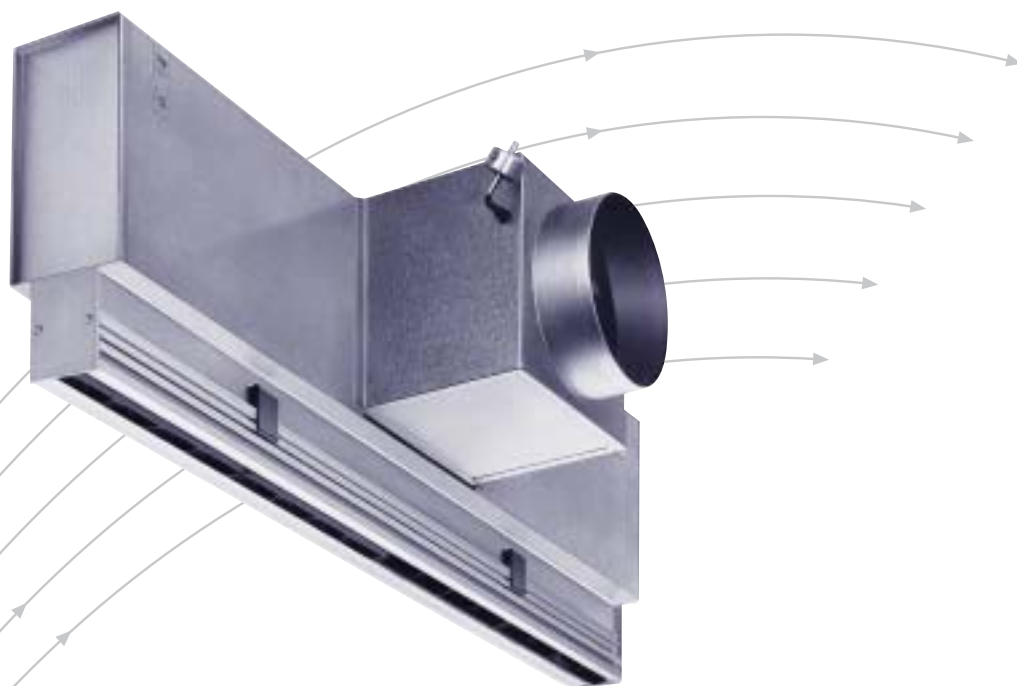


Slot Diffuser

- Type VSD35-Varyset
- for Variable Air Volume Systems



TROX[®] TECHNİK

• TROX GmbH
• Heinrich-Trox-Platz
• D-47504 Neukirchen-Vluyn

Telephone +49/28 45/2 02-0
Telefax +49/28 45/2 02-2 65
e-mail trox@trox.de
www.troxtechnik.com

Contents · Description

Description	2	Nomenclature	7
Technical Characteristics	3	Technical Data VSD35-Varyset	7
Construction · Dimensions	4	Order Details VSD35-Varyset	19
Acoustic Data: Spectra VSD35-Varyset	5		



Fig. 1: Without Varyset, $\dot{V} = 22$ l/s; $\Delta t = -8$ K

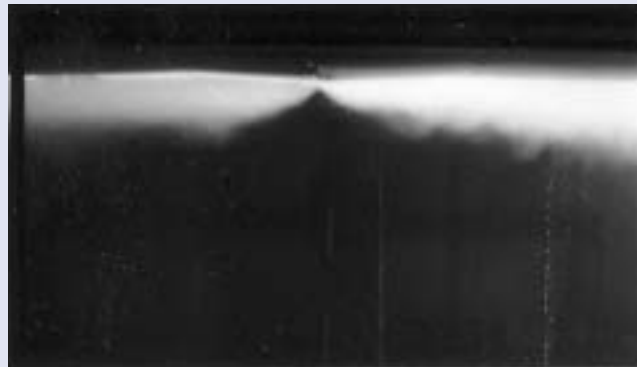


Fig. 3: VSD35-1-Varyset, $\dot{V} = 22$ l/s; $\Delta t = -8$ K



Fig. 2: Without Varyset, $\dot{V} = 11$ l/s; $\Delta t = -8$ K



Fig. 4: VSD35-1-Varyset, $\dot{V} = 11$ l/s; $\Delta t = -8$ K

The type VSD35-Varyset slot diffuser is available with 1 to 4 slots and is ideal for use in variable air volume systems (VAV systems). Despite a large volume flow range from 100 % to 25 %, the slot diffusers retain stable discharge characteristics even when cooling.

The automatic Varyset flap in the plenum box requires no external power supply.

Diffusers of type VSD35-Varyset can be used in rooms with heights up to 4.00 m. They are characterised by high induction, which results in rapid decay of supply air velocity and temperature differential. The recommended supply air temperature differential range is plus or minus 10 K.



Fig. 5: VSD35-1-Varyset, $\dot{V} = 44$ l/s; $\Delta t = -8$ K

Technical Characteristics

The Trox-Varyset system largely eliminates such problems as:

- Premature supply air detachment from the ceiling in cooling mode (resulting in drafts)
- Supply air not penetrating far enough; insufficient air movement in the occupied zone
- Large temperature gradient in the occupied zone, particularly in heating mode.

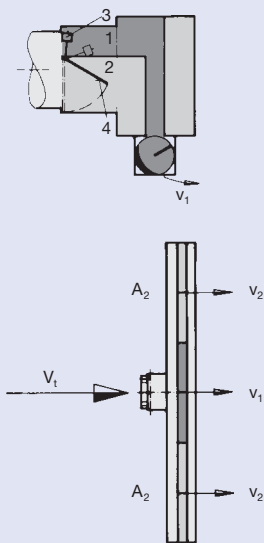
The diagrams below show the function of the VSD-Varyset. The total slot length of the diffuser and plenum box are divided into sections A_1 and A_2 . Section A_1 of the plenum and slot diffuser are connected to the bypass section of the Varyset element (1); whilst sections A_2 are connected to the

part of the Varyset element (2) containing the Varyset flap (4). The Varyset flap is controlled by the dynamic pressure in the air stream, i.e.: it does not require an external power source. This ensures that the volume flow in section A_1 remains almost constant. The balance weight (3) adjusts the Varyset flap such that the discharge velocities v_1 and v_2 at $\dot{V} = 100\%$ are virtually constant.

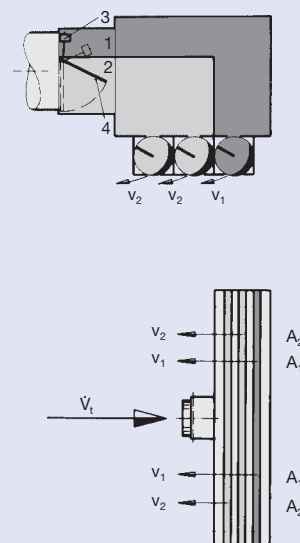
At $\dot{V} = 25\%$ the Varyset flap is closed such that the discharge velocity v_1 is only slightly reduced even allowing for leakage across the closed flap.

The diagrams below show the discharge characteristics of the VSD35-Varyset in comparison with the VSD35 without Varyset.

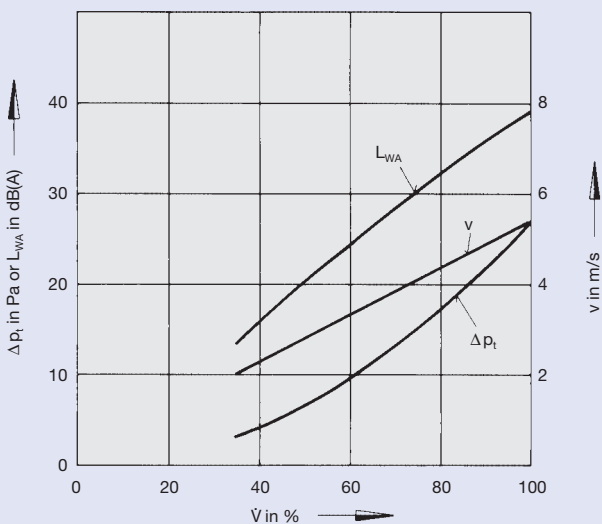
Functional Principles of VSD-1-Varyset



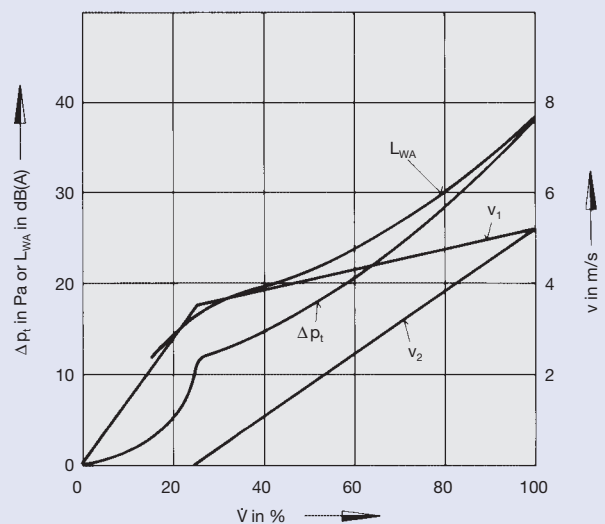
Functional Principles of VSD-3-Varyset



Flow characteristics of VSD35 without Varyset



Flow characteristics of VSD35 with Varyset



Construction · Dimensions

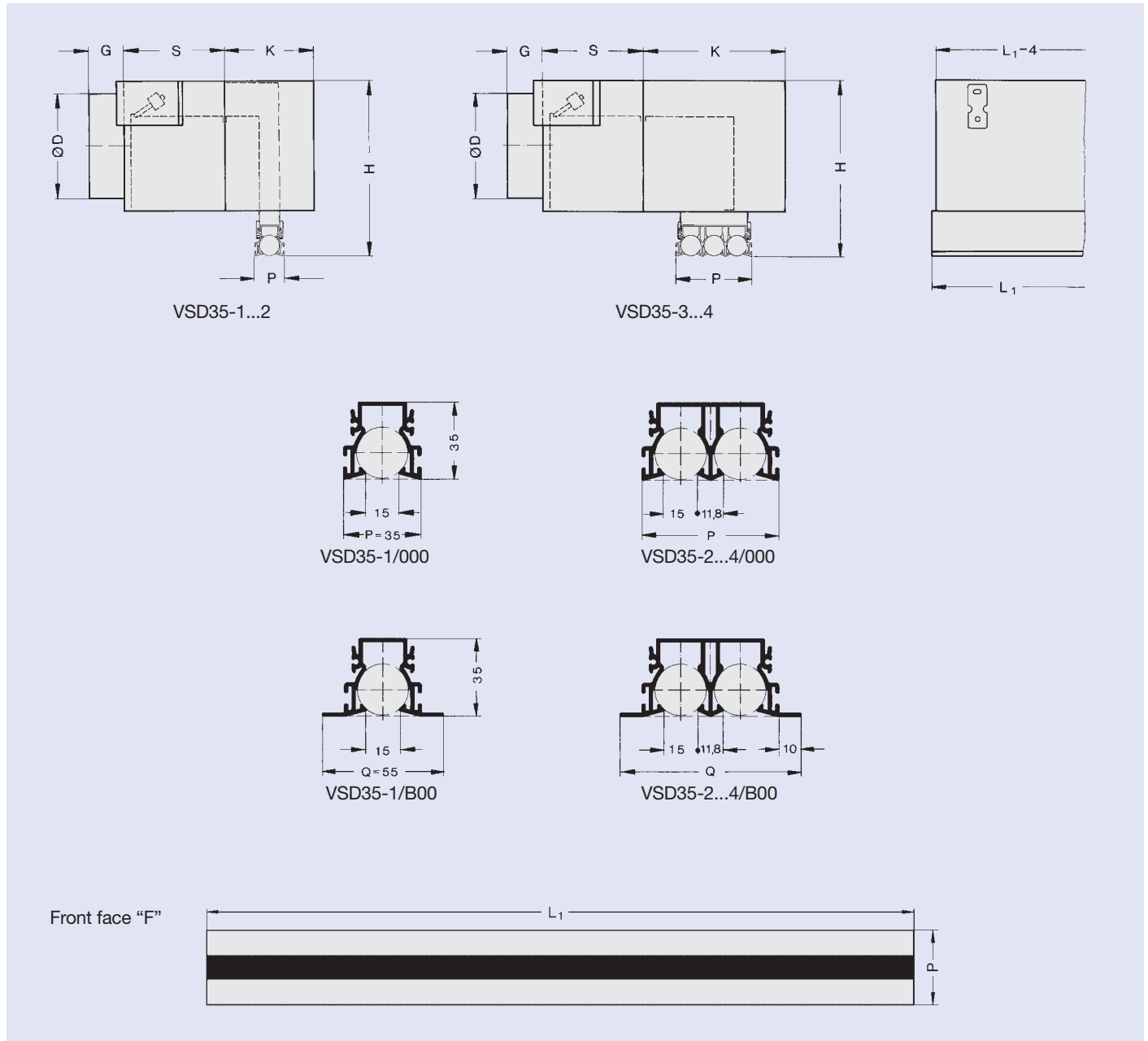
The diffuser is supplied with a rear mounted plenum box. The Varyset flap is factory set to the required volume flow range. The moving balance weight arm is protected by a cover section.

The supply air is connected to the circular side entry spigot.

End caps and alignment/fixing details for Type VSD35 are shown in leaflets 2/2.6/EN/...

	Number of slots "n"	ØD	G	H	K	S	P	Q	R
VSD35	1	123	46	203	100	115	35	55	68
	2	158	48	233	138	150	62	82	95
	3	178	40	251	176	160	89	109	122
	4	198	48	283	214	177	116	136	149

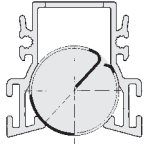
L ₁	900	1050	1200	1350	1500
----------------	-----	------	------	------	------



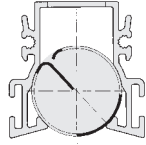
Acoustic Data: Spectra VSD35-Varyset

Air discharge

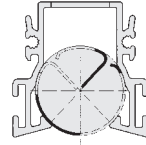
Air discharge horizontal right



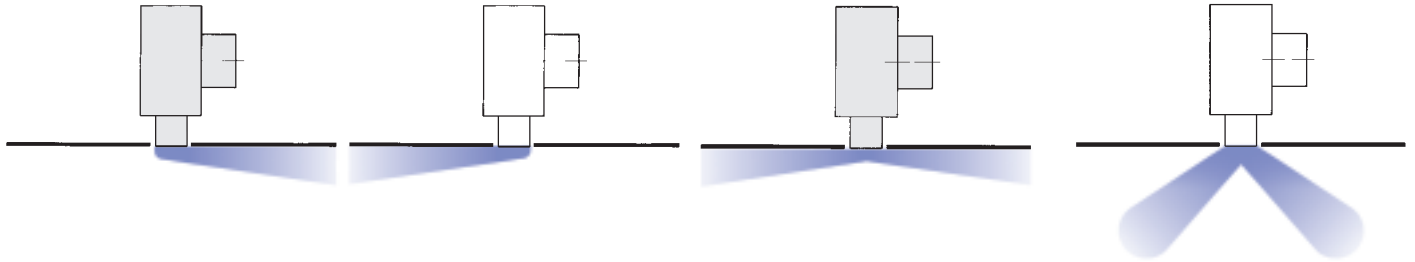
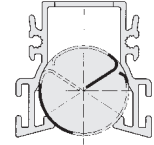
Air discharge horizontal left



Air discharge alternating horizontal



Air discharge alternating angled



Air discharge: one or two directions, horizontal and alternating horizontal

Type	Length mm	\dot{V}_t		Octave band centre frequency Hz								L_{WA} dB(A)	L_{WNC} NC
		l/s	m ³ /h										
				63	125	250	500	1000	2000	4000	8000		
VSD35-1	900	35	126	33	40	46	38	31	22	8	–	40	35
		30	108	31	37	41	33	25	15	–	–	35	29
		15	54	29	21	26	18	6	3	–	–	20	12
		7,5	27	21	13	17	6	–	–	–	–	10	–
	1200	45	162	42	43	49	41	33	24	12	–	43	39
		40	144	38	39	45	37	29	20	8	–	39	34
1500	20	72	32	25	25	21	10	2	5	15	22	14	
	10	36	26	19	19	15	4	–	–	–	15	< 10	
	50	180	35	41	49	39	31	23	–	–	42	38	
	40	144	31	39	42	33	25	14	–	–	36	31	
VSD35-2	900	20	72	30	29	32	24	14	6	–	–	26	19
		12,5	45	28	27	30	22	12	4	–	–	24	17
		50	180	39	41	44	36	28	20	–	–	38	33
		40	144	45	37	39	31	22	13	–	–	33	26
	1200	20	72	36	25	26	19	14	14	–	–	22	15
		10	36	30	19	20	13	8	8	–	–	16	9
1500	70	252	44	44	46	37	30	21	–	–	40	35	
	60	216	42	42	42	33	25	15	–	–	36	31	
	30	108	43	31	28	19	2	2	–	–	23	14	
	15	54	34	25	23	6	–	–	–	–	16	< 10	
1500	80	288	41	43	48	39	35	26	–	–	42	37	
	60	216	35	38	41	33	27	15	5	–	35	29	
	40	144	41	29	30	25	16	4	–	–	26	18	
	20	72	23	22	24	16	6	4	–	–	18	< 10	
VSD35-3	900	70	252	38	41	45	38	30	27	17	15	40	34
		60	216	40	41	43	35	26	21	–	–	37	32
		30	108	40	29	34	20	–	–	–	–	26	20
		15	54	31	12	23	–	–	–	–	–	15	< 10
	1200	90	324	43	41	47	40	33	29	20	–	42	37
		80	288	43	39	45	37	29	25	15	–	39	34
1500	40	144	32	31	35	25	14	10	–	–	28	22	
	20	72	29	23	29	15	5	4	–	–	21	15	
	100	360	35	44	47	41	33	28	18	–	42	36	
	80	288	32	41	44	38	30	25	15	–	39	33	
VSD35-4	900	50	180	44	37	37	30	21	15	–	–	32	25
		25	90	37	28	28	20	14	11	5	–	23	14
		80	288	41	44	46	37	30	23	–	–	40	36
		60	216	41	42	43	32	22	12	–	–	36	31
	1200	40	144	37	38	39	28	18	8	–	–	32	27
		20	72	40	33	32	18	7	–	–	–	25	18
1500	100	360	44	43	46	38	30	25	15	–	40	35	
	60	216	40	38	39	28	19	11	–	–	32	26	
	40	144	28	34	34	22	11	7	–	–	27	21	
	25	90	30	27	29	11	3	6	–	–	21	15	
1500	100	360	40	43	44	37	30	25	14	–	39	33	
	80	288	40	42	42	35	26	20	9	–	37	31	
	50	180	36	37	37	28	18	10	–	–	31	25	
	30	108	24	30	32	19	9	3	–	–	25	19	

Acoustic Data: Spectra VSD35-Varyset

Air discharge: alternating angled

Type	Length mm	\dot{V}_t		Octave band centre frequency Hz								L _{WA} dB(A)	L _{WNC} NC
				l/s	m³/h	63	125	250	500	1000	2000		
VSD35-1	900	35	126	32	42	46	40	35	31	-	-	42	36
		30	108	29	39	42	35	30	23	-	-	37	30
		7,5	27	30	24	22	13	2	-	-	-	16	< 10
	1200	45	162	41	47	49	43	35	29	16	-	44	39
		40	144	32	43	45	39	31	24	-	-	40	34
		10	36	38	23	19	10	6	9	-	-	17	10
1500	50	180	34	43	49	42	35	30	-	-	44	39	
	40	144	28	38	44	36	28	21	-	-	38	33	
	12,5	45	25	23	31	22	11	4	-	-	24	17	
VSD35-2	900	50	180	42	41	45	38	32	27	-	-	40	34
		40	144	36	38	41	33	26	18	-	-	35	29
		10	36	30	21	22	15	9	9	-	-	18	10
	1200	70	252	44	43	46	39	33	26	-	-	41	36
		60	216	43	42	44	36	29	19	-	-	38	33
		15	54	35	22	22	6	2	2	-	-	16	< 10
1500	80	288	40	44	47	41	37	29	-	-	43	37	
	60	216	42	38	42	34	28	16	-	-	36	30	
	20	72	24	20	22	14	1	1	-	-	16	< 10	
VSD35-3	900	70	252	44	45	48	41	34	31	19	-	43	38
		60	216	41	42	45	38	31	28	16	-	40	34
		15	54	39	25	26	12	6	4	-	-	20	12
	1200	90	324	45	43	47	42	35	32	22	-	43	37
		80	288	42	42	46	40	32	29	17	-	41	35
		20	72	36	21	27	15	6	13	-	-	21	14
1500	100	360	47	45	48	43	35	32	21	-	44	38	
	80	288	46	41	44	38	29	25	13	-	39	33	
	25	90	32	28	28	19	14	13	-	-	23	14	
VSD35-4	900	80	288	39	45	47	40	34	30	-	-	42	36
		40	144	41	38	39	27	18	11	-	-	32	27
		20	72	35	30	31	17	6	7	-	-	24	18
	1200	100	360	41	45	47	40	33	28	-	-	42	37
		50	180	40	36	37	28	19	10	-	-	31	25
		25	90	30	28	28	12	5	8	-	-	21	14
1500	100	360	42	44	46	40	32	28	15	-	41	35	
	60	216	44	41	41	33	23	14	-	-	35	29	
	30	108	27	30	33	19	6	4	-	-	25	19	

Technical Data VSD35-1-Varyset

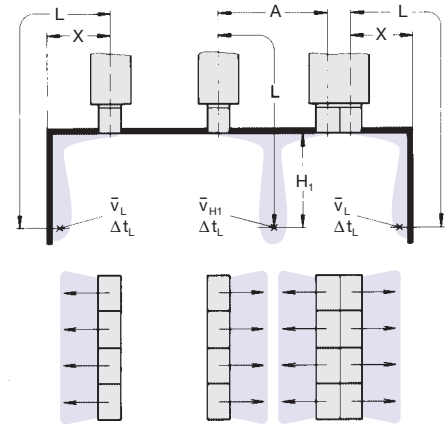
Air discharge: horizontal, one or two directions

Nomenclature

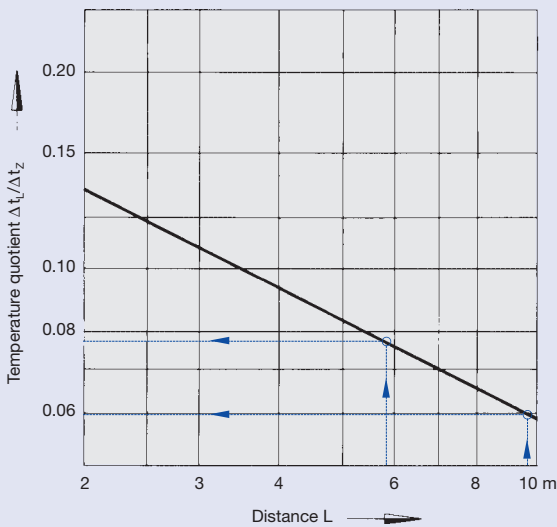
- \dot{V} in l/s · m: Volume flow per unit length
- \dot{V} in m³/h · m: Volume flow per unit length
- \dot{V}_t in l/s: Total volume flow per diffuser
- \dot{V}_t in m³/h: Total volume flow per diffuser
- A in m: Spacing between two diffusers
- H₁ in m: Distance between ceiling and occupied zone
- H_{1 max} in m: Maximum penetration depth when heating
- L in m: Distance from diffuser L = A/2 + H₁ or L = X + H₁
- v, v₁, v₂ in m/s: Discharge velocity
- \bar{v}_{H1} in m/s: Time average air velocity between two diffusers at distance H₁ from the ceiling
- \bar{v}_L in m/s: Time average air velocity at the wall at distance L
- v_{eff} in m/s: Effective jet velocity
- Δt_{H1} in K: Difference between core temperature at distance H₁ and room temperature
- Δt_L in K: Difference between core temperature and room temperature at distance L
- Δt_z in K: Temperature difference between supply and room air
- Δp_t in Pa: Total pressure drop
- L_{WA} in dB(A): A-weighted sound power level
- L_{WNC}: NC rating of sound power level L_{WNC} = L_{WA} - 6
- L_{WNR}: L_{WNR} = L_{WNC} + 2

L_{pA}, L_{pNC} : A-weighting and NC rating respectively of room sound pressure level
 L_{pA} ≈ L_{WA} - 8 dB, L_{pNC} ≈ L_{WNC} - 8 dB

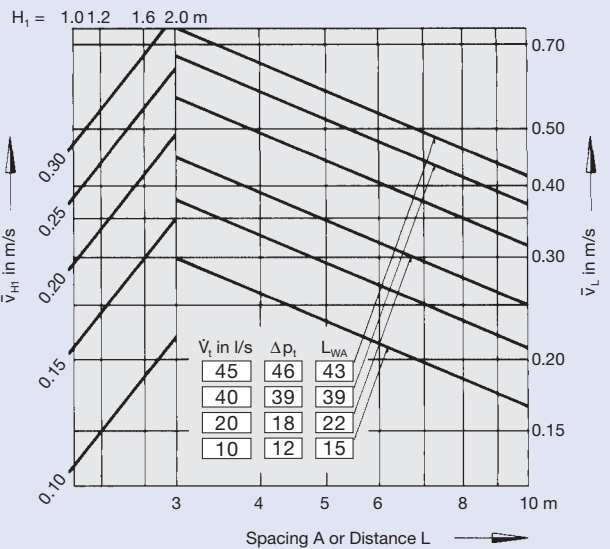
Diffuser Layout



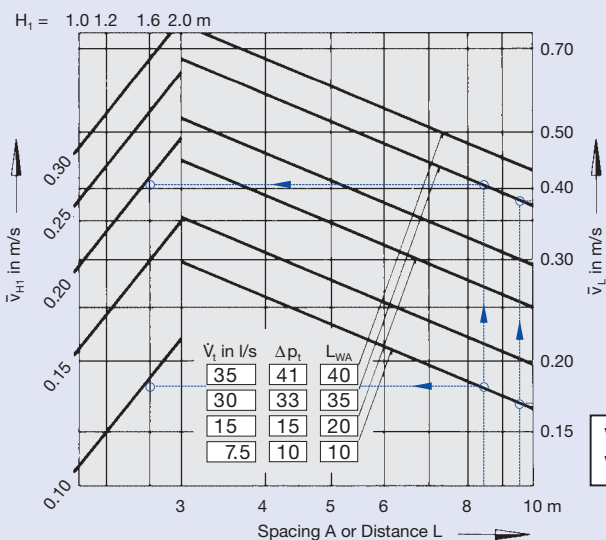
1 Temperature quotient



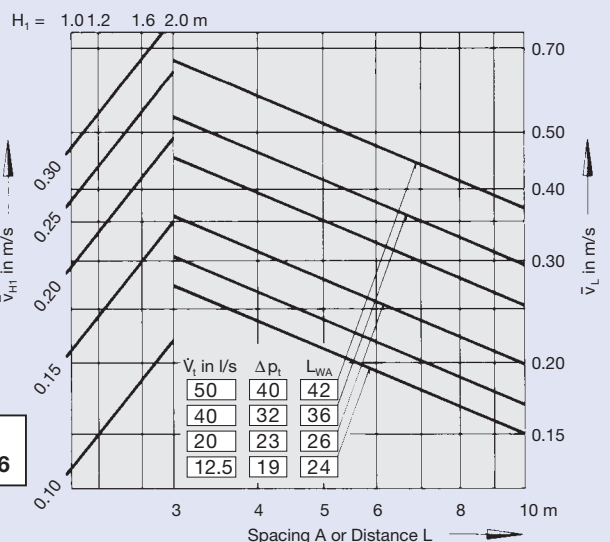
3 L₁ = 1200 mm



2 L₁ = 900 mm



4 L₁ = 1500 mm



\dot{V} [m³/h] =
 \dot{V} [l/s] x 3.6

Technical Data VSD35-2-Varyset

Air discharge: horizontal, one or two directions

Example

Data given:

VSD35-1-Varyset,
one or two directions, horizontal

Slot length $L_1 = 900 \text{ mm}$
 Total volume flow per diffuser $\dot{V}_t = 30 \dots 7.5 \text{ l/s}$
 Diffuser spacing $A = 8.5 \text{ m}$
 Distance between ceiling and occupied zone $H_1 = 1.6 \text{ m}$
 Distance between diffuser centre and wall $X = 8.0 \text{ m}$

Diagram 2:

$$L = X + H_1 = 8.0 + 1.6 = 9.6 \text{ m}$$

\dot{V}_t	\bar{v}_{H1}	\bar{v}_L	Δp_t	L_{WA}
30 l/s	0.19 m/s	0.38 m/s	33 Pa	35 dB(A)
7.5 l/s	< 0.10 m/s	0.17 m/s	10 Pa	10 dB(A)

Diagram 1:

Between two diffusers:

$$L = A/2 + H_1 = 4.25 + 1.6 = 5.85 \text{ m}$$

$$\Delta t_L / \Delta t_Z = 0.077$$

At the wall:

$$L = X + H_1 = 8.0 + 1.6 = 9.6 \text{ m}$$

$$\Delta t_L / \Delta t_Z = 0.06$$

Temperature quotient

Effective Jet Velocity

\dot{V}_t in l/s

$$v_{\text{eff}} = \frac{\dot{V}_t}{s_{\text{eff}} \cdot L_1 \cdot 1000} \text{ [m/s]}$$

\dot{V}_t in m³/h

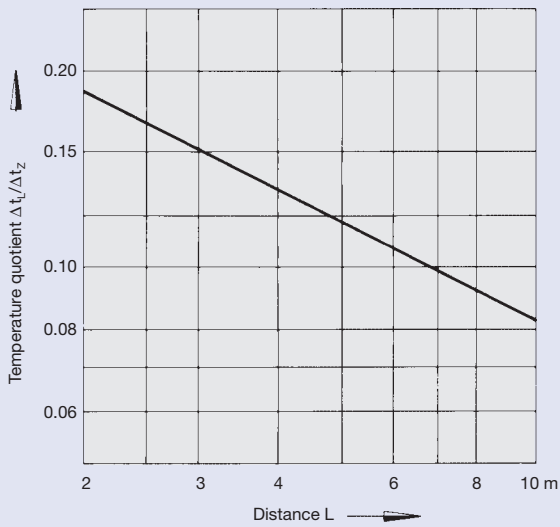
$$v_{\text{eff}} = \frac{\dot{V}_t}{s_{\text{eff}} \cdot L_1 \cdot 3600} \text{ [m/s]}$$

L_1 = length of slot in m

Effective Slot Width

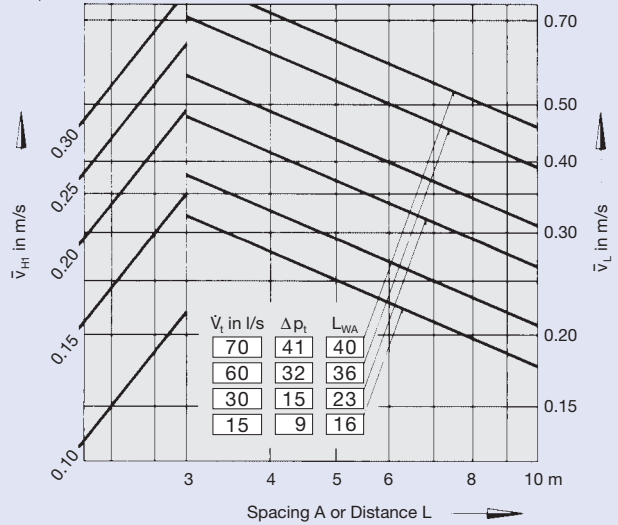
s_{eff} in m	Air discharge horizontal	Air discharge angled
VSD35	0.0062	0.0049

5 Temperature quotient



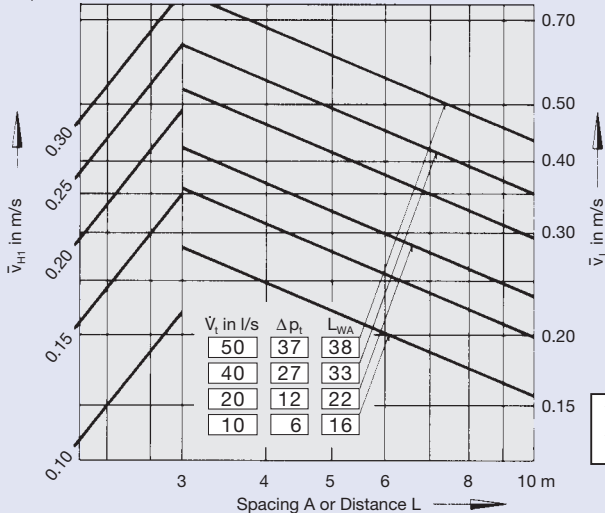
7 $L_1 = 1200 \text{ mm}$

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0 \text{ m}$



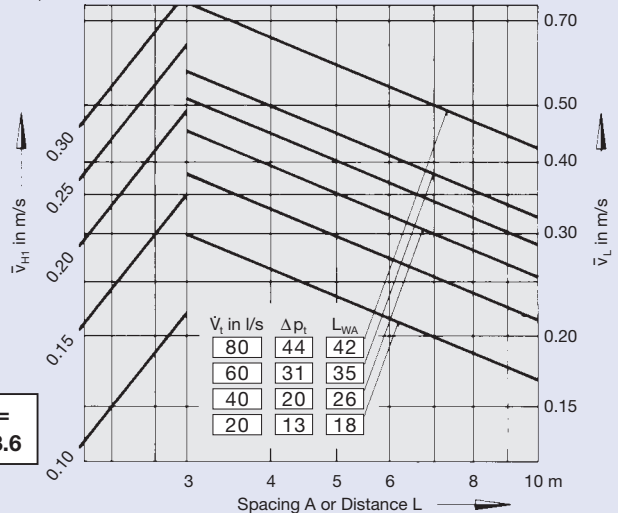
6 $L_1 = 900 \text{ mm}$

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0 \text{ m}$



8 $L_1 = 1500 \text{ mm}$

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0 \text{ m}$

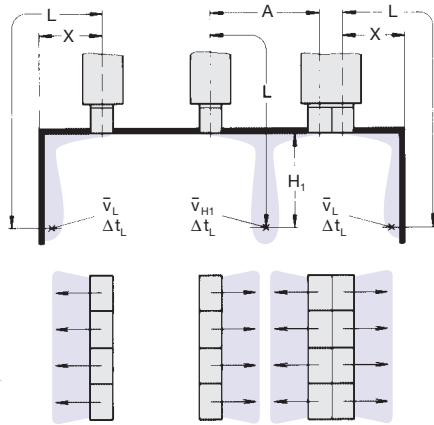


$$\dot{V} \text{ [m}^3\text{/h]} = \dot{V} \text{ [l/s]} \times 3.6$$

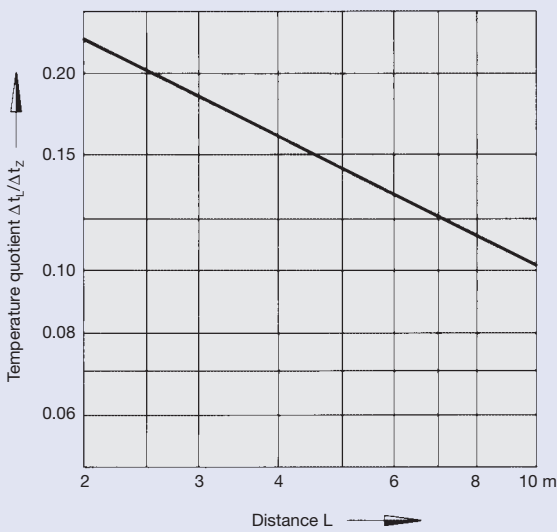
Technical Data VSD35-3-Varyset

Air discharge: horizontal, one or two directions

Diffuser Layout

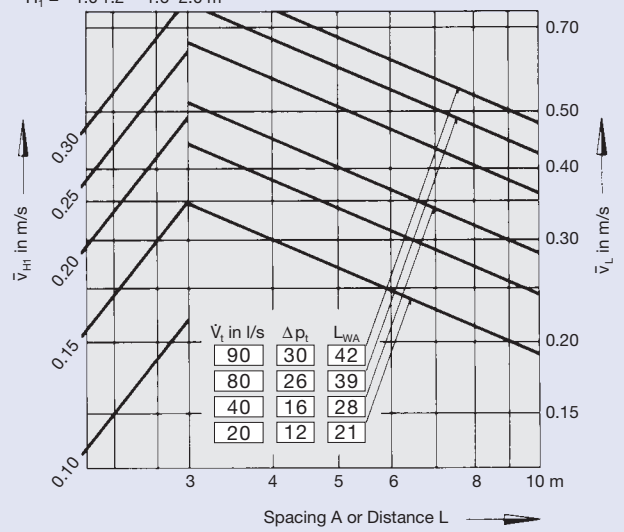


9 Temperature quotient



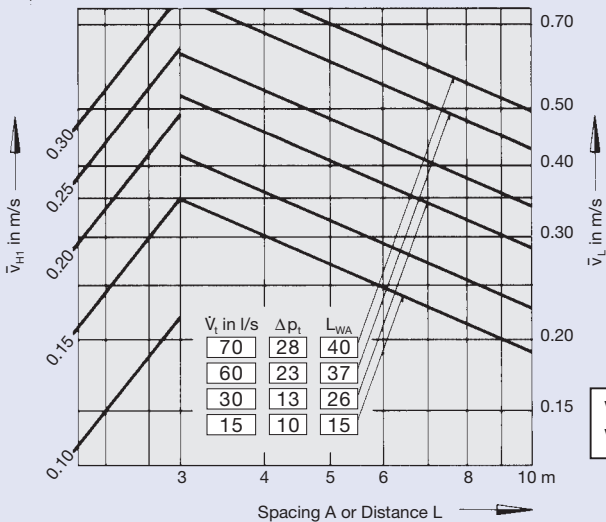
11 $L_1 = 1200$ mm

$H_1 = 1.01.2 \quad 1.6 \quad 2.0$ m



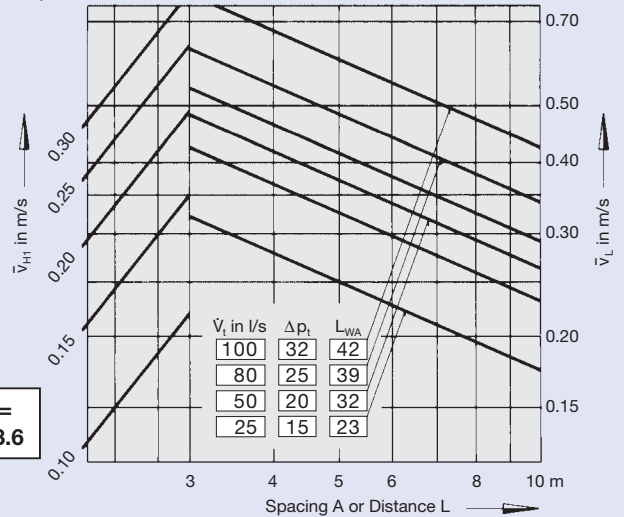
10 $L_1 = 900$ mm

$H_1 = 1.01.2 \quad 1.6 \quad 2.0$ m



12 $L_1 = 1500$ mm

$H_1 = 1.01.2 \quad 1.6 \quad 2.0$ m

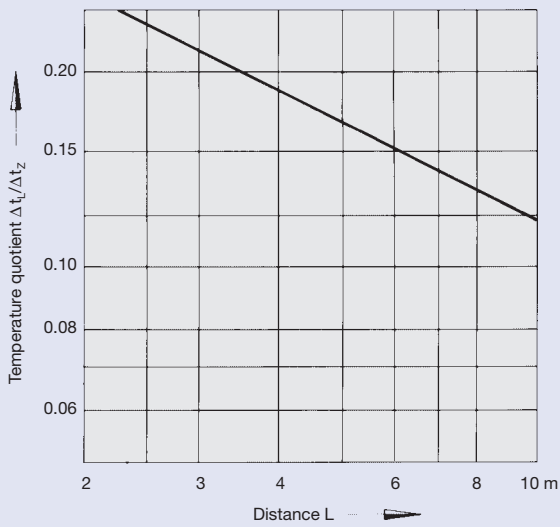


$$\dot{V} \text{ [m}^3\text{/h]} = \dot{V} \text{ [l/s]} \times 3.6$$

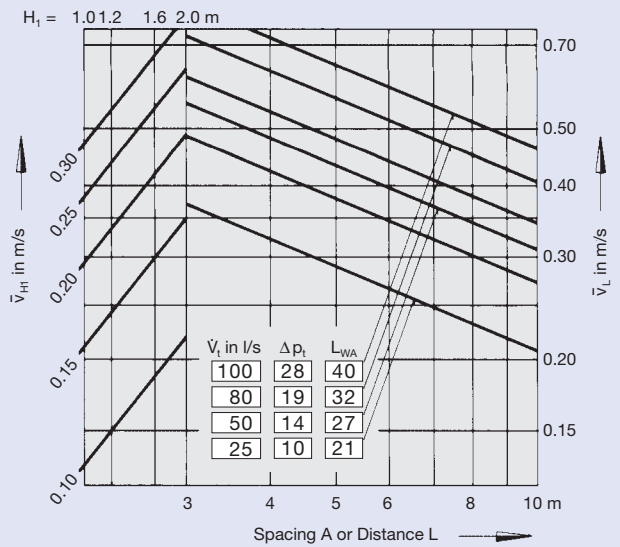
Technical Data VSD35-4-Varyset

Air discharge: horizontal, one or two directions

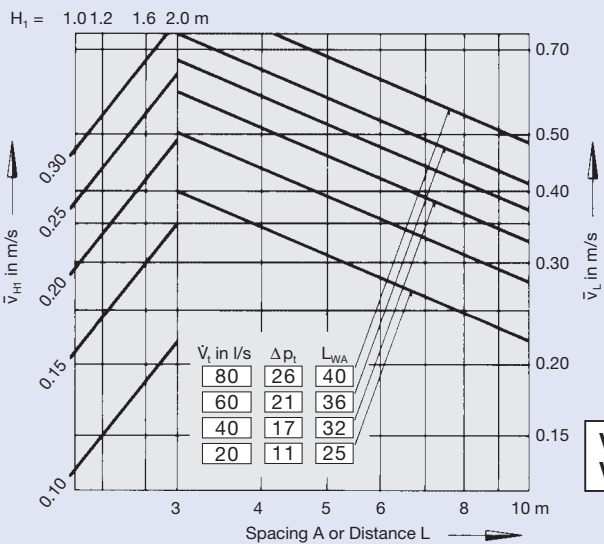
13 Temperature quotient



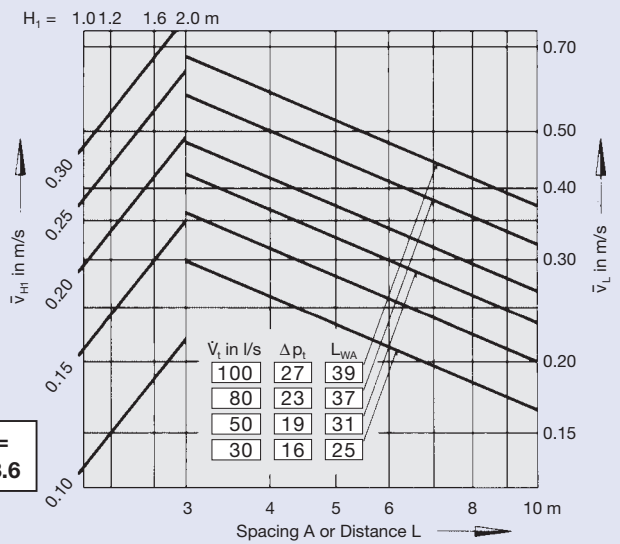
15 $L_1 = 1200$ mm



14 $L_1 = 900$ mm



16 $L_1 = 1500$ mm

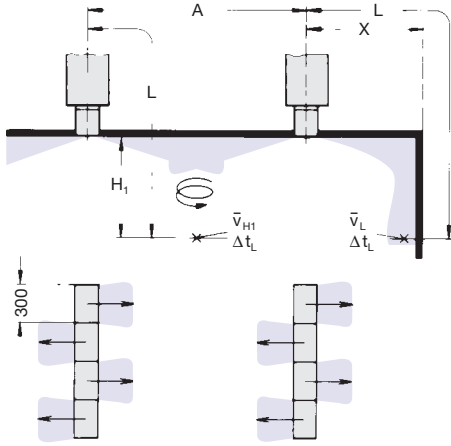


$\dot{V} \text{ [m}^3\text{/h]} = \dot{V} \text{ [l/s]} \times 3.6$

Technical Data VSD35-1-Varyset

Air discharge: Alternating horizontal

Diffuser Layout



Example

Data given:

VSD35-1-Varyset, alternating horizontal

Slot length

$L_1 = 900$ mm

Total volume flow per diffuser

$\dot{V}_t = 30 \dots 7.5$ l/s

Diffuser spacing

$A = 1.9$ m

Distance between ceiling and occupied zone

$H_1 = 1.2$ m

Distance between diffuser centre and wall

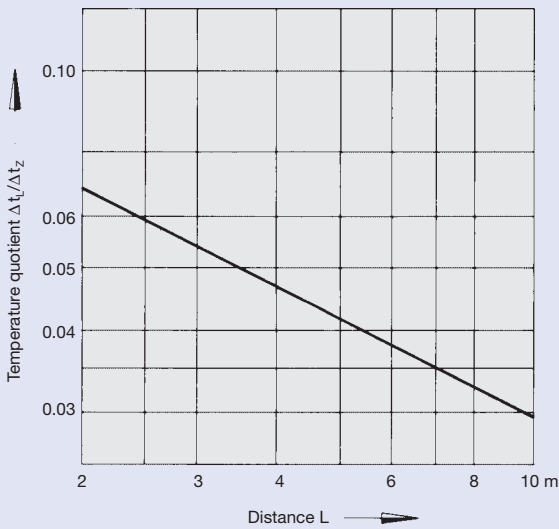
$X = 3.3$ m

Diagram 18:

$$L = X + H_1 = 3.3 + 1.2 = 4.5 \text{ m}$$

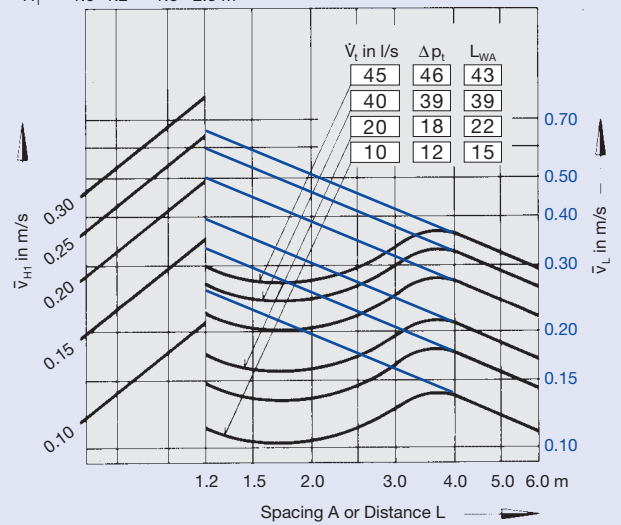
\dot{V}_t	\bar{v}_{H1}	\bar{v}_L	Δp_t	L_{WA}
30 l/s	0.16 m/s	0.31 m/s	33 Pa	35 dB(A)
7.5 l/s	< 0.10 m/s	0.13 m/s	10 Pa	10 dB(A)

17 Temperature quotient



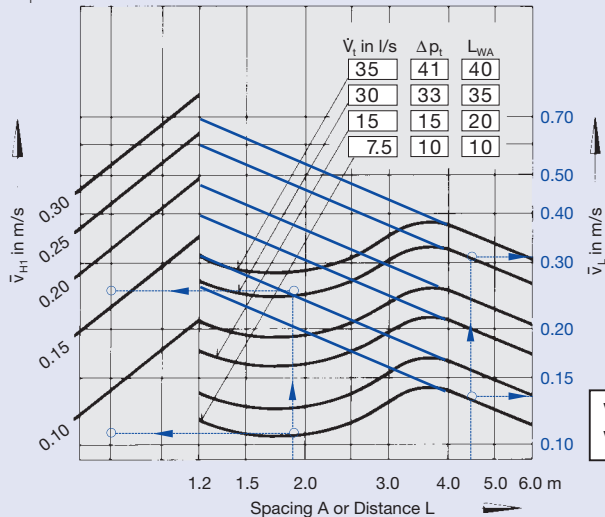
19 L1 = 1200 mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m



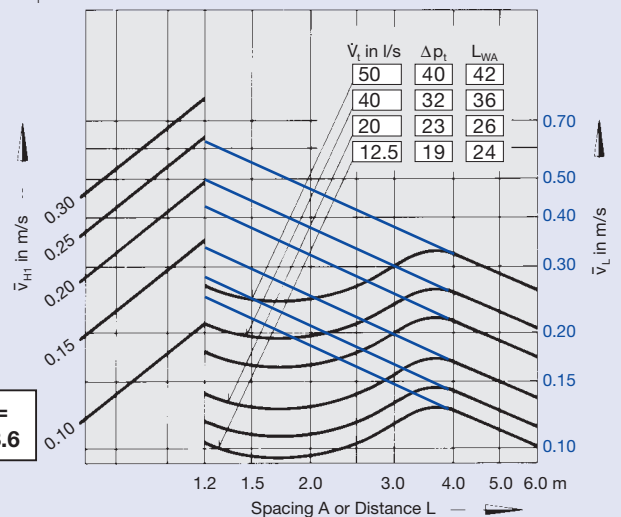
18 L1 = 900 mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m



20 L1 = 1500 mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m

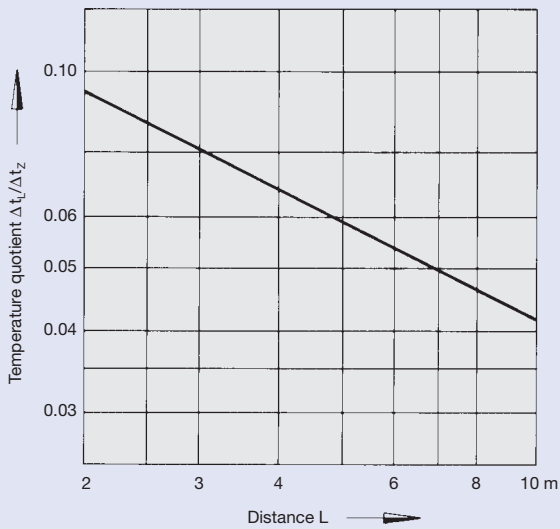


$$\dot{V} \text{ [m}^3/\text{h]} = \dot{V} \text{ [l/s]} \times 3.6$$

Technical Data VSD35-2-Varyset

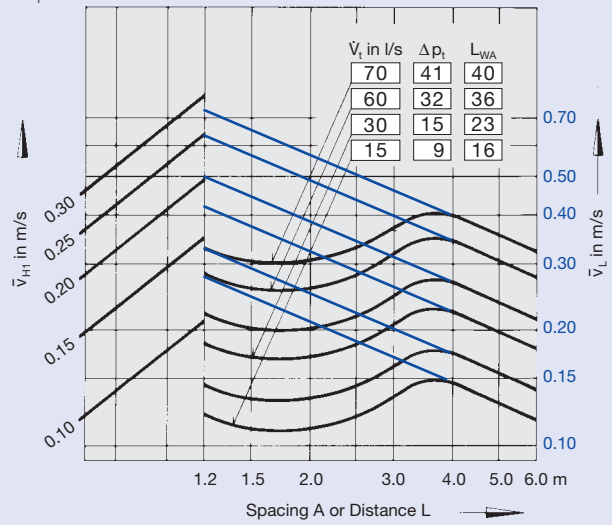
Air discharge: Alternating horizontal

21 Temperature quotient



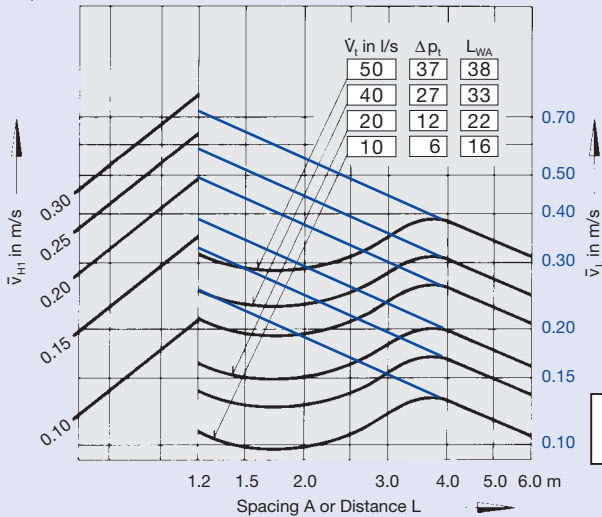
23 $L_1 = 1200$ mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m



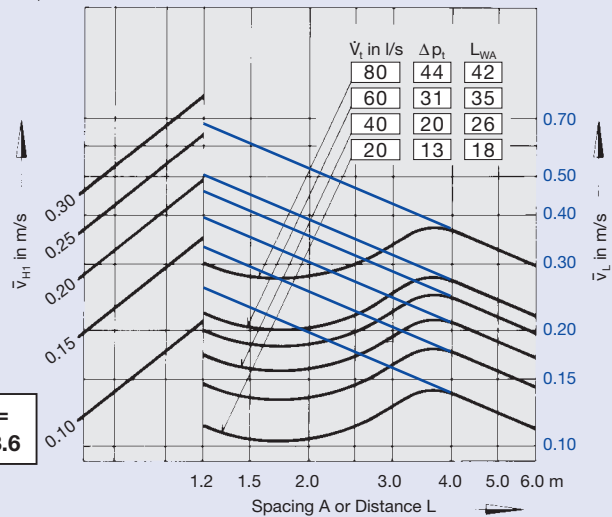
22 $L_1 = 900$ mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m



24 $L_1 = 1500$ mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m

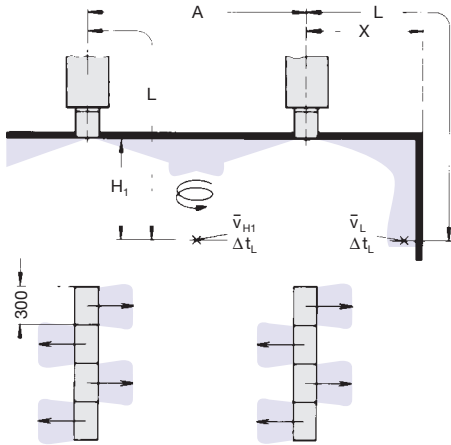


$$\dot{V} \text{ [m}^3\text{/h]} = \dot{V} \text{ [l/s]} \times 3.6$$

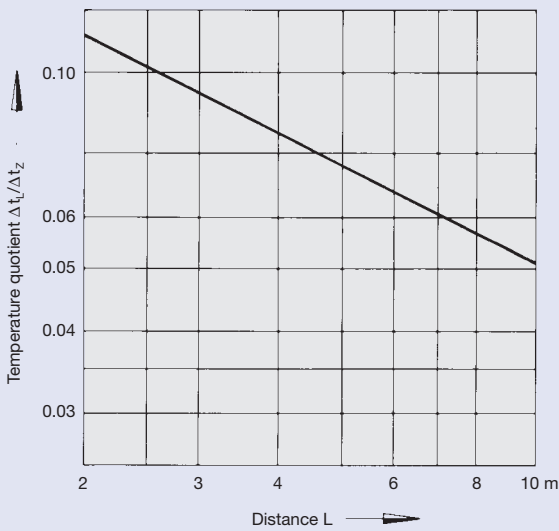
Technical Data VSD35-3-Varyset

Air discharge: Alternating horizontal

Diffuser Layout

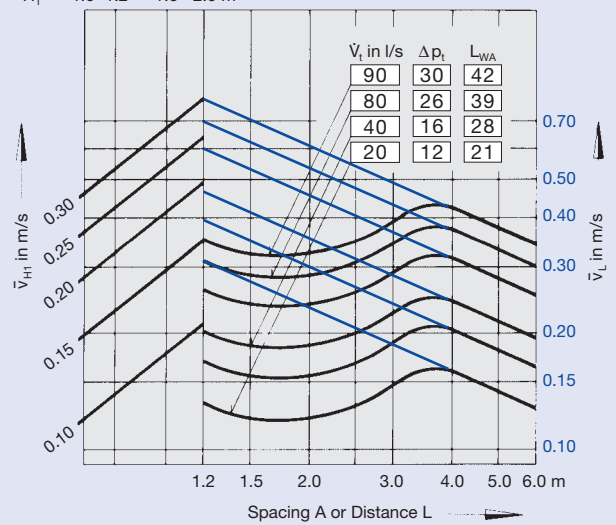


25 Temperature quotient



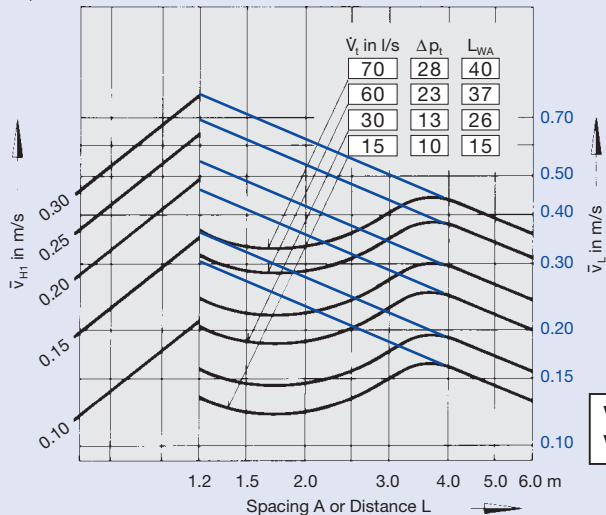
27 $L_1 = 1200$ mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m



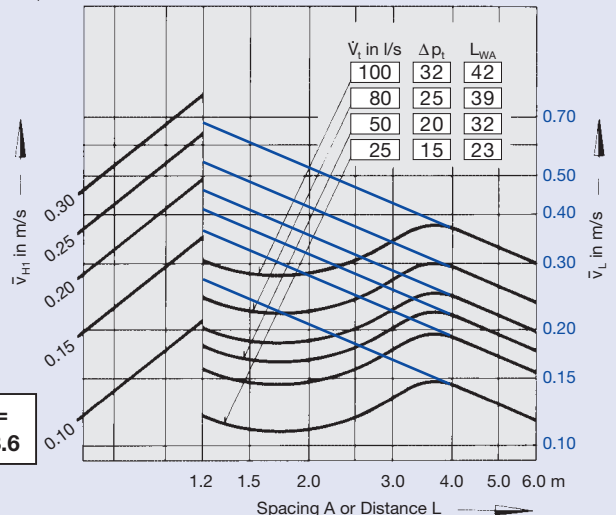
26 $L_1 = 900$ mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m



28 $L_1 = 1500$ mm

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0$ m

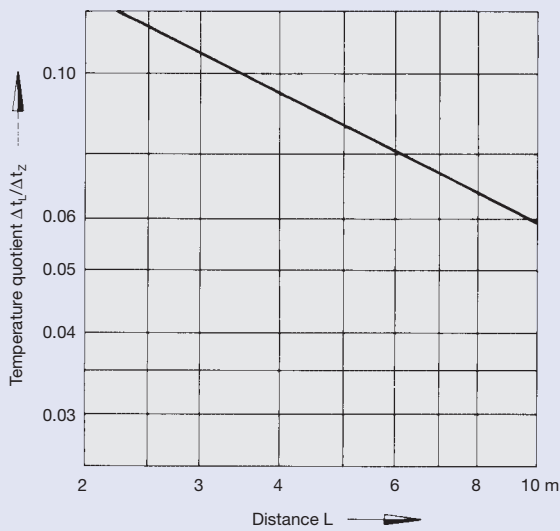


$\dot{V} \text{ [m}^3\text{/h]} = \dot{V} \text{ [l/s]} \times 3.6$

Technical Data VSD35-4-Varyset

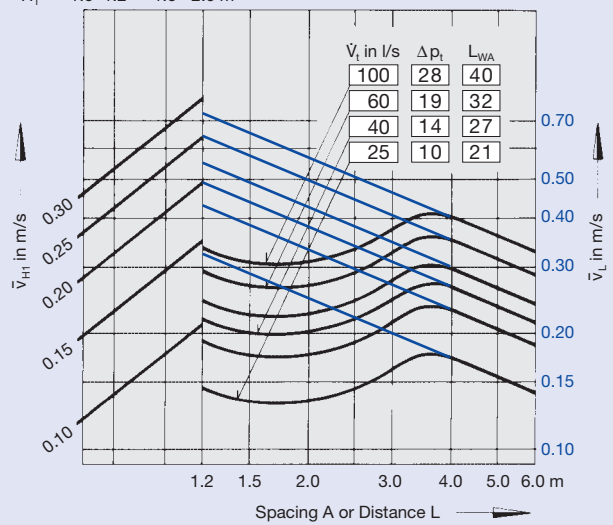
Air discharge: Alternating horizontal

29 Temperature quotient



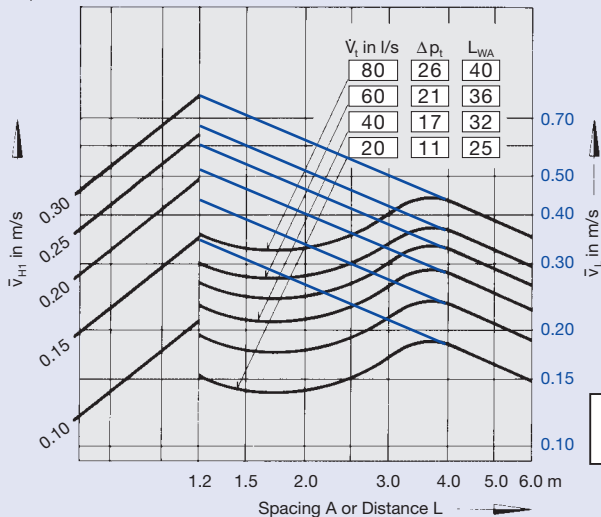
31 $L_1 = 1200$ mm

$H_1 = 1.0$ 1.2 1.6 2.0 m



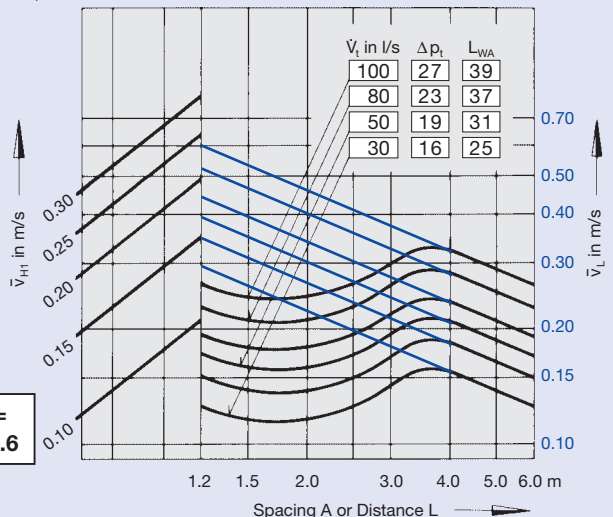
30 $L_1 = 900$ mm

$H_1 = 1.0$ 1.2 1.6 2.0 m



32 $L_1 = 1500$ mm

$H_1 = 1.0$ 1.2 1.6 2.0 m

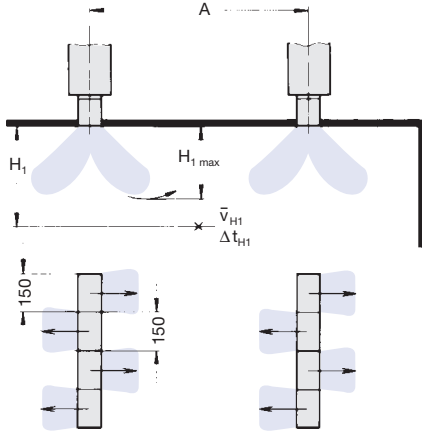


$$\dot{V} [\text{m}^3/\text{h}] = \dot{V} [\text{l/s}] \times 3.6$$

Technical Data VSD35-1-Varyset

Air discharge: Alternating angled

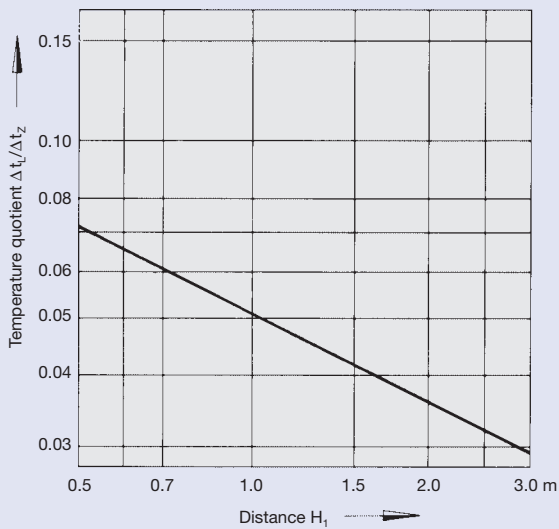
Diffuser Layout



Max. penetration depth $H_{1\max}$ in m heating

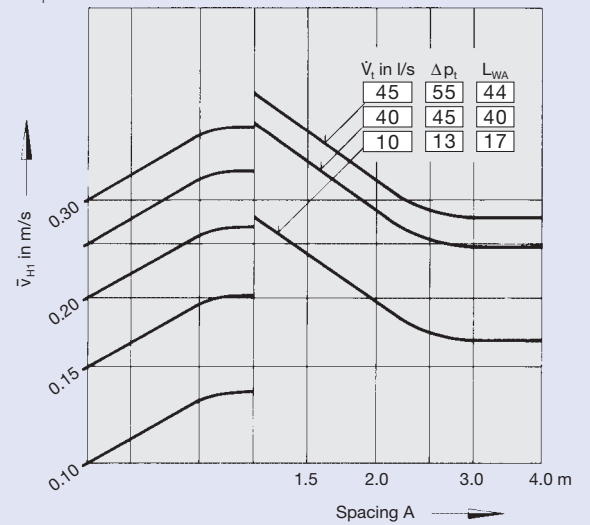
VSD-1	$L_1 = 900 \text{ mm}$				$L_1 = 1200 \text{ mm}$				$L_1 = 1500 \text{ mm}$			
$\Delta t_z \text{ [K]}$	$\dot{V}_t \text{ in l/s}$				$\dot{V}_t \text{ in l/s}$				$\dot{V}_t \text{ in l/s}$			
	35	30	15	7,5	45	40	20	10	50	40	20	12,5
+ 4	2.65	2.50	1.95	1.40	2.60	2.50	1.85	1.20	2.20	2.10	1.65	1.20
+ 8	2.05	1.90	1.45	1.00	2.00	1.90	1.40	0.90	1.70	1.60	1.25	0.90
+ 10	1.90	1.75	1.35	0.95	1.85	1.75	1.30	0.85	1.50	1.40	1.10	0.80

33 Temperature quotient



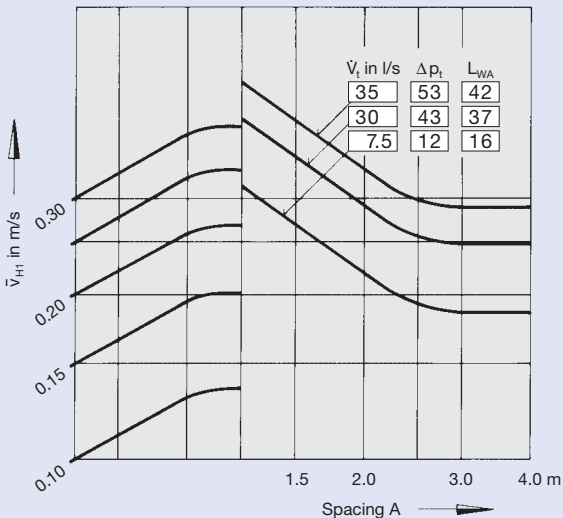
35 $L_1 = 1200 \text{ mm}$

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0 \text{ m}$



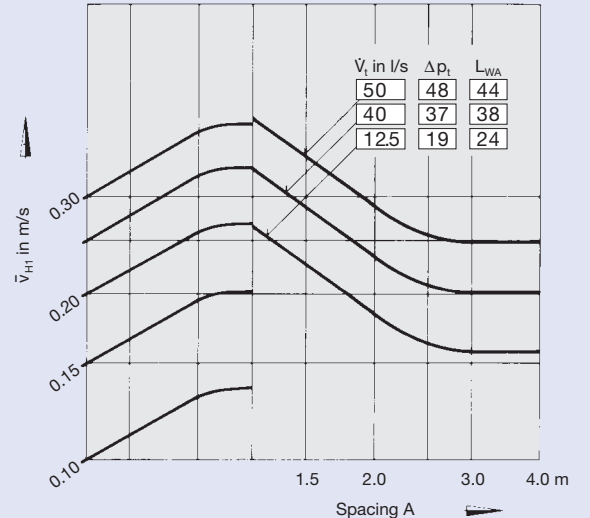
34 $L_1 = 900 \text{ mm}$

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0 \text{ m}$



36 $L_1 = 1500 \text{ mm}$

$H_1 = 1.0 \ 1.2 \ 1.6 \ 2.0 \text{ m}$



$$\dot{V} \text{ [m}^3\text{/h]} = \dot{V} \text{ [l/s]} \times 3.6$$

Technical Data VSD35-2-Varyset

Air discharge: Alternating angled

Example

Data given:

VSD35-2-Varyset, alternating, angled

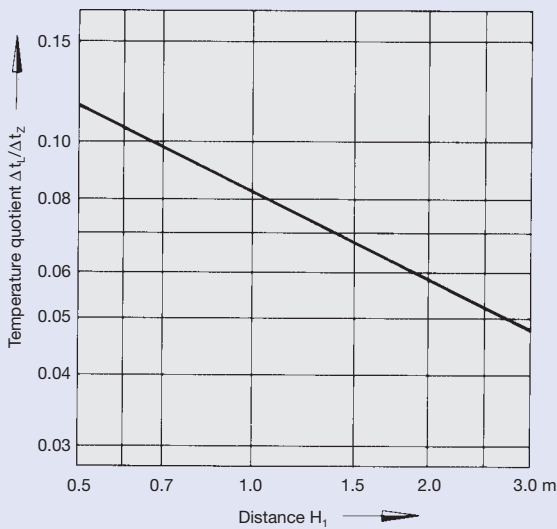
Slot length $L_1 = 900 \text{ mm}$
 Total volume flow per diffuser $\dot{V}_t = 30 \dots 10 \text{ l/s}$
 Diffuser spacing $A = 2.5 \text{ m}$
 Distance between ceiling and occupied zone $H_1 = 1.4 \text{ m}$
 Temperature difference between supply air and room air heating $\Delta t_z = + 8 \text{ K}$

Max. penetration depth $H_{1 \text{ max}}$ in m heating												
VSD-2	$L_1 = 900 \text{ mm}$				$L_1 = 1200 \text{ mm}$				$L_1 = 1500 \text{ mm}$			
$\Delta t_z \text{ [K]}$	$\dot{V}_t \text{ in l/s}$				$\dot{V}_t \text{ in l/s}$				$\dot{V}_t \text{ in l/s}$			
	50	40	20	10	70	60	30	15	80	60	30	20
+ 4	1.70	1.60	1.30	1.00	1.80	1.70	1.35	1.00	1.60	1.50	1.25	1.00
+ 8	1.30	1.20	1.00	0.80	1.40	1.30	1.05	0.80	1.20	1.10	0.95	0.80
+ 10	1.20	1.10	0.90	0.70	1.30	1.20	0.95	0.70	1.10	1.00	0.85	0.70

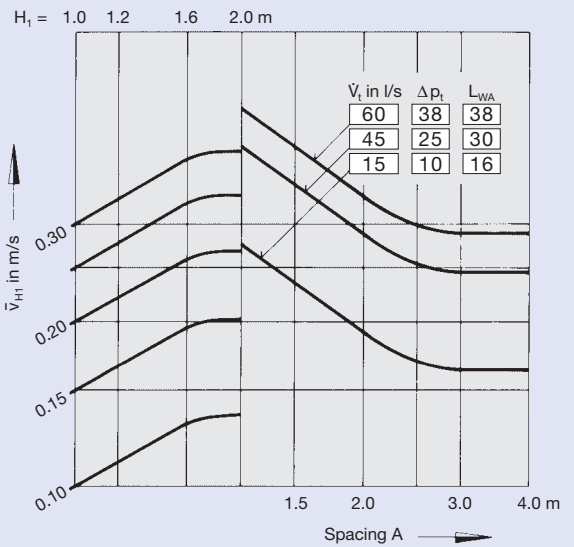
Diagram 38:

\dot{V}_t	\bar{v}_{H1}	Δp_t	L_{WA}	$H_{1 \text{ max}}$
30 l/s	0.19 m/s	25 Pa	30 dB(A)	1.1 m
10 l/s	0.14 m/s	10 Pa	18 dB(A)	0.80 m

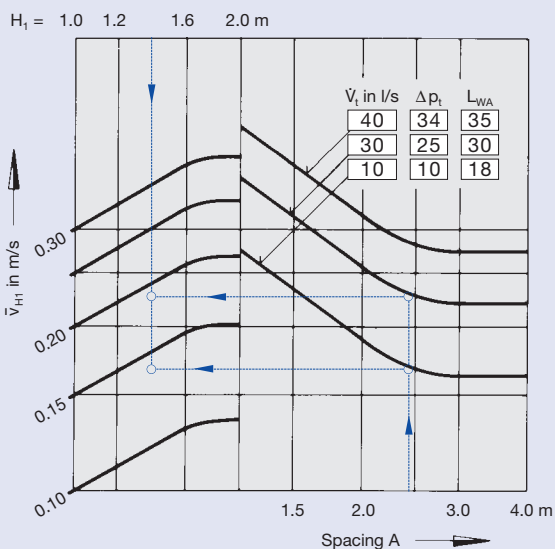
37 Temperature quotient



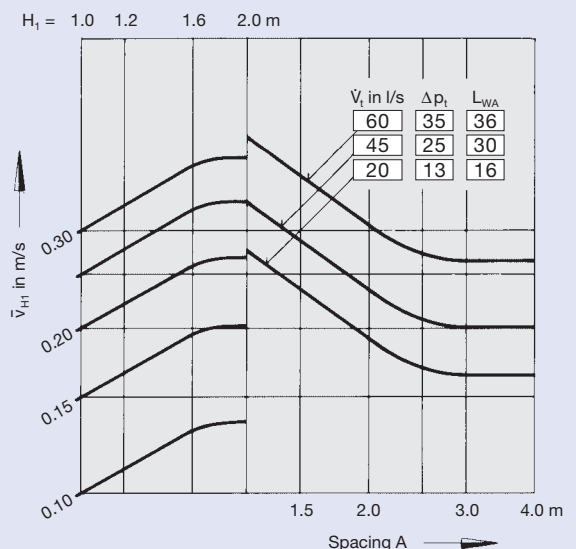
39 $L_1 = 1200 \text{ mm}$



38 $L_1 = 900 \text{ mm}$



40 $L_1 = 1500 \text{ mm}$

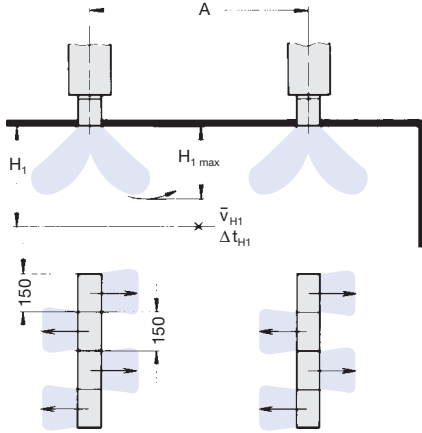


$$\dot{V} \text{ [m}^3\text{/h]} = \dot{V} \text{ [l/s]} \times 3.6$$

Technical Data VSD35-3-Varyset

Air discharge: Alternating angled

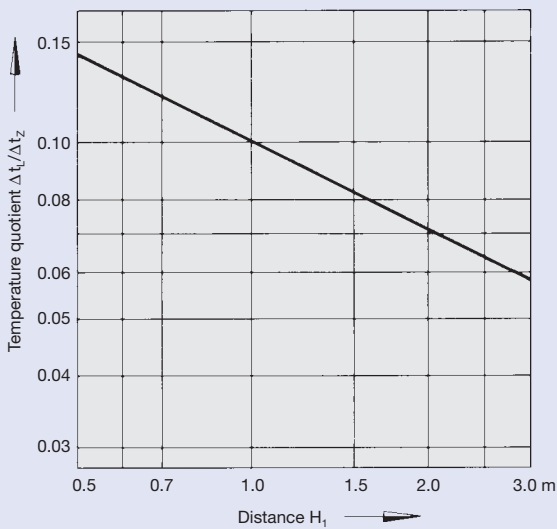
Diffuser Layout



Max. penetration depth $H_{1\max}$ in m heating

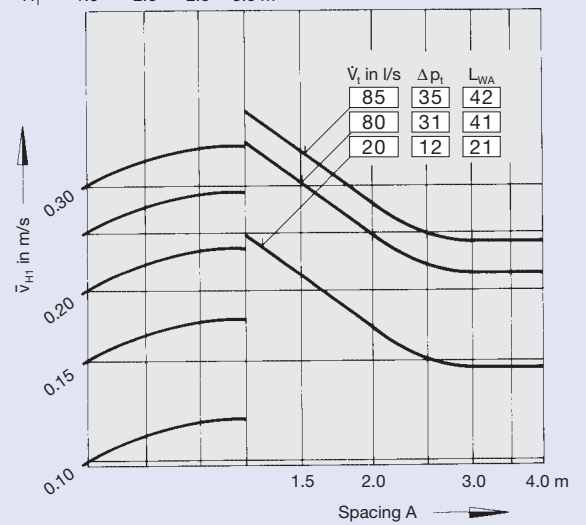
VSD-3	$L_1 = 900 \text{ mm}$				$L_1 = 1200 \text{ mm}$				$L_1 = 1500 \text{ mm}$			
$\Delta t_z \text{ [K]}$	$\dot{V}_t \text{ in l/s}$				$\dot{V}_t \text{ in l/s}$				$\dot{V}_t \text{ in l/s}$			
	70	60	30	15	90	80	40	20	100	80	40	25
+ 4	1.60	1.50	1.25	1.00	1.55	1.50	1.25	1.00	1.25	1.20	1.10	1.00
+ 8	1.20	1.10	0.95	0.80	1.15	1.10	0.95	0.80	0.95	0.90	0.85	0.80
+ 10	1.10	1.00	0.85	0.70	1.05	1.00	0.85	0.70	0.85	0.80	0.75	0.70

41 Temperature quotient



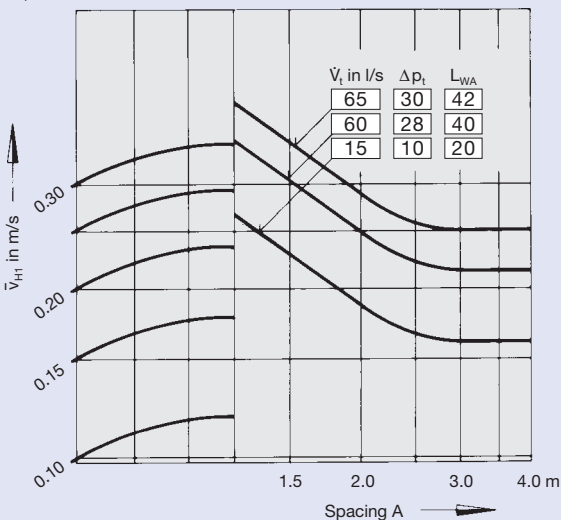
43 $L_1 = 1200 \text{ mm}$

$H_1 = 1.6 \quad 2.0 \quad 2.5 \quad 3.0 \text{ m}$



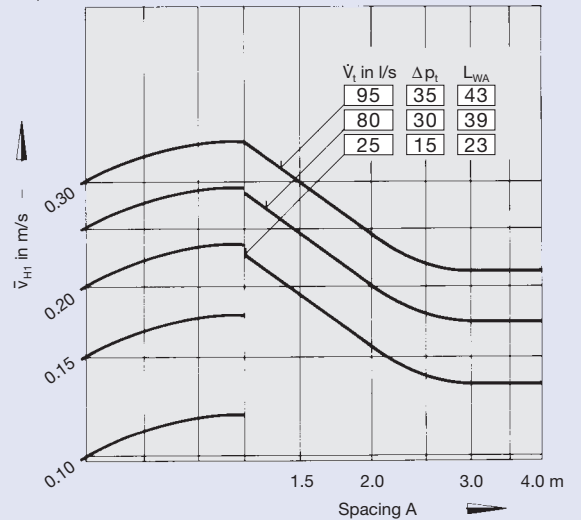
42 $L_1 = 900 \text{ mm}$

$H_1 = 1.6 \quad 2.0 \quad 2.5 \quad 3.0 \text{ m}$



44 $L_1 = 1500 \text{ mm}$

$H_1 = 1.6 \quad 2.0 \quad 2.5 \quad 3.0 \text{ m}$



$$\dot{V} \text{ [m}^3\text{/h]} = \dot{V} \text{ [l/s]} \times 3.6$$

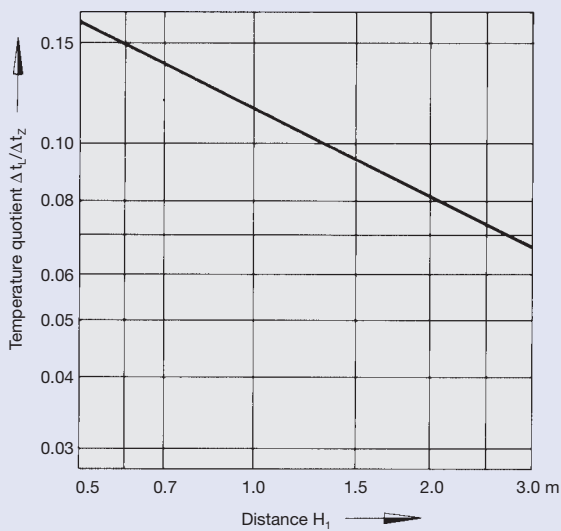
Technical Data VSD35-4-Varyset

Air discharge: Alternating angled

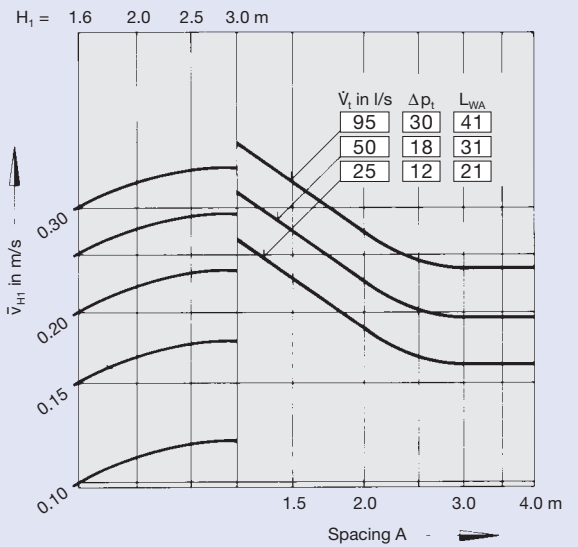
Max. penetration depth $H_{1\max}$ in m heating

VSD-4	$L_1 = 900\text{ mm}$				$L_1 = 1200\text{ mm}$				$L_1 = 1500\text{ mm}$			
Δt_z [K]	\dot{V}_t in l/s				\dot{V}_t in l/s				\dot{V}_t in l/s			
	80	60	40	20	100	80	50	25	100	80	60	30
+ 4	1.40	1.35	1.30	1.20	1.30	1.28	1.25	1.20	1.10	1.10	1.10	1.10
+ 8	1.10	1.08	1.05	1.00	1.00	0.98	0.95	0.90	0.90	0.90	0.90	0.90
+ 10	0.95	0.93	0.90	0.85	0.90	0.88	0.85	0.80	0.80	0.80	0.80	0.80

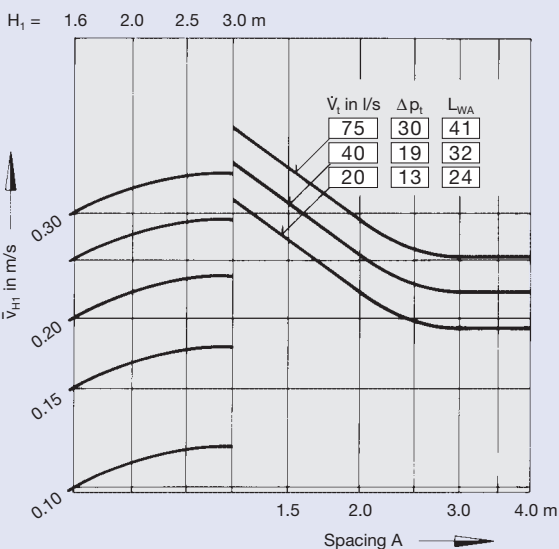
45 Temperature quotient



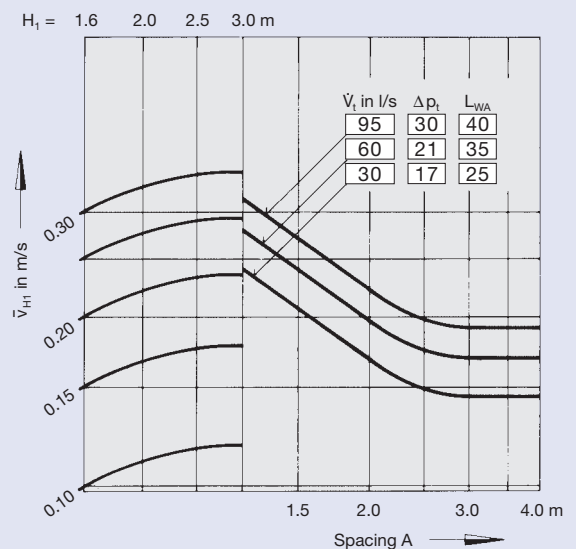
47 $L_1 = 1200\text{ mm}$



46 $L_1 = 900\text{ mm}$



48 $L_1 = 1500\text{ mm}$



$$\dot{V} [\text{m}^3/\text{h}] = \dot{V} [\text{l/s}] \times 3.6$$

Order Details VSD35-Varyset

Specification Text

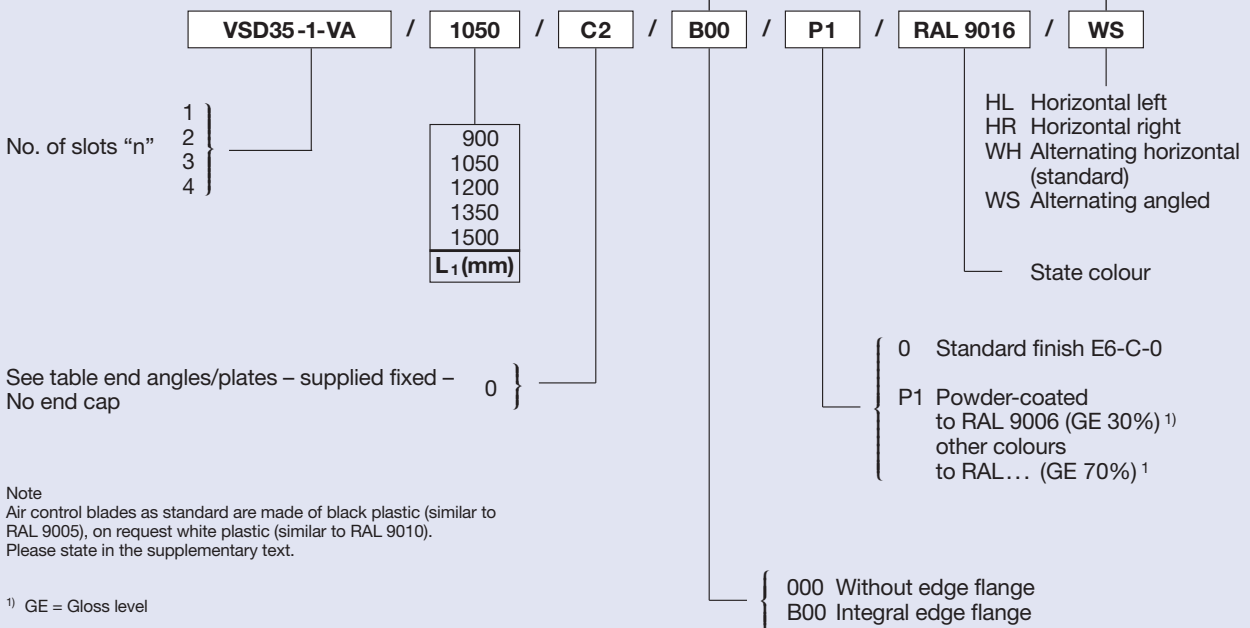
Adjustable slot diffusers for variable air volume systems (VAV). Volume flow range 100 to 25 %, with aesthetically shaped face section, suitable for installation in suspended shaped ceilings, comprising the diffuser face in 1- to 4-slot configuration, optionally without edge flange 000 or with integral edge flange B00. End caps either as end plates or end angles, with incorporated air control blades suitable for any air discharge direction, which are set at the factory but can be adjusted by the user at any time to enable adaptation to the prevailing conditions. Rear plenum box with system-driven Varyset flap (no external power), calibrated at the factory, with circular side entry spigot and four suspension points for suspension of the complete assembly from the ceiling slab.

Materials:

Diffuser face and end caps consist of extruded aluminium sections, natural anodised finish E6-C-0 or powder-coated in RAL colours. The air control blades are produced in black plastic (polystyrene) as standard, similar to RAL 9005, or on request in white (similar to RAL 9010). The plenum box consists of sendzimir-galvanised sheet steel.

Order Code

These codes do not require to be stated for standard variants



Order code for pairs of end angles/end plates – supplied loose – – Please order separately –

Type	000	B00
End plate	VSD35-*-EP/000	VSD35-*-EP/B00
End angle	VSD35-*-EW/000	VSD35-*-EW/B00
* 1...4-slots		

End angles/end plates – supplied fixed –

	Edge flange	Both ends
End angles	000	C1
	B00	C2
End plates	000	C5
	B00	C6

Order example

Make : TROX
 Type : VSD35-1-VA / 1050 / C2 / B00 / P1 / RAL9016 / WS
 Supplementary text : Air control blades white, similar RAL 9010