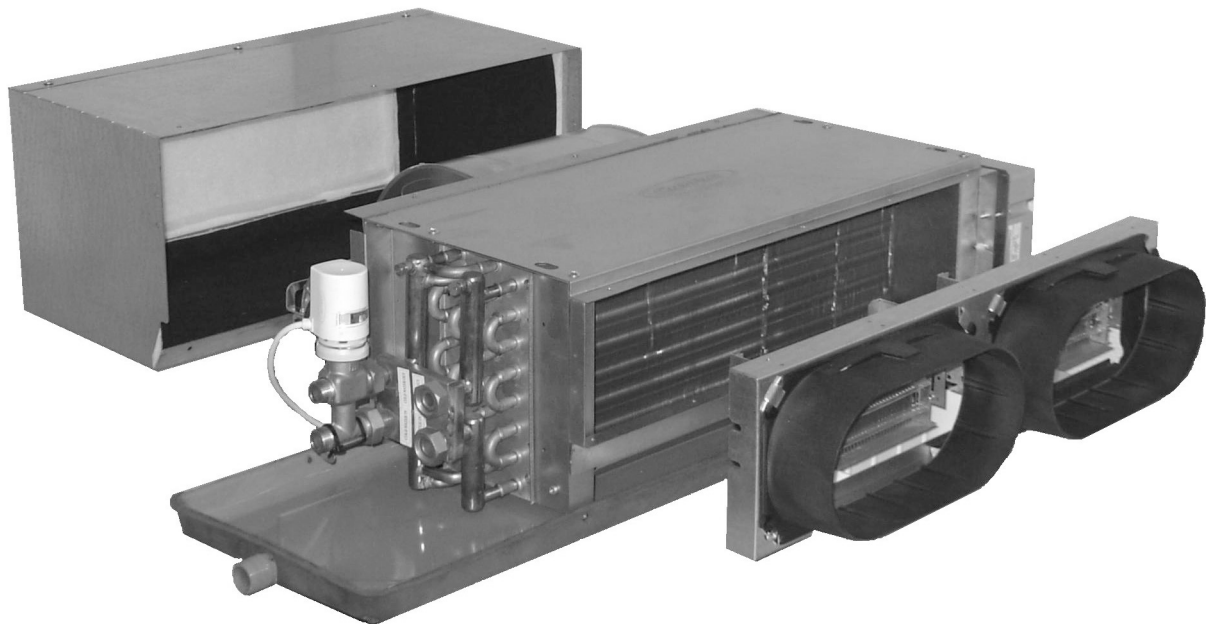




42CE

Fan coil units



Product Data Digest



Quality Management System Approval

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1 - DESCRIPTION

The 42CE is available in five sizes and two- and four-pipe configuration, with an air flow range of 93 to 285 l/s (335 to 1026 m³/h), nominal cooling capacities from 2 to 5.2 kW and nominal heating capacities from 2.8 to 7 kW.

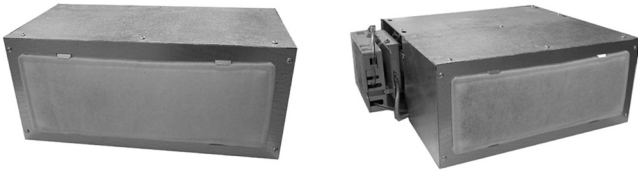
Main base unit features:

- Excellent finish
- Single-piece insulated condensate pan with internal anti-corrosion lining
- No standard filter for greater installation flexibility, G3 filter as an accessory
- Standard integrated supply air connection sleeve
- Three-speed fan motor
- Coil equipped with air purges with a centre distance of 40 mm for the water connections
- Low pressure drop, compatible with most liquid chiller hydronic kits

2 - AVAILABLE OPTIONS/ACCESSORIES

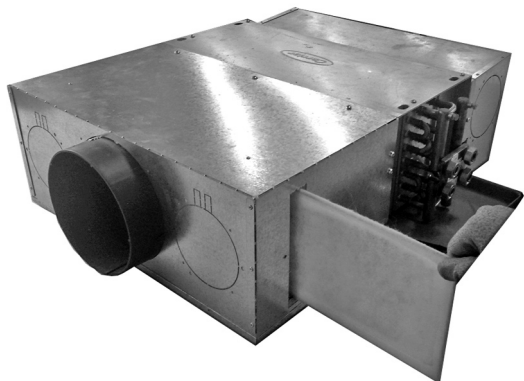
2.1 - Filter and non-ducted return air plenum

The 42CE fan coil unit can be equipped with a return air plenum complete with a G3 efficiency filter (85% gravi-metric). This return air plenum is acoustically insulated and permits a sound level reduction by -2 dB(A) at the return air connection.



2.2 - Filter and ducted return air plenum

42CE sizes 2 or 3 can be equipped with an optional ducted plenum with a \varnothing 200 mm spigot. This includes a G3 filter with right or left-hand side access (reversible on site). This return air plenum is acoustically insulated and permits a sound level reduction by -3 to -6 dB(A) at the return air connection.



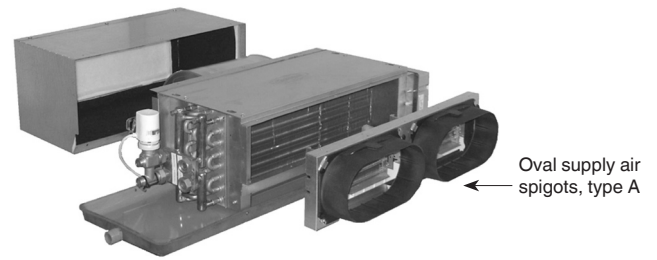
2.3 - Supply air plenum

The 42CE unit can be supplied with supply air connection spigots. Depending on the size there are several versions. The oval type A spigots have the same perimeter as a \varnothing 200 mm circular duct.

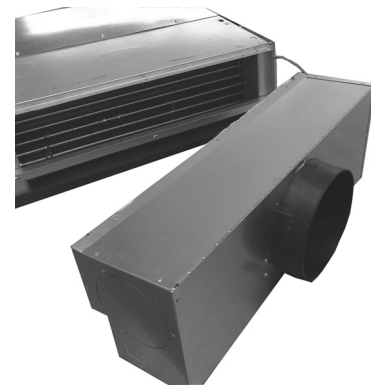
The supply air plenum (type B) is acoustically insulated and permits a sound level reduction by -3 to -8 dB(A) at the return air connection.

These plenums can be field-connected to one or more air distribution casings using flexible isophonic ducts (35BD Moduboot range).

Type A - oval spigots



Type B - disassembled supply air plenum (with electric heater)



Size	Return air plenum		Supply air plenum	
	Non ducted	Ducted	Type A	Type B
42CE 002	X	1 spigot	2 spigots	1 spigot
42CE 003	X	1 spigot	2 spigots	1 spigot
42CE 004	X	NA	2 spigots	NA
42CE 005	X	NA	3 spigots	NA
42CE 006	X	NA	3 spigots	NA

2.4 - Electric heater

The 42CE fan coil units can be equipped with electric resistance heaters to ensure sufficient heating capacity (main or booster heating).

Electric resistance heater:

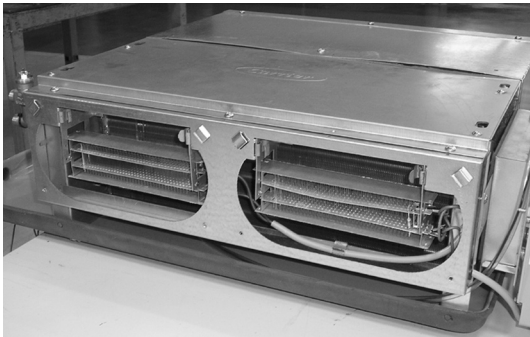
- Power supply: 230 V-1 ph-50 Hz
- Heater capacities per unit size:
 - 42CE 002, 003, 004: 500 W or 1000 W (+5%/-10%)
 - 42CE 005, 006: 1000 W or 1500 W (+5%/-10%).

- The heater includes two safety devices:
 - Integrated maintenance-free safety thermostat, cut-out temperature 75°C. When the cut-out temperature is reached, a resistance heater is automatically energised. It prevents automatic cut-in, if the system is energised and there is no air flow. Cut-in is allowed after the electric heater supply voltage is shut off. The safety thermostat protects the unit against overheating caused by electric heater operation without air flow.
 - A thermal fuse tripping at 167°C.

NOTE: The required minimum discharge air flow to prevent damage to the electric heaters for the 42CE units is 28 l/s (100 m³/h).

ATTENTION: The main unit disconnect switch must always be shut off before any work is carried out on the electric heater.

42CE 003: electric heater, 1000 W (2 x 500 W)



2.5 - Water control valves

The cold and hot water valves can be factory-installed as an option:

- Two-way valves
- Four-way valves

2.5.1 - Thermoelectric actuator (on/off)

The 230 V a.c. on/off actuator is used with numeric Carrier controllers and electronic Carrier room thermostats.

Actuator	230 V a.c. actuator
Power supply	230 V a.c. (±15%), 1 ph, 50 Hz
Holding current	0.01 A
Power	3 W
Maximum stroke	2.5 mm
Operating temperature	0 to 50°C
Protection class	IP43 if installed vertically IP40 if installed horizontally
Opening time	4 minutes
Closing time	Maximum 4 minutes, based on the actuator warm-up time (ambient temperature 20°C)
Connection cable	1 m - 2 x 1 mm ²
Dimensions	Diameter 50 mm, height 75 mm
Admissible differential pressure - two-way valve (Kvs - 1.6) - four-way valve (Kvs - 1.6)	2.5 bar
Logic	NC valve, closed when no power supplied

2.5.2 - Technical specifications, valve

The valve body is always the same, independent of the control type.

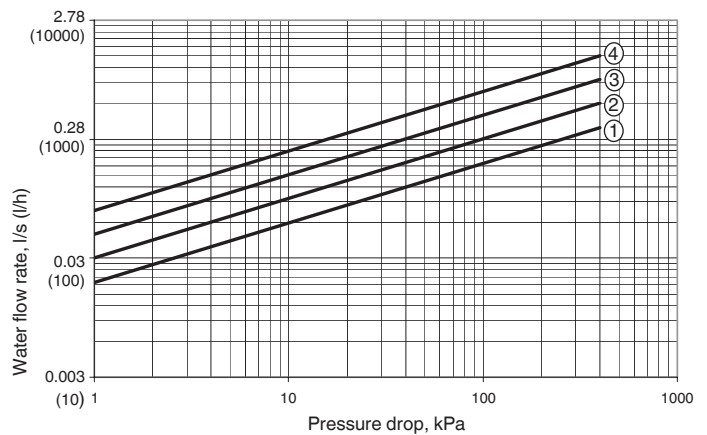
2.5.3 - 1/2" two-way valve specifications

- G1/2" flat joint thread
- Straight valve body, with arrow indicating the flow direction embossed on the valve body
- DN 15 for 1/2" valve, Kvs value: 1.6
- Fluid: water, water/glycol solution, concentration 40% max.
- Temperature: 2 to 90°C
- Stroke: 2.5 mm
- Nominal pressure: PN 16 bar

2.5.4 - 1/2" four-way valve specifications

- G1/2" flat joint thread
- Straight valve body, with arrow indicating the flow direction embossed on the valve body
- DN 15 for 1/2" valve, Kvs values: flow A-AB = 1.6 - bypass B-AB = 1.3
- Fluid: water, water/glycol solution, concentration 40% max.
- Temperature: 2 to 90°C
- Stroke: 2.5 mm
- Nominal pressure: PN 16 bar

2.5.5 - Valve pressure drop

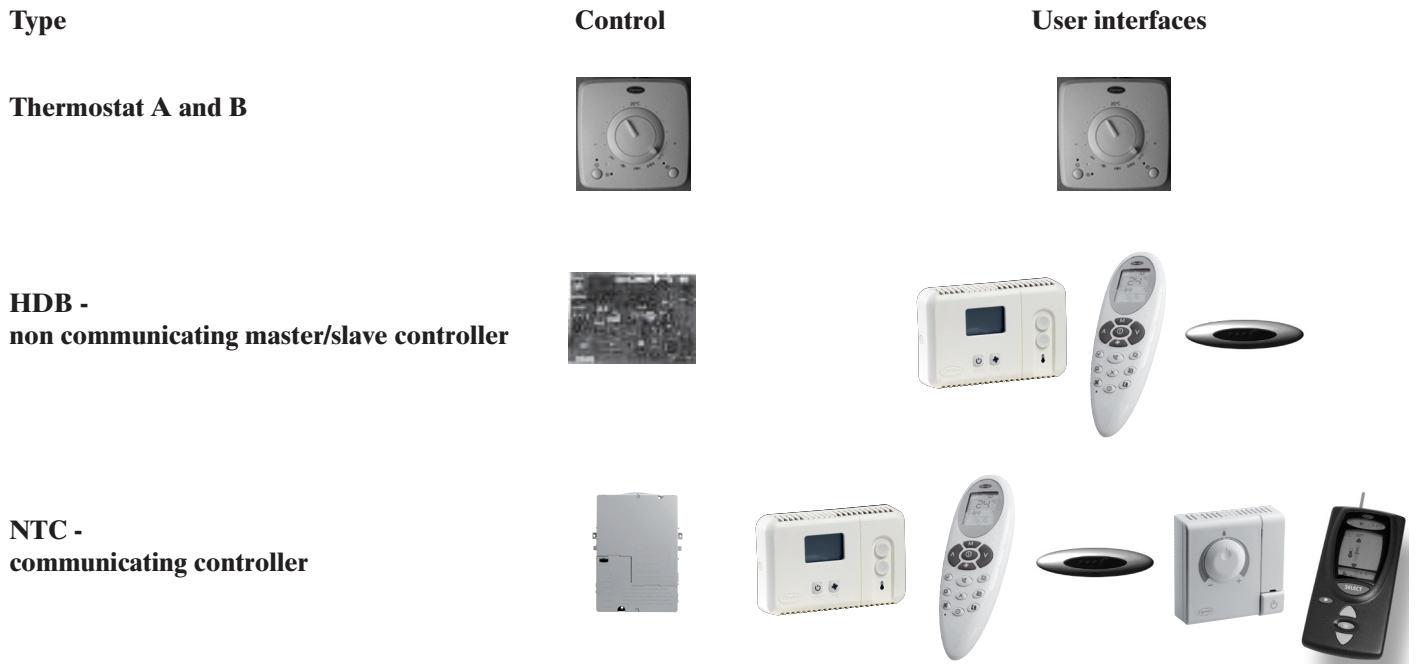


Legend:

- ① Kvs = 0.63 ② Kvs = 1 ③ Kvs = 1.6 ④ Kvs = 2.5

2.6 - Controls

As an option, the 42CE fan coil units are available with a large choice of Carrier controllers.



These controllers offer various functions, suited to different application needs:

		Thermostats A and B	HDB	NTC
Control algorithms	On-Off	X	X	X
	Proportional - integral			X
Valve control	Air flow control only (no valve)	X	X	
	On/off motors	X	X	X
	Proportional valves			O
Fan control	3 speeds	X	X	X
	Optimal fan speed selection	X	X	X
	Variable speed		O	
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
	Entering water temperature measurement for automatic change-over (2 pipes)	Type A	X	X
	Automatic change-over (4 pipes or 2 pipes + electric heater)	Type B	X	X
	Manual change-over	X	X	X
	Continuous ventilation within deadband	X	X	X
	Periodical ventilation within deadband	X	X	X
	Unit grouping		X	X
	Supply air grille louvre control		X	X
	On-site configuration		X	X
	Supply air temperature limit and monitoring			X
	Communication (CCN)			X
	Electric heater unloading			X
	Filter dirty alarm			X
	Alarm reporting			X
	Indoor air quality control (IAQ)			O
	Demand control ventilation (DCV)			O
	Free cooling mode			O
User interface	Numerical display		X	X
	Manual or automatic fan speed command	X	X	X
	Operating mode selection	X	X	X
	Occupied mode (eco) button	X	X	X

Legend:
HDB - Hydronic Dual Board
NTC - New Terminal Controller
X - Basic function
O - Option

3 - PHYSICAL AND ELECTRICAL DATA

Unit with non-ducted return air plenum and G3 filter		42CE 002			42CE 003			42CE 004			42CE 005			42CE 006		
Fan speed		LS	MS	HS	LS	MS	HS	LS	MS	HS	LS	MS	HS	LS	MS	HS
Air flow at 0 Pa (dry coil)	m ³ /h	345	440	525	422	546	647	551	700	813	656	771	904	736	898	1023
	l/s	96	122	146	117	152	180	153	194	226	182	214	251	204	249	284
Cooling mode*																
Total cooling capacity	kW	2.08	2.48	2.80	2.58	3.10	3.48	3.08	3.64	4.02	3.60	4.03	4.48	4.13	4.75	5.18
Sensible cooling capacity	kW	1.63	1.98	2.27	2.0	2.45	2.80	2.45	2.95	3.31	2.85	3.23	3.65	3.23	3.77	4.16
Water flow rate	l/h	358	426	482	443	533	598	529	625	691	619	692	771	710	817	891
	l/s	0.099	0.118	0.134	0.123	0.148	0.166	0.147	0.174	0.192	0.172	0.192	0.214	0.197	0.227	0.248
Water pressure drop	kPa	7	10	14	15	22	28	7	10	12	12	15	19	22	29	35
Heating mode (2 pipes change-over)**																
Heating capacity	kW	2.61	3.17	3.64	3.19	3.92	4.47	4.04	4.87	5.45	4.77	5.41	6.10	5.42	6.34	7.00
Heating mode (4 pipes)**																
Heating capacity	kW	2.86	3.35	3.75	3.47	4.11	4.57	4.23	4.93	5.41	4.94	5.48	6.06	5.64	6.41	6.96
Water flow rate	l/h	252	295	330	305	361	402	371	433	476	434	482	533	495	563	611
	l/s	0.070	0.082	0.092	0.085	0.100	0.112	0.103	0.120	0.132	0.121	0.134	0.148	0.138	0.156	0.170
Water pressure drop	kPa	8	11	13	16	22	28	21	28	35	35	43	53	62	80	94
Electric heater (option)		V-ph-Hz						230-1-50 ±15 %								
Maximum heating capacity	W	500/1000			500/1000			500/1000			1000/1500			1000/1500		
Sound levels																
Sound power level	dB(A)	49	54	59	48	54	57	50	57	60	54	58	62	56	61	64
Sound pressure level***	dB(A)	38	43	48	37	43	40	39	46	49	43	47	51	45	50	53
NR value		33	40	43	33	39	34	36	41	45	39	43	46	41	47	49
Electrical data, motor																
Power input	kW	0.048	0.054	0.064	0.050	0.058	0.066	0.071	0.077	0.089	0.087	0.089	0.104	0.104	0.107	0.122
Current draw	A	0.21	0.23	0.28	0.22	0.25	0.29	0.31	0.33	0.37	0.38	0.39	0.45	0.45	0.47	0.53
Air filter (G3)		mm			mm			mm			mm			mm		
		180 x 490			180 x 570			180 x 690			180 x 770			180 x 890		
Physical data																
Coil connection diameter (gas screw connector)	inch	1/2			1/2			1/2			1/2			1/2		
Height	mm	243			243			243			243			243		
Depth	mm	742			822			942			1022			1142		
Length	mm	536			536			536			536			536		
Weight	kg	14			15.6			17.7			19.1			20.5		

Legend:

Fan speed: LS = low speed/MS = medium speed/HS = high speed

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

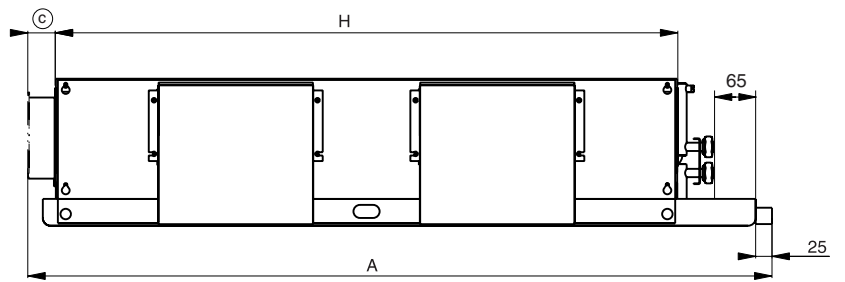
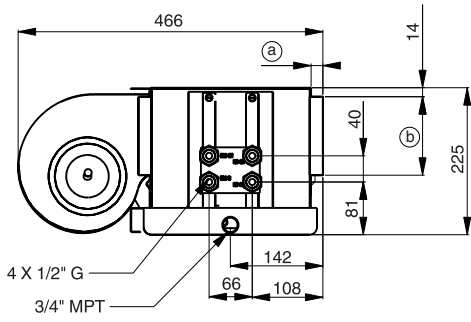
** Eurovent conditions: Entering air temperature = 20°C - entering water temperature 70°C and water temperature difference = 10 K.

*** Based on a hypothetical sound attenuation for the room and the system of -14 dB(A).

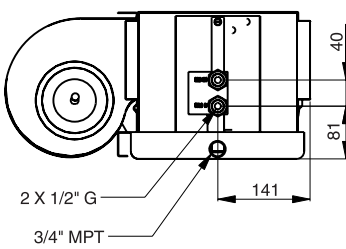
4 - DIMENSIONAL DRAWINGS (dimensions in mm)

4.1 - Base unit

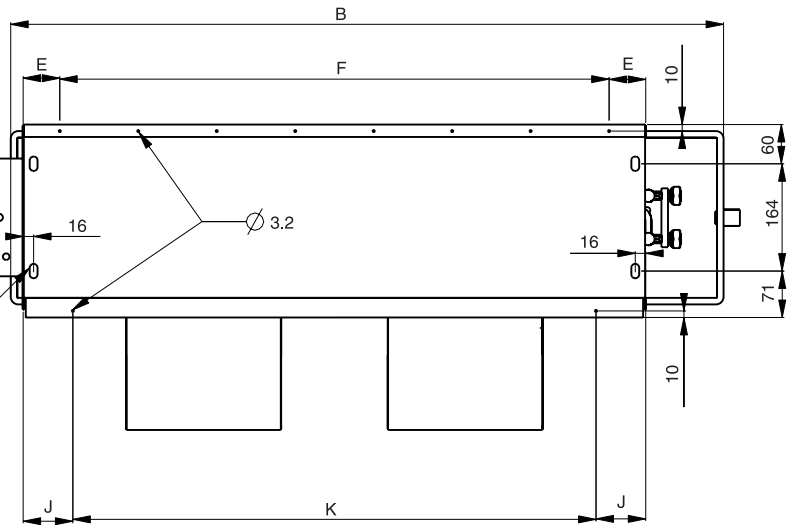
Four-pipe coil



Two-pipe coil

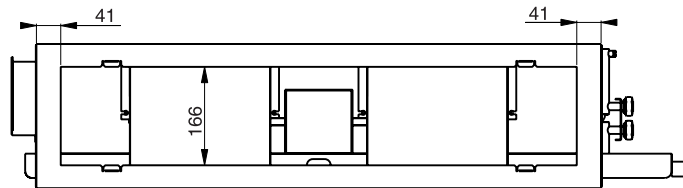
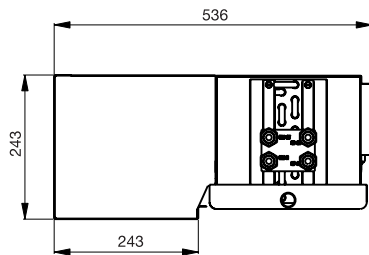


4 oval 12 x 22 mm fixing slots

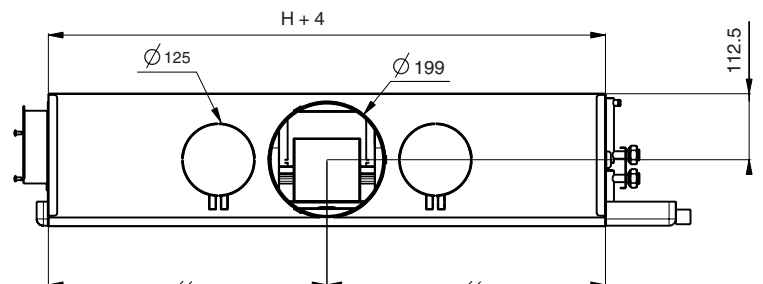
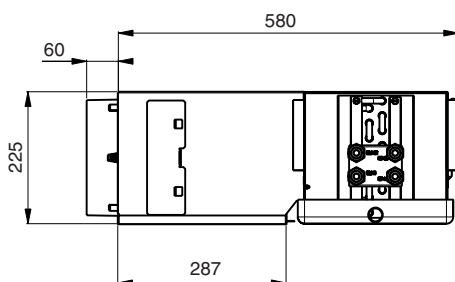


- a 18 mm without electric heater, 28 mm with electric heater
- b 120 mm without electric heater, 146 mm with electric heater
- c 42 mm without NTC, 101 mm with NTC

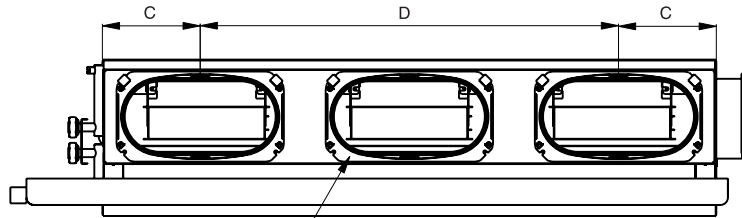
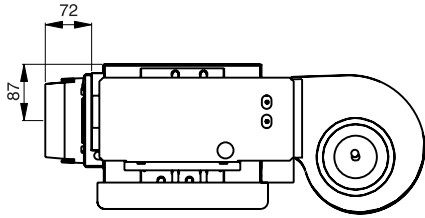
4.2 - Base unit with non-ducted return air plenum and filter



4.3 - Base unit with ducted return air plenum and filter

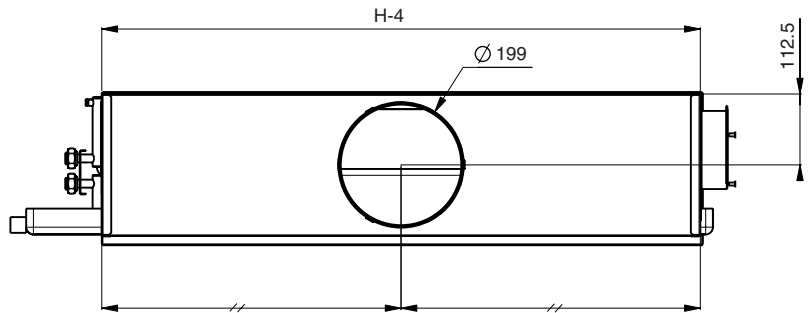
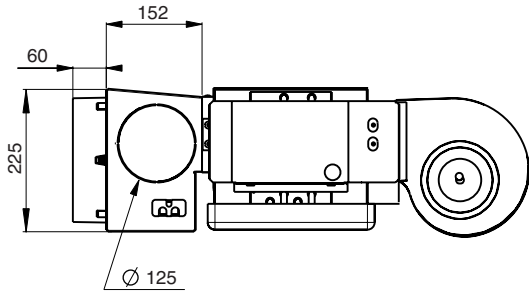


4.4 - Base unit with oval supply air spigots



Oval 120 x 245 mm spigot for \varnothing 200 mm duct

4.5 - Base unit with a \varnothing 200 mm supply air spigot



	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	K mm	Number of spigots
42CE 002	742	705	138	1 x 274 = 274	36	4 x 120 = 480	552	76	2 x 200 = 400	2
42CE 003	822	785	160	1 x 310 = 310	76	4 x 120 = 480	632	116	2 x 200 = 400	2
42CE 004	942	905	200	1 x 350 = 350	76	5 x 120 = 600	752	76	3 x 200 = 600	2
42CE 005	1022	985	138	2 x 277 = 554	76	6 x 120 = 720	832	116	3 x 200 = 600	3
42CE 006	1142	1105	150	2 x 325 = 650	56	7 x 120 = 840	952	76	4 x 200 = 800	3

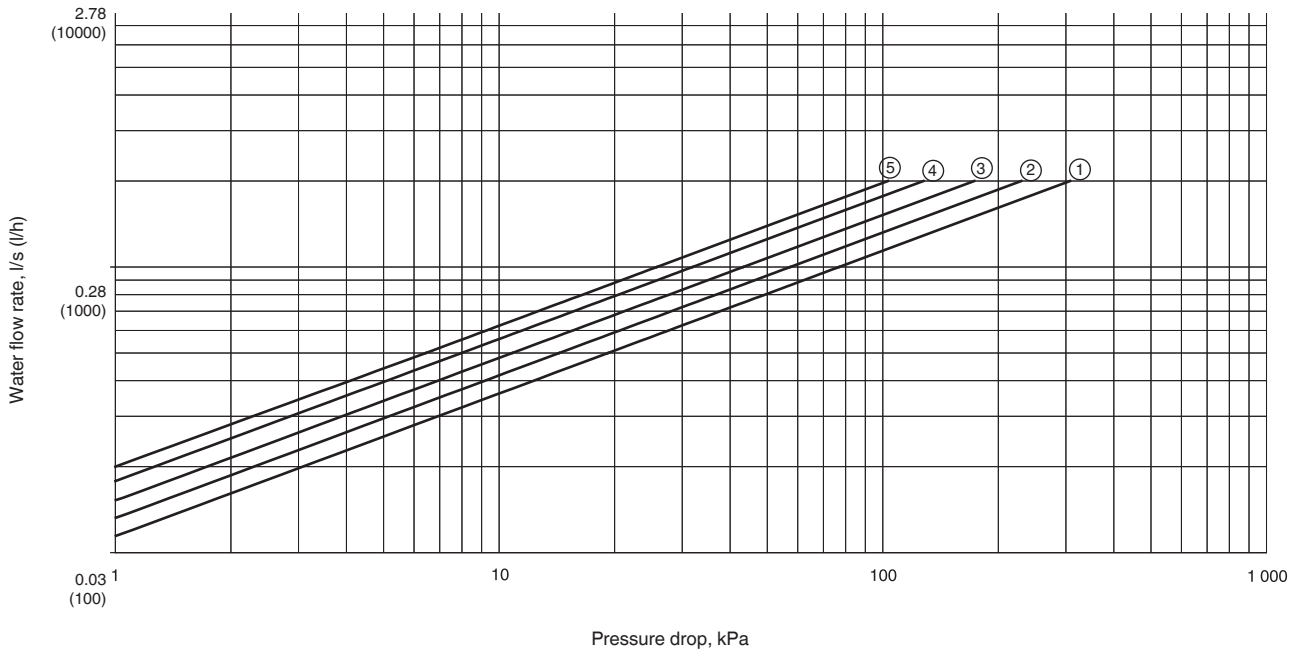
5.3 - Heating capacities (electric heater only, no hot-water coil)

Entering air temperature 20°C			Non-ducted unit						Unit with available static pressure								
			Base unit			Unit with filter, non-ducted return air			Base unit			Unit with filter, non-ducted return air			Unit with filter and oval supply air spigots		
			HS	MS	LS	HS	MS	LS	HS	MS	LS	HS	MS	LS	HS	MS	LS
Available pressure, Pa			0	0	0	0	0	0	30	24	16	30	24	16	30	24	16
42CE 002	500 W	AF	158	130	101	139	118	93	131	112	89	116	101	82	114	99	81
		TSA	22.6	23.2	24.1	23.0	23.5	24.4	23.1	23.7	24.6	23.5	24.1	25.0	23.6	24.2	25.1
	1000 W	AF	158	130	101	139	118	93	131	112	89	116	101	82	114	99	81
		TSA	25.2	26.3	28.1	25.9	27.0	28.9	26.3	27.4	29.2	27.1	28.2	30.0	27.2	28.3	30.2
42CE 003	500 W	AF	198	170	127	166	142	111	166	142	111	134	119	96	129	116	94
		TSA	22.1	22.4	23.3	22.5	22.9	23.7	22.5	22.9	23.7	23.1	23.5	24.3	23.2	23.5	24.4
	1000 W	AF	198	170	127	166	142	111	166	142	111	134	119	96	129	116	94
		TSA	24.2	24.8	26.5	25.0	25.8	27.4	25.0	25.8	27.4	26.2	26.9	28.5	26.4	27.1	28.7
42CE 004	500 W	AF	281	230	176	208	182	146	228	196	155	174	155	128	166	149	124
		TSA	21.5	21.8	22.3	22.0	22.3	22.8	21.8	22.1	22.7	22.4	22.7	23.2	22.5	22.8	23.3
	1000 W	AF	281	230	176	208	182	146	228	196	155	174	155	128	166	149	124
		TSA	22.9	23.6	24.7	24.0	24.5	25.6	23.6	24.2	25.3	24.7	25.3	26.4	25.0	25.5	26.7
42CE 005	1000 W	AF	307	255	210	237	203	175	248	211	181	194	171	151	190	168	149
		TSA	22.7	23.2	23.9	23.5	24.1	24.7	23.3	23.9	24.5	24.2	24.8	25.5	24.3	24.9	25.5
	1500 W	AF	307	255	210	237	203	175	248	211	181	194	171	151	190	168	149
		TSA	24.0	24.8	25.9	25.2	26.1	27.1	25.0	25.9	26.8	26.4	27.2	28.2	26.5	27.4	28.3
42CE 006	1000 W	AF	353	294	223	285	250	204	279	246	202	233	210	180	226	205	177
		TSA	22.3	22.8	23.7	22.9	23.3	24.0	23.0	23.3	24.1	23.5	23.9	24.6	23.6	24.0	24.7
	1500 W	AF	353	294	223	285	250	204	279	246	202	233	210	180	226	205	177
		TSA	23.5	24.2	25.5	24.3	24.9	26.0	24.4	25.0	26.1	25.3	25.9	26.9	25.5	26.0	27.0

TSA - Supply air temperature, °C
 AF - Air flow rate, l/s
 HS - High speed
 MS - Medium speed
 LS - Low speed

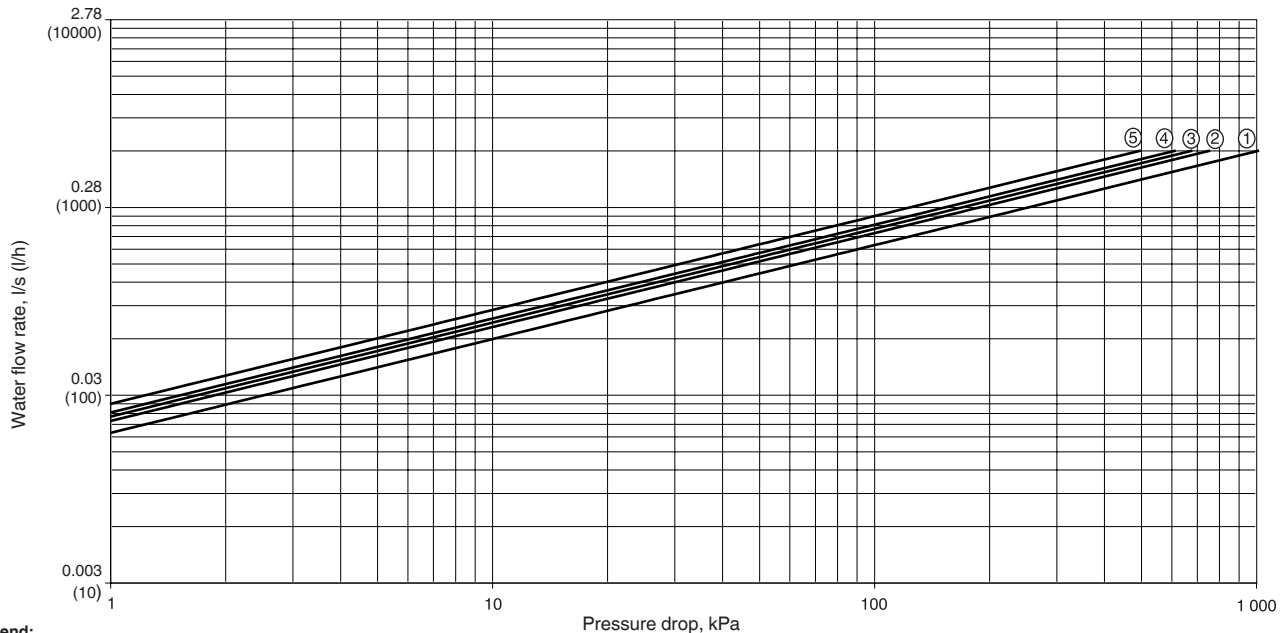
5.4 - Water coil pressure drops

5.4.1 - Pressure drops, two-pipe cold-water coils or coils with changeover



Legend:
 ① 42CE 003 ② 42CE 002 ③ 42CE 006 ④ 42CE 005 ⑤ 42CE 004

5.4.2 - Pressure drops, four-pipe hot-water coils



Legend:

① 42CE 003 ② 42CE 002 ③ 42CE 006 ④ 42CE 005 ⑤ 42CE 004

5.5 - Sound power levels, dB(A)

	Supply			Return			Radiated	
	Base unit	Unit with oval spigots	Unit with supply air plenum 1 spigot ø 200 mm	Base unit	Unit with non-ducted return air plenum and filter	Unit with return air plenum 1 spigot ø 200 mm	Base unit	Unit with supply air plenum 1 spigot ø 200 mm
42CE 002 V1	55.2	54.7	49	53.2	51.2	50.4	55.5	54.5
42CE 002 V2	50.1	49.6	43.9	49.7	47.7	46.9	51.1	50.1
42CE 002 V3	44.8	44.3	38.6	45.9	43.9	43.1	45	44
42CE 003 V1	53.8	53.3	45.3	53	51	46.6	51.9	50.9
42CE 003 V2	49.9	49.4	41.4	50.6	48.6	44.2	49.7	48.7
42CE 003 V3	43	42.5	34.5	45.6	43.6	39.2	42.7	41.7
42CE 004 V1	56.3	55.8	Not available	55.8	53.8	Not available	55.9	54.9
42CE 004 V2	52.1	51.6		53.1	51.1		53.7	52.7
42CE 004 V3	46	45.5		47	45		46.8	45.8
42CE 005 V1	58.7	58.2	Not available	56.9	54.9	Not available	57.6	56.6
42CE 005 V2	54.6	54.1		54.2	52.2		54.7	53.7
42CE 005 V3	51.1	50.6		49.7	47.7		50	49
42CE 006 V1	59.9	59.4	Not available	58.2	56.2	Not available	61.3	60.3
42CE 006 V2	56.9	56.4		56.1	54.1		58.9	57.9
42CE 006 V3	51.3	50.8		51.9	49.9		52.2	51.2

* Ducted unit, supply and return air with one ø 200 mm spigot

	Hotel application			Office application (non-ducted return air)			Office application (ducted return air)		
	Base unit with: - non-ducted return air plenum + filter			Base unit with: - non-ducted return air plenum + filter - one ø 200 mm supply air spigot			Base unit with: - non-ducted return air plenum + filter - one ø 200 mm supply air spigot - oval supply air spigots		
	Lw	Lp	NR	Lw	Lp	NR	Lw	Lp	NR
42CE 002 42CE 003 42CE 004 42CE 005 42CE 006	Attenuation -11 dB(A)			Attenuation -15 dB(A)			Attenuation -17 dB(A)		

Legend

Lw - Sound power level, dB(A)
Lp - Sound pressure level, dB(A)
NR - NR sound pressure level

5.6 - Electrical data (base unit)

The electrical data is given for 0 Pa available pressure.

Unit size	Fan speed	I A	PI W	AF m ³ /h	AF l/s
42CE 002	HS	0.26	64	568	158
	MS	0.24	56	469	130
	LS	0.22	48	363	101
42CE 003	HS	0.29	69	714	198
	MS	0.26	60	612	170
	LS	0.23	51	462	128
42CE 004	HS	0.41	98	1010	281
	MS	0.36	83	828	230
	LS	0.32	72	634	176
42CE 005	HS	0.49	115	1106	307
	MS	0.43	100	917	255
	LS	0.40	94	764	212
42CE 006	HS	0.56	130	1272	353
	MS	0.52	119	1057	294
	LS	0.49	112	803	223

Legend:

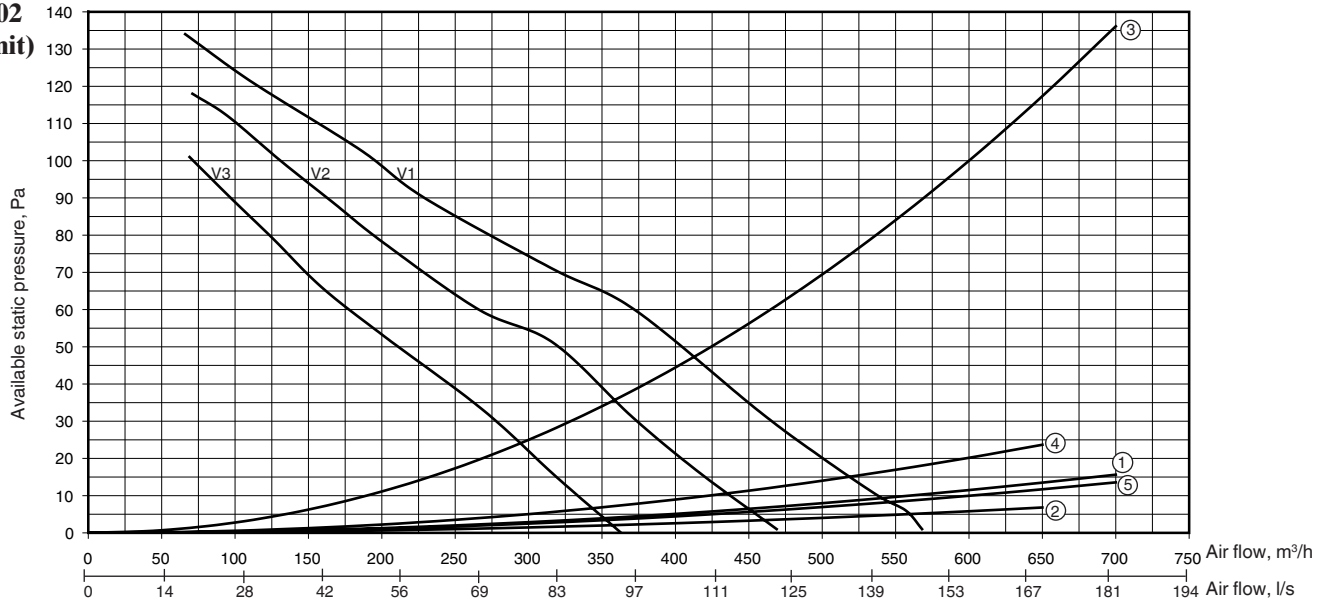
HS - High speed
 MS - Medium speed
 LS - Low speed
 I - Effective current draw of the fan motor assembly
 PI - Power input of the fan motor assembly
 AF - Air flow

NOTE: The supply voltage is 230 V ± 15%.

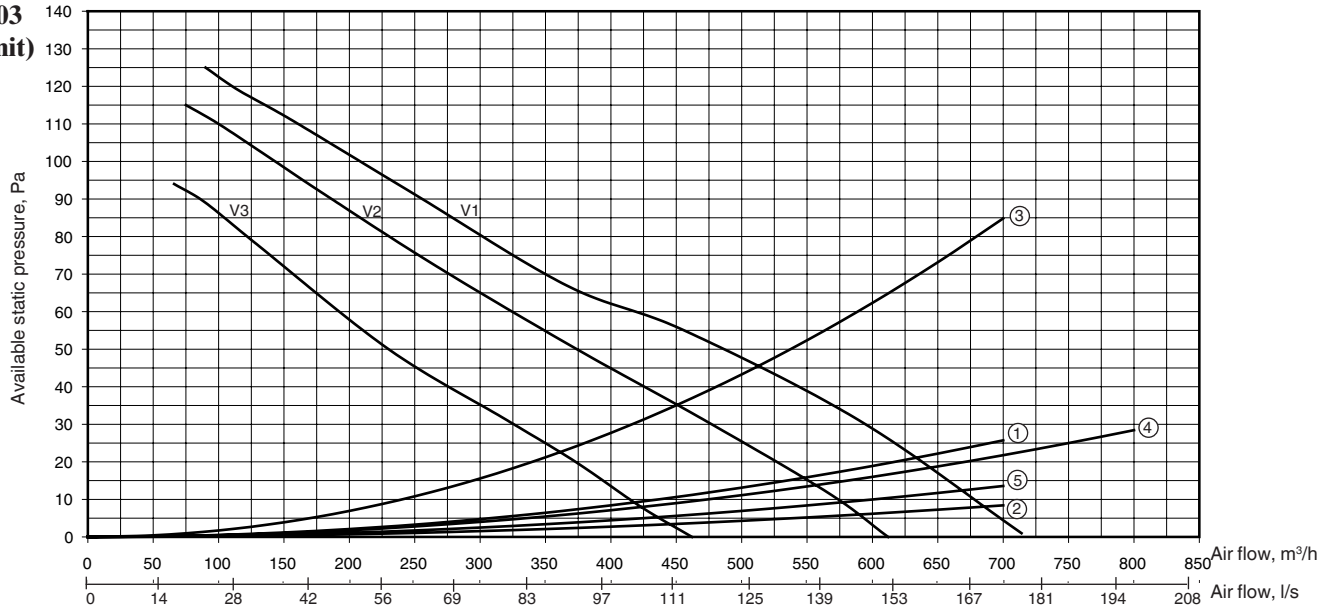
5.7 - Air flow/available static pressure data

Available static pressure curves (Pa) as a function of the air flow in l/s (m³/h)

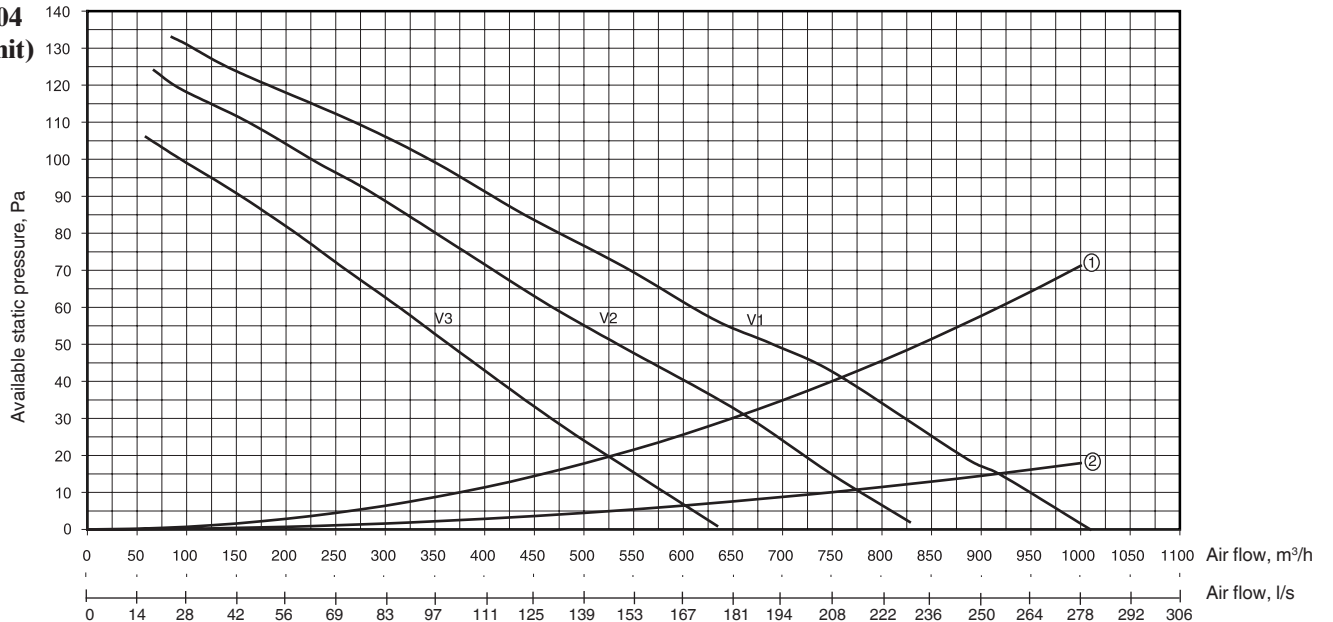
42CE 002 (base unit)



42CE 003 (base unit)



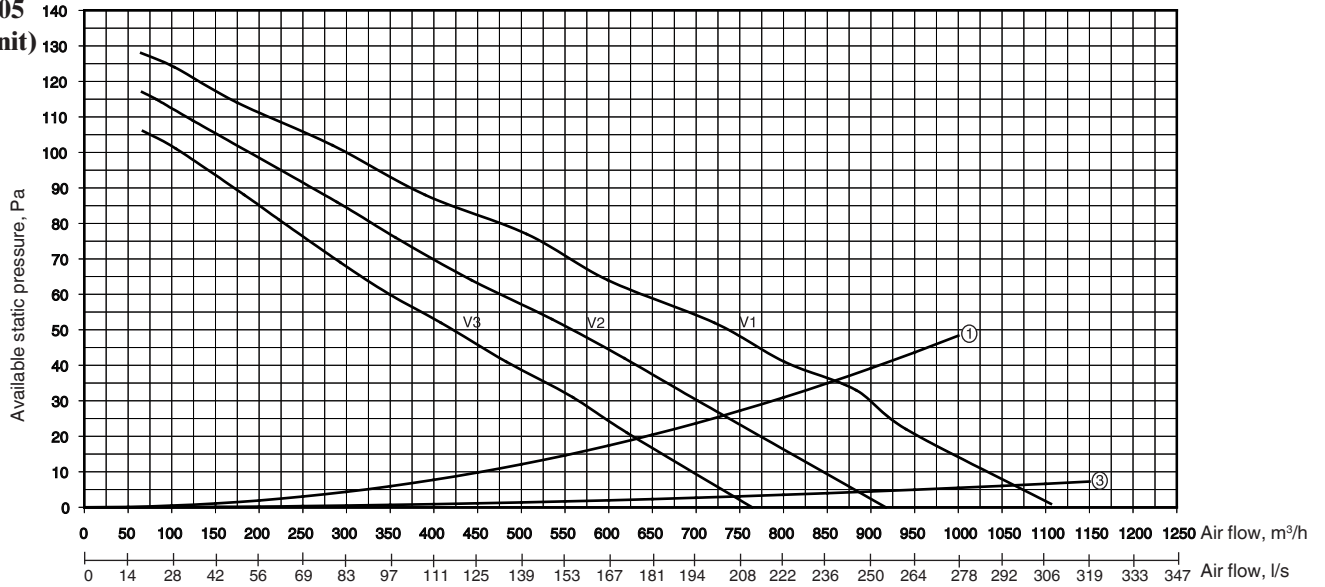
42CE 004 (base unit)



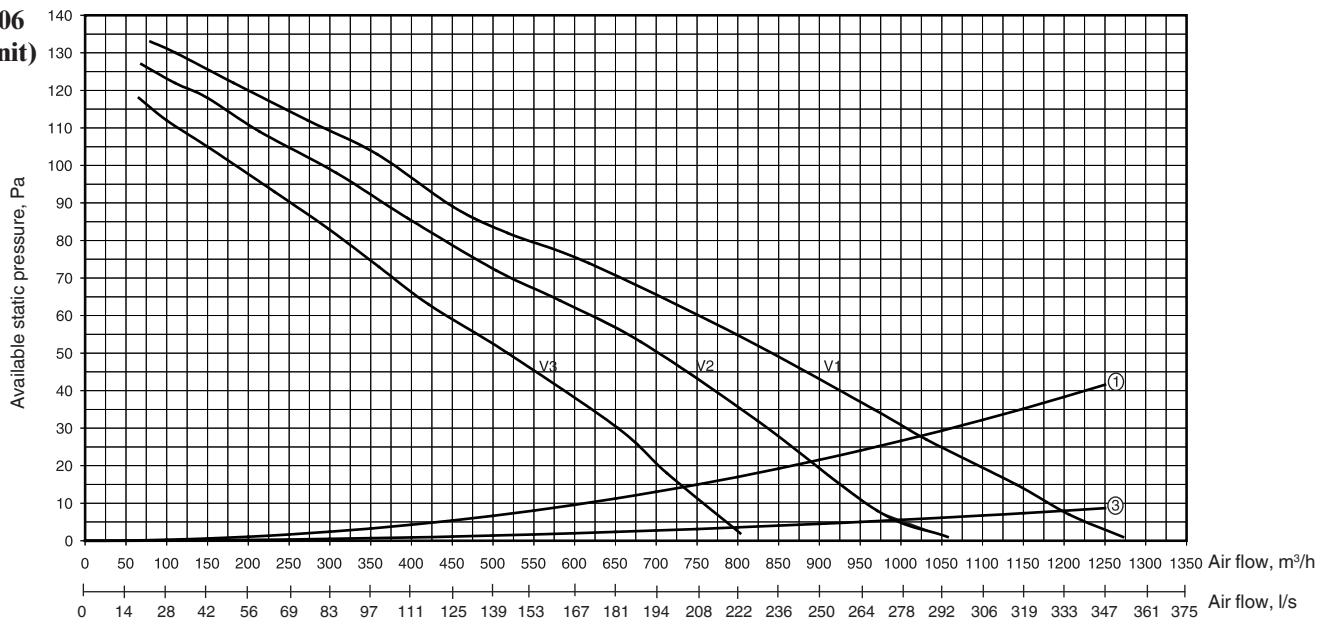
Legend:

- ① Filter pressure drop
- ② Pressure drop, two supply air spigots

**42CE 005
(base unit)**



**42CE 006
(base unit)**



Legend:

- ① Filter pressure drop
- ② Pressure drop, two supply air spigots
- ③ Pressure drop, three supply air spigots

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Environmental Management System Approval



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Manufacturer reserves the right to change any product specification without notice.

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