

PRODUCT BROCHURE

Air Curtains

Viento

Your customers will be glad to come



The signs of the times are unmistakable



Investors, plant engineers, planners, and architects no longer ask “whether” but “how” they can enhance the degree of sustainability of their plants and building management systems. Each building is unique. Its location, size, construction quality, and increasingly the building management system determine its value and profit. The energy state of a building has gained appreciably in significance here: it is a fact that buildings consume around 40 percent of the world’s energy, and produce 21 percent of global greenhouse-gas emissions. The proportion of the energy costs in the “second rent” for users and residents is constantly increasing.

Where the heating, cooling, cleaning, purification, humidification and dehumidification of air are required, DencoHappel makes its contribution to progress. Customised climate control and air treatment, with the maximum-possible reduction in energy consumption over the entire life cycle of the facilities: this all pays out handsomely in euros and cents, in comfort, and in staff productivity. Our solutions reliably comply with all international standards in highly sensitive areas such as hospitals and cleanroom applications. They likewise set new standards for sustainability and flawless system integration in advanced sports arenas, production facilities, airport buildings, and swimming pools – as well as in offices, museums, and hotels.

The one who processes air must master it

It is due to the precision work that has gone into the development of the hardware and software that our air treatment can neither be seen nor be heard, provides pleasant experience and helps in avoiding wastage of energy and money.

Can a building with large glazed areas be heated during spring and autumn on its north side and cooled on its south side, with only one system and without having to switch on the central heating? Does a system used, e. g., for heating cooling, humidification and dehumidification in pharmaceutical or electronic industry also protect against dirt and bacteria? Can investors and building owners calculate the life cycle costs of a central plant air handling unit, determine the effect of an energy-saving equipment on the operating cost for this purpose and thus select the optimal efficiency class right in the configuration stage of the plant?

DencoHappel has found answers to these and many other questions concerning air treatment and climate control – and has implemented them in solutions which reflect its experience gained in many and various successful applications. The core proposal consists of a broad spectrum of central and decentral air treatment plants, separators and filter plants up to complete clean-room systems. Their function, control and design can be fine tuned to their task, the condition and infrastructure of buildings, the operating cost calculations and the highest standards of energy efficiency and climate protection. State-of-the-art control technology developed in-house permits the individual control in individual rooms just as it permits the central handling in the context of building management system.

Control unit, which has interfaces to all usual systems of the building automation, provide for the trouble-free integration of the devices into the building management system. The fact that planners and users can implement their own desires at the design stage of the plant itself is the proof of the precision work involved in the air conditioning equipment.

DencoHappel stands for:

- Tailor-made air quality and a healthy, comfortable room climate with extremely noiseless operation
- Maximum energy efficiency and reduction in the CO₂ emission
- Precise central and decentral control and regulation
- High adaptability to most diverse functions and environments
- Easy system integration
- Durability and high degree of availability at low maintenance costs



Where good climate begins

To keep your door open for customers, you don't have to let in cold and heat too.

A friendly entrance, and an open door: this means – “Please come in!” Regular visitors and a steady stream of public guests are of course always welcome.

But if your doors are always open, or are frequently opened, you encounter considerable problems:

The differences in temperatures and air pressure between outdoors and inside naturally mean a large exchange of air. Heated or cooled air escapes to the outside or penetrates into the building, in order to eventually balance the pressure and temperatures.

The result is unpleasant drafts – even when wind is not blowing from the outside into the entrance area. When rooms inside are heated or air conditioned, heating or cooling systems struggle permanently against cold or heat from the outside. The consequence is that not only expensive energy is wasted: good indoor climate and comfort are gone. And who goes in where it's uncomfortable?

The secret of a satisfying stream of visitors? DencoHappel lifts the curtain ...

It's actually no secret. Good indoor climate – in summer and winter, and during the intermediate seasons – is a key for good business. If you feel good inside, you'll come back.



WITH VIENTO, YOU OPEN THE DOOR TO MANY BENEFITS...

Quiet and flexible

Summer and winter

Technology and form

Quiet and flexible

As a result of its effective sound insulation, the Viento goes about its business in exceptionally quiet fashion. With its enclosure made of galvanized and coated sheet steel, its unobtrusive form, and its extensive accessories, it meets any and all installation situations. It consequently guarantees pleasantly temperate ambience, for example, in the entrances of shops, department stores, hotels, and heavily frequented office buildings.

Energy and climate

Viento keeps energy inside the building. This air curtain produces a stable flow of air and invisibly separates the building interior from outside climate influences. This means that expensive heating and cooling energy remains indoors. Wherever Viento is in operation: customers, guests, and visitors will be thankful.

Performance and price

Viento is indeed impressive owing to its great efficiency and its satisfying cost effectiveness: which enables its outstanding cost/benefit ratio. Air-flow rates from 750 to 8,250 m³/h, as well as heating capacity of 5 to 45.8 kW, depending on the model range. This assures successful operations under a great variety of conditions.

Summer and winter

Viento assures reliable benefits in summer and winter, and during the transition seasons with their changeable weather conditions. You can always be sure that the climate conditions achieved in your building will remain as desired. The fan speeds of Viento can be regulated throughout five levels, with change-over from winter to summer and vice versa. If required, the supply-air temperature can be regulated.

Technology and form

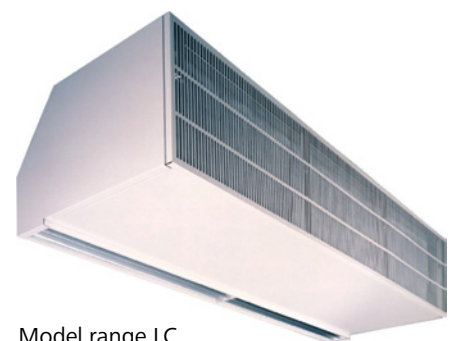
Viento: this name signifies the combination of appealing design and rock-solid technology in quality shops, department stores, hotels, and heavily frequented office buildings.



Diversity in form and color assures the harmonious integration of Viento in any shop, department store, hotel, or heavily frequented office building.

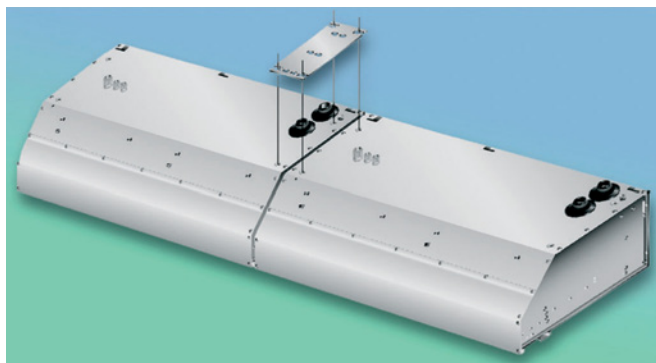


Model ranges LA and LB



Model range LC

Feel-good climate begins over your doors



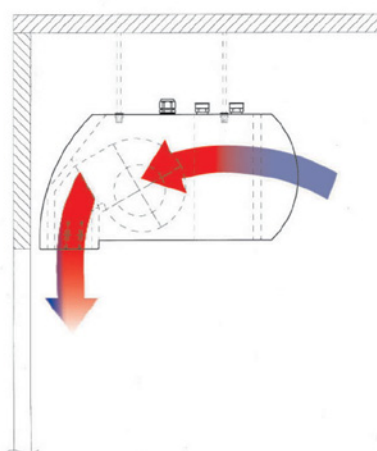
For wide doors, Viento is installed in a modular configuration of several standard units.

One of the key criteria for selection of the optimal Viento unit is the installation height. Three ranges for various door heights (2.5, 3 and 3.5 m) ensure that the air flow creates an air curtain that reaches the floor. Each range is, in turn, available in 3 widths: 1, 1.5 and 2 m. If your entrance is wider, a connecting element joins several modular units in series.

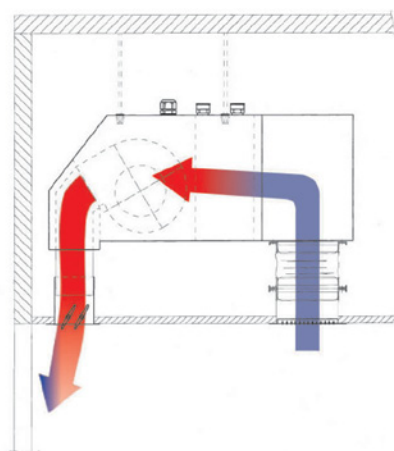
If necessary, the installation height can be reduced by placing the heat-exchanger connection at the side.

The Viento is installed directly on the wall above doors, or within suspended ceilings. With suspended ceilings, the unit can be concealed with the accessory kit provided. Depending on installation and operational mode (for example, visible or concealed, or recirculated or mixed air), the Viento can be installed with or without an enclosure.

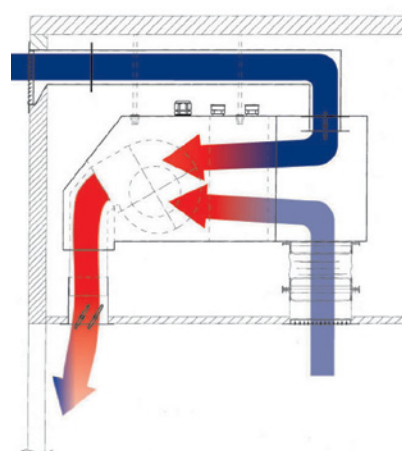
Examples of installation



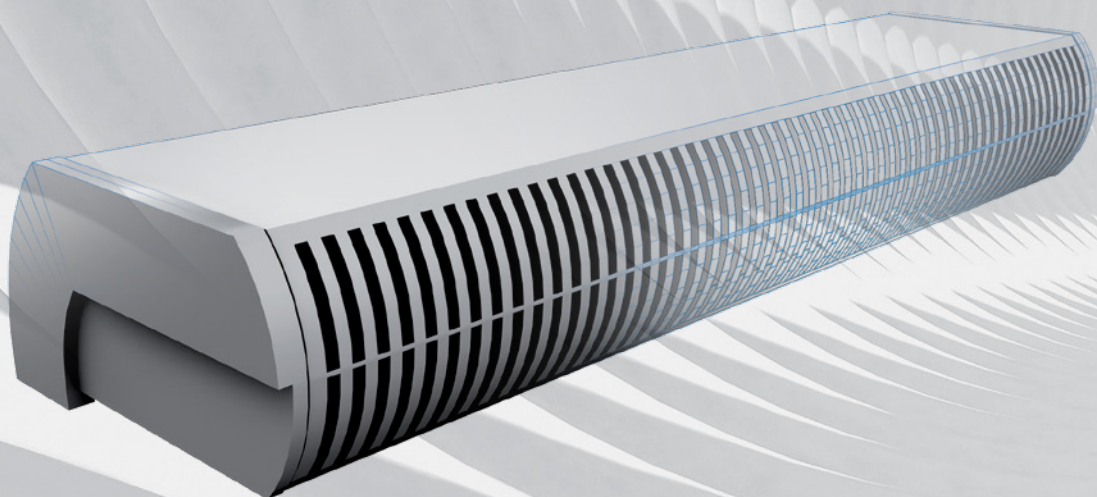
Recirculated-air mode
without suspended ceiling



Recirculated-air mode with installation
above a suspended ceiling

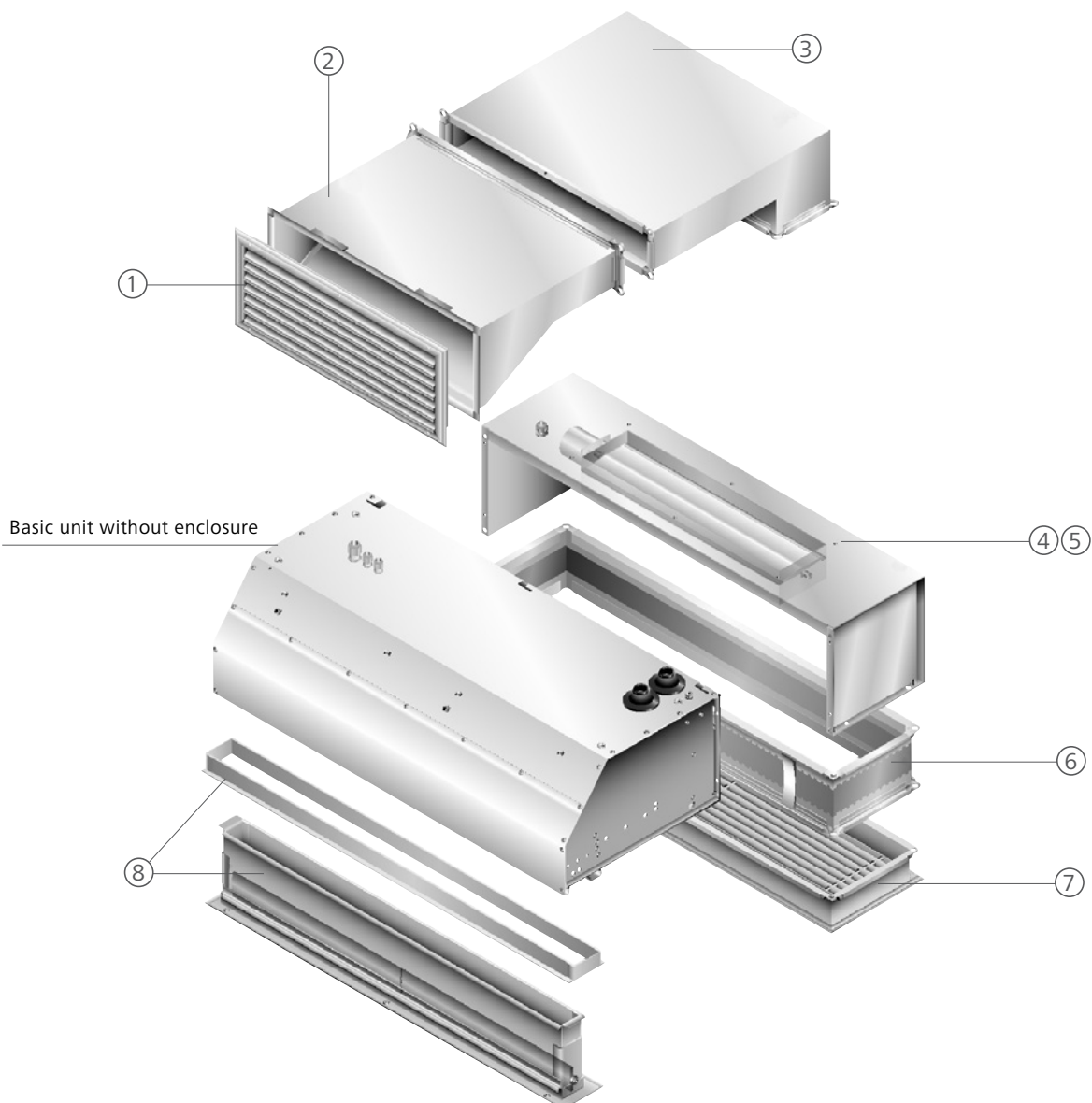


Mixed-air mode with installation
above a suspended ceiling



For entrances to office buildings, sales rooms, or factory shop floors. Wherever the Viento is installed, it separates climatecontrolled room air from outside air. This also ensures that no drafts occur.

Exploded view of system components



Formed components and grill		Formed components and grill		Assembly sets and filters	
① External weather grill	LZ 32	⑤ Air intake bend	LZ 20	Ceiling mounting unit, galvanized	LZ 40
② Intake duct	LZ 31	⑥ Flexible discharge connector	LZ 21	Ceiling mounting unit, RAL 9002	LZ 41
③ Intake duct	LZ 30	⑦ Intake grill	LZ 22	Wall mounting unit, galvanized	LZ 42
④ Mixed-air unit, integrated in mixed-air model M	●	⑧ Duct outlet fitting with air-deflection louver	LZ 10	Wall mounting unit, RAL 9002	LZ 43
				Connection piece for 2 units	LZ 50
				Spare-filter set (5 filters)	LZ 60
Enclosure		Control units		Valves	
Unit enclosure, RAL 9002	●	5-stage control units	●	2-way thermostat valves	●

Capacity stage 1 Air intake 18 °C Fan-speeds 1 - 2 - 3 - 4 - 5		Recirculated-air mode	Door height m	Door width m	Air-flow rating m³/h	Heating capacity kW
Model range	LPWW	Heat exchanger	Max.	Max.	Min. Max.	Min. Max.
LA1 U2	80 / 60 °C	2 RR Cu-Al	2.5	1.0	750 1,750	8 13
LA2 U2				1.5	1,100 2,600	12 21
LA3 U2				2.0	1,450 3,400	16 28
LB1 U2	80 / 60 °C	2 RR Cu-Al	3.0	1.0	1,100 2,400	10 15
LB2 U2				1.5	1,700 3,700	17 26
LB3 U2				2.0	2,100 4,600	20 33
LC1 U2	80 / 60 °C	2 RR Cu-Al	3.5	1.0	2,450 4,100	16 20
LC2 U2				1.5	3,650 6,200	26 35
LC3 U2				2.0	4,900 8,250	34 45

Capacity stage 2 Air intake 18 °C Fan-speeds 1 - 2 - 3 - 4 - 5		Recirculated-air mode	Door height m	Door width m	Air-flow rating m³/h	Heating capacity kW
Model range	LPWW	Heat exchanger	Max.	Max.	Min. Max.	Min. Max.
LA1 U3	60 / 40 °C	3 RR Cu-Al	2.5	1.0	730 1,690	5 10
LA2 U3				1.5	1,080 2,520	8 16
LA3 U3				2.0	1,430 3,330	11 21
LB1 U3	60 / 40 °C	3 RR Cu-Al	3.0	1.0	1,060 2,240	7 12
LB2 U3				1.5	1,630 3,480	11 19
LB3 U3				2.0	2,050 4,430	15 25
LC1 U3	60 / 40 °C	3 RR Cu-Al	3.5	1.0	2,400 3,910	12 16
LC2 U3				1.5	3,580 5,920	20 26
LC3 U3				2.0	4,810 7,900	26 36

Model range LA and LB
with rounded edges on enclosure



Model range LC
with sharper corners on enclosure



Capacity stage 1 2 RR Cu-Al Recirculated-air mode			Model range LA1 U2	Model range LA2 U2	Model range LA3 U2
For air-flow rating of	Stage 1	m³/h	750	1,100	1,450
Sound power level		Lw	57	59	60
Sound pressure level *		Lp *	43	45	46
For air-flow rating of	Stage 3	m³/h	1,050	1,600	2,150
Sound power level		Lw	65	67	68
Sound pressure level *		Lp *	51	53	54
For air-flow rating of	Stage 5	m³/h	1,750	2,600	3,400
Sound power level		Lw	75	76	78
Sound pressure level *		Lp *	61	62	64

Capacity stage 1 2 RR Cu-Al Recirculated-air mode			Model range LB1 U2	Model range LB2 U2	Model range LB3 U2
For air-flow rating of	Stage 1	m³/h	1,100	1,700	2,100
Sound power level		Lw	59	63	63
Sound pressure level *		Lp *	45	49	49
For air-flow rating of	Stage 3	m³/h	1,600	2,400	3,000
Sound power level		Lw	67	71	71
Sound pressure level *		Lp *	53	57	57
For air-flow rating of	Stage 5	m³/h	2,400	3,700	4,600
Sound power level		Lw	77	79	80
Sound pressure level *		Lp *	63	65	66

Capacity stage 1 2 RR Cu-Al Recirculated-air mode			Model range LC1 U2	Model range LC2 U2	Model range LC3 U2
For air-flow rating of	Stage 1	m³/h	2,450	3,650	4,900
Sound power level		Lw	67	69	70
Sound pressure level *		Lp *	53	55	56
For air-flow rating of	Stage 3	m³/h	3,450	5,150	6,900
Sound power level		Lw	74	76	77
Sound pressure level *		Lp *	60	62	63
For air-flow rating of	Stage 5	m³/h	4,100	6,200	8,250
Sound power level		Lw	78	80	81
Sound pressure level *		Lp *	64	66	67

* Measuring conditions for sound pressure level (Lp):

Absorption surface area = 500 m²; measuring distance = 3 m; reverberation time = 0.5 s; directional factor = 2 (hemispherical radiation)

Capacity stage 2 3 RR Cu-AI Recirculated-air mode			Model range LA1 U3	Model range LA2 U3	Model range LA3 U3
For air-flow rating of	Stage 1	m ³ /h	730	1,080	1,430
Sound power level		Lw	57	59	60
Sound pressure level *		Lp *	43	45	46
For air-flow rating of	Stage 3	m ³ /h	1,030	1,570	2,120
Sound power level		Lw	65	67	68
Sound pressure level *		Lp *	51	53	54
For air-flow rating of	Stage 5	m ³ /h	1,690	2,520	3,300
Sound power level		Lw	75	76	78
Sound pressure level *		Lp *	61	62	64

Capacity stage 2 3 RR Cu-AI Recirculated-air mode			Model range LB1 U3	Model range LB2 U3	Model range LB3 U3
For air-flow rating of	Stage 1	m ³ /h	1,060	1,630	2,050
Sound power level		Lw	59	63	63
Sound pressure level *		Lp *	45	49	49
For air-flow rating of	Stage 3	m ³ /h	1,530	2,300	2,920
Sound power level		Lw	67	71	71
Sound pressure level *		Lp *	53	57	57
For air-flow rating of	Stage 5	m ³ /h	2,240	3,480	4,430
Sound power level		Lw	77	79	80
Sound pressure level *		Lp *	63	65	66

Capacity stage 2 3 RR Cu-AI Recirculated-air mode			Model range LC1 U3	Model range LC2 U3	Model range LC3 U3
For air-flow rating of	Stage 1	m ³ /h	2,400	3,580	4,810
Sound power level		Lw	67	69	70
Sound pressure level *		Lp *	53	55	56
For air-flow rating of	Stage 3	m ³ /h	3,330	4,970	6,690
Sound power level		Lw	74	76	77
Sound pressure level *		Lp *	60	62	63
For air-flow rating of	Stage 5	m ³ /h	3,910	5,920	7,900
Sound power level		Lw	78	80	81
Sound pressure level *		Lp *	64	66	67

* Measuring conditions for sound pressure level (Lp):

Absorption surface area = 500 m²; measuring distance = 3 m; reverberation time = 0.5 s; directional factor = 2 (hemispherical radiation)

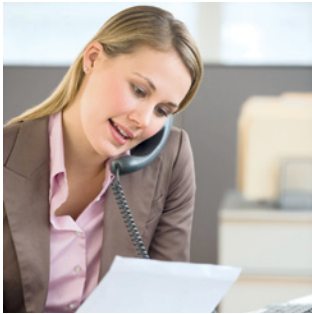
Capacity stage 1 Air intake 18 °C 2 RR Cu-Al			Door width m			Door height 2,5 m			Door height 3,0 m			Door height 3,5 m		
Fan stages	PWW	Max.	Model range	m³/h	kW	Model range	m³/h	kW	Model range	m³/h	kW	Model range	m³/h	kW
①	80 / 60 °C	1.0	LA1 U2	750	7	LB1 U2	1,100	10	LC1 U2	2,450	16			
②				850	8		1,250	11		2,850	17			
③				1,050	9		1,600	12		3,450	19			
④				1,500	11		2,050	14		3,750	19			
⑤				1,750	13		2,400	15		4,100	20			
①	80 / 60 °C	1.5	LA2 U2	1,100	12	LB2 U2	1,700	17	LC2 U2	3,650	26			
②				1,300	14		2,000	18		4,400	29			
③				1,600	16		2,400	20		5,150	31			
④				2,100	19		3,150	24		5,650	33			
⑤				2,600	21		3,700	26		6,200	35			
①	80 / 60 °C	2.0	LA3 U2	1,450	16	LB3 U2	2,100	20	LC3 U2	4,900	34			
②				1,750	18		2,500	23		5,900	37			
③				2,150	21		3,000	25		6,900	41			
④				2,800	24		3,800	29		7,550	43			
⑤				3,400	28		4,600	33		8,250	45			

Capacity stage 2 Air intake 18 °C 3 RR Cu-Al			Door width m			Door height 2,5 m			Door height 3,0 m			Door height 3,5 m		
Fan stages	PWW	Max.	Model range	m³/h	kW	Model range	m³/h	kW	Model range	m³/h	kW	Model range	m³/h	kW
①	60 / 40 °C	1.0	LA1 U3	730	5	LB1 U3	1,060	7	LC1 U3	2,400	12			
②				830	6		1,210	8		2,770	13			
③				1,030	7		1,530	9		3,330	15			
④				1,360	8		1,940	11		3,590	16			
⑤				1,690	10		2,240	12		3,910	17			
①	60 / 40 °C	1.5	LA2 U3	1,080	8	LB2 U3	1,630	11	LC2 U3	3,580	20			
②				1,280	10		1,920	13		4,290	22			
③				1,570	11		2,300	15		4,970	24			
④				2,060	14		2,990	18		5,430	25			
⑤				2,520	16		3,480	19		5,920	26			
①	60 / 40 °C	2.0	LA3 U3	1,430	11	LB3 U3	2,050	15	LC3 U3	4,810	27			
②				1,730	13		2,440	17		5,760	30			
③				2,120	15		2,920	19		6,690	32			
④				2,760	18		3,690	22		7,270	34			
⑤				3,330	21		4,430	25		7,900	36			

Capacity stage 1 2 RR Cu-Al Recirculated-air mode m ³ /h		Without enclosure				With enclosure			
		Width mm	Height mm	Depth mm	Weight kg	Width mm	Height mm	Depth mm	Weight kg
Model range	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
LA1 U2	1,750	1,100	305	485	46	1,130	315	595	52
LA2 U2	2,600	1,600	305	485	65	1,630	315	595	73
LA3 U2	3,400	2,100	305	485	82	2,130	315	595	93
LB1 U2	2,400	1,100	305	485	53	1,130	315	595	60
LB2 U2	3,700	1,600	305	485	75	1,630	315	595	85
LB3 U2	4,600	2,100	305	485	94	2,130	315	595	107
LC1 U2	4,100	1,100	415	700	70	1,105	435	725	76
LC2 U2	6,200	1,600	415	700	100	1,605	435	725	108
LC3 U2	8,250	2,100	415	700	130	2,105	435	725	140

Capacity stage 2 3 RR Cu-Al Recirculated-air mode m ³ /h		Without enclosure				With enclosure			
		Width mm	Height mm	Depth mm	Weight kg	Width mm	Height mm	Depth mm	Weight kg
Model range	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
LA1 U3	1,690	1,100	305	485	48	1,130	315	595	54
LA2 U3	2,520	1,600	305	485	68	1,630	315	595	76
LA3 U3	3,330	2,100	305	485	86	2,130	315	595	97
LB1 U3	2,240	1,100	305	485	55	1,130	315	595	62
LB2 U3	3,480	1,600	305	485	78	1,630	315	595	78
LB3 U3	4,430	2,100	305	485	98	2,130	315	595	111
LC1 U3	3,910	1,100	415	700	72	1,105	435	725	78
LC2 U3	5,920	1,600	415	700	103	1,605	435	725	111
LC3 U3	7,900	2,100	415	700	134	2,105	435	725	144

Always at your side



Our services at a glance

- Own heat exchanger production
- Use of certified products and components
- Use of components from well-known component manufacturers
- Short delivery times for spare parts
- Commissioning of new facilities
- Periodic servicing
- Maintenance
- Factory trial run
- Upgrading and optimisation of old facilities
- Maintenance agreements

Economical from the beginning

The technical developments of DencoHappel represent state-of-the-art swimming pool climate control. Our systems support diverse applications that optimally conform to current criteria of cost effectiveness, safety and sustainability. Our products and services go far beyond pure technology. They are integrated into a comprehensive and in every respect customised service package. This programme includes not only conventional services such as spare part delivery, maintenance, and repair. It unites the consulting and engineering of a technology leader with customised after-sales service and rapid response times. And this not only for installing new equipment. This service also applies for upgrading and optimising old equipment and provides you with perfect support in all project phases. The functionality of the system is secured over its entire service life.

International service und support in experienced hands

Wherever you need us, we will be there for you in the shortest time. All over Europe, our own customer service ensures that you are able to make optimal use of our units' advantages at all times. Many technicians are ready on-call in Germany alone for rapid deployment. All services are designed for absolute safety and reliability. For example, an on-site function check is a part of our delivery service, conducted by an experienced DencoHappel technician together with the installer. This way we directly and personally pass on our functional know-how built up over many years. In this context we should also mention the training we offer in the technology of our climate control systems. Such training is a beneficial instrument for ensuring the lasting functionality and availability of the systems.

A decision for quality

A high quality standard is the basis and principle for all our services. All our service specialists are highly experienced and devote themselves to their work with great diligence. Technically and personally convincing: this is what you can expect from us.



- Initial installation
- Maintenance and servicing
- Assembly services
- Spare parts
- Customer service
- Consulting
- Refurbishing
- Training

DencoHappel is a globally operating company with great expertise in air treatment, air conditioning and filtration technology.

Our nearest consulting and service teams will be glad to discuss ideas and develop creative and effective solutions with you.

