

Constant Airflow Regulator MR

MR Mono - MR Modulo



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MR Mono - MR Modulo



INTRODUCTION

- Aerodynamic disturbances within HVAC systems generate airflow variations.
- Managing to set real airflows as per those calculated in design stage, will ensure hygiene (ventilation) and thermal comfort (air conditioning) while limiting noise and optimizing fan or AHU operating costs.

RANGE

2 models:

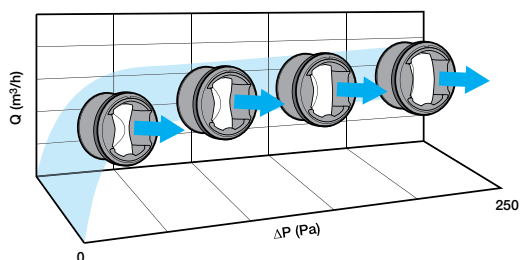
- MR Mono: 1 code = 1 factory-set airflow
- MR Modulo: 1 code = several airflow set point (8 references).

7 diameters (mm): 80, 100, 125, 150, 160, 200 and 250.
2 differential pressure operating ranges:

- 50 - 250 Pa for MR Mono and MR Modulo,
- 150 - 650 Pa for MR Mono only.

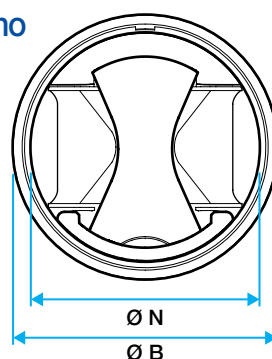
PRINCIPLE OF OPERATION

- CARs (MR) purpose is airflow balancing in HVAC ductwork.
 - It can be easily inserted into a portion of a circular duct network in order to regulate an accurate and constant airflow within a large differential pressure range.
 - The membrane inflates or deflates depending on the pressure drop on both sides of the CAR, changing consequently the free air passage (see illustration below).
- > This principle guarantees a constant airflow when the upstream/downstream differential pressure varies.

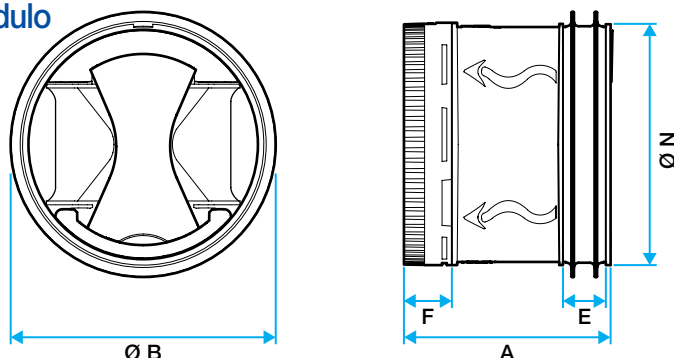


DIMENSIONS - WEIGHT

MR Mono



MR Modulo



| in mm | | | | MR Mono | | | MR Modulo | | |
|---------------------|-----|-----|----|---------|-----|-------------|-----------|-----|-------------|
| Duct Ø | ØN | ØB | E | F | A | weight (kg) | F | A | weight (kg) |
| 80 | 76 | 85 | 14 | 3 | 53 | 0,06 | 15 | 65 | 0,08 |
| 100 | 92 | 105 | 14 | 4 | 61 | 0,10 | 13 | 70 | 0,12 |
| 125 15-95 m³/h | 116 | 132 | 14 | 4 | 61 | 0,14 | 13 | 70 | 0,15 |
| 125 100-190 m³/h | 116 | 132 | 14 | 4 | 97 | 0,20 | 17 | 110 | 0,17 |
| 150 | 147 | 153 | 14 | 4 | 103 | 0,30 | 19 | 118 | 0,37 |
| 160 | 153 | 167 | 14 | 4 | 103 | 0,30 | 19 | 118 | 0,37 |
| 200 | 190 | 210 | 20 | 7 | 130 | 0,60 | 23 | 144 | 0,59 |
| 250 | 238 | 262 | 20 | 5 | 159 | 1,06 | 26 | 179 | 1,02 |

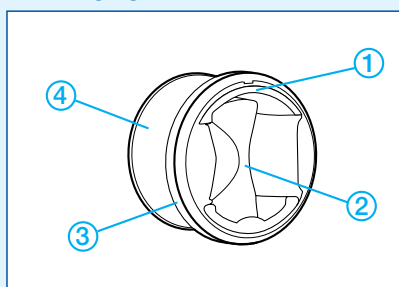
CONSTRUCTION AND MATERIAL

- ① Removable clips in PC / ABS plastic (Euroclass fire ratings : B s3 d0)
- ② Regulating silicon membrane
- ③ Double-lip airtightness seal in elastomer
- ④ Housing in PC / ABS plastic (Euroclass fire ratings: B s3 d0)
- ⑤ Rotating adjustment ring in PC / ABS plastic for airflow setting (Euroclass fire ratings: B s3 d0)

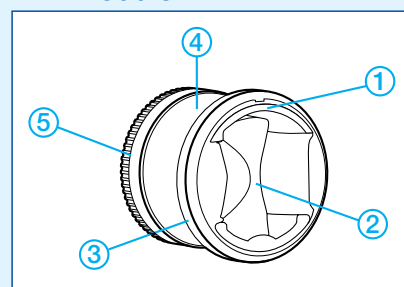
The following information is directly indicated on the product:

- Flow direction, diameter in mm and inch, operating differential pressure range, code, production traceability,
- MR Mono: factory airflow calibration (both in m³/h and cfm),
- MR Modulo: airflow setting range correlation table (both in m³/h and cfm).

MR Mono



MR Modulo



Constant Airflow Regulator MR

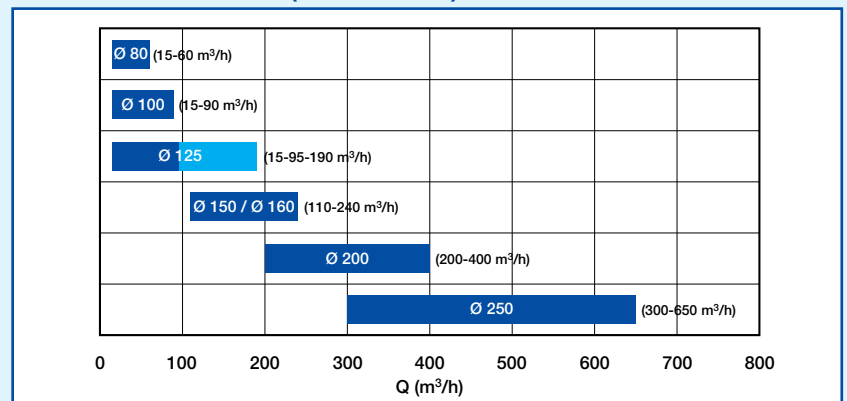
MR Mono - MR Modulo



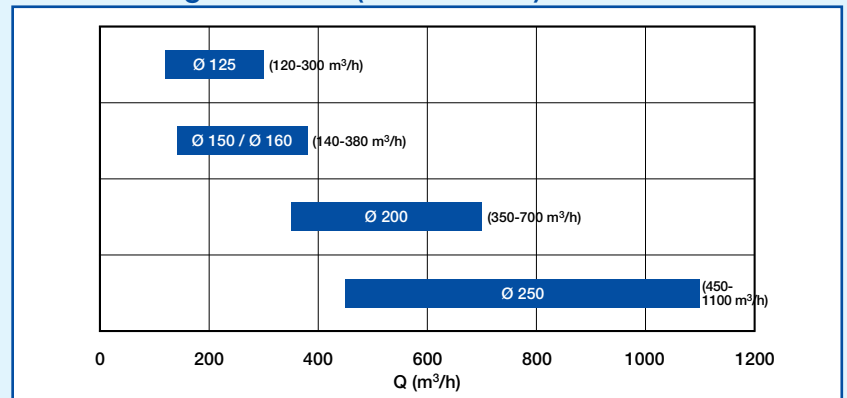
FIELD OF APPLICATION

- Maintaining airflows in ventilation or air conditioning ductworks.
- Use in air supply and air exhaust.
- Operating airflow range (see diagrams).
- Airflow accuracy:
 - +/- 5 m³/h for nominal flow ≤ 50 m³/h,
 - +/- 10% for nominal flow > 50 m³/h.
- Differential pressure operating range: 50 to 250 Pa and 150 to 650 Pa.
- Temperature range of use: -10 to 60° C.
- Compliant with DIN EN 1506 (dimensions).

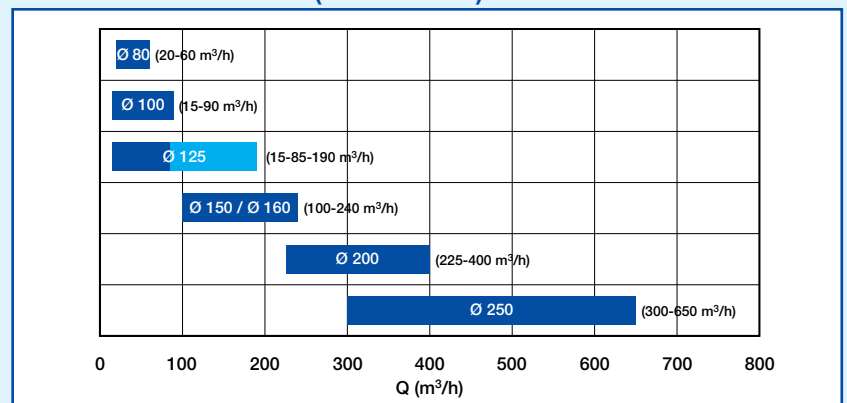
MR Mono Standard (50 - 250 Pa)



MR Mono High Pressure (150 - 650 Pa)



MR Modulo Standard (50 - 250 Pa)



Constant Airflow Regulator MR

MR Mono - MR Modulo

AERAUIC FEATURES

The curves below show the airflow variation for each MR according to the pressure difference between upstream and downstream of the CAR. 2 differential pressure operating ranges:

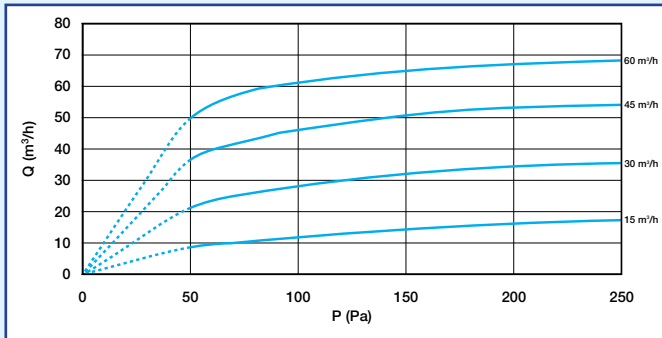
MR Mono and MR Modulo are available for a differential pressure operating ranges from 50 to 250 Pa (Standard range), and the MR Mono only from 150 - 650 Pa (High Pressure range).

MR Mono and MR Modulo CARS regulate within the following nominal airflow tolerances for both standard and high pressure ranges:

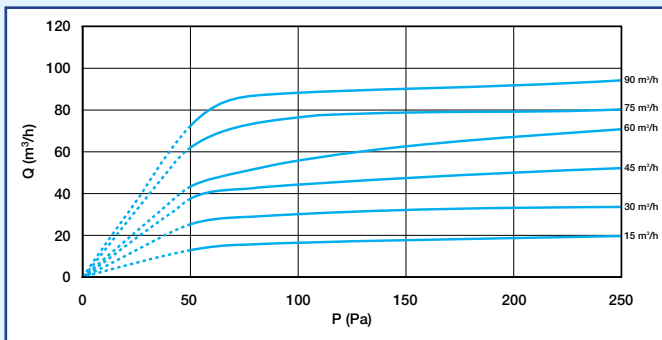
- +/- 5 m³/h for nominal airflow ≤ 50 m³/h,
- +/- 10% for nominal airflow > 50 m³/h.

MR Mono and MR Modulo Standard:

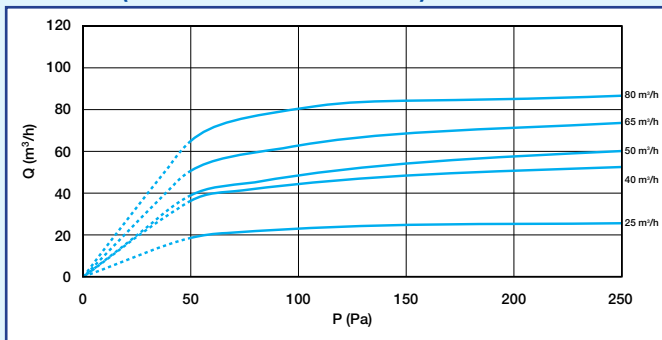
Ø80mm



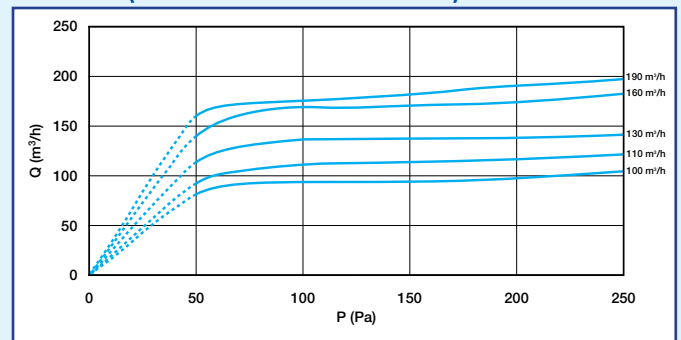
Ø100mm



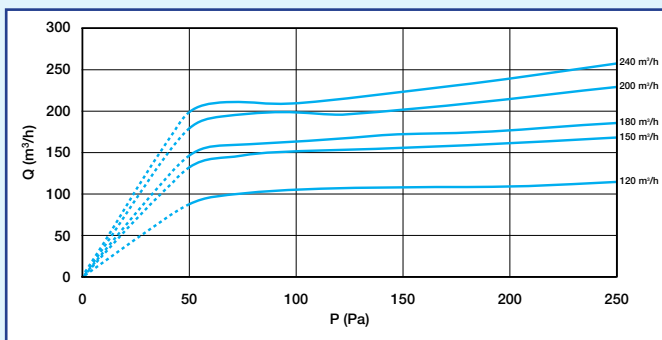
Ø125mm (model from 15 to 90 m³/h)



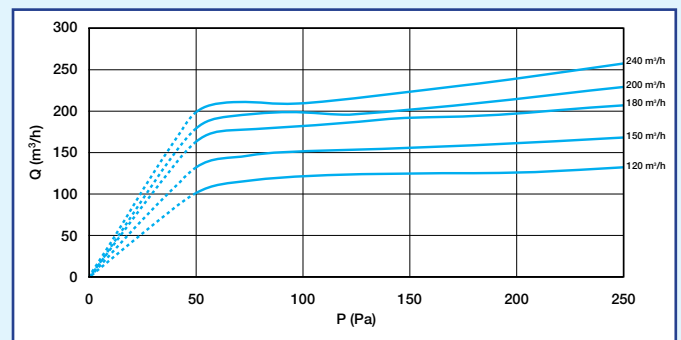
Ø125mm (model from 100 to 190 m³/h)



Ø150mm



Ø160mm

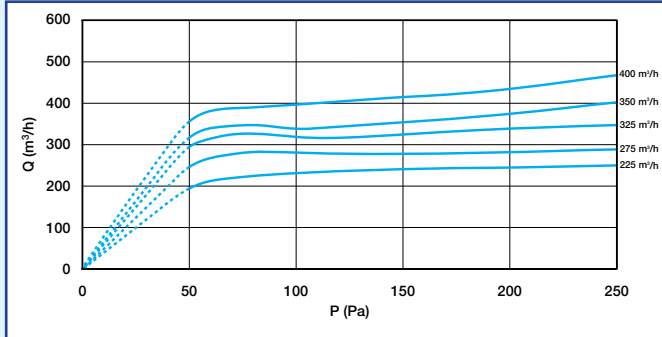


Constant Airflow Regulator MR

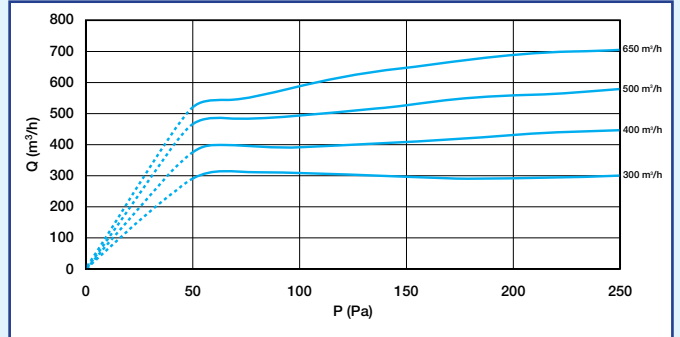
AERAUIC FEATURES

MR Mono and MR Modulo Standard:

Ø200 mm



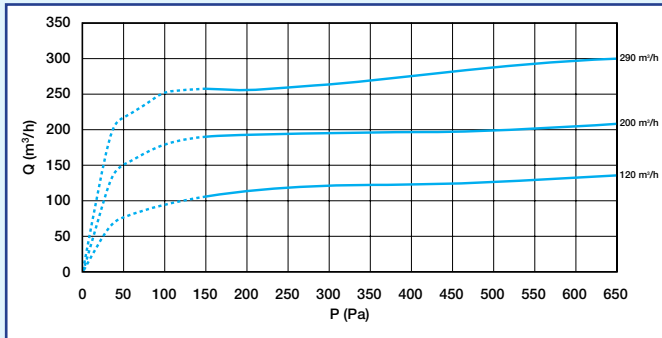
Ø250 mm



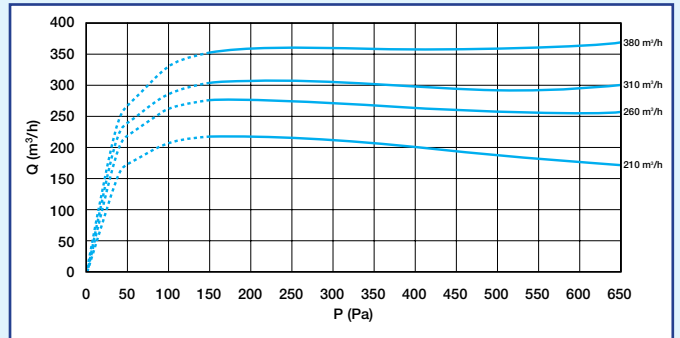
MR Mono

MR Mono High Pressure:

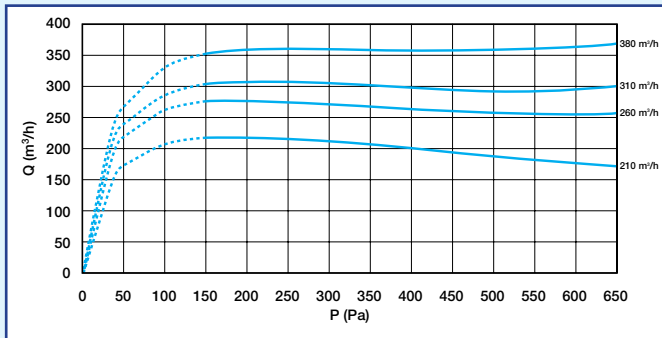
Ø125 mm



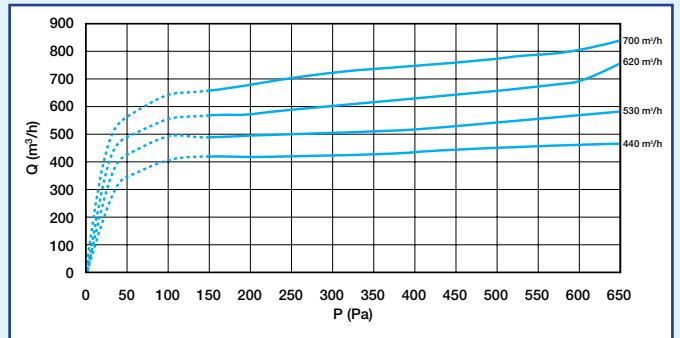
Ø150 mm



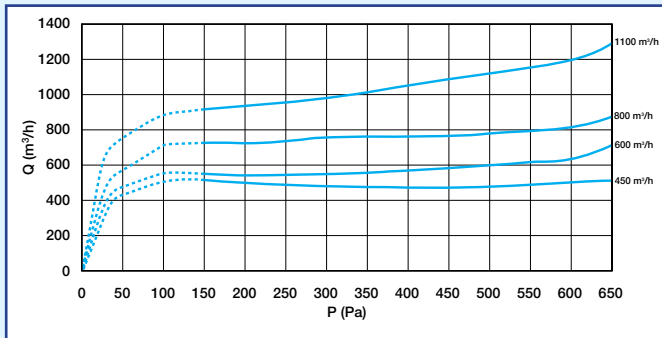
Ø160 mm



Ø200 mm



Ø250 mm



Constant Airflow Regulator MR

MR Mono Standard

ACOUSTIC FEATURES

Sound power levels of noise (Lw) at duct output:

The following tables give the sound power levels of noise (Lw) expressed in decibels per octave (dB/oct) as well as the global sound power levels in dB(A) according to the pressure drop.

These sound power levels are results of tests carried out by a Dutch independent laboratory (PEUTZ) and are given at the duct outlet.

Measures were carried out in accordance with NF EN ISO 3741 and NF EN ISO 5135 norms, with a CAR fitted into a duct with an upstream and downstream straight length equal to 3 diameters.

| Ø 80 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|-------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m³/h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 15 | | 18 | 13 | 17 | 10 | 11 | 3 | 1 | 18 | 19 | 22 | 25 | 22 | 25 | 18 | 14 | 30 | 20 | 24 | 29 | 29 | 31 | 26 | 21 | 36 | 21 | 27 | 32 | 35 | 36 | 32 |
| 20 | | 18 | 14 | 17 | 11 | 12 | 4 | 1 | 19 | 20 | 23 | 26 | 23 | 25 | 18 | 14 | 30 | 21 | 26 | 29 | 29 | 31 | 26 | 21 | 36 | 22 | 28 | 33 | 35 | 37 | 33 | 28 | 42 |
| 25 | | 18 | 15 | 18 | 12 | 13 | 4 | 2 | 19 | 21 | 24 | 26 | 23 | 26 | 19 | 14 | 31 | 22 | 27 | 30 | 30 | 32 | 27 | 22 | 37 | 23 | 30 | 33 | 35 | 37 | 33 | 28 | 42 |
| 30 | | 18 | 16 | 18 | 13 | 14 | 5 | 2 | 20 | 22 | 25 | 26 | 24 | 26 | 20 | 14 | 31 | 23 | 28 | 30 | 30 | 33 | 27 | 22 | 37 | 25 | 31 | 34 | 35 | 38 | 34 | 29 | 43 |
| 35 | | 19 | 16 | 18 | 14 | 14 | 5 | 2 | 21 | 22 | 25 | 26 | 25 | 27 | 20 | 14 | 32 | 24 | 30 | 30 | 30 | 33 | 27 | 22 | 38 | 26 | 33 | 34 | 35 | 39 | 34 | 30 | 43 |
| 40 | | 19 | 17 | 19 | 15 | 15 | 6 | 3 | 21 | 23 | 26 | 26 | 25 | 28 | 21 | 15 | 32 | 25 | 31 | 31 | 31 | 34 | 28 | 23 | 38 | 27 | 35 | 35 | 35 | 39 | 34 | 30 | 44 |
| 45 | | 19 | 18 | 19 | 15 | 16 | 6 | 3 | 22 | 24 | 27 | 27 | 26 | 28 | 21 | 15 | 33 | 26 | 32 | 31 | 31 | 34 | 28 | 23 | 39 | 28 | 36 | 35 | 36 | 40 | 35 | 31 | 44 |
| 50 | | 20 | 19 | 19 | 16 | 16 | 7 | 3 | 22 | 25 | 28 | 27 | 26 | 29 | 22 | 15 | 33 | 27 | 33 | 31 | 31 | 35 | 29 | 24 | 39 | 29 | 38 | 36 | 36 | 41 | 35 | 32 | 45 |
| 60 | | 20 | 20 | 20 | 18 | 18 | 8 | 4 | 24 | 26 | 30 | 27 | 27 | 30 | 23 | 16 | 34 | 29 | 36 | 32 | 32 | 36 | 30 | 25 | 41 | 31 | 41 | 37 | 36 | 42 | 36 | 33 | 46 |

| Ø 100 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|-------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m³/h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 15 | | 20 | 21 | 20 | 13 | 8 | 3 | 2 | 20 | 20 | 22 | 26 | 25 | 21 | 18 | 15 | 29 | 25 | 25 | 29 | 31 | 31 | 29 | 28 | 38 | 30 | 27 | 32 | 37 | 40 | 39 |
| 20 | | 20 | 21 | 20 | 13 | 8 | 3 | 2 | 20 | 20 | 23 | 27 | 25 | 22 | 19 | 15 | 30 | 25 | 25 | 30 | 31 | 31 | 29 | 27 | 38 | 30 | 28 | 33 | 37 | 40 | 39 | 38 | 46 |
| 25 | | 19 | 22 | 20 | 13 | 9 | 3 | 2 | 20 | 21 | 23 | 27 | 25 | 22 | 19 | 15 | 30 | 26 | 26 | 30 | 31 | 31 | 29 | 27 | 38 | 30 | 29 | 33 | 37 | 40 | 39 | 37 | 45 |
| 30 | | 19 | 22 | 20 | 14 | 9 | 3 | 2 | 20 | 21 | 24 | 27 | 25 | 23 | 19 | 15 | 30 | 26 | 27 | 31 | 31 | 31 | 29 | 26 | 38 | 30 | 30 | 34 | 37 | 39 | 38 | 36 | 45 |
| 35 | | 18 | 22 | 20 | 14 | 9 | 3 | 2 | 21 | 22 | 25 | 28 | 25 | 23 | 19 | 15 | 30 | 26 | 28 | 31 | 31 | 31 | 29 | 26 | 38 | 30 | 31 | 35 | 37 | 39 | 38 | 35 | 45 |
| 40 | | 18 | 22 | 21 | 14 | 10 | 3 | 2 | 21 | 22 | 25 | 28 | 25 | 23 | 19 | 15 | 31 | 27 | 29 | 32 | 31 | 32 | 29 | 25 | 38 | 30 | 31 | 35 | 37 | 39 | 37 | 34 | 45 |
| 50 | | 17 | 22 | 21 | 14 | 11 | 3 | 2 | 21 | 23 | 27 | 29 | 25 | 24 | 20 | 14 | 31 | 27 | 30 | 33 | 31 | 32 | 29 | 24 | 38 | 31 | 33 | 37 | 36 | 38 | 36 | 32 | 44 |
| 55 | | 16 | 22 | 21 | 15 | 11 | 3 | 2 | 22 | 24 | 27 | 29 | 25 | 25 | 20 | 14 | 31 | 28 | 31 | 33 | 31 | 32 | 29 | 23 | 38 | 31 | 34 | 37 | 36 | 38 | 36 | 31 | 44 |
| 60 | | 16 | 23 | 21 | 15 | 12 | 3 | 2 | 22 | 24 | 28 | 29 | 25 | 25 | 20 | 14 | 32 | 28 | 32 | 34 | 31 | 32 | 29 | 23 | 38 | 31 | 35 | 38 | 36 | 38 | 36 | 30 | 44 |
| 65 | | 17 | 23 | 21 | 16 | 13 | 3 | 3 | 22 | 25 | 29 | 30 | 26 | 26 | 21 | 14 | 32 | 29 | 33 | 34 | 31 | 32 | 29 | 22 | 38 | 32 | 36 | 38 | 36 | 38 | 36 | 30 | 44 |
| 70 | | 19 | 24 | 22 | 16 | 13 | 4 | 4 | 23 | 26 | 30 | 30 | 26 | 26 | 21 | 14 | 33 | 30 | 34 | 35 | 32 | 32 | 29 | 22 | 39 | 33 | 37 | 39 | 37 | 38 | 36 | 29 | 44 |
| 75 | | 20 | 24 | 22 | 17 | 14 | 5 | 5 | 23 | 27 | 31 | 30 | 26 | 27 | 22 | 14 | 33 | 30 | 35 | 35 | 32 | 33 | 29 | 22 | 39 | 34 | 38 | 39 | 37 | 38 | 36 | 29 | 44 |
| 85 | | 23 | 25 | 22 | 19 | 16 | 6 | 7 | 24 | 28 | 33 | 31 | 27 | 28 | 23 | 14 | 34 | 32 | 37 | 36 | 33 | 33 | 30 | 22 | 40 | 36 | 41 | 40 | 38 | 38 | 36 | 29 | 44 |
| 90 | | 25 | 26 | 22 | 20 | 17 | 7 | 8 | 25 | 29 | 34 | 31 | 28 | 29 | 23 | 14 | 35 | 33 | 38 | 36 | 33 | 34 | 30 | 21 | 40 | 37 | 42 | 40 | 38 | 38 | 36 | 28 | 45 |

| Ø 125 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|-------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m³/h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 15 | | 19 | 26 | 22 | 15 | 12 | 0 | 8 | 23 | 23 | 27 | 31 | 30 | 27 | 18 | 17 | 34 | 25 | 28 | 34 | 32 | 31 | 27 | 25 | 38 | 27 | 28 | 37 | 34 | 35 | 34 |
| 25 | | 20 | 26 | 23 | 15 | 12 | 2 | 8 | 23 | 24 | 27 | 31 | 29 | 28 | 18 | 16 | 34 | 26 | 29 | 34 | 32 | 32 | 27 | 24 | 38 | 28 | 30 | 37 | 34 | 35 | 34 | 30 | 42 |
| 30 | | 20 | 27 | 23 | 16 | 13 | 2 | 8 | 24 | 24 | 28 | 31 | 29 | 29 | 18 | 16 | 34 | 26 | 29 | 34 | 32 | 32 | 27 | 23 | 38 | 28 | 30 | 37 | 34 | 35 | 34 | 30 | 42 |
| 40 | | 21 | 27 | 23 | 17 | 14 | 4 | 8 | 24 | 25 | 28 | 30 | 29 | 30 | 18 | 15 | 35 | 27 | 30 | 33 | 32 | 33 | 27 | 22 | 38 | 29 | 32 | 36 | 34 | 36 | 34 | 28 | 42 |
| 50 | | 22 | 27 | 23 | 17 | 15 | 4 | 8 | 25 | 26 | 28 | 30 | 29 | 30 | 18 | 15 | 35 | 28 | 31 | 33 | 32 | 33 | 27 | 21 | 38 | 29 | 33 | 36 | 34 | 36 | 34 | 27 | 42 |
| 60 | | 22 | 28 | 23 | 18 | 16 | 6 | 8 | 25 | 26 | 29 | 30 | 29 | 31 | 18 | 14 | 35 | 28 | 32 | 33 | 31 | 34 | 27 | 20 | 39 | 30 | 34 | 36 | 34 | 36 | 34 | 26 | 42 |
| 65 | | 23 | 28 | 23 | 18 | 16 | 6 | 8 | 25 | 27 | 29 | 29 | 29 | 32 | 18 | 13 | 36 | 29 | 32 | 33 | 31 | 34 | 27 | 20 | 39 | 30 | 35 | 36 | 34 | 36 | 34 | 26 | 42 |
| 70 | | 23 | 28 | 23 | 19 | 17 | 7 | 8 | 25 | 27 | 29 | 29 | 28 | 32 | 18 | 13 | 36 | 29 | 32 | 33 | 31 | 35 | 27 | 19 | 39 | 31 | 35 | 36 | 34 | 37 | 34 | 25 | 42 |
| 75 | | 24 | 28 | 23 | 19 | 17 | 7 | 8 | 26 | 27 | 29 | 29 | 28 | 33 | 18 | 13 | 36 | 29 | 33 | 33 | 31 | 35 | 27 | 19 | 39 | 31 | 36 | 36 | 34 | 37 | 34 | 24 | 42 |
| 80 | | 24 | 28 | 24 | 19 | 17 | 8 | 8 | 26 | 28 | 30 | 29 | 28 | 33 | 18 | 12 | 36 | 30 | 33 | 33 | 31 | 35 | 27 | 18 | 39 | 31 | 37 | 36 | 34 | 37 | 34 | 24 | 42 |
| 85 | | 24 | 28 | 24 | 20 | 18 | 9 | 8 | 26 | 28 | 30 | 29 | 28 | 33 | 18 | 12 | 37 | 30 | 34 | 33 | 31 | 35 | 27 | 18 | 39 | 31 | 37 | 36 | 34 | 37 | 34 | 23 | 42 |
| 90 | | 25 | 29 | 24 | 20 | 18 | 9 | 8 | 26 | 29 | 30 | 29 | 28 | 34 | 19 | 12 | 37 | 30 | 34 | 33 | 31 | 36 | 27 | 18 | 40 | 32 | 38 | 36 | 34 | 37 | 34 | 23 | 42 |
| 95 | | 25 | 29 | 24 | 20 | 19 | 10 | 8 | 27 | 29 | 30 | 29 | 28 | 34 | 19 | 11 | 37 | 31 | 35 | 33 | 31 | 36 | 27 | 17 | 40 | 32 | 38 | 36 | 34 | 38 | 34 | 22 | 43 |

Constant Airflow Regulator MR

| Ø 125 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m ³ /h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 100 | | 27 | 30 | 25 | 22 | 8 | 5 | 9 | 27 | 32 | 35 | 35 | 34 | 23 | 20 | 14 | 37 | 35 | 36 | 40 | 40 | 29 | 26 | 21 | 42 | 38 | 37 | 44 | 45 | 34 | 32 |
| 110 | | 29 | 30 | 25 | 23 | 9 | 6 | 10 | 27 | 34 | 36 | 35 | 34 | 25 | 21 | 15 | 37 | 38 | 38 | 40 | 40 | 30 | 28 | 22 | 42 | 41 | 40 | 44 | 45 | 35 | 34 | 28 | 47 |
| 120 | | 30 | 30 | 25 | 23 | 10 | 7 | 10 | 27 | 37 | 37 | 35 | 34 | 26 | 22 | 16 | 37 | 41 | 40 | 40 | 40 | 31 | 29 | 23 | 43 | 44 | 42 | 45 | 45 | 36 | 35 | 29 | 48 |
| 130 | | 31 | 30 | 25 | 23 | 12 | 8 | 11 | 28 | 39 | 37 | 35 | 34 | 27 | 23 | 17 | 38 | 43 | 41 | 41 | 40 | 32 | 30 | 24 | 43 | 47 | 45 | 45 | 45 | 37 | 37 | 31 | 48 |
| 140 | | 32 | 30 | 25 | 23 | 13 | 9 | 11 | 28 | 41 | 38 | 35 | 34 | 28 | 24 | 17 | 38 | 46 | 43 | 41 | 40 | 33 | 31 | 25 | 44 | 51 | 47 | 46 | 45 | 38 | 38 | 32 | 49 |
| 150 | | 34 | 30 | 26 | 24 | 14 | 10 | 12 | 28 | 44 | 39 | 35 | 34 | 29 | 25 | 18 | 39 | 49 | 45 | 41 | 40 | 34 | 33 | 26 | 45 | 54 | 50 | 46 | 45 | 39 | 40 | 33 | 50 |
| 160 | | 35 | 30 | 26 | 24 | 16 | 12 | 13 | 29 | 46 | 40 | 36 | 34 | 30 | 26 | 19 | 39 | 52 | 46 | 42 | 40 | 36 | 34 | 27 | 46 | 57 | 52 | 47 | 45 | 40 | 41 | 35 | 51 |
| 190 | | 39 | 30 | 26 | 25 | 20 | 15 | 14 | 30 | 53 | 42 | 36 | 35 | 33 | 29 | 22 | 42 | 60 | 51 | 42 | 40 | 39 | 38 | 31 | 49 | 66 | 59 | 48 | 46 | 44 | 45 | 39 | 56 |

| Ø 160 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m ³ /h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 110 | | 24 | 25 | 28 | 23 | 23 | 16 | 7 | 29 | 32 | 31 | 34 | 35 | 35 | 28 | 17 | 40 | 36 | 36 | 39 | 41 | 40 | 35 | 25 | 46 | 40 | 40 | 44 | 46 | 45 | 40 |
| 120 | | 25 | 25 | 27 | 22 | 22 | 14 | 7 | 29 | 33 | 31 | 34 | 35 | 34 | 27 | 17 | 40 | 37 | 36 | 40 | 40 | 40 | 34 | 25 | 45 | 41 | 41 | 44 | 45 | 44 | 40 | 32 | 50 |
| 130 | | 25 | 25 | 27 | 22 | 21 | 12 | 7 | 28 | 33 | 32 | 34 | 34 | 33 | 26 | 16 | 39 | 38 | 37 | 40 | 40 | 39 | 33 | 25 | 45 | 42 | 41 | 45 | 45 | 44 | 39 | 32 | 50 |
| 140 | | 26 | 25 | 26 | 21 | 20 | 10 | 7 | 27 | 34 | 32 | 34 | 33 | 33 | 25 | 16 | 39 | 39 | 37 | 40 | 39 | 38 | 32 | 24 | 44 | 44 | 42 | 45 | 45 | 43 | 39 | 32 | 50 |
| 150 | | 26 | 24 | 26 | 21 | 19 | 9 | 7 | 27 | 35 | 33 | 34 | 33 | 32 | 24 | 15 | 38 | 40 | 38 | 40 | 39 | 38 | 32 | 24 | 44 | 45 | 42 | 45 | 45 | 42 | 38 | 32 | 49 |
| 160 | | 27 | 24 | 25 | 20 | 18 | 7 | 7 | 26 | 36 | 33 | 34 | 32 | 31 | 23 | 15 | 38 | 42 | 38 | 40 | 39 | 37 | 31 | 24 | 44 | 47 | 43 | 46 | 44 | 42 | 38 | 32 | 49 |
| 170 | | 27 | 24 | 25 | 20 | 17 | 5 | 7 | 26 | 37 | 34 | 34 | 32 | 31 | 22 | 15 | 37 | 43 | 39 | 41 | 38 | 36 | 30 | 24 | 43 | 48 | 44 | 46 | 44 | 41 | 37 | 33 | 49 |
| 180 | | 28 | 24 | 24 | 19 | 16 | 3 | 7 | 25 | 38 | 34 | 34 | 31 | 30 | 20 | 14 | 37 | 44 | 39 | 41 | 38 | 35 | 29 | 24 | 43 | 50 | 44 | 46 | 44 | 40 | 37 | 33 | 49 |
| 190 | | 28 | 24 | 24 | 19 | 16 | 4 | 7 | 25 | 38 | 34 | 35 | 31 | 30 | 20 | 14 | 37 | 44 | 40 | 41 | 38 | 35 | 29 | 24 | 43 | 50 | 44 | 46 | 44 | 40 | 37 | 32 | 49 |
| 200 | | 28 | 25 | 24 | 19 | 16 | 4 | 7 | 25 | 38 | 34 | 35 | 31 | 30 | 20 | 15 | 37 | 44 | 40 | 41 | 38 | 35 | 29 | 23 | 43 | 50 | 44 | 46 | 43 | 40 | 37 | 31 | 49 |
| 210 | | 28 | 25 | 24 | 19 | 15 | 4 | 7 | 25 | 39 | 35 | 35 | 32 | 30 | 20 | 15 | 37 | 45 | 40 | 41 | 38 | 36 | 29 | 23 | 43 | 50 | 45 | 46 | 43 | 40 | 36 | 30 | 48 |
| 240 | | 28 | 26 | 25 | 19 | 14 | 4 | 7 | 25 | 40 | 35 | 35 | 33 | 30 | 20 | 16 | 38 | 46 | 40 | 41 | 38 | 36 | 28 | 21 | 43 | 50 | 45 | 46 | 43 | 41 | 36 | 27 | 48 |

| Ø 200 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m ³ /h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 225 | | 23 | 20 | 18 | 14 | 9 | 3 | 8 | 20 | 31 | 30 | 29 | 25 | 23 | 16 | 8 | 33 | 36 | 36 | 35 | 31 | 29 | 24 | 15 | 37 | 41 | 41 | 41 | 36 | 35 | 31 |
| 250 | | 25 | 22 | 19 | 16 | 11 | 5 | 9 | 21 | 34 | 31 | 30 | 28 | 24 | 17 | 10 | 33 | 39 | 37 | 36 | 33 | 31 | 25 | 16 | 39 | 43 | 42 | 42 | 38 | 37 | 32 | 22 | 44 |
| 275 | | 26 | 24 | 21 | 18 | 13 | 6 | 10 | 23 | 37 | 33 | 31 | 31 | 26 | 18 | 11 | 35 | 42 | 38 | 37 | 36 | 33 | 26 | 17 | 40 | 46 | 42 | 42 | 40 | 39 | 33 | 22 | 46 |
| 300 | | 28 | 26 | 22 | 20 | 15 | 8 | 10 | 25 | 39 | 34 | 32 | 34 | 27 | 20 | 13 | 37 | 44 | 39 | 38 | 38 | 34 | 28 | 18 | 42 | 49 | 43 | 43 | 42 | 41 | 35 | 23 | 47 |
| 325 | | 29 | 27 | 24 | 22 | 16 | 10 | 11 | 27 | 40 | 36 | 33 | 35 | 28 | 22 | 15 | 38 | 44 | 40 | 39 | 39 | 36 | 29 | 20 | 43 | 48 | 44 | 45 | 43 | 42 | 35 | 24 | 48 |
| 350 | | 31 | 29 | 25 | 24 | 18 | 11 | 11 | 28 | 42 | 37 | 34 | 36 | 30 | 24 | 18 | 39 | 44 | 42 | 41 | 40 | 37 | 30 | 22 | 44 | 47 | 46 | 47 | 44 | 43 | 36 | 25 | 49 |
| 400 | | 34 | 32 | 27 | 29 | 21 | 14 | 11 | 32 | 44 | 40 | 36 | 38 | 33 | 28 | 22 | 42 | 45 | 44 | 44 | 42 | 39 | 33 | 25 | 47 | 46 | 48 | 50 | 45 | 45 | 37 | 28 | 52 |

| Ø 250 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m ³ /h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 300 | | 27 | 25 | 19 | 12 | 14 | 7 | 7 | 22 | 39 | 37 | 30 | 26 | 28 | 21 | 15 | 35 | 48 | 41 | 34 | 24 | 33 | 28 | 22 | 39 | 57 | 44 | 37 | 23 | 37 | 34 |
| 350 | | 28 | 26 | 20 | 15 | 15 | 7 | 7 | 23 | 40 | 37 | 32 | 29 | 29 | 21 | 15 | 36 | 47 | 41 | 37 | 29 | 35 | 29 | 22 | 41 | 53 | 45 | 41 | 30 | 39 | 35 | 29 | 45 |
| 400 | | 28 | 27 | 22 | 19 | 16 | 8 | 7 | 25 | 41 | 38 | 33 | 32 | 30 | 22 | 15 | 37 | 45 | 42 | 39 | 34 | 36 | 29 | 22 | 42 | 49 | 46 | 45 | 36 | 42 | 36 | 28 | 47 |
| 450 | | 29 | 28 | 24 | 22 | 18 | 8 | 7 | 27 | 41 | 38 | 34 | 35 | 31 | 23 | 16 | 39 | 44 | 43 | 42 | 39 | 38 | 30 | 22 | 45 | 46 | 47 | 48 | 43 | 44 | 36 | 28 | 50 |
| 500 | | 30 | 29 | 26 | 26 | 19 | 9 | 7 | 29 | 42 | 39 | 36 | 38 | 32 | 24 | 16 | 41 | 42 | 44 | 44 | 44 | 40 | 31 | 22 | 47 | 42 | 48 | 52 | 49 | 47 | 37 | 28 | 54 |
| 550 | | 31 | 30 | 27 | 27 | 20 | 10 | 7 | 30 | 42 | 39 | 37 | 39 | 33 | 25 | 16 | 42 | 43 | 44 | 44 | 44 | 40 | 31 | 23 | 48 | 43 | 48 | 50 | 49 | 46 | 37 | 29 | 53 |
| 650 | | 33 | 31 | 30 | 29 | 22 | 13 | 7 | 32 | 41 | 41 | 40 | 40 | 37 | 26 | 16 | 44 | 43 | 45 | 44 | 45 | 41 | 32 | 24 | 48 | 45 | 48 | 48 | 48 | 44 | 36 | 31 | 52 |

Constant Airflow Regulator MR

MR Modulo

ACOUSTIC FEATURES

Sound power levels of noise (Lw) at duct output:

The following tables give the sound power levels of noise (Lw) expressed in decibels per octave (dB/oct) as well as the global sound power levels in dB(A) according to the pressure drop.

These sound power levels are results of tests carried out by a Dutch independent laboratory (PEUTZ) and are given at the duct outlet.

Measures were carried out in accordance with NF EN ISO 3741 and NF EN ISO 5135 norms, with a CAR fitted into a duct with an upstream and downstream straight length equal to 3 diameters.

| Ø 80 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m ³ /h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 20 | | 13 | 17 | 18 | 13 | 16 | 1 | 1 | 21 | 15 | 20 | 24 | 23 | 27 | 17 | 14 | 31 | 22 | 29 | 31 | 32 | 38 | 32 | 18 | 41 | 28 | 36 | 37 | 40 | 47 | 46 |
| 25 | | 13 | 17 | 18 | 14 | 16 | 2 | 1 | 21 | 16 | 21 | 25 | 23 | 27 | 18 | 14 | 31 | 23 | 29 | 31 | 32 | 37 | 32 | 19 | 41 | 28 | 36 | 37 | 39 | 46 | 45 | 24 | 51 |
| 30 | | 14 | 17 | 18 | 14 | 16 | 2 | 2 | 21 | 17 | 22 | 25 | 24 | 28 | 19 | 14 | 32 | 23 | 30 | 31 | 32 | 37 | 32 | 21 | 41 | 29 | 37 | 37 | 39 | 45 | 44 | 26 | 50 |
| 35 | | 14 | 17 | 18 | 15 | 16 | 3 | 3 | 21 | 19 | 23 | 25 | 24 | 28 | 19 | 15 | 32 | 24 | 30 | 31 | 32 | 37 | 32 | 22 | 41 | 29 | 37 | 36 | 38 | 45 | 43 | 28 | 49 |
| 40 | | 14 | 18 | 18 | 15 | 16 | 4 | 3 | 22 | 20 | 23 | 25 | 25 | 28 | 20 | 15 | 32 | 25 | 31 | 31 | 32 | 36 | 32 | 23 | 40 | 30 | 37 | 36 | 38 | 44 | 42 | 30 | 48 |
| 45 | | 14 | 18 | 19 | 16 | 16 | 4 | 4 | 22 | 21 | 24 | 25 | 25 | 28 | 21 | 15 | 32 | 26 | 31 | 31 | 32 | 36 | 31 | 24 | 40 | 30 | 37 | 36 | 37 | 43 | 41 | 32 | 47 |
| 50 | | 15 | 18 | 19 | 17 | 16 | 5 | 5 | 22 | 23 | 25 | 26 | 25 | 28 | 22 | 15 | 33 | 27 | 32 | 31 | 32 | 36 | 31 | 25 | 40 | 31 | 38 | 36 | 37 | 42 | 40 | 33 | 47 |
| 60 | | 15 | 19 | 19 | 18 | 16 | 6 | 6 | 23 | 25 | 27 | 26 | 26 | 29 | 24 | 16 | 33 | 29 | 33 | 31 | 31 | 35 | 31 | 27 | 40 | 32 | 38 | 36 | 36 | 41 | 38 | 37 | 46 |

| Ø 100 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m ³ /h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 15 | | 16 | 22 | 17 | 8 | 12 | 3 | -1 | 19 | 21 | 27 | 26 | 23 | 20 | 15 | 12 | 28 | 26 | 26 | 30 | 28 | 30 | 28 | 24 | 36 | 29 | 26 | 33 | 33 | 39 | 39 |
| 20 | | 16 | 22 | 18 | 9 | 12 | 3 | 0 | 20 | 22 | 28 | 27 | 24 | 21 | 16 | 12 | 29 | 26 | 27 | 30 | 29 | 30 | 28 | 23 | 36 | 29 | 27 | 34 | 34 | 39 | 38 | 34 | 44 |
| 25 | | 16 | 23 | 18 | 10 | 12 | 2 | 1 | 20 | 22 | 28 | 28 | 25 | 21 | 16 | 12 | 30 | 26 | 28 | 31 | 30 | 30 | 28 | 23 | 36 | 29 | 28 | 35 | 35 | 38 | 38 | 33 | 44 |
| 30 | | 17 | 23 | 19 | 11 | 12 | 2 | 2 | 20 | 22 | 28 | 29 | 26 | 21 | 16 | 12 | 30 | 26 | 29 | 32 | 31 | 30 | 27 | 22 | 37 | 29 | 29 | 35 | 35 | 38 | 37 | 32 | 44 |
| 35 | | 17 | 24 | 20 | 12 | 11 | 2 | 3 | 21 | 22 | 29 | 29 | 26 | 22 | 16 | 12 | 31 | 26 | 30 | 33 | 31 | 30 | 27 | 22 | 37 | 29 | 31 | 36 | 36 | 37 | 37 | 31 | 44 |
| 45 | | 18 | 24 | 21 | 13 | 11 | 2 | 4 | 21 | 23 | 29 | 30 | 27 | 22 | 17 | 12 | 32 | 26 | 31 | 34 | 32 | 30 | 27 | 21 | 37 | 29 | 32 | 37 | 37 | 37 | 30 | 43 | |
| 50 | | 19 | 25 | 23 | 16 | 10 | 1 | 7 | 23 | 23 | 30 | 33 | 30 | 23 | 18 | 12 | 34 | 26 | 33 | 37 | 35 | 30 | 27 | 20 | 39 | 28 | 36 | 40 | 39 | 35 | 35 | 27 | 44 |
| 55 | | 19 | 25 | 22 | 15 | 10 | 1 | 6 | 22 | 23 | 30 | 32 | 29 | 23 | 17 | 12 | 33 | 26 | 32 | 36 | 34 | 30 | 27 | 20 | 38 | 28 | 34 | 39 | 38 | 36 | 36 | 28 | 44 |
| 60 | | 20 | 26 | 24 | 17 | 10 | 1 | 8 | 24 | 24 | 31 | 33 | 30 | 24 | 18 | 12 | 34 | 26 | 34 | 38 | 35 | 30 | 27 | 19 | 39 | 28 | 37 | 41 | 40 | 35 | 35 | 26 | 44 |
| 65 | | 19 | 25 | 23 | 17 | 10 | 2 | 8 | 23 | 24 | 31 | 33 | 30 | 24 | 18 | 12 | 34 | 27 | 34 | 37 | 35 | 31 | 27 | 20 | 39 | 29 | 38 | 41 | 39 | 36 | 35 | 27 | 44 |
| 70 | | 19 | 24 | 22 | 17 | 11 | 2 | 8 | 23 | 25 | 31 | 32 | 29 | 25 | 19 | 12 | 34 | 27 | 35 | 36 | 34 | 32 | 28 | 20 | 39 | 29 | 38 | 40 | 39 | 37 | 36 | 27 | 44 |
| 75 | | 19 | 24 | 21 | 16 | 11 | 3 | 8 | 22 | 25 | 32 | 32 | 29 | 26 | 19 | 12 | 34 | 28 | 35 | 36 | 34 | 33 | 28 | 21 | 39 | 30 | 39 | 40 | 38 | 38 | 36 | 28 | 45 |
| 80 | | 18 | 22 | 20 | 15 | 12 | 4 | 7 | 21 | 26 | 33 | 30 | 27 | 28 | 20 | 12 | 34 | 29 | 36 | 35 | 33 | 35 | 29 | 22 | 40 | 31 | 40 | 39 | 38 | 40 | 37 | 30 | 46 |
| 90 | | 18 | 22 | 19 | 15 | 12 | 4 | 7 | 21 | 27 | 33 | 30 | 27 | 29 | 21 | 13 | 34 | 30 | 37 | 34 | 32 | 36 | 30 | 22 | 40 | 32 | 40 | 38 | 37 | 42 | 38 | 31 | 46 |

| Ø 125 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | 100 Pa | | | | | | | 150 Pa | | | | | | | 200 Pa | | | | | | | | | | |
| Airflow (m ³ /h) | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| | | 15 | | 31 | 19 | 17 | 14 | 14 | -3 | -3 | 19 | 28 | 25 | 23 | 24 | 32 | 11 | 9 | 34 | 30 | 26 | 26 | 27 | 31 | 23 | 19 | 35 | 32 | 27 | 29 | 29 | 30 | 33 |
| 25 | | 31 | 21 | 18 | 15 | 15 | -1 | 0 | 20 | 29 | 27 | 25 | 25 | 31 | 13 | 10 | 34 | 31 | 28 | 29 | 28 | 32 | 24 | 19 | 36 | 33 | 30 | 33 | 31 | 32 | 33 | 28 | 39 |
| 30 | | 31 | 22 | 19 | 15 | 15 | 0 | 1 | 20 | 30 | 28 | 26 | 25 | 31 | 14 | 10 | 34 | 32 | 30 | 31 | 29 | 32 | 24 | 19 | 37 | 34 | 31 | 34 | 33 | 34 | 34 | 27 | 40 |
| 45 | | 32 | 25 | 21 | 16 | 16 | 3 | 5 | 20 | 32 | 31 | 30 | 26 | 30 | 17 | 11 | 34 | 34 | 33 | 35 | 32 | 33 | 26 | 19 | 39 | 35 | 36 | 39 | 36 | 37 | 34 | 26 | 43 |
| 50 | | 32 | 26 | 21 | 16 | 16 | 4 | 6 | 21 | 33 | 32 | 31 | 27 | 29 | 18 | 11 | 35 | 34 | 35 | 36 | 32 | 34 | 26 | 19 | 39 | 36 | 37 | 41 | 38 | 38 | 34 | 25 | 44 |
| 60 | | 32 | 28 | 23 | 17 | 16 | 6 | 8 | 21 | 34 | 34 | 34 | 28 | 29 | 20 | 12 | 36 | 35 | 37 | 39 | 34 | 35 | 28 | 19 | 41 | 37 | 40 | 44 | 40 | 40 | 34 | 25 | 46 |
| 65 | | 32 | 29 | 23 | 17 | 17 | 7 | 9 | 23 | 35 | 35 | 35 | 28 | 28 | 21 | 12 | 36 | 36 | 38 | 40 | 35 | 35 | 28 | 18 | 42 | 37 | 41 | 46 | 41 | 41 | 35 | 24 | 47 |
| 70 | | 33 | 30 | 24 | 18 | 17 | 8 | 10 | 22 | 35 | 36 | 36 | 28 | 28 | 22 | 12 | 37 | 37 | 40 | 42 | 36 | 35 | 29 | 18 | 43 | 38 | 43 | 47 | 42 | 42 | 35 | 24 | 49 |
| 75 | | 33 | 31 | 25 | 18 | 17 | 9 | 12 | 24 | 36 | 37 | 37 | 29 | 28 | 23 | 13 | 38 | 37 | 41 | 43 | 37 | 36 | 29 | 18 | 44 | 38 | 44 | 49 | 44 | 43 | 35 | 23 | 50 |
| 80 | | 33 | 32 | 25 | 18 | 17 | 10 | 13 | 23 | 37 | 38 | 38 | 29 | 27 | 24 | 13 | 39 | 38 | 42 | 45 | 37 | 36 | 30 | 18 | 45 | 39 | 46 | 50 | 45 | 44 | 35 | 23 | 51 |
| 85 | | 33 | 33 | 26 | 19 | 18 | 11 | 14 | 23 | 37 | 39 | 39 | 29 | 27 | 25 | 13 | 40 | 38 | 43 | 46 | 38 | 37 | 30 | 18 | 46 | 39 | 47 | 52 | 46 | 45 | 35 | 22 | 53 |

Constant Airflow Regulator MR

| Ø 125 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|----|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | | 100 Pa | | | | | | | | 150 Pa | | | | | | | | 200 Pa | | | | | | | |
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| 100 | 33 | 31 | 26 | 24 | 20 | 11 | 9 | 21 | 39 | 40 | 37 | 34 | 30 | 25 | 17 | 39 | 42 | 41 | 42 | 39 | 35 | 32 | 26 | 44 | 45 | 41 | 46 | 44 | 40 | 39 | 34 | 49 | |
| 110 | 34 | 31 | 26 | 24 | 20 | 12 | 9 | 22 | 40 | 39 | 37 | 34 | 30 | 26 | 18 | 39 | 44 | 41 | 42 | 39 | 36 | 33 | 27 | 44 | 47 | 43 | 46 | 44 | 41 | 40 | 35 | 49 | |
| 120 | 34 | 31 | 26 | 24 | 20 | 12 | 10 | 23 | 40 | 39 | 36 | 34 | 30 | 27 | 19 | 39 | 45 | 42 | 42 | 40 | 37 | 34 | 27 | 45 | 49 | 44 | 46 | 45 | 42 | 41 | 35 | 50 | |
| 130 | 34 | 31 | 26 | 24 | 19 | 13 | 11 | 24 | 41 | 39 | 36 | 34 | 30 | 27 | 19 | 39 | 47 | 42 | 42 | 40 | 37 | 35 | 28 | 45 | 52 | 45 | 47 | 45 | 43 | 42 | 36 | 51 | |
| 140 | 35 | 31 | 26 | 24 | 19 | 14 | 12 | 25 | 42 | 38 | 36 | 34 | 30 | 28 | 20 | 39 | 48 | 43 | 42 | 40 | 38 | 36 | 29 | 46 | 54 | 47 | 47 | 45 | 44 | 43 | 37 | 52 | |
| 150 | 35 | 31 | 26 | 24 | 18 | 15 | 12 | 26 | 42 | 38 | 36 | 35 | 30 | 28 | 21 | 40 | 49 | 43 | 42 | 40 | 38 | 36 | 30 | 46 | 56 | 48 | 47 | 45 | 46 | 44 | 37 | 52 | |
| 160 | 36 | 31 | 26 | 24 | 18 | 16 | 13 | 27 | 43 | 37 | 36 | 35 | 30 | 29 | 21 | 40 | 51 | 44 | 42 | 41 | 39 | 37 | 30 | 47 | 58 | 49 | 48 | 46 | 47 | 45 | 38 | 53 | |
| 190 | 37 | 30 | 26 | 24 | 17 | 19 | 15 | 28 | 44 | 36 | 35 | 36 | 30 | 31 | 23 | 40 | 55 | 45 | 42 | 41 | 41 | 40 | 32 | 48 | 64 | 53 | 49 | 46 | 50 | 48 | 40 | 56 | |

| Ø 160 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|----|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | | 100 Pa | | | | | | | | 150 Pa | | | | | | | | 200 Pa | | | | | | | |
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| 110 | 28 | 25 | 25 | 19 | 14 | 6 | 6 | 25 | 34 | 31 | 35 | 30 | 27 | 21 | 11 | 36 | 36 | 34 | 39 | 36 | 33 | 28 | 20 | 41 | 38 | 36 | 43 | 41 | 38 | 34 | 28 | 46 | |
| 120 | 28 | 25 | 25 | 19 | 15 | 6 | 6 | 25 | 35 | 32 | 35 | 31 | 27 | 21 | 11 | 36 | 37 | 35 | 40 | 36 | 33 | 28 | 20 | 41 | 39 | 38 | 44 | 41 | 38 | 34 | 28 | 46 | |
| 130 | 28 | 25 | 25 | 20 | 15 | 6 | 6 | 26 | 36 | 33 | 35 | 31 | 28 | 21 | 12 | 36 | 39 | 36 | 40 | 37 | 34 | 28 | 20 | 42 | 41 | 39 | 44 | 41 | 39 | 34 | 28 | 46 | |
| 140 | 29 | 25 | 25 | 20 | 15 | 6 | 7 | 26 | 37 | 34 | 35 | 32 | 28 | 22 | 12 | 37 | 40 | 38 | 40 | 37 | 34 | 29 | 20 | 42 | 42 | 41 | 44 | 41 | 39 | 35 | 28 | 47 | |
| 150 | 29 | 25 | 25 | 20 | 16 | 6 | 7 | 26 | 39 | 35 | 35 | 33 | 28 | 22 | 13 | 37 | 41 | 39 | 40 | 37 | 35 | 29 | 21 | 42 | 44 | 43 | 45 | 41 | 40 | 35 | 28 | 47 | |
| 160 | 29 | 25 | 25 | 21 | 16 | 6 | 7 | 26 | 40 | 35 | 35 | 34 | 29 | 22 | 13 | 38 | 43 | 40 | 41 | 38 | 35 | 29 | 21 | 43 | 46 | 44 | 45 | 42 | 40 | 35 | 28 | 48 | |
| 170 | 29 | 25 | 25 | 21 | 16 | 6 | 7 | 26 | 41 | 36 | 35 | 35 | 29 | 22 | 14 | 38 | 44 | 41 | 41 | 38 | 35 | 29 | 21 | 43 | 47 | 46 | 46 | 42 | 41 | 36 | 27 | 48 | |
| 180 | 29 | 25 | 25 | 21 | 17 | 6 | 8 | 27 | 42 | 37 | 35 | 35 | 30 | 22 | 14 | 39 | 46 | 43 | 41 | 39 | 36 | 30 | 21 | 44 | 49 | 47 | 46 | 42 | 41 | 36 | 27 | 49 | |
| 190 | 29 | 25 | 26 | 22 | 17 | 7 | 7 | 27 | 42 | 37 | 35 | 35 | 30 | 23 | 15 | 39 | 45 | 42 | 41 | 39 | 36 | 30 | 22 | 44 | 49 | 46 | 46 | 42 | 41 | 36 | 27 | 48 | |
| 200 | 29 | 25 | 26 | 22 | 18 | 8 | 7 | 27 | 42 | 37 | 35 | 35 | 31 | 24 | 16 | 39 | 45 | 41 | 41 | 39 | 36 | 30 | 22 | 44 | 48 | 46 | 45 | 41 | 41 | 36 | 28 | 48 | |
| 210 | 28 | 25 | 26 | 22 | 18 | 9 | 7 | 27 | 41 | 36 | 35 | 36 | 31 | 25 | 17 | 39 | 45 | 41 | 40 | 39 | 36 | 31 | 23 | 44 | 48 | 45 | 45 | 41 | 40 | 36 | 28 | 47 | |
| 240 | 27 | 25 | 27 | 23 | 19 | 12 | 7 | 28 | 40 | 35 | 35 | 36 | 33 | 28 | 19 | 40 | 44 | 39 | 39 | 39 | 36 | 32 | 24 | 43 | 48 | 42 | 43 | 41 | 39 | 36 | 28 | 46 | |

| Ø 200 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|----|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | | 100 Pa | | | | | | | | 150 Pa | | | | | | | | 200 Pa | | | | | | | |
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| 225 | 26 | 21 | 20 | 19 | 13 | 5 | 7 | 23 | 36 | 33 | 33 | 29 | 27 | 21 | 13 | 35 | 40 | 37 | 38 | 35 | 32 | 27 | 19 | 40 | 42 | 40 | 42 | 40 | 37 | 33 | 25 | 45 | |
| 250 | 27 | 23 | 21 | 20 | 14 | 6 | 7 | 24 | 38 | 34 | 33 | 31 | 28 | 21 | 14 | 36 | 41 | 38 | 38 | 36 | 33 | 27 | 19 | 41 | 44 | 41 | 42 | 40 | 37 | 32 | 23 | 45 | |
| 275 | 28 | 24 | 23 | 22 | 15 | 7 | 8 | 25 | 39 | 35 | 34 | 33 | 29 | 21 | 15 | 37 | 43 | 39 | 38 | 37 | 33 | 26 | 18 | 41 | 46 | 43 | 41 | 40 | 37 | 31 | 21 | 45 | |
| 300 | 29 | 25 | 24 | 23 | 16 | 7 | 8 | 27 | 40 | 36 | 35 | 35 | 29 | 22 | 16 | 39 | 44 | 40 | 38 | 38 | 34 | 26 | 18 | 42 | 48 | 44 | 40 | 40 | 38 | 30 | 20 | 45 | |
| 325 | 30 | 27 | 25 | 25 | 18 | 10 | 9 | 28 | 42 | 37 | 35 | 36 | 31 | 24 | 18 | 40 | 45 | 41 | 40 | 39 | 35 | 28 | 20 | 43 | 49 | 45 | 44 | 41 | 40 | 32 | 22 | 47 | |
| 350 | 32 | 28 | 27 | 27 | 19 | 12 | 10 | 30 | 43 | 38 | 36 | 37 | 32 | 26 | 20 | 41 | 46 | 43 | 42 | 40 | 37 | 30 | 22 | 45 | 49 | 47 | 48 | 43 | 42 | 35 | 25 | 49 | |
| 400 | 35 | 31 | 29 | 30 | 23 | 16 | 11 | 33 | 45 | 40 | 37 | 40 | 34 | 26 | 23 | 43 | 48 | 45 | 47 | 43 | 40 | 35 | 27 | 48 | 51 | 50 | 56 | 45 | 46 | 39 | 30 | 55 | |

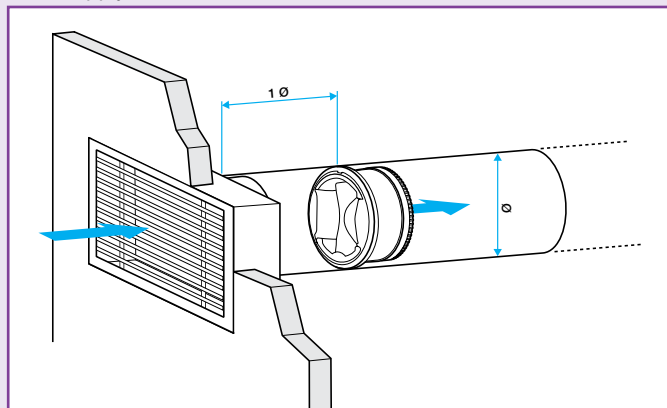
| Ø 250 | | Differential Pressure ΔP (Pa) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|----|---------------------------------------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|--------|--------|--------|---------|---------|---------|---------|--------------------|
| | | 50 Pa | | | | | | | | 100 Pa | | | | | | | | 150 Pa | | | | | | | | 200 Pa | | | | | | | |
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | Overall Lw (dB(A)) |
| 300 | 32 | 27 | 25 | 20 | 17 | 10 | 5 | 27 | 38 | 33 | 34 | 33 | 27 | 16 | 9 | 36 | 38 | 39 | 36 | 29 | 33 | 24 | 15 | 39 | 37 | 44 | 39 | 26 | 38 | 32 | 21 | 43 | |
| 350 | 31 | 28 | 25 | 22 | 18 | 10 | 6 | 27 | 39 | 35 | 35 | 35 | 28 | 18 | 11 | 38 | 40 | 40 | 38 | 33 | 34 | 26 | 18 | 41 | 40 | 45 | 41 | 32 | 39 | 34 | 24 | 45 | |
| 400 | 31 | 28 | 26 | 23 | 19 | 10 | 7 | 28 | 40 | 37 | 35 | 36 | 30 | 20 | 13 | 39 | 42 | 42 | 39 | 37 | 36 | 28 | 20 | 43 | 43 | 47 | 43 | 38 | 41 | 35 | 26 | 47 | |
| 450 | 30 | 29 | 26 | 25 | 20 | 10 | 7 | 29 | 41 | 38 | 36 | 37 | 31 | 22 | 15 | 40 | 44 | 43 | 41 | 41 | 38 | 30 | 22 | 45 | 46 | 48 | 45 | 43 | 43 | 37 | 28 | 49 | |
| 500 | 30 | 30 | 27 | 26 | 21 | 10 | 8 | 30 | 43 | 40 | 37 | 39 | 33 | 25 | 17 | 42 | 46 | 45 | 42 | 44 | 39 | 32 | 24 | 47 | 49 | 49 | 47 | 49 | 45 | 39 | 31 | 52 | |
| 550 | 31 | 31 | 29 | 29 | 23 | 12 | 9 | 32 | 42 | 40 | 38 | 39 | 34 | 26 | 18 | 42 | 46 | 45 | 43 | 44 | 40 | 33 | 25 | 48 | 49 | 49 | 47 | 49 | 45 | 39 | 31 | 53 | |
| 650 | 32 | 34 | 33 | 33 | 27 | 18 | 12 | 36 | 41 | 41 | 39 | 40 | 35 | 28 | 19 | 44 | 45 | 45 | 44 | 45 | 41 | 34 | 26 | 49 | 47 | 48 | 48 | 49 | 47 | 40 | 33 | 53 | |

Constant Airflow Regulator MR

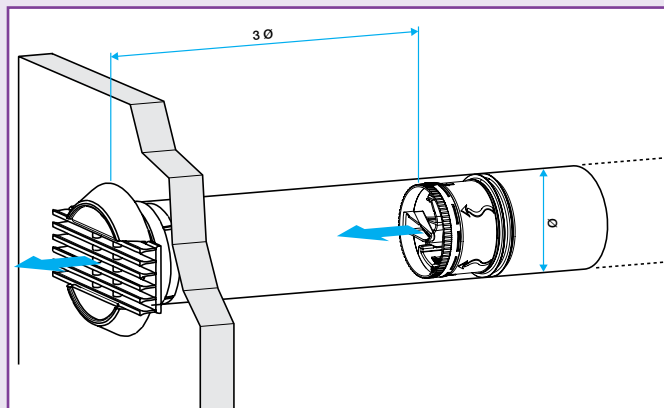
MR Mono - MR Modulo

INSTALLATION

- The MR will push-fit into circular ducts in close proximity to a take-off or a terminal.
- It is important to observe the MR orientation corresponding to the airflow direction indicated on the MR.
- Horizontal / vertical mounting possible.
- In order to avoid acoustic and aeraulic disturbance it is recommended to respect the following distance between the MR and the terminal (grille / diffuser / inlet):
 - in exhaust: $D = 1 \varnothing$,
 - in supply: $D = 3 \varnothing$.

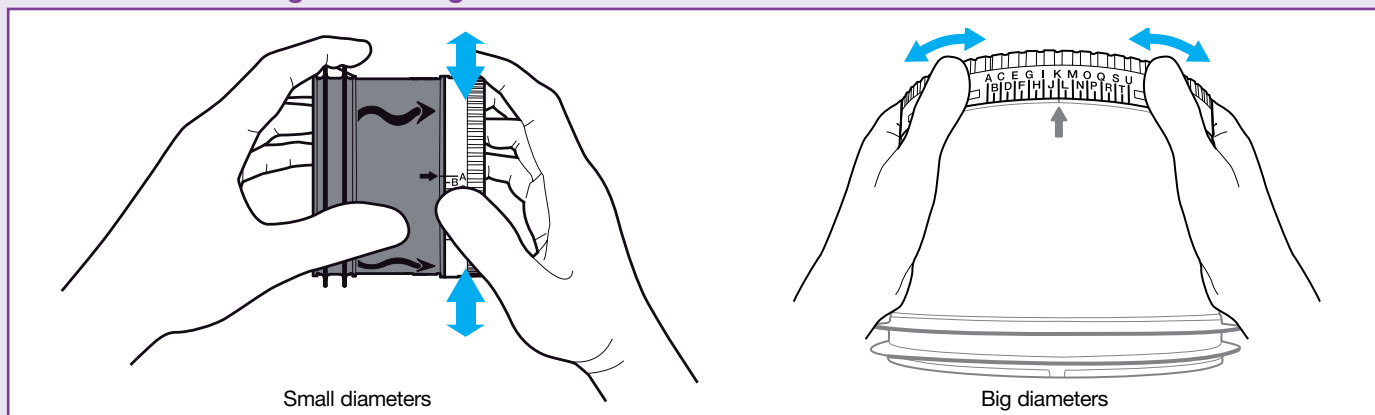


Air exhaust



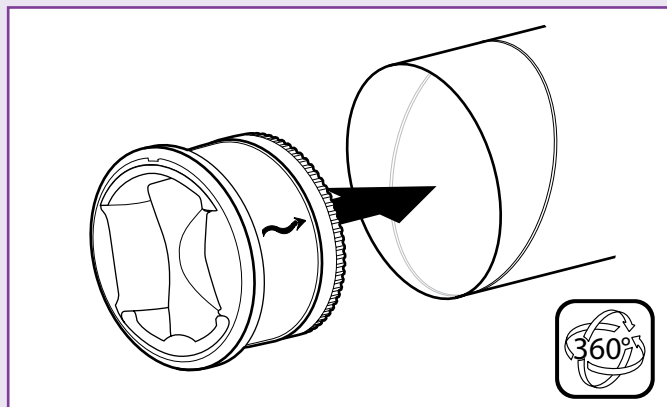
Air supply

MR Modulo mounting and setting



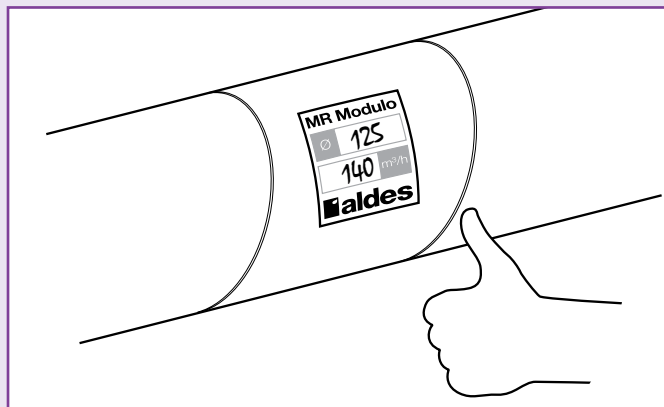
1. Adjust the airflow setting

Rotate the adjustment ring for a tool-free airflow setting until the desired airflow according to the correlation table.



2. Position the MR Modulo

Introduce the MR in the duct according to the arrow which shows the airflow direction. Minimum straight upstream and downstream distances must be observed. There is no recommendation regarding the membrane positioning.



3. Product localization

MR Modulo is delivered with a sticker which will be needed to be manually filled on site (MR diameter and airflow setting) and placed directly onto the duct to show where the MR Modulo has been mounted.

Constant Airflow Regulator MR

MR Modulo

INSTALLATION Correlation table

Ø 80

| | m³/h | cfm | m³/h | cfm |
|---|------|------|------|------|
| K | 20 | 12 | 35 | 20 |
| I | 25 | 15 | 40 | 21,5 |
| H | 30 | 17,5 | - | - |
| G | - | - | 45 | 25 |
| F | - | - | 50 | 30 |
| B | - | - | 60 | 35 |

Ø 100

| | m³/h | cfm | m³/h | cfm |
|---|------|------|------|-----|
| L | 15 | 10 | - | - |
| J | 20 | 12,5 | - | - |
| H | 25 | 15 | - | - |
| G | 30 | 17,5 | - | - |
| E | 35 | 20 | 70 | 41 |
| D | 40 | 22,5 | 75 | 44 |
| C | 45 | 25 | 80 | 47 |
| A | 55 | 32,5 | 90 | 53 |

Ø 125 (15 to 85 m³/h)

| | m³/h | cfm | m³/h | cfm |
|---|------|------|------|------|
| L | 15 | 10 | - | - |
| I | 25 | 15 | - | - |
| G | - | - | 60 | 35 |
| F | 30 | 17,5 | 65 | 37,5 |
| D | - | - | 70 | 40 |
| C | - | - | 75 | 45 |
| B | 45 | 25 | 80 | 47,5 |
| A | 50 | 30 | 85 | 50 |

Ø 125 (100 to 190 m³/h)

| | m³/h | cfm |
|---|------|-----|
| K | 100 | 60 |
| J | 110 | 65 |
| I | 120 | 70 |
| H | 130 | 75 |
| G | 140 | 80 |
| E | 150 | 90 |
| C | 160 | 95 |
| A | 190 | 110 |

Ø 150 - Ø 160

| | m³/h | cfm |
|---|------|-----|
| R | 100 | 60 |
| P | 110 | 65 |
| O | 120 | 70 |
| M | 130 | 75 |
| L | 140 | 80 |
| K | 150 | 90 |
| J | 160 | 95 |
| H | 170 | 100 |
| G | 180 | 105 |
| F | 190 | 110 |
| E | 200 | 120 |
| D | 210 | 125 |
| A | 240 | 140 |

Ø 200

| | m³/h | cfm |
|---|------|-----|
| U | 225 | 130 |
| S | 250 | 150 |
| Q | 275 | 160 |
| N | 300 | 175 |
| M | 325 | 190 |
| J | 350 | 205 |
| D | 400 | 235 |

Ø 250

| | m³/h | cfm |
|---|------|-----|
| U | 300 | 175 |
| R | 355 | 205 |
| O | 400 | 235 |
| L | 450 | 265 |
| I | 500 | 295 |
| G | 550 | 325 |
| A | 650 | 385 |

MAINTENANCE

- MR performances are not altered by clogging, therefore it requires practically no special maintenance.
- If used in an atmosphere where there is a lot of particles, sleeves with inspection window (see MAF page 14) are recommended to allow regular inspection.
- When cleaning, plug the hole on the plastic body, at the base of the bulb, in order to avoid any blocking of this orifice and to prevent any liquid or foreign body from passing inside the bulb.

MR MODULO SPECIFICATION TEXT

- CARs will be manufactured from ABS plastic (Euroclass fire ratings : B s3 d0) without chlorine. They will provide a constant airflow rate, for use in air conditioning and ventilation systems. They will include an airflow adjustment system and a regulation system as describe below:
 - regulation mechanism with a stainless steel spring and a silicone membrane,
 - airflow setting system thanks to an adjustment rotating ring (tool-free).

CARs will insure an airflow accuracy within a pressure range between 50 and 250 Pa:

- +/- 5 m³/h for airflow ≤ 50 m³/h,
- +/- 10% for airflow > 50 m³/h.

Installation will be possible in duct and accessories as well independent of orientation.

Positioning and sealing will be ensured by a double-lip seal in elastomer.

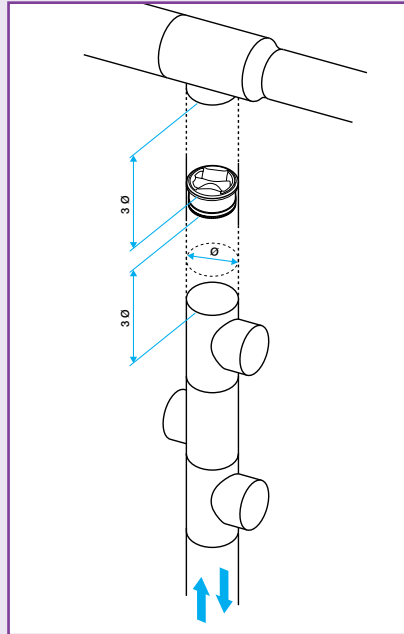
Type MR Modulo, Aldes brand.

Constant Airflow Regulator MR

MR Mono - MR Modulo

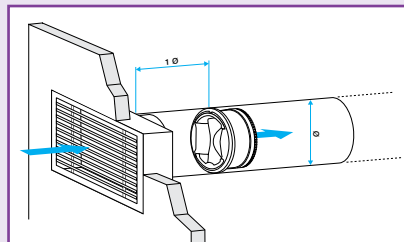
APPLICATION EXAMPLE

Airflow stabilization within an HVAC network portion

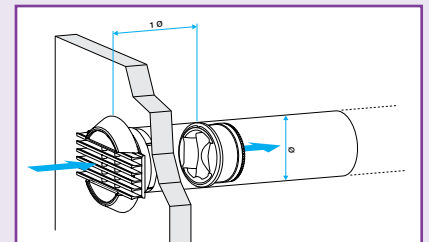


Exhausted airflow stabilization

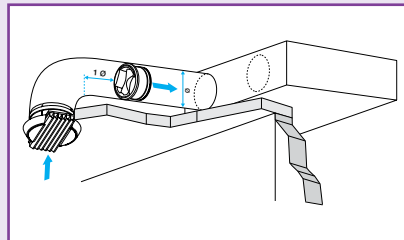
- Exhausted airflow stabilization
- In exhaust, a 1Ø -distance is recommended between the CAR and the terminal to insure air velocity harmonization in the duct to avoid aeraulic and acoustic disturbance.



1/ MR installed after a supply plenum box



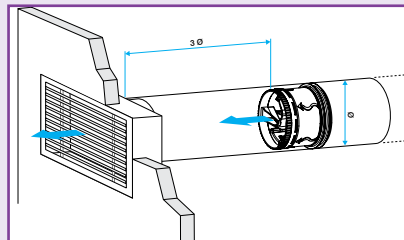
2/ MR installed after a BIM-type grille



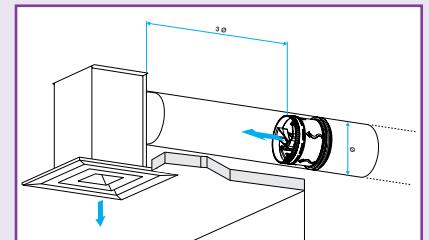
3/ MR installed before a fancoil

Supply airflow stabilization throughout a terminal

- In supply as well a 3Ø -distance is recommended between the CAR and the terminal to insure air velocity harmonization in the duct to avoid aeraulic and acoustic disturbance.



1/ MR installed before a supply plenum box



2/ MR installed before a BIM-type grille

Constant Airflow Regulator MR

MR Modulo

Standard range codes (50 - 250 Pa)

• Ø80 to 250 mm • Qnom from 15 to 650 m³/h.



| Ø (mm) | Airflow (m³/h) | Code |
|--------|----------------|----------|
| 80 | 20-60 | 11016307 |
| 100 | 15-90 | 11016308 |
| 125 | 15-85 | 11016309 |
| 125 | 100-190 | 11016310 |
| 150 | 100-240 | 11016311 |
| 160 | 100-240 | 11016312 |
| 200 | 225-400 | 11016313 |
| 250 | 300-650 | 11016314 |

MR Mono



Standard range codes (50 - 250 Pa)

• Ø80 to 250 mm • Qnom from 15 to 650 m³/h.

| Ø (mm) | Airflow (m³/h) | Code |
|--------|----------------|----------|
| 80 | 15 | 11016226 |
| | 20 | 11016227 |
| | 25 | 11016228 |
| | 30 | 11016229 |
| | 35 | 11016230 |
| | 40 | 11016231 |
| | 45 | 11016232 |
| | 50 | 11016233 |
| 100 | 60 | 11016234 |
| | 15 | 11016235 |
| | 20 | 11016236 |
| | 25 | 11016237 |
| | 30 | 11016238 |
| | 35 | 11016239 |
| | 40 | 11016240 |
| | 45 | 11016241 |
| | 50 | 11016242 |
| | 55 | 11016243 |
| | 60 | 11016244 |
| | 65 | 11016245 |
| | 70 | 11016246 |
| | 75 | 11016247 |
| | 80 | 11016248 |
| | 85 | 11016249 |
| 90 | 11016250 | |

| Ø (mm) | Airflow (m³/h) | Code |
|--------|----------------|----------|
| 125 | 15 | 11016251 |
| | 25 | 11016252 |
| | 30 | 11016253 |
| | 45 | 11016254 |
| | 50 | 11016255 |
| | 60 | 11016256 |
| | 65 | 11016257 |
| | 70 | 11016258 |
| | 75 | 11016259 |
| | 80 | 11016260 |
| | 85 | 11016261 |
| | 90 | 11016262 |
| | 95 | 11016263 |
| | 100 | 11016264 |
| | 105 | 11016265 |
| | 110 | 11016266 |
| | 115 | 11016267 |
| | 150 | 120 |
| 125 | | 11016269 |
| 130 | | 11016270 |
| 140 | | 11016271 |
| 150 | | 11016272 |
| 160 | | 11016273 |
| 190 | | 11016274 |
| 110 | | 11016275 |
| 130 | | 11016276 |
| 150 | | 11016277 |

| Ø (mm) | Airflow (m³/h) | Code |
|--------|----------------|----------|
| 160 | 120 | 11016281 |
| | 130 | 11016282 |
| | 140 | 11016283 |
| | 150 | 11016284 |
| | 160 | 11016285 |
| | 170 | 11016286 |
| | 180 | 11016287 |
| | 190 | 11016288 |
| | 200 | 11016289 |
| | 210 | 11016290 |
| 200 | 240 | 11016291 |
| | 200 | 11016292 |
| | 225 | 11016293 |
| | 250 | 11016294 |
| | 275 | 11016295 |
| | 300 | 11016296 |
| | 325 | 11016297 |
| | 350 | 11016298 |
| | 400 | 11016299 |
| | 250 | 300 |
| 350 | | 11016301 |
| 400 | | 11016302 |
| 450 | | 11016303 |
| 500 | | 11016304 |
| 550 | | 11016305 |
| 650 | 11016306 | |

High Pressure range codes (150 - 650 Pa)

• Ø125 to 250 mm • Qnom from 120 to 1 100 m³/h

| Ø (mm) | Airflow (m³/h) | Code |
|--------|----------------|----------|
| 125 | 120 | 11016071 |
| | 150 | 11016072 |
| | 200 | 11016073 |
| | 240 | 11016074 |
| | 290 | 11016075 |
| 150 | 210 | 11016076 |
| | 260 | 11016077 |
| | 310 | 11016078 |
| | 380 | 11016079 |

| Ø (mm) | Airflow (m³/h) | Code |
|--------|----------------|----------|
| 160 | 210 | 11016081 |
| | 260 | 11016082 |
| | 310 | 11016083 |
| | 380 | 11016084 |
| | 350 | 11016086 |
| 200 | 440 | 11016087 |
| | 530 | 11016088 |
| | 620 | 11016089 |
| | 700 | 11016090 |

| Ø (mm) | Airflow (m³/h) | Code |
|--------|----------------|----------|
| 250 | 550 | 11016091 |
| | 600 | 11016092 |
| | 800 | 11016093 |
| | 950 | 11016094 |
| | 1 100 | 11016095 |

Constant Airflow Regulator MR

MR Mono - MR Modulo

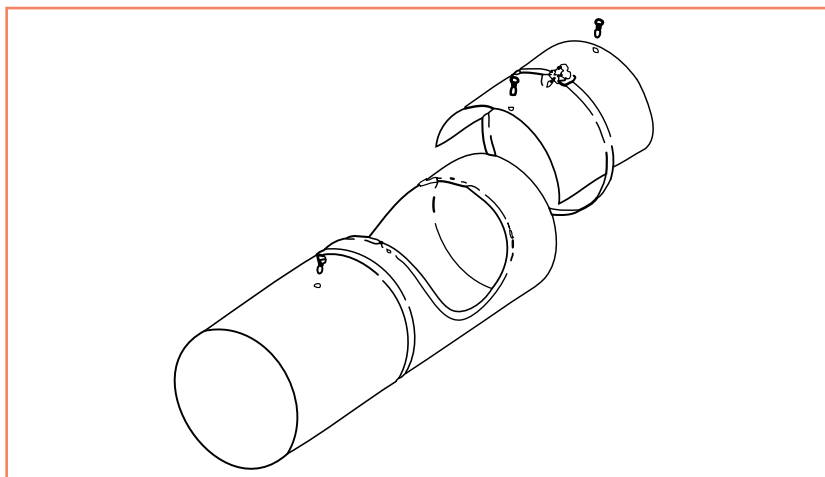
COMPLEMENTARY OFFERS

MAF

MR performances are not altered by clogging, therefore it requires practically no special maintenance.

- If used in an atmosphere where there is a lot of particles, sleeves with inspection window are recommended to allow regular inspection.
- When cleaning, plug the hole on the plastic body, at the base of the bulb, in order to avoid any blocking of this orifice and to prevent any liquid or foreign body from passing inside the membrane.

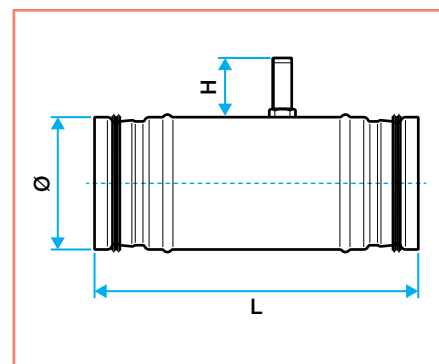
| Description | Code |
|-------------------------|----------|
| Manchon à fenêtre Ø 100 | 11013121 |
| Manchon à fenêtre Ø 125 | 11013122 |
| Manchon à fenêtre Ø 150 | 11013123 |
| Manchon à fenêtre Ø 160 | 11013124 |
| Manchon à fenêtre Ø 200 | 11013125 |
| Manchon à fenêtre Ø 250 | 11013126 |



MR Max

- The MR Max is especially adapted for specific systems requiring big diameter (up to 400 mm), high pressure (up to 1 000 Pa) and high airflow (up to 4 000 m³/h).
- The MR Max is available from diameter 80 mm to 400 mm.
- The MR Max works with a free-moving control plate. The airflow can be set from outside.

| Description | Code |
|--------------|----------|
| MR Max Ø 80 | 11016389 |
| MR Max Ø 100 | 11016390 |
| MR Max Ø 125 | 11016391 |
| MR Max Ø 160 | 11016392 |
| MR Max Ø 200 | 11016393 |
| MR Max Ø 250 | 11016394 |
| MR Max Ø 315 | 11016395 |
| MR Max Ø 400 | 11016396 |



| Duct Ø (mm) | Airflow range (m ³ /h) | L (mm) | H (mm) |
|-------------|-----------------------------------|--------|--------|
| 80 | 40 - 125 | 200 | 70 |
| 100 | 70 - 220 | 250 | 70 |
| 125 | 100 - 280 | 250 | 70 |
| 160 | 180 - 500 | 320 | 70 |
| 200 | 250 - 900 | 320 | 70 |
| 250 | 500 - 150 | 320 | 70 |
| 315 | 800 - 280 | 350 | 110 |
| 400 | 1 000 - 4 000 | 420 | 110 |

Constant Airflow Regulator MR

MR Mono - MR Modulo

REGULATION AND AIR-BALANCING OFFER FOR HVAC DUCWORKS

Passive range

Balancing dampers.



RG
Commissioning damper



CRGN
Rectangular balancing dampers



Iris
Iris damper

Automatic range

Constant airflow steadiness irrespective of pressure variations.



MR Mono
Constant Airflow Regulator
single-airflow



MR Modulo
Constant Airflow Regulator multi-
airflow



MR Max
Constant Airflow Regulator high
pressure, high airflows



RMA
Motorized Constant Airflow
Regulator motorized

Active range

Variable flow rate control according to instructions.



VMT Mod
Timed proportional regulation
damper



VAV
Variable Air Volume
damper

Constant Airflow Regulator MR

MR Mono - MR Modulo



Advantages

Regulating technology with a flexible bulb exclusive to Aldes, offering:

- a reliability of acoustic and aerodynamic performances,
- a regulating reliability unaltered by clogging,
- an operating silence: no clatter or other parasitical sound due to pressure variations,
- horizontal or vertical mounting,
- a use for air supply or air exhaust with the same product.

MR Mono and MR Modulo ranges propose:

- a wide range of airflows and diameters available,
- an optimum stock management with the MR Modulo (8 references for 7 diameters)
- a high quality product (designed and produced in Europe)
- a userfriendly installation: no commissioning, tool-free airflow setting (for MR Modulo), no wiring required (mechanically self-powered), can be fitted in both ducting and accessories,
- Smart design:
 - Double-lip ring seal for a better positioning and less leakage,
 - Rotative ring for on-site airflow setting (Aldes Patent for the MR Modulo),
 - Plastic fire-resistance rating b-S3-d0 (Euroclass) recyclable without chlorine, stainless steel regulation spring.

Use of the constant airflow regulator MR guarantees:

- hygienic air quality (ventilation) or thermal comfort of occupants (air-conditioning),
- a simplification of the installation studies for air distribution ductworks,
- reduced operating costs,
- substantial time saved in installation linked to absence of commissioning (MR Mono range),
- maximum flexibility on site with tool-free airflow setting (MR Modulo range)

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