

# FlowGrid for Axial and Centrifugal Fans

Less noise – better quality of life.

# ebmpapst

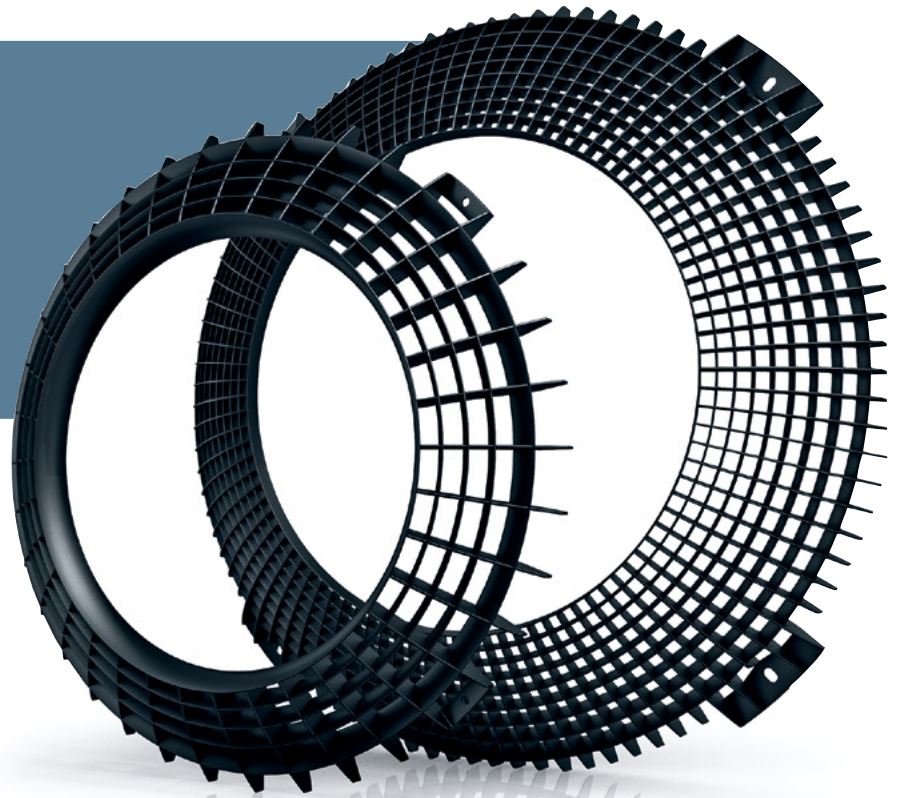
The engineer's choice



## Innovating for people

*FlowGrid stands for ... efficient noise reduction features in cooling, ventilation and air-conditioning technology. ebm-papst offers a future-oriented solution for the problem of high-performance technology generating disturbing noise: FlowGrid for axial and centrifugal fans. The grill on the air inlet side drastically reduces the noise emissions and minimizes disturbing low frequency tones.*

*There are often problems wherever people and technology share space. The movement of air, for example, often goes hand in hand with noise. With FlowGrid, noise-generating disturbances in the fan inflow are a thing of the past!*



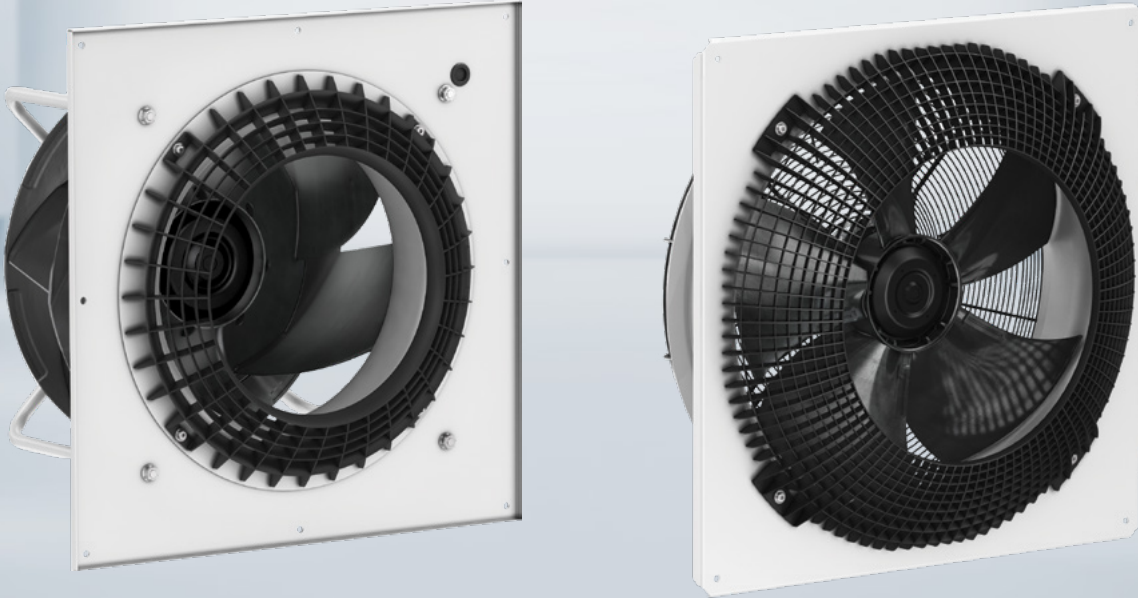
# FlowGrid

by ebmpapst  
patent pending



Whether it's heat pumps in the garden, supermarket condensers or ventilation systems on an industrial property: FlowGrid, the innovative air inlet grill from ebm-papst, uses technical expertise to provide drastic noise reduction.

# The sound of silence



## FlowGrid for axial and centrifugal fans

- + Reduced noise range**
  - Lower noise level
  - Drastically reduced tonal noise
- + Maintaining efficiency**
  - Air performance unaffected
  - No increase in input power
- + Compact design**
  - Low space requirements
  - Less acoustic insulation work
- + Quick assembly**
  - Through-holes for simple mounting
  - Customer-specific mounting on request
- + Effective environmental protection**
  - Noise reduction as an important part of environmentally friendly operation
- + Robust design**
  - Made from composite material
  - Available with flammability class UL94-5VA



Noise



Efficiency



Plug&Play



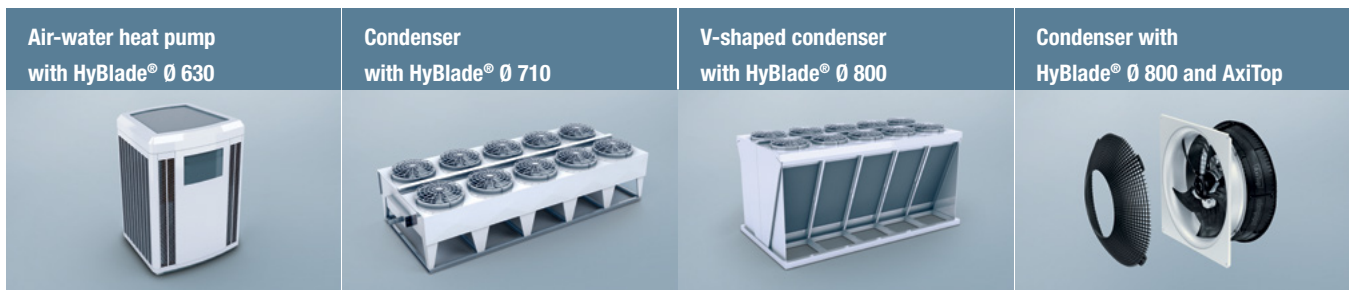
Compactness



Sustainability

# The sound of silence

## Axial applications



### Function

Heat is extracted from the outside air. This is used to heat the residential building via a circulatory system.

### Design

The axial fan is installed directly behind an evaporator for horizontal or vertical air conduction.

### Challenge

In compact heat pumps, the evaporator is placed very close to the fan. Excess noise is created by the installation position. As heat pumps are used in residential buildings, however, noise limit values need to be complied with.

### Benefits of FlowGrid

Noise limit values are complied with and the blade-passing noise is reduced by 12 dB.

### Function

Extraction of heat arising in a coolant circuit.

### Design

One or multiple axial fans extract outside air through a horizontally arranged heat exchanger.

### Challenge

The fans are placed very close to the heat exchanger. This results in the air inflow being disturbed. If multiple fans are used in one condenser, the uneven air inflow becomes stronger.

### Benefits of FlowGrid

Reduction of the noise level by 3.9 dB(A) and a huge reduction of the blade-passing noise by 16 dB. This results in much less disturbing noise.

### Function

Extraction of heat arising in a coolant circuit.

### Design

One or multiple axial fans extract outside air through a heat exchanger arranged in V-form.

### Challenge

Due to the size of the heat exchanger, the distances between it and the fan vary greatly. This leads to turbulences being created in the intake area.

### Benefits of FlowGrid

Reduction of the noise level by 1.3 dB(A) and of the blade-passing noise by 7 dB.

### Function

Extraction of heat arising in a coolant circuit.

### Design

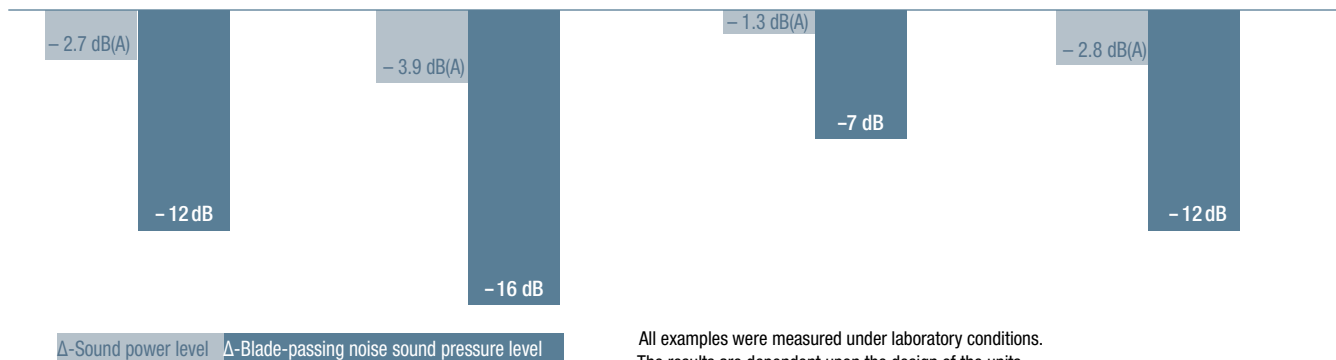
Outside air is sucked through a heat exchanger. The condenser, with a horizontally arranged exchanger, has an axial fan with an AxITop diffuser unit installed on the pressure side.

### Challenge

Despite an already low noise level, there is still a disturbing tonal noise.

### Benefits of FlowGrid

Additional reduction of the noise level by 2.8 dB(A) and of the blade-passing noise by 12 dB.

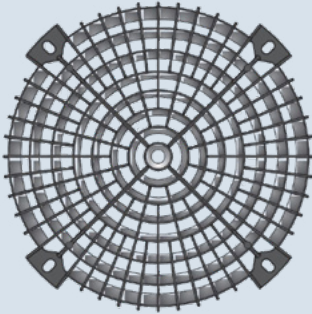


All examples were measured under laboratory conditions. The results are dependent upon the design of the units.

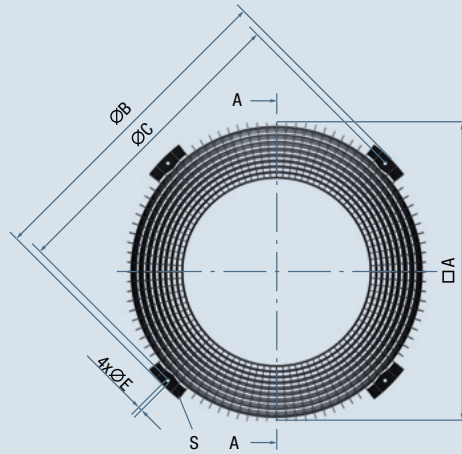
# FlowGrid – Always a good solution

## Version A

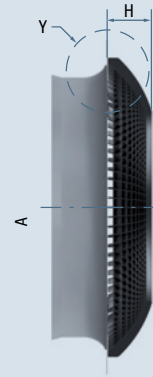
FlowGrid is completely enclosed and works as a fan guard.



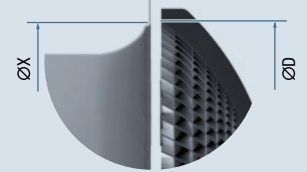
## Version B



Section A-A



Detail Y



| UL 94-HB<br>Part Number | UL 94-5VA<br>Part Number | RadiCal            | RadiPac       | HyBlade®           | A    | B    | C       | D    | E   | S   | H   |
|-------------------------|--------------------------|--------------------|---------------|--------------------|------|------|---------|------|-----|-----|-----|
| 00190-2-2957*           | 00191-2-2957             | 175, 190           | –             | –                  | –    | 170  | 155-160 | 150  | 4.5 | 2.0 | 30  |
| 00250-2-2957*           | –                        | 220, 225, 250      | –             | –                  | –    | 205  | 193     | 187  | 4.5 | 2.0 | 38  |
| 20280-2-2957            | 20281-2-2957             | 220, 225, 250, 280 | 280           | 200                | –    | 280  | 245-260 | 245  | 4.5 | 3.5 | 40  |
| 25310-2-2957            | 25311-2-2957             | 310                | 310           | 250                | –    | 310  | 290     | 282  | 4.0 | 3.5 | 49  |
| 00400-2-2957            | 00401-2-2957             | 355, 400           | 355           | –                  | –    | 365  | 335-345 | 325  | 4.0 | 3.0 | 56  |
| 35505-2-2957            | 35506-2-2957             | 450, 500           | 400, 450, 500 | 330, 315, 330, 350 | –    | 470  | 440     | 412  | 9.0 | 3.0 | 71  |
| 00630-2-2957            | 00631-2-2957             | 560, 630           | 560, 630      | 400                | –    | 580  | 545     | 532  | 10  | 3.0 | 90  |
| 50710-2-2957            | 50711-2-2957             | –                  | 710           | 450, 500           | 590  | 666  | 630     | 580  | 10  | 3.0 | 106 |
| 63000-2-2957            | 63001-2-2957             | –                  | 800           | 560, 630           | 734  | 785  | 750     | 724  | 10  | 3.0 | 125 |
| 80000-2-2957            | 80001-2-2957             | –                  | 900           | 710, 800           | 930  | 995  | 960     | 920  | 10  | 3.5 | 131 |
| 91000-2-2957            | 91001-2-2957             | –                  | –             | 910                | 1035 | 1105 | 1075    | 1025 | 10  | 3.5 | 164 |

A: Minimum installation dimension  
 B: Outer diameter  
 C: Pitch circle diameter  
 D: Reference diameter for matching with the nozzle  
 E: Hole diameter  
 S: Thickness of mounting tabs  
 H: Installation height

X: Nozzle diameter at bent outer end

\*FlowGrid is completely enclosed and works as a grill guard.

The reference diameter must be at least equal to the nozzle diameter at the bent outer end ( $D \geq X$ )

All dimensions in mm

# Notes

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