Swegon **PACIFIC**®

Integrated climate beam

PACIFIC climate beam

- The PACIFIC is a high performance climate beam for installation in false ceilings.
- With high built-in flexibility, it is designed to meet today's needs as well as those of tomorrow.
- The modular design offers great freedom of choice for configuring its arrangement to meet current needs.
- Supply air, cooling and heating
- Supply air, cooling and electric heating

Key figures

Primary airflow:		Up to 55 l/s
Pressure range:		30 to 150 Pa
Cooling capacity:		Up to 2600 W
Heating capacity:	Water:	Up to 3000 W
	Electric:	Up to 1000 W
Lengths:		Min. 1194 mm / max. 3043 mm*
Widths:		Min. 594 mm / max. 667 mm*
Heights:		163 mm - Ø100 mm air connection
		189 mm - Ø125 mm air connection
		277 mm - Ø160 mm air connection

*Lengths and widths are matched to suit different types of false ceilings.

Figure 1. PACIFIC

Operation

The PACIFIC is an active climate beam with two-way air distribution. The unit does not contain a fan of its own but instead is driven by the pressure and flow generated by a centrally located air handling unit, which means low sound level and excellent comfort in the room.

The PACIFIC is designed for dry systems, i.e. without condensation and therefore does not require any condensate drainage system or any filter. The minimum number of moving parts and lack of filter guarantees very little need for maintenance.

Flexibility

The modular design and the built-in commissioning functions make the PACIFIC adaptable to meet current needs in all phases of its useful product life.

- In the planning phase of the project: adapt the performance and the physical dimensions to suit the current project.
- In the installation phase: commission the airflow volume, distribution and direction of discharge to provide optimum comfort.
- In the operational phase: adjust the airflow volume, distribution and direction of discharge to deal with changes in e.g. the layout of the building.

Induction principle

The PACIFIC climate beam operates according to the induction principle. A centrally located air handling unit distributes primary air via the duct system into the plenum of the unit and creates excess pressure. The plenum is equipped with a number if sliding strips that in turn contain a row of nozzles of various sizes. The excess pressure in the plenum forces the primary air through the nozzles at relatively high velocity. When the primary air is distributed at high velocity through the nozzles, negative pressure is created in the space above the built-in heat exchanger (coil). The negative pressure sucks (induces) the room air up through the heat exchanger where the air is treated as required.

If cooling is required, the room control equipment opens the cooling circuit valve and chilled water circulates through the cooling circuit of the heat exchanger. The recirculating air is chilled and is mixed with the primary air before it is discharged into the room.

If heating is required, the heating circuit valve opens instead and hot water circulates in the heat exchanger and the recirculating air is heated before it is mixed with the primary air and is discharged into the room.

The PACIFIC can also be equipped with electric heating if desired. The electric heat is then generated by heating rods that have been inserted into the heating tubes of the heat exchanger. The induction principle is still the same as that with waterborne heating however instead of opening a valve, the heating rods are energised.

If neither cooling nor heating is required, then the recirculating air passes through the heat exchanger without being treated. The ratio between the primary air and the recirculating air varies depending on the magnitude of the excess pressure and the airflow rate of the primary air. This relationship is also called the degree of induction.

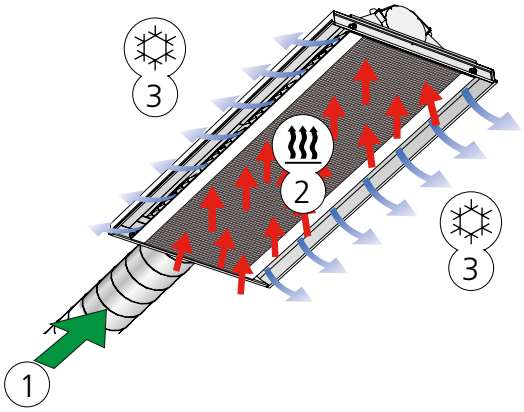


Figure 2. Cooling operation

1 = Primary air

2 = Induced room air

3 = Primary air mixed with chilled room air

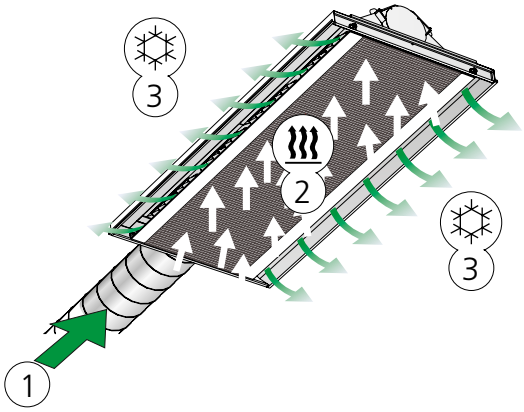


Figure 4. Neutral operation

1 = Primary air

2 = Induced room air

3 = Primary air mixed with untreated room air

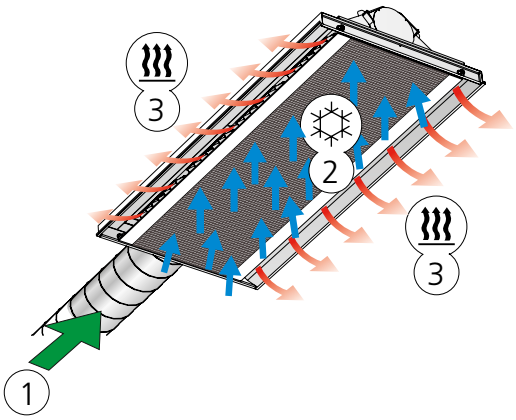


Figure 3. Heating operation

1 = Primary air

2 = Induced room air

3 = Primary air mixed with heated room air

Range of Application

- Offices and conference rooms
- Classrooms
- Hotels
- Restaurants
- Hospitals
- Shops
- Shopping centres

Figures 5. Capacity module – 4 lengths

Security

The Swegon PACIFIC is Eurovent certificated, which is your guarantee that all specified data has been confirmed by tests and has been validated.

Capacity we take responsibility for

Swegon PACIFIC has been developed for generating high cooling and heating capacity without compromising comfort. The outlet of the unit is designed to handle large pressure and flow ranges with maintained Coanda effect. The result is that the distributed air is kept near the ceiling, has time to mix with the room air and its velocity decreases before it reaches the occupied zone. This provides an excellent indoor climate with low air velocities.

Flexibility

Modern office buildings make ever stricter demands on adaptability to various needs. A layout that from the beginning was designed as an open-plan office may in the next phase need to be partitioned into smaller rooms. By carefully planning the cooling, heating and ventilation installations from the beginning, the costs for future operational changes or needs can be drastically reduced. Swegon PACIFIC is a climate beam developed for maximum flexibility throughout its useful life.

Since different buildings involve different demands on performance as well as physical measurements, the Swegon PACIFIC is designed so that you can configure it to meet current needs. The unit is divided into two modules: Capacity module and Design module

The capacity module contains a combined cooling and heating coil with two separate water circuits, one for cooling and the other for heating. The capacity modules come in four different lengths to choose from: The length required is determined by capacity and flexibility needs.

Three different air connection sizes are available to choose from depending on what airflow and sound requirements are under consideration: Ø100; Ø125 and Ø160 mm. The size of the air connection determines the height of the unit which means that you must take into consideration the available space above the false ceiling.

Figure 6. Capacity module - Ø100; Ø125 and Ø160 mm

The plenum in the PACIFIC is designed so that the runs of connected ducting are always well above the profiled T-sections of the load-carrying ceiling grid system. This offers several advantages. One advantage is that there is never any risk of the ductwork colliding with the T-section grid system or that you will need to use duct components to avoid such a collision. A second advantage is that the sound level will be minimised if you can connect straight runs of ducting. A third advantage is that you can connect the primary air duct to several units in series by allowing a certain portion of the air to pass through the first unit and on to the next one. The number of units that can be inter-connected in a series depends on the airflow per unit and the selected connection size of the ducting. The sound level in the first unit in the series is the design level. By using the ProSelect Web software available at Swegon's home page www.swegon.com, you can easily calculate how many units you can connect in series.

Figure 7. Several PACIFIC climate beams connected in a series

Comfort and commissioning functions

The ADC (Anti Draught Control) and VariFlow comfort and commissioning functions are also included as standard features.

ADC

ADC consists of a number of sections with adjustable fins arranged in the outlet of the unit. With a simple grip of the hand, the fins can be set to an appropriate angle to direct the discharge of air and in this way create the desired air distribution pattern. The standard setting for ADC is straight but the unit can be supplied factory-preset to a V-shape distribution pattern, if desired.

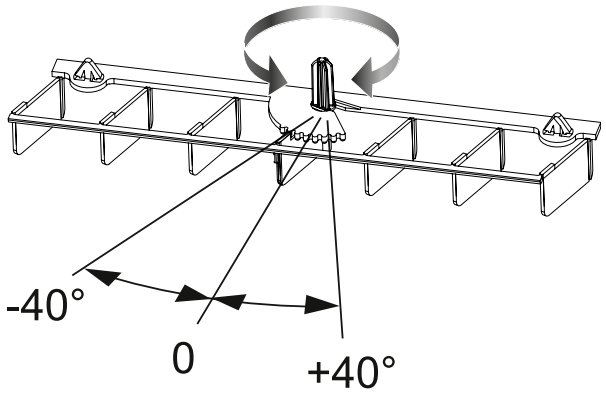


Figure 8. Detailed illustration of ADC

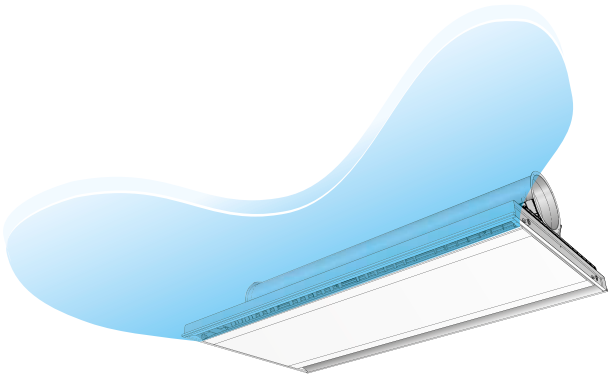


Figure 9. ADC set to the V-shape setting

VariFlow

VariFlow is the name of Swegon's unique adjustable nozzle strips. There are three airflow variants to choose from:

- LF = Low airflow
- MF = Medium Flow
- HF = High Flow

The most suitable airflow variant is selected depending on current airflow needs and future needs to possibly increase or decrease the airflow. The number of VariFlow nozzle strips varies depending on the length of the capacity module.

Table 1. Number of VariFlow nozzle strips per capacity module

Length of the capacity module (mm)	Number of VariFlow nozzle strips
1100	8
1600	12
2200	16
2700	20

The three different airflow variants of VariFlow nozzle strip can also be set to three different positions:

- L = Low flow
- M = Medium flow
- H = High flow

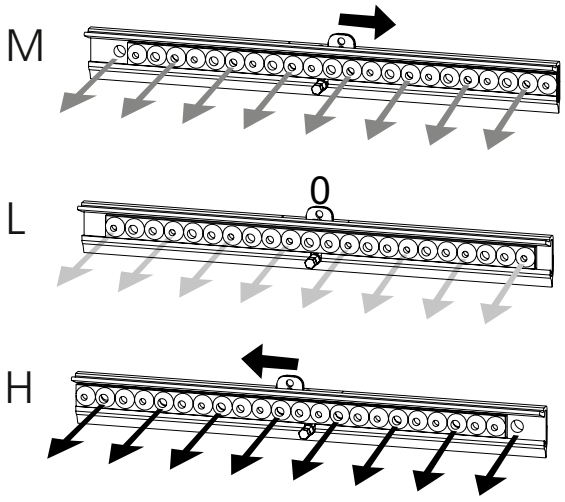


Figure 10. VariFlow nozzle strip adjusted in three positions. L, M and H

By setting the VariFlow nozzle strips in different ways, you can easily set the beam to provide symmetric, asymmetric or displaced air distribution.

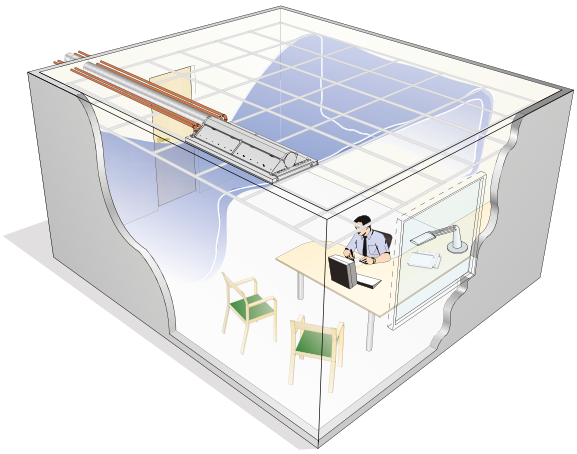


Figure 11. VariFlow with asymmetric airflow distribution

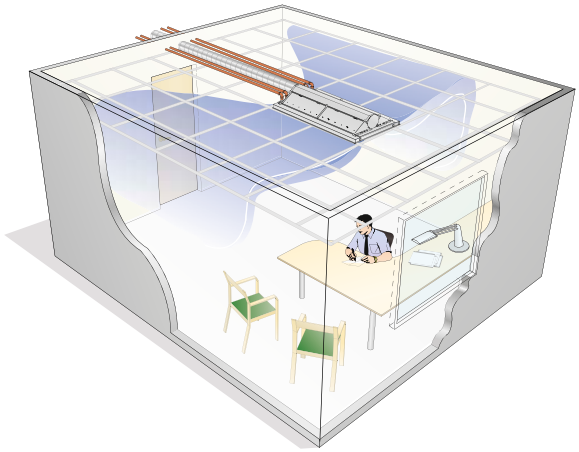


Figure 12. VariFlow with symmetric airflow distribution

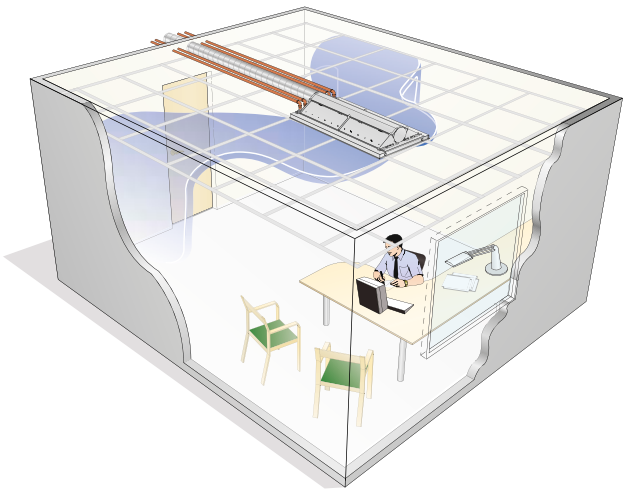


Figure 13. VariFlow with displaced airflow distribution

The K factors (COP) of the nozzle strips are mutually adapted to enable you to change how the airflow is distributed without affecting the total K factor of the climate beam. This means that you do not need to re-commission the unit when you make a change.

The sectional division of VariFlow offers tremendous flexibility. This technical brochure outlines only some of the settings that are possible to set. The PACIFIC can be supplied preset to basic settings for subsequent commissioning at the site or it can be supplied factory-preset to an optional setting, if so desired. Note that it is most often more advantageous to commission the beams at the building site considering the logistics, especially if the project involves a larger number of variants with different settings. For handling configurations, we recommend Swegon's new ProSelect Web software available at our home page: www.swegon.com.

Figure 14. Design module

The design module serves as the interface to the current false ceiling system. Customised modules are available for integration in most false ceiling systems sold on the market.

- T-section grid systems, 600 mm centre-to-centre
- T-section grid systems, 625 mm centre-to-centre
- T-section grid systems, 675 mm centre-to-centre
- T-section grid systems, Imperial (USA)
- Sheet-metal modular ceiling
- Strip grid systems
- Gypsum ceiling (requires separate accessories)

The face plate of the design module is hinged and can be swung out from either side to a 90-degree open position. This completely exposes the coil for cleaning. Safety cords secure the face plate and ensure that it cannot fall down.

Figure 15. Hinged face plate.

In certain cases it could be advantageous to select a design module that is extra long in relation to the capacity module. One typical case is when the beam is installed in a gypsum ceiling and there is a need for inspecting the valves and/or the commissioning damper. By employing a design module that is longer than the capacity module you get a built-in inspection cover per automatic control system. The inactive section of the design module is covered to avoid acoustic disturbance and so that the space above the false ceiling will not be visible from the room.

The capacity module is always installed offset toward the one end panel with the water connections on the side where the inactive section is situated.

Figur 16. Built-in inspection cover through shorter capacity module.

Accessories

CRP Commissioning damper

100, 125 and 160 mm dia. circular commissioning damper with perforated damper blade and manual adjusting knob.

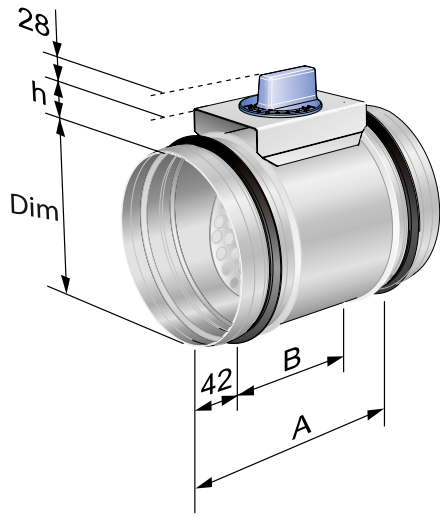


Figure 17. SYST CRPc 9-100, 125, or 160 commissioning damper

CRPc 9	A	B	h	Weight
Dim.	mm	mm	mm	kg
100	210	110	20	0.7
125	210	110	20	0.8
160	210	110	20	0.9

Connection piece, air, SYST CA

90° duct bend, used if the PACIFIC will be connected on the long side or vertically. Available in three dimensions: Ø100; Ø125 and Ø160 mm.

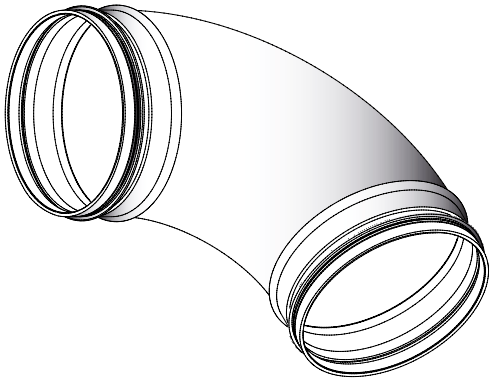


Figure 18. Connection piece, air – 90° duct bend, SYST CA 100/125/160-90

Connection piece, air – insertion joint, SYST AD1

SYST AD1 is used as an insertion joint between the PACIFIC and the duct system. Available in three dimensions: Ø100; Ø125 and Ø160 mm.

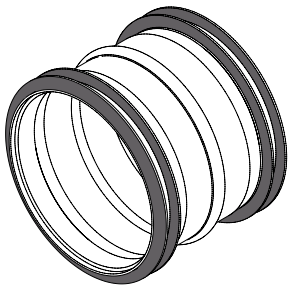


Figure 19. Connection piece, air – insertion joint, SYST AD1- 100, 125 or 160

Side connection kit, water

The PACIFIC is as standard equipped with vertical water connections but can be converted to a unit with side connections by complementing it with a side connection kit.

This kit can be easily installed on the side required, by means of quick-fit, push-on couplings and matched copper tubing.

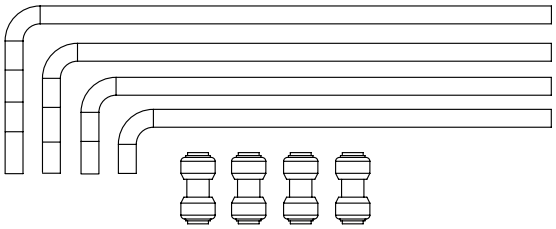


Figure 20. Side connection kit, SYST CK1

Horizontal connection kit, water

The PACIFIC is as standard equipped with vertical water connections but can be converted to a unit with horizontal connections by complementing it with a horizontal connection kit.

This kit can be easily installed by means of quick-fit, push-on couplings and matched copper tubing.

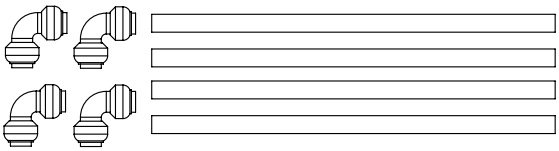


Figure 21. Horizontal connection kit, SYST CK2

Flexible connection hoses

Flexible hoses are available with quick-fit, push-on couplings as well as clamping ring couplings for quick and simply connection. The hoses are also available in various lengths. Note that clamping ring couplings require support sleeves inside the tubes.

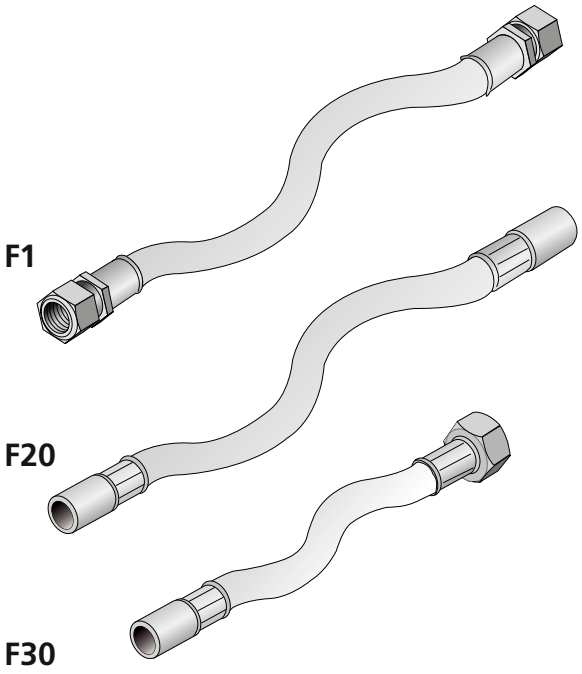


Figure 22. Flexible connection hoses, SYST FH

F1 = Flexible hoses with clamping ring couplings

F20 = Flexible hoses with quick-fit couplings (push-on)

F30 = Flexible hose with quick-fit, push-on coupling in one end and G20ID sleeve nut in the other end.

See the SYST FH quick selection guide on the Internet.

Venting nipple, push-on

A venting nipple is available as a complement to the flexible hoses with push-on couplings. The venting nipple fits directly in the push-on hose coupling and can be fitted in an instant.

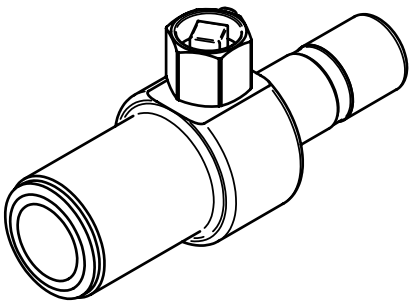


Figure 23. Venting nipple, SYST AR-12

Installation

The PACIFIC is designed for installation flush-mounted in the majority of false ceilings available on the market.

- T-section grid systems with 600 mm c–c and gypsum ceilings:
  Width: 594 mm
  Lengths: 1,194; 1,794; 2,394 and 2,994 mm
- T-section grid systems with 600 mm c–c in combination with 100 mm wide strip grid systems, 1800 mm c–c
  Width: 594 mm
  Length: 1,715 mm
- T-section grid systems with 625 mm c–c
  Width: 617 mm
  Lengths: 1,242; 1,867; 2,492 mm
- T-section grid systems with 675 mm c–c
  Width: 667 mm
  Lengths: 1,342; 2,017; 2,692 mm
- T-section grid systems with IP units (USA)
  Width: 23.70 inches (603 mm)
  Length: 47.80. 71.81, 95.79, 119.80 inches (1,214; 1,824; 2,433; 3,043 mm)
- Clip-in ceiling / sheet metal modules 598 mm
  Lengths: 1,198; 1,498; 1,698; 1,715; 1,798; 2,398; 2,998 mm

Connection dimensions

Cooling (water):	Cu Ø 12 x 1.0 mm plain pipe end
Heating (water):	Cu Ø 12 x 1.0 mm plain pipe end
Air:	Insertion joint, dia. 100, 125 or 160 mm

Recommended limit values – water

Max. recommended operating pressure:	1,600 kPa
Max. recommended test pressure:	2,400 kPa
Min. cooling water flow* Capacity module: L = 1100; 1600 mm:	0.03 l/s
Min. cooling water flow* Capacity module: L = 2200; 2700 mm:	0.045 l/s
Min. permissible heating water flow*:	0.013 l/s
Increase in temperature, cooling water:	2-5 K
Decrease in temperature, heating water:	5-10 K
Min. supply flow temperature:	Should always be sized avoid condensation
Max. permissible inlet flow temperature:	60° C

* Min. recommended water flows ensure the entrainment of any air pockets in the circuit.

Suspension:

The PACIFIC is supplied with four mounting brackets and self-tapping screws packaged separately and supplied with each unit. The mounting brackets can be located at an optional position along the entire long side of the unit for maximum adjustability. The pre-punched holes in each mounting bracket simplify the fastening work. The mounting brackets are designed enabling them to be turned in any optional direction depending to suit type of suspension system selected. Turned inward, the mounting brackets offer simple installation by means of mounting strips. Turned outward, the mounting brackets work at their best for suspending the beams by means of size M8 threaded rods. Mounting strips and threaded rods are not supplied with the unit.

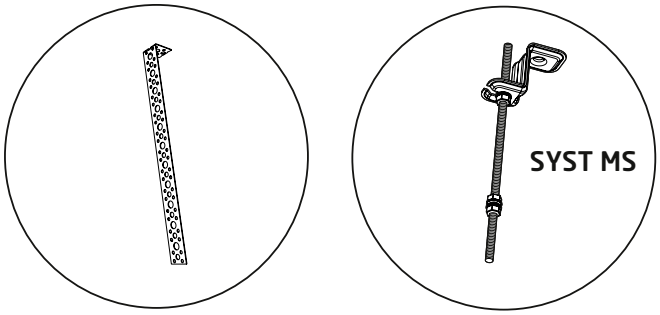
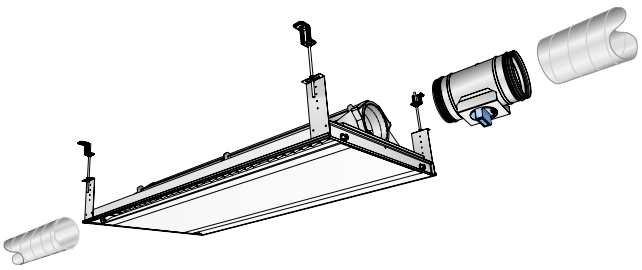


Figure 24. Suspension variant with mounting strips and threaded rods respectively.



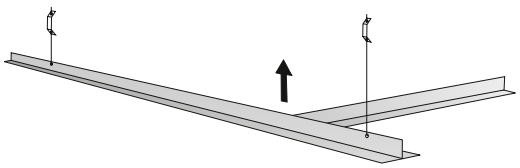


Figure 25. Installation of PACIFIC, here suspended by means of threaded rods.

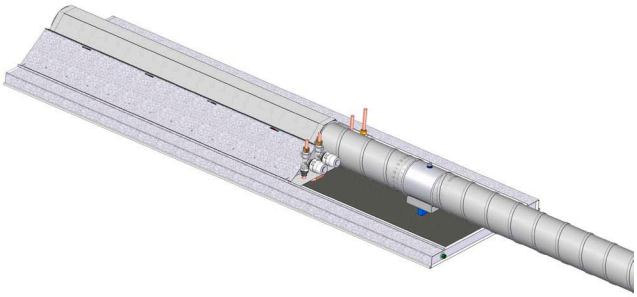


Figure 26. Example with straight air connection and vertical water connections.

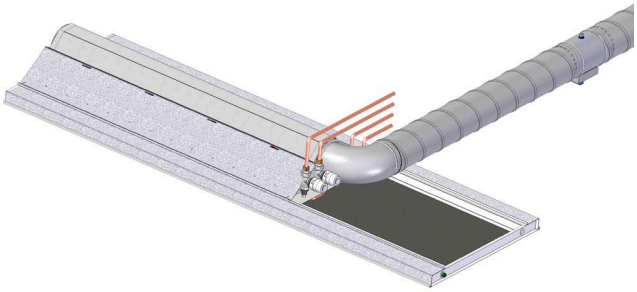


Figure 27. Example with air and water connections from the side.

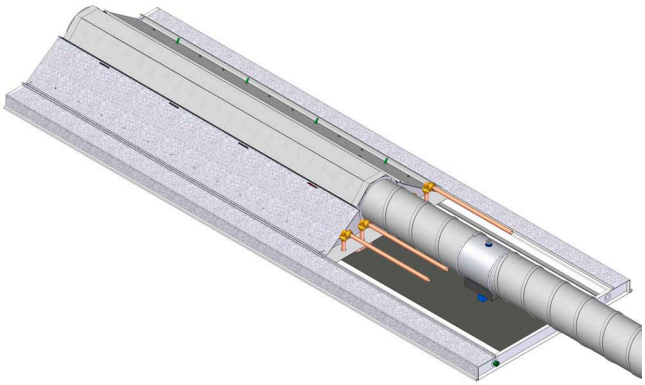


Figure 28. Example with straight, horizontal air and water connections.

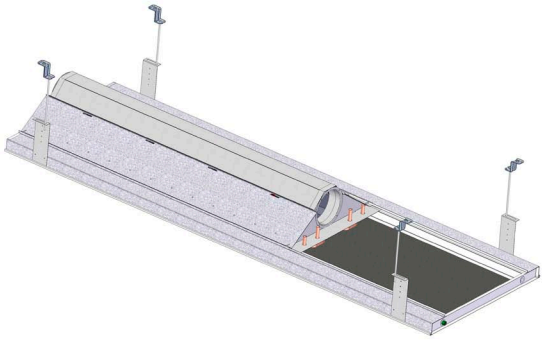


Figure 29. Example of beam suspension with threaded rods.

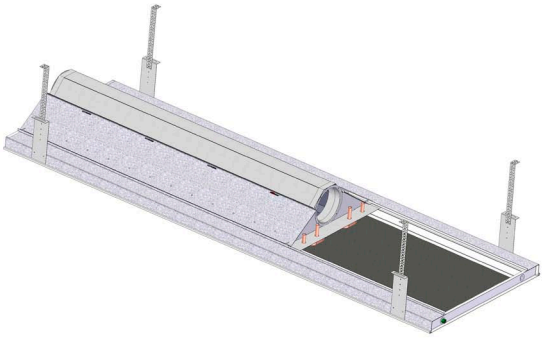


Figure 30. Example of beam suspension with mounting strips.

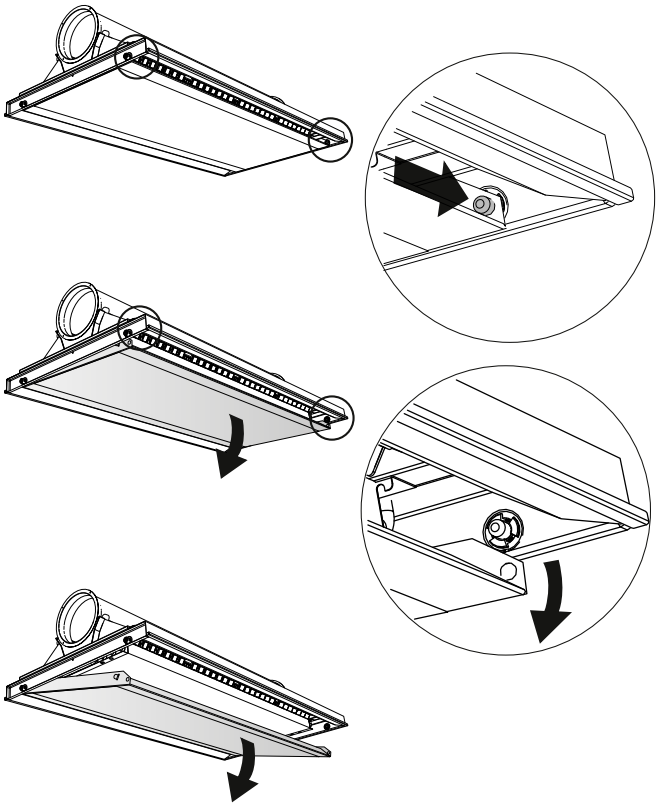


Figure 31. Simple opening of the face plate from its hinges on optional long side.

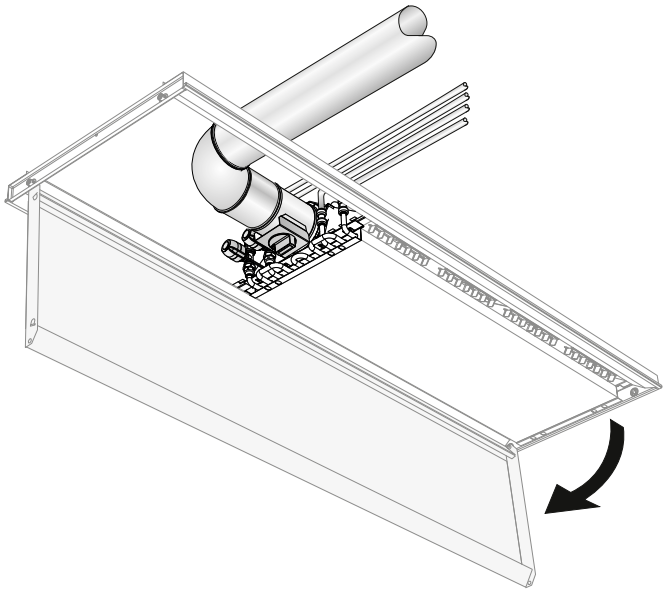


Figure 32. Example showing accessibility to an inactive section and horizontal connections to the side when the face plate is swung open from its hinges.

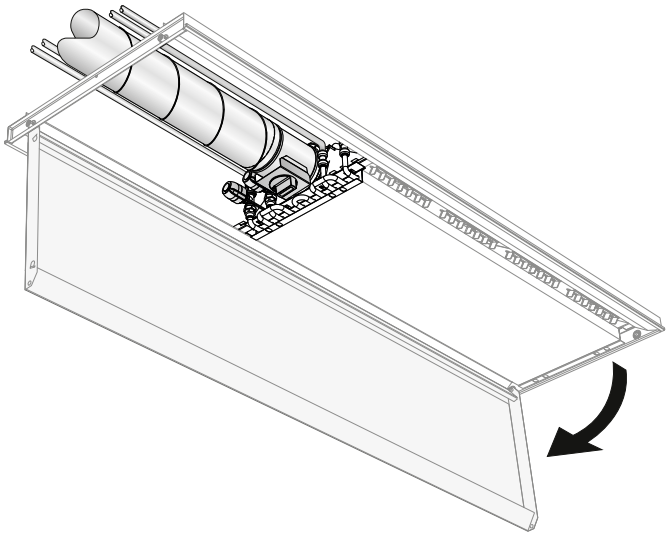


Figure 33. Example showing accessibility to an inactive section with straight horizontal connections when the face plate is open from its hinges.

Technical data

Cooling

The capacities are measured in conformity with EN 15116.

Sizing guides, Tables 3 to 10.

The tables are arranged according to airflow variant. Select the relevant table to suit your application on the basis of airflow, nozzle pressure and capacity requirements. The following can be read in the sizing guide:

1. Unit length (mm)
2. Nozzle setting, left-hand and right-hand side.
3. Primary airflow q_l (l/s) and (m^3/h)
4. Sound pressure level Lp(A) for open damper with one air connection of Ø100, Ø125 or Ø160 (dB(A))
5. Airborne cooling capacity, P_l (W)
6. Waterborne cooling capacity, P_l (W)
7. Pressure drop constant, air, k_{pl}

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

1	2	3	4	5	6	7

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)

ΔT_m: Temperature differential [t_r - t_m] (K)

ΔT: Temperature differential, between inlet – return (K)

Supplementary index: k = cooling, v = heating, l = air, i = commissioning

Pressure drop in cooling circuit

The following formula can be used for calculating the pressure drop in the cooling sircuit:

$\Delta p_k = (q_k / k_{pk})^2$

Δp_k = Pressure drop in cooling coil (kPa)

q_k = Flow of cooling water (l/s), see Chart 1

k_{pk} = Pressure drop constant for cooling circuit, see Table 2.

Table 2. Pressure drop constant, water

Capacity module	Pressure drop constant, water
Length (mm)	k_{pk}
1100	0.023
1600	0.021
2200	0.039
2700	0.038

Cooling capacity of the primary air

The following formula can be used for calculating the cooling capacity of the primary air:

$P_l = q_l \times 1.2 \times \Delta T_l$

P_l = cooling capacity of the primary air (W)

q_l = primary airflow (l/s)

ΔT_l = Temperature differential between the temperature of the primary air and the room temperature (K)

Table 3. Data – Cooling. Sizing guide for the PACIFIC LF airflow variant with symmetric air distribution (50/50%), 50 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Cooling capacity, primary air (W)				Cooling capacity of the water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_i				ΔT_{mk}							
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	8	10	12	6	7	8	9	10	11	12	k_{pl}
1100	4L	4L	5.6	20.2	<20	<20	<20	40	54	67	81	203	237	270	303	336	369	401	0.79
1100	4M	4M	7.5	27.0	<20	<20	<20	54	72	90	108	248	288	327	367	406	446	485	1.06
1100	4H	4H	12.7	45.7	<20	<20	<20	91	122	152	183	301	355	409	464	519	574	630	1.79
1600	6L	6L	8.4	30.2	<20	<20	<20	60	81	101	121	302	351	401	450	499	548	596	1.18
1600	6M	6M	11.2	40.3	<20	<20	<20	81	108	134	161	367	426	485	543	601	659	717	1.58
1600	6H	6H	19	68.4	<20	<20	<20	137	182	228	274	446	526	607	688	770	852	935	2.69
2200	8L	8L	11.2	40.3	<20	<20	<20	81	108	134	161	414	482	550	617	684	751	818	1.57
2200	8M	8M	15	54.0	<20	<20	<20	108	144	180	216	505	587	667	748	828	908	988	2.11
2200	8H	8H	25.4	91.4	21	<20	<20	183	244	305	366	613	723	834	945	1058	1171	1285	3.58
2700	10L	10L	13.9	50.0	<20	<20	<20	100	133	167	200	509	592	675	758	840	923	1005	1.97
2700	10M	10M	18.7	67.3	<20	<20	<20	135	180	224	269	625	725	825	924	1024	1122	1221	2.64
2700	10H	10H	31.7	114.1	27	<20	<20	228	304	380	456	759	894	1031	1169	1308	1448	1589	4.48

Table 4. Data – Cooling. Sizing guide for the PACIFIC LF airflow variant with asymmetric air distribution (75/25%), 50 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Cooling capacity, primary air (W)				Cooling capacity of the water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_i				ΔT_{mk}							
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	8	10	12	6	7	8	9	10	11	12	k_{pl}
1100	4H	4L	9.1	32.8	<20	<20	<20	66	87	109	131	270	317	365	413	461	509	558	1.29
1600	6H	6L	13.7	49.3	<20	<20	<20	99	132	164	197	402	473	544	615	687	759	832	1.93
2200	8H	8L	18.2	65.5	<20	<20	<20	131	175	218	262	550	646	744	841	939	1038	1137	2.58
2700	10H	10L	22.8	82.1	20	<20	<20	164	219	274	328	682	802	922	1043	1165	1287	1410	3.22

* The specified sound level is applicable to straight connection without duct bend and commissioning damper.

Room attenuation = 4 dB

Detailed acoustic data can be obtained by sizing with Swegon's new ProSelect Web software available at Swegon's home page: www.swegon.com.

Table 5. Data – Cooling. Sizing guide for the PACIFIC LF airflow variant with symmetric air distribution (50/50%), 100 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Cooling capacity, primary air (W)				Cooling capacity of the water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_1				ΔT_{mk}							
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	8	10	12	6	7	8	9	10	11	12	k_{pl}
1100	4L	4L	7.9	28.4	21	21	21	57	76	95	114	283	330	378	425	472	519	567	0.79
1100	4M	4M	10.6	38.2	21	21	21	76	102	127	153	328	383	438	493	549	604	660	1.06
1100	4H	4H	17.9	64.4	21	21	21	129	172	215	258	385	453	522	592	662	733	804	1.79
1600	6L	6L	11.8	42.5	24	24	24	85	113	142	170	419	489	559	629	699	769	839	1.18
1600	6M	6M	15.8	56.9	24	24	24	114	152	190	228	485	566	648	729	811	893	975	1.58
1600	6H	6H	26.9	96.8	27	24	24	194	258	323	387	572	674	777	880	985	1090	1195	2.69
2200	8L	8L	15.7	56.5	27	27	27	113	151	188	226	574	670	766	861	957	1053	1149	1.57
2200	8M	8M	21.1	76.0	27	27	27	152	203	253	304	666	778	890	1002	1115	1227	1340	2.11
2200	8H	8H	35.9	129.2	32	28	27	258	345	431	517	786	925	1066	1209	1352	1496	1641	3.58
2700	10L	10L	19.7	70.9	29	27	27	142	189	236	284	713	832	951	1070	1189	1308	1427	1.97
2700	10M	10M	26.4	95.0	30	28	27	190	253	317	380	825	964	1103	1242	1381	1521	1660	2.64
2700	10H	10H	44.8	161.3	38	30	27	323	430	538	645	972	1145	1319	1495	1672	1851	2030	4.48

Table 6. Data – Cooling. Sizing guide for the PACIFIC LF airflow variant with asymmetric air distribution (75/25%), 100 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Cooling capacity, primary air (W)				Cooling capacity of the water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_1				ΔT_{mk}							
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	8	10	12	6	7	8	9	10	11	12	k_{pl}
1100	4H	4L	12.9	46.4	21	21	21	93	124	155	186	354	416	478	541	604	668	732	1.29
1600	6H	6L	19.4	69.8	25	23	21	140	186	233	279	526	619	712	805	899	994	1089	1.93
2200	8H	8L	25.8	92.9	32	27	25	186	248	310	372	721	848	975	1103	1232	1361	1491	2.58
2700	10H	10L	32.2	115.9	31	28	27	232	309	386	464	892	1048	1206	1364	1524	1684	1845	3.22

* The specified sound level is applicable to straight connection without duct bend and commissioning damper.

Room attenuation = 4 dB.

Detailed acoustic data can be obtained by sizing with Swegon's new ProSelect Web software available at Swegon's home page: www.swegon.com.

Table 7. Data – Cooling. Sizing guide for the PACIFIC MF airflow variant with symmetric air distribution (50/50%), 50 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A)			Cooling capacity, primary air (W)				Cooling capacity of the water (W)							Pressure drop constant, air
Length	Side				Connection *			ΔT_I				ΔT_{mk}							
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	8	10	12	6	7	8	9	10	11	12	k_{pl}
1100	4L	4L	7.5	27.0	<20	<20	<20	54	72	90	108	248	288	327	367	406	446	485	1.06
1100	4M	4M	12.7	45.7	<20	<20	<20	91	122	152	183	301	355	409	464	519	574	630	1.79
1100	4H	4H	16.5	59.4	<20	<20	<20	119	158	198	238	324	377	429	481	533	585	363	2.34
1600	6L	6L	11.2	40.3	<20	<20	<20	81	108	134	161	367	426	485	543	601	659	717	1.58
1600	6M	6M	19	68.4	<20	<20	<20	137	182	228	274	446	526	607	688	770	852	935	2.69
1600	6H	6H	24.8	89.3	21	<20	<20	179	238	298	357	482	560	638	716	793	870	947	3.5
2200	8L	8L	14.9	53.6	<20	<20	<20	107	143	179	215	503	583	664	744	823	903	982	2.11
2200	8M	8M	25.4	91.4	21	<20	<20	183	244	305	366	613	723	834	945	1058	1171	1285	3.58
2200	8H	8H	33	118.8	28	<20	<20	238	317	396	475	661	768	874	980	1086	1192	1297	4.67
2700	10L	10L	18.7	67.3	<20	<20	<20	135	180	224	269	625	725	825	924	1024	1122	1221	2.64
2700	10M	10M	31.7	114.1	27	<20	<20	228	304	380	456	759	894	1031	1169	1308	1448	1589	4.48
2700	10H	10H	41.2	148.3	35	22	<20	297	396	494	593	817	950	1082	1213	1344	1475	1605	5.84

Table 8. Data – Cooling. Sizing guide for the PACIFIC MF airflow variant with asymmetric air distribution (75/25%), 50 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Cooling capacity, primary air (W)				Cooling capacity of the water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_I				ΔT_{mk}							
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	8	10	12	6	7	8	9	10	11	12	k_{pl}
1100	4H	4L	12	43.2	<20	<20	<20	86	115	144	173	301	349	397	446	494	542	589	1.7
1600	6H	6L	18	64.8	<20	<20	<20	130	173	216	259	446	519	590	662	733	805	876	2.54
2200	8H	8L	24	86.4	20	<20	<20	173	230	288	346	613	712	810	908	1006	1104	1201	3.39
2700	10H	10L	30	108.0	25	<20	<20	216	288	360	432	759	881	1003	1125	1246	1367	1488	4.24

* The specified sound level is applicable to straight connection without duct bend and commissioning damper.

Room attenuation = 4 dB

Detailed acoustic data can be obtained by sizing with Swegon's new ProSelect Web software available at Swegon's home page: www.swegon.com.

Table 9. Data – Cooling. Sizing guide for the PACIFIC MF airflow variant with symmetric air distribution (50/50%), 100 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Cooling capacity, primary air (W)				Cooling capacity of the water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_l				ΔT_{mk}							
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	8	10	12	6	7	8	9	10	11	12	k_{pl}
1100	4L	4L	10.6	38.2	21	21	21	76	102	127	153	328	383	438	493	549	604	660	1.06
1100	4M	4M	17.9	64.4	21	21	21	129	172	215	258	385	453	522	592	662	733	804	1.79
1100	4H	4H	23.4	84.2	25	21	21	168	225	281	337	409	476	542	607	673	738	804	2.34
1600	6L	6L	15.8	56.9	24	24	24	114	152	190	228	485	566	648	729	811	893	975	1.58
1600	6M	6M	26.9	96.8	27	27	24	194	258	323	387	572	674	777	880	985	1090	1195	2.69
1600	6H	6H	35	126.0	32	27	27	252	336	420	504	607	706	803	901	998	1095	1192	3.5
2200	8L	8L	21.1	76.0	27	27	27	152	203	253	304	666	778	890	1002	1115	1227	1340	2.11
2200	8M	8M	35.8	128.9	32	28	27	258	344	430	516	784	924	1065	1207	1350	1494	1639	3.58
2200	8H	8H	46.7	168.1	40	29	27	336	448	560	672	834	968	1103	1237	1370	1504	1636	4.67
2700	10L	10L	26.4	95.0	30	28	27	190	253	317	380	825	964	1103	1242	1381	1521	1660	2.64
2700	10M	10M	44.8	161.3	38	30	27	323	430	538	645	972	1145	1319	1495	1672	1851	2030	4.48
2700	10H	10H	58.4	210.2	46	32	29	420	561	701	841	1032	1199	1366	1532	1697	1862	2027	5.84

Table 10. Data – Cooling. Sizing guide for the PACIFIC MF airflow variant with asymmetric air distribution (75/25%), 100 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Cooling capacity, primary air (W)				Cooling capacity of the water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_l				ΔT_{mk}							
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	8	10	12	6	7	8	9	10	11	12	k_{pl}
1100	4H	4L	17	61.2	21	21	21	122	163	204	245	384	447	510	572	634	697	759	1.7
1600	6H	6L	25.4	91.4	25	24	23	183	244	305	366	569	662	755	848	940	1032	1125	2.54
2200	8H	8L	33.9	122.0	31	28	27	244	325	407	488	781	909	1037	1164	1291	1418	1544	3.39
2700	10H	10L	42.4	152.6	36	29	27	305	407	509	611	968	1126	1284	1442	1599	1756	1913	4.24

* The specified sound level is applicable to straight connection without duct bend and commissioning damper.

Room attenuation = 4 dB.

Detailed acoustic data can be obtained by sizing with Swegon's new ProSelect Web software available at Swegon's home page: www.swegon.com.

Cooling

Diagram 1. The cooling capacity P_k (W) as a function of the change in temperature ΔT_k (K) and the cooling water flow q_k (l/s). The capacity of the cooling water can also be calculated by using the following formula:

$P_k = 4186 \times q_k \times \Delta T_k$

P_k = Cooling capacity of the water (W)

q_k = Cooling water flow (l/s)

ΔT_k = Temperature differential between the cooling water inlet flow and return (K)

Diagrams 2a-2b. Correction factor k for cooling capacity P_k (W) as a function of cooling the water flow q_k (l/s). Different water flows have a certain effect on the cooling capacity depending on how turbulent the water flow is. By checking calculated water flow against Diagram 1, the capacity indicated in Tables 3 – 10 may need to be slightly adjusted up or down according to the formula: $P_{corrected}$ (W) = P_k (table) x $k_{(Diagram\ 2a/2b)}$

Diagram 1. Water flow – Cooling capacity

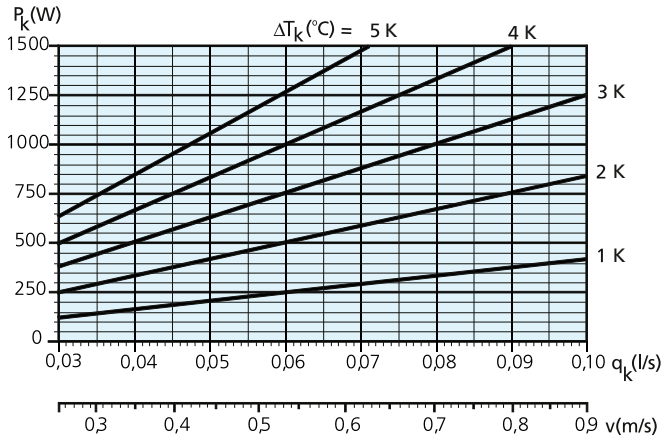


Diagram 2a. Water flow – capacity correction
Length of Capacity module: 1100 and 1600 mm

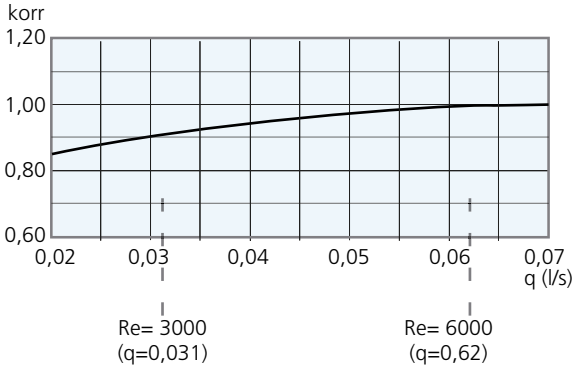
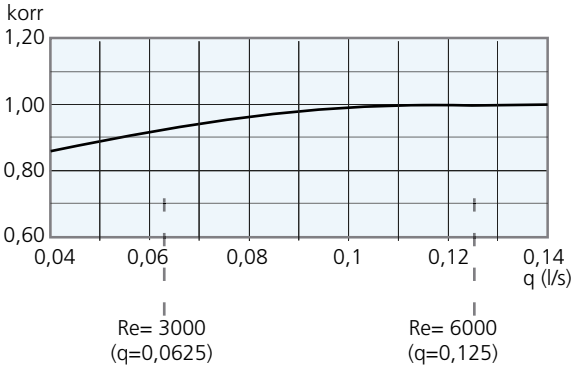


Diagram 2b. Water flow – capacity correction
Length of Capacity module: 2200 and 2700 mm



Swegon reserves the right to alter specifications.

Heating

Waterborne heating

The PACIFIC is as standard equipped with a coil containing two separate tube circuits. The first functions as a cooling circuit and the second as a heating circuit. When hot water circulates in the tube circuit, the recirculated air from the room is heated up in the coil, is then mixed with the primary air and is distributed to the room. The inlet flow temperature of the heating water should be kept as low as possible to minimise the temperature differential between the air at ceiling level and at floor level. The temperature stratification in the room will be negligible if the inlet flow temperature is kept at 40°C or lower. If the inlet flow temperature is up to the recommended max temperature (60°C), the stratification will be perceptible even if it normally is within the prescribed range.

In the majority of cases, the system will heat the room air to a satisfactory temperature. In order to achieve good operating temperature, other factors must be taken into account. The following factors are typical in this respect: Window dimensions, the U factor of the windows, the orientation of the room, the location of the occupants, etc. The quality and dimensions of the windows are also important with regard to possible cold down draughts. The windows used now-a-days are usually so well insulated that cold down draughts do not arise. Cold down draughts are especially likely to occur in the renovation of old buildings if the planner decides to keep the existing windows.

Recommendations for waterborne heating	
Max. permissible inlet flow temperature:	60°C
Min. permissible heating water flow:	0.013 l/s
Min. permissible nozzle pressure:	50 Pa

The cooling/heating capacity of the primary air

The following formula can be used for calculating the cooling/heating capacity of the primary air:

$P_l = q_l \times 1.2 \times \Delta T_l$

P_l = cooling/heating capacity of the primary air (W)

q_l = the primary airflow (l/s)

ΔT_l = Temperature differential between the temperature of the primary air and the room temperature (K)

Sizing guides, Tables 12 to 19.

The tables are arranged according to airflow variant. Select the relevant table to suit your application on the basis of airflow, nozzle pressure and capacity requirements. The following can be read in the sizing guide:

Table guide

1. Length of the capacity module (mm)
2. Nozzle setting, left-hand and right-hand side
3. Primary airflow q_l (l/s) och (m^3/h)
4. Sound pressure level Lp(A) for open damper with one air connection of Ø100, Ø125 or Ø160 (dB(A))
5. Waterborne heating capacity, P_v (W)
6. Pressure drop constant, air, k_{pl}

1	2		3		4			5							6
Length	Side				Connection			ΔT_{ww}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	5	10	15	20	25	30	35	
1100	4L	4L	5.6	20.2	<20	<20	<20	87	174	260	347	433	519	606	0.79
1100	4M	4M	7.5	27.0	<20	<20	<20	105	210	315	420	524	629	733	1.06
1100	4H	4H	12.7	45.7	<20	<20	<20	134	269	402	536	669	803	936	1.79
1600	6L	6L	8.4	30.2	<20	<20	<20	129	258	387	515	643	772	900	1.18
1600	6M	6M	11.2	40.3	<20	<20	<20	156	311	466	621	776	930	1085	1.56
1600	6H	6H	19	68.4	<20	<20	<20	199	398	597	795	993	1191	1388	2.69
2200	8L	8L	11.2	40.3	<20	<20	<20	177	354	530	707	883	1059	1235	1.57
2200	8M	8M	15	54.0	<20	<20	<20	214	429	642	856	1069	1282	1494	2.11
2200	8H	8H	25.4	91.4	21	<20	<20	274	547	820	1092	1364	1636	1908	3.58
2700	10L	10L	13.9	50.0	<20	<20	<20	217	435	651	868	1084	1300	1516	1.97
2700	10M	10M	18.7	67.3	<20	<20	<20	265	530	794	1057	1320	1584	1847	2.64
2700	10H	10H	31.7	114.1	27	<20	<20	339	677	1014	1352	1688	2025	2361	4.48

NOTE! The total heating capacity is the sum of the airborne and waterborne heating capacities. If the primary air temperature is lower than the room temperature, it causes a negative impact on the total heating capacity.

Diagram 3. The heating capacity P_v (W) as a function of the change in temperature ΔT_v (K) and the heating water flow q_v (l/s). The capacity of the heating water can also be calculated by using the following formula:

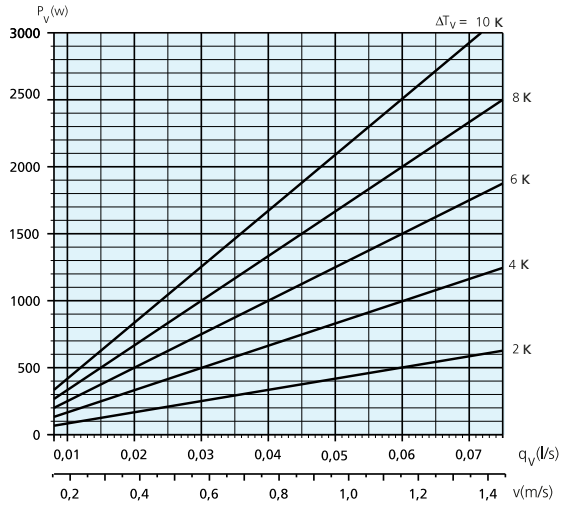
$P_v = 4186 \times q_v \times \Delta T_v$

P_k = Heating capacity of the water (W)

q_k = Heating water flow (l/s)

ΔT_v = The temperature differential between the heating water supply and return (K)

Diagram 3. Water flow – heating



Pressure drop for the heating water circuit
Use the following formula for calculating the pressure drop in the heating water circuit:

$\Delta p_v = (q_v/k_{pv})^2$ [kPa]

Δp_v = pressure drop in heating circuit (kPa)

q_v = flow of heating water (l/s), read from Diagram 3.

k_{pv} = pressure drop constant read from Table 11.

Table 11. Pressure drop constants, heating circuit

Capacity module	Pressure drop constant in the heating circuit
Length (mm)	k_{pv}
1100	0.034
1600	0.031
2200	0.030
2700	0.027

Table 12. Data – Heating. Sizing guide for the PACIFIC LF airflow variant with symmetric air distribution (50/50%), 50 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Heating capacity, water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_{mv}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m^3/h)	Ø100	Ø125	Ø160	5	10	15	20	25	30	35	
1100	4L	4L	5.6	20.2	<20	<20	<20	87	174	260	347	433	519	606	0.79
1100	4M	4M	7.5	27.0	<20	<20	<20	105	210	315	420	524	629	733	1.06
1100	4H	4H	12.7	45.7	<20	<20	<20	134	269	402	536	669	803	936	1.79
1600	6L	6L	8.4	30.2	<20	<20	<20	129	258	387	515	643	772	900	1.18
1600	6M	6M	11.2	40.3	<20	<20	<20	156	311	466	621	776	930	1085	1.58
1600	6H	6H	19	68.4	<20	<20	<20	199	398	597	795	993	1191	1388	2.69
2200	8L	8L	11.2	40.3	<20	<20	<20	177	354	530	707	883	1059	1235	1.57
2200	8M	8M	15	54.0	<20	<20	<20	214	429	642	856	1069	1282	1494	2.11
2200	8H	8H	25.4	91.4	21	<20	<20	274	547	820	1092	1364	1636	1908	3.58
2700	10L	10L	13.9	50.0	<20	<20	<20	217	435	651	868	1084	1300	1516	1.97
2700	10M	10M	18.7	67.3	<20	<20	<20	265	530	794	1057	1320	1584	1847	2.64
2700	10H	10H	31.7	114.1	27	<20	<20	339	677	1014	1352	1688	2025	2361	4.48

Table 13. Data – Heating. Sizing guide for the PACIFIC LF airflow variant with asymmetric air distribution (75/25%), 50 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Heating capacity, water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_{mv}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m^3/h)	Ø100	Ø125	Ø160	6	7	8	9	10	11	12	
1100	4H	4L	9.1	32.8	<20	<20	<20	119	239	357	476	594	713	831	1.29
1600	6H	6L	13.7	49.3	<20	<20	<20	178	356	533	710	886	1063	1240	1.93
2200	8H	8L	18.2	65.5	<20	<20	<20	243	486	728	970	1212	1453	1695	2.58
2700	10H	10L	22.8	82.1	20	<20	<20	302	603	903	1203	1503	1803	2102	3.22

* The specified sound level is applicable to straight connection without duct bend and commissioning damper.

Room attenuation = 4 dB.

Detailed acoustic data can be obtained by sizing with Swegon's new ProSelect Web software available at Swegon's home page: www.swegon.com.

Table 14. Data – Heating. Sizing guide for the PACIFIC MF airflow variant with symmetric air distribution (50/50%), 50 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Heating capacity, water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_{mv}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m^3/h)	Ø100	Ø125	Ø160	5	10	15	20	25	30	35	
1100	4L	4L	7.5	27.0	<20	<20	<20	105	210	315	420	524	629	733	1.06
1100	4M	4M	12.7	45.7	<20	<20	<20	134	269	402	536	669	803	936	1.79
1100	4H	4H	16.5	59.4	<20	<20	<20	151	302	455	607	760	912	1065	2.34
1600	6L	6L	11.2	40.3	<20	<20	<20	156	311	466	621	766	930	1085	1.58
1600	6M	6M	19	68.4	<20	<20	<20	199	398	597	795	993	1191	1388	2.69
1600	6H	6H	24.8	89.3	21	<20	<20	225	449	676	902	1130	1357	1584	3.50
2200	8L	8L	14.9	53.6	<20	<20	<20	213	426	638	850	1062	1274	1485	2.11
2200	8M	8M	25.4	91.4	21	<20	<20	274	547	820	1092	1364	1636	1908	3.58
2200	8H	8H	33	118.8	28	<20	<20	308	616	927	1237	1549	1860	2172	4.67
2700	10L	10L	18.7	67.3	<20	<20	<20	265	530	794	1057	1320	1584	1847	2.64
2700	10M	10M	31.7	114.1	27	<20	<20	339	677	1014	1352	1688	2025	2361	4.48
2700	10H	10H	41.2	148.3	35	22	<20	381	763	1147	1531	1917	2302	2688	5.84

Table 15. Data – Heating. Sizing guide for the PACIFIC MF airflow variant with asymmetric air distribution (75/25%), 50 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Heating capacity, water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_{mv}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m^3/h)	Ø100	Ø125	Ø160	6	7	8	9	10	11	12	
1100	4H	4L	12	43.2	<20	<20	<20	137	274	411	549	686	824	962	1.70
1600	6H	6L	18	64.8	<20	<20	<20	203	407	611	815	1020	1224	1429	2.54
2200	8H	8L	24	86.4	20	<20	<20	279	558	838	1118	1399	1680	1961	3.39
2700	10H	10L	30	108.0	25	<20	<20	345	691	1038	1385	1732	2080	2428	4.24

* The specified sound level is applicable to straight connection without duct bend and commissioning damper.

Room attenuation = 4 dB.

Detailed acoustic data can be obtained by sizing with Swegon's new ProSelect Web software available at Swegon's home page: www.swegon.com.

Table 16. Data – Heating. Sizing guide for the PACIFIC LF airflow variant with symmetric air distribution (50/50%), 100 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Heating capacity, water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_{mv}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m^3/h)	Ø100	Ø125	Ø160	5	10	15	20	25	30	35	
1100	4L	4L	7.9	28.4	21	21	21	122	244	366	488	609	731	852	0.79
1100	4M	4M	10.6	38.2	21	21	21	142	284	425	567	708	849	990	1.06
1100	4H	4H	17.9	64.4	21	21	21	171	343	513	684	854	1025	1195	1.79
1600	6L	6L	11.8	42.5	24	24	24	181	362	542	722	902	1082	1261	1.18
1600	6M	6M	15.8	56.9	24	24	24	210	420	629	838	1047	1255	1464	1.58
1600	6H	6H	26.9	96.8	27	24	24	255	510	763	1017	1270	1524	1777	2.69
2200	8L	8L	15.7	56.5	27	27	27	248	496	742	989	1235	1481	1727	1.57
2200	8M	8M	21.1	76.0	27	27	27	288	577	864	1151	1438	1725	2011	2.11
2200	8H	8H	35.9	129.2	32	28	27	350	700	1048	1396	1744	2092	2439	3.58
2700	10L	10L	19.7	70.9	29	27	27	308	616	922	1228	1534	1840	2146	1.97
2700	10M	10M	26.4	95.0	30	28	27	357	715	1071	1427	1782	2137	2492	2.64
2700	10H	10H	44.8	161.3	38	30	27	433	866	1297	1727	2158	2588	3017	4.48

Table 17. Data – Heating. Sizing guide for the PACIFIC LF airflow variant with asymmetric air distribution (75/25%), 100 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Heating capacity, water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_{mv}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m^3/h)	Ø100	Ø125	Ø160	6	7	8	9	10	11	12	
1100	4H	4L	12.9	46.4	21	21	21	156	313	468	624	780	935	1090	1.29
1600	6H	6L	19.4	69.8	25	23	21	233	465	697	929	1160	1391	1622	1.93
2200	8H	8L	25.8	92.9	32	27	25	319	638	955	1272	1589	1906	2222	2.58
2700	10H	10L	32.2	115.9	31	28	27	394	789	1181	1574	1966	2358	2749	3.22

* The specified sound level is applicable to straight connection without duct bend and commissioning damper.

Room attenuation = 4 dB.

Detailed acoustic data can be obtained by sizing with Swegon's new ProSelect Web software available at Swegon's home page: www.swegon.com.

Table 18. Data – Heating. Sizing guide for the PACIFIC MF airflow variant with symmetric air distribution (50/50%), 100 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Heating capacity, water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_{mv}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	5	10	15	20	25	30	35	
1100	4L	4L	10.6	38.2	21	21	21	142	284	425	567	708	849	990	1.06
1100	4M	4M	17.9	64.4	21	21	21	171	343	513	684	854	1025	1195	1.79
1100	4H	4H	23.4	84.2	25	21	21	177	354	528	703	876	1049	1222	2.34
1600	6L	6L	15.8	56.9	24	24	24	210	420	629	838	1047	1255	1464	1.58
1600	6M	6M	26.9	96.8	27	27	24	255	510	763	1017	1270	1524	1777	2.69
1600	6H	6H	35	126.0	32	27	27	263	525	784	1043	1300	1557	1813	3.50
2200	8L	8L	21.1	76.0	27	27	27	288	577	864	1151	1438	1725	2011	2.11
2200	8M	8M	35.8	128.9	32	28	27	349	699	1046	1394	1741	2089	2435	3.58
2200	8H	8H	46.7	168.1	40	29	27	361	721	1076	1431	1784	2137	2488	4.67
2700	10L	10L	26.4	95.0	30	28	27	357	715	1071	1427	1782	2137	2492	2.64
2700	10M	10M	44.8	161.3	38	30	27	433	866	1297	1727	2158	2588	3017	4.48
2700	10H	10H	58.4	210.2	46	32	29	447	893	1333	1772	2209	2646	3082	5.84

Table 19. Data – Heating. Sizing guide for the PACIFIC MF airflow variant with asymmetric air distribution (75/25%), 100 Pa nozzle pressure

Capacity module	Nozzle setting		Airflow		Sound level, dB(A) *			Heating capacity, water (W)							Pressure drop constant, air
Length	Side				Connection			ΔT_{mv}							k_{pl}
(mm)	Left-hand	Right-hand	(l/s)	(m³/h)	Ø100	Ø125	Ø160	6	7	8	9	10	11	12	
1100	4H	4L	17	61.2	21	21	21	166	332	496	660	824	987	1150	1.70
1600	6H	6L	25.4	91.4	25	24	23	246	493	736	979	1222	1463	1705	2.54
2200	8H	8L	33.9	122.0	31	28	27	338	676	1010	1344	1676	2009	2340	3.39
2700	10H	10L	42.4	152.6	36	29	27	418	838	1251	1665	2076	2488	2898	4.24

* The specified sound level is applicable to straight connection without duct bend and commissioning damper.

Room attenuation = 4 dB.

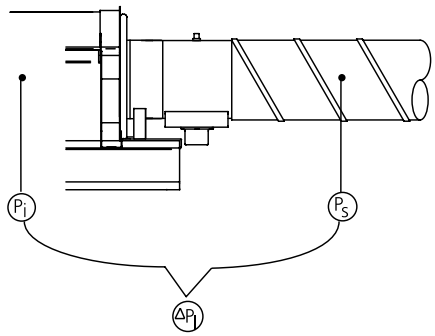
Detailed acoustic data can be obtained by sizing with Swegon's new ProSelect Web software available at Swegon's home page: www.swegon.com.

Acoustics

Diagrams 4-6 show the total generated sound power (L_{Wtot} dB), as a function of the airflow and pressure drop across the commissioning damper. By correcting L_{Wtot} with the correction factors from Table 20, the sound power level for each octave band ($L_W = L_{wtot} + K_{ok}$)can be obtained.

Table 20. Sound power level for commissioning damper SYST CRPc, Correction factor, K_{ok}

Size	Mid-frequency (Octave band) Hz							
CRPc 9	63	125	250	500	1000	2000	4000	8000
100	0	-2	-9	-15	-20	-25	-29	-35
125	0	-2	-11	-17	-22	-25	-29	-34
160	0	-2	-12	-16	-18	-21	-26	-36



Figur 34. Pressure relationship, air

p_i = nozzle pressure (Pa), read from Tables 3-10 and 12-19.

p_s = duct pressure (Pa) upstream of unit and commissioning damper

Δp_i = damper commissioning range, for CRPc 9, see the Diagram for each size.

Diagram 4. Commissioning range, SYST CRPc 9-100 damper

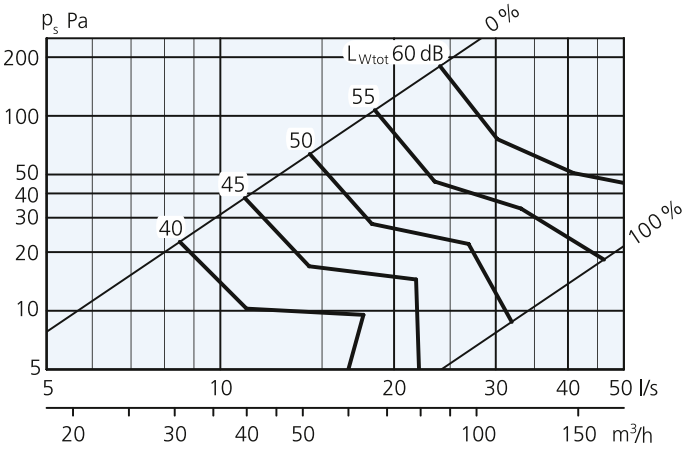


Diagram 5. Commissioning range, SYST CRPc 9-125 damper

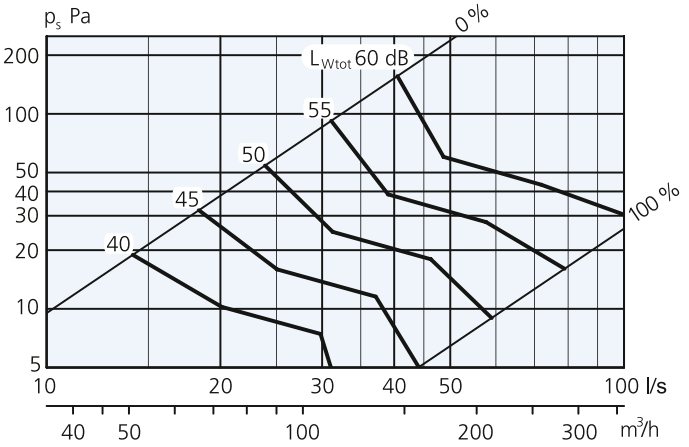
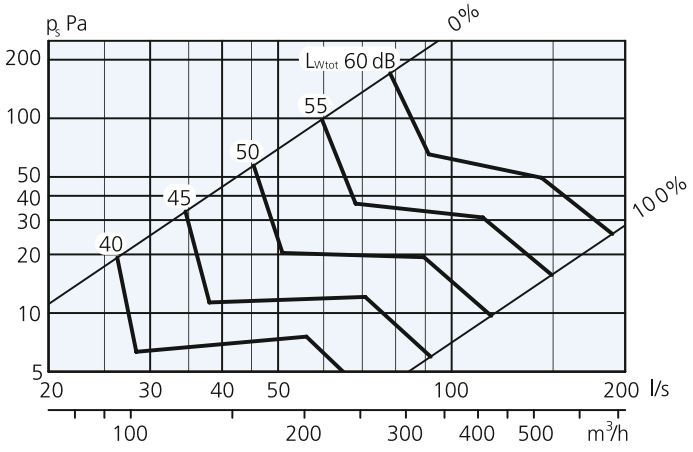


Diagram 6. Commissioning range, SYST CRPc 9-160 damper



Swegon reserves the right to alter specifications.

Dimensions

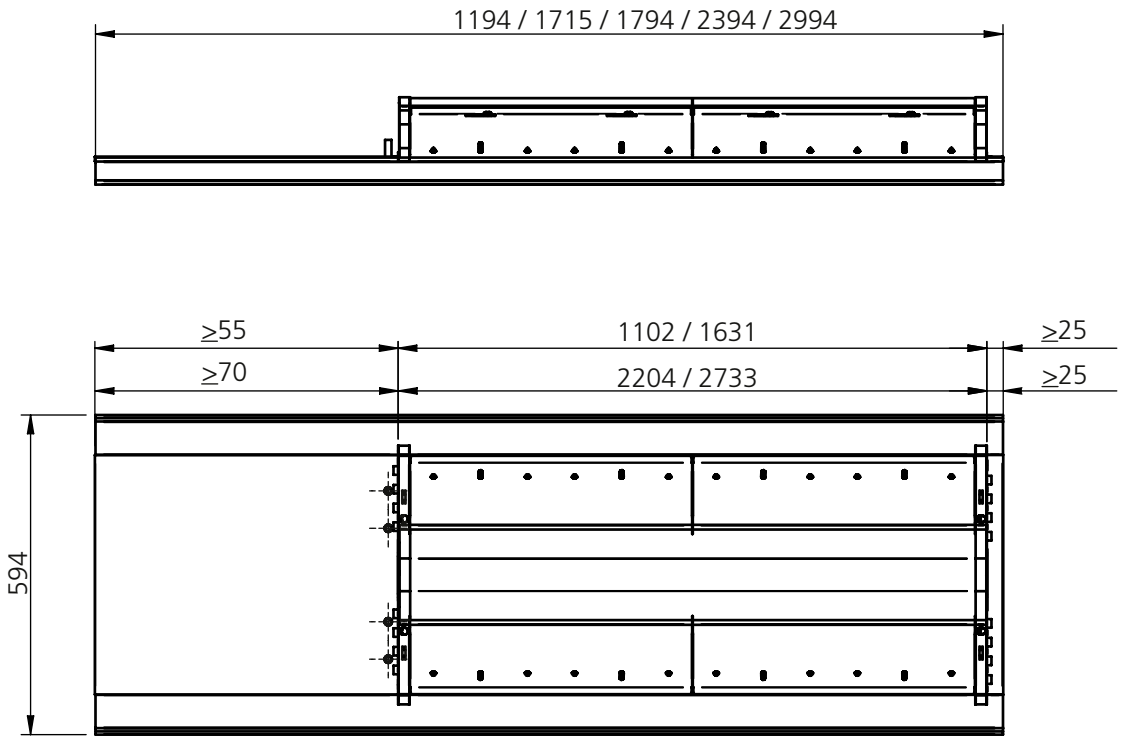


Figure 35. Dimensional drawing for the design module in a load carrying T-section grid system with 600 mm centre-to-centre – View from the side and from above

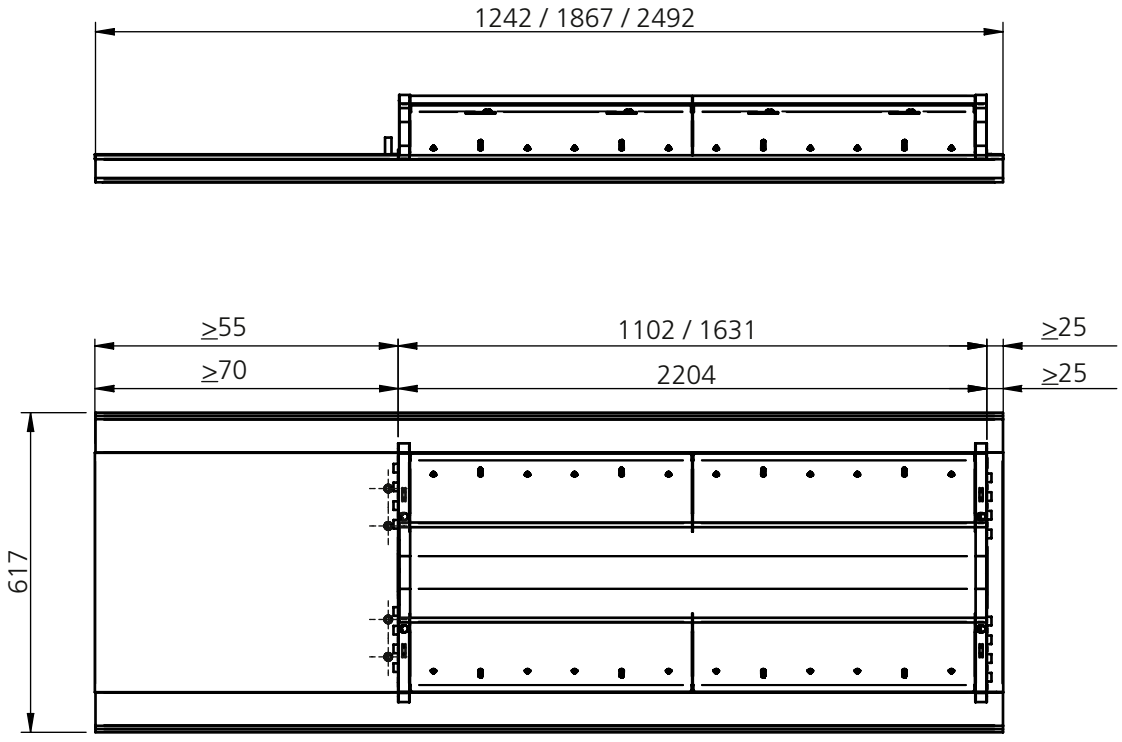


Figure 36. Dimensional drawing for the design module in a load carrying T-section grid system with 625 mm centre-to-centre – View from the side and from above

Dimensions

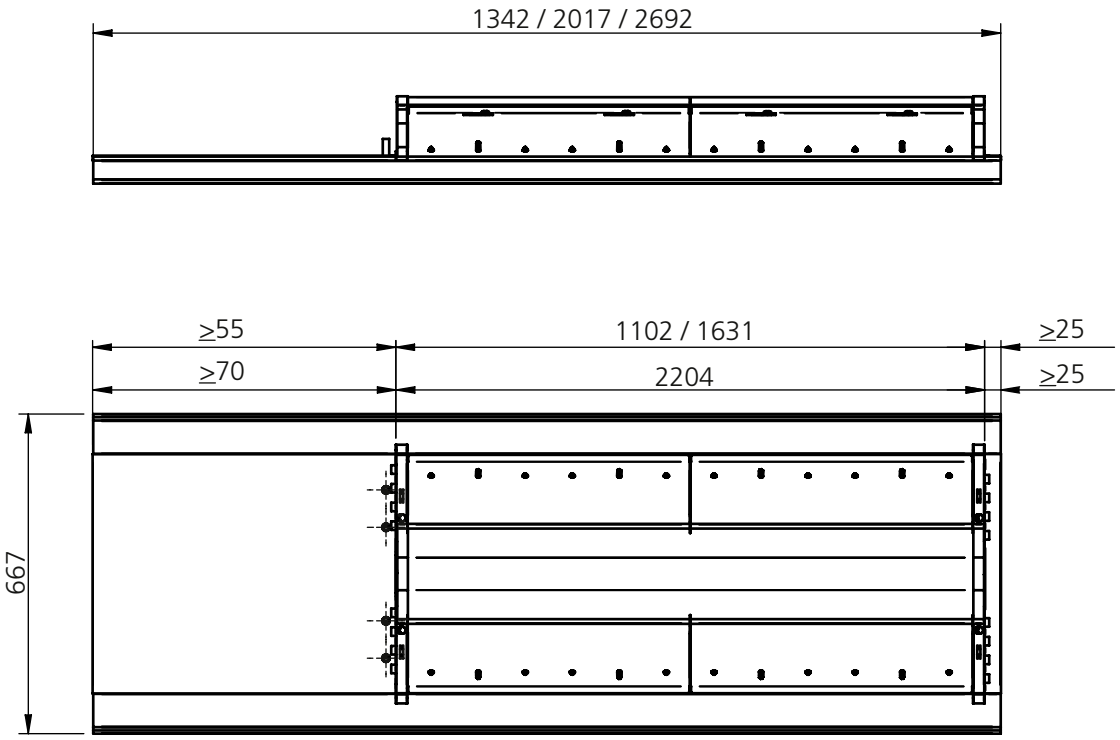


Figure 37. Dimensional drawing for the design module in a load carrying T-section grid system with 675 mm centre-to-centre – View from the side and from above

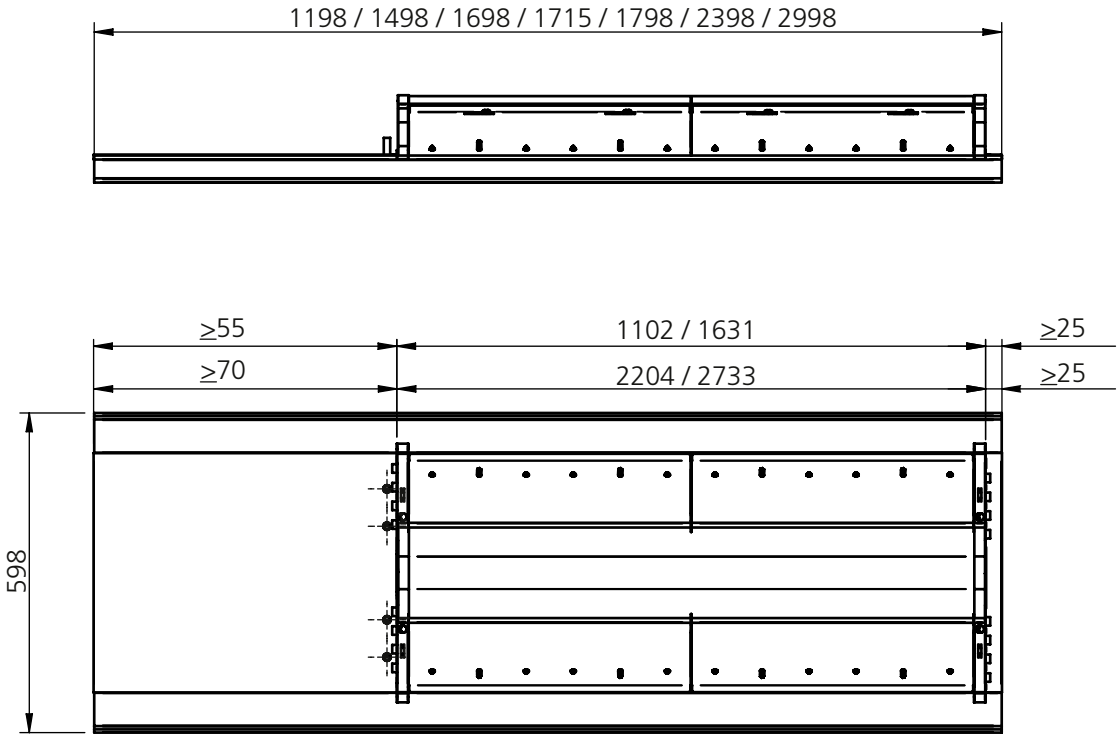


Figure 38. Dimensional drawing for the design module in a Clip-in ceiling system and sheet metal modules – View from the side and from above

Dimensions

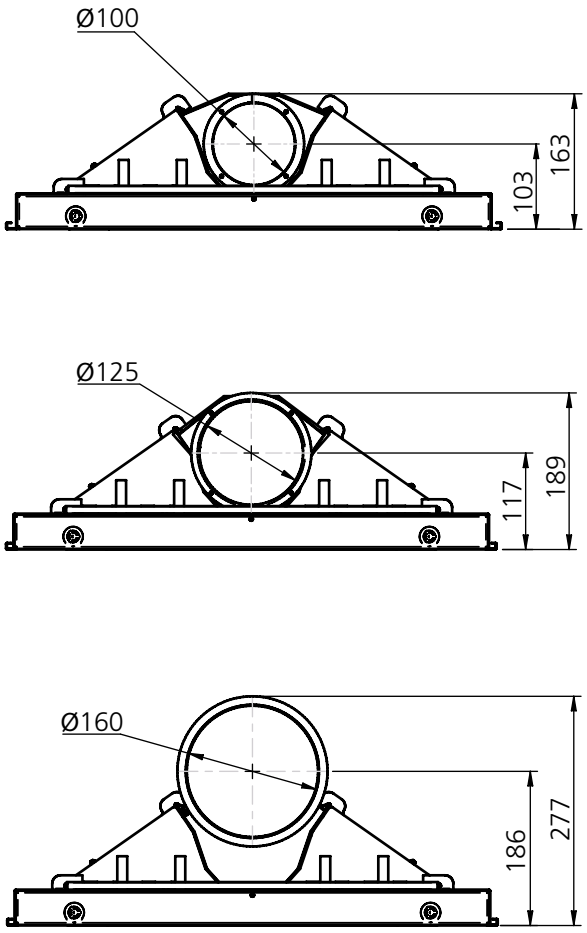


Figure 39. Dimensional drawing – air connection

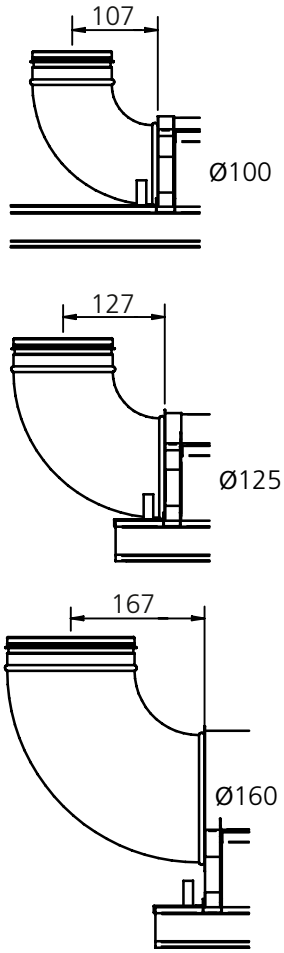


Figure 41. Dimensional drawing – vertical air connection with duct bend

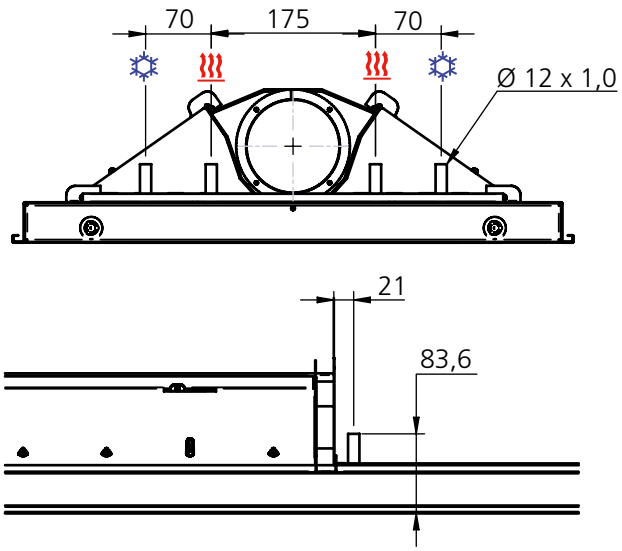


Figure 40. Dimensional drawing – water connections

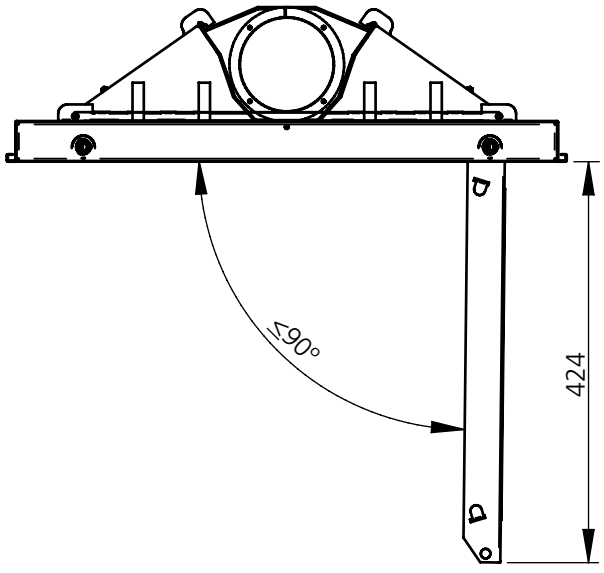


Figure 42. Dimensional drawing of hinged face plate

Dimensions (inches)

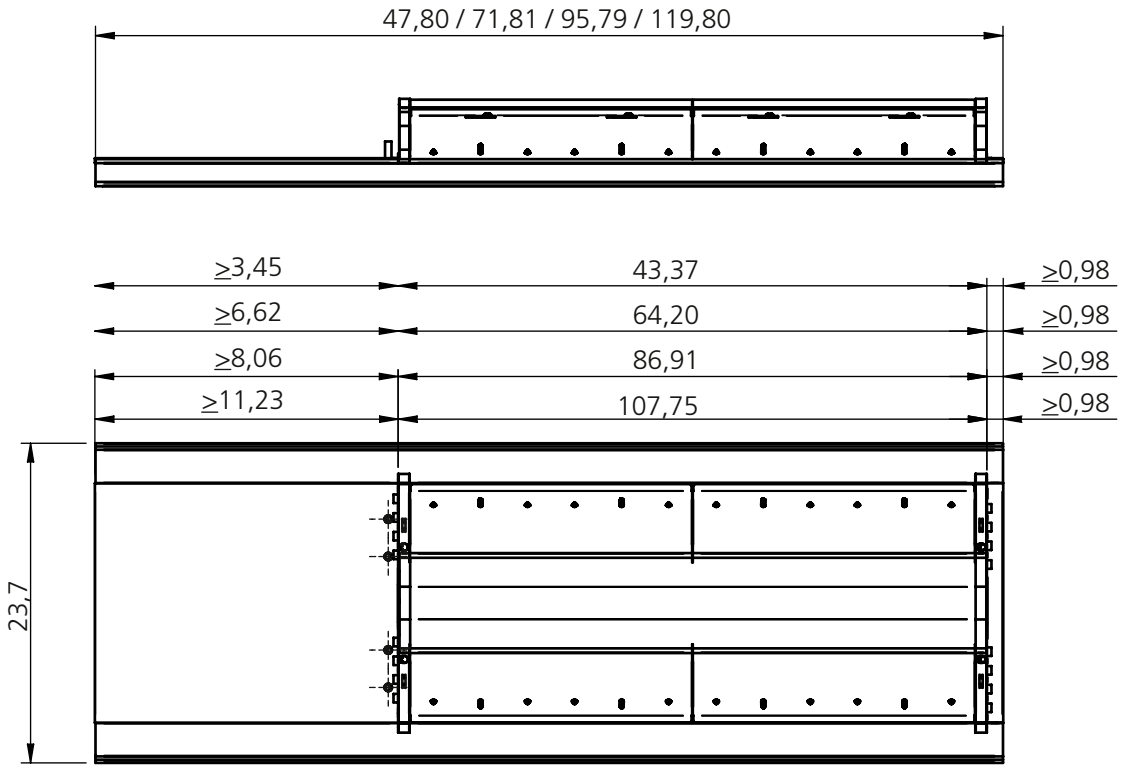


Figure 43. Dimensional drawing for the design module in a USA model – View from the side and from above

Dimensions (inches)

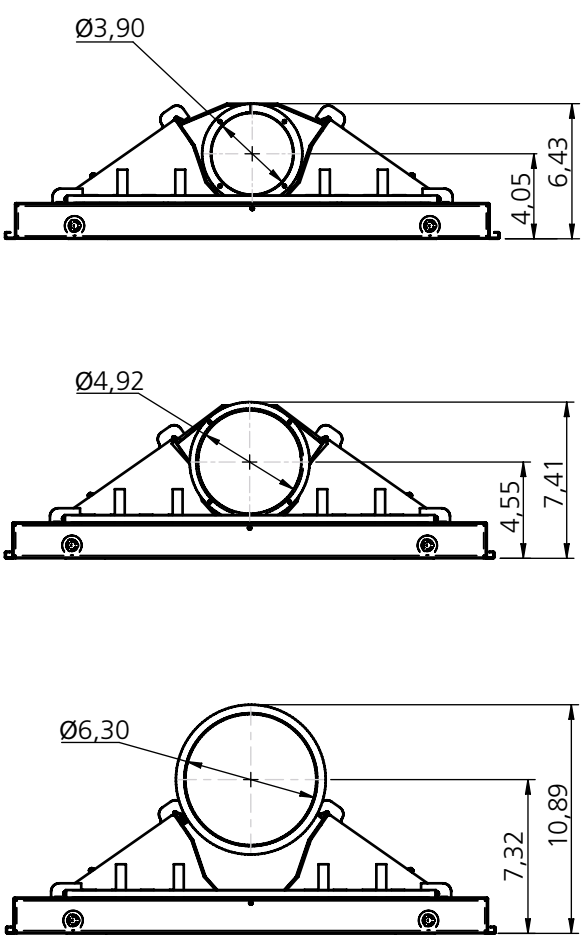


Figure 44. Dimensional drawing, USA model – air connection

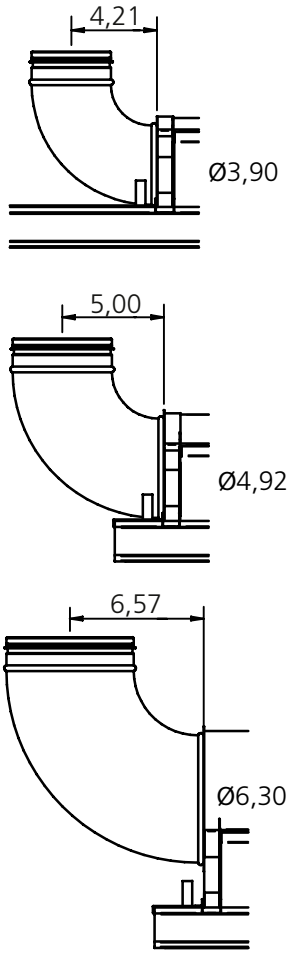


Figure 46. Dimensional drawing, USA model – vertical air connection

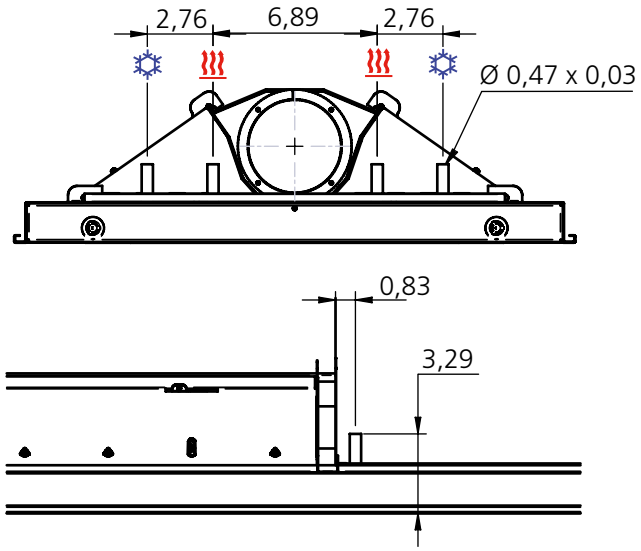


Figure 45. Dimensional drawing, USA model – water connections

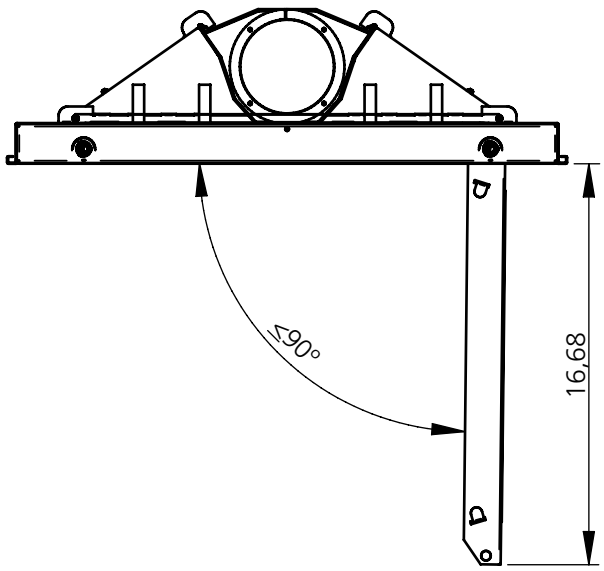


Figure 47. Examples of USA model - hinged face plate

Ordering key

Swegon's PACIFIC climate beam for integrated installation in false ceilings, for cooling, heating and ventilation

T-section grid systems with 600 mm centre-to-centre

PACIFIC	a	bbbb	cccc	594	ee	ff	ggg
Version							
Design module Length (mm): 1194, 1715, 1794, 2394, 2994							
Capacity module Length (mm): 1100, 1600, 2200, 2700							
Width (mm): 594							
B = Waterborne heating X1 = Electric heating 500 W X2 = Electric heating 1000 W							
Airflow variant: LF = Low flow MF = Medium flow HF = High flow							
Connection, air: 100, 125 and 160 (mm).							

T-section grid systems with 625 mm centre-to-centre

PACIFIC	a	bbbb	cccc	617	ee	ff	ggg
Version							
Design module Length (mm): 1242, 1867, 2492							
Capacity module Length (mm): 1100, 1600, 2200							
Width (mm): 617							
B = Waterborne heating X1 = Electric heating 500 W X2 = Electric heating 1000 W							
Airflow variant: LF = Low flow MF = Medium flow HF = High flow							
Connection, air: 100, 125 and 160 (mm).							

T-section grid systems with 675 mm centre-to-centre

PACIFIC	a	bbbb	cccc	667	ee	ff	ggg
Version							
Design module Length (mm): 1342, 2017, 2692							
Capacity module Length (mm): 1100, 1600, 2200							
Width (mm): 667							
B = Waterborne heating X1 = Electric heating 500 W X2 = Electric heating 1000 W							
Airflow variant: LF = Low flow MF = Medium flow HF = High flow							
Connection, air: 100, 125 and 160 (mm).							

T-section grid systems with 603 mm centre-to-centre

PACIFIC	a	bbbb	cccc	603	ee	ff	ggg
Version							
Design module Length: 1214, 1824, 2433, 3043 (mm) *47.80, 71.81, 95.79, 119.80 (inches)*							
Capacity module Length: 1100, 1600, 2200, 2700 (mm) *43.37, 64.20, 86.91, 107.75 (inches)*							
Width (mm): 603 (mm) *23.7 (inches)*							
B = Waterborne heating X1 = Electric heating 500 W X2 = Electric heating 1000 W							
Airflow variant: LF = Low flow MF = Medium flow HF = High flow							
Connection, air: 100, 125 and 160 (mm). *3.90, 4.92, 6.30 (inches)*							

Ordering key

Clip-in ceiling / sheet metal ceiling modules

PACIFIC	a	bbbb	cccc	598	ee	ff	ggg
Version							
Design module Length (mm): 1198, 1498, 1698, 1715, 1798, 2398, 2998							
Capacity module Length (mm): 1100, 1600, 2200, 2700							
Width (mm): 598							
B = Waterborne heating X1 = Electric heating 500 W X2 = Electric heating 1000 W							
Airflow variant: LF = Low flow MF = Medium flow HF = High flow							
Connection, air: 100, 125 och 160 (mm):							

Ordering examples

Example 1:

One PACIFIC climate beam for a T-section grid system with 625 mm centre-to-centre, a beam width of 617 mm. The length of the design module is 2492 mm and the length of the capacity module is 2200 mm.

The unit should be the medium airflow variant and have a 125 mm dia. connection.

Designation: PACIFIC a-2492-2200-617-B-MF-125

Example 2:

One PACIFIC climate beam for a T-section grid system with 600 mm centre-to-centre, a beam width of 594 mm. The length of the design module is 2394 mm and the client wants an inactive section and therefore selects a capacity module with a length of 1600 mm.

The unit should be the low airflow variant and have a 100 mm dia. connection.

Designation: PACIFIC a-2394-1600-594-B-LF-100

Swegon reserves the right to alter specifications.

Accessories

Connection piece, air – insertion joint	SYST AD1	aaa	
Dimension (mm): 100; 125 or 160			

Connection piece, air	SYST CA	aaa	90
Dimension (mm): 100; 125 or 160			
90° duct bend			

Commissioning damper	SYST CRPc 9	aaa
Dimension (mm): 100; 125 or 160		

Side connection kit, water	SYST CK1	aaa
Air connection: Ø 100/125 or 160		

Horizontal straight connection kit, water	SYST CK2

Venting nipple	SYST AR-12

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

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

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

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

Swegon reserves the right to alter specifications.

Specification text

Example of a specification text conforming to VVS AMA Standard.
KB XX

Swegon's PACIFIC climate beam for integrated installation in false ceilings, with the following functions:

- Cooling
- Heating, water
- Ventilation
- ADC comfort guarantee feature
- VariFlow for simple adjustment of the airflows
- Enclosed version for circulating air
- Cleanable
- Fixed measurement tapping with hose
- Easily removable face plate for access to coil
- Painted in standard shade of white (RAL 9010), gloss rating: 30±6%
- Fits standard T-section grid system with modular dim.: 600 mm. 24 mm T-profiled section
- Contractor demarcation at the connection points for water and air according to dimensional drawing.
- At the connection points, the pipework contractor connects to Ø12 mm plain pipe end (cooling) or 12 mm dia. plain pipe end (heating). The ventilation contractor connects the ducting to the beam across a Ø100 mm, Ø125 mm or Ø160 mm dia. connection piece.
- The pipework contractor fills, bleeds, tests the pressure and assumes responsibility for the design water flows reaching each branch of the system and the climate beam.
- The ventilation contractor adjusts the design airflows.

Size:

KB XX-1 PACIFIC a bbbb/cccc - ddd - ee - ff - gg xx st.

KB XX-2 PACIFIC a bbbb/cccc - ddd - ee - ff - gg xx st.

etc.

Accessories:

- Connection piece, air (insertion joint) SYST AD1-100 xx items
- Connection piece (90° duct bend), SYST CA 100-90 xx items
- Commissioning damper, SYST CRPc 9-100, xx items.
- Connection piece, air (insertion joint) SYST AD1-125 xx items
- Connection piece (90° duct bend), SYST CA 125-90 xx items
- Commissioning damper, SYST CRPc 9-125, xx items.
- Connection piece, air (insertion joint) SYST AD1-160 xx items
- Connection piece (90° duct bend), SYST CA 160-90 xx items
- Commissioning damper, SYST CRPc 9-160, xx items.
- Side connection kit, water, SYST CK1-160 xx items
- Horizontal connection kit, water, SYST CK2 xx items
- Venting nipple SYST AR-12 xx items
- Flexible connection hose, SYST FH F1 aaa - 12 xx items
- Flexible connection hose, SYST FH F20 aaa - 12 xx items
- Flexible connection hose, SYST FH F30 aaa - 12 xx items
- Assembly pies, SYST MS aaaa- b M8 xx items
- Control equipment, see separate product information in catalogue for waterborne climate systems or on Swegon's home page: www.swegon.com.

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