# 04

Slot diffusers

Round duct diffusers

## Slot diffusers LD-17, LD-18

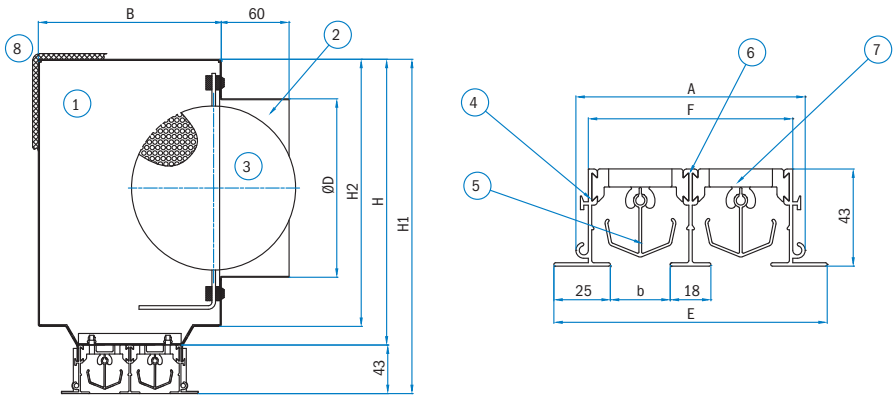
**Application**
Slot diffusers LD-17 and LD-18 are designed for supply of cold or warm air in rooms with a height between 2.5 m and 4 m. They allow easy setting of air deflectors for different modes of operation and can be mounted to ceiling or wall.

**Description**
LD-17 and LD-18 slot diffusers are designed in 1, 2, 3 and 4-slot versions. The unit's front consists of anodised aluminium profiles (on customer's request, these can be powder painted in RAL 9010 or another colour). The individually adjustable air deflectors are made of plastic in white (RAL 9010) or black (RAL 9005) colour). Plenum box is made of galvanised sheet steel. Slot diffusers LD-17 and LD-18 are made in standard lengths: from 200 up to 2000 mm with a 100 mm step (any length available upon request).

Nominal air volume per 1 m of slot:

LD-17 – 150 m³/h
LD-18 – 200 m³/h
($\Delta p_t$ = 30 Pa, NR = 35 dB)

1. Plenum box
2. Inlet spigot
3. Volume control damper
4. Side section
5. Cylindrical deflector
6. Intermediate section
7. Connecting bar
8. Insulation (entire outside surface of the plenum box)




| LD-17 b=15 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **No. of slots** | **A** | **F** | **E** | **B** | **H** | **H1** | **H2** |
| **1** | 45.5 | 34.5 | 65 | 107 | 220 | 263 | 203.5 |
| **2** | 78.5 | 67.5 | 98 | 139 | 230 | 273 | 213.5 |
| **3** | 111.5 | 100.5 | 131 | 172 | 250 | 293 | 233.5 |
| **4** | 144.5 | 133.5 | 164 | 205 | 290 | 333 | 273.5 |

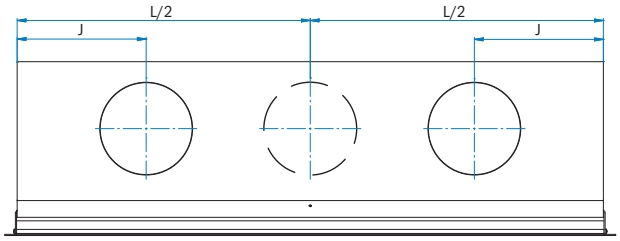
| LD-18 b=26.5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **No. of slots** | **A** | **F** | **E** | **B** | **H** | **H1** | **H2** |
| **1** | 57.0 | 46.0 | 76.5 | 118 | 233 | 276 | 216.5 |
| **2** | 101.0 | 90.5 | 121.0 | 162 | 253 | 296 | 236.5 |
| **3** | 146.0 | 135.0 | 165.5 | 207 | 293 | 336 | 276.5 |
| **4** | 190.5 | 179.5 | 210.0 | 251 | 318 | 361 | 301.5 |

## Number and diameter of inlet spigots

| L | 300 to 1000 | | 1100 to 1500 | | 1600 to 2000 | |
|---|---|---|---|---|---|---|
| Number of slots | Number and diameter of inlet spigots | | | | | |
| | LD-17 | LD-18 | LD-17 | LD-18 | LD-17 | LD-18 |
| 1 | 1x98 | 1x123 | 2x98 | 2x123 | 2x123 | 2x138 |
| 2 | 1x138 | 1x158 | 2x123 | 2x138 | 2x138 | 2x158 |
| 3 | 1x158 | 1x198 | 2x138 | 2x158 | 2x158 | 2x198 |
| 4 | 1x198 | 1x223 | 2x158 | 2x198 | 2x198 | 2x223 |

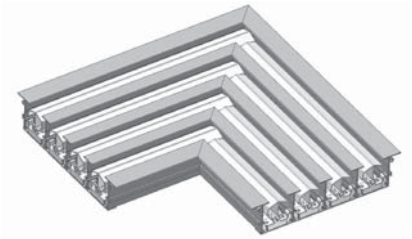
## Position of inlet spigots

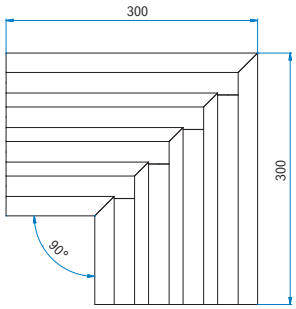
| Number of spigots | Standard length | Position of inlet spigots |
|---|---|---|
| 1 | 300-1000 | L/2 |
| 2 | 1100-1500 | J=300 |
| 2 | 1600-2000 | J=400 |




## Slot diffuser face plate designs

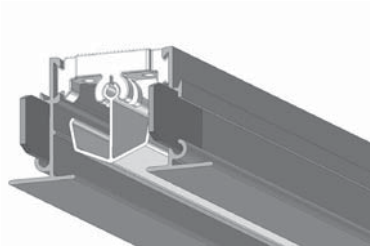
Slot diffuser face plates are made of linear or angular ended sections, which allow the diffusers to be joined at different angles.






## Joining diffusers together in length

Joining in length requires connecting plates (the total length of combined diffusers is not limited).

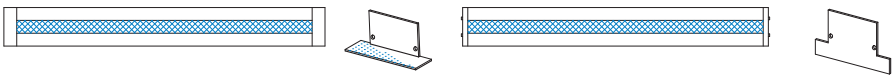


## End seals

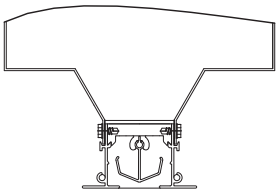
End seals are components of the diffuser face plate. They are available in two designs:

- as an angle piece (**E** – on both ends, **ET** – on one end only) or
- plates (**F** – on both ends, **FT** – on one end only).

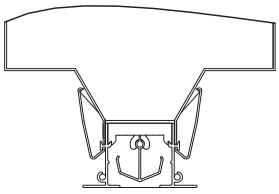
The connecting strip-section has no end anglepieces or plates seals (designation T).



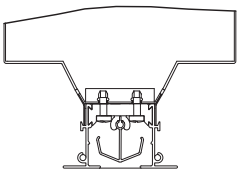
## Fixing of the plenum box onto LD-17, LD-18 diffusers



Fixing with self-tapping screws (U)

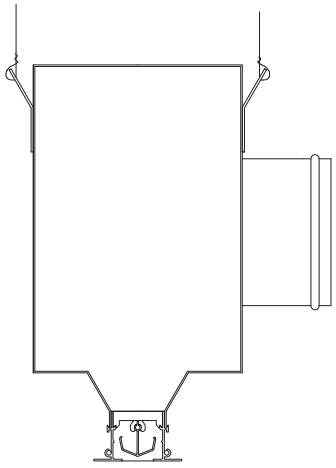


Fixing with spring clamps (S)

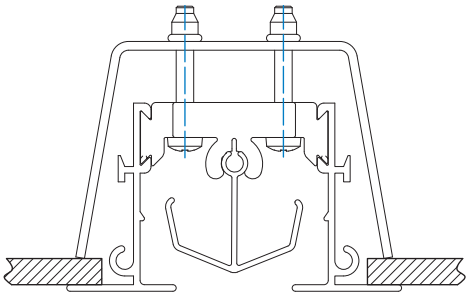


Fixing with a cross-member (Z)

## Installation methods

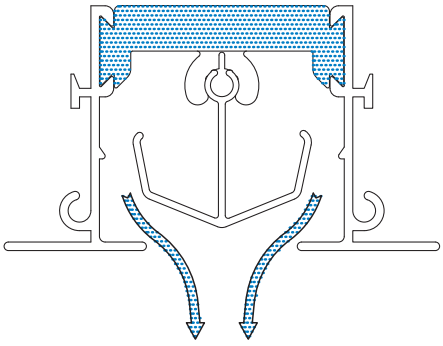


Installation with hangers (P)

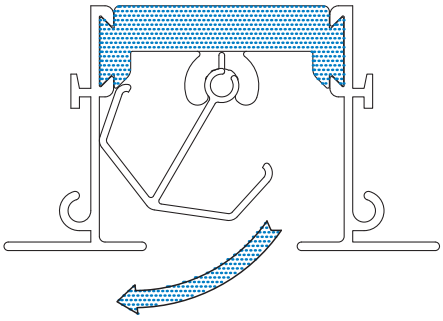


Installation with a cross member without plenum box (N)

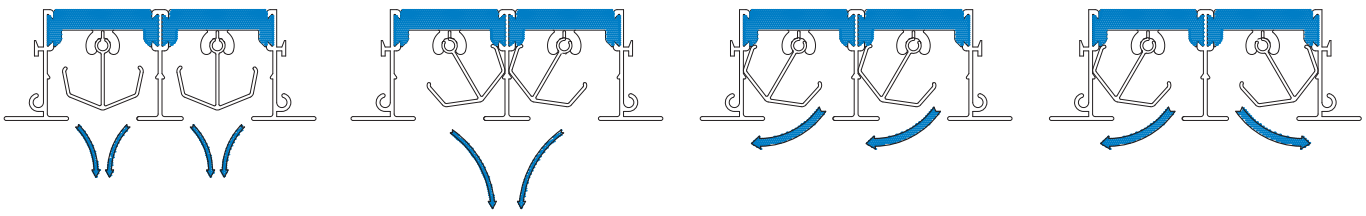
## Types of air discharges



Vertical – heating



Horizontal – cooling



Different settings of the two slot model (similar combinations are possible also for diffusers with more slots).

## Ordering key

**LD-17/1/B/E/K/M/S/P I5** L=1000 (length L=200, 300, ..., 2000)

**I5** Thermal insulation (polyethylene), 5 mm thick, on the outside of the plenum box
**I9** Sound and thermal insulation (from -40 °C to 105 °C), 9 mm thick, on the outside of the plenum box (synthetic rubber based material)
**I19** Sound and thermal insulation (from -40 °C to 105 °C), 19 mm thick, on the outside of the plenum box (synthetic rubber based material)
**N** Diffuser installation with a cross-member without plenum box
**P** Installation of the plenum box with hangers

**Z** Fixing of the diffuser to the plenum box with a cross-member
**S** Fixing of the diffuser to the plenum box with spring clamps
**U** Fixing of the diffuser to the plenum box with self-tapping screws

**M** Volume control damper

**K** Plenum box

**E** End sealing on both ends
**ET** End sealing on one end
**F** End plate on both ends
**FT** End plate on one end
**T** Rail-type without end sealings and plates

**B** Black deflectors
**W** White deflectors

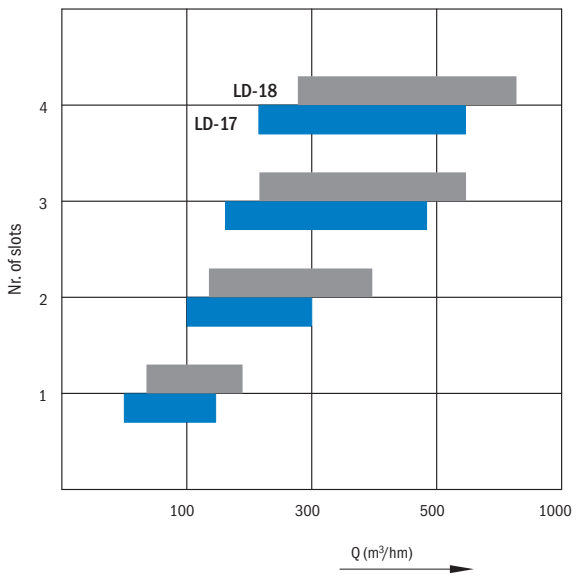
**1** Number of slots
**2**
**3**
**4**

**LD-17** Slot diffuser type
**LD-18**

**Note:**

- Please specify the deflector colour in your order.
- Standard eloxal colour of the aluminium section is the original aluminium colour. Other colours shall be specified in the order.
- When installing in cooling ceilings, consult the manufacturer.
- Versions with insulation on the inside of the plenum box are also available.

## Quick selection diagram: $L_{WA}$ < 35 dB(A)



## Sound power level, pressure drop and throw distances

### LD-17 horizontal discharge

| Type | Q | [l/s] | 13.9 | 27.8 | 41.7 | 55.6 | 83.3 | 111.1 | 138.9 | 166.7 | 194.4 | 222.2 | 250.0 | 277.8 | 333.3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | [m³/h] | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
| LD-17/1 L=500 mm | $L_{WA}$ | [dB (A)] | 32 | 47 | | | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 13 | 42 | | | | | | | | | | | |
| | $L_{0.2}$ | [m] | 5.6 | 6.6 | | | | | | | | | | | |
| | $L_{min}$ | [m] | 12.5 | >15 | | | | | | | | | | | |
| LD-17/1 L=1000 mm | $L_{WA}$ | [dB (A)] | 27 | 35 | 43 | 50 | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 8 | 27 | 56 | 95 | | | | | | | | | |
| | $L_{0.2}$ | [m] | 6 | 6.5 | 6.7 | 6.8 | | | | | | | | | |
| | $L_{min}$ | [m] | 12 | >15 | >15 | >15 | | | | | | | | | |
| LD-17/1 L=1500 mm | $L_{WA}$ | [dB (A)] | <25 | 29 | 34 | 40 | 50 | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 5 | 16 | 32 | 52 | 99 | | | | | | | | |
| | $L_{0.2}$ | [m] | 5.5 | 6.1 | 6.5 | 6.6 | 6.8 | | | | | | | | |
| | $L_{min}$ | [m] | 4 | 12.5 | >15 | >15 | >15 | | | | | | | | |
| LD-17/1 L=2000 mm | $L_{WA}$ | [dB (A)] | | <25 | 32 | 36 | 43 | 49 | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 2 | 3 | 6 | 11 | 19 | | | | | | | |
| | $L_{0.2}$ | [m] | | 5.8 | 6.1 | 6.5 | 6.7 | 6.8 | | | | | | | |
| | $L_{min}$ | [m] | | 6.5 | 12.5 | 13 | >15 | >15 | | | | | | | |
| LD-17/2 L=500 mm | $L_{WA}$ | [dB (A)] | <25 | 34 | 42 | 50 | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 3 | 11 | 22 | 36 | | | | | | | | | |
| | $L_{0.2}$ | [m] | 5 | 5.4 | 5.7 | 5.8 | | | | | | | | | |
| | $L_{min}$ | [m] | 11.5 | 14 | >15 | >15 | | | | | | | | | |
| LD-17/2 L=1000 mm | $L_{WA}$ | [dB (A)] | | 27 | 30 | 36 | 45 | 50 | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 7 | 14 | 22 | 48 | 80 | | | | | | | |
| | $L_{0.2}$ | [m] | | 5.3 | 5.4 | 5.5 | 5.7 | 5.8 | | | | | | | |
| | $L_{min}$ | [m] | | 8 | 13.2 | 13.4 | >15 | >15 | | | | | | | |
| LD-17/2 L=1500 mm | $L_{WA}$ | [dB (A)] | | | 26 | 30 | 36 | 42 | 46 | 52 | | | | | |
| | $\Delta p_t$ | [Pa] | | | 8 | 13 | 28 | 44 | 65 | 84 | | | | | |
| | $L_{0.2}$ | [m] | | | 5.1 | 5.4 | 5.5 | 5.6 | 5.8 | 5.8 | | | | | |
| | $L_{min}$ | [m] | | | 5.7 | 13.3 | 13.5 | >15 | >15 | >15 | | | | | |
| LD-17/2 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | 26 | 32 | 36 | 41 | 44 | 48 | 51 | | | |
| | $\Delta p_t$ | [Pa] | | | | 2 | 4 | 7 | 10 | 13 | 18 | 22 | | | |
| | $L_{0.2}$ | [m] | | | | 5.2 | 5.4 | 5.5 | 5.6 | 5.7 | 5.7 | 5.8 | | | |
| | $L_{min}$ | [m] | | | | 7.5 | 13.2 | 13.4 | >15 | >15 | >15 | >15 | | | |
| LD-17/3 L=500 mm | $L_{WA}$ | [dB (A)] | | 30 | 37 | 45 | 54 | | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 5 | 12 | 20 | 50 | | | | | | | | |
| | $L_{0.2}$ | [m] | | 8 | 8.5 | 8.7 | 9 | | | | | | | | |
| | $L_{min}$ | [m] | | 9 | 10.5 | 11.2 | 13.5 | | | | | | | | |
| LD-17/3 L=1000 mm | $L_{WA}$ | [dB (A)] | | <25 | 29 | 34 | 42 | 50 | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 3 | 8 | 14 | 32 | 54 | | | | | | | |
| | $L_{0.2}$ | [m] | | 7.7 | 7.9 | 8 | 8.5 | 8.8 | | | | | | | |
| | $L_{min}$ | [m] | | 6.4 | 6.9 | 9 | 11 | 12 | | | | | | | |
| LD-17/3 L=1500 mm | $L_{WA}$ | [dB (A)] | | | | 28 | 35 | 42 | 48 | 53 | | | | | |
| | $\Delta p_t$ | [Pa] | | | | 8 | 19 | 34 | 52 | 79 | | | | | |
| | $L_{0.2}$ | [m] | | | | 7.8 | 8.2 | 8.5 | 8.7 | 8.7 | | | | | |
| | $L_{min}$ | [m] | | | | 7.5 | 9.5 | 10.8 | 11.7 | 12.3 | | | | | |
| LD-17/3 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | | 31 | 36 | 41 | 46 | 50 | 54 | | | |
| | $\Delta p_t$ | [Pa] | | | | | 2 | 4 | 6 | 8 | 12 | 17 | | | |
| | $L_{0.2}$ | [m] | | | | | 7.9 | 8.1 | 8.4 | 8.5 | 8.6 | 9 | | | |
| | $L_{min}$ | [m] | | | | | 7.7 | 9.6 | 10.5 | 11 | 11.9 | 12 | | | |

| Type | Q | [l/s] | 13.9 | 27.8 | 41.7 | 55.6 | 83.3 | 111.1 | 138.9 | 166.7 | 194.4 | 222.2 | 250.0 | 277.8 | 333.3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | [m³/h] | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
| LD-17/4 L=500 mm | $L_{WA}$ | [dB (A)] | | 25 | 32 | 40 | 51 | 55 | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 3 | 7 | 12 | 29 | 50 | | | | | | | |
| | $L_{0.2}$ | [m] | | 7.2 | 7.5 | 7.6 | 8 | 8.1 | | | | | | | |
| | $L_{min}$ | [m] | | 8.2 | 9 | 9.5 | 10.5 | 11.2 | | | | | | | |
| LD-17/4 L=1000 mm | $L_{WA}$ | [dB (A)] | | | | 35 | 38 | 46 | 53 | 60 | | | | | |
| | $\Delta p_t$ | [Pa] | | | | 9 | 21 | 38 | 56 | 90 | | | | | |
| | $L_{0.2}$ | [m] | | | | 7.5 | 7.6 | 7.7 | 7.9 | 8 | | | | | |
| | $L_{min}$ | [m] | | | | 8.3 | 9 | 9.5 | 10.5 | 10.5 | | | | | |
| LD-17/4 L=1500 mm | $L_{WA}$ | [dB (A)] | | | | | 32 | 38 | 44 | 48 | 52 | 60 | | | |
| | $\Delta p_t$ | [Pa] | | | | | 10 | 19 | 30 | 44 | 60 | 80 | | | |
| | $L_{0.2}$ | [m] | | | | | 7.2 | 7.5 | 7.6 | 7.8 | 7.9 | 8 | | | |
| | $L_{min}$ | [m] | | | | | 7.5 | 8.7 | 9.5 | 9.8 | 10.2 | 10.4 | | | |
| LD-17/4 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | | | 34 | 38 | 42 | 45 | 49 | 52 | 56 | 60 |
| | $\Delta p_t$ | [Pa] | | | | | | 3 | 5 | 7 | 9 | 12 | 17 | 23 | 33 |
| | $L_{0.2}$ | [m] | | | | | | 7.4 | 7.5 | 7.6 | 7.8 | 7.8 | 7.8 | 7.9 | 8.3 |
| | $L_{min}$ | [m] | | | | | | 8.2 | 8.6 | 9.2 | 9.5 | 9.7 | 10.2 | 10.5 | 11.3 |

## Definition of symbols

| | |
|---|---|
| $L_{WA}$ | A-weighted sound power level |
| $\Delta p_t$ | Total pressure drop calculated to normal conditions |
| $L_{0.2}$ | Isothermal throw distance of supply air jet, when its velocity drops down to 0.2 m/s |
| $L_{min}$ | Minimum distance between diffusers, that the jet velocity is less than or equal to 0.2 m/s |

## Conditions for $L_{min}$:

| | |
|---|---|
| Q=600 m³/h | |
| L=1000 mm | |
| Room height: | H=2.8 m |
| Occupied zone height: | 1.8 m |
| Room temperature: | 24 °C |
| Supply temperature: | ΔT= -6 K |

## Sound power level, pressure drop and throw distances

### LD-17 vertical discharge

| Type | Q | [l/s] | 13.9 | 27.8 | 41.7 | 55.6 | 83.3 | 111.1 | 138.9 | 166.7 | 194.4 | 222.2 | 250.0 | 277.8 | 333.3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | [m³/h] | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
| LD-17/1 L=500 mm | $L_{WA}$ | [dB (A)] | 32 | 47 | | | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 17 | 68 | | | | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 2.4 | 4.8 | | | | | | | | | | | |
| LD-17/1 L=1000 mm | $L_{WA}$ | [dB (A)] | 27 | 35 | 43 | 50 | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 4 | 17 | 39 | 68 | | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 1 | 2.4 | 3.5 | 5 | | | | | | | | | |
| LD-17/1 L=1500 mm | $L_{WA}$ | [dB (A)] | <25 | 29 | 34 | 40 | 50 | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 2 | 8 | 17 | 30 | 68 | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 0.9 | 1.5 | 2.3 | 3.3 | 4.7 | | | | | | | | |
| LD-17/1 L=2000 mm | $L_{WA}$ | [dB (A)] | | <25 | 32 | 36 | 43 | 49 | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 4 | 10 | 17 | 39 | 68 | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | 0.8 | 1.8 | 2.4 | 3.8 | 4.8 | | | | | | | |
| LD-17/2 L=500 mm | $L_{WA}$ | [dB (A)] | 25 | 35 | 43 | 51 | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 4 | 17 | 39 | 68 | | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 1.6 | 3 | 4 | 4.5 | | | | | | | | | |
| LD-17/2 L=1000 mm | $L_{WA}$ | [dB (A)] | | 28 | 31 | 37 | 46 | 51 | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 4 | 10 | 17 | 39 | 68 | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | 1.6 | 2.6 | 3 | 4.2 | 4.5 | | | | | | | |

| Type | Q | [l/s] | 13.9 | 27.8 | 41.7 | 55.6 | 83.3 | 111.1 | 138.9 | 166.7 | 194.4 | 222.2 | 250.0 | 277.8 | 333.3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | [m³/h] | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
| LD-17/2 L=1500 mm | $L_{WA}$ | [dB (A)] | | | 26 | 30 | 36 | 42 | 46 | 52 | | | | | |
| | $\Delta p_t$ | [Pa] | | | 4 | 8 | 17 | 30 | 48 | 68 | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | | 1.6 | 2.5 | 3.2 | 3.6 | 4 | 4.5 | | | | | |
| LD-17/2 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | 26 | 32 | 36 | 41 | 44 | 48 | 51 | | | |
| | $\Delta p_t$ | [Pa] | | | | 4 | 10 | 17 | 27 | 39 | 52 | 68 | | | |
| | $L_{0.2}$ (+10K) | [m] | | | | 1.8 | 2.5 | 3.1 | 3.5 | 3.8 | 4.3 | 4.5 | | | |
| LD-17/3 L=500 mm | $L_{WA}$ | [dB (A)] | | 31 | 38 | 46 | 55 | | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 8 | 17 | 30 | 68 | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | 3.1 | 4.2 | 5.5 | 7.5 | | | | | | | | |
| LD-17/3 L=1000 mm | $L_{WA}$ | [dB (A)] | | | 31 | 36 | 44 | 52 | | | | | | | |
| | $\Delta p_t$ | [Pa] | | | 4 | 8 | 17 | 30 | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | | 1.9 | 3.1 | 4.2 | 5.5 | | | | | | | |
| LD-17/3 L=1500 mm | $L_{WA}$ | [dB (A)] | | | | 30 | 37 | 44 | 50 | 55 | | | | | |
| | $\Delta p_t$ | [Pa] | | | | 3 | 8 | 14 | 21 | 30 | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | | | 1.5 | 2.9 | 3.8 | 4.8 | 5.5 | | | | | |
| LD-17/3 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | | 32 | 37 | 42 | 47 | 51 | 55 | | | |
| | $\Delta p_t$ | [Pa] | | | | | 4 | 8 | 12 | 17 | 23 | 30 | | | |
| | $L_{0.2}$ (+10K) | [m] | | | | | 1.9 | 3.1 | 3.8 | 4.3 | 5 | 5.5 | | | |
| LD-17/4 L=500 mm | $L_{WA}$ | [dB (A)] | | 27 | 34 | 42 | 53 | 57 | | | | | | | |
| | $\Delta p_t$ | [Pa] | | 4 | 10 | 17 | 39 | 68 | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | 3.1 | 4.3 | 5.2 | 6.8 | 7.7 | | | | | | | |
| LD-17/4 L=1000 mm | $L_{WA}$ | [dB (A)] | | | | 36 | 39 | 47 | 54 | 61 | | | | | |
| | $\Delta p_t$ | [Pa] | | | | 4 | 10 | 17 | 27 | 39 | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | | | 3 | 4.4 | 5.2 | 6.1 | 6.7 | | | | | |
| LD-17/4 L=1500 mm | $L_{WA}$ | [dB (A)] | | | | | 33 | 39 | 45 | 49 | 53 | 61 | | | |
| | $\Delta p_t$ | [Pa] | | | | | 4 | 8 | 12 | 17 | 23 | 30 | | | |
| | $L_{0.2}$ (+10K) | [m] | | | | | 2.9 | 4.1 | 4.8 | 5.2 | 5.8 | 6.2 | | | |
| LD-17/4 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | | | 35 | 39 | 43 | 46 | 50 | 53 | 57 | 61 |
| | $\Delta p_t$ | [Pa] | | | | | | 4 | 7 | 10 | 13 | 17 | 22 | 27 | 39 |
| | $L_{0.2}$ (+10K) | [m] | | | | | | 3.1 | 4 | 4.3 | 4.8 | 5.3 | 5.8 | 6.1 | 6.8 |

## Definition of symbols

| | |
|---|---|
| $L_{WA}$ | A-weighted sound power level |
| $\Delta p_t$ | Total pressure drop calculated to normal conditions |
| $L_{0.2}$ (+10 °C) | Isothermal throw distance of supply air jet with temperature +10K, when its velocity drops down to 0.2 m/s |

## Sound power level, pressure drop and throw distances

### LD-18 horizontal discharge

| Type | Q | [l/s] | 27.8 | 41.7 | 55.6 | 83.3 | 111.1 | 138.9 | 166.7 | 194.4 | 222.2 | 250.0 | 277.8 | 333.3 | 388.9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | [m³/h] | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 |
| LD-18/1 L=500 mm | $L_{WA}$ | [dB (A)] | 41 | 51 | | | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 24 | 53 | | | | | | | | | | | |
| | $L_{0.2}$ | [m] | 6.6 | 6.9 | | | | | | | | | | | |
| | $L_{min}$ | [m] | >15 | >15 | | | | | | | | | | | |
| LD-18/1 L=1000 mm | $L_{WA}$ | [dB (A)] | 29 | 37 | 44 | | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 16 | 36 | 64 | | | | | | | | | | |
| | $L_{0.2}$ | [m] | 6.2 | 6.5 | 6.7 | | | | | | | | | | |
| | $L_{min}$ | [m] | 12.8 | >15 | >15 | | | | | | | | | | |
| LD-18/1 L=1500 mm | $L_{WA}$ | [dB (A)] | 25 | 31 | 36 | 46 | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 9 | 19 | 34 | 77 | | | | | | | | | |
| | $L_{0.2}$ | [m] | 5.8 | 6.2 | 6.4 | 6.6 | | | | | | | | | |
| | $L_{min}$ | [m] | 4.2 | 12.8 | >15 | >15 | | | | | | | | | |
| LD-18/1 L=2000 mm | $L_{WA}$ | [dB (A)] | <25 | 28 | 32 | 40 | 47 | 53 | 58 | 62 | | | | | |
| | $\Delta p_t$ | [Pa] | 1 | 2 | 4 | 9 | 15 | 24 | 35 | 47 | | | | | |
| | $L_{0.2}$ | [m] | 5.2 | 5.9 | 6.2 | 6.5 | 6.7 | 6.8 | 6.9 | 6.9 | | | | | |
| | $L_{min}$ | [m] | 2 | 6.6 | 12.8 | >15 | >15 | >15 | >15 | >15 | | | | | |
| LD-18/2 L=500 mm | $L_{WA}$ | [dB (A)] | 29 | 37 | 45 | 56 | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 6 | 13 | 24 | 53 | | | | | | | | | |
| | $L_{0.2}$ | [m] | 5.4 | 5.6 | 5.7 | 5.8 | | | | | | | | | |
| | $L_{min}$ | [m] | 14 | >15 | >15 | >15 | | | | | | | | | |
| LD-18/2 L=1000 mm | $L_{WA}$ | [dB (A)] | <25 | 27 | 32 | 40 | 48 | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 4 | 9 | 16 | 37 | 65 | | | | | | | | |
| | $L_{0.2}$ | [m] | 5 | 5.3 | 5.5 | 5.6 | 5.7 | | | | | | | | |
| | $L_{min}$ | [m] | 2 | 8 | 13.4 | >15 | >15 | | | | | | | | |
| LD-18/2 L=1500 mm | $L_{WA}$ | [dB (A)] | | <25 | 27 | 34 | 40 | 45 | 50 | | | | | | |
| | $\Delta p_t$ | [Pa] | | 5 | 9 | 20 | 35 | 55 | 80 | | | | | | |
| | $L_{0.2}$ | [m] | | 5 | 5.2 | 5.4 | 5.6 | 5.7 | 5.7 | | | | | | |
| | $L_{min}$ | [m] | | 2 | 5.8 | 13.4 | >15 | >15 | >15 | | | | | | |
| LD-18/2 L=2000 mm | $L_{WA}$ | [dB (A)] | | | 25 | 30 | 35 | 39 | 44 | 47 | 51 | 54 | 57 | 62 | 67 |
| | $\Delta p_t$ | [Pa] | | | 1 | 3 | 6 | 9 | 13 | 18 | 23 | 29 | 36 | 52 | 71 |
| | $L_{0.2}$ | [m] | | | 5 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 5.7 | 5.7 | 5.8 | 5.8 | 5.8 |
| | $L_{min}$ | [m] | | | 2 | 8 | 13.4 | >15 | >15 | >15 | >15 | >15 | >15 | >15 | >15 |
| LD-18/3 L=500 mm | $L_{WA}$ | [dB (A)] | <25 | 31 | 37 | 48 | 56 | 63 | | | | | | | |
| | $\Delta p_t$ | [Pa] | 3 | 6 | 11 | 24 | 42 | 66 | | | | | | | |
| | $L_{0.2}$ | [m] | 8 | 8.3 | 8.6 | 8.8 | 9 | 9.1 | | | | | | | |
| | $L_{min}$ | [m] | 8 | 10 | 11.2 | 12.6 | 13.4 | 13.8 | | | | | | | |
| LD-18/3 L=1000 mm | $L_{WA}$ | [dB (A)] | | <25 | 27 | 34 | 40 | 46 | 51 | 55 | | | | | |
| | $\Delta p_t$ | [Pa] | | 4 | 7 | 16 | 29 | 45 | 65 | 88 | | | | | |
| | $L_{0.2}$ | [m] | | 7.7 | 8 | 8.3 | 8.6 | 8.7 | 8.8 | 8.9 | | | | | |
| | $L_{min}$ | [m] | | 6.4 | 8 | 10 | 11.2 | 12 | 12.6 | 13 | | | | | |
| LD-18/3 L=1500 mm | $L_{WA}$ | [dB (A)] | | | <25 | 29 | 34 | 38 | 42 | 46 | 50 | 53 | 56 | | |
| | $\Delta p_t$ | [Pa] | | | 4 | 9 | 15 | 24 | 34 | 47 | 61 | 77 | 96 | | |
| | $L_{0.2}$ | [m] | | | 7.6 | 8 | 8.2 | 8.4 | 8.6 | 8.7 | 8.7 | 8.8 | 8.9 | | |
| | $L_{min}$ | [m] | | | 5.8 | 8.2 | 9.6 | 10.6 | 11.2 | 11.8 | 12.2 | 12.6 | 12.8 | | |
| LD-18/3 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | 26 | 30 | 34 | 37 | 40 | 44 | 46 | 49 | 54 | 58 |
| | $\Delta p_t$ | [Pa] | | | | 1 | 2 | 3 | 4 | 6 | 8 | 10 | 12 | 17 | 23 |
| | $L_{0.2}$ | [m] | | | | 7.7 | 8 | 8.2 | 8.4 | 8.5 | 8.6 | 8.6 | 8.7 | 8.8 | 8.9 |
| | $L_{min}$ | [m] | | | | 6.4 | 8 | 9.2 | 10 | 10.8 | 11.2 | 11.8 | 12 | 12.6 | 13 |

| Type | Q | [l/s] | 27.8 | 41.7 | 55.6 | 83.3 | 111.1 | 138.9 | 166.7 | 194.4 | 222.2 | 250.0 | 277.8 | 333.3 | 388.9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | [m³/h] | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 |
| LD-18/4 L=500 mm | $L_{WA}$ | [dB (A)] | | 28 | 34 | 44 | 52 | 58 | 64 | 68 | | | | | |
| | $\Delta p_t$ | [Pa] | | 3 | 6 | 13 | 24 | 37 | 53 | 72 | | | | | |
| | $L_{0.2}$ | [m] | | 7.4 | 7.6 | 7.8 | 8 | 8.1 | 8.2 | 8.3 | | | | | |
| | $L_{min}$ | [m] | | 8.2 | 9 | 10.2 | 10.6 | 11 | 11.2 | 11.4 | | | | | |
| LD-18/4 L=1000 mm | $L_{WA}$ | [dB (A)] | | | <25 | 31 | 37 | 42 | 47 | 51 | 55 | 58 | | | |
| | $\Delta p_t$ | [Pa] | | | 4 | 9 | 16 | 26 | 37 | 50 | 65 | 83 | | | |
| | $L_{0.2}$ | [m] | | | 7 | 7.4 | 7.6 | 7.7 | 7.8 | 7.9 | 8 | 8 | | | |
| | $L_{min}$ | [m] | | | 6.2 | 8.2 | 9 | 9.6 | 10.2 | 10.4 | 10.6 | 10.8 | | | |
| LD-18/4 L=1500 mm | $L_{WA}$ | [dB (A)] | | | | 26 | 31 | 35 | 38 | 42 | 45 | 48 | 51 | 56 | |
| | $\Delta p_t$ | [Pa] | | | | 5 | 9 | 14 | 20 | 28 | 36 | 46 | 57 | 82 | |
| | $L_{0.2}$ | [m] | | | | 7 | 7.3 | 7.4 | 7.6 | 7.7 | 7.8 | 7.8 | 7.9 | 8 | |
| | $L_{min}$ | [m] | | | | 6.2 | 7.6 | 8.4 | 9 | 9.6 | 9.8 | 10 | 10.4 | 10.6 | |
| LD-18/4 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | | 28 | 31 | 34 | 37 | 40 | 42 | 45 | 50 | 54 |
| | $\Delta p_t$ | [Pa] | | | | | 2 | 3 | 4 | 6 | 7 | 9 | 11 | 16 | 22 |
| | $L_{0.2}$ | [m] | | | | | 7 | 7.2 | 7.4 | 7.5 | 7.6 | 7.7 | 7.7 | 7.8 | 7.9 |
| | $L_{min}$ | [m] | | | | | 6.2 | 7.4 | 8.2 | 8.6 | 9.2 | 9.4 | 9.8 | 10.2 | 10.4 |

## Definition of symbols

| | |
|---|---|
| $L_{WA}$ | A-weighted sound power level |
| $\Delta p_t$ | Total pressure drop calculated to normal conditions |
| $L_{0.2}$ | Isothermal throw distance of supply air jet, when its velocity drops down to 0.2 m/s |
| $L_{min}$ | Minimum distance between diffusers, that the jet velocity is less than or equal to 0.2 m/s |

## Conditions for $L_{min}$:

Q=600 m³/h
L=1000 mm

| | |
|---|---|
| Room height: | H=2.8 m |
| Occupied zone height: | 1.8 m |
| Room temperature: | 24 °C |
| Supply temperature: | ΔT= -6 K |

## Sound power level, pressure drop and throw distances

### LD-18 vertical discharge

| Type | Q | [l/s] | 27.8 | 41.7 | 55.6 | 83.3 | 111.1 | 138.9 | 166.7 | 194.4 | 222.2 | 250.0 | 277.8 | 333.3 | 388.9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | [m³/h] | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 |
| LD-18/1 L=500 mm | $L_{WA}$ | [dB (A)] | 40 | 51 | | | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 25 | 56 | | | | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 3.4 | 5.1 | | | | | | | | | | | |
| LD-18/1 L=1000 mm | $L_{WA}$ | [dB (A)] | 29 | 36 | 43 | | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 17 | 39 | 69 | | | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 1.5 | 2.5 | 3.4 | | | | | | | | | | |
| LD-18/1 L=1500 mm | $L_{WA}$ | [dB (A)] | 25 | 31 | 36 | 45 | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 10 | 21 | 38 | 86 | | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 0.7 | 1.5 | 2.2 | 3.5 | | | | | | | | | |
| LD-18/1 L=2000 mm | $L_{WA}$ | [dB (A)] | | 28 | 32 | 39 | 46 | 52 | 57 | | | | | | |
| | $\Delta p_t$ | [Pa] | | 4 | 7 | 17 | 30 | 47 | 67 | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | 0.9 | 2 | 2.5 | 3.5 | 4.4 | 5.2 | | | | | | |
| LD-18/2 L=500 mm | $L_{WA}$ | [dB (A)] | 29 | 37 | 44 | 55 | | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 6 | 14 | 25 | 56 | | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 2.4 | 3.2 | 3.8 | 4.6 | | | | | | | | | |
| LD-18/2 L=1000 mm | $L_{WA}$ | [dB (A)] | <25 | 27 | 32 | 40 | 47 | | | | | | | | |
| | $\Delta p_t$ | [Pa] | 4 | 10 | 17 | 39 | 69 | | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 1 | 1.9 | 2.4 | 3.2 | 3.8 | | | | | | | | |
| LD-18/2 L=1500 mm | $L_{WA}$ | [dB (A)] | | <25 | 27 | 33 | 39 | 44 | 49 | | | | | | |
| | $\Delta p_t$ | [Pa] | | 6 | 10 | 22 | 39 | 61 | 88 | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | 1.1 | 1.7 | 2.4 | 3 | 3.4 | 3.8 | | | | | | |
| LD-18/2 L=2000 mm | $L_{WA}$ | [dB (A)] | | | 25 | 30 | 35 | 39 | 43 | 47 | 50 | 53 | 56 | 61 | |
| | $\Delta p_t$ | [Pa] | | | 2 | 5 | 9 | 15 | 21 | 29 | 38 | 48 | 59 | 85 | |
| | $L_{0.2}$ (+10K) | [m] | | | 1 | 1.9 | 2.4 | 2.9 | 3.2 | 3.5 | 3.8 | 4 | 4.3 | 4.6 | |
| LD-18/3 L=500 mm | $L_{WA}$ | [dB (A)] | 23 | 30 | 36 | 46 | 54 | 60 | | | | | | | |
| | $\Delta p_t$ | [Pa] | 3 | 6 | 11 | 25 | 44 | 69 | | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 1.9 | 3.1 | 4 | 5.7 | 7.1 | 8.2 | | | | | | | |
| LD-18/3 L=1000 mm | $L_{WA}$ | [dB (A)] | | <25 | 26 | 33 | 39 | 44 | 49 | 53 | | | | | |
| | $\Delta p_t$ | [Pa] | | 4 | 8 | 17 | 31 | 49 | 70 | 95 | | | | | |
| | $L_{0.2}$ (+10K) | [m] | | 1.3 | 1.9 | 3.1 | 4 | 5 | 5.8 | 6.5 | | | | | |
| LD-18/3 L=1500 mm | $L_{WA}$ | [dB (A)] | | | 23 | 28 | 33 | 37 | 41 | 45 | 48 | 51 | | | |
| | $\Delta p_t$ | [Pa] | | | 5 | 10 | 18 | 28 | 41 | 56 | 73 | 92 | | | |
| | $L_{0.2}$ (+10K) | [m] | | | 1 | 1.9 | 2.7 | 3.4 | 4 | 4.7 | 5.2 | 5.8 | | | |
| LD-18/3 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | 26 | 29 | 33 | 36 | 39 | 42 | 45 | 47 | 52 | 56 |
| | $\Delta p_t$ | [Pa] | | | | 3 | 5 | 8 | 12 | 16 | 21 | 27 | 34 | 48 | 66 |
| | $L_{0.2}$ (+10K) | [m] | | | | 1.3 | 1.9 | 2.5 | 3.1 | 3.6 | 4 | 4.5 | 5 | 5.8 | 6.5 |
| LD-18/4 L=500 mm | $L_{WA}$ | [dB (A)] | 21 | 27 | 33 | 42 | 50 | 56 | 61 | | | | | | |
| | $\Delta p_t$ | [Pa] | 2 | 3 | 6 | 14 | 25 | 39 | 56 | | | | | | |
| | $L_{0.2}$ (+10K) | [m] | 2.1 | 3.3 | 4.1 | 5.4 | 6.4 | 7.2 | 7.9 | | | | | | |

### Definition of symbols

**$L_{WA}$** A-weighted sound power level

**$\Delta p_t$** Total pressure drop calculated to normal conditions

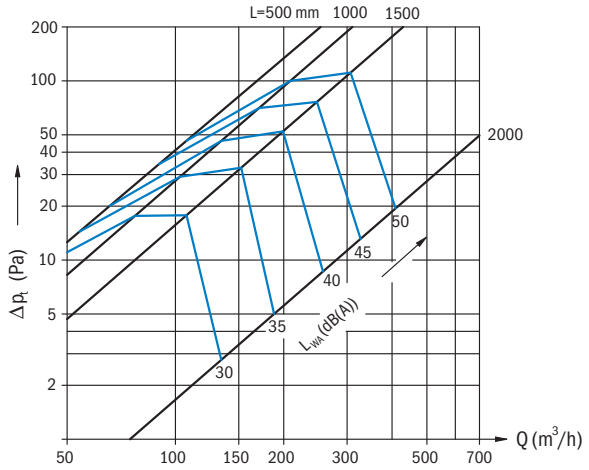
**$L_{0.2}$ (+10 °C)** Isothermal throw distance of supply air jet with temperature +10K, when its velocity drops down to 0.2 m/s

| Type | Q | [l/s] | 27.8 | 41.7 | 55.6 | 83.3 | 111.1 | 138.9 | 166.7 | 194.4 | 222.2 | 250.0 | 277.8 | 333.3 | 388.9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | [m³/h] | 100 | 150 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 |
| LD-18/4 L=1000 mm | $L_{WA}$ | [dB (A)] | | | <25 | 30 | 36 | 41 | 45 | 49 | 53 | 56 | | | |
| | $\Delta p_t$ | [Pa] | | | 4 | 10 | 18 | 27 | 39 | 54 | 70 | 89 | | | |
| | $L_{0.2}$ (+10K) | [m] | | | 2.1 | 3.3 | 4.1 | 4.8 | 5.4 | 6 | 6.5 | 6.9 | | | |
| LD-18/4 L=1500 mm | $L_{WA}$ | [dB (A)] | | | | 26 | 30 | 34 | 37 | 41 | 44 | 47 | 50 | 54 | |
| | $\Delta p_t$ | [Pa] | | | | 6 | 10 | 16 | 23 | 32 | 41 | 52 | 65 | 93 | |
| | $L_{0.2}$ (+10K) | [m] | | | | 2.1 | 2.9 | 3.6 | 4.1 | 4.6 | 5 | 5.5 | 5.8 | 6.5 | |
| LD-18/4 L=2000 mm | $L_{WA}$ | [dB (A)] | | | | | 27 | 30 | 33 | 36 | 39 | 41 | 44 | 48 | 52 |
| | $\Delta p_t$ | [Pa] | | | | | 3 | 5 | 7 | 10 | 13 | 16 | 20 | 29 | 39 |
| | $L_{0.2}$ (+10K) | [m] | | | | | 2.1 | 2.8 | 3.3 | 3.8 | 4.2 | 4.5 | 4.8 | 5.5 | 6 |

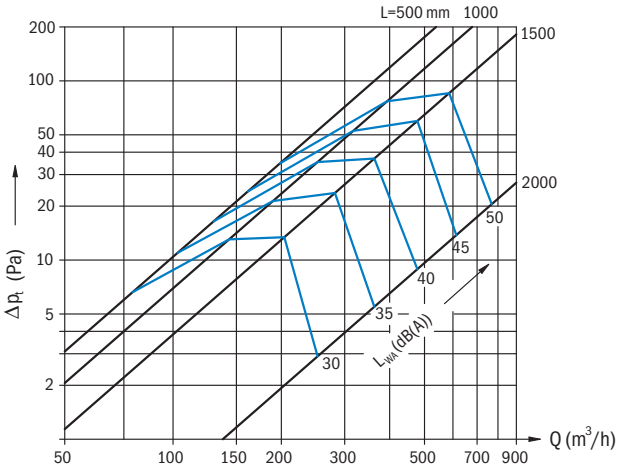
## Pressure drop

(valid for horizontal discharge and plenum box with 100 % opened volume control damper)

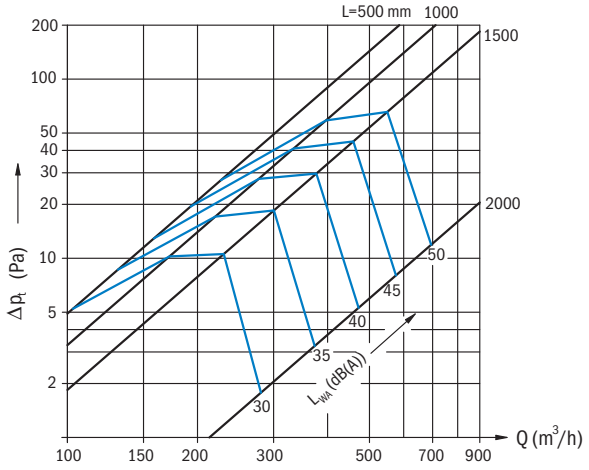
**LD-17/1**



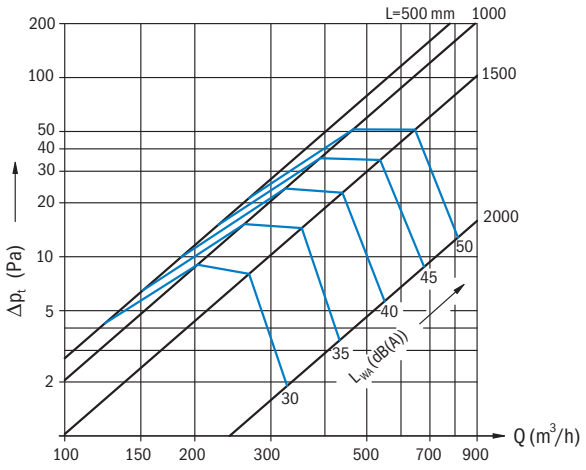

**LD-17/2**




**LD-17/3**




**LD-17/4**



### Correction factors

| LD-17/1 | Type of discharge | Horizontal | | Vertical | |
|---|---|---|---|---|---|
| Length | Volume control damper | Open | Closed | Open | Closed |
| L=500 | $\Delta p_t$ | x 1 | x 1.1 | x 1.1 | x 1.5 |
| | $L_{WA}$ | - | + 1 | - | + 2 |
| L=1000 | $\Delta p_t$ | x 1 | x 1.2 | x 1.2 | x 1.5 |
| | $L_{WA}$ | - | + 2 | - | + 1 |
| L=1500 | $\Delta p_t$ | x 1 | x 1.3 | x 1.2 | x 1.6 |
| | $L_{WA}$ | - | + 2 | - | +1 |
| L=2000 | $\Delta p_t$ | x 1 | x 2.9 | x 2.0 | x 2.7 |
| | $L_{WA}$ | - | + 2 | - | - |

| LD-17/2 | Type of discharge | Horizontal | | Vertical | |
|---|---|---|---|---|---|
| Length | Volume control damper | Open | Closed | Open | Closed |
| L=500 | $\Delta p_t$ | x 1 | x 2 | x 1.0 | x 2.2 |
| | $L_{WA}$ | - | + 4 | + 1 | + 2 |
| L=1000 | $\Delta p_t$ | x 1 | x 2.3 | x 1.2 | x 2.2 |
| | $L_{WA}$ | - | + 4 | + 1 | + 2 |
| L=1500 | $\Delta p_t$ | x 1 | x 2.3 | x 1.2 | x 2.3 |
| | $L_{WA}$ | - | + 3 | - | + 1 |
| L=2000 | $\Delta p_t$ | x 1 | x 3 | x 1.6 | x 3.4 |
| | $L_{WA}$ | - | + 3 | - | + 1 |

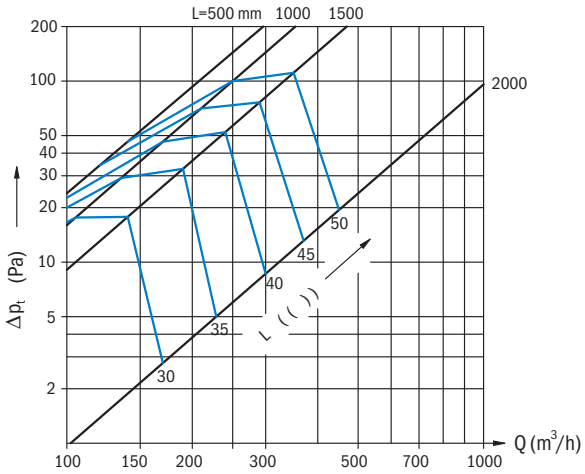
| LD-17/3 | Type of discharge | Horizontal | | Vertical | |
|---|---|---|---|---|---|
| Length | Volume control damper | Open | Closed | Open | Closed |
| L=500 | $\Delta p_t$ | x 1 | x 2.5 | x 1.1 | x 2.4 |
| | $L_{WA}$ | - | + 5 | + 1 | + 4 |
| L=1000 | $\Delta p_t$ | x 1 | x 2.6 | x 1.2 | x 2.5 |
| | $L_{WA}$ | - | + 6 | + 2 | + 4 |
| L=1500 | $\Delta p_t$ | x 1 | x 2.7 | x 1.2 | x 2.8 |
| | $L_{WA}$ | - | + 6 | + 2 | + 3 |
| L=2000 | $\Delta p_t$ | x 1 | x 3.2 | x 2.5 | x 6 |
| | $L_{WA}$ | - | + 5 | + 1 | + 2 |

| LD-17/4 | Type of discharge | Horizontal | | Vertical | |
|---|---|---|---|---|---|
| Length | Volume control damper | Open | Closed | Open | Closed |
| L=500 | $\Delta p_t$ | x 1 | x 2.2 | x 1.2 | x 2.4 |
| | $L_{WA}$ | - | + 6 | + 2 | + 3 |
| L=1000 | $\Delta p_t$ | x 1 | x 2.4 | x 1.2 | x 2.4 |
| | $L_{WA}$ | - | + 5 | + 1 | + 3 |
| L=1500 | $\Delta p_t$ | x 1 | x 2.7 | x 1.2 | x 2.7 |
| | $L_{WA}$ | - | + 6 | + 1 | + 2 |
| L=2000 | $\Delta p_t$ | x 1 | x 5 | x 1.9 | x 4.3 |
| | $L_{WA}$ | - | + 6 | + 1 | + 2 |

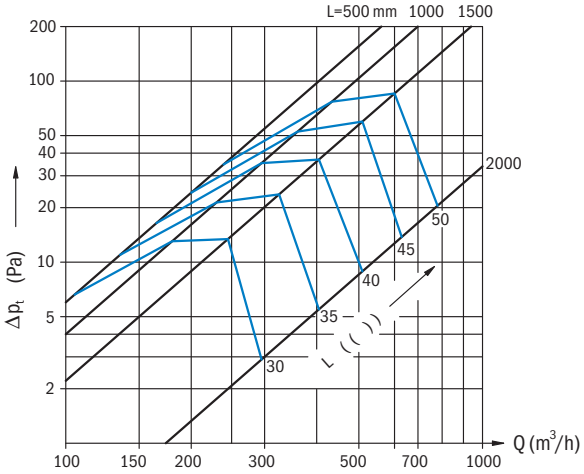
## Pressure drop

(valid for horizontal discharge and plenum box with 100 % opened volume control damper)

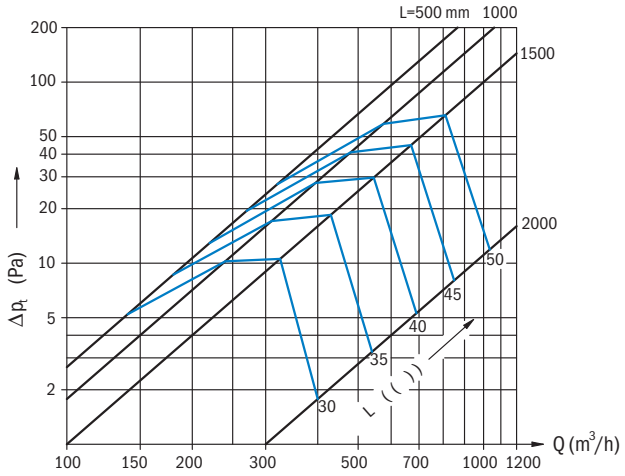
**LD-18/1**



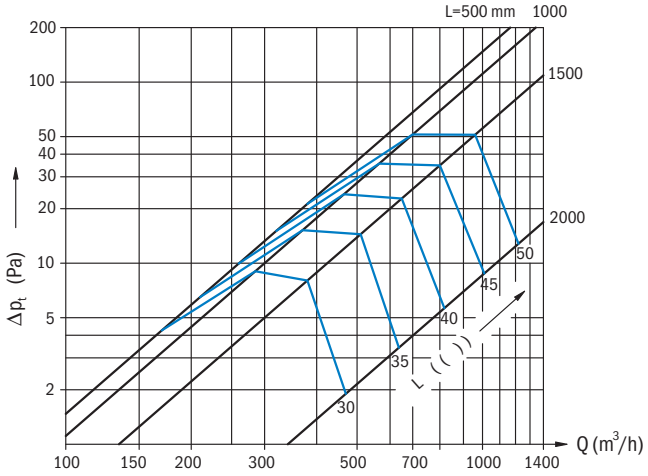

**LD-18/2**




**LD-18/3**




**LD-18/4**



### Correction factors

| LD-18/1 | Type of discharge | Horizontal | | Vertical | |
|---|---|---|---|---|---|
| Length | Volume control damper | Open | Closed | Open | Closed |
| L=500 | $\Delta p_t$ | x 1 | x 1 | x 1 | x 1.4 |
| | $L_{WA}$ | - | + 1 | - | - |
| L=1000 | $\Delta p_t$ | x 1 | x 1.1 | x 1.1 | x 1.4 |
| | $L_{WA}$ | - | + 1 | - | - |
| L=1500 | $\Delta p_t$ | x 1 | x 1.2 | x 1.1 | x 1.5 |
| | $L_{WA}$ | - | + 1 | - | - |
| L=2000 | $\Delta p_t$ | x 1 | x 2.8 | x 1.9 | x 2.6 |
| | $L_{WA}$ | - | + 1 | - | - |

| LD-18/2 | Type of discharge | Horizontal | | Vertical | |
|---|---|---|---|---|---|
| Length | Volume control damper | Open | Closed | Open | Closed |
| L=500 | $\Delta p_t$ | x 1 | x 2.1 | x 1 | x 2.1 |
| | $L_{WA}$ | - | + 3 | - | + 1 |
| L=1000 | $\Delta p_t$ | x 1 | x 2.2 | x 1.1 | x 2.1 |
| | $L_{WA}$ | - | + 3 | - | + 1 |
| L=1500 | $\Delta p_t$ | x 1 | x 2.2 | x 1.1 | x 2.2 |
| | $L_{WA}$ | - | + 3 | - | + 1 |
| L=2000 | $\Delta p_t$ | x 1 | x 3 | x 1.6 | x 3.3 |
| | $L_{WA}$ | - | + 3 | - | + 1 |

| LD-18/3 | Type of discharge | Horizontal | | Vertical | |
|---|---|---|---|---|---|
| Length | Volume control damper | Open | Closed | Open | Closed |
| L=500 | $\Delta p_t$ | x 1 | x 2.5 | x 1.0 | x 2.4 |
| | $L_{WA}$ | - | + 6 | - | + 3 |
| L=1000 | $\Delta p_t$ | x 1 | x 2.5 | x 1.1 | x 2.5 |
| | $L_{WA}$ | - | + 6 | - | + 3 |
| L=1500 | $\Delta p_t$ | x 1 | x 2.5 | x 1.2 | x 2.7 |
| | $L_{WA}$ | - | + 6 | - | + 2 |
| L=2000 | $\Delta p_t$ | x 1 | x 3.1 | x 2.8 | x 6.5 |
| | $L_{WA}$ | - | + 6 | - | + 3 |

| LD-18/4 | Type of discharge | Horizontal | | Vertical | |
|---|---|---|---|---|---|
| Length | Volume control damper | Open | Closed | Open | Closed |
| L=500 | $\Delta p_t$ | x 1 | x 2.2 | x 1 | x 2.4 |
| | $L_{WA}$ | - | + 5 | + 1 | + 2 |
| L=1000 | $\Delta p_t$ | x 1 | x 2.3 | x 1.1 | x 2.5 |
| | $L_{WA}$ | - | + 5 | - | + 2 |
| L=1500 | $\Delta p_t$ | x 1 | x 2.6 | x 1.1 | x 2.6 |
| | $L_{WA}$ | - | + 5 | - | + 2 |
| L=2000 | $\Delta p_t$ | x 1 | x 5 | x 1.8 | x 4.3 |
| | $L_{WA}$ | - | + 4 | - | + 2 |