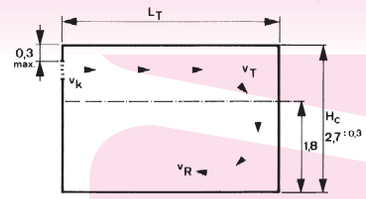
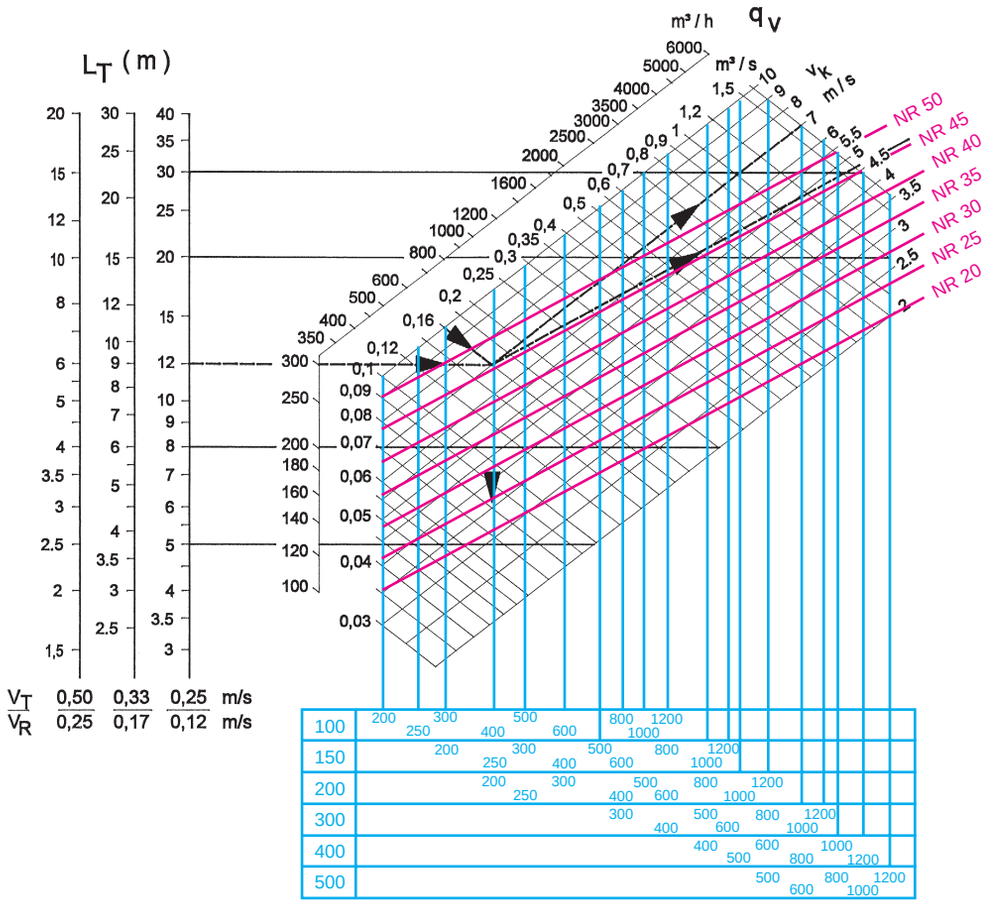
G-100, 110, 120, 130

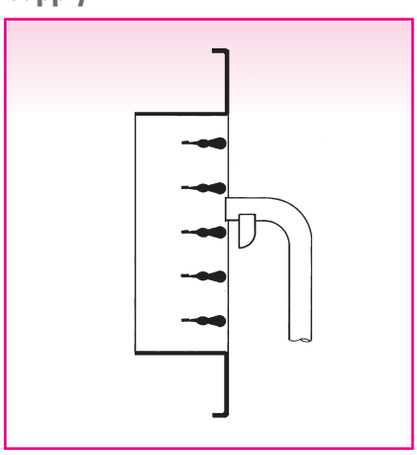
Selection diagram - supply

- **Deflection 0°**
- with ceiling effect
- damper completely open





Air flow rate measurement-supply



Velometer jet: 2220A or 6070

H (mm)	A_k-values (m^2) L (mm)								
	200	250	300	400	500	600	800	1000	1200
100	0,010	0,013	0,016	0,023	0,029	0,039	0,060	0,071	0,084
150	0,016	0,023	0,029	0,039	0,051	0,060	0,084	0,113	0,133
200	0,023	0,029	0,039	0,060	0,071	0,084	0,113	0,145	0,179
300	-	-	0,060	0,084	0,113	0,133	0,179	0,225	0,270
400	-	-	-	0,113	0,145	0,179	0,225	0,301	0,367
500	-	-	-	-	0,179	0,225	0,301	0,367	0,448

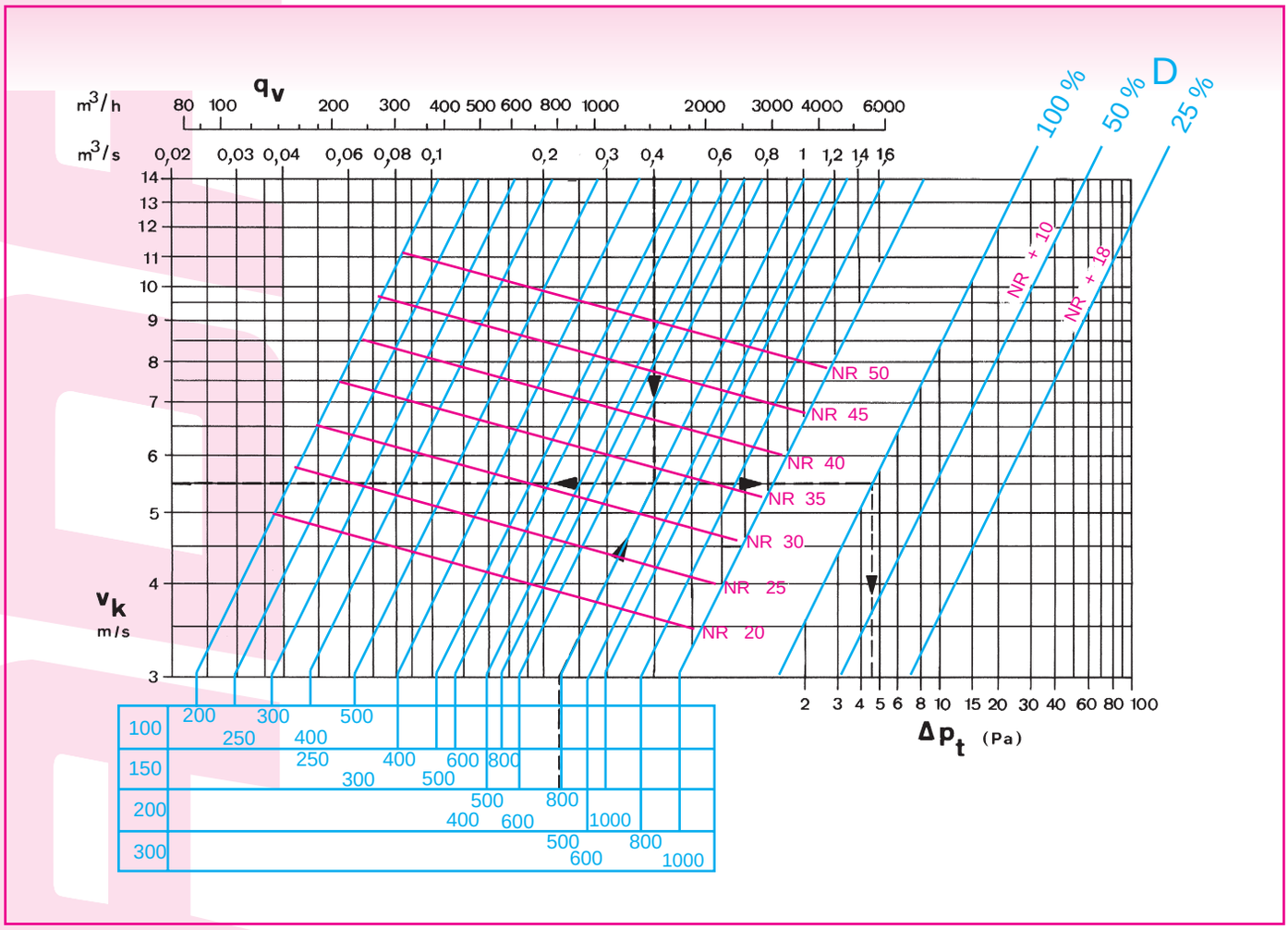
Correction factors

- Correction of the throw L_T without ceiling effect

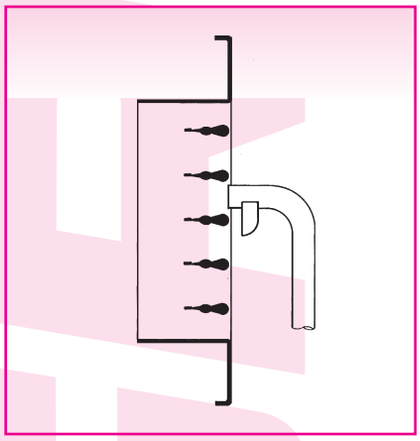
Distance between ceiling and supply grille (m)	Correction
≥ 0,9 m	L_T x 0,75

- Correction factor according to the deflection of the vertical vanes (see p. 1 051 verso)

Selection diagram - exhaust



Air flow rate measurement-exhaust

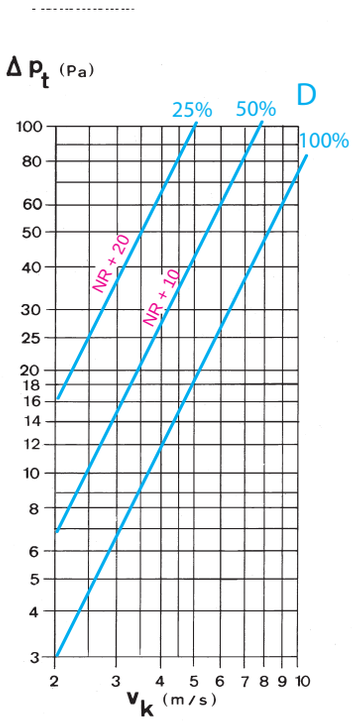


Velometer jet: 2220A or 6070

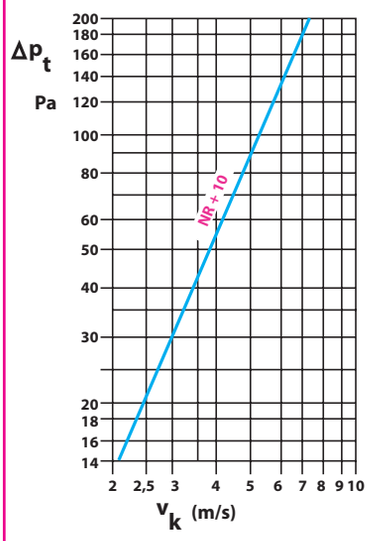
A_k-values (m²)								
H (mm)	L (mm)							
	200	250	300	400	500	600	800	1000
100	0,008	0,010	0,012	0,016	0,020	-	-	-
150	-	0,016	0,020	0,026	0,033	0,037	0,054	-
200	-	-	-	0,037	0,045	0,054	0,071	0,092
300	-	-	-	-	0,071	0,084	0,114	0,143

Pressure loss

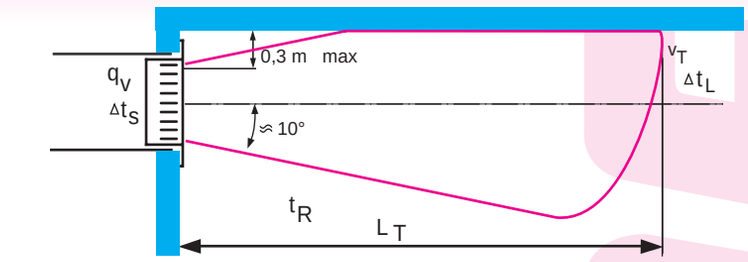
with damper type ...7

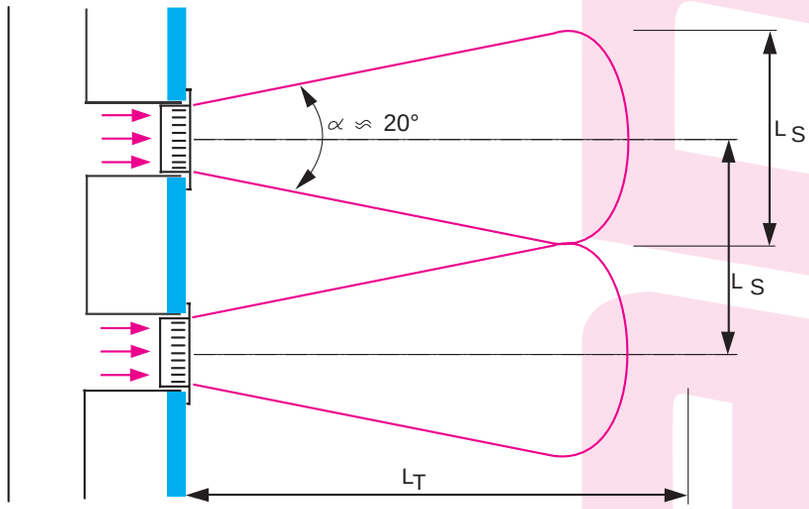


with perforated sheet type ... 3



Example





SUPPLY:

Selection data:

- Airflow rate q_V = 0,16 m³/s
- Throw L_T =12 m at v_T = 0,25 m/s

Solution:

- Grilles 400 x 100 or 250 x 150 mm
- Supply air velocity v_K= 7 m/s
- Noise level NR 45
- Total pressure loss with damper type 50 % open: Δ p_t = 90 Pa.
- Noise level correction NR 45 + 10 = NR 55

EXHAUST:

Selection data:

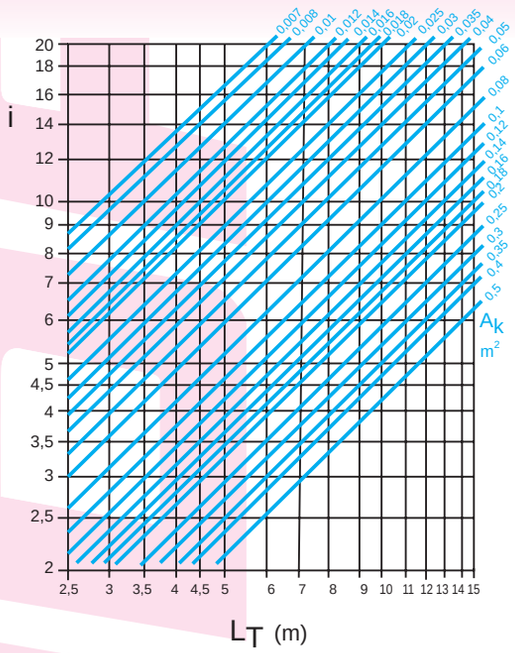
- Airflow rate q_V = 0,4 m³/s

Solution:

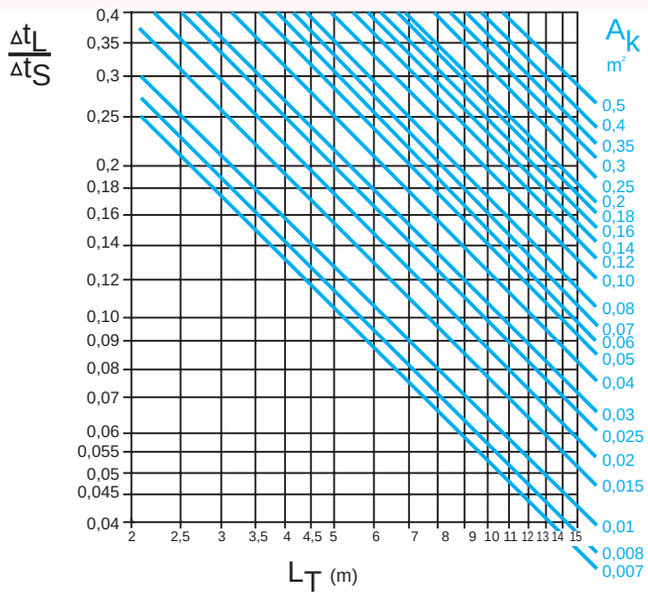
- Grille 800 x 200 mm
- Supply air velocity v_K= 5,5 m/s
- Noise level NR 45
- Total pressure loss with damper type 100 % open: Δ p_t = 4,5 Pa.

Induction and temperature quotient with ceiling effect

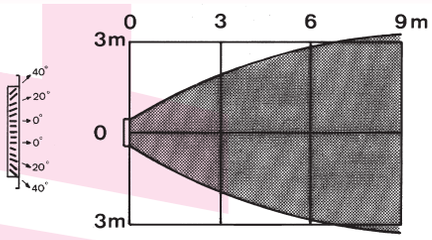
Induction



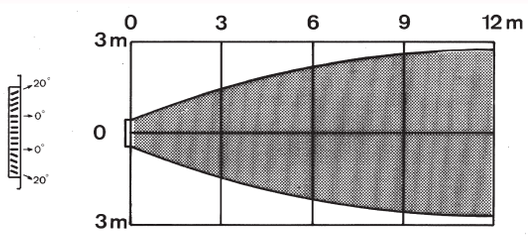
Temperature quotient



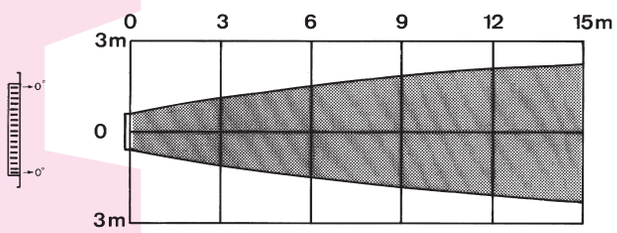
Deflection 40°



Deflection 20°

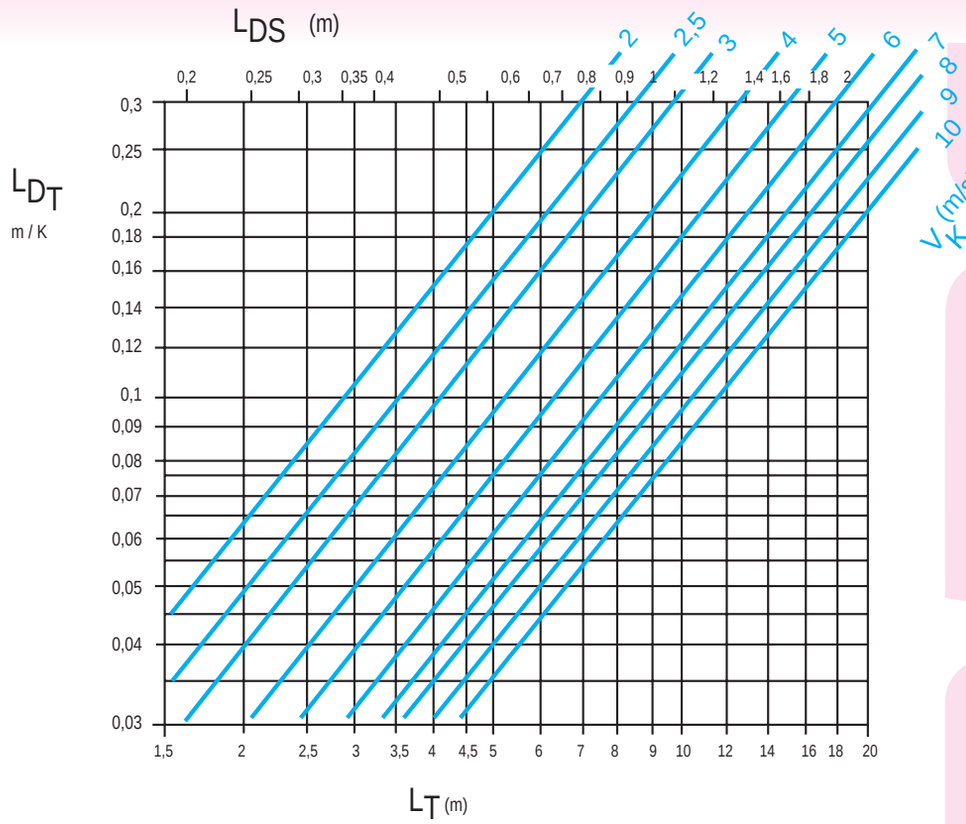


Deflection 0°



Correction factors Correction for vertical vane deflection	Deflection	A_k	v_k	L_T	NR	i	$\frac{\Delta t_L}{\Delta t_S}$
	20°	x 0,87	x 1,15	x 0,85	+ 3	x 1,4	x 1,4
	40°	x 0,80	x 1,25	x 0,75	+ 5	x 2	x 2

Drop requirements



Drop requirements

The total drop is the maximum vertical distance between the centre of a grille core and the lower point of a specified envelope, determined by the envelope velocity v_T.

The total drop consists of two elements:

$L_D = L_{DS} + L_{DT}$

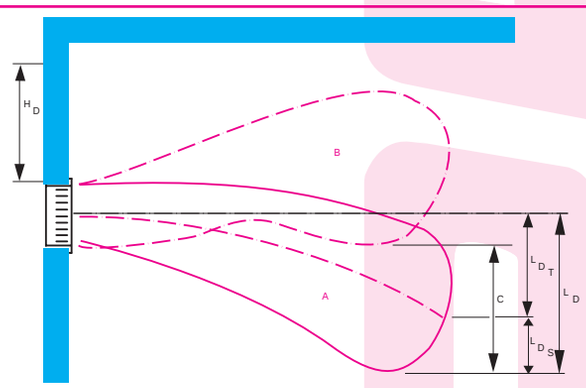
1) The isothermal drop L_{DS} is the distance between the centre of an air current and the lowest point of the envelope.
2) The non-isothermal drop L_{DT} is the distance between the centre of the grille core and the air current centre line, at the place of measurement.

Drop correction L_D

Drop correction is possible by projecting the air current upward, with supply grilles having adjustable horizontal bars.

The drop effect can be significantly corrected if the air is projected upward 15° to 20°, as shown in the drop correction diagram.

The correction factors "C" in the diagram are only valid if the minimum distance H_d between the centre of the grille and the ceiling is maintained.



A) Envelope of a non-isothermal air current without drop correction.

B) Envelope of a non-isothermal air current with drop correction.

Drop correction diagram