

► Heating and Cooling with Refrigerants  
Overview

# Heating and Cooling with Refrigerants

► Overview

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## Functions



Heating



Cooling



Ventilation

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# Heating and Cooling with Refrigerants

Discover the diversity of its options

Kampmann GmbH is facing up to the global challenge to act and conduct business sustainably. For this reason, we offer our well-known products in a range of designs for the heating, air conditioning and ventilation of buildings.

This brochure outlines Kampmann products for use with refrigerants. They include almost all conventional refrigerants.

For a more sustainable approach, Kampmann GmbH supports the trend towards using refrigerants with low greenhouse potential, which is why these products can also be operated using the natural cooling agent CO<sub>2</sub>.

For this, the coils used feature significantly thicker walls.

These products are available as "direct evaporation" models and have already been used for many years for heat recovery from chiller plants. They can also be connected to VRF systems.

The products are also available with water-operated heat exchangers. These models provide the option of reducing the volume of refrigerant needed in the pipework and require a heat carrier, such as a plate heat exchanger, to provide the transition from refrigerant to water.

The products listed here offer other energy-saving features, such as EC fans and Tandem technology, as well as being suitable for heat recovery and designed for maximum energy efficiency.

## Overview



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2



3

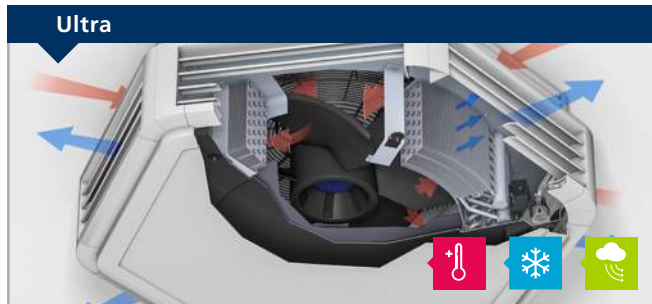


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- 1 Ultra Ceiling Unit
- 2 Venkon Fan Coil
- 3 Tandem 365 Door Air Curtain
- 4 Airblock FG Air Handling Unit

# Products with Refrigerants

## Overview



### Article Group 1.54

#### Unit Heater Ceiling Unit

##### Casing

- ▶ contemporary plastic casing
- ▶ with 6-sided air outlets, each with six pre-set defined adjustment angles

##### Fan

- ▶ sickle blade axial fans
- ▶ EC fans

##### Heat exchanger

- ▶ circular design for maximum output with minimal dimensions
- ▶ conventional refrigerant
- ▶ CO<sub>2</sub>
- ▶ suitable for LPHW/CHW

##### Installation options

- ▶ ceiling installation

##### Equipment

- ▶ all units in the range come complete with fitted bracket set

##### Applications

- ▶ supermarkets, retail stores or exhibitions

### Article Group 1.48

#### Fan Coil

- ▶ decentralised façade ventilation units for heating and cooling
- ▶ for new build or for refurbishments
- ▶ whisper-quiet design

##### Fan

- ▶ large-size, slow-running radial fans
- ▶ continuously variable EC fans
- ▶ IP44 rated

##### Heat exchanger

- ▶ conventional refrigerant
- ▶ LPHW/CHW

##### Installation options

- ▶ wall-mounted
- ▶ ceiling installation
- ▶ free-standing installation

##### Equipment

- ▶ air filter (ePM10>50% / ePM1>50%) optional
- ▶ complies with VDI 6022 hygiene regulations

**Tandem 365****Airblock FG****Article Group 2.52****Door Air Curtain**

- ▶ for controlled screening of cold air across open doors
- ▶ up to 38% energy savings through the patented separation of ambient and warm air streams

**Fan**

- ▶ large-size EC-radial fans

**Max. discharge height**

- ▶ 3.2 – 4.0 m

**Heat exchanger**

- ▶ conventional refrigerant
- ▶ CO<sub>2</sub>
- ▶ LPHW

**Installation options**

- ▶ ceiling installation

**Equipment**

- ▶ separate unheated ambient air stream for screening
- ▶ attractive casing

**Article Group 1.50****Air Handling Unit**

- ▶ slim-line unit for heating, cooling, ventilation and filtering
- ▶ for use with fresh, mixed or recirculating air, heating or cooling mode

**Fan**

- ▶ direct-driven radial fan with backward-curved impeller
- ▶ continuously variable EC fans

**Heat exchanger**

- ▶ cooling or heating with copper/aluminium element suitable for use with refrigerant
- ▶ CO<sub>2</sub>
- ▶ LPHW/CHW

**Installation options**

- ▶ indoor installation
- ▶ for installation in suspended ceilings

**Equipment**

- ▶ extensive accessories, modular system:
  - air filter (ISO ePM2.5 65% / H13)
  - mixed air systems
  - heat recovery module with counterflow plate heat exchanger for over 90% heat recovery
  - sound absorber

**Applications**

- ▶ for use as overpressure systems for meat counters

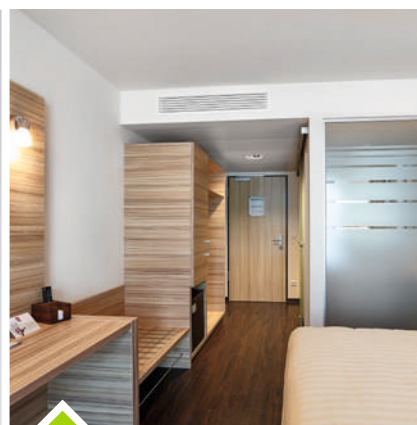
# Products with Refrigerants

At a glance



Venkon

Whisper-quiet fans



Venkon

Fan coil, recirculating air.  
Heating, cooling and filtering  
with maximum comfort.



Tandem 365

Door air curtain with Tandem  
technology. Ambient and warm  
air stream for effective cold air  
screening.

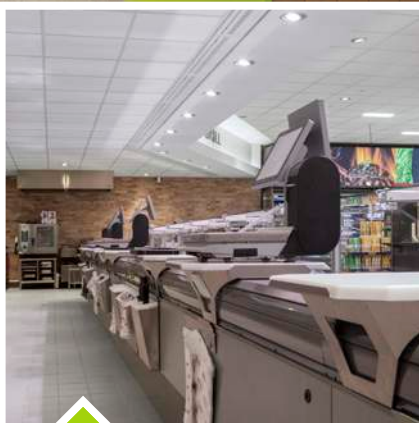






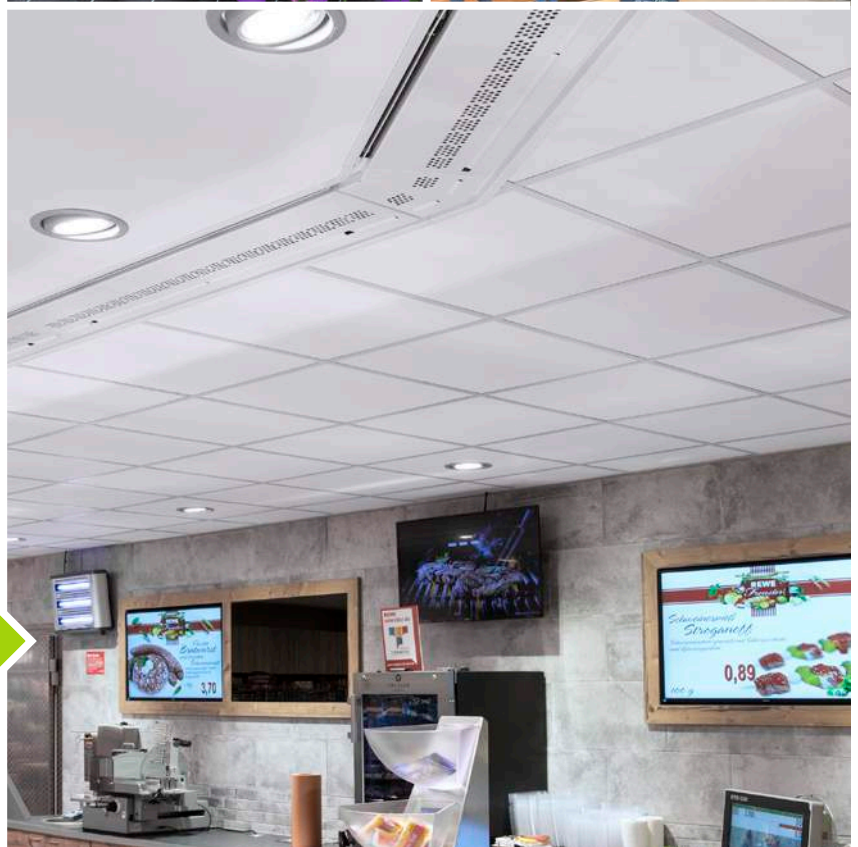
## Ultra

Ceiling unit for heating, cooling, ventilation within architectural interiors. Meets the most exacting demands in terms of design and comfort.



## Airblock FG

Air handling unit for heating, cooling, ventilation and filtering. For installation in suspended ceilings, with heat recovery.



# Ultra

## Product Information



### Product Features

- ▶ minimal height due to circular heat exchanger
- ▶ design reliability thanks to standardised accessories
- ▶ hexagonal housing design for optimum air distribution with heating and cooling



### Features

- Installation** ▶ ceiling-mounted, under-ceiling unit
- Air flow** ▶ recirculating air

### Technical Data

#### Heat output<sup>1)</sup>

8.1 – 14.0 kW

#### Cooling output<sup>2)</sup>

8.0 – 11.9 kW

#### Sound pressure level<sup>3)</sup>

44 – 52 dB(A)

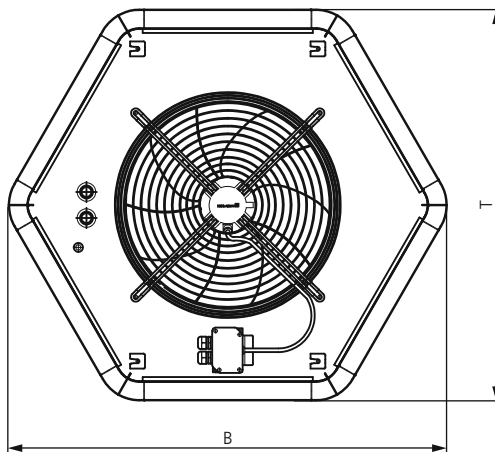
#### Sound power level

53 – 61 dB(A)

#### Heat exchanger

- ▶ conventional refrigerant
- ▶ CO<sub>2</sub>
- ▶ LPHW/CHW

### Technical drawing



Top view (example)

### Product versions

	Height	Width	Depth
Series 85	330	1004	900
Series 96	330	1117	1050

Dimensions [mm]

<sup>1)</sup> Liquefaction temperature: 43°C undercooling 2 K, refrigerant R410 A, entering air temperature 20°C / CO<sub>2</sub>: Gas On / Off 110°C / 40°C

<sup>2)</sup> Evaporation temperature: 10°C, overheating 6 K, refrigerant R410 A, entering air temperature 27°C / 48 %

<sup>3)</sup> Sound pressure level taken in a highly sound-absorbent room at a distance of 3 m

# Ultra

Ceiling unit for heating, cooling, ventilation in large rooms.

Model	Heat output <sup>1)</sup>	Cooling output <sup>2)</sup>	Air volume	Sound pressure level <sup>3)</sup>	Voltage supply	Fan speed stages	Power consumption	Max. mounting height	Throw	Weight	Article no.
	[kW]	[kW]	[m³/h]	[dB(A)]	[V]		[W]	[m]	[m]	[kg]	
<b>1.54 Heat exchanger for conventional refrigerant heating/cooling (combined exchanger)</b>											
85	10,0/8,1	9,6/8,0	2750/1990	52/45	400	2	140/80	3,3/3,0	5,5/4,6	37	154000853836*
85	10	9,6	2750	52	230	1	130	3,3	5,5	37	154000853816*
96	12,6/10,2	11,9/9,9	3520/2520	51/44	400	2	170/100	3,6/3,2	6,0/5,0	47	154000963838*
96	2,3–12,6	2,2–11,9	560–3610	12–50	230	infinitely variable EC fans	---	3,6/3,2	6,0/5,0	48	154000963833
<b>1.54 Heat exchanger for conventional refrigerant , heating only (liquefier)</b>											
96	14/11,2	---	3520/2520	51/44	400	2	170/100	3,6/3,2	6,0/5,0	48	154000963638*
96	2,5–14	---	560–3610	12–50	230	infinitely variable EC fans	---	3,6/3,2	6,0/5,0	48	154000963633
<b>1.54 Heat exchanger for CO<sub>2</sub> heating/cooling (combined exchanger)</b>											
96	3,8–20,6	1,6–9,5	560–3610	12–50	230	infinitely variable EC fans	---	3,6/3,2	6,0/5,0	48	154000963534
<b>1.54 Heat exchanger for CO<sub>2</sub>, heating only (liquefier)</b>											
96	4,2–22,1	---	560–3610	12–50	230	infinitely variable EC fans	---	3,6/3,2	6,0/5,0	48	154000963334
<b>1.54 Control accessories (fitted)</b>											
Evaporation temperature limit thermostat										*T	
Evaporation temperature limit thermostat and repair switch										*TR	

Available direct evaporation heat exchanger (heating / cooling)				
R410A	CO <sub>2</sub>	R134A	R404A	R407C
•	•	•	•	•

Performance data other than for R410A and CO<sub>2</sub> on request. Information for water heat exchangers is available in conventional Kampmann product literature

Max. pressure rating for conventional refrigerant: 48 bar

Max. pressure rating for CO<sub>2</sub>: 120 bar

# Venkon

## Product Information



### Product features

- ▶ hygiene-certified in line with VDI 6022 by using optional filter ePM10>50%
- ▶ EC fans
- ▶ whisper-quiet fans
- ▶ optionally with condensate pump fitted
- ▶ available without casing



Venkon | Ceiling casing



Venkon | Wall-standing casing

### Features

**Installation** ▶ wall- or ceiling-mounted

### Technical Data

#### Heat output <sup>1)</sup>

1.0 – 7.2 kW

#### Cooling output <sup>2)</sup>

0.67 – 6.3 kW

#### Sound pressure level <sup>3)</sup>

21 – 42 dB(A)

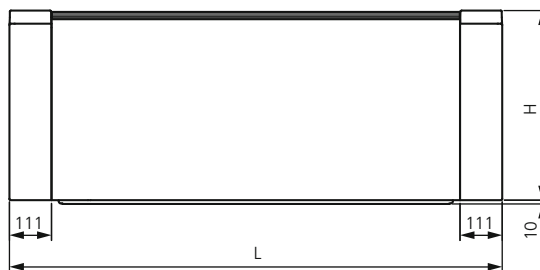
#### Sound power level

27 – 58 dB(A)

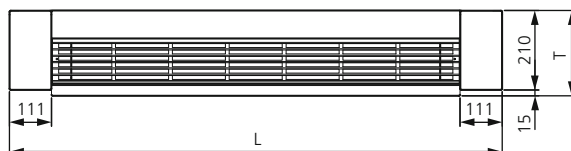
#### Heat exchanger

- ▶ conventional refrigerant
- ▶ CO<sub>2</sub>
- ▶ LPHW/CHW

### Technical drawing



Front view, wall-hanging casing (example)



Front view of ceiling casing (example)

### Product versions

#### Models

#### Lengths (L)

1	850
2	1000
3	1150
4	1300
5	1450
6	1600
7	2000

#### Depth (D)

##### Wall-mounted

225

##### Ceiling-mounted

235

#### Height (H)

510

Wall-hanging

650

Wall-mounted/  
free-standing

670

Ceiling

Dimensions [mm]

<sup>1)</sup> Liquefaction temperature: 43°C undercooling 2 K, refrigerant R410 A, entering air temperature 20°C / CO<sub>2</sub>: Gas On / Off 110°C / 40°C

<sup>2)</sup> Evaporation temperature: 10°C, overheating 6 K, refrigerant R410 A, entering air temperature 27°C / 48 %

<sup>3)</sup> The sound pressure levels were calculated with assumed room insulation of 8 dB(A).

This corresponds to a distance of 2 m, a room volume of 100 m<sup>3</sup> and a reverberation time of 0.5 s (in accordance with VDI 2081).



# Venkon

Fan coils, recirculating air. Heating, cooling and filtering with maximum comfort.

	Model	Heat output <sup>1)</sup>	Cooling output <sup>2)</sup>	Air volume	Sound pressure level <sup>3)</sup>	Sound power level	Voltage supply	Fan speed stages	Power consumption	Current consumption	Weight (with / without casing)	Article no.
		[kW]	[kW]	[m³/h]	[dB(A)]	[dB(A)]	[V]		[W]	[A]	[kg]	
1.48	Heat exchanger for conventional refrigerant heating/cooling (combined exchanger)											
	1	1020–2070	670–1270	150 – 370	21 – 41	27 – 57	230	infinitely variable EC fans	13 – 62	0,13 – 0,27	26,5/18,5	14851UL0B12FEC
	2	1230–2470	830–1560	180 – 420	21 – 41	26 – 55			13 – 64	0,13 – 0,28	30,0/21,0	14851UL0B22FEC
	3	1570–3020	1600–3020	240 – 560	21 – 39	28 – 55			12 – 68	0,15 – 0,34	34,0/24,0	14851UL0B32FEC
	4	1730–3450	1770–3430	260 – 620	21 – 39	27 – 54			13 – 73	0,15 – 0,36	41,0/27,0	14851UL0B42FEC
	5	1950–3980	1930–3710	280 – 650	21 – 39	26 – 53			13 – 73	0,15 – 0,36	48,0/32,0	14851UL0B52FEC
	6	2850–5700	2760–5140	420 – 990	24 – 43	33 – 58			26 – 129	0,28 – 0,59	57,0/36,0	14851UL0B62FEC
	7	3400–7240	3330–6370	500 – 1230	24 – 42	34 – 58			26 – 145	0,30 – 0,71	69,0/46,0	14851UL0B72FEC
1.48	Heat exchanger for CO <sub>2</sub> refrigerant heating/cooling (combined exchanger)											
	1	1900–3800	550–1300	150 – 370	21 – 41	27 – 57	230	infinitely variable EC fans	13 – 62	0,13 – 0,27	26,5/18,5	14851UL0B12CEC
	2	2500–4800	650–1470	180 – 420	21 – 41	26 – 55			13 – 64	0,13 – 0,28	30,0/21,0	14851UL0B22CEC
	3	3100–5800	860–1970	240 – 560	21 – 39	28 – 55			12 – 68	0,15 – 0,34	34,0/24,0	14851UL0B32CEC
	4	3500–6800	940–2180	260 – 620	21 – 39	27 – 54			13 – 73	0,15 – 0,36	41,0/27,0	14851UL0B42CEC
	5	3940–7460	1000–2290	280 – 650	21 – 39	26 – 53			13 – 73	0,15 – 0,36	48,0/32,0	14851UL0B52CEC
	6	5600–10400	1560–3400	420 – 990	24 – 43	33 – 58			26 – 129	0,28 – 0,59	57,0/36,0	14851UL0B62CEC
	7	6600–11140	1860–4200	500 – 1230	24 – 42	34 – 58			26 – 145	0,30 – 0,71	69,0/46,0	14851UL0B72CEC
1.48	Accessories											
	Model	1	2	3	4	5	6	7				
	Wall-hanging casing	14832UB0W102	14832UB0W202	14832UB0W302	14832UB0W402	14832UB0W502	14832UB0W602	14832UB0W702				
	Wall-standing casing	14832UB1W102	14832UB1W202	14832UB1W302	14832UB1W402	14832UB1W502	14832UB1W602	14832UB1W702				
	Free-standing casing	14832UB0S102	14832UB0S202	14832UB0S302	14832UB0S402	14832UB0S502	14832UB0S602	14832UB0S702				
	Ceiling casing	14832UB1D102	14832UB1D202	14832UB1D302	14832UB1D402	14832UB1D502	14832UB1D602	14832UB1D702				
	Round pipe connection unit	14835BB0B105	14835BB0B205	14835BB0B305	14835BB0B405	14835BB0B505	14835BB0B605	14835BB0B705				
	Condensate tray, injection valve, wall-mounted	14834AL0W001										
	Condensate tray, injection valve, ceiling-mounted	14834AL0D001										
	Condensation pump	14834AB0B002										

Available direct evaporation heat exchanger (heating / cooling)			
R410A	R134A	R404A	R407C
•	•	•	•

Performance data other than for R410A and CO<sub>2</sub> on request. Information for water heat exchangers is available in conventional Kampmann product literature.

max. pressure rating for conventional refrigerant: 48 bar

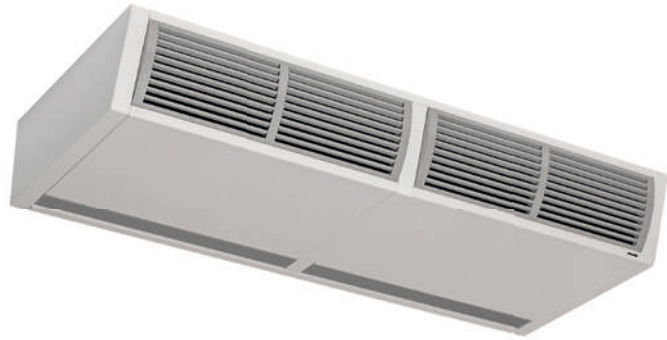
# Tandem 365

## Product Information



### Product features

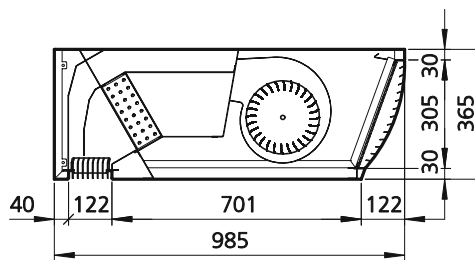
- ▶ 38 % energy savings using Tandem technology
- ▶ minimal heating requirement with the same screening effect



### Features

- Installation** ▶ wall or ceiling-mounted horizontal/vertical
- Construction** ▶ Factory-cased unit (extension possible)
- Door air curtains** ▶ ambient and warm air stream

### Technical drawing



Cross-section

### Technical Data

**Heat output**<sup>1)</sup>  
5.0 – 16.7 kW

**Air volume**  
1090 – 8480 m<sup>3</sup>/h

**Sound pressure level**<sup>2)</sup>  
33 – 67 dB(A)

**Sound power level**  
49 – 83 dB(A)

**Max. discharge height**  
3.2 – 4.0 m

- Heat exchanger**
- ▶ conventional refrigerant
  - ▶ CO<sub>2</sub>
  - ▶ LPHW

### Product versions

#### Tandem 365

Models	Lengths
12	1250
20	2000
27	2750

Depth (D)	Height (H)
985	365

Dimensions [mm]

<sup>1)</sup> Liquefaction temperature: 43°C undercooling 2 K, refrigerant R410 A, entering air temperature 20°C / CO<sub>2</sub>: Gas On / Off 110°C / 40°C

<sup>2)</sup> The sound pressure levels was calculated based on an assumed room insulation of 16 dB(A).

This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0 s (in accordance with VDI 2081)

# Tandem 365

Door air curtains with Tandem technology.

	Model	Heat output <sup>1)</sup>	Cooling output	Air volume	Sound pressure level <sup>2)</sup>	Voltage supply	Fan speed stages	max. mounting height	max. door width	Weight	Article no.
		[kW]	[kW]	[m³/h]	[dB(A)]			[m]	[m]	[kg]	
2.52	Heat exchanger for conventional refrigerant , heating only (liquefier)										
	12	3,6–7,4	–	1090–3090	33–64	230 V, 50/60 Hz	infinitely variable	4,0	1,25	94	252003212380
	20	6,3–13,7	–	1860–5830	37–66				2,00	151	252003220380
	27	8,8–20,1	–	2550–8480	38–67				2,75	200	252003227380
2.52	Heat exchanger for CO <sub>2</sub> , heating only (gas cooler)										
	12	4,5–8,0	–	1090–3090	33–64	230 V, 50/60 Hz	infinitely variable	4,0	1,25	94	252003212350
	20	5,3–9,0	–	1860–5830	37–66				2,00	151	252003220350
	27	11,8–22,8	–	2550–8480	38–67				2,75	200	252003227350

<sup>1)</sup> Refrigerants: Liquefaction temperature: 43 °C undercooling 2 K, refrigerant R410 A, entering air temperature 20°C

CO<sub>2</sub>: Gas On / Off 110 °C / 40 °C entering air temperature 20°C

<sup>2)</sup> The sound pressure level was calculated with assumed room insulation of 16 dB (A).

This corresponds to a distance of 3 m, a room volume of 2000 m³ and a reverberation time of 1,0 s (in accordance with VDI 2081).

<b>2.52</b>	<b>Accessories</b>			
	<b>Model</b>	<b>12</b>	<b>20</b>	<b>27</b>
	Wall bracket RAL 9016	252000200890	252000200890	252000200892
	Ceiling bracket RAL 9016	252000200895	252000200895	252000200897

Available direct evaporation heat exchanger (heating / cooling)				
R410A	CO <sub>2</sub>	R134A	R404A	R407C
•	•	•	•	•

Performance data other than for R410A and CO<sub>2</sub> on request. Information for water heat exchangers is available in conventional Kampmann product literature.

max. pressure rating for conventional refrigerant: 48 bar

max. pressure rating for CO<sub>2</sub>: 120 bar

# Airblock FG

## Product Information



### Product features

- ▶ slim-line construction
- ▶ air filter options for every application (e.g. particle filters)
- ▶ EC fans



### Features

- Installation** ▶ indoor installation, for installation in suspended ceilings

### Technical Data

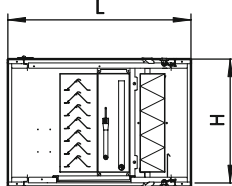
**Air volume unit combination**  
**Exhaust air and chiller module**  
 330–6100 m³/h

#### Heat exchanger

- ▶ conventional refrigerant
- ▶ CO<sub>2</sub>
- ▶ LPHW/CHW

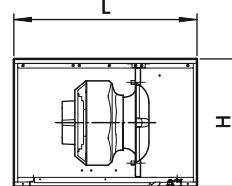
### Technical Drawing

Cross-section



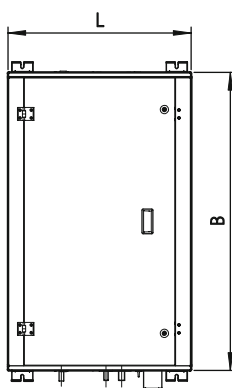
Chiller module

Cross-section

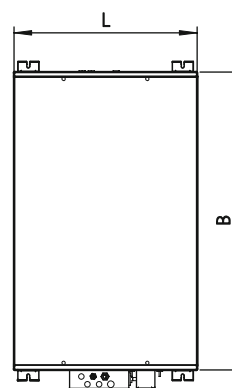


Fan unit

Plan view



Plan view



### Product versions

Models	Lengths (L) Chiller module Direct evaporator	Lengths (L) Fan unit	Width (W)	Height (H)
6	└ 700 ─┘	└ 600 ─┘	740	390
7	└ 700 ─┘	└ 600 ─┘	940	
8	└ 700 ─┘	└ 700 ─┘	1140	490
9	└ 700 ─┘	└ 700 ─┘		

Dimensions [mm]



# Airblock FG

Slim-line units for heating, cooling, ventilation and filtering.

	Model	Cooling output <sup>1)</sup>		Heat output <sup>2)</sup>		Air volume <sup>3)</sup>	Filter class <sup>4)</sup>	Voltage supply	Fan speed stages	Max. power consumption	Article no. Supply air module / Exhaust air module
		Refrigerant R410A	Refrigerant CO <sub>2</sub>	Refrigerant R410A	Refrigerant CO <sub>2</sub>						
		[kW]		[kW]		[m³/h]		[V]		[W]	
1.50	Airblock FG Supply air module (liquefier or gas cooler)										
	6	2,6–4,3	3,3–5,1	–	–	500–1100	ISO ePM2,5 65%	230 V, 50/60 Hz	infinitely variable	170	150006300300* / 150006300600*
	7	4,3–6,6	5,6–8,4	–	–	900–1900				340	150007300300* / 150007300600*
	8	7,2–9,2	8,6–11,6	–	–	1700–2700				730	150008300300* / 150008300600*
	9	10,8–12,7	12,7–14,7	–	–	2800–3800				1460	150009300300* / 150009300600*
1.50	Airblock FG Chiller module (direct evaporator)										
	6	–	–	1,9–3,4	1,8–3,5	400–1000	ISO ePM10 70%	230 V, 50/60 Hz	infinitely variable	170	150006300300* / 150006300600*
	7	–	–	3,7–5,6	3,6–6,1	900–1900				340	150007300300* / 150007300600*
	8	–	–	6,2–8,5	6,1–9,1	1700–3200				730	150008300300* / 150008300600*
	9	–	–	10,0–12,3	10,7–13,8	3500–5400				1460	150009300300* / 150009300600*

<sup>1)</sup> Refrigerants: Liquefaction temperature: 43 °C undercooling 2 K, refrigerant R410 A, entering air temperature 20°C

CO<sub>2</sub>: Gas On / Off 110 °C / 40 °C, Entering air temperature 20°C

<sup>2)</sup> Refrigerants: Evaporation temperature: 10°C, overheating 6K, refrigerant: R410 A, entering air temperature: 27°C / 48% relative humidity

CO<sub>2</sub>: Evaporation temperature: 10°C, overheating 6K, refrigerant: CO<sub>2</sub>, entering air temperature: 27°C / 48% relative humidity

<sup>3)</sup> Including chiller module with ePM2,5>65% filter (accessory) and droplet separator (accessory)

<sup>4)</sup> Accessories

Control accessories (additional to the unit type)

\*P00 effective pressure display, digital

\*V00 volumetric flow control via effective pressure

<b>1.50</b>	<b>Accessories</b>			
Model	6	7	8	9
Chiller module as direct evaporator <sup>5)</sup>	150006302230*	150007302230*	150008302230*	150009302230*
Chiller module as direct evaporator <sup>6)</sup>	150006302250*	150007302250*	150008302250*	150008302250*
Droplet separator	150006002010	150007002010	150008002010	150009002010
Compact Filter ePM2,5>65%	150006013270	150007013270	150008013270	150009013270
Bag Filter ePM10>85%	150006303170*	150007303170*	150008303170*	150009303170*
Particle filter module H13	---	150007303130*	150008303130*	150009303130*
Heat recovery module	150006301700*	150007301700*	150008301700*	150009301700*

<sup>5)</sup> including mounting options for compact filter and droplet separation

<sup>6)</sup> for CO<sub>2</sub>, incl. mounting options for compact filter and droplet separator

Control accessories (additional to the unit type)

\*00D analogue filter pressure display

\*00P Filter pressure display, digital

Available direct evaporation heat exchangers (heating / cooling)				
R410A	CO <sub>2</sub>	R134A	R404A	R407C
•	•	•	•	•

Performance data other than for R410A and CO<sub>2</sub> on request. Information on water heat exchangers is available in conventional Kampmann product literature.

max. pressure rating for conventional refrigerant: 48 bar, for CO<sub>2</sub>: 120 bar

# Kampmann. Genau mein Klima.

With over 950 employees at 16 locations around the world, Kampmann is one of the major players in the construction and building services industries. Kampmann systems for heating, cooling and ventilation are at the forefront of different market segments today.



Traditionally, Kampmann's expertise has focused on series production with an extraordinary variety of options, as well as on visually attractive, custom-made, project-based solutions.

Outstandingly well-trained, skilled personnel in our three factories produce Kampmann-quality products for customers around the world. In addition to the company's headquarters in Lingen/Lower Saxony, housing administration and production, Kampmann GmbH has two further production sites in Saxony-Anhalt and in Łęczyska, Poland.

In the spring of 2011, Kampmann acquired a majority stake in NOVA Apparate GmbH, Donaueschingen. NOVA serves ventilation manufacturers with centralised units, while Kampmann serves heating contractors with decentralised units. Centralised and decentralised air conditioning and ventilation technology grow together.

Kampmann UK Ltd., established in 2013, is responsible for the sale and distribution of Kampmann HVAC products in the United Kingdom.

emco Klima GmbH has been working as part of the Kampmann group of companies since 2018, which provides an environment clearly focussed on the building services sector for the company's knowledge and expertise in air outlets, decentralised ventilation systems, chilled ceilings and controls.

Exciting synergies become possible through the cooperation of professionals in the merged companies. All customers benefit from this and can now access even more comprehensive and coordinated system solutions.

**NOVA**

Nova-klima.de

**emco**

Emco-klima.com



◀ **Kampmann GmbH head office in Lingen (Ems)**

- ▶ development, production, final assembly and sale of virtually all product groups
- ▶ Research & Development Centre
- ▶ approx. 62,000 m<sup>2</sup> production area



▲ **KAMPMANN Polska Sp. z o.o.**

- ▶ production of unfinished and finished products for heating, cooling and ventilation systems
- ▶ in addition to finished products for the regional market, a large proportion of the production output is sent to the German main factory in Lingen for further processing
- ▶ approx. 8,300 m<sup>2</sup> production area

## Consistently there.

Kampmann.  
Genau mein Klima.

Wherever our customers and partners need us: we are there. Around the corner. Around the globe. On the web. We are there transforming today's challenges into tomorrow's solutions. We are there when the standards and norms of the future are defined. Down-to-earth, attentive, available at any time. And always ready to go the extra mile.

## Consistently cooperative.

Kampmann.  
Genau mein Klima.

We believe that fairness is the best foundation for sustainable success. That a handshake can mean more than a 100-page contract. And that mutual respect comes from seeing eye-to-eye. This is the way we are – and this is how we interact, with our customers, with our suppliers, with each other: a cordial and sincere invitation to genuine partnership.

## Consistently sophisticated.

Kampmann.  
Genau mein Klima.

We leave nothing to chance. Including the future. We check and recheck. We enhance and optimise. And we don't let go until we are thoroughly satisfied. With a love for detail that is only rivalled by our passion for thinking in systems, we maintain and nurture our spirit of discovery and invention that drives us from good ideas to useful products.

## Consistently solution-focused.

Kampmann.  
Genau mein Klima.

A hotel needs a different climate than a retail outlet. And when the southern side of an office block needs to be cooled down, the north may still need warming up. Our customers' requirements are highly specific. So are our solutions. Which means that even the trickiest challenges have a predictable (and most satisfying) outcome: We turn complexity into clarity – and create the perfect climate.



# Kampmann as a Family Company

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**One person – one product: Kampmann GmbH has continuously evolved since the company was set up in 1972.**

With its vision and keen insight into future markets, Kampmann GmbH grew to become one of the leading international specialists in heating, cooling, ventilation and integrated building automation. The company is still family-owned and, now in its second generation, is managed by Hendrik Kampmann.

The company focuses on customer satisfaction. Some 56 external sales representatives are out on the road in Germany and across the globe for our customers. Together with staff in the 14 (inter-) national representative offices, they provide customers with qualified professional advice on site.

Our customer service team in the Lingen Service Centre supports customers with 16 internal employees. There is a further employee in our Munich Service office handling any problems that might arise. Germany-wide, we also maintain 50 Service Centres and, internationally, our customers can call upon Kampmann Customer Service at 28 Service Centres in twelve countries.



Company founder Heinrich Kampmann and the present Managing Director Hendrik Kampmann.

# Research & Development Centre



The company's own Research & Development Centre is one of the most modern of its kind.

## **The R & D Centre (FEC) enables the company to**

- ▶ develop new standard products
- ▶ continually improve its products
- ▶ undertake applied research
- ▶ provide detailed analysis of the units to be tested
- ▶ undertake standard tests.

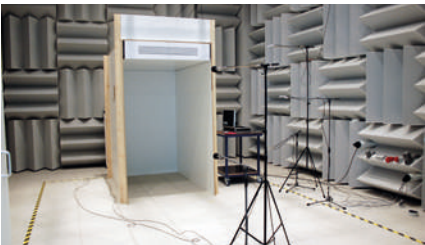
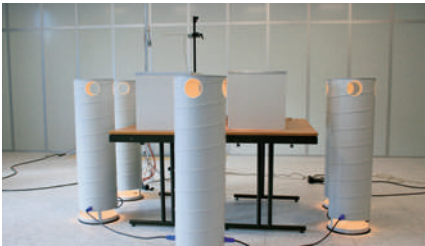
Major investment requires performance that can be tested. That is what we offer our customers in our in-house R & D Centre (FEC) adjacent to our headquarters in Lingen. Built in June 2008, with an investment of approx. € 4 million, it is one of the most modern facilities of its type in Europe.

The multifunctional design of the building with a floor area of approx. 1,200 m<sup>2</sup> houses an air flow laboratory, a multi-purpose laboratory and a sound chamber.

The technically state of the art fit-out of the laboratory, which also houses a test chamber, two climate simulation units and a climate chamber, is designed to meet customers' ever-changing demands:

- ▶ functional demonstration and presentation of products
- ▶ product testing in real installation situations
- ▶ reliable technical data and proof of outputs
- ▶ continuous new developments and product enhancements.

We work closely with leading scientific research institutions, universities and test laboratories. The focus of our work is on sustainable products that operate energy-efficiently and have a long service life, with adaptable operation and manufactured using recyclable materials.



The company's own Research & Development Centre (FEC) at its headquarters in Lingen (Ems), Germany.



# Project Report on Poli Supermarket



## Use of waste heat and air conditioning in a supermarket as part of a CO<sub>2</sub> composite system as direct evaporation

The retailer has been relying on environmentally-friendly air conditioning and refrigeration technology for many years. CO<sub>2</sub> chillers offer supermarkets major potential for climate-friendly optimisation. On the one hand, natural refrigerants carry minimal greenhouse gas potential. On the other hand, energy is saved through the utilisation of waste heat. The volumes of waste heat are sufficient to cover a large part of the building's heating load, without using large volumes of refrigerant with high GWP.

### Matching terminal units for the utilisation of waste heat

Freezer chests and cabinets in retail chains can be operated using CO<sub>2</sub> as a refrigerant. However, by contrast, there is often a lack of suitable terminal units when air conditioning the building. The solution of transferring to a water-based system is therefore selected.

With its Ultra air heater and Tandem door air curtain, Kampmann GmbH offers suitable terminal units for the utilisation of waste heat and for cooling for direct connection to the CO<sub>2</sub> composite system. Thanks to their pressure rating of 120 bar, these products are ideal for direct evaporation using CO<sub>2</sub> as the refrigerant.



### Successful collaboration with the Poli supermarket chain in Italy

Poli, the Italian supermarket chain, also relies on environmentally-friendly and efficient air conditioning technology. Kampmann GmbH has therefore already equipped several Poli supermarkets with its Ultra CO<sub>2</sub> air heaters and Tandem CO<sub>2</sub> door air curtains.

Poli also uses Enex srl CO<sub>2</sub> chillers, which, among other things, also supply the freezer chests and cabinets, as well as the Ultra and Tandem terminal units. Equipped with energy-saving EC fans, Ultra air heaters and Tandem door air curtains are regulated by the higher-level control for the chiller.

Due to this higher-level control, the cooling and heat energy is retained in the supermarket and is displaced, as required. In summer, for example, the system air conditions the entire supermarket and operates the freezer chests and cabinets, thanks to a Booster stage. There is thus no need for additional heating or cooling energy generators, such as boilers or chillers.

Apart from the energy savings achieved by utilising waste heat, the door air curtains are also equipped with Tandem technology, with up to 38% energy being saved compared with conventional door air curtains.

Poli has confirmed that, together with the Enex srl CO<sub>2</sub> chiller and the Kampmann GmbH CO<sub>2</sub> terminal units, it has saved approx. 30 % operating costs compared to conventional systems.

Discover more about the natural refrigerant CO<sub>2</sub> at [kampmanngroup.com/cooling](https://kampmanngroup.com/cooling)



## Contact

Do you still have questions or would like a personal consultation?  
Simply get in touch with us.

[kampmanngroup.com/contact](https://kampmanngroup.com/contact)

# Kampmann International

Professional advice - worldwide



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# Kampmann Online

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You will find the best solutions and best support for your everyday business at [kampmanngroup.com](http://kampmanngroup.com)



## ► Products

A wealth of filter options quickly and easily limits the Kampmann product range. In addition to the extensive product information, the product configurator provides for configuration even with limited available data, from the product group to final article number.

## ► Solutions

Differentiated by building and type of use, designers obtain tailor-made solutions and planning-relevant information, such as technical documentation or current guidelines.

## ► Service

Kampmann is always on hand in an advisory capacity to ensure that your project runs seamlessly throughout all stages of your project – from efficiency calculations on green building projects to on-site support.

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