

PARASOL Zenith

Integrated comfort module



QUICK GUIDE

- High performance 4-way distribution comfort module with cooling, heating and ventilation
- Large span between the lowest and highest air flow
- Few variants serve many needs
- Optimised for low energy consumption
- Manages high air flow at low driving pressure
- Low noise level
- Easy installation on account of low weight, compact dimensions and optional air connections on short or long sides
- Stylish design with optional perforation pattern
- Fold-out coil as an optional extra when stringent cleaning demands are stipulated
- Quick bracket
- Can be integrated in the WISE system with the help of the factory mounted WISE IORE

Size	Variant		Supply air			Performance	
	Air connection	Pa*	l/s	m ³ /h	Total cooling capacity (W)**	Sound level (dB(A))	
1200	Ø160	50	20	72	763	<20	
1200	Ø160	50	40	144	1123	22	
1200	Ø160	50	60	216	1329	26	
1200	Ø160	75	20	72	835	21	
1200	Ø160	75	40	144	1243	25	
1200	Ø160	75	60	216	1482	28	
1800	Ø160	50	20	72	884	<20	
1800	Ø160	50	50	180	1463	24	
1800	Ø160	50	80	288	1732	31	
1800	Ø160	75	20	72	1002	21	
1800	Ø160	75	50	180	1613	27	
1800	Ø160	75	80	288	1958	34	

*Total pressure (Pa)

**Air: $\Delta T=7K$ / Water: $\Delta T_{\text{m}}=8.5K$, $q_v=0.07$ l/s, $t_{\text{a}}=14^{\circ}\text{C}$

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Advantages with PARASOL Zenith

The list below shows a few of the benefits enjoyed by the consultant, architect, installer and user

The Consultant appreciates

- Energy efficient product - high cooling capacity at low driving pressure
- Few variants with large application area – Large span regarding minimum to largest air flow
- Expanded product range – New: 1800 size
- High comfort irrespective of room placement – Easy to adapt the supply air rate and direction for optimal room comfort both initially and in the event of future changes to the floor plan
- Easy planning through alternative air connections – select the connect on the short or long side

The Architect appreciates

- Face plate always “flush”/level with the suspended ceiling
- Space efficient – Takes up very little ceiling space
- Different perforation to choose from
- Numerous options with different colours

The Installer appreciates

- Low weight – simpler and more ergonomic handling
- Compact dimensions - Can often be installed in existing roof system, without the need of dismantling this
- Possibility of air connection on the short side - faster installation with less material usage
- Easily accessible water connections - access with press coupling tool
- Easier commissioning - Select factory setting k-factor or adjustment on site

The User appreciates

- Low energy consumption - High capacity at low driving pressure
- High comfort - Double outlet provides improved Coanda effect even at low pressure
- 4-way air distribution ensures very good mixing
- ADC air deflector - Change the air flow pattern as required
- Very low sound levels

Technical description

Comfort module PARASOL Zenith

Our latest addition to the Parasol family have be developed, with as few variants as possible, to handle large variations in the air flow rate, cooling load and heating load. This is to enable tenant adaptations without the need of making extensive changes in the system as a whole.

The increased cooling capacity also enables a lower duct pressure or a higher cooling water temperature can be used, which saves energy and even improves room comfort further.

PARAGON Zenith is available in the following variants:

- Variant A: Supply air and waterborne cooling, (1200 and 1800)
- Variant B: Supply air, waterborne cooling and heating (1200)

Installation: Flush mounting for suspended ceilings

Range of Application

Parasol Zenith is ideal for use as a standard application in such premises as:

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

Function

Parasol Zenith is a 4-way air discharge comfort module with induction function. Exactly as in a climate beam, the supply air is used to operate the cooling and heating function of a central air handling unit and therefore does not include an integrated fan or other moving parts. This gives very quiet operation and minimal maintenance requirements. Unlike a 2-way air discharge climate beam, air distribution to the room occurs from all 4 sides of the unit, which means as large areas of the ceiling as possible are used to spread the air, thus ensuring comfort in the occupied zone.

Market-based module dimensions

The order range includes module dimensions to fit the standardised ceiling measurement c-c 600, 625 and 675 mm. In addition, there is a mounting frame for drywall ceilings and ceiling solutions of the clip-in-type, for example, Dampa and FineLine. In order to guarantee a good fit in T-bar systems, we recommend T sections with a width of 24 mm.



Figure 1. Product image (PARASOL Zenith 1200)

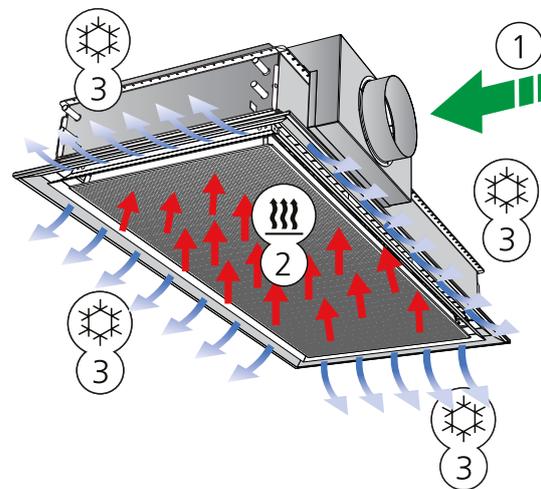


Figure 2. Variant A: Cooling and supply air function
 1 = Primary air
 2 = Induced room air
 3 = Primary air mixed with chilled room air

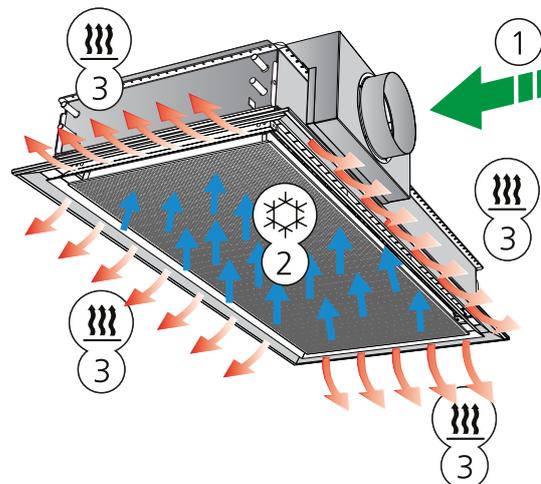


Figure 3. Variant B: Heating and supply air function (Heating only 1200 module and also including cooling function)
 1 = Primary air
 2 = Induced room air
 3 = Primary air mixed with heated room air

Induction principle

Primary air (A) from the air handling unit provides Zenith PARASOL with supply air via a supply air duct and builds up positive pressure in the unit's plenary.

The supply air is forced out at high speed through small nozzles (B). The high speed means that the surrounding air is drawn in and mixed with supply air, which generates negative pressure above the unit's integrated heat exchanger (C). Room air (D) is continuously drawn up from the room through the water-based heat exchanger where, if necessary, it is cooled or heated before it mixes with the supply air.

The mixed air is then distributed to the room via aerodynamically designed outlets. The outlets are designed to ensure that the distributed air follows the suspended ceiling by utilising the so-called Coanda effect (E). The supplied air is then mixed with additional room air, which reduces air velocity and lessening the temperature difference before it reaches the occupied zone.

The proportion of recirculated room air drawn through the heat exchanger is typically about 3-5 times the proportion of primary air, i.e. if 20 l/s supply air comes from the air handling unit, then approximately 60-100 l/s room air will pass through the exchanger and be tempered.

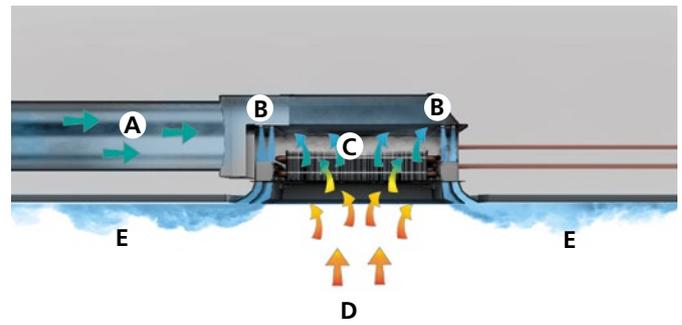


Figure 4. Induction principle in Parasol Zenith

Condensation-free cooling

Parasol Zenith has been developed to work condensation-free and therefore requires no drainage system or filter. Normally inlet temperatures between 14-16 °C are used for the cooling water.

High comfort – today and tomorrow.

A good indoor climate is characterized by good air quality and the correct room temperature without draughts and noise. Different requirements are made on air flow, cooling capacity and heating capacity depending on the type of building in question and how this will be used. If you are sure that the initial floor plan will never be changed you do not need to take into account future changes. However, if it is likely that the floor plan will change, you need to take this into account at an early stage to minimise the high costs of subsequent retrofitting. No matter which scenario you imagine, Parasol Zenith gives you the possibility to find the right solution.

Large operation range

The work area related to the smallest to the largest air flow in one and the same product is very large for Parasol Zenith. In practice this means that one and the same product can handle a variety of room types, by being adjusted as required. The large work area is made possible by Parasol Zenith being equipped with dual nozzle rows and thus more available nozzles. This also gives the following advantages:

- Individually adjustable air flow on all four sides of the unit
 - o Move the air where you want
- Possible to maintain the same k-factor in different distribution patterns
 - o No need to readjust the damper
- Nozzle setting of the k-factor (small step)
- Fewer variants
 - o One Parasol Zenith serves many needs

In order to clarify the large work area of Parasol Zenith we can compare the curves for cooling capacity/air flow with the cooling requirements for five different types of rooms:

- A Individual office room (1 person)
- B Office for customer visits (3 people)
- C Conference room (4 people)
- D Conference room (6 people)
- E Conference room (8 people)

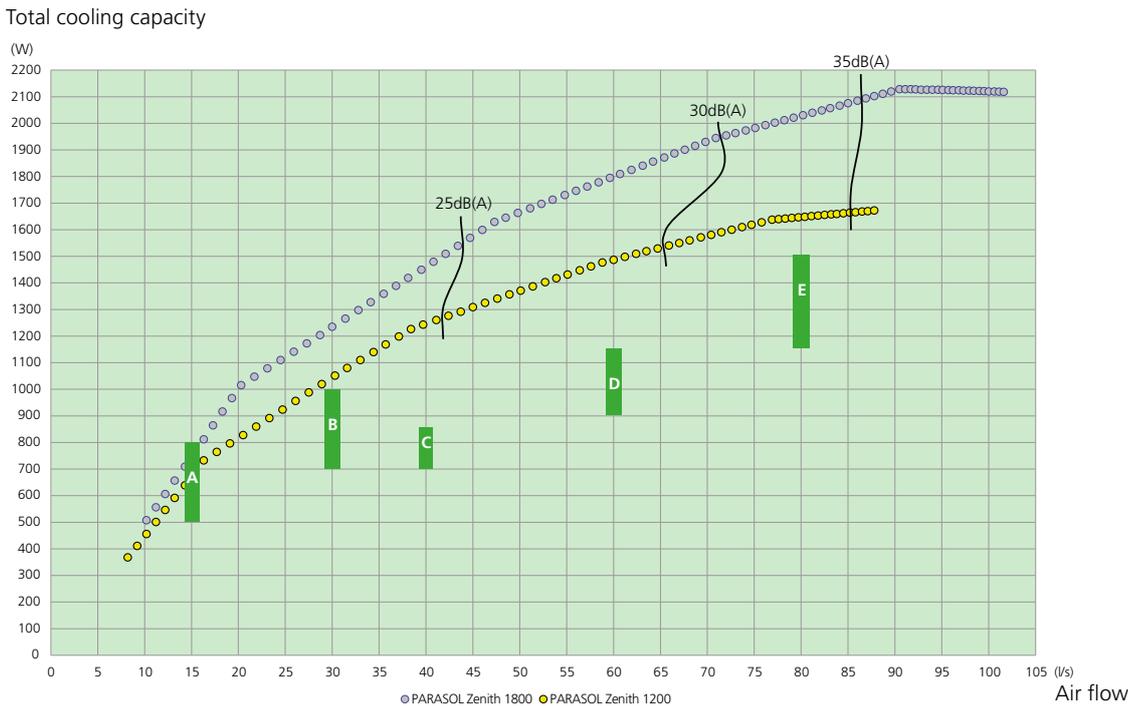
The individual office and the office for customer visits are assumed to be placed at the façade, while the conference room is assumed to be placed on the floor’s inner zone.

In diagram 1, we can clearly see that the same product can handle all types of rooms. All that is required is that the nozzle strips are adjusted to open or close the nozzles as needed.

You can also see that the products give a higher cooling capacity than the demand. This allows several options:

- Use the full capacity to quickly correct the deviations in room temperature
- Lower the driving pressure in the supply air duct and save fan energy
- Increase the supply flow temperature of the cooling water and save energy (chiller)

Diagram 1. Parasol Zenith capacity range (Total pressure drop 75Pa)



<p>A Individual office room, 1 person 12 m² 15 l/s 500-800 W cooling load</p>	<p>C Conference room, 4 people 8 m² 40 l/s 700-850 W cooling load</p>	<p>E Conference room, 8 people 12 m² 80 l/s 1150-1500 W cooling load</p>
<p>B Office for customer visits, 3 people 12 m² 30 l/s 700-1000 W cooling load</p>	<p>D Conference room, 6 people 10 m² 60 l/s 900-1150 W cooling load</p>	<p>Prerequisites: Supply air: $\Delta P_i = 75 \text{ Pa}$; $\Delta T_i = 7\text{K}$ Cooling water: $t_{in} = 14^\circ\text{C}$; $t_{out} = 17^\circ\text{C}$ Room: $t_{room} = 24^\circ\text{C}$</p>

Comfort guarantee

As previously described, Parasol Zenith has 4-way air distribution, which gives low air velocities in the occupied zone. Distributing the cooled air over a large ceiling area creates the low air velocity. The comfort module's closed design with a circulation opening for return air in the face plate of the module also contributes to its advantageous mixing performance.

With its dual nozzle rows in combination with the aerodynamically designed double outlets PARASOL Zenith distributes the air with very good adhesion to the suspended ceiling (Coanda effect) even at low driving pressure. The duct pressure can then, depending on air flow rate, be lowered down to 20 Pa. This saves fan energy while the noise level is kept to an absolute minimum.



Figure 5. Double outlets.

All the comfort modules contain 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 nine 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 great flexibility and can be adjusted without having to affect the system as a whole. The sound level and the static pressure are not at all affected by the ADC.

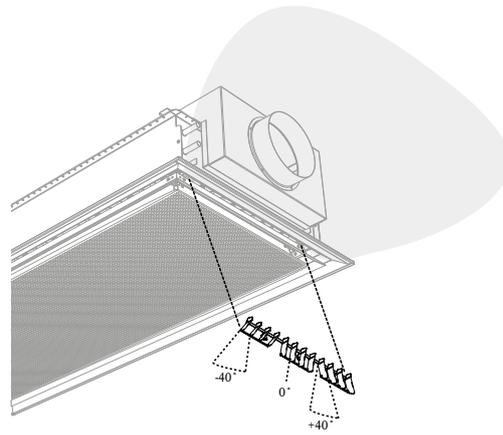


Figure 6. Possible settings for the ADC, Fan-shape

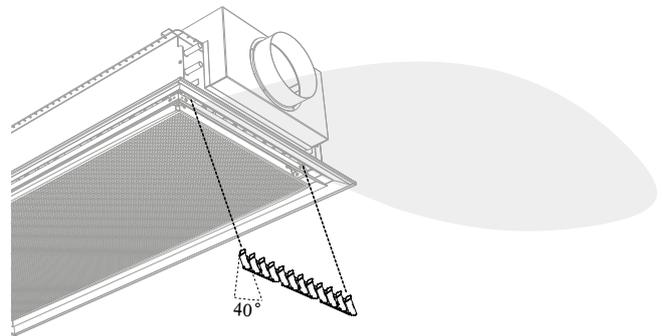


Figure 7. Possible settings for the ADC, X-shape

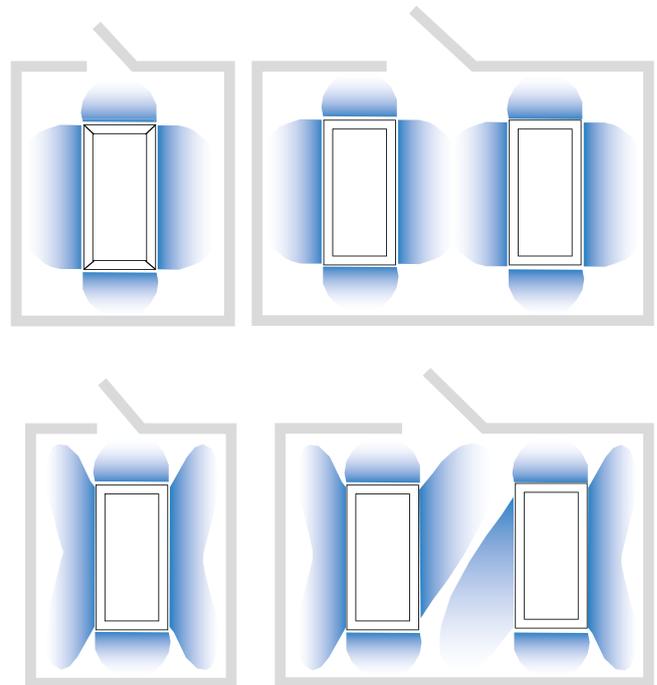


Figure 8. Parasol Zenith with examples of different ADC settings

Change of layout - Example

Figure 9 shows an example of the floor plan of a building with offices and a conference room. Assume it is arranged as illustrated and that the highlighted rooms were originally used as a group rooms or small conference rooms. New demands on the premises in the form of alternative usage or other activities may mean that some of the rooms need to be partitioned off as in figure 10, for example, to create small individual offices. Adjustable air flow through adjustable nozzles, high k-factor range, air deflectors ADC and 4-way air distribution mean that no new installations are needed, but the same products can be used with other settings.

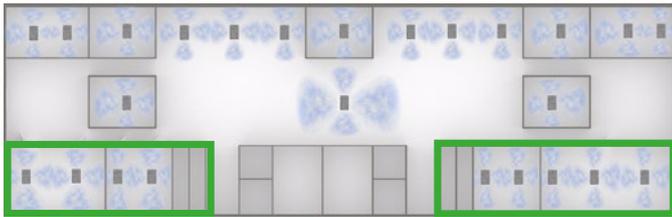


Figure 9.

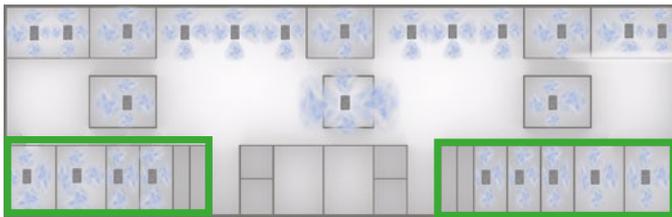


Figure 10.

The large working area permits great opportunities to control the air flow rate individually on all four sides of the Parasol Zenith. At 80 Pa total pressure, a 1200-size can supply anywhere from 0 to 11 l/s on one short side and between 0-34 l/s on one long side (Figure 11). A 1800-size can supply anywhere from 0 to 11 l/s per short side and between 0 and a full 42 l/s on one long side (Figure 12).

The direction and rate of the air flow can be easily optimised using the Swegon ProSelect sizing program available at www.swegon.com. You can then easily export CAD models with the current settings from ProSelect to MagiCAD or other CAD programs.

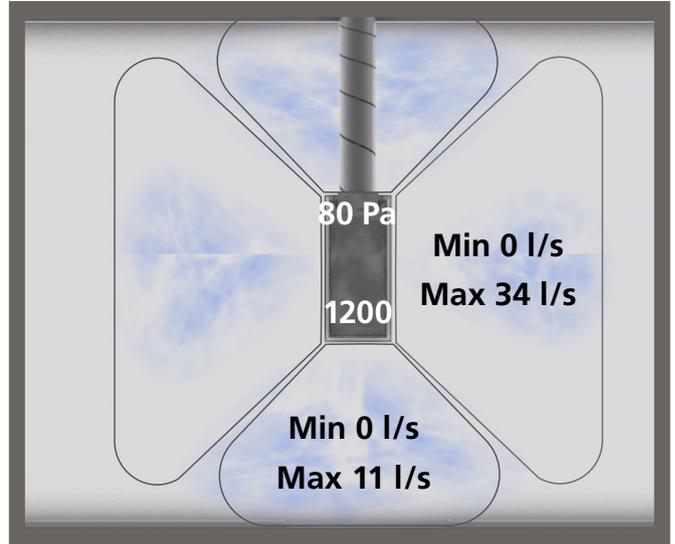


Figure 11. Adjustable air flow per side - 1200 size at 80 Pa total pressure.

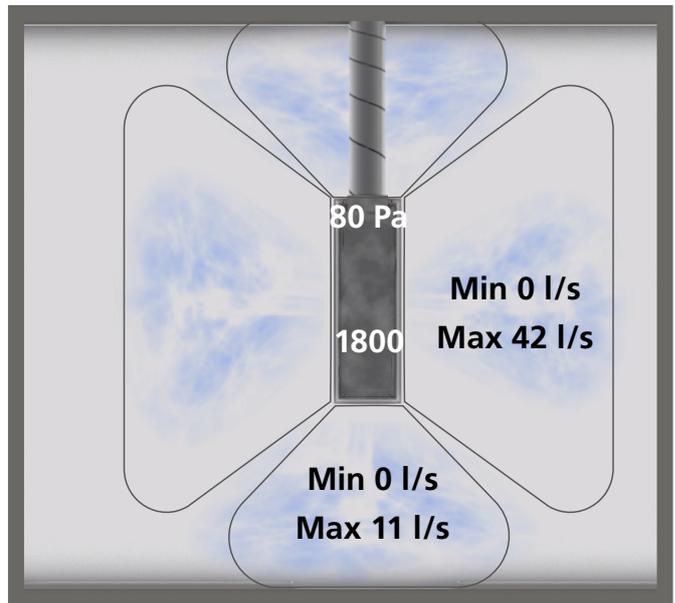


Figure 12. Adjustable air flow per side - 1800 size at 80 Pa total pressure.

Design

The face plate of the Parasol Zenith is always “flush”, i.e. always in line with the suspended ceiling which gives a stylish and discreet installation. The double outlets means that there is no need to lower the face plate for high air flow rates, maximum capacity (induction) is still achieved. The face plate on PARASOL Zenith is available with four different perforation patterns that make it easily adaptable to suit different types of ceiling components, e.g. light fittings and extract air diffusers that share the surface of a suspended ceiling. A suspended ceiling containing different types of perforation patterns can otherwise be experienced as disturbing to the eye. As standard, the face plate has round perforations arranged in a square pattern. Other patterns are of course available on special order. For further details, get in touch with your nearest Swegon representative.



Figure 13. Standard face plate Circular holes arranged in a square pattern



Figure 14. PD face plate Circular holes arranged in a square pattern with a graduated border



Figure 15. PE face plate Square holes arranged in a square pattern with a graduated border



Figure 16. PX face plate Circular holes arranged in a square pattern - field perforated rectangular paths.

Easy installation

PARASOL Zenith is built on a platform with very compact dimensions. In many cases the design permits installation in the existing T-bar system without the need of dismantling, provided that there is at least 300 mm of space between the suspended ceiling and the joists.

The slim design and lightweight result in simpler handling, especially when handling the products on the site, which gives less handling damage and a better working environment. Parasol Zenith's compact units fit most common modular dimensions and fit most suspended ceiling system on the market.

As standard the units include four mounting brackets.

These are adjustable +/- 20 mm in both directions and in doing so create the adjustment range normally required during installation.



Figure 17. Installation in existing T-bar system

Rooms with elevated hygiene demands

PARASOL Zenith is available as a variant with a fold-out coil for easy access to the complete heat exchanger.

A dust-free environment is especially important in rooms with elevated hygiene demands.

Over time large amounts of room air pass through Parasol Zenith's coil (heat exchanger). Dust particles, which fasten on the coil, not only result in less capacity, but also fail to comply with the hygiene requirements that apply to the room.

Parasol Zenith has, as an option, the possibility of fold-out coils to meet these requirements.

In addition to normal cleaning, by wiping off dust from the white painted surfaces exactly as you clean other surfaces in the room, the option of more thorough cleaning is now possible.

1. It is recommended to vacuum clean the coil several times a year. More frequently in a room with a lot of textiles and a high rate of air change. The face plate is opened or dismantled to gain access to the coil, see figure 18.
2. In environments with elevated hygiene demands additional cleaning of the comfort module may be a requirement. The use of flexible connection hoses and the possibility to fold out the coil permits cleaning of the top of the coil in these instances, see figure 19.



Figure 18. Removing the face plate to access the coil



Figure 19. Removing the face plate and folding out the coil for accurate cleaning in the event of high hygiene requirements.

Note! requires the product to be ordered with the accessory, fold-out coil, and that flexible connection hoses are used on the water side.

Alternative air connections

To simplify the duct installation and reduce the number of duct bends gives several advantages. Installation time is shorter and the cost of materials decreases while the pressure drop and noise generation are also reduced. Therefore, Parasol Zenith is equipped with alternative air connections (Figure 23). You can choose between the air connection on either the long side or the brand new option to connect on any short side. Installations frequently appear as in figure 20. Straight ducts are of course always preferable.

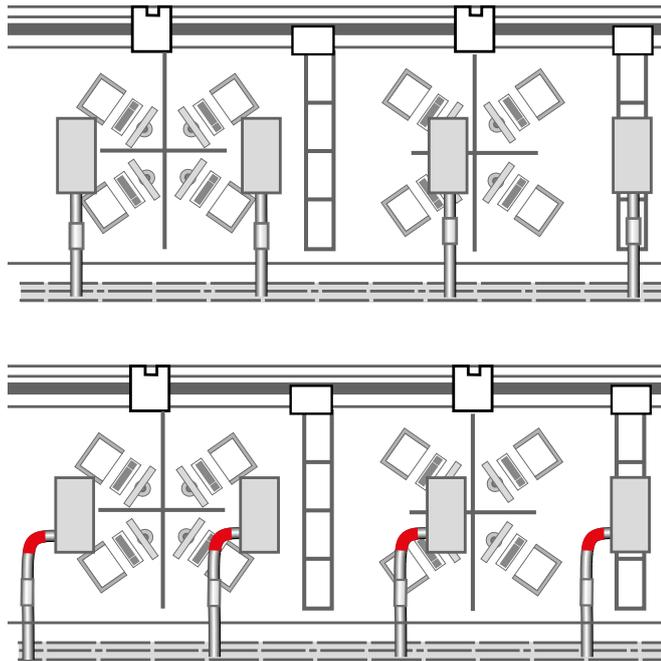


Figure 20. Installation example. Straight air connection, alternative with 90° bend.

Alternative air connections

The air connection on the short side (1 and 3)
Air connections on the long side (2 and 4)

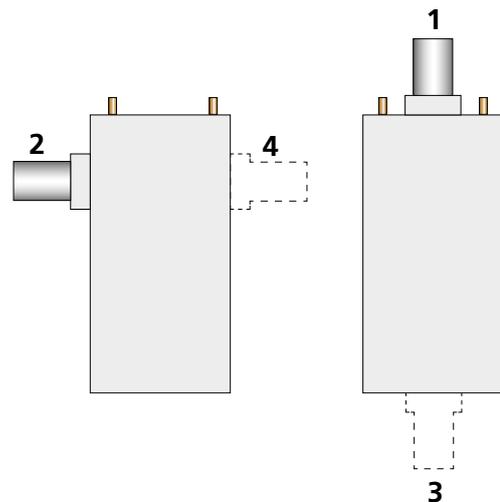


Figure 23. Alternative air connections

Easily accessible water connections

The water pipes are very easily accessible, which facilitates connection, particularly if e.g. press couplings and associated tools are used.

This saves installation time and simplifies a safe water connection.

The pipes are placed in a standardised fashion, which means irrespective of product the cooling and possibly heating pipes are always positioned in the same way, which facilitates installation

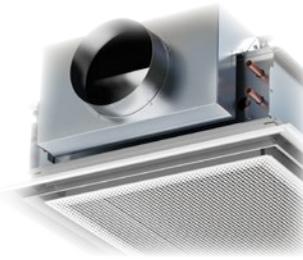


Figure 21. Air connection on the product's short side

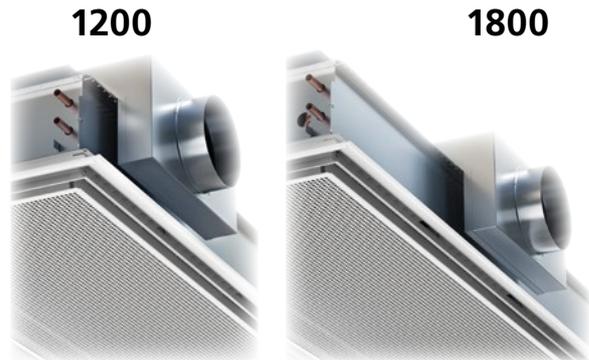


Figure 22. Air connection on the product's long side.

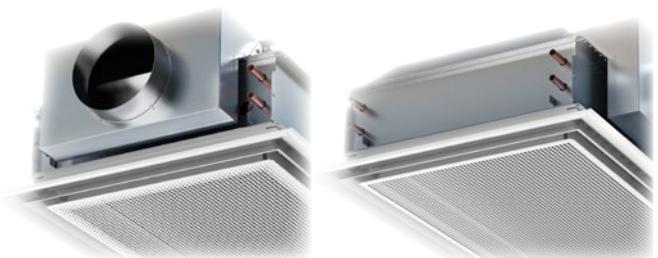


Figure 24. Parasol Zenith with short-side connection and long side connection. Irrespective of the connection, the water connection is placed in the same easily accessible position.

Installation - Details

Suspension

PARASOL Zenith has four mounting brackets for suspension and are installed using one threaded drop rod in each mounting bracket (Figure 26). A double threaded rod with a thread lock should be used if there is substantial distance between the overhead slab and the unit. A 200 mm threaded drop rod is used for surface mounting. Threaded drop rods and assembly fitting SYST MS M8 (Figure 25) are ordered separately.

For installation in an existing T-bar system, the product is stabilised by the T-bar system and in this case it is sufficient to suspend the product from two brackets (diagonal).

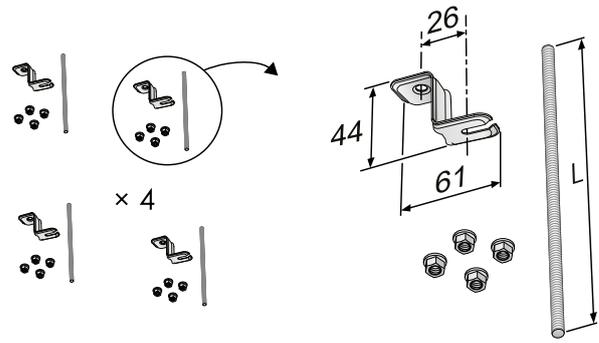


Figure 25. Assembly piece SYST MS M8-1, ceiling mount and threaded rod

Quick bracket

There is now also the PARASOL Z QUICK SUSPENSION KIT, consisting of 2 fixed brackets to suspend Parasol Zenith.

The fixed brackets are fastened to the ceiling, after which the product can be pushed into place without the use of tools. The brackets also feature an integrated fine adjustment of approx. 50 mm in height. (Figure 27).

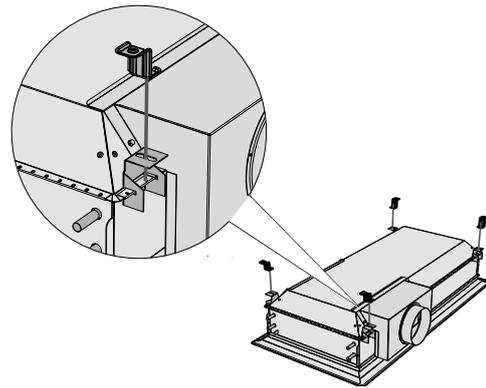


Figure 26. Suspension in four brackets with SYST MS M8

Centring kit

The kit consists of 6 centring rails that can be used to centre the product in specific suspended ceiling systems. (Figure 28)

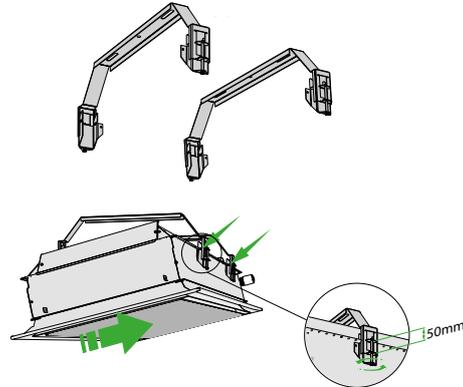


Figure 27. Suspension with quick brackets, PARASOL Z QUICK SUSPENSION KIT

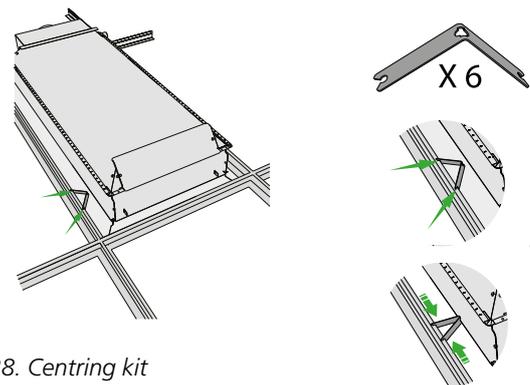


Figure 28. Centring kit SYST CENTRINGKIT PARASOL

Connection sizes

Water – cooling* plain pipe ends Cu Ø 12 x 1.0 mm

Water – heating* plain pipe ends Cu Ø 12 x 1.0 mm

*Alternatively, external threads DN ½" (applies to factory-fitted valves)

Air connection sleeve Ø 125 or Ø 160 mm

To connect the air

The air connection sleeve is supplied mounted on the side of the product you choose, (Figure 29).

For selection of the short side connection: Position 1 or 3

For selection of the long side connection: Position 2 or 4

The alternative connection on the opposite side is then closed with a tightly fitting cover. The sleeve can be removed if necessary and switched with the cover if at a late stage you choose to connect on the opposite page.

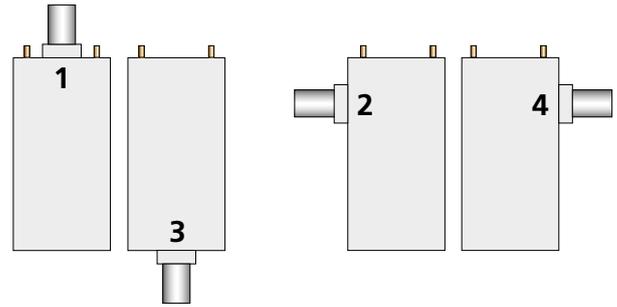


Figure 29. Alternative air connections
Position 1 and 3 = Short side connection
Position 2 and 4 = Long side connection

Connecting the water

Connect the water pipes using push-on, compression ring or press couplings. Note that compression ring couplings and press couplings require support sleeves inside the pipes.

Do not use solder couplings to connect the water pipes.

High temperatures can damage the unit's existing soldered joints.

Flexible connection hoses for water may be ordered separately.

Technical data

Recommended limit values

Pressure levels

Coil working pressure, max. 1600 kPa *

Coil test pressure, max. 2400 kPa *

* *Applicable without control equipment mounted*

Nozzle pressure 20-200 Pa

Recommended lowest nozzle pressure, cooling	Air flow	Nozzle pressure
	(l/s)	(pa)
	<10	50
	10-30	25
	>30	20

Recommended lowest nozzle pressure if coil heat is used. 70 Pa

Water flow

Ensures evacuation of any air pockets in the system.

Cooling water, min. 0.030 l/s

Heating water (1200), min. 0.013 l/s

Temperature differentials

Cooling water, temperature increase 2–5 K

Heating water, drop in temperature 4–10 K

Temperature differences are always expressed in Kelvin (K).

Supply flow temperature

Cooling water **

Heating water, max. 60 °C

** *Cooling water must always be kept at a level that ensures that no condensation is formed.*

Cooling

Table 1 – data – cooling. Sizing Guide for Parasol Zenith at 50 Pa

Unit mm	Nozzle setting	Air flow		Sound level dB(A)	Cooling capacity of primary air at ΔT_1 (K)				Cooling capacity, water at ΔT_{mk} (K)					Pressure drop constant air k_{pl}	
		l/s	m ³ /h		6	8	10	12	6	7	8	9	10		
1200 Ø125	1	13	48	20	95	126	158	189	*	300	356	412	468	524	1,89
	2	30	107	20	214	285	356	428	*	451	548	647	749	845	4,54
	3	43	153	28	306	408	510	612	*	456	551	647	746	840	7,20
	4	52	186	33	372	496	620	745	*	435	522	610	700	790	9,86
	5	56	203	34	406	541	677	812	*	403	485	569	655	741	11,68
1200 Ø160	1	13	48	20	96	128	160	192	*	305	362	419	476	533	1,89
	2	31	113	20	226	301	377	452	*	483	586	691	798	894	4,54
	3	48	173	23	346	461	576	691	*	536	645	756	860	960	7,20
	4	63	226	27	452	603	754	904	*	554	663	774	875	974	9,86
	5	72	258	29	516	688	860	1032	*	532	636	742	842	937	11,68
1800 Ø160	1	17	60	20	120	159	199	239	*	401	490	581	673	767	2,36
	2	39	139	21	278	371	463	556	*	665	803	931	1059	1189	5,68
	3	58	208	24	417	556	695	834	*	742	886	1027	1169	1312	9,00
	4	74	266	29	532	709	887	1064	*	795	936	1078	1220	1363	12,32
	5	83	298	31	597	796	995	1194	*	713	854	988	1125	1262	14,60

Table 2 – data – cooling. Sizing Guide for Parasol Zenith at 75 Pa

Unit mm	Nozzle setting	Air flow		Sound level dB(A)	Cooling capacity of pri- mary air at ΔT_1 (K)				Cooling capacity, water at ΔT_{mk} (K)					Pressure drop constant air k_{pl}	
		l/s	m ³ /h		6	8	10	12	6	7	8	9	10		
1200 Ø125	1	13	48	20	95	126	158	189	*	300	356	412	468	524	1,89
	2	30	107	20	214	285	356	428	*	451	548	647	749	845	4,54
	3	43	153	28	306	408	510	612	*	456	551	647	746	840	7,20
	4	52	186	33	372	496	620	745	*	435	522	610	700	790	9,86
	5	56	203	34	406	541	677	812	*	403	485	569	655	741	11,68
1200 Ø160	1	16	59	21	117	156	196	235	*	397	475	555	636	718	1,89
	2	38	138	25	276	369	461	553	*	604	728	848	961	1075	4,54
	3	59	212	28	423	564	706	847	*	672	804	923	1043	1162	7,20
	4	77	277	33	554	738	923	1107	*	683	814	933	1051	1170	9,86
	5	88	316	36	632	843	1054	1264	*	645	768	880	990	1099	11,68
1800 Ø160	1	20	73	22	146	195	244	292	*	541	662	788	902	1018	2,36
	2	47	170	26	341	454	568	681	*	846	999	1154	1310	1467	5,68
	3	71	255	29	510	681	851	1021	*	917	1088	1262	1437	1613	9,00
	4	90	326	36	652	869	1086	1303	**	886	1067	1233	1400	1569	12,32
	5	102	366	38	732	975	1219	1463	**	805	975	1138	1294	1452	14,60

* Locked ΔT 3°C on the water side. Temperature inlet flow +14°C, return flow +17°C.

** Locked ΔT 4°C on the water side. Temperature inlet flow +14°C, return flow +18°C.

The specified sound level applies to straight connection without damper or with fully open damper. Room attenuation = 4 dB

Table 3 – Data – Cooling. Sizing Guide for Parasol Zenith at 100 Pa

Unit mm	Nozzle setting	Air flow		Sound level dB(A)	Cooling capacity of primary air at ΔT_1 (K)				Cooling capacity, water at ΔT_{mk} (K)					Pressure drop constant air k_{pl}	
		l/s	m ³ /h		6	8	10	12	6	7	8	9	10		
1200 Ø125	1	19	67	25	134	179	223	268	*	459	553	648	745	837	1,89
	2	42	151	30	302	403	503	604	*	657	791	912	1033	1154	4,54
	3	60	216	39	433	577	721	865	*	687	819	941	1063	1185	7,2
	4	73	264	45	527	703	878	1054	*	652	779	895	1009	1122	9,86
	5	80	287	45	575	766	958	1149	*	591	705	817	920	1022	11,68
1200 Ø160	1	19	68	25	135	180	226	271	*	464	559	656	754	846	1,89
	2	44	160	28	320	426	533	639	*	691	827	952	1078	1205	4,54
	3	68	244	31	489	652	815	978	*	771	907	1040	1174	1308	7,20
	4	89	319	37	639	852	1064	1277	*	777	912	1045	1178	1311	9,86
	5	101	365	41	730	973	1217	1460	*	727	855	975	1095	1215	11,68
1800 Ø160	1	23	84	26	168	225	281	337	*	644	790	924	1060	1199	2,36
	2	55	197	29	393	524	655	786	*	967	1141	1316	1491	1668	5,68
	3	82	295	33	590	786	983	1179	*	1040	1234	1431	1630	1796	9,00
	4	104	376	41	752	1003	1254	1505	**	998	1189	1375	1564	1754	12,32
	5	117	422	43	845	1126	1408	1689	**	916	1101	1274	1449	1624	14,60

* Locked ΔT 3°C on the water side. Temperature inlet flow +14°C, return flow +17°C.

** Locked ΔT 4°C on the water side. Temperature inlet flow +14°C, return flow +18°C.

The specified sound level applies to straight connection without damper or with fully open damper. Room attenuation = 4 dB

Table 4. Cooling capacity for natural convection

Unit (mm)	Cooling capacity (W) for temperature difference, room - water ΔT_{mk} (K)						
	6	7	8	9	10	11	12
PARASOL Zenith 1200	69	83	97	111	125	141	155
PARASOL Zenith 1800	89	106	123	143	160	179	199

Reported cooling capacities apply at a water flow of 0.063 l/s.

Table 5. Pressure drop constant - water, K_{pk}

Unit (mm)	Function	
	A2	B2
	k_{pk} cooling*	k_{pk} cooling*
PARASOL Zenith 1200	0,0161	0,0186
PARASOL Zenith 1800	0,0133	-

A2 = Cooling and supply air, serial connected double row coil

B2 = Cooling, heating and supply air, serial connected double row coil

* K_{pk} -values for the water flow 0.05l/s.

Heating

Heating function

As the comfort module is able to quickly mix the primary air with room the air, PARASOL Zenith is ideal to manage both cooling and heating. Heating spaces with air heated above room temperature discharged from the ceiling is a good alternative to conventional radiator heating solutions. The benefits achieved include lower installation costs, simpler installation and perimeter walls free from piping and radiators.

Regardless of the type of heating system installed it is important to consider the operative temperature in a room. Most people are comfortable when the operative temperature in winter is in between 20–24°C, and the optimal comfort requirements are normally met when the room temperature is 22°C. This means that for a room with a cold perimeter wall, the air temperature must be higher than 22°C to compensate for the chilling effect of the wall. In new buildings with normal insulated perimeter walls and normal standards of window glazing, the difference between the room air temperature and the operative temperature is small. But for older buildings with worse windows, it may be necessary to raise the air temperature to compensate for the chilling effect. Different operating scenarios can be simulated easily using the Swegon ESBO software to calculate the heat balance where both the room air temperature and operative temperature are specified.

Supplying heated air from the ceiling results in some stratification of the air. With a maximum supply flow temperature of 40°C, the stratification is non-existent, while at 60°C it can be around 4 K in the occupied zone. This only applies during the warming-up phase, when the room is unused and there is no internal load. When the room is being used and lighting, computers and people are present, the stratification is reduced or disappears depending on the heating load.

Laboratory studies, computer simulations and reference projects all show that a good indoor climate will be achieved by means of the PARASOL Zenith comfort module whatever the time of year.

Table 6 – data – heating. Sizing Guide for Parasol Zenith at 50 Pa

Unit	Nozzle setting	Air flow		Sound level	Heating capacity, water at ΔT_{mv} (K)						Pressure drop constant air
		l/s	m ³ /h		10	15	20	25	30	35	
mm				dB(A)							k_{pl}
1200 Ø125	1	13	48	20	252*	431*	491	663	841	1024	1,89
	2	30	107	20	378*	511	759	1021	1347	1597	4,54
	3	43	153	28	394*	541	809	1095	1436	1709	7,20
	4	52	186	33	379*	522	783	1062	1401	1669	9,86
	5	56	203	34	343*	468	703	954	1280	1522	11,68
1200 Ø160	1	13	48	20	256*	437*	499	673	853	1048	1,89
	2	31	113	20	398*	540	801	1077	1410	1671	4,54
	3	48	173	23	437*	602	897	1211	1564	1861	7,20
	4	63	226	27	445*	616	918	1241	1597	1901	9,86
	5	72	258	29	428*	587	874	1178	1526	1814	11,68

Locked ΔT 10°C on the water side. Temperature room +20°C

* Locked ΔT 5°C on the water side.

The specified sound level applies to straight connection without damper or with fully open damper. Room attenuation = 4 dB

Table 7 – data – heating. Sizing Guide for Parasol Zenith at 75 Pa

Unit	Nozzle setting	Air flow		Sound level	Heating capacity, water at ΔT_{mv} (K)						Pressure drop constant air
		l/s	m ³ /h		10	15	20	25	30	35	
mm				dB(A)	10	15	20	25	30	35	k_{pl}
1200 Ø125	1	16	58	21	324*	432	642	863	1094	1381	1,89
	2	36	137	26	452*	618	914	1227	1575	1868	4,54
	3	52	188	34	465*	644	957	1290	1650	1963	7,20
	4	63	228	40	448*	620	925	1250	1607	1913	9,86
	5	69	249	41	414*	569	847	1143	1488	1768	11,68
1200 Ø160	1	16	59	21	328*	438	650	874	1108	1395	1,89
	2	38	138	25	473*	648	957	1284	1638	1943	4,54
	3	59	212	28	510*	707	1047	1449	1779	2117	7,20
	4	77	277	33	516*	717	1063	1468	1804	2147	9,86
	5	88	316	36	502*	692	1023	1417	1737	2063	11,68

Table 8 – data – heating. Sizing Guide for Parasol Zenith at 100 Pa

Unit	Nozzle setting	Air flow		Sound level	Heating capacity, water at ΔT_{mv} (K)						Pressure drop constant air
		l/s	m ³ /h		10	15	20	25	30	35	
mm				dB(A)	10	15	20	25	30	35	k_{pl}
1200 Ø125	1	19	67	25	324*	552	753	1011	1334	1580	1,89
	2	42	151	30	506*	696	1026	1419	1738	2063	4,54
	3	60	216	39	518*	719	1064	1468	1803	2145	7,20
	4	73	264	45	498*	692	1027	1426	1753	2087	9,86
	5	80	287	45	467*	642	952	1281	1637	1945	11,68
1200 Ø160	1	19	68	25	381*	514	761	1022	1347	1594	1,89
	2	44	160	28	527*	727	1070	1471	1802	2139	4,54
	3	68	244	31	563*	783	1156	1574	1934	2300	7,20
	4	89	319	37	567*	790	1167	1588	1952	2322	9,86
	5	101	365	41	556*	768	1130	1540	1888	2241	11,68

Locked ΔT 10°C on the water side. Temperature room +20°C

* Locked ΔT 5°C on the water side.

The specified sound level applies to straight connection without damper or with fully open damper. Room attenuation = 4 dB

Tabell 9. Pressure drop constant - water, K_{pv}

Unit (mm)	Function	
	A2	B2
	K_{pv} heating*	K_{pv} heating*
PARASOL Zenith 1200	-	0,0287
PARASOL Zenith 1800	-	-

B2 = Cooling, heating and supply air, serial connected double row coil

* K_{pv} -values for the water flow 0,03l/s.

Acoustics

Initial Commissioning Range

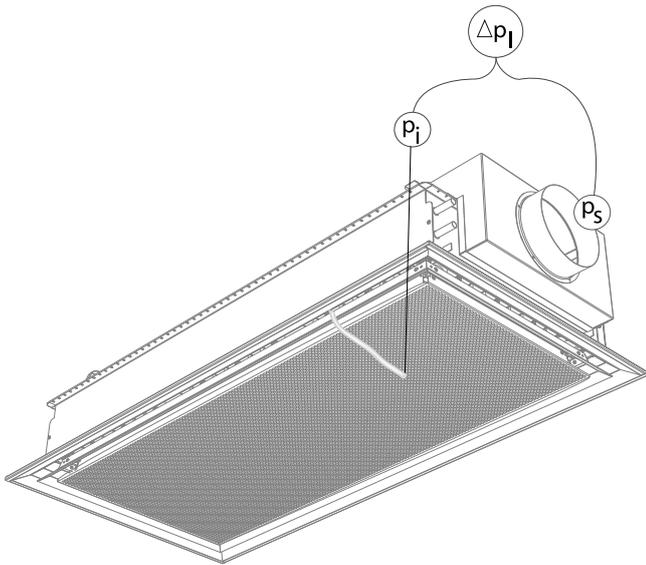


Figure 30. Pressure Conditions - Air

Damper throttling range

$$\Delta p_1 = p_s - p_i$$

Δp_1 Commissioning range of fitted damper $p_s - p_i$, see Diagrams 2-3

p_i Nozzle pressure (easily measured with a pressure gauge connected to measurement hoses).

p_s Static pressure upstream of unit and damper

Commissioning range for damper CRPc 9-125/160, in Δp_1 (Pa) and the primary air flow q_1 (l/s).

Diagram 2. Commissioning range, CRPc 9-125 damper

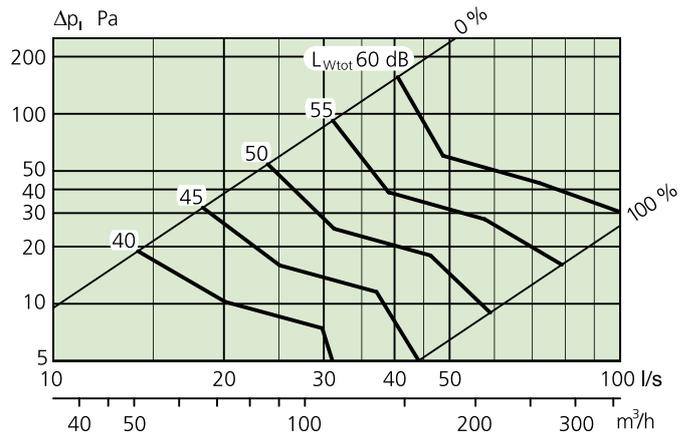


Diagram 2 shows the total generated sound power (L_{wtot} dB), as a function of the air flow and pressure drop across the damper. By correcting L_{wtot} with the correction factors from Table 13, the sound power level for each octave band ($L_w = L_{wtot} + K_{ok}$) can be obtained.

Diagram 3. Commissioning range, CRPc 9-160 damper

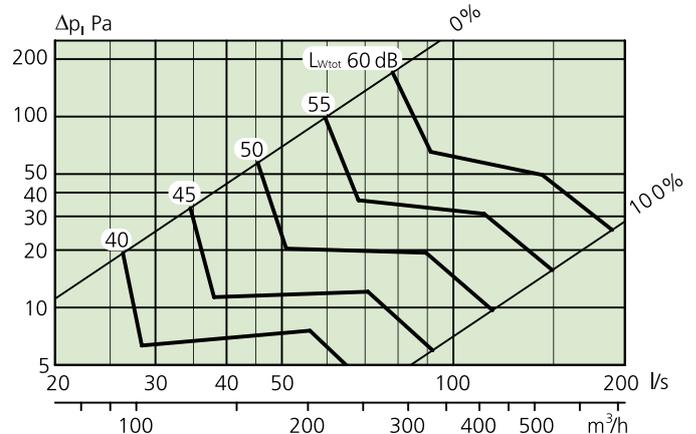


Diagram 3 shows the total generated sound power (L_{wtot} dB), as a function of the air flow and pressure drop across the damper. By correcting L_{wtot} with the correction factors from Table 14, the sound power level for each octave band ($L_w = L_{wtot} + K_{ok}$) can be obtained.

Natural attenuation and end reflection

Natural attenuation ΔL (dB) including end reflection.

**Table 10. Natural attenuation ΔL (dB)
PARASOL Zenith 1200 \varnothing 125**

Nozzle setting	Octave band (Hz)							
	63	125	250	500	1k	2k	4k	8k
1	24	18	12	9	9	9	14	20
2	23	17	11	8	8	7	11	18
3	22	17	11	7	7	6	9	16
4	21	17	11	7	7	6	9	15
5	21	17	11	7	7	5	7	14

**Table 11. Natural attenuation ΔL (dB)
PARASOL Zenith 1200 \varnothing 160**

Nozzle setting	Octave band (Hz)							
	63	125	250	500	1k	2k	4k	8k
1	22	16	11	8	8	10	16	19
2	20	15	11	7	6	7	12	17
3	20	15	11	6	5	6	9	15
4	20	15	11	6	5	5	9	15
5	19	15	9	5	4	5	8	13

**Table 12. Natural attenuation ΔL (dB)
PARASOL Zenith 1800 \varnothing 160**

Nozzle setting	Octave band (Hz)							
	63	125	250	500	1k	2k	4k	8k
1	19	15	11	7	7	9	16	19
2	19	14	10	6	6	6	13	17
3	19	14	10	5	5	5	11	16
4	19	14	10	5	5	5	9	15
5	19	14	9	5	5	4	9	13

**Table 13. Sound power level for damper CRPc 9-125,
Correction factor, K_{ok}**

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1k	2k	4k	8k
CRPc 9	63	125	250	500	1k	2k	4k	8k
125	0	-2	-9	-15	-20	-25	-29	-35
Tol. \pm	2	2	2	2	2	2	2	2

**Table 14. Sound power level for damper CRPc 9-160,
Correction factor, K_{ok}**

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1k	2k	4k	8k
CRPc 9	63	125	250	500	1k	2k	4k	8k
160	0	-2	-12	-16	-18	-21	-26	-36
Tol. \pm	2	2	2	2	2	2	2	2

Accessories

Factory-fitted

Face plate, optional perforation patterns

The face plate of the unit is available with four different perforation patterns that make it easily adaptable to suit different types of ceiling components, e.g. light fittings and extract air diffusers that share the surface of a suspended ceiling. A ceiling containing different types of perforation patterns can be experienced as disturbing to the eye.

Other patterns are of course available on special order. For further details, get in touch with your nearest Swegon representative.

A. Standard face plate

Circular holes arranged in a square pattern.

B. PD face plate

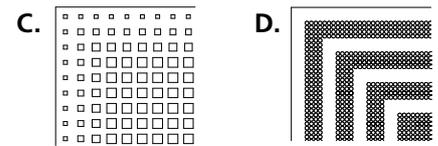
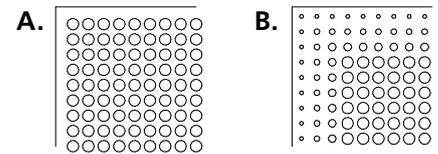
Circular holes arranged in a square pattern with a graduated border

C. PE face plate

Square holes arranged in a square pattern with a graduated border

D. PX face plate

Circular holes arranged in a square pattern - field perforated rectangular paths



Room controller URC1

Control system for room temperature and air flow.

On delivery, the control module is mounted on PARASOL Zenith.

URC1 can control an actuator for cooling and an actuator for heating and motorised air damper.

The required set point for room temperature can be changed on the sensor module.



Sensor module

The sensor module for URC1 is a combined setpoint selector switch, occupancy detector and temperature sensor in the same unit, and is mounted on the face plate on PARASOL Zenith.

The push buttons on the sensor module allow you to adjust the temperature in the room, put the PARASOL Zenith in commissioning mode and read the alarm list.

In normal mode 6 LEDs indicate the selected temperature level.

In the event of a fault, the relevant alarm is indicated in the form of flashing LEDs that is translated with the help of an alarm list.

The sensor module is connected to the controller with the help of an RJ12 cable.

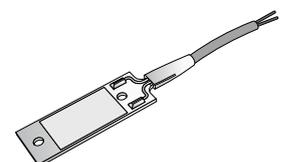


Condensation sensor CG-IV

CG-IV is a condensation sensor with sensor element, consisting of a circuit board with gold plated conductive paths that react when condensation occurs between the paths.

When condensation arises, the cooling valve closes the incoming water flow to the product. The cooling valve is permitted to open again when the condensation on the conductive paths has been wiped off.

Compatible with URC1, LUNA, CONDUCTOR and WISEII

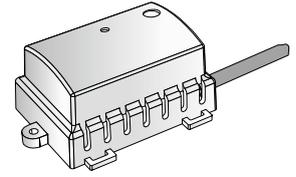


Condensation sensor WCD2

The detector operates at the dew point temperature rather than a fixed relative humidity value.

The dew-point is calculated from a temperature compensated RH element and an extremely accurate sensor element that is bound to the metal plate on the detector.

Compatible with URC1, LUNA, CONDUCTOR and WISEII



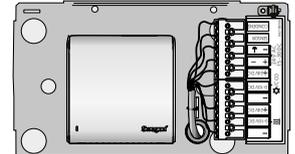
Control equipment WISE IORE

WISE IORE allows PARASOL Zenith to be integrated in the WISE system.

WISE IORE can control heating and cooling actuators as well as receive signals from the transducers and sensors.

WISE IORE can also receive signals from third-party products.

For more information about WISE and compatibility with sensors and transducers, refer to the WISE documentation.



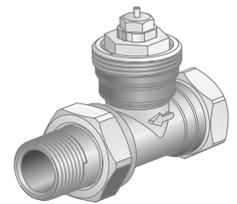
Valve, cooling & heating, VDN 215

Factory fitted valves for cooling and heating.

The valve is mounted on the product and preset fully open on Kv 0.89. DN15 (1/2")

K_v-value can be set between 0.1 to 0.89 m³/h.

For more information about the valve, see the separate product data sheet on www.swegon.com.

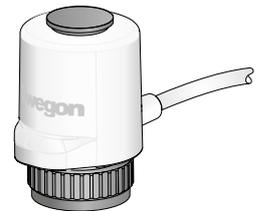


Actuator, cooling & heating

Factory fitted valve actuators for cooling and heating.

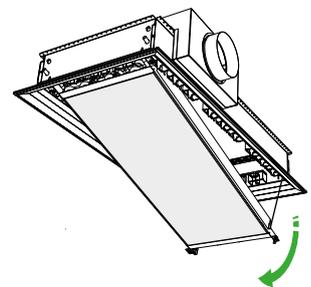
24V AC/DC, NC (Normally Closed).

For more information about the actuator, see the separate product data sheet on www.swegon.com.



Fold-out coil

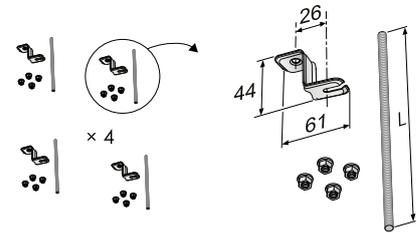
PARASOL Zenith can be ordered as a variant with fold-out coil for easy access and cleaning of the complete coil. PARASOL Zenith with fold-out coil is well suited for use in rooms where stringent demands are made on hygiene. The accessory requires the use of flexible hose connections on the water side.



Loose items

Assembly fitting, SYST MS M8

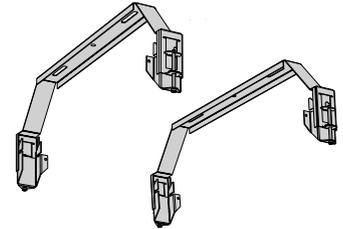
For installation use the assembly fitting containing threaded rods, ceiling brackets and nuts to all four mounting brackets. Also available with threaded drop rods and thread locks.



Assembly fitting, PARASOL Z QUICK SUSPENSION KIT

The kit consists of 2 fixed brackets to suspend Parasol Zenith.

The fixed brackets are fastened to the ceiling, after which the product can be pushed into place without the use of tools. The brackets also feature an integrated fine adjustment of approx. 50 mm in height



Flexible connection hoses, SYST FH

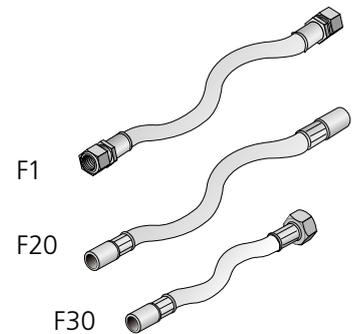
Flexible hoses are available with quick-fit, push-on couplings as well as clamping ring couplings for quick and simply connection. The hoses are also available in various lengths. Note that compression ring couplings require support sleeves inside the pipes.

Example of flexible connection hoses:

F1 = Flexible hoses with clamping ring couplings

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

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



Connection piece, air – double nipple, SYST AD1

SYST AD1 is used as a joint between the PARASOL Zenith and the duct system.

Available in two sizes: Ø125 and Ø160 mm.



Connection piece, air – 90° duct bend, SYST CA

90° duct bend for air connection. Nipple connection with seals at both ends.

Dimensions: Ø125 and 160 mm



Commissioning damper, CRPc 9

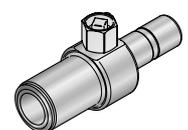
Commissioning damper with perforated damper blade for better damper characteristic in leakage class 0. Nipple connection with seals at both ends.

Dimensions: Ø125 and 160 mm



Bleed nipple SYST AR-12

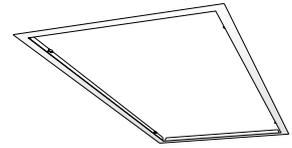
Nipple for venting the water circuit. Equipped with push-on connector adapted for installation with flexible connection hose F20 and F30.



Loose items

Drywall ceiling frame Parasol c T-FPB

Mounting frame for neat installation of Parasol Zenith in drywall ceilings



Commissioning tool SYST TORX 6-200

Tool to adjust the nozzle strips in Parasol Zenith.



Centring kit, SYST CENTRING KIT PARASOL

The kit consists of 6 centring rails that can be used to centre the product in specific suspended ceiling systems.



External sensor module, (URC1)

Sensor module with temperature sensor and presence detector for wall mounting.

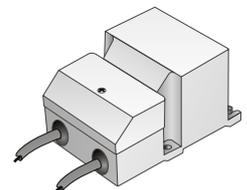
Available in a circular or rectangular model and is always supplied with both mounting frame for the most common existing electrical connection boxes as well as a protruding frame for surface mounting.



Transformer, SYST TS-1 72 VA

Double-insulated protective transformer, 230V AC/24 V AC

See separate product datasheet at www.swegon.com.



Dimensions and weights

Table 15. Length and width

PARASOL Zenith 1200		PARASOL Zenith 1800	
Length L (mm)	Width W (mm)	Length L (mm)	Width W (mm)
1184	584	1784	584
1192	592	1792	592
1198	598	1798	598
1213	603	1823	603
1242	617	1867	617
1248	623	1873	623
1292	642	1942	642
1342	667	2017	667

Table 16. Weight - Variant A, cooling

PARASOL Zenith	Dry weight (kg)	Water volume (l)
	Cooling	Cooling
1200 Ø125	23.0	2.4
1200 Ø160	23.5	2.4
1800 Ø160	34	3.9

Table 17. Weight - Variant B, cooling and heating

PARASOL Zenith	Dry weight	Water volume (l)	
	(kg)	Cooling	Heating
1200 Ø125	23.3	1.8	0.7
1200 Ø160	23.8	1.8	0.7

PARASOL Zenith 1200, long-side connection (2 or 4)

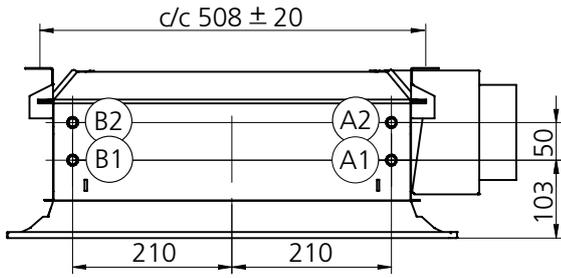


Figure 31. Dimensional drawing, end-view with water connections.

Air connection on the long side - pos 2.

A1 = Supply cooling water $\varnothing 12 \times 1.0$ mm (Cu)

A2 = Return cooling water $\varnothing 12 \times 1.0$ mm (Cu)

B1 = Supply heating water $\varnothing 12 \times 1.0$ mm (Cu)

B2 = Return heating water $\varnothing 12 \times 1.0$ mm (Cu)

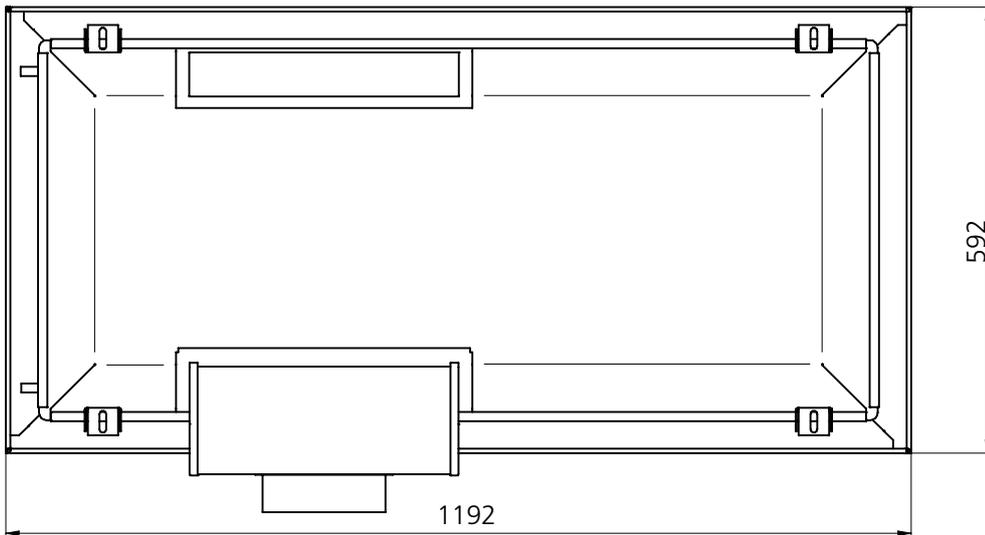


Figure 32. Dimensional drawing, view from above. Air connection on the long side - pos 2.

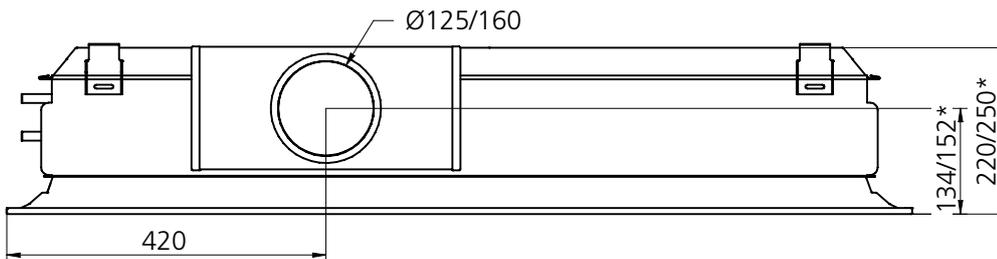


Figure 33. Dimensional drawing, side view. Air connection on the long side - pos 2.

*= $\varnothing 160$

PARASOL Zenith 1200, long-side connection (1 or 3)

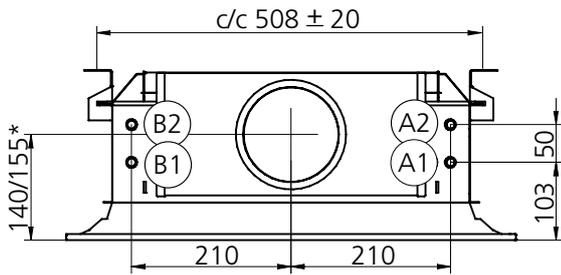


Figure 34. Dimensional drawing, end-view with water connections.

Air connection on the short side - pos 1.

* = Dimensions at air connection 160

A1 = Supply cooling water $\varnothing 12 \times 1.0$ mm (Cu)

A2 = Return cooling water $\varnothing 12 \times 1.0$ mm (Cu)

B1 = Supply heating water $\varnothing 12 \times 1.0$ mm (Cu)

B2 = Return heating water $\varnothing 12 \times 1.0$ mm (Cu)

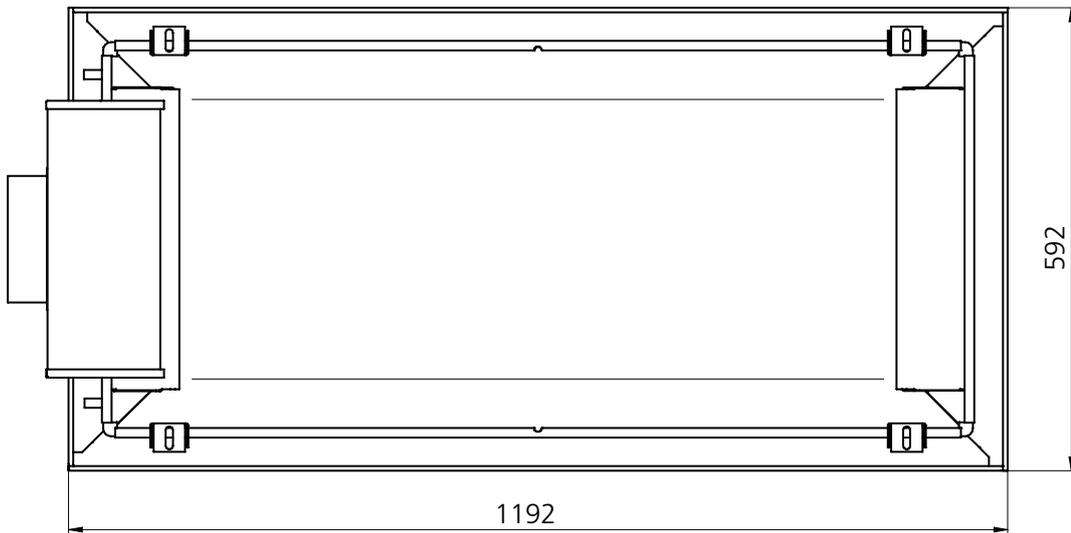


Figure 35. Dimensional drawing, view from above. Air connection on the short side - pos 1.

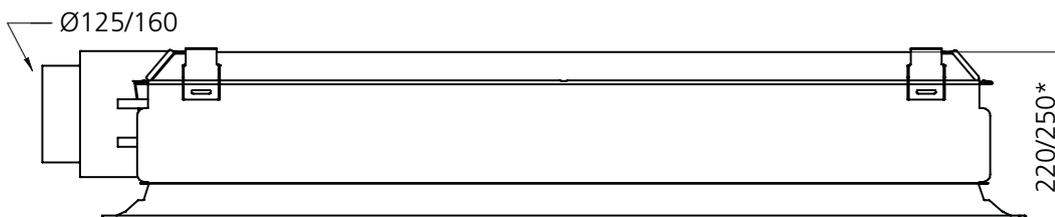


Figure 36. Dimensional drawing, side view. Air connection on the short side - pos 1.

* = $\varnothing 160$

PARASOL Zenith 1800, long-side connection (2 or 4)

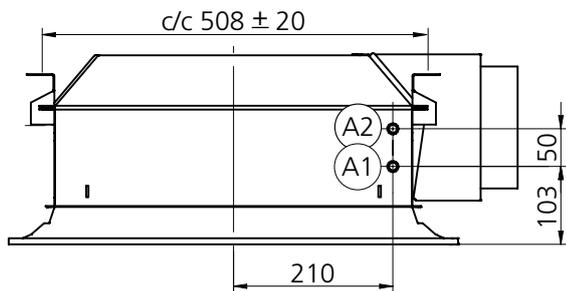


Figure 37. Dimensional drawing, end-view with water connections.
Air connection on the long side - pos 2.

A1 = Supply cooling water $\varnothing 12 \times 1.0$ mm (Cu)
A2 = Return cooling water $\varnothing 12 \times 1.0$ mm (Cu)

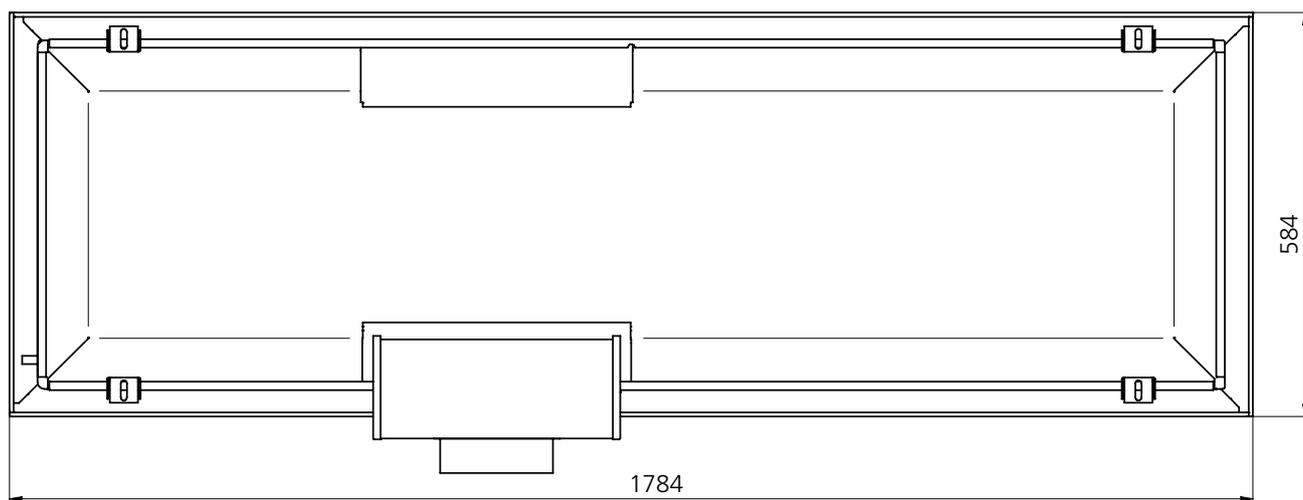


Figure 38. Dimensional drawing, view from above. Air connection on the long side - pos 2.

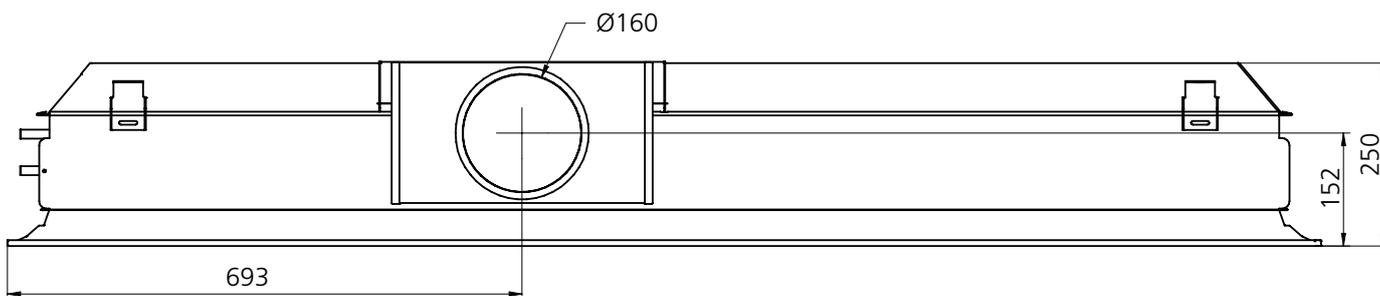


Figure 39. Dimensional drawing, side view. Air connection on the long side - pos 2.

PARASOL Zenith 1800, long-side connection (1 or 3)

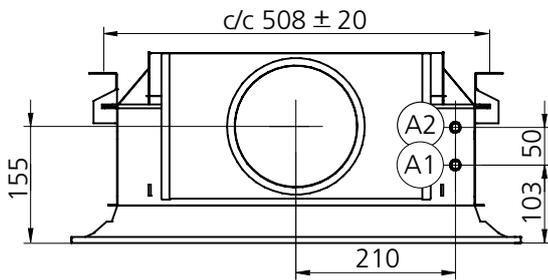


Figure 40. Dimensional drawing, end-view with water connections. Air connection on the short side - pos 1.

A1 = Supply cooling water $\varnothing 12 \times 1.0$ mm (Cu)
 A2 = Return cooling water $\varnothing 12 \times 1.0$ mm (Cu)



Figure 41. Dimensional drawing, view from above. Air connection on the short side - pos 1.

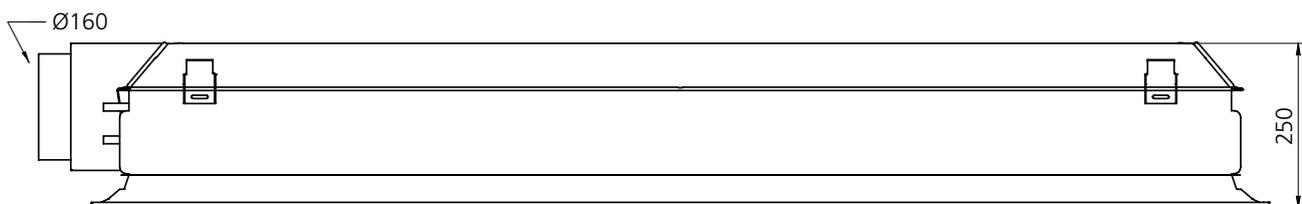
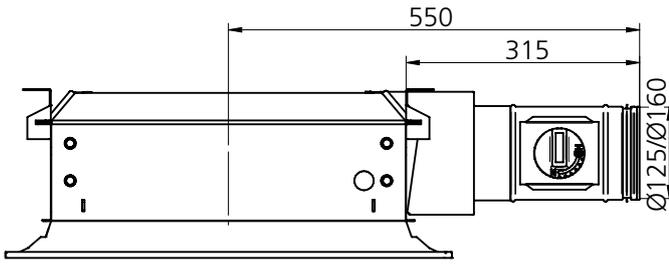


Figure 42. Dimensional drawing, side view. Air connection on the short side - pos 1.

PARASOL Zenith with damper or bend



Connection sizes	
PARASOL Zenith 1200	Ø125 or Ø160
PARASOL Zenith 1800	Ø160

The damper must always be mounted with the knob to the left viewed in the direction of primary air flow in order for the specified sound levels to apply.

Figure 43. Dimensional drawing, long side connection with the commissioning damper fitted SYST CRPc 9-125/160



Figure 44. Dimensional drawing, short side connection with the commissioning damper fitted SYST CRPc 9-125/160

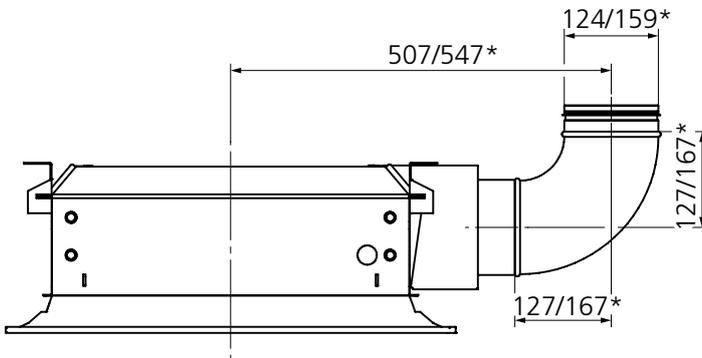


Figure 45. Dimensional drawing, long side connection with bend Ø125/160

*= Ø160

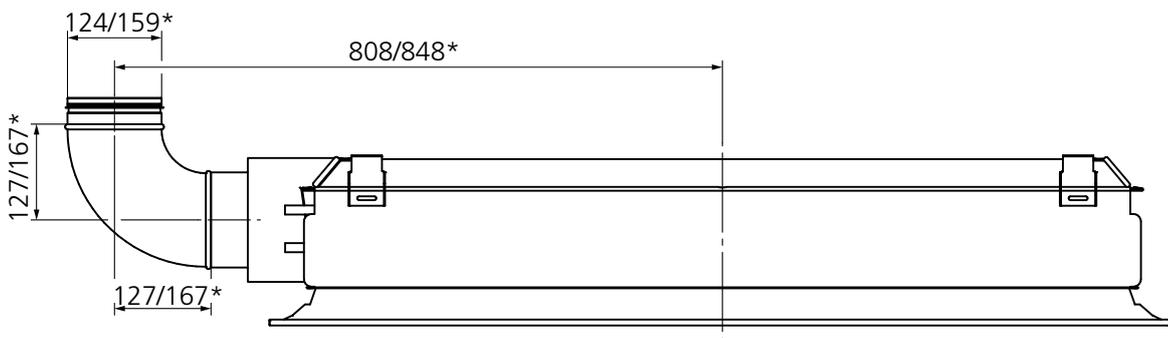


Figure 46. Dimensional drawing, short side connection with bend Ø125/160

*= Ø160

Specification

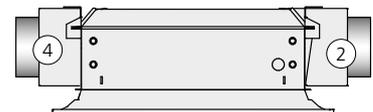
Contractor demarcation

Swegon's delivery ends at the connection points for water and air and the connection of any factory-fitted actuators. (See Figures 31-46).

- The pipe contractor connects the connections points for water to the plain pipe ends and fills/flushes the system, bleeds it and tests the pressure. When valves are installed at the factory, the cooling and heating water's return line is connected to the valve. (Male thread, DN 1/2").
- The ventilation contractor connects the supply air duct to the product air connection sleeves.
- If factory-fitted actuators are chosen, the electrical contractor connects the actuators' pinned cable ends to the room controller - 24V AC/DC.

Available to order

Size	Double module unit: 1184 x 584 mm 1192 x 592 mm 1198 x 598 mm 1213 x 603 mm 1242 x 617 mm 1248 x 623 mm 1292 x 642 mm 1342 x 667 mm Three-module unit: 1784 x 584 mm 1792 x 592 mm 1798 x 598 mm 1823 x 603 mm 1867 x 617 mm 1873 x 623 mm 1942 x 642 mm 2017 x 667 mm The tolerance is ± 2 mm.
Function	The units can be ordered in various functional versions: A = Cooling and supply air (size 1200 and 1800) B = Cooling, heating and supply air (only size 1200)
ADC	Factory-fitted ADC supplied as standard
Size of connection sleeve	Ø125 (only size 1200) Ø160 (size 1200 and 1800)
Positioning of connection sleeves	Connection on the short side 1 = Air and water on the same side 3 = Air and water on the opposite sides Connection on the long side 2=Connection on the right hand side* 4=Connection on the left hand side* * Seen from the short side with water connections
Colour	The units are supplied finished in Swegon's standard shade of white, RAL 9003, gloss ratio 30 \pm 6%



Ordering key - Product

PARASOL Zenith 1200

Product	PARASOL Zenith	a	aaaa-	bb-	ccc-	d
Version:						
Size:						
1184 x 584; 1192 x 592 1198 x 598; 1213 x 603 1242 x 617; 1248 x 623 1292 x 642; 1342 x 667						
Function:						
A2 = Cooling and supply air, serial connected double row coil B2 = Cooling, heating and supply air, serial connected double row coil						
Dimensions connection sleeves:						
125 = Ø125 connection, product height 220 mm 160 = Ø160 connection, product height 250 mm						
Positioning of connection sleeves:						
1 = Short side the same side as the water connection 2 = Long side, right side of the water connection 3 = Short side, opposite side as the water connection 4 = Long side, left side of the water connection						

PARASOL Zenith 1800

Product	PARASOL Zenith	a	aaaa-	bb-	ccc-	d
Version:						
Size:						
1784 x 584; 1792 x 592; 1798 x 598; 1823 x 603; 1867 x 617; 1873 x 623; 1942 x 642; 2017 x 667						
Function:						
A2 = Cooling and supply air, serial connected double row coil						
Dimensions connection sleeves:						
160 = Ø160 connection, product height 250mm						
Positioning of connection sleeves:						
1 = Short side the same side as the water connection 2 = Long side, right side of the water connection 3 = Short side, opposite side as the water connection 4 = Long side, left side of the water connection						

Specification text

VVS AMA PTD.4 0 Product with cooling & heating

AMA-codes XXX

Page 1
QUANTITY

CODE **TEXT**

P UNITS; PIPES ETC IN PIPE SYSTEMS OR PIPE NETWORKS

PT ROOM MOUNTED HEATER AND COOLER

PTD ROOM DEVICES FOR HEATING AND COOLING

PTD.4 Duct connected room devices for heating and cooling

XXXX

Make: Swegon

Type: Parasol Zenith a - B

Comfort module with waterborne cooling and heating for integrated installation in suspended ceilings.

Double outlets for good adhesion (Coanda effect) against the suspended ceiling at low driving pressure.

4-way air distribution with integrated comfort guarantee (ADC) for setting of the desired direction of the distributed air.

Individually adjustable air flow (k-factor) on all four sides for selectable air distribution in quantity and direction (symmetric or asymmetric).

Enclosed design with integrated circulation air opening.

Air connection on the product's short or long side (optional) with the opportunity to move the connection to the opposite side.

Cleanable air duct.

Eurovent certified (verified cooling capacity according to EN-15116).

Colour: White, RAL 9003, gloss ratio 30 ± 6 %

Length (nominal): 1,200 mm

Width (nominal): 600 mm

Height: 220 (Ø125), 250 (Ø160) mm

Tolerances: ± 2 mm

Water connection: Plain pipe ends Cu Ø 12 x 1.0 mm

Alternatively - External thread DN ½" (applies to factory-fitted valves)

Air connection: Sleeve Ø125, Ø160 mm Optional short side or long side

Product: Parasol Z a aaaa-B-ccc-ddd

X pcs.

Nozzle setting: XXXX

VVS AMA PTD.4 0 Product with cooling & heating, continued

AMA-codes XXX
CODE TEXT

Options/accessories

Factory-fitted:	<p>Optional perforation pattern PD: Circular holes arranged in a square pattern with a graduated transition PE: Square holes arranged in a square pattern with a graduated border PX: Circular holes arranged in a square pattern - field perforated rectangular paths.</p> <p>Valve DN15 (1/2") Normally-open Kv value 0.89 (adjustable 0.1-0.89)</p> <p>Thermal actuator On/off - 24 V AC/DC Normally closed SYST</p> <p>Fold-out coil For easy access and cleaning of the complete coil when stringent demands are made on hygiene. Requires flexible hose connections on the water side.</p>	<p>X pcs.</p> <p>X pcs.</p> <p>X pcs.</p> <p>X pcs.</p>
Separate	<p>SYST MS M8 assembly fitting containing threaded rods, ceiling brackets and nuts to all four mounting brackets.</p> <p>PARASOL Z QUICK SUSPENSION KIT The kit consisting of 2 fixed brackets to suspend PARASOL Zenith</p> <p>SYST AD1 Double nipple for the connection of the air duct to the product's air connection sleeve. Dimensions: Ø125 and 160 mm</p> <p>SYST CA 90° duct bend for air connection. Nipple connections with seals. Dimensions: Ø125 and 160 mm CRPc 9 Commissioning damper with perforated damper blade. Air tightness class 0 Dimensions: Ø125 and 160 mm</p> <p>SYST FH Flexible connection hoses (available in various colours)</p> <p>SYST AR-12 Nipple for venting the water circuit. Push-on connector adapted for installation with flexible connection hose type F20 and F30.</p> <p>Parasol c T-FPB Drywall ceiling frame to create a neat transition between the product and holes in drywall ceilings.</p> <p>SYST TORX Tools to facilitate adjustment of nozzle strips.</p> <p>SYST CENTRING KIT PARASOL Kit consisting of 6 centring rails that can be used to centre the product in specific suspended ceiling systems.</p>	<p>X pcs.</p>

VVS AMA PTC.312 Product with cooling

CODE	AMA-codes, XXX TEXT	PAGE 1 QUANTITY
P	UNITS; PIPES ETC IN PIPE SYSTEMS OR PIPE NETWORKS	
PT	ROOM MOUNTED HEATER AND COOLER	
PTC	ROOM CHILLERS	
PTC.3	Chilled beams and convectors	
PTC.31	Chilled beams	
PTC.312	Duct connected chilled beams XXXX	
	<p>Make: Swegon</p> <p>Type: Parasol Zenith a - A</p> <p>Comfort module with waterborne cooling for integrated installation in suspended ceilings. Double outlets for good adhesion (Coanda effect) against the suspended ceiling at low driving pressure.</p> <p>4-way air distribution with integrated comfort guarantee (ADC) for setting of the desired direction of the distributed air.</p> <p>Individually adjustable air flow (k-factor) on all four sides for selectable air distribution in quantity and direction (symmetric or asymmetric).</p> <p>Enclosed design with integrated circulation air opening.</p> <p>Air connection on the product's short or long side (optional) with the opportunity to move the connection to the opposite side.</p> <p>Cleanable air duct.</p> <p>Eurovent certified (verified cooling capacity according to EN-15116).</p> <p>Colour: White, RAL 9003, gloss ratio 30 ± 6 %</p> <p>Length (nominal): 1200, 1800 mm</p> <p>Width (nominal): 600 mm</p> <p>Height: 220 (Ø125), 250 (Ø160) mm</p> <p>Tolerances: ± 2 mm</p> <p>Water connection: Plain pipe ends Cu Ø 12 x 1.0 mm Alternatively - External thread DN ½" (applies to factory-fitted valves)</p> <p>Air connection: Sleeve Ø125, Ø160 mm Optional short side or long side</p> <p>Product: Parasol Z a aaaa-A-ccc-ddd X pcs. Nozzle setting: XXXX</p>	

