SCHAKO
KLIMA-LUFT

Induction diffuser

DISA-H

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Induction diffuser DISA-H

Contents

Induction diffuser DISA-H

Description

Induction diffusers combine the flow characteristics of air diffusers with the energetic advantages of load discharge via water-based heat exchangers, allowing them to remove high thermal loads from the room while keeping the hygienically required air exchange low.
Its low installation depth and horizontal air flow makes it suitable in particular for installation in suspended entrance halls and in suspended ceiling panellings, such as in hotels, hospitals and offices.

The induction diffuser DISA-H is available in 3 different nozzle configurations and in the following lengths: 900, 1200 and 1500 mm.

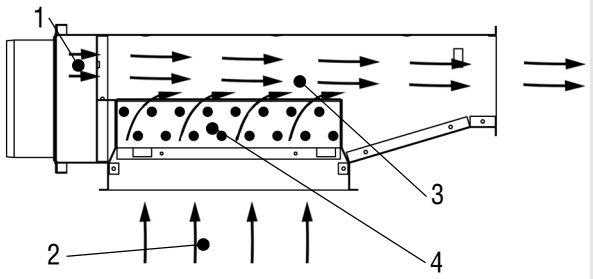
Note:
The ventilation grilles must be ordered separately, see Page°7(free cross-section min. 60%).

The cold water supply temperature must be selected such that it does not fall below the dew point, which may make it necessary to install protective devices (condensate monitors).

Function

The primary air (1) supplied from the plenum box induces secondary air in the room (2), which is cooled or heated via the water register (4).
The primary air is mixed with the cooled secondary air.
The mixed (3) primary and secondary air flows are supplied to the room at low velocity via 1 supply air inlet.

Schematic diagram of the mode of operation

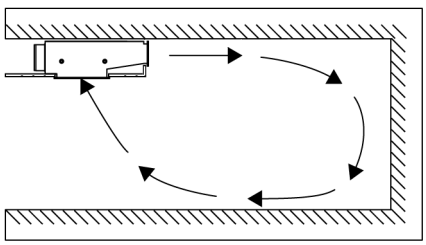


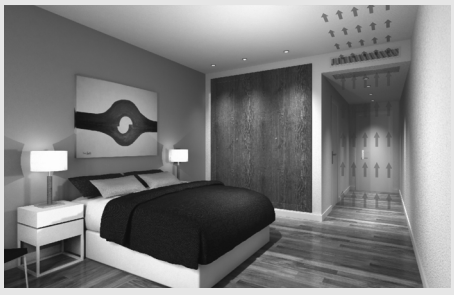
1 Primary air
2 Room air
3 Secondary air
4 Heat exchanger

Advantages

- High energy efficiency
- High performance (compensation of high thermal loads)
- Compact dimensions
- Saving in energy by means of reduced primary air
- Low noise level
- Low mounting and maintenance expenditure

Schematic diagram of the jet path





Induction diffuser DISA-H

Description of the equipment

Construction

Housing and nozzle plate

- Galvanised sheet steel, with 1 or 2 connection pipes ø98, ø123 (standard) or ø148 mm.
  Painted housing RAL 9005 (optional)
- Connection pipe position:
  - horizontal (-H)
- Arrangement of connecting pieces
  - 1 central connecting piece (-AS1)
  - 2 central connecting pieces and at the same distance (-AS2/AS3)

Heat exchanger

- 2-pipe system (cooling or heating) or optionally 4-pipe system (cooling and heating)
  - Galvanised sheet steel frame
  - Aluminium blades
  - Copper pipes ø12 mm
  - Connection Cu, d=12 x 1.0 smooth
- Painted register RAL 9005 (black, optional)

Model

DISA-H	-	600 mm depth
DISA-H-H	-	2-pipe system (standard)
DISA-H-HT	-	4-pipe system
DISA-...-D	-	Nozzle configuration D (small air volumes) (Technical data p. 8, 11, 14, 15-18)
DISA-...-E	-	Nozzle configuration E (medium air volumes) (Technical data p. 9, 12, 14, 19-22)
DISA-...-F	-	Nozzle configuration F (large air volumes) (Technical data p. 10, 13, 14, 23-26)
DISA-...- 900	-	Length 900 mm
DISA-...-1200	-	Length 1200 mm
DISA-...-1500	-	Length 1500 mm

Accessories

Rubber lip seal (-GD)

Flexible connection hoses

- 500 mm (-FA 500)
- 800 mm (-FA 800)
- 1200 mm (-FA1200)

External thread flat-sealing (-WA 1/2)

Volumetric flow measuring tube (-MR)

Box neck extension for supply air (-KZ 60...200)

Box neck extension for secondary air (-KS 60...200)

Louvre grid for supply air

- Type SCHAKO PA (PA-1-Z, PA-2a-Z)
- Type SCHAKO AL (AL-1-Z, AL-2-Z)
- Type SCHAKO IB (IB-1-Z, IB-2-Z)

Louvre grid for return air

- Type SCHAKO PA (PA-1-A)
- Type SCHAKO AL (AL-1-A)
- Type SCHAKO IB (IB-1-A)

Control units

- Valves
- Actuators
- Room temperature control
- Condensation monitor

Fastening

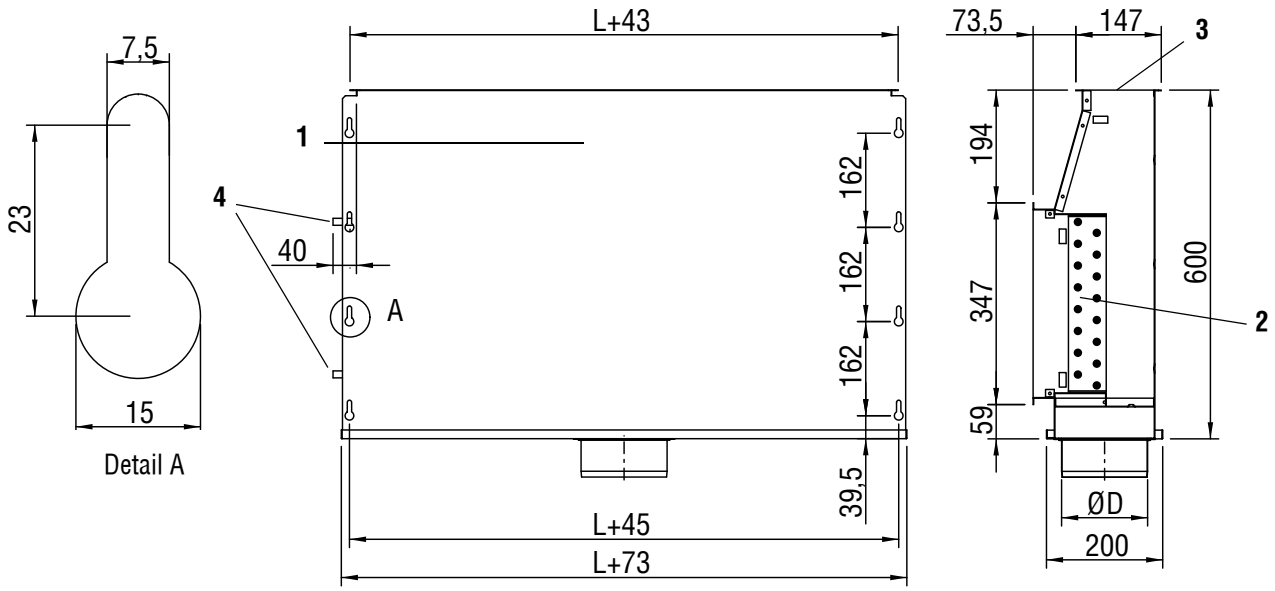
Fixing lugs

- for suspension

Induction diffuser DISA-H

Models and dimensions

Dimensions and weights



1 Housing
2 Heat exchanger
3 Supply air inlet
4 Water connection

L (mm) = Length (900 ,1200 and 1500)
øD (mm) = diameter of the connection pipes (98, 123 and 148)

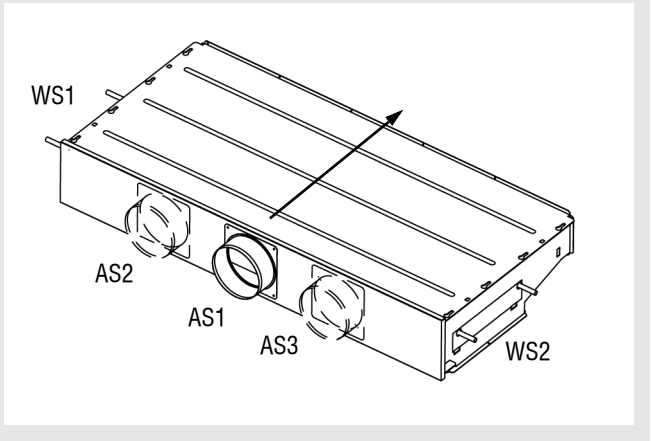
Weights DISA-H

L (mm)	**900**	**1200**	**1500**
Weights (1) (kg)	19	23	28

1) Standard unit: housing + heat exchanger (empty)

Induction diffuser DISA-H

Arrangement of the connection pieces and water connection



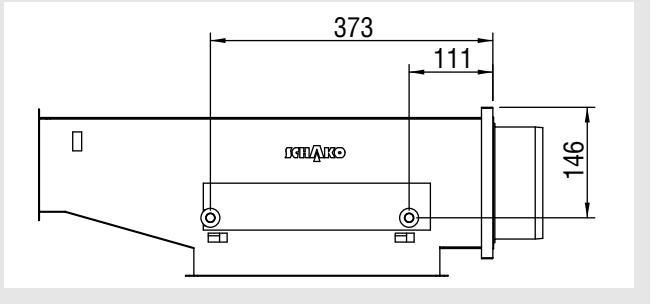
Number/position of the connection pipes

- 1 connection pipe (standard)
  - centre back (-**AS1**)
- 2 connection pipes
  - left and right back (-**AS3**/-**AS2**)

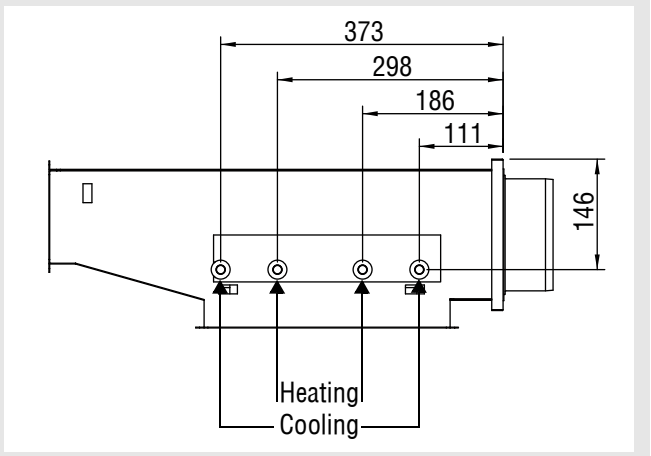
Number/position of the water connections

- with 2 water connections (2-pipe system, standard)
- with 4 water connections (4-pipe system)
- left back (-**WS1**)
- right back (-**WS2**)

Hydraulic connections DISA-H-H (2-pipe)

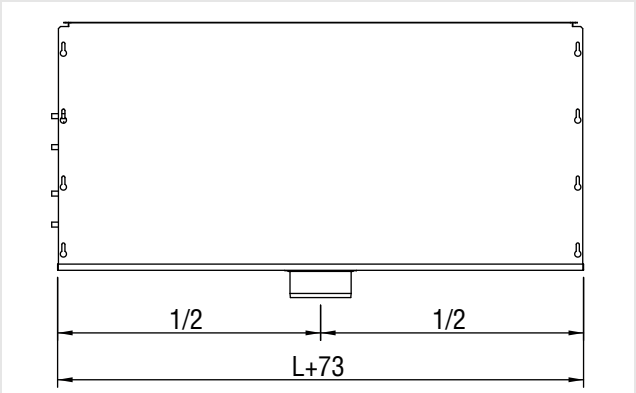


Hydraulic connections DISA-H-HT (4-pipe)

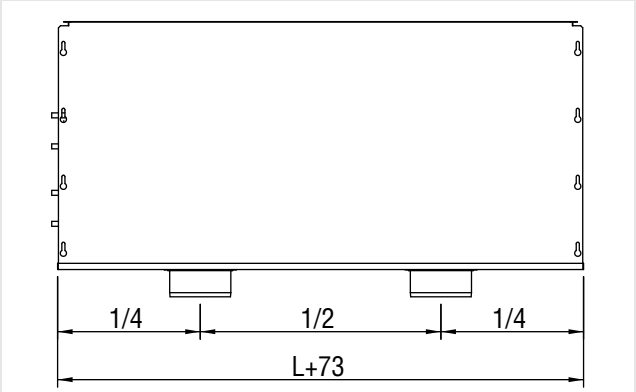


Number of connecting pieces

with 1 connecting piece (-AS1)



with 2 connecting pieces (-AS2/AS3)

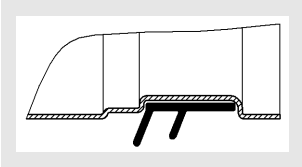


Induction diffuser DISA-H

Accessories

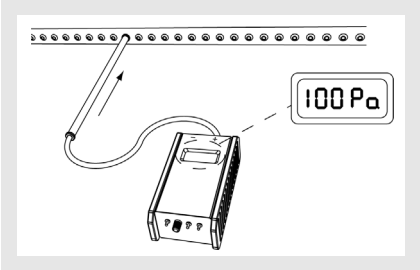
Rubber lip seal (-GD)

At the connection piece for better tightness.



Volumetric flow measuring tube (-MR)

The supplied primary volumetric flow can be simply checked by checking the static pressure with a Pa meter. The measurement is taken in the supply air area.

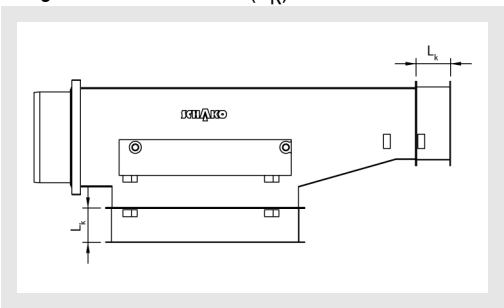


Flexible connection hoses (-FA)

Flexible armoured hose with stainless steel braid, oxygen diffusion layer to DIN 4726, one-sided by means of plug-in fitting 90° with stainless steel prong, support ring, 2 sealing rings (operating pressure 20 bar, test pressure 60 bar, temperature -40° to +80°) and lock washer, other side 1/2" flat-sealing spigot nut. L= 500, 800 and 1200 mm. Other lengths on request.

Box neck extension for supply air (-KZ) and secondary air (-KS)

Length of the box neck (L_K) between 60 and 200 mm.

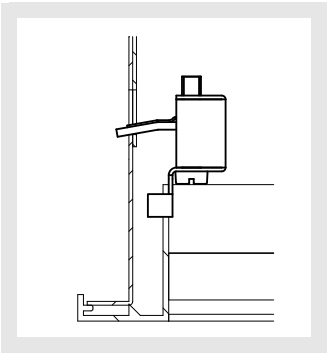


Louvre grid for supply air and return air

Louvre grid for supply air and return air type SCHAKO-PA, SCHAKO-AL and SCHAKO-IB.

Grilles	Type	Dimensions LxH (mm)		
		DISA-H-900	DISA-H-1200	DISA-H-1500
Supply air grille	PA-1-Z	925x125	1225x125	1525x125
Supply air grille	PA-2a-Z	925x125	1225x125	1525x125
Secondary air grille	PA-1-A	925x325	1225x325	1525x325
Supply air grille	AL-1-Z	925x125	1225x125	1525x125
Supply air grille	AL-2-Z	925x125	1225x125	1525x125
Secondary air grille	AL-1-A	925x325	1225x325	1525x325
Supply air grille	IB-1-Z	925x125	1225x125	1525x125
Supply air grille	IB-2-Z	925x125	1225x125	1525x125
Secondary air grille	IB-1-A	925x325	1225x325	1525x325

The grilles are mounted with concealed mounting VM11.



For more information, please refer to the brochures:
SCHAKO-PA
SCHAKO-IB
SCHAKO-AL

External thread flat-sealing (-WA 1/2)

Water connections 1/2" external thread flat-sealing

Induction diffuser DISA-H

Technical data

Performance data

DISA-H-H -...-D -Cooling-

L	V		P_S	Cooling capacity primary air Δt_{Pr} (K)				Cooling capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	6	7	8	9	10	11	12	(kPa)
900	28,8	8,0	50	58	77	96	115	188	220	251	282	314	345	376	7,6
	35,3	9,8	75	71	94	118	141	248	289	331	372	413	455	496	7,6
	40,7	11,3	100	81	108	136	163	287	335	383	431	478	526	574	7,6
	45,7	12,7	125	91	122	152	183	319	372	425	478	531	585	638	7,6
	50,0	13,9	150	100	133	167	200	346	403	461	518	576	633	691	7,6
	57,6	16,0	200	115	154	192	230	399	465	531	598	664	731	797	7,6
1200	38,9	10,8	50	78	104	130	156	243	283	324	364	404	445	485	10
	47,9	13,3	75	96	128	160	192	325	380	434	488	542	596	651	10
	55,1	15,3	100	110	147	184	220	378	441	504	567	630	693	756	10
	61,6	17,1	125	123	164	205	246	418	488	557	627	697	766	836	10
	67,7	18,8	150	135	180	226	271	450	525	600	675	750	825	900	10
	78,1	21,7	200	156	208	260	312	498	581	664	747	830	913	996	10
1500	49,3	13,7	50	99	132	164	197	315	368	420	473	525	578	630	12,2
	60,5	16,8	75	121	161	202	242	414	483	552	621	690	760	829	12,2
	69,5	19,3	100	139	185	232	278	475	554	633	713	792	871	950	12,2
	77,8	21,6	125	156	207	259	311	522	608	695	782	869	956	1043	12,2
	85,3	23,7	150	171	228	284	341	560	654	747	841	934	1027	1121	12,2
	98,6	27,4	200	197	263	329	395	632	737	842	948	1053	1158	1264	12,2

V_{Wn} = 0.07 l/s (250 l/h)

DISA-H-HT -...-D -Cooling-

L	V		P_S	Cooling capacity primary air Δt_{Pr} (K)				Cooling capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	6	7	8	9	10	11	12	(kPa)
900	28,8	8,0	50	58	77	96	115	180	210	240	270	300	330	360	5,8
	35,3	9,8	75	71	94	118	141	235	275	314	353	392	431	471	5,8
	40,7	11,3	100	81	108	136	163	277	323	369	415	461	507	553	5,8
	45,7	12,7	125	91	122	152	183	312	363	415	467	519	571	623	5,8
	50,0	13,9	150	100	133	167	200	338	395	451	507	564	620	676	5,8
	57,6	16,0	200	115	154	192	230	378	440	503	566	629	692	755	5,8
1200	38,9	10,8	50	78	104	130	156	237	277	317	356	396	435	475	7,6
	47,9	13,3	75	96	128	160	192	316	369	421	474	527	579	632	7,6
	55,1	15,3	100	110	147	184	220	366	426	487	548	609	670	731	7,6
	61,6	17,1	125	123	164	205	246	402	469	536	603	670	737	805	7,6
	67,7	18,8	150	135	180	226	271	432	504	576	648	720	792	864	7,6
	78,1	21,7	200	156	208	260	312	475	554	634	713	792	871	950	7,6
1500	49,3	13,7	50	99	132	164	197	301	351	401	451	501	551	601	9,3
	60,5	16,8	75	121	161	202	242	392	458	523	588	654	719	785	9,3
	69,5	19,3	100	139	185	232	278	449	524	599	673	748	823	898	9,3
	77,8	21,6	125	156	207	259	311	492	574	656	738	820	902	984	9,3
	85,3	23,7	150	171	228	284	341	527	615	703	791	879	967	1055	9,3
	98,6	27,4	200	197	263	329	395	589	688	786	884	982	1080	1179	9,3

V_{Wn} = 0.07 l/s (250 l/h)

Induction diffuser DISA-H

DISA-H-H -...-E -Cooling-

L	V		P_S	Cooling capacity primary air Δt_{Pr} (K)				Cooling capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	6	7	8	9	10	11	12	(kPa)
900	48,6	13,5	50	97	130	162	194	251	293	335	377	419	461	503	7,6
	59,4	16,5	75	119	158	198	238	306	357	409	460	511	562	613	7,6
	68,4	19,0	100	137	182	228	274	348	406	464	522	580	638	696	7,6
	76,7	21,3	125	153	204	256	307	383	447	510	574	638	702	766	7,6
	83,9	23,3	150	168	224	280	336	411	479	548	616	685	753	821	7,6
	96,8	26,9	200	194	258	323	387	456	532	608	683	759	835	911	7,6
1200	65,5	18,2	50	131	175	218	262	342	399	457	514	571	628	685	10
	80,3	22,3	75	161	214	268	321	409	478	546	614	682	750	819	10
	92,9	25,8	100	186	248	310	372	466	544	622	699	777	855	932	10
	103,7	28,8	125	207	276	346	415	513	598	684	769	855	940	1026	10
	113,8	31,6	150	228	303	379	455	553	646	738	830	922	1015	1107	10
	131,4	36,5	200	263	350	438	526	614	716	819	921	1023	1126	1228	10
1500	82,8	23,0	50	166	221	276	331	432	504	576	648	720	792	864	12,2
	101,5	28,2	75	203	271	338	406	523	610	698	785	872	959	1046	12,2
	117,0	32,5	100	234	312	390	468	586	684	782	880	977	1075	1173	12,2
	131,0	36,4	125	262	349	437	524	636	742	848	955	1061	1167	1273	12,2
	143,6	39,9	150	287	383	479	575	677	789	902	1015	1128	1240	1353	12,2
	165,6	46,0	200	331	442	552	662	740	863	986	1109	1233	1356	1479	12,2

V_{Wn} = 0.07 l/s (250 l/h)

DISA-H-HT -...-E -Cooling-

L	V		P_S	Cooling capacity primary air Δt_{Pr} (K)				Cooling capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	6	7	8	9	10	11	12	(kPa)
900	48,6	13,5	50	97	130	162	194	244	285	326	367	407	448	489	5,8
	59,4	16,5	75	119	158	198	238	295	344	394	443	492	541	591	5,8
	68,4	19,0	100	137	182	228	274	334	390	446	501	557	613	669	5,8
	76,7	21,3	125	153	204	256	307	367	428	489	551	612	673	734	5,8
	83,9	23,3	150	168	224	280	336	393	458	524	589	655	720	786	5,8
	96,8	26,9	200	194	258	323	387	432	503	575	647	719	791	863	5,8
1200	65,5	18,2	50	131	175	218	262	329	384	439	494	549	603	658	7,6
	80,3	22,3	75	161	214	268	321	394	459	525	590	656	721	787	7,6
	92,9	25,8	100	186	248	310	372	446	520	595	669	743	818	892	7,6
	103,7	28,8	125	207	276	346	415	488	570	651	733	814	895	977	7,6
	113,8	31,6	150	228	303	379	455	525	612	700	787	875	962	1050	7,6
	131,4	36,5	200	263	350	438	526	579	676	772	869	966	1062	1159	7,6
1500	82,8	23,0	50	166	221	276	331	411	479	547	616	684	753	821	9,3
	101,5	28,2	75	203	271	338	406	493	575	657	739	821	904	986	9,3
	117,0	32,5	100	234	312	390	468	549	641	732	824	915	1007	1098	9,3
	131,0	36,4	125	262	349	437	524	593	692	791	889	988	1087	1186	9,3
	143,6	39,9	150	287	383	479	575	628	733	837	942	1047	1151	1256	9,3
	165,6	46,0	200	331	442	552	662	683	797	911	1025	1139	1252	1366	9,3

V_{Wn} = 0.07 l/s (250 l/h)

Induction diffuser DISA-H

DISA-H-H -...-F -Cooling-

L	V		P_S	Cooling capacity primary air Δt_{Pr} (K)				Cooling capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	6	7	8	9	10	11	12	(kPa)
900	99,4	27,6	50	199	265	331	397	338	395	451	507	564	620	677	7,6
	121,7	33,8	75	243	324	406	487	389	453	518	583	648	713	777	7,6
	140,8	39,1	100	282	375	469	563	431	503	575	646	718	790	862	7,6
	157,3	43,7	125	315	420	524	629	466	544	622	700	777	855	933	7,6
	172,1	47,8	150	344	459	574	688	496	579	662	744	827	910	993	7,6
	198,7	55,2	200	397	530	662	795	545	636	727	818	909	999	1090	7,6
1200	134,6	37,4	50	269	359	449	539	429	500	572	643	715	786	858	10
	164,9	45,8	75	330	440	550	660	505	589	673	757	841	925	1009	10
	190,4	52,9	100	381	508	635	762	558	651	744	837	930	1023	1116	10
	213,1	59,2	125	426	568	710	852	598	698	797	897	997	1096	1196	10
	233,3	64,8	150	467	622	778	933	629	734	838	943	1048	1153	1258	10
	269,3	78,4	200	539	718	898	1077	675	787	900	1012	1125	1237	1350	10
1500	169,9	47,2	50	340	453	566	680	557	650	743	836	928	1021	1114	12,2
	208,1	57,8	75	416	555	694	832	680	793	906	1020	1133	1246	1360	12,2
	240,5	66,8	100	481	641	802	962	751	877	1002	1127	1252	1377	1503	12,2
	268,9	74,7	125	538	717	896	1076	796	929	1062	1194	1327	1460	1592	12,2
	294,5	81,8	150	589	785	982	1178	827	965	1103	1240	1378	1516	1654	12,2
	339,8	94,4	200	680	906	1133	1359	872	1018	1163	1308	1454	1599	1744	12,21

V_{Wn} = 0.07 l/s (250 l/h)

DISA-H-HT -...-F -Cooling-

L	V		P_S	Cooling capacity primary air Δt_{Pr} (K)				Cooling capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	6	7	8	9	10	11	12	(kPa)
900	99,4	27,6	50	199	265	331	397	327	381	436	490	545	599	654	5,8
	121,7	33,8	75	243	324	406	487	373	435	497	559	621	684	746	5,8
	140,8	39,1	100	282	375	469	563	411	480	548	617	685	754	822	5,8
	157,3	43,7	125	315	420	524	629	443	516	590	664	738	812	885	5,8
	172,1	47,8	150	344	459	574	688	469	548	626	704	782	860	939	5,8
	198,7	55,2	200	397	530	662	795	512	598	683	768	854	939	1025	5,8
1200	134,6	37,4	50	269	359	449	539	429	500	572	643	715	786	858	7,6
	164,9	45,8	75	330	440	550	660	505	589	673	757	841	925	1009	7,6
	190,4	52,9	100	381	508	635	762	558	651	744	837	930	1023	1116	7,6
	213,1	59,2	125	426	568	710	852	598	698	797	897	997	1096	1196	7,6
	233,3	64,8	150	467	622	778	933	629	734	838	943	1048	1153	1258	7,6
	269,3	74,8	200	539	718	898	1077	675	787	900	1012	1125	1237	1350	7,6
1500	169,9	47,2	50	340	453	566	680	524	612	699	786	874	961	1049	9,3
	208,1	57,8	75	416	555	694	832	634	740	846	951	1057	1163	1269	9,3
	240,5	66,8	100	481	641	802	962	698	814	930	1046	1163	1279	1395	9,3
	268,9	74,7	125	538	717	896	1076	737	860	982	1105	1228	1351	1474	9,3
	294,5	81,8	150	589	785	982	1178	764	891	1018	1146	1273	1400	1528	9,3
	339,8	94,4	200	680	906	1133	1359	805	939	1073	1207	1341	1476	1610	9,3

V_{Wn} = 0.07 l/s (250 l/h)

Induction diffuser DISA-H

DISA-H-H -…-D -Heating-

L	V		P_S	Heating capacity primary air Δt_{Pr} (K)				Heating capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	16	18	20	22	24	26	28	(kPa)
900	28,8	8,0	50	58	77	96	115	459	517	574	632	689	746	804	3,1
	35,3	9,8	75	71	94	118	141	589	662	736	809	883	956	1030	3,1
	40,7	11,0	100	81	108	136	163	671	755	839	923	1007	1091	1175	3,1
	45,7	13,0	125	91	122	152	183	736	828	921	1013	1105	1197	1289	3,1
	50,0	14,0	150	100	133	167	200	788	887	985	1084	1182	1281	1380	3,1
	57,6	16,0	200	115	154	192	230	884	995	1105	1216	1327	1437	1548	3,1
1200	38,9	11,0	50	78	104	130	156	584	657	730	802	875	948	1021	4,1
	47,9	13,0	75	96	128	160	192	754	848	942	1036	1131	1225	1319	4,1
	55,1	15,0	100	110	147	184	220	857	964	1072	1179	1286	1393	1500	4,1
	61,6	17,0	125	123	164	205	246	931	1047	1164	1280	1397	1513	1629	4,1
	67,7	19,0	150	135	180	226	271	988	1111	1235	1358	1482	1605	1729	4,1
	78,1	22,0	200	156	208	260	312	1066	1199	1332	1465	1598	1731	1865	4,1
1500	49,3	14,0	50	99	132	164	197	733	824	916	1008	1099	1191	1282	5
	60,5	17,0	75	121	161	202	242	923	1039	1154	1270	1385	1501	1616	5
	69,5	19,0	100	139	185	232	278	1035	1164	1293	1422	1552	1681	1810	5
	77,8	22,0	125	156	207	259	311	1113	1252	1391	1530	1669	1808	1948	5
	85,3	24,0	150	171	228	284	341	1172	1318	1465	1611	1757	1904	2050	5
	98,6	27,0	200	197	263	329	395	1265	1423	1581	1739	1897	2056	2214	5

V_{Wn} = 0.0416 l/s (150 l/h)

DISA-H-HT -…-D -Heating-

L	V		P_S	Heating capacity primary air Δt_{Pr} (K)				Heating capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	16	18	20	22	24	26	28	(kPa)
900	28,8	8,0	50	58	77	96	115	313	352	391	430	469	509	548	0,5
	35,3	9,8	75	71	94	118	141	370	417	463	509	555	602	648	0,5
	40,7	11,0	100	81	108	136	163	409	460	511	562	614	665	716	0,5
	45,7	13,0	125	91	122	152	183	439	494	548	603	658	713	768	0,5
	50,0	14,0	150	100	133	167	200	460	517	575	632	689	747	804	0,5
	57,6	16,0	200	115	154	192	230	488	549	610	671	732	793	854	0,5
1200	38,9	11,0	50	78	104	130	156	405	455	506	556	607	658	708	0,6
	47,9	13,0	75	96	128	160	192	488	549	610	671	732	793	854	0,6
	55,1	15,0	100	110	147	184	220	536	603	670	737	804	871	938	0,6
	61,6	17,0	125	123	164	205	246	568	639	710	781	852	923	994	0,6
	67,7	19,0	150	135	180	226	271	591	665	739	812	886	960	1034	0,6
	78,1	22,0	200	156	208	260	312	621	698	776	853	931	1009	1086	0,6
1500	49,3	14,0	50	99	132	164	197	507	570	634	697	761	824	887	0,7
	60,5	17,0	75	121	161	202	242	602	677	753	828	903	979	1054	0,7
	69,5	19,0	100	139	185	232	278	655	737	819	901	983	1065	1147	0,7
	77,8	22,0	125	156	207	259	311	691	778	864	950	1037	1123	1210	0,7
	85,3	24,0	150	171	228	284	341	717	807	897	986	1076	1166	1255	0,7
	98,6	27,0	200	197	263	329	395	759	854	949	1043	1138	1233	1328	0,7

V_{Wn} = 0.0416 l/s (150 l/h)

Induction diffuser DISA-H

DISA-H-H -...-E -Heating-

L	V		P_S	Heating capacity primary air Δt_{Pr} (K)				Heating capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	16	18	20	22	24	26	28	(kPa)
900	48,6	13,5	50	97	130	162	194	598	673	748	822	897	972	1047	3,1
	59,4	16,5	75	119	158	198	238	709	798	886	975	1064	1152	1241	3,1
	68,4	19,0	100	137	182	228	274	789	888	987	1085	1184	1283	1381	3,1
	76,7	21,3	125	153	204	256	307	854	961	1067	1174	1281	1388	1494	3,1
	83,9	23,3	150	168	224	280	336	904	1017	1130	1243	1356	1469	1582	3,1
	96,8	26,9	200	198	258	323	387	980	1103	1225	1348	1471	1593	1716	3,1
1200	65,5	18,2	50	131	175	218	262	796	896	995	1095	1194	1294	1393	4,1
	80,3	22,3	75	161	214	268	321	923	1039	1154	1269	1385	1500	1616	4,1
	92,9	25,8	100	186	248	310	372	1022	1150	1278	1406	1534	1661	1789	4,1
	103,7	28,8	125	207	276	346	415	1099	1236	1374	1511	1648	1786	1923	4,1
	113,8	31,6	150	228	303	379	455	1162	1308	1453	1598	1743	1889	2034	4,1
	131,4	36,5	200	263	350	438	526	1251	1408	1564	1720	1877	2033	2190	4,1
1500	82,8	23,0	50	166	221	276	331	958	1078	1197	1317	1437	1557	1676	5
	101,5	28,2	75	203	271	338	406	1109	1248	1386	1525	1663	1802	1941	5
	117,0	32,5	100	234	312	390	468	1203	1353	1504	1654	1804	1955	2105	5
	131,0	36,4	125	262	349	437	524	1270	1428	1587	1746	1905	2063	2222	5
	143,6	39,9	150	287	383	479	575	1319	1483	1648	1813	1978	2143	2308	5
	165,6	46,0	200	331	442	552	662	1389	1563	1737	1911	2084	2258	2432	5

V_{Wn} = 0.0416 l/s (150 l/h)

DISA-H-HT -...-E -Heating-

L	V		P_S	Heating capacity primary air Δt_{Pr} (K)				Heating capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	16	18	20	22	24	26	28	(kPa)
900	48,6	13,5	50	97	130	162	194	380	428	475	523	570	618	666	0,5
	59,4	16,5	75	119	158	198	238	425	478	532	585	638	691	744	0,5
	68,4	19,0	100	137	182	228	274	456	513	570	627	687	741	799	0,5
	76,7	21,3	125	153	204	256	307	480	541	601	661	721	781	841	0,5
	83,9	23,3	150	168	224	280	336	498	560	623	685	747	809	872	0,5
	96,8	26,9	200	194	258	323	387	523	589	654	720	785	850	916	0,5
1200	65,5	18,2	50	131	175	218	262	508	572	635	699	762	826	889	0,6
	80,3	22,3	75	161	214	268	321	563	634	704	775	845	916	986	0,6
	92,9	25,8	100	186	248	310	372	605	681	757	832	908	984	1060	0,6
	103,7	28,8	125	207	276	346	415	637	717	797	876	956	1036	1115	0,6
	113,8	31,6	150	228	303	379	455	663	746	829	912	995	1078	1161	0,6
	131,4	36,5	200	263	350	438	526	699	787	874	962	1049	1137	1224	0,6
1500	82,8	23,0	50	166	221	276	331	622	700	778	856	934	1011	1089	0,7
	101,5	28,2	75	203	271	338	406	689	775	861	947	1033	1119	1205	0,7
	117	32,5	100	234	312	390	468	731	822	914	1005	1096	1188	1279	0,7
	131	36,4	125	262	349	437	524	761	857	952	1047	1142	1237	1332	0,7
	143,6	39,9	150	287	383	479	575	784	882	980	1078	1176	1274	1372	0,7
	165,6	46,0	200	331	442	552	662	817	920	1022	1124	1226	1328	1430	0,7

V_{Wn} = 0.0416 l/s (150 l/h)

Induction diffuser DISA-H

DISA-H-H -…-F -Heating-

L	V		P_S	Heating capacity primary air Δt_{Pr} (K)				Heating capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	16	18	20	22	24	26	28	(kPa)
900	99,4	27,6	50	199	265	331	397	775	871	968	1065	1162	1259	1356	3,1
	121,7	33,8	75	243	324	406	487	867	976	1084	1193	1301	1410	1518	3,1
	140,8	39,1	100	282	375	469	563	941	1058	1176	1294	1411	1529	1647	3,1
	157,3	43,7	125	315	420	524	629	999	1124	1249	1374	1499	1624	1749	3,1
	172,1	47,8	150	344	459	574	688	1047	1178	1309	1440	1571	1702	1832	3,1
	198,7	55,2	200	397	530	662	795	1120	1261	1401	1541	1681	1821	1961	3,1
1200	134,6	37,4	50	269	359	449	539	941	1058	1176	1294	1411	1529	1646	4,1
	164,9	45,8	75	330	440	550	660	1062	1195	1327	1460	1593	1726	1858	4,1
	190,4	52,9	100	381	508	635	762	1141	1284	1426	1569	1712	1854	1997	4,1
	213,1	59,2	125	426	568	710	852	1197	1346	1496	1646	1795	1945	2095	4,1
	233,3	64,8	150	467	622	778	933	1237	1392	1546	1701	1856	2010	2165	4,1
	269,3	74,8	200	539	718	898	1077	1293	1455	1616	1778	1940	2101	2263	4,1
1500	169,9	47,2	50	340	453	566	680	1164	1310	1456	1601	1747	1892	2038	5
	208,1	57,8	75	416	555	694	832	1321	1486	1651	1816	1981	2146	2312	5
	240,5	66,8	100	481	641	802	962	1407	1583	1759	1935	2110	2286	2462	5
	268,9	74,7	125	538	717	896	1076	1457	1639	1821	2003	2185	2368	2550	5
	294,5	81,8	150	589	785	982	1178	1488	1675	1861	2047	2233	2419	2605	5
	339,8	94,4	200	680	906	1133	1359	1532	1723	1914	2106	2297	2489	2680	5

V_{Wn} = 0.0416 l/s (150 l/h)

DISA-H-HT -…-F -Heating-

L	V		P_S	Heating capacity primary air Δt_{Pr} (K)				Heating capacity water (W) Δt_{RWV} (K)							Δp_W
(mm)	(m³/h)	[l/s]	(Pa)	6	8	10	12	16	18	20	22	24	26	28	(kPa)
900	99,4	27,6	50	199	265	331	397	447	502	559	614	670	726	781	0,5
	121,7	33,8	75	243	324	406	487	480	541	601	661	721	781	841	0,5
	140,8	39,1	100	282	375	469	563	507	570	633	696	759	823	886	0,5
	157,3	43,7	125	315	420	524	629	527	592	659	724	790	856	921	0,5
	172,1	47,8	150	344	459	574	688	543	611	679	747	814	882	950	0,5
	198,7	55,2	200	397	530	662	795	568	639	710	781	852	923	994	0,5
1200	134,6	37,4	50	269	359	449	539	581	654	727	799	872	945	1017	0,6
	164,9	45,8	75	330	440	550	660	635	714	793	873	952	1031	1111	0,6
	190,4	52,9	100	381	508	635	762	669	753	837	920	1004	1088	1171	0,6
	213,1	59,2	125	426	568	710	852	694	780	867	954	1041	1127	1214	0,6
	233,3	64,8	150	467	622	778	933	711	767	852	937	1022	1107	1193	0,6
	269,3	74,8	200	539	718	898	1077	736	828	920	1012	1104	1196	1288	0,6
1500	169,9	47,2	50	340	453	566	680	714	804	893	982	1072	1161	1250	0,7
	208,1	57,8	75	416	555	694	832	786	884	982	1080	1178	1277	1375	0,7
	240,5	66,8	100	481	641	802	962	825	929	1032	1135	1238	1341	1445	0,7
	268,9	74,7	125	538	717	896	1076	849	956	1062	1168	1274	1380	1486	0,7
	294,5	81,8	150	589	785	982	1178	865	973	1081	1190	1298	1406	1514	0,7
	339,8	94,4	200	680	906	1133	1359	888	999	1110	1221	1332	1443	1554	0,7

V_{Wn} = 0.0416 l/s (150 l/h)

Induction diffuser DISA-H

Sound level

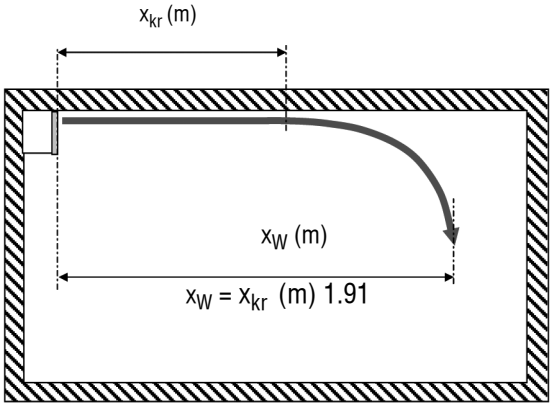
Sound pressure level (room damping -8 dB)

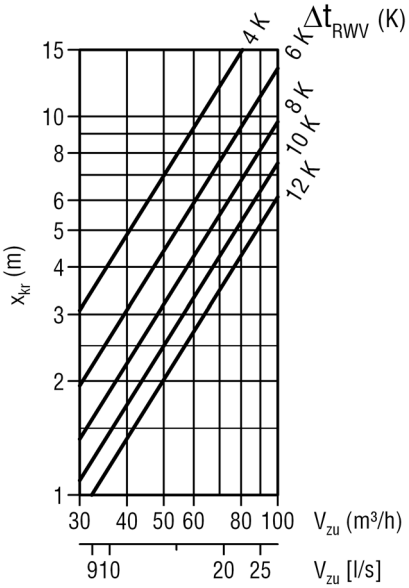
L (mm)	P_S (Pa)	L_p [dB(A)]																	
		DISA-H-...-D						DISA-H-...-E						DISA-H-...-F					
		1 x ø98	2 x ø98	1 x ø123	2 x ø123	1 x ø148	2 x ø148	1 x ø98	2 x ø98	1 x ø123	2 x ø123	1 x ø148	2 x ø148	1 x ø98	2 x ø98	1 x ø123	2 x ø123	1 x ø148	2 x ø148
900	50	15	15	15	15	15	15	15	15	15	15	15	15	36	23	25	18	21	15
	75	15	15	15	15	15	15	17	15	15	15	15	15	42	29	31	23	26	21
	100	15	15	15	15	15	15	21	15	15	15	15	15	46	33	35	27	30	27
	125	15	15	15	15	15	15	24	18	18	17	15	15	49	36	38	30	33	28
	150	15	15	15	15	15	15	27	21	21	20	17	17	52	39	40	32	35	30
	200	19	19	18	18	17	17	31	25	25	25	23	23	56	43	44	36	39	35
1200	50	15	15	15	15	15	15	26	15	16	15	15	15	46	31	36	23	28	17
	75	15	15	15	15	15	15	30	18	21	15	15	15	52	37	42	29	33	23
	100	16	15	15	15	15	15	34	22	25	18	19	15	57	40	47	33	37	28
	125	20	15	15	15	15	15	36	26	28	22	23	20	60	44	50	36	40	32
	150	23	18	17	16	17	16	38	28	30	25	26	23	63	46	53	38	43	35
	200	27	23	21	21	21	21	40	33	34	31	31	28	67	50	57	42	47	39
1500	50	17	15	15	15	15	15	38	16	17	15	17	15	53	35	43	27	33	24
	75	21	15	15	15	15	15	41	22	23	16	23	15	59	40	49	33	40	29
	100	24	15	15	15	15	15	44	27	27	21	27	19	63	44	53	37	42	33
	125	26	16	17	17	17	15	46	30	30	25	29	23	66	48	56	40	46	36
	150	28	19	20	19	20	18	47	33	33	29	32	26	69	50	59	43	48	38
	200	31	23	24	24	24	23	50	38	37	34	36	31	73	54	63	47	52	42

L_P[dB (A)] <= 15 display 15

Induction diffuser DISA-H

Flow data
DISA-H-D (with grille)
Critical throw





Correction factors for the critical throw

Water Δt_{RWV} (K)	Amount of water [l/h]	Correction factor x critical
6	150	0,56
8	150	0,54
10	150	0,5
6	250	0,53
8	250	0,48
10	250	0,45

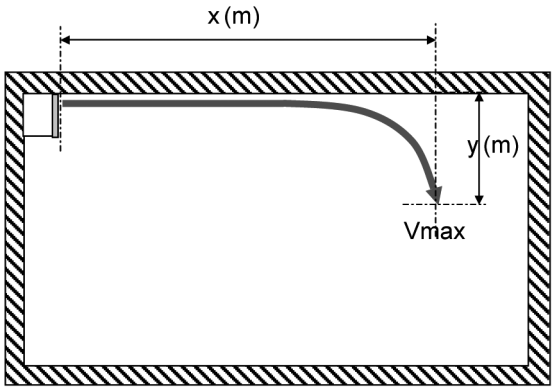
Critical jet path - Correction factors for PA grille

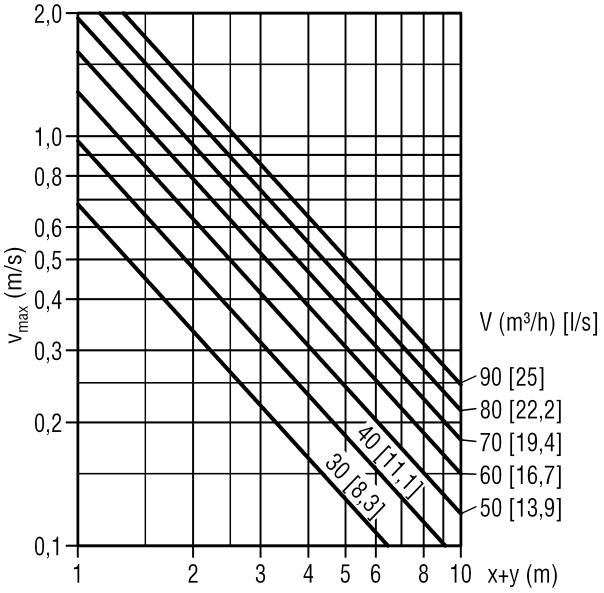
PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
X_{kr} x 1.00	X_{kr} x 1.00	X_{kr} x 0.57	X_{kr} x 0.44

Critical jet path - Correction factors for IB grille

IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
X_{kr} x 0.68	X_{kr} x 0.68	X_{kr} x 0.43	X_{kr} x 0.33

Maximum end velocity of jet (isotherm) with coanda effect





Length correction factors for air volumes

V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

Maximum end velocity of jet - Correction factors for PA grille

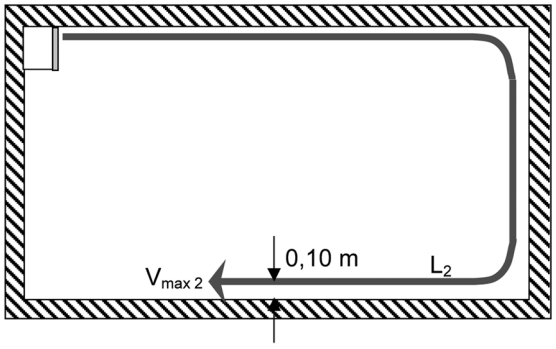
PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
v_{max} x 1.00	v_{max} x 1.00	v_{max} x 0.65	v_{max} x 0.5

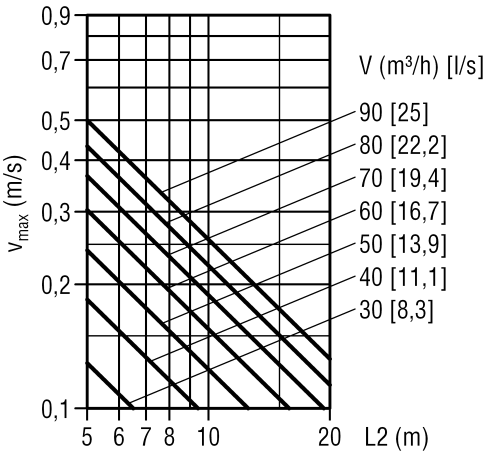
Maximum end velocity of jet - Correction factors for IB grille

IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
v_{max} x 0.77	v_{max} x 0.77	v_{max} x 0.49	v_{max} x 0.38

Induction diffuser DISA-H

Maximum end velocity of jet (isothermal) at floor level





Length correction factors for air volumes

V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

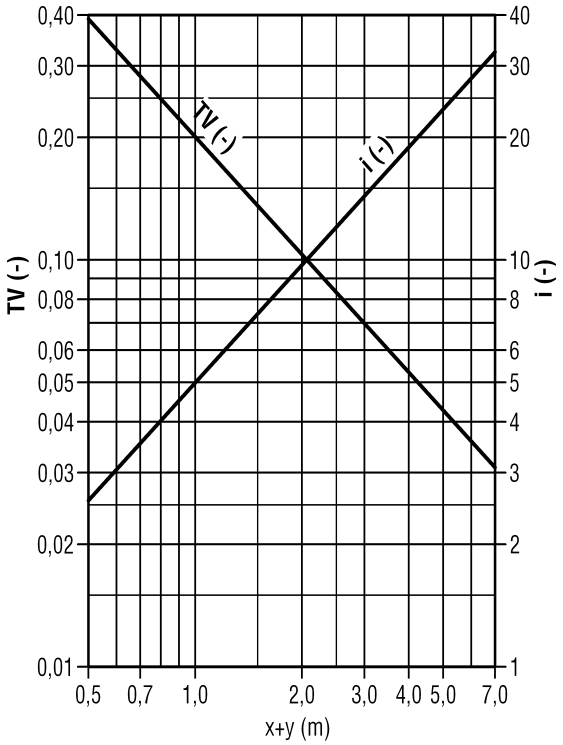
Maximum end velocity of jet - Correction factors for PA grille

PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
v_{max2} x 1.00	v_{max2} x 1.00	v_{max2} x 0.65	v_{max2} x 0.5

Maximum end velocity of jet - Correction factors for IB grille

IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
v_{max2} x 0.77	v_{max2} x 0.77	v_{max2} x 0.49	v_{max2} x 0.38

Temperature ratio / induction ratio secondary slot - primary air only



Correction factors for temperature ratios TV and Induction ratio

Water ΔT (K)	Amount of water [l/h]	Correction factor x-TV diagram	Correction factor x-I diagram
6	150	2,11	0,47
8	150	2,25	0,44
10	150	2,38	0,42
6	250	2,3	0,43
8	250	2,42	0,41
10	250	2,53	0,39

Induction ratios and temperature ratios - Correction factors for PA grille

PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
TV x 1.00	TV x 1.00	TV x 0.64	TV x 0.49
I x 1.00	I x 1.00	I x 1.56	I x 2.04

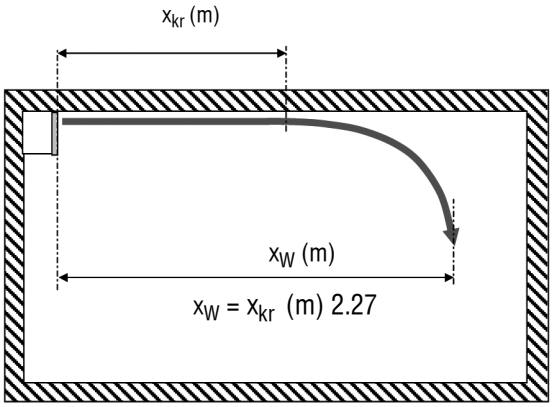
Induction ratios and temperature ratios - Correction factors for IB grille

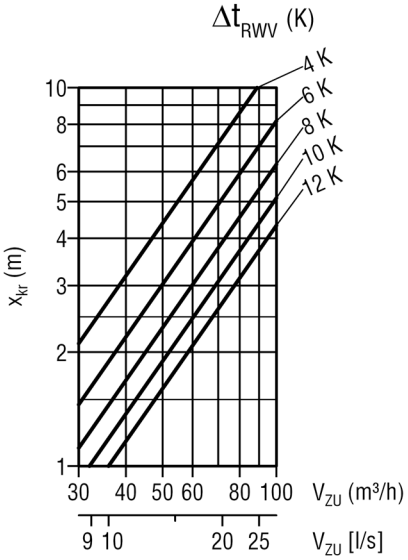
IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
TV x 1.33	TV x 1.33	TV x 0.85	TV x 0.65
I x 0.75	I x 0.75	I x 1.18	I x 1.53

Induction diffuser DISA-H

DISA-H-D (without grille)

Critical throw

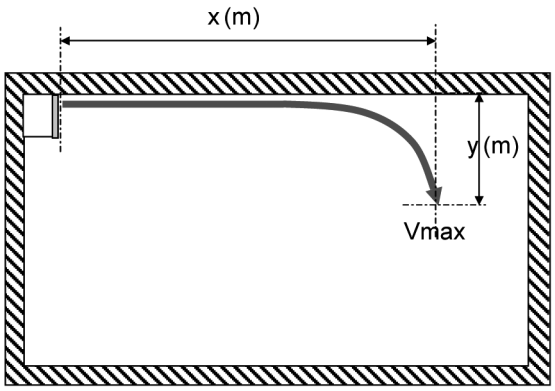


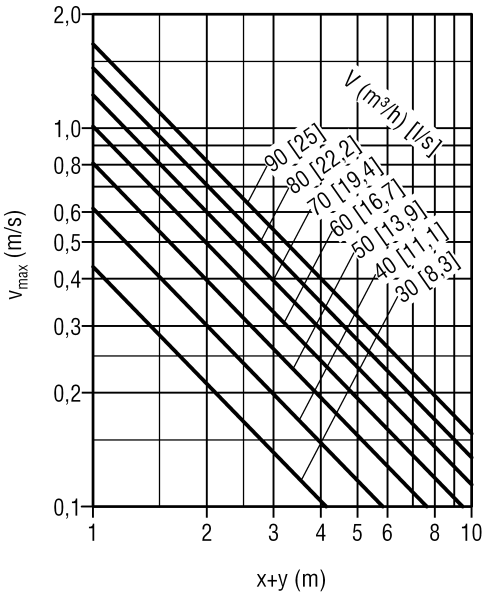


Correction factors for the critical throw

Water Δt_{RWV} (K)	Amount of water [l/h]	Correction factor x critical
6	150	0,49
8	150	0,41
10	150	0,38
6	250	0,44
8	250	0,37
10	250	0,34

Maximum end velocity of jet (isotherm) with coanda effect





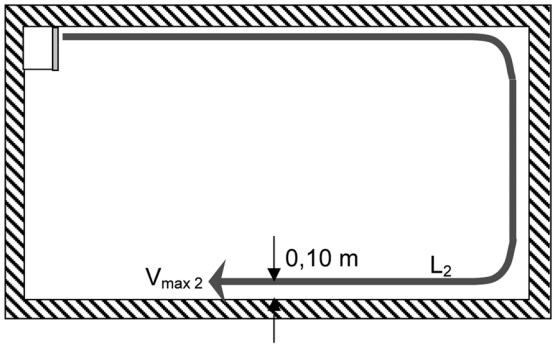
Length correction factors for air volumes

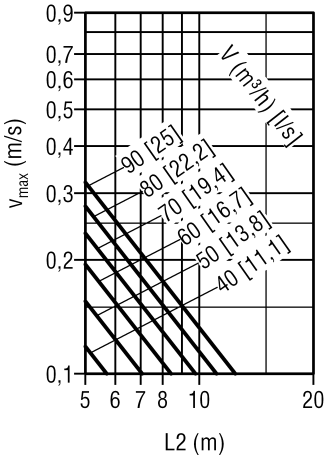
V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

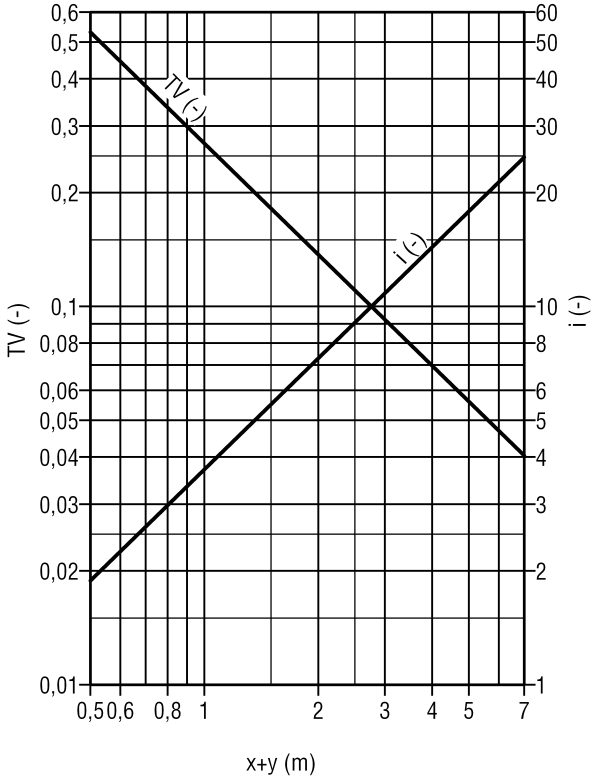
Induction diffuser DISA-H

Maximum end velocity of jet (isothermal) at floor level





Temperature ratio / induction ratio secondary slot - primary air only



Length correction factors for air volumes

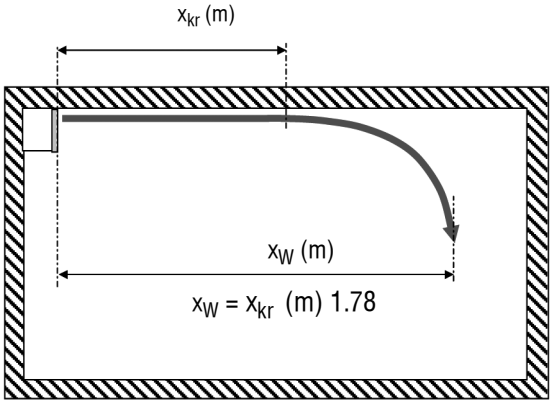
V_{ZU} x KF

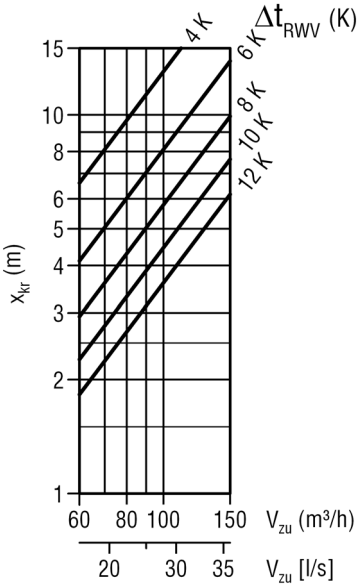
NL	KF
900	1,33
1200	1,0
1500	0,80

Induction diffuser DISA-H

DISA-H-E (with grille)

Critical throw

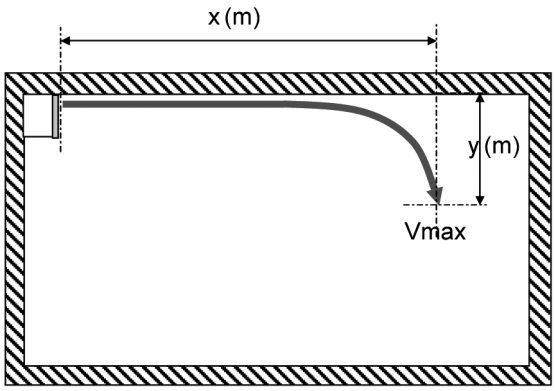


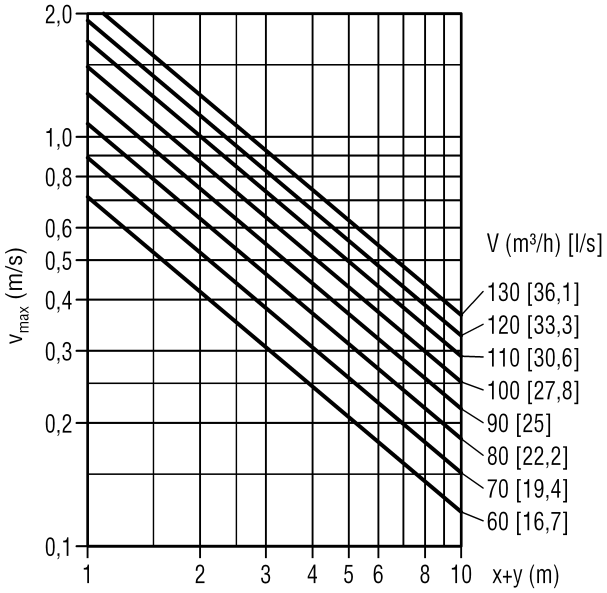


Correction factors for the critical throw

Water Δt_{RWV} (K)	Amount of water [l/h]	Correction factor x critical
6	150	0,68
8	150	0,65
10	150	0,63
6	250	0,64
8	250	0,62
10	250	0,58

Maximum end velocity of jet (isotherm) with coanda effect





Length correction factors for air volumes

V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

Critical jet path - Correction factors for PA grille

PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
x_{kr} x 1.00	x_{kr} x 1.00	x_{kr} x 0.57	x_{kr} x 0.44

Maximum end velocity of jet - Correction factors for PA grille

PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
v_{max} x 1.00	v_{max} x 1.00	v_{max} x 0.65	v_{max} x 0.5

Critical jet path - Correction factors for IB grille

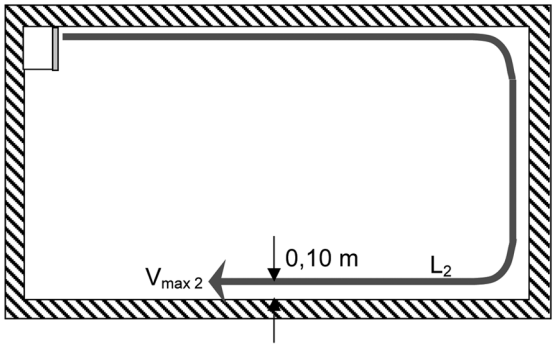
IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
x_{kr} x 0.68	x_{kr} x 0.68	x_{kr} x 0.43	x_{kr} x 0.33

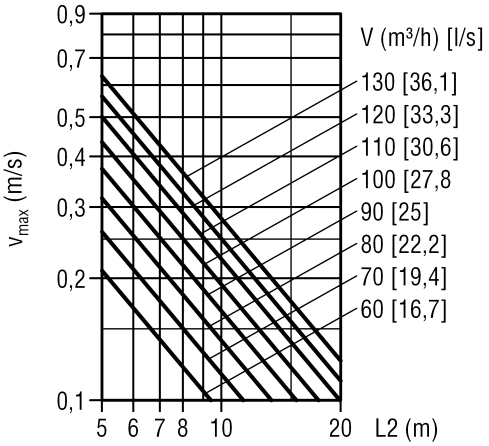
Maximum end velocity of jet - Correction factors for IB grille

IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
v_{max} x 0.77	v_{max} x 0.77	v_{max} x 0.49	v_{max} x 0.38

Induction diffuser DISA-H

Maximum end velocity of jet (isothermal) at floor level





Length correction factor for air volumes

V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

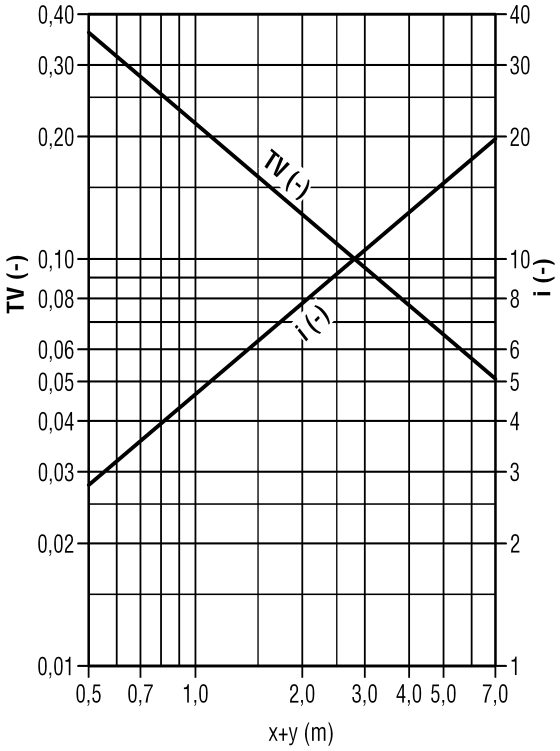
Maximum end velocity of jet - Correction factors for PA grille

PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
v_{max2} x 1.00	v_{max2} x 1.00	v_{max2} x 0.65	v_{max2} x 0.5

Maximum end velocity of jet - Correction factors for IB grille

IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
v_{max2} x 0.77	v_{max2} x 0.77	v_{max2} x 0.49	v_{max2} x 0.38

Temperature ratio / induction ratio secondary slot - primary air only



Correction factors for temperature ratios TV and Induction ratio

Water ΔT (K)	Amount of water [l/h]	Correction factor x-TV diagram	Correction factor x-I diagram
6	150	1,47	0,68
8	150	1,62	0,62
10	150	1,77	0,56
6	250	1,63	0,61
8	250	1,79	0,55
10	250	1,95	0,51

Induction ratios and temperature ratios - Correction factors for PA grille

PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
TV x 1.00	TV x 1.00	TV x 0.64	TV x 0.49
I x 1.00	I x 1.00	I x 1.56	I x 2.04

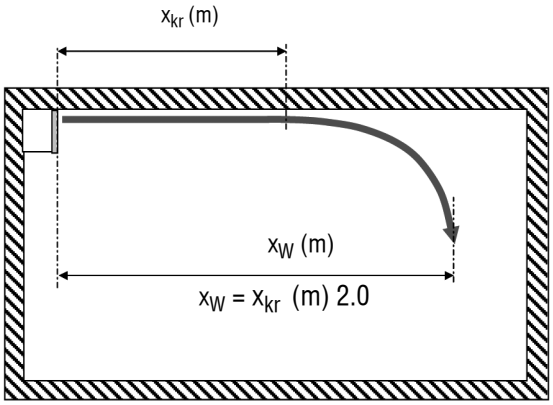
Induction ratios and temperature ratios - Correction factors for IB grille

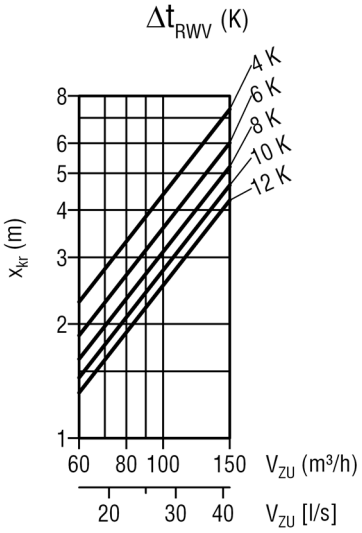
IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
TV x 1.33	TV x 1.33	TV x 0.85	TV x 0.65
I x 0.75	I x 0.75	I x 1.18	I x 1.53

Induction diffuser DISA-H

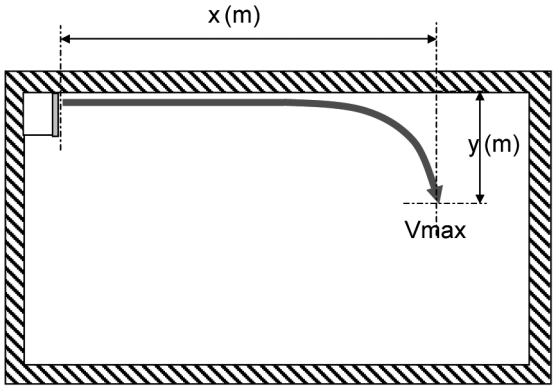
DISA-H-E (without grille)

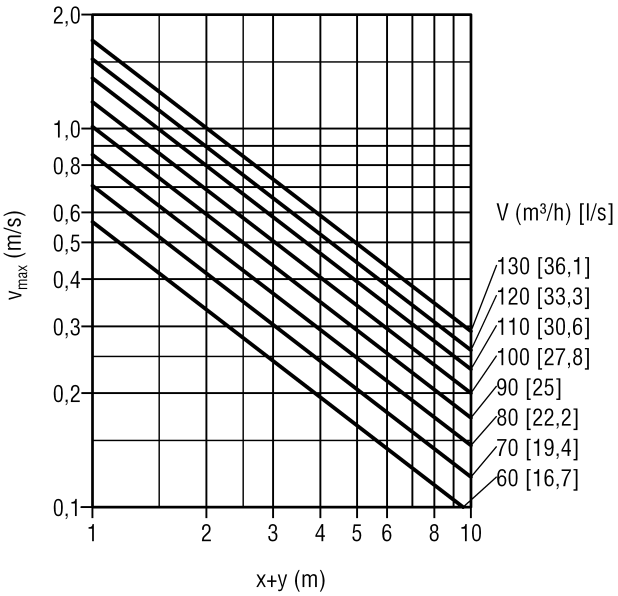
Critical throw





Maximum end velocity of jet (isotherm) with coanda effect





Correction factors for the critical throw

Water Δt_{RWV} (K)	Amount of water [l/h]	Correction factor x critical
6	150	0,62
8	150	0,52
10	150	0,48
6	250	0,55
8	250	0,47
10	250	0,44

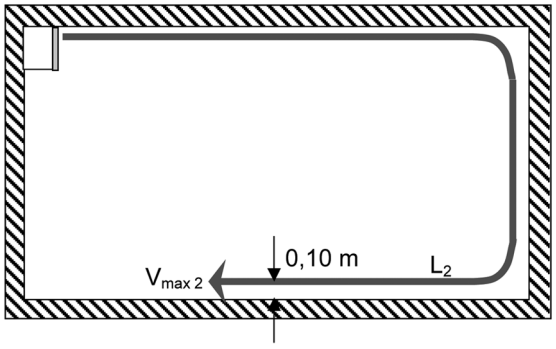
Length correction factors for air volumes

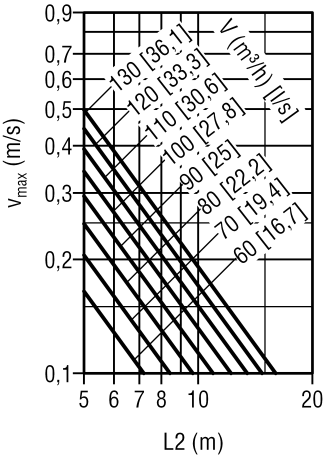
V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

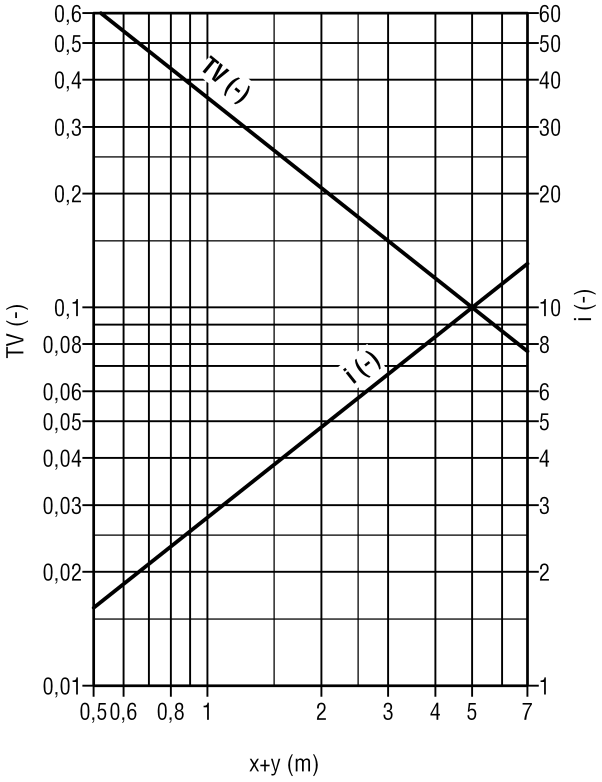
Induction diffuser DISA-H

Maximum end velocity of jet (isothermal) at floor level





Temperature ratio / induction ratio secondary slot - primary air only



Length correction factors for air volumes

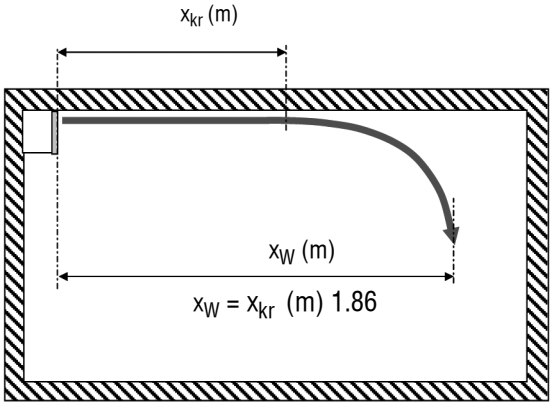
V_{ZU} x KF

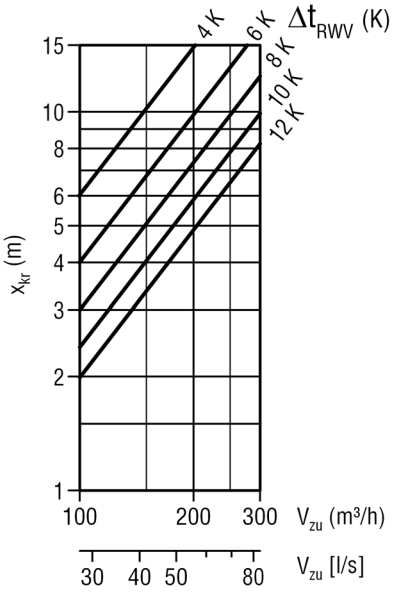
NL	KF
900	1,33
1200	1,0
1500	0,80

Induction diffuser DISA-H

DISA-H-F (with grille)

Critical throw





Correction factors for the critical throw

Water Δt_{RWV} (K)	Amount of water [l/h]	Correction factor x critical
6	150	0,71
8	150	0,67
10	150	0,63
6	250	0,66
8	250	0,62
10	250	0,55

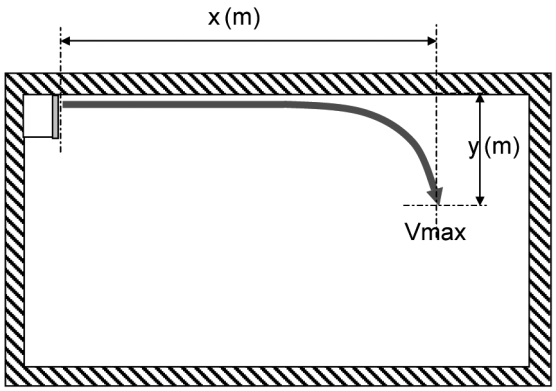
Critical jet path - Correction factors for PA grille

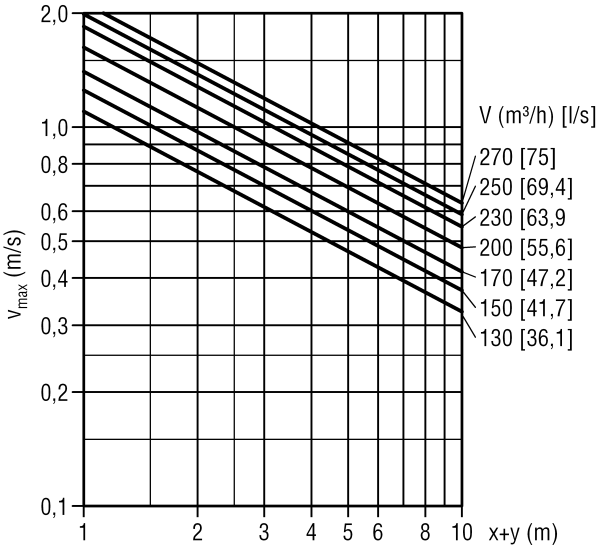
PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
X_{kr} x 1.00	X_{kr} x 1.00	X_{kr} x 0.57	X_{kr} x 0.44

Critical jet path - Correction factors for IB grille

IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
X_{kr} x 0.68	X_{kr} x 0.68	X_{kr} x 0.43	X_{kr} x 0.33

Maximum end velocity of jet (isotherm) with coanda effect





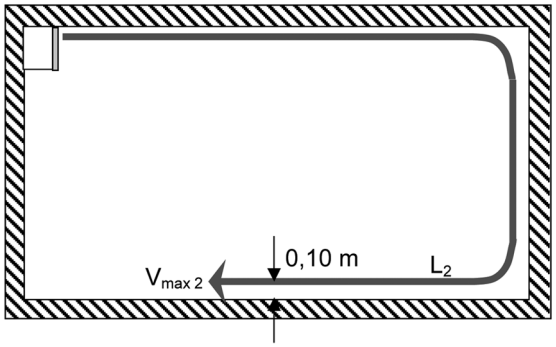
Length correction factor for air volumes

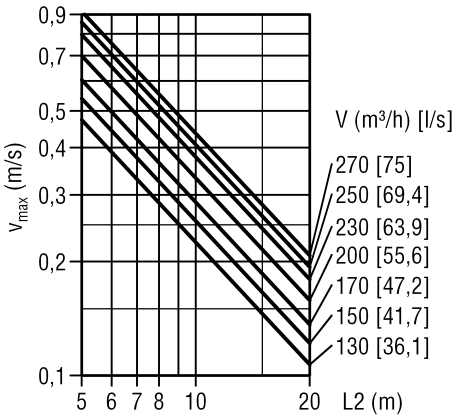
V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

Induction diffuser DISA-H

Maximum end velocity of jet (isothermal) at floor level





Length correction factors for air volumes

V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

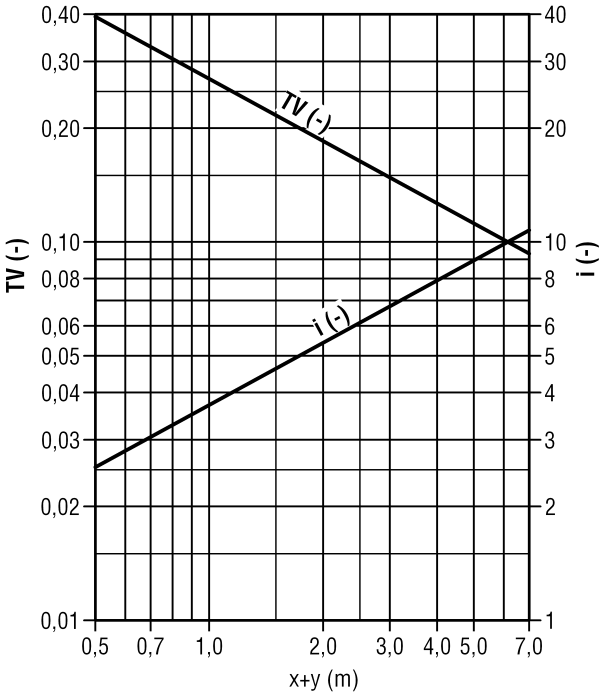
Maximum end velocity of jet - Correction factors for PA grille

PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
v_{max2} x 1.00	v_{max2} x 1.00	v_{max2} x 0.65	v_{max2} x 0.5

Maximum end velocity of jet - Correction factors for IB grille

IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
v_{max2} x 0.77	v_{max2} x 0.77	v_{max2} x 0.49	v_{max2} x 0.38

Temperature ratio / induction ratio secondary slot - primary air only



Correction factors for temperature ratios TV and Induction ratio

Water ΔT (K)	Amount of water [l/h]	Correction factor x-TV diagram	Correction factor x-I diagram
6	150	1,19	0,84
8	150	1,25	0,8
10	150	1,57	0,63
6	250	1,47	0,67
8	250	1,55	0,64
10	250	1,77	0,56

Induction ratios and temperature ratios - Correction factors for PA grille

PA-1 Blade position straight	PA-2 Blade position straight	PA-2 Blade position 44 ° diverging	PA-2 Blade position 84 ° diverging
TV x 1.00	TV x 1.00	TV x 0.64	TV x 0.49
I x 1.00	I x 1.00	I x 1.56	I x 2.04

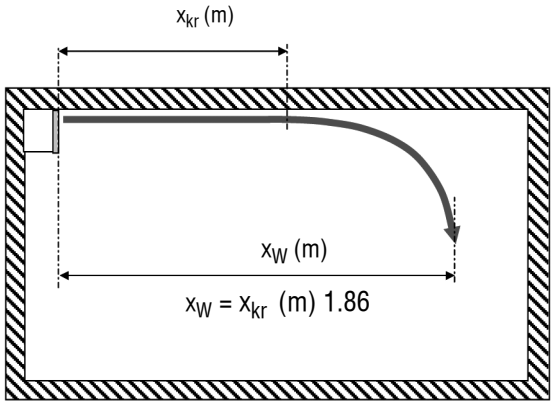
Induction ratios and temperature ratios - Correction factors for IB grille

IB-1 Blade position straight	IB-2 Blade position straight	IB-2 Blade position 44 ° diverging	IB-2 Blade position 84 ° diverging
TV x 1.33	TV x 1.33	TV x 0.85	TV x 0.65
I x 0.75	I x 0.75	I x 1.18	I x 1.53

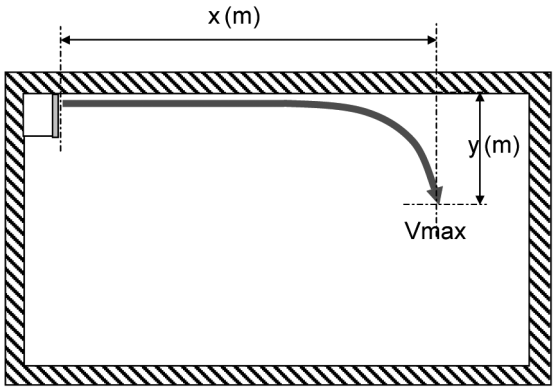
Induction diffuser DISA-H

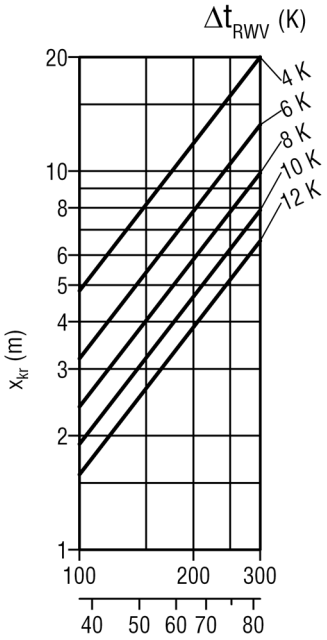
DISA-H-F (without grille)

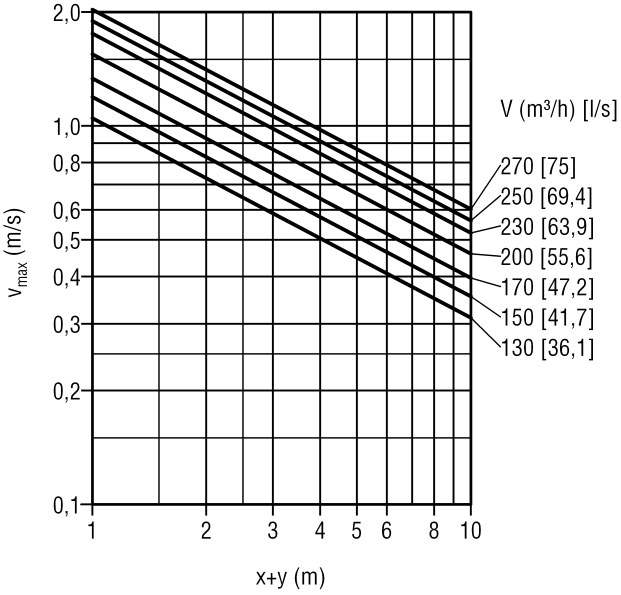
Critical throw



Maximum end velocity of jet (isotherm) with coanda effect







Correction factors for the critical throw

Water Δt_{RWV} (K)	Amount of water [l/h]	Correction factor x critical
6	150	0,71
8	150	0,67
10	150	0,63
6	250	0,66
8	250	0,62
10	250	0,55

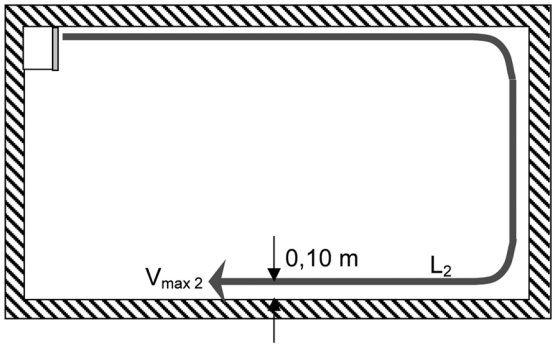
Length correction factors for air volumes

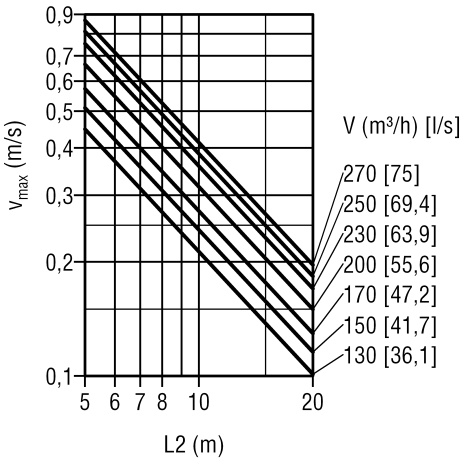
V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

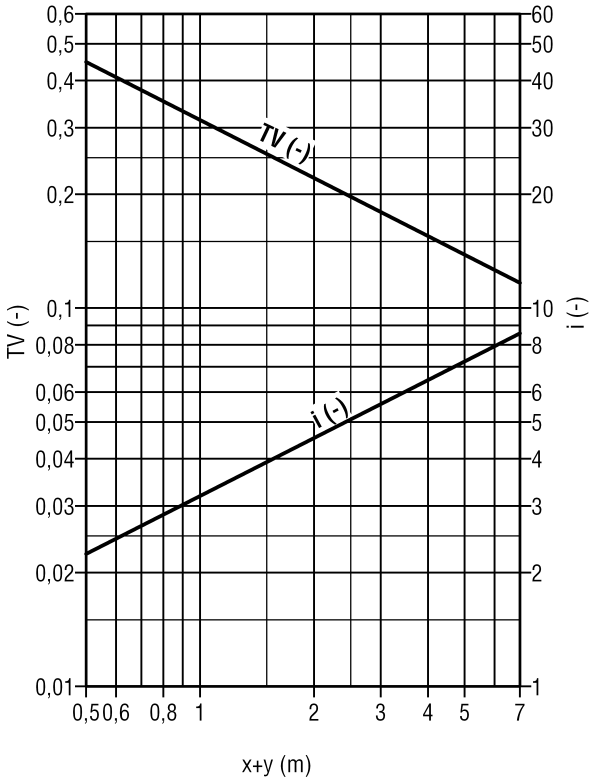
Induction diffuser DISA-H

Maximum end velocity of jet (isothermal) at floor level





Temperature ratio / induction ratio secondary slot - primary air only



Length correction factors for air volumes

V_{ZU} x KF

NL	KF
900	1,33
1200	1,0
1500	0,80

Induction diffuser DISA-H

Control units

Valves

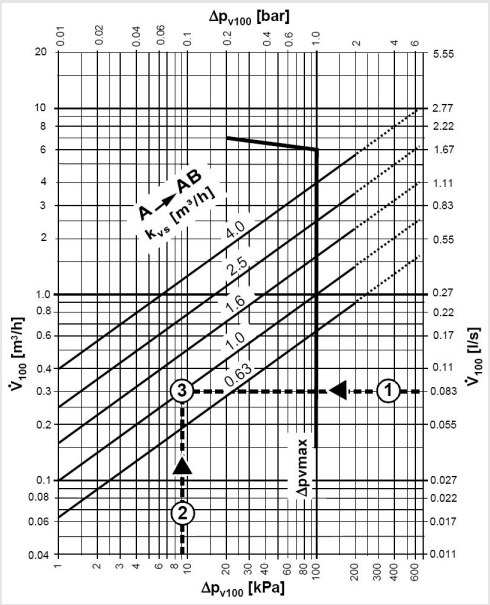
3-way valves (series VXP46.10-...)

- Nominal diameter 10 mm
- Connection G1/2 B
- k_{VS}: 0.63 (VXP46.10-0.63) and 1 m^3/h (VXP46.10-1)
- Δp_s : 150 kPa
- Δp_{max}: 100 kPa
- Drives SSA (100 N) and STA (100 N)

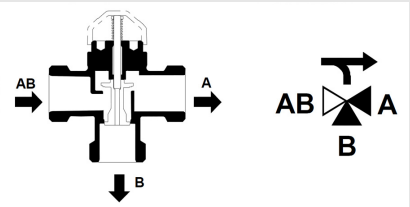
Compatible drives:

Actuator	Operating voltage	Activation
SSA31	AC 230 V	3-point
SSA61	AC 24 V	DC 0 ...10 V
SSA81	AC 24 V	3-point
STA23	AC 230 V	2-point
STA73	AC 24 V	2-point or PWM (1)
STA63	AC 24 V	DC 0...10 V

Selection k_{VS} value:



Operation:



AB→A 0...100%
AB→B 70...0%

The 3-way valves VXP46 are designed exclusively as distributor valves. For distributor circuits, the valve must therefore be mounted in the supply line.

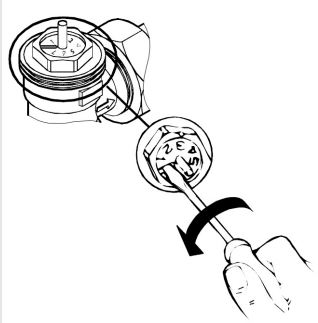
2-way valves (series VD115CLC)

- Nominal diameter 15 mm
- Connections inner and outer thread 1/2 inch thick
- Manual setting button/protective cap included in delivery
- Valve with adjustable k_{VS} by means of a ring 0.25-1.9 m^3/h
- Drives SSA (100 N) and STA (100 N)

Compatible drives:

Actuator	Operating voltage	Activation
SSA31	AC 230 V	3-point
SSA61	AC 24 V	DC 0 ...10 V
SSA81	AC 24 V	3-point
STA23	AC 230 V	2-point
STA73	AC 24 V	2-point or PWM (1)
STA63	AC 24 V	DC 0 ...10 V

Valve data:



Numbers	Valve stroke (mm)	k_{VS} (m^3/h)
0 1.)	0	0
1	0,188	0,25
2	0,375	0,65
3	0,563	0,88
4	0,750	1,12
5	0,938	1,30
6	1,125	1,46
7	1,313	1,57
0 2.)	1,50	1,90

The presetting < 5 is not recommended because of too little stroke resolution.

Two revolutions are possible on the presetting ring. The values listed in the table (numbers $0^{1)}$... $0^{2)}$) define the first revolution. Another revolution (numbers $0^{2)}$ ... 6) will increase the stroke to 2.5 mm (completely open), but the kvs values will no longer change after $0^{2)}$.

If Siemens valves VD...CLC are motorised with actuators SSA61..., the preset flow rate must be fixed at 1.5 mm of valve stroke (factory setting $0^{2)}$). At a valve stroke < 1.5 mm, self-calibration will not be possible, and the actuator/valve combination will remain blocked.

(1) in connection with room controllers RDG

Induction diffuser DISA-H

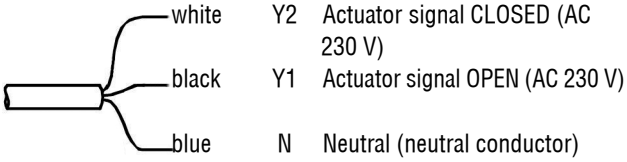
Actuators

Model SSA

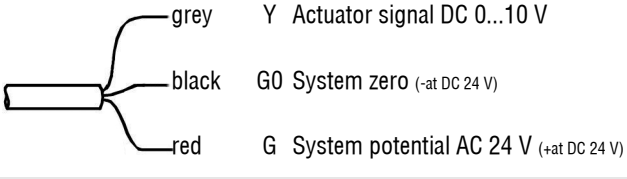
- Actuating power 100 N
- Automatic detection of the valve stroke
- Direct mounting
- Manual adjustment and position indicator
- Connecting cable lengths 1.5, 2.5 and 4.5 m

SSA31: actuator 230 V AC, 3-point activation
SSA61: actuator 24 V AC/DC, activation 0...10 V DC
SSA81: actuator 24 V AC, 3-point activation

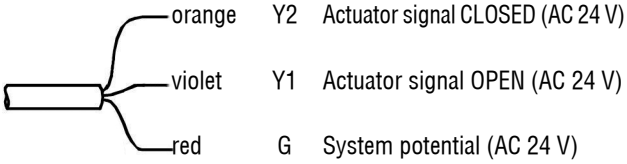
Connection diagrams:
SSA31:



SSA61:



SSA81:

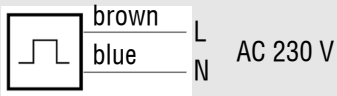


Model STA

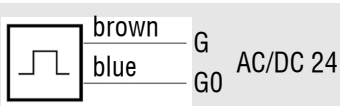
- Actuating power 100 N
- Simple installation
- Standard version including connecting cables of 1, 2 or 5 m
- Motion and position indicator
- Two-wire connection
- Pulse width modulation PWM (room temperature controllers RDG and RCU)

STA23: Operating voltage 230 V AC, actuator signal 2-point
STA73: Operating voltage 24 V AC/DC, actuator signal 2-point or PDM (pulse duration modulation)

Connection diagrams:
STA23



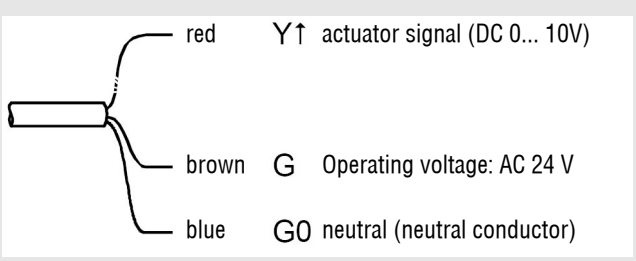
STA73



Model STA63

- Actuating power 100 N
- Simple installation
- Standard version with connecting cables 1 m. (2, 5 or 7 m. optional)
- 270° visible position indicator
- 3-wire connection
- Voltage 24V AC/DC 0...10 V position signal

Connection diagrams:



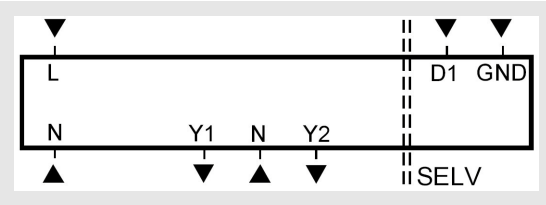
Induction diffuser DISA-H

Control units

Model RCU 10

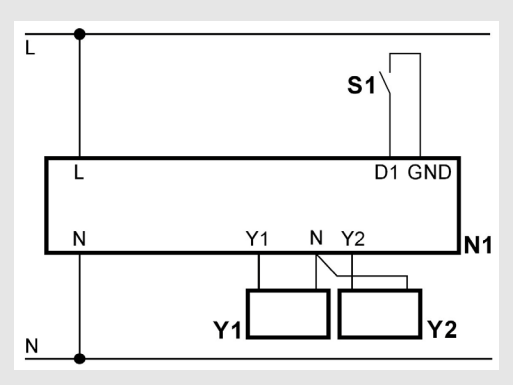
- 2-point or steady control with PI behaviour, as desired, combined with model STA
- On/Off or PWM signal
- Operating mode switchover contact input for remote circuit
- Operating voltage AC 230 V

Terminals:



L,N Operating voltage AC 230 V
D1, GND Signal input for potential-free operating mode switch
Y1, Y2 Control signal PWM / 2-point AC 230 V

Connection diagram:

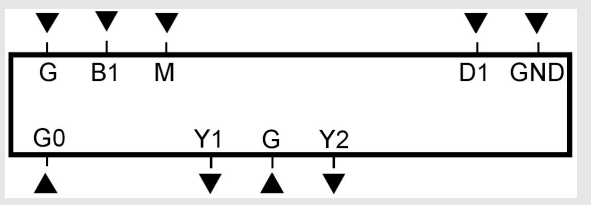


N1 Room temperature control
S1 External operating mode converter
Y1, Y2 Actuator

Model RCU 15

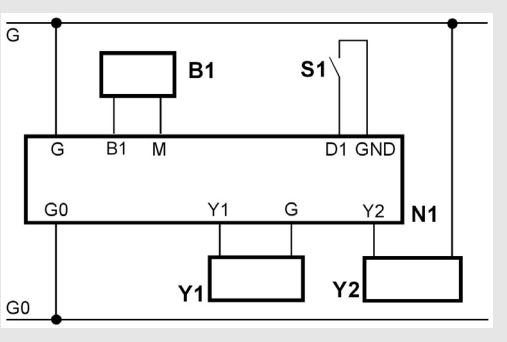
- 2-point or steady control with PI behaviour, as desired
- ON/OFF or PWM actuator signal outputs
- Standard, Economy and Stand-by operating modes
- Operating mode switchover contact input for remote circuit
- Operating voltage AC 24 V

Terminals:



G, G0 Operating voltage AC 24 V
B1 Signal input external room temperature sensor or return air temperature sensor
D1, GND Signal input for potential-free operating mode switch
M Measurement zero "external room temperature sensor or return air temperature sensor"
Y1, Y2 Control signal PWM / 2-point AC 24 V

Connection diagram (4-pipe induction control):



For 2-pipe induction unit, connect only Y1

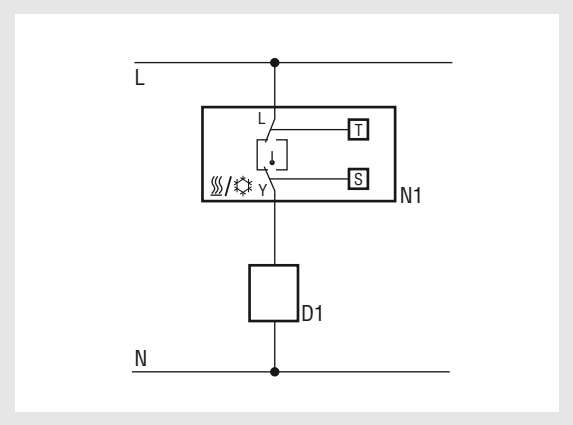
B1 External room temperature sensor (QAA32) or return air temperature sensor (QAH11.1)
N1 Room temperature control
S1 External operating mode converter
Y1, Y2 Actuator

Induction diffuser DISA-H

Model RAA41

- Room thermostat with manual switch for heating or cooling
- Two-point control behaviour
- Switching voltage AC 24...250 V

Connection diagram:

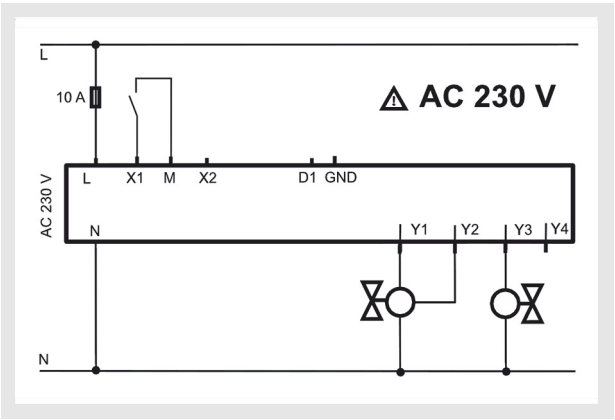


D1	Zone valves or thermal valves
L	Switching voltage AC 24...250 V
N1	Room thermostat
S	Selector switch Heating / OFF / Cooling
Y	Control output "Heating" or "Cooling", AC 24...250 V
N	Operating voltage zero
T	Thermocouple (gas membrane)

Model RDG

- Display with backlight
- Automatic switchover between heating and cooling mode by means of sensor QAH11.1 (optional)
- Operating modes: Comfort, Economy and Protective modes
- PWM regulation, optional
- Automatic mode with timer program
- Optional RDG KNX communication standard protocol (RDG 100KN)
- Condensation symbol visible on the display (when condensation occurs, the cooling valve will close)

Connection diagram (4-pipe induction control):



Y1...Y4	Valve control signal AC 230 V
L, N	Operating voltage AC 230 V
D1, GND	Signal input for potential-free operating mode switch
X1	Multifunctional input for dew point monitor (e.g. QXA 2000)
X2	Multifunctional input for temperature sensor (e.g. QAH11.1). Heating / cooling switchover

Induction diffuser DISA-H

Condensation monitor

Models QXA2602 + QXA2604 + QXA2601 and QXA2603

QXA2602
QXA2604

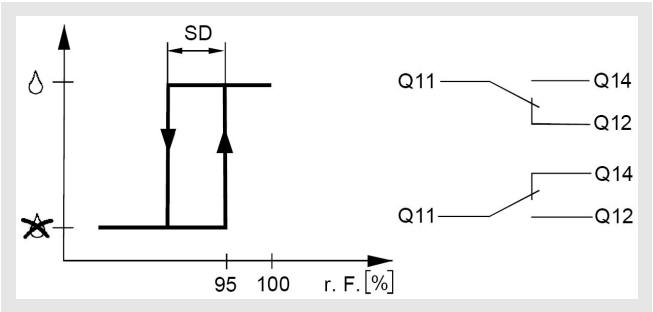
QXA2601
QXA2603

- Operating voltage AC/DC 24 V or AC 230 V
- Potential-free changeover contact AC/DC 1...30V or AC 230V
- Quick and simple installation
- Flat or pre-assembly
- Integrated and remote sensor available
- Status display via two-colour LED

Mode of action:

The condensation monitor detects the relative humidity near the dew point (= 100% of r. h.) via its moisture-sensitive element. During this detection, the resistance value of the element increases considerably between 90 ... 100% of r. h. Before reaching the dew point, the electronics of the relay switches. A changeover of the relay contact (two-point output) has the following effect, for example in cooling ceiling applications:

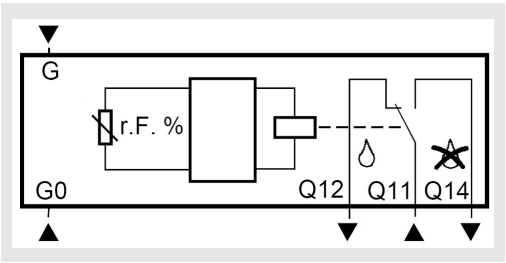
1. The cooling capacity is switched off by the valve position or by a controller until the condensation signal disappears again.
2. The water supply temperature is increased immediately by a selectable value (typically 1 to 2 K) und slowly lowered again once the signal has disappeared. This use results in a specific control function of the controller.



SD Switching difference
Q... Relay contact output

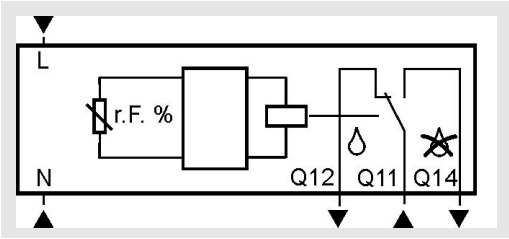
Wiring diagrams:

QXA2601 / QXA2602



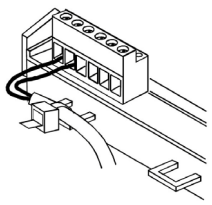
G Measurement voltage AC 24 V (DC 24 V)
G0 System zero
Q... Potential-free changeover contact AC/DC 1...48 V

QXA2603 / QXA2604



L, N Mains voltage AC 230 V
Q... Potential-free changeover contact AC/DC 12...250 V

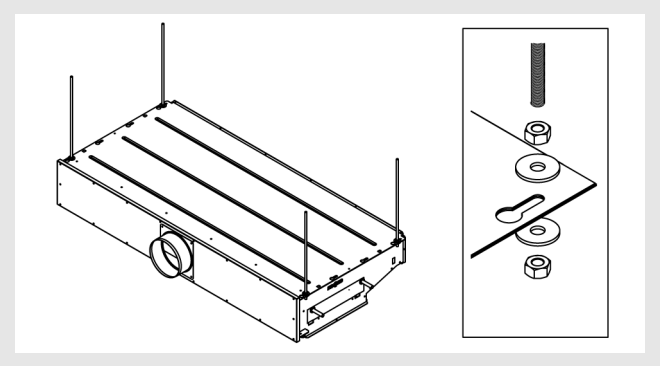
A strain relief for the AC 230 V terminals is absolutely necessary. The cables must be attached to the fishplates at the housing base using cable binders (see figure opposite).



Induction diffuser DISA-H

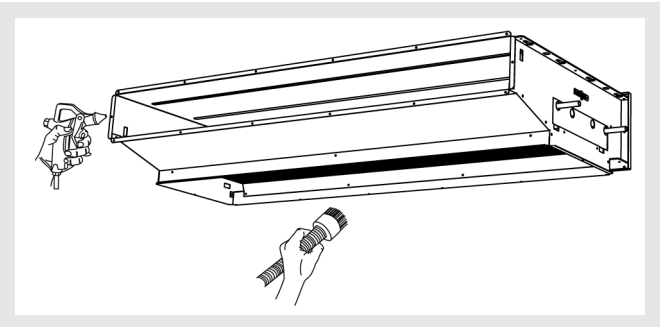
Assembly

The DISA-H series has been developed for horizontal installation in suspended entry halls or ceiling panellings. The device is suspended from a load-bearing ceiling using fastening material approved by the building supervisory authorities, for example M6 threaded bars. Fastening takes place on the mounting bores provided ex works.



Maintenance

The induction diffuser type DISA-H is distinguished by particularly easy maintenance. Grille, register and plenum box are cleaned by spraying with compressed air.
Since the grilles are fastened to the device, the grille can be easily dismounted, in order to carry out the maintenance activities.

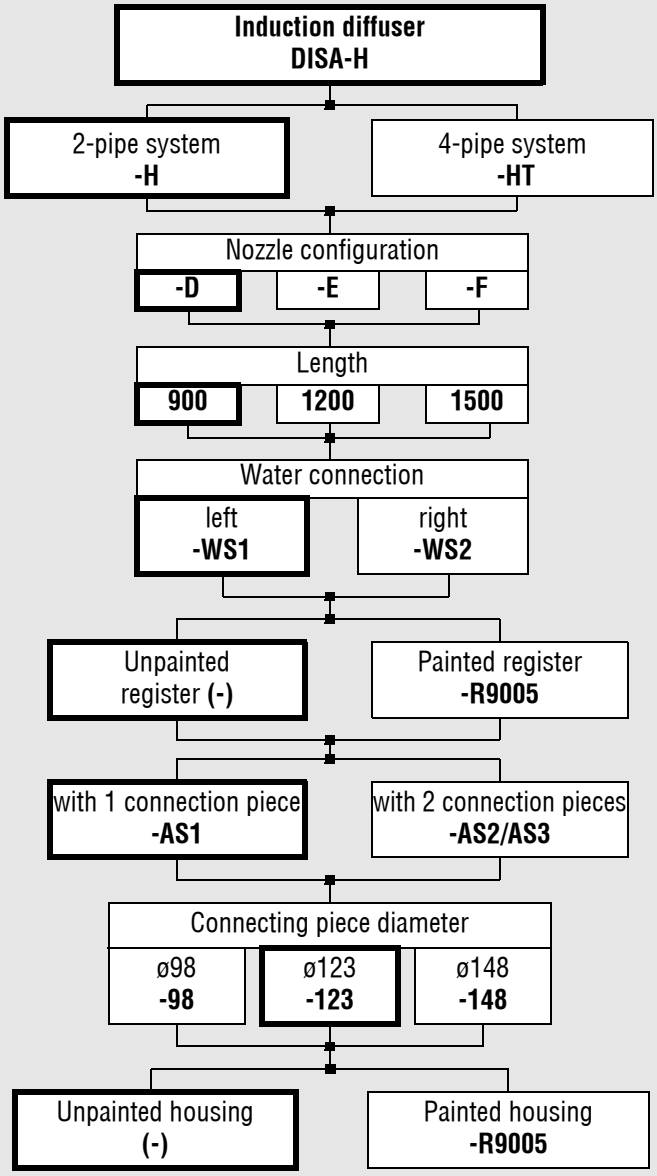


Legend

L	(mm)	=	Length
L_K	(mm)	=	Length of the box neck
V	(m^3/h) [l/s]	=	Primary air flow
V_{Wn}	[l/s]	=	Standard amount of water flow
P_S	(Pa)	=	Static pressure
Δp_W	(kPa)	=	Water-side pressure loss
t_{Pr}	(°C)	=	Primary air temperature
t_R	(°C)	=	Room air temperature
t_{WV}	(°C)	=	Water supply temperature
Δt_{Pr}	(K)	=	t_R-t_{Pr}
Δt_{RWV}	(K)	=	t_R-t_{WV}
v_{max}	(m/s)	=	Maximum end velocity of jet
x+y	(m)	=	Horizontal + vertical throw
x_{kr}	(m)	=	Critical throw
ΔT_x	(K)	=	Temperature difference at point x
V_x	(m^3/h) [l/s]	=	Total air jet volume at point x
i	(-)	=	Induction ratio ($i = V_x / V$)
TV	(-)	=	Temperature ratio ($TV = \Delta T_x / \Delta t_{Pr}$)
x_w	(m)	=	Throw distance
L_2	(m)	=	Distance covered by the jet path to the floor level
v_{max2}	(m/s)	=	Maximum end velocity of jet at floor level
k_{vs}	(m^3/h)	=	Flow characteristic value of the valve in m^3/h with the valve completely open and a pressure drop of 1 bar
Δp_s	(kPa)	=	Maximum allowed differential pressure at which the valve will still close against the pressure.
Δp_{max}	(kPa)	=	Maximum allowed differential pressure above the control path of the valve for the entire actuating range of the valve/ actuator unit
L_P	[dB(A)]	=	Sound pressure level (room damping - -8 dB)

Induction diffuser DISA-H

Order details



Order example
DISA-H-H-D-900-WS1-AS1-123

Unless stated otherwise, the thick-frame model will be delivered!

Accessories:

Box neck extension Supply air **-KZ** (60...200)	Box neck extension for secondary air **-KS** (60...200)
Rubber lip seal **-GD**	Flexible connection hoses - **FA** (500/800/1200)
Volumetric flow measuring tube **-MR**	External thread flat-sealing **-WA1/2**
Valves	Actuators
Control units	Condensation monitor

Supply air grille

PA-1-Z	**PA-2a-Z**
AL-1-Z	**AL-2-Z**
IB-1-Z	**IB-2-Z**

Secondary air grille

PA-1-A	**IB-1-A**
AL-1-A	

Induction diffuser DISA-H

Specification text

Induction diffuser type DISA-H with horizontal throw, for installation preferably in hotels, hospitals and offices with suspended entrance hall or suspended ceiling panelling.
Consisting of a galvanised sheet steel housing with integrated non-flammable galvanised sheet steel nozzle plate available in three different configurations for small, medium and large air volumes.
As standard the devices are equipped with a heat exchanger with copper pipes and attached aluminium blades for the 2-pipe system for cooling or heating or the 4-pipe system for cooling and heating (optional).
The air-side connection of the induction units is made from behind using 1 or, optionally, 2 connecting pieces.
For easy mounting, the devices are equipped ex works with mounting bores on the top side.
Depth: 600 mm, Height: 200 mm, Length: 900 - 1500 mm (with 300
mm division)

Product: SCHAKO **type DISA-H**

- System
  - 2-pipe system (**-H**), standard
  - 4-pipe (**-HT**)
- Nozzle configuration
  - **D**
  - **E**
  - **F**
- Length
  - **900**
  - **1200**
  - **1500**
- Water connection
  - left back (-**WS1**)
  - right back (-**WS2**)
- Registers
  - Unpainted register (**-**)
  - Painted register (**-R9005**)
- Number of connection pipes
  - With 1 connection pipe (**-AS1**, standard)
  - With 2 connection pipes (**-AS2/AS3**)
- Connection pipe diameter
  - Ø **98** mm
  - Ø **123** mm (standard)
  - Ø **148** mm
- Housing
  - Unpainted housing (**-**)
  - Painted housing (**-R9005**)

Accessories:

- Rubber lip seal (-**GD**)
- Volumetric flow measuring tube (-**MR**)
- Box neck extension for supply air **-KZ** (**60…200**)
- Box neck extension for secondary air **-KS** (**60…200**)
- Flexible connection hose (**-FA**)
  - 500 mm (**-FA 500**)
  - 800 mm (**-FA 800**)
  - 1200 mm (**-FA 1200**)
- External thread flat-sealing (**WA 1/2**)
- Valves
- Actuators
- Control units
- Condensation monitor
- Supply air grille
  - **PA-1-Z**
  - **PA-2a-Z**
  - **AL-1-Z**
  - **AL-2-Z**
  - **IB-1-Z**
  - **IB-2-Z**
- Secondary air grille
  - **PA-1-A**
  - **IB-1-A**
  - **AL-1-A**