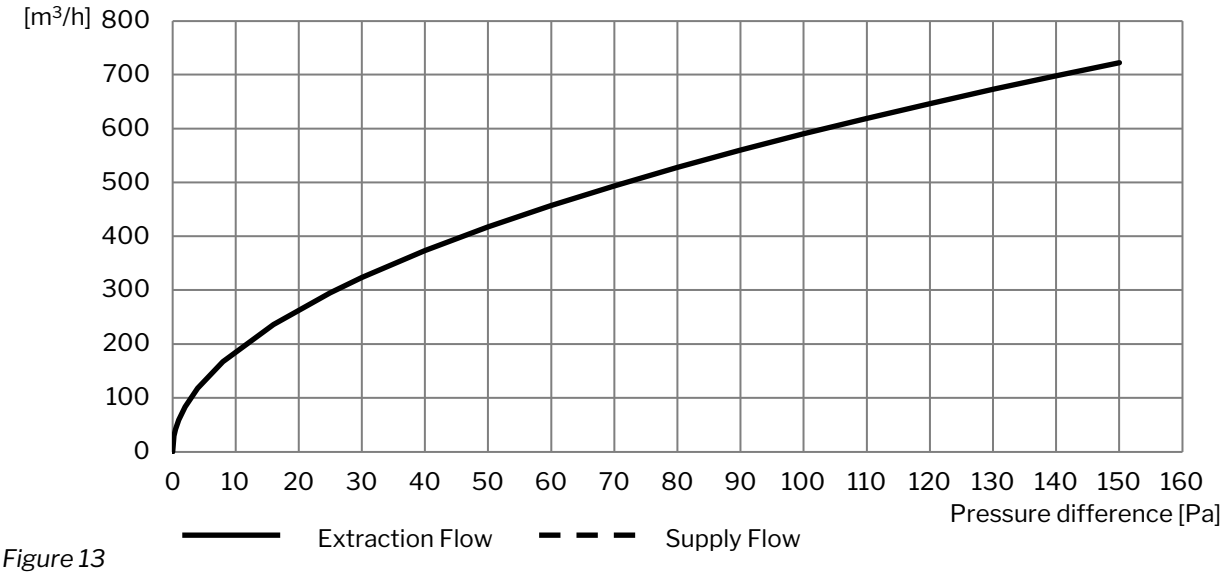



*Figure 13*

In equation 13.1 and 13.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

13.1: $\dot{V} = 59.0 * (\Delta p)^{0.5}$ [m$^3$/h]

13.2: $\dot{V} = 16.4 * (\Delta p)^{0.5}$ [l/s]

**AM 900 HM – generation 3 (9020900103)**

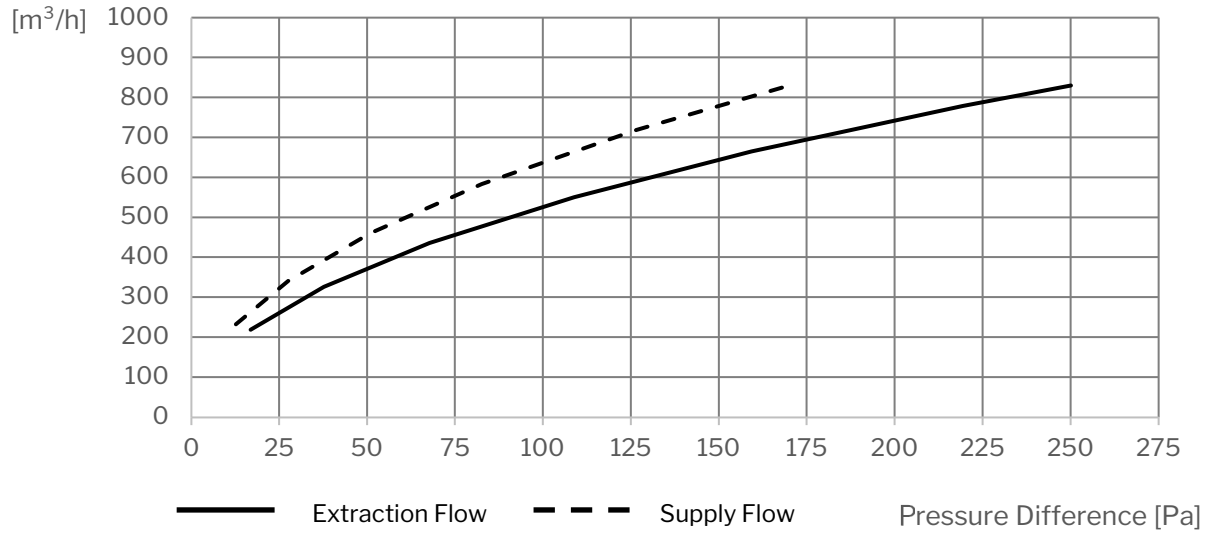



*Figure 14*

In equation 14.1 and 14.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 14.1: | $\dot{V} = 54.25 * (\Delta p)^{0.494}$ | $\dot{V} = 67.01 * (\Delta p)^{0.49}$ | [m³/h] |
| 14.2: | $\dot{V} = 15.07 * (\Delta p)^{0.494}$ | $\dot{V} = 18.61 * (\Delta p)^{0.49}$ | [l/s] |

**AM 900 VM – generation 3 (9020900203)**

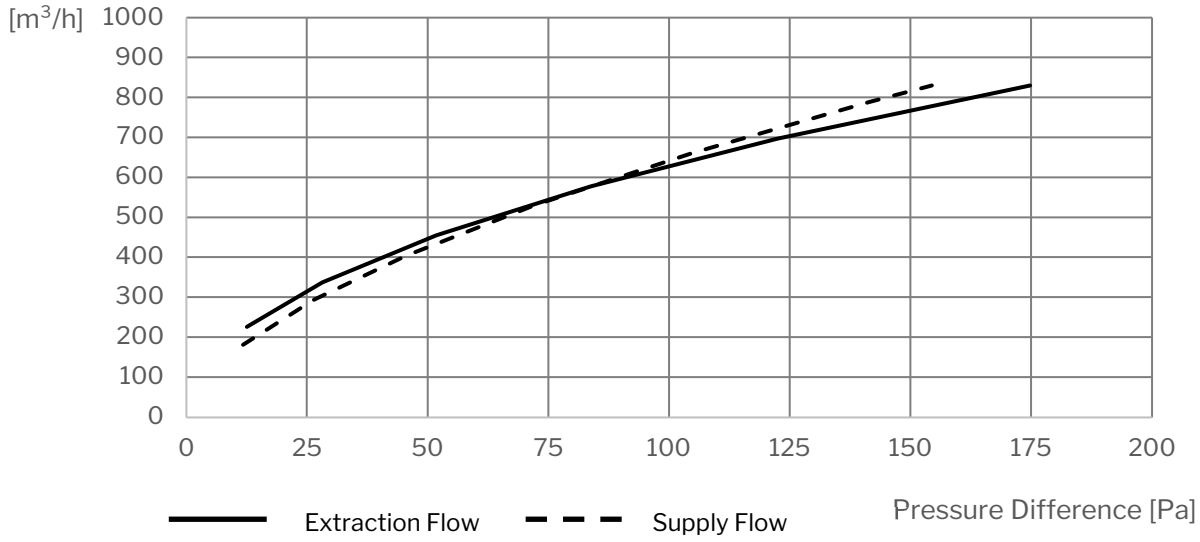



*Figure 15*

In equation 15.1 and 15.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 15.1: | $\dot{V} = 42.44 * (\Delta p)^{0.59}$ | $\dot{V} = 64.77 * (\Delta p)^{0.494}$ | [m³/h] |
| 15.2: | $\dot{V} = 11.79 * (\Delta p)^{0.59}$ | $\dot{V} = 17.99 * (\Delta p)^{0.494}$ | [l/s] |

**AM 950 F**

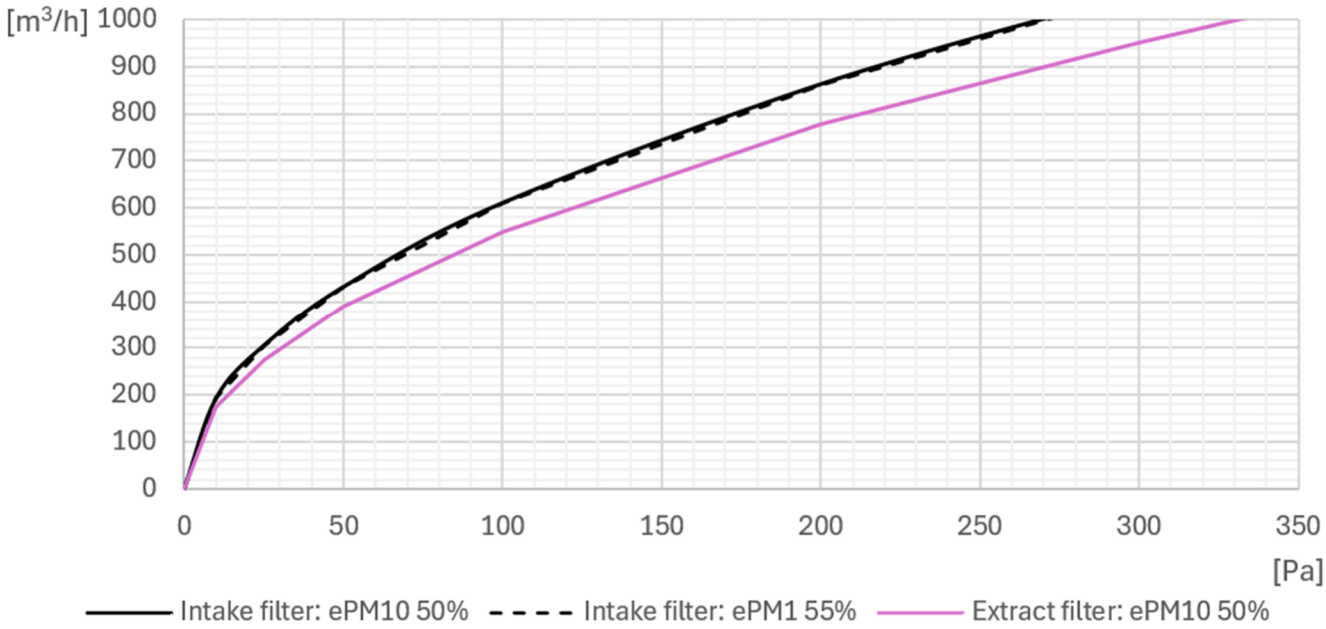



*Figure 16*

In equation 16.1 to 16.4, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

Filter configuration (extract + intake): ePM10 50% + ePM10 50%

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 16.1: | $\dot{V} = 55 * (\Delta p)^{0.5}$ | $\dot{V} = 61 * (\Delta p)^{0.5}$ | [m³/h] |
| 16.2: | $\dot{V} = 15{,}3 * (\Delta p)^{0.5}$ | $\dot{V} = 16.9 * (\Delta p)^{0.5}$ | [l/s] |

Filter configuration (extract + intake): ePM10 50% + ePM1 55%

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 16.3: | $\dot{V} = 55 * (\Delta p)^{0.5}$ | $\dot{V} = 61 * (\Delta p)^{0.5}$ | [m³/h] |
| 16.4: | $\dot{V} = 15.3 * (\Delta p)^{0.5}$ | $\dot{V} = 16.9 * (\Delta p)^{0.5}$ | [l/s] |

**AM 1000**

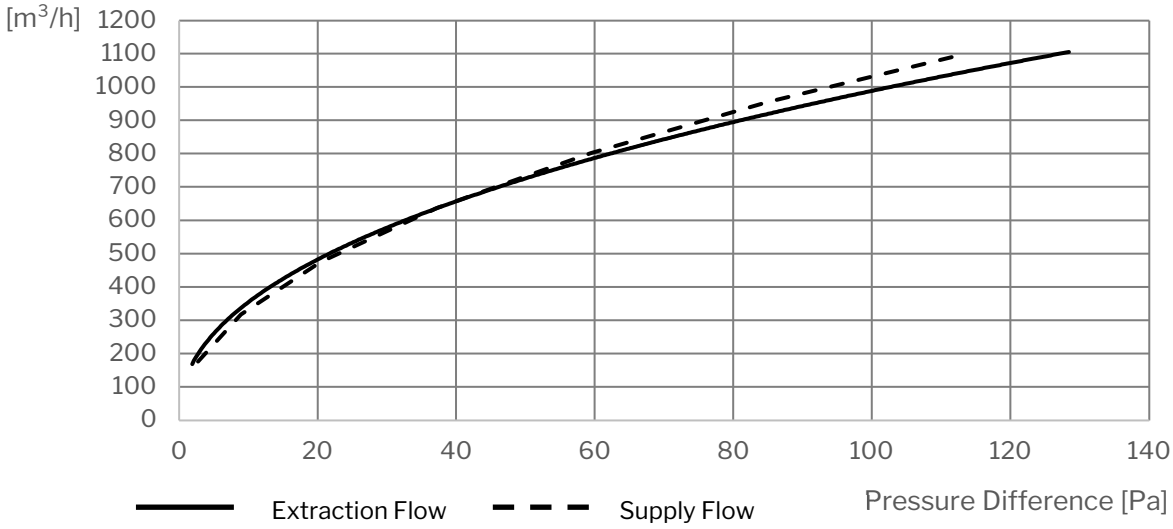



*Figure 17*

In equation 17.1 and 17.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 17.1: | $\dot{V} = 126.73 * (\Delta p)^{0.446}$ | $\dot{V} = 108.29 * (\Delta p)^{0.49}$ | [m³/h] |
| 17.2: | $\dot{V} = 35.20 * (\Delta p)^{0.446}$ | $\dot{V} = 30.08 * (\Delta p)^{0.49}$ | [l/s] |

**AM 1200 H**

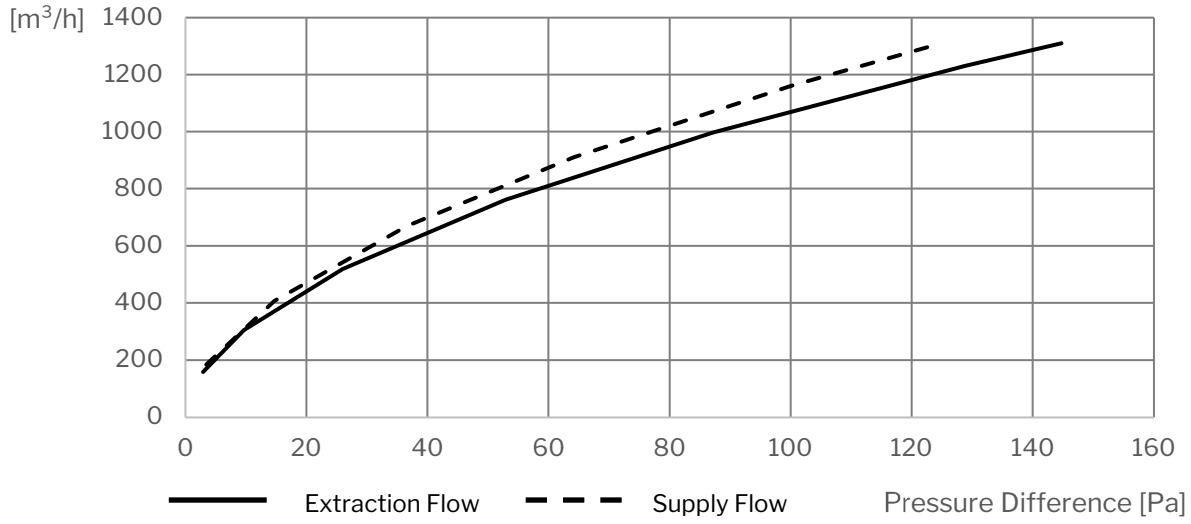



*Figure 18*

In equation 18.1 and 18.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 18.1: | $\dot{V} = 89.25 * (\Delta p)^{0.54}$ | $\dot{V} = 93.43 * (\Delta p)^{0.547}$ | [m³/h] |
| 18.2: | $\dot{V} = 24.79 * (\Delta p)^{0.54}$ | $\dot{V} = 25.95 * (\Delta p)^{0.547}$ | [l/s] |

**AM 1200 V**

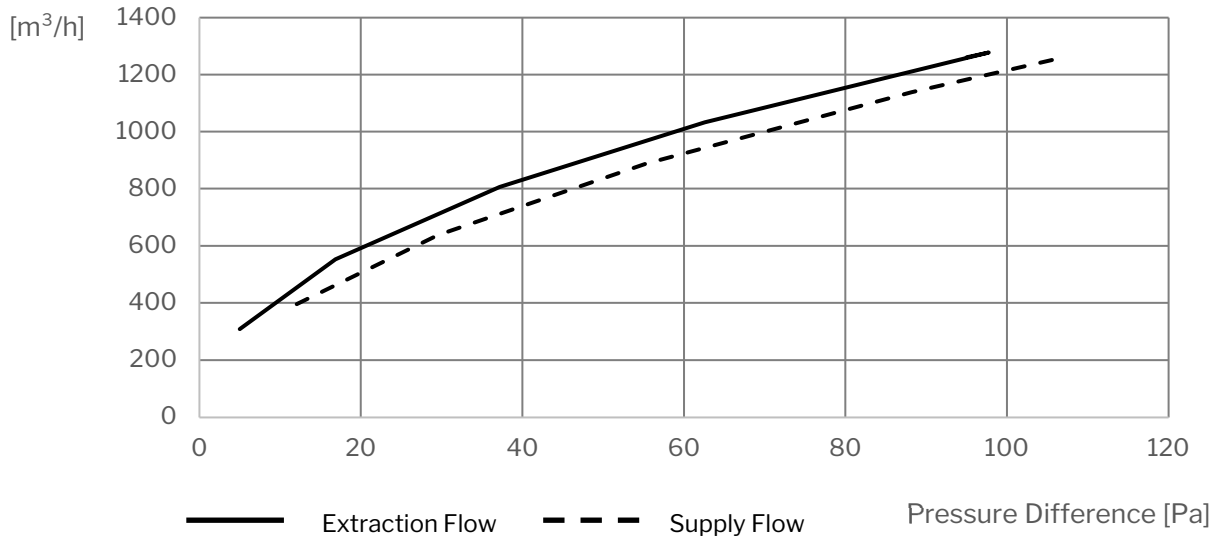



*Figure 19*

In equation 19.1 and 19.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 19.1: | $\dot{V} = 143.54 * (\Delta p)^{0.477}$ | $\dot{V} = 105.89 * (\Delta p)^{0.53}$ | [m³/h] |
| 19.2: | $\dot{V} = 39.87 * (\Delta p)^{0.477}$ | $\dot{V} = 29.41 * (\Delta p)^{0.53}$ | [l/s] |

**DV 1000**

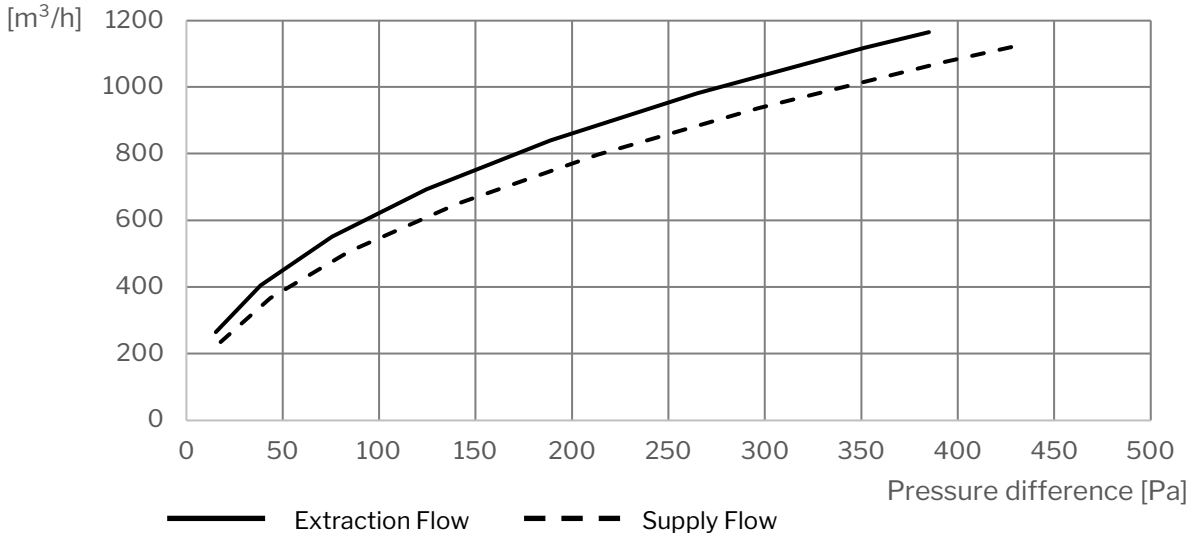



*Figure 20*

In equation 20.1 and 20.2, $\dot{V}$ is the airflow and $\Delta p$ is the pressure difference in Pa.

| | Extraction flow: | Supply flow: | |
|---|---|---|---|
| 20.1: | $\dot{V} = 57.54 * (\Delta p)^{0.49}$ | $\dot{V} = 75.32 * (\Delta p)^{0.46}$ | [m³/h] |
| 20.2: | $\dot{V} = 15.98 * (\Delta p)^{0.49}$ | $\dot{V} = 20.92 * (\Delta p)^{0.46}$ | [l/s] |