

ADRIATIC VF

Active climate beam with cooling, heating and ventilation



QUICK FACTS

- The ADRIATIC VF is a climate beam with integrated recirculated air opening in the face plate.
- Air is discharged into the room along the ceiling.
- Integrated VariFlow airflow distribution for simple adjustment at the site
- An attractive climate beam designed for suspended installation.

Cooling capacity				
P_k (W/m)	q (l/sm)	p_j (Pa)	ΔT_{mk} K	ΔT_r K
500	10	60	10	10
590	15	55	10	10
680	20	55	10	10

Primary airflow:	Up to 60 l/s
Pressure range:	30 to 70 Pa
Total cooling capacity:	Up to 2800 W
Heating capacity:	Up to 3400 W
Size - Length:	From 1.2 to 3.6 m in increments of 0.6 m
Width:	363 mm
Height:	172 mm

Swegon

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Technical description

ADRIATIC VF

The ADRIATIC VF is a closed, active climate beam with two-way air discharge. Cooling and ventilation or cooling, heating and ventilation.

Installation

The ADRIATIC VF is designed for suspended installation from hangers or mounting directly against the ceiling.

Connection dimensions:

Cooling (water): Ø 12 x 1.0 mm Cu plain pipe end.

Heating (water): Ø 12 x 1.0 mm Cu plain pipe end.

Air: Insertion piece (sleeve) Ø125 mm

Suspension:

The units are delivered without mounting parts. If mounting parts are required, they can be ordered separately.

The SYST MS M8 assembly piece is required for suspended installation from hangers.

The SYST MD4S is required for mounting the beam directly against the ceiling

Operation

- Cooling
- Heating (optional)
- Ventilation
- ADC air deflectors
- VariFlow airflow distribution

Application

The ADRIATIC VF is well-suited for use in all types of rooms with waterborne climate cooling:

- Offices and conference rooms
- Hotels
- Classrooms
- Data processing rooms
- Bank premises
- Restaurants



Advantages of the ADRIATIC VF

- The ADRIATIC VF has an attractive design and extremely low installation height that fits in well in all types of room decor.
- Since the ADRIATIC VF is a closed climate beam with integrated recirculating air opening in the face plate, it can be mounted directly against the ceiling without regard to circulation air slots.
- The ADRIATIC VF combines the superior air discharge properties of ceiling units with the stringent design requirements of suspended climate beams. The discharge of air along the ceiling provides the optimal coanda effect that is always the objective when it is desirable to maintain low air velocities in the occupied zone.
- The connection components, valves and dampers are concealed in a simple manner by an attractive connection casing. The casing is installed after the climate beam has been suspended and connected.
- Swegon's ADC air deflectors, which are standard, provide a unique possibility to check the air discharge performance of the climate beam.
- Integrated VariFlow airflow distribution for simple adjustment at the site. The airflow can be varied to suit the application by means of nozzle strips. The fixed nozzles guarantee that the airflow will be correct and all in all offers a flexible and simple solution.



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Operation

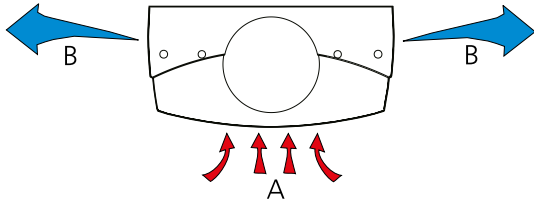


Figure 1. Cooling and ventilation.

A = Room air

B = Primary air and chilled room air

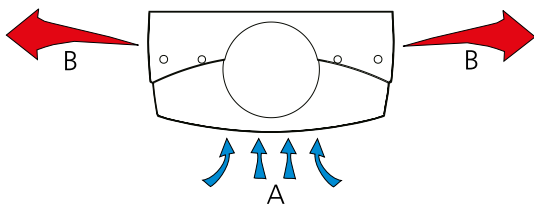


Figure 2 Heating and ventilation.

A = Room air

B = Primary air and heated room air

Installation

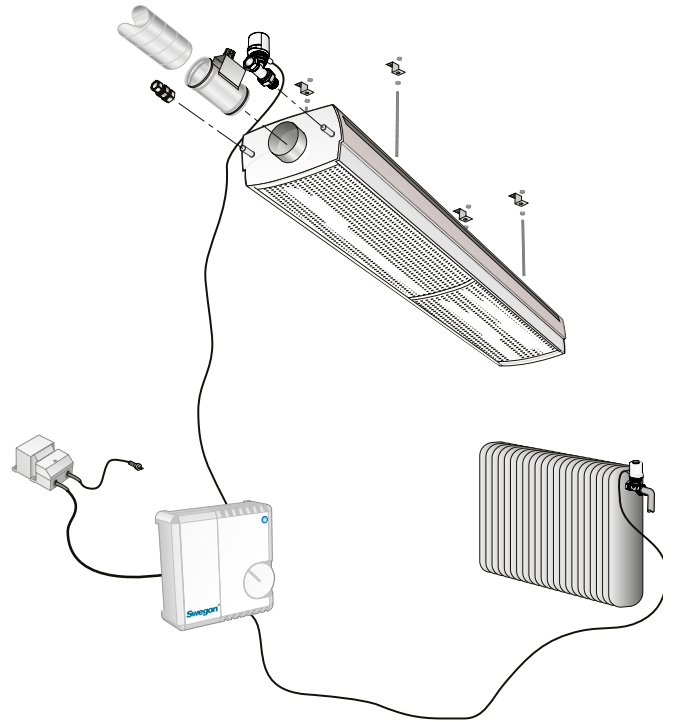


Figure 3. Installation.

Range of products held in stock:

Length: From 1.8 to 3.0 m in increments of 600 mm

Available to order:

Full length (-OH): From 1.2 to 3.6 m

Installed connection (-I): From 1.5 to 3.9 m

The lengths above are available with 600 mm increments.

Waterborne heating, Variant -B

See the section on heating, further ahead.

Installed connection (-I):

With 300 mm empty section and end panel without openings for pipes and an air duct. Designed for vertical connection to the climate beam. For particulars of the capacity, calculate the active length as follows: $L_{\text{active}} = L_{\text{rated}} - 300 \text{ mm}$.

Special Types

The ADRIATIC VF can, on enquiry, be supplied painted in an optional colour or relief finish paint.

For further particulars about special types, get in touch with your nearest Swegon representative.

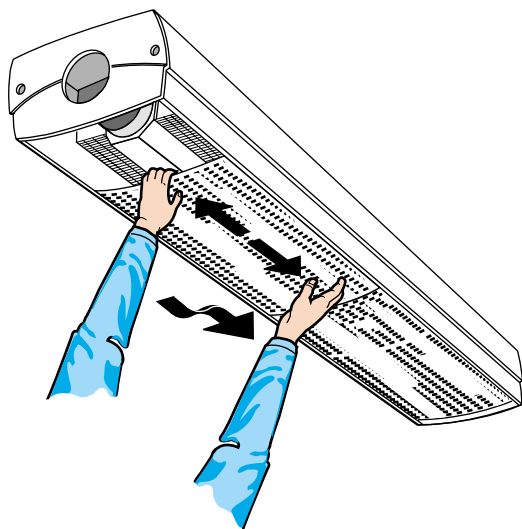


Figure 4. Access from below.

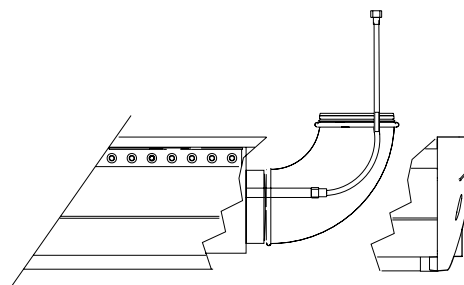
Available to order

Figure 5. Installed connections for vertical coupling. The duct bend and hose must be ordered separately.

ADRIATIC VF with VariFlow

Swegon's built-in airflow distributor can be set to three different positions and makes it possible to check the airflow.

The ADRIATIC VF with VariFlow, among others, offers the following benefits:

- Shorter delivery time because the stocked products have a substantial working range
- It is simple to change the airflow if changes are made in the installation
- Asymmetrical airflow (for example 70/30 %) can be set directly on the stocked product.
- Interacts very well with our ADC air deflectors. Combined, there is enormous potential to affect air distribution patterns and air motion

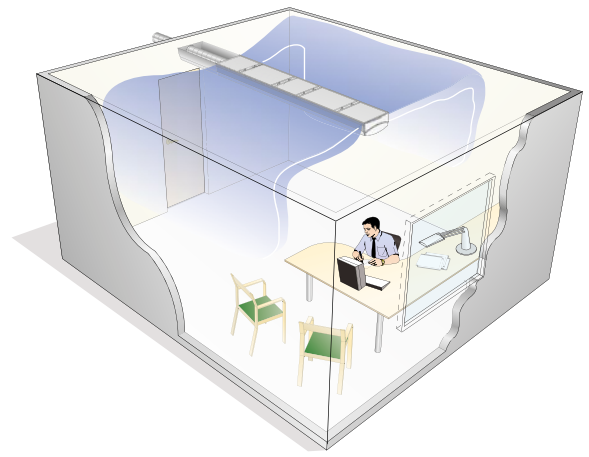


Figure 6. Example of symmetrical air distribution with VariFlow.

Flexible nozzle configuration by means of VariFlow

Nozzle configuration, i.e. the number of nozzle openings in the air duct for discharging air to the room. For further particulars, see the relevant Technical Data Sheet. The number of nozzle configurations that are possible to set is enormous, however the basic concept is based on three different fixed nozzles:

L = Low flow for low airflows

M= Medium Flow for medium-sized airflows

H= High Flow for high airflows and combinations of these.

You can also combine the nozzle settings for the airflows if a one-way version is used (70/30%).

the most common nozzle combinations are tabulated, see Technical Data.

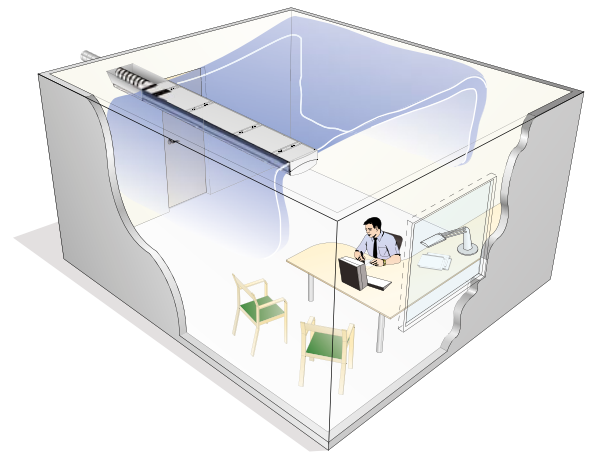


Figure 7. Example of symmetrical air distribution with VariFlow.

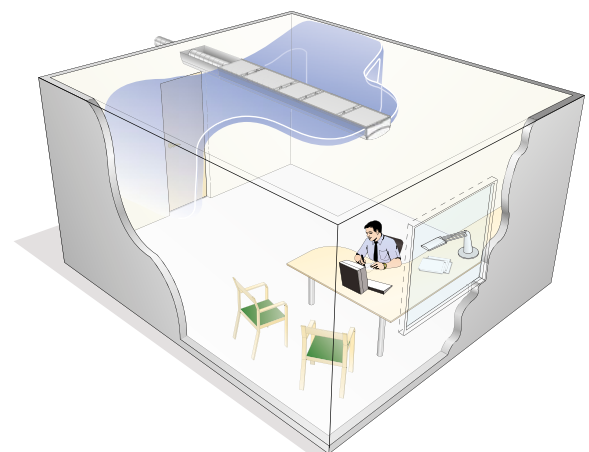


Figure 8. Example of displaced air distribution with VariFlow

ADRIATIC VF with ADC

The Swegon ADRIATIC VF climate beam contains ADC as standard. ADC stands for Anti Draught Control, which enables you to set the diffusion pattern of the air being distributed to avoid risk of draught.

A number of ADC sections with four air deflectors per section are arranged on each side of the unit. Each section is adjustable from a straight setting to 40° air deflection to the right or left in increments of 10°. This provides enormous flexibility and can be easily adjusted without at all having to affect the system as a whole. The static pressure is not at all affected by ADC. The sound level increases slightly when the air deflectors are set for "V-shape" air discharge. For more information, see Swegon's ProSelect sizing program.

The ADRIATIC VF with ADC, among others, offers the following benefits:

- Shorter distance between contra-discharging climate beams
- Simple correction of the direction of air discharge to compensate for obstructions
- Simple to adjust at the site
- Enables the user to adjust the comfort setting in the room
- Offers great flexibility for future conversion of the rooms.

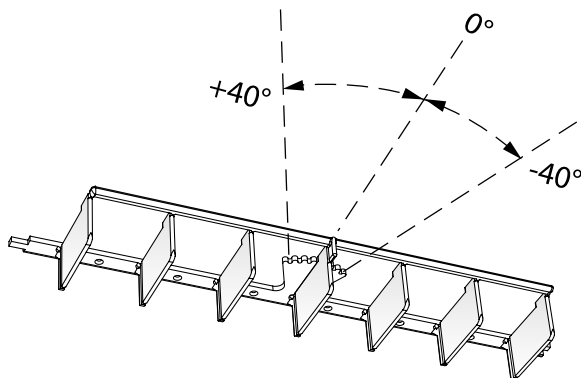


Figure 9. Swegon's ADC air deflectors

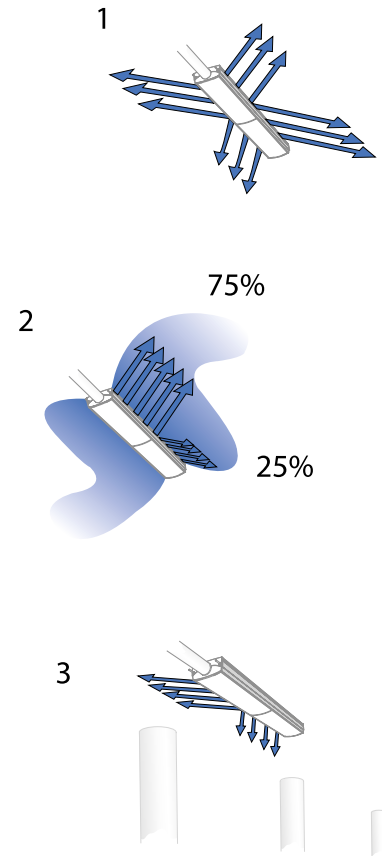


Figure 10. Flexible air discharge with ADC
 1. Climate beam with ADC set to V-shape.
 2. Climate beam with ADC set to L-shape.
 3. Climate beam with ADC set for avoiding obstacles

Accessories

CRP Commissioning damper

Circular commissioning damper Ø125 mm with perforated damper blade designed for climate beam installations and a manual actuator with knob.

Flexible connection hose

Flexible hose with quick-fit coupling at both ends for connection to a copper tube. Ø12 mm or quick-fit coupling in one end and G20ID threads for connection to valve in the other end. Supplied piece by piece.

Angled duct connection part

Connection piece for vertical connection, 90°.

Connection casing, connection against a wall

Connection casing to be mounted in the extended section of the climate beam and beyond to a wall designed for concealing pipe and duct connections.

MD4S assembly piece

Special assembly piece for installation directly against the ceiling.

SYST MS M8, assembly piece

Assembly piece for suspended installation containing threaded rods of various lengths (200; 500 and 1000 mm). Specify the length required as needed. The set also contains plastic caps designed for concealing the threaded rods and giving the beam a more attractive appearance. Ceiling mounting brackets, nuts and washers are included in the set.

Recommended limit values – water

Max. recommended operating pressure:	1600 kPa
Max. recommended test pressure for testing a completed installation:	2400 kPa
Recommended min. cooling water flow:	0.03 l/s
Increase in temperature, cooling water:	2 - 5 K
Min. permissible inlet flow temperature:	Should always be sized so that the system operates without condensation
Decrease in temperature, heating water:	2 - 10 K
Max. permissible inlet flow temperature:	60°C
Recommended min. hot water flow:	0.013 l/s
The min. recommended water flow per circuit ensures evacuation of any air pockets in the circuit.	

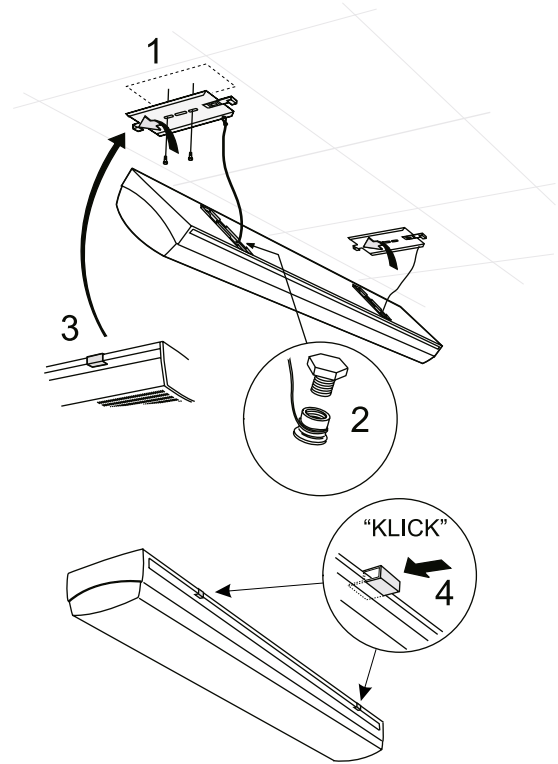


Figure 11. Installation directly against the ceiling, MD4S.

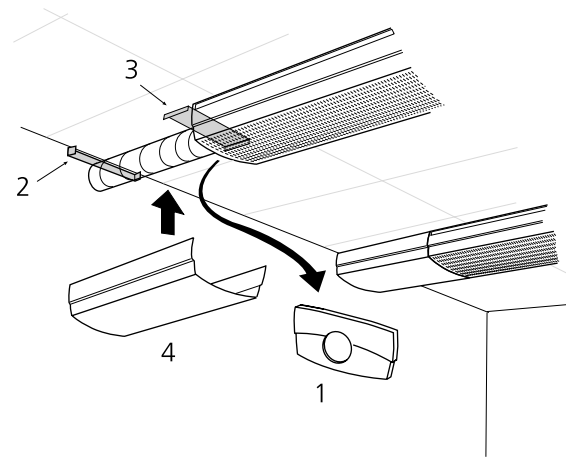


Figure 12. Casing for connection against a wall.

1. Remove the plastic end panel of the climate beam.
2. Attach the wall mounting bracket on the wall.
3. Push the mounting plate to fit over and rest on the top of the climate beam.
4. Fit the casing in the wall mounting bracket and against the beam. Lock the casing in position by pushing it up to engage in the mounting plate

Technical Data

Cooling

The cooling capacities have been measured in conformance with EN 15116 Standard and have been recalculated for a constant water flow according to Diagram 3.

Sizing Guides, Tables 1 – 6.

The tables are arranged according to duct pressure and the nozzle configuration in the air duct, i.e. the number of nozzle openings in the air duct for discharging air to the room. The air volume, duct pressure and the cooling capacity can be affected by utilizing the optional nozzle configurations (Tables 1 – 6).

The following can be read in the Sizing Guide:

The length of the climate beam (m)

The primary airflow (l/s)

The noise level for an open damper, with ADC

Nozzle pressure, p_i (Pa)

Airborne cooling capacity, P_i (W)

Waterborne cooling capacity, P_k (W)

N.B.! The total cooling capacity is the sum of the airborne and waterborne cooling capacities.

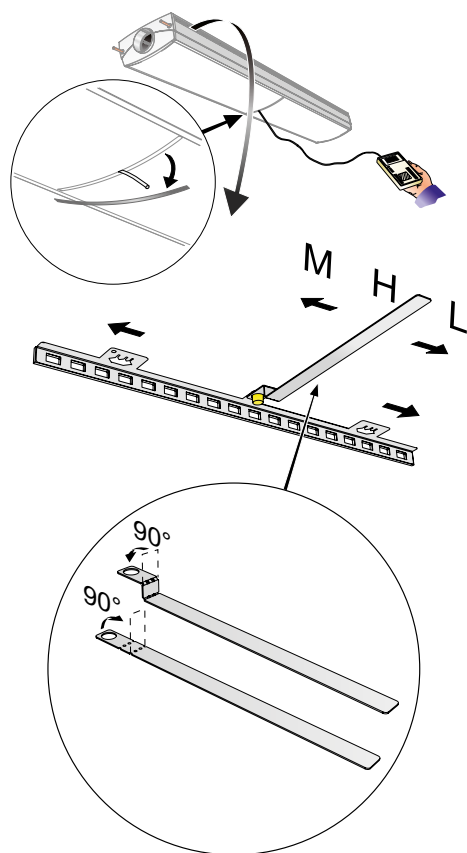


Figure 13. Change of nozzle configuration by means of an adjustment tool.

Flexible nozzle configuration by means of VariFlow (see Figure 13)

A large number of variants can be configured by adjusting the nozzle strips. Each nozzle strip is 600 mm long and can easily be adjusted with a supplied tool to the required position. There are three different settings (different sized fixed nozzles) on each nozzle strip:

L= Low for low airflows

M= Medium for medium large airflows

H= High for high airflows

There are different numbers of nozzle strips depending on the length:

1.2 m 4 nozzle strips (2 + 2 strips)

1.8 m 6 nozzle strips (3 + 3 strips)

2.4 m 8 nozzle strips (4 + 4 strips)

3.0 m 10 nozzle strips (5 + 5 strips)

3.6 m 12 nozzle strips (6 + 6 strips)

Each side can also be freely configured for asymmetrical airflows. The number of nozzle strips for a certain length of beam is always the same.

N.B.! For specifying asymmetrical distribution, see Figure 14 which describes the mutual relation between the sides viewed from above (Top view) based on the arrangement of the water pipes.

The most common nozzle combinations are tabulated, see Tables 1 - 6.

For more detailed information, refer to the Swegon Pro-Select sizing program available at website: www.swegon.com

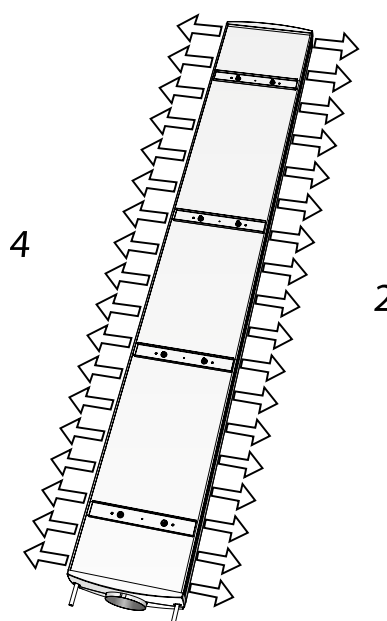


Figure 14. air flow, pages 1-4

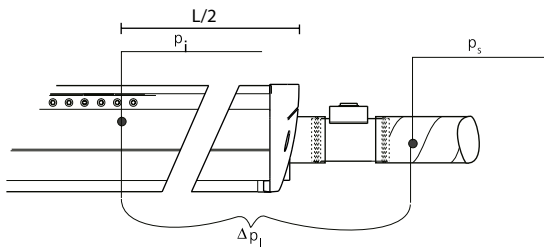


Figure 15. Pressure relationship, air.

p_i = nozzle pressure (measured in the measurement hose or in the centre of the nozzle), obtained from Tables 1 - 6
 p_s = The pressure upstream of the unit and damper
 Δp_i = The throttling range, mounted damper (obtained from Diagram 6)

The pressure drop on the water side

can be calculated using the formula:

$\Delta p_k = (q_k / k_{pk})^2$ [kPa] where:

Δp_k = pressure drop in the water circuit (kPa)

q_k = the water flow (l/s), read from Diagram 1

k_{pk} = Pressure drop constant.

Calculate the cooling capacity of the air

using the formula:

P_i (W) = $q_i \times 1.2 \times \Delta T_i$, where:

P_i = Cooling capacity of the air (W)

q_i = Airflow (l/s)

ΔT_i = temperature difference K

Designations

- P: Capacity W, kW
 - t_r : Room temperature, °C
 - t_m : Mean water temperature, °C
 - v: Velocity, m/s
 - q: Airflow, l/s
 - p: Pressure, Pa, kPa
 - Δp : Pressure drop, Pa, kPa
 - ΔT_m : Temperature difference [$t_r - t_m$] K
 - ΔT : Temperature difference, between inlet – return K
- Supplementary index: v = heating, k = cooling, l = air, i = commissioning

Table 1. Data – Cooling. Sizing guide, ADRIATIC VF -OH Symmetrical, 30 Pa nozzle pressure

Length of the unit m	Nozzle setting, pages 2 and 4		Air-flow (l/s)	Noise level, dB (A)	p _i (Pa)	Cooling capacity, primary air (W) ΔT _i				Cooling capacity of water (W) for ΔT _{mk}						Pressure drop constant, air k _{pl}	
	≈50%	≈50%				6	8	10	12	6	7	8	9	10	11		12
1,2	2L	2L	6,8	<20	30	49	65	82	98	167	195	221	248	274	301	327	1,25
1,2	LM	LM	11	<20	30	79	106	132	158	207	242	275	309	342	375	408	2,01
1,2	LH	LH	14,1	<20	30	102	135	169	203	226	262	300	337	374	411	448	2,57
1,2	2M	2M	15,2	<20	30	109	146	182	219	227	264	301	337	375	411	447	2,77
1,2	MH	MH	18,2	<20	30	131	175	218	262	238	277	316	355	393	433	471	3,33
1,2	2H	2H	21,3	22	30	153	204	256	307	246	286	326	367	408	448	489	3,88
1,8	3L	3L	10,3	<20	30	74	99	124	148	263	306	347	389	431	473	514	1,88
1,8	2LM	2LM	14,5	<20	30	104	139	174	209	314	365	415	465	515	565	615	2,64
1,8	2LH	2LH	17,5	<20	30	126	168	210	252	339	394	450	505	560	615	671	3,19
1,8	LMH	LMH	21,6	20	30	156	207	259	311	357	416	474	532	590	648	706	3,95
1,8	L2H	L2H	24,6	23	30	177	236	295	354	371	432	492	554	615	675	736	4,50
1,8	M2H	M2H	28,8	23	30	207	276	346	415	379	442	504	567	629	691	754	5,26
2,4	4L	4L	13,7	<20	30	99	132	164	197	359	416	474	531	587	644	700	2,51
2,4	3LM	3LM	17,9	<20	30	129	172	215	258	415	482	549	614	681	747	813	3,27
2,4	2L2M	2L2M	22,1	<20	30	159	212	265	318	449	523	595	667	739	812	884	4,03
2,4	L3M	L3M	26,2	21	30	189	252	314	377	472	549	625	701	778	853	928	4,79
2,4	4M	4M	30,4	22	30	219	292	365	438	490	569	649	727	806	885	963	5,55
2,4	2M2H	2M2H	36,4	23	30	262	349	437	524	513	597	681	765	848	932	1015	6,65
3,0	5L	5L	17,2	<20	30	124	165	206	248	457	530	604	675	748	820	892	3,14
3,0	4LM	4LM	21,4	<20	30	154	205	257	308	514	597	679	762	843	925	1007	3,90
3,0	3L2M	3L2M	25,5	<20	30	184	245	306	367	554	644	733	822	911	1000	1088	4,66
3,0	2L3M	2L3M	29,7	22	30	214	285	356	428	583	678	772	866	959	1053	1146	5,42
3,0	L4M	L4M	33,8	23	30	243	324	406	487	604	702	799	896	994	1091	1187	6,18
3,0	4MH	4MH	41	25	30	295	394	492	590	634	737	840	944	1047	1149	1251	7,49
3,6	6L	6L	20,6	20	30	148	198	247	297	552	641	729	817	904	992	1078	3,76
3,6	5LM	5LM	24,8	20	30	179	238	298	357	614	714	812	910	1009	1106	1203	4,52
3,6	4L2M	4L2M	28,9	20	30	208	277	347	416	657	763	869	974	1079	1184	1288	5,28
3,6	3L3M	3L3M	33,1	21	30	238	318	397	477	690	802	913	1024	1134	1245	1356	6,04
3,6	3LM2H	3LM2H	39,1	23	30	282	375	469	563	732	852	972	1092	1211	1330	1449	7,14
3,6	2L2M2H	2L2M2H	43,3	26	30	312	416	520	624	751	874	997	1119	1242	1363	1485	7,90

The grey-shaded area indicates the delivery setting for climate beams ordered from stock. For the sizing of alternative nozzle settings, use the Swegon ProSelect sizing program that is available for use at www.swegon.com

*) = The specified sound level is applicable to air discharge with the ADC air deflectors in the V-shape setting and to 4 dB room attenuation (10 m² Sabine)

**) = The cooling capacity of the water is specified for a water flow of 0.064 l/s and may vary depending on how the climate beams are installed and how the ADC air deflectors are set.

Table 2. Data – Cooling. Sizing guide, ADRIATIC VF -OH Symmetrical, 50 Pa nozzle pressure

Length of the unit m	Nozzle setting, pages 2 and 4		Air-flow (l/s)	Noise level, dB (A)	p _i (Pa)	Cooling capacity, primary air (W) ΔT _i				Cooling capacity of water (W) for ΔT _{mk}							Pressure drop constant, air k _{pl}
	≈50%	≈50%				6	8	10	12	6	7	8	9	10	11	12	
1,2	2L	2L	8,8	<20	50	63	84	106	127	206	241	275	310	343	377	412	1,25
1,2	LM	LM	14,2	<20	50	102	136	170	204	252	293	333	374	414	454	494	2,01
1,2	LH	LH	18,2	<20	50	131	175	218	262	271	317	362	407	452	497	543	2,57
1,2	2M	2M	19,6	24	50	141	188	235	282	272	316	360	403	446	490	532	2,77
1,2	MH	MH	23,5	24	50	169	226	282	338	283	329	376	423	469	515	561	3,33
1,2	2H	2H	27,4	28	50	197	263	329	395	291	339	388	436	485	534	582	3,88
1,8	3L	3L	13,3	21	50	96	128	160	192	328	382	436	492	546	600	654	1,88
1,8	2LM	2LM	18,7	20	50	135	180	224	269	381	444	506	568	629	691	753	2,64
1,8	2LH	2LH	22,6	21	50	163	217	271	325	408	476	544	611	679	748	816	3,19
1,8	LMH	LMH	27,9	26	50	201	268	335	402	428	497	568	638	709	779	848	3,95
1,8	L2H	L2H	31,8	29	50	229	305	382	458	440	514	587	661	734	808	882	4,50
1,8	M2H	M2H	37,2	30	50	268	357	446	536	451	526	601	674	749	824	897	5,26
2,4	4L	4L	17,7	21	50	127	170	212	255	447	522	596	670	744	818	893	2,51
2,4	3LM	3LM	23,1	22	50	166	222	277	333	507	590	672	755	838	919	1002	3,27
2,4	2L2M	2L2M	28,5	22	50	205	274	342	410	544	632	721	808	896	982	1070	4,03
2,4	L3M	L3M	33,9	27	50	244	325	407	488	569	662	753	843	935	1025	1116	4,79
2,4	4M	4M	39,2	28	50	282	376	470	564	587	681	775	869	961	1055	1147	5,55
2,4	2M2H	2M2H	47	29	50	338	451	564	677	610	711	811	910	1011	1111	1210	6,65
3,0	5L	5L	22,2	22	50	160	213	266	320	569	664	758	852	947	1040	1134	3,14
3,0	4LM	4LM	27,6	23	50	199	265	331	397	632	735	838	942	1045	1147	1250	3,90
3,0	3L2M	3L2M	33	23	50	238	317	396	475	674	784	894	1003	1111	1220	1328	4,66
3,0	2L3M	2L3M	38,3	29	50	276	368	460	552	704	818	931	1044	1157	1269	1381	5,42
3,0	L4M	L4M	43,7	29	50	315	420	524	629	726	844	960	1077	1193	1308	1423	6,18
3,0	4MH	4MH	53	31	50	382	509	636	763	758	881	1004	1127	1248	1370	1492	7,49
3,6	6L	6L	26,6	23	50	192	255	319	383	688	802	917	1031	1145	1259	1372	3,76
3,6	5LM	5LM	32	24	50	230	307	384	461	754	878	1002	1125	1247	1370	1493	4,52
3,6	4L2M	4L2M	37,3	25	50	269	358	448	537	799	930	1060	1189	1318	1448	1577	5,28
3,6	3L3M	3L3M	42,7	26	50	307	410	512	615	835	970	1105	1240	1374	1508	1642	6,04
3,6	3LM2H	3LM2H	50,5	29	50	364	485	606	727	879	1024	1170	1314	1460	1605	1750	7,14
3,6	2L2M2H	2L2M2H	55,9	33	50	402	537	671	805	898	1046	1193	1341	1488	1636	1782	7,90

The grey-shaded area indicates the delivery setting for climate beams ordered from stock. For the sizing of alternative nozzle settings, use the Swegon ProSelect sizing program that is available for use at www.swegon.com

*) = The specified sound level is applicable to air discharge with the ADC air deflectors in the V-shape setting and to 4 dB room attenuation (10 m² Sabine)

**)= The cooling capacity of the water is specified for a water flow of 0.064 l/s and may vary depending on how the climate beams are installed and how the ADC air deflectors are set.

Table 3. Data – cooling. Sizing guide, ADRIATIC VF -OH Symmetrical, 70 Pa nozzle pressure

Length of the unit m	Nozzle setting, pages 2 and 4		Air-flow (l/s)	Noise level, dB (A) *	p _i (Pa)	Cooling capacity primary air (W) ΔT _i				Cooling capacity of water (W) for ΔT _{mk}							Pressure drop constant, air k _{pl}
	≈50%	≈50%				6	8	10	12	6	7	8	9	10	11	12	
1,2	2L	2L	10,5	23	70	76	101	126	151	235	274	315	354	393	434	473	1,25
1,2	LM	LM	16,8	22	70	121	161	202	242	280	326	372	417	462	507	551	2,01
1,2	LH	LH	21,5	22	70	155	206	258	310	300	350	401	451	501	552	603	2,57
1,2	2M	2M	23,2	29	70	167	223	278	334	302	350	398	446	493	542	589	2,77
1,2	MH	MH	27,9	29	70	201	268	335	402	314	365	417	468	519	570	622	3,33
1,2	2H	2H	32,5	32	70	234	312	390	468	320	375	429	483	537	591	645	3,88
1,8	3L	3L	15,7	24	70	113	151	188	226	370	433	494	557	620	682	745	1,88
1,8	2LM	2LM	22,1	24	70	159	212	265	318	427	496	565	635	704	774	842	2,64
1,8	2LH	2LH	26,7	24	70	192	256	320	384	452	529	605	681	757	834	910	3,19
1,8	LMH	LMH	33	31	70	238	317	396	475	474	551	630	708	785	864	942	3,95
1,8	L2H	L2H	37,6	34	70	271	361	451	541	487	568	650	731	813	896	977	4,50
1,8	M2H	M2H	44	34	70	317	422	528	634	497	580	663	745	828	910	993	5,26
2,4	4L	4L	21	25	70	151	202	252	302	506	592	677	763	848	935	1020	2,51
2,4	3LM	3LM	27,4	25	70	197	263	329	395	568	662	755	848	942	1034	1128	3,27
2,4	2L2M	2L2M	33,7	26	70	243	324	404	485	607	705	802	900	998	1095	1191	4,03
2,4	L3M	L3M	40,1	32	70	289	385	481	577	633	734	836	937	1037	1137	1238	4,79
2,4	4M	4M	46,4	33	70	334	445	557	668	651	755	859	962	1065	1167	1269	5,55
2,4	2M2H	2M2H	55,6	34	70	400	534	667	801	674	785	896	1007	1118	1228	1338	6,65
3,0	5L	5L	26,3	26	70	189	252	316	379	643	752	860	969	1077	1186	1296	3,14
3,0	4LM	4LM	32,6	26	70	235	313	391	469	708	825	941	1058	1174	1290	1407	3,90
3,0	3L2M	3L2M	39	27	70	281	374	468	562	752	875	997	1119	1241	1362	1483	4,66
3,0	2L3M	2L3M	45,3	33	70	326	435	544	652	783	910	1036	1162	1287	1412	1536	5,42
3,0	L4M	L4M	51,7	34	70	372	496	620	744	807	937	1067	1195	1323	1451	1579	6,18
3,0	4MH	4MH	62,7	36	70	451	602	752	903	839	975	1111	1246	1381	1516	1649	7,49
3,6	6L	6L	31,5	27	70	227	302	378	454	779	909	1041	1172	1303	1436	1568	3,76
3,6	5LM	5LM	37,8	27	70	272	363	454	544	845	986	1126	1265	1405	1544	1683	4,52
3,6	4L2M	4L2M	44,2	29	70	318	424	530	636	895	1041	1187	1333	1478	1623	1768	5,28
3,6	3L3M	3L3M	50,5	30	70	364	485	606	727	931	1081	1232	1382	1532	1681	1829	6,04
3,6	3LM2H	3LM2H	59,7	33	70	430	573	716	860	974	1136	1299	1461	1623	1784	1946	7,14
3,6	2L2M2H	2L2M2H	66,1	37	70	476	635	793	952	995	1159	1323	1487	1650	1815	1978	7,90

The grey-shaded area indicates the delivery setting for climate beams ordered from stock. For the sizing of alternative nozzle settings, use the Swegon ProSelect sizing program that is available for use at www.swegon.com

*) = The specified sound level is applicable to air discharge with the ADC air deflectors in the V-shape setting and to 4 dB room attenuation (10 m² Sabine)

**)= The cooling capacity of the water is specified for a water flow of 0.064 l/s and may vary depending on how the climate beams are installed and how the ADC air deflectors are set.

Table 4. Data – Cooling. ADRIATIC VF -OH Asymmetrical, 30 Pa nozzle pressure

Length of the unit m	Nozzle setting		Air-flow (l/s)	Noise level, dB (A)*	p _i (Pa)	Cooling capacity, primary air (W) ΔT _i				Cooling capacity of water (W) for ΔT _{mk}						Pressure drop constant, air k _{pl}	
	q≈30%	q≈70%				6	8	10	12	6	7	8	9	10	11		12
1,2	2L	2M	11,0	<20	30	79	106	132	158	197	229	260	292	323	355	386	2,01
1,2	LM	2H	16,1	<20	30	116	155	193	232	228	265	303	340	377	415	451	2,95
1,8	3L	L2M	14,5	<20	30	104	139	174	209	304	352	401	449	498	547	595	2,64
1,8	L2M	3H	25,3	23	30	182	243	304	364	365	425	484	544	603	663	722	4,61
2,4	4L	2L2M	17,9	<20	30	129	172	215	258	405	471	536	601	665	729	794	3,27
2,4	L3M	4H	34,3	25	30	247	329	412	494	501	584	666	748	830	911	993	6,27
3,0	5L	L4M	25,5	<20	30	184	245	306	367	532	617	703	787	873	957	1042	4,66
3,0	3L2M	5H	39,3	27	30	283	377	472	566	614	716	816	916	1015	1116	1216	7,17
3,6	6L	4LMH	26,3	20	30	189	252	316	379	621	723	823	922	1021	1121	1220	4,80
3,6	6L	M5H	40,6	24	30	292	390	487	585	680	791	902	1012	1123	1233	1343	7,42

Table 5. Data – Cooling. ADRIATIC VF -OH Asymmetrical, 50 Pa nozzle pressure

Length of the unit m	Nozzle setting		Air-flow (l/s)	Noise level, dB (A)*	p _i (Pa)	Cooling capacity, primary air (W) ΔT _i				Cooling capacity of water (W) for ΔT _{mk}						Pressure drop constant, air k _{pl}	
	q≈30%	q≈70%				6	8	10	12	6	7	8	9	10	11		12
1,2	2L	2M	14,2	<20	50	102	136	170	204	240	279	318	357	396	434	474	2,01
1,2	LM	2H	20,9	28	50	150	201	251	301	272	317	362	406	451	495	540	2,95
1,8	3L	L2M	18,7	20	50	135	180	224	269	371	432	492	552	612	672	732	2,64
1,8	L2M	3H	32,6	29	50	235	313	391	469	436	508	579	651	723	793	865	4,61
2,4	4L	2L2M	23,1	22	50	166	222	277	333	497	578	660	741	822	902	983	3,27
2,4	L3M	4H	44,3	31	50	319	425	532	638	599	697	795	894	992	1089	1187	6,27
3,0	5L	L4M	33,0	23	50	238	317	396	475	649	755	860	965	1070	1176	1281	4,66
3,0	3L2M	5H	50,7	33	50	365	487	608	730	735	857	978	1099	1220	1341	1462	7,17
3,6	6L	4LMH	33,9	24	50	244	325	407	488	761	887	1012	1138	1263	1389	1514	4,80
3,6	6L	M5H	52,5	30	50	378	504	630	756	824	961	1098	1235	1371	1508	1645	7,42

Table 6. Data – Cooling. ADRIATIC VF -OH Asymmetrical, 70 Pa nozzle pressure

Length of the unit m	Nozzle setting		Air-flow (l/s)	Noise level, dB (A)*	p _i (Pa)	Cooling capacity, primary air (W) ΔT _i				Cooling capacity of water (W) for ΔT _{mk}						Pressure drop constant, air k _{pl}	
	q≈30%	q≈70%				6	8	10	12	6	7	8	9	10	11		12
1,2	2L	2M	16,8	22	70	121	161	202	242	269	314	358	402	445	490	533	2,01
1,2	LM	2H	24,7	32	70	178	237	296	356	301	351	401	450	500	549	599	2,95
1,8	3L	L2M	22,1	24	70	159	212	265	318	415	483	551	619	687	755	823	2,64
1,8	L2M	3H	38,6	34	70	278	371	463	556	482	561	641	721	799	878	957	4,61
2,4	4L	2L2M	27,4	25	70	197	263	329	395	557	649	741	833	924	1015	1107	3,27
2,4	L3M	4H	52,5	36	70	378	504	630	756	664	773	882	990	1099	1207	1316	6,27
3,0	5L	L4M	39,0	27	70	281	374	468	562	725	844	963	1082	1201	1319	1438	4,66
3,0	3L2M	5H	60,0	38	70	432	576	720	864	816	951	1085	1221	1356	1490	1625	7,17
3,6	6L	4LMH	40,2	28	70	289	386	482	579	853	996	1138	1281	1423	1566	1709	4,80
3,6	6L	M5H	62,1	34	70	447	596	745	894	918	1072	1226	1380	1534	1689	1843	7,42

*) = The specified sound level is applicable to air discharge with the ADC air deflectors in the V-shape setting and to 4 dB room attenuation (10 m² Sabine)

**) = The cooling capacity of the water is specified for a water flow of 0.064 l/s and may vary depending on how the climate beams are installed and how the ADC air deflectors are set.

Cooling

Diagram 1. Cooling capacity, P_k (W), as a function of the change in temperature ΔT_k K and cooling water flow, q_k (l/s).

Diagram 2. Pressure drop Δp_k (kPa) in the cooling water circuit, as a function of the cooling water flow q_k (l/s) and the length of the unit.

Table 7. Cooling capacity for natural convection (without supply air).

Diagram 3. The correction factor for the cooling capacity, P_k (W) as a function of cooling water flow, q_k (l/s). Different water flow rates to some extent have an effect on the capacity output. By checking calculated water flow against Diagram 3, the capacity indicated in Tables 1 – 6 may need to be slightly adjusted up or down according to the formula: $P_{corrected} = P_{k(table 1-6)} \cdot k_{(Diagram 3)}$.

Diagram 1. Water flow – Cooling capacity

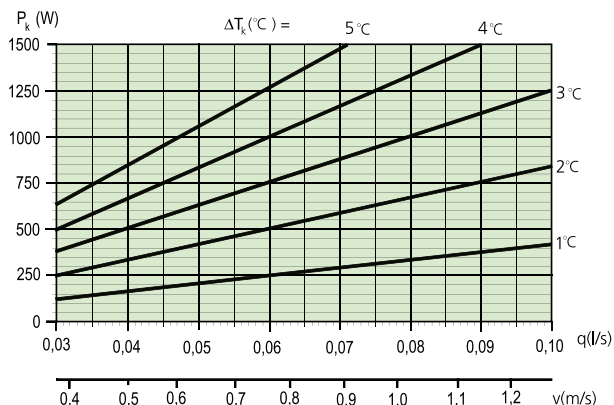


Diagram 3. Water flow – Capacity correction, cooling

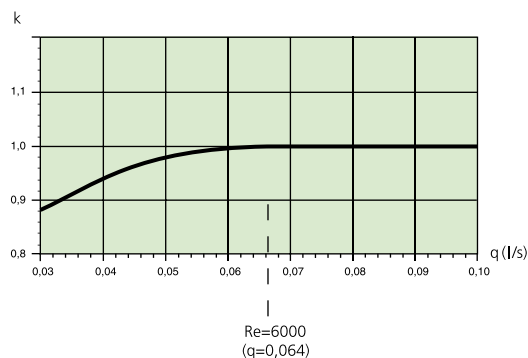


Table 7. Capacity, natural convection, cooling (W)

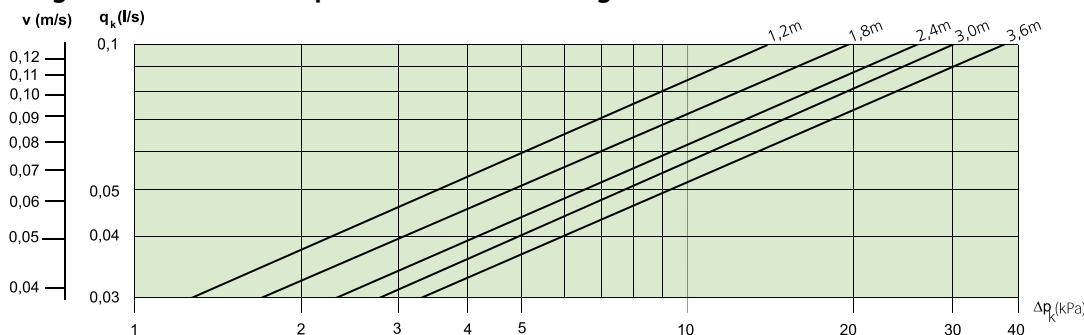
Length	Temperature, room – water, K							
	ΔT_{mk}	6	7	8	9	10	11	12
1.2 m		49	60	71	84	96	110	123
1.8 m		77	94	113	132	152	173	194
2.4 m		105	129	154	180	208	236	265
3.0 m		133	163	195	229	263	299	336
3.6 m		161	198	237	277	319	363	408

For a water flow of 0.064 l/s

Table 8. Pressure drop constant, water, cooling

Length	k_{pk}
1.2 m	0,0219
1.8 m	0,0209
2.4 m	0,0200
3.0 m	0,0192
3.6 m	0,0185

Diagram 2. Pressure Drop – Water flow, Cooling



Heating

Additional heat – Heating coil

The heating function is intended for use only as a supplement if surplus heat is available, however during shorter periods a smaller amount of surplus heat will be needed, for example in the evening and at night.

The supply air fan must then be in operation in order for the additional heat to reach the room. The supply air is used for mixing the warm air with chilled air, which is why the temperature distribution in the room is completely dependent on the ratio between supply air and the capacity taken from the climate beam.

The heat is conducted along the ceiling which, in order to work properly, requires low supply flow temperature and a certain impulse. A temperature gradient of 3 K is normally obtained between floor and ceiling.

Recommendations for excess heat operation

- Max. permissible inlet flow temperature: 60°C
- Min. permissible heating water flow: 0.013 l/s
- Nozzle pressure, p_i : >30 Pa

For perimeter walls with large glazed surfaces, it is recommended that radiant heating in the ceiling or radiators along the perimeter wall be used for compensating the radiant cooling energy of the glazed surfaces. For advice concerning other conditions, contact Swegon.

Diagram 4. Pressure drop Δp_v (kPa), in the hot water circuit, as a function of the hot water flow, q_v (l/s).

Diagram 5. Water flow – Heating

The function between the hot water flow, q_v (l/s), temperature change ΔT_v , K and the heating capacity, P_v (W).

Diagram 6. Correction factor for the heating capacity P_v (W) as a function of the heating water flow q_v (l/s). Different water flow rates to some extent have an effect on the capacity output. By checking the calculated water flow against Diagram 6, the capacity indicated in Tables 11-16 may need to be slightly adjusted up or down according to the formula: $P_{corrected} = P_{v(table\ 11-16)} \cdot k_{(diagram\ 6)}$

Diagram 4. Pressure Drop – Water Flow, Heating

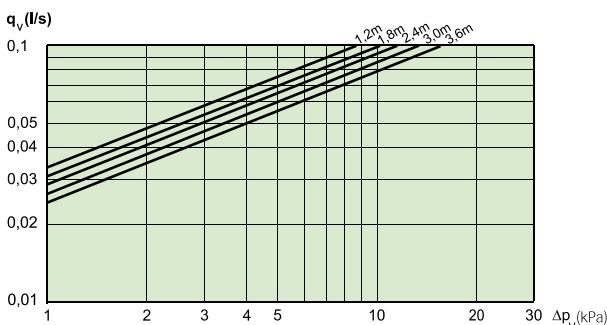


Diagram 5. Water Flow – Heating Capacity

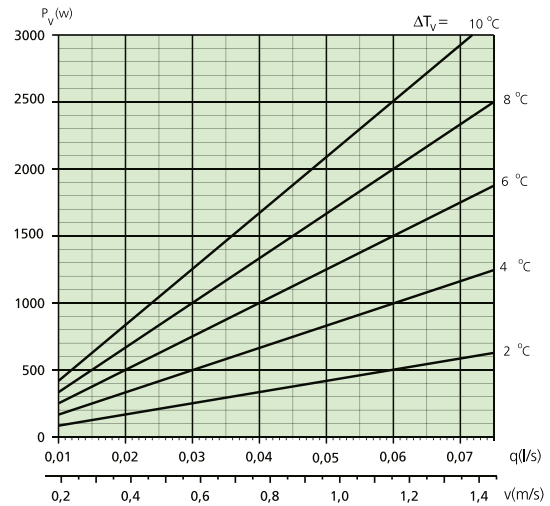


Diagram 6. Water flow – capacity correction, heating

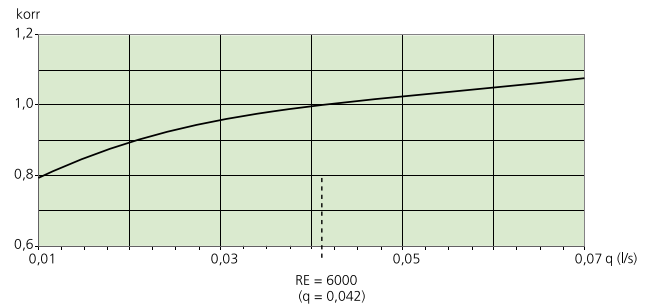


Table 9. Capacity, natural convection, heating (W)

Length	Temperature differential, room – water, K							
	ΔT_{mv}	5	10	15	20	25	30	35
1.2 m		14	39	71	108	149	194	243
1.8 m		23	62	112	170	235	307	383
2.4 m		31	85	153	233	322	419	524
3.0 m		40	108	194	295	408	531	664
3.6 m		48	131	235	357	494	643	805

For a water flow of 0.042 l/s

Table 10. Pressure drop constant, water, heating

Length	k_{pv}
1,2	0,0341
1,8	0,0310
2,4	0,0286
3,0	0,0267
3,6	0,0251

Table 11. Data – Heating. Sizing guide, ADRIATIC VF -OH Symmetrical, 30 Pa nozzle pressure

Length of the unit m	Nozzle setting, pages 2 and 4		Airflow (l/s)	Noise level, dB (A)*	p _i (Pa)	Heating capacity, water (W) ** for ΔT_{mv}							Pressure drop constant, air K _{pl}
	q ≈50%	q ≈50%				5	10	15	20	25	30	35	
1,2	2L	2L	6,8	<20	30	108	211	313	413	513	612	711	1,25
1,2	LM	LM	11	<20	30	124	244	362	479	596	711	827	2,01
1,2	LH	LH	14,1	<20	30	121	244	368	492	618	744	870	2,57
1,2	2M	2M	15,2	<20	30	131	259	383	508	632	756	879	2,77
1,2	MH	MH	18,2	<20	30	127	256	384	513	643	772	901	3,33
1,2	2H	2H	21,3	22	30	125	254	385	517	651	785	920	3,88
1,8	3L	3L	10,3	<20	30	171	334	496	656	814	971	1128	1,88
1,8	2LM	2LM	14,5	<20	30	190	374	554	733	911	1088	1265	2,64
1,8	2LH	2LH	17,5	<20	30	187	375	563	753	943	1133	1324	3,19
1,8	LMH	LMH	21,6	20	30	196	392	589	784	982	1179	1375	3,95
1,8	L2H	L2H	24,6	23	30	193	391	591	792	996	1199	1404	4,50
1,8	M2H	M2H	28,8	23	30	200	402	607	812	1018	1225	1432	5,26
2,4	4L	4L	13,7	<20	30	233	456	676	895	1110	1325	1538	2,51
2,4	3LM	3LM	17,9	<20	30	255	499	741	980	1218	1455	1691	3,27
2,4	2L2M	2L2M	22,1	<20	30	267	526	781	1034	1286	1535	1785	4,03
2,4	L3M	L3M	26,2	21	30	276	544	807	1070	1330	1589	1847	4,79
2,4	4M	4M	30,4	22	30	283	556	828	1096	1363	1629	1894	5,55
2,4	2M2H	2M2H	36,4	23	30	274	550	829	1107	1385	1664	1944	6,65
3,0	5L	5L	17,2	<20	30	297	580	860	1136	1412	1684	1955	3,14
3,0	4LM	4LM	21,4	<20	30	318	625	928	1228	1526	1821	2116	3,90
3,0	3L2M	3L2M	25,5	<20	30	333	655	972	1287	1599	1911	2221	4,66
3,0	2L3M	2L3M	29,7	22	30	344	677	1006	1331	1655	1978	2299	5,42
3,0	L4M	L4M	33,8	23	30	352	693	1029	1363	1696	2026	2355	6,18
3,0	4MH	4MH	41	25	30	354	703	1050	1396	1741	2086	2430	7,49
3,6	6L	6L	20,6	20	30	359	702	1041	1375	1708	2038	2366	3,76
3,6	5LM	5LM	24,8	20	30	382	750	1112	1471	182	2182	2535	4,52
3,6	4L2M	4L2M	28,9	20	30	398	782	1161	1536	1910	2281	2650	5,28
3,6	3L3M	3L3M	33,1	21	30	411	808	1199	1588	1974	2358	2741	6,04
3,6	3LM2H	3LM2H	39,1	23	30	402	806	1211	1617	2024	2431	2838	7,14
3,6	2L2M2H	2L2M2H	43,3	26	30	412	824	1236	1648	2062	2475	2889	7,90

*) = The specified sound level is applicable to air discharge with the ADC air deflectors in the V-shape setting and to 4 dB room attenuation (10 m² Sabine)

**) = The heating capacity of the water is specified for a water flow of 0.042 l/s and may vary depending on how the climate beams are installed and how the ADC air deflectors are set.

Tabell 12. Data - Heating. Sizing guide, ADRIATIC VF -OH Symmetrical, 50 Pa nozzle pressure

Length of the unit m	Nozzle setting Pages 2 and 4		Airflow (l/s)	Noise level, dB (A)*	p _i (Pa)	Heating capacity, water (W) **							Pressure drop constant, air K _{pl}
	q ≈50%	q ≈50%				for ΔT _{mv}							
						5	10	15	20	25	30	35	
1,2	2L	2L	8,8	<20	50	124	242	358	473	587	701	814	1,25
1,2	LM	LM	14,2	<20	50	141	278	415	550	686	821	955	2,01
1,2	LH	LH	18,2	<20	50	126	260	398	539	681	824	968	2,57
1,2	2M	2M	19,6	24	50	139	275	410	545	678	812	946	2,77
1,2	MH	MH	23,5	24	50	132	269	410	552	696	841	987	3,33
1,2	2H	2H	27,4	28	50	127	266	411	558	709	862	1016	3,88
1,8	3L	3L	13,3	21	50	196	382	567	749	930	1110	1289	1,88
1,8	2LM	2LM	18,7	20	50	208	410	609	807	1005	1200	1396	2,64
1,8	2LH	2LH	22,6	21	50	199	405	616	830	1045	1262	1480	3,19
1,8	LMH	LMH	27,9	26	50	205	419	634	852	1071	1292	1514	3,95
1,8	L2H	L2H	31,8	29	50	199	415	636	863	1092	1324	1559	4,50
1,8	M2H	M2H	37,2	30	50	204	424	648	876	1106	1339	1574	5,26
2,4	4L	4L	17,7	21	50	267	523	774	1023	1270	1515	1759	2,51
2,4	3LM	3LM	23,1	22	50	281	552	821	1087	1353	1616	1879	3,27
2,4	2L2M	2L2M	28,5	22	50	289	571	850	1128	1404	1678	1952	4,03
2,4	L3M	L3M	33,9	27	50	295	584	870	1155	1438	1721	2003	4,79
2,4	4M	4M	39,2	28	50	299	593	884	1174	1463	1751	2038	5,55
2,4	2M2H	2M2H	47	29	50	284	581	885	1191	1501	1814	2127	6,65
3,0	5L	5L	22,2	22	50	339	664	983	1300	1613	1925	2234	3,14
3,0	4LM	4LM	27,6	23	50	354	695	1033	1367	1700	2031	2360	3,90
3,0	3L2M	3L2M	33	23	50	364	717	1066	1413	1759	2103	2445	4,66
3,0	2L3M	2L3M	38,3	29	50	371	731	1089	1445	1799	2152	2504	5,42
3,0	L4M	L4M	43,7	29	50	376	743	1107	1470	1830	2191	2550	6,18
3,0	4MH	4MH	53	31	50	371	745	1122	1499	1878	2256	2636	7,49
3,6	6L	6L	26,6	23	50	411	803	1190	1573	1952	2330	2705	3,76
3,6	5LM	5LM	32,0	24	50	426	837	1243	1644	2044	2441	2837	4,52
3,6	4L2M	4L2M	37,3	25	50	436	564	1278	1693	2107	2517	2927	5,28
3,6	3L3M	3L3M	42,7	26	50	444	877	1305	1731	2155	2577	2998	6,04
3,6	3LM2H	3LM2H	50,5	29	50	425	866	1314	1767	2225	2684	3146	7,14
3,6	2L2M2H	2L2M2H	55,9	33	50	432	879	1332	1790	2250	2714	3179	7,90

*) = The specified sound level is applicable to air discharge with the ADC air deflectors in the V-shape setting and to 4 dB room attenuation (10 m² Sabine)

**)= The heating capacity of the water is specified for a water flow of 0.042 l/s and may vary depending on how the climate beams are installed and how the ADC air deflectors are set.

Table 13. Data – Heating. Sizing guide, ADRIATIC VF -OH Symmetrical, 70 Pa nozzle pressure

Length of the unit m	Nozzle setting pages 2 and 4		Airflow (l/s)	Noise level dB(A)*	p _i (Pa)	Heating capacity, water (W) ** vid ΔT_{mv}							Pressure drop constant air K _{pl}
	q ≈50%	q ≈50%				5	10	15	20	25	30	35	
1,2	2L	2L	10,5	23	70	135	262	920	514	638	762	884	1,25
1,2	LM	LM	16,8	22	70	141	278	415	550	686	821	955	2,01
1,2	LH	LH	21,5	22	70	130	271	419	569	722	877	1033	2,57
1,2	2M	2M	23,2	29	70	144	289	428	568	709	849	990	2,77
1,2	MH	MH	27,9	29	70	135	279	428	579	732	888	1044	3,33
1,2	2H	2H	32,5	32	70	128	274	428	587	749	913	1081	3,88
1,8	3L	3L	15,7	24	70	211	414	613	810	1006	1200	1393	1,88
1,8	2LM	2LM	22,1	24	70	220	434	646	856	1066	1275	1482	2,64
1,8	2LH	2LH	26,7	24	70	205	435	651	880	1112	1347	1583	3,19
1,8	LMH	LMH	33,0	31	70	212	436	665	896	1130	1366	1604	3,95
1,8	L2H	L2H	37,6	34	70	203	430	666	908	1156	1407	1660	4,50
1,8	M2H	M2H	44,0	34	70	208	437	674	917	1164	1414	1666	5,26
2,4	4L	4L	21	25	70	290	566	839	1109	1376	1642	1906	2,51
2,4	3LM	3LM	27,4	25	70	299	588	875	1159	1442	1723	2004	3,27
2,4	2L2M	2L2M	33,7	26	70	304	601	896	1189	1481	1772	2062	4,03
2,4	L3M	L3M	40,1	32	70	308	610	911	1210	1509	1807	2105	4,79
2,4	4M	4M	46,4	33	70	310	616	921	1226	1529	1831	2134	5,55
2,4	2M2H	2M2H	55,6	34	70	290	602	922	1247	1578	1911	2247	6,65
3,0	5L	5L	26,3	26	70	368	720	1065	1408	1747	2084	2419	3,14
3,0	4LM	4LM	32,6	26	70	376	741	1101	1459	1814	2168	2520	3,90
3,0	3L2M	3L2M	39	27	70	382	757	1127	1494	1861	2226	2590	4,66
3,0	2L3M	2L3M	45,3	33	70	387	767	1144	1520	1893	2267	2638	5,42
3,0	L4M	L4M	51,7	34	70	390	776	1158	1539	1919	2298	2677	6,18
3,0	4MH	4MH	62,7	36	70	382	774	1169	1567	1967	2368	2771	7,49
3,6	6L	6L	31,5	27	70	445	871	1289	1704	2114	2522	2928	3,76
3,6	5LM	5LM	37,8	27	70	454	894	1327	1758	2184	2610	3034	4,52
3,6	4L2M	4L2M	44,2	29	70	461	910	1356	1797	2237	2675	3112	5,28
3,6	3L3M	3L3M	50,5	30	70	466	923	1375	1826	2275	2722	3168	6,04
3,6	3LM2H	3LM2H	59,7	33	70	439	905	1382	1867	2356	2850	3347	7,14
3,6	2L2M2H	2L2M2H	66,1	37	70	445	915	1396	1882	2374	2870	3369	7,90

*) = The specified sound level is applicable to air discharge with the ADC air deflectors in the V-shape setting and to 4 dB room attenuation (10 m² Sabine)

**) = The heating capacity of the water is specified for a water flow of 0.042 l/s and may vary depending on how the climate beams are installed and how the ADC air deflectors are set.

Tabell 14. Data – Heating. Sizing guide, ADRIATIC VF -OH Asymmetrical, 30 Pa nozzle pressure

Length of the unit m	Nozzle setting pages 2 and 4		Airflow (l/s)	Noise level dB(A)*	p _i (Pa)	Heating capacity, water (W) ** vid ΔT _{mv}							Pressure drop constant air K _{pl}
	q ≈30%	q ≈70%				5	10	15	20	25	30	35	
1,2	2L	2M	11	<20	30	124	244	362	479	596	711	827	2,01
1,2	LM	2H	16,2	<20	30	125	251	377	504	632	761	889	2,95
1,8	3L	L2M	14,5	<20	30	190	374	554	733	912	1088	1265	2,64
1,8	L2M	3H	25,3	23	30	198	398	600	801	1004	1207	1411	4,61
2,4	4L	2L2M	17,9	<20	30	250	499	741	980	1218	1455	1691	3,27
2,4	L3M	4H	34,3	25	30	271	546	821	1097	1374	1651	1930	6,27
3,0	5L	L4M	25,5	<20	30	333	655	883	1287	1599	1911	2221	4,66
3,0	3L2M	5H	39,3	27	30	338	681	1026	1372	1720	2068	2418	7,17
3,6	6L	4LMH	26,3	20	30	380	753	1122	1488	1854	2220	2583	4,80
3,6	6L	M5H	40,6	24	30	401	806	1214	1624	2034	2446	2859	7,42

Tabell 15. Data – Heating. Sizing guide, ADRIATIC VF -OH Asymmetrical, 50 Pa nozzle pressure

Length of the unit m	Nozzle setting pages 2 and 4		Airflow (l/s)	Noise level dB(A)*	p _i (Pa)	Heating capacity, water (W) ** vid ΔT _{mv}							Pressure drop constant air K _{pl}
	q ≈30%	q ≈70%				5	10	15	20	25	30	35	
1,2	2L	2M	14,2	<20	50	134	264	394	522	650	778	904	2,01
1,2	LM	2H	20,9	28	50	129	265	405	547	690	835	960	2,95
1,8	3L	L2M	18,7	20	50	208	410	609	807	1005	1200	1396	2,64
1,8	L2M	3H	32,6	29	50	205	422	642	866	1092	1319	1549	4,61
2,4	4L	2L2M	23,1	22	50	281	552	821	1087	1353	1616	1879	3,27
2,4	L3M	4H	44,3	31	50	281	577	879	1185	1494	1805	2118	6,27
3,0	5L	L4M	33	23	50	364	717	1066	1413	1759	2103	2445	4,66
3,0	3L2M	5H	50,7	33	50	351	723	1104	1489	1879	2273	2669	7,17
3,6	6L	4LMH	33,9	24	50	420	835	1248	1661	2074	2487	2899	4,80
3,6	6L	M5H	52,5	30	50	421	864	1317	1776	2239	2707	3177	7,42

Tabell 16. Data – Heating. Sizing guide, ADRIATIC VF -OH Asymmetrical, 70 Pa nozzle pressure

Length of the unit m	Nozzle setting pages 2 and 4		Airflow (l/s)	Noise level dB(A)*	p _i (Pa)	Heating capacity, water (W) ** vid ΔT _{mv}							Pressure drop constant air K _{pl}
	q ≈30%	q ≈70%				5	10	15	20	25	30	35	
1,2	2L	2M	16,8	22	70	141	278	415	550	686	821	955	2,01
1,2	LM	2H	24,7	32	70	133	276	424	575	727	883	1039	2,95
1,8	3L	L2M	22,1	24	70	220	434	646	856	1066	1275	1482	2,64
1,8	L2M	3H	38,6	34	70	210	437	670	909	1151	1395	1642	4,61
2,4	4L	2L2M	27,4	25	70	299	588	875	1159	1442	1723	2004	3,27
2,4	L3M	4H	52,5	36	70	288	599	918	1243	1574	1907	2245	6,27
3,0	5L	L4M	39	27	70	382	757	1127	1494	1861	2226	2590	4,66
3,0	3L2M	5H	60	38	70	360	752	1155	1567	1986	2408	2835	7,17
3,6	6L	4LMH	40,2	28	70	445	890	1334	1778	2223	2667	3111	4,80
3,6	6L	M5H	62,1	34	70	434	902	1384	1876	2374	2877	3385	7,42

*) = The specified sound level is applicable to air discharge with the ADC air deflectors in the V-shape setting and to 4 dB room attenuation (10 m² Sabine)

**) = The heating capacity of the water is specified for a water flow of 0.042 l/s and may vary depending on how the climate beams are installed and how the ADC air deflectors are set.

Acoustics

Diagram 7. The diagrams show the total generated sound power (L_{Wtot} dB), as a function of the airflow and pressure drop across the damper. By correcting L_{Wtot} with the correction factors from Table 17, the sound power levels for the corresponding octave bands can be obtained ($L_W = L_{Wtot} + K_{ok}$).

Diagram 7. Throttling range of SYST CRPc 9-125 damper

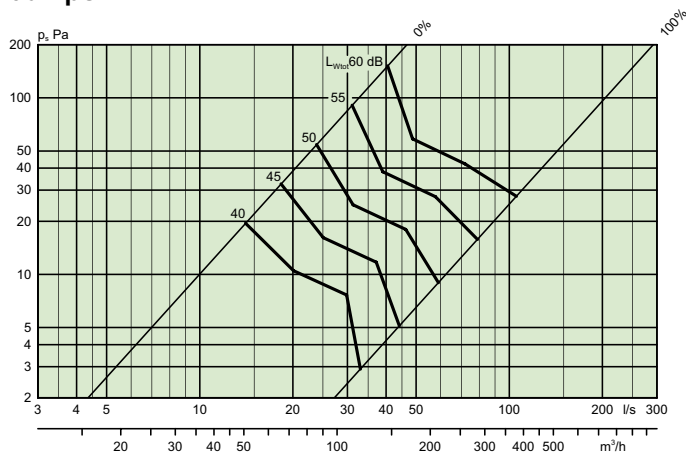


Table 17. Sound power level for CRPc 9-125 damper, Correction factor, K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
CRPc	63	125	250	500	1000	2000	4000	8000
125	0	-2	-9	-15	-20	-25	-29	-35
Tol. +	2	2	2	2	2	2	2	2

Cooling example

An office with dimensions $w \times d \times h = 3.6 \times 4.0 \times 2.7$ m requires a cooling capacity of $60 \text{ W/m}^2 = 864 \text{ W}$. The airflow must be 2 l/s m^2 . This produces 29 l/s in the room. The noise level must not exceed 30 dB(A) . Design room temperature, summer: 24°C
 A heating water temperature of $14/18$ produces:
 $\Delta T_k = 4 \text{ K}$; $\Delta T_{mk} = 8 \text{ K}$
 A supply air temperature of 18°C produces: $\Delta T_l = 6 \text{ K}$.

SOLUTION

Cooling

The supply air that maintains 18°C temperature produces $P_l = 1.2 \cdot 6 \cdot 29 = 209 \text{ W}$ cooling capacity. The ADRIATIC VF must therefore achieve $864 - 209 = 655 \text{ W}$.

Table 2 provides for a length of 2.4 m climate beam and an airflow of 29 l/s more than 655 W in cooling capacity (50 Pa with $2\text{L}2\text{M}/2\text{L}2\text{M}$ nozzles produce 721 W), which is sufficient for meeting requirements.

Cooling water

If 655 W cooling capacity is required, the necessary cooling water flow can be obtained in Diagram 1. A temperature increase of $\Delta T_k = 4 \text{ K}$ produces a water flow of 0.039 l/s .

In Diagram 3, we can read that a water flow of 0.039 l/s needs to be compensated if the water flow is not completely turbulent. This means that we cannot make use of full capacity from the climate beam. The reduction in this case will be approx. 6% . 721 W is therefore reduced to 678 W , which still meets the requirement.

The pressure drop is calculated on the basis of a water flow of 0.039 l/s and the pressure drop constant $k_{pk} = 0.0201$, obtained from Table 2.

The pressure drop will then be: $\Delta p_k = (q_k / k_{pk})^2 = (0.039 / 0.0201)^2 = 3.5 \text{ kPa}$.

The pressure drop can also be obtained from Diagram 2.

Noise level

In Table 2 we see that the sound pressure level without a damper (or with a completely open damper) is 22 dB(A) . Diagram 6 shows a SYST CRPc 9-125 damper throttling range.

Heating example

An office with dimensions $w \times d \times h = 3.6 \times 4.0 \times 2.7$ m requires a heating capacity of 400 W . The air flow should be 29 l/s .
 Design room temperature, winter: 22°C
 A heating water temperature of $39/35$ produces: $\Delta T_v = 4 \text{ K}$; $\Delta T_{mv} = 15 \text{ K}$.
 A supply air temperature of 18°C provides: $\Delta T_l = 4 \text{ K}$

SOLUTION

The supply air that maintains 18°C temperature produces $P_l = 1.2 \cdot 4 \cdot 29 = 139 \text{ W}$ cooling capacity. The ADRIATIC VF must therefore achieve $400 + 139 = 539 \text{ W}$.

Table 12 provides for a length of 2.4 m climate beam and an airflow of 29 l/s more than 539 W in cooling capacity (50 Pa with $2\text{L}2\text{M}/2\text{L}2\text{M}$ nozzles produce 850 W), which is sufficient for meeting the requirement.

Heating water

If 539 W heating capacity is required, the necessary water flow can be obtained in Diagram 5. With a decrease in temperature of $\Delta T_v = 4 \text{ K}$ produces a water flow of 0.032 l/s .

The pressure drop is calculated on the basis of a water flow of 0.032 l/s and the pressure drop constant $k_{pv} = 0.0285$, which is obtained from Table 12. The pressure drop will then be: $\Delta p_v = (q_v / k_{pv})^2 = (0.032 / 0.0285)^2 = 1.3 \text{ kPa}$. The pressure drop can also be obtained from Diagram 4.

Dimensions

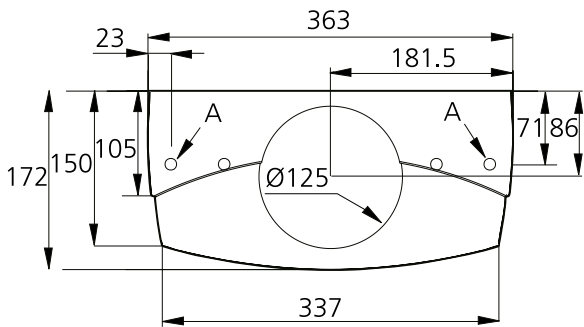


Figure 16. 125 mm duct connection, end view.
A = Cooling, Cu 12 x 1.0 mm pipes

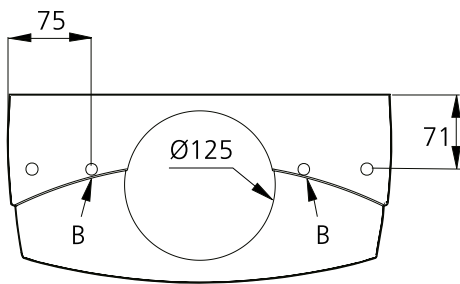


Figure 17. 125 mm duct connection, end view.
B = Heating, Cu 12 x 1.0 mm pipes

Length, ADRIATIC VF

Nominal dimensions: 1.2; 1.8; 2.4; 3.0 and 3.6 m
Length: Nominal – 15 mm (+4/-2) mm.
Length to the division of the face plate, $L_u = L / 2$

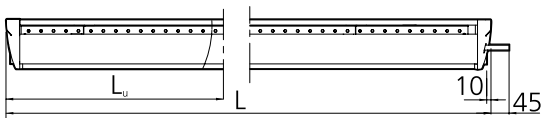


Figure 18. Horizontal connections in end panel, long side view.
L = Length, ADRIATIC VF
 L_u = length to the division of the face plate

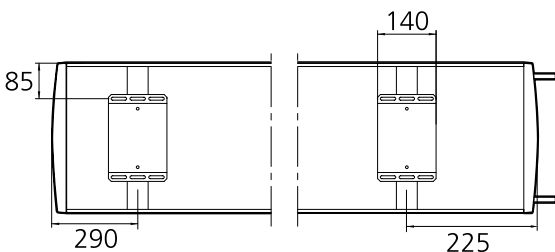


Figure 19. Horizontal connections in end panel (-OH), top view.

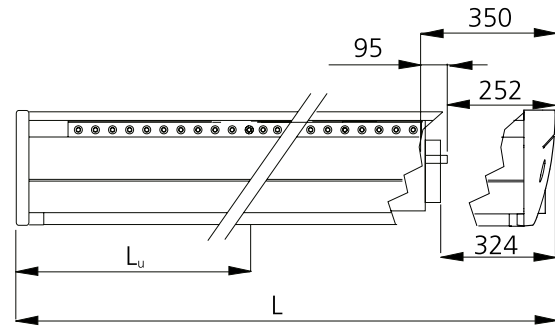


Figure 20. Internal connections (-I), long side view.
L = Length, ADRIATIC VF
 L_u = length to the division of the face plate

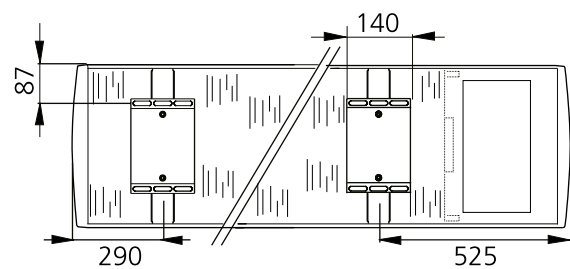


Figure 21. Internal connections (-I), top view.

Installation space

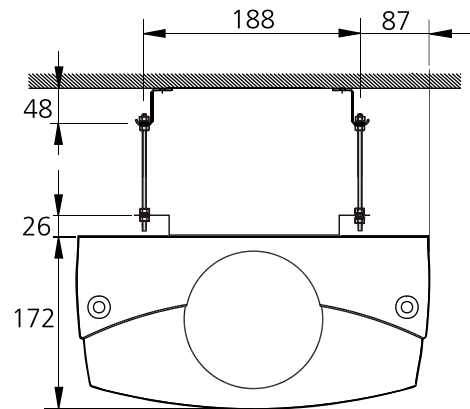


Figure 22. SYST MS M8 assembly piece.

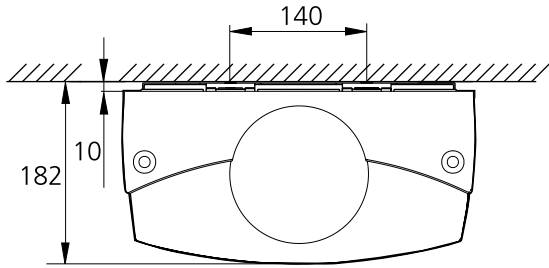


Figure 23. MD4S assembly piece.

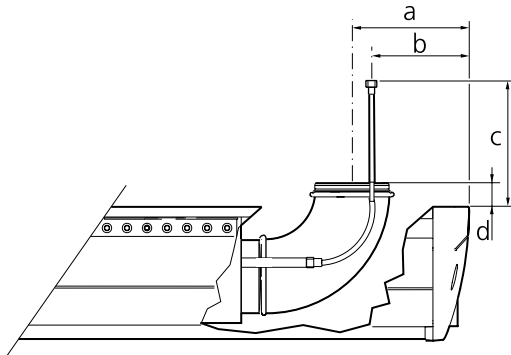


Figure 24. Internal connections (-I), vertical connections.

Dimensions, vertical connection to the climate beam.

a	b	c	d
172 mm	120 mm	Length of hose, -180 mm	70 mm

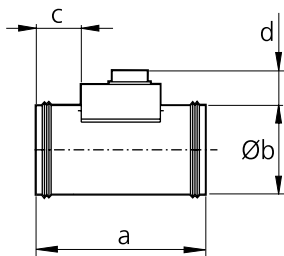


Figure 25. CRPc 9-125 Commissioning damper

Dimensions, SYST CRPc 9-125

a	b	c	d
184 mm	124 mm	40 mm	42 mm

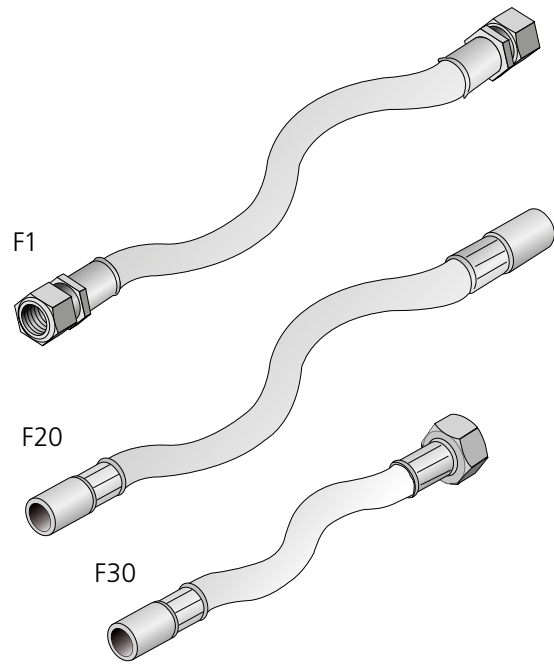


Figure 26. Flexible connection hose. SYST FH

F1 = Ø12, Length 300; 500 or 700 mm.
 F20 = Ø12, Length 275; 475 or 675 mm.
 F30 = Ø12, Length 200; 400 or 600 mm.

Ordering Key

Type ADRIATIC VF active climate beam including ADC air deflectors for cooling and ventilation or cooling, heating and ventilation.

The units are supplied painted in Swegon's standard shade of white, RAL 9003, gloss ratio $30 \pm 6\%$.

Contractor demarcation

Swegon's limits of supply are at the points of connection for water and air respectively. At these connection points, the pipework contractor connects to plain pipe ends, fills the system, bleeds it and tests the pressure in the circuits. The ventilation contractor connects to the duct connections with dimensions as specified on the basic size drawing under "Dimensions – Contractor Demarcation/ Points of connection". If valves and actuators are installed in the connection section, this must take place before the damper and ventilation duct is connected. When mounting a casing, the end panel must be removed before the unit can be mounted in the ceiling! The units are delivered without mounting parts for suspended installation.

Contractor demarcation/ Point of connection

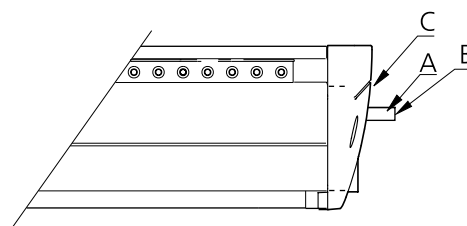


Figure 27. Points of connection.

A = Cooling: The pipework contractor connects the beam to Cu 12 x 1.0 mm pipes

B = Heating: The pipework contractor connects the beam to Cu 12 x 1.0 mm pipes

C = Ventilation: The ventilation contractor connects ducting to the connection piece (sleeve). $\varnothing 125$ mm

Weight

Weight per metre, ADRIATIC VF	length ≤ 2.4	length $\geq 2,4$
Dry weight	11.0 kg/m	11.5kg/m
Weight, filled with water	12.0 kg/m	12.5kg/m

Specification

Product

ADRIATIC VF c	aa-	b-	c-	dddd/ddd
Climate beams				
Incl. ADC air deflesters				
Length:				
-OH: 1.2; 1.8; 2.4; 3.0; 3.6 m				
-I: 1.5; 2.1; 2.7; 3.3; 3.9 m				
Operation:				
A = Cooling and supply air				
B = Cooling, heating and supply air				
Connection:				
-OH = Horizontal connection				
-I = Internal connection				
Nozzle configuration:				
see Table 1 or ProSelect for selection				

Ordering examples

Active climate beam for suspended installation with cooling, ventilation and length 2.4 m:
ADRIATIC VF c 2.4-A-OH (2L2M/2L2M).

Active climate beam for suspended installation with cooling and ventilation. 70% of the air volume should be conveyed from the right-hand side of the climate beam viewed from the coil connections. The length is 2.4 m:
ADRIATIC VF c 2.4-A-OH (4L/4H).

Accessories

Connection casing	ADRIATIC VF c T-KA	aaa
Length: 120, 300; 500; 700		

Loose end panel	ADRIATIC VF c T-GL	aa
UH = Without openings MH = With openings		

Assembly piece	SYST MD 4S
(For installation directly against the ceiling)	

Assembly piece	SYST MS M8	aaaa-	b-	RAL9003
(For suspended installation)				
Length of threaded rod: 200, 500, 1000 mm				
1 = Threaded rod only 2 = Double threaded rods with thread locking device.				

Flexible connection hose (1)	SYST FH F1	aaa	12
Clamping ring coupling against pipe on both ends			
Length: 300, 500 or 700 mm			
Dimension (Ø) mm: 12			

Flexible connection hose (1)	SYST FH F20	aaa	12
Quick-fit coupling (push-on) against pipe on both ends			
Length: 275; 475 or 675 mm			
Dimension (Ø) mm: 12			

Flexible connection hose (1)	SYST FH F30	aaa	12
Quick-fit coupling (push-on) against pipe on one end, G20ID sleeve nut on the other end			
Length: 200; 400 or 600 mm			
Dimension (Ø) mm: 12			

Connection piece	SYST CA-125-90
(90° duct bend)	

Commissioning damper	SYST CRPc 9-125
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Specification Text

Example of a specification text conforming to VVS AMA Standard.

KB XX

Swegon's ADRIATIC VF climate beam that conveys the air along the ceiling and has an integrated circulation air opening in the face plate. For suspended installation from the ceiling, with the following functions:

- Cooling
- Heating (optional)
- Ventilation
- VariFlow for simple adjustment of the airflows
- ADC air deflectors
- Ø125 mm duct connection
- Integrated circulating air opening in face plate
- Sliding face plate
- Cleanable
- Fixed measurement tapping with hose
- Painted in standard shade of white (RAL 9003)
- Contractor demarcation at point of connection for water and air as in outline drawing.
- At the points of connection the pipe contractor connects to 12 mm plain pipe end after which the ventilation contractor connects the Ø125 mm insertion piece (sleeve).
- The pipe contractor fills, bleeds, tests the pressure and assumes responsibility for the design water flows reaching each branch of the system and the unit.
- Ventilation contractor conducts initial commissioning of the airflows.

Accessories:

- Connection casing, ADRIATIC VF c-T-KA-aaa xx items
- Commissioning damper, SYST CRPc 9-125, xx items.
- Assembly piece, against ceiling, SYST MD 4S xx items
- Assembly piece for suspended installation SYST MS M8 aaaa-b-RAL9003
- Flexible connection hose, SYST FH aaa bbb – 12 xx items
- 90°duct bend, SYST CA 125-90 xx items etc.

Specify the quantity separately or with reference to the drawing.

Size: KB XX-1 ADRIATIC VF c aa - b - cc (ddd/ddd) xx items
 KB XX-2 ADRIATIC VF c aa - b - cc (ddd/ddd) xx items
 etc.

Control equipment, see separate section in catalogue on waterborne indoor climate systems