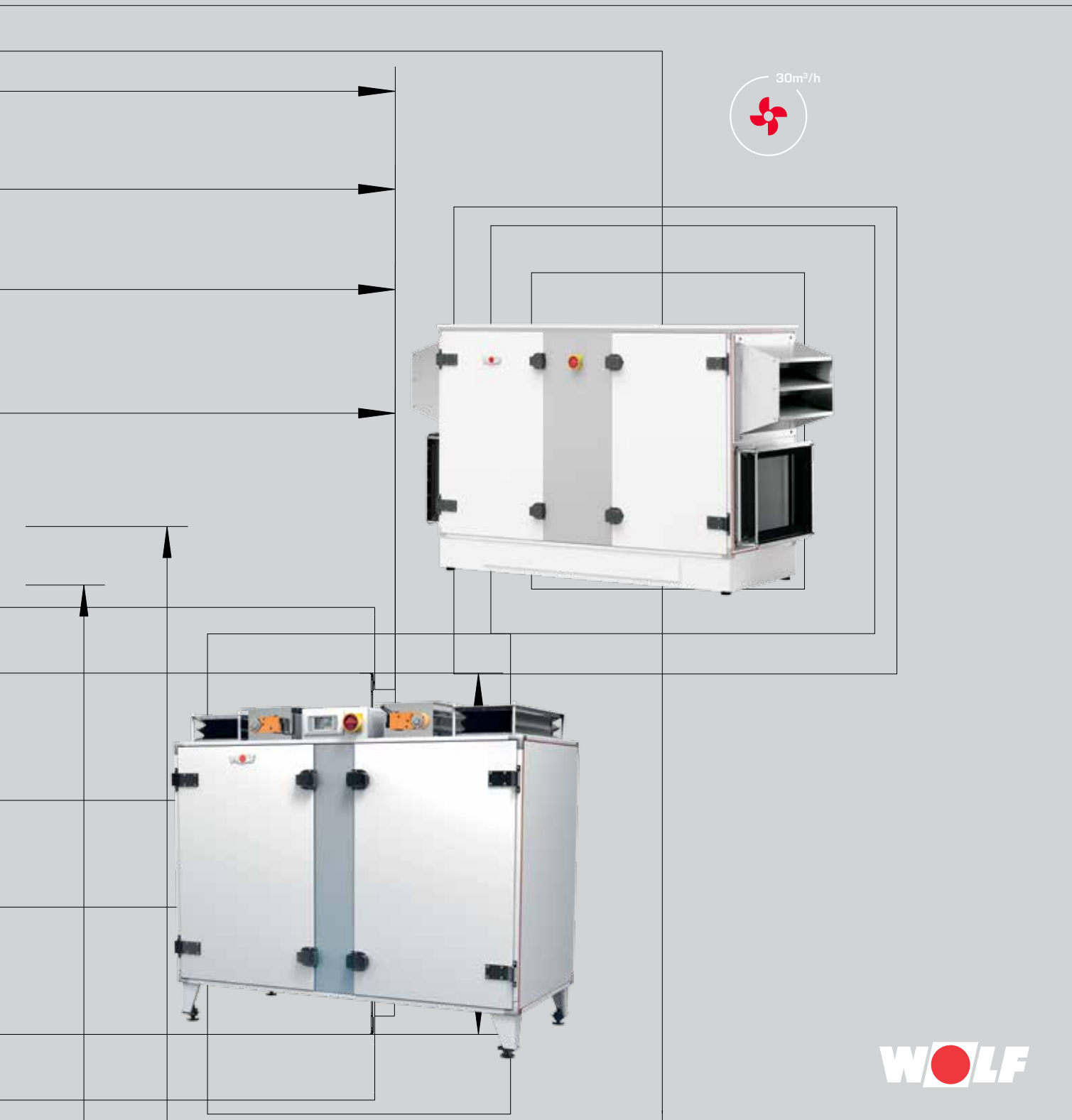


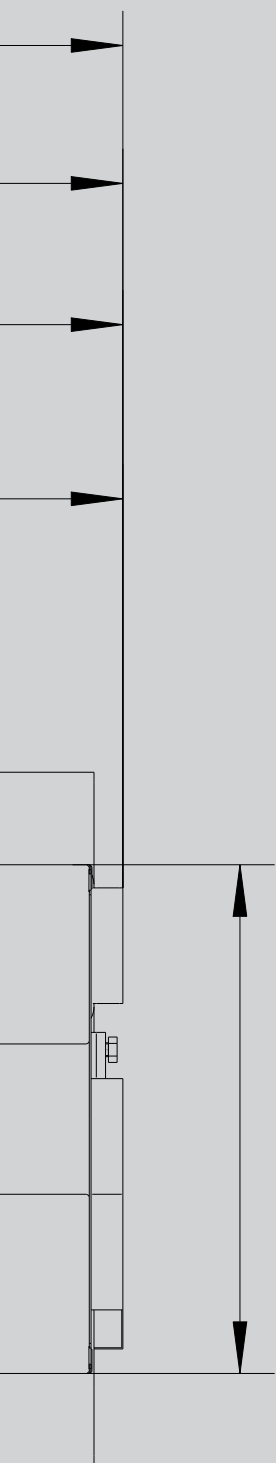
TECHNICAL DOCUMENTATION

WOLF COMFORT COMPACT VENTILATION UNIT

CKL FOR INDOOR INSTALLATION / CKL AS WEATHERPROOF VERSION



WOLF

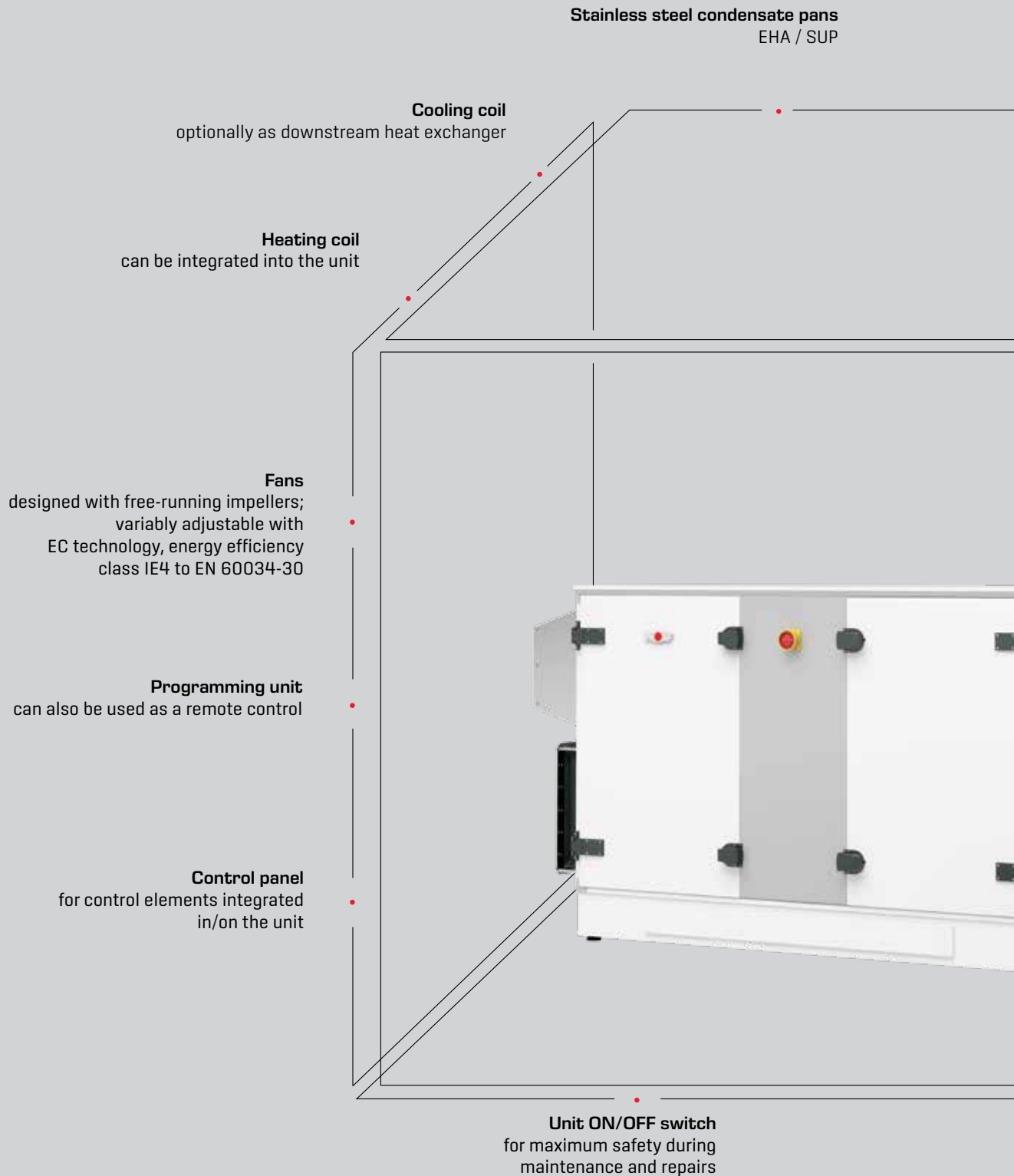


THE EXTENSIVE EQUIPMENT RANGE

from system supplier WOLF offers the ideal solution for commercial and industrial buildings, new build and modernisation projects alike. The range of WOLF control units can meet any requirement for heating convenience. All equipment is easy to operate, highly energy efficient and reliable. Solar thermal systems can be swiftly integrated into existing systems.

WOLF equipment is easy and quick to install and maintain.

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APPLICATION RANGE

The compact units with heat recovery are designed for controlled ventilation in modern properties.

The regulations for energy saving and air hygiene in buildings have led to an increase in the technical and hygienic requirements of ventilation systems.

CKL compact units with heat recovery provide rooms with filtered outdoor air, the volume of which can be adjusted precisely to ensure sufficient supply. At the same time, a corresponding volume of stale indoor air containing CO₂ is

removed and expelled as exhaust air. This results in other pollutants such as odours, fine dust, moisture, etc. being removed effectively as well.

Heat is recovered via an aluminium countercurrent plate heat exchanger (PHE) with efficiency levels up to and exceeding 90 %.

In this way, the primary energy costs of the heating system can be significantly reduced. The high energy efficiency also explains the favourable SFP value [specific fan power].

Combined ventilation unit in a compact design

with integrated heat recovery thanks to high performance countercurrent plate heat exchanger made from corrosion-resistant aluminium alloy

10

BENEFITS OF THE WOLF COMFORT COMPACT VENTILATION UNIT

CKL FOR INDOOR INSTALLATION

CKL AS WEATHERPROOF VERSION



Compact unit dimensions

[see unit range table] indoor units and outdoor units up to 5800 m³/h. CKL-iH-4400, 5800 and CKL-iV-4400, 5800 can be divided across its width for easier handling

Unit is fully wired

for fast, straightforward commissioning

MOTOR DATA	CKL-1300	CKL-2200	CKL-3000	CKL-4400	CKL-5800
Rated voltage	1x230 V [50/60 Hz]	3x400 V [50/60 Hz]	3x400 V [50/60 Hz]	3x400 V [50/60 Hz]	3x400 V [50/60 Hz]
Max. power consumption / max. current draw of both fans	0.96 kW / 4.2 A	2.0 kW / 3.2 A	2.0 kW / 3.3 A	6.0 kW / 9.2 A	6.0 kW / 9.2 A
Speed	2970 rpm	3100 rpm	2580 rpm	2550 rpm	2550 rpm
IP rating / protection class	IP 54 / Iso B	IP 54 / Iso B	IP 54 / Iso B	IP 54 / Iso F	IP 54 / Iso F



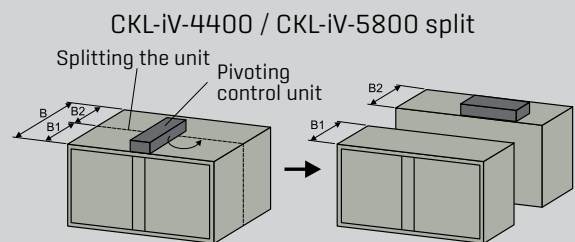
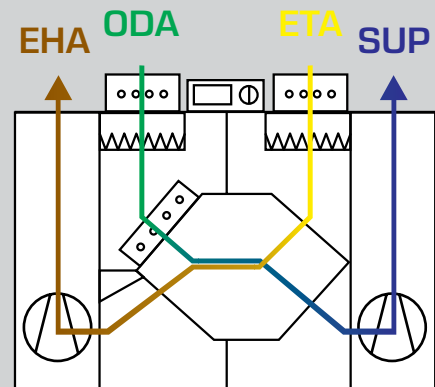
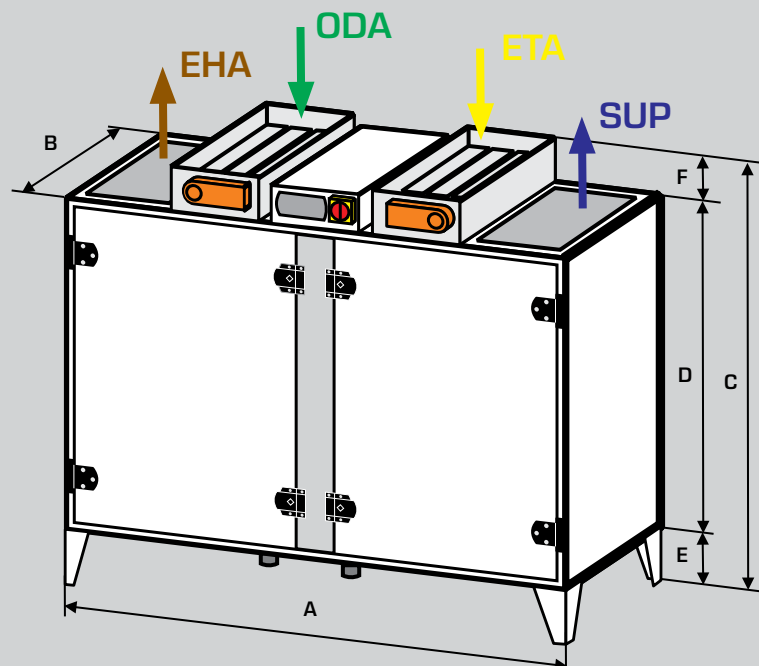
COMFORT COMPACT VENTILATION UNIT

CKL-IV COMFORT COMPACT VENTILATION UNIT

SPECIFICATION

INDOOR UNITS

Indoor unit with vertical duct connection
 SUP right with mounting parts
 SUP left = mirror image



TYPE		CKL-iV-1300	CKL-iV-2200	CKL-iV-3000	CKL-iV-4400	CKL-iV-5800
Length A	mm	1525	2033	2033	2237	2237
Width B	mm	750		950	1360	1665
		-	-	-	B1=645 B2=715	B1=950 B2=715
Total height C	mm	1315	1720	1720	1745	1745
Height D	mm	1017	1425	1425	1425	1425
Foot height E	mm	170			170	
Damper height F	mm	128			150	
Exhaust air EHA	mm	int. 596x206*	int. 596x307*	int. 799x307*	int. 1222x358*	int. 1527x358*
Outdoor air ODA	mm	int. 596x206*	int. 596x307*	int. 799x307*	int. 1222x358*	int. 1527x358*
Extract air ETA	mm	int. 596x206*	int. 596x307*	int. 799x307*	int. 1222x358*	int. 1527x358*
Supply air SUP	mm	int. 596x206*	int. 596x307*	int. 799x307*	int. 1222x358*	int. 1527x358*
Condensate connector		1½"			1½"	
Weight	kg	250	360	450	645	725
Max. flow rate	m³/h	1300	2200	3000	4400	5800

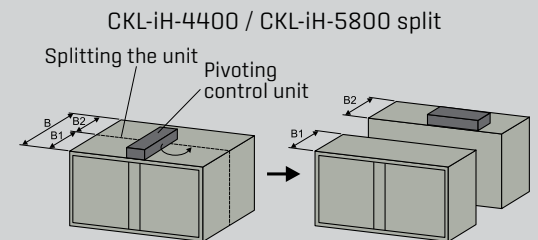
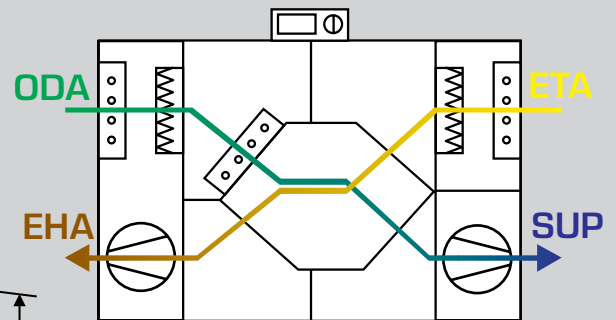
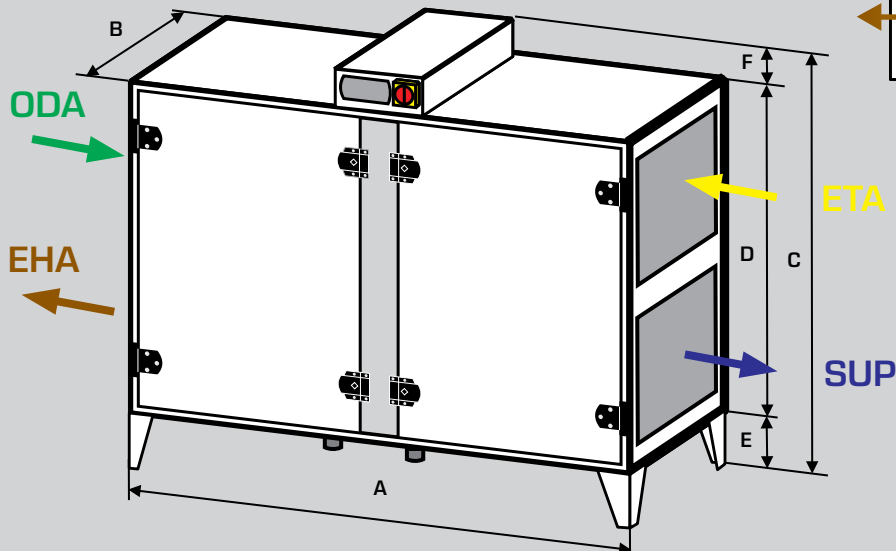
* Duct connection dimensions

CKL-IV COMFORT COMPACT VENTILATION UNIT

SPECIFICATION

INDOOR UNITS

Indoor unit with horizontal duct connection
 SUP right with mounting parts
 SUP left = mirror image



TYPE		CKL-iH-1300	CKL-iH-2200	CKL-iH-3000	CKL-iH-4400	CKL-iH-5800
Length A	mm	1525	2032	2032	2237	2237
Width B	mm	750	950	1360	1665	
		-	-	-	B1=645 B2=715	B1=950 B2=715
Total height C	mm	1305	1711	1711	1711	1711
Height D	mm	1017	1425	1425	1425	1425
Foot height E	mm	170	170	170	170	170
Control unit F	mm	122	122	122	122	122
Exhaust air EHA	mm	int. 612x409*	int. 612x612*	int. 815x612*	int. 1222x612*	int. 1527x612*
Outdoor air ODA	mm	int. 612x409*	int. 612x612*	int. 815x612*	int. 1222x612*	int. 1527x612*
Extract air ETA	mm	int. 612x409*	int. 612x612*	int. 815x612*	int. 1222x612*	int. 1527x612*
Supply air SUP	mm	int. 612x409*	int. 612x612*	int. 815x612*	int. 1222x612*	int. 1527x612*
Condensate connector		1½"	1½"	1½"	1½"	1½"
Weight	kg	250	360	450	645	725
Max. flow rate	m³/h	1300	2200	3000	4400	5800

* Duct connection dimensions



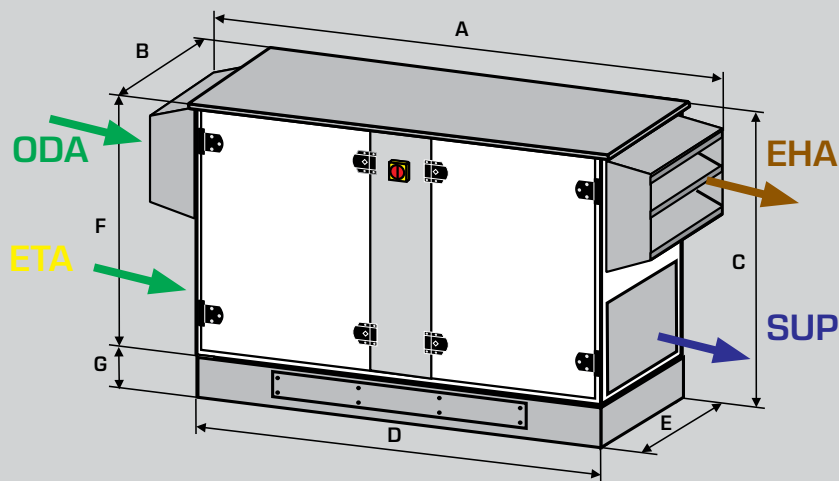
COMFORT COMPACT VENTILATION UNIT

CKL-A COMFORT COMPACT VENTILATION UNIT

SPECIFICATION

OUTDOOR UNITS

Outdoor unit (weatherproof) SUP right
with mounting parts
SUP left = mirror image



TYPE		CKL-A-1300	CKL-A-2200	CKL-A-3000	CKL-A-4400	CKL-A-5800
Total length A	mm	2111	2780	2780	2780	2780
Total width B	mm	812	812	1015	1422	1725
Total height C	mm	1350	1750			
Length D	mm	1729	2236			
Width E	mm	712	712	915	1322	1625
Height F	mm	1050	1450			
Base frame G	mm	300				
Extract air ETA	mm	int. 612x409*	int. 612x612*	int. 815x612*	int. 1222x612*	int. 1525x612*
Supply air SUP	mm	int. 612x409*	int. 612x612*	int. 815x612*	int. 1222x612*	int. 1525x612*
Condensate connector		1½"				
Weight	kg	315	460	555	715	800
Max. flow rate	m³/h	1300	2200	3000	4400	5800

* Duct connection dimensions

CKL-A/IH COMFORT COMPACT VENTILATION UNIT

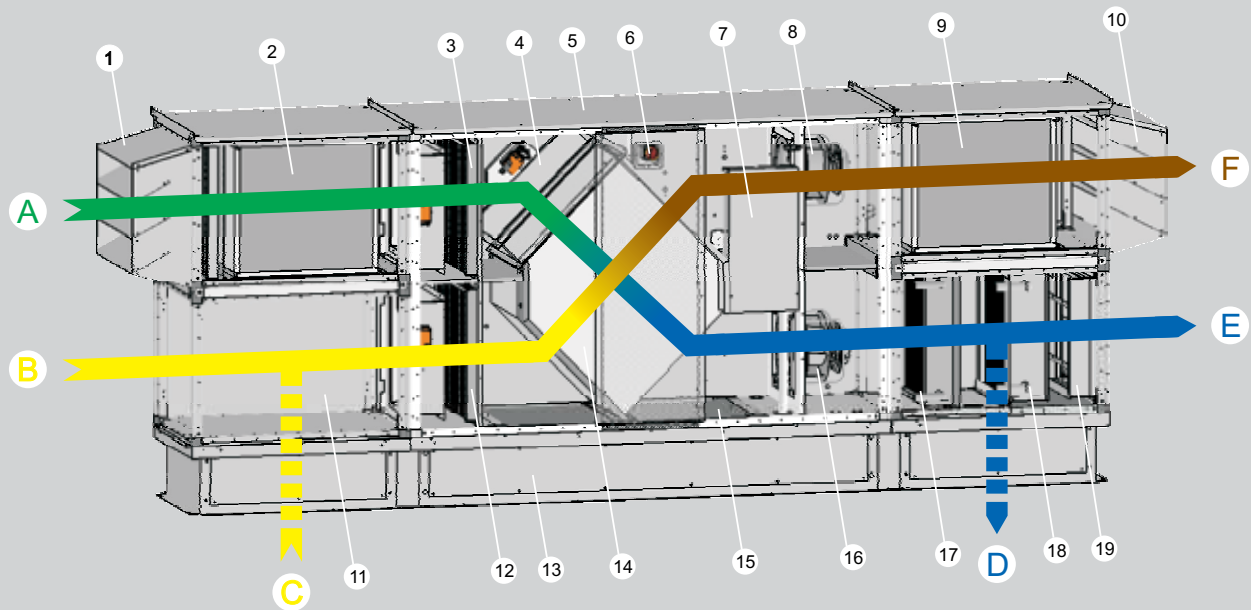
SPECIFICATION

UNIT VERSIONS

With optional horizontal / vertical duct connection, depending on unit version and installation situation.

To meet different thermodynamic [heating, cooling] and acoustic [sound] requirements, our specially developed sizing program offers the option of individual configuration [specification, delivery time and price on request].

Example: Fully detailed illustration of unit version possibilities.



Key:

A Outdoor air [ODA]	1 Intake hood with mist eliminator	11 Empty section
B Extract air [ETA]	2 Outdoor air silencer section	12 M5 extract air filter
Alternative intake	3 F7 filter, outdoor air	13 Base frame
C Extract air [ETA]	4 Bypass damper	14 Countercurrent heat exchanger with bypass
Alternative intake	5 Weatherproof top cladding	15 Condensate pan
D Supply air [SUP]	6 Repair switch	16 EC fan, supply air
Alternative discharge without fitted parts (empty section only)	7 Control panel	17 Heating coil
E Supply air [SUP]	8 EC fan, extract air	18 Cooling coil
Alternative discharge with / without fitted parts	9 Exhaust air silencer section	19 Mist eliminator
F Exhaust air [EHA]	10 Discharge hood	

Note regarding CKL-A only: Extract air intake and supply air discharge can be arranged horizontally or vertically subject to requirements. In connection with this, note that the supply air discharge can only be arranged horizontally if fitted parts such as the heating coil or cooling coil and the mist eliminator are installed downstream of the supply air fan. To direct the supply air discharge downwards despite fitted parts, a further empty section can be added for example.

CKL COMFORT COMPACT VENTILATION UNIT

COMPONENT DESCRIPTION



ENCLOSURE

Compact, stable housing.

Indoor unit with feet (height-adjustable up to 30 mm) as standard

Outdoor unit with all-round base frame (height 300 mm) as standard

Duplex casing structure made of powder-coated sheet steel, RAL 9016 (traffic white) with core of 50 mm thick thermal insulation, partition in silver, RAL 9006

Optimum sound and thermal insulation through mineral wool, material class A1, non-combustible to DIN 4102

Inspection doors extending across the entire operating height of the unit ensure excellent access to fitted parts



MOTOR/FAN UNIT FOR SUPPLY AND EXTRACT AIR

Highly efficient free-running fans, single sided intake, directly connected to EC motor with low energy consumption, infinitely variable (0-10 V)

Complete motor/fan unit statically and dynamically balanced

Fan/motor combination with very low noise levels



HEAT RECOVERY

Heat recovery by means of high performance countercurrent plate heat exchanger (PHE)

Heat exchanger made from high grade, corrosion-resistant aluminium

Very low air resistance

Heat recovery factors up to and exceeding 90 %



BYPASS

A bypass is built into the air supply side of the unit as standard. Consequently, the bypass is able to take full care of night time ventilation during the summer.



FILTER

Easy to replace compact panel filters

F7 or F9 supply air filter (fine dust and pollen filter)

Extract air filter M5 (fine dust filter)

CKL COMFORT COMPACT VENTILATION UNIT CONTROL UNIT



The microprocessor-controlled control unit, with an isolator on the appliance, is fully assembled and wired at the factory. It controls and regulates the fans, heat recovery, temperatures, flow rates and operating times, as well as a variety of internal functions and alarms.

FUNCTION	DESCRIPTION
Languages	Language selection with menu prompts
Preheating program	When outside temperatures are low (adjustable setting), the heating circuit will heat up first when the system is started up. This ensures that when there is a risk of frost the heating coil is not damaged and cold air is not blown in
Backup mode, heating and cooling	In off mode; minimum and maximum room temperature limits are maintained (unoccupied period)
Night ventilation / cooling function	The building can be cooled to an adjustable set value during the night using cooler outdoor air (unoccupied period)
Burner demand via contact	Heat demand is issued to Wolf boilers via the floating contact
Summer compensation	As outside temperatures rise, the set value tracks the room temperature
Natural cooling control	If a room needs to be cooled and cool outdoor air is available, outdoor air will first be used for cooling; if the supply of outdoor air is insufficient, the cooling coil will be operated
Fault logging	Date and time of faults are recorded (10 messages)
Anti-seizing pump protection	To stop pumps seizing up, they are run once a week (service function, adjustable start time)
Anti-seizing mixer protection	To stop mixers seizing up, they are run once a week (service function, adjustable start time)
CO ₂ or VOC control	The speed is matched as appropriate via the CO ₂ content of the air
Constant pressure control	Constant pressure control in extract or supply air duct, differential pressure sensor mounted in the unit
Flow rate control	For controlling a constant air volume, differential pressure sensor mounted in the unit
Time program for the day	4 day programs can be set, each with 5 switching times, with different set values for temperature, speed and pressure
Switching times per day	5 start times and 5 stop times can be set
Filter monitor (contamination check)	Weekly (adjustable start time, service function), checks the barometric cells for extract and supply air
Fire alarm connection	When fire alarm devices are triggered, the system shuts down (adjustable)
Thermal motor monitor	Motor monitoring via cold lead
Outdoor/exhaust air damper switching	230 V OPEN/CLOSE switching by controller
Outside temperature sensor	Outside sensor for direct connection to controller (always required)
Supply air temperature control	Supply air is controlled according to the set value.
Supply air - indoor air control	Room temperature control via room sensor
Supply air - extract air control	Room temperature control via extract air sensor
Floating central fault message contact	All accumulating faults are transferred via this contact
Infinitely variable valve control, cooling / heating	Control of valve drives with 0-10 V DC
Constant operation for heating circuit pump	For uninsulated / long pipework
External system start	Remote ON/OFF
Operating modes	Automatic mode, manual mode, off mode (unoccupied period), standby (OFF)
Infinitely variable motor control	Balance adjustment option for fans (extract air management)
HR, cooling via HR (heat recovery)	PWT (bypass damper control), each with 0-10 V DC control
El. heating coil	Control of one electric heating coil, variable 0-10 V DC control
Frost protection, heating coil (PWW)	Frost stat on the heating coil; when triggered, the valve turns off and the heating coil is purged
Holiday program	Additional time program for the aforementioned operating modes
Summertime/wintertime changeover	Automatically in relation to date
PWT de-icing function (icing sensor on plate heat exchanger)	When there is a risk of icing-up, the bypass damper is opened and the PWT is de-iced by the flow of warm extract air
Supply air minimum limit	For all control unit versions, the supply air temperature does not fall below an adjustable limit
Programming unit with FSTN graphics	The programming unit can also be used as a remote control; indication on the display; connections for BMS on the controller

CKL COMFORT COMPACT VENTILATION UNIT

CONTROL ACCESSORIES



AIR QUALITY SENSOR

Plug-in design

Mixed gas sensor for detecting air quality in offices, hotels, homes, businesses, restaurants, etc.

Supply voltage:	24 V AC/DC
Permiss. ambient temperature:	0-50 °C
IP rating:	IP 30
Dimensions:	81x79x26 mm



CO2 SENSOR

Plug-in design (alternatively to air quality sensor)

CO2 sensor for detecting CO2 content

Supply voltage:	24 V AC/DC
Permiss. ambient temperature:	0-50 °C
IP rating:	IP 30
Dimensions:	95x97x30 mm



OUTSIDE OR ROOM TEMPERATURE SENSOR

Wall mounted, 2-pole, terminals up to 1.5 mm²

Sensor:	NTC5K
Measuring range:	-30 to +50 °C
IP rating:	IP 54
Dimensions:	100x60x33 mm



DUCT HYGROSTAT

Type KH-10U with wall mounting bracket WH-20

Internal setting	
Measuring range:	35 to 100 % r.h.
IP rating:	IP 65
Dimensions:	107x70x97 mm



ROOM HYGROSTAT

Type RH-2U for wall mounting or on flush box

Internal setting 35 to 100 % r.h.

Measuring range:	25 to 95 % r.h.
IP rating:	IP 30
Dimensions:	95x97x30 mm



BMK-F REMOTE CONTROL

For wall mounting with integral room temperature sensor

6 function keys: ON/OFF, manual/auto, speed, fresh air, utilisation time extension, intermittent ventilation. LCD screen. Fault indication, 24 V AC power supply, RS485 interface (pLAN), IP rating IP 30.

Functions: switching the unit ON/OFF, speed setting, specifying fresh air proportion, activating utilisation time extension, activating intermittent ventilation, adjusting set temperature.

Dimensions: 135x86x30 mm



LON INTERFACE FOR WRS-K

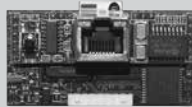
To be plugged into the KLM controller

For communication between the control unit and the building management system using LON standard network variables, designed as an expansion card, integrated into the DDC control unit.

Transceiver FTT-10A / 78 kbit/s.

Connection via plug-in/screw terminals.

Module is integrated into existing BMS on site.



BACNET INTERFACE FOR WRS-K

To be plugged into the KLM controller

For communication between the control unit and the building management system, designed as an expansion card, integrated into the DDC control unit.

Supported protocols: BACnet Ethernet / BACnet / IP. Connection via RJ45 interface.

Module is integrated into existing BMS on site.



ETHERNET INTERFACE FOR WRS-K

To be plugged into the KLM controller

For linking the control unit into an Ethernet network (LAN), designed as an expansion card, integrated into the DDC control unit.

Supported protocols: HTTP / FTP. Connection via RJ45 interface.

Module is integrated into existing BMS on site.



MODBUS INTERFACE FOR WRS-K

To be plugged into the KLM controller

For communication between the control unit and the building management system, designed as an expansion card, integrated into the DDC control unit.

Connection via screw terminals, 2-pole

Module is integrated into existing BMS on site.



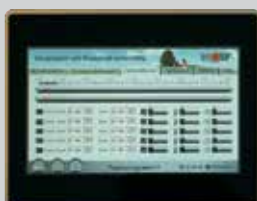
KNX INTERFACE FOR WRS-K

To be plugged into the KLM controller

For communication between the control unit and the building management system, designed as an expansion card, integrated into the DDC control unit.

Connection via screw terminals, 2-pole

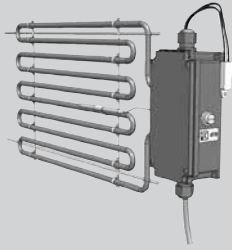
Module is integrated into existing BMS on site.



BMK-T10 TOUCH PANEL

Enables operation of several CKL units, for front installation on site, on request

CKL COMFORT COMPACT VENTILATION UNIT HEATING COILS



ELECTRIC PREHEATING COIL; SINGLE STAGE FOR FILTER PRE-DRYING

Recommended for optimum unit performance

1000 W; 1x230 V/50 Hz	for CKL-iV/iH/A-1300
2000 W; 1x230 V/50 Hz	for CKL-iV/iH/A-2200, 3000
4000 W; 2x230 V/50 Hz	for CKL-iV/iH/A-4400, 5800

Note: Fully wired electric coil with high limit safety cut-out, frost stat and panel for protecting the outdoor air filter from moisture penetration and as frost protection for heat recovery



ELECTRIC REHEATING COIL

For raising the supply air temperature when outside temperatures are low; fitted and fully wired

1000 W; 1x230 V/50 Hz	for CKL-iH/iV/A-1300
4000 W; 3x400 V/50 Hz	for CKL-iV/iH/A-2200
6000 W; 3x400 V/50 Hz	for CKL-iV/iH/A-3000



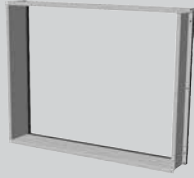
PWW HEAT EXCHANGER (PUMPED HOT WATER)

Cu/Al heat exchanger with frost stat, fully wired,

for CKL-iV/iH/A-1300
for CKL-iV/iH/A-2200
for CKL-iV/iH/A-3000
for CKL-A/iV-4400
for CKL-iV/A-5800

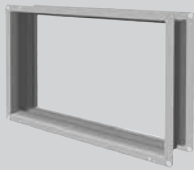
Note: With CKL-iH-4400 & 5800 the extension module (EKTA module) is required.

CKL COMFORT COMPACT VENTILATION UNIT CONNECTION ACCESSORIES



INSULATING FRAME

596 x 205 mm	for CKL-iV-1300	[set = 4 pce]
596 x 307 mm	for CKL-iV-2200	[set = 4 pce]
799 x 307 mm	for CKL-iV-3000	[set = 4 pce]
1222 x 358 mm	for CKL-iV-4400	[set = 4 pce]
1527 x 358 mm	for CKL-iV-5800	[set = 4 pce]
612 x 409 mm	for CKL-A-1300	[set = 2 pce]
612 x 612 mm	for CKL-A-2200	[set = 2 pce]
815 x 612 mm	for CKL-A-3000	[set = 2 pce]
1222 x 612 mm	for CKL-A-4400	[set = 2 pce]
1527 x 612 mm	for CKL-A-5800	[set = 2 pce]
612 x 409 mm	for CKL-iH-1300	[set = 4 pce]
612 x 612 mm	for CKL-iH-2200	[set = 4 pce]
815 x 612 mm	for CKL-iH-3000	[set = 4 pce]
1222 x 612 mm	for CKL-iH-4400	[set = 4 pce]
1527 x 612 mm	for CKL-iH-5800	[set = 4 pce]



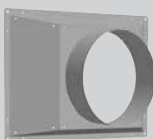
FLEXIBLE CONNECTION

592 x 201 mm	for CKL-iV-1300	[set = 4 pce]
592 x 303 mm	for CKL-iV-2200	[set = 4 pce]
795 x 303 mm	for CKL-iV-3000	[set = 4 pce]
1218 x 354 mm	for CKL-iV-4400	[set = 4 pce]
1523 x 354 mm	for CKL-iV-5800	[set = 4 pce]
608 x 405 mm	for CKL-A-1300	[set = 2 pce]
608 x 608 mm	for CKL-A-2200	[set = 2 pce]
811 x 608 mm	for CKL-A-3000	[set = 2 pce]
1218 x 608 mm	for CKL-A-4400	[set = 2 pce]
1523 x 608 mm	for CKL-A-5800	[set = 2 pce]
608 x 405 mm	for CKL-iH-1300	[set = 4 pce]
608 x 608 mm	for CKL-iH-2200	[set = 4 pce]
811 x 608 mm	for CKL-iH-3000	[set = 4 pce]
1218 x 608 mm	for CKL-iH-4400	[set = 4 pce]
1523 x 608 mm	for CKL-iH-5800	[set = 4 pce]



ADAPTOR BOX FROM SQUARE TO ROUND CONNECTION FOR VERTICAL AIRFLOW DIRECTION

[Set = 2 pce]	
Diameter 315 mm	for CKL-iV-1300
Diameter 400 mm	for CKL-iV-2200
Diameter 450 mm	for CKL-iV-3000
Diameter 560 mm	for CKL-iV-4400
[Insulating frame required]	for CKL-iV-5800



ADAPTOR INSULATING CONE FROM SQUARE TO ROUND CONNECTION FOR HORIZONTAL AIR ROUTING

Diameter 315 mm	for CKL-A-1300	[set = 2 pce]
Diameter 400 mm	for CKL-A-2200	[set = 2 pce]
Diameter 450 mm	for CKL-A-3000	[set = 2 pce]
Diameter 560 mm	for CKL-A-4400	[set = 2 pce]
	for CKL-A-5800	[set = 2 pce]
Diameter 315 mm	for CKL-iH-1300	[set = 4 pce]
Diameter 400 mm	for CKL-iH-2200	[set = 4 pce]
Diameter 450 mm	for CKL-iH-3000	[set = 4 pce]
Diameter 560 mm	for CKL-iH-4400	[set = 4 pce]
	for CKL-iH-5800	[set = 4 pce]

CKL COMFORT COMPACT VENTILATION UNIT EXTENSION MODULES



OUTDOOR AIR SILENCER MODULE

Horizontal air routing
Incl. pan and F7 or F9 outdoor air filter (L x D x H)

1017 x 750 x 508 mm	for CKL-iH/A-1300
1017 x 750 x 712 mm	for CKL-iH/A-2200
1017 x 955 x 712 mm	for CKL-iH/A-3000
1017 x 1360 x 712 mm	for CKL-iH/A-4400
1017 x 1665 x 712 mm	for CKL-iH/A-5800



EXTRACT AIR SILENCER MODULE

Horizontal air routing
Incl. F7 or F9 outdoor air filter (L x D x H)

1017 x 750 x 508 mm	for CKL-iH/A-1300
1017 x 750 x 712 mm	for CKL-iH/A-2200
1017 x 955 x 712 mm	for CKL-iH/A-3000
1017 x 1360 x 712 mm	for CKL-iH/A-4400
1017 x 1665 x 712 mm	for CKL-iH/A-5800



SUPPLY AIR/EXHAUST AIR SILENCER MODULE

For horizontal air routing (L x D x H)

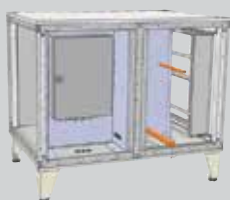
1017 x 750 x 508 mm	for CKL-iH/A-1300
1017 x 750 x 712 mm	for CKL-iH/A-2200
1017 x 955 x 712 mm	for CKL-iH/A-3000
1017 x 1360 x 712 mm	for CKL-iH/A-4400
1017 x 1665 x 712 mm	for CKL-iH/A-5800



HEATING COIL - COOLING COIL - MIST ELIMINATOR MODULE (EKTA)

Horizontal air routing for version with supply air below (L x D x H)

1017 x 750 x 508 mm	for CKL-iH/A-1300
1017 x 750 x 712 mm	for CKL-iH/A-2200
1017 x 955 x 712 mm	for CKL-iH/A-3000
1017 x 1360 x 712 mm	for CKL-iH/A-4400
1017 x 1665 x 712 mm	for CKL-iH/A-5800



HEAT PUMP EKTA MODULE (HP EKTA)

Horizontal air routing for version with supply air below (L x D x H)
Comprising DX coil / capacitor coil, inverter-controlled outdoor heat pump unit and a control kit integrated into the module

1017 x 750 x 508 mm	for CKL-iH/A-1300
1017 x 750 x 712 mm	for CKL-iH/A-2200
1017 x 955 x 712 mm	for CKL-iH/A-3000
1017 x 1360 x 712 mm	for CKL-iH/A-4400
1017 x 1665 x 712 mm	for CKL-iH/A-5800



OUTDOOR HEAT PUMP UNIT

Dimensions (H x W x D)

Rated output outdoor unit
heating / cooling

640 x 871 x 290 mm	4.0 / 4.5 kW
640 x 871 x 290 mm	5.0 / 6.0 kW
640 x 871 x 290 mm	6.1 / 6.7 kW
750 x 968 x 340 mm	7.1 / 8.0 kW
640 x 871 x 290 mm	10.0 / 11.2 kW
640 x 871 x 290 mm	12.5 / 14.0 kW
750 x 968 x 340 mm	14.0 / 16.0 kW

1300 x 970 x 370 mm	19.0 / 22.4 kW
1505 x 970 x 370 mm	24.0 / 27.0 kW



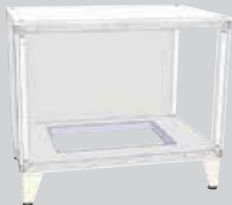
CKL COMFORT COMPACT VENTILATION UNIT EXTENSION MODULES



EMPTY MODULE

For horizontal air routing (L x D x H)

1017 x 750 x 508 mm	for CKL-iH/A-1300
1017 x 750 x 712 mm	for CKL-iH/A-2200
1017 x 955 x 712 mm	for CKL-iH/A-3000
1017 x 1360 x 712 mm	for CKL-iH/A-4400
1017 x 1665 x 712 mm	for CKL-iH/A-5800



EMPTY MODULE

For downward air routing (L x D x H)

1017 x 750 x 508 mm	for CKL-iH/A-1300
1017 x 750 x 712 mm	for CKL-iH/A-2200
1017 x 955 x 712 mm	for CKL-iH/A-3000
1017 x 1360 x 712 mm	for CKL-iH/A-4400
1017 x 1665 x 712 mm	for CKL-iH/A-5800



COOLING COIL MODULE

For horizontal air routing, iH only (L x D x H)

611 x 750 x 508 mm	for CKL-iH-1300
611 x 750 x 712 mm	for CKL-iH-2200
611 x 955 x 712 mm	for CKL-iH-3000
611 x 1360 x 712 mm	for CKL-iH-4400
611 x 1665 x 712 mm	for CKL-iH-5800



DIRECT EXPANSION COIL MODULE

For horizontal air routing, iH only (L x D x H)

611 x 750 x 508 mm	for CKL-iH-1300
611 x 750 x 712 mm	for CKL-iH-2200
611 x 955 x 712 mm	for CKL-iH-3000
611 x 1360 x 712 mm	for CKL-iH-4400
611 x 1665 x 712 mm	for CKL-iH-5800



HEATING COIL MODULE

For horizontal air routing, iH only (L x D x H)

611 x 750 x 508 mm	for CKL-iH-1300
611 x 750 x 712 mm	for CKL-iH-2200
611 x 955 x 712 mm	for CKL-iH-3000
611 x 1360 x 712 mm	for CKL-iH-4400
611 x 1665 x 712 mm	for CKL-iH-5800

CKL COMFORT COMPACT VENTILATION UNIT

UNIT ACCESSORIES



PIPE SILENCER, LENGTH 600 MM

All-round insulation 90 mm

Diameter 315 mm [attenuation 8 dB / 250 Hz]	for CKL-1300
Diameter 400 mm [attenuation 6 dB / 250 Hz]	for CKL-2200
Diameter 450 mm [attenuation 6 dB / 250 Hz]	for CKL-3000
Diameter 560 mm [attenuation 5 dB / 250 Hz]	for CKL-4400, 5800



COMPACT PANEL FILTER M5

Depth 48 mm, fine dust filter

592 x 287 mm	for CKL-1300
592 x 592 mm	for CKL-2200
592 x 404 mm	for CKL-3000 [set = 2 pce]
592 x 592 mm	for CKL-4400 [set = 2 pce]
592 x 592 mm [2 pce]	for CKL-5800 [set = 3 pce]
592 x 287 mm [1 pce]	



COMPACT PANEL FILTER M7

Depth 48 mm, fine dust and pollen filter

592 x 287 mm	for CKL-1300
592 x 592 mm	for CKL-2200
592 x 404 mm	for CKL-3000 [set = 2 pce]
592 x 592 mm	for CKL-4400 [set = 2 pce]
592 x 592 mm [2 pce]	for CKL-5800 [set = 3 pce]
592 x 287 mm [1 pce]	



COMPACT PANEL FILTER M9

Depth 48 mm, fine dust and pollen filter

592 x 287 mm	for CKL-1300
592 x 592 mm	for CKL-2200
592 x 404 mm	for CKL-3000 [set = 2 pce]
592 x 592 mm	for CKL-4400 [set = 2 pce]
592 x 592 mm [2 pce]	for CKL-5800 [set = 3 pce]
592 x 287 mm [1 pce]	



SIPHON WITH NON-RETURN DEVICE

[Set = 2 pce]

1 1/4", suction side, supplied loose	for CKL-iV/A
	for CKL-iH-1300, 2200, 3000

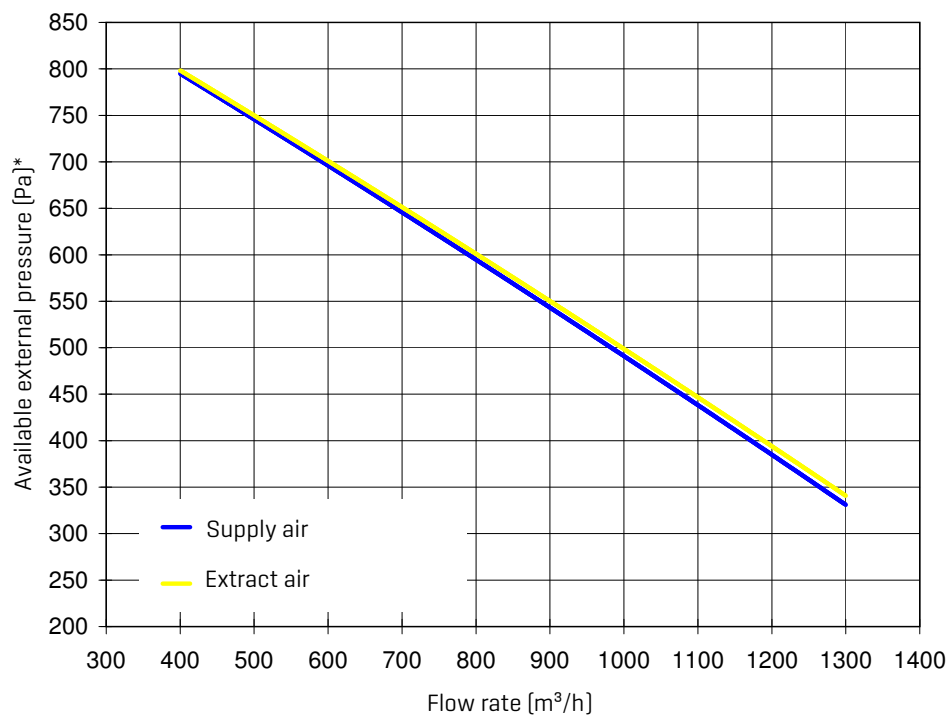
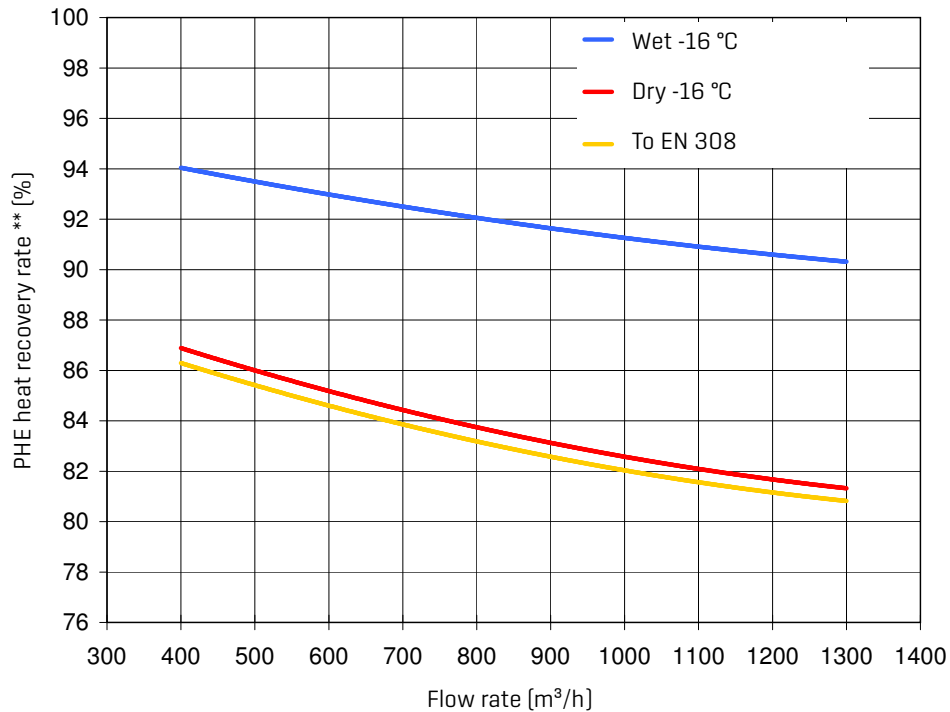
[With CKL-iH-4400, 5800 fitted as standard]



FROST PROTECTION HEATER

For trap	for CKL-A
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Exact technical data can only be supplied in relation to a specific project.



* With free intake and free discharge [without accessories]

** Operating conditions:

\dot{m} 1:1

ETA +22 °C 40 % r.h.

EN 308 conditions

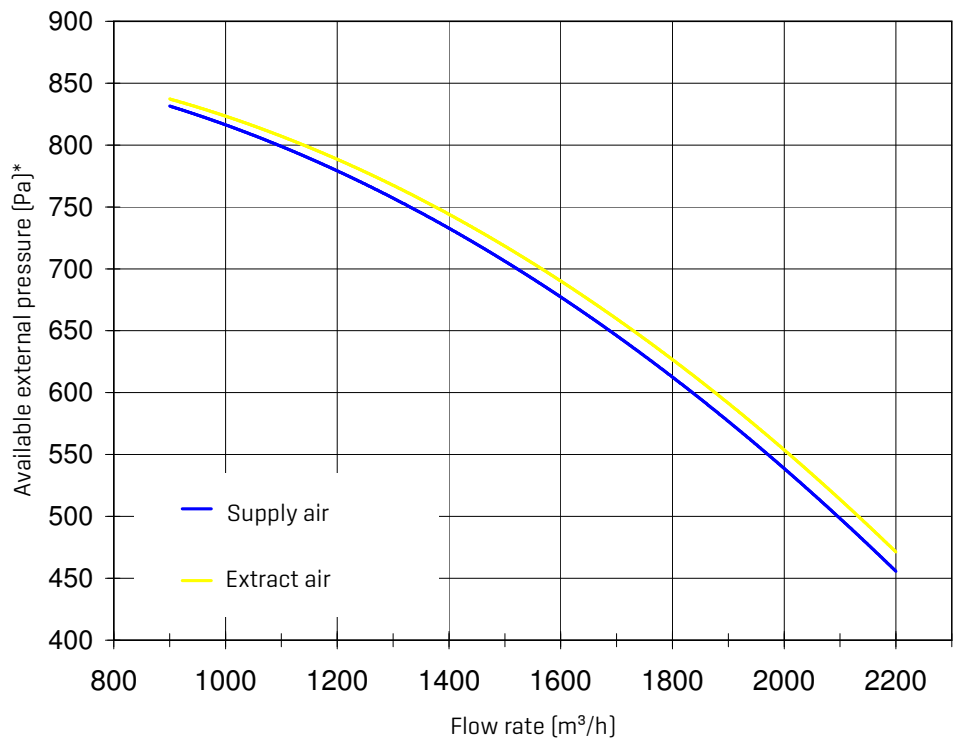
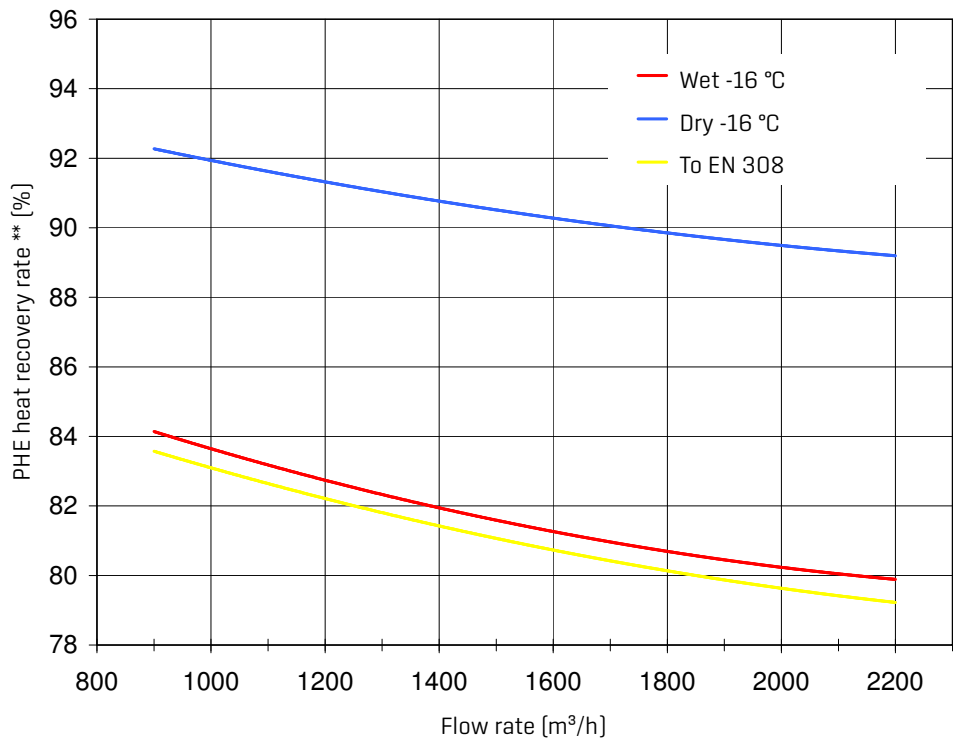
ODA -16 °C

ETA +25 °C 25 % r.h.

ODA +5 °C

COMFORT COMPACT VENTILATION UNIT
OUTPUT DIAGRAMS
CKL-2200

Exact technical data can only be supplied in relation to a specific project.



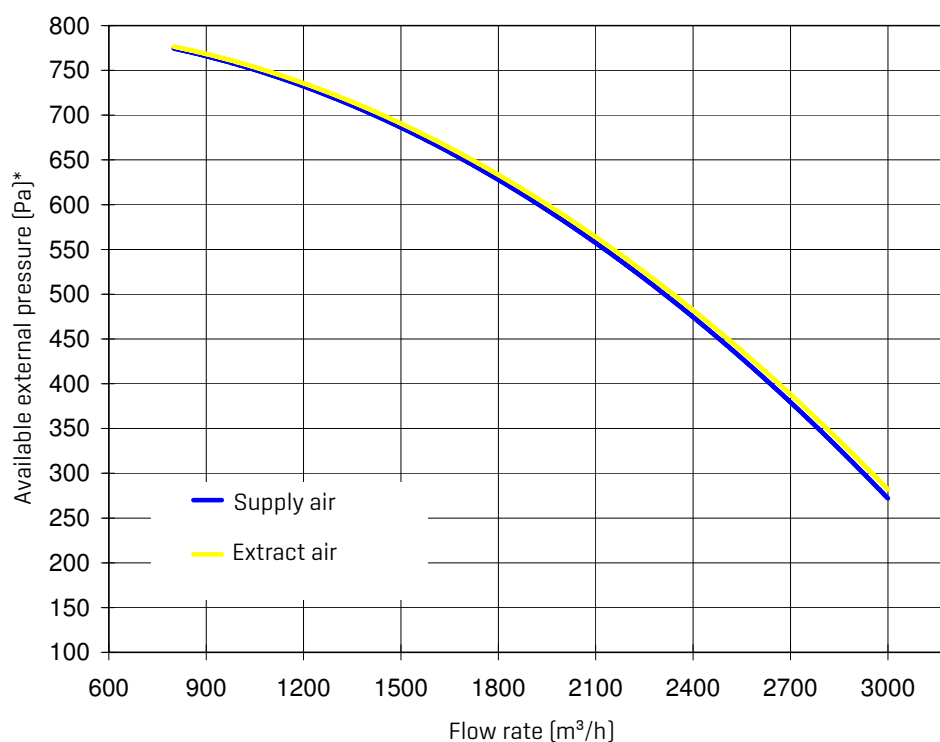
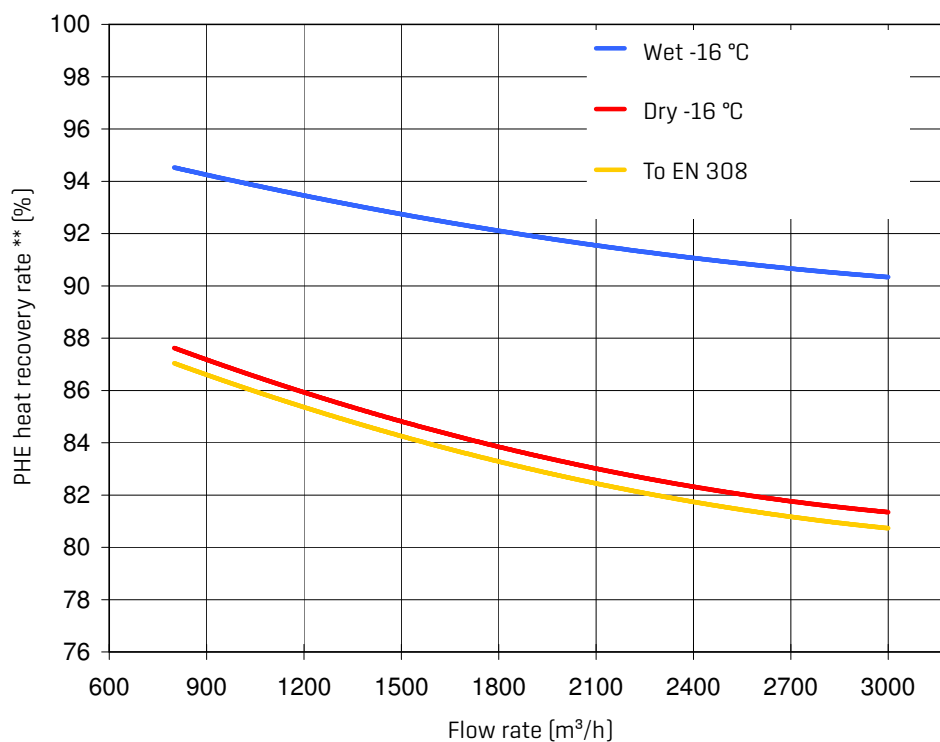
* With free intake and free discharge [without accessories]

** Operating conditions:

ETA +22 °C 40 % r.h.
ODA -16 °C

m 1:1
EN 308 conditions
ETA +25 °C 25 % r.h.
ODA +5 °C

Exact technical data can only be supplied in relation to a specific project.



* With free intake and free discharge [without accessories]

** Operating conditions:

\dot{m} 1:1

ETA +22 °C 40 % r.h.

EN 308 conditions

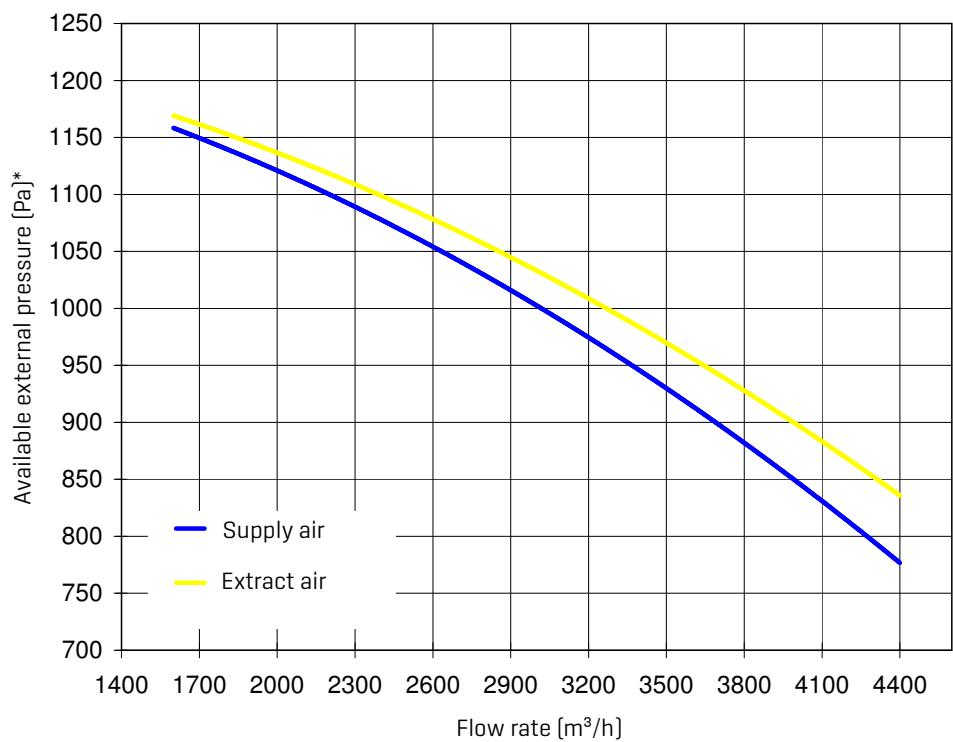
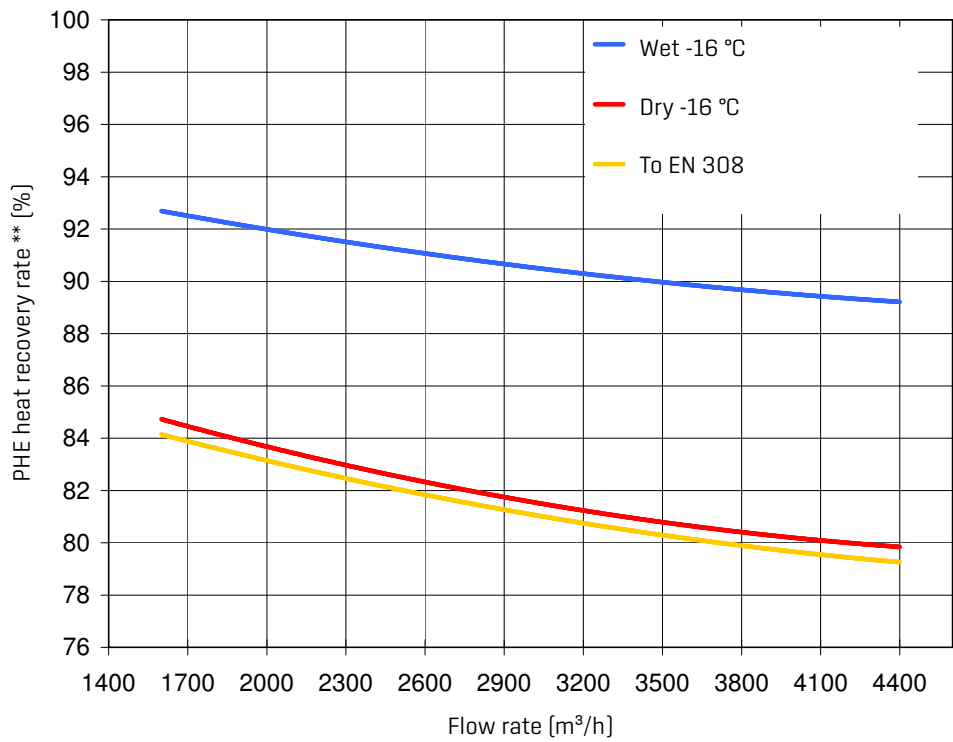
ODA -16 °C

ETA +25 °C 25 % r.h.

ODA +5 °C

COMFORT COMPACT VENTILATION UNIT
OUTPUT DIAGRAMS
CKL-4400

Exact technical data can only be supplied in relation to a specific project.



* With free intake and free discharge [without accessories]

** Operating conditions:
ETA +22 °C 40 % r.h.
ODA -16 °C

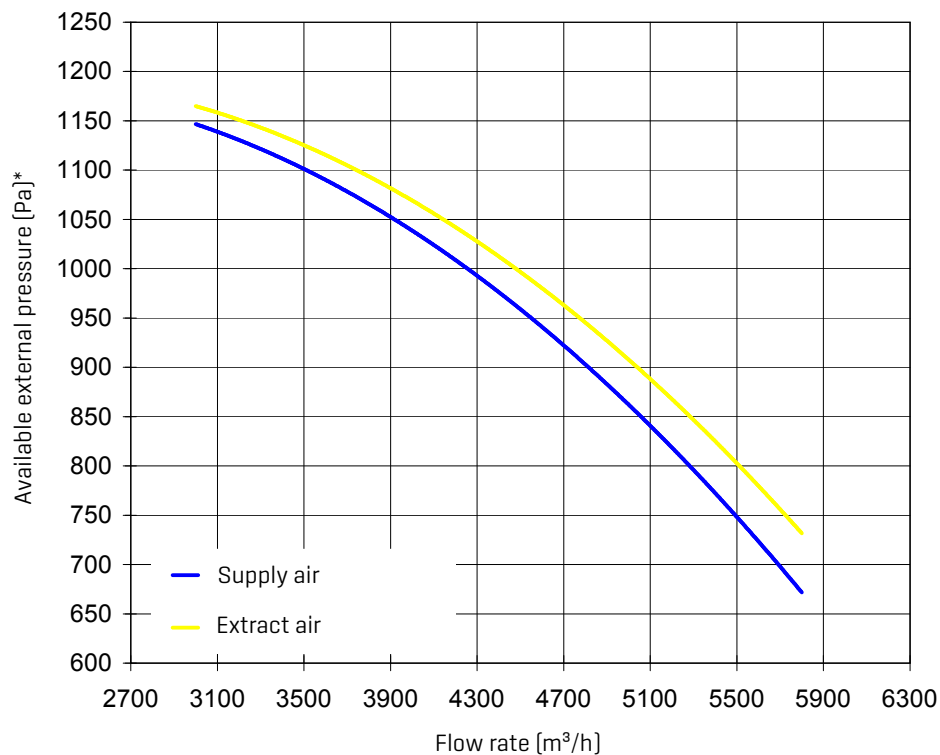
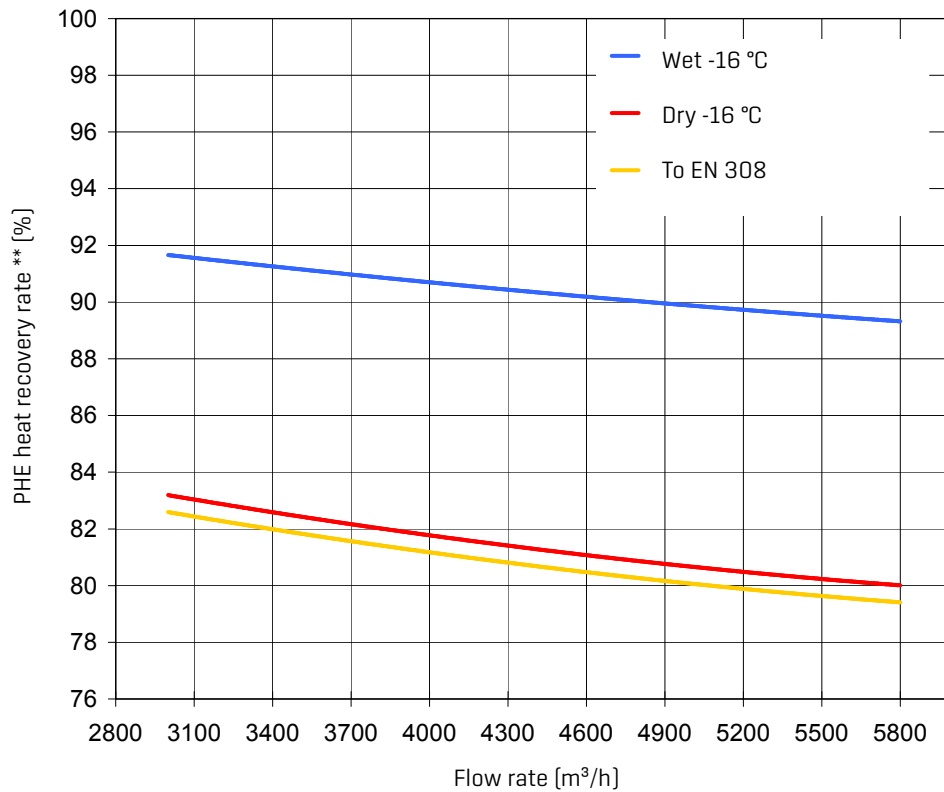
ṁ 1:1
EN 308 conditions
ETA +25 °C 25 % r.h.
ODA +5 °C

COMFORT COMPACT VENTILATION UNIT

OUTPUT DIAGRAMS

CKL-5800

Exact technical data can only be supplied in relation to a specific project.



* With free intake and free discharge [without accessories]

** Operating conditions:

\dot{m} 1:1

ETA +22 °C 40 % r.h.

EN 308 conditions

ODA -16 °C

ETA +25 °C 25 % r.h.

ODA +5 °C

CKL COMFORT COMPACT VENTILATION UNIT

TECHNICAL INFORMATION

INDOOR AIR QUALITY

The indoor air quality is influenced by the following three factors [see also EN 15251 and EN 13779]:

- **Emissions from persons and their activities**
Carbon dioxide emissions from a person's respiration, biological vapours, smoking, personal hygiene products, etc.
- **Emissions from the room**
Vapours from furniture, carpets, paint, adhesives, etc.
- **Outdoor air conditions**
Rural areas, urban areas, dust, fine dust, pollen, etc.

DESIGN CRITERIA

According to EN 15251 various categories are used for indoor air quality and ventilation rate criteria.

DESCRIPTION OF THE APPLICABILITY OF THE VARIOUS CATEGORIES

CATEGORY	DESCRIPTION
1	High level of expectation. Recommended for spaces occupied by very sensitive persons with special needs, such as disabled or sick persons, very young children and elderly persons.
2	Standard level of expectation. Recommended for new and renovated buildings.
3	Acceptable, moderate level of expectation. Can be applied to existing buildings.
4	Values outside the above categories. This category should only be applied for a limited part of the year.

As carbon dioxide concentration rises, the ability to concentrate and perform declines, tiredness increases and people feel uncomfortable.

Carbon dioxide is a natural constituent of the earth's atmosphere and is found in outdoor air in concentrations ranging from around 350 ppm (rural areas) to around 500 ppm (urban areas).

CKL COMFORT COMPACT VENTILATION UNIT

TECHNICAL INFORMATION

CO₂ LEVEL IN INDOOR ENVIRONMENTS to EN 15251 or EN 13779

The following table from EN 13779 shows the recommended minimum values for the outdoor air flow rate per person. The design air flow rate also takes emissions from other sources into account, such as building materials and furniture.

		Outdoor air flow rate							
		Non-smoking area				Smoking area			
Category	Unit	Standard area		Standard value		Standard area		Standard value	
1	l/s/person m ³ /h/person	> 15	> 54	20	72	> 30	> 108	40	144
2	l/s/person m ³ /h/person	10 - 15	36 - 54	12.5	45	20 - 30	72 - 108	25	90
3	l/s/person m ³ /h/person	6 - 10	21.6 - 36	8	28.8	12 - 30	43.2 - 108	16	57.6
4	l/s/person m ³ /h/person	< 6	< 21.6	5	18	< 12	< 43.2	10	36

MINIMUM AIR VOLUMES PER PUPIL (based on max. CO₂ requirement)

Age-dependent rates			
For approx. age	Target 1200 ppm	Target 1000 ppm	Target group
0 - 6	19 m ³ /h	25 m ³ /h	Preschool
6 - 10	19 m ³ /h	25 m ³ /h	Primary school
10 - 14	23 m ³ /h	30 m ³ /h	Secondary school
14 - 19	24 m ³ /h	33 m ³ /h	College
Adults	28 m ³ /h	37 m ³ /h	

EXAMPLE CALCULATIONS:

$$\text{l/s} \times 3.6 = \text{m}^3/\text{h}$$

Example 1:

School, 2 classrooms, each with 30 children aged 6 - 10 and one teacher.

Required air volume per room, according to max. CO₂ requirement of 1200 ppm

Calculation:	2 x 30 persons x 19 m ³ /h	=	1140 m ³ /h
	2 x 1 teacher x 28 m ³ /h	=	56 m ³ /h
	Required outdoor air volume:	=	1196 m ³ /h

Example 2:

Required interior category: 3 - Non-smoking area (standard value) 40 persons, air volume per room:

Calculation:	40 persons x 8 l/s	=	320 l/s
	Required outdoor air volume:	=	320 l/s = 1152 m ³ /h

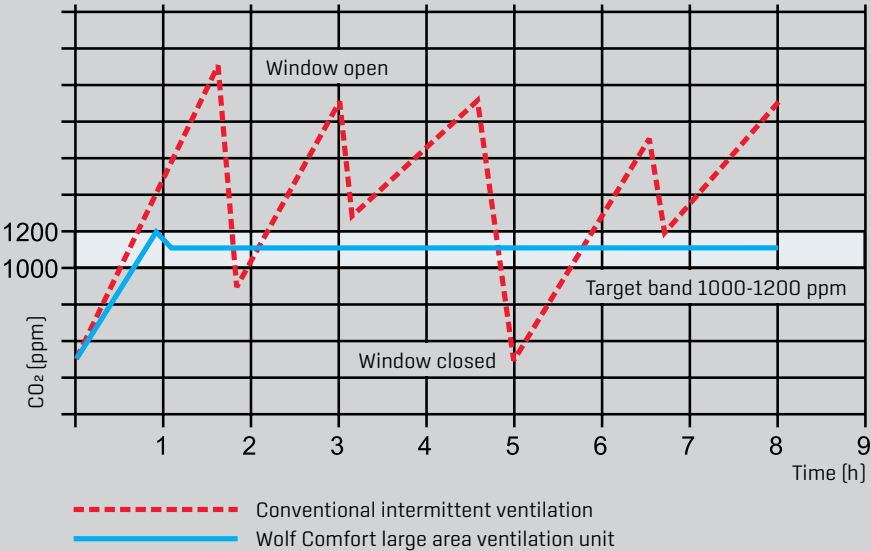
NOTES:

If greater air volumes are required, units from our KG Top range of air handling units can be used.

CKL COMFORT COMPACT VENTILATION UNIT

TECHNICAL INFORMATION

COMPARISON WITH INTERMITTENT VENTILATION:

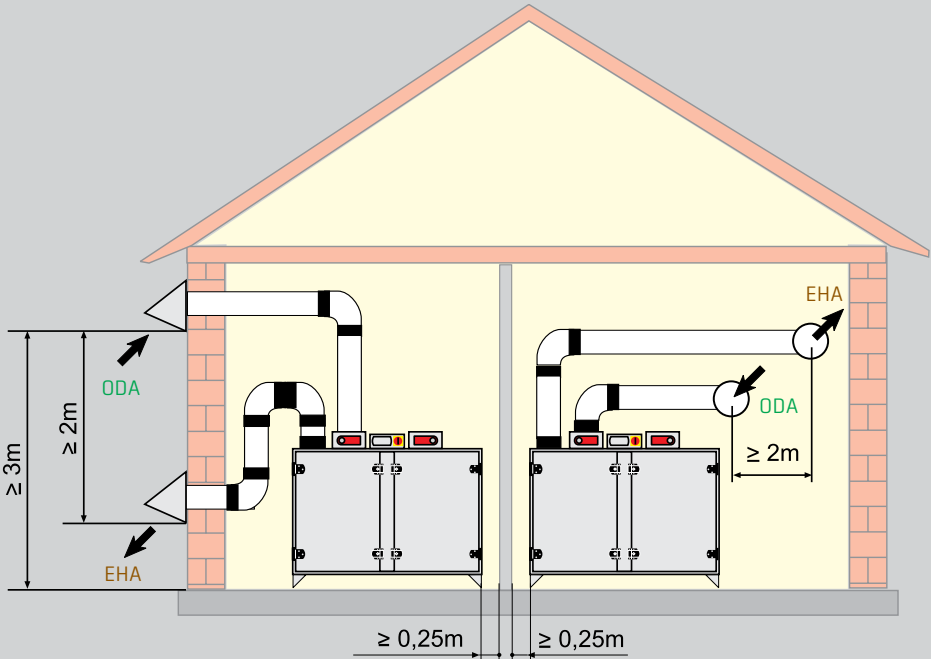


CRITERIA FOR INDOOR NOISE LEVELS to EN 15251 or EN 13779

TYPE OF BUILDING/ROOM	RECOMMENDED RANGE SOUND PRESSURE (DBA)
Open-plan office	35 - 45
Conference room	30 - 40
Classroom, nursery	35 - 45
Cafeterias / restaurants	35 - 50
Shops	35 - 50

MINIMUM CLEARANCE

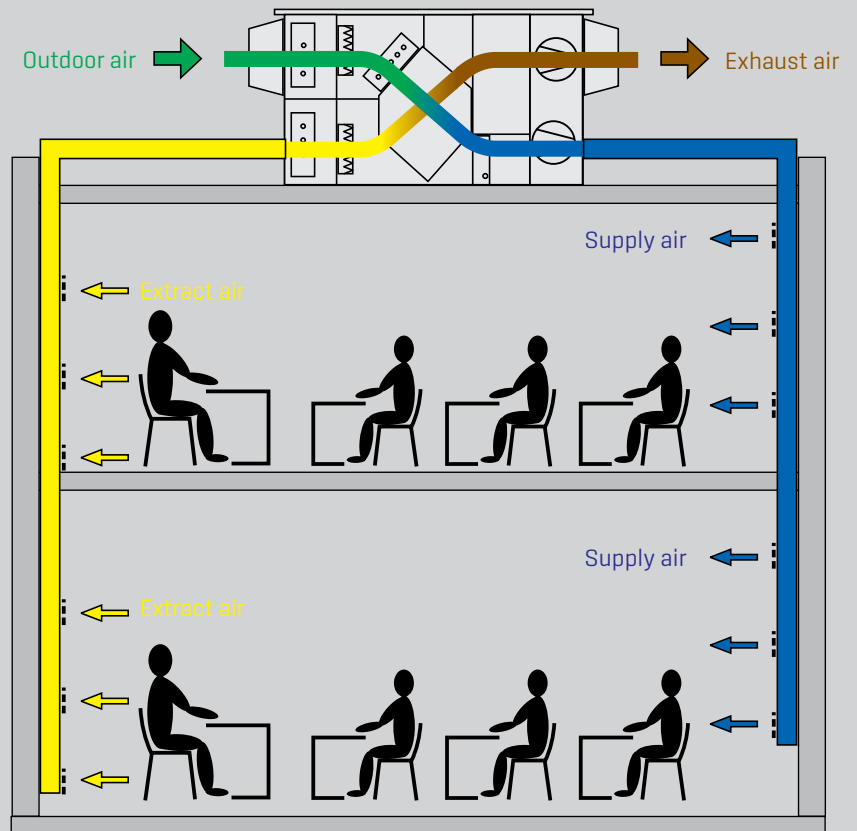
between outdoor air intake and exhaust air discharge to prevent an "air short circuit" (EN 13779)



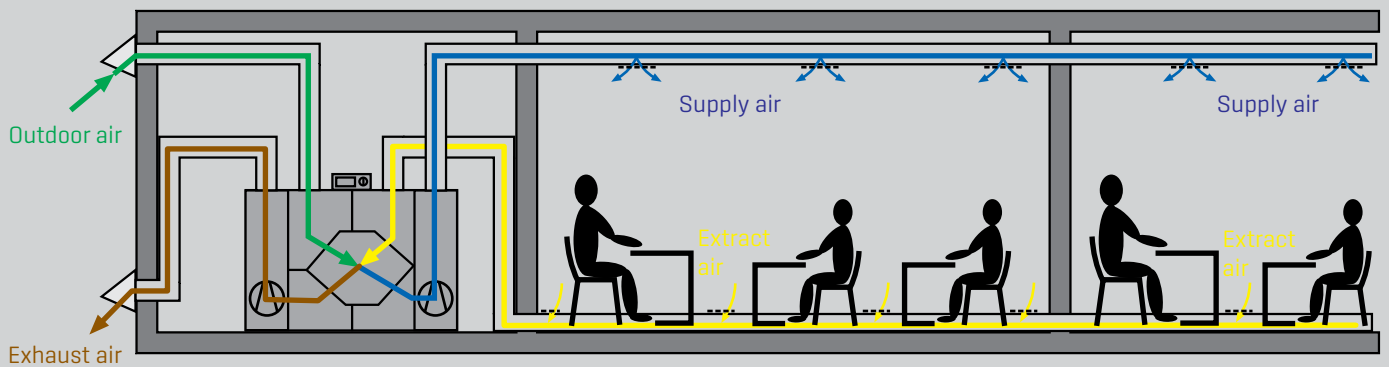
CKL COMFORT COMPACT VENTILATION UNIT

TECHNICAL INFORMATION

VIEW OF AIR INTAKE FUNCTION: CKL-A



UNIT POSITIONED IN ADJOINING ROOM



Dealer address

WOLF GMBH / P.O. BOX 1380 / D-84048 MAINBURG / TEL. +49.0.875174-0 / FAX +49.0.875174-1600 / www.WOLF.eu

