PRODUCT BROCHURE

Fan Coil Units – Effective and quiet
HyCassette-Geko® and Cassette-Geko®

Quality as a sign of the times

DencoHappel®

In the office or health services

In daily life, concentration is of primary importance. A crucial condition for effective office work is the quality of the prevailing conditions: after all, who wants to work at freezing temperatures or be subjected to an irritating draft? Innovative visions can only arise under optimal room air conditions, allowing small ideas to grow into brilliant results

Reforms, structural changes, capping and budgeting increasingly challenge health service providers in a competitive environment. Attributes such as capacity utilization, service, quality management and friendliness today play as large a role in a company's economic success as the medical ratings themselves. The room comfort is also a significant factor for your facility, because if people feel comfortable where they are, they will gladly remain or return with pleasure.

Economical, sustainable, and reliable

Buildings are unique objects. Location, size, construction quality and the building technology determine value and returns. The energy state of a building gains appreciably in significance. We offer highly efficient air treatment and supply with the greatest possible reduction of energy consumption over the entire service life of the plants. Our solutions reliably satisfy all international standards.

The feel-good climate manager

With the HyCassette-Geko using SWIRL outlet technology, we have developed a system that sets new standards in terms of comfort, hygiene and design – experience room climate control at a completely new level!

Our Know-how

- many years of experience
- greatest reliability
- passion
- top quality
- highest standards
- efficient products
- economic solutions

A totally new definition of room air comfort

Certified room air quality at a glance:

- circular SWIRL air outlet for regulated swirl airflow
- continuously-variable GreenTech EC fan technology
- optimized heat exchanger
- low-noise operation
- intelligent MATRIX controlling
- Compatibility of control system
- Software flexibility (individual operating points)
- certified hygiene conformity (VDI6022)
- attractive design

Minimum air draft and maximum hygiene

Traditional fan coil units with a 4-way outlet discharge air in four directions at right angles to each other. Cold air currents are distributed unevenly in the room, so that air drafts cannot always be avoided. This is a phenomenon that many people find disagreeable.

With SWIRL technology, we systematically go one step further: the circular outlet generates a regulated air flow that is distributed uniformly and in a barely perceptible manner. The intelligent MATRIX control reacts directly to climate changes in the room and immediately sets the operation back to the desired setpoint conditions – no matter whether this involves heating or cooling.

Eyes and ears likewise profit: the appealing design converts the fan coil unit into an attractive design element, a modern plastic casing furthermore reduces noise emissions to a minimum.

The HyCassette-Geko with SWIRL outlet also scores points with regard to hygienic standards: thanks to plastic technology, the unit can be easily cleaned and disinfected, and thus satisfies the VDI6022 directive.

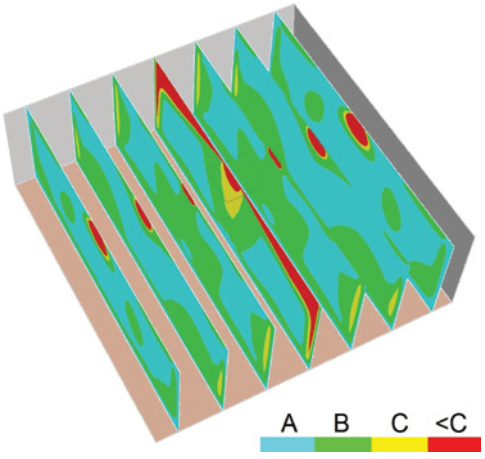
The motorized SWIRL
air outlet – an all-round success

COMPREHENSIVE CONCEPT – MAXIMUM USE

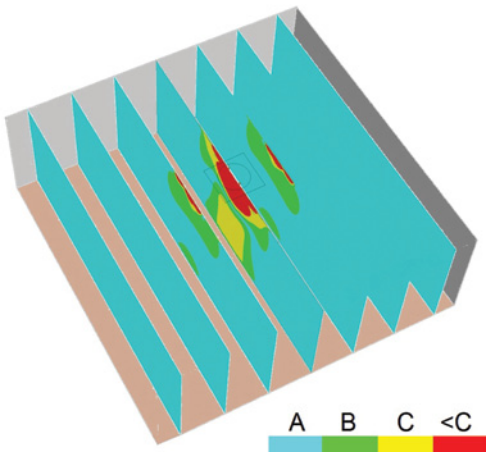
We optimize your total operating costs continuously and sustainably: highly-efficient fans are integrated in the unit and precisely tailored to our MATRIX control technology. Besides, our reliable software enables individual configuration and layout of your system.

The single cassettes, compared by air draft:

Unit with conventional 4-way outlet



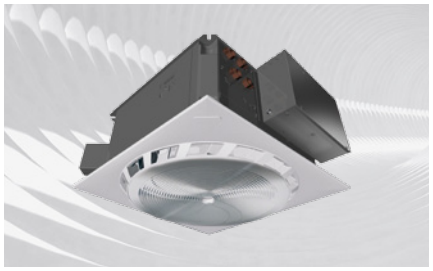
Unit with SWIRL® outlet



The simulated room air flow clearly shows for 480 m³/h according to DIN EN ISO 7730:

- smaller risk of air draft because of greater temperature homogeneity and lower air velocities
- category A according to DIN EN ISO 7730 in the occupied zone of the sample office

Patented, efficient and intelligent



SWIRL® air outlet

The patented SWIRL outlet ensures a swirl flow current with a regulated-air throw and projection angle. This means that cold air currents can be uniformly distributed in the room and the risk of air drafts is minimized according to DIN EN ISO 7730.

The swirled air stream, which can extend in all directions compared to the conventional 4-way air outlet technology, guarantees an optimal feeling of comfort. The flat air flow of the motordriven SWIRL outlet thus supports the Coanda effect in cooling operation. In heating operation, it acts to counter the thermals of the rising warm air thanks to the steeper discharge angle.

EC Fans

Continuously-variable and reliable EC fans manufactured by ebm-papst are employed in our units. With up to 75 percent reduced power consumption compared to conventional AC fans, the components are especially energy-efficient.

This energ-saving potential pays off not only in full-load operation but especially in partial-load operation. The speed is then adapted by demand to the current temperature requirements. GreenTech EC motors clearly run more efficiently than asynchronous motors with the same power.

MATRIX control system

With the MATRIX control system we offer intelligent controls that react to climate changes in the room. The cross-product system permits the cost-effective structuring of single-room and network solutions. Many energy-saving functions and high user comfort round off the performance spectrum.

Not least, the MATRIX PC software guarantees easy commissioning, parameterization and system analysis. The MATRIX 3500 cassette control acts as an integrated comfort regulator. Additional functions such as the turbo or swing mode serve for rapid cooling of a room before use, or in order to generate dynamic air movement.

Capacity overview with SWIRL® outlet

SWIRL®-outlet							
System	**CS***	**Speed**	**V max.**	**Cooling capacity at 27°C/46 r.h. PCW 6/12°C**	**Heating capacity at 20°C PWW 70/50°C**	**Sound pressure level ******	**Motor data EC motor 1 ~ 230 Volt**
4-pipe	1	min	210 m³/h	1.40 kW	1.10 kW	<20 dB(A)	4 W
		max	670 m³/h	3.90 kW	2.50 kW	50 dB(A)	45 W
2-pipe	1	min	210 m³/h	1.40 kW	2.80 kW	<20 dB(A)	4 W
		max	670 m³/h	3.90 kW	7.80 kW	50 dB(A)	45 W
2-pipe	2	min	210 m³/h	1.70 kW	3.10 kW	22 dB(A)	4 W
		max	640 m³/h	4.50 kW	8.60 kW	50 dB(A)	44 W
2-pipe + E-heating	1	min	210 m³/h	1.40 kW	0.75 kW	<20 dB(A)	4 W
		max	670 m³/h	3.90 kW	1.50 kW	50 dB(A)	45 W

* CS = Capacity stage, PC(W)W=pumped chilled (warm) water

** sound pressure level for hemispheric radiation (direction coefficient 2) with 5 m distance to the noise source, room size 100 m³, reverberation time 0.5 sec

Heating, cooling, and ventilation: effectively and quietly

Comfortable climate-control solution:

- Heating, cooling, ventilation, and filtering with only one unit
- Fast reaching of the desired temperature by a unit with compact dimensions
- Energy savings by only slight temperature differences between the heating and cooling medium and the room temperature
- Flexible temperature-regulation with quiet operation

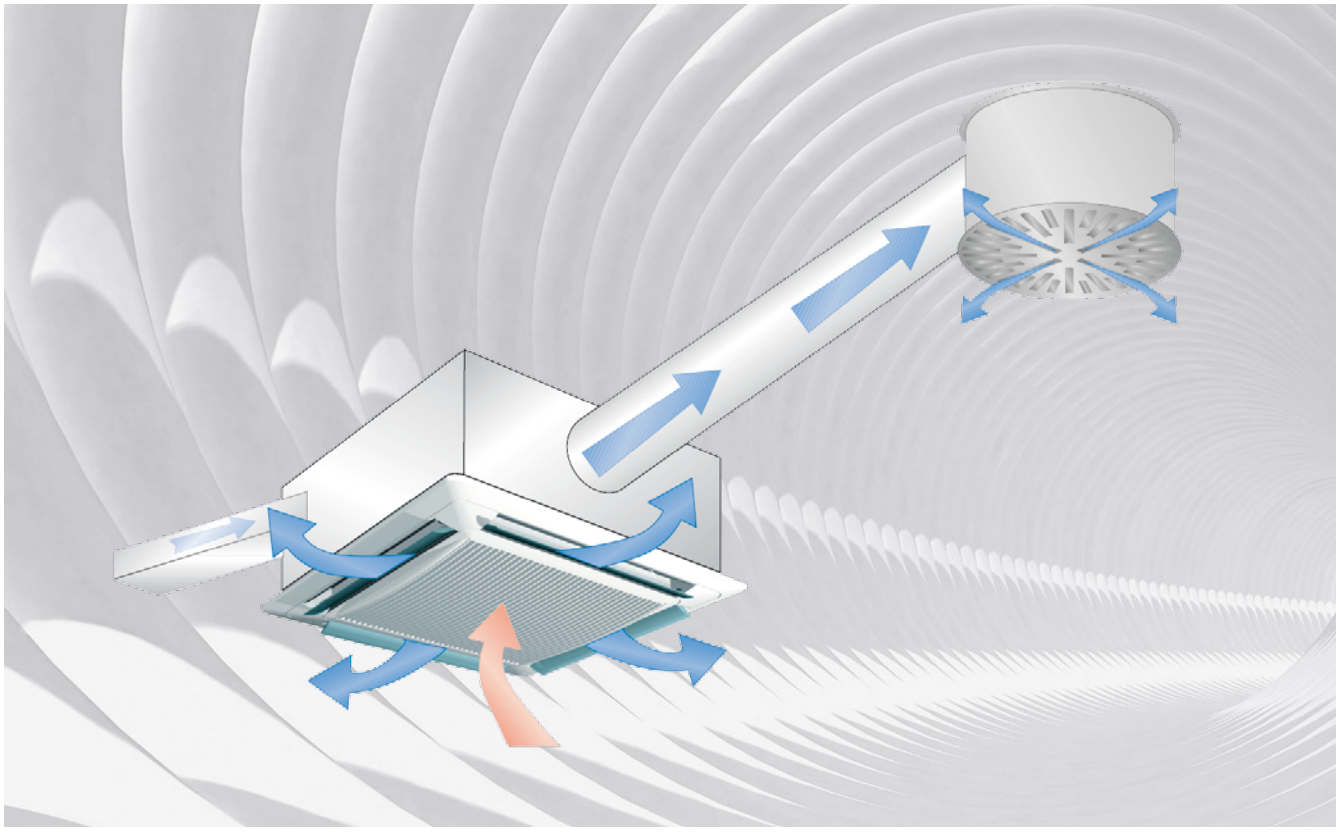
Cassette fan coil units are designed for the climate control of rooms. They are installed above suspended ceilings as flush-mounted units. The 3 models available – the Single, Double, and Big Single versions – assure pleasant, comfortable room climate in summer and winter. Installation in the open space between the suspended ceiling and the floor slab above minimises space requirements and saves costs.

The 2-pipe systems feature 1 heat exchanger. Seasonable changeover from heating to cooling, and vice-versa, is possible. The 4-pipe systems are quite impressive due to their 2 separate heat exchangers for heating and cooling operations. This means that they allow spontaneous changer-over to the heating or cooling mode in any zone, as required.

Very quiet 3-speed fans can additionally condition the air that is pulled in through primary air feed. Fully optimised heat exchangers are your guarantee for effective and energy-saving medium temperatures. Minimum losses on the air path to the energy generators are the result. A regenerable G1 filter medium comes with the series-production versions.

In addition, 3-speed fans, optionally pre-installed valves, as well as 4-side, individually adjustable air directional louvers ensure a pleasantly uniform distribution of the conditioned air flow in the zones to be climate-controlled.

Quality down to the very smallest detail



The quality standard of Cassette fan coil units is apparent in many technical characteristics, all of which go to make up an overall perfectly harmonising unified solution.

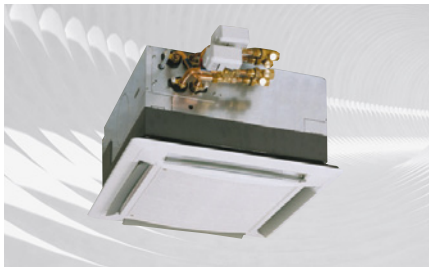
Thanks to its optimised engineering design, the heat exchanger assures ideal transfer of cold and heat. The incoming air streams can be individually directed and are especially gently distributed throughout the room.

A condensate pump and an air filter are part of the series-production versions. Condensate that forms at the connections is captured by a collector on the side and passed on to the main condensate pan. The designer enclosure is available upon request in special colours.

The extensive valve equipment provided allows flawless regulation of medium feed. Two pre-punched openings for primary and supply air can even simultaneously provide climate-control for a small adjacent room (although the extra room cannot be separately temperature-controlled).

Cassette fan coil units – design-oriented recessed systems for rectangular-grid ceilings, with precisely targeted air distribution by adjustable louvers – and with maximum utilization of available room floor space.

Just the right version for all requirements



Single

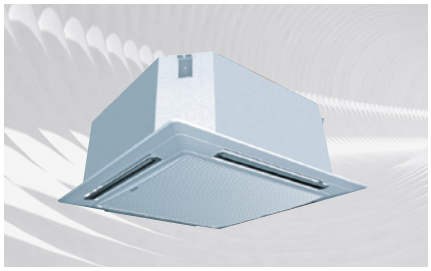
An especially compact suspended-ceiling model, which makes it the smallest of the Cassette range of fan coil units. With its dimensions, it matches the installation sizes made available in a conventional rectangular-grid ceiling.

Dimensions: 575 x 575 mm;
covering enclosure: 660 x 660 mm

Double

This model is the right one where greater capacity is required. Truly a double: with 2 fans, 2 heat exchangers, 2 filters, and 2 air-intake openings, the Double model matches the dimensions of two Single units. This also means that the version fits the dimensions of a conventional rectangular-grid ceiling.

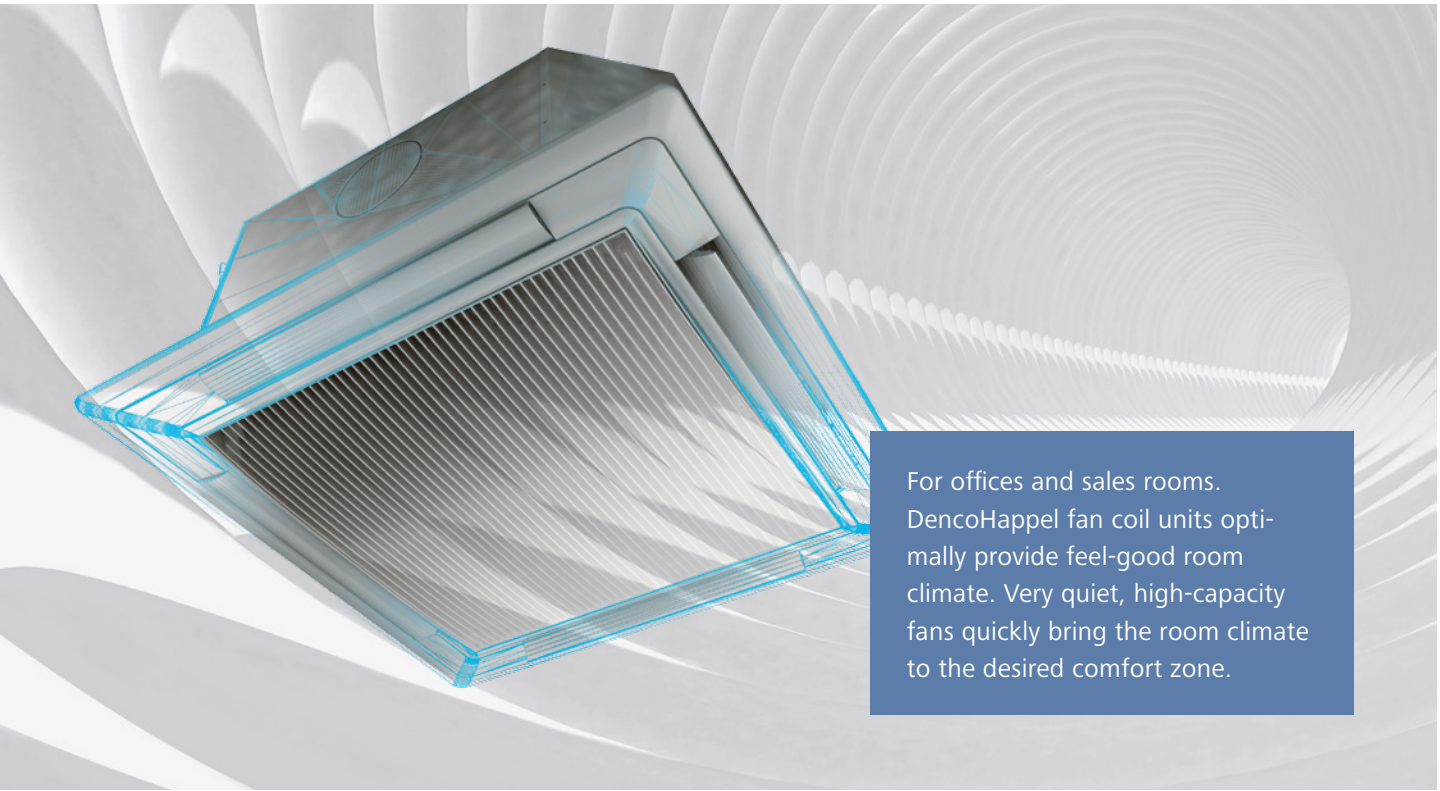
Dimensions: 1175 x 575 mm;
covering enclosure: 1260 x 660 mm



Big Single

This model is the preferred choice if the user requires a very quiet unit in combination with greater capacity. Thanks to its larger enclosure, the Big Single has the same capacity as the Double model. Since, however, the key components are included only once in the model, the Big Single combines high capacity with low energy consumption, low operating costs, and very quiet operation.

Dimensions: 822 x 822 mm;
covering enclosure: 905 x 905 mm



For offices and sales rooms. DencoHappel fan coil units optimally provide feel-good room climate. Very quiet, high-capacity fans quickly bring the room climate to the desired comfort zone.

The right turn for the right climate

Upon request, the proven MATRIX intelligent control system will be integrated into the Cassette fan-coil unit at the factory. This means that completely tested systems reliably go into operation at the construction site.

The MATRIX is available with the following model capacity rating stages, in accordance with various applications: MATRIX 500, 2000, and 3000. Beginning with the MATRIX 2000, all models offer as standard feature the MATRIX.Net dual-conductor bus system to enable the MATRIX components to communicate with each other. This allows simple implementation of daytime and nighttime operation modes, effective control of pumps, and collection of error messages at a single point. MATRIX can also be connected to higher-level bus systems.

MATRIX furthermore ensures energy-optimised operation of the Cassette fan coil units. Coordinated switching circuitry, for example, prevents heating and cooling circulation systems from conflicting. The hardware and software for MATRIX control technology were completely developed at DencoHappel. Close collaboration in the company allows the engineers to coordinate the control system systematically to each component, which results in optimal exploitation of equipment possibilities. After-Sales Support also profits from this benefit, and can react quickly and expertly to any questions that arise.

For functional expansion of the standard-version local connections of the MATRIX control system, a great number of additional global modules are available: e.g., intra-group operator-control units, clock modules, modules for activation control of cooling generators, expansion units for analogue or digital input and output signals, and integration into a LON bus system as per the LonWorks standard.

All modules beginning with the MATRIX 2000 model can be integrated via the MATRIX.Net bus system without difficulty. In addition, the service tools MATRIX.PDA and MATRIX.PC can be effectively employed for parameterisation, commissioning, maintenance, and data acquisition from the MATRIX control systems.

Comprehensive control possibilities:

- Closed-loop control in various model capacity rating stages
- Bus interfaces to other equipment
- Plug-and-play functionality
- Energy-optimised equipment operation
- Equipment ready to operate, with highly competent service
- Global upgrade modules
- LON integration
- Effective service tools

MATRIX *controls and CET.ECH compact controller*

MATRIX OP5

- Enclosure without display, pure white
- **Recirculated-air mode,** IP 20 protection class
- Desired-temperature setting
- Fan-speed selection for permanent duty
- Button for temperature-reduction mode
- LED for operation/malfunction/ext. influence
- Integrated room-temperature sensor

MATRIX OP 21

Same as the OP5 control unit, but with

- Fan-speed selection switch for permanent / automatic operation
- **MATRIX.Net** data bus Network connection for **MATRIX** add-on modules via **OP21** control unit

MATRIX OP30 without buttons MATRIX OP31 with temp.-reduction button

- Enclosure without display, pure white
- **Recirculated-air,** IP 20 protection class
- Desired-temperature setting
- Fan-speed selection switch for permanent/automatic operation
- LED for operation/malfunction/ext. influence
- Integrated room-temperature sensor

MATRIX OP 44

Same as the OP31 control unit, but with

- Selection switching for heating/cooling/automatic operation
- All units without display. Protective hood as option.

MATRIX OP50 without clock MATRIX OP51 with clock

- Enclosure with display, pure white
- **Recirculated-air mode** of operation
- IP 20 enclosure protection class
- Operation by rotary navigator
- LCD display with plain text
- Status report by pictograms
- Integrated room-temperature sensor

MATRIX.IR infrared remote control unit

- Functions as for the OP44 control unit, but:
  Without operational/malfunction reports
  Without report of external influence
  Without integrated room sensor
- Black enclosure, similar to RAL 9004
- LCD display, 45 x 30 mm
- Effective range = approx. 20 m

Compact controller CET.ECH

- White casing, similar to RAL 9016
- **Recirculating air mode**
- Protection class IP 30
- Setpoint temperature setting
- Speed selector switch for continuous/automatic operation
- Integrated room-temperature sensor
- Input via volt on-site floating contact by others
- Contact for external sensor
- Room frost protection

Overview of systems and performance ratings

Single Fan speeds 1 - 2 - 3		GCS	Air Flow m³/h	Heating rating kW	Cooling rating kW
Recirculated air with primary-air feed	**Type**	**Performance rating**	**min | max**	**min | max**	**min | max**
Pumped hot water / pumped cold water					
Heating with pumped hot water	U0W	❶ ❷	250 | 850	2.9 | 9.2	
Cooling with pumped cold water	UW0	❶ ❷	250 | 850		1.5 | 5.0
Cooling with pumped cold water or heating with pumped hot water (change-over)	UWC	❶ ❷	250 | 850	2.9 | 9.2	1.5 | 5.0
Cooling with pumped cold water and heating with pumped hot water (4-pipe system)	UWW	❶ ❷	250 | 850	2.2 | 5.4	1.5 | 3.7
Pumped cold water + electrical heating					
Cooling with pumped cold water and heating with electric heater 3 ~ 400 V	UWE	❶ ❷	250 | 850	1.0 | 2.0	1.5 | 5.0

Double Fan speeds 1 - 2 - 3		GCD	Air Flow m³/h	Heating rating kW	Cooling rating kW
Recirculated air with primary-air feed	**Type**	**Performance rating**	**min | max**	**min | max**	**min | max**
Pumped hot water / pumped cold water					
Heating with pumped hot water	U0W	❶ ❷	530 | 1.400	7.3 | 16.0	
Cooling with pumped cold water	UW0	❶ ❷	530 | 1.400		4.0 | 8.8
Cooling with pumped cold water or heating with pumped hot water (change-over)	UWC	❶ ❷	530 | 1.400	7.3 | 16.0	4.0 | 8.8
Cooling with pumped cold water and heating with pumped hot water (4-pipe system)	UWW	❶ ❷	530 | 1.400	4.7 | 9.4	3.2 | 6.6
Pumped cold water + electrical heating					
Cooling with pumped cold water and heating with electric heater 3 ~ 400 V	UWE	❶ ❷	530 | 1.400	2.0 | 4.0	4.0 | 8.8

Big Single Fan speeds 1 - 2 - 3		GCB	Air Flow m³/h	Heating rating kW	Cooling rating kW
Recirculated air with primary-air feed	**Type**	**Performance rating**	**min | max**	**min | max**	**min | max**
Pumped hot water / pumped cold water					
Heating with pumped hot water	U0W	❶ ❷	620 | 1.700	8.6 | 18.9	
Cooling with pumped cold water	UW0	❶ ❷	620 | 1.700		4.9 | 10.5
Cooling with pumped cold water or heating with pumped hot water (change-over)	UWC	❶ ❷	620 | 1.700	8.6 | 18.9	4.9 | 10.5
Cooling with pumped cold water and heating with pumped hot water (4-pipe system)	UWW	❶ ❷	620 | 1.700	5.3 | 10.8	3.5 | 7.4
Pumped cold water + electrical heating					
Cooling with pumped cold water and heating with electric heater 3 ~ 400 V	UWE	❶ ❷	620 | 1.700	2.0 | 3.0	4.8 | 10.4

Heating with pumped hot water: 70/50°C. tL1 +20°C;
cooling with pumped cold water: 6/12°C. tL1 +27°C. 46% relative humidity

Noise Emission dB(A)

Single Fan speeds 1 - 2 - 3		GCS		Performance rating	
			0	1	2
At air flow of	**Fan speed 1**	**m³/h**	**250**	**330**	**480**
Acoustic power level		Lw	34	35	44
Acoustic pressure level*		Lp*	25	26	35
At air flow of	**Fan speed 2**	**m³/h**	**310**	**480**	**710**
Acoustic power level		Lw	35	43	54
Acoustic pressure level*		Lp*	26	34	45
At air flow of	**Fan speed 3**	**m³/h**	**460**	**660**	**850**
Acoustic power level		Lw	44	52	58
Acoustic pressure level*		Lp*	35	43	49

Double Fan speeds 1 - 2 - 3		GCD	Performance rating	
			1	2
At air flow of	**Fan speed 1**	**m³/h**	**530**	**840**
Acoustic power level		Lw	38	48
Acoustic pressure level*		Lp*	30	40
At air flow of	**Fan speed 2**	**m³/h**	**740**	**1220**
Acoustic power level		Lw	47	59
Acoustic pressure level*		Lp*	39	50
At air flow of	**Fan speed 3**	**m³/h**	**1000**	**1400**
Acoustic power level		Lw	56	62
Acoustic pressure level*		Lp*	47	54

Big Single Fan speeds 1 - 2 - 3		GCB	Performance rating	
			1	2
At air flow of	**Fan speed 1**	**m³/h**	**620**	**770**
Acoustic power level		Lw	32	38
Acoustic pressure level*		Lp*	24	29
At air flow of	**Fan speed 2**	**m³/h**	**920**	**1150**
Acoustic power level		Lw	43	49
Acoustic pressure level*		Lp*	35	41
At air flow of	**Fan speed 3**	**m³/h**	**1200**	**1700**
Acoustic power level		Lw	50	59
Acoustic pressure level*		Lp*	42	51

* Conditions for measurement of acoustic pressure level Lp:
Measuring interval = 5 m. Room volume = 100 m³. Reverberation period = 0.5 s. Directional factor = 2 (hemisphere sound emission)

Performance ratings

Single Fan speeds 1 - 2 - 3		GCS	Performance rating		
			0	1	2
At air flow of	**Fan speed 1**	**m³/h**	**230**	**330**	**480**
Heating, 2 pipes, U0W / UWC		kW	2.9	4.4	6.0
Heating, 2 pipes, UWE (electrical)		kW	1.0	1.0	2.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	1.5	2.4	3.3
Heating, 4 pipes, UWW		kW	2.2	2.8	3.7
Cooling, 4 pipes, UWW		kW	1.5	1.9	2.6
At air flow of	**Fan speed 2**	**m³/h**	**310**	**480**	**710**
Heating, 2 pipes, U0W / UWC		kW	3.5	6.0	8.1
Heating, 2 pipes, UWE (electrical)		kW	1.0	1.0	2.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	1.8	3.3	4.4
Heating, 4 pipes, UWW		kW	2.7	3.7	4.8
Cooling, 4 pipes, UWW		kW	1.8	2.6	3.3
At air flow of	**Fan speed 3**	**m³/h**	**460**	**660**	**850**
Heating, 2 pipes, U0W / UWC		kW	4.7	7.6	9.2
Heating, 2 pipes, UWE (electrical)		kW	1.0	1.0	2.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	2.5	4.2	5.0
Heating, 4 pipes, UWW		kW	3.6	4.5	5.4
Cooling, 4 pipes, UWW		kW	2.5	3.2	3.7

Heating with pumped hot water: 70/50°C, tL1 +20°C;
cooling with pumped cold water: 6/12°C, tL1 +27°C, 46% relative humidity

Double Fan speeds 1 - 2 - 3		GCD	Performance rating	
			1	2
At air flow of	**Fan speed 1**	**m³/h**	**530**	**840**
Heating, 2 pipes, U0W / UWC		kW	7.3	10.8
Heating, 2 pipes, UWE (electrical)		kW	2.0	4.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	4.0	5.9
Heating, 4 pipes, UWW		kW	4.7	6.7
Cooling, 4 pipes, UWW		kW	3.2	4.6
At air flow of	**Fan speed 2**	**m³/h**	**740**	**1220**
Heating, 2 pipes, U0W / UWC		kW	9.7	14.4
Heating, 2 pipes, UWE (electrical)		kW	2.0	4.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	5.3	8.0
Heating, 4 pipes, UWW		kW	6.1	8.7
Cooling, 4 pipes, UWW		kW	4.2	6.0
At air flow of	**Fan speed 3**	**m³/h**	**1000**	**1400**
Heating, 2 pipes, U0W / UWC		kW	12.4	16.0
Heating, 2 pipes, UWE (electrical)		kW	2.0	4.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	6.8	8.8
Heating, 4 pipes, UWW		kW	7.6	9.4
Cooling, 4 pipes, UWW		kW	5.3	6.6

Heating with pumped hot water: 70/50°C, tL1 +20°C;
cooling with pumped cold water: 6/12°C, tL1 +27°C, 46% relative humidity

Performance ratings

Big Single Fan speeds 1 - 2 - 3		GCB	Performance rating 1	 2
At air flow of	**Fan speed 1**	**m³/h**	**620**	**770**
Heating, 2 pipes, U0W / UWC		kW	8.6	10.2
Heating, 2 pipes, UWE (electrical)		kW	2.0	3.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	4.9	5.9
Heating, 4 pipes, UWW		kW	5.3	6.3
Cooling, 4 pipes, UWW		kW	3.5	4.3
At air flow of	**Fan speed 2**	**m³/h**	**920**	**1150**
Heating, 2 pipes, U0W / UWC		kW	11.8	14.2
Heating, 2 pipes, UWE (electrical)		kW	2.0	3.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	6.7	7.9
Heating, 4 pipes, UWW		kW	7.2	8.4
Cooling, 4 pipes, UWW		kW	4.9	5.8
At air flow of	**Fan speed 3**	**m³/h**	**1200**	**1700**
Heating, 2 pipes, U0W / UWC		kW	14.6	18.9
Heating, 2 pipes, UWE (electrical)		kW	2.0	3.0
Cooling, 2 pipes, UW0 / UWC / UWE		kW	8.2	10.5
Heating, 4 pipes, UWW		kW	8.6	10.8
Cooling, 4 pipes, UWW		kW	5.9	7.4

Heating with pumped hot water: 70/50°C, tL1 +20°C;
cooling with pumped cold water: 6/12°C, tL1 +27°C, 46% relative humidity

DIMENSIONS AND WEIGHTS

Cassette-Geko®		Dimensions Height	 Width	 Depth	Weights
Single	**GCS**	**mm**	**mm**	**mm**	**kg**
Unit without design panel		298	575	575	23
Design panel		25	660	660	5
Double	**GCD**				
Unit without design panel		298	1175	575	45
Design panel		25	1260	660	9
Big Single	**GCB**				
Unit without design panel		322	822	822	36
Design panel		25	905	905	9

ACCESSORIES

Air-outlet side		
Single – Double – Big Single		
Spare filter set	Filter class: G1 (EN 779)	●

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.

www.dencohappel.com

DencoHappel®