

PRODUCT BROCHURE

Dehumidifier Units

CAIRfricostar®

***Efficient air handling for
small and private pools***





COMPETENCE IN HEAT EXCHANGERS

Because our engineers are geared to the future and are always thinking about ecologically more equitable and efficient solutions. Because our key components ensure the ecological and economically efficient exchange of heat.

We have the know-how and the technology

Trailblazing solutions for swimming pool climate control

Whether private, hotel or therapy pool: DencoHappel is your experienced partner for the precise climate control of smaller swimming pools. Since 1969, we have been engaged with this complex topic and have developed trailblazing solutions. CAIRfricostar represents the most modern state of technology. This system is especially designed for the utilization profile of smaller pools, such as flexible bathing times in private and hotel pools or the very different moisture discharge for therapy groups and rehabilitation spas. For this, one requires a reliable and flexibly reacting facility that exactly meets current demands and ensures physical well-being. With these product series, every smaller swimming pool can be air conditioned with the maximum requirements of today: safe, durable, reliable and absolutely energy-efficient – in total harmony with the philosophy of sustainability.

The climate control of swimming pools is one of the most discriminating tasks of airtreatment systems. They create an air temperature that is appropriate to the water temperature, so that swimmers do not freeze when outside of the pool. And they ensure that the air humidity is felt to be agreeable and not “oppressive”. The dehumidification also protects the building substance from mildew formation – here people and masonry likewise profit from the air conditioning.

Our solutions respond to the high demands on material strength with tried and tested materials and corrosion protection measures harmonized down to the slightest detail at every application. For instance, the air in normal indoor swimming pools is less aggressive than that in brine or sea water spas with its saline air. Here special configurations of the units provide additional protection and guarantee a long service life. CAIRfricostar is fitted with the most advanced technology for low energy consumption. Equipped with multi-stage heat recovery, the economical handling of resources is possible and the operating costs are kept low. The rest is contributed by the control unit: it selects the optimal operating mode depending on the opening times or the current air humidity. This way, only the power needed at the moment is demanded.



Your partner for swimming pool technology

- More than 40 years of experience in this field
- Customized systems for all types and sizes of pools
- Technically state-of-the-art
- Certified quality
- Compact solutions with high comfort
- Optimal energy efficiency
- Simple system integration
- Low maintenance costs



CAIRfricostar® IS FLEXIBLE

Because every pool is different

The swimming pool landscape has changed considerably in the last few decades. Especially the wellness trend has ensured that an enormous diversity of smaller pool types has arisen – on a private level as well as in hotels or health facilities. The requirements on the climate control are correspondingly very different. DencoHappel has continuously accompanied the market development and acquired unique know-how. This intense experience is in the current model lines of CAIRfricostar. The developments of this series impressively reflect modern pool diversity. With CAIRfricostar, architects and planners can find customized solutions for every kind of private and smaller pool. And all of them claim greatest possible efficiency. Because of their economic operation management, energy-saving characteristics and a long service life, the life cycle costs are correspondingly low.



- Energy efficiency
- Easy on the building substance
- Compact and space saving
- Flexible
- Hygienic
- Strong in design
- Economical
- Comfortable

Efficiency and sustainability – natural with CAIRfricostar®

Sustainability is the keyword of our time. With CAIRfricostar we have succeeded in creating a model series which also thoroughly convinces in this regard. The optimal energy efficiency of the models contributes considerably to the preservation of valuable resources and protects the environment. Decreasing operating costs simultaneously promote cost effectiveness – an advantage which rapidly pays for itself even for smaller spas and swimming pools.

Your advantages at a glance:

- Comprehensive market know-how of the DencoHappel specialists
- Energy-efficient and economical operating concepts
- CAIRfricostar as an answer to modern swimming pool diversity
- Tailored solutions for every requirement
- Planning support right from the beginning

CAIRfricostar® perfects the climate

CAIRfricostar® at a glance

- Functions dehumidification, heating, ventilation
- According to the standards of swimming pool technology VDI 2089
- Tested heat recovery according to EN308
- Hygiene-compliant configurations
- Electronic control or fully automatic DDC control for the continuously most favorable operating point
- 2- or 3-level heat recovery
- Relief of the building-side heating unit
- Diverse corrosion protection classes
- Low air velocities in the unit, i.e. small internal pressure losses for a reduction of the fan drive energy

The swimming pool dehumidification with CAIRfricostar ensures a pleasant indoor climate and reliably counteracts structural damage from too much moisture– and this with low energy input. For the dehumidification, for example with the Micro CAT series, the pool air is cooled down to the dew point. This in part already takes place in the recuperator (heat recovery), and depending on the unit type, at the evaporator of the heat pump. The dehumidified exhaust air is then partially released to the outside air, partially mixed with the fresh outside air and re-heated with the recuperator fresh air inlet. The surplus energy of the heat pump now brings the pre-heated fresh air with the condenser to an additional temperature level so that the pool supply air is warmer than its return air. Since the internal components of the CAIRfricostar are configured with regard to energy efficiency, the required electrical energy consumption can be kept low. Sophisticated control concepts regulate the most favorable operating point for every system type.

During the idle mode, the pool air is dehumidified in the recirculating air mode. During the night/idle period, the controller monitors the air conditions in the swimming pool. The dehumidification process is then initiated depending on air condition.

Intelligently controlled

An intelligent fan control helps to keep the energy consumption as low as possible. In pool mode, the recirculating air is mixed with fresh air according to VDI 2089. The fresh air share is thereby continuously adapted depending on the current water evaporation and the pool utilization. In summer mode and with a possible overheating of the swimming pool hall, the outside air is conducted around the recuperator via bypass. This bypass function is continuously carried out and allows the unit to work up to a purely outgoing air/fresh air operation or to ventilate the swimming pool hall. This functional principle is also used as “Free Night Cooling” during the night in order to maintain temperatures of indoor swimming pools at the required level.



Fans comply with ERP2015 standards



TESTED AND CERTIFIED

High production quality and reproducible data are the CAIRfricostar standard. All components are tested and certified. As a member at EUROVENT and the German Association of HVAC Manufacturers, our production factory, units, and components are regularly monitored and tested by an independent agency.

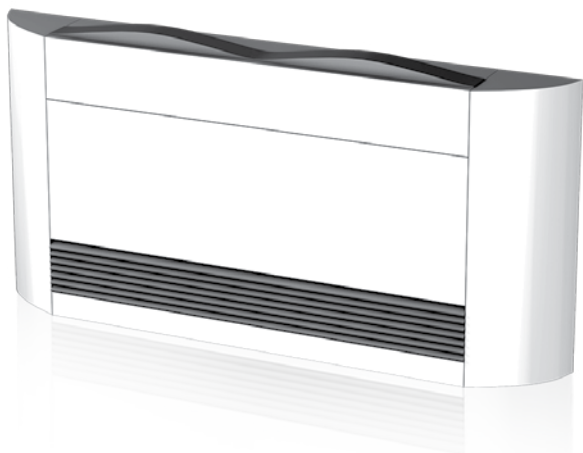
The integrated and freely programmable DDC control system from CAIRfricostar also offers many advantages. The user can inspect all important parameters and settings on a display and adapt them at need. The control system permits use with many conventional building management systems for remote maintenance and diagnosis. The control strategy is based on the technical equipment of the units. With many possible options, the unit can be adapted to every building.

With an optional pool water condenser, for instance, surplus heat can be released to the basin or a tank, a humidity shift permits an additional humidity setting during the night, and a temperature shift permits the change in air temperature depending on the water temperature, to name only a few examples.



Control System

4 series for all requirements



F800

The compact cabinet unit F800 unites form and function in an elegant manner. It is easy to install in private and smaller swimming pools. One electric power connection and one for the condensation water suffice. Thanks to the splash protection, installation in the vicinity of the pool is no problem. The unit is individually configurable – free choice of colors according to RAL color chart – and flexible in installation, which makes an optical integration in the swimming pool design possible. Upon request, also available as invisible solution behind a wall with especially small noise emission.



CAIRfricostar® CAU

This recirculating air dehumidification unit with heat pump for dehumidification and electronic control system was designed for installation in a separate plant room and is available in four model sizes from 750 to 4.000 m³/h. CAIRfricostar CAU ensures very high efficiency and systematic air exchange. The air connection to the swimming pool functions via ductwork. The modular configuration makes the unit suitable for small installation openings, also for retrofitting.



CAIRfricostar® Micro CWT and Micro CAT

Mixed-air units as high performance solutions for dehumidification: the compact and ready-to-install air conditioning units of the CAIRfricostar Micro series are characterized by compact dimensions, high efficiency and flexible assembly options. All important components were adapted to future energetic requirements. The duct connectors for the supply air, extract air, outside air and exhaust air are located on the unit's upper side to save space. The access to the integrated control cabinet is arranged laterally, so that the installation becomes a plug-and-play solution. The quadratic powerhouse nevertheless offers abundant output. The units can always be selected with (CAT) or without (CWT) heat-pump cycles. Corresponding to the air volume areas, the CAIRfricostar Micro-series is suitable for pools of about 30 m² to 145 m² water surface depending on the air conditions.

CAIRfricostar® Series				
	F800	CAU	Micro CWT	Micro CAT
Model size and capacity range	4 basic types 800 m³/h	4 model sizes from 750 – 4,000 m³/h	5 model sizes from 800 – 6,500 m³/h	5 model sizes from 800 – 6,500 m³/h
Functions	dehumidification and heating	dehumidification and heating	dehumidification, ventilation and heating	dehumidification, ventilation and heating
Model design	cabinet unit (decentral) with or without casing (recirculating-air unit)	modular (recirculating-air unit)	compact with air- duct connectors from above (mixed-air unit)	compact with air duct connectors from above (mixed-air unit)
Heat recovery	●	●	2-stage	3-stage
DDC control system			●	●
Electronic controls	●	●		
EC fan			●	●
Heat pump	●	●		●
ECOPLAT 2 Double heat exchanger			●	●
Corrosion protection		2 classes selectable	2 classes selectable	2 classes selectable
Application area	private pools	private pools	private, therapy, hotel- and small swimming halls, small showers and damp areas	private, therapy, hotel- and small swimming halls

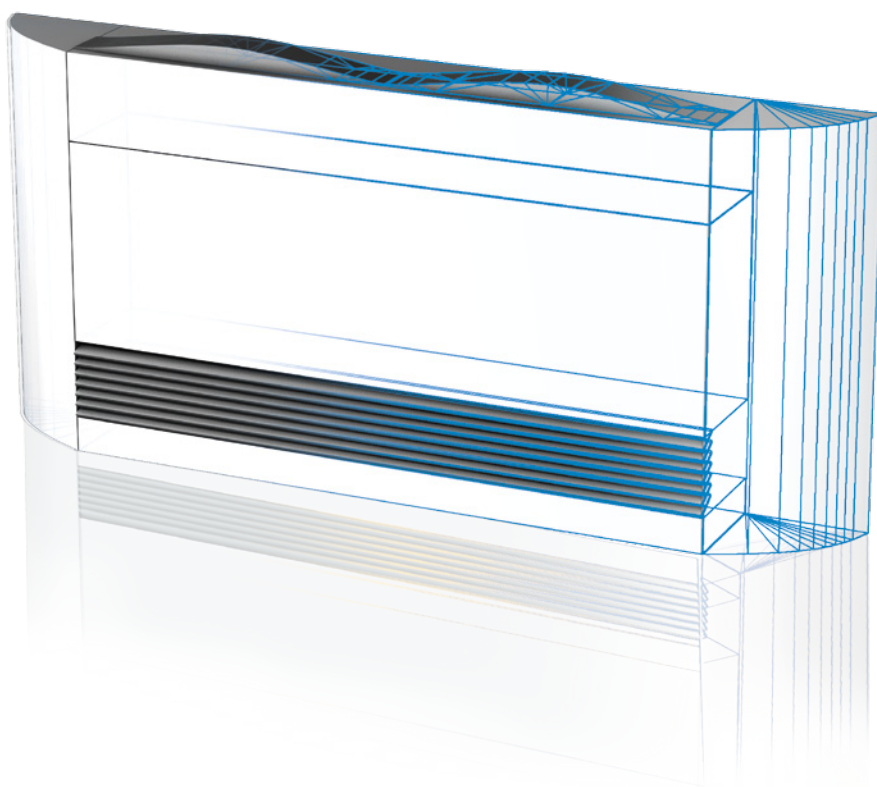
You will find solutions for larger pools or limited installation space in our brochure
 “CAIRfricostar – efficient climate control for public and commercial pools”.

Aesthetic and energy saving

Unit series F800		without casing				G = with casing			
Type F800		F8S	F8B	F8P	F8K	F8SG	F8BG	F8PG	F8KG
Dimensions, weight, and sound level									
Width	mm	1,450	1,528	1,570	1,570	1,660	1,660	1,660	1,660
Height	mm	751	751	751	751	800	800	800	800
Depth	mm	264	264	264	264	290	290	290	290
Weight (approx.)	kg	103	109	107	113	112	118	116	122
Noise level	db (A)	62	62	62	62	61	61	61	61
Sound pressure level ³⁾	db (A)	54	54	54	54	53	53	53	53

F800

- Decentralized solution for recirculating-air dehumidifier and heating (fresh air connection optional)
- Installation in the pool, in niches or neighboring rooms
- Thanks to splash protection (type of unit IPX5) it is also possible to install in pool vicinity
- Optical integration in the swimming pool setting
- 800 m³/h air volume
- Four basic types with or without casing
- Individually configurable and flexible in installation
- Electronic controller for regulation of the air condition
- By heat recovery up to 60 % energy saving in comparison to conventional ventilation
- Up to 60 % energy cost reduction
- All units are suited for a max. water surface of 50 m² and room air states from min. 20 °C / 40 % rel.h. and max. 36 °C / 60 % rel.h.
- Use in private pools and damp areas



Unit series F800		without casing					G = with casing		
Type F800		F8S	F8B	F8P	F8K	F8SG	F8BG	F8PG	F8KG
Basic features									
With pool water condenser			●		●		●		●
With PWW – Additional heater batteries				●	●			●	●
Dehumidification efficiency									
For recirculating air mode ¹⁾	kg/h	3.4	3.9	3.4	3.9	3.4	3.9	3.4	3.9
Heating capacity									
Max. heat emission to the air	kW	4.6	4.4	4.6	4.4	4.6	4.4	4.6	4.4
Max. heat emission to the water	kW	–	2.9	–	2.9	–	2.9	–	2.9
Fan									
Air flow	m³/h	800	800	800	800	800	800	800	800
Max. external pressure drop	Pa	20	20	20	20	20	20	20	20
Power consumption	kW	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Current consumption	A	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Compressor/ Scroll compressor									
Power consumption ¹⁾	kW	1.73	1.55	1.73	1.55	1.73	1.55	1.73	1.55
Current consumption	A	8.0	7.3	8.0	7.3	8.0	7.3	8.0	7.3
Refrigerant type		R407C	R407C	R407C	R407C	R407C	R407C	R407C	R407C
Refrigerant quantity	kg	1.0	1.3	1.0	1.3	1.0	1.3	1.0	1.3
Pool water condenser									
Medium inlet	°C	–	28	–	28	–	28	–	28
Medium volume flow	m³/h	–	0.7	–	0.7	–	0.7	–	0.7
Medium resistance	kPa	–	8.0	–	8.0	–	8.0	–	8.0
PWW additional heater battery									
Heating capacity at PWW 80 / 60 °C ²⁾	kW	–	–	3.1/4.0	3.1/4.0	–	–	3.1/4.0	3.1/4.0
Medium volume flow	m³/h	–	–	0.17	0.17	–	–	0.17	0.17
Medium resistance	kPa	–	–	1.7	1.7	–	–	1.7	1.7
Electrical connection values									
Max. power consumption	kW	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Max. operating current	A	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
Max. starting current	A	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
Operating voltage	V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Control voltage	VDC	24	24	24	24	24	24	24	24

¹⁾ Pool water temperature + 28 °C, room air state 30 °C / 60 % rel.h. (not to be considered for heat demand calculation)

²⁾ Recirculating air inlet temperature + 30 °C and fan stage I / II

³⁾ Sound pressure level with 50 m² water surface, 200 m² hall surface, 3 m hall height, 600 m³ room volume, absorption factor 0.075 (sound pressure level – 3 m distance – 1/4 sphere)

All data are rounded values and only serve as an overview. Exact data from the current configuration software Lplus.

Modular and efficient

Unit series CAIRfricostar® CAU – Series Standard ¹⁾									
Type CAU		015		025		030		037	
Unit dimensions									
Width	mm	760		760		760		760	
Height	mm	1,120		1,360		1,360		1,600	
Length	mm	1,680		1,800		1,800		1,720	
Air flow rate									
Minimum	m³/h	750	–	1,842	–	2,755	–	3,354	–
Maximum	m³/h	–	1,842	–	2,755	–	3,355	–	4,129
Nominal at dehumidification	m³/h	750	1,842	1,842	2,755	2,755	3,355	3,354	4,129
Nominal for ventilation 2/3	m³/h	500	1,228	1,228	1,836	1,836	2,236	2,236	2,752
Dehumidification efficiency									
Recirculating air mode ²⁾	kg/h	3.1	1.4	4.2	3.3	4.3	3.6	4.9	3.9
Heating capacity									
Air condenser without PWC mode	kW	7.0	8.0	13.0	13.8	16.2	16.6	19.8	20.1
Air condenser with PWC mode	kW	4.6	6.0	10.6	11.3	13.3	13.9	16.3	17.0
Pool water condenser ³⁾	kW	2.3	2.0	2.5	2.1	2.6	2.5	3.3	3.1
Re-heater ⁴⁾	kW	5.9	9.4	11.1	14.1	14.1	15.8	18.3	20.5

¹⁾ Standard series = max. air velocity approx. 2.8 m / s

²⁾ Hall air state 30 °C / 54 % rel.h.

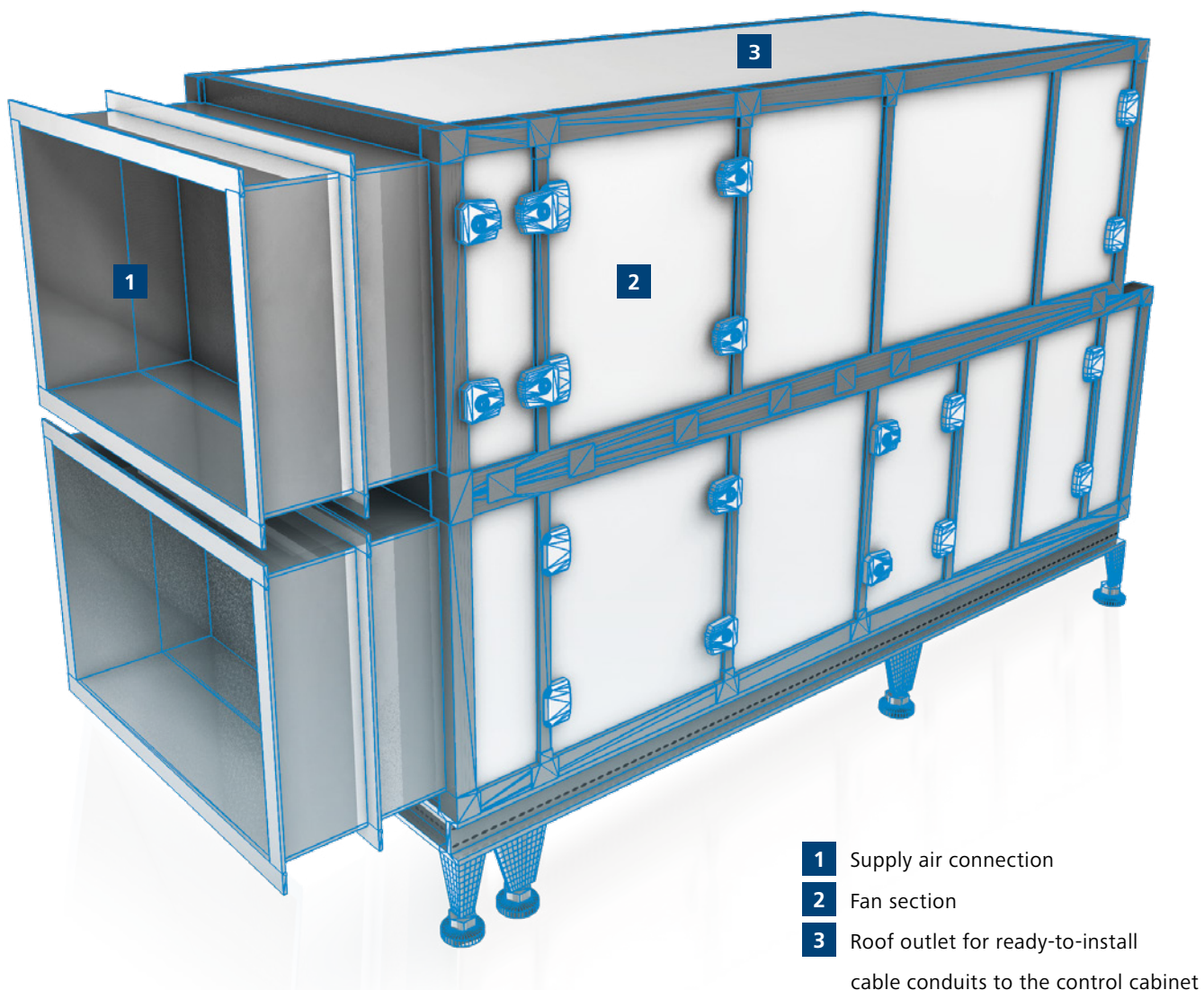
³⁾ Pool water condenser (PWC) = accessory item

⁴⁾ Inlet/outlet temperature = 70 °C / 50 °C

All data are rounded values and only serve as an overview. Exact data from the current configuration software *Lplus*.

CAIRfricostar® CAU

- Air handling unit for circulating airdehumidification and heating
- Installation in a separate plant room
- Connection to the swimming pool with ventilation ducts
- Four model sizes from 750 to 4,000 m³/h
- Efficient heat pump and electronic control system
- Use in private pools



The successful Micro Series

CAIRfricostar Micro CWT – highly efficient and compact

- Dehumidification, ventilation, and heating
- High Performance Configuration
- 5 model sizes, 800 to 6,500 m³/h
- Two-stage heat recovery
With ECOPLAT2 doubleplate exchanger
- Including energy-saving EC fan and modern DDC control
- Compact model design with air duct connections from above
- Use in therapy, hotel and small swimming pools as well as showers and damp areas

CAIRfricostar® Micro CAT – the compact professional

- Dehumidification, ventilation, and heating
- High Performance Configuration
- 5 model sizes, 800 to 6,500 m³/h
- 3-stage heat recovery
With ECOPLAT2 doubleplate exchanger and efficient heat pump
- Including energy-saving EC fan and modern DDC control
- Compact model design with air duct connections from above
- Use in therapy, hotel and small swimming pools

CAIRfricostar® Micro Series: strong, comfortable, compact

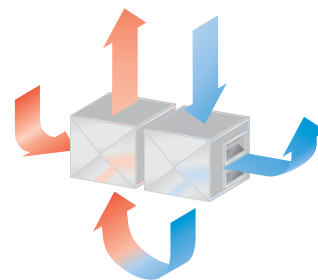
The compact and ready-to-install swimming pool air conditioning equipment of CAIRfricostar Micro Series is characterized by compact dimensions, high efficiency, and flexible assembly options. All important components were adapted to future energetic requirements. The smaller unit type requires about 1,800 mm height and a width of only 1,640 mm. The duct connections for the supply air, extract air, outside air and outgoing air are located on the unit's upper side to save space. The access to the integrated control cabinet is on the side, so that installation becomes a plug-and-play solution. The quadratic powerhouse nevertheless offers abundant capacity: air flow treatment of up to 1,500 m³/h is possible with the smallest overall depth of 760 mm. The four additional models even bring a total of 6,500 m³/h.

The dehumidification efficiencies extend from 7 kg/h for the small units up to over 41 kg/h for the large unit types. The units can always be selected with (CAT) or without (CWT) heat-pump cycles. If the dehumidification in recirculating air mode can take place during the night hours, for instance, this is likewise possible thanks to integrated recirculating air flaps. Low operating costs are ensured by a EUROVENT certified high-performance double plate heat exchanger according to EN308. It withdraws the return air heat and makes it available again to the supply air stream. Another characteristic is the highly-efficient panel filter with a large filter surface for long service intervals. They are located behind the fittings for extract air and outside air. The great dust-holding capacity with a 96 mm overall depth extends the exchange interval and thus reduces operating costs. The air is driven by modern EC fans of the most recent generation. They already satisfy the energetic standards of ERP2015 and thus likewise save costs. The DDC Control System is already integrated at the factory, where the prevailing conditions for the unit functions were specified with the swimming pool operator. The unit automatically selects the best mode of operation.

Corresponding to the air volume areas, the CAIRfricostar Micro Series is suitable for pools with about 30 m² to 145 m² water surface, depending on the air conditions.



- 1 EC fan
- 2 Re-heater
- 3 Air condenser
- 4 High efficiency recuperator
- 5 Filter
- 6 Mixing-air damper
- 7 Evaporator
- 8 Connection fitting



ECOPLAT2 –
double-plate heat exchanger

Micro Series with High Performance

Unit series CAIRfricostar® Micro CWT						
Type CWT		015	025	035	050	065
Unit dimensions						
Width	mm	760	760	760	1,080	1,440
Height	mm	1,800	1,800	2,080	2,080	2,080
Length	mm	1,640	2,280	2,760	2,760	2,760
Air flow rate						
Minimum	m³/h	800	1,400	2,400	3,400	4,900
Maximum	m³/h	1,500	2,500	3,500	5,000	6,500
Nominal	m³/h	1,100	1,800	2,500	4,000	5,500
Dehumid. capacity VDI _{nominal}	m³/h	7.0	11.4	15.9	25.4	35.0
V Nominal	m/s	1.5	1.5	1.8	1.8	1.8
Heating capacity						
Heat recovery	%	92	91	85	87	87
Heat recovery	kW	5.6	9.1	11.8	19.4	26.5
Re-heater ¹⁾	kW	10.4	15.8	21.4	35.4	49.2
Ext. pressure loss						
Ext. outside/supply air, Extract/outgoing air; for each	Pa	300	300	300	300	300
Energy input according to VDI 2089						
q̇ EL, WLW, O ²⁾	kWh/kg	0.003	0.004	0.003	0.002	0.003
Current consumption						
Supply / extract air fan, at air flow rating	kW	0.5/0.4	0.8/0.7	0.9/0.8	1.4/1.2	2.0/1.8
Unit total ³⁾	kW/A	2/3.2	3.3/5	3.3/5	6/9.2	6/9.2

¹⁾ Inlet/outlet temperature 70°C / 50°C, maximum heating power

²⁾ Specific consumption of electrical energy (annual average at 60 % pool load)

³⁾ Plus steering /controls /pumps, etc.

All data are rounded values and only serve as an overview. Exact data from the current configuration software *Lplus*.

Unit series CAIRfricostar® Micro CAT						
Type CAT		015	025	035	050	065
Unit dimensions						
Width	mm	760	760	760	1,080	1,440
Height	mm	1,800	1,800	2,080	2,080	2,080
Length	mm	1,640	2,280	2,760	2,760	2,760
Air flow rate						
Minimum	m³/h	800	1,400	2,400	3,400	4,900
Maximum	m³/h	1,500	2,500	3,500	5,000	6,500
Nominal (at dehumidification)	m³/h	1,100	1,800	2,500	4,000	5,500
V Nominal	m/s	1.5	1.5	1.8	1.8	1.9
Entfeuchtungsleistung						
According to VDI 2089, for nominal rate of airflow ¹⁾	kg/h	7.0	11.4	15.9	25.4	35.0
Idle mode (recirculating air)	kg/h	7.1	7.1	7.3	8.5	11.6
Heating capacity						
Air condenser, without PWC mode	kW	4.9	5.3	6.6	8.3	15
Air condenser, with PWC mode	kW	3.5	4.1	5.3	7.1	11.6
Pool water condenser (accessories)	kW	4.3	3.9	3.4	3.9	4.3
Heat recovery	kW	6.2	9.0	10.8	16.4	22.6
Heat recovery ⁴⁾	%	92	91	85	87	87
Re-heater ²⁾	kW	9	14	21	33	46
Ext. pressure loss						
External outside / supply air; Return/outgoing air; each	Pa	300	300	300	300	300
Energy input according to VDI 2089						
q̇ EL, WU, WP, AU ⁵⁾	kWh/kg	0.611	0.335	0.221	0.164	0.145
Current consumption						
Supply / extract air fan, at air flow rating	kW/A	0.5/0.4	0.7/0.5	0.9/0.8	1.4/1.1	1.9/1.6
Unit total ³⁾	kW/A	3.5/6.0	4.7/7.7	4.7/7.7	7.7/12.7	8.4/13.5

¹⁾ Hall air state 30 °C / 54 % r.h., outside air state 5 °C / 85 % r.h.

²⁾ Inlet /outlet temperature 70 °C / 50 °C; maximum heating capacity

³⁾ Plus steering /controls / pumps, etc.

⁴⁾ Heat recovery data = Max. winter values - 12 °C / 90 % rH

⁵⁾ Specific consumption of electrical energy (annual average at 60 % pool load)

All data are rounded values and only serve as an overview. Exact data from the current configuration software *Lplus*.



ABSOLUTELY RESISTANT

With a maximum corrosion protection of Class 2, a salt content up to 3 % can do no damage to the CAIRfricostar units.

CORROSION PROTECTION CLASSES

That is unique on the market

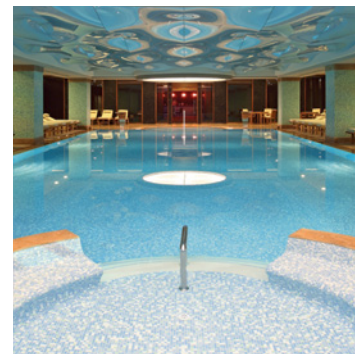
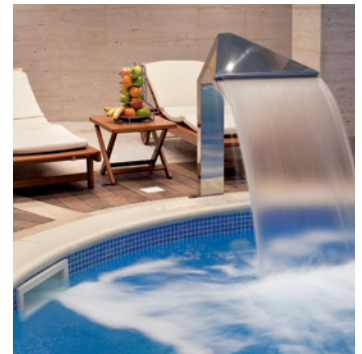
Where there is water and high air humidity, the threat of corrosion is great. We therefore routinely prepare our systems with corrosion protection to prevent them from rusting. This ensures the long-term reliability of all functions. The protected quality and long service life of DencoHappel units is a decisive factor in their low life-cycle costs. Depending on pool type and water quality (water quality according to DIN 19643), the models can be furnished with two different corrosion protection classes.

Protection Class 1 – Standard pools with drinking water supply

- Casing – internal and external skin coated RAL 9002
- Casing frame aluminum-coated
- Fixing materials stainless steel 1.4571, aluminum or coated
- Guide rails in the floor region stainless steel 1.4571 coated
- Damper blades of aluminum with sealing lips, motor actuators IP54
- Fans and components are coated
- Heat exchanger copper/aluminum, frame AIMg3
- Copper pipe plasticized/painted
- Chrome molybdenum Bumax screws
- Coil drip tray stainless steel 1.4571 powder coated

Protection class 2 – pools in coastal regions and / or water salt content to approx. 3 %

- Casing – internal and external skin coated RAL 9002
- Casing frame aluminum-coated
- Fixing material stainless steel 1.4571, or aluminum marine lacquer finishing
- Guide rails in the floor region stainless steel 1.4571 marine lacquer finishing
- Damper blades of aluminum with sealing lips, coated, special motor actuators IP66
- Fans and components coated, screws painted
- Heat exchangers epoxy coated, frame AIMg3
- Copper pipes plasticized / painted
- Compressor marine lacquer coating
- Condensate tray stainless steel 1.4571 powder coated
- Chrome molybdenum Bumax screws



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

REFERENCES

CAIRfricostar® in operation



Hotel Neuklostersee, Nakenstorf

Pool and steam bath, air conditioned with CAIRfricostar

Whether private, therapy or hotel pool: in smaller spas of all types, CAIRfricostar provides precision climate control in the signs of the times. Feel-good quality. Economical and ecological. Here we present some selected examples.



Menden swimming pool

Wellness oasis, air-conditioned with CAIRfricostar



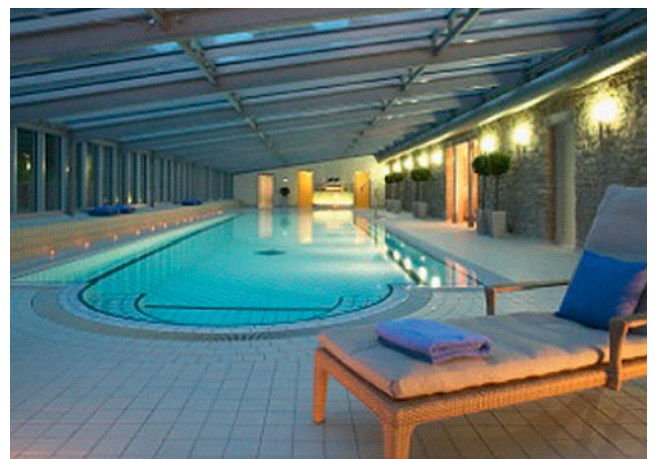
Pocking swimming pool

Wellness oasis, air-conditioned with CAIRfricostar



Hotel Adlon-Spa, Berlin

Hotel swimming pool, air conditioned with CAIRfricostar



Schlosshotel Münchhausen, Aerzen

Wellness swimming pool, air conditioned with CAIRfricostar

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.

