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SkyStar SK Cassette Fan Coil Unit with Asynchronous Motor

Innovating and beautiful design, **seven different sizes**, high control flexibility, easy maintenance: the **SkyStar chilled water Cassette** is the result of an extended technical and design development aimed at achieving the highest level in terms of performance, silent operation and control possibilities. The air diffuser has an highly attractive aesthetical appearance, very innovative, and is also able to offer the best air distribution performance thanks to in-depth computer studies and laboratory tests. The 4 smaller sizes are designed to fit into **600x600 mm false ceiling** standard modules. The 3 bigger sizes have a **dimension of 800x800 mm** which allows the best outcome in terms of quietness and of price/performance ratio for these high capacity models.

In addition to temperature and speed standard controls,

automatic speed selection is also available.

More than one unit can be connected to a single control, and the unit control panel can be installed in a remote position that **facilitates**

the maintenance operation. **All** the **SkyStar** units can be supplied in **MB version**.

This version allows a wide range of controls, including the infra-red remote control, which can manage one single unit or several units by using the **Modbus RTU – RS 485** communication protocol.

The units can be connected to the most common automatic building management systems.



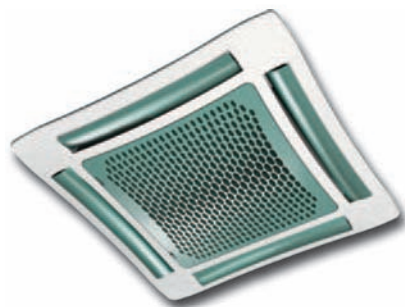
Technical characteristics of the main components:

Air diffuser: intake grid, frame and adjustable air distribution louvers on each side, made from ABS.



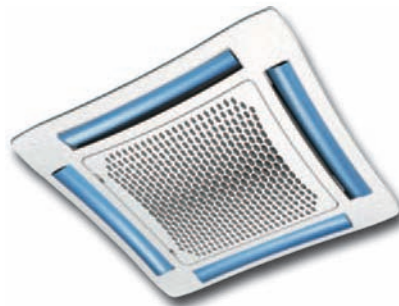
HTA version
white ABS, RAL 9003

HTB version
intake grid, frame and louvers
in a colour of choice



HTC version
intake grid and louvers
in a colour of choice,
plus white ABS frame RAL 9003

HTD version
louvers in a colour of choice,
while the grid and frame
are made from ABS, RAL 9003



MD-600 version
metal diffuser painted in RAL 9003
white colour with 600x600 dimension
to perfectly fit into the false ceiling
standard modules without overlapping parts
(800x800 model is not available)

Casing: made from galvanized steel with internal thermal insulation with polyolefin (PO) foam (class M1) and external anti-condensate lining.

Control panel: made of an external metallic box with control electronic board and easily accessible terminal board.

Fan assembly: the fan assembly, which is mounted on anti-vibrating supports, is extremely silent. The radial fan has been designed to optimise performance, using wing profile blades with a shape that reduces turbulence, increasing efficiency and reducing noise. The single air inlet radial fan is connected to a **6 speed** electric motor with **single phase 230 V / 50 Hz** supply, class B insulation and integrated Klaxon thermal contact for motor protection.



The units are supplied with 3 standard speeds connected and it is possible to change them on site if necessary.

Coil: made of copper tubes with bonded aluminium fins for maximum transfer contact.

The coils have 1, 2 or 3 rows for 2 pipe models and 2+1 rows for 4 pipe models (the heating row is on the inside part of the coil).

For 4 pipe systems two versions are available:

- **SK 04, SK 14, SK 24, SK 34, SK 44, SK 54, SK 64** supply an higher heating emission,
- **SK 26, SK 36, SK 56, SK 66** supply an higher cooling emission.

The coil is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion.

Condensate collection tray: high density ABS polystyrene foam condensate tray, shaped in order to optimize the air diffusion, fire retardant rating B1 to DIN 4102.

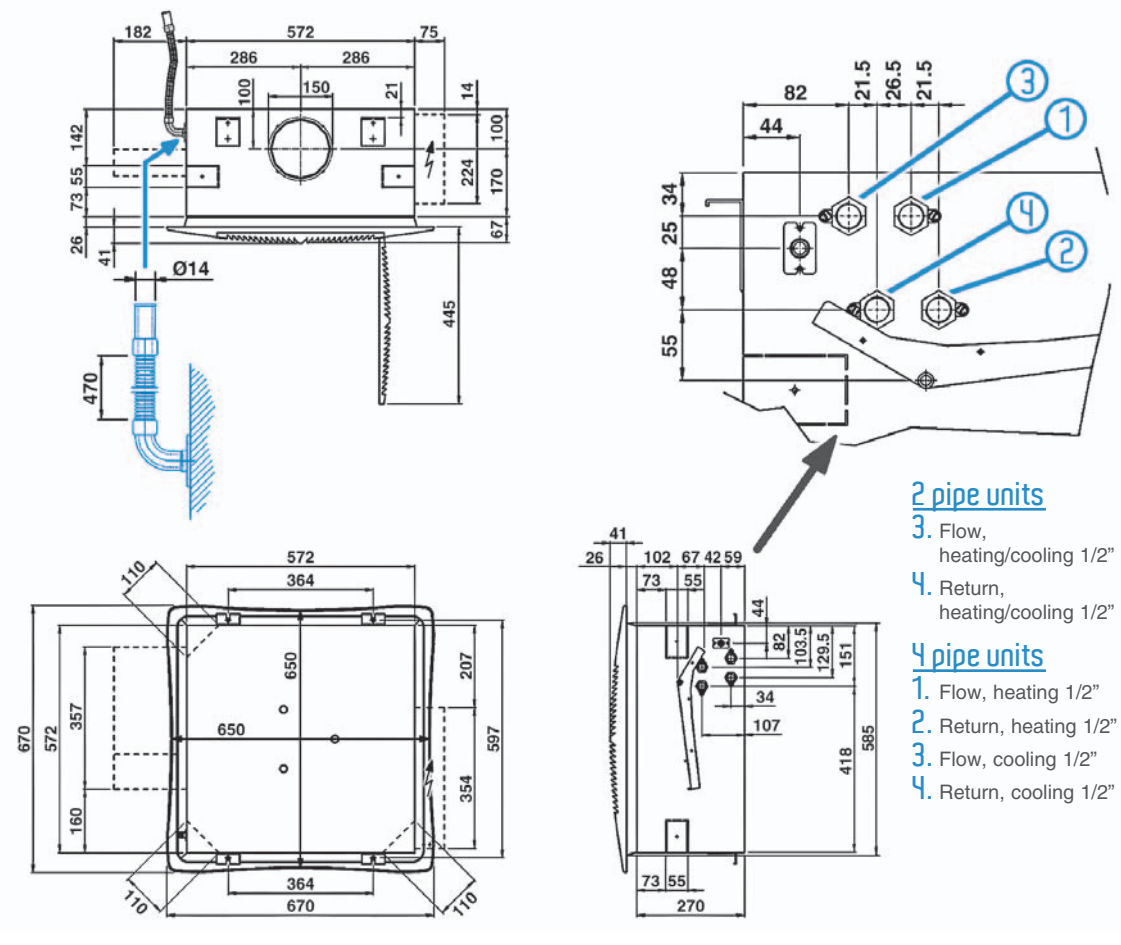
Air filter: synthetic washable filter, easily removable.

Condensate pump: float switch centrifugal pump with 650 mm of maximum head, built into the unit and wired to the control panel on the outside of the casing.

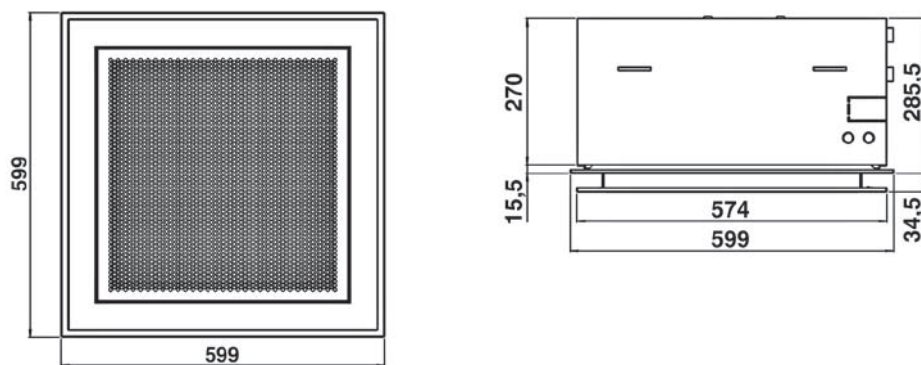
Valve set: two or three way valves for ON/OFF operation, with pipe mounting kit and thermostatic actuator.

Dimensions and Weight

SK 02-04 / SK 12-14 / SK 22-24-26 / SK 32-34-36
(Version 600 x 600)



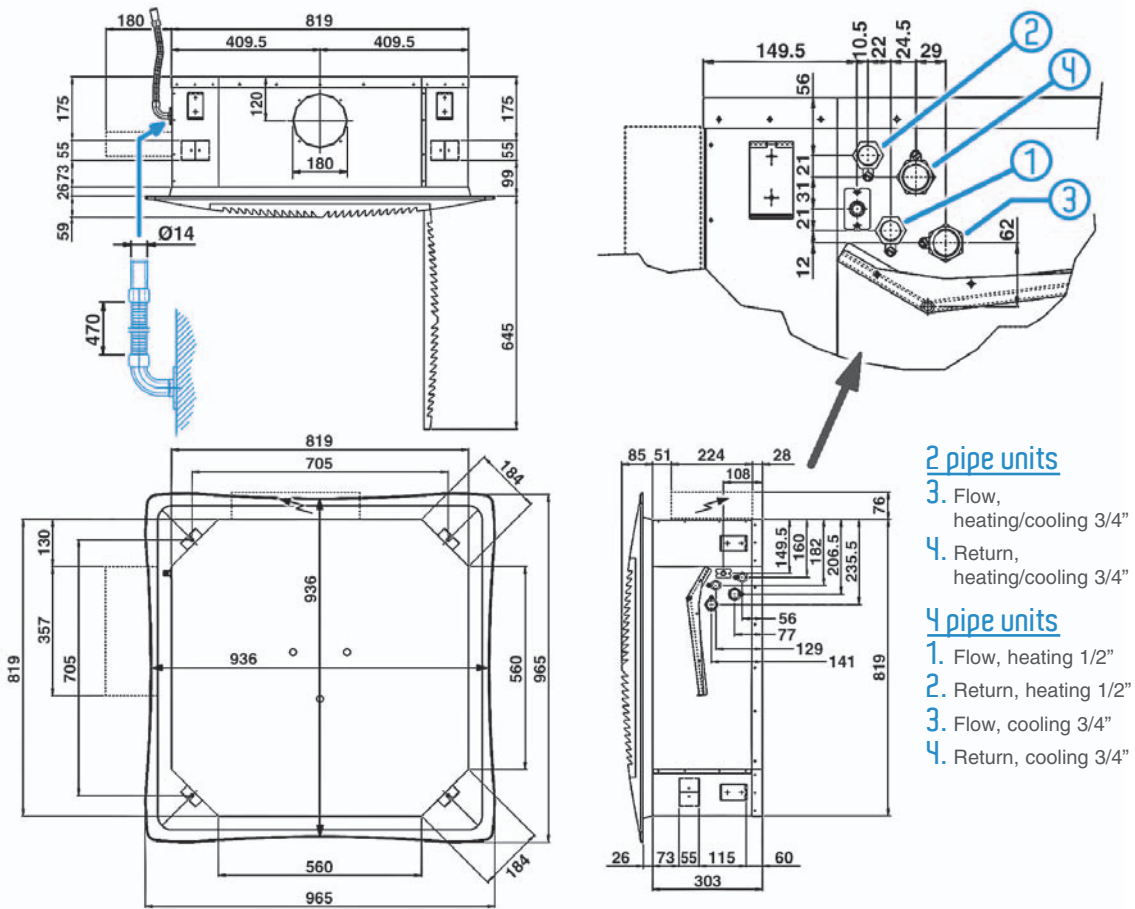
MD-600 metal diffuser



MODEL	Unit		Diffuser					
	WEIGHTS PACKED UNIT	WEIGHTS UNPACKED UNIT	WEIGHTS PACKED UNIT	WEIGHTS UNPACKED UNIT	PACKED UNIT DIMENSIONS (mm)			
	kg	kg	kg	kg	A	B	C	D
SK 02 - 12	30	24	6	3	790	350	750	150
SK 04 - 14								
SK 22 - 24 - 26								
SK 32 - 34 - 36								

Dimensions and Weight

SK 42-44 / SK 52-54-56 / SK 62-64-66
(Version 800 x 800)



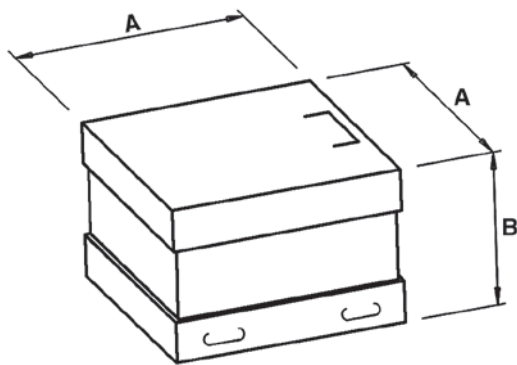
2 pipe units

- 3. Flow, heating/cooling 3/4"
- 4. Return, heating/cooling 3/4"

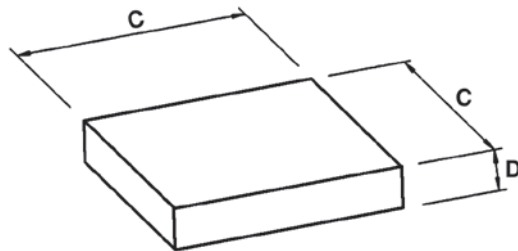
4 pipe units

- 1. Flow, heating 1/2"
- 2. Return, heating 1/2"
- 3. Flow, cooling 3/4"
- 4. Return, cooling 3/4"

Unit



Diffuser



MODEL	Unit		Diffuser					
	WEIGHTS PACKED UNIT	WEIGHTS UNPACKED UNIT	WEIGHTS PACKED UNIT	WEIGHTS UNPACKED UNIT	PACKED UNIT DIMENSIONS (mm)			
	kg	kg	kg	kg	A	B	C	D
SK 42	44	36	10	6	1050	400	1000	200
SK 44								
SK 52 - 54 - 56	47	39						
SK 62 - 64 - 66								



Certification

2 pipe units. The following standard rating conditions are used:

COOLING (summer mode)

Entering air temperature: +27°C d.b. +19°C w.b.
 Water temperature: +7°C E.W.T. +12°C L.W.T.

HEATING (winter mode)

Entering air temperature: +20°C
 Entering water temperature: +50°C

Water flow rate as for the cooling conditions

MODEL	SK 02			SK 12			SK 22			SK 32			
	1	2	3	1	2	3	1	2	3	1	2	3	
Speed													
Air flow	m ³ /h	310	420	610	310	420	520	320	500	710	430	610	880
Cooling total emission (E)	kW	1,27	1,63	1,98	1,84	2,34	2,68	2,25	3,34	4,33	2,94	3,88	5,02
Cooling sensible emission (E)	kW	1,01	1,32	1,64	1,35	1,75	2,04	1,57	2,39	3,18	2,08	2,81	3,74
Heating (E)	kW	1,62	2,12	2,64	2,22	2,90	3,35	2,56	3,93	5,23	3,43	4,63	6,17
Heating - Water 70-60°C	kW	2,80	3,66	4,56	4,19	4,91	5,68	4,83	6,96	9,25	6,10	8,25	10,63
Water flow	l/h	219	280	340	316	402	461	387	574	745	506	667	863
Dp Cooling (E)	kPa	4,5	7,0	10,0	4,9	7,6	9,7	4,6	9,4	15,1	7,5	12,4	19,7
Dp Heating (E)	kPa	4,0	6,0	9,0	4,1	6,3	8,2	3,5	7,3	11,4	6,7	11,2	17,7
Sound power Lw (E)	dB(A)	33	40	49	33	40	45	33	45	53	41	49	59
Sound pressure Lp (★)	dB(A)	24	31	40	24	31	36	24	36	44	32	40	50
Fan (E)	W	25	32	57	25	32	44	25	44	68	32	57	90
	A	0,11	0,15	0,27	0,11	0,15	0,20	0,11	0,20	0,32	0,15	0,27	0,45
Water content	l	0,8	0,8	0,8	1,4	1,4	1,4	2,1	2,1	2,1	2,1	2,1	2,1
Dimensions	mm	575 x 575 x 275											

MODEL	SK 42			SK 52			SK 62			
	1	2	3	1	2	3	1	2	3	
Speed										
Air flow	m ³ /h	630	820	1140	710	970	1500	710	1280	1820
Cooling total emission (E)	kW	4,21	4,91	6,16	5,31	6,78	9,51	5,31	8,45	11,10
Cooling sensible emission (E)	kW	3,03	3,58	4,59	3,46	4,48	6,48	3,71	6,09	8,25
Heating (E)	kW	5,12	6,03	7,77	5,61	7,34	10,71	6,13	10,30	14,00
Heating - Water 70-60°C	kW	8,61	10,16	13,14	10,25	13,43	19,76	10,25	17,26	23,68
Water flow	l/h	724	845	1060	913	1166	1636	913	1453	1909
Dp Cooling (E)	kPa	10,9	14,3	21,6	9,4	14,7	26,9	9,4	21,8	35,6
Dp Heating (E)	kPa	6,7	9,9	15,1	7,9	12,4	23,0	7,9	18,6	30,6
Sound power Lw (E)	dB(A)	33	40	48	34	40	53	34	48	58
Sound pressure Lp (★)	dB(A)	24	31	39	25	31	44	25	39	49
Fan (E)	W	33	48	77	42	63	120	42	95	170
	A	0,15	0,23	0,36	0,18	0,28	0,53	0,18	0,42	0,74
Water content	l	3,0	3,0	3,0	4,0	4,0	4,0	4,0	4,0	4,0
Dimensions	mm	820 x 820 x 303								

(E) = Eurovent certified performance.

(★) = The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m³ room and a reverberation time of 0.5 sec.



www.eurovent-certification.com
www.certiflash.com

Certification

4 pipe units. The following standard rating conditions are used:

COOLING (summer mode)

Entering air temperature: +27°C d.b. +19°C w.b.
Water temperature: +7°C E.W.T. +12°C L.W.T.

HEATING (winter mode)

Entering air temperature: +20°C
Water temperature: +70°C E.W.T. +60°C L.W.T.

MODEL		SK 04			SK 14			SK 24			SK 26			SK 34			SK 36		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Speed																			
Air flow	m ³ /h	310	420	610	310	420	520	320	500	710	320	500	710	430	610	880	430	610	880
Cooling total emission (E)	kW	1,51	1,96	2,33	1,85	2,36	2,70	1,85	2,65	3,34	2,09	3,06	3,93	2,36	3,02	3,81	2,72	3,53	4,53
Cooling sensible emission (E)	kW	1,15	1,55	1,90	1,34	1,71	1,98	1,34	1,98	2,56	1,49	2,24	2,95	1,75	2,29	2,97	1,97	2,62	3,46
Water flow	l/h	260	337	401	318	406	464	318	456	574	359	526	676	406	519	655	468	607	779
Dp Cooling (E)	kPa	6,0	10,0	13,5	4,6	6,9	8,8	4,6	8,8	13,4	4,0	7,0	10,5	7,2	11,2	17,0	6,0	9,0	14,0
Heating (E)	kW	1,96	2,54	3,03	2,43	3,02	3,46	2,43	3,46	4,40	1,98	2,71	3,35	3,10	3,97	4,95	2,46	3,06	3,79
Water flow	l/h	169	219	261	209	260	298	209	298	378	170	233	288	267	341	426	212	263	326
Dp Heating (E)	kPa	6,5	10,5	14,5	5,7	8,5	10,8	5,7	10,8	16,6	3,6	6,0	9,0	8,8	13,8	20,5	5,0	7,8	11,0
Sound power Lw (E)	dB(A)	33	40	49	33	40	45	33	45	53	33	45	53	41	49	59	41	49	59
Sound pressure Lp (★)	dB(A)	24	31	40	24	31	36	24	36	44	24	36	44	32	40	50	32	40	50
Fan (E)	W	25	32	57	25	32	44	25	44	68	25	44	68	32	57	90	32	57	90
	A	0,11	0,15	0,27	0,11	0,15	0,20	0,11	0,20	0,32	0,11	0,20	0,32	0,15	0,27	0,45	0,15	0,27	0,45
Cooling water content	l	1,0	1,0	1,0	1,4	1,4	1,4	1,4	1,4	1,4	1,7	1,7	1,7	1,4	1,4	1,4	1,7	1,7	1,7
Heating water content	l	0,6	0,6	0,6	0,7	0,7	0,7	0,7	0,7	0,7	0,5	0,5	0,5	0,7	0,7	0,7	0,5	0,5	0,5
Dimensions	mm	575 x 575 x 275																	

MODEL		SK 44			SK 54			SK 56			SK 64			SK 66		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Speed																
Air flow	m ³ /h	630	820	1140	710	970	1500	710	970	1500	710	1280	1820	710	1280	1820
Cooling total emission (E)	kW	4,14	5,03	6,34	4,52	5,66	7,71	4,99	6,33	8,77	4,52	6,93	8,89	4,99	7,84	10,20
Cooling sensible emission (E)	kW	2,96	3,65	4,69	3,25	4,15	5,83	3,53	4,55	6,49	3,25	5,18	6,84	3,53	5,73	7,68
Water flow	l/h	712	865	1090	777	974	1326	858	1089	1508	777	1192	1529	858	1348	1754
Dp Cooling (E)	kPa	8,8	12,5	18,9	10,3	15,4	26,9	9,0	14,0	25,0	10,3	22,1	34,7	9,0	20,0	32,0
Heating (E)	kW	5,91	7,19	9,10	6,45	8,10	11,00	5,23	6,42	8,56	6,45	9,98	12,70	5,23	7,74	9,80
Water flow	l/h	508	618	783	555	697	946	450	552	736	555	858	1092	450	666	843
Dp Heating (E)	kPa	9,8	14,0	21,4	11,5	17,4	29,9	6,5	9,2	15,3	11,5	25,3	38,8	6,5	13,0	19,5
Sound power Lw (E)	dB(A)	33	40	48	34	40	53	34	40	53	34	48	58	34	48	58
Sound pressure Lp (★)	dB(A)	24	31	39	25	31	44	25	31	44	25	39	49	25	39	49
Fan (E)	W	33	48	77	42	63	120	42	63	120	42	95	170	42	95	170
	A	0,15	0,23	0,36	0,18	0,28	0,53	0,18	0,28	0,53	0,18	0,42	0,74	0,18	0,42	0,74
Cooling water content	l	3,0	3,0	3,0	3,0	3,0	3,0	3,6	3,6	3,6	3,0	3,0	3,0	3,6	3,6	3,6
Heating water content	l	1,4	1,4	1,4	1,4	1,4	1,4	1,1	1,1	1,1	1,4	1,4	1,4	1,1	1,1	1,1
Dimensions	mm	820 x 820 x 303														

(E) = Eurovent certified performance.

(★) = The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m³ room and a reverberation time of 0.5 sec.

Other available Versions

SK-MB

All the SkyStar units can be supplied in MB version. This version allows a wide range of controls, including the infra-red remote control, which can manage one single unit or several units by using the Modbus RTU - RS 485 communication protocol.



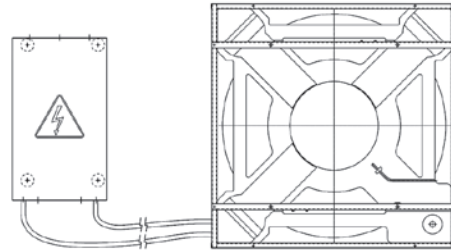
SK-E

The SkyStar 2 pipe models are available with electric heater that is controlled in place of the heating coil valve. The electric heater is controlled in place of the hot water valve and not as integration to it. The heater is hermetically sealed and supplied inside the coil pipes and therefore can be only factory mounted. The electric heaters of the SK 12-22-32 units are for single phase 230V supply. The electric heaters of the SK 42-52-62 units are for three phase 400V supply.

Model	SK 12-E	SK 22-E / SK 32-E	SK 42-E / SK 52-E / SK 62-E
Emission	1500 Watt	2500 Watt	3000 Watt

Unit with remote electric board

On request the Skystar cassettes are available with electric control panel reachable from below and with the electric board that can be placed in a remote position.


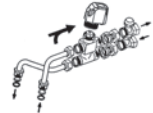





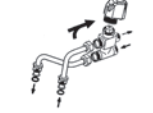
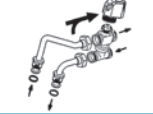



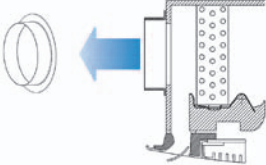
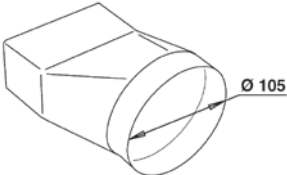
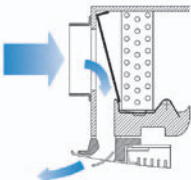


MCT

The **MCT** version has been designed for all environments where false ceilings are not featured or cannot be constructed. The cover cabinet fits perfectly to the air intake and outlet diffuser, maintaining the appealing design that defines the SkyStar series. The water fittings can be turned to point upwards. The **MCT** series includes 7 models, with an installation height of up to 5 m, thanks to the highly flexible adjustment of the air distribution louvers. All the technical specifications described on the previous pages remain the same, while keeping in mind that the **MCT** series features one coil only (two pipe systems), there is no possibility of fresh air intake, there is no possibility of additional electric heater. The **MCT** version features a special casing delivered in separate packaging; this must only be fitted after having installed the SkyStar unit and completed the water and electrical connections.



Accessories

<p>3 way ON-OFF valves with micrometric lockshield valve</p> <p>Valve set, 3 ways, ON-OFF, with thermoelectric actuator. The set includes connection pipes and holders.</p>		 <p>SK 02-04 / 12-14 / 22-24-26 / 32-34-36</p>  <p>SK 42-44 / 52-54-56 / 62-64-66</p>
<p>2 way ON-OFF valves with micrometric lockshield valve</p> <p>Valve set, 2 ways, ON-OFF, with thermoelectric actuator. The set includes connection pipes and holders.</p>		 <p>SK 02-04 / 12-14 / 22-24-26 / 32-34-36</p>  <p>SK 42-44 / 52-54-56 / 62-64-66</p>
<p>3 way ON-OFF valves with simplified kit</p> <p>Valve set, 3 ways, ON-OFF, with thermoelectric actuator. The set includes connection pipes.</p>		 <p>SK 02-04 / 12-14 / 22-24-26 / 32-34-36</p>  <p>SK 42-44 / 52-54-56 / 62-64-66</p>
<p>2 way ON-OFF valves with simplified kit</p> <p>Valve set, 2 ways, ON-OFF, with thermoelectric actuator. The set includes connection pipes.</p>		 <p>SK 02-04 / 12-14 / 22-24-26 / 32-34-36</p>  <p>SK 42-44 / 52-54-56 / 62-64-66</p>
<p>CDA</p>	<p>Air distribution connection</p>	
<p>CAP</p>	<p>Fresh air connection</p>	 <p>Ø 105</p>
<p>PRT</p>	<p>Fresh air kit</p> <p>This is used to introduce fresh air into the environment directly through the diffuser.</p>	

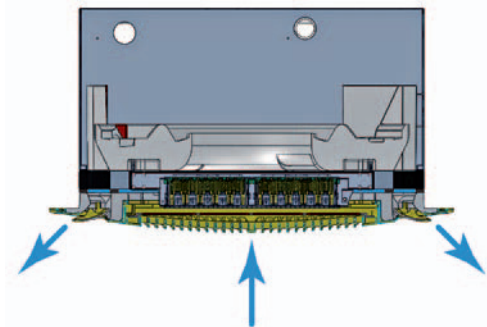
IAQ accessory



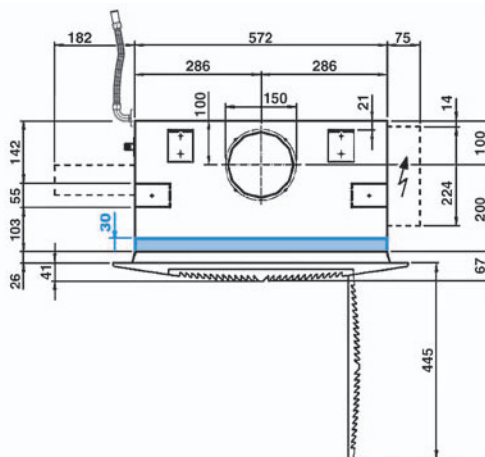
Crystall

SkyStar Cassette can be equipped with the innovative plate type electrostatic filter, **Crystall**, combining air treatment and purifying in a single product.

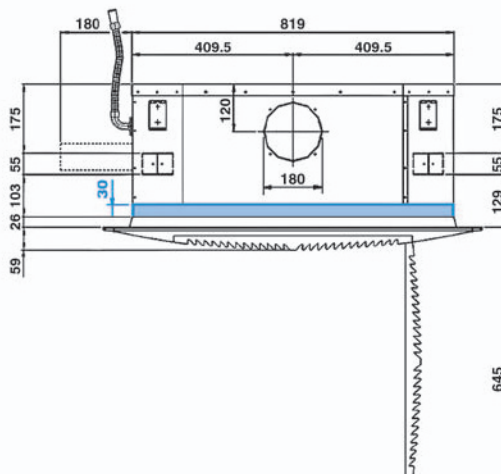
The electronic filter is **patented and certified** according to Standard UNI 11254.



Dimensions



SK 0 / 1 / 2 / 3
(Model 600 x 600)



SK 4 / 5 / 6
(Model 800 x 800)

Wall electronic controls

SK version

MO-3V	3 speed control
CR-T	3 speed control with electronic thermostat and manual summer/winter switch
TMO-T	3 speed control with electronic thermostat and summer/winter switch
TMO-T-AU	Automatic speed control with electronic thermostat and summer/winter switch
TMO-DI	Automatic speed control with electronic thermostat, summer/winter switch and liquid crystal display
TMO-503-SV2	Automatic speed control with electronic thermostat to be mounted in the DIN 503 box (for units with valves)
T2T	Electromechanical thermostat with summer/winter switch (only for 2 pipe units)

FreeSabiana wireless control system

Free-Com	Remote control to be used with electronic boards described at Page 229
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Electronic controls

SK-MB version

T-MB	Wall control (to be used with SK-MB version only)
RCS-RT03	RT03 infra-red remote control with receiver supplied with separate packaging (to be used with SK-MB version only)
RT03	RT03 infra-red remote control supplied with separate packaging (to be used with SK-MB version only)
RCS	Receiver for RT03 infra-red remote control supplied with separate packaging (to be used with SK-MB version only)
RS	Receiver for RT03 infra-red remote control and MD-600 metal diffuser supplied with separate packaging (to be used with SK-MB version only)
PSM-DI	Multifunction control (to be used with SK-MB version only)

Sabianet management system for a network of fan coils

Sabianet	Sabianet (to be used with SK-MB version only)
ROUTER-S	Router for Sabianet
SIOS	Relay output board for Sabianet

The descriptions and illustrations provided in this publication are not binding: Sabiana reserves the right, whilst maintaining the essential characteristics of the types described and illustrated, to make, at any time, without the requirement to promptly update this piece of literature, any changes that it considers useful for the purpose of improvement or for any other manufacturing or commercial requirements.



SABIANA
IL CLIMA AMICO

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