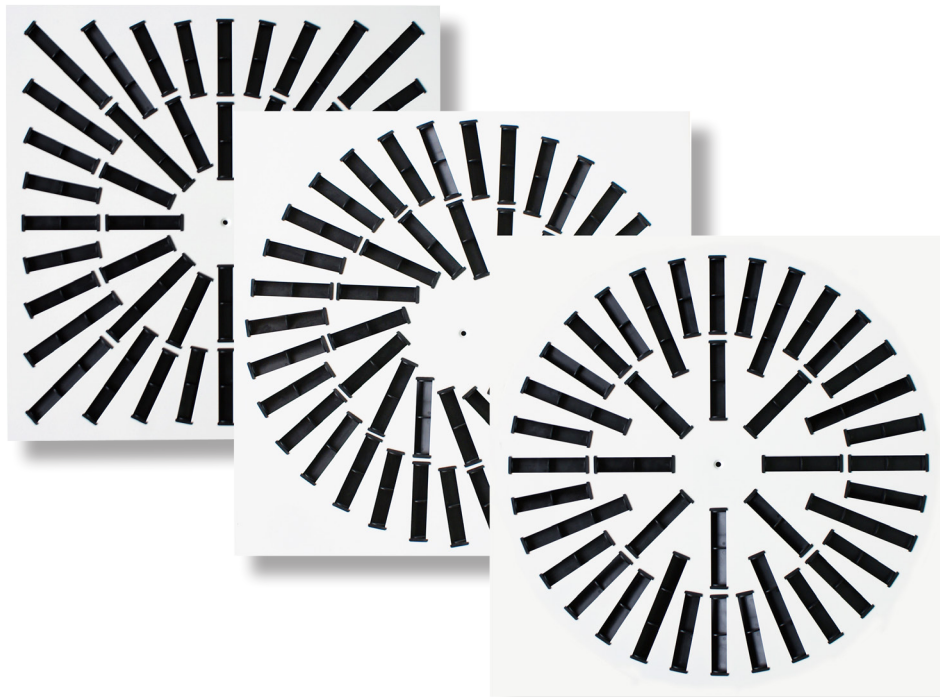


**2/S5**  
v 2.4 (en)



# ADJUSTABLE CEILING DIFFUSERS

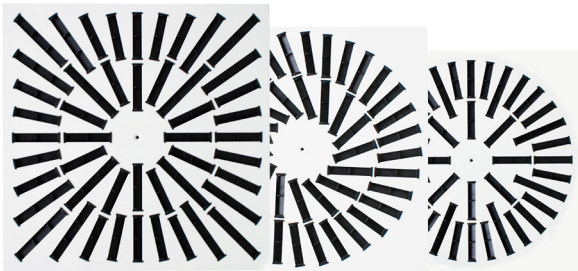
DEV, DEK, DEU

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**Definition of symbols:**

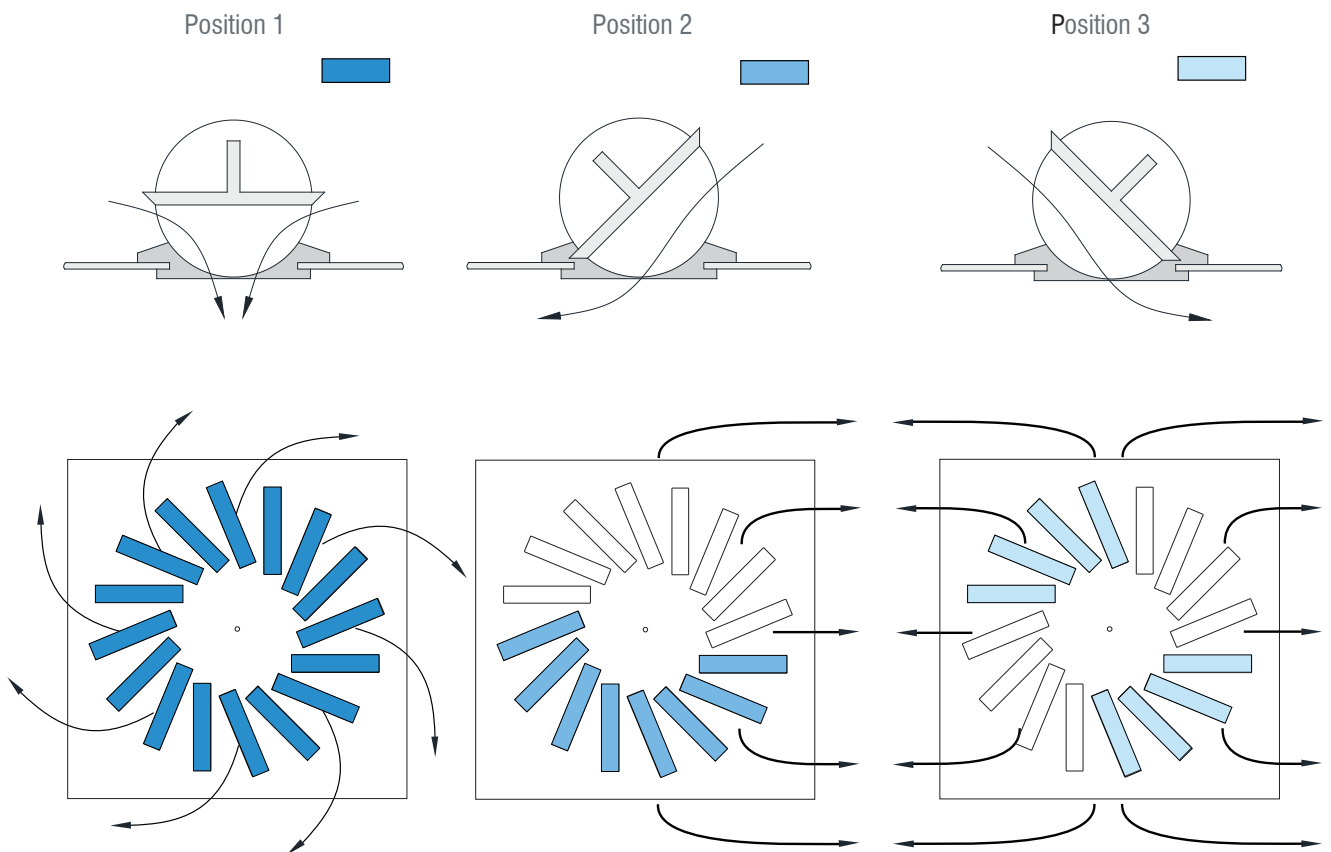
|                              |   |                   |   |
|------------------------------|---|-------------------|---|
| $V$ [m <sup>3</sup> /h]      | - Air flow  | $v_h$ [m/s]       | - Average core velocity at distance $h$ (m) from diffuser |
| $V_{uk}$ [m <sup>3</sup> /h] | - Total air volume in motion                              | $\Delta p$ [Pa]   | - Total pressure drop                                     |
| $h$ [m]                      | - Distance from the ceiling to the occupied zone          | $t_p$ [°C]        | - Air temperature in the room                             |
| $H$ [m]                      | - Room height   | $t_z$ [°C]        | - Supply air temperature                                  |
| $A, B$ [m]                   | - Distance between diffusers                              | $t_m$ [°C]        | - Core air temperature                                    |
| $x$ [m]                      | - Distance from wall                                      | $\Delta t_z$ [°C] | - $(t_z - t_p)$   |
| $L$ [m]                      | - Throw distance ( $x+h$ )                                | $\Delta t_L$ [°C] | - $(t_m - t_p)$   |
| $A_{ef}$ [m <sup>2</sup> ]   | - Effective discharge area                                | $i$               | - Induction $V_{uk}/V$                                    |
| $v_{ef}$ [m/s]               | - Effective jet velocity                                  | $L_{WA}$ [dB(A)]  | - Sound power level                                       |
| $v_L$ [m/s]                  | - Average core velocity at distance $L$ (m) from diffuser |                   |   |


**DEV, DEK, DEU**

- Ceiling diffuser for room heights from 2,3 to 4m.
- Made out of steel sheet, standard RAL 9010
- Individually adjustable discharge elements
- Central screw fixing

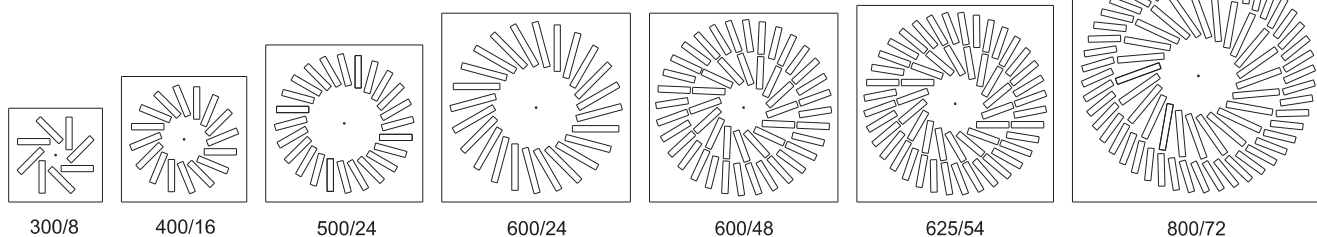
**Options**

- RAL...
- Plenum box
- White or black discharge elements

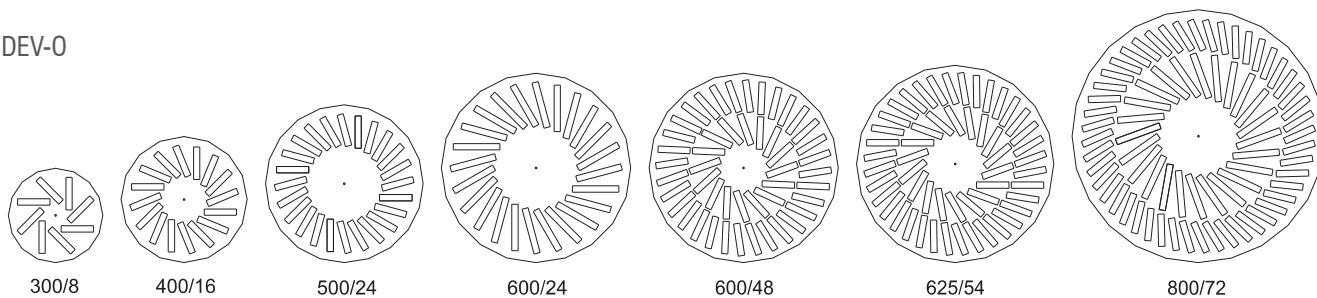
**Adjusting discharge direction**


## ADJUSTABLE CEILING DIFFUSERS

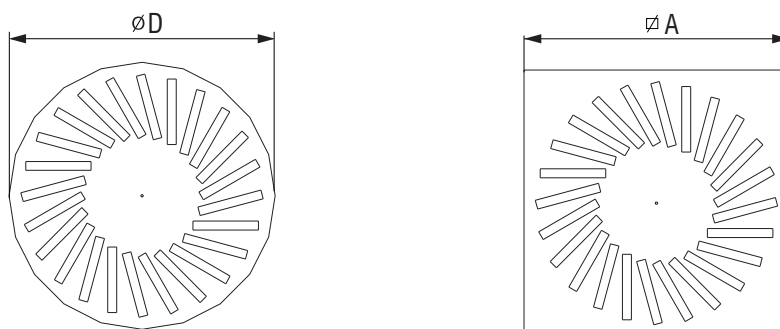
### DEV-K



### DEV-O



| DEV    | $\varnothing A$<br>[mm] | $\varnothing D$<br>[mm] | Number of outlets | $A_{ef}$<br>[m <sup>2</sup> ] | $\varnothing d$<br>[mm] |
|--------|-------------------------|-------------------------|-------------------|-------------------------------|-------------------------|
| 300/8  | 298                     | 298                     | 8                 | 0,0095                        | 158                     |
| 400/16 | 398                     | 398                     | 16                | 0,0189                        | 198                     |
| 500/16 | 498                     | 498                     | 16                | 0,0189                        | 198                     |
| 500/24 | 498                     | 498                     | 24                | 0,0284                        | 198                     |
| 600/16 | 595                     | 595                     | 16                | 0,0189                        | 198                     |
| 600/24 | 595                     | 595                     | 24                | 0,0449                        | 248                     |
| 600/48 | 595                     | 595                     | 48                | 0,0568                        | 248                     |
| 625/16 | 623                     | 623                     | 16                | 0,0189                        | 198                     |
| 625/24 | 623                     | 623                     | 24                | 0,0449                        | 248                     |
| 625/48 | 623                     | 623                     | 48                | 0,0568                        | 248                     |
| 625/54 | 623                     | 623                     | 54                | 0,0639                        | 248                     |
| 800/72 | 798                     | 798                     | 72                | 0,1017                        | 313                     |



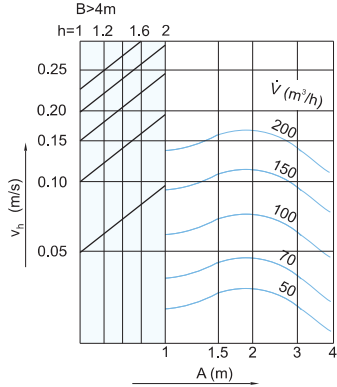
### Ordering key:

|                                     |  |
|-------------------------------------|--|
| Type                                | <b>DEV - K - 600/16 - B - A - H - <math>\varnothing d</math> - Z</b> |
| <b>K</b> - square diffuser          |  |
| <b>O</b> - round diffuser           |  |
| Size                                |  |
| <b>B</b> - white discharge elements |  |
| <b>C</b> - black discharge elements |  |
| <b>A</b> - supply air               |  |
| <b>B</b> - exhaust air              |  |
| <b>H</b> - horizontal connection    |  |
| <b>V</b> - vertical connection      |  |
| Connection diameter                 |  |
| Insulation                          |  |
| *Screws are not delivered           |  |

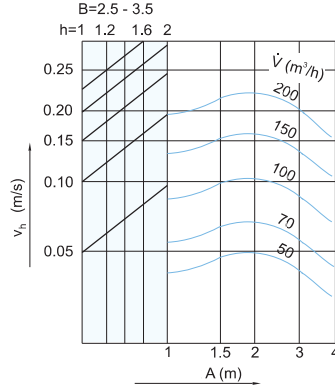
SELECTION DIAGRAMS FOR DEV-K I DEV-O

Diagrams of mean jet velocity  $v_n$  at distance B and diagrams of mean jet velocity along the wall  $v_L$  and temperature ratio for diffuser DEV (300/8 - 625/24)

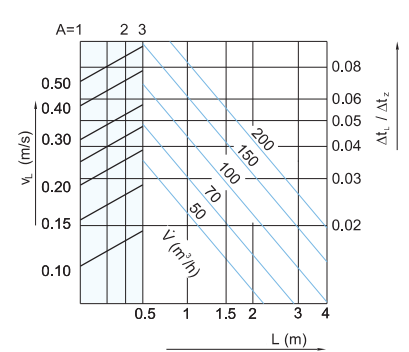
**300/8**



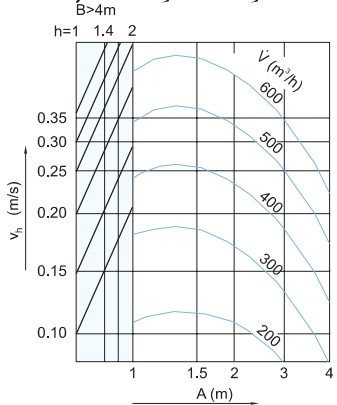
**300/8**



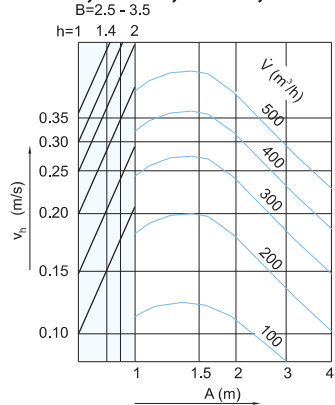
**300/8**



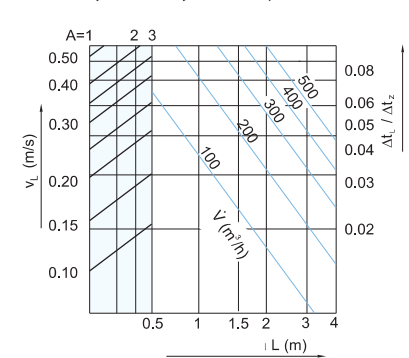
**400/16, 500/16, 600/16, 625/16**



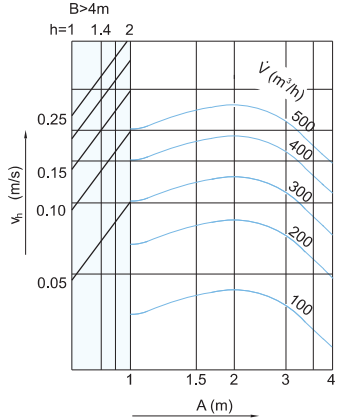
**400/16, 500/16, 600/16, 625/16**



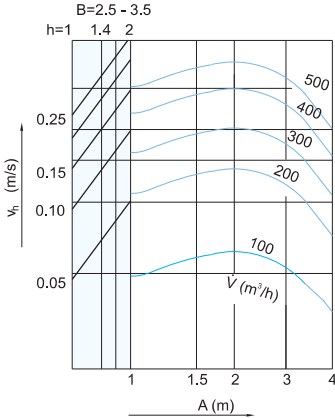
**400/16, 500/16, 600/16, 625/16**



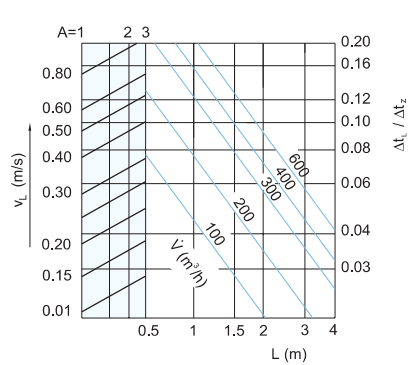
**500/24**



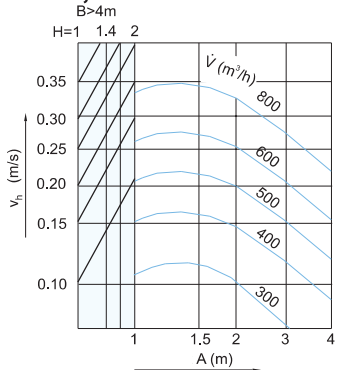
**500/24**



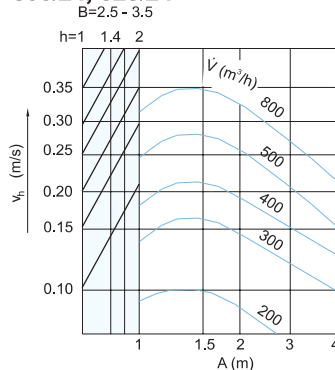
**500/24**



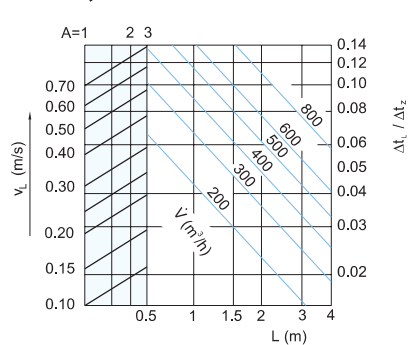
**600/24, 625/24**



**600/24, 625/24**



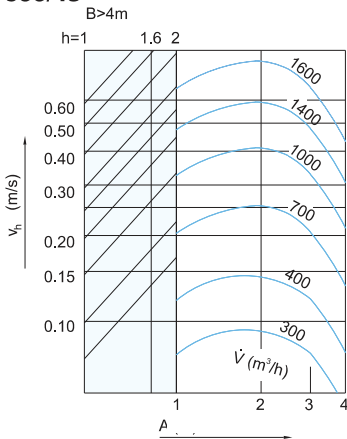
**600/24, 625/24**



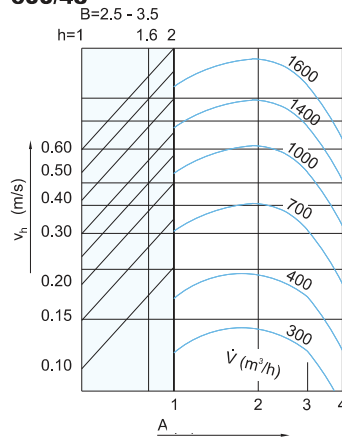
## ADJUSTABLE CEILING DIFFUSERS

Diagrams of mean jet velocity  $v_h$  at distance B and diagrams of mean jet velocity along the wall  $v_L$  and temperature ratio for diffuser DEV (625/48 - 825/72)

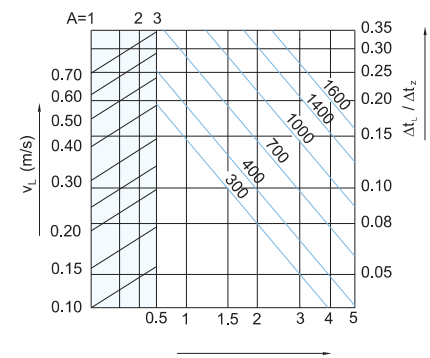
**600/48**



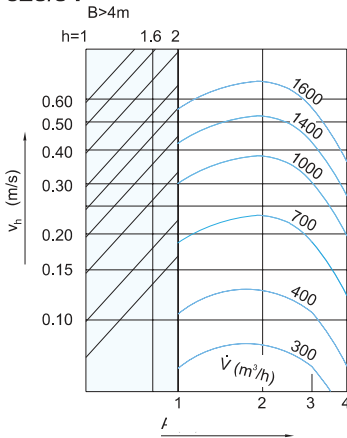
**600/48**



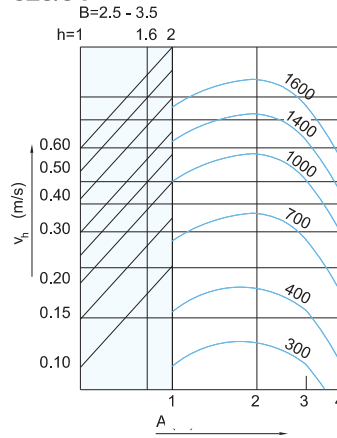
**600/48**



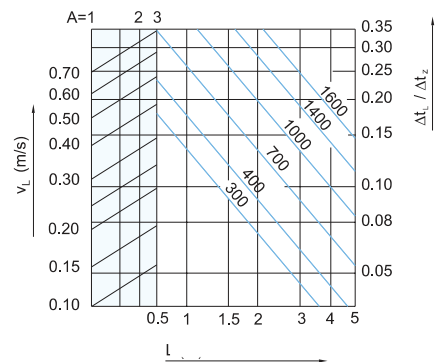
**625/54**



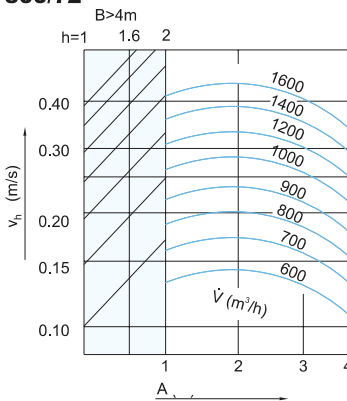
**625/54**



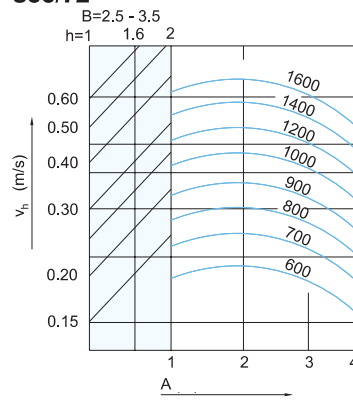
**625/54**



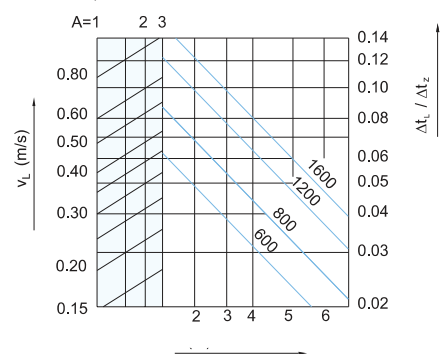
**800/72**



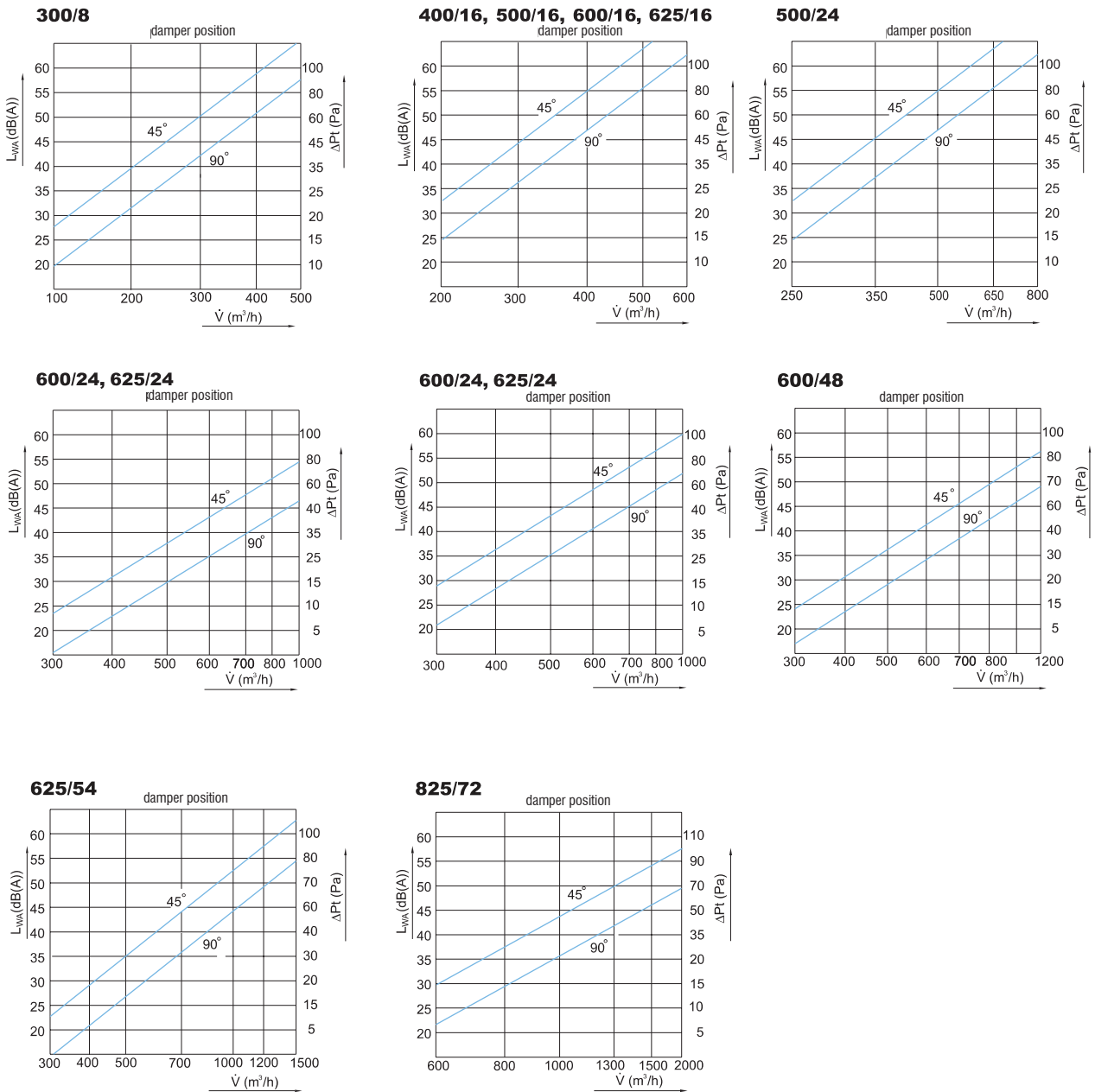
**800/72**



**800/72, 825/72**

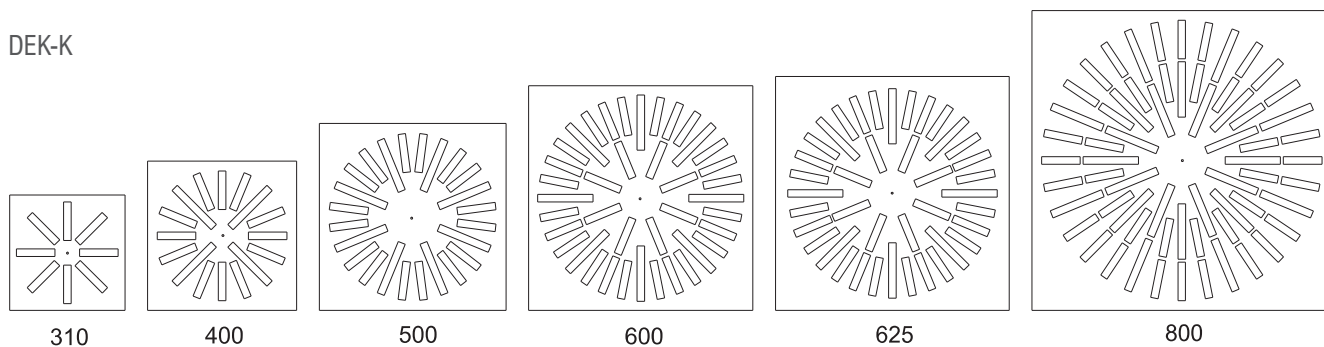


Air pressure drop and sound power level diagrams depending on damper position

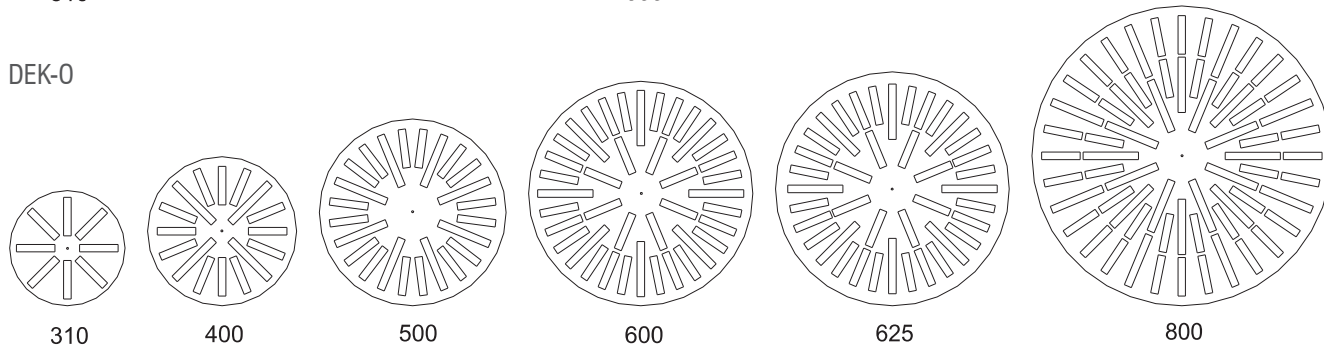


## ADJUSTABLE CEILING DIFFUSERS

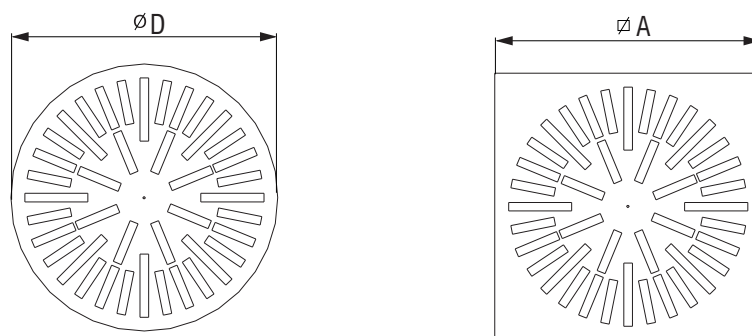
### DEK-K



### DEK-O



| DEK | ∅ A [mm] | ∅D [mm] | Number of outlets | A <sub>ef</sub> [m <sup>2</sup> ] | ∅d [mm] |
|-----|----------|---------|-------------------|-----------------------------------|---------|
| 310 | 308      | 308     | 8                 | 0,012                             | 158     |
| 400 | 398      | 398     | 16                | 0,0248                            | 198     |
| 500 | 498      | 498     | 24                | 0,0392                            | 248     |
| 600 | 595      | 595     | 40                | 0,0565                            | 248     |
| 625 | 623      | 623     | 40                | 0,0565                            | 248     |
| 800 | 798      | 798     | 64                | 0,0938                            | 313     |



### Ordering key:

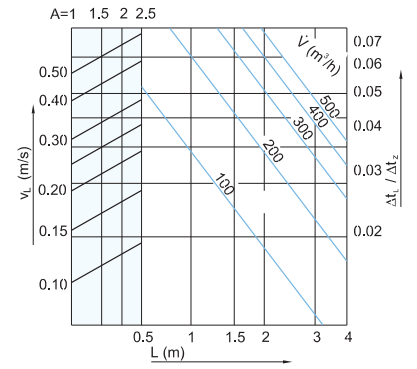
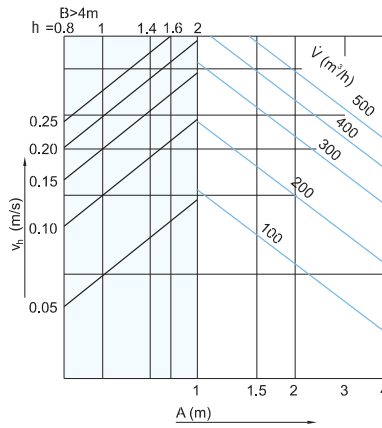
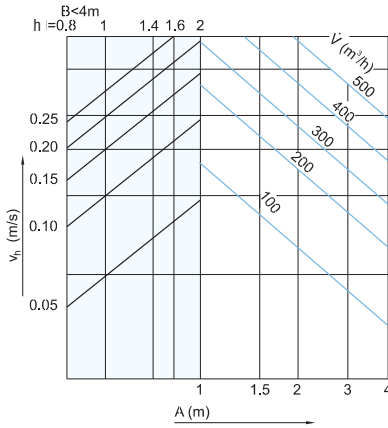
|                                     |                |                 |            |            |            |             |            |
|-------------------------------------|----------------|-----------------|------------|------------|------------|-------------|------------|
| Type                                | <b>DEK - K</b> | <b>- 600/16</b> | <b>- B</b> | <b>- A</b> | <b>- H</b> | <b>- ∅d</b> | <b>- Z</b> |
| <b>K</b> - square diffuser          |                |                 |            |            |            |             |            |
| <b>O</b> - round diffuser           |                |                 |            |            |            |             |            |
| Size                                |                |                 |            |            |            |             |            |
| <b>B</b> - white discharge elements |                |                 |            |            |            |             |            |
| <b>C</b> - black discharge elements |                |                 |            |            |            |             |            |
| <b>A</b> - supply air               |                |                 |            |            |            |             |            |
| <b>B</b> - exhaust air              |                |                 |            |            |            |             |            |
| <b>H</b> - horizontal connection    |                |                 |            |            |            |             |            |
| <b>V</b> - vertical connection      |                |                 |            |            |            |             |            |
| Connection diameter                 |                |                 |            |            |            |             |            |
| Insulation                          |                |                 |            |            |            |             |            |

\*Screws are not delivered

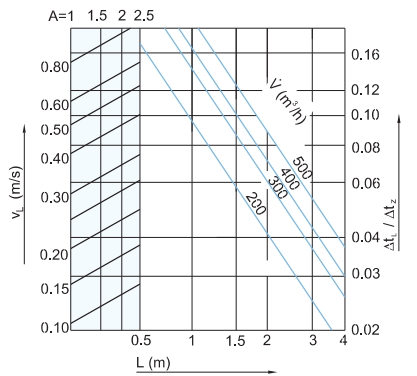
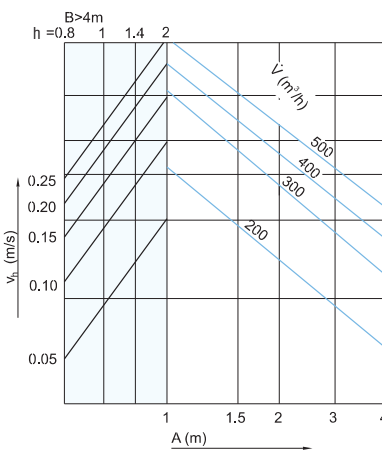
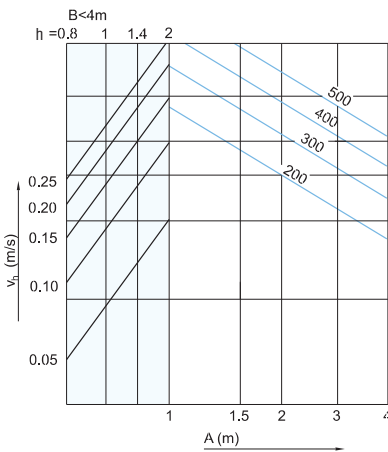
SELECTION DIAGRAMS FOR DEK-K AND DEK-O

Diagrams of mean jet velocity  $v_n$  at distance B and diagrams of mean jet velocity along the wall  $v_L$  and temperature ratio for diffuser DEK (310 - 500)

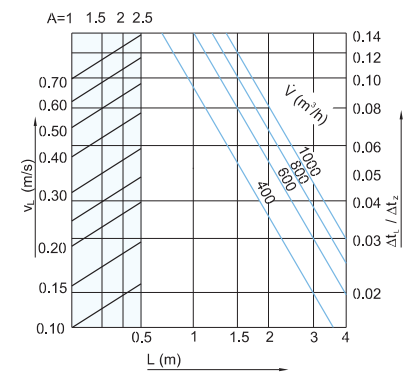
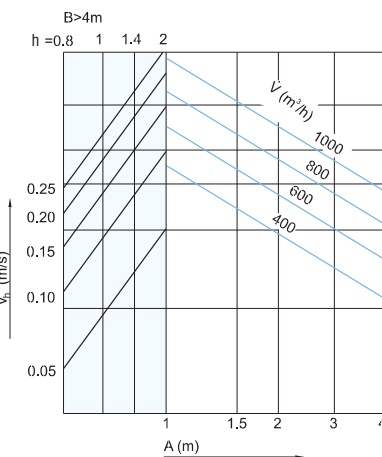
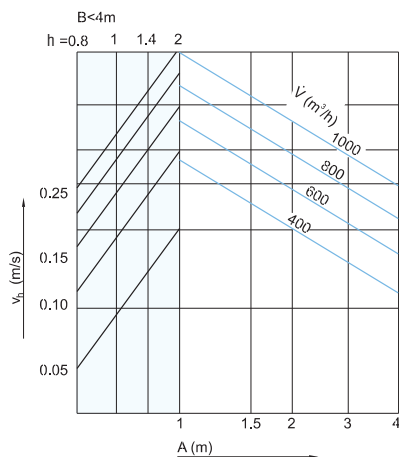
310



400



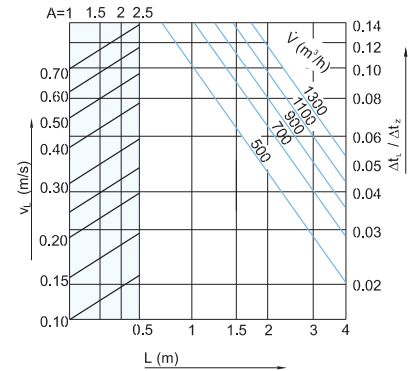
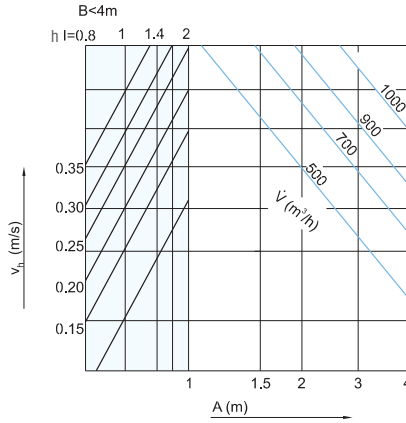
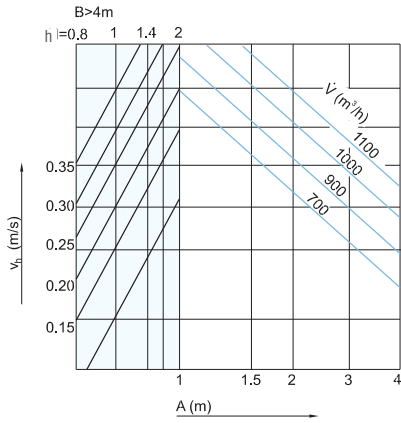
500



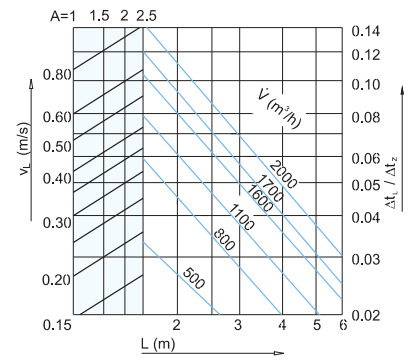
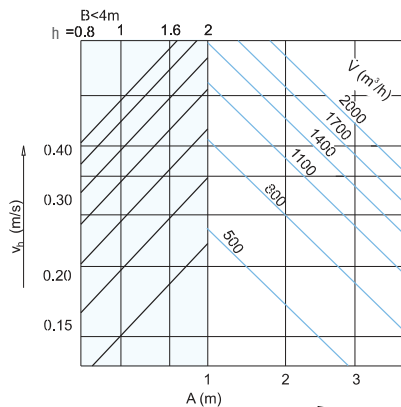
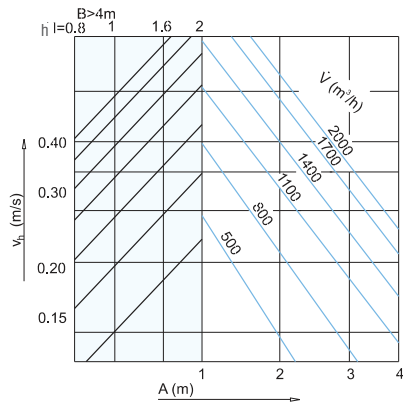
## ADJUSTABLE CEILING DIFFUSERS

Diagrams of mean jet velocity  $v_h$  at distance B and diagrams of mean jet velocity along the wall  $v_L$  and temperature ratio for diffuser DEK (600 - 800)

### 600,625

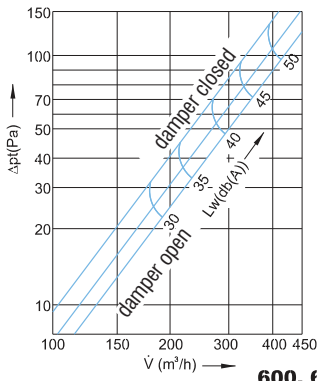


### 800

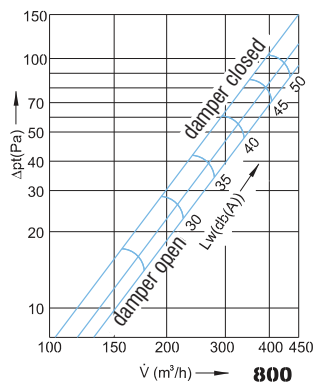


Air pressure drop and sound power level diagrams depending on damper position (for diffuser with plenum box)

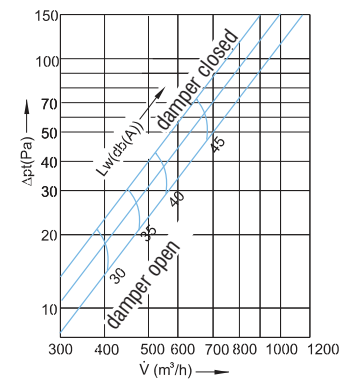
### 310



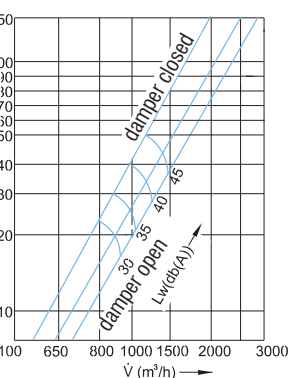
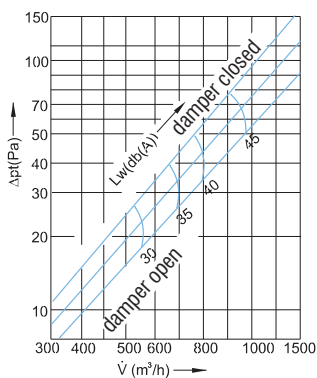
### 400

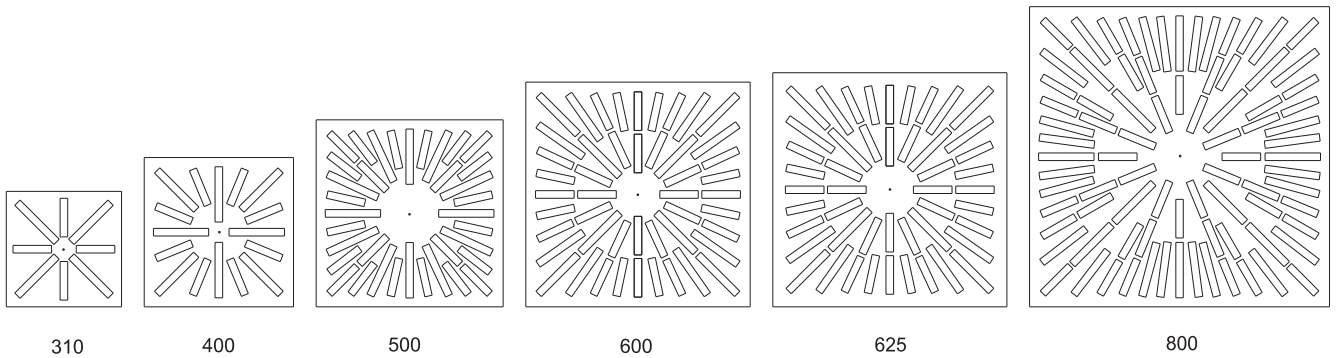


### 500

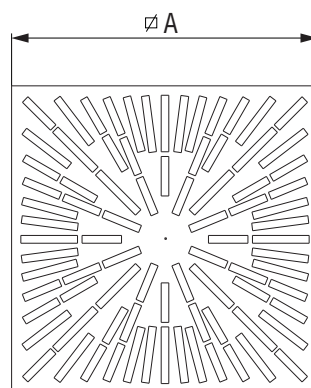


### 600, 625



**DEU**


| DEU | $\phi A$<br>[mm] | $\phi D$<br>[mm] | Number of outlets | $A_{ef}$<br>[m <sup>2</sup> ] | $\phi d$<br>[mm] |
|-----|------------------|------------------|-------------------|-------------------------------|------------------|
| 310 | 308              | -                | 8                 | 0,0192                        | 158              |
| 400 | 398              | -                | 16                | 0,0248                        | 198              |
| 500 | 498              | -                | 36                | 0,0517                        | 248              |
| 600 | 595              | -                | 48                | 0,0718                        | 248              |
| 625 | 623              | -                | 48                | 0,0718                        | 248              |
| 800 | 798              | -                | 84                | 0,1359                        | 313              |


**Ordering key:**

Type **DEU - 600 - B - A - H -  $\phi d$  - Z**

Size

**B** - white discharge elements

**C** - black discharge elements

**A** - supply air

**B** - exhaust air

**H** - horizontal connection

**V** - vertical connection

Connection diameter

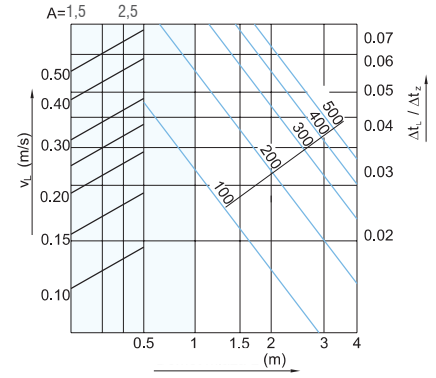
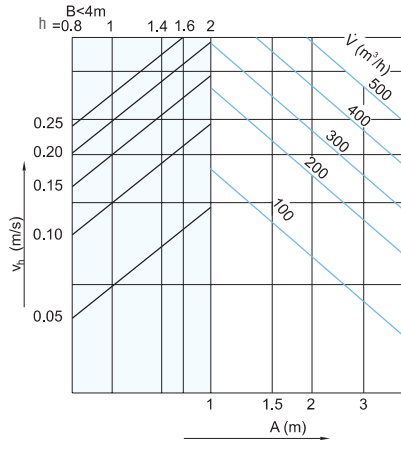
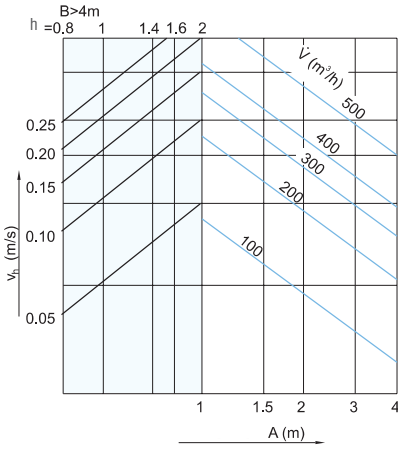
Insulation

\*Screws are not delivered

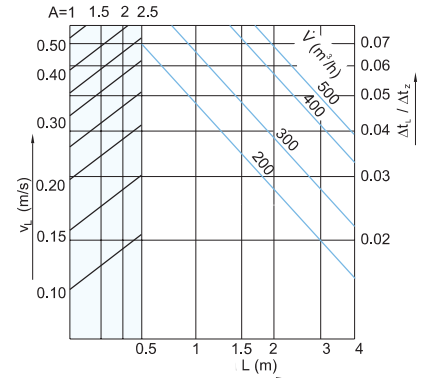
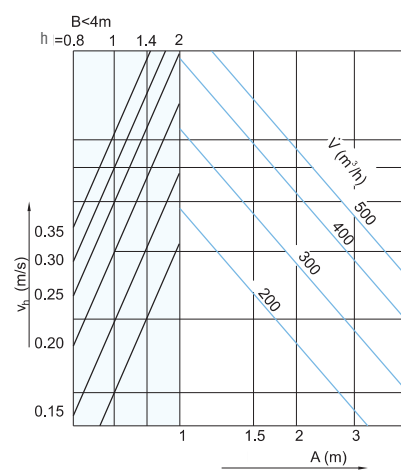
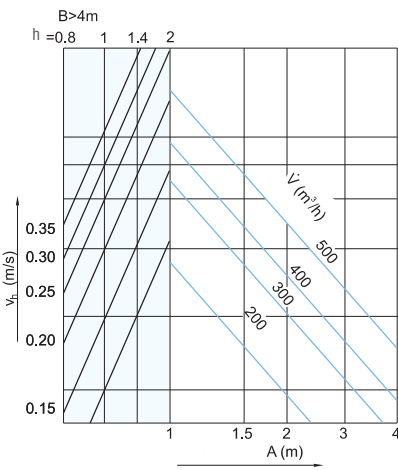
**SELECTION DIAGRAM FOR DEU**

Diagrams of mean jet velocity  $v_h$  at distance B and diagrams of mean jet velocity along the wall  $v_L$  and temperature ratio for diffuser DEU (310 - 500)

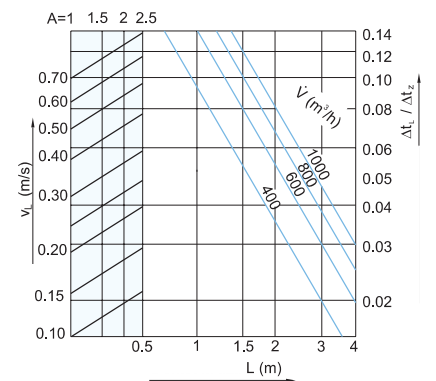
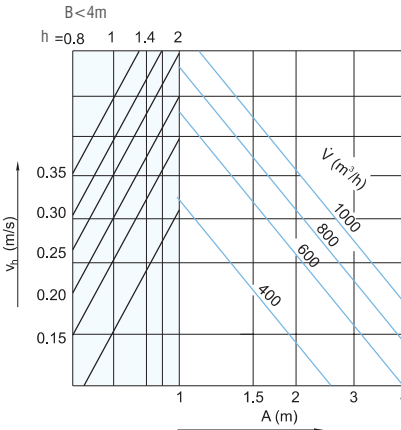
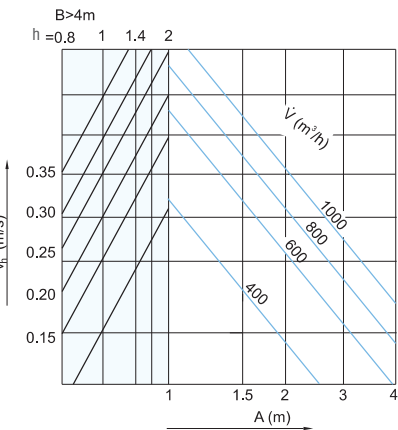
**310**



**400**

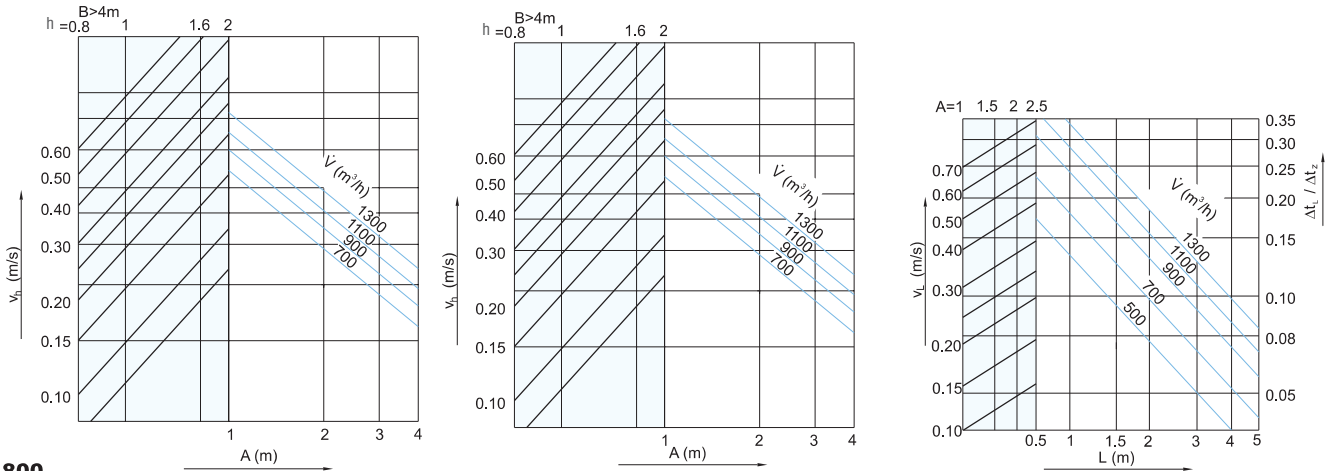


**500**

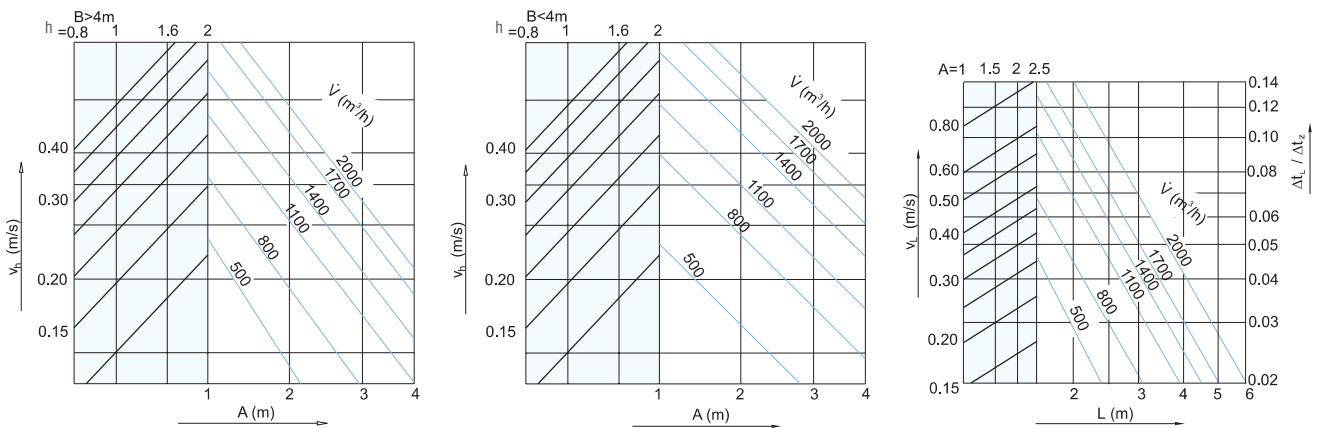


Diagrams of mean jet velocity  $v_h$  at distance B and diagrams of mean jet velocity along the wall  $v_L$  and temperature ratio for diffuser DEU (600 - 800)

**600, 625**

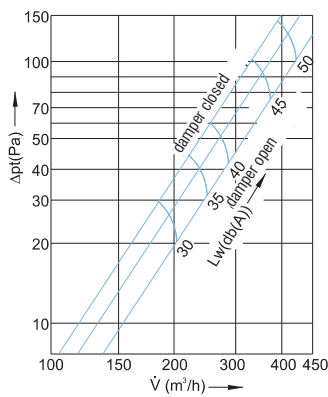


**800**

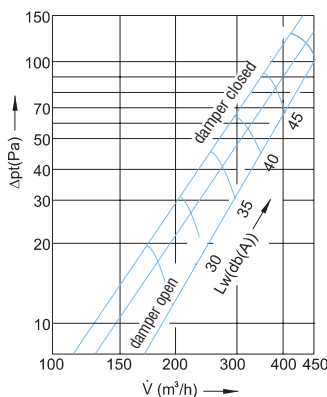


Air pressure drop and sound power level diagrams depending on damper position (for diffuser with plenum box)

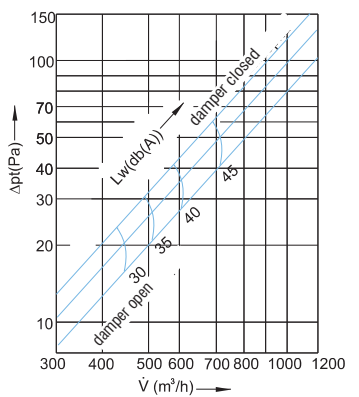
**310**



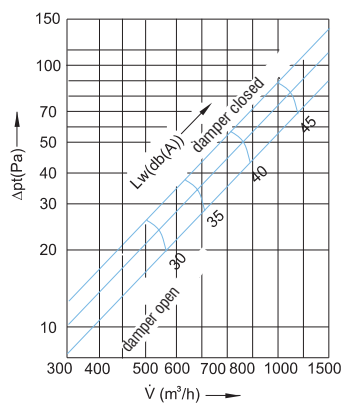
**400**



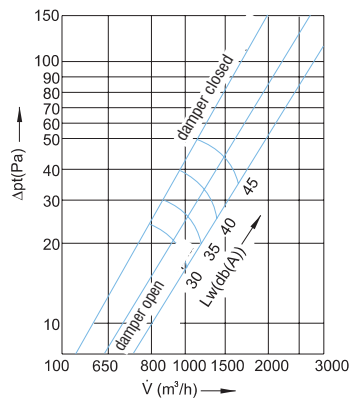
**500**



**600, 625**



**800**

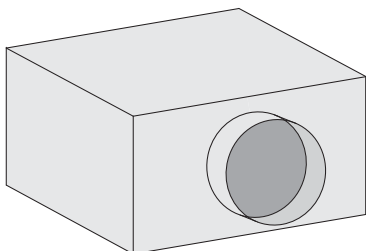


## ADJUSTABLE CEILING DIFFUSERS

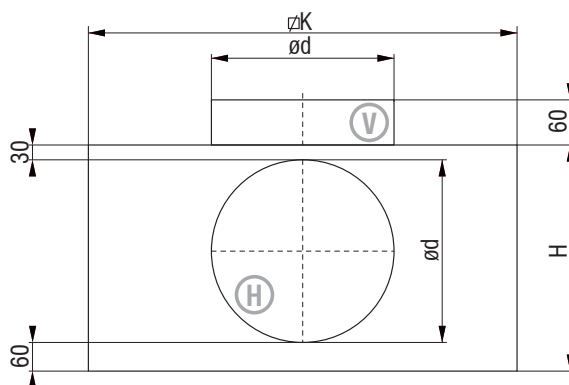
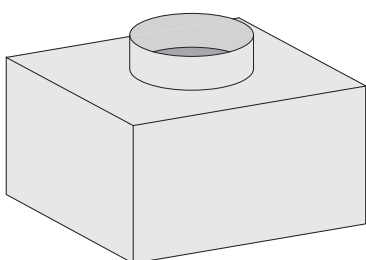
### PLENUM BOXES

#### Plenum box UPK1

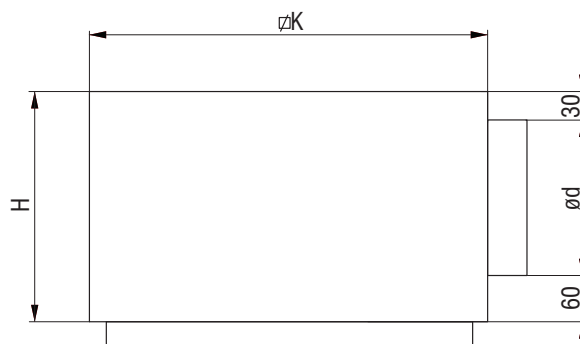
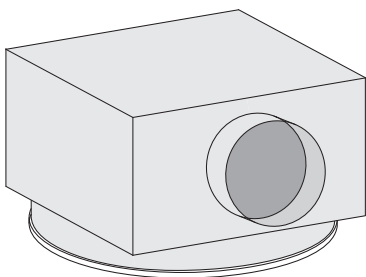
- horizontal connection UPK1 - H



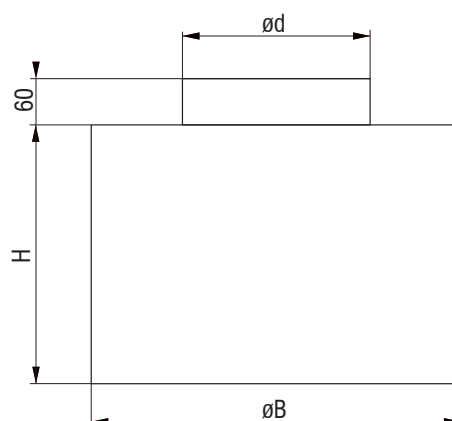
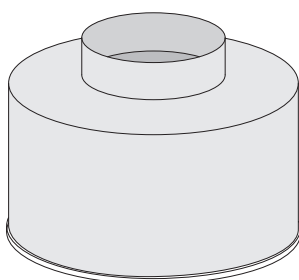
-vertical connection UPK1 - V



#### Plenum box for round diffuser UPK2



#### Plenum box for round diffuser UPK3



| UPK1 | øK [mm] | H [mm] | ød [mm] |
|------|---------|--------|---------|
| 300  | 284     | 250    | 158     |
| 310  | 294     | 250    | 158     |
| 400  | 384     | 290    | 198     |
| 500  | 484     | 290    | 198     |
| 600  | 590     | 340    | 248     |
| 625  | 615     | 340    | 248     |
| 800  | 790     | 405    | 313     |

| UPK2 | øK [mm] | H [mm] | ød [mm] |
|------|---------|--------|---------|
| 300  | 284     | 250    | 158     |
| 310  | 294     | 250    | 158     |
| 400  | 384     | 290    | 198     |
| 500  | 484     | 290    | 198     |
| 600  | 590     | 340    | 248     |
| 625  | 615     | 340    | 248     |
| 800  | 790     | 405    | 313     |

| UPK3 | øB [mm] | H [mm] | ød [mm] |
|------|---------|--------|---------|
| 300  | 284     | 200    | 158     |
| 310  | 294     | 200    | 158     |
| 400  | 384     | 200    | 198     |
| 500  | 484     | 200    | 198     |
| 600  | 590     | 200    | 248     |
| 625  | 615     | 200    | 248     |
| 800  | 790     | 300    | 313     |

Example 1:

**Given:**

Type DEV 300/8  
 $A = 2 \text{ m}$   
 $h = 1.6 \text{ m}$   
 $L = 3 \text{ m}$   
 $B > 4 \text{ m}$   
 $V = 150 \text{ m}^3/\text{h}$

**Solution:**

**Diagram pg. 5**

$v_h = 0.07 \text{ m/s}$

$v_L = 0.13 \text{ m/s}$

**Diagram pg. 7**

Damper open 45%

$\rho = 24 \text{ Pa}$

$L_{WA} = 34 \text{ dB (A)}$

