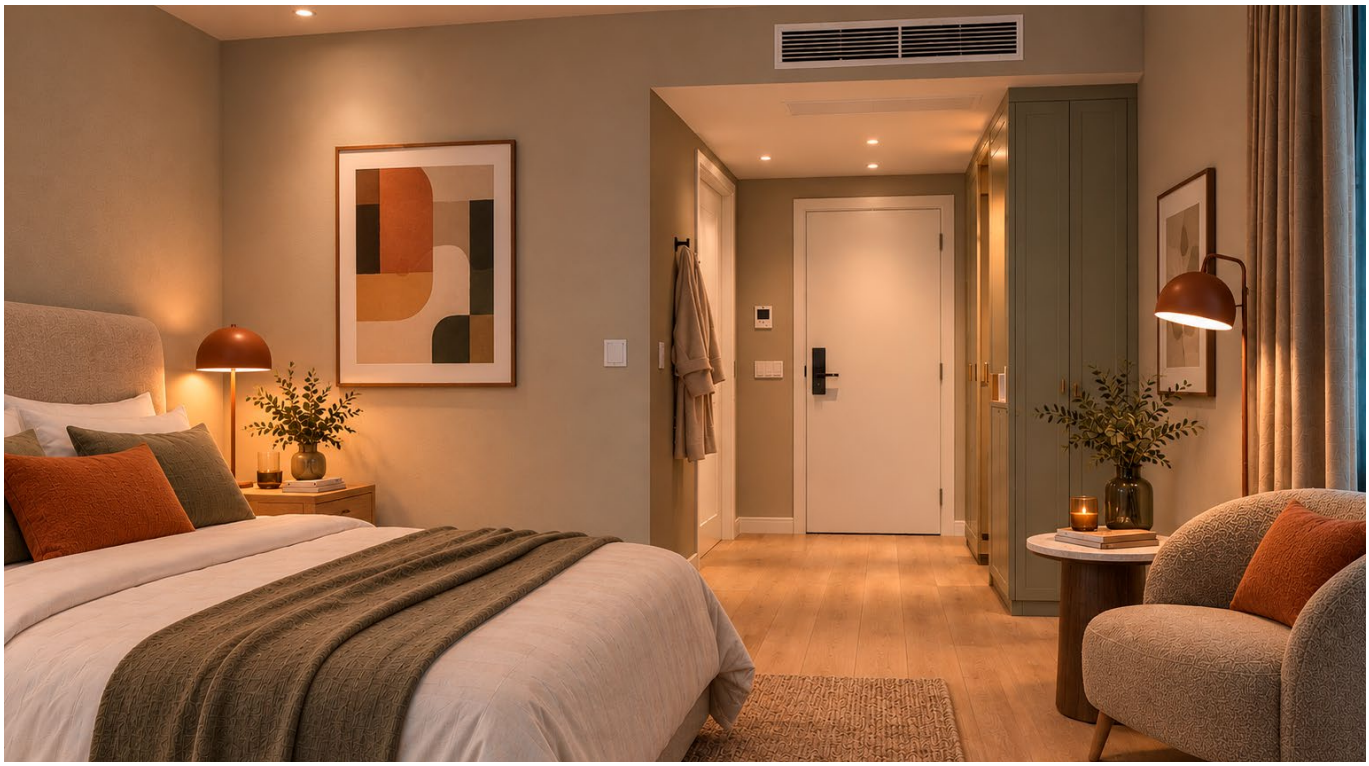
PARAGON

Compact comfort module for hotels and care rooms



QUICK FACTS

- Constant airflow – Combines ventilation, cooling, and heating in a compact comfort module for CAV systems
- Optimised for hotel rooms – Creates a quiet and comfortable indoor climate without a fan in the room
- Flexible air distribution – Adjustable airflow direction with ADC and adjustable grille lamellas ensures a high level of comfort
- Easy installation – Flexible connection options and optional factory-fitted control equipment simplify installation
- High capacity and low maintenance – Efficient cooling and heating even at low pressures and airflows, with no fan or filter requiring maintenance

KEY TECHNICAL DATA				
Airflow range		Pressure range	Total cooling capacity	Heating capacity (W)
l/s	m³/h	Pa	W	water
0-49	0-176	20-200	≤ 1250	≤ 1700

SIZE		
Length (mm)	Depth (mm)	Height (mm)
800, 1100, 1400	722 (+0-20)	205

Cooling, air: ΔTl = 6,6K / water: ΔT_{mk} = 8,5K, t_{water} = 14/18°C, water flow 0,1 l/s.

Heating, air: ΔTl = 0K / water: ΔT_{mk}= 19K, t_{water} = 45/31°C, water flow 0,045 l/s.

Commissioning pressure: 70 Pa.

30 dB with 5 dB room attenuation.

Content

Technical description 3
Design 3
Adjustable supply and return air grilles 3
Quiet and efficient 3
Sustainable by default 3
Sizes and variants 3
Functionality 4
Flow Control 4
Anti-Draught Control (ADC) 4
Material and surface treatment 4
Operating principle 5
Installation, commissioning and maintenance 6
Water connection 6
Mounting 6
Air connection 6
Connection dimensions - water 7
Certificates and standards 7
Technical data 8
Dimensions and weights 8
Performance 9
Designations 9
Cooling 9
Heating 10
Accessories 11
Factory-fitted accessories 11
Loose accessories 12
Accessory kits 14
Specification 15
Scope of supply 15
Ordering specification 15
PARAGON 15
Accessories 15
Specification text 16

Swegon reserves the right to alter specifications.

Technical description

Design

PARAGON is a comfort module designed primarily for offices and care rooms, where high demands are placed on comfort, low sound levels and discreet installation.

Thanks to an optimised cooling/heating coil, PARAGON delivers high cooling and heating capacity even at low airflows and pressure drops. The compact installation height of the product is kept at an absolute minimum which enables maximum room height in e.g. the entrance to a hotel room.

On the rear of the product, the supply airflow is set using the Flow Control nozzles. A simple control is used to select the required k-factor to achieve the correct airflow to the room at the current commissioning pressure.

Adjustable supply and return air grilles

The adjustable supply and return air grilles ensures a clean, well-fitted transition to the wall. Both grilles can be adjusted for a good fit against ceiling and wall, and is easily secured with screws for stable and safe installation.

Lightweight and service-friendly

The construction reduces weight and improves access to all components, ideal for buildings with tight installation spaces and renovation projects.

Quiet and efficient

- High induction ensures excellent air quality and comfort.
- Low pressure drop reduces fan energy.
- Quiet operation suitable for noise-sensitive environments.

Sustainable by default

- The product contains steel with at least 75% recycled material.

Sizes and variants

The product is available in three lengths: 800, 1100 and 1400 mm.

All sizes can be ordered with the water connection on the left or right short side, or centered at the rear, providing high installation flexibility.

Water connections

Optional water connections on the right side, left side, or at the rear provide great flexibility in both planning and installation. The connection position can be adapted to pipe routing, available installation space and room layout.

Suite version

PARAGON in length 1400 mm is available in a suite design with dual air connections. This enables a higher airflow and makes the product particularly suitable for larger hotel rooms and suites with greater ventilation requirements.

Optional electric heating

Available with built-in electric heating of 350 W or 700 W for the 800 mm width, and 500 W or 1000 W for the 1100 and 1400 mm widths, with simple connection and control via a 24 V auxiliary relay.

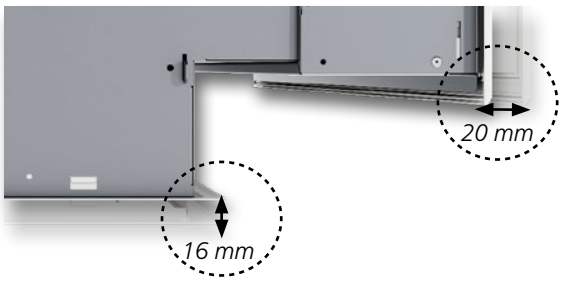


Figure 1. Adjustment of supply and return air grille.

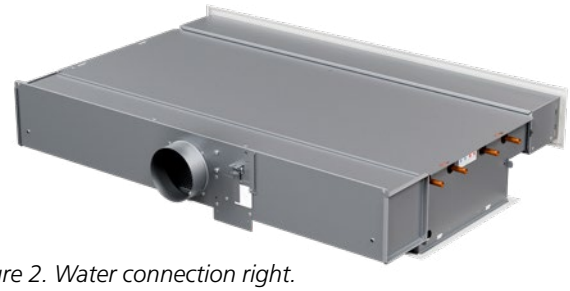


Figure 2. Water connection right.



Figure 3. Water connection left.



Figure 4. Water connection Water Back (WB).



Figure 5. Suite design with dual air connections.

Swegon reserves the right to alter specifications.

Functionality

PARAGON features an integrated actuator for airflow adjustment.

This ensures:

- Optimal comfort in every room or zone.
- Lower energy use.
- Future-proof and flexible operation.

Flow Control

PARAGON features integrated Flow Control nozzles for easy adjustment of a constant supply airflow. A manual control on the rear of the product is used to select the required k-factor to achieve the correct airflow at the current commissioning pressure.

The airflow is adjusted by adapting the nozzle opening, allowing the available operating pressure to be utilised for efficient air mixing and high cooling and heating capacity.

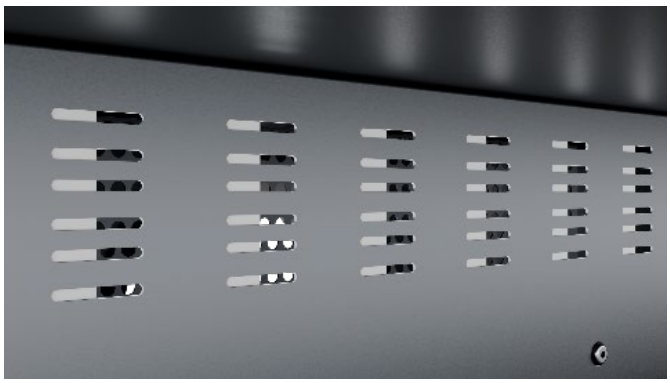


Figure 6. Flow Control for quick and easy commissioning during start-up and when the room layout changes.

Anti-Draught Control (ADC)

Anti Draught Control (ADC) makes it possible to direct and distribute the supply air to reduce the risk of draughts in the occupied zone.

PARAGON is equipped with both horizontal and vertical ADC fins, providing great flexibility to adapt the air distribution pattern to the room layout and current conditions.

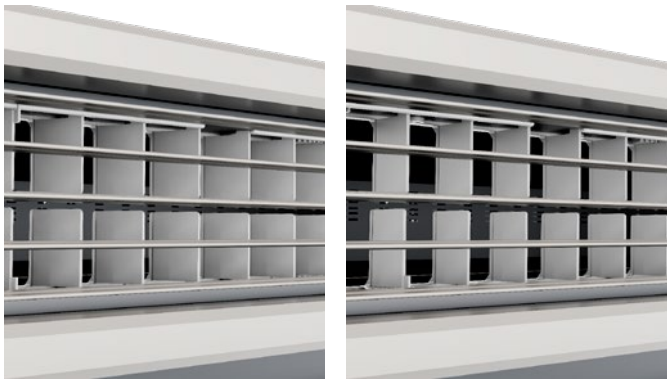


Figure 7. ADC.

Material and surface treatment

- PARAGON is manufactured from recycled and renewably produced galvanized sheet steel (zinc plated).
- Supply and return air grilles can be ordered in several colours.
- Standard colour:
  - RAL 9003 Signal white, gloss 30
- Alternative Standard colours:
  - RAL 7037 Dusty grey, gloss 30
  - RAL 9010 Pure white, gloss 30
  - RAL 9005 Jet black, gloss 30
  - RAL 9006 White aluminium, gloss 70
  - RAL 9007 Grey aluminium, gloss 70

Swegon reserves the right to alter specifications.

Operating principle

Primary air is supplied through the duct connection at the rear and creates positive pressure inside the product. The positive pressure distributes the primary air at relatively high velocity across the slot openings. The high velocity of the primary air creates negative pressure that induces room air. The recirculated air is drawn through the return air grille and then through the coil, where it is cooled, heated or passes untreated depending on demand, before mixing with the primary air and being supplied to the room.

The air is distributed into the room as straight as possible, allowing it to travel along the ceiling by means of the Coanda effect and reach the façade. The air distribution can be directed horizontally using ADC. Where vertical distribution is required, this is achieved by adjusting the outlet grille blades upwards or downwards. The angle of the outlet grille can be locked using an accessory that secures the blades.

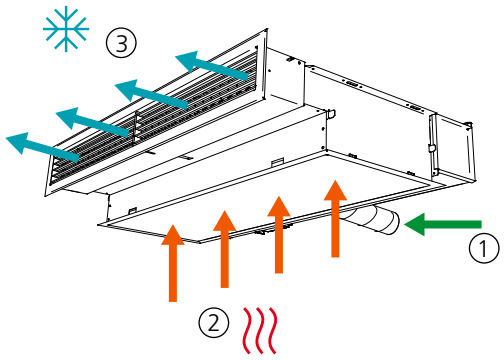


Figure 8. Cooling function PARAGON.
1. *Primary air.*
2. *Induced room air.*
3. *Primary air mixed with cooled room air.*

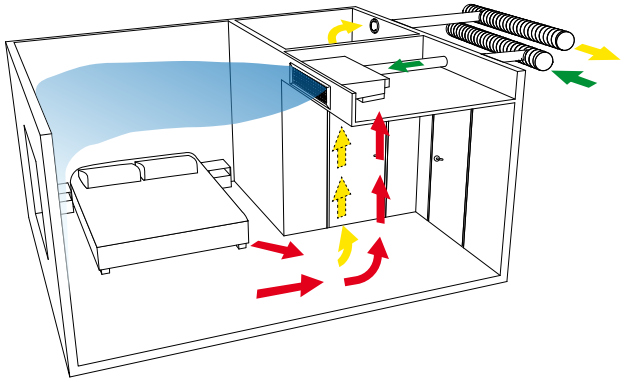


Figure 9. Air distribution with PARAGON in a hotel room.

Swegon reserves the right to alter specifications.

Installation, commissioning and maintenance

PARAGON has two holes on each short side for suspension and is mounted with one threaded rod in each hole. For installation, use the assembly fitting containing threaded rods, ceiling brackets and nuts for all four suspension points. Threaded rod length from 200 mm.

For large distances between the ceiling and the unit, double threaded rods with a thread lock are used. Assembly fitting SYST MS M8 is ordered separately.

Water connection

The water pipes are located on the left or right short side of the product depending on the selected option. A version with the water connection at the rear (WB) is also available.

Connect the water pipes using push-on couplings or compression ring couplings.

Note that compression-ring couplings require support sleeves inside the pipes. Do not use solder couplings to connect the water pipes. High temperatures can damage the product's existing soldered joints.

Flexible connecting hoses for water are available for both plain pipe ends and valves and can be ordered separately.

Recommended limit values, water

Max. recommended operating pressure (across coil only):	1600 kPa*
Max. recommended test pressure (across coil only):	2400 kPa*
Max. recommended pressure drop across CCO-valve:	20 kPa
Max. recommended pressure drop across standard valve:	20 kPa
Min. heating water flow:	0.013 l/s
Max. permissible inlet flow temperature:	60°C
Min. cooling water flow:	0.04 l/s
Min. permissible inlet flow temperature:	Should always be sized to ensure the system operates without condensation.

* Applies without fitted control equipment.

Electrical data

Power supply	24V AC +-15 % 50-60Hz 24V DC +-25 %	
Power consumption	VA / unit	W / unit
Inrush current 10ms/20ms	72.0	36.0
Operation	4.5	3.0

Mounting

Once PARAGON has been installed, work on the surrounding ceiling finish can begin. PARAGON is designed to suit most ceiling types available on the market, such as T-bar ceilings with tiles, plasterboard ceilings, etc. Detailed opening dimensions are specified in the separate installation instructions.

Air connection

All designs have an Ø125 air connection. The standard design has the air connection centred at the rear of the product for easy access from both ends and the rear, and to avoid product mix-ups during site logistics.

The suite design, available only in length 1400 mm, has two parallel air connections at the rear, i.e. 2 x Ø125.

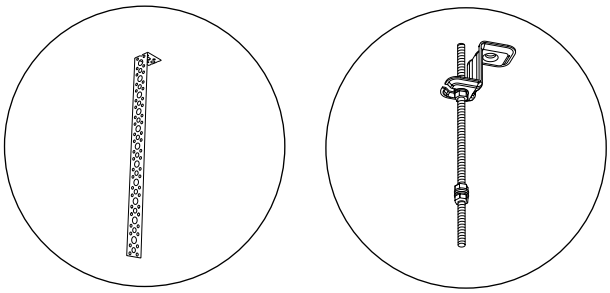


Figure 10. Suspension options with mounting strips and threaded rods respectively.

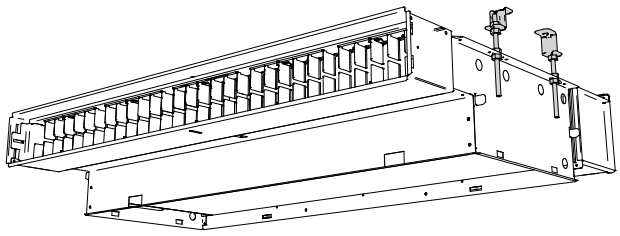


Figure 11. Installation of PARAGON, here suspended using threaded rods.

For detailed information about installation, commissioning and maintenance, see the PARAGON IOM manual.

Swegon reserves the right to alter specifications.

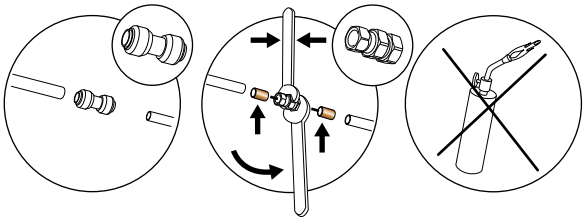
Connection dimensions - water

Standard version with factory-fitted valves:

Length (mm)	Cooling, return	Heating, return
800, 1100, 1400	DN15 external thread	DN15 external thread

Standard version without factory-fitted valves:

Length (mm)	Cooling, supply and return	Heating, supply and return
800, 1100, 1400	Plain pipe end	Plain pipe end
	(Cu) Ø 12 x 1.0 mm	(Cu) Ø 12 x 1.0 mm



Note that compression-ring couplings require support sleeves inside the pipes.

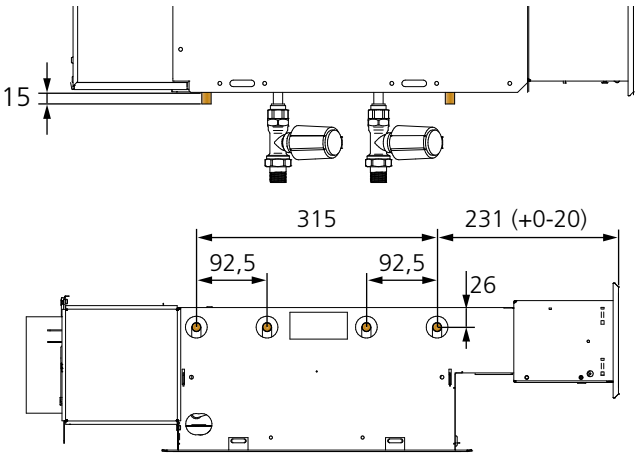
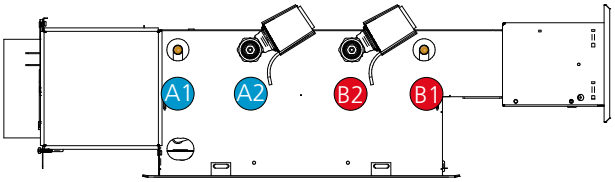


Figure 14. Dimensions, suspension.

Water connection on right side (R)

Cooling and heating R, all sizes.



Cooling R, all sizes.

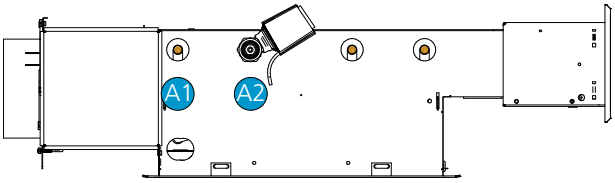
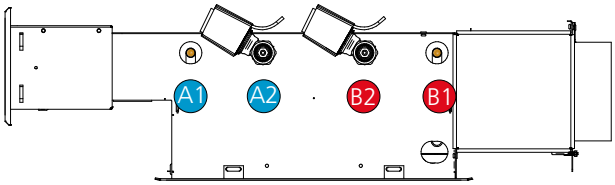


Figure 12. Water connection on right side (R).
A1 = Cooling water, supply B1 = Heating water, supply
A2 = Cooling water, return B2 = Heating water, return

Water connection on left side (L)

Cooling and heating L, all sizes.



Cooling L, all sizes.

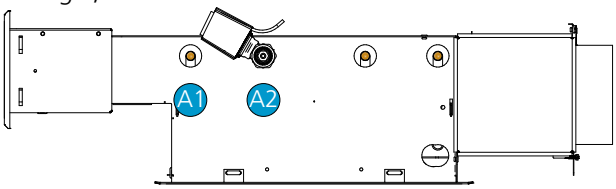


Figure 15. Water connection on left side (L).
A1 = Cooling water, supply B1 = Heating water, supply
A2 = Cooling water, return B2 = Heating water, return

Rear connection (WB)

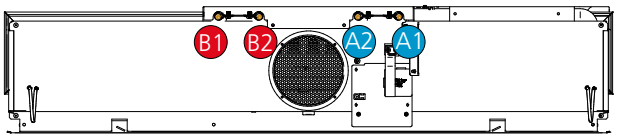


Figure 13. Water connection, rear (WB)
A1 = Cooling water, supply B1 = Heating water, supply
A2 = Cooling water, return B2 = Heating water, return

Certificates and standards

- EPD Declaration.
- CE Declaration.
- Eurovent.

Certifications and standards are available at www.swegon.com.

Technical data

Dimensions and weights

PARAGON 800

Length (mm)	Type	Dim. (Ø)	Dry weight* (kg)		Water volume (l)	
			Without grille	With grille	Cooling	Heating
800 R	A	125	15.0	17.7	1.4	
800 L	A	125	15.0	17.7	1.4	
800 R	B	125	15.0	17.7	1.4	0.4
800 L	B	125	15.0	17.7	1.4	0.4
800 R	X	125	15.0	17.7	1.4	
800 L	X	125	15.0	17.7	1.4	

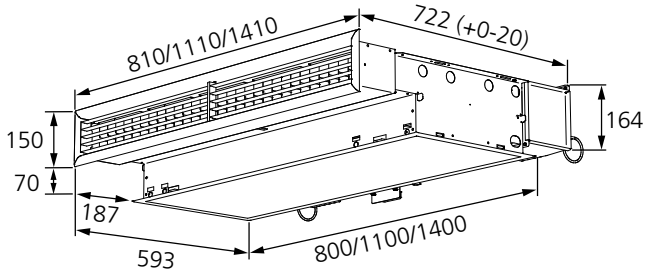


Figure 16. Dimensions with grille.

PARAGON 1100

Length (mm)	Type	Dim. (Ø)	Dry weight* (kg)		Water volume (l)	
			Without grille	With grille	Cooling	Heating
1100 R	A	125	20.0	23.4	1.9	
1100 L	A	125	20.0	23.4	1.9	
1100 R	B	125	20.0	23.4	1.9	0.5
1100 L	B	125	20.0	23.4	1.9	0.5
1100 R	X	125	20.0	23.4	1.9	
1100 L	X	125	20.0	23.4	1.9	

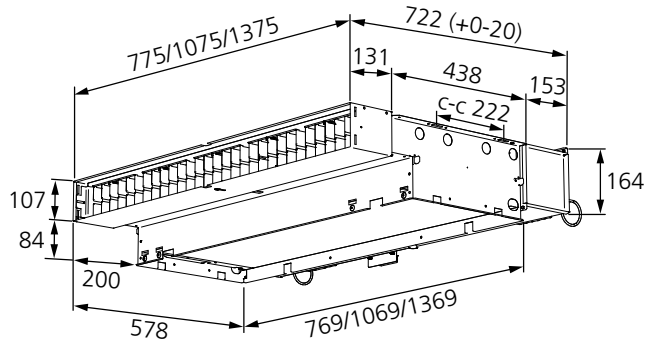


Figure 17. Dimensions without grille.

PARAGON 1400

Length (mm)	Type	Dim. (Ø)	Dry weight* (kg)		Water volume (l)	
			Without grille	With grille	Cooling	Heating
1400 R	A	125	23.2	27.6	2.5	
1400 L	A	125	23.2	27.6	2.5	
1400 R	B	125	23.2	27.6	2.5	0.7
1400 L	B	125	23.2	27.6	2.5	0.6
1400 R	X	125	23.2	27.6	2.5	
1400 L	X	125	23.2	27.6	2.5	

*Add 0.7 kg for control equipment.

Swegon reserves the right to alter specifications.

Performance

Designations

P: Power (W, kW)

v: Velocity (m/s)

q: Flow (l/s)

p: Pressure (Pa, kPa)

t_r: Room temperature (°C)

t_m: Mean water temperature (°C)

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

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

ΔT_l: Temperature differential between room and supply air (K)

Δp: Pressure drop (Pa, kPa)

k_p: Pressure drop constant

Supplementary index:

k = cooling, l = air, v = heating, i = commissioning

Cooling

Tables 1–2 show the achieved cooling capacity from both primary air and water for different lengths and airflows.

The total cooling capacity of the product is the sum of the primary-air and water cooling capacities.

Table 1 - Cooling capacity, 70 Pa

Length (mm)	Airflow		Sound level* (dB (A))	Cooling capacity, air (W) at ΔT				Cooling capacity, water (W) at ΔT_{mk}**							Air pressure drop constant (k)
	l/s	m³/h		6	8	10	12	6	7	8	9	10	11	12	
800	8	30	<20	60	80	100	120	214	250	285	320	356	391	427	1.0
800	17	60	<20	120	161	201	241	319	370	422	473	524	575	626	2.0
800	25	90	20	181	241	301	361	356	414	473	537	595	660	719	3.0
1100	8	30	<20	60	80	100	120	236	274	311	349	386	423	460	1.0
1100	25	90	<20	181	241	301	361	445	519	594	668	743	818	893	3.0
1100	37	133	28	266	355	444	533	506	591	676	762	848	934	1020	4.4
1400	8	30	<20	60	80	100	120	263	306	348	391	433	475	517	1.0
1400	25	90	21	181	241	301	361	497	581	665	749	833	917	1002	3.0
1400	48	172	29	344	459	574	688	612	712	812	920	1021	1130	1231	5.7

Table 2 - Cooling capacity, 100 Pa

Length (mm)	Airflow		Sound level* (dB (A))	Cooling capacity, air (W) at ΔT				Cooling capacity, water (W) at ΔT_{mk}**							Air pressure drop constant (k)
	l/s	m³/h		6	8	10	12	6	7	8	9	10	11	12	
800	10	36	21	72	96	120	144	258	302	345	389	432	476	520	1.0
800	20	72	21	144	192	240	288	373	435	496	556	617	678	738	2.0
800	30	108	24	216	288	360	432	417	489	555	627	699	765	837	3.0
1100	10	36	21	72	96	120	144	297	344	390	437	483	529	574	1.0
1100	30	108	25	216	288	360	432	524	613	703	793	883	974	1064	3.0
1100	44	158	31	317	422	528	634	588	684	788	885	982	1088	1185	4.4
1400	10	36	22	72	96	120	144	324	378	433	487	542	597	651	1.0
1400	30	108	24	216	288	360	432	585	684	784	883	983	1082	1182	3.0
1400	57	205	34	410	547	684	821	709	828	937	1055	1173	1292	1360	5.7

*Room attenuation = 4 dB.

**The stated capacities are based on the complete product including standard supply and return air grilles.

Without grilles, the water capacity increases by approx. 5%.

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

Water flow = 0.05 l/s, room temperature 20°C.

Heating

Table 3 - Heating capacity, 70 Pa

Length (mm)	Airflow		Sound level* (dB(A))	Heating capacity, water (W) at ΔT_{mk}							Air pressure drop constant (k)
	l/s	m³/h		5	10	15	20	25	30	35	
800	8	30	<20	100	196	302	412	524	636	751	1.0
800	17	60	<20	134	281	436	598	764	933	1104	2.0
800	25	90	20	141	296	457	621	784	952	1124	3.0
1100	8	30	<20	105	219	344	474	609	745	883	1.0
1100	25	90	<20	190	385	598	821	1044	1271	1504	3.0
1100	37	133	28	193	408	640	877	1119	1369	1619	4.4
1400	8	30	<20	140	297	458	624	792	963	1135	1.0
1400	25	90	21	230	474	735	997	1262	1535	1787	3.0
1400	48	172	29	252	518	803	1087	1380	1676	1975	5.7

Table 4 - Heating capacity, 100 Pa

Length (mm)	Airflow		Sound level* (dB(A))	Heating capacity, water (W) at ΔT_{mv}							Air pressure drop constant (k)
	l/s	m³/h		5	10	15	20	25	30	35	
800	10	36	21	105	221	343	467	593	721	851	1.0
800	20	72	21	153	316	489	667	848	1036	1223	2.0
800	30	108	24	157	327	504	684	870	1058	1245	3.0
1100	10	36	21	120	255	400	547	700	854	1012	1.0
1100	30	108	25	204	431	672	919	1171	1427	1686	3.0
1100	44	158	31	212	458	714	980	1257	1534	1815	4.0
1400	10	36	22	165	341	530	719	916	1115	1313	1.0
1400	30	108	24	260	540	829	1123	1421	1722	2030	3.0
1400	57	205	34	275	576	893	1210	1536	1866	2199	6.0

*Room attenuation = 4 dB.

Water flow = 0.04 l/s, room temperature 20°C.

Swegon reserves the right to alter specifications.

Accessories

Factory-fitted accessories

Terminal block

Factory-fitted terminal block for connection of accessories.



Valve cooling and heating – SYST VDN 215

Valves for cooling and heating.

Preset fully open.

Function	Type	Dim.	K_v (m^3/h)
Cooling/heating	VDN215	DN15 (½")	0,07-0,89



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

Actuator, cooling and heating – ACTUATOR 24V NC

Valve actuators for cooling and heating.

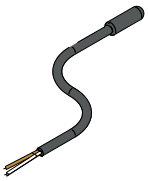
24 V AC/DC, NC (Normally Closed).

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



Temperature sensor – T-TG-1

For temperature measurement.



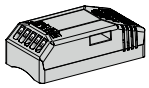
Condensation sensor – SYST PCS

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 thermally bonded to the detector's metal plate.

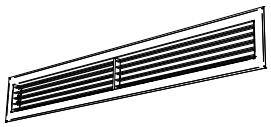
Compatible with LUNA.

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



Loose accessories

Supply air grille – PARAGON-SG
Supply air grille for PARAGON, available for product lengths 800, 1100 and 1400 mm.



Grille lock – PARAGON T-GL
Grille lock for securing the position of the supply air grille.



Return air grille – PARAGON-RG
Return air grille for PARAGON, available for product lengths 800, 1100 and 1400 mm.

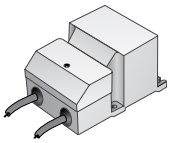


Transformer – Power ADAPT 20 VA (ARV)
Input voltage 230 V 50-60 Hz, Output voltage 24 V AC.
Power 20 VA, Enclosure IP33.

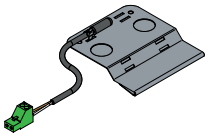


Transformer – SYST TS-1
Double-insulated protective transformer 230V AC/24 V AC.
Input voltage 230 V 50-60 Hz, Output voltage 24 V AC,
Power 20 VA, Enclosure IP33

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



Temperature sensor – T-TG-1
External temperature sensor. Used, for example, if the room temperature is to be measured at a location other than the sensor module, or to measure the temperature on the main pipe in a change-over system.



Valve – SYST VDN 215
Straight valve for cooling and heating.

VDN 215 is preset fully open at K_v 0,89.

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

Function	Type	Dim.	K_v (m^3/h)
Cooling/ heating	VDN215	DN15 (½")	0,07-0,89



Valve actuator, cooling and heating – ACTUATOR 24V NC
Valve actuators for cooling and heating.

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

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



Card switch – SYST SENSO II
Key card holder for hotel rooms.



Swegon reserves the right to alter specifications.

Assembly fitting – SYST MS M8

For installation use the assembly fitting containing threaded rods, ceiling brackets and nuts for all four mounting brackets.

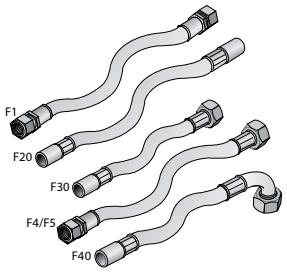
Threaded rod length from 200 mm. For large distances between ceiling and unit, double threaded rods with a thread lock are used.



Flexible hoses – SYST FH

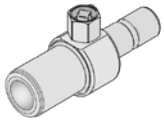
Flexible hoses with couplings for chilled beams and comfort modules.

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



Venting nipple, push-on – SYST AR-12

A venting nipple is available as a complement to the flexible hoses with push-on couplings. The nipple fits directly in the push-on hose coupling for easy installation.



Air connection fitting, nipple – SYST AD1

SYST AD1 is used as a joint between PARAGON and the duct system.
Available in two dimensions: Ø125 and Ø160 mm.



Air connection fitting – SYST CA

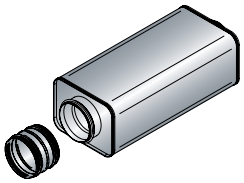
90° duct bend.

Available in 2 dimensions: Ø125 and Ø160 mm.



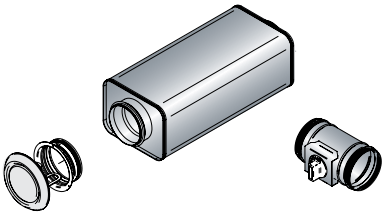
Supply air kit – Supply Air Kit-125

Supply air kit containing CLA sound attenuator, Ø125 mm and sleeve.



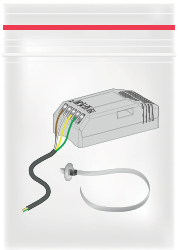
Extract air kit – Extract Air Kit CAV-CRP-125

Extract air kit for CAV containing CLA sound attenuator, Ø125, manual commissioning damper, EXC extract air diffuser.



Accessory kits

SYST PCS-KIT



SYST PCS condensation sensor and fastening components for retrofitting.

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 thermally bonded to the detector's metal plate.

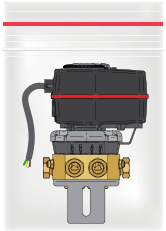
For more information, see separate product data sheet on www.swegon.com.

Temperature sensor – T-TG-1



Kit with temperature sensor and cable ties for fastening.

CCO-Kit (ventil + damper)



Compact change-over valve for maximum utilization of the coil.

Specification

PARAGON comfort module for cooling, heating, ventilation and control.

Scope of supply

Swegon's scope of supply ends at the water connection point.

At the connection points, the pipe contractor connects to the plain pipe end and/or external valve thread, fills the system, vents it and pressure-tests it.

The ventilation contractor connects to the duct connection with the dimension shown in the Dimensions and weight chapter *Dimensions and weight*.

The electrical contractor provides a 24 V AC power supply or an earthed 230 V socket for the transformer and, where required, a wall-mounted junction box for the room thermostat.

The building contractor makes openings in the corridor wall for the supply air duct, in internal walls and ceilings for supply and extract air grilles, and in the bathroom ceiling for the extract air duct.

The electrical contractor connects the power (24 V) and signal cables to the terminal block with spring-loaded push connections.

Maximum cable area is 2.5 mm^2. For reliable operation, ferruled cable ends are recommended.

Ordering specification

PARAGON

PARAGON	e	aaaa-	bb-	cc-	ddddd
Version:					
Length (mm): 800, 1100 and 1400					
Function: A = Cooling (water) B = Cooling and heating (water) X1 = Cooling and electric heating Length: 800 = 350W Length: 1100/1400 = 500W X2 = Cooling and electric heating Length: 800 = 700W Length: 1100/1400 = 1000W					
Connection side for water (viewed from the rear of the product): R = Right L = Left WB = Centred at rear (optional)					
Air connections: 125 = Ø125 (standard) 2x125 = 2Ø125 (suite, only available for length 1400)					

Accessories

Grille	PARAGON e	aa-	bbbb	ccccccc
Type: SG = Supply air grille RG = Return air grille				
Product length (mm): 800, 1100, 1400				
Colour: STD (RAL9003), RAL9010, RAL7037, RAL9005, RAL9006, RAL9007, COLOR (Special)				

Assembly fitting	SYST MS M8	aaaa-	b
Threaded rod length (mm): 200; 500; 1000			
Type: 1 = One threaded rod 2 = Two threaded rods and one thread lock			

Specification text

Example specification text according to VVS AMA.

PCT.312 Duct-connected chilled beams.

PTD.4 Duct-connected room units for heating and cooling.

KB XX

PARAGON comfort module with integrated supply air damper. Designed for rear-edge installation in ceiling/wall with the following functions:

- Waterborne cooling.
- Waterborne heating or electric heating.
- Ventilation.
- ADC comfort function with adjustable setting ±30 degrees.
- Duct connection Ø125 mm.
- Integrated recirculation air opening in the lower section.
- Coil and any control equipment accessible from the rear of the product or via the return air grille.
- Cleanable.
- Fixed measuring point with hose.
- Eurovent certified.
- Grille in Standard colour RAL 9003.

Contract boundary at the water and air connection points according to the schematic drawing.

- At the connection points, the pipe contractor connects to the 12 mm plain pipe end, after which the ventilation contractor connects to the Ø125 mm connection sleeve.
- The pipe contractor fills, vents and pressure-tests the system and is responsible for ensuring that the design water flows reach each system branch and unit.
- The ventilation contractor commissions the design airflows.

Swegon reserves the right to alter specifications.