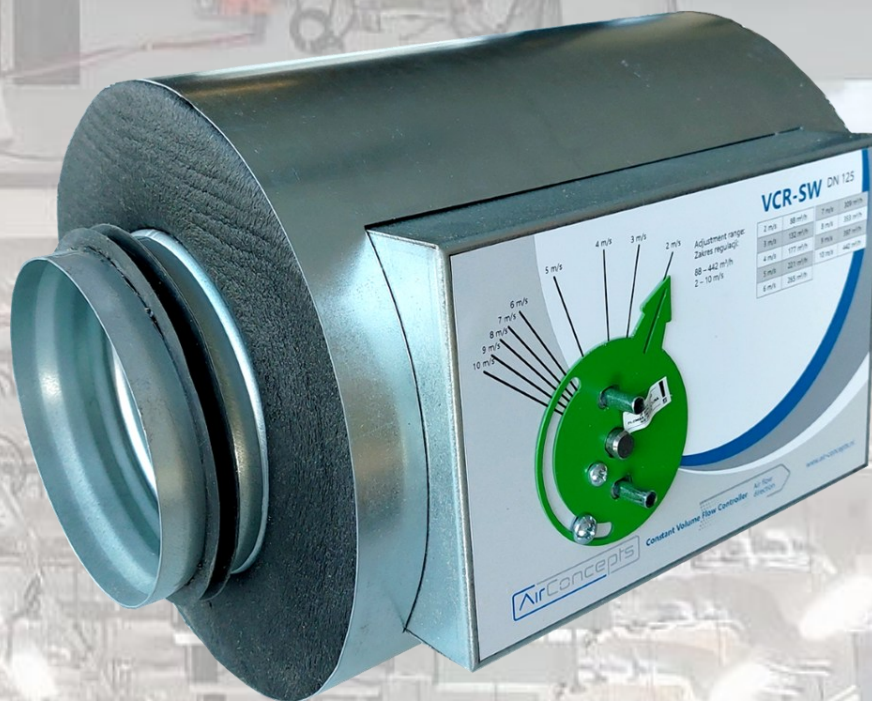


# 1.3.2 VCR-DW

Circular system powered,  
Mechanical CAV regulator

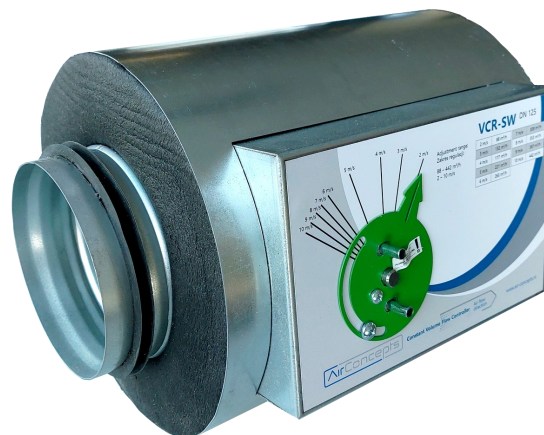


AIRFLOW MEASUREMENT AND CONTROL

## Application

The mechanical constant volume regulator type VCR is used to reduce the cost and time of air balancing or commissioning on site. The advantage over manual dampers is that measurements and adjustments by a qualified commissioning engineer are no longer required. The factory set air volume can be read on the external scale and can be site adjusted.

When using normal manual balancing dampers, if the pressure in the duct system changes, the volume flows in the system with also changes. This is not the case when type VCR mechanical constant volume regulators are used. The regulators respond immediately and adjust the damper positions directly so that the set volume flow is held constant over the entire



Type VCR-DW

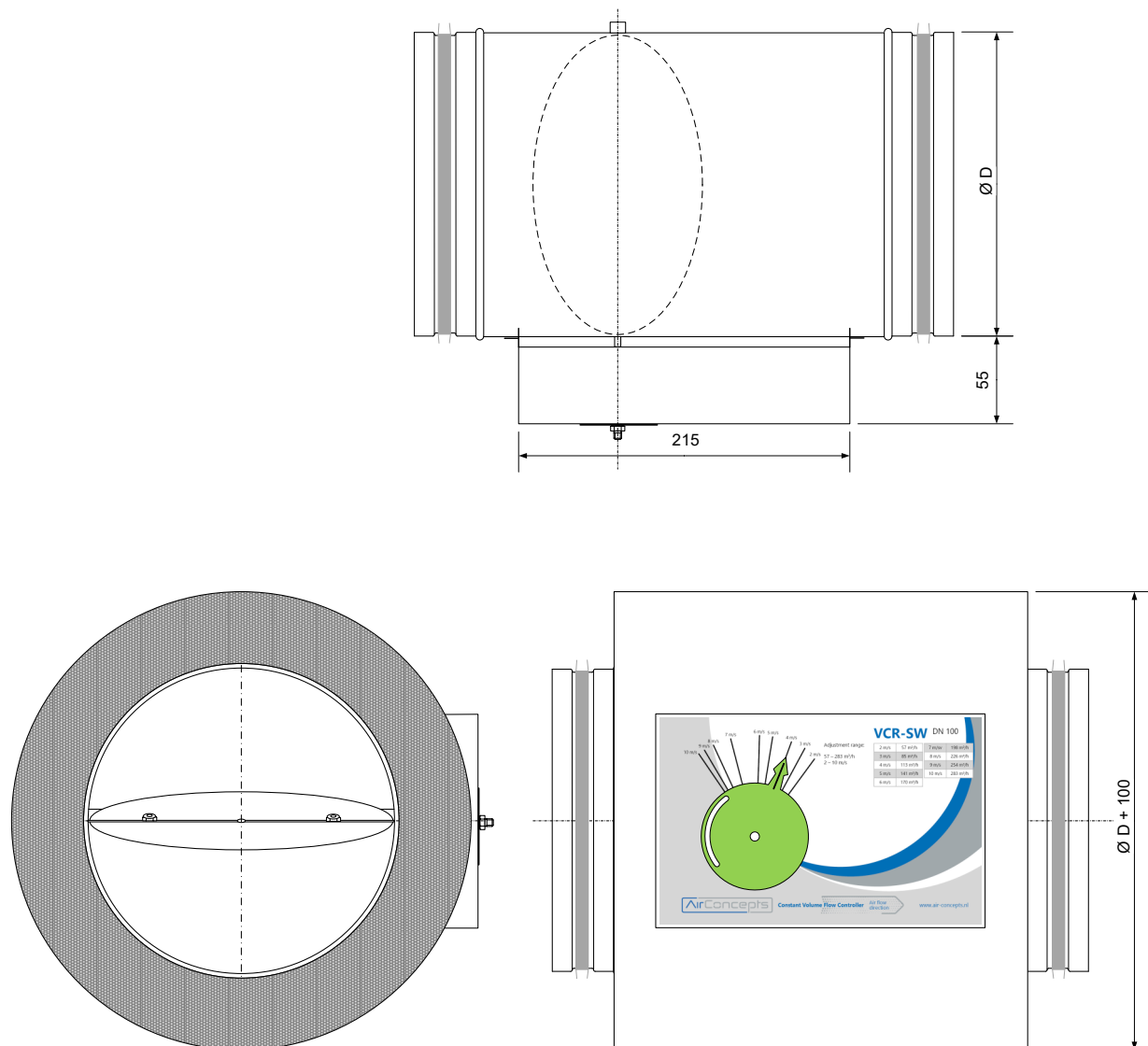
## Design features

### Casing

- Ridged galvanised steel construction (1.0mm)
- Silicone bellow for anti-oscillating and reduced hysteresis.
- Spigots comply with DIN 24145 or DIN 24146 ducts.
- Maintenance free
- Short installed length
- Rubber seal (optional) for easy and air tight mounting (DIN 24194 Class 4)
- Casing leakage complies with Class II, VDI 3803 or DIN 24194, Part 2

### Volume Flow Control

- Mechanical system powered, no external power supply
- Insensitive to mounting position
- Suitable for supply or extract air
- Operating temperature  $-20$  to  $+70^{\circ}\text{C}$
- Differential pressure range 50 to 1000 Pa
- Correct functioning even with unfavourable inlet and outlet flow conditions (minimum straight length of inlet duct  $3.0 \times D$ )
- Control blade shaft supported in bearings
- Includes anti oscillation bellow
- Large volume flow range (1 : 5)
- Volume flow adjustment and resetting via external scale, scale accuracy approx 5%
- Maintenance free



### Dimensions, weight and control range

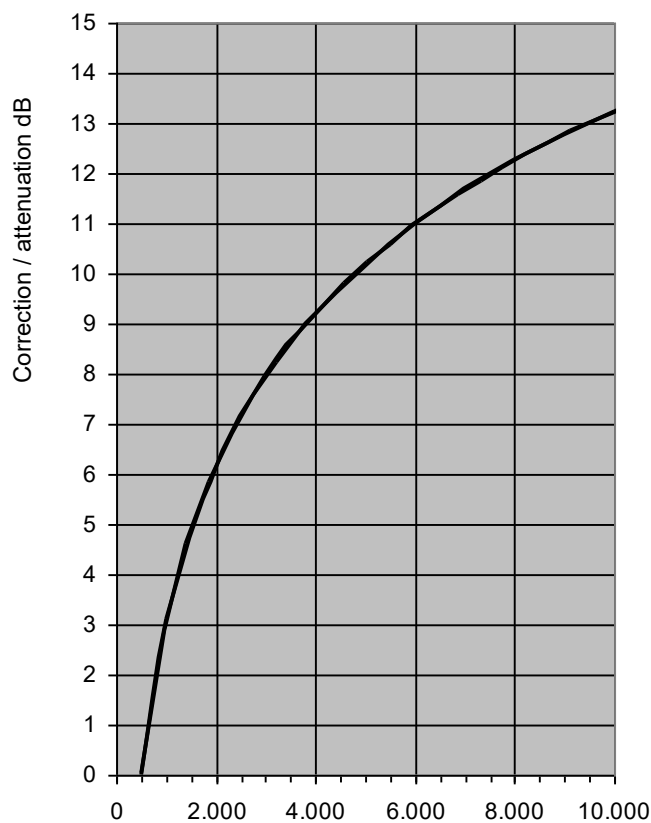
| Model         | 100 | 125 | 160 | 200  | 250  | 315  | 400  | mm   |
|---------------|-----|-----|-----|------|------|------|------|------|
| ØD            | 98  | 123 | 158 | 198  | 248  | 313  | 398  | mm   |
| VCR-DW weight | 2,8 | 3,2 | 3,8 | 4,5  | 5,4  | 7,6  | 9,4  | kg   |
| Vmin (2 m/s)  | 57  | 88  | 145 | 226  | 353  | 561  | 904  | m³/h |
|               | 16  | 24  | 40  | 63   | 98   | 156  | 251  | l/s  |
| Vmax (10 m/s) | 283 | 442 | 723 | 1130 | 1766 | 2804 | 4522 | m³/h |
|               | 79  | 123 | 201 | 314  | 491  | 779  | 1256 | l/s  |

## Sound data

1.  $L_w$  in dB/Oct are sound power levels (re  $10^{-12}W$ ) per octave band in dB for discharge sound and radiated sound. Values less than 17 dB are indicated by "-".
2. The discharge sound pressure levels  $L_p$ , are determined with a room absorption of 7dB/oct and the following assumption for downstream ductwork, diffuser(s) and end reflection:

| 125 | 250 | 500 | 1k  | 2k  | 4k  | Hz |
|-----|-----|-----|-----|-----|-----|----|
| -3  | -5  | -10 | -15 | -15 | -12 | dB |

3. The discharge sound pressure levels  $L_p(A)$  also include a correction for air volume :



4. The Radiated sound pressure levels  $L_p$  are determined with a room absorption of 7dB/oct and the following assumption ceiling attenuation:

| 125 | 250 | 500 | 1k | 2k | 4k  | Hz |
|-----|-----|-----|----|----|-----|----|
| -1  | -3  | -5  | -7 | -7 | -10 | dB |

5.  $\Delta Pa$ . Unit resistance with fully opened damper blade
6. Sound data is measured in a reverberation room at an independent sound laboratory, according to ISO-3741 and ISO-5135 standards.

| Model / Diameter | Air volume (m³/h) | Air velocity (m/s) | Min. P <sub>st</sub> (Pa) | Sound pressure L <sub>p</sub> (A) in dB(A) |                            |                            | Sound power level Discharge                    |        |        |         |         |         |                          | Sound Power Level single wall (-SW)            |        |        |         |         |         |                          | Sound Power Level double wall (-DW)            |        |        |         |         |         |                          |
|------------------|-------------------|--------------------|---------------------------|--------------------------------------------|----------------------------|----------------------------|------------------------------------------------|--------|--------|---------|---------|---------|--------------------------|------------------------------------------------|--------|--------|---------|---------|---------|--------------------------|------------------------------------------------|--------|--------|---------|---------|---------|--------------------------|
|                  |                   |                    |                           | Discharge sound (Spl)                      | Radiated sound double wall | Radiated sound single wall | L <sub>w</sub> (dB/oct) re 10 <sup>-12</sup> W |        |        |         |         |         | L <sub>w</sub> (A) dB(A) | L <sub>w</sub> (dB/oct) re 10 <sup>-12</sup> W |        |        |         |         |         | L <sub>w</sub> (A) dB(A) | L <sub>w</sub> (dB/oct) re 10 <sup>-12</sup> W |        |        |         |         |         | L <sub>w</sub> (A) dB(A) |
|                  |                   |                    |                           |                                            |                            |                            | 125 Hz                                         | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz |                          | 125 Hz                                         | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz |                          | 125 Hz                                         | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz |                          |
| 100              | 57                | 2,0                | 50                        | 22                                         | -                          | -                          | 20                                             | 32     | 39     | 34      | 33      | 31      | 40                       | --                                             | --     | 23     | 17      | 23      | 20      | 27                       | --                                             | --     | 21     | --      | --      | --      | 22                       |
|                  | 113               | 4,0                | 55                        | 27                                         | 19                         | -                          | 34                                             | 41     | 43     | 40      | 39      | 39      | 46                       | 20                                             | 24     | 27     | 23      | 29      | 28      | 34                       | 19                                             | 23     | 25     | 22      | 20      | 24      | 29                       |
|                  | 170               | 6,0                | 64                        | 30                                         | 23                         | 18                         | 40                                             | 44     | 46     | 42      | 43      | 41      | 49                       | 26                                             | 27     | 30     | 25      | 33      | 30      | 37                       | 25                                             | 26     | 28     | 24      | 24      | 26      | 32                       |
|                  | 226               | 8,0                | 78                        | 34                                         | 26                         | 21                         | 46                                             | 49     | 47     | 46      | 46      | 45      | 52                       | 32                                             | 32     | 31     | 29      | 36      | 34      | 40                       | 31                                             | 31     | 29     | 28      | 27      | 30      | 35                       |
|                  | 283               | 10,0               | 98                        | 35                                         | 27                         | 23                         | 50                                             | 49     | 49     | 48      | 48      | 46      | 54                       | 36                                             | 32     | 33     | 31      | 38      | 35      | 42                       | 35                                             | 31     | 31     | 30      | 29      | 31      | 37                       |
| 125              | 88                | 2,0                | 40                        | 23                                         | -                          | -                          | 22                                             | 34     | 40     | 37      | 36      | 32      | 42                       | --                                             | 17     | 23     | 20      | 24      | 20      | 28                       | --                                             | --     | 22     | 19      | 17      | 17      | 25                       |
|                  | 177               | 4,0                | 44                        | 29                                         | 20                         | -                          | 37                                             | 42     | 44     | 43      | 41      | 39      | 48                       | 22                                             | 25     | 27     | 26      | 29      | 27      | 34                       | 21                                             | 24     | 26     | 25      | 22      | 24      | 30                       |
|                  | 265               | 6,0                | 52                        | 32                                         | 22                         | 19                         | 43                                             | 46     | 47     | 45      | 44      | 42      | 51                       | 28                                             | 29     | 30     | 28      | 32      | 30      | 37                       | 27                                             | 28     | 29     | 27      | 25      | 27      | 33                       |
|                  | 353               | 8,0                | 65                        | 35                                         | 26                         | 22                         | 49                                             | 50     | 48     | 48      | 48      | 46      | 54                       | 34                                             | 33     | 31     | 31      | 36      | 34      | 40                       | 33                                             | 32     | 30     | 30      | 29      | 31      | 36                       |
|                  | 442               | 10,0               | 83                        | 36                                         | 28                         | 24                         | 52                                             | 50     | 49     | 49      | 50      | 47      | 55                       | 37                                             | 33     | 32     | 32      | 38      | 35      | 42                       | 36                                             | 32     | 31     | 31      | 31      | 32      | 38                       |
| 160              | 145               | 2,0                | 40                        | 26                                         | -                          | -                          | 27                                             | 36     | 41     | 41      | 40      | 34      | 46                       | --                                             | 19     | 23     | 23      | 24      | 20      | 29                       | --                                             | 18     | 23     | 23      | 20      | 18      | 27                       |
|                  | 289               | 4,0                | 43                        | 30                                         | 19                         | 18                         | 40                                             | 44     | 45     | 45      | 44      | 40      | 50                       | 23                                             | 27     | 27     | 27      | 28      | 26      | 33                       | 20                                             | 26     | 27     | 27      | 24      | 24      | 32                       |
|                  | 434               | 6,0                | 51                        | 34                                         | 22                         | 21                         | 47                                             | 48     | 48     | 47      | 47      | 44      | 53                       | 30                                             | 31     | 30     | 29      | 31      | 30      | 36                       | 27                                             | 30     | 30     | 29      | 27      | 28      | 35                       |
|                  | 579               | 8,0                | 64                        | 37                                         | 26                         | 24                         | 52                                             | 52     | 49     | 50      | 51      | 47      | 56                       | 35                                             | 35     | 31     | 32      | 35      | 33      | 40                       | 32                                             | 34     | 31     | 32      | 31      | 31      | 38                       |
|                  | 723               | 10,0               | 81                        | 38                                         | 27                         | 25                         | 55                                             | 52     | 50     | 51      | 52      | 49      | 57                       | 38                                             | 35     | 32     | 33      | 36      | 35      | 41                       | 35                                             | 34     | 32     | 33      | 32      | 33      | 39                       |
| 200              | 226               | 2,0                | 40                        | 28                                         | -                          | -                          | 32                                             | 39     | 43     | 44      | 44      | 35      | 49                       | --                                             | 21     | 23     | 24      | 26      | 19      | 30                       | --                                             | 18     | 22     | 22      | 24      | 20      | 28                       |
|                  | 452               | 4,0                | 43                        | 33                                         | 20                         | 19                         | 43                                             | 45     | 46     | 48      | 48      | 42      | 53                       | 25                                             | 27     | 26     | 28      | 30      | 26      | 34                       | 22                                             | 24     | 25     | 26      | 28      | 27      | 33                       |
|                  | 678               | 6,0                | 51                        | 36                                         | 23                         | 21                         | 50                                             | 50     | 48     | 49      | 50      | 46      | 55                       | 32                                             | 32     | 28     | 29      | 32      | 30      | 37                       | 29                                             | 29     | 27     | 27      | 30      | 31      | 36                       |
|                  | 904               | 8,0                | 63                        | 38                                         | 26                         | 24                         | 54                                             | 53     | 50     | 51      | 53      | 49      | 58                       | 36                                             | 35     | 30     | 31      | 35      | 33      | 40                       | 33                                             | 32     | 29     | 29      | 33      | 34      | 39                       |
|                  | 1130              | 10,0               | 80                        | 40                                         | 27                         | 25                         | 58                                             | 53     | 51     | 52      | 54      | 50      | 59                       | 40                                             | 35     | 31     | 32      | 36      | 34      | 41                       | 37                                             | 32     | 30     | 30      | 34      | 35      | 40                       |
| 250              | 353               | 2,0                | 50                        | 31                                         | 23                         | 19                         | 36                                             | 41     | 44     | 47      | 47      | 37      | 51                       | 20                                             | 25     | 27     | 31      | 33      | 25      | 37                       | 17                                             | 22     | 24     | 29      | 28      | 23      | 33                       |
|                  | 707               | 4,0                | 52                        | 35                                         | 26                         | 23                         | 46                                             | 47     | 47     | 50      | 51      | 43      | 55                       | 30                                             | 31     | 30     | 34      | 37      | 31      | 41                       | 27                                             | 28     | 27     | 32      | 32      | 29      | 37                       |
|                  | 1060              | 6,0                | 58                        | 37                                         | 28                         | 25                         | 53                                             | 52     | 49     | 51      | 52      | 47      | 57                       | 37                                             | 36     | 32     | 35      | 38      | 35      | 42                       | 34                                             | 33     | 29     | 33      | 33      | 33      | 39                       |
|                  | 1413              | 8,0                | 68                        | 40                                         | 31                         | 27                         | 57                                             | 55     | 51     | 53      | 55      | 50      | 59                       | 41                                             | 39     | 34     | 37      | 41      | 38      | 45                       | 38                                             | 36     | 31     | 35      | 36      | 36      | 42                       |
|                  | 1766              | 10,0               | 83                        | 42                                         | 32                         | 29                         | 61                                             | 55     | 52     | 54      | 56      | 52      | 61                       | 45                                             | 39     | 35     | 38      | 42      | 40      | 46                       | 42                                             | 36     | 32     | 36      | 37      | 38      | 43                       |
| 315              | 561               | 2,0                | 50                        | 34                                         | 27                         | 23                         | 41                                             | 43     | 45     | 50      | 51      | 38      | 55                       | 26                                             | 27     | 29     | 35      | 38      | 27      | 41                       | 23                                             | 23     | 25     | 32      | 33      | 24      | 37                       |
|                  | 1122              | 4,0                | 52                        | 37                                         | 30                         | 26                         | 49                                             | 48     | 48     | 53      | 54      | 44      | 58                       | 34                                             | 32     | 32     | 38      | 41      | 33      | 44                       | 31                                             | 28     | 28     | 35      | 36      | 30      | 40                       |
|                  | 1682              | 6,0                | 58                        | 40                                         | 32                         | 28                         | 56                                             | 54     | 50     | 54      | 55      | 49      | 59                       | 41                                             | 38     | 34     | 39      | 42      | 38      | 46                       | 38                                             | 34     | 30     | 36      | 37      | 35      | 42                       |
|                  | 2243              | 8,0                | 68                        | 42                                         | 34                         | 30                         | 60                                             | 56     | 52     | 55      | 57      | 51      | 61                       | 45                                             | 40     | 36     | 40      | 44      | 40      | 48                       | 42                                             | 36     | 32     | 37      | 39      | 37      | 44                       |
|                  | 2804              | 10,0               | 83                        | 43                                         | 35                         | 31                         | 63                                             | 56     | 53     | 56      | 58      | 53      | 62                       | 48                                             | 40     | 37     | 41      | 45      | 42      | 49                       | 45                                             | 36     | 33     | 38      | 40      | 39      | 45                       |
| 400              | 904               | 2,0                | 50                        | 37                                         | 31                         | 26                         | 46                                             | 46     | 47     | 53      | 55      | 40      | 58                       | 32                                             | 30     | 31     | 38      | 43      | 30      | 45                       | 28                                             | 26     | 27     | 35      | 37      | 27      | 40                       |
|                  | 1809              | 4,0                | 52                        | 40                                         | 34                         | 29                         | 53                                             | 49     | 50     | 55      | 57      | 46      | 60                       | 39                                             | 33     | 34     | 40      | 45      | 36      | 48                       | 35                                             | 29     | 30     | 37      | 39      | 33      | 43                       |
|                  | 2713              | 6,0                | 58                        | 42                                         | 35                         | 30                         | 60                                             | 56     | 51     | 56      | 58      | 50      | 62                       | 46                                             | 40     | 35     | 41      | 46      | 40      | 49                       | 42                                             | 36     | 31     | 38      | 40      | 37      | 44                       |
|                  | 3617              | 8,0                | 68                        | 44                                         | 36                         | 32                         | 63                                             | 57     | 52     | 57      | 59      | 53      | 63                       | 49                                             | 41     | 36     | 42      | 47      | 43      | 51                       | 45                                             | 37     | 32     | 39      | 41      | 40      | 46                       |
|                  | 4522              | 10,0               | 83                        | 45                                         | 38                         | 33                         | 66                                             | 57     | 53     | 57      | 60      | 55      | 64                       | 52                                             | 41     | 37     | 42      | 48      | 45      | 52                       | 48                                             | 37     | 33     | 39      | 42      | 42      | 47                       |

| Model / Diameter | Air volume (m³/h) | Air velocity (m/s) | Min. Pst (Pa) | Sound pressure Lp(A) in dB(A)       |                                        |                                        | Sound power level Discharge |         |         |          |          |          |               | Sound Power Level single wall (-SW) |         |         |          |          |          |               | Sound Power Level double wall (-DW) |         |         |          |          |          |               |
|------------------|-------------------|--------------------|---------------|-------------------------------------|----------------------------------------|----------------------------------------|-----------------------------|---------|---------|----------|----------|----------|---------------|-------------------------------------|---------|---------|----------|----------|----------|---------------|-------------------------------------|---------|---------|----------|----------|----------|---------------|
|                  |                   |                    |               | Discharge sound (SpL) ge-luiddemper | Radiated sound double wall enkelwandig | Radiated sound single wall enkelwandig | Lw (dB/oct) re 10-12W       |         |         |          |          |          |               | Lw (dB/oct) re 10-12W               |         |         |          |          |          |               | Lw (dB/oct) re 10-12W               |         |         |          |          |          |               |
|                  |                   |                    |               |                                     |                                        |                                        | 12 5 Hz                     | 25 0 Hz | 50 0 Hz | 10 00 Hz | 20 00 Hz | 40 00 Hz | Lw (A) dB (A) | 12 5 Hz                             | 25 0 Hz | 50 0 Hz | 10 00 Hz | 20 00 Hz | 40 00 Hz | Lw (A) dB (A) | 12 5 Hz                             | 25 0 Hz | 50 0 Hz | 10 00 Hz | 20 00 Hz | 40 00 Hz | Lw (A) dB (A) |
|                  |                   |                    |               |                                     |                                        |                                        |                             |         |         |          |          |          |               |                                     |         |         |          |          |          |               |                                     |         |         |          |          |          |               |
| 100              | 57                | 2,0                | 50            | 32                                  | 23                                     | 19                                     | 21                          | 37      | 41      | 37       | 34       | 49       | 51            | --                                  | 20      | 25      | 20       | 24       | 38       | 39            | --                                  | 19      | 23      | 19       | --       | 34       | 35            |
|                  | 113               | 4,0                | 55            | 38                                  | 29                                     | 25                                     | 39                          | 46      | 47      | 44       | 41       | 55       | 57            | 25                                  | 29      | 31      | 27       | 31       | 44       | 45            | 24                                  | 28      | 29      | 26       | 22       | 40       | 41            |
|                  | 170               | 6,0                | 64            | 38                                  | 29                                     | 25                                     | 45                          | 50      | 50      | 46       | 46       | 54       | 57            | 31                                  | 33      | 34      | 29       | 36       | 43       | 45            | 30                                  | 32      | 32      | 28       | 27       | 39       | 41            |
|                  | 226               | 8,0                | 78            | 41                                  | 32                                     | 28                                     | 56                          | 54      | 53      | 51       | 48       | 56       | 59            | 42                                  | 37      | 37      | 34       | 38       | 45       | 47            | 41                                  | 36      | 35      | 33       | 29       | 41       | 43            |
|                  | 283               | 10,0               | 98            | 42                                  | 33                                     | 29                                     | 60                          | 54      | 55      | 52       | 51       | 56       | 60            | 46                                  | 37      | 39      | 35       | 41       | 45       | 48            | 45                                  | 36      | 37      | 34       | 32       | 41       | 44            |
| 125              | 88                | 2,0                | 40            | 33                                  | 23                                     | 20                                     | 26                          | 40      | 43      | 41       | 38       | 50       | 52            | --                                  | 23      | 26      | 24       | 26       | 38       | 40            | --                                  | 22      | 25      | 23       | 19       | 35       | 36            |
|                  | 177               | 4,0                | 44            | 38                                  | 28                                     | 26                                     | 43                          | 48      | 49      | 48       | 43       | 55       | 57            | 28                                  | 31      | 32      | 31       | 31       | 43       | 45            | 27                                  | 30      | 31      | 30       | 24       | 40       | 42            |
|                  | 265               | 6,0                | 52            | 40                                  | 30                                     | 27                                     | 49                          | 53      | 52      | 48       | 47       | 56       | 59            | 34                                  | 36      | 35      | 31       | 35       | 44       | 46            | 33                                  | 35      | 34      | 30       | 28       | 41       | 43            |
|                  | 353               | 8,0                | 65            | 43                                  | 33                                     | 29                                     | 59                          | 56      | 54      | 52       | 52       | 57       | 61            | 44                                  | 39      | 37      | 35       | 40       | 45       | 48            | 43                                  | 38      | 36      | 34       | 33       | 42       | 45            |
|                  | 442               | 10,0               | 83            | 43                                  | 33                                     | 30                                     | 62                          | 56      | 56      | 54       | 53       | 57       | 62            | 47                                  | 39      | 39      | 37       | 41       | 45       | 48            | 46                                  | 38      | 38      | 36       | 34       | 42       | 45            |
| 160              | 145               | 2,0                | 40            | 35                                  | 23                                     | 21                                     | 33                          | 43      | 46      | 45       | 43       | 51       | 54            | --                                  | 26      | 28      | 27       | 27       | 37       | 39            | --                                  | 25      | 28      | 27       | 23       | 35       | 37            |
|                  | 289               | 4,0                | 43            | 40                                  | 28                                     | 26                                     | 47                          | 50      | 50      | 50       | 46       | 56       | 59            | 30                                  | 33      | 32      | 32       | 30       | 42       | 44            | 27                                  | 32      | 32      | 32       | 26       | 40       | 42            |
|                  | 434               | 6,0                | 51            | 41                                  | 29                                     | 27                                     | 53                          | 55      | 53      | 51       | 50       | 56       | 60            | 36                                  | 38      | 35      | 33       | 34       | 42       | 44            | 33                                  | 37      | 35      | 33       | 30       | 40       | 43            |
|                  | 579               | 8,0                | 64            | 44                                  | 32                                     | 30                                     | 61                          | 58      | 55      | 54       | 54       | 58       | 62            | 44                                  | 41      | 37      | 36       | 38       | 44       | 47            | 41                                  | 40      | 37      | 36       | 34       | 42       | 45            |
|                  | 723               | 10,0               | 81            | 45                                  | 33                                     | 31                                     | 65                          | 58      | 57      | 55       | 55       | 58       | 63            | 48                                  | 41      | 39      | 37       | 39       | 44       | 47            | 45                                  | 40      | 39      | 37       | 35       | 42       | 45            |
| 200              | 226               | 2,0                | 40            | 36                                  | 23                                     | 23                                     | 38                          | 46      | 48      | 49       | 47       | 52       | 56            | 20                                  | 28      | 28      | 29       | 29       | 36       | 39            | 17                                  | 25      | 27      | 27       | 27       | 37       | 39            |
|                  | 452               | 4,0                | 43            | 41                                  | 28                                     | 28                                     | 50                          | 52      | 52      | 53       | 52       | 57       | 61            | 32                                  | 34      | 32      | 33       | 34       | 41       | 43            | 29                                  | 31      | 31      | 31       | 32       | 42       | 44            |
|                  | 678               | 6,0                | 51            | 43                                  | 29                                     | 29                                     | 57                          | 58      | 54      | 53       | 53       | 58       | 62            | 39                                  | 40      | 34      | 33       | 35       | 42       | 45            | 36                                  | 37      | 33      | 31       | 33       | 43       | 45            |
|                  | 904               | 8,0                | 63            | 46                                  | 32                                     | 31                                     | 64                          | 60      | 56      | 56       | 56       | 59       | 64            | 46                                  | 42      | 36      | 36       | 38       | 43       | 46            | 43                                  | 39      | 35      | 34       | 36       | 44       | 46            |
|                  | 1130              | 10,0               | 80            | 47                                  | 33                                     | 32                                     | 67                          | 60      | 58      | 57       | 57       | 59       | 64            | 49                                  | 42      | 38      | 37       | 39       | 43       | 47            | 46                                  | 39      | 37      | 35       | 37       | 44       | 47            |
| 250              | 353               | 2,0                | 50            | 39                                  | 30                                     | 27                                     | 44                          | 49      | 50      | 52       | 51       | 54       | 58            | 28                                  | 33      | 33      | 36       | 37       | 42       | 45            | 25                                  | 30      | 30      | 34       | 32       | 40       | 43            |
|                  | 707               | 4,0                | 52            | 43                                  | 33                                     | 30                                     | 54                          | 54      | 54      | 55       | 56       | 57       | 62            | 38                                  | 38      | 37      | 39       | 42       | 45       | 49            | 35                                  | 35      | 34      | 37       | 37       | 43       | 46            |
|                  | 1060              | 6,0                | 58            | 45                                  | 35                                     | 32                                     | 61                          | 60      | 56      | 56       | 56       | 58       | 63            | 45                                  | 44      | 39      | 40       | 42       | 46       | 49            | 42                                  | 41      | 36      | 38       | 37       | 44       | 47            |
|                  | 1413              | 8,0                | 68            | 47                                  | 36                                     | 33                                     | 66                          | 62      | 57      | 58       | 58       | 59       | 65            | 50                                  | 46      | 40      | 42       | 44       | 47       | 51            | 47                                  | 43      | 37      | 40       | 39       | 45       | 48            |
|                  | 1766              | 10,0               | 83            | 49                                  | 38                                     | 35                                     | 70                          | 62      | 58      | 58       | 59       | 60       | 66            | 54                                  | 46      | 41      | 42       | 45       | 48       | 52            | 51                                  | 43      | 38      | 40       | 40       | 46       | 49            |
| 315              | 561               | 2,0                | 50            | 42                                  | 34                                     | 30                                     | 49                          | 52      | 53      | 56       | 56       | 55       | 62            | 34                                  | 36      | 37      | 41       | 43       | 44       | 49            | 31                                  | 32      | 33      | 38       | 38       | 41       | 45            |
|                  | 1122              | 4,0                | 52            | 44                                  | 36                                     | 33                                     | 58                          | 56      | 55      | 57       | 59       | 58       | 64            | 43                                  | 40      | 39      | 42       | 46       | 47       | 51            | 40                                  | 36      | 35      | 39       | 41       | 44       | 48            |
|                  | 1682              | 6,0                | 58            | 47                                  | 38                                     | 34                                     | 64                          | 62      | 57      | 58       | 59       | 59       | 65            | 49                                  | 46      | 41      | 43       | 46       | 48       | 52            | 46                                  | 42      | 37      | 40       | 41       | 45       | 49            |
|                  | 2243              | 8,0                | 68            | 49                                  | 39                                     | 35                                     | 69                          | 64      | 58      | 59       | 60       | 60       | 66            | 54                                  | 48      | 42      | 44       | 47       | 49       | 53            | 51                                  | 44      | 38      | 41       | 42       | 46       | 50            |
|                  | 2804              | 10,0               | 83            | 50                                  | 40                                     | 36                                     | 72                          | 64      | 59      | 60       | 61       | 60       | 67            | 57                                  | 48      | 43      | 45       | 48       | 49       | 54            | 54                                  | 44      | 39      | 42       | 43       | 46       | 50            |
| 400              | 904               | 2,0                | 50            | 45                                  | 38                                     | 33                                     | 55                          | 55      | 55      | 59       | 61       | 56       | 65            | 41                                  | 39      | 39      | 44       | 49       | 46       | 53            | 37                                  | 35      | 35      | 41       | 43       | 43       | 48            |
|                  | 1809              | 4,0                | 52            | 46                                  | 40                                     | 35                                     | 62                          | 58      | 57      | 60       | 62       | 58       | 66            | 48                                  | 42      | 41      | 45       | 50       | 48       | 54            | 44                                  | 38      | 37      | 42       | 44       | 45       | 50            |
|                  | 2713              | 6,0                | 58            | 49                                  | 41                                     | 36                                     | 68                          | 65      | 58      | 61       | 62       | 60       | 67            | 54                                  | 49      | 42      | 46       | 50       | 50       | 55            | 50                                  | 45      | 38      | 43       | 44       | 47       | 51            |
|                  | 3617              | 8,0                | 68            | 51                                  | 42                                     | 37                                     | 71                          | 66      | 59      | 61       | 63       | 61       | 68            | 57                                  | 50      | 43      | 46       | 51       | 51       | 56            | 53                                  | 46      | 39      | 43       | 45       | 48       | 52            |
|                  | 4522              | 10,0               | 83            | 52                                  | 43                                     | 38                                     | 75                          | 66      | 60      | 62       | 63       | 61       | 69            | 61                                  | 50      | 44      | 47       | 51       | 51       | 56            | 57                                  | 46      | 40      | 44       | 45       | 48       | 52            |

| Model / Diameter | Lucht volume (m <sup>3</sup> /h) | Luchtsnelheid (m/s) | Min. P <sub>st</sub> (Pa) | Snelselectie<br>L <sub>p</sub> (A) in dB(A) |                                   |                                    | Luchtgeluid<br>enkel- en dubbelwandig          |        |        |         |         |         |                          | Afgestraalgeluid<br>enkelwandig                |        |        |         |         |         |                          | Afgestraalgeluid<br>dubbelwandig               |        |        |        |         |         |                          |
|------------------|----------------------------------|---------------------|---------------------------|---------------------------------------------|-----------------------------------|------------------------------------|------------------------------------------------|--------|--------|---------|---------|---------|--------------------------|------------------------------------------------|--------|--------|---------|---------|---------|--------------------------|------------------------------------------------|--------|--------|--------|---------|---------|--------------------------|
|                  |                                  |                     |                           | Luchtgeluid zonder<br>geluiddemper          | Afgestraald geluid<br>enkelwandig | Afgestraald geluid<br>dubbelwandig | L <sub>w</sub> (dB/oct) re 10 <sup>-12</sup> W |        |        |         |         |         | L <sub>w</sub> (A) dB(A) | L <sub>w</sub> (dB/oct) re 10 <sup>-12</sup> W |        |        |         |         |         | L <sub>w</sub> (A) dB(A) | L <sub>w</sub> (dB/oct) re 10 <sup>-12</sup> W |        |        |        |         |         | L <sub>w</sub> (A) dB(A) |
|                  |                                  |                     |                           |                                             |                                   |                                    | 125 Hz                                         | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz |                          | 125 Hz                                         | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz |                          | L <sub>w</sub> (A) dB(A)                       | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz |                          |
| 100              | 57                               | 2,0                 | 50                        | 40                                          | 31                                | 27                                 | 22                                             | 39     | 42     | 39      | 34      | 58      | 59                       | --                                             | 22     | 26     | 22      | 24      | 47      | 48                       | --                                             | 21     | 24     | 21     | --      | 43      | 44                       |
|                  | 113                              | 4,0                 | 55                        | 44                                          | 35                                | 31                                 | 42                                             | 48     | 49     | 46      | 43      | 62      | 63                       | 28                                             | 31     | 33     | 29      | 33      | 51      | 52                       | 27                                             | 30     | 31     | 28     | 24      | 47      | 48                       |
|                  | 170                              | 6,0                 | 64                        | 44                                          | 35                                | 31                                 | 48                                             | 52     | 53     | 48      | 47      | 61      | 63                       | 34                                             | 35     | 37     | 31      | 37      | 50      | 51                       | 33                                             | 34     | 35     | 30     | 28      | 46      | 47                       |
|                  | 226                              | 8,0                 | 78                        | 46                                          | 37                                | 33                                 | 61                                             | 57     | 56     | 53      | 50      | 62      | 64                       | 47                                             | 40     | 40     | 36      | 40      | 51      | 53                       | 46                                             | 39     | 38     | 35     | 31      | 47      | 49                       |
|                  | 283                              | 10,0                | 98                        | 47                                          | 37                                | 34                                 | 65                                             | 57     | 58     | 54      | 52      | 62      | 65                       | 51                                             | 40     | 42     | 37      | 42      | 51      | 53                       | 50                                             | 39     | 40     | 36     | 33      | 47      | 49                       |
| 125              | 88                               | 2,0                 | 40                        | 40                                          | 30                                | 27                                 | 28                                             | 42     | 45     | 43      | 39      | 58      | 59                       | --                                             | 25     | 28     | 26      | 27      | 46      | 47                       | --                                             | 24     | 27     | 25     | 20      | 43      | 44                       |
|                  | 177                              | 4,0                 | 44                        | 45                                          | 35                                | 32                                 | 45                                             | 51     | 51     | 50      | 44      | 63      | 64                       | 30                                             | 34     | 34     | 33      | 32      | 51      | 52                       | 29                                             | 33     | 33     | 32     | 25      | 48      | 49                       |
|                  | 265                              | 6,0                 | 52                        | 45                                          | 35                                | 32                                 | 52                                             | 56     | 54     | 50      | 49      | 62      | 64                       | 37                                             | 39     | 37     | 33      | 37      | 50      | 51                       | 36                                             | 38     | 36     | 32     | 30      | 47      | 48                       |
|                  | 353                              | 8,0                 | 65                        | 47                                          | 36                                | 33                                 | 63                                             | 59     | 57     | 54      | 54      | 62      | 65                       | 48                                             | 42     | 40     | 37      | 42      | 50      | 52                       | 47                                             | 41     | 39     | 36     | 35      | 47      | 49                       |
|                  | 442                              | 10,0                | 83                        | 48                                          | 37                                | 34                                 | 67                                             | 59     | 59     | 56      | 54      | 62      | 65                       | 52                                             | 42     | 42     | 39      | 42      | 50      | 52                       | 51                                             | 41     | 41     | 38     | 35      | 47      | 49                       |
| 160              | 145                              | 2,0                 | 40                        | 41                                          | 30                                | 28                                 | 35                                             | 46     | 48     | 47      | 44      | 59      | 60                       | 18                                             | 29     | 30     | 29      | 28      | 45      | 46                       | --                                             | 28     | 30     | 29     | 24      | 43      | 44                       |
|                  | 289                              | 4,0                 | 43                        | 46                                          | 34                                | 32                                 | 50                                             | 53     | 53     | 52      | 48      | 63      | 65                       | 33                                             | 36     | 35     | 34      | 32      | 49      | 50                       | 30                                             | 35     | 35     | 34     | 28      | 47      | 48                       |
|                  | 434                              | 6,0                 | 51                        | 46                                          | 34                                | 32                                 | 56                                             | 59     | 56     | 53      | 51      | 62      | 64                       | 39                                             | 42     | 38     | 35      | 35      | 48      | 50                       | 36                                             | 41     | 38     | 35     | 31      | 46      | 48                       |
|                  | 579                              | 8,0                 | 64                        | 48                                          | 36                                | 34                                 | 66                                             | 61     | 58     | 56      | 56      | 63      | 66                       | 49                                             | 44     | 40     | 38      | 40      | 49      | 51                       | 46                                             | 43     | 40     | 38     | 36      | 47      | 49                       |
|                  | 723                              | 10,0                | 81                        | 49                                          | 36                                | 35                                 | 70                                             | 61     | 60     | 57      | 56      | 63      | 66                       | 53                                             | 44     | 42     | 39      | 40      | 49      | 51                       | 50                                             | 43     | 42     | 39     | 36      | 47      | 49                       |
| 200              | 226                              | 2,0                 | 40                        | 43                                          | 29                                | 30                                 | 41                                             | 49     | 51     | 51      | 49      | 60      | 62                       | 23                                             | 31     | 31     | 31      | 31      | 44      | 45                       | 20                                             | 28     | 30     | 29     | 29      | 45      | 46                       |
|                  | 452                              | 4,0                 | 43                        | 47                                          | 33                                | 34                                 | 54                                             | 55     | 55     | 55      | 54      | 64      | 66                       | 36                                             | 37     | 35     | 35      | 36      | 48      | 50                       | 33                                             | 34     | 34     | 33     | 34      | 49      | 50                       |
|                  | 678                              | 6,0                 | 51                        | 47                                          | 33                                | 33                                 | 60                                             | 61     | 57     | 55      | 54      | 63      | 66                       | 42                                             | 43     | 37     | 35      | 36      | 47      | 49                       | 39                                             | 40     | 36     | 33     | 34      | 48      | 49                       |
|                  | 904                              | 8,0                 | 63                        | 49                                          | 35                                | 34                                 | 68                                             | 63     | 59     | 58      | 58      | 63      | 67                       | 50                                             | 45     | 39     | 38      | 40      | 47      | 50                       | 47                                             | 42     | 38     | 36     | 38      | 48      | 50                       |
|                  | 1130                             | 10,0                | 80                        | 50                                          | 36                                | 35                                 | 72                                             | 63     | 61     | 59      | 58      | 63      | 67                       | 54                                             | 45     | 41     | 39      | 40      | 47      | 50                       | 51                                             | 42     | 40     | 37     | 38      | 48      | 50                       |
| 250              | 353                              | 2,0                 | 50                        | 44                                          | 35                                | 32                                 | 47                                             | 53     | 53     | 54      | 53      | 61      | 63                       | 31                                             | 37     | 36     | 38      | 39      | 49      | 51                       | 28                                             | 34     | 33     | 36     | 34      | 47      | 49                       |
|                  | 707                              | 4,0                 | 52                        | 48                                          | 38                                | 35                                 | 58                                             | 58     | 57     | 57      | 58      | 64      | 67                       | 42                                             | 42     | 40     | 41      | 44      | 52      | 54                       | 39                                             | 39     | 37     | 39     | 39      | 50      | 52                       |
|                  | 1060                             | 6,0                 | 58                        | 49                                          | 39                                | 36                                 | 64                                             | 64     | 59     | 58      | 57      | 64      | 67                       | 48                                             | 48     | 42     | 42      | 43      | 52      | 54                       | 45                                             | 45     | 39     | 40     | 38      | 50      | 52                       |
|                  | 1413                             | 8,0                 | 68                        | 51                                          | 40                                | 37                                 | 70                                             | 65     | 60     | 60      | 60      | 64      | 68                       | 54                                             | 49     | 43     | 44      | 46      | 52      | 55                       | 51                                             | 46     | 40     | 42     | 41      | 50      | 52                       |
|                  | 1766                             | 10,0                | 83                        | 52                                          | 41                                | 38                                 | 74                                             | 65     | 61     | 60      | 60      | 64      | 69                       | 58                                             | 49     | 44     | 44      | 46      | 52      | 55                       | 55                                             | 46     | 41     | 42     | 41      | 50      | 52                       |
| 315              | 561                              | 2,0                 | 50                        | 47                                          | 39                                | 35                                 | 53                                             | 56     | 56     | 59      | 58      | 63      | 66                       | 38                                             | 40     | 40     | 44      | 45      | 52      | 54                       | 35                                             | 36     | 36     | 41     | 40      | 49      | 51                       |
|                  | 1122                             | 4,0                 | 52                        | 49                                          | 40                                | 37                                 | 62                                             | 60     | 59     | 60      | 61      | 64      | 68                       | 47                                             | 44     | 43     | 45      | 48      | 53      | 56                       | 44                                             | 40     | 39     | 42     | 43      | 50      | 52                       |
|                  | 1682                             | 6,0                 | 58                        | 51                                          | 41                                | 37                                 | 68                                             | 66     | 60     | 60      | 61      | 64      | 68                       | 53                                             | 50     | 44     | 45      | 48      | 53      | 56                       | 50                                             | 46     | 40     | 42     | 43      | 50      | 53                       |
|                  | 2243                             | 8,0                 | 68                        | 52                                          | 42                                | 38                                 | 73                                             | 67     | 61     | 61      | 62      | 64      | 69                       | 58                                             | 51     | 45     | 46      | 49      | 53      | 56                       | 55                                             | 47     | 41     | 43     | 44      | 50      | 53                       |
|                  | 2804                             | 10,0                | 83                        | 53                                          | 43                                | 39                                 | 76                                             | 67     | 62     | 62      | 63      | 64      | 70                       | 61                                             | 51     | 46     | 47      | 50      | 53      | 57                       | 58                                             | 47     | 42     | 44     | 45      | 50      | 53                       |
| 400              | 904                              | 2,0                 | 50                        | 49                                          | 42                                | 38                                 | 60                                             | 59     | 59     | 62      | 63      | 64      | 69                       | 46                                             | 43     | 43     | 47      | 51      | 54      | 57                       | 42                                             | 39     | 39     | 44     | 45      | 51      | 54                       |
|                  | 1809                             | 4,0                 | 52                        | 51                                          | 43                                | 39                                 | 66                                             | 62     | 61     | 63      | 65      | 64      | 70                       | 52                                             | 46     | 45     | 48      | 53      | 54      | 58                       | 48                                             | 42     | 41     | 45     | 47      | 51      | 54                       |
|                  | 2713                             | 6,0                 | 58                        | 53                                          | 44                                | 40                                 | 73                                             | 69     | 62     | 63      | 65      | 65      | 71                       | 59                                             | 53     | 46     | 48      | 53      | 55      | 59                       | 55                                             | 49     | 42     | 45     | 47      | 52      | 55                       |
|                  | 3617                             | 8,0                 | 68                        | 54                                          | 45                                | 41                                 | 75                                             | 70     | 62     | 64      | 65      | 65      | 71                       | 61                                             | 54     | 46     | 49      | 53      | 55      | 59                       | 57                                             | 50     | 42     | 46     | 47      | 52      | 55                       |
|                  | 4522                             | 10,0                | 83                        | 56                                          | 46                                | 42                                 | 79                                             | 70     | 63     | 64      | 65      | 65      | 72                       | 65                                             | 54     | 47     | 49      | 53      | 55      | 59                       | 61                                             | 50     | 43     | 46     | 47      | 52      | 56                       |

**VCR - DW - 250 - 600 - m<sup>3</sup>/h**

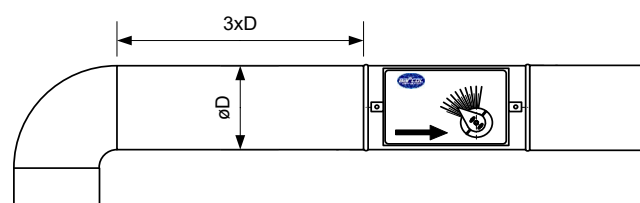
| Type                    | Model | Air volume        |
|-------------------------|-------|-------------------|
|                         | 80    |                   |
|                         | 100   |                   |
|                         | 125   |                   |
|                         | 160   |                   |
|                         | 200   |                   |
|                         | 250   |                   |
|                         | 315   |                   |
| <b>construction</b>     |       | <b>units</b>      |
| Single wall - SW        |       | m <sup>3</sup> /h |
| Double wall (40mm) - DW |       | l/s               |
|                         |       | cfm               |

## Mounting instructions

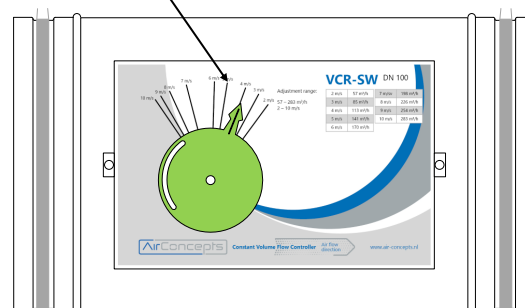
To achieve the specified accuracy, a straight inlet of 3xD is required. If this is not possible, field adjustment may be required. NR units can be installed in any position, however the air flow is factory calibrated in a horizontal position. Different mounting positions can result in up to 10% error and field adjustment may be required.

### Air flow field adjustment

The air flow setting can be adjusted by loosening the M6 nut (SW10) on the centre of the scale and rotation of the indicator to the required air volume. The scale is both in m<sup>3</sup>/h and in l/s.



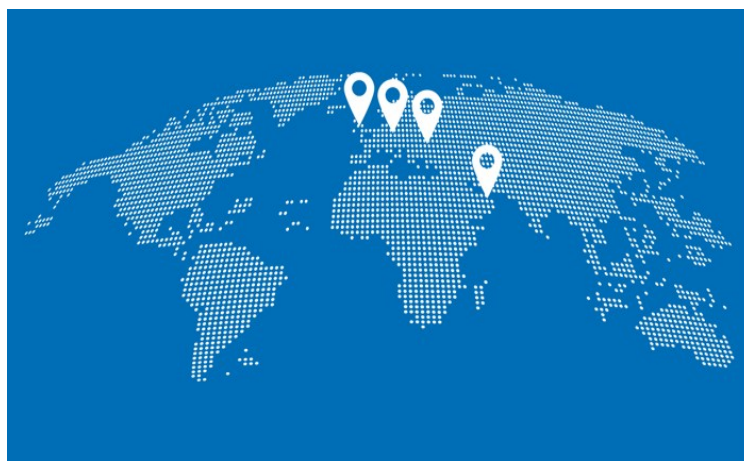
Scale ( in m/s )



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