

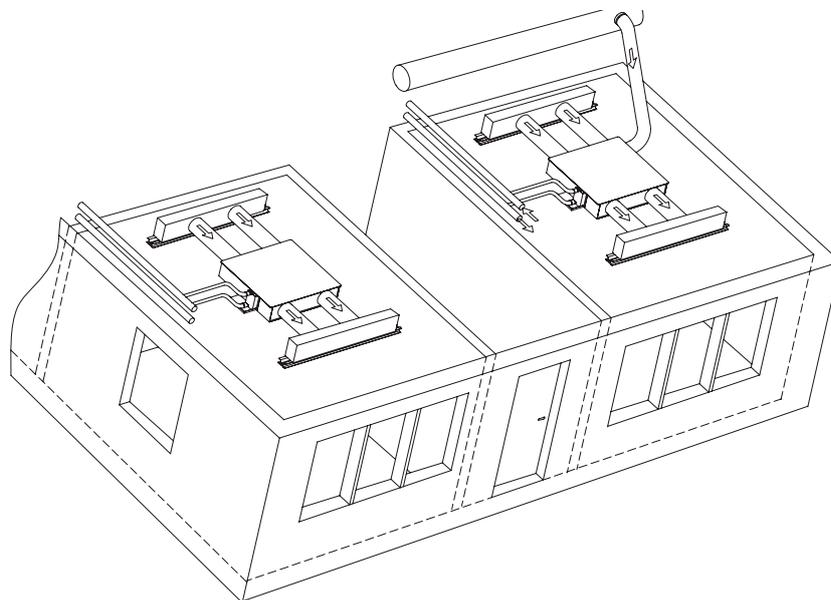
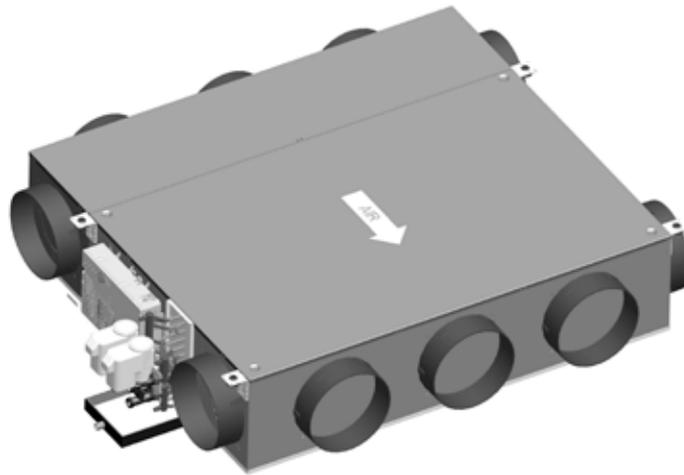


42EM ATMOSPHERA™

Ducted Fan Coil Unit



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



Selection manual



Quality and Environment
Management Systems
Approval

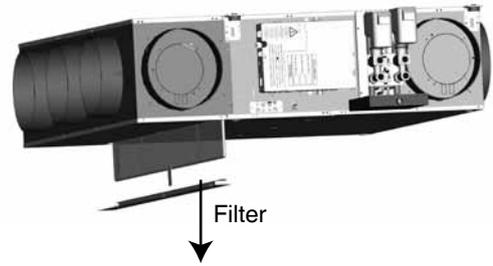
Contents

1 - FUNCTIONS.....	3
2 - FEATURES.....	3
2.1 - Configuration flexibility.....	3
2.2 - Low noise levels.....	3
2.3 - Compact design	3
2.4 - Physical and electrical data at Eurovent conditions	4
2.5 - Dimensional drawings	6
2.6 - Spigot configuration.....	9
3 - MAIN MODULES AND COMPONENTS	11
3.1 - Fan motor assemblies.....	11
3.2 - Water coil.....	11
3.3 - One-piece condensate drain pan	11
3.4 - Filter and filter access	11
3.5 - Fan wiring solutions	11
3.6 - Fresh air controller.....	12
3.7 - Electric heater (option).....	12
4 - TECHNICAL SPECIFICATIONS	13
4.1 - Valves (option).....	13
4.2 - Technical specification, flexible water pipes (option).....	13
5 - CONTROL (OPTION)	14
6 - ATMOSPHERA PERFORMANCE DATA.....	15
6.1 - Cooling capacity - water coil.....	15
6.2 - Heating capacity (water coil).....	18
6.3 - Sound power levels	20
6.4 - Electrical data	22
6.5 - Water coil pressure drop	26
6.6 - Air flow data.....	26
7 - GUIDE SPECIFICATION	28

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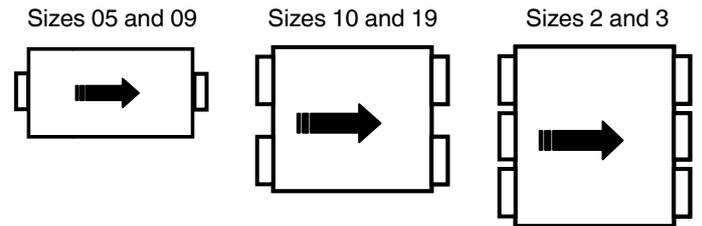
1 - FUNCTIONS

- The Carrier 42EM Atmosphaera is available in different sizes with 2-pipe, 2-pipe plus electric heater or 4-pipe coils, with an air flow range from 66 to 347 l/s, a total nominal cooling capacity range from 0.65 to 9.71 kW and a nominal heating capacity range from 1.1 to 9.93 kW.
- Decentralised, compact ducted unit, designed for false ceiling installation.
- Reliable and economical for light commercial and office applications.
- Low height of 250 mm.
- Two versions for increased installation flexibility: modular or compact.
- Compatible with the Carrier 35BD diffuser range.
- Air outlet configuration modularity with different plenums.
- Extremely low sound levels for ducted applications.
- Six-speed fan motor offers a wide choice of medium speeds.
- Available with low-consumption variable-speed EC motor (LEC = low energy consumption).
- High-pressure centrifugal fan.
- High-efficiency EU3 filters as standard.
- Safe factory-installed electric heater with one or two capacity stages.
- Low water pressure drop with factory-installed valves.
- Factory-installed options (valves and controllers) for fast and easy installation in false ceilings.

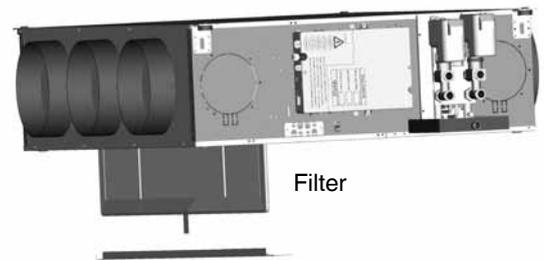


NOTE: Carrier recommends not to exceed an air velocity of 4 m/s (125 l/s) per spigot.

- One-piece compact in-line units (all sizes) are models with in-line ducted supply and return air (only 125 mm diameter fresh air ducts can be connected on the sides).



This version does not allow the use of 200 mm diameter spigots on the sides. Filter removal is from below.



2 - FEATURES

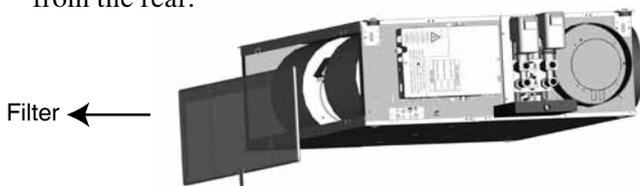
2.1 - Configuration flexibility

Depending on the size, several motor drive selections are available:

- Sizes 0 and 1: one multi-speed motor drive (models 05 and 10) and one low-consumption variable-speed motor drive (models 09 and 19)
- Sizes 2 and 3: three multi-speed motor drive selections possible

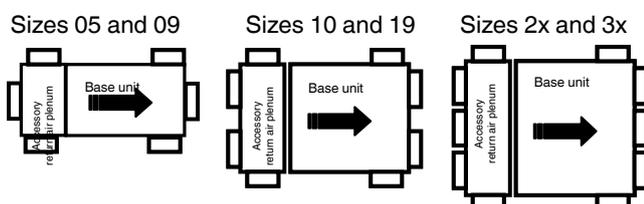
There are two unit models available:

- modular models for all sizes, with side connection spigots for maximised flexibility. This model consists of a non-ducted base unit. In this configuration filter removal is from the rear:



In models with ducted return air it is possible to add a factory-assembled return air plenum.

Connection possibilities



2.2 - Low noise levels

In order to further enhance occupant comfort this product range offers especially low noise levels. The casing of the 42EM Atmosphaera is made of galvanised sheet steel with full high-efficiency internal lining for optimised thermal and sound insulation of the unit.

In order to comply with the various local regulations (fire class) the 42EM Atmosphaera is available with class M1 type insulation. It is also equipped with anti-vibration mounts as standard.

2.3 - Compact design

The condensate removal pan height is optimised at 215 mm. In order to reduce the dimensions of the 42EM Atmosphaera to the minimum, the units are equipped with high-efficiency heat exchangers with very high cooling capacity/treated air flow ratios.

2.4 - Physical and electrical data at Eurovent conditions

42EM		05			09			10			19		
Fan speed		L	M	H	L	M	H	L	M	H	L	M	H
Air flow	l/s	66	97	104	35	108	133	74	119	132	37	127	151
	m ³ /h	237	349	375	126	396	479	271	438	490	122	456	544
Available static pressure	Pa	23	50	58	1	50	75	19	50	62	4	50	75
Cooling mode, two pipes*													
Total cooling capacity	kW	1.5	2.01	2.13	0.88	2.19	2.53	1.87	2.76	3	1.01	2.90	3.31
Sensible cooling capacity	kW	1.15	1.59	1.69	0.65	1.76	2.05	1.39	2.11	2.31	0.73	2.23	2.59
Water flow rate	l/s	0.07	0.10	0.10	0.04	0.11	0.12	0.09	0.13	0.14	0.04	0.14	0.16
	l/h	258	346	363	150	376	434	321	475	516	162	499	569
Water pressure drop	kPa	11	19	21	4	23	30	11	23	27	3	25	33
Water content	l	0.35	0.35	0.35	0.35	0.35	0.35	0.5	0.5	0.5	0.5	0.5	0.5
Heating mode, two pipes**													
Heating capacity	kW	2.09	2.9	3.08	1.1	3.19	3.76	2.44	3.75	4.1	1.26	3.97	4.6
Cooling mode, four pipes*													
Total cooling capacity	kW	1.33	1.78	1.88	0.80	1.95	2.22	1.8	2.6	2.8	0.91	2.67	3.01
Sensible cooling capacity	kW	1.07	1.47	1.55	0.62	1.62	1.87	1.36	2.03	2.21	0.66	2.1	2.4
Water flow rate	l/s	0.06	0.085	0.009	0.04	0.093	0.106	0.09	0.12	0.13	0.04	0.13	0.14
	l/h	229	306	322	137	335	382	310	446	482	155	457	518
Water pressure drop	kPa	8	14	15	3	17	22	14	29	34	4	30	39
Water content	l	0.32	0.32	0.32	0.32	0.32	0.32	0.45	0.45	0.45	0.45	0.45	0.45
Heating mode, four pipes***													
Heating capacity	kW	1.51	2.00	2.10	0.9	2.17	2.5	2.44	3.46	3.73	1.36	3.63	4.09
Water flow rate	l/s	0.04	0.05	0.05	0.02	0.05	0.06	0.04	0.06	0.06	0.02	0.06	0.07
	l/h	130	172	181	77	187	215	209	298	320	110	311	352
Water pressure drop	kPa	10	17	19	3	20	27	7	14	16	2	16	20
Water content	l	0.11	0.11	0.11	0.11	0.11	0.11	0.15	0.15	0.15	0.15	0.15	0.15
Electric heater													
		230 V ± 15 % - 1 ph - 50 Hz											
Maximum capacity	W	1000			1000			1000			1000		
Current drawn	A	4.35			4.35			4.35			4.35		
Sound levels													
Sound power level (return and radiated)	dB(A)	43	51	53	33	52	56	41	51	53	34	52	57
Sound power level (supply)	dB(A)	42	49	50	29	50	55	38	49	51	32	51	56
Electrical data, motor													
		230 V ± 15 % - 1 ph - 50 Hz											
Power input	W	45	77	105	4	44	75	44	82	113	6	51	83
Current drawn	A	0.2	0.34	0.45				0.17	0.35	0.48			
Air filter (G3)	mm	230 x 420			230 x 420			230 x 570			230 x 570		
Technical data (compact model, overall dimensions)													
Connection diameter, cold and hot-water coils	in	1/2 gas (unit nuts female)											
Spigot connection diameter	mm	200			200			200			200		
Height	mm	250			250			250			250		
Depth	mm	700			700			850			850		
Length	mm	870			870			870			870		
Unit weight	kg	17			22			22			22		

Fan speed: L = Low, M = Medium, H = High

* Eurovent conditions: Entering air temperature = 27°C db/47% rh – entering water temperature = 7°C, water temperature difference = 5 K.

** Eurovent conditions: Entering air temperature = 20°C, entering water temperature = 50°C, same water flow rate as in cooling.

*** Eurovent conditions: Entering air temperature = 20°C, entering water temperature = 70°C, water temperature difference = 10 K.

2.4 - Physical and electrical data at Eurovent conditions (continued)

42EM		22			29			32			39		
Fan speed		L	M	H	L	M	H	L	M	H	L	M	H
Air flow	l/s	96	183	207	55	211	237	96	183	207	55	211	237
	m ³ /h	345	659	744	198	760	853	345	659	744	198	760	853
Available static pressure	Pa	14	50	64	3	50	63	14	50	64	3	50	63
Cooling mode, two pipes*													
Total cooling capacity	kW	2.52	4.33	4.75	1.56	4.92	5.36	2.99	5.38	5.97	1.81	6.11	6.71
Sensible cooling capacity	kW	1.85	3.29	3.65	1.13	3.80	4.18	2.05	3.77	4.2	1.23	4.32	4.77
Water flow rate	l/s	0.12	0.21	0.23	0.07	0.24	0.26	0.14	0.26	0.29	0.10	0.29	0.32
	l/h	433	745	817	269	845	921	514	925	1027	311	1050	1153
Water pressure drop	kPa	10	30	36	4	39	45	13	35	45	6	59	69
Water content	l	1	1	1	1.0	1.0	1.0	1.7	1.7	1.7	1.7	1.7	1.7
Heating mode, two pipes**													
Heating capacity	kW	3.2	5.69	6.31	1.9	6.43	7.08	3.34	6.21	6.9	1.94	6.49	7.12
Cooling mode, four pipes*													
Total cooling capacity	kW	2.47	4.04	4.42	1.51	4.57	4.95	2.99	5.38	5.97	1.81	6.11	6.71
Sensible cooling capacity	kW	1.8	3.14	3.46	1.1	3.59	3.94	2.05	3.77	4.2	1.23	4.32	4.77
Water flow rate	l/s	0.12	0.2	0.21	0.07	0.22	0.24	0.14	0.26	0.29	0.10	0.29	0.32
	l/h	414	695	759	260	785	850	514	925	1027	311	1050	1153
Water pressure drop	kPa	10	29	35	4	37	43	13	35	45	6	59	69
Water content	l	0.90	0.90	0.90	0.8	0.8	0.8	1.7	1.7	1.7	1.7	1.7	1.7
Heating mode, four pipes***													
Heating capacity	kW	2.47	4.05	4.41	1.57	4.57	4.95	2.08	3.56	3.92	1.11	4.09	4.55
Water flow rate	l/s	0.06	0.10	0.11	0.04	0.11	0.12	0.05	0.09	0.09	0.03	0.10	0.11
	l/h	212	348	379	138	402	435	179	306	337	97	359	400
Water pressure drop	kPa	4	9	11	2	11	13	9	23	27	2.00	24.00	30.00
Water content	l	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Electric heater													
		230 V ± 15 % - 1 ph - 50 Hz											
Maximum capacity	W	2000			2000			2000			2000		
Current drawn	A	8.7			8.7			8.7			8.7		
Sound levels													
Sound power level (return and radiated)	dB(A)	41	55	58	43	52	55	41	55	58	43	52	55
Sound power level (supply)	dB(A)	40	54	56	43	51	53	40	54	56	43	51	53
Electrical data, motor													
		230 V ± 15 % - 1 ph - 50 Hz											
Power input	W	67	120	142	4	73	96	67	120	142	4	73	96
Current drawn	A	0.30	0.50	0.63				0.30	0.50	0.63			
Air filter (G3)	mm	230 x 990			230 x 408			208 x 978			208 x 578		
Technical data (compact model, overall dimensions)													
Connection diameter, cold and hot-water coils	in	1/2 gas (unit nuts female)											
Spigot connection diameter	mm	200			200			200			200		
Height	mm	250			250			250			250		
Depth	mm	1270			1270			1270			1270		
Length	mm	870			870			1110			1110		
Unit weight	kg	39			39			69			69		

Fan speed: L = Low, M = Medium, H = High

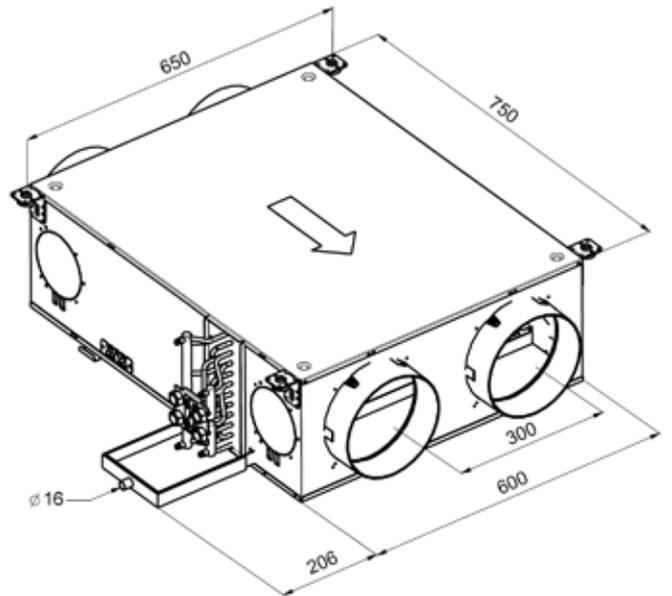
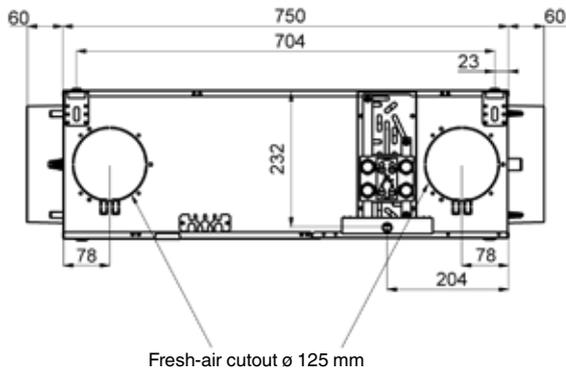
* Eurovent conditions: Entering air temperature = 27°C db/47% rh – entering water temperature = 7°C, water temperature difference = 5 K.

** Eurovent conditions: Entering air temperature = 20°C, entering water temperature = 50°C, same water flow rate as in cooling.

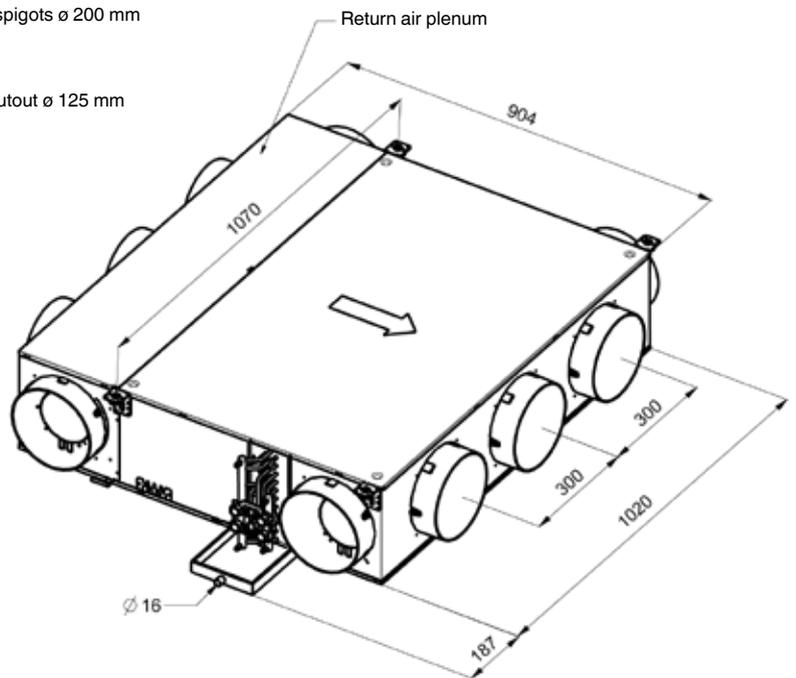
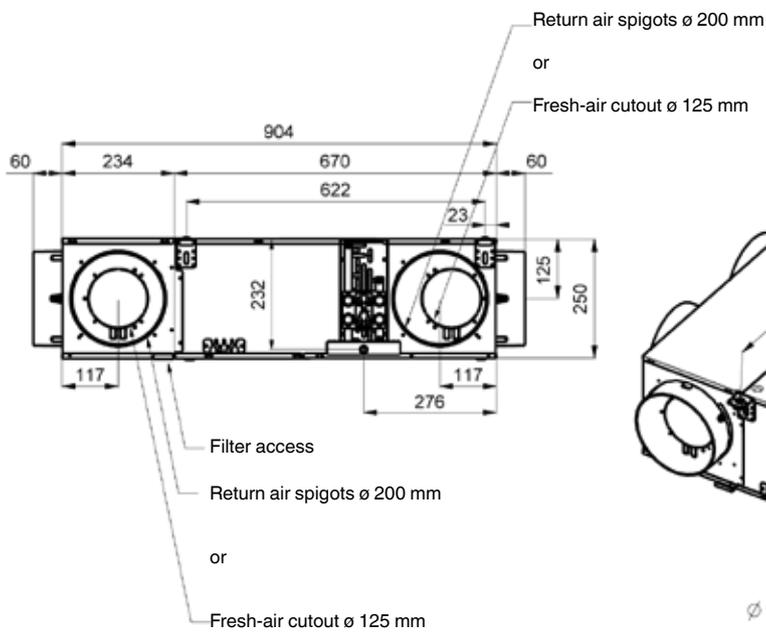
*** Eurovent conditions: Entering air temperature = 20°C, entering water temperature = 70°C, water temperature difference = 10 K.

NOTE: Models 2x include sizes 21, 22, 23 and 29 with different speed arrangements. Models 3x include sizes 31, 32, 33 and 39 with different speed arrangements.

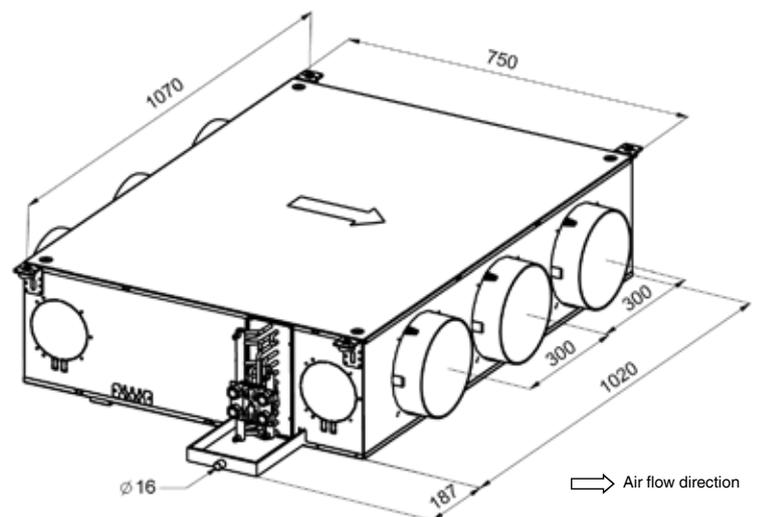
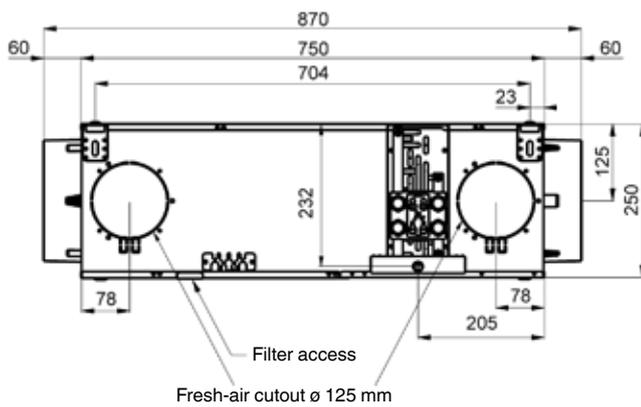
Size 1 - Compact in-line model, ducted return air



Size 2 - Modular model (with optional return air plenum)

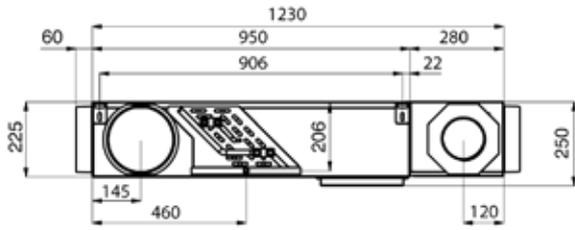


Size 2 - Compact in-line model, ducted return air

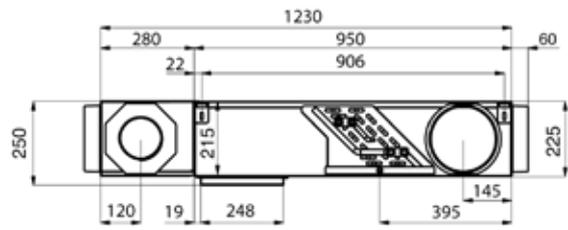


All dimensions are in mm.

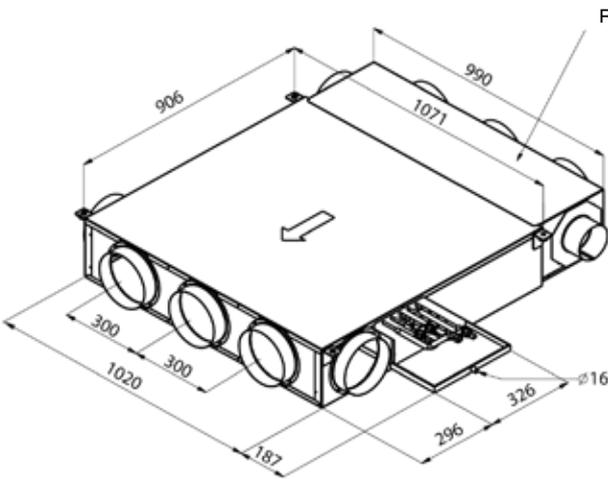
Size 3 - Modular model (with optional return air plenum)



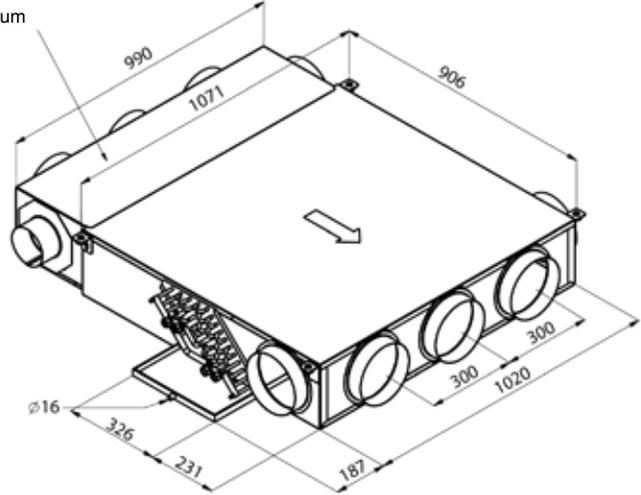
Left-hand connections



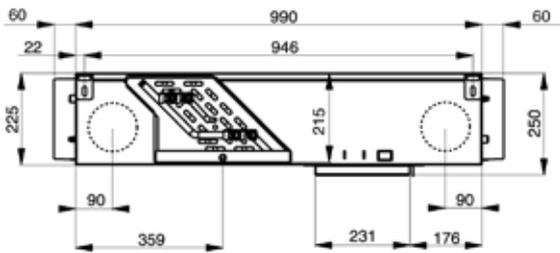
Right-hand connections



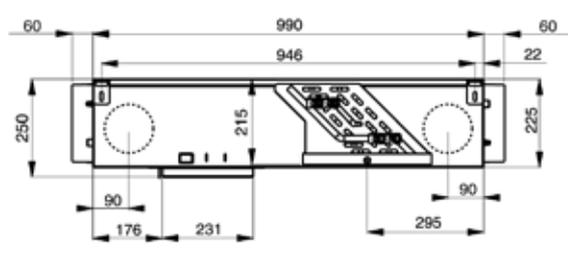
Return air plenum



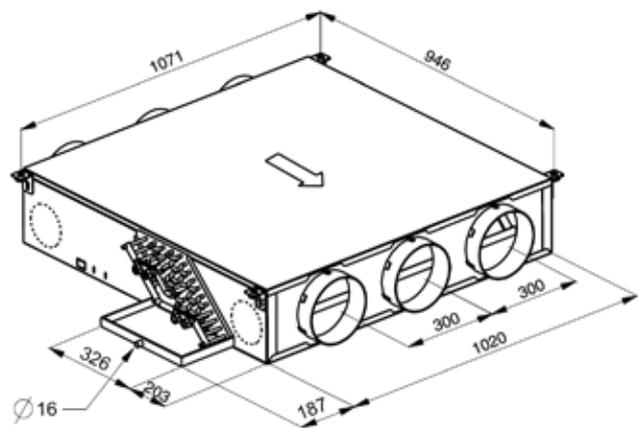
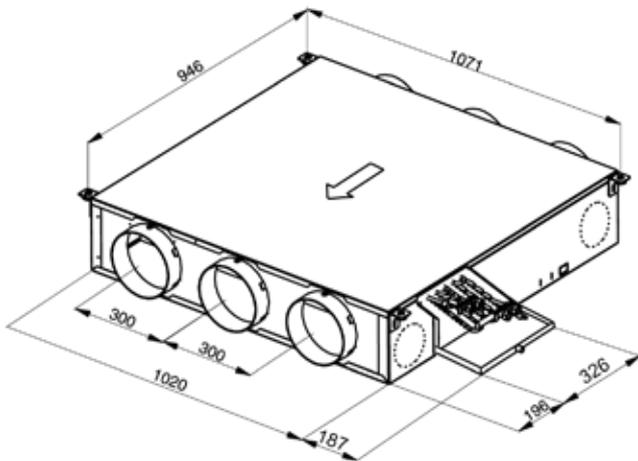
Size 3 - Compact in-line model, ducted return air



Left-hand connections



Right-hand connections

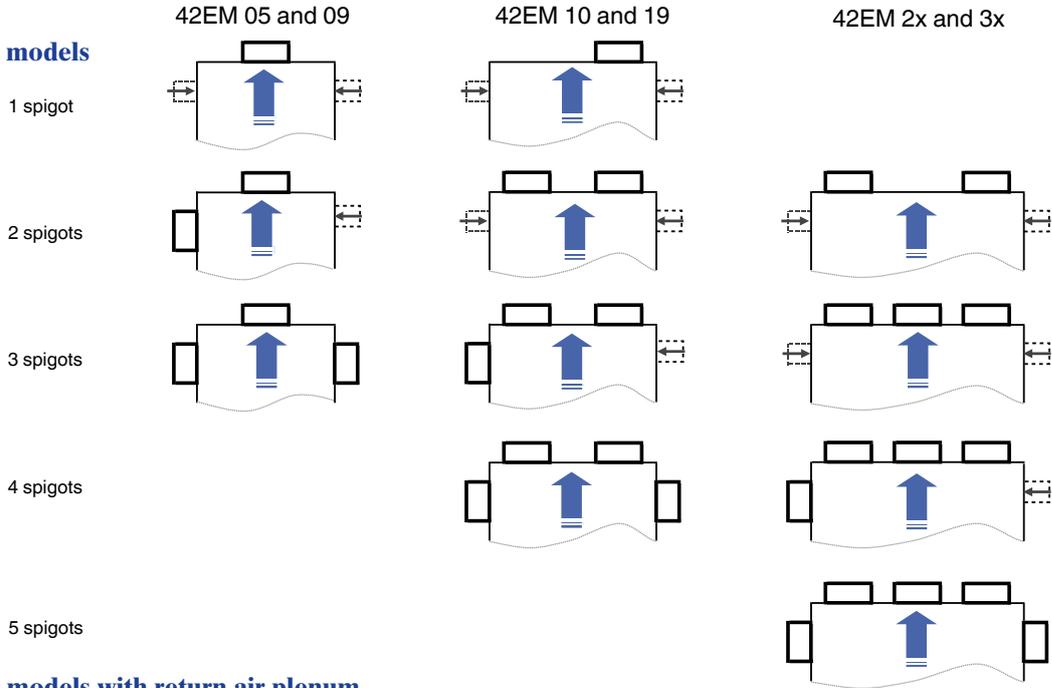


⇒ Air flow direction

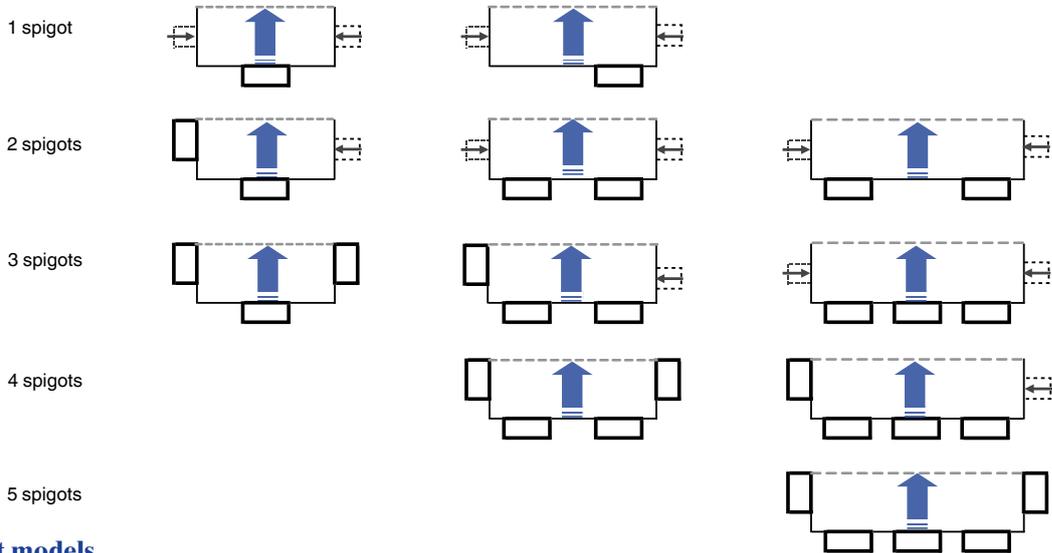
All dimensions are in mm.

2.6 - Spigot configuration

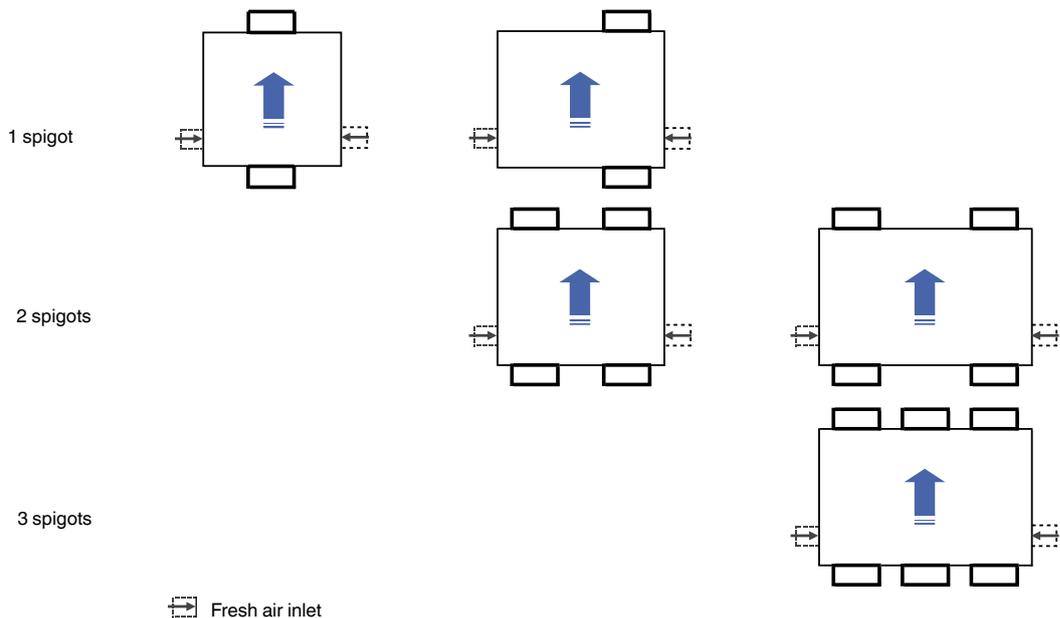
Modular models



Modular models with return air plenum



Compact models



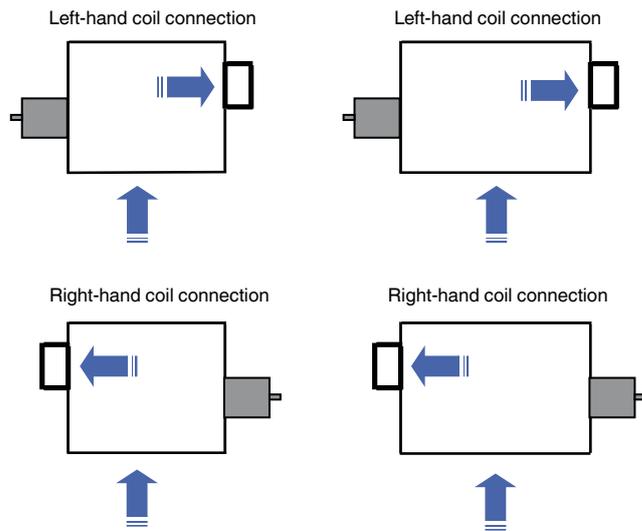
IMPORTANT: The fresh air inlet is always opposite the spigot side that is by default opposite the coil connection side.

2.6 - Spigot configuration (continued)

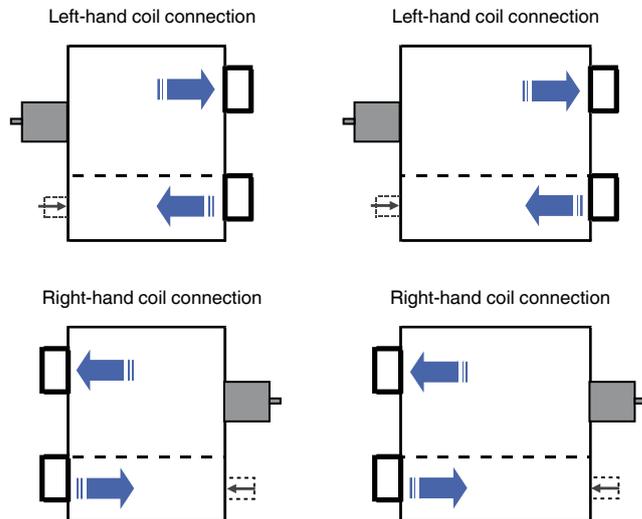
42EM 05 and 09

42EM 10 and 19

U-shaped modular models without return air plenum



U-shaped modular models with return air plenum



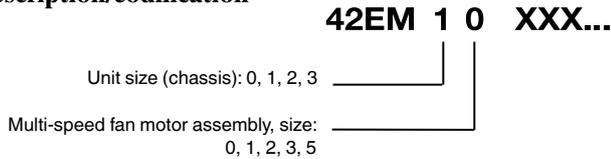
 Fresh air inlet

3 - MAIN MODULES AND COMPONENTS

3.1 - Fan motor assemblies

3.1.1. Multi-speed fan motor assembly

Description/codification



- Asynchronous motors, 230 V - 1 ph - 50 Hz, 4 poles with internal overload protection.
- Permanent capacitor.
- Class B winding insulation, varnish class F.

The 42EM Atmosfera sizes 0x and 1x have a multi-speed fan motor assembly with forward-curved, double-inlet, single-wheel fans. Sizes 2x and 3x are available with double-wheel fans and three speed arrangements (21, 22, 23 and 31, 32, 33), depending on the required air flows/pressures.

Six speeds are available as standard. From these three speeds must be selected to allow connection of the fan motor in accordance with the applicable electromechanical or electronic regulations.

- Minimum speed: terminal 6
- Maximum speed: terminal 1
- 42EM units are supplied with Carrier numerical controls and prewired to the factory settings, for speeds 1, 3 and 5.
- For other fan motor speed wiring combinations refer to the unit codification.

3.1.2 - Low-consumption fan motor assembly (variable-speed LEC)

Atmosfera sizes 09, 19, 29 and 39 are equipped with the variable-speed LEC fan motor, that is controlled by a 0 to 10 V signal, available with the Carrier NTC type electronic control.

NOTE: In this case the minimum control signal that allows motor start-up is 2 V for two- and four-pipe versions and 3 V for the versions equipped with electric heaters.

If the product is supplied without a Carrier control device, verification of EMC conformity is the responsibility of the installer.

3.2 - Water coil

- Aluminium fins mechanically bonded by expansion onto copper tubes
- 1/2" threaded water inlet and outlet connections (female)
- Air purge valves and drain are standard.
- Service pressure 1600 kPa.

The coil is integral with the drain pan and coil access door to ease of removal during service and maintenance.

NOTE: The coil connection side can be changed on site, by turning the coil. Remember to reverse the water entering/leaving sides for size 3 (42EM models 31, 32, 33 and 39).

3.3 - One-piece condensate drain pan

Pan with a 16 mm external drain connection diameter and insulation class M1 in accordance with standard NFP 92-507.

3.4 - Filter and filter access

The 42EM includes a non-regenerable EU3 filter according to EN 779, medium fire rating M1, metal wire frame.

3.5 - Fan wiring solutions

3.5.1 - Multi-speed unit with bare wires (standard)

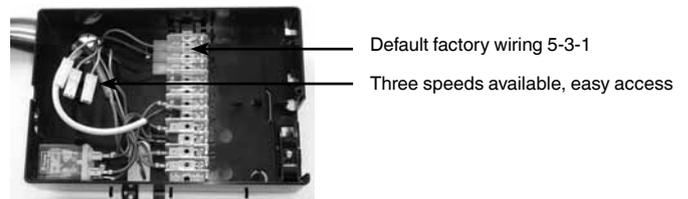
The fan motor assembly has six speeds taken from an auto-transformer offering the unit greater flow control flexibility.

When ordering, three of the six speeds must be selected to allow connection of the fan motor in accordance with the applicable electronic regulations. Three speeds are connected - the default factory wiring is 5-3-1 (minimum speed = 6, maximum speed = 1).

3.5.2 - Multi-speed unit with optional control box

This option allows the installer to connect the unit to a terminal board inside a control box. To comply with the applicable regulations, the control box can be opened with a screw driver.

The control box option permits changing the speed wiring without access to the motor. Three of the available six speeds are connected - the default factory wiring is 5-3-1 (minimum speed = 6, maximum speed = 1).



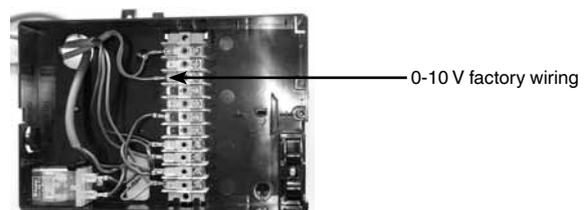
3.5.3 - Variable-speed low energy consumption (LEC) fan motor option with bare wires (standard)

The variable-speed low energy consumption (LEC) fan motor must be controlled by a 0-10 V d.c. signal.

3.5.4 - Variable-speed low energy consumption (LEC) fan motor option with control box option

This option allows the installer to connect the unit to a terminal board inside a control box. To comply with the applicable regulations, the control box can be opened with a screw driver.

The 0-10 V d.c. signal that controls the variable fan speed is directly accessible at the terminal board.



3.5.5 - Cover only option

An accessory plastic cover can be provided for a control supplied by the customer (max. dimensions L = 200 mm x D = 100 mm x H = 95 mm) and is installed on site or at the factory on a multi-speed unit or a variable-speed low energy consumption (LEC) fan motor.

NOTE: This option is not compatible with the control box option.

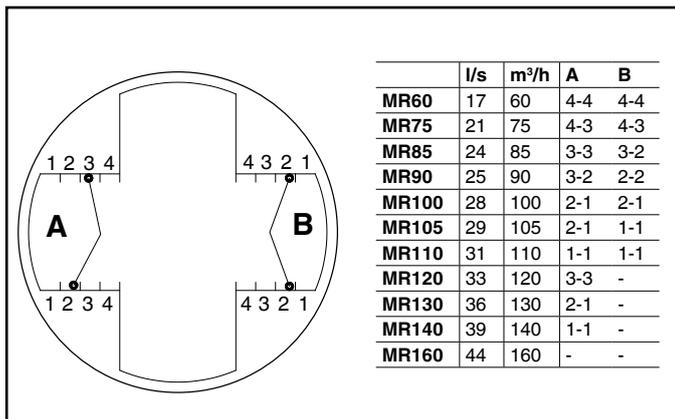


3.6 - Fresh air controller

3.6.1 - Constant volume fresh air controller

The 42EM Atmosphaera can be fitted with a constant fresh air flow controller, fixed at 8.5 l/s (30 m³/h) or adjustable from 17 l/s (60 m³/h) to 44 l/s (160 m³/h) to allow control of the introduction of fresh air and of the air change rate. The fresh air supply is normally located ahead of the water coil.

Controllers with adjustable fresh air flow:



The 17 l/s (60 m³/h) or fresh air controller may be modified on site by relocating or removing two plastic restrictors in order to increase the maximum constant fresh air flow capacity to 44 l/s (160 m³/h).

IMPORTANT: If the 42EM includes a return air temperature sensor, the constant fresh air flow rate must not exceed 50% of the unit supply air flow rate at minimum speed.

NOTE: To operate correctly, the 8.5 l/s (30 m³/h) the constant fresh air flow controller requires a differential pressure in the range of 50 Pa to 200 Pa. The controller with adjustable fresh air flow from 17 l/s (60 m³/h) to 44 l/s (160 m³/h) requires a differential pressure in the range of 70 to 200 Pa.

3.6.2 - Variable volume fresh air controller

The 42EM Atmosphaera can be equipped with an optional variable fresh air flow controller from 0-55 l/s (0-200 m³/h). This is connected to the numeric Carrier controller and can regulate the fresh air intake in two ways:

- either using a fixed rate set by the installer that can be reconfigured as required
- or based on the CO₂ level; in this case it is connected to a CO₂ sensor via the Carrier numeric controller (the CO₂ sensor is located opposite the fresh air inlet).

NOTE: With the variable fresh air flow controller the upstream pressure in the fresh air duct must be 180 Pa.

3.7 - Electric heater (option)

Electric heater-resistance wire type

- Supply voltage: 230 V - 1 ph - 50 Hz
- Heater size and capacity per unit:
 - Size 05, 09, 10, 19: 500 or 1000 W (+5%; -10%)
 - Sizes 21, 31: 500 or 1000 W (+5%; -10%)
 - Sizes 22, 23, 29, 32, 33, 39: 1000 or 2000 W(+5%; -10%)
- The heater is protected with a dual safety device:
 - a) Self-holding automatically reset integrated safety thermostat
 - b) Destructive thermofuse link

NOTE: Minimum air flow must be maintained to avoid damaging the electric heaters:

- **Unit sizes 05, 09, 10, 19: minimum air flow 28 l/s (100 m³/h)**
- **Unit sizes 21, 31: minimum air flow 42 l/s (150 m³/h)**
- **Unit sizes 22, 23, 29, 32, 33, 39: minimum air flow 55 l/s (200 m³/h)**

4 - TECHNICAL SPECIFICATIONS

4.1 - Valves (option)

It should be noted that the valve body is the same for whatever controller option is chosen.

NOTE: The motor valve assembly is normally closed.

4.1.1 - Electrothermal actuator (on/off)

The actuator is a 230 V a.c. on/off type. Linear movement is provided by the expansion and contraction of a wax element heated by an electrical resistor.

4.1.2 - Two-way valve body

Features of the 1/2" two-way valve

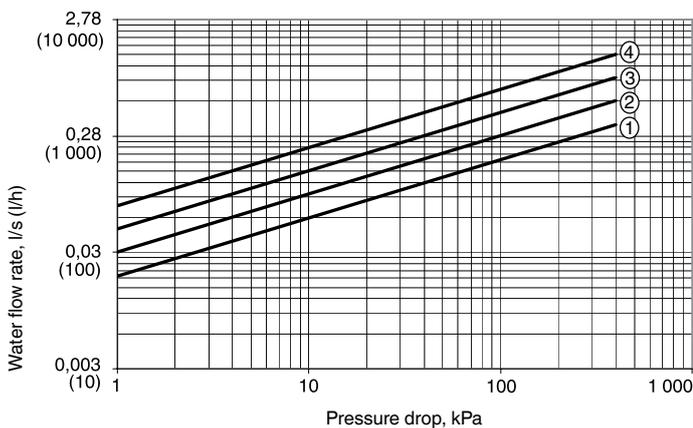
- 1/2" male BSP connection for union nuts
- Straight valve body with arrow indicating direction of flow embossed on valve body
- Nominal size DN 15 for 1/2" valve
- Fluid: water and glycol solution (max. 40% glycol)
- Operating range: 2-90°C
- Nominal pressure: PN 16 bar
- Kvs = 1.6

4.1.3 - Three-way valve body (with integral bypass)

Features of the 1/2" three-way valve

- 1/2" male BSP connection for union nuts
- Straight valve body with arrow indicating direction of flow embossed on valve body
- Nominal size DN 15 for 1/2" valve
- Fluid: water and glycol solution (max. 40% glycol)
- Operating range: 2-90°C
- Nominal pressure: PN 16 bar
- Kvs = 1.6

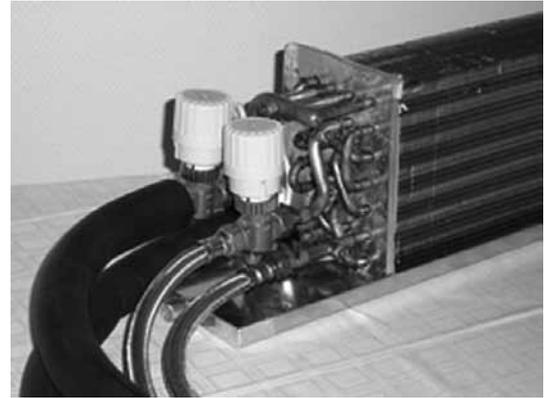
4.1.4 - Water valve pressure drop



Legend

- 1 Kvs = 0.63
- 2 Kvs = 1
- 3 Kvs = 1.6 (standard valve)
- 4 Kvs = 2.5

4.2 - Technical specification, flexible water pipes (option)



4.2.1 - Materials

- Pipes: MEPD-based elastomer (modified ethylene-propylene-diene)
- Braid: 304L stainless steel
- Insulation: cellular foam rubber with M1 fire rating (9 mm thick, flexible water pipes).

4.2.2 - Characteristics

- Minimum bend radius: 106 mm
- Ten-year guarantee
- The flexible water pipes are designed for treated or untreated water (maximum 40% ethylene glycol or propylene glycol).
- Maximum hot water temperature 90°C
- Maximum operating pressure: 16 bar
- 1/2" flat gas connections
- Length: 1 m.

5 - CONTROL (OPTION)

The Atmosphaera can be supplied with a wide range of Carrier controls. These offer functions to suit the various application requirements, summarised in the table below.

		Thermostats	HDB	NTC
Control algorithms	On-Off	X	X	
	Proportional-integral			X
Valve management	Air flow control only (no valve)	X	X	
	On-off actuators	X	X	X
	Proportional valves			O
Fan control	Three speeds	X	X	X
	Automatic fan speed selection	X	X	X
	LEC motor control			X
Main functions	Setpoint control	X	X	X
	Occupied/unoccupied mode	X	X	X
	Frost protection mode	X	X	X
	Window contact input	X	X	X
	Measurement of water inlet temperature for automatic seasonal changeover (2 pipes)	Type A	X	X
	Automatic seasonal changeover (4 pipes and 2 pipes + electric heater)	Type B	X	X
	Manual changeover	X	X	X
	Continuous ventilation within dead-band	X	X	X
	Periodical ventilation within dead-band	X	X	X
	Unit grouping		X	X
	Louvre control		X	X
	On-site configuration		X	X
	Supply air temperature monitoring limiting			X
	Communication (CCN)			X
	Electrical heater loadshed			X
	Dirty filter alarm			X
	Alarm reporting			X
	IAQ control			O
	Demand control ventilation (DCV)			O
	Free cooling mode			O
User interface	Digital display		X	X
	Automatic or manual fan speed control	X	X	X
	Operating mode selection	X	X	X
	Eco/unoccupied button	X	X	X

Legend

HDB Hydronic Dual Board
 NTC New Terminal Controller
 X Standard function
 O Available as an option

NOTE: For the features and specifications of the Carrier controllers refer to the technical documentation for each controller.

Upon special request other controller types can be factory-installed on the units (supplied by Carrier or the customer).

6 - ATMOSPHERA PERFORMANCE DATA

6.1 - Cooling capacity - water coil

6.1.1 - Two-pipe water coil

Entering/ leaving water temperature, °C		Sizes 05 and 09																	
		Relative humidity 50%																	
		Air flow, l/s (m³/h)																	
		28 (100)			56 (200)			83 (300)			111 (400)			139 (500)			167 (600)		
Entering air dry-bulb temperature, °C																			
		27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	27	25	23
6-12	TC	0.76	0.62	0.49	1.37	1.09	0.83	1.89	1.50	1.16	2.33	1.86	1.45	2.72	2.17	1.71	3.06	2.47	1.95
	SHC	0.53	0.47	0.42	0.99	0.87	0.76	1.40	1.23	1.07	1.77	1.56	1.36	2.10	1.86	1.62	2.40	2.14	1.86
	SAT	10.9	10.9	10.5	12.0	11.9	11.7	12.9	12.7	12.3	13.6	13.4	12.8	14.3	13.9	13.3	14.9	14.4	13.7
	WF	109	88	70	197	156	119	270	215	166	334	266	207	389	311	244	438	353	279
7-12	TC	0.76	0.61	0.47	1.38	1.10	0.84	1.90	1.51	1.16	2.34	1.87	1.45	2.72	2.19	1.71	3.05	2.47	1.96
	SHC	0.53	0.46	0.41	0.99	0.87	0.76	1.40	1.24	1.08	1.77	1.56	1.37	2.10	1.86	1.63	2.40	2.14	1.88
	SAT	10.9	11.0	10.7	11.9	11.9	11.6	12.8	12.7	12.3	13.6	13.3	12.8	14.3	13.9	13.3	14.9	14.4	13.7
	WF	131	104	81	237	188	143	326	259	199	402	321	249	467	376	294	524	423	336
8-13	TC	0.68	0.53	0.42	1.23	0.96	0.74	1.69	1.33	1.03	2.09	1.65	1.30	2.43	1.94	1.54	2.73	2.21	1.76
	SHC	0.50	0.43	0.39	0.93	0.82	0.71	1.32	1.16	1.00	1.67	1.47	1.27	1.98	1.75	1.51	2.26	2.02	1.74
	SAT	12.0	11.9	11.4	12.9	12.8	12.4	13.7	13.5	13.0	14.4	14.0	13.5	15.0	14.5	14.0	15.6	14.9	14.3
	WF	116.8	92	72	211	165	127	291	228	178	359	283	223	417	334	264	468	379	303
10-15	TC	0.53	0.42	0.34	0.95	0.75	0.59	1.31	1.05	0.83	1.63	1.31	1.04	1.92	1.56	1.24	2.18	1.78	1.42
	SHC	0.43	0.38	0.34	0.82	0.71	0.59	1.16	1.01	0.83	1.47	1.28	1.04	1.76	1.53	1.24	2.02	1.76	1.42
	SAT	13.8	13.4	12.9	14.6	14.3	14.2	15.3	14.9	14.7	15.9	15.4	15.2	16.3	15.9	15.6	16.8	16.3	15.9
	WF	90	72	58	163	129	101	225	180	142	280	226	179	331	268	213	376	206	244

Entering/ leaving water temperature, °C		Sizes 10 and 19																		
		Relative humidity 50%																		
		Air flow, l/s (m³/h)																		
		28 (100)			56 (200)			83 (300)			111 (400)			139 (500)			167 (600)			194 (700)
Entering air dry-bulb temperature, °C																				
		27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	
6-12	TC	0.82	0.67	0.53	1.55	1.24	0.94	2.19	1.75	1.34	2.78	2.21	1.70	3.31	2.63	2.03	3.78	3.01	2.33	
	SHC	0.56	0.49	0.44	1.07	0.94	0.82	1.55	1.36	1.19	2.00	1.75	1.54	2.41	2.12	1.86	2.80	2.46	2.16	
	SAT	10.1	10.1	9.9	10.7	10.8	10.7	11.3	11.3	11.1	11.9	11.8	11.5	12.4	12.2	11.9	12.9	12.6	12.2	
	WF	117	96	76	221	177	135	314	251	192	397	317	243	473	376	290	541	431	334	
7-12	TC	0.81	0.65	0.51	1.53	1.23	0.82	2.18	1.74	1.33	2.76	2.20	1.68	3.28	2.62	2.01	3.74	3.00	2.32	
	SHC	0.55	0.49	0.43	1.07	0.94	0.82	1.55	1.36	1.19	1.99	1.75	1.53	2.40	2.12	1.85	2.78	2.46	2.16	
	SAT	10.3	10.4	10.2	10.8	10.9	10.8	11.4	11.4	11.2	11.9	11.8	11.6	12.4	12.3	11.9	12.9	12.7	12.3	
	WF	139	112	87	263	211	160	375	299	228	475	378	289	564	450	346	643	516	398	
8-13	TC	0.73	0.57	0.45	1.38	1.08	0.82	1.95	1.53	1.17	2.47	1.93	1.49	2.94	2.30	1.79	3.35	2.64	2.07	
	SHC	0.52	0.45	0.40	1.00	0.87	0.76	1.45	1.27	1.11	1.87	1.63	1.43	2.26	1.98	1.73	2.62	2.30	2.00	
	SAT	11.3	11.4	11.0	11.8	11.9	11.6	12.4	12.3	12.0	12.8	12.7	12.3	13.3	13.1	12.7	13.8	13.5	13.0	
	WF	125	99	77	236	185	141	335	262	260	425	332	257	505	395	308	576	454	356	
10-15	TC	0.56	0.45	0.36	1.06	0.82	0.65	1.50	1.18	0.93	1.90	1.50	1.20	2.27	1.80	1.44	2.61	2.08	1.66	
	SHC	0.45	0.40	0.35	0.87	0.76	0.65	1.27	1.11	0.93	1.64	1.43	1.20	1.99	1.73	1.44	2.31	2.01	1.66	
	SAT	13.3	13.0	12.5	13.8	13.5	13.3	14.2	13.9	13.7	14.6	14.3	14.1	15.0	14.6	14.4	15.3	14.9	14.7	
	WF	97	77	61	183	142	112	258	202	161	327	258	206	390	310	247	448	357	286	

Entering/ leaving water temperature, °C		Size 21						Size 22						Size 23						
		Relative humidity 50%																		
		Air flow, l/s (m³/h)																		
		83 (300)			125 (450)			167 (600)			208 (750)			264 (950)			319 (1150)			347 (1250)
Entering air dry-bulb temperature, °C																				
		27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	
6-12	TC	2.38	1.91	1.46	3.38	2.71	2.09	4.28	3.42	2.65	5.08	4.08	3.16	6.04	4.86	3.78	6.89	5.55	4.35	
	SHC	1.64	1.44	1.25	2.37	2.08	1.83	3.05	2.68	2.35	3.68	3.24	2.84	4.46	3.94	3.45	5.17	4.58	4.02	
	SAT	10.5	10.6	10.5	11.1	11.1	10.9	11.6	11.6	11.3	12.1	12.0	11.7	12.8	12.5	12.1	13.4	13.0	12.6	
	WF	340	274	208	483	388	299	612	490	378	727	583	452	865	695	541	986	794	623	
7-12	TC	2.35	1.89	1.44	3.35	2.68	2.06	4.24	3.40	2.61	5.04	4.04	3.12	5.98	4.80	3.75	6.83	5.49	4.31	
	SHC	1.63	1.43	1.25	2.35	2.07	1.81	3.03	2.67	2.34	3.66	3.23	2.83	4.43	3.92	3.45	5.14	4.55	4.01	
	SAT	10.6	10.7	10.6	11.1	11.2	11.0	11.7	11.6	11.4	12.2	12.1	11.7	12.9	12.6	12.2	13.5	13.1	12.6	
	WF	404	325	248	575	461	353	728	583	448	865	694	536	1027	825	643	1172	943	739	
8-13	TC	2.12	1.67	1.27	3.00	2.36	1.82	3.80	2.99	2.31	4.51	3.56	2.77	5.36	4.25	3.32	6.11	4.86	3.84	
	SHC	1.52	1.33	1.16	2.21	1.93	1.69	2.85	2.49	2.18	3.44	3.02	2.63	4.17	3.67	3.20	4.85	4.27	3.72	
	SAT	11.6	11.6	11.4	12.1	12.1	11.8	12.6	12.5	12.2	13.1	12.9	12.5	13.7	13.4	12.9	14.2	13.8	13.3	
	WF	363	286	218	516	406	313	653	513	397	775	612	475	920	729	571	1049	836	660	
10-15	TC	1.64	1.28	1.00	2.33	1.83	1.44	2.95	2.32	1.84	3.52	2.78	2.21	4.19	3.34	2.66	4.81	3.85	3.09	
	SHC	1.33	1.16	0.99	1.93	1.69	1.43	2.50	2.17	1.83	3.03	2.63	2.20	3.69	3.20	2.66	4.30	3.72	3.09	
	SAT	13.6	13.4	13.2	14.0	13.7	13.5	14.4	14.1	13.9	14.8	14.4	14.2	15.7	14.9	14.6	15.7	15.3	15.0	
	WF	283	220	171	401	314	247	507	400	316	605	478	379	721	574	458	828	663	531	

Legend

TC Total cooling capacity (kW)
 SHC Sensible cooling capacity (kW)
 SAT Supply air temperature (°C)
 WF Water flow rate (l/h)

NOTE: To convert l/h to l/s, divide by 3600.

NOTE: Operating limits: air discharge temperature 12°C when the unit is installed in an ambient temperature of 27°C dry bulb and 65% relative humidity.

6.1.1 - Two-pipe water coil (cont.)

Entering/ leaving water temperature, °C	Size 31									Size 32									Size 33								
	Size 39																										
	Relative humidity 50%																										
	Air flow, l/s (m³/h)																										
83 (300)			125 (450)			167 (600)			208 (750)			264 (950)			319 (1150)			347 (1250)									
Entering air dry-bulb temperature, °C																											
27			25			23			27			25			23			27			25			23			
6-12	TC	2.88	2.36	1.88	4.20	3.43	2.72	5.46	4.46	3.53	6.60	5.40	4.27	8.04	6.57	5.22	9.38	7.66	6.08	10.02	8.17	6.49					
	SHC	1.85	1.64	1.44	2.72	2.41	2.12	3.56	3.17	2.77	4.34	3.87	3.40	5.35	4.77	4.20	6.31	5.63	4.96	6.77	6.04	5.33					
	SAT	8.3	8.5	8.6	8.7	8.9	9.0	9.1	9.2	9.2	9.5	9.5	9.5	10.0	9.9	9.8	10.4	10.3	10.2	10.6	10.5	10.3					
	WF	413	338	269	601	492	390	781	639	505	945	773	612	1151	941	748	1342	1096	871	1434	1170	930					
7-12	TC	2.78	2.27	1.79	4.06	3.30	2.60	5.26	4.29	3.37	6.38	5.18	4.09	7.79	6.32	4.98	9.10	7.37	5.81	9.71	7.88	6.21					
	SHC	1.80	1.60	1.40	2.65	2.35	2.06	3.47	3.09	2.70	4.24	3.77	3.31	5.24	4.66	4.09	6.18	5.50	4.83	6.64	5.91	5.20					
	SAT	8.8	9.0	9.0	9.2	9.3	9.3	9.6	9.6	9.6	9.9	9.9	9.9	10.4	10.3	10.2	10.8	10.7	10.5	11.0	10.8	10.6					
	WF	477	389	308	697	567	446	905	736	579	1096	890	702	1339	1086	856	1564	1267	998	1670	1353	1067					
8-13	TC	2.54	2.04	1.57	3.70	2.96	2.30	4.80	3.84	2.95	5.80	4.64	3.59	7.08	5.65	4.39	8.26	6.59	5.13	8.82	7.03	5.48					
	SHC	1.69	1.49	1.30	2.49	2.20	1.92	3.26	2.89	2.51	3.99	3.53	3.08	4.93	4.36	3.82	5.82	5.15	4.51	6.25	5.54	4.85					
	SAT	9.9	10.0	10.1	10.2	10.3	10.3	10.6	10.6	10.6	10.9	10.9	10.8	11.4	11.3	11.1	11.7	11.6	11.3	11.9	11.7	11.4					
	WF	437	350	270	637	509	395	825	661	508	998	799	617	1217	972	755	1420	1132	882	1517	1209	943					
10-15	TC	2.06	1.57	1.19	2.99	2.29	1.73	3.87	2.95	2.26	4.67	3.59	2.75	5.68	4.38	3.39	6.61	5.11	3.99	7.06	5.47	4.28					
	SHC	1.49	1.29	1.12	2.18	1.91	1.65	2.87	2.50	2.16	3.51	3.07	2.65	4.34	3.80	3.28	5.12	4.50	3.88	5.51	4.84	4.17					
	SAT	12.0	12.1	11.9	12.3	12.3	12.1	12.6	12.5	12.3	12.9	12.8	12.5	13.3	13.0	12.7	13.6	13.3	13.0	13.7	13.4	13.1					
	WF	354	270	204	514	395	298	666	508	388	804	617	473	978	754	583	1138	880	686	1215	941	736					

6.1.2 - Four-pipe water coil

Entering/ leaving water temperature, °C	Sizes 05 and 09																		
	Relative humidity 50%																		
	Air flow, l/s (m³/h)																		
	28 (100)			56 (200)			83 (300)			111 (400)			139 (500)			167 (600)			
Entering air dry-bulb temperature, °C																			
27			25			23			27			25			23				
6-12	TC	0.68	0.56	0.45	1.21	0.96	0.74	1.65	1.31	1.01	2.04	1.62	1.26	2.37	1.89	1.49	2.67	2.14	1.69
	SHC	0.50	0.44	0.40	0.92	0.80	0.69	1.28	1.13	0.97	1.61	1.41	1.22	1.91	1.68	1.44	2.18	1.92	1.65
	SAT	12.0	11.6	11.1	13.1	13.0	12.6	14.1	13.8	13.3	14.8	14.4	13.9	15.5	15.0	14.4	16.0	15.4	14.8
	WF	97	80	64	173	137	105	237	187	145	291	231	181	340	271	213	383	306	242
7-12	TC	0.68	0.55	0.43	1.23	0.97	0.74	1.68	1.33	1.03	2.07	1.64	1.28	2.40	1.92	1.51	2.69	2.17	1.72
	SHC	0.50	0.44	0.39	0.92	0.81	0.70	1.29	1.14	0.98	1.62	1.43	1.24	1.92	1.69	1.47	2.18	1.94	1.68
	SAT	11.9	11.8	11.3	13.0	12.9	12.5	14.0	13.7	13.2	14.7	14.3	13.8	15.4	14.3	13.8	16.0	15.4	14.6
	WF	117	94	74	210	167	128	288	229	176	355	282	220	412	329	259	462	372	295
8-13	TC	0.61	0.48	0.39	1.09	0.85	0.66	1.49	1.17	0.92	1.84	1.45	1.15	2.15	1.71	1.36	2.41	1.94	1.55
	SHC	0.47	0.41	0.37	0.87	0.76	0.65	1.22	1.06	0.90	1.53	1.34	1.13	1.81	1.59	1.34	2.06	1.82	1.54
	SAT	12.9	12.6	12.1	13.9	13.7	13.4	14.7	14.4	14.0	15.4	15.0	14.5	16.0	15.5	15.0	16.6	15.9	15.3
	WF	105	83	67	188	147	114	257	202	158	317	250	197	369	293	233	414	334	266
10-15	TC	0.48	0.39	0.31	0.84	0.67	0.53	1.16	0.93	0.73	1.44	1.16	0.92	1.69	1.37	1.08	1.93	1.78	1.42
	SHC	0.41	0.36	0.31	0.76	0.71	0.53	1.07	0.91	0.73	1.34	1.15	0.92	1.60	1.36	1.08	1.83	1.56	1.24
	SAT	14.5	14.1	13.7	15.5	14.3	15.1	16.2	15.9	15.7	16.8	16.4	16.2	17.3	16.9	16.5	17.8	17.2	16.8
	WF	82	66	54	145	115	90	200	160	126	248	200	157	291	236	186	331	270	213

Entering/ leaving water temperature, °C	Sizes 10 and 19																					
	Relative humidity 50%																					
	Air flow, l/s (m³/h)																					
	28 (100)			56 (200)			83 (300)			111 (400)			139 (500)			167 (600)			194 (700)			
Entering air dry-bulb temperature, °C																						
27			25			23			27			25			23							
6-12	TC	0.81	0.66	0.53	1.50	1.21	0.95	2.08	1.69	1.31	2.60	2.10	1.63	3.03	2.46	1.91	3.42	2.79	2.17	3.76	3.07	2.41
	SHC	0.55	0.49	0.44	1.05	0.93	0.82	1.49	1.32	1.16	1.89	1.67	1.47	2.25	2.00	1.75	2.58	2.29	2.01	2.88	2.56	2.41
	SAT	10.2	10.3	10.0	11.1	11.1	10.8	11.9	11.8	11.5	12.7	12.4	12.0	13.3	13.0	12.5	14.0	13.5	13.0	14.5	14.0	13.4
	WF	117	96	76	221	177	135	314	251	192	397	317	243	473	376	290	541	431	334	602	482	375
7-12	TC	0.80	0.65	0.51	1.48	1.20	0.93	2.07	1.67	1.29	2.56	2.08	1.60	2.99	2.43	1.89	3.37	2.74	2.15	3.72	3.02	2.38
	SHC	0.55	0.48	0.43	1.04	0.92	0.81	1.49	1.31	1.15	1.88	1.66	1.46	2.24	1.99	1.74	2.56	2.28	2.00	2.87	2.54	2.38
	SAT	10.4	10.4	10.2	11.2	11.2	10.9	12.0	11.9	11.6	12.8	12.5	12.1	13.5	13.1	12.6	14.1	13.6	13.0	14.6	14.1	13.4
	WF	137	111	87	254	206	159	355	286	221	440	356	276	514	418	324	579	471	368	639	519	409
8-13	TC	0.72	0.58	0.45	1.33	1.07	0.82	1.86	1.48	1.14	2.31	1.85	1.42	2.69	2.17	1.68	3.03	2.45	1.92	3.34	2.69	2.14
	SHC	0.51	0.45	0.40	0.98	0.86	0.76	1.40	1.23	1.08	1.77	1.56	1.36	2.11	1.86	1.62	2.42	2.14	1.87	2.71	2.39	2.14
	SAT	11.4	11.3	11.0	12.2	12.0	11.7	12.9	12.7	12.3	13.6	13.3	12.8	14.2	13.8	13.3	14.8	14.3	13.7	15.3	14.7	14.1
	WF	124	100	77	229	183	140	319	255	195	396	317	244	462	372	289	521	420	330	574	463	368
10-15	TC	0.58	0.45	0.36	1.06	0.82	0.65	1.47	1.14	0.91	1.82	1.43	1.14	2.14	1.73	1.44	2.41	1.93	1.55	2.66	2.15	1.73
	SHC	0.45	0.40	0.35	0.86	0.75	0.64	1.23	1.08	0.91	1.57	1.36	1.14	1.87	1.63	1.35	2.15	1.87	1.55	2.40	2.09	1.73
	SAT	13.2	13.0	12.5	13.9	13.6	13.4	14.6	14.2	14.0	15.1	14.7	14.5	15.7	15.2	14.9	16.2	15.6	15.3	16.6	16.0	15.6
	WF	99	77	62	182	141	112	252	197	156	314	246	196	368	291	233	415	332	266	458	370	297

Legend

- TC Total cooling capacity (kW)
- SHC Sensible cooling capacity (kW)
- SAT Supply air temperature (°C)
- WF Water flow rate (l/h)

NOTE: To convert l/h to l/s, divide by 3600.

NOTE: Operating limits: air discharge temperature 12°C when the unit is installed in an ambient temperature of 27°C dry bulb and 65% relative humidity.

6.1.2 - Four-pipe water coil (cont.)

Entering/ leaving water temperature, °C		Size 21						Size 22						Size 23								
		Size 29																				
		Relative humidity 50%																				
		Air flow, l/s (m³/h)																				
		83 (300)			125 (450)			167 (600)			208 (750)			264 (950)			319 (1150)			347 (1250)		
		Entering air dry-bulb temperature, °C																				
		27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	27	25	23
6-12	TC	2.28	1.83	1.40	3.21	2.57	1.98	4.02	3.22	2.48	4.74	3.80	2.94	5.58	4.48	3.49	6.31	5.07	3.99	6.65	5.35	4.22
	SHC	1.59	1.40	1.22	2.28	2.01	1.76	2.91	2.56	2.25	3.49	3.08	2.70	4.19	3.70	3.25	4.82	4.27	3.75	5.12	4.54	4.22
	SAT	10.9	11.0	10.8	11.6	11.6	11.3	12.3	12.1	11.8	12.9	12.6	12.3	13.6	13.3	12.8	14.3	13.8	13.2	14.6	14.1	13.5
	WF	326	262	200	459	368	283	576	461	355	678	544	420	798	641	500	903	726	571	951	765	604
7-12	TC	2.26	1.81	1.38	3.18	2.55	1.94	3.98	3.20	2.45	4.69	3.76	2.90	5.52	4.43	3.45	6.25	5.01	3.93	6.59	5.28	4.16
	SHC	1.58	1.39	1.22	2.27	2.00	1.75	2.89	2.55	2.24	3.47	3.06	2.69	4.16	3.68	3.24	4.80	4.25	3.73	5.10	4.51	4.16
	SAT	11.0	11.0	10.9	11.7	11.6	11.4	12.4	12.2	11.9	13.0	12.7	12.3	13.7	13.3	12.8	14.4	13.9	13.3	14.6	14.1	13.5
	WF	388	311	238	546	437	334	684	549	421	805	646	499	948	761	592	1074	861	675	1132	907	714
8-13	TC	2.02	1.60	1.23	2.85	2.24	1.73	3.56	2.81	2.18	4.19	3.31	2.60	4.93	3.91	3.10	5.58	4.45	3.54	5.88	4.69	3.75
	SHC	1.48	1.30	1.14	2.13	1.87	1.63	2.72	2.39	2.09	3.26	2.87	2.51	3.92	3.46	3.01	4.53	3.99	3.48	4.81	4.24	3.75
	SAT	12.0	12.0	11.7	12.7	12.5	12.1	13.3	13.0	12.6	13.8	13.5	13.0	14.5	14.1	13.5	15.1	14.6	14.0	15.3	14.8	14.2
	WF	348	275	211	489	385	297	612	482	375	721	569	446	847	672	532	959	764	609	1011	806	645
10-15	TC	1.57	1.23	0.97	2.20	1.74	1.38	2.77	2.19	1.75	3.27	2.61	2.09	3.87	3.11	2.50	4.39	3.55	2.88	4.64	3.76	3.05
	SHC	1.30	1.14	0.97	1.87	1.63	1.38	2.40	2.09	1.75	2.88	2.51	2.09	3.47	3.02	2.50	4.01	3.48	2.88	4.26	3.69	3.05
	SAT	13.9	13.6	13.4	14.4	14.1	13.8	14.9	14.5	14.3	15.4	14.9	14.7	15.9	15.5	15.1	16.4	15.9	15.5	16.7	16.1	15.7
	WF	270	212	167	378	299	238	476	377	301	562	448	359	665	534	430	755	611	495	797	647	525

Entering/ leaving water temperature, °C		Size 31						Size 32						Size 33								
		Size 39																				
		Relative humidity 50%																				
		Air flow, l/s (m³/h)																				
		83 (300)			125 (450)			167 (600)			208 (750)			264 (950)			319 (1150)			347 (1250)		
		Entering air dry-bulb temperature, °C																				
		27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	27	25	23	27	25	23
6-12	TC	2.88	2.36	1.88	4.20	3.43	2.72	5.46	4.46	3.53	6.60	5.40	4.27	8.04	6.57	5.22	9.38	7.66	6.08	10.02	8.17	6.49
	SHC	1.85	1.64	1.44	2.72	2.41	2.12	3.56	3.17	2.77	4.34	3.87	3.40	5.35	4.77	4.20	6.31	5.63	4.96	6.77	6.04	5.33
	SAT	8.3	8.5	8.6	8.7	8.9	9.0	9.1	9.2	9.2	9.5	9.5	9.5	10.0	9.9	9.8	10.4	10.3	10.2	10.6	10.5	10.3
	WF	413	338	269	601	492	390	781	639	505	945	773	612	1151	941	748	1342	1096	871	1434	1170	930
7-12	TC	2.78	2.27	1.79	4.06	3.30	2.60	5.26	4.29	3.37	6.38	5.18	4.09	7.79	6.32	4.98	9.10	7.37	5.81	9.71	7.88	6.21
	SHC	1.80	1.60	1.40	2.65	2.35	2.06	3.47	3.09	2.70	4.24	3.77	3.31	5.24	4.66	4.09	6.18	5.50	4.83	6.64	5.91	5.20
	SAT	8.8	9.0	9.0	9.2	9.3	9.3	9.6	9.6	9.6	9.9	9.9	9.9	10.4	10.3	10.2	10.8	10.7	10.5	11.0	10.8	10.6
	WF	477	389	308	697	567	446	905	736	579	1096	890	702	1339	1086	856	1564	1267	998	1670	1353	1067
8-13	TC	2.54	2.04	1.57	3.70	2.96	2.30	4.80	3.84	2.95	5.80	4.64	3.59	7.08	5.65	4.39	8.26	6.59	5.13	8.82	7.03	5.48
	SHC	1.69	1.49	1.30	2.49	2.20	1.92	3.26	2.89	2.51	3.99	3.53	3.08	4.93	4.36	3.82	5.82	5.15	4.51	6.25	5.54	4.85
	SAT	9.9	10.0	10.1	10.2	10.3	10.3	10.6	10.6	10.6	10.9	10.9	10.8	11.4	11.3	11.1	11.7	11.6	11.3	11.9	11.7	11.4
	WF	437	350	270	637	509	395	825	661	508	998	799	617	1217	972	755	1420	1132	882	1517	1209	943
10-15	TC	2.06	1.57	1.19	2.99	2.29	1.73	3.87	2.95	2.26	4.67	3.59	2.75	5.68	4.38	3.39	6.61	5.11	3.99	7.06	5.47	4.28
	SHC	1.49	1.29	1.12	2.18	1.91	1.65	2.87	2.50	2.16	3.51	3.07	2.65	4.34	3.80	3.28	5.12	4.50	3.88	5.51	4.84	4.17
	SAT	12.0	12.1	11.9	12.3	12.3	12.1	12.6	12.5	12.3	12.9	12.8	12.5	13.3	13.0	12.7	13.6	13.3	13.0	13.7	13.4	13.1
	WF	354	270	204	514	395	298	666	508	388	804	617	473	978	754	583	1138	880	686	1215	941	736

Legend

- TC** Total cooling capacity (kW)
- SHC** Sensible cooling capacity (kW)
- SAT** Supply air temperature (°C)
- WF** Water flow rate (l/h)

NOTE: To convert l/h to l/s, divide by 3600.

NOTE: Operating limits: air discharge temperature 12°C when the unit is installed in an ambient temperature of 27°C dry bulb and 65% relative humidity.

6.2 - Heating capacity (water coil)

6.2.1 - Two-pipe changeover coil

Entering/ leaving water temperature, °C		Sizes 05 and 09																	
		Air flow, l/s (m³/h)																	
		28 (100)			56 (200)			83 (300)			111 (400)			139 (500)			167 (600)		
		Entering air dry-bulb temperature, °C																	
		21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19
70-60	HC	1.56	1.60	1.64	3.01	3.08	3.15	4.33	4.44	4.54	5.56	5.69	5.82	6.70	6.85	7.01	7.76	7.94	8.12
	SAT	67.4	67.4	67.4	65.5	65.5	65.5	63.6	63.6	63.6	62.0	61.9	61.9	60.5	60.4	60.3	59.1	59.0	58.9
	WF	137	141	144	264	271	277	381	390	398	488	500	511	588	602	615	682	697	713
60-50	HC	1.21	1.25	1.29	2.32	2.39	2.46	3.32	3.42	3.52	4.24	4.37	4.50	5.10	5.25	5.41	5.89	6.07	6.26
	SAT	57.0	57.0	57.0	55.3	55.3	55.3	53.7	53.7	53.6	52.3	52.2	52.2	51.1	51.0	50.9	50.0	49.8	49.7
	WF	106	109	113	203	209	215	290	299	308	371	382	394	446	459	473	515	531	547
55-40	HC	0.92	0.96	1.01	1.73	1.81	1.89	2.46	2.57	2.68	3.13	3.26	3.39	3.73	3.89	4.05	4.28	4.47	4.65
	SAT	48.4	48.5	48.6	46.6	46.7	46.8	45.2	45.3	45.3	44.0	44.0	44.0	43.0	42.9	42.9	42.0	41.9	41.9
	WF	54	56	59	101	105	110	143	150	156	182	190	198	217	226	236	249	260	271
50-40	HC	0.85	0.89	0.93	1.61	1.68	1.76	2.30	2.40	2.50	2.91	3.05	3.18	3.49	3.64	3.80	4.02	4.20	4.38
	SAT	46.2	46.3	46.3	44.8	44.8	44.9	43.6	43.6	43.6	42.5	42.5	42.4	41.6	41.5	41.4	40.7	40.6	40.5
	WF	74	77	81	140	147	153	200	209	218	254	265	277	304	317	331	350	366	382

Entering/ leaving water temperature, °C		Sizes 10 and 19																				
		Air flow, l/s (m³/h)																				
		28 (100)			56 (200)			83 (300)			111 (400)			139 (500)			167 (600)			194 (700)		
		Entering air dry-bulb temperature, °C																				
		21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19
70-60	HC	1.57	1.61	1.65	3.08	3.16	3.24	4.52	4.63	4.75	5.88	6.04	6.19	7.18	7.37	7.55	8.41	8.63	8.85	9.58	9.83	10.08
	SAT	67.5	67.5	67.5	66.7	66.7	66.7	65.7	65.7	65.7	64.7	64.6	64.6	63.6	63.6	63.5	62.6	62.5	62.5	61.6	61.5	61.4
	WF	138	141	145	270	277	284	397	407	417	517	530	544	631	647	664	739	758	777	841	863	885
60-50	HC	1.22	1.25	1.29	2.38	2.46	2.54	3.48	3.59	3.71	4.51	4.66	4.81	5.49	5.68	5.86	6.42	6.63	6.85	7.30	7.54	7.79
	SAT	57.1	57.1	57.2	56.3	56.4	56.4	55.4	55.4	55.4	54.5	54.5	54.5	53.6	53.6	53.6	52.8	52.7	52.7	51.9	51.9	51.8
	WF	106	110	113	208	215	222	304	314	324	385	408	421	480	496	512	561	580	599	638	659	681
55-40	HC	0.93	0.97	1.02	1.79	1.88	1.96	2.60	2.72	2.84	3.36	3.51	3.67	4.07	4.25	4.44	4.73	4.94	5.16	5.34	5.59	5.83
	SAT	48.7	48.8	48.9	47.6	47.7	47.8	46.7	46.8	46.9	45.9	46.0	46.0	45.1	45.2	45.2	44.4	44.4	44.3	43.7	43.6	43.6
	WF	54	57	59	104	109	114	151	158	165	195	204	213	237	247	258	275	288	300	311	325	340
50-40	HC	0.86	0.89	0.93	1.66	1.74	1.82	2.42	2.53	2.65	3.13	3.27	3.42	3.79	3.97	4.15	4.41	4.62	4.83	5.00	5.24	5.48
	SAT	46.4	46.5	46.5	45.6	45.7	45.8	44.9	45.0	45.0	44.2	44.2	44.2	43.5	43.5	43.5	42.8	42.8	42.7	42.2	42.1	42.1
	WF	75	78	81	145	151	158	211	221	231	272	285	298	330	346	361	384	403	421	336	457	477

Entering/ leaving water temperature, °C		Size 21						Size 22						Size 23								
		Air flow, l/s (m³/h)																				
		83 (300)			125 (450)			167 (600)			208 (750)			264 (950)			319 (1150)			347 (1250)		
		Entering air dry-bulb temperature, °C																				
		21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19
70-60	HC	4.62	4.74	4.86	6.74	6.91	7.09	8.73	8.95	9.18	10.59	10.87	11.15	12.92	13.26	13.60	15.08	15.47	15.87	16.10	16.53	16.95
	SAT	66.8	66.8	66.8	65.5	65.4	65.4	64.2	64.1	64.1	62.9	62.9	62.8	61.4	61.3	61.2	59.9	59.8	59.7	59.2	59.1	59.0
	WF	406	417	427	592	607	623	767	786	806	931	955	979	1135	1165	1194	1325	1359	1394	1415	1452	1489
60-50	HC	3.58	3.69	3.81	5.18	5.35	5.52	6.68	6.90	7.13	8.09	8.36	8.63	9.83	10.16	10.49	11.44	11.83	12.22	12.21	12.62	13.03
	SAT	56.4	56.4	56.4	55.2	55.2	55.2	54.1	54.0	54.0	53.0	53.0	52.9	51.7	51.6	51.6	50.5	50.4	50.3	50.0	49.9	49.7
	WF	313	323	333	453	468	483	584	604	623	707	731	755	860	888	917	1001	1035	1068	1068	1104	1140
55-40	HC	2.70	2.82	2.94	3.87	4.05	4.23	4.95	5.18	5.40	5.94	6.21	6.49	7.16	7.49	7.82	8.27	8.66	9.05	8.80	9.21	9.62
	SAT	47.7	47.8	47.9	46.5	46.6	46.7	45.5	45.5	45.5	44.5	44.5	44.5	43.4	43.3	43.3	42.4	42.3	42.2	41.9	41.8	41.7
	WF	157	164	171	225	236	246	288	301	314	446	462	477	546	573	600	648	686	724	742	780	818
50-40	HC	2.50	2.61	2.73	3.60	3.77	3.94	4.61	4.83	5.05	5.56	5.82	6.09	6.72	7.04	7.37	7.79	8.17	8.55	8.30	8.70	9.10
	SAT	45.7	45.8	45.8	44.7	44.8	44.8	43.8	43.8	43.8	43.0	43.0	42.9	42.0	41.9	41.9	41.1	41.0	40.9	40.7	40.6	40.5
	WF	218	228	238	314	328	343	402	421	440	484	507	530	585	613	642	679	712	745	723	758	793

Entering/ leaving water temperature, °C		Size 31						Size 32						Size 33								
		Air flow, l/s (m³/h)																				
		83 (300)			125 (450)			167 (600)			208 (750)			264 (950)			319 (1150)			347 (1250)		
		Entering air dry-bulb temperature, °C																				
		21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19
70-60	HC	4.77	4.89	5.01	7.1	7.27	7.45	9.31	9.54	9.77	11.45	11.74	12.02	14.25	14.61	14.97	16.9	17.3	17.8	18.23	18.69	19.15
	SAT	67.8	67.8	67.7	67.1	67.1	67	66.4	66.4	66.3	65.8	65.7	65.7	65	64.9	64.8	64.2	64.1	64	63.8	63.7	63.6
	WF	420	430	440	624	639	655	818	838	859	1007	1032	1057	1253	1284	1316	1488	1525	1563	1603	1644	1684
60-50	HC	3.74	3.86	3.97	5.55	5.72	5.9	7.26	7.49	7.71	8.91	9.19	9.47	11.06	11.41	11.76	13.1	13.5	13.9	14.11	14.56	15.01
	SAT	57.7	57.7	57.7	57.1	57	57	56.4	56.4	56.4	55.9	55.8	55.8	55.1	55.1	55	54.5	54.4	54.3	54.1	54.1	54
	WF	327	338	348	486	501	516	635	655	675	780	804	829	968	998	1029	1147	1183	1220	1234	1274	1313
55-40	HC	3.02	3.14	3.26	4.44	4.62	4.8	5.77	6	6.23	7.03	7.32	7.6	8.66	9.02	9.37	10.2	10.6	11	10.94	11.4	11.85
	SAT	50.6	50.6	50.7	49.8	49.9	49.9	49.2	49.2	49.2	48.5	48.5	48.5	47.7	47.7	47.7	47	47	47	46.7	46.7	46.6
	WF	176	183	190	258	269	279	336	349	363	409	426	443	504	525	546	594	618	643	637	664	690
50-40	HC	2.69	2.8	2.92	3.97	4.14	4.32	5.17	5.4	5.62	6.33	6.6	6.88	7.82	8.17	8.51	9.2	9.6	10.1	9.93	10.37	10.82
	SAT	47.4	47.4	47.4	46.8	46.8	46.8	46.3	46.3	46.2	45.8	45.7	45.7	45.1	45.1	45.1	44.6	44.5	44.5	44.3	44.3	44.2
	WF	234	244	255	346	361	376	451	470	490	551	576	600	682	712	742	805	841	877	866	905	943

For the legend and notes see page 19.

6.2.2 - Four-pipe coil, heating circuit

Entering/ leaving water temperature, °C	Sizes 05 and 09																	
	Air flow, l/s (m³/h)																	
	28 (100)			56 (200)			83 (300)			111 (400)			139 (500)			167 (600)		
	Entering air dry-bulb temperature, °C																	
	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19
70-60 HC	0.72	0.74	0.76	1.29	1.32	1.36	1.76	1.80	1.85	2.17	2.22	2.27	2.52	2.59	2.65	2.85	2.92	2.99
SAT	42.5	42.0	41.5	40.1	39.5	39.0	38.3	37.7	37.2	37.0	36.4	35.7	35.9	35.2	34.6	35.0	34.3	33.7
WF	64	65	67	113	116	119	155	158	162	190	195	200	222	227	233	250	256	262
60-50 HC	0.55	0.57	0.59	0.97	1.01	1.04	1.32	1.37	1.41	1.63	1.68	1.73	1.89	1.95	2.02	2.13	2.20	2.27
SAT	37.3	36.8	36.3	35.4	34.9	34.3	34.0	33.4	32.9	33.0	32.4	31.8	32.2	31.5	30.9	31.5	30.8	30.2
WF	48	50	51	85	88	91	116	120	123	142	147	151	166	171	176	187	193	199
55-40 HC	0.39	0.41	0.42	0.68	0.72	0.75	0.93	0.97	1.02	1.14	1.19	1.24	1.32	1.38	1.44	1.48	1.55	1.62
SAT	32.5	32.0	31.5	31.1	30.6	30.0	30.1	29.6	29.0	29.4	28.8	28.2	28.8	28.1	27.5	28.3	27.6	26.9
WF	22	24	25	40	42	44	54	57	59	66	69	72	77	80	84	86	90	94
50-40 HC	0.37	0.39	0.41	0.66	0.69	0.72	0.89	0.93	0.97	1.09	1.14	1.19	1.26	1.32	1.38	1.42	1.49	1.56
SAT	32.0	31.5	31.0	30.7	30.2	29.6	29.7	29.2	28.6	29.0	28.4	27.8	28.4	27.8	27.2	28.0	27.3	26.7
WF	32	34	35	57	60	63	77	81	85	95	99	104	110	115	121	124	130	136

Entering/ leaving water temperature, °C	Sizes 10 and 19																				
	Air flow, l/s (m³/h)																				
	28 (100)			56 (200)			83 (300)			111 (400)			139 (500)			167 (600)			194 (700)		
	Entering air dry-bulb temperature, °C																				
	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19
70-60 HC	1.03	1.05	1.08	1.89	1.94	1.99	2.60	2.67	2.74	3.22	3.31	3.39	3.77	3.87	3.97	4.25	4.36	4.48	4.69	4.81	4.94
SAT	51.5	51.2	50.9	49.0	48.6	48.3	46.8	46.4	46.0	44.9	44.5	44.0	43.4	42.9	42.4	42.0	41.5	41.0	40.9	40.3	39.8
WF	90	93	95	166	170	174	229	235	241	283	291	298	331	340	348	373	383	393	412	423	434
60-50 HC	0.78	0.81	0.83	1.43	1.48	1.53	1.96	2.03	2.10	2.42	2.51	2.59	2.83	2.92	3.02	3.19	3.30	3.41	3.51	3.63	3.76
SAT	44.1	43.9	43.6	42.2	41.8	41.5	40.4	40.0	39.6	39.0	38.5	38.1	37.8	37.3	36.8	36.8	36.3	35.7	35.9	35.4	34.8
WF	68	71	73	125	129	133	172	178	184	212	219	227	247	256	264	279	288	298	307	318	328
55-40 HC	0.55	0.58	0.61	1.00	1.05	1.10	1.37	1.44	1.51	1.69	1.77	1.86	1.97	2.06	2.16	2.21	2.32	2.43	2.43	2.55	2.67
SAT	37.5	37.2	37.0	35.8	35.5	35.2	34.5	34.2	33.8	33.5	33.1	32.7	32.7	32.2	31.8	31.9	31.4	30.9	31.3	30.8	30.2
WF	32	34	35	58	61	64	80	84	88	98	103	108	114	120	126	129	135	141	141	148	155
50-40 HC	0.53	0.55	0.58	0.96	1.01	1.06	1.32	1.39	1.45	1.62	1.70	1.79	1.89	1.98	2.08	2.12	2.23	2.34	2.33	2.45	2.57
SAT	36.7	36.4	36.1	35.2	34.9	34.6	34.0	33.7	33.3	33.0	32.6	32.2	32.2	31.7	31.3	31.5	31.0	30.5	30.9	30.4	29.8
WF	46	48	51	83	88	92	115	121	127	141	148	156	164	173	181	185	194	204	203	214	224

Entering/ leaving water temperature, °C	Size 21						Size 22						Size 23								
	Air flow, l/s (m³/h)																				
	83 (300)			125 (450)			167 (600)			208 (750)			264 (950)			319 (1150)			347 (1250)		
	Entering air dry-bulb temperature, °C																				
	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19
70-60 HC	2.13	2.18	2.24	2.96	3.03	3.11	3.67	3.77	3.87	4.30	4.42	4.54	5.05	5.19	5.32	5.71	5.86	6.02	6.01	6.17	6.33
SAT	42.2	41.7	41.2	40.6	40.1	39.6	39.3	38.7	38.2	38.2	37.6	37.0	36.9	36.3	35.6	35.8	35.2	34.5	35.4	34.7	34.0
WF	187	192	197	260	267	274	323	331	340	378	388	399	444	456	467	501	515	528	528	542	556
60-50 HC	1.61	1.66	1.72	2.22	2.30	2.38	2.75	2.85	2.95	3.22	3.33	3.45	3.77	3.90	4.04	4.26	4.41	4.56	4.48	4.64	4.80
SAT	37.0	36.5	36.0	35.8	35.2	34.7	34.7	34.2	33.6	33.8	31.3	30.6	31.2	30.5	29.8	30.6	29.9	29.1	30.3	29.6	28.8
WF	140	145	150	194	201	208	241	249	258	282	292	302	330	341	353	372	385	399	392	406	419
55-40 HC	1.10	1.16	1.21	1.51	1.59	1.67	1.87	1.97	2.07	2.19	2.30	2.42	2.56	2.70	2.83	2.89	3.04	3.19	3.04	3.20	3.35
SAT	31.9	31.5	31.0	31.0	30.5	30.0	30.3	29.8	29.2	29.7	29.1	28.6	29.1	28.5	27.9	28.5	27.9	27.2	28.3	27.6	27.0
WF	64	67	71	88	93	97	109	115	120	127	134	141	149	157	165	168	177	186	177	186	195
50-40 HC	1.07	1.12	1.18	1.47	1.55	1.63	1.83	1.92	2.02	2.14	2.25	2.36	2.49	2.62	2.75	2.81	2.95	3.10	2.95	3.10	3.26
SAT	31.6	31.1	30.7	30.8	30.3	29.7	30.1	29.6	29.0	29.5	28.9	28.3	28.8	28.2	27.6	28.3	27.7	27.0	28.1	27.4	26.7
WF	93	98	103	128	135	142	159	168	176	186	196	205	217	229	240	245	257	270	257	271	284

Entering/ leaving water temperature, °C	Size 31						Size 32						Size 33								
	Air flow, l/s (m³/h)																				
	83 (300)			125 (450)			167 (600)			208 (750)			264 (950)			319 (1150)			347 (1250)		
	Entering air dry-bulb temperature, °C																				
	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19	21	20	19
70-60 HC	1.81	1.85	1.9	2.56	2.63	2.69	3.23	3.31	3.4	3.85	3.95	4.05	4.63	4.75	4.86	5.33	5.47	5.6	5.68	5.82	5.96
SAT	38.7	38.1	37.5	37.6	37	36.3	36.8	36.1	35.5	36.1	35.4	34.7	35.3	34.6	33.9	34.6	33.9	33.2	34.3	33.6	32.9
WF	159	163	167	225	231	237	284	291	299	339	347	356	407	417	427	469	481	493	499	512	524
60-50 HC	1.39	1.44	1.49	1.98	2.04	2.11	2.5	2.58	2.66	2.97	3.07	3.17	3.57	3.69	3.8	4.12	4.25	4.38	4.38	4.52	4.66
SAT	34.7	34.1	33.5	33.8	33.2	32.6	33.2	32.5	31.9	32.6	32	31.3	32	31.3	30.6	31.5	30.8	30.1	31.3	30.6	29.9
WF	122	126	130	173	179	184	218	225	233	260	269	277	313	323	333	360	372	383	383	396	408
55-40 HC	1.08	1.12	1.17	1.53	1.59	1.65	1.93	2.01	2.09	2.29	2.39	2.48	2.75	2.87	2.98	3.17	3.3	3.43	3.37	3.51	3.65
SAT	31.6	31	30.4	30.9	30.3	29.7	30.4	29.8	29.1	30	29.3	28.7	29.5	28.8	28.1	29.1	28.4	27.7	28.9	28.2	27.5
WF	63	65	68	89	93	96	112	117	121	134	139	145	160	167	174	185	192	200	196	205	213
50-40 HC	0.98	1.03	1.07	1.39	1.45	1.52	1.76	1.84	1.91	2.09	2.19	2.28	2.51	2.63	2.74	2.89	3.02	3.15	3.08	3.22	3.36
SAT	30.6	30	29.4	30	29.4	28.8	29.6	28.9	28.3	29.2	28.5	27.9	28.8	28.1	27.4	28.4	27.7	27	28.2	27.5	26.8
WF	86	90	93	121	127	132	153	160	167	182	191	199	219	229	239	252	264	275	268	280	293

Legend

HC Heating capacity (kW)

SAT Supply air temperature (°C)

WF Water flow rate (l/h)

NOTE: To convert l/h to l/s, divide by 3600.

WARNING: The SAT must not exceed 60°C otherwise the supply air spigot connections may be damaged.

NOTE: The supply air temperature should be kept below 35°C in order to avoid the risk of stratification.

If the Atmosfera unit size 2 or 3 has only two spigots, the above performance data is reduced by 3%.

6.3 - Sound power levels

42EM 05 with one discharge spigot (multi-speed version)

		Octave band frequency (Hz)						
Speed	Typ	125	250	500	1K	2K	4K	dB(A)
R1	SUP	55	50	49	42	40	33	50
	RET	61	60	56	51	40	32	57
	RAD	62	49	45	41	34	23	49
R2	SUP	54	49	48	41	39	32	49
	RET	59	58	54	49	39	31	55
	RAD	55	46	44	40	32	21	46
R3	SUP	53	48	47	40	39	31	48
	RET	58	57	53	49	38	29	54
	RAD	51	44	42	38	31	19	44
R4	SUP	51	46	44	37	36	27	45
	RET	56	55	51	46	35	26	52
	RAD	50	43	41	37	30	*	43
R5	SUP	49	44	43	35	34	23	43
	RET	53	52	48	43	33	*	49
	RAD	47	40	38	34	27	*	39
R6	SUP	47	42	41	34	33	22	42
	RET	52	50	47	42	30	*	48
	RAD	46	38	35	31	24	*	37

42EM 09 with one discharge spigot (variable-speed LEC motor)

		Octave band frequency (Hz)						
Volt	Typ	125	250	500	1K	2K	4K	dB(A)
10	SUP	61	61	55	51	50	43	58
	RET	70	68	63	53	46	44	64
	RAD	60	59	54	51	48	42	57
9	SUP	60	59	53	50	48	41	56
	RET	68	66	61	51	44	42	62
	RAD	58	57	52	49	46	39	55
8	SUP	58	57	51	48	45	39	54
	RET	66	64	58	49	42	39	59
	RAD	57	55	50	47	44	37	53
7	SUP	56	54	48	46	41	35	51
	RET	63	61	56	47	39	36	57
	RAD	55	52	48	45	41	34	50
6	SUP	53	51	45	42	36	30	48
	RET	61	59	53	45	35	32	54
	RAD	53	49	45	41	37	30	47
5	SUP	50	47	42	38	32	26	44
	RET	58	54	49	41	31	27	50
	RAD	50	46	41	38	33	26	44
4	SUP	46	43	38	32	27	22	40
	RET	53	49	45	36	26	23	46
	RAD	46	41	37	33	27	22	39
3	SUP	41	38	33	24	22	19	34
	RET	48	43	40	29	23	21	40
	RAD	41	35	31	25	22	19	33
2	SUP	37	34	29	18	18	17	29
	RET	44	39	36	24	21	20	36
	RAD	38	31	26	19	18	17	28

42EM 10 with one discharge spigot (multi-speed version)

		Octave band frequency (Hz)						
Speed	Typ	125	250	500	1K	2K	4K	dB(A)
R1	SUP	57.3	55.1	46.2	43.1	37.1	31.3	50.3
	RET	60	57.8	52	46.8	43.5	38.7	54.3
	RAD	57.6	50.3	45.2	37.6	32.2	24.7	47.3
R2	SUP	55.8	52.4	43.7	40.4	34.4	27.1	47.8
	RET	57.8	54.1	49	43.3	39.9	34	51
	RAD	54.1	46.8	41.7	34.2	28.4	19.9	43.8
R3	SUP	51.5	48.8	40.1	36.5	30.4	22.2	44
	RET	55	51.5	46.4	40.8	36.8	29.8	48.3
	RAD	53.2	44.1	37	31	25.6	16.8	41.1
R4	SUP	48.4	45.2	36.9	33	26.4	18	40.6
	RET	51.9	47.7	43.2	37.1	32.5	23.9	44.7
	RAD	49.9	40.7	33.8	27.4	21.7	14.2	37.8
R5	SUP	46.4	43.5	35.1	30.7	23.4	16.8	38.7
	RET	49.9	45.6	41.6	34.7	29	20.2	42.7
	RAD	47.6	39.2	32.3	25.6	19.1	14.6	36
R6	SUP	45.1	42.1	34.1	28.9	21	17	37.4
	RET	48.7	44.6	40.6	32.9	26.5	18.9	41.5
	RAD	45.2	37.3	30.5	22.9	16.4	14.3	34

42EM 19 with one discharge spigot (variable-speed LEC motor)

		Octave band frequency (Hz)						
Volt	Typ	125	250	500	1K	2K	4K	dB(A)
10	SUP	66	64	59	52	51	46	61
	RET	70	69	63	56	52	48	65
	RAD	58	60	55	52	47	41	57
9	SUP	64	62	56	51	49	44	59
	RET	68	67	61	54	49	46	63
	RAD	57	58	53	50	45	39	55
8	SUP	62	59	54	49	46	42	56
	RET	65	65	58	52	47	44	60
	RAD	56	56	50	48	42	36	53
7	SUP	60	57	51	46	43	38	54
	RET	63	63	56	50	44	41	58
	RAD	55	54	48	46	39	32	51
6	SUP	57	54	48	43	40	35	51
	RET	61	60	53	47	41	37	55
	RAD	53	51	46	43	36	28	48
5	SUP	54	50	45	40	35	29	47
	RET	58	56	49	44	37	32	51
	RAD	50	47	42	39	31	22	45
4	SUP	50	45	41	35	29	23	42
	RET	53	50	45	39	32	26	46
	RAD	47	43	38	34	26	17	40
3	SUP	45	39	35	27	21	19	36
	RET	47	44	39	32	26	21	40
	RAD	41	39	33	27	20	17	35
2	SUP	41	34	32	22	15	15	32
	RET	43	39	35	28	22	17	36
	RAD	37	36	29	21	16	17	31

42EM 21 and 31 with two discharge spigots (multi-speed version)

		Octave band frequency (Hz)						
Speed	Type	125	250	500	1K	2K	4K	dB(A)
R1	SUP	56	51.0	44.0	38.0	30.0	23.0	46.7
	RET	58.5	53	48.5	42	36.5	30	50.1
	RAD	51	43	37	29	25	15	39.8
R2	SUP	53.4	47.4	41.1	33.3	25	19	43.4
	RET	55	50	46	39	32	27	47.1
	RAD	48	40	34	25.5	20	13	36.7
R3	SUP	49.5	44.2	37.9	30.0	19.7	15.0	40
	RET	51.9	46.6	42.5	34.8	27.7	23.1	43.6
	RAD	45	36.0	30.6	21.7	16.2	11.3	33.3
R4	SUP	47.5	43	36.3	27	17	16	38.4
	RET	49.3	44.5	40	31	27	22.5	41.2
	RAD	42.8	34.6	28.1	18	14.2	12	31.3
R5	SUP	45.5	41	34.3	24.9	14.8	14.7	36.4
	RET	47.3	42.5	38	28.8	24.9	21.1	39.2
	RAD	39.8	31.6	25.1	15	11.2	11	28.6
R6	SUP	Speed not available for 230 V						
	RET	Speed not available for 230 V						
	RAD	Speed not available for 230 V						

Legend

SUP Supply (dB re = 10⁻¹² W)
RET Return (dB re = 10⁻¹² W)
RAD Radiated (dB re = 10⁻¹² W)
R Fixed speed

NOTE: The measurements are based on ISO standards and are without supply and return octopus plenums.

The room sound level calculations must take account of the sound absorption of the duct, the plenum, the room and ceiling.

For a selected speed the sound level can vary within a tolerance of ± 2.5 dB(A), depending on the available static pressure.

42EM 22 and 32 with three discharge spigots (multi-speed version)

Speed	Type	Octave band frequency (Hz)						
		125	250	500	1K	2K	4K	dB(A)
R1	SUP	64.4	59.6	52.2	46.8	38.3	33.9	55.2
	RET	66.4	61.9	56.2	50.8	45.8	40.3	58.5
	RAD	57.2	51.3	44.6	38.3	34.2	25.1	47.5
R2	SUP	63.7	57.8	50.6	44.9	36.4	31.5	53.7
	RET	64.8	60	54.7	49	43.8	37.8	56.8
	RAD	55.9	49.6	43.2	36.5	32.3	22.4	45.9
R3	SUP	62	56.1	49.4	43.2	34.3	28.5	52.1
	RET	63	58.3	53.2	47.2	41.5	35	55
	RAD	53.8	46.1	40.3	33.1	28.7	18.3	43
R4	SUP	56.9	50.9	44.6	37.8	28.2	21.7	47
	RET	58.8	53.5	49.1	42.4	36	29.6	50.5
	RAD	51.2	43	37.4	29.5	24.4	15.1	40
R5	SUP	51.5	46.2	39.9	32	21.7	17	42
	RET	53.3	48	43.9	36.2	29.1	24.5	45
	RAD	46.7	37.7	32.3	23.4	17.9	13	35
R6	SUP	47.5	43	36.3	26.9	16.8	16.7	38.4
	RET	48.8	44	39.5	30.3	26.4	22.6	40.7
	RAD	42.3	34.1	27.6	17.4	13.7	13.3	31

42EM 23 and 33 with four discharge spigots (multi-speed version)

Speed	Type	Octave band frequency (Hz)						
		125	250	500	1K	2K	4K	dB(A)
R1	SUP	67.2	64	55.9	51.4	42.6	39.2	59.2
	RET	68	64.8	58.4	53.6	49.2	44.4	61.1
	RAD	58.9	54.6	46.5	41.3	36.3	29.1	50.1
R2	SUP	66	61.8	54.1	49.5	40.8	37.1	57.3
	RET	66.6	63	56.6	51.8	47.3	42.3	59.3
	RAD	57.1	52.6	44.6	39.4	34.4	26.9	48.1
R3	SUP	64.5	60.3	52.8	48	39.3	35.2	55.9
	RET	65.4	61.3	55.4	50.5	45.9	40.5	57.9
	RAD	55.9	50.9	43.4	38	33	24.9	46.7
R4	SUP	62.6	57.6	50.6	45.4	36.6	31.8	53.5
	RET	64.1	58.9	53.6	48.4	43.6	37.6	55.9
	RAD	54.2	48.4	41.3	35.5	30.4	21.4	44.4
R5	SUP	58.3	52.8	46.2	40.3	31.3	25	48.8
	RET	59.4	53.9	49.3	43.4	37.9	31	51.1
	RAD	49.9	43.6	37.3	30.7	25.9	16	40
R6	SUP	53.7	49.1	42.6	35.6	25.3	18.6	44.8
	RET	56	49.9	45.8	38.8	32	25.9	47.1
	RAD	45.3	39.1	32.8	25.1	19.1	12.5	35.3

42EM 29 and 39 with four discharge spigots (variable-speed LEC motor)

Volt	Type	Octave band frequency (Hz)						
		125	250	500	1K	2K	4K	dB(A)
10	SUP	64	59	56	52	45	39	58
	RET	65	60	55	48	38	37	57
	RAD	67	62	54	50	44	36	58
9	SUP	62	57	54	50	43	35	55
	RET	63	58	53	46	37	35	55
	RAD	60	57	50	47	38	31	53
8	SUP	59	54	51	47	40	29	53
	RET	61	56	52	44	36	29	53
	RAD	53	53	47	45	33	29	50
7	SUP	58	52	50	45	38	31	51
	RET	60	54	50	42	35	31	51
	RAD	49	50	44	43	30	23	47
6	SUP	56	51	48	44	36	31	50
	RET	59	53	49	40	33	29	50
	RAD	47	48	42	42	28	27	45
5	SUP	54	49	47	42	34	25	48
	RET	57	51	47	38	32	23	48
	RAD	43	46	40	40	25	23	43
4	SUP	53	48	45	40	32	18	46
	RET	56	49	46	36	30	28	47
	RAD	39	43	38	38	22	18	41
3	SUP	51	46	43	38	30	25	44
	RET	54	47	44	34	29	26	45
	RAD	37	40	35	37	19	18	39
2	SUP	49	44	42	36	28	20	43
	RET	52	45	41	32	27	22	42
	RAD	35	38	33	35	17	17	37

Legend

- SUP** Supply (dB re = 10⁻¹² W)
- RET** Return (dB re = 10⁻¹² W)
- RAD** Radiated (dB re = 10⁻¹² W)
- R** Fixed speed

NOTE: The measurements are based on ISO standards and are without supply and return octopus plenums.

The room sound level calculations must take account of the sound absorption of the duct, the plenum, the room and ceiling.

For a selected speed the sound level can vary within a tolerance of ± 2.5 dB(A), depending on the available static pressure.

Return air plenum attenuation

The sound power level measurements were carried out on a non-ducted unit without return air plenum. If the unit includes a return air plenum, correct the sound power levels (RET) using the correction factors in the table below:

Unit size 42EM	Octave band frequency (Hz)						
	125	250	500	1K	2K	4K	dB(A)
0	-4	-7	-6	-5	-9	-3	-6
1, 2, and 3	-0.4	-1.1	-2.6	-7.4	-10.7	-6.8	-2.5

6.4 - Electrical data

42EM 05 (multi-speed version)

Speed	I (A)	P (W)	Qv (l/s)	Qv (m³/h)	PR (Pa)	
R1	0.49	112	170	612	0	
	0.49	112	164	592	6	
	0.48	110	147	528	27	
	0.47	107	130	469	41	
	0.47	105	119	429	54	
	0.46	103	110	395	64	
	0.45	101	88	316	81	
	0.45	101	78	280	91	
	0.44	100	66	236	101	
	0.43	99	39	141	113	
0.43	99	26	93	119		
R2	0.36	83	149	537	0	
	0.36	83	145	523	5	
	0.35	78	119	430	34	
	0.34	77	103	371	53	
	0.34	76	93	334	63	
	0.33	74	79	286	75	
	0.32	72	59	213	95	
	0.31	70	38	139	106	
	0.31	69	30	107	110	
	0.31	69	20	74	115	
R3	0.31	71	131	473	0	
	0.31	71	128	462	5	
	0.30	67	114	411	21	
	0.29	66	98	353	43	
	0.29	65	90	325	52	
	0.28	64	81	292	62	
	0.28	64	74	266	71	
	0.28	62	64	231	82	
	0.27	61	51	184	92	
	0.26	58	31	111	103	
0.26	57	21	74	110		
R4	0.26	59	110	397	0	
	0.26	59	108	390	4	
	0.24	57	91	328	27	
	0.24	55	74	265	51	
	0.24	55	65	234	63	
	0.23	53	54	193	77	
	0.23	52	42	151	85	
	0.22	50	28	102	96	
	0.22	49	19	70	103	
	R5	0.22	50	93	336	0
0.22		50	92	330	2	
0.21		49	81	293	17	
0.21		48	70	252	33	
0.20		47	58	210	51	
0.20		47	53	192	59	
0.20		45	35	127	78	
0.19		45	25	91	88	
R6		0.19	46	84	301	0
		0.19	46	80	289	6
	0.19	45	71	256	19	
	0.19	45	63	228	30	
	0.18	44	52	187	47	
	0.18	42	40	143	60	
	0.17	41	23	85	79	
	0.17	39	14	50	90	

Legend

- I** Current drawn by the fan motor
- P** Power input to the fan motor
- Qv** Air flow rate
- PR** Available static pressure
- R** Fixed speed

NOTE: Voltage supply: 230 V ± 15%

42EM 09 (variable-speed LEC motor)

Control (Volt)	I (A)	Cos	P (W)	Qv (l/s)	Qv (m³/h)	PR (Pa)	
10	1.21	0.54	152	236	850	12	
	1.17	0.54	144	222	800	35	
	1.12	0.53	137	208	750	57	
	1.08	0.53	131	194	700	78	
	1.04	0.52	125	181	650	98	
	0.99	0.52	119	167	600	116	
	0.95	0.52	114	153	550	134	
	0.91	0.52	109	139	500	151	
9	1.00	0.54	123	222	800	2	
	0.96	0.53	116	208	750	24	
	0.92	0.52	110	194	700	45	
	0.89	0.52	106	181	650	66	
	0.85	0.52	101	167	600	85	
	0.82	0.51	97	153	550	103	
	0.78	0.51	93	139	500	121	
	0.75	0.51	88	125	450	137	
8	0.68	0.59	92	194	700	7	
	0.66	0.56	86	181	650	30	
	0.65	0.55	81	167	600	51	
	0.63	0.53	77	153	550	69	
	0.61	0.53	73	139	500	86	
	0.58	0.52	70	125	450	102	
	0.56	0.51	66	111	400	116	
	0.54	0.51	63	97	350	129	
7	0.56	0.49	64	167	600	15	
	0.53	0.49	60	153	550	34	
	0.50	0.49	56	139	500	51	
	0.47	0.49	53	125	450	65	
	0.44	0.49	50	111	400	78	
	0.41	0.49	47	97	350	89	
	0.39	0.49	44	83	300	100	
	0.36	0.49	41	69	250	110	
6	0.45	0.47	48	153	550	5	
	0.41	0.48	45	139	500	23	
	0.38	0.48	42	125	450	38	
	0.36	0.48	40	111	400	51	
	0.34	0.48	37	97	350	63	
	0.31	0.48	35	83	300	73	
	0.29	0.48	32	69	250	83	
	0.27	0.47	30	56	200	92	
5	0.31	0.46	33	125	450	1	
	0.28	0.48	31	111	400	19	
	0.25	0.49	29	97	350	34	
	0.23	0.51	26	83	300	46	
	0.20	0.52	24	69	250	56	
	0.18	0.52	21	56	200	65	
	0.15	0.52	18	42	150	72	
	4	0.11	0.77	19	97	350	1
0.11		0.71	18	83	300	17	
0.10		0.72	17	69	250	29	
0.10		0.65	15	56	200	38	
0.10		0.58	13	42	150	45	
0.10		0.50	11	28	100	50	
3		0.11	0.48	12	69	250	3
		0.11	0.40	10	56	200	15
	0.10	0.39	9	42	150	22	
	0.10	0.38	8	28	100	27	
	0.08	0.38	7	14	50	31	
	2	0.05	0.35	4	42	150	4
0.05		0.35	4	28	100	8	
0.05		0.35	4	14	50	10	

42EM 10 (multi-speed version)

Speed	I (A)	P (W)	Qv (l/s)	Qv (m ³ /h)	PR (Pa)
R1	0.52	119	196	705	0
	0.52	118	188	675	10
	0.51	117	181	650	20
	0.50	115	166	596	39
	0.50	114	156	560	50
	0.48	111	114	410	92
	0.48	110	89	321	114
	0.47	108	63	227	135
0.46	107	39	141	149	
R2	0.37	87	165	594	0
	0.37	85	146	525	28
	0.36	82	128	460	50
	0.35	81	111	400	69
	0.34	78	93	335	89
	0.34	78	82	294	102
	0.34	77	62	222	122
	0.33	76	50	180	130
0.33	75	41	149	135	
R3	0.31	73	145	522	0
	0.31	72	131	473	22
	0.30	69	109	393	51
	0.29	68	92	332	72
	0.29	67	77	278	91
	0.28	65	60	217	110
0.28	64	50	179	118	
R4	0.26	60	121	437	0
	0.25	59	107	385	23
	0.25	58	88	315	53
	0.24	57	68	246	80
	0.24	55	52	187	100
	0.23	54	41	147	110
R5	0.21	51	103	370	1
	0.21	51	87	312	25
	0.21	49	71	255	48
	0.20	48	50	179	80
	0.20	47	42	150	90
R6	0.19	45	92	330	0
	0.18	44	76	274	20
	0.18	43	54	196	52
	0.18	43	42	150	70
	0.18	42	33	120	80
	0.17	41	24	87	90
	0.17	41	18	63	99

Legend

- I** Current drawn by the fan motor
- P** Power input to the fan motor
- Qv** Air flow rate
- PR** Available static pressure
- R** Fixed speed

NOTE: Voltage supply: 230 V ± 15%

42EM 19 (variable-speed LEC motor)

Control (Volt)	I (A)	Cos	P (W)	Qv (l/s)	Qv (m ³ /h)	PR (Pa)
10	1.25	0.55	157	250	900	14
	1.19	0.54	149	236	850	41
	1.14	0.54	143	222	800	66
	1.11	0.54	138	208	750	89
	1.07	0.54	134	194	700	111
	1.04	0.54	129	181	650	130
	1.00	0.54	125	167	600	149
9	1.04	0.53	127	236	850	4
	0.99	0.53	121	222	800	29
	0.95	0.53	115	208	750	52
	0.91	0.53	111	194	700	73
	0.87	0.53	106	181	650	93
	0.84	0.53	102	167	600	111
	0.81	0.53	97	153	550	127
0.77	0.52	93	139	500	142	
8	0.79	0.52	94	208	750	17
	0.76	0.52	90	194	700	38
	0.72	0.52	86	181	650	57
	0.69	0.52	82	167	600	74
	0.66	0.51	78	153	550	90
	0.63	0.51	75	139	500	104
	0.60	0.51	71	125	450	118
0.57	0.51	66	111	400	129	
0.53	0.51	62	97	350	140	
7	0.62	0.51	72	194	700	3
	0.59	0.51	68	181	650	22
	0.56	0.50	65	167	600	40
	0.54	0.50	62	153	550	56
	0.51	0.50	59	139	500	70
	0.48	0.50	56	125	450	82
	0.46	0.50	52	111	400	94
0.43	0.49	49	97	350	104	
0.40	0.49	45	83	300	113	
6	0.47	0.49	53	167	600	10
	0.44	0.49	50	153	550	27
	0.42	0.49	47	139	500	43
	0.40	0.49	45	125	450	56
	0.37	0.49	42	111	400	67
	0.35	0.49	39	97	350	77
	0.33	0.49	36	83	300	86
0.30	0.48	34	69	250	94	
5	0.33	0.48	36	139	500	11
	0.31	0.48	34	125	450	26
	0.29	0.48	32	111	400	38
	0.27	0.48	29	97	350	48
	0.25	0.47	27	83	300	57
	0.23	0.47	25	69	250	64
	0.21	0.47	23	56	200	71
0.19	0.46	20	42	150	76	
4	0.30	0.31	22	111	400	11
	0.27	0.33	21	97	350	21
	0.24	0.34	19	83	300	29
	0.21	0.36	17	69	250	37
	0.18	0.38	16	56	200	43
	0.15	0.40	13	42	150	48
	0.12	0.41	11	28	100	52
3	0.14	0.37	12	83	300	7
	0.13	0.39	11	69	250	14
	0.12	0.41	11	56	200	20
	0.10	0.43	10	42	150	26
	0.09	0.44	9	28	100	31
	0.08	0.42	8	14	50	34
	0.08	0.39	7	3	10	35
2	0.05	0.35	4	42	150	4
	0.05	0.35	4	28	100	8
	0.05	0.35	4	14	50	10
	0.05	0.35	4	3	10	10

42EM 21 and 31 (multi-speed version)

Speed	I (A)	P (W)	Qv (l/s)	Qv (m ³ /h)	PR (Pa)
R1	0.60	128	232	834	0
	0.57	122	213	765	20
	0.52	111	182	654	50
	0.49	104	161	581	65
	0.46	99	139	499	80
	0.45	95	121	437	91
	0.43	91	104	373	100
	0.40	85	81	290	110
R2	0.52	111	200	720	0
	0.50	108	181	652	21
	0.46	99	152	547	50
	0.43	94	134	483	65
	0.41	89	115	413	79
	0.39	85	98	353	90
	0.37	79	79	286	100
	0.35	74	59	211	110
R3	0.42	92	162	583	0
	0.41	89	140	503	21
	0.37	82	111	398	50
	0.36	78	95	341	65
	0.34	74	79	283	80
	0.33	72	69	248	90
	0.31	68	48	173	100
	0.31	68	48	173	100
R4	0.35	77	133	477	0
	0.34	74	108	390	20
	0.31	69	76	275	50
	0.30	66	63	228	65
	0.28	62	40	143	80
	0.28	62	24	87	90
R5	0.27	59	96	347	0
	0.26	57	67	241	20
	0.25	56	53	192	30
	0.25	54	44	160	40
	0.24	53	27	97	50
	0.24	53	6	20	62
	0.24	53	6	20	62

42EM 22 and 32 (multi-speed version)

Speed	I (A)	P (W)	Qv (l/s)	Qv (m ³ /h)	PR (Pa)
R1	0.82	182	334	1203	0
	0.75	168	309	1114	15
	0.70	155	283	1020	35
	0.67	150	256	920	53
	0.63	139	224	807	70
	0.60	132	196	707	85
	0.57	126	153	549	106
	0.56	121	146	524	110
	0.56	121	146	524	110
R2	0.70	158	297	1070	0
	0.66	149	271	976	20
	0.61	138	232	837	50
	0.58	131	209	754	65
	0.54	121	184	661	80
	0.52	115	164	590	90
	0.50	112	143	514	101
	0.49	107	122	440	110
	0.49	107	122	440	110
R3	0.62	140	257	926	0
	0.59	132	236	849	20
	0.53	120	201	723	51
	0.50	113	180	649	66
	0.47	105	155	559	81
	0.45	101	137	493	91
	0.43	95	117	423	100
	0.40	91	94	340	110
	0.40	91	94	340	110
R4	0.51	114	211	760	0
	0.49	110	193	693	20
	0.44	100	158	568	51
	0.42	96	143	513	64
	0.40	90	121	437	80
	0.38	87	104	376	90
	0.35	81	84	304	101
	0.33	76	66	239	111
	0.33	76	66	239	111
R5	0.39	89	159	574	0
	0.38	86	139	499	20
	0.35	79	107	386	51
	0.33	75	92	331	65
	0.32	73	81	293	74
	0.30	68	67	240	85
	0.29	65	53	189	95
	0.29	65	53	189	95
	0.29	65	53	189	95
R6	0.30	68	116	417	0
	0.29	66	92	333	20
	0.27	62	67	241	44
	0.26	59	54	193	55
	0.25	58	36	128	69
	0.25	58	36	128	69

Legend

- I** Current drawn by the fan motor
P Power input to the fan motor
Qv Air flow rate
PR Available static pressure
R Fixed speed

NOTE: Voltage supply: 230 V ± 15%

42EM 23 and 33 (multi-speed version)

Speed	I (A)	P (W)	Qv (l/s)	Qv (m³/h)	PR (Pa)
R1	1.01	225	415	1494	1
	0.94	209	352	1266	31
	0.91	201	317	1141	50
	0.89	193	298	1074	60
	0.86	189	256	920	80
	0.83	182	225	812	90
	0.81	176	195	701	100
	0.80	172	169	610	111
R2	0.89	203	393	1414	0
	0.85	194	358	1290	20
	0.80	179	307	1104	51
	0.77	174	280	1007	65
	0.74	165	244	880	81
	0.71	158	215	774	90
	0.68	152	185	666	101
	0.67	148	161	578	110
R3	0.80	184	365	1314	0
	0.76	173	333	1199	22
	0.70	159	287	1033	51
	0.67	153	259	932	65
	0.63	143	221	797	81
	0.60	135	193	695	91
	0.58	133	174	625	100
	0.56	127	145	522	111
R4	0.71	162	316	1138	0
	0.66	151	290	1043	21
	0.60	139	250	901	50
	0.58	133	227	817	65
	0.53	122	194	700	80
	0.51	117	172	621	90
	0.50	113	149	536	100
	0.47	107	118	426	110
R5	0.58	132	244	878	0
	0.55	125	225	811	20
	0.50	116	198	714	50
	0.47	108	178	639	65
	0.44	101	153	550	81
	0.42	98	137	492	91
	0.40	94	117	422	100
	0.38	88	93	335	110
R6	0.45	102	175	631	1
	0.43	98	157	566	21
	0.40	91	134	482	51
	0.38	87	118	426	65
	0.36	83	101	362	80
	0.34	79	88	317	90
	0.32	73	70	253	100
	0.30	70	52	186	110

Legend

- I** Current drawn by the fan motor
- P** Power input to the fan motor
- Qv** Air flow rate
- PR** Available static pressure
- R** Fixed speed

NOTE: Voltage supply: 230 V ± 15%

42EM 29 and 39

Control (Volt)	I (A)	P (W)	Qv (l/s)	Qv (m³/h)	PR (Pa)	
10	1.35	192	444	1600	8	
	1.28	178	417	1500	36	
	1.22	169	389	1400	59	
	1.17	160	361	1300	79	
	1.12	152	333	1200	96	
	1.06	144	306	1100	110	
	1.01	136	278	1000	122	
	0.95	129	250	900	132	
	0.90	121	222	800	141	
	0.84	113	194	700	149	
9	0.79	105	167	600	157	
	0.72	95	139	500	166	
	1.12	150	417	1500	17	
	1.04	140	389	1400	35	
	0.98	132	361	1300	51	
	0.94	126	333	1200	66	
	0.89	120	306	1100	80	
	0.85	114	278	1000	92	
	0.81	107	250	900	104	
	0.76	100	222	800	114	
8	0.71	93	194	700	123	
	0.65	85	167	600	130	
	0.61	78	139	500	137	
	0.94	119	389	1400	11	
	0.87	111	361	1300	27	
	0.81	104	333	1200	42	
	0.77	99	306	1100	56	
	0.73	93	278	1000	68	
	0.69	87	250	900	79	
	0.64	81	222	800	89	
7	0.60	75	194	700	98	
	0.55	68	167	600	106	
	0.68	85	333	1200	17	
	0.65	80	306	1100	31	
	0.61	75	278	1000	44	
	0.58	70	250	900	55	
	0.54	65	222	800	65	
	0.50	60	194	700	74	
	0.46	55	167	600	81	
	0.41	49	139	500	87	
6	0.37	44	111	400	93	
	0.50	62	306	1100	5	
	0.48	58	278	1000	19	
	0.45	54	250	900	30	
	0.42	50	222	800	40	
	0.39	46	194	700	49	
	0.35	42	167	600	56	
	0.32	37	111	400	63	
	0.30	33	56	200	68	
	5	0.33	38	250	900	5
0.31		35	222	800	15	
0.29		33	194	700	24	
0.26		30	167	600	32	
0.24		27	139	500	39	
0.21		23	83	300	45	
0.20		21	56	200	49	
0.20		19	28	100	52	
4		0.21	23	194	700	6
		0.20	21	167	600	14
	0.18	20	139	500	20	
	0.14	14	83	300	31	
	0.10	11	56	200	34	
	0.08	7	28	100	37	
	0.07	6	14	50	37	
	3	0.15	15	167	600	0
0.13		13	139	500	6	
0.11		11	83	300	16	
0.10		10	56	200	20	
0.10		9	28	100	23	
0.09		8	14	50	24	
2	0.04	4	83	300	2	
	0.05	4	56	200	6	
	0.05	4	28	100	10	
	0.05	4	14	50	12	

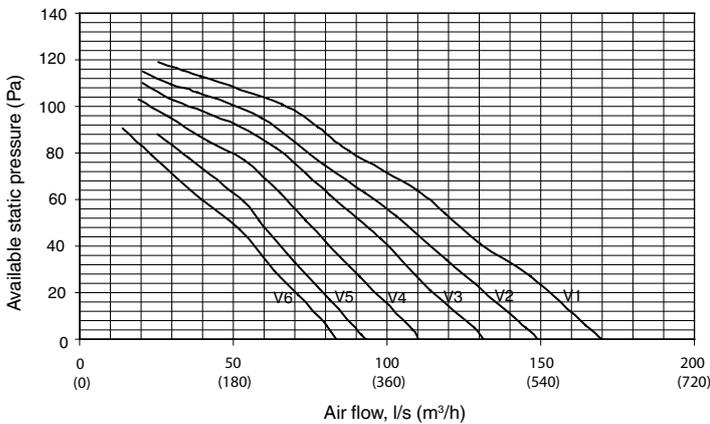
6.5 - Water coil pressure drop

Water flow rate, l/s		0.03	0.05	0.08	0.11	0.14	0.17	0.19	0.22	0.25	0.28	0.30	0.33	0.36
Water flow rate, l/h		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Sizes 05-09	Water coil type													
	Two-pipe cooling and changeover	2	6	14	26	40	58	79	-	-	-	-	-	-
	Four-pipe cooling	1	6	13	23	36	52	71	-	-	-	-	-	-
	Four-pipe heating	5	22	49	87	-	-	-	-	-	-	-	-	-
Sizes 10-19	Two-pipe cooling and changeover	1	4	9	16	26	37	50	65	83	-	-	-	-
	Four-pipe cooling	1	6	13	23	36	52	71	93	-	-	-	-	-
	Four-pipe heating	2	6	14	24	38	55	75	-	-	-	-	-	-
Sizes 21-22-23-29	Two-pipe cooling and changeover	1	2	5	9	14	19	26	35	44	54	-	-	-
	Four-pipe cooling	1	2	5	10	15	22	29	38	49	60	-	-	-
	Four-pipe heating	1	3	6	11	17	25	34	44	56	69	84	100	117
Sizes 31-32-33-39	Two-pipe cooling and changeover	1	2	5	9	13	19	26	33	42	52	62	74	87
	Four-pipe cooling	1	2	5	9	13	19	26	33	42	52	62	74	87
	Four-pipe heating	4	10	19	31	47	66	89	-	-	-	-	-	-

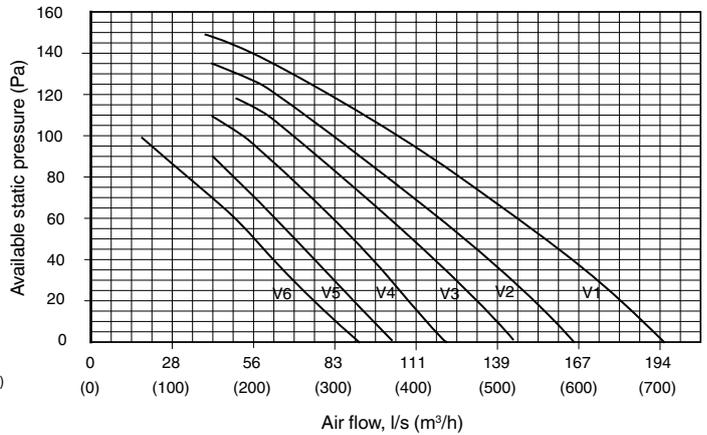
6.6 - Air flow data

Static pressure available (Pa) as a function of the air flow, l/s (m³/h)

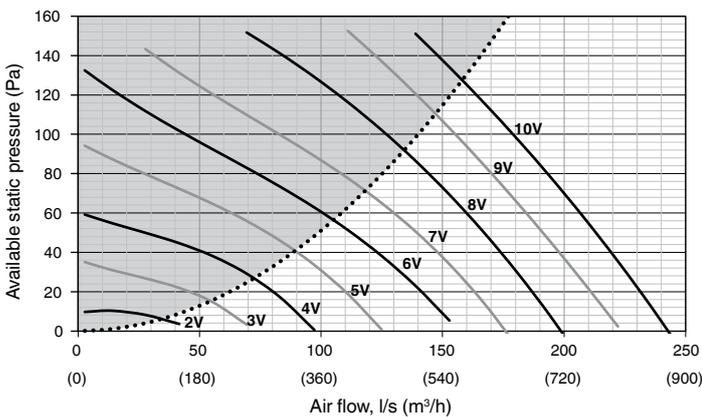
Size 05 multi-speed - unit without spigot



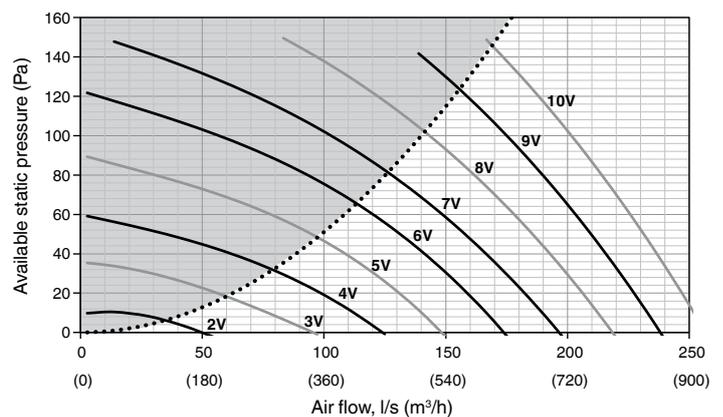
Size 10 multi-speed - unit without spigot



Size 09 (variable-speed LEC motor) - unit without spigot



Size 19 (variable-speed LEC motor) - unit without spigot



Area with increased pressure, not recommended

Pressure drop (Pa) for supply and return air plenum boxes as a function of the number of spigots (ø 200 mm)

Size 0

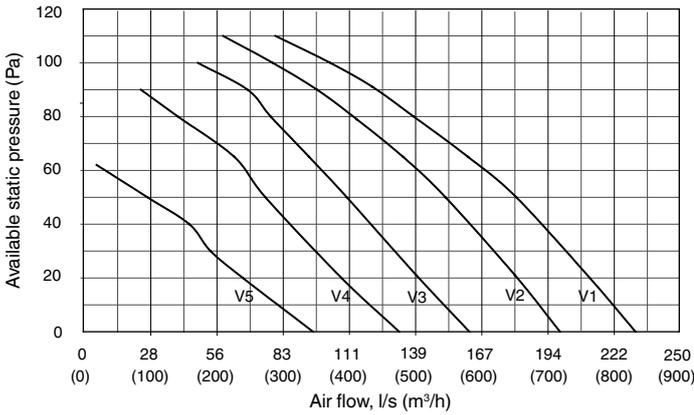
Air flow, l/s	0	28	56	83	111	139	167	
Air flow, m³/h	0	100	200	300	400	500	600	
1 spigot	Supply	0	1	2	5	9	14	19
	Return	0	0	1	2	3	5	6
2 spigots	Supply	0	0	1	2	3	5	6
	Return	0	0	0	0	1	2	3

Size 1

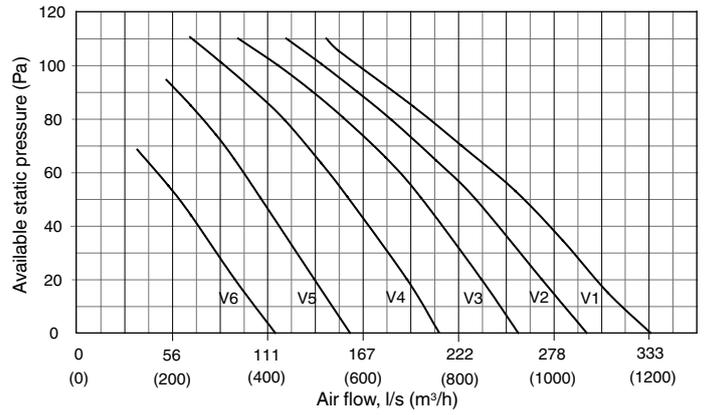
Air flow, l/s	28	56	83	111	125	139	153	167	181	194	
Air flow, m³/h	100	200	300	400	450	500	550	600	650	700	
1 spigot	Supply	1	4	9	15	19	24	-	-	-	
	Return	2	7	15	27	35	43	-	-	-	
2 spigots	Supply	0	1	2	3	4	5	6	8	9	10
	Return	0	2	4	6	8	10	12	16	18	20
3 spigots	Supply	0	0	1	1	2	2	3	3	4	4
	Return	0	1	2	3	4	5	6	7	8	10

Static pressure available (Pa) as a function of the air flow, l/s (m³/h)

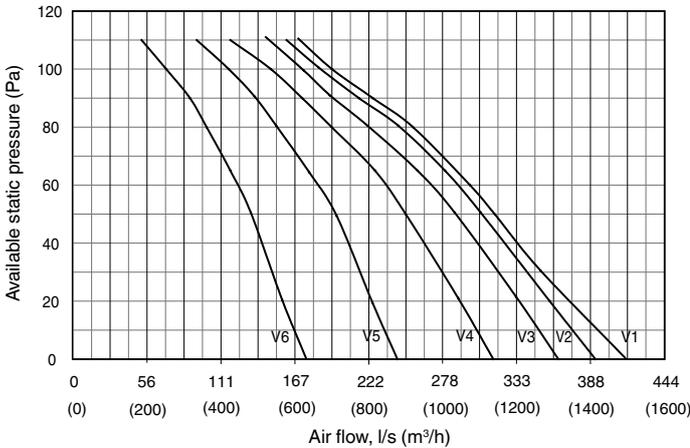
Sizes 21 and 31 - unit without spigot



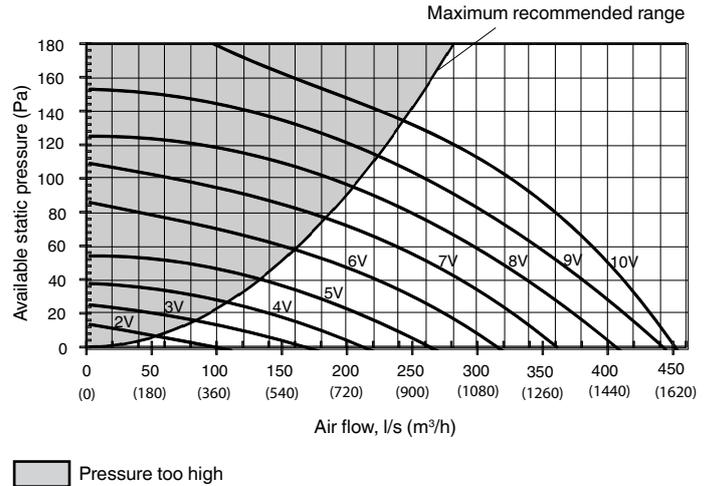
Sizes 22 and 32 - unit without spigot



Sizes 23 and 33 (unit without spigot)



Sizes 29 and 39 (unit without spigot)



IMPORTANT: The curves were derived by smoothing, based on the information shown in the electrical data table.

NOTE: The data is for units without supply and return plenums. See chapter “Pressure drop for supply and return air plenum boxes as a function of the number of spigots” for the plenum pressure drops.

Pressure drop (Pa) for supply and return air plenum boxes as a function of the number of spigots (ø 200 mm)

Sizes 21 - 22 - 23 - 29 - 31 - 32 - 33 - 39

Air flow (l/s)	0	28	56	83	111	139	167	194	222	250	278	306	333	361	389	417	
Air flow (m³/h)	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
1 spigot	Supply	0	0.9	3.5	7.9	14	21.8	31.4									
	Return	0	0.7	2.7	6.1	10.9	17.1	24.6									
2 spigots	Supply	0	0.2	0.7	1.6	2.9	4.5	6.5	8.9	11.6	14.7	18.1	21.9				
	Return	0	0.2	0.7	1.7	3.0	4.6	6.7	9.1	11.9	15.0	18.6	22.5				
3 spigots	Supply	0	0.1	0.5	1.1	2.0	3.1	4.4	6.0	7.9	10.0	12.3	14.9	17.7	20.8	24.1	27.7
	Return	0	0.2	0.7	1.5	2.6	4.1	5.9	8.0	10.5	13.3	16.4	19.8	23.6	27.7	32.1	36.9
4 spigots	Supply	0	0.0	0.1	0.3	0.6	0.9	1.3	1.7	2.3	2.9	3.6	4.3	5.1	6.0	7.0	8.0
	Return	0	0.1	0.2	0.5	0.9	1.3	1.9	2.6	3.4	4.3	5.3	6.5	7.7	9.0	10.4	12.0
5 spigots	Supply	0	0.0	0.1	0.3	0.5	0.7	1.0	1.4	1.8	2.3	2.9	3.5	4.1	4.9	5.6	6.5
	Return	0	0.0	0.2	0.4	0.7	1.1	1.6	2.1	2.8	3.5	4.3	5.3	6.3	7.3	8.5	9.8

7 - GUIDE SPECIFICATION

- Supply 42EM Atmosphaera fan coil units in accordance with the certified drawings.
- The performance of each 42EM unit shall conform to the published technical and performance data.
- The casings of 42EM units shall be made from galvanised sheet steel, thermally and acoustically insulated, and shall be provided with adequate access for service and maintenance. 42EM units shall be provided with suspension lugs with rubber anti-vibration mounts.
- The supply and return air connection spigots (200 mm diameter) shall be integral with each 42EM unit.
- 42EM units shall be equipped with either a cooling/heating changeover coil, a monobloc heating and cooling coil or a cooling coil and an electric heater. The water coils shall be provided with manual air purge valves.
- The cooling and heating coils shall be made from copper tubes of 3/8" external diameter and aluminium fins. The maximum water side working pressure shall not exceed 10 bar (1000 kPa).
- The aluminium drain pan beneath the coil and valves shall be monobloc to avoid the possibility of leaks.
- The two-way or three-way on/off water flow control valves shall be provided with flexible water pipes with 1/2" BSP union nuts to simplify connections on site and maintenance and servicing work.
- 42EM units supplied shall be provided with disposable 85% gravimetric (EU3 or G3) and M1 fire class filters.
- Filter access shall be:
 - From below the unit for ducted models,
 - From the rear of the unit for non-ducted models.
- The 42EM shall be equipped with a LEC (Low Energy Consumption) type fan motor assembly.
- This direct-drive motor shall be electronically commutated (EC motor), controlled by a 0-10 V signal, allowing it to operate precisely, simply and quietly with a wide range of rotational speeds in variation from the original speed.
- Fans shall be a double-inlet centrifugal forward-curved type, with 1 or 2 fans per unit depending upon unit size.
- 42EM units shall be suitable for connection to electronic controllers (wall-mounted thermostats) that allow fan speed changes to adjust the unit's heating and cooling capacity.
- Electrical connections carried out on 42EM units shall be the quick-connection type in order to simplify maintenance. A plastic cover shall protect the terminals.

Numerical control

- The numerical controls shall use the CCN (Carrier Comfort Network) communication protocol.
- These controls shall have the following functions:
 - Control of the Atmosphaera fan speed.
 - Control of the water flow through the on/off type two or three-way valves with reference to internal and external loads, in order to maintain a constant ambient temperature in the conditioned space.
 - Provide on/off control of the resistance wire type electric heater.
 - Be controlled by a Zone User Interface.
- The power supply to the controller shall be 230 V a.c. $\pm 15\%$ single-phase, 50 Hz, to avoid the need for a transformer. The electric heater shall be controlled directly from the numerical controller to avoid the need for a power Triac.

