

# 1.3.1 VCR-SW

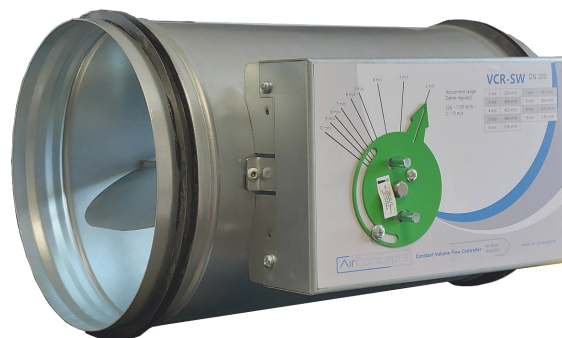
## Circular system powered, Mechanical CAV regulator



## 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-SW

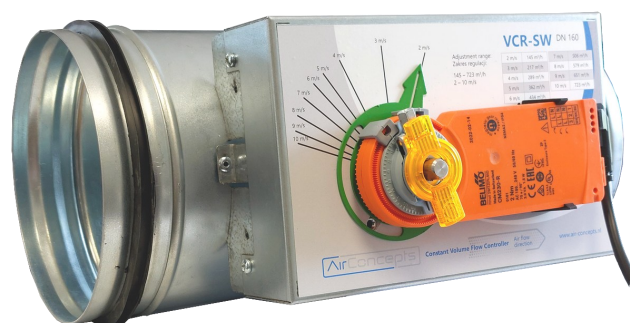
## Design features

### Casing

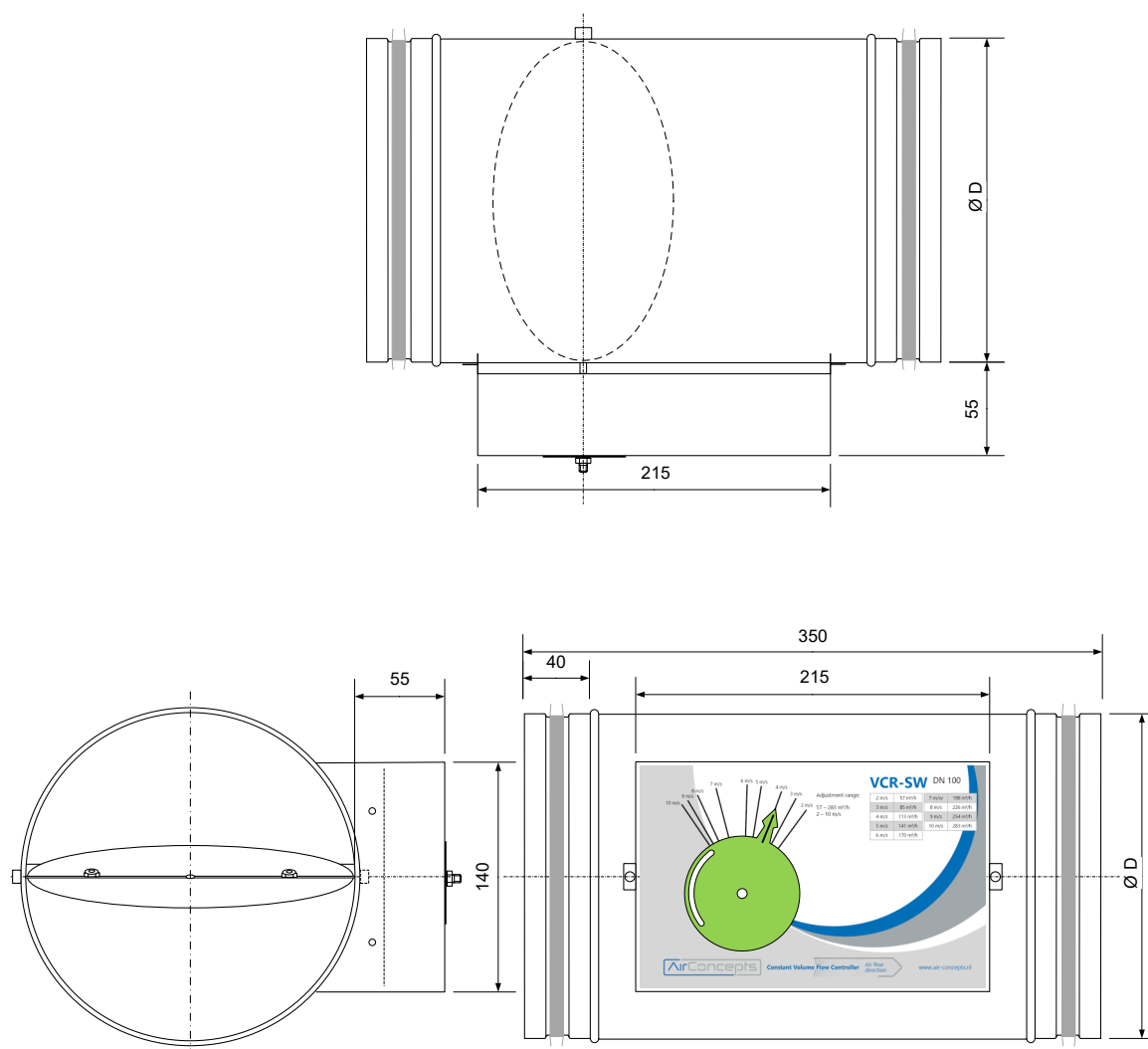
- Ridged galvanised steel construction (1.0mm)
- Silicone bellow for anti-oscillating and reduced hysteresis.
- Spigots comply with DIN 24145 or DIN 24146 ducts.
- Maintenance free
- Short installed length
- Rubber seal (optional) for easy and air tight mounting (DIN 24194 Class 4)
- Casing leakage complies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



VCR-SW-160-230



### Dimensions, weight and control range

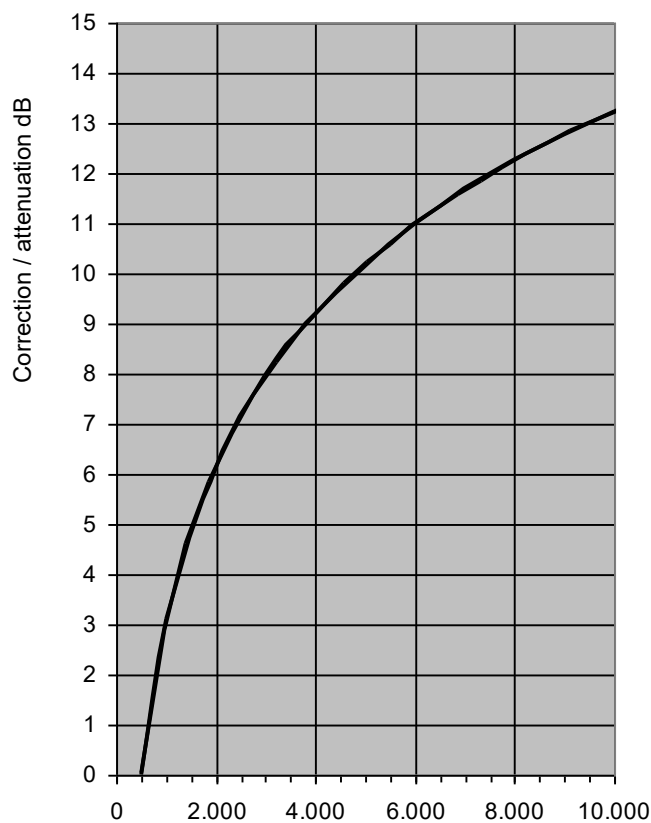
| Model         | 100 | 125 | 160 | 200  | 250  | 315  | 400  | mm   |
|---------------|-----|-----|-----|------|------|------|------|------|
| øD            | 98  | 123 | 158 | 198  | 248  | 313  | 398  | mm   |
| VCR-SW weight | 2,0 | 2,2 | 2,6 | 3,1  | 3,7  | 4,4  | 5,6  | kg   |
| Vmin (2 m/s)  | 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 /<br>Diameter | Air volume<br>(m³/h) | Air velocity<br>(m/s) | Min.<br>P <sub>st</sub><br>(Pa) | Sound pressure<br>L <sub>p</sub> (A) in dB(A)     |                                                    |                                                    | Sound power level<br>Discharge     |               |               |                |                |                |                                    | Sound Power Level<br>single wall (-SW) |               |               |                |                |                |                                    | Sound Power Level<br>double wall (-DW) |               |               |               |                |                |                                    |                |                                    |
|---------------------|----------------------|-----------------------|---------------------------------|---------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------|---------------|---------------|----------------|----------------|----------------|------------------------------------|----------------------------------------|---------------|---------------|----------------|----------------|----------------|------------------------------------|----------------------------------------|---------------|---------------|---------------|----------------|----------------|------------------------------------|----------------|------------------------------------|
|                     |                      |                       |                                 | Discharge<br>sound<br>(SpL)<br>ge-luiddem-<br>per | Radiated<br>sound<br>double<br>wall<br>enkelwandig | Radiated<br>sound<br>single<br>wall<br>enkelwandig | Lw (dB/oct) re 10 <sup>-12</sup> W |               |               |                |                |                | L <sub>w</sub><br>(A)<br>dB<br>(A) | Lw (dB/oct) re 10 <sup>-12</sup> W     |               |               |                |                |                | L <sub>w</sub><br>(A)<br>dB<br>(A) | Lw (dB/oct) re 10 <sup>-12</sup> W     |               |               |               |                |                | L <sub>w</sub><br>(A)<br>dB<br>(A) |                |                                    |
|                     |                      |                       |                                 |                                                   |                                                    |                                                    | 12<br>5<br>Hz                      | 25<br>0<br>Hz | 50<br>0<br>Hz | 10<br>00<br>Hz | 20<br>00<br>Hz | 40<br>00<br>Hz |                                    | 12<br>5<br>Hz                          | 25<br>0<br>Hz | 50<br>0<br>Hz | 10<br>00<br>Hz | 20<br>00<br>Hz | 40<br>00<br>Hz |                                    | L <sub>w</sub><br>(A)<br>dB<br>(A)     | 12<br>5<br>Hz | 25<br>0<br>Hz | 50<br>0<br>Hz | 10<br>00<br>Hz | 20<br>00<br>Hz |                                    | 40<br>00<br>Hz | L <sub>w</sub><br>(A)<br>dB<br>(A) |
|                     |                      |                       |                                 |                                                   |                                                    |                                                    |                                    |               |               |                |                |                |                                    |                                        |               |               |                |                |                |                                    |                                        |               |               |               |                |                |                                    |                |                                    |
| 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 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             | 42                                 | 47             |                                    |

| Sound pressure<br>Lp(A) in dB(A)                 |                                                         |                                                         | Sound power level<br>Discharge |           |           |            |            |            |                | Sound Power Level<br>single wall (-SW) |           |           |            |            |            |                | Sound Power Level<br>double wall (-DW) |           |           |            |            |            |                |
|--------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|--------------------------------|-----------|-----------|------------|------------|------------|----------------|----------------------------------------|-----------|-----------|------------|------------|------------|----------------|----------------------------------------|-----------|-----------|------------|------------|------------|----------------|
| Discharge<br>sound<br>(Spl)<br>geluid-<br>demper | Radiated<br>sound<br>double<br>wall<br>enkel-<br>wandig | Radiated<br>sound<br>single<br>wall<br>enkel-<br>wandig | Lw (dB/oct) re 10-12W          |           |           |            |            |            |                | Lw (dB/oct) re 10-12W                  |           |           |            |            |            |                | Lw (dB/oct) re 10-12W                  |           |           |            |            |            |                |
|                                                  |                                                         |                                                         | 125<br>Hz                      | 250<br>Hz | 500<br>Hz | 1000<br>Hz | 2000<br>Hz | 4000<br>Hz | Lw(A)<br>dB(A) | 125<br>Hz                              | 250<br>Hz | 500<br>Hz | 1000<br>Hz | 2000<br>Hz | 4000<br>Hz | Lw(A)<br>dB(A) | 125<br>Hz                              | 250<br>Hz | 500<br>Hz | 1000<br>Hz | 2000<br>Hz | 4000<br>Hz | Lw(A)<br>dB(A) |
| 32                                               | 23                                                      | 19                                                      | 21                             | 37        | 41        | 37         | 34         | 49         | 51             | --                                     | 20        | 25        | 20         | 24         | 38         | 39             | --                                     | 19        | 23        | 19         | --         | 34         | 35             |
| 38                                               | 29                                                      | 25                                                      | 39                             | 46        | 47        | 44         | 41         | 55         | 57             | 25                                     | 29        | 31        | 27         | 31         | 44         | 45             | 24                                     | 28        | 29        | 26         | 22         | 40         | 41             |
| 38                                               | 29                                                      | 25                                                      | 45                             | 50        | 50        | 46         | 46         | 54         | 57             | 31                                     | 33        | 34        | 29         | 36         | 43         | 45             | 30                                     | 32        | 32        | 28         | 27         | 39         | 41             |
| 41                                               | 32                                                      | 28                                                      | 56                             | 54        | 53        | 51         | 48         | 56         | 59             | 42                                     | 37        | 37        | 34         | 38         | 45         | 47             | 41                                     | 36        | 35        | 33         | 29         | 41         | 43             |
| 42                                               | 33                                                      | 29                                                      | 60                             | 54        | 55        | 52         | 51         | 56         | 60             | 46                                     | 37        | 39        | 35         | 41         | 45         | 48             | 45                                     | 36        | 37        | 34         | 32         | 41         | 44             |
| 33                                               | 23                                                      | 20                                                      | 26                             | 40        | 43        | 41         | 38         | 50         | 52             | --                                     | 23        | 26        | 24         | 26         | 38         | 40             | --                                     | 22        | 25        | 23         | 19         | 35         | 36             |
| 38                                               | 28                                                      | 26                                                      | 43                             | 48        | 49        | 48         | 43         | 55         | 57             | 28                                     | 31        | 32        | 31         | 31         | 43         | 45             | 27                                     | 30        | 31        | 30         | 24         | 40         | 42             |
| 40                                               | 30                                                      | 27                                                      | 49                             | 53        | 52        | 48         | 47         | 56         | 59             | 34                                     | 36        | 35        | 31         | 35         | 44         | 46             | 33                                     | 35        | 34        | 30         | 28         | 41         | 43             |
| 43                                               | 33                                                      | 29                                                      | 59                             | 56        | 54        | 52         | 52         | 57         | 61             | 44                                     | 39        | 37        | 35         | 40         | 45         | 48             | 43                                     | 38        | 36        | 34         | 33         | 42         | 45             |
| 43                                               | 33                                                      | 30                                                      | 62                             | 56        | 56        | 54         | 53         | 57         | 62             | 47                                     | 39        | 39        | 37         | 41         | 45         | 48             | 46                                     | 38        | 38        | 36         | 34         | 42         | 45             |
| 35                                               | 23                                                      | 21                                                      | 33                             | 43        | 46        | 45         | 43         | 51         | 54             | --                                     | 26        | 28        | 27         | 27         | 37         | 39             | --                                     | 25        | 28        | 27         | 23         | 35         | 37             |
| 40                                               | 28                                                      | 26                                                      | 47                             | 50        | 50        | 50         | 46         | 56         | 59             | 30                                     | 33        | 32        | 32         | 30         | 42         | 44             | 27                                     | 32        | 32        | 32         | 26         | 40         | 42             |
| 41                                               | 29                                                      | 27                                                      | 53                             | 55        | 53        | 51         | 50         | 56         | 60             | 36                                     | 38        | 35        | 33         | 34         | 42         | 44             | 33                                     | 37        | 35        | 33         | 30         | 40         | 43             |
| 44                                               | 32                                                      | 30                                                      | 61                             | 58        | 55        | 54         | 54         | 58         | 62             | 44                                     | 41        | 37        | 36         | 38         | 44         | 47             | 41                                     | 40        | 37        | 36         | 34         | 42         | 45             |
| 45                                               | 33                                                      | 31                                                      | 65                             | 58        | 57        | 55         | 55         | 58         | 63             | 48                                     | 41        | 39        | 37         | 39         | 44         | 47             | 45                                     | 40        | 39        | 37         | 35         | 42         | 45             |
| 36                                               | 23                                                      | 23                                                      | 38                             | 46        | 48        | 49         | 47         | 52         | 56             | 20                                     | 28        | 28        | 29         | 29         | 36         | 39             | 17                                     | 25        | 27        | 27         | 27         | 37         | 39             |
| 41                                               | 28                                                      | 28                                                      | 50                             | 52        | 52        | 53         | 52         | 57         | 61             | 32                                     | 34        | 32        | 33         | 34         | 41         | 43             | 29                                     | 31        | 31        | 31         | 32         | 42         | 44             |
| 43                                               | 29                                                      | 29                                                      | 57                             | 58        | 54        | 53         | 53         | 58         | 62             | 39                                     | 40        | 34        | 33         | 35         | 42         | 45             | 36                                     | 37        | 33        | 31         | 33         | 43         | 45             |
| 46                                               | 32                                                      | 31                                                      | 64                             | 60        | 56        | 56         | 56         | 59         | 64             | 46                                     | 42        | 36        | 36         | 38         | 43         | 46             | 43                                     | 39        | 35        | 34         | 36         | 44         | 46             |
| 47                                               | 33                                                      | 32                                                      | 67                             | 60        | 58        | 57         | 57         | 59         | 64             | 49                                     | 42        | 38        | 37         | 39         | 43         | 47             | 46                                     | 39        | 37        | 35         | 37         | 44         | 47             |
| 39                                               | 30                                                      | 27                                                      | 44                             | 49        | 50        | 52         | 51         | 54         | 58             | 28                                     | 33        | 33        | 36         | 37         | 42         | 45             | 25                                     | 30        | 30        | 34         | 32         | 40         | 43             |
| 43                                               | 33                                                      | 30                                                      | 54                             | 54        | 54        | 55         | 56         | 57         | 62             | 38                                     | 38        | 37        | 39         | 42         | 45         | 49             | 35                                     | 35        | 34        | 37         | 37         | 43         | 46             |
| 45                                               | 35                                                      | 32                                                      | 61                             | 60        | 56        | 56         | 56         | 58         | 63             | 45                                     | 44        | 39        | 40         | 42         | 46         | 49             | 42                                     | 41        | 36        | 38         | 37         | 44         | 47             |
| 47                                               | 36                                                      | 33                                                      | 66                             | 62        | 57        | 58         | 58         | 59         | 65             | 50                                     | 46        | 40        | 42         | 44         | 47         | 51             | 47                                     | 43        | 37        | 40         | 39         | 45         | 48             |
| 49                                               | 38                                                      | 35                                                      | 70                             | 62        | 58        | 58         | 59         | 60         | 66             | 54                                     | 46        | 41        | 42         | 45         | 48         | 52             | 51                                     | 43        | 38        | 40         | 40         | 46         | 49             |
| 42                                               | 34                                                      | 30                                                      | 49                             | 52        | 53        | 56         | 56         | 55         | 62             | 34                                     | 36        | 37        | 41         | 43         | 44         | 49             | 31                                     | 32        | 33        | 38         | 38         | 41         | 45             |
| 44                                               | 36                                                      | 33                                                      | 58                             | 56        | 55        | 57         | 59         | 58         | 64             | 43                                     | 40        | 39        | 42         | 46         | 47         | 51             | 40                                     | 36        | 35        | 39         | 41         | 44         | 48             |
| 47                                               | 38                                                      | 34                                                      | 64                             | 62        | 57        | 58         | 59         | 59         | 65             | 49                                     | 46        | 41        | 43         | 46         | 48         | 52             | 46                                     | 42        | 37        | 40         | 41         | 45         | 49             |
| 49                                               | 39                                                      | 35                                                      | 69                             | 64        | 58        | 59         | 60         | 60         | 66             | 54                                     | 48        | 42        | 44         | 47         | 49         | 53             | 51                                     | 44        | 38        | 41         | 42         | 46         | 50             |
| 50                                               | 40                                                      | 36                                                      | 72                             | 64        | 59        | 60         | 61         | 60         | 67             | 57                                     | 48        | 43        | 45         | 48         | 49         | 54             | 54                                     | 44        | 39        | 42         | 43         | 46         | 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             |
| 46                                               | 40                                                      | 35                                                      | 62                             | 58        | 57        | 60         | 62         | 58         | 66             | 48                                     | 42        | 41        | 45         | 50         | 48         | 54             | 44                                     | 38        | 37        | 42         | 44         | 45         | 50             |
| 49                                               | 41                                                      | 36                                                      | 68                             | 65        | 58        | 61         | 62         | 60         | 67             | 54                                     | 49        | 42        | 46         | 50         | 50         | 55             | 50                                     | 45        | 38        | 43         | 44         | 47         | 51             |
| 51                                               | 42                                                      | 37                                                      | 71                             | 66        | 59        | 61         | 63         | 61         | 68             | 57                                     | 50        | 43        | 46         | 51         | 51         | 56             | 53                                     | 46        | 39        | 43         | 45         | 48         | 52             |
| 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 | Lw (dB/oct) re 10 <sup>-12</sup> W    |        |        |         |         |         | L <sub>w</sub> (A) dB(A) | Lw (dB/oct) re 10 <sup>-12</sup> W |        |        |         |         |         | L <sub>w</sub> (A) dB(A) | Lw (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                        | 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 - SW - 250 - 600 - m<sup>3</sup>/h**

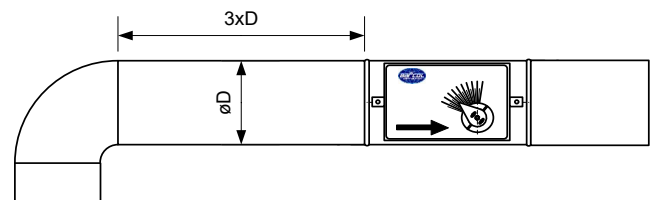
| Type                    | Model | Air volume | units             |
|-------------------------|-------|------------|-------------------|
|                         | 80    |            |                   |
|                         | 100   |            |                   |
| construction          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

## Mounting instructions

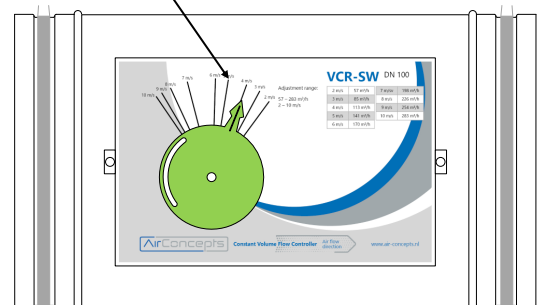
To achieve the specified accuracy, a straight inlet of 3xD is required. If this is not possible, field adjustment may be required. NR units can be installed in any position, however the air flow is factory calibrated in a horizontal position. Different mounting positions can result in up to 10% error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



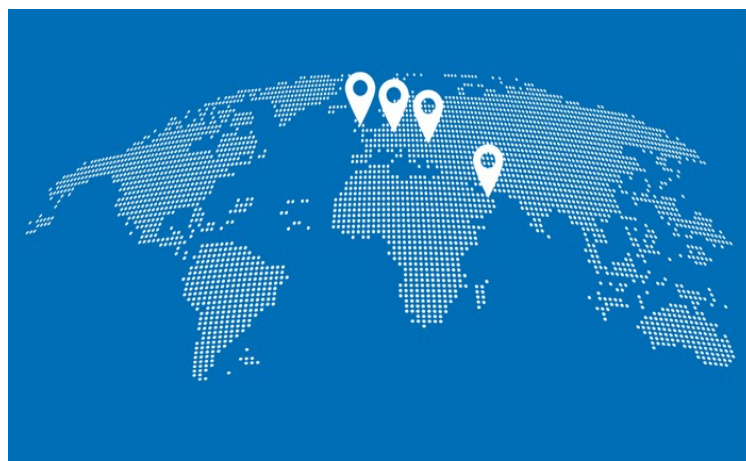
Scale ( in m/s )



## Air-Concepts locations

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