Multi-Jet Nozzles

Type DUE-M

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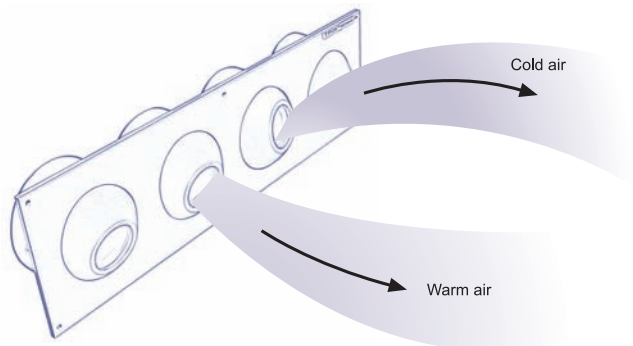
Contents · Description



Quite often it is necessary to air-condition spaces (very different ones) where large supply air volume flows are concentrated into small areas. In addition to this, there may be large distances from the nozzles to the occupied zone.
In these cases jet nozzles can be used to solve the problem. Being a multiple array of small units, these can be used to easily replace a larger single jet nozzle.
Multi-jet nozzles are located in the side wall areas of the air-conditioned space. When the temperature difference between the supply air and the room air changes, the supply air stream is deflected upwards (warm air) or downwards (cold air).

On the other hand, the direction of the supply air flow is also affected by other influences such as local convention effects or draughts within the space.
To deal with this situation, the TROX multi-jet nozzles can be adjusted in any direction. The direction of the air stream from the jet nozzle can be easily adjusted manually to suit particular site conditions.
The well-designed, aerodynamically efficient shape of TROX jet nozzles results in low noise characteristics. For this reason, and because of the sophisticated design, they can be used in critical areas such as concerts halls, theatres, museums etc.

Preliminary Selection

The table below gives a guide for selecting the size of a multi-jet nozzle array.
The data shown is determined for an isothermal, single free horizontal air stream.
According to our extensive experience, air velocities of 0.25 m/s for example, with a throw of 30 m. are only possible in theory as many room parameters must be taken into account with such throw distances.

If the supply air temperature difference changes, the air stream deflection in diagram 2, must be taken into account. The noise levels are determined for the number of jet nozzles incorporated into the multi-jet nozzle assembly.

In the table below no data is given for effective discharge velocities below 2 m/s nor are values given above a sound power level rating of 55 db(A). If the values required lie outside the limits of this table then diagram 7 on page 14 should be used .

Technical data with axial air flow DUE-S-M

Size	Throw												Air velocity
	10 m				20 m				30 m				
	V_{TOTAL}		L_{WA}	Δp_t	V_{TOTAL}		L_{WA}	Δp_t	V_{TOTAL}		L_{WA}	Δp_t	V_L
	l/s	m^3/h	dB(A)	Pa	l/s	m^3/h	dB(A)	Pa	l/s	m^3/h	dB(A)	Pa	m/s
DUE-050-M2...6	10-18	36-66	<20	<20	20-36	72-136	28-18	100-40	30-54	108-198	38-32	200-90	
DUE-075-M2...6	11-23	40-84	<20	<20	22-46	80-168	18-10	40-20	33-69	120-252	28-23	100-50	
DUE-100-M2...6	15-27	56-96	<20	<20	30-54	112-192	18-10	40-15	45-81	168-288	23-10	70-30	
DUE-125-M2...6	19-33	70-120	<20	<20	38-66	140-240	13-10	25-10	57-99	210-360	13-10	50-20	
DUE-160-M2...6	23-42	82-150	<20	<20	46-84	164-300	<20	<20	69-126	243-450	13-10	20-10	0,2
DUE-200-M2...6	30-55	110-198	<20	<20	60-110	220-396	<20	<20	90-165	330-594	13-17	20-15	
DUE-250-M2...6	39-67	140-240	<20	<20	78-134	280-480	<20	<20	117-201	420-720	<20	<20	
DUE-315-M2...6	50-100	180-360	<20	<20	100-200	360-720	<20	<20	150-300	540-1080	<20	<20	
DUE-400-M2...4	67-116	240-420	<20	<20	134-232	480-840	<20	<20	201-348	720-1260	<20	<20	
DUE-050-M2...6	25-45	90-162	33-23	150-50	50-90	180-334	-	-	75-135	270-486	-	-	
DUE-075-M2...6	28-58	100-210	27-18	80-30	56-116	200-420	-	-	84-174	300-630	-	-	
DUE-100-M2...6	39-67	140-240	25-10	60-20	78-134	280-480	-31	-70	117-201	420-720	-	-	
DUE-125-M2...6	48-83	175-300	15-10	30-15	96-166	350-600	38-33	158-70	144-249	525-900	-	-	
DUE-160-M2...6	57-104	205-375	<20	20-10	114-208	410-750	28-18	60-20	171-312	615-1125	-28	-45	0,5
DUE-200-M2...6	76-138	275-495	<20	<20	152-276	550-990	28-18	50-20	228-414	825-1485	33-30	80-40	
DUE-250-M2...6	97-167	350-600	<20	<20	194-334	700-1200	25-	30-	291-501	1050-1800	35-23	70-20	
DUE-315-M2...6	125-250	450-900	<20	<20	250-500	900-1800	<20	<20	375-750	1350-2700	30-23	40-20	
DUE-400-M2...4	167-292	600-1050	<20	<20	334-584	1200-2100	<20	<20	501-876	1800-3150	28-10	28-10	
DUE-050-M2...6	50-90	180-324	-	-	100-180	360-648	-	-	150-270	540-972	-	-	
DUE-075-M2...12	55-117	200-420	-	-	110-234	400-840	-	-	165-351	600-1260	-	-	
DUE-100-M2...6	78-133	280-480	-32	-70	156-266	560-960	-	-	234-399	840-1440	-	-	
DUE-125-M2...6	97-167	350-600	38-28	150-50	194-334	700-1200	-	-	291-501	1050-1800	-	-	
DUE-160-M2...6	114-208	410-750	28-18	60-20	228-416	820-1500	43-40	200-100	342-624	1230-2250	-	-	1,0
DUE-200-M2...6	153-275	550-990	25-20	40-20	306-550	1100-1980	45-30	110-70	459-825	1650-2970	-46	-150	
DUE-250-M2...6	194-333	700-1200	23-10	30-10	388-666	1400-2400	43-28	150-30	582-999	2100-3600	-42	-80	
DUE-315-M2...6	250-500	900-1800	20-10	20-10	500-1000	1800-3600	35-33	70-30	750-1500	2700-5400	48-43	-70	
DUE-400-M2...4	333-583	1200-2100	<20	<20	666-1166	2400-4200	37-28	50-20	999-1750	3600-6300	48-38	-40	

Constructions · Dimensions

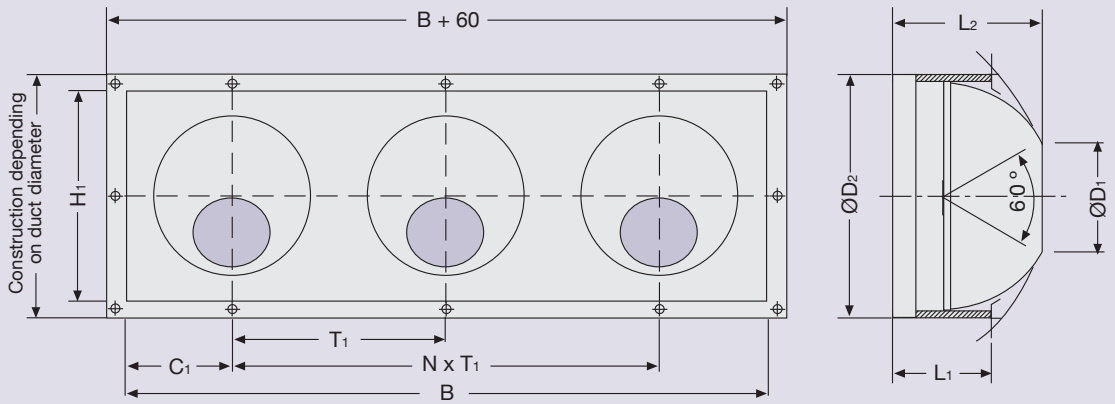
The multi-jet nozzles type DUE-M are suitable for almost all situations because of the wide range of variants available. Because of their low height they are suitable for all types of space and can be easily installed.
The multi-jet nozzles consist of spherical discharge nozzles fitted into a plate complete with a face mounting flange, the plate can either be curved or flat depending on whether the array is to be fitted to a rectangular or circular duct, the linear nozzle array can be in one or two rows.

The basic jet nozzles can be one of three types, DUE-S-M, DUE-V-M and DUE-F-M. The jet nozzles in the type DUE-S-M can be manually adjusted angularly up to a maximum of 30°up or down. The type DUE-V-M can be in addition be manually rotated. The type DUE-F-M has an array of fixed nozzles
The variations on these basic types are shown in the order codes on page 15.

Size	$ØD_1$	$ØD_2$	L_1	T_1	H	L_2	T_2	C_1	C_2	Min. nos. nozzles	Max. nos. nozzles	Possible circular duct diameters Ø A						
												200	250	250	315	500	630	800
50	30	81	52	105	115	56	-	60	-	2	15	•	•	•	•	•	•	•
50[1) 2)]	30	-	52	105	220	56	-	60	-	4	30		•	•	•	•	•	•
75	40	107	55	125	160	76,5	125	65	85	2	14		•	•	•	•	•	•
75[1) 2)]	40	107	55	125	290	76,5	125	65	85	2	28		•	•	•	•	•	•
100	50	128	70	150	170	91	155	80	95	2	10		•	•	•	•	•	•
100[1)]	50	128	70	150	310	91	-	80	-	4	20					•	•	•
125	65	158	73	175	200	105	180	95	115	2	10			•	•	•	•	•
160	87	194	85	215	235	133	215	112,5	127,5	2	10				•	•	•	•
200	113	242	90	260	290	148	260	140	155	2	9					•	•	•
250	141	300	106	320	345	173	320	165	180	2	7					•	•	•
315	181	376	120	405	405	204	405	202,5	220	2	6					•	•	•
400	235	474	145	500	500	245	500	250	267,5	2	4						•	•

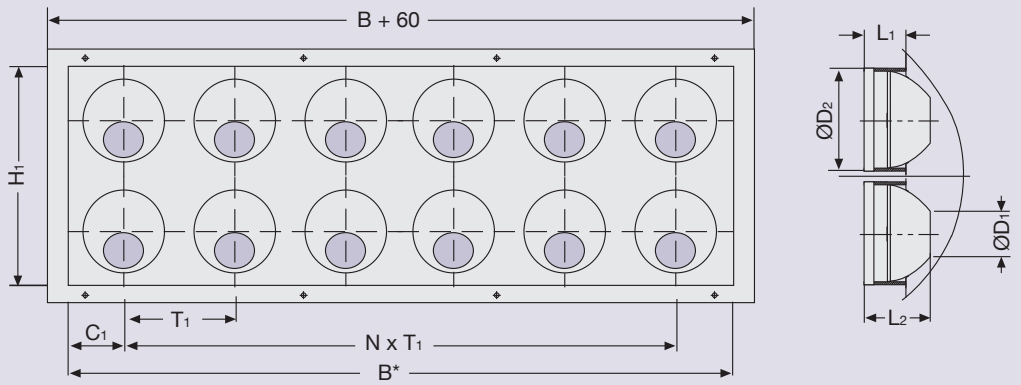
1) Arrangement in 2 rows 2) Only for construction QR

Multi-jet nozzles type DUE-S-QR-M and DUE-V-QR-M fitted on a flat plate with curved flanges for installation into a circular duct



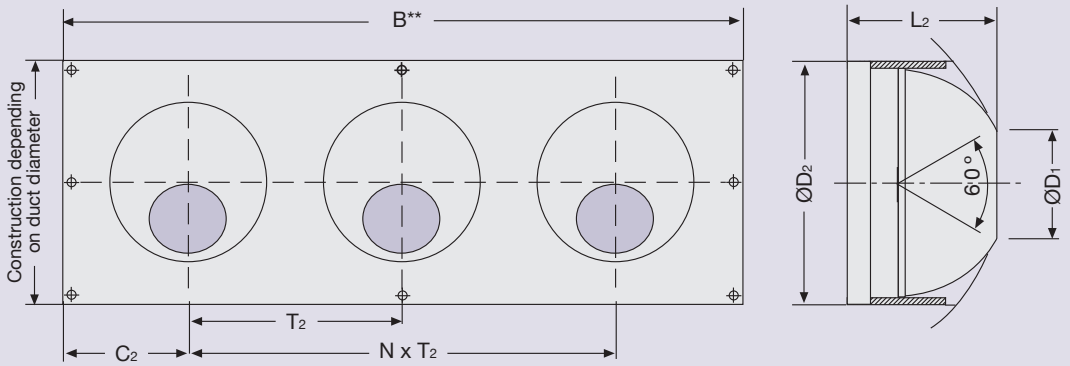
Multi-jet nozzles types DUE-S-QR-M and DUE-V-QR-M in two rows

*B = (nos. nozzles - 1xT_1) + 2C_1



Multi-jet nozzles types DUE-S-RR-M and DUE-V-RR-M fitted on a curved plate for installation on to a circular duct

**B = (nos. nozzles - 1xT_2) + 2C_2

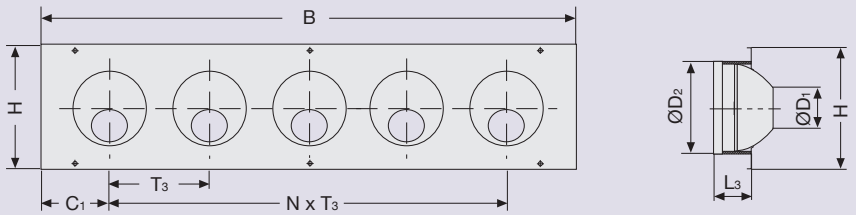


The multi jet nozzles type DUE-S-Q-M can be installed on a wall or directly on the side of a rectangular duct, and consist of a flat plate and jet nozzles in one or two rows.
The multi jet nozzles should be DUE-S, if they are to be with angular adjustment or DUE-V with angular and rotational adjustment.

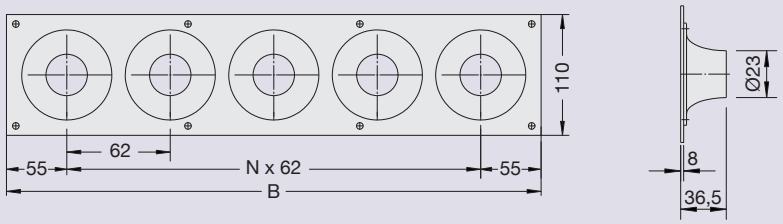
Size	$ØD_1$	$ØD_2$	L_3	T_3	H	C_1	Min. nos. nozzles	Max. nos. nozzles
50	30	82	52	105	140	65	2	17
75	40	107	55	125	160	80	2	14
100	50	128	70	150	185	92,5	2	14
100[1)]	50	128	70	150	335	92,5	4	28
125	65	158	73	175	220	100	2	10
160	87	194	85	215	250	135	2	12
200	113	242	90	260	300	150	2	10
250	141	300	106	320	360	180	2	6
315	181	376	120	405	435	220	2	5
400	235	474	145	500	540	270	2	4

1) Arrangement in 2 rows

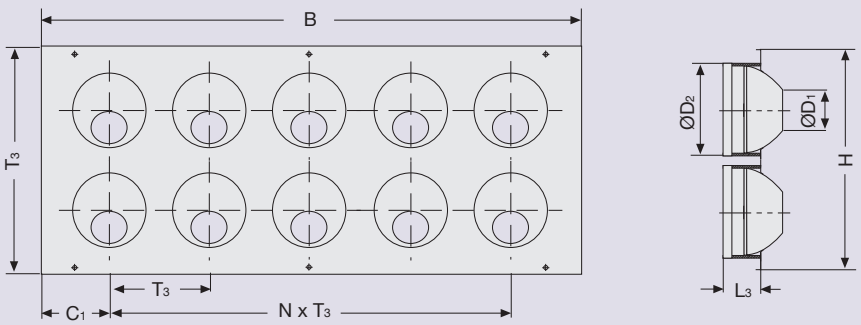
Multi jet nozzles DUE-S-Q-M and DUE-V-Q-M in flat rectangular plate



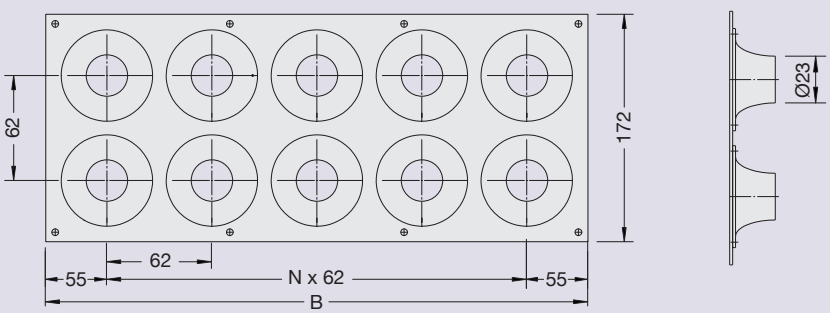
Multi jet nozzle DUE-F-25 in flat rectangular plate



Multi jet nozzles DUE-S-Q and DUE-V-Q in two rows



Multi jet nozzle DUE-F-25 in two rows



(*) Opening size: B - 36 and H - 36
B = (nos. nozzles - 1 x T3) + 2 C1

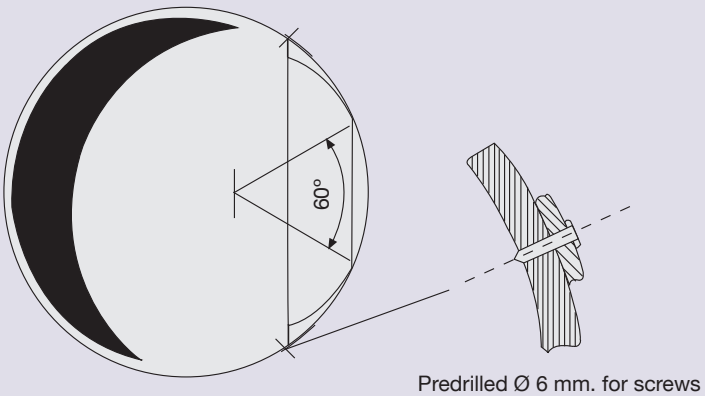
Installation · Materials

Installation

TROX multi jet nozzles are suitable for installation on rectangular or circular ducts.
The types DUE-S-QR-M, DUE-V-QR-M and DUE-S-RR-M are used for installation into circular ducts.
The type DUE-S-RR-M is supplied with a predrilled plate and the types DUE-S-QR-M and DUE-V-QR-M, are supplied with predrilled flanges for screw fixing to the duct work. These types are suitable for fitting to most commonly used circular duct diameters. On the other hand, multi jet nozzles types DUE-S-Q-M and DUE-V-Q-M are suitable for installation on rectangular duct work or on a wall. For this reason, the face plate is supplied predrilled for screw fixing. It is advised to fit a seal between the flange/plate and the mounting surface.

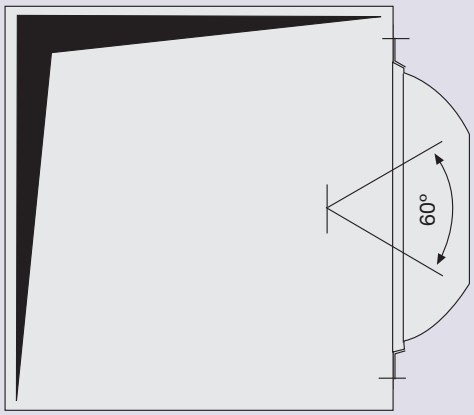
Materials

The set is composed of a spherical casing, an inner piece of nozzle, a face sheet and some duct connection flanges. Spherical casing is made of aluminium. Face plate and duct connection flanges are made of galvanized steel sheet, or aluminium under request. The complete set is powder coated in white (RAL 9010) or any other RAL colour under request.
Inner piece of the nozzle is made of plastic ABS V0 (black colour).
The set could also be provided by a perforated sheet steel plate for flow rate control, power coated in black (RAL 9005).

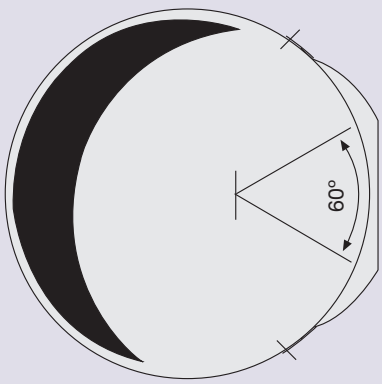


Predrilled Ø 6 mm. for screws
5,5 x 22, DIN 7982

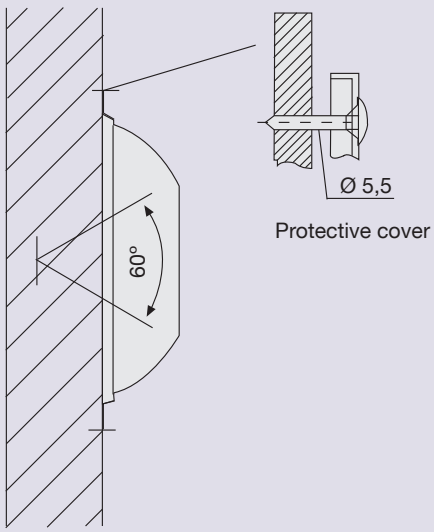
Example of installation
on a circular duct type DUE-S-QR-M



Example of installation on a rectangular
duct types DUE-S-Q-M and DUE-V-Q-M



Example of installation
on a circular duct types DUE-S-RR-M and DUE-V-RR-M



Protective cover

Example of wall installation

Nomenclature

A in m: Horizontal distance from nozzles to the air stream collision point.

B in m: Spacing distance between two nozzle arrays.

C, T, S : Variables function of α_K

H in m: Nozzle installation height above occupied zone.

H_1 in m: Height of collision point of two air streams above the occupied zone.

H_2 in m: Height of collision point of two air streams above mounting position of nozzles, for isothermal conditions.

L in m: Distance from nozzle array for isothermal conditions.

L_{max} in m: Max. penetration depth of warm air stream directed vertically downwards.

α_k in °: Discharge angle for cold air.

α_w in °: Discharge angle for warm air.

i in m: Air induction ratio at distance L.

$\dot{V}$ in m^3/h: Volume flow rate

$\dot{V}$ in l/s: Volume flow rate

y in m: Air stream deflection due to temperature difference from isothermal conditions.

v_{eff} in m/s: Effective air discharge velocity at nozzle.

v_k in m/s: Air velocity in duct.

$\bar{v}_L$ in m/s: Time average air stream velocity at distance L.

$\bar{v}_{H1}$ in m/s: Time average air velocity entering occupied zone.

Δt_Z in K: Temperature difference between supply air and room air.

Δt_L in K: Temperature difference between core and room at distance L.

Δt_{H1} in K: Temperature difference between core at occupied zone and room air.

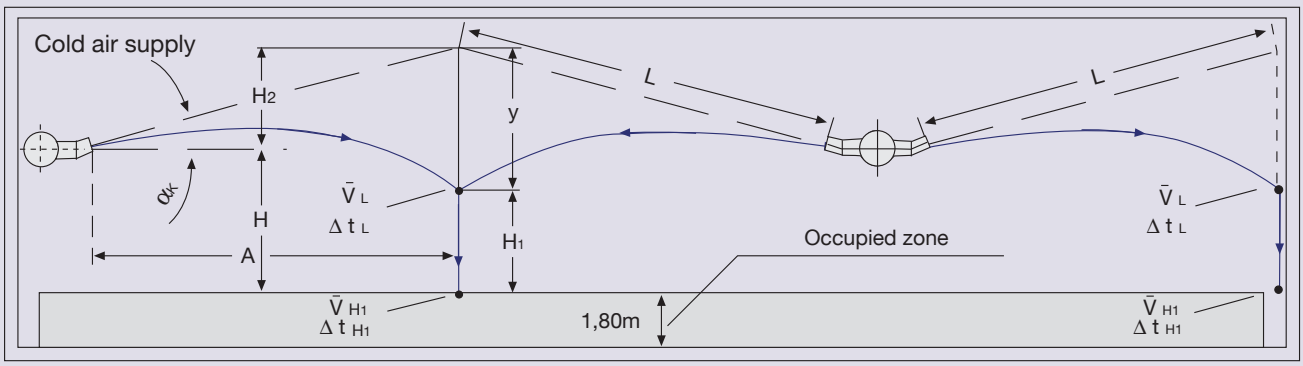
Δp_t in Pa: Total pressure drop.

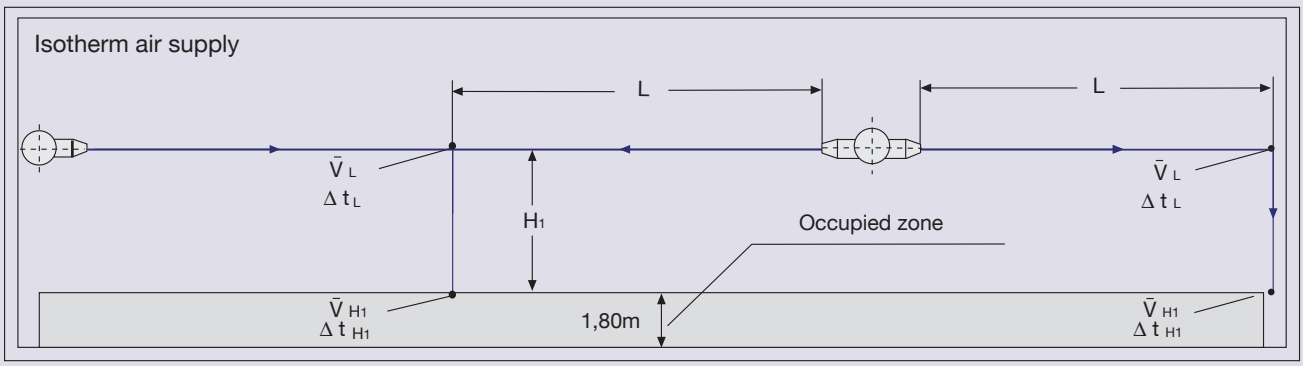
L_{WA} in dB(A): A-weighted sound power level.

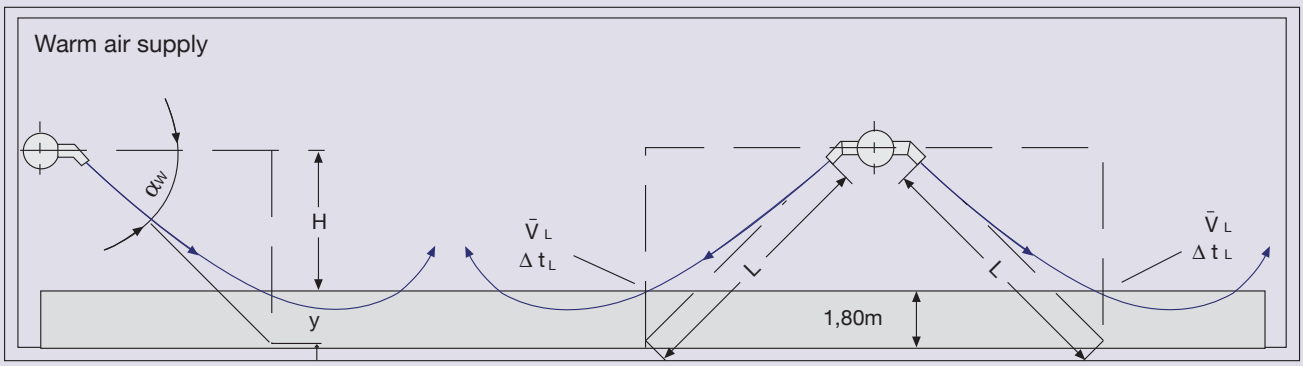
L_{WNC} : Noise criteria rating of sound power level spectrum.

L_{WNR} : $L_{WNR} = L_{WNC} + 1,5$

L_{pA}, L_{pNC} : A-weighting or NC-rating respectively of room sound pressure level.
$L_{pA} \approx L_{WA} - 8$ dB , $L_{pNC} \approx L_{WNC} - 8$ dB







Selection Method

Given:

$A, H, \Delta t_{Z\ Heating}, \Delta t_{Z\ Cooling}, \dot{V}_W, \dot{V}_K$

Preliminary selection from table on page 3:

Volume flow rate $\dot{V}$
Size of multi jet nozzle DUE-M

Table 1

α_K	C
0	1,00
5	1,00
10	0,98
15	0,97
20	0,94
25	0,91
30	0,87
35	0,82
40	0,77
45	0,71
50	0,64
55	0,57
60	0,50

Table 2

α_K	T
0	0,00
5	0,09
10	0,18
15	0,27
20	0,36
25	0,47
30	0,58
35	0,70
40	0,84
45	1,00
50	1,19
55	1,43
60	1,73

Table 3

α_K	S
0	0,00
5	0,09
10	0,17
15	0,26
20	0,34
25	0,42
30	0,50
35	0,57
40	0,64
45	0,71
50	0,77
55	0,82
60	0,87

Cold air

① A selection: e.g. $\alpha_k = 30°$ — $\alpha_k = \ldots°$

② L is calculated: $L = A/C$ — $L = \ldots$ m
(C from table 1)

③ H_2 is calculated: $H_2 = T \cdot A$ — $H_2 = \ldots$m
(T from table 2)

④ $\bar{v}_L$ from diagram 1 — $\bar{v}_L = \ldots$m/s

⑤ y from diagram 2 — y = …m

⑥ H_1 is calculated: $H_1 = H + H_2 - y$ — $H_1 = \ldots$m

⑦ $\bar{v}_{H1}$ from diagram 3 — $\bar{v}_{H1} = \ldots$m/s

If $\bar{v}_{H1}$ differs from set value, procedure must be repeated with revised α_K!

⑧ Δt_{H1} from diagram 4: — $\Delta t_{H1} = \ldots$K
$\Delta t_{H1} = (\Delta t_{H1} / \Delta t_Z) \cdot \Delta t_Z$

Isothermal air

Horizontal discharge at $\alpha = 0°$

① $\bar{v}_L$ from diagram 1 (L=A) — $\bar{v}_L = \ldots$ m/s

② $\bar{v}_{H1}$ from diagram 3 — $\bar{v}_{H1} = \ldots$m/s

If $\bar{v}_{H1}$ deviates from the specific value, must be corrected upwards or downwards. L and H_1 are changed as a result. Repeat the analysis.

Warm air

① $\bar{v}_L$ is specified: e.g. $\bar{v}_L = 0{,}3$ m/s — $\bar{v}_L = \ldots$m/s

② L from diagram 1 — L = …m

③ y from diagram 2 — y = …m

④ α_W is calculated: $S = (H + y) / L$ — $\alpha_K = \ldots°$
(α_w from table 3)
Note: $\alpha_W + \alpha_K$ = Max. 60°

Motorised adjustement of the discharge angle on a change of supply air temperature is only possible up to a max. $\alpha_W + \alpha_K = 60°$

⑤ Δt_L from diagram 4: — $\Delta t_L = \ldots$K
$\Delta t_L = (\Delta t_L / \Delta t_Z) \cdot \Delta t_Z$

Example

Data given:

2 multi jet nozzles are to be fitted at a spacing of 30 m (A = 15 m) and at a height of H = 4 m above the occupied zone, dischar ging towards each other.

For cooling, for each nozzle $\dot{V}_k$ = 200 l/s with Δt_k =-8K and for heating $\dot{V}_w$ = 100 l/s con Δt_w = +4 K.

Solución

Procedure (see page 8)

From preliminary selection table on page 3 selection is a multi jet nozzle, composed of 4 nozzles size 125.

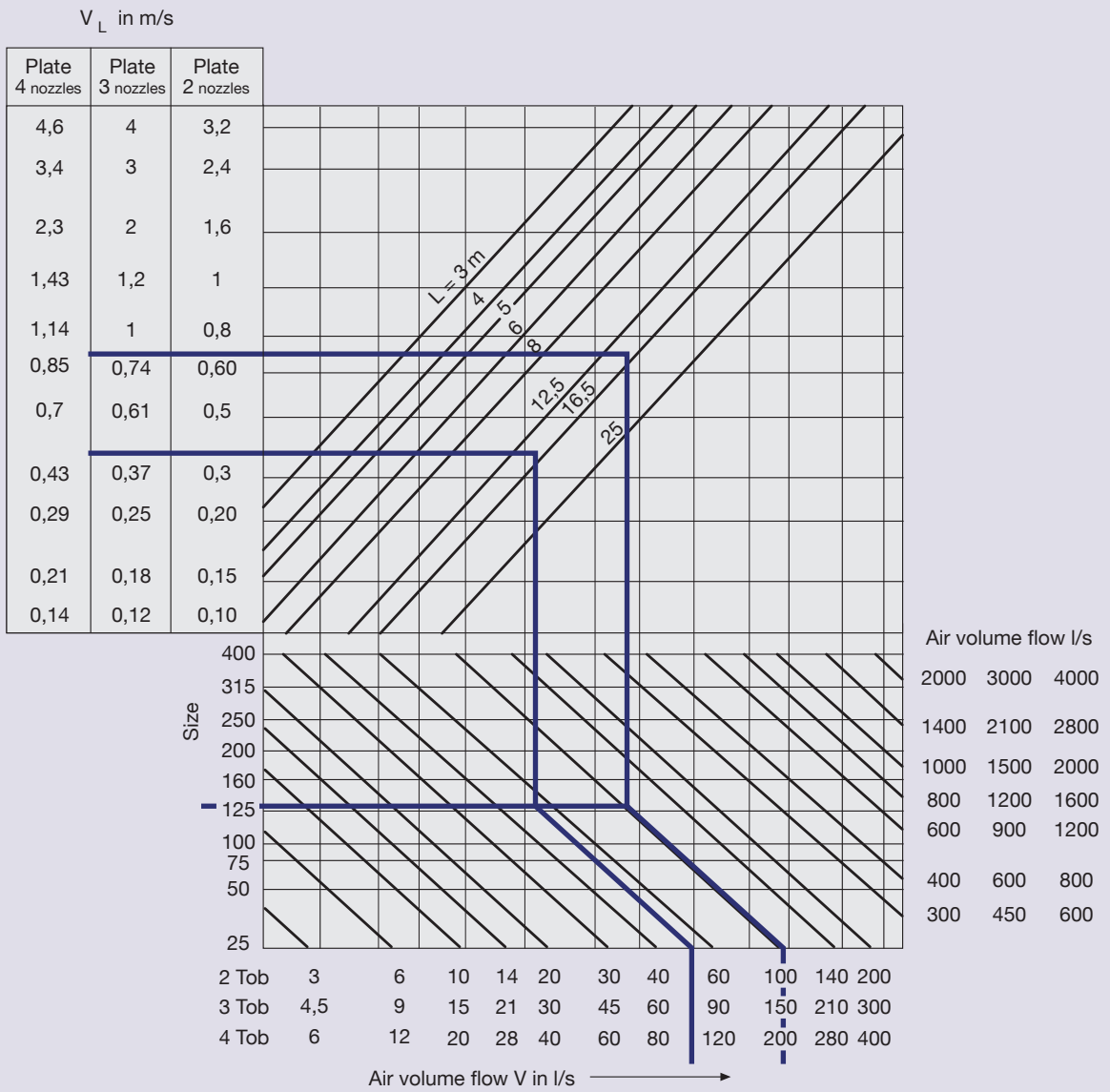
Cold air

① α_k = 20°
② L = A/C = 15/0,94 = 16,0 m. (C from table 1)
③ $H_2 = T \cdot A = 0{,}36 \cdot 15 = 5{,}4$ m. (T from table 2)
④ from diagram 1: $\bar{v}_L$ = 0,91 m/s
⑤ from diagram 2: y = 0,9 m.
⑥ $H_1 = H + H_2 - y = 5{,}8 + 5{,}4 - 0{,}9 = 10{,}3$ m.
⑦ from diagram 3: $\bar{v}_{H1} < 0{,}05$ m/s

Warm air

① data given: $\bar{v}_L$ = 0,45 m/s
② from diagram 1: L = 14,5 m.
③ from diagram 2: y = 1,1 m.
④ S = (H + y)/L = (5,8 + 1,1)/14,5 = 0,48
from table 3: α_w = 30°
from diagram 7:
with $\dot{V}$ = 200 l/s L_{WA} = 43 dB(A)
Δp_t = 155 Pa
with $\dot{V}$ = 100 l/s L_{WA} = 23 dB(A)
Δp_t = 38 Pa

1.1 Core Velocity and throw (plates with 2-4 nozzles)



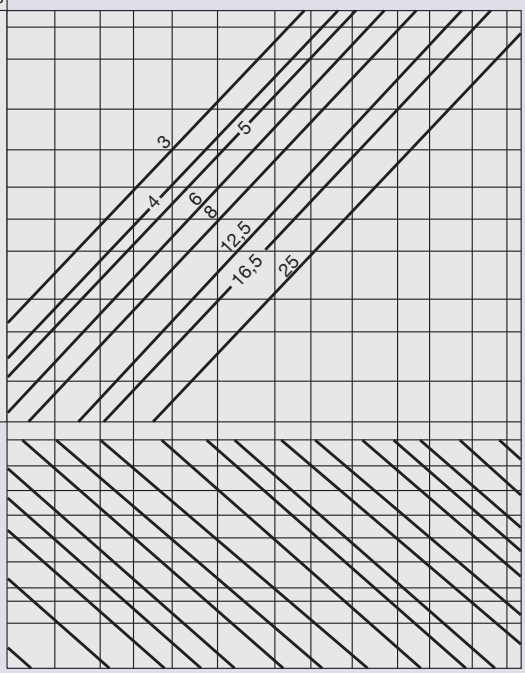
Technical data

Result
Multi jet nozzle DUE-M, size 200 with 4 jet nozzles, must be installed horizontally with the motorised movement set such that an angular movement of 30° upwards occurs with cold air and 30° downwards from warm air.

1.2 Core velocity and throw (plates with 5-14 nozzles)

V_L in m/s

Plate 14 nozzles	Plate 12 nozzles	Plate 10 nozzles	Plate 8 nozzles	Plate 7 nozzles	Plate 6 nozzles	Plate 5 nozzles
8,5	7,9	7,2	6,5	6	5,6	5
6,4	5,9	5,4	4,85	4,5	4,2	3,8
4,8	3,95	3,6	3,2	3,7	2,8	2,5
2,67	2,47	2,25	2	1,9	1,75	1,6
2,13	2,0	1,8	1,6	1,5	1,4	1,3
1,6	1,5	1,35	1,2	1,12	1,05	0,95
1,3	1,23	1,13	1	0,94	0,9	0,8
0,8	0,74	0,68	0,6	0,56	0,52	0,5
0,53	0,5	0,45	0,40	0,38	0,35	0,32
0,4	0,37	0,34	0,3	0,28	0,26	0,24
0,27	0,25	0,22	0,2	0,19	0,17	0,16



400
315
250
200
160
125
100
75
50
25

Volume flow l/s

5000	6000	7000	8000	10000	12000	14000
3500	4200	4900	5600	7000	8400	9800
2500	3000	3500	4000	5000	6000	7000
2000	2400	2800	3200	4000	4800	5600
1500	1800	2100	2400	3000	3600	4200
1000	1200	1400	1600	2000	2400	2800
750	900	1050	1200	1500	1800	2100

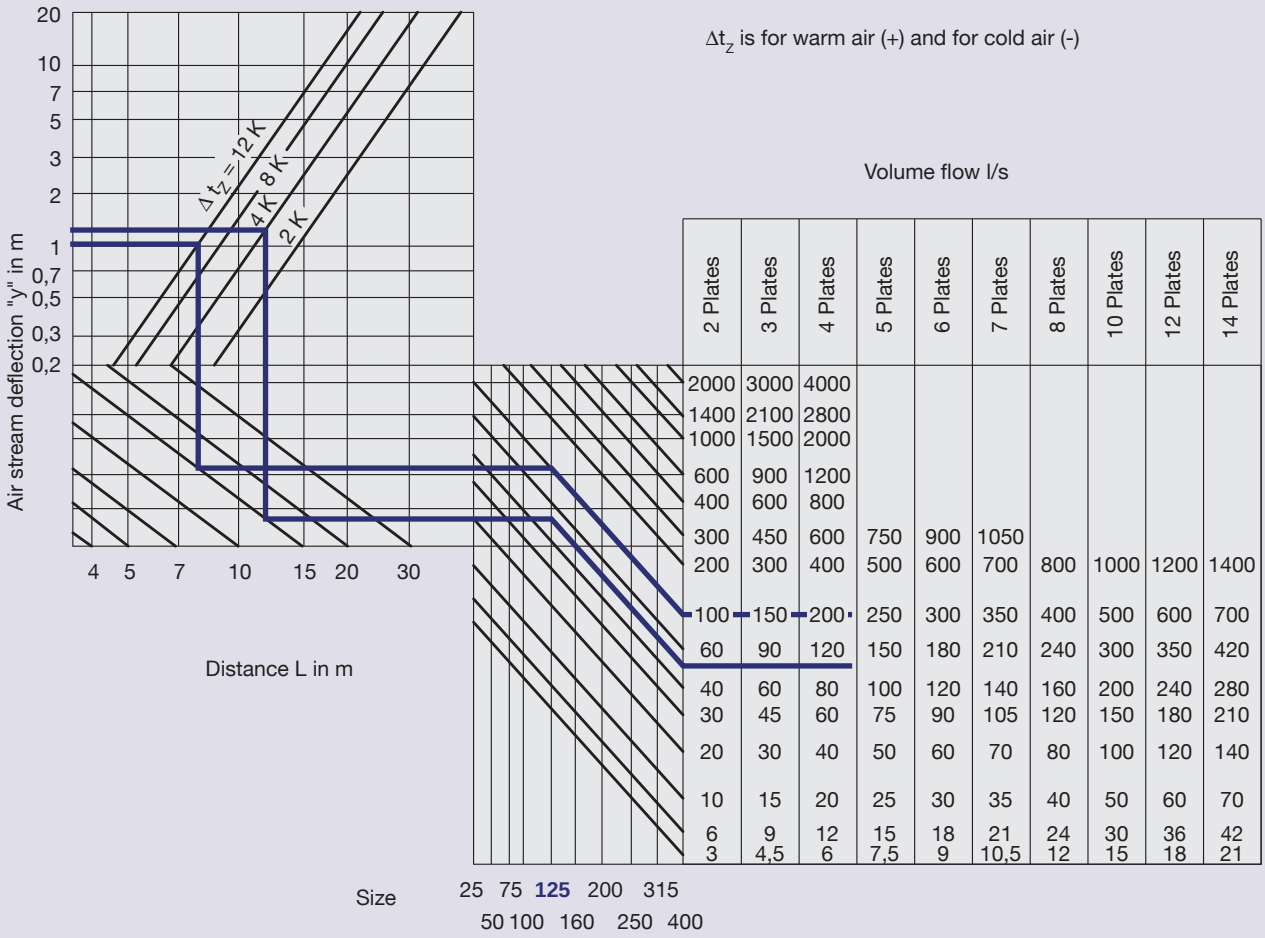
5 Tob.	7,5	15	25	35	50	75	100	150	250	350	500
6 Tob.	9	18	30	42	60	90	120	180	300	420	600
7 Tob.	10,5	21	35	49	70	105	140	210	350	490	700
8 Tob.	12	24	40	56	80	120	160	240	400	560	800
10 Tob.	15	30	50	70	100	150	200	300	500	700	1000
12 Tob.	18	36	60	84	120	180	240	360	600	840	1200
14 Tob.	21	42	70	98	140	210	280	420	700	980	1400

Volume flow l/s →

2. Air stream deflection

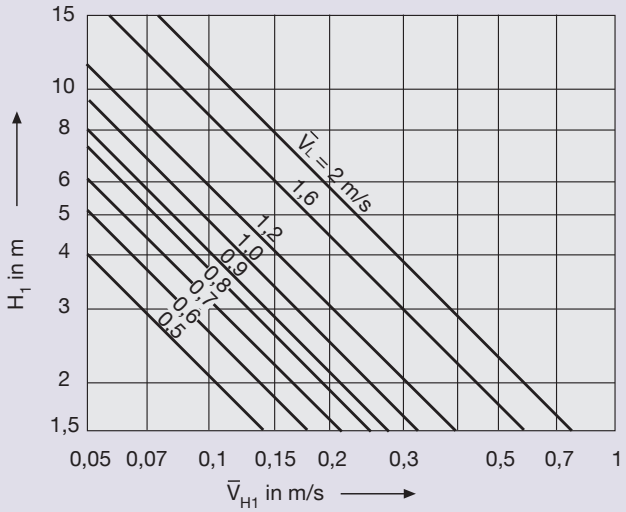
Air stream "Y" is upwards for warm air and downwards for cold air.

Δt_Z is for warm air (+) and for cold air (-)

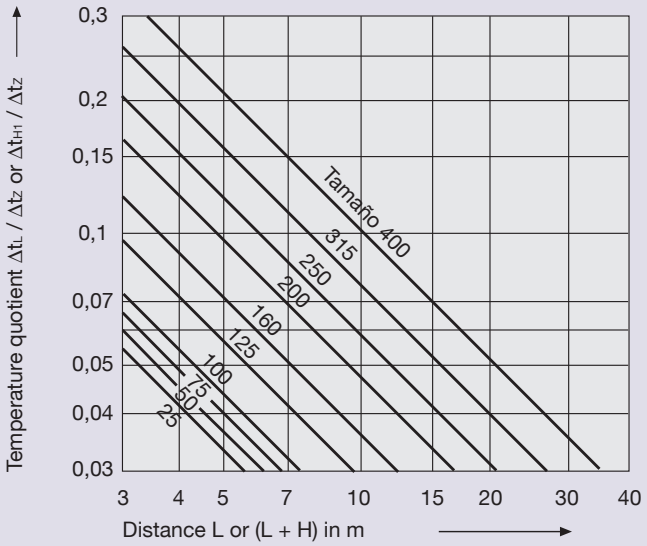


Technical data

3. Air steam velocity



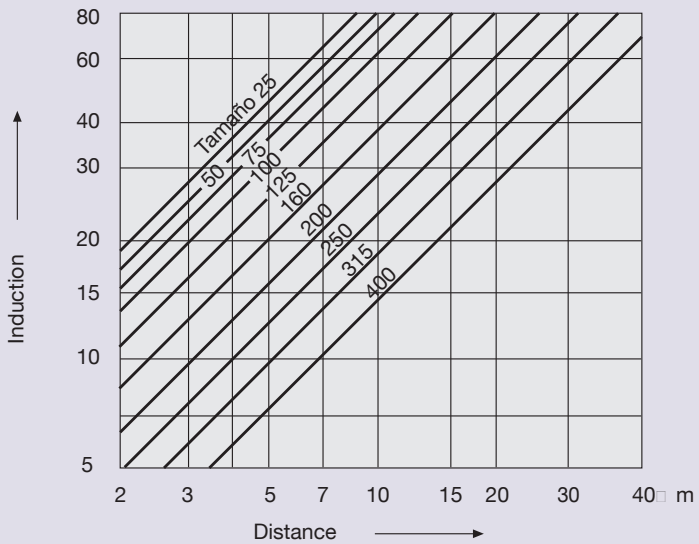
4. Temperature quotient



Correction factor
Temperature quotient

Nos. Nozzles	Factor
2	1,4
3	1,7
4	2
5	2,25
6	2,4
7	2,5
8	2,8
10	3,1
12	3,4
14	3,7

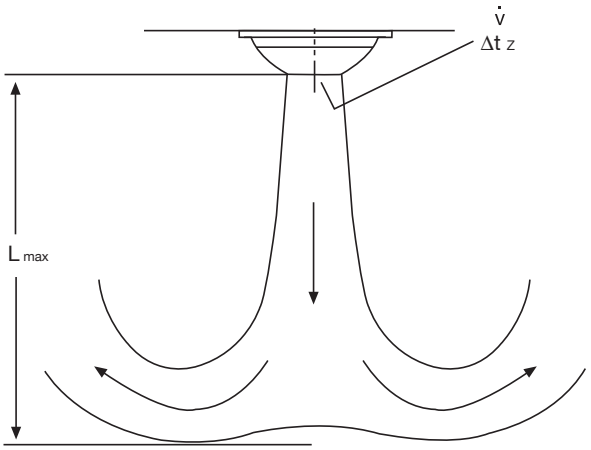
5. Induction



Correction factor
Induction

Nos. Nozzles	Factor
2	0,71
3	0,58
4	0,5
5	0,45
6	0,41
7	0,4
8	0,35
10	0,32
12	0,3
14	0,27

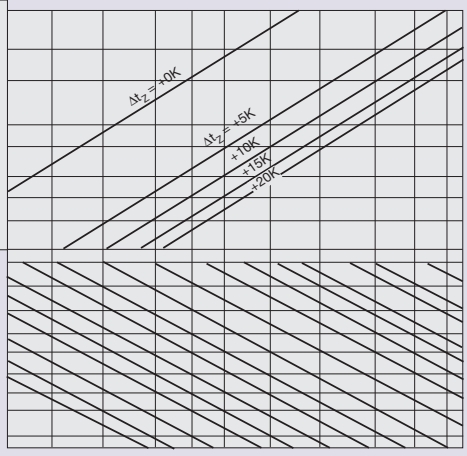
L_{max} is the maximum penetration depth to which a warm air stream can penetrate vertically downwards as a function of the temperature difference.



6. Maximum penetration depth of a warm air stream discharging vertically downward

Maximum penetration L max. in m

Plate 14 nozzles	Plate 12 nozzles	Plate 10 nozzles	Plate 8 nozzles	Plate 7 nozzles	Plate 6 nozzles	Plate 5 nozzles	Plate 4 nozzles	Plate 3 nozzles	Plate 2 nozzles
111	102	93	84	78	72	67	60	51	42
74	68	62	56	52	48	45	40	34	28
55	51	46	42	39	36	34	30	25	21
37	34	31	28	26	24	22	20	17	14
30	27	25	22	21	19	18	16	13	11
22	20	18	17	15	14	13	12	10	8
18	17	15	14	13	12	11	10	8	7
15	13	12	11	10	10	9	8	7	5
11	10	9	8	8	7	7	6	5	4



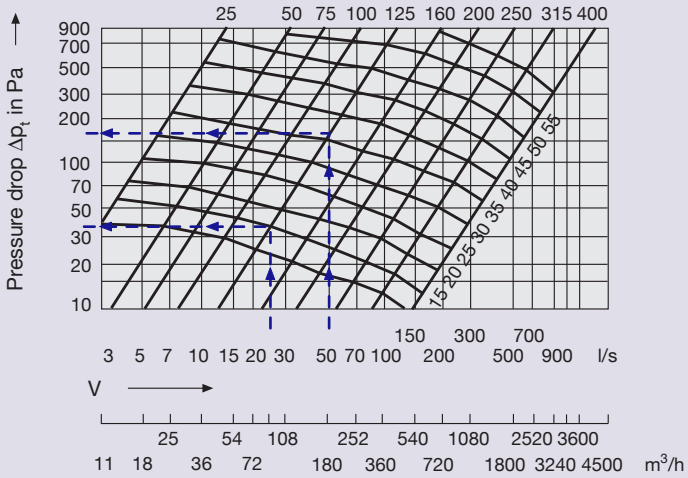
Volume flow l/s

2 Nozzles	10	14	20	30	40	60	80	100	140	
3 Nozzles	15	21	30	45	60	90	120	150	210	
4 Nozzles	20	28	40	60	80	120	160	200	280	
5 Nozzles	25	35	50	75	100	150	200	250	350	
6 Nozzles	30	42	60	90	120	180	240	300	420	
7 Nozzles	35	49	70	105	140	210	280	350	490	
8 Nozzles	40	56	80	120	160	240	320	400	560	
10 Nozzles	50	70	100	150	200	300	400	500	700	
12 Nozzles	60	84	120	180	240	360	480	600	840	
14 Nozzles	70	98	140	210	280	420	560	700	980	

400	600	800	1000	1200	1400	1600	2000	2400	2800	
300	450	600	750	900	1050	1200	1500	1800	2100	
200	300	400	500	600	700	800	1000	1200	1400	

Acoustic Data

7. Sound power and pressure drop



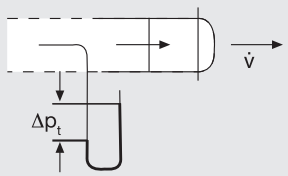
Correction to diagram 7:

Size	Number of jet nozzles per plate												
	2	3	4	5	6	7	8	9	10	11	12	13	14
25	5	7	8	9	10	11,5	12	12,5	13	13,5	13,8	14	14,5
50	5	7	8	9	10	11,5	12	12,5	13	13,5	13,8	14	14,5
75	5	7	8	9	10	11,5	12	12,5	13	13,5	13,8	14	14,5
100	5	7	8	9	10	11,5	12	12,5	13	13,5	13,8	14	14,5
125	5	7	8	9	10	11,5	12	12,5	13	13,5	13,8	14	14,5
160	5	7	8	9	10	11,5	12	12,5	13	13,5	13,8	14	14,5
200	5	7	8	9	10	11,5	12	12,5	13	13,5	13,8	14	14,5
250	4	6	7	8	9	9,5	10	10,5	11	11,5	11,8	12	12,5
315	3	5	6	7	8	8,5	9	9,5	10	10,5	10,8	11	11,5
400	2	4	5	6	7	7,5	8	8,5	9	9,5	9,8	10	10,5

Based on sound power per plate.

For angular adjustement of α=±30

For adjustement of angle no additional correction is necessary



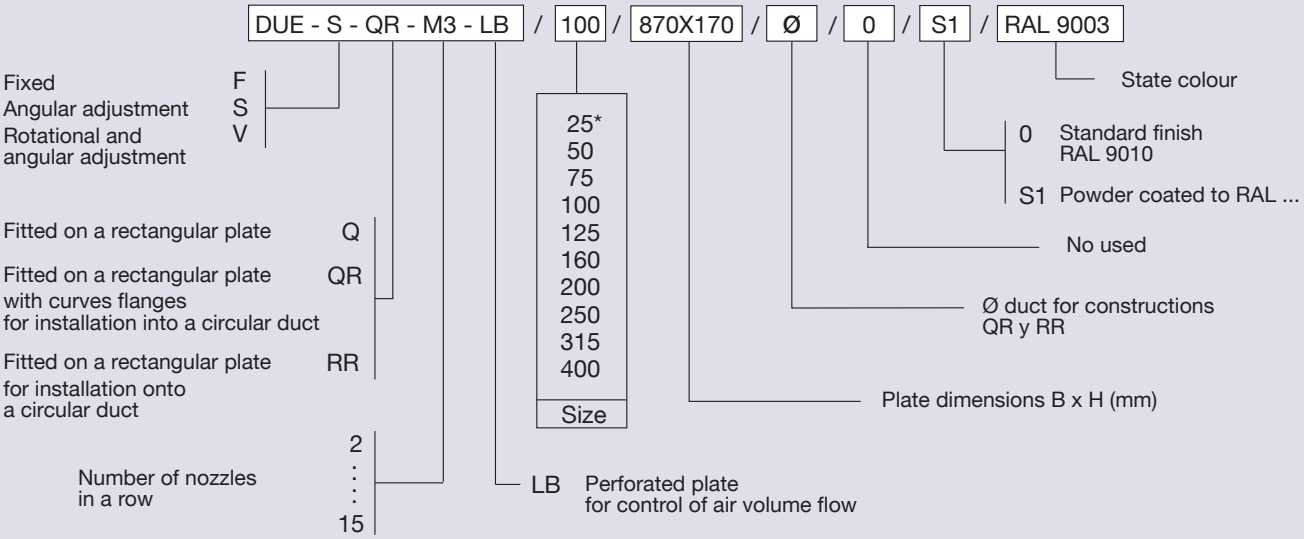
Size	A_{eff} = in m²
25	0,000314
50	0,00070686
75	0,001257
100	0,001744
125	0,00294
160	0,00469
200	0,00813
250	0,01289
315	0,02110
400	0,03686

$$V_{ef} = \frac{\dot{V}}{1000 \cdot A_{ef}} \text{ (m/s)}$$

$$V_{ef} = \frac{\dot{V}}{3600 \cdot A_{ef}} \text{ (m/s)}$$

$\dot{V}$ in m³/h, A_{ef} in m²

Order code



* Just for construction DUE-F
*1) The construction V is not possible with RR plate

Specification text

Multi jet nozzles type DUE-M are used for preference where the supply air from the diffuser has to travel a large distance to a small occupied zone. They are suitable for long throw distances with optimum acoustic properties, preferably used for heating and cooling in critical areas. The manual adjustment allows variation to compensate for changing temperature differences. Adjustment angular range 30º upwards to 30º downwards for construction S. It can also be rotated through 360º with construction V. DUE-M jet nozzles are recommended for circular, rectangular ducts or for direct wall mounting.

Materials

The set is composed of a spherical casing, an inner piece of nozzle, a face sheet and some duct connection flanges. Spherical casing is made of aluminium. Face plate and duct connection flanges are made of galvanized steel sheet, or aluminium under request. The complete set is powder coated in white (RAL 9010) or any other RAL colour under request.
Inner piece of the nozzle is made of plastic ABS V0 (black colour).
The set could also be provided by a perforated sheet steel plate for flow rate control, power coated in black (RAL 9005).

Order example:

Maker : TROX
Type : DUE-S-QR-M3/100/870X170/0/S1/RAL 9005