

**CWK / CFK**  
**Circular duct coolers**  
**for cooled water**

# CWK

## Circular duct coolers for cooled water

CWK duct coolers with circular duct connection use cold water as energy medium and are used to cool the ventilation air in a ventilation system. CWK duct coolers can also be used for individual cooling of specific rooms or areas. To regulate the room or inlet air temperature, the duct coolers are complemented with regulators, sensors, actuators, valves and a frost-protection control.

- 7 standard sizes in stock
- Opening access panel for inspection and cleaning
- Stainless steel drip tray for condensation water
- Air tightness class D as per EN 15727

### Design

Casing made of Zinc Magnesium-coated sheet steel, ZM 310.

Coil with copper pipes and pipe connections as well as aluminium fins.

Opening access panel for easy inspection and cleaning. Stainless steel drip tray (EN 1.4301) for condensation water with connection for drain (G½"). Duct connections are fitted with rubber gaskets.

### Operating Data

Max. operating temperature: +150 °C  
 Max. operating pressure: 1.0 MPa (10 bar)  
 The coils have been pressurised and leak tested.

### Dimensioning

Dimensioning can easily be achieved with our web-based calculation program VEAB Select ([www.veab.com](http://www.veab.com)). If necessary, contact our sales staff for help.

### Installation

CWK are intended for installation in a horizontal duct.

### Control Unit

See pages 6 to 8 for a list of regulators, sensors, valves and actuators.

### Hygiene

The design with an opening access panel allows for inspection and cleaning of coil, drip tray and air channels. This contributes to cleaner air channels and thus fresh and healthy ventilation air.



### Air Tightness Class D

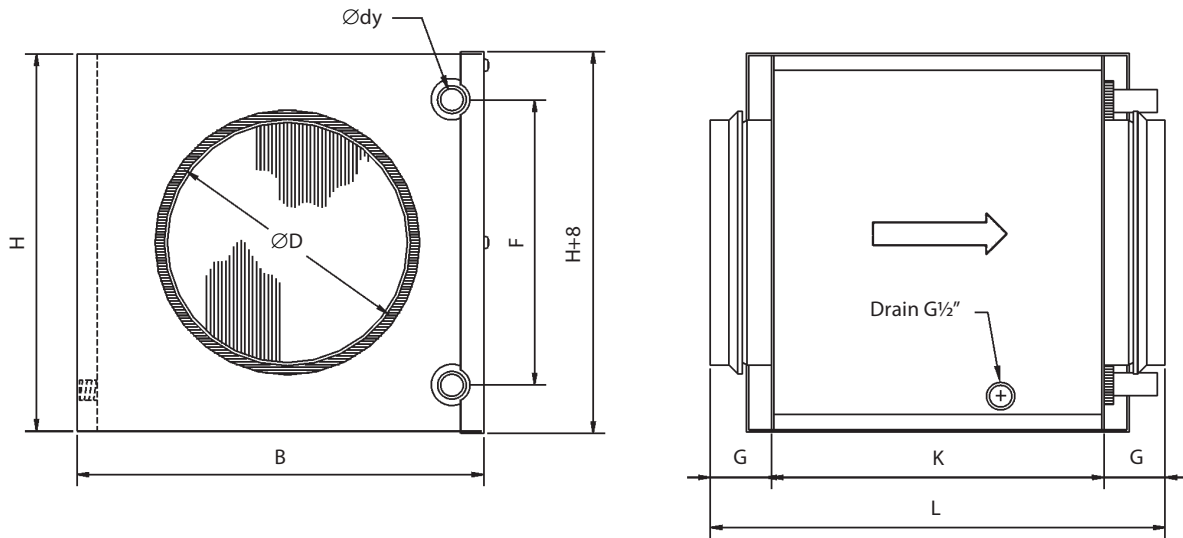
CWK duct coolers meet air tightness class D as per EN 15727, which ensures that the chilled air reaches its destination and does not leak out of the ventilation system that saves both energy and money.

Tightness class D is the highest classification according to EN 15727.



# Product Range Overview with Dimensional Drawing

Type	∅ D mm	B mm	H mm	∅ dy mm	F mm	G mm	K mm	L mm	Inner pipe volume l	Weight kg
CWK 100-3-2.5	100	251	180	10	100	30	280	340	0.15	4
CWK 125-3-2.5	125	326	255	10	175	35	280	350	0.4	6
CWK 160-3-2.5	160	326	255	10	175	40	280	360	0.4	6
CWK 200-3-2.5	200	411	330	22	250	40	280	360	0.7	9
CWK 250-3-2.5	250	486	405	22	325	40	280	360	1.1	11
CWK 315-3-2.5	315	560	504	22	400	40	280	360	1.61	15
CWK 400-3-2.5	400	710	529	22	425	55	332	442	2.5	20



CWK / CFK

## Project Design/Orders

### Description – CWK

Duct heater, VEAB type CWK, with casing made of Zinc Magnesium-coated sheet steel, ZM 310, coil with copper pipes and pipe connections as well as aluminium fins. Stainless steel drip tray for condensation water.

The duct cooler meets air tightness class D. Feedback control is achieved by means of an external regulator, sensors, valves and actuators to be

**Type designation** CWK 100 - 3 - 2.5  
(example)

Size designation

Number of rows of pipes

Fin spacing mm

### Specify the following when configuring/ ordering

1. Air flow: - m<sup>3</sup>/h
2. Inlet air temperature: - °C
3. Outlet air temp. or desired output: - °C or kW
4. Duct dimensions: - mm
5. Inlet water temperature: - °C
6. Outlet water temp. or water flow: - °C or l/s
7. Inlet air humidity: - % RH
8. Antifreeze agent - type / %

# CFK

## Circular duct coolers for cooled water, Insulated

CFK duct coolers with circular duct connection use cold water as energy medium and are used to cool the ventilation air in a ventilation system. CFK duct coolers can also be used for individual cooling of specific rooms or areas. To regulate the room or inlet air temperature, the duct coolers are complemented with regulators, sensors, actuators and valves.

CFK is supplied with a double-jacket casing and insulated with 50 mm rock wool. The insulation minimises energy loss, and exterior condensation. CFK has an insulated opening access panel making it easy to clean the coil and condensation tray.

Regular cleaning ensures efficiency, and is important for hygiene.

- 6 standard sizes in stock
- Double-jacket casing made of Zinc Magnesium-coated sheet steel, ZM 310
- Insulated with 50 mm rock wool
- Opening access panel for inspection and cleaning
- Stainless steel drip tray for condensation water
- Air tightness class D as per EN 15727

### Design

Double-jacket casing made of Zinc Magnesium-coated steel plate ZM 310 with 50 mm rock wool insulation.

Coil with copper pipes and pipe connections as well as aluminium fins.

Stainless steel drip tray (EN 1.4301) for condensation water with connection for drain (G $\frac{1}{2}$ ”).

Duct connections are fitted with rubber gaskets.

### Operating Data

Max. operating temperature: +150 °C  
 Max. operating pressure: 1.0 MPa (10 bar)  
 The coils have been pressurised and leak tested.

### Dimensioning

Dimensioning can easily be achieved with our web-based calculation program VEAB Select ([www.veab.com](http://www.veab.com)).

If necessary, contact our sales staff for help.

### Installation

CFK are intended for installation in a horizontal duct.

### Control Unit

See pages 6 to 8 for a list of regulators, sensors, valves and actuators.

### Hygiene

The design with an opening access panel allows for inspection and cleaning of coil, drip tray and air channels. This contributes to cleaner air channels and thus fresh and healthy ventilation air.



### Air Tightness Class D

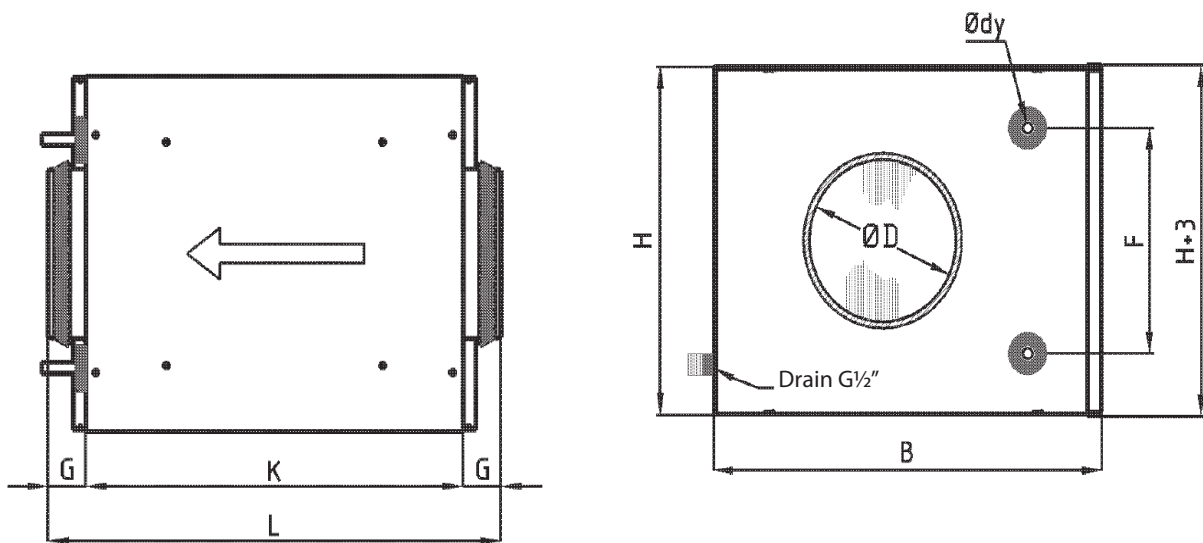
CFK duct coolers meet air tightness class D as per EN 15727, which ensures that the chilled air reaches its destination and does not leak out of the ventilation system—that saves both energy and money.

Tightness class D is the highest classification according to EN 15727.



# Product Range Overview with Dimensional Drawing

Type	∅ D mm	B mm	H mm	∅ dy mm	F mm	G mm	K mm	L mm	Inner pipe volume l	Weight kg
CFK 125-3-2.5	125	404	328	10	175	35	366	436	0.4	10.8
CFK 160-3-2.5	160	404	328	10	175	40	368	448	0.4	10.8
CFK 200-3-2.5	200	489	403	22	250	40	368	448	0.7	15.8
CFK 250-3-2.5	250	564	478	22	325	40	380	460	1.1	20.9
CFK 315-3-2.5	315	639	553	22	400	40	382	462	1.6	28.1
CFK 400-3-2.5	400	789	581	22	425	55	380	490	2.5	38



CWK / CFK

## Project Design/Orders

### Description – CFK

Duct cooler, VEAB type CFK, with double-jacket casing made of Zinc Magnesium-coated sheet steel, ZM 310, insulated with 50 mm rock wool, coil with copper pipes and pipe connections as well as aluminium fins. Stainless steel drip tray for condensation water. The duct cooler meets air tightness class D. Feedback control is achieved by means of an external regulator, sensors, valves and actuators to be ordered separately.

**Type designation** CFK 125 - 3 - 2.5  
(example)

Size designation

Number of rows of pipes

Fin spacing mm

### Specify the following when configuring/ ordering

- Air flow: - m<sup>3</sup>/h
- Inlet air temperature: - °C
- Outlet air temp. or desired output: - °C or kW
- Duct dimensions: - mm
- Inlet water temperature: - °C
- Outlet water temp. or water flow: - °C or l/s
- Inlet air humidity: - % RH
- Antifreeze agent - type / %

## Regulators



RC



RC-DO



OPTIGO OP10

### REGIO MINI

Complete regulator with integrated room sensor. Can be fitted with external room and/or duct sensor. Includes two control outputs for sequential heating and cooling, for example.

#### RC

24 V supply. 0...10 V outgoing control signal. Base setpoint 20-26 °C is adjusted with DIP switches. The base setpoint can be adjusted by  $\pm 3$  °C using the setpoint knob.

#### RC-DO

24 V supply. 0...10 V outgoing control signal. RC-DO includes a backlighted display and temperature range from 0-50 °C.

### OPTIGO

Regulator with display. One knob for all adjustments. To be mounted on DIN rail. Operates with PT1000 sensor within the  $-20$  °C to  $+40$  °C range. Started/stopped with "run" signal from fan.

#### OP5

24 V supply. 0...10 V outgoing control signal. Operates with a room or duct sensor. Convertible for heating or cooling feedback control.





#### OP10

24 V supply. Adjustable for 0...10 V outgoing control signal or 3-point feedback control. Two control outputs for sequential heating and cooling, for example. Input for two sensors and possible antifreeze sensor. Inlet air feedback control or room feedback control with cascade controlled inlet air. Antifreeze control with standstill heater. Output for starting/stopping fans, for example, via relay 230 VAC 1-ph., 5 A. Programmable weekly timer for control of both fans and heating/cooling. Outputs for external timer that extends operating time. Can be equipped with an external setpoint adjuster.

#### OP10-230

Same functions as OP10 but with 230 VAC 1-ph supply.

## OPTIGO and REGIO Accessories

	Product	Range	Design
	Duct sensor TG-K3/PT1000	-30...+70 °C	IP20 degree of protection
	Room sensor TG-R5/PT1000	0-50°C	IP30 degree of protection
	Room sensor TG-UH/PT1000	-30...+120 °C	IP65 degree of protection
	Transformer 60 Enclosed transformer for wall mounting. Integrated two-pole protection on secondary side.		Input voltage 230 VAC 1-ph. Output voltage 24 VAC 1-ph. Maximum load 60 VA  IP44 degree of protection

## Actuators and Valves with Kvs 0.25 – 8.0 (110 °C max.)

Designation	Type
3-way actuator for ZTV/ZTR valves, IP44 degree of protection	RVAZ4-24
0...10 V actuators for ZTV/ZTR valves, IP44 degree of protection	RVAZ4-24A

Designation	Kvs	Type
2-way valve 1/2"	0.25	ZTV15-0,25
2-way valve 1/2"	0.4	ZTV15-0,4
2-way valve 1/2"	0.6	ZTV15-0,6
2-way valve 1/2"	1.0	ZTV15-1,0
2-way valve 1/2"	1.6	ZTV15-1,6
2-way valve 3/4"	2.0	ZTV20-2,0
2-way valve 3/4"	2.5	ZTV20-2,5
2-way valve 3/4"	4.0	ZTV20-4,0
2-way valve 3/4"	6.0	ZTV20-6,0
2-way valve 1"	8.0	ZTVB25-8
3-way valve 1/2"	0.25	ZTR15-0,25
3-way valve 1/2"	0.4	ZTR15-0,4
3-way valve 1/2"	0.6	ZTR15-0,6
3-way valve 1/2"	1.0	ZTR15-1,0
3-way valve 1/2"	1.6	ZTR15-1,6
3-way valve 3/4"	2.0	ZTR20-2,0
3-way valve 3/4"	2.5	ZTR20-2,5
3-way valve 3/4"	4.0	ZTR20-4,0
3-way valve 3/4"	6.0	ZTR20-6,0
3-way valve 1"	8.0	ZTRB25-8



RVAZ4-24 actuator



ZTV valve



ZTR valve



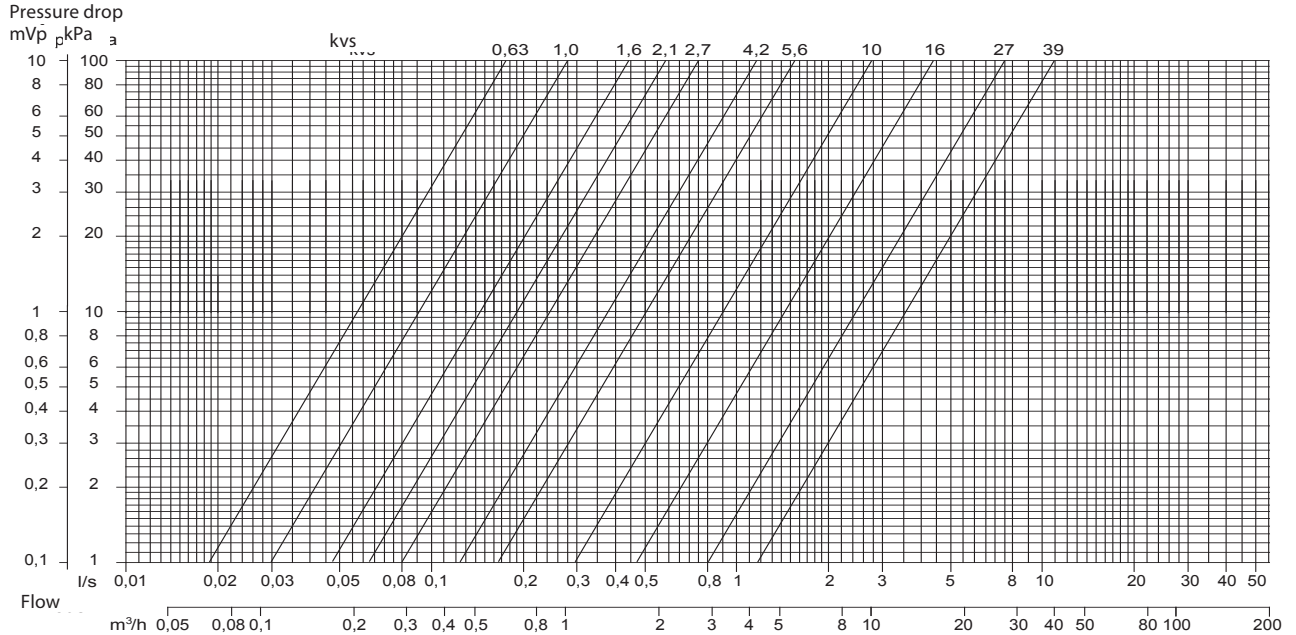
## Valve and Actuator Selection Guide for CWK / CFK

Water temp. 110 °C max.

Actuators RVAZ4-24 (3-position) or RVAZ4-24A (0...10 V) can be used for all ZTV/ZTR valves.

Type of CWK / CFK	Valve type	Kvs
CWK 100-3-2.5	2-way ZTV15-0.4	0.4
CWK 125-3-2.5 CFK 125-3-2.5	2-way ZTV15-0.4	0.4
CWK 160-3-2.5 CFK 160-3-2.5	2-way ZTV15-0.4	0.4
CWK 200-3-2.5 CFK 200-3-2.5	2-way ZTV15-0.6	0.6
CWK 250-3-2.5 CFK 250-3-2.5	2-way ZTV15-1.0	1.0
CWK 315-3-2.5 CFK 315-3-2.5	2-way ZTV15-1.6	1.6
CWK 400-3-2.5 CFK 400-3-2.5	2-way ZTV20-2.5	2.5

## Pressure Drop Chart for Valves





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