



Krantz Components

Adjustable radial outlet
with core tube RA-V2....

Air distribution systems

Krantz

Adjustable radial outlet with core tube RA-V2

Preliminary remark

The adjustable radial outlet RA-V2 of Krantz Components generates turbulent mixing ventilation and is well suited for installation flush with the ceiling or freely suspended, especially in case of large thermal load variations in commercial or industrial applications as well as for great room heights.

The direction of the supply air jets is adjustable from horizontal to vertical (downwards) depending on the supply air temperature. Adjustment occurs via a built-in damper controlled by a self-acting thermostatic control unit, an electric actuator, or a manual device.

Mode of operation

The radial vanes generate a diffuse air flow according to the principle of turbulent mixing ventilation. In cooling mode the supply air is discharged horizontally with high-turbulence air jets that induce indoor air. This leads to rapid temperature equalization of supply air and indoor air as well as to a quick decrease in jet velocity. Thus, the adjustable radial outlet with core tube achieves a high level of thermal comfort.

For heating, a support jet is generated via an adjustable damper built into the core tube; this support jet adjusts the discharge direction of the whole supply air continuously from horizontal (cooling mode) to vertical (heating mode).

RA-V2 outlets can be installed flush with the ceiling or freely suspended.

When used in HVAC systems without cooling (e.g. in industrial spaces), if indoor air temperatures are high, vertical air discharge may be appropriate to achieve higher air velocities.



Fig. 1: Adjustable radial outlet RA-V2 with electric actuator

Air outlet data

Nom. ø	Volume flow rate range				Discharge height H m	Max. temperature difference supply air–indoor air $\Delta\theta$	
	\dot{V}_{min}		\dot{V}_{max}			Cooling mode K	Heating mode K
DN	l/s	m³/h	l/s	m³/h			
250	111	400	389	1 400	2.8 – 6	-12	+12
315	167	600	611	2 200	3 – 8		
355	222	800	833	3 000	3 – 9		
400	278	1 000	1 055	3 800	3 – 12		
500	444	1 600	1 390	5 000	4 – 12		
630	694	2 500	2 500	9 000	5 – 13		
710	972	3 500	3 056	11 000	5 – 14		
900	1 667	6 000	4 444	16 000	6 – 15		

Construction design

The adjustable radial outlet **1** has a circular or square face and is made of powder coated sheet metal.

The core tube **2** is fitted with an adjustable damper **3**, a jet straightener **4** and a collar **5**. The underside of the fixed radial vanes **6** is flush with the outlet face. The radial discharge of the supply air is enhanced by the slanting exit **7**.

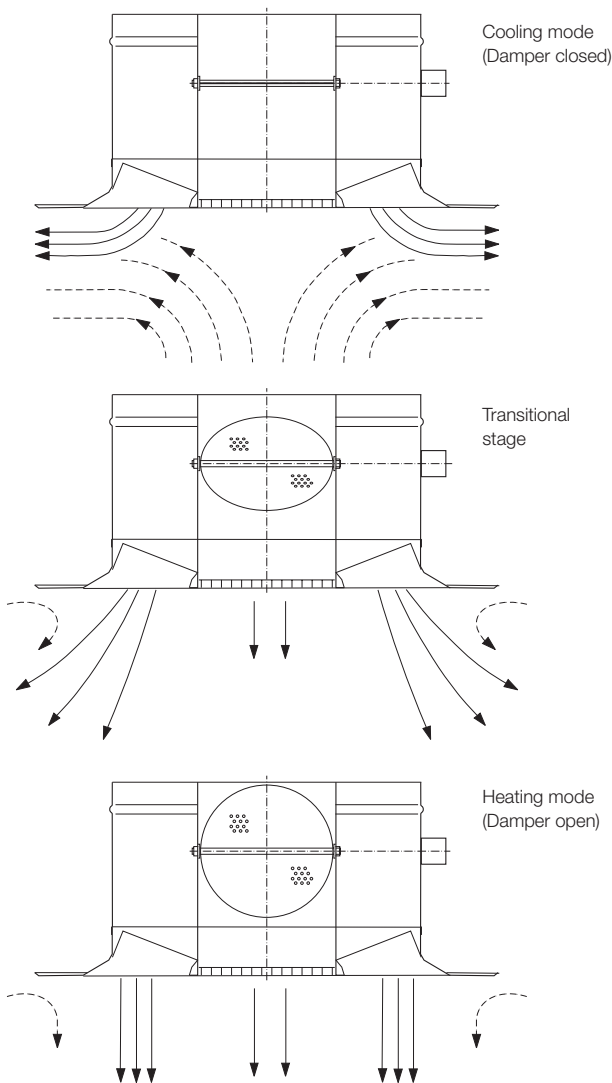


Fig. 2: Jet spread at different positions of the adjustable damper, shown here with electric actuator

Adjustable radial outlet with core tube RA-V2

The discharge direction is adjusted either via a thermostatic control unit **8** built into the radial outlet, or via an electric actuator **9** or a manual adjusting device **10**, each being positioned on the housing outer surface.

As an option, the outlet can be fitted with a perforated plate **4a** in order to enable quicker heating-up in very high rooms.



Horizontal jet when cooling



Vertical jet when heating

Fig. 3: Jet spread when cooling and heating, made visible by smoke tracer

Self-acting thermostatic control unit for alteration of discharge direction

The thermostatic control unit includes a self-acting element containing expandable material; in response to the supply air temperature it alters the discharge direction from horizontal when cooling to vertical when heating.

At supply air temperatures below 22 °C we usually have the cooling mode; the supply air is discharged horizontally. In the isothermal range from 22 °C to 24 °C the supply air is discharged at a slight downward incline. Above 24 °C we mainly have the heating mode; the supply air is then discharged at a steeper downward incline, and even vertically downwards above 28 °C.

For electrical adjustment the radial outlets must be equipped with actuators. The direction of the supply air jets is adjusted to the prevailing load on the basis of the measured supply and indoor air temperatures, using the building management system (BMS) and an appropriate control graph.

Thermostatic control obviates the need for a central control system and outlet wiring. Each adjustable radial outlet is fitted with a thermostatic control unit which gets energy for damper adjustment

from the supply air temperature. The thermostatic control unit, which is filled with expandable material, is available for two supply air temperature ranges: T1 from 20 to 28 °C and T2 from 16 to 28 °C. Another advantage of this unit is that the supply air temperature is measured inside the air outlet, not at a central point such as behind the HVAC system. With a long ductwork, for instance, significant temperature differences are likely to occur and to impair both thermal comfort and heating-up periods; this is precluded by the thermostatic control unit.

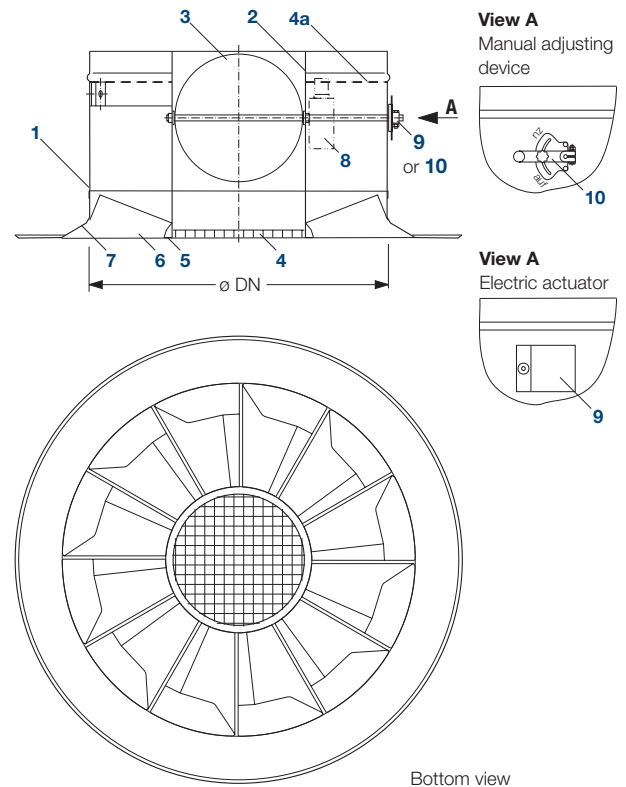


Fig. 4: Adjustable radial outlet RA-V2

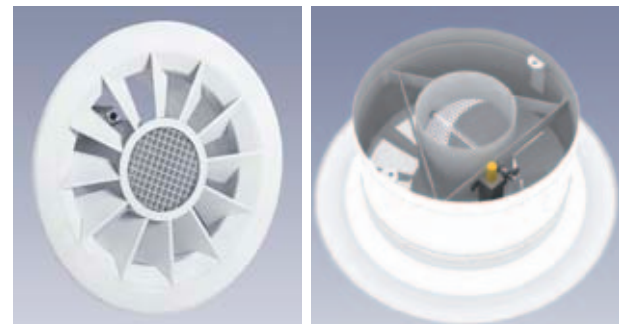


Fig. 5: Adjustable radial outlet RA-V2 with thermostatic control unit

Adjustable radial outlet with core tube RA-V2

Connection types

The adjustable radial outlet RA-V2 can be connected to the duct system either directly by the spigot **11** or via a connection box **12** available for outlets up to DN 710.

Connection to a circular duct

The adjustable radial outlet is fastened to the circular duct on site either directly or, for installation flush with ceiling, via a crossbar **12a** available as accessory. Screwing is then made from the outlet underside through the openings between the vanes. The spigot and the crossbar suit circular ducts to EN 1506.

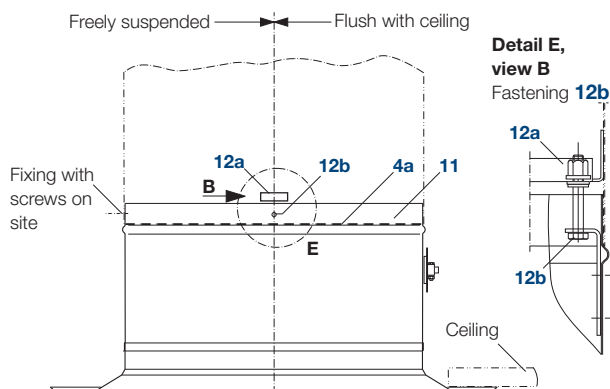


Fig. 6: Example of connection to circular duct

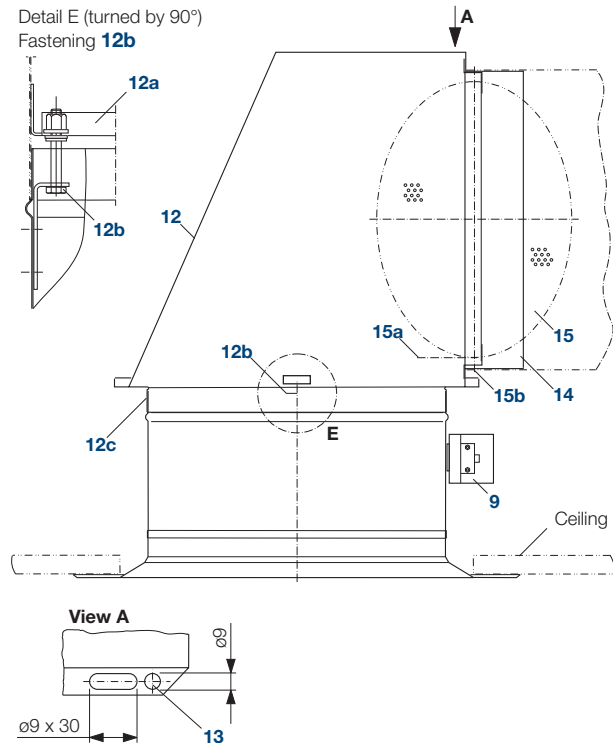


Fig. 8: Example of connection to connection box



Fig. 7: Adjustable radial outlet RA-V2 with connection box

Connection to a connection box

The adjustable radial outlet is inserted into the sleeve **12c** of the connection box and screwed to the crossbar of this box with fastening screws **12b**. The connection box is fixed to the ceiling either via quick fasteners or via threaded rods (M8 with lock nuts) which are to be provided by the client. The optional volume flow damper **15** can be ordered with adjustment from the room or at the connection spigot.

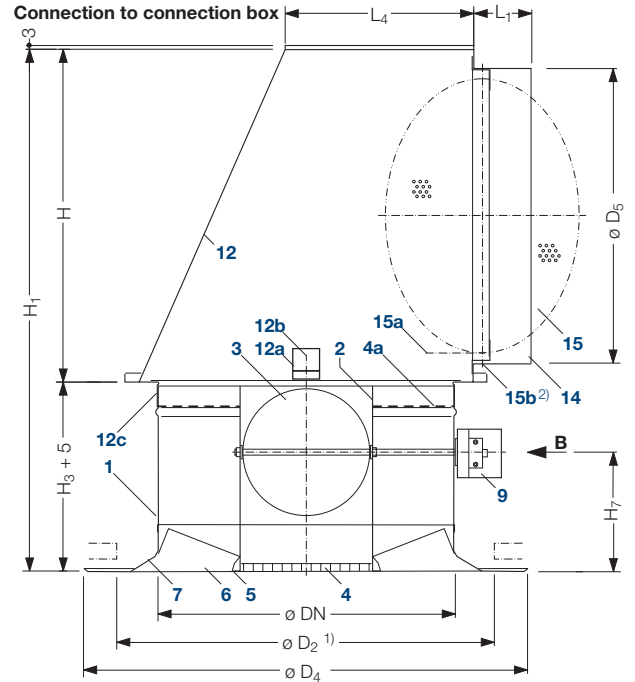
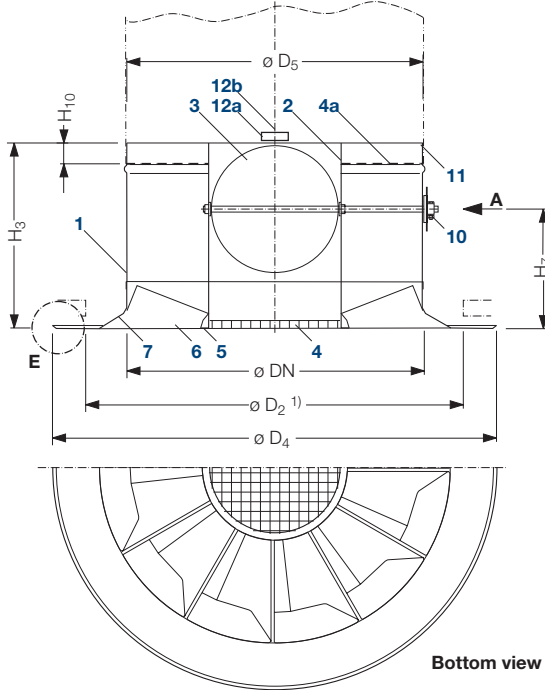
Key for all pages

- | | |
|---------------------------------------|--|
| 1 Adjustable radial outlet | 11 Spigot |
| 2 Core tube | 12 Connection box |
| 3 Adjustable damper | 12a Crossbar (optional) |
| 4 Jet straightener | 12b Fastening screws M8 |
| 4a Perforated plate (optional) | 12c Sleeve |
| 5 Collar | 13 Bore for suspension with quick fastener or threaded rod M8 |
| 6 Vane | 14 Connection spigot |
| 7 Slanting exit | 15 Volume flow damper (optional) |
| 8 Thermostatic control unit | 15a Adjustment from room up to DN 500 |
| 9 Electric actuator | 15b Adjustment at spigot for DN 630 and DN 710 |
| 10 Manual adjusting device | |

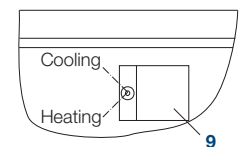
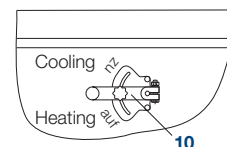
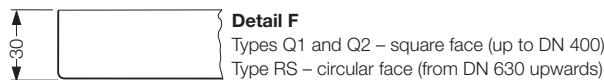
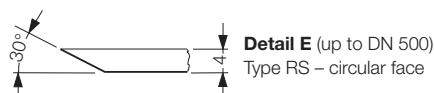
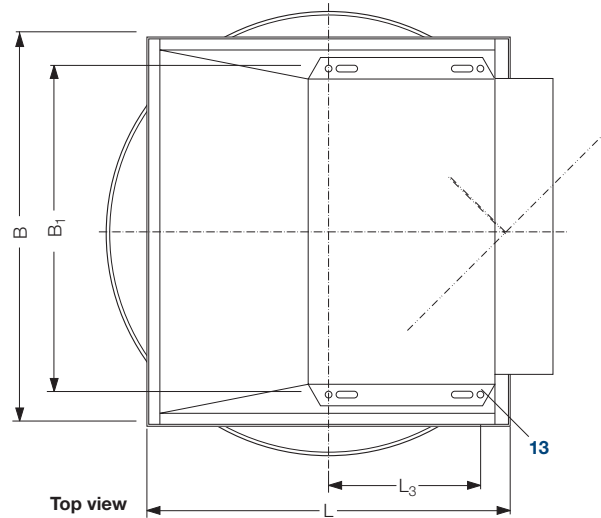
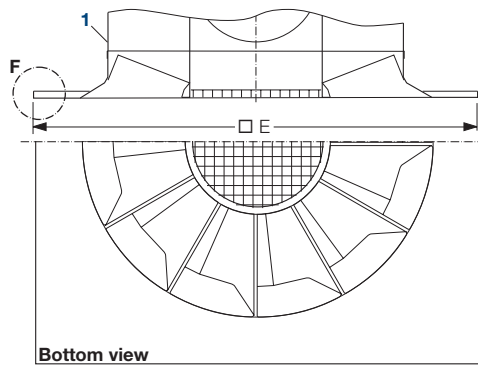
Adjustable radial outlet with core tube RA-V2

Dimensions

Connection to circular duct
- with circular face



- with square face



Nom. ø	Dimensions in mm														RA-V2-RS		RA-V2-Q1		RA-V2-Q2					
	D ₂ ¹⁾	D ₄	D ₅	H	H ₁	H ₃	H ₇	H ₁₀	L	B	B ₁	L ₁	L ₃	L ₄	W in kg ³⁾	①	②	W in kg ³⁾	①	②	W in kg ³⁾	①	②	
															①	②	①	②	①	②	①	②	①	②
DN 250	325	375	249	300	505	200	127	30	350	375	298	60	135	180	3.8	8.0								
DN 315	420	470	314	365	587	217	141	30	415	445	357	60	168	213	5.2	11.2								
DN 355	460	530	354	405	640	230	151	30	455	485	390	60	188	233	6.2	13.5								
DN 400	500	600	399	450	705	250	161	35	500	535	432	80	210	255	7.5	16.6								
DN 500	600	750	499	550	849	294	183	40	600	645	525	80	260	305	10.6	23.9								
DN 630	760	945	628	680	1 035	350	211	50	730	785	642	80 ²⁾	325	370	16.0	35.3								
DN 710	860	1 065	708	760	1 150	385	229	50	810	870	713	100 ²⁾	365	410	19.8	44.8								
DN 900	1 100	1 350	898	-	-	472	272	50	-	-	-	-	-	-	29.6	-								

1) Ceiling cutout

2) With DN 630 and DN 710 dimension L₁ = 160 mm with optional volume flow damper

3) Weight inclusive of electric actuator or thermostatic control unit;

① Air outlet; ② Air outlet with connection box

Adjustable radial outlet with core tube RA-V2

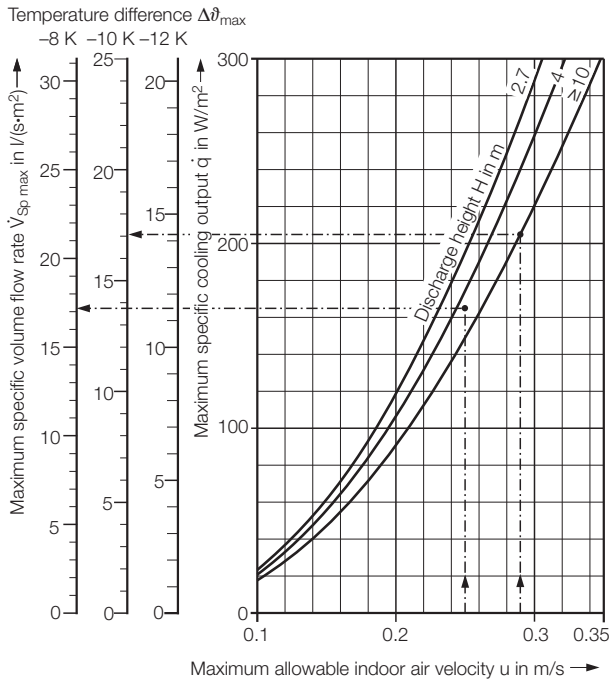
Comfort criteria

Comfort criteria ¹⁾

The outlet layout must comply with the maximum allowable indoor air velocities u in the occupied zone in cooling mode. The indoor air velocity depends on the cooling load that is to be removed from the room. The maximum specific cooling capacity \dot{q} depends on the discharge height and the maximum allowable indoor air velocity u (Graph 1).

Graph 1 enables to determine for the cooling mode the maximum specific volume flow rate $\dot{V}_{Sp\ max}$ in relation to the maximum specific cooling capacity and the maximum temperature difference $\Delta\vartheta_{max}$. The volume flow rate supplied to the room $\dot{V}_{Sp\ act}$ may not exceed this value.

Graph 2 enables to determine the minimum centre spacing between two outlets on the basis of the maximum specific volume flow rate.



Graph 1: Maximum specific volume flow rate

Key for layout:

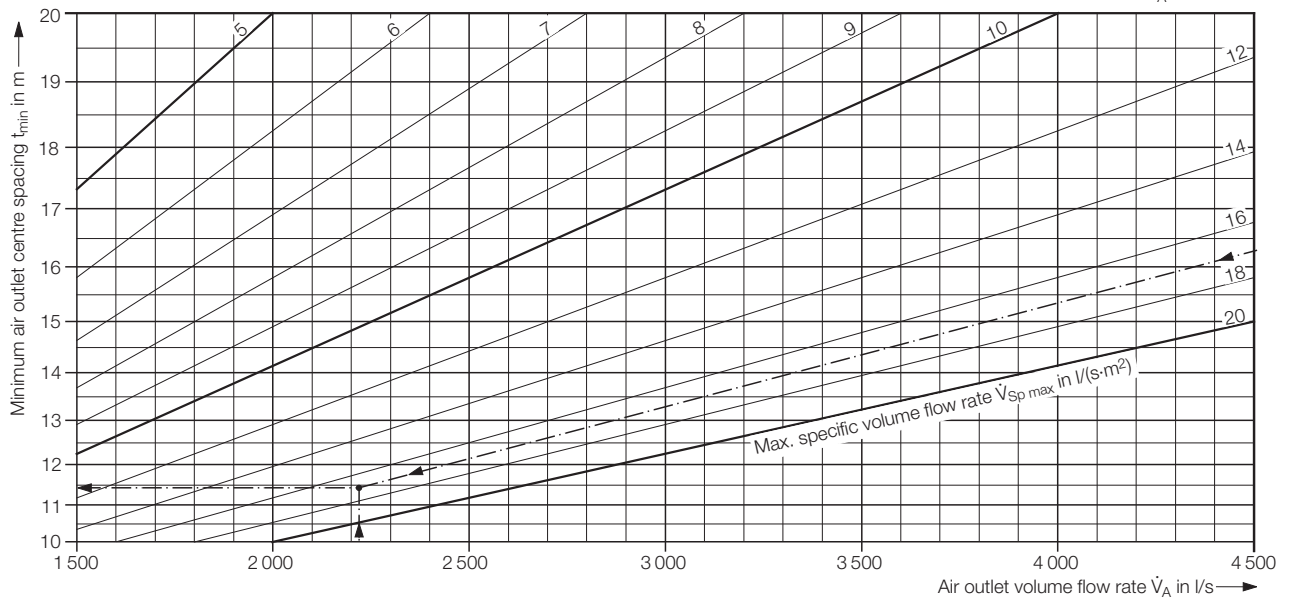
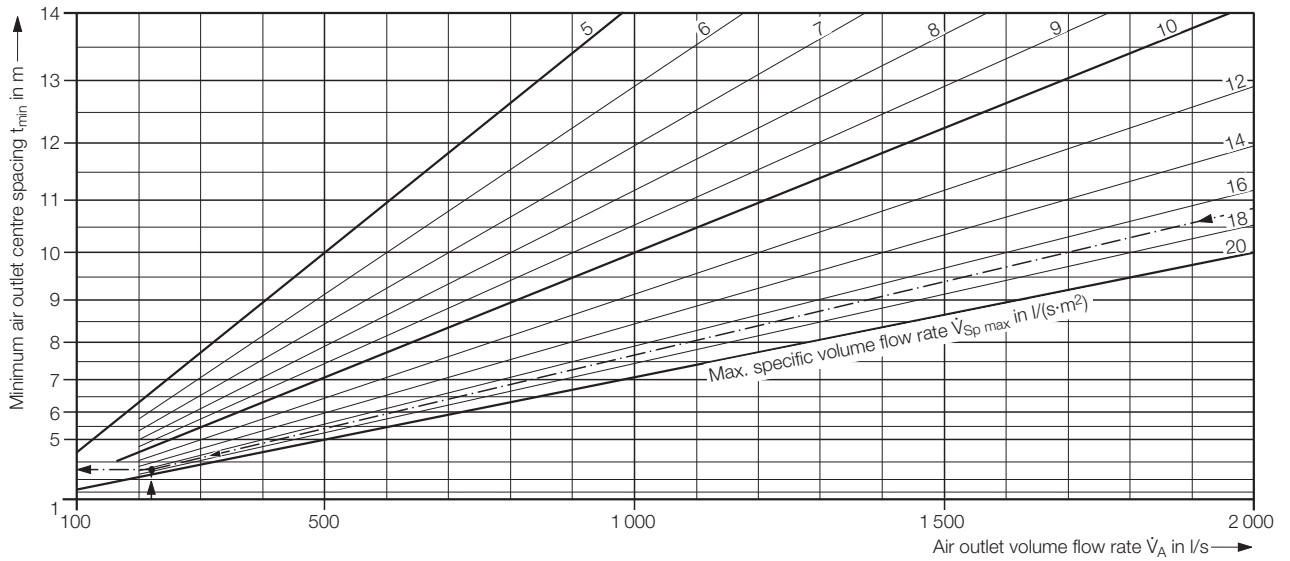
- \dot{V}_A = volume flow rate per air outlet in l/s
- $\dot{V}_{A\ max}$ = max. volume flow rate per air outlet when cooling in l/s
- $\dot{V}_{A\ min}$ = min. volume flow rate per air outlet when cooling in l/s
- $\dot{V}_{A\ min\ H}$ = min. volume flow rate per air outlet in l/s, when heating, with $\Delta\vartheta = \dots K$
- $\dot{V}_{Sp\ max}$ = max. specific volume flow rate per m² in l/(s·m²)
- $\dot{V}_{Sp\ act}$ = actual specific volume flow rate per m² of floor area in l/(s·m²)
- u = max. allowable indoor air velocity in m/s
- \dot{q} = max. specific cooling capacity in W/m²
- $\Delta\vartheta_{max}$ = max. temperature difference supply air to return air in K
- t_{min} = minimum air outlet centre spacing in m
- H = discharge height in m
- L_{WA} = sound power level in dB(A) ref. 10⁻¹² W
- Δp_t = total pressure drop in Pa
- RV = duct connection, vertical discharge
- RH = duct connection, horizontal discharge
- KV = connection box, vertical discharge
- KH = connection box, horizontal discharge

Layout examples		Super-market	Exhibition Hall
Size		DN 250	DN 710
Connection type		Duct connection	Duct connection
1 Supply air volume flow rate \dot{V}	l/s	5 550	200 000
2 Discharge height H	m	5	10
3 Floor area A	m ²	645	14 000
4 Max. allowable sound power level L_{WA}	dB(A) ref. 10 ⁻¹² W	55	65
5 Max. temperature difference supply air to return air:			
$\Delta\vartheta_{Cooling}$	K	-8	-10
$\Delta\vartheta_{Heating}$	K	+6	+5
6 Comfort criteria			
- Max. allowable indoor air velocity u	m/s	0.25	0.29
- Max. specific volume flow rate $\dot{V}_{Sp\ max}$	l/(s·m ²)	17	17
- Actual specific volume flow rate $\dot{V}_{Sp\ act}$ [from 1 : 3]	l/(s·m ²)	8.6	14.2
Criterion is met if $\dot{V}_{Sp\ act} < \dot{V}_{Sp\ max}$.			
From graph:			
7 $\dot{V}_{A\ min\ H}$	l/s	[Graph p. 7] 120 [at $\Delta\vartheta = 6\ K$]	[Graph p. 9] 2 080 [at $\Delta\vartheta = 5\ K$]
8 Z	selected	units	25
9 \dot{V}_A	[$\dot{V} : Z$]	l/s	[Graph p. 7] 220
10 $L_{WA\ max}$		dB(A)	[Graph p. 9] 2 220
11 $\Delta p_t\ max$		Pa	52
12 t_{min}	[Graph 2, p. 7]	m	59
			62
			100
			≈ 3.6
			≈ 11.4

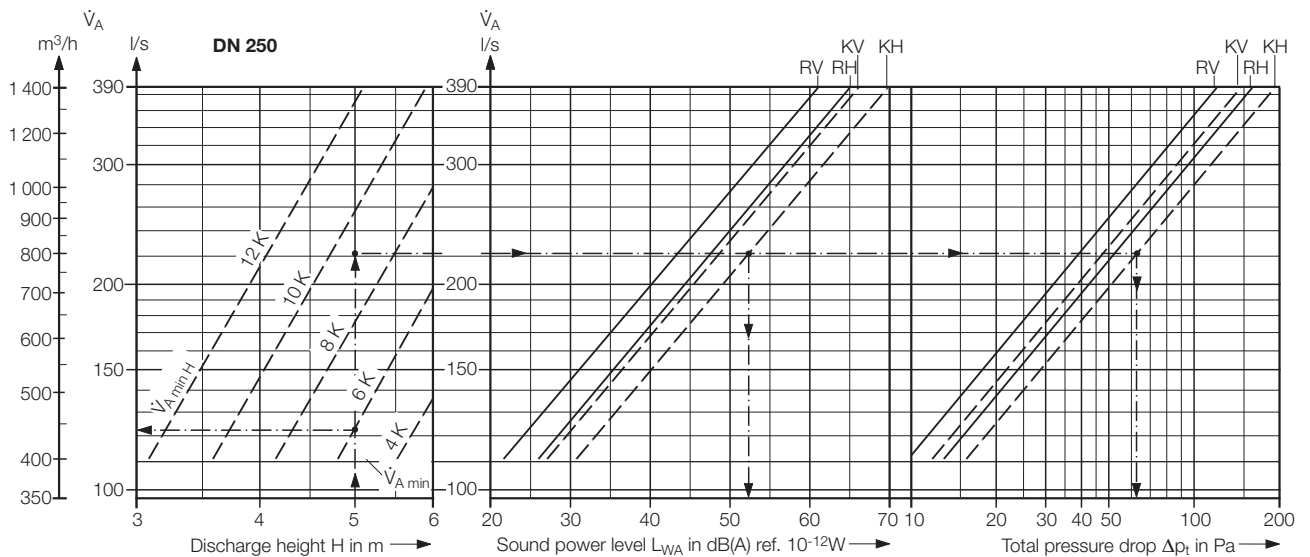
¹⁾ See our brochure ref. TB 69 'Layout specifications for thermal comfort'

Adjustable radial outlet with core tube RA-V2

Air outlet centre spacing and layout sheet for DN 250

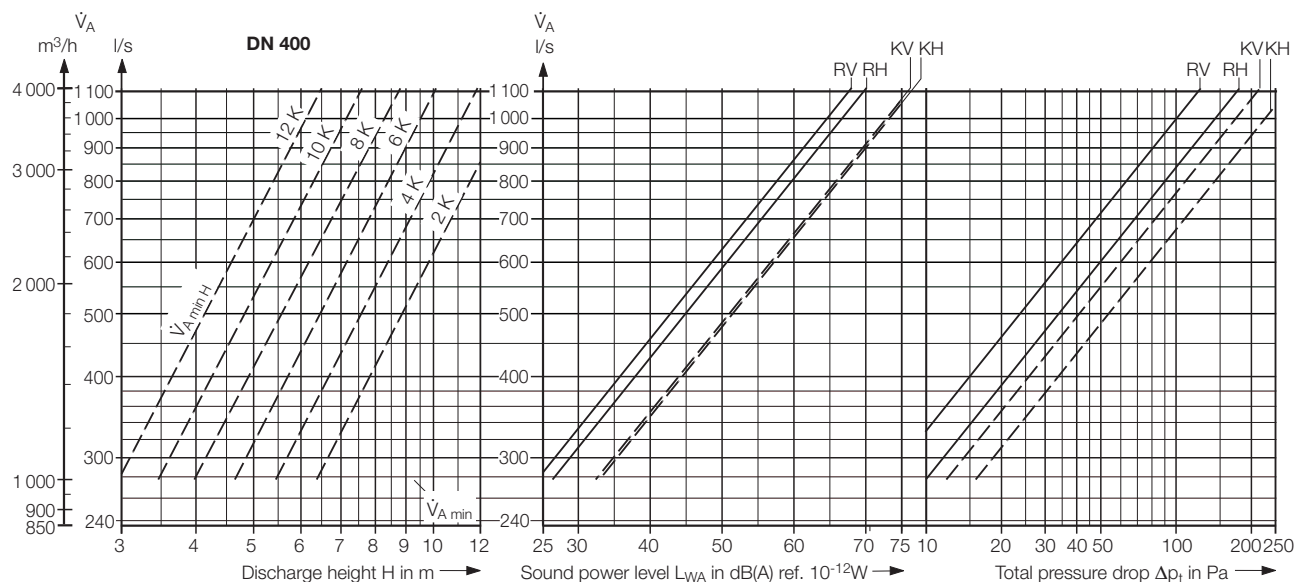
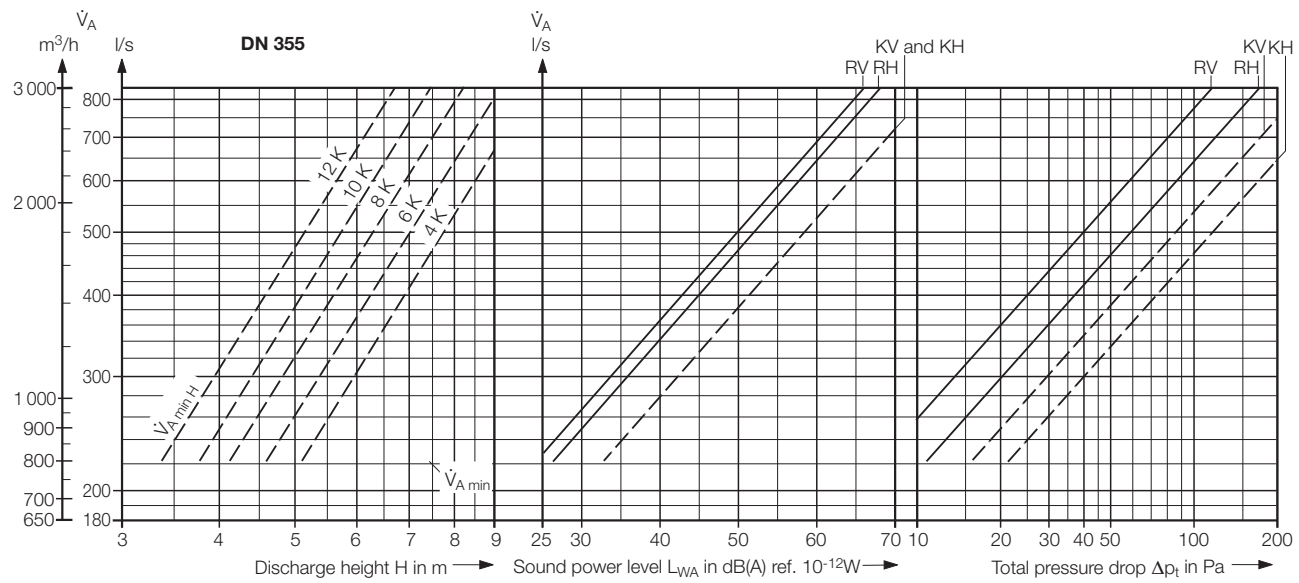
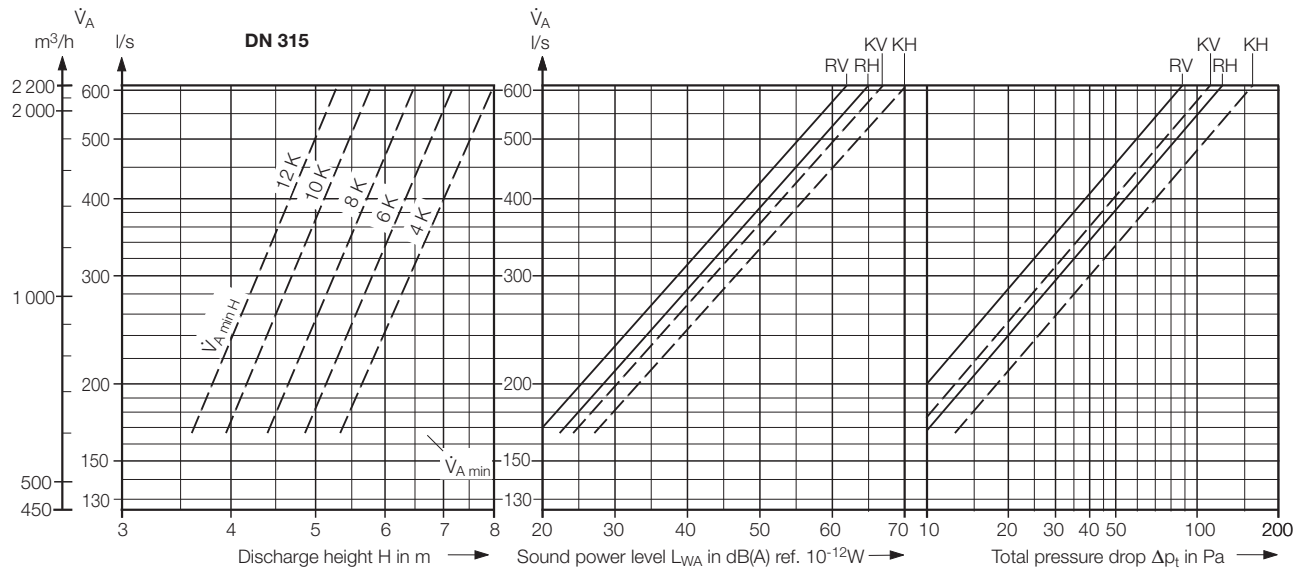


Graph 2: Minimum air outlet centre spacing



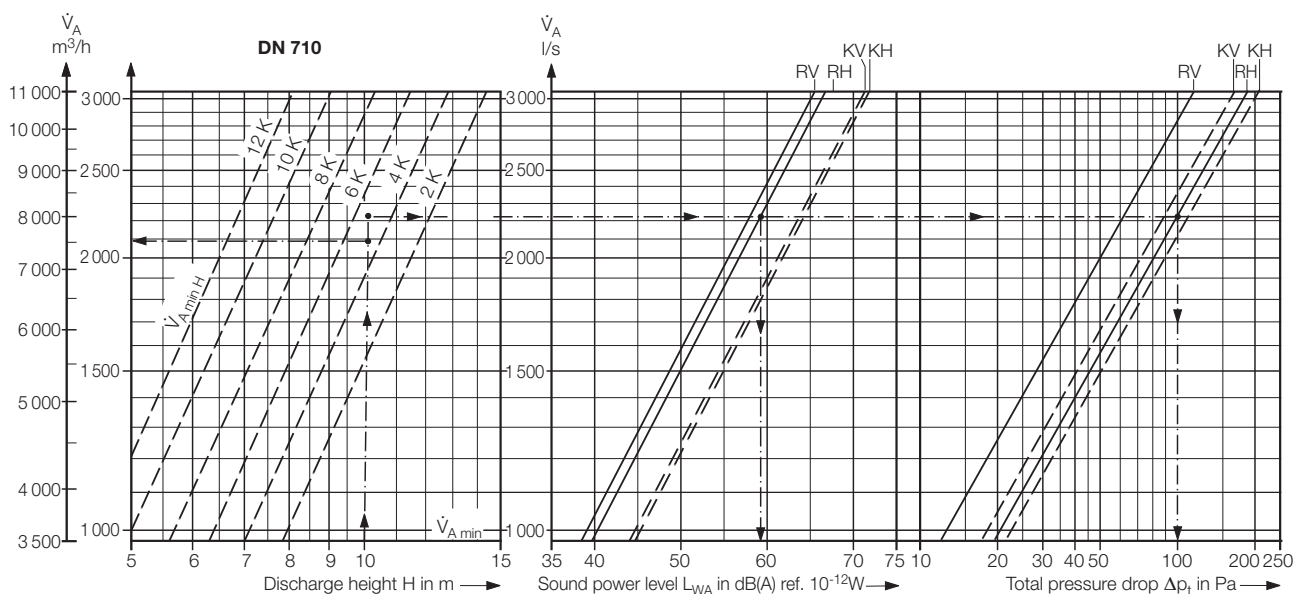
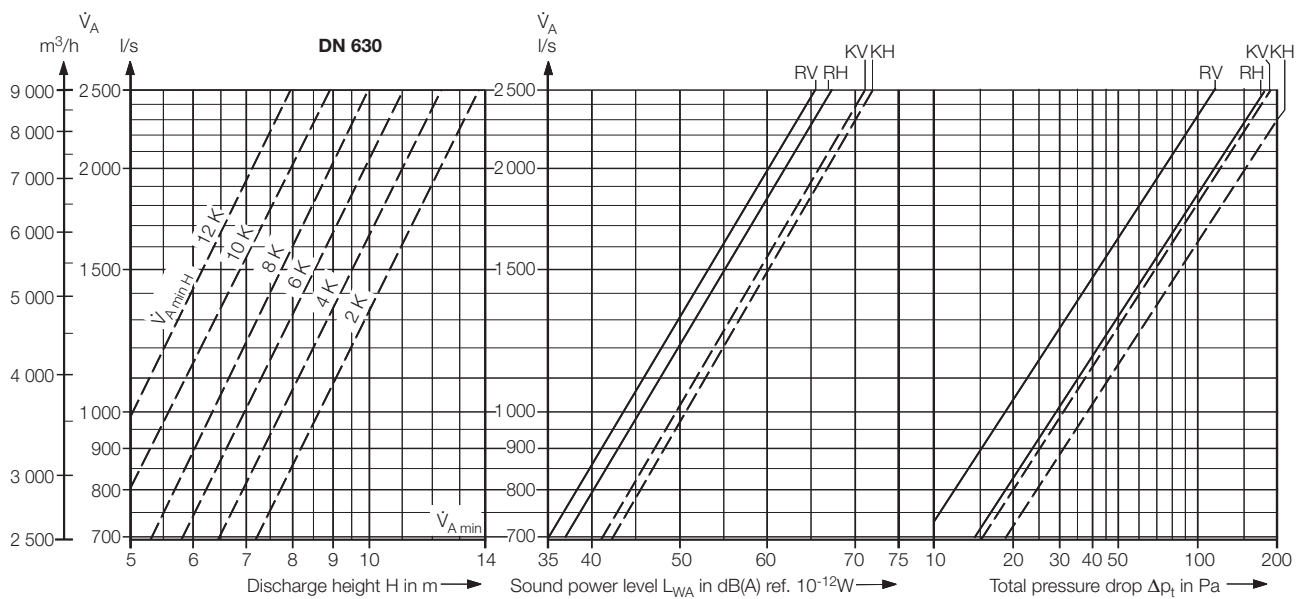
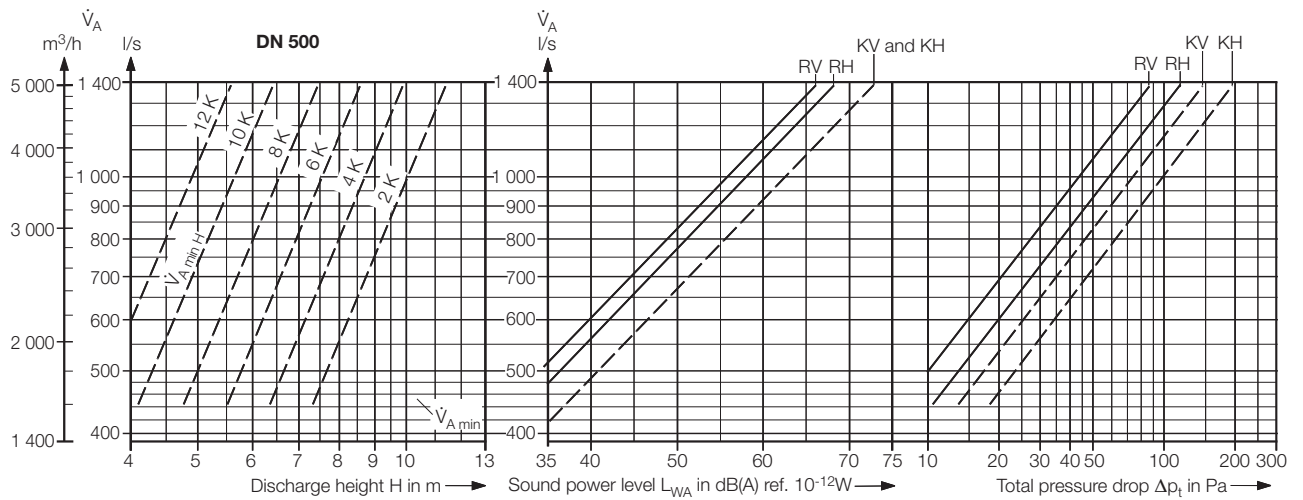
Adjustable radial outlet with core tube RA-V2

Layout sheet for DN 315 to DN 400



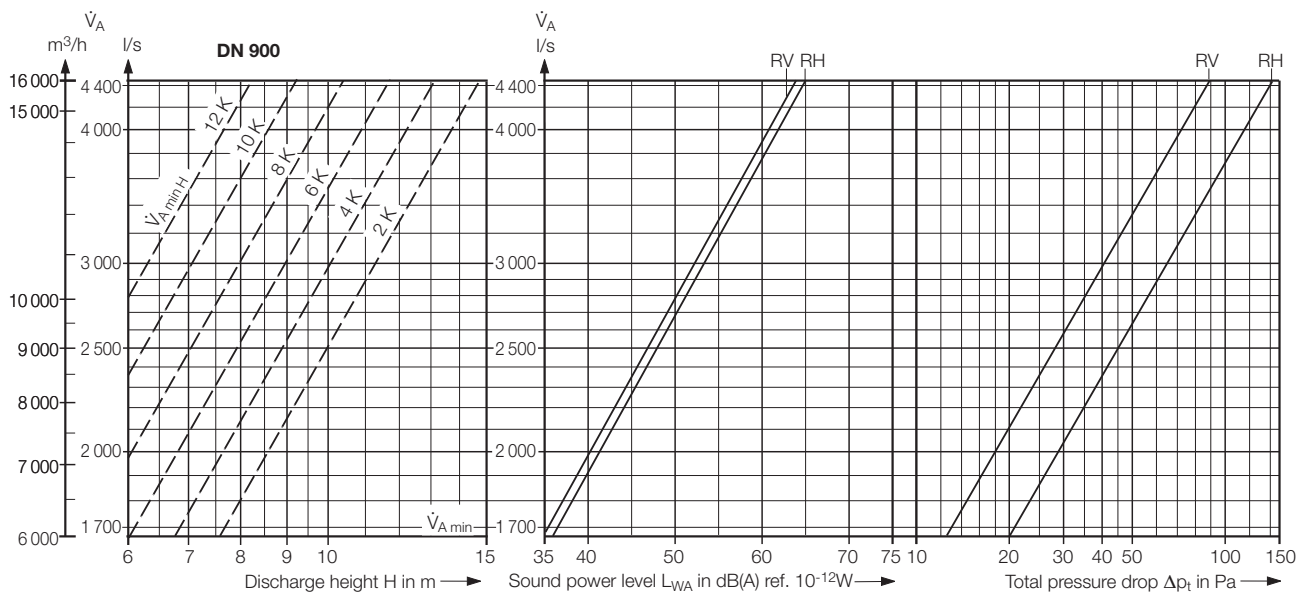
Adjustable radial outlet with core tube RA-V2

Layout sheet for DN 500 to DN 710



Adjustable radial outlet with core tube RA-V2

Layout sheet for DN 900 and correction tables



Correction table 1: Jet penetration depth in heating mode as well as sound power level and pressure drop for optional outlet design with perforated plate above vanes

Nom. ø	Connection type	Discharge height H Factor	Sound power level increase ¹⁾ L_{WA} in dB(A) ref. 10^{-12} W	Pressure drop increase ¹⁾ Δp_t - Factor
DN 400	RH	—	2	1.45
	RV	1.4	2	1.45
	KH	—	0	1.20
	KV	1.4	0	1.20
DN 500	RH	—	2	1.35
	RV	1.4	2	1.25
	KH	—	0	1.20
	KV	1.4	0	1.20
DN 630	RH	—	2	1.20
	RV	1.4	2	1.30
	KH	—	0	1.20
	KV	1.4	0	1.20
DN 710	RH	—	2	1.25
	RV	1.4	2	1.25
	KH	—	0	1.20
	KV	1.4	0	1.20
DN 900	RH	—	3	1.40
	RV	1.4	3	1.40

Note:

If the air outlet is fitted with a perforated plate to increase the jet penetration depth, the sound power level is not further increased by the self-acting thermostatic control unit.

Correction table 2: Adjustable radial outlet RA-V2 with self-acting thermostatic control unit

Nom. ø	Sound power level increase ¹⁾ L_{WA} in dB(A) ref. 10^{-12} W	Pressure drop increase ¹⁾ Δp_t - Factor
DN 250	+ 1 to 5	1.40
DN 315	+ 1 to 3	1.30
DN 355	+ 1	1.15
DN 400	0	1.05
DN 500	0	1.00
DN 630	0	1.00
DN 710	0	1.00
DN 900	0	1.00

Example of jet penetration depth for air outlet with optional perforated plate (index 'LB'): RA-V2RS - DN 900 - R

\dot{V}_A : 4 167 l/s [15 000 m³/h]

$\Delta\theta$: +8 K

H: $H_{LB} = H \times \text{factor} = 10 \text{ m} \times 1.4 = 14 \text{ m}$

(see example in graph above and correction table 1)

Increase: $\Delta p_{LB} = \Delta p_t \times \text{factor} = 80 \text{ Pa} \times 1.4 = 112 \text{ Pa}$

$L_{WLB} = L_{WA} + 3 \text{ dB(A)} = 62 \text{ dB(A)} + 3 = 65 \text{ dB(A)}$

¹⁾ Increase depending on volume flow rate

Adjustable radial outlet with core tube RA-V2

Sound power level and total pressure drop

Air outlet volume flow rate		For duct connection	Total pressure drop Δp_t Pa	Sound power level L_{Wj} in dB ref. 10^{-12} W										With connection box	Total pressure drop Δp_t Pa	Sound power level L_{Wj} in dB ref. 10^{-12} W									
\dot{V}_A				L_{WA} dB(A)	Octave band centre frequency in Hz								L_{WA} dB(A)			Octave band centre frequency in Hz									
l/s	m ³ /h				63	125	250	500	1 K	2 K	4 K	8 K				63	125	250	500	1 K	2 K	4 K	8 K		
DN 250																									
167	600	RH	30	38	36	40	38	37	32	27	17	—	KH	36	43	41	46	43	43	37	32	22	12		
		RV	22	35	30	38	36	33	29	27	25	10	KV	27	40	35	42	41	39	35	30	20	10		
278	1 000	RH	82	54	52	55	53	52	49	45	41	34	KH	99	59	57	60	58	57	55	50	46	40		
		RV	61	51	44	49	48	47	45	45	42	30	KV	74	56	49	54	53	52	50	50	44	34		
389	1 400	RH	160	65	62	64	62	60	60	57	57	51	KH	191	70	67	69	66	66	62	61	57			
		RV	120	61	52	56	55	56	55	56	53	42	KV	142	66	57	61	59	59	61	58	47			
DN 315																									
278	1 000	RH	27	39	40	46	40	38	33	28	17	12	KH	34	44	45	51	45	43	38	33	22	13		
		RV	18	36	32	39	37	35	30	27	14	—	KV	23	41	37	44	42	40	36	31	17	—		
444	1 600	RH	69	55	50	58	54	51	50	47	40	33	KH	86	60	56	63	59	57	55	52	45	37		
		RV	47	52	44	54	48	49	45	46	37	24	KV	60	57	49	58	53	54	51	51	41	28		
556	2 200	RH	130	65	57	66	63	60	60	59	54	47	KH	160	70	62	71	67	65	66	64	60	52		
		RV	89	62	52	64	55	58	54	58	52	38	KV	116	67	56	67	60	63	60	63	57	42		
DN 355																									
278	1 000	RH	18	34	32	40	35	33	27	19	—	—	KH	33	40	40	42	37	39	36	28	14	—		
		RV	12	30	28	36	31	30	23	14	—	—	KV	24	40	40	41	36	40	35	30	17	—		
556	2 000	RH	70	55	52	59	53	53	50	47	41	30	KH	139	61	61	61	55	58	56	55	49	39		
		RV	47	53	47	55	49	50	47	47	38	26	KV	104	62	58	60	56	59	58	56	50	41		
833	3 000	RH	159	67	63	70	64	64	62	59	55	47	KH	314	72	70	72	68	68	66	65	63	57		
		RV	108	65	60	65	61	61	59	59	55	45	KV	232	73	67	69	67	70	67	67	64	58		
DN 400																									
556	2 000	RH	43	48	51	50	48	46	44	39	30	19	KH	67	55	58	52	51	54	51	46	37	24		
		RV	30	46	48	48	45	44	41	39	29	17	KV	51	54	57	51	50	54	49	45	38	26		
833	3 000	RH	97	61	62	60	57	57	56	55	48	39	KH	157	68	68	61	62	65	63	62	55	45		
		RV	69	59	58	57	56	55	54	52	48	38	KV	118	67	67	61	62	64	62	62	54	45		
1 055	3 800	RH	156	68	67	65	62	63	64	63	58	51	KH	256	75	74	66	67	70	69	70	65	56		
		RV	111	66	64	63	62	61	61	60	58	50	KV	192	75	73	67	68	70	68	71	63	56		
DN 500																									
833	3 000	RH	40	52	57	54	50	51	47	44	37	26	KH	71	57	61	55	55	55	53	49	39	28		
		RV	30	50	58	50	48	48	46	43	36	22	KV	53	57	62	54	54	54	53	49	41	29		
1 111	4 000	RH	73	61	64	61	56	58	56	55	50	39	KH	125	66	67	61	61	62	63	60	51	42		
		RV	54	59	65	56	55	56	54	54	49	33	KV	94	66	69	61	61	62	62	59	53	45		
1 389	5 000	RH	116	68	69	65	61	63	63	63	59	48	KH	194	73	71	66	66	68	70	67	60	53		
		RV	85	66	70	60	59	60	60	62	59	41	KV	147	73	75	65	65	68	69	66	63	57		
DN 630																									
1 111	4 000	RH	36	48	56	49	45	45	43	40	31	26	KH	46	53	61	55	50	50	48	45	36	31		
		RV	23	46	57	50	45	44	42	37	29	22	KV	38	52	63	56	51	49	47	43	35	28		
1 667	6 000	RH	81	57	63	57	53	54	52	50	46	41	KH	105	62	68	63	59	59	57	55	51	46		
		RV	51	56	61	56	52	51	51	49	44	36	KV	86	62	68	62	58	57	57	55	50	42		
2 222	8 000	RH	144	64	67	63	59	60	58	57	56	52	KH	187	69	72	68	64	65	63	62	61	57		
		RV	91	63	64	60	56	56	58	57	55	45	KV	152	69	70	66	62	62	64	62	60	51		
DN 710																									
1 389	5 000	RH	35	48	63	52	48	44	41	41	34	23	KH	43	53	68	57	53	49	46	46	39	28		
		RV	24	47	57	50	45	44	43	38	29	20	KV	35	53	63	56	51	50	48	43	34	25		
2 083	7 500	RH	86	58	68	61	57	53	51	52	47	39	KH	98	63	73	66	62	58	57	57	52	44		
		RV	53	56	64	57	53	52	52	49	45	34	KV	79	62	70	63	59	58	58	55	51	39		
2 778	10 000	RH	152	65	71	67	63	59	58	59	56	50	KH	176	70	76	72	68	64	63	64	61	55		
		RV	93	63	69	62	58	58	58	56	56	43	KV	140	69	74	68	64	64	64	62	62	49		
DN 900																									
1 667	6 000	RH	20	37	39	39	37	36	32	23	—	—	RH = duct connection, horizontal discharge RV = duct connection, vertical discharge KH = connection box, horizontal discharge KV = connection box, vertical discharge												
		RV	12	35	32	37	35	33	31	21	—	—													
2 778	10 000	RH	55	52	55	56	52	51	47	39	24	23													
		RV	35	50	49	53	51	48	47	26	19	18													
3 889	14 000	RH	109	63	66	67	63	62	57	50	33	31													
		RV	68	61	60	64	62	60	57	48	32	33													

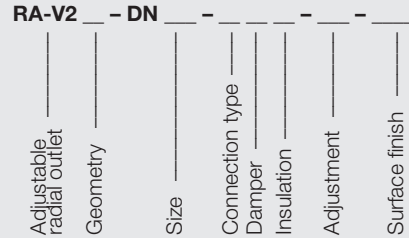
Adjustable radial outlet with core tube RA-V2

Features and type code

Features

- For installation flush with ceiling or freely suspended in commercial or industrial applications; also suitable for great room heights
- For turbulent mixing ventilation
- Discharge direction adjustable from horizontal to vertical (downwards)
- Adjustment of discharge direction via thermostatic control unit, electric actuator, or manual adjusting device
- Radial jet spread in cooling mode
- Shorter heating-up time due to vertical discharge in heating mode
- Air volume flow rates from 111 to 4 444 l/s [400 to 16 000 m³/h]
- Maximum temperature difference between supply air and indoor air: from -12 K when cooling to +12 K when heating
- Discharge height from 2.8 to 15 m room height, depending on nominal diameter and volume flow rate
- Perforated plate available as an option to increase the jet penetration depth
- Connection directly to circular ducts to EN 1506 or via connection box
- 8 sizes available, from DN 250 to DN 900
- Radial outlet made of powder coated sheet metal
- Vane underside flush with outlet face
- Radial outlet with circular or square face

Type code



Geometry ¹⁾

- RS = circular face
 Q1 = square face for square tile ceiling 600 x 600 mm
 Q2 = square face for square tile ceiling 625 x 625 mm

Size

- | | | |
|--------------|--------------|--------------|
| 250 = DN 250 | 400 = DN 400 | 710 = DN 710 |
| 315 = DN 315 | 500 = DN 500 | 900 = DN 900 |
| 355 = DN 355 | 630 = DN 630 | |

Connection type

- O = no connection piece (only discharge element)
 R = duct connection with rivets or screws
 K = connection box (up to DN 710)
 T = duct connection via crossbar

Damper

- O = no volume flow damper
 R = with volume flow damper adjustable from room (up to DN 500)
 S = with volume flow damper adjustable at spigot (for DN 630 and DN 710)

Insulation (for connection box)

- O = without acoustic lining
 I = with acoustic lining

Adjustment

- MA = manual
 E1 = „Siemens actuator, 0 – 10 V modulation“, rotation drive type GDB161.1E
 E2 = „Siemens actuator, 3-point type, 24 V“, rotation drive type GDB131.1E
 E3 = „Siemens actuator, 3-point type, 230 V“, rotation drive type GDB331.1E
 E4 = „Belimo actuator, 0 – 10 V modulation“, rotation drive type LM24A-SR
 E5 = „Belimo actuator, 3-point type, 24 V“, rotation drive type LM24A
 E6 = „Belimo actuator, 3-point type, 230 V“, rotation drive type LM230A
 T1 = thermostatic control unit, 20 – 28 °C
 T2 = thermostatic control unit, 16 – 28 °C

Surface finish

- 9010 = face painted to RAL 9010, semi-matt
 = face painted to RAL

¹⁾ Square face only up to DN 400

Adjustable radial outlet with core tube RA-V2

Tender text

Tender text

..... units

Adjustable radial outlet with core tube for air distribution from great heights and high-quality indoor air flow with high-induction radial air jets, discharge direction adjustable from horizontal to vertical (downwards),

consisting of:

outlet element with slanting exit, radial vanes – vane underside flush with outlet face –, and core tube with jet straightener and adjustable damper for adjustment of discharge direction, either with circular face or with square face ¹⁾ with all-side turn-up for installation in square tile ceilings 600 x 600 mm or 625 x 625 mm, as well as with top spigot for outlet connection to ducts to EN 1506 or to connection box.

The discharge direction can be adjusted optionally via a manual adjusting device, an electric actuator or, without auxiliary energy, via a self-acting thermostatic control unit.

Connection to the duct system either directly to a circular duct, using rivets or screws or an optional crossbar, or via a low-height connection box ²⁾ with lateral connection spigot and bottom sleeve, inner crossbar for outlet fastening, and bores for suspension; connection box optionally fitted with acoustic lining and volume flow damper adjustable from room (up to DN 500) or at connection spigot (for DN 630 and DN 710).

Material:

- Radial outlet made of sheet metal powder coated to RAL
- Connection box made of galvanized sheet metal

Make:

Krantz Components

Type:

RA-V2 __ – DN __ – __ – __ – __ – __

Subject to technical alterations.

¹⁾ Square face only up to DN 400

²⁾ Connection box for size DN 900 on request

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The logo for Krantz GmbH, featuring the word "Krantz" in a stylized, blue, cursive script font.