Series
OKF

Application

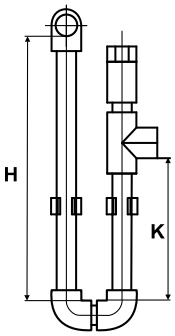
Air coolers with direct evaporative cooling are designed for cooling the incoming air in ventilation systems with rectangular cross-section. These air coolers can also be used as coolers in inlet and inlet-exhaust units.

Design

The case is made of galvanized sheet steel, pipe collectors are made of copper tubes and heat exchange surface is made of aluminum plates. Triple-row versions of coolers are available. They are designed for operation with cooling mediums R123, R134a, R152a, R404a, R407c, R410a, R507, R12, R22. The coolers are supplied with a drip-plate for collection and removal of condensed water.

Mounting

- Design of the cooler allows fixing it by flanged coupling. Coolers with direct evaporative cooling may be installed only horizontally, allowing removal of condensed water.
- It is recommended to install the cooler in position that ensures uniformly distributed air flow across the full width of cross-section.
- Air filter should be installed in front of the cooler protecting it from contamination.
- Cooler may be installed in front or behind the fan. If the cooler is placed behind the fan it's recommended to anticipate air duct between them in the distance not less than 1-1,5 m in order to stabilize air flow.
- Cooler needs to be connected on the counter flow principle in order to reach maximum cooling effect. All estimated nomographic charts, included in the catalogue, are true for such type of connection.
- It is recommended to install a droplet separator (ordered separately) at the coolers air outlet if air flow speed exceeds 2,5 m/s. This will prevent the drops of condensed water from penetrating into air duct system.
- Removal of condensed water from the cooler should be carried out by means of siphon. The height of siphon directly depends on the fan total pressure. The height of siphon can be calculated in accordance with the following figure and table.



H (mm)	K (mm)	P (Pa)
100	55	600
200	105	1100
260	140	1400

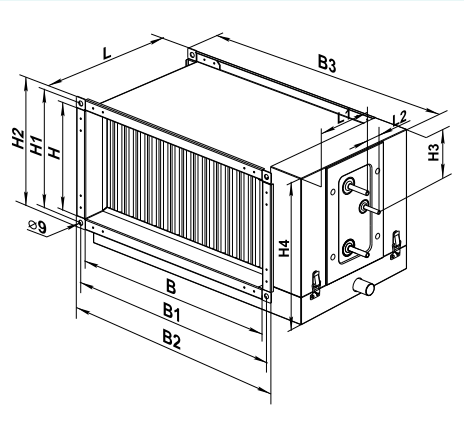
H – siphon height
K – branch height
P – fan total pressure

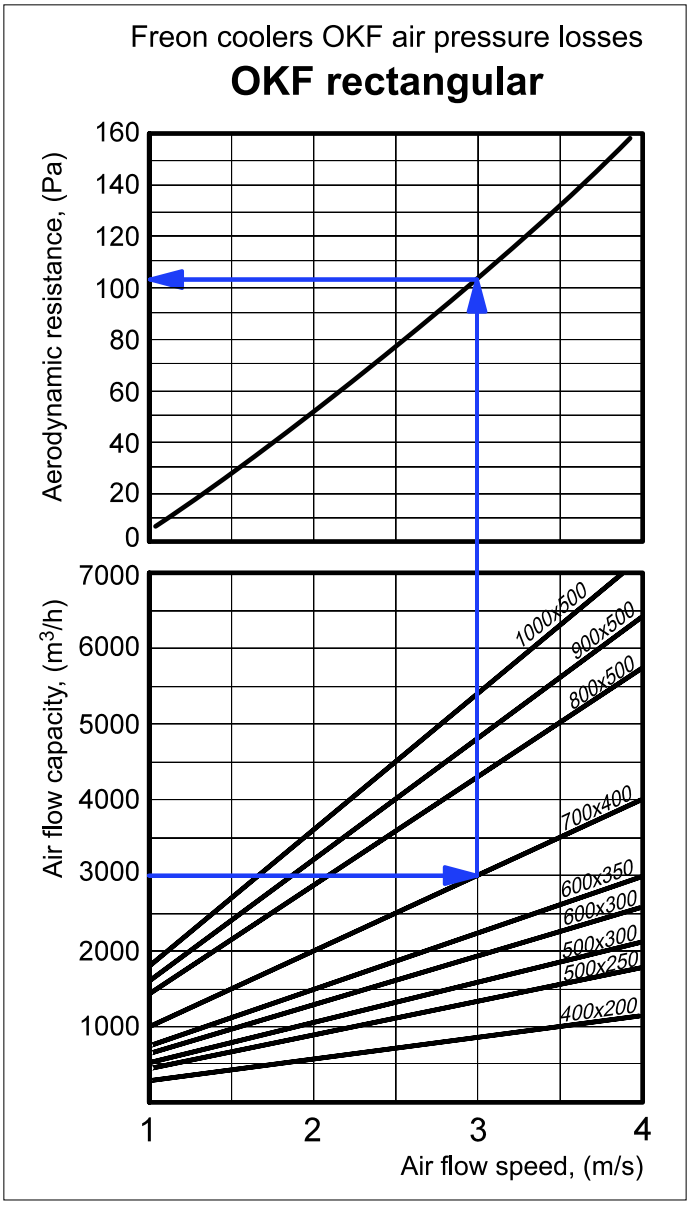
- For correct and safe operation of coolers we recommend you to use automation system that provides complex control and automated regulation of cooling effect and chilling temperature.

Legend:

Series	Flange diameter, mm	–	Number of pipes' rows
OKF	400X200; 500X250; 500X300; 600X300; 600X350; 700x400; 800x500; 900x500; 1000x500		3

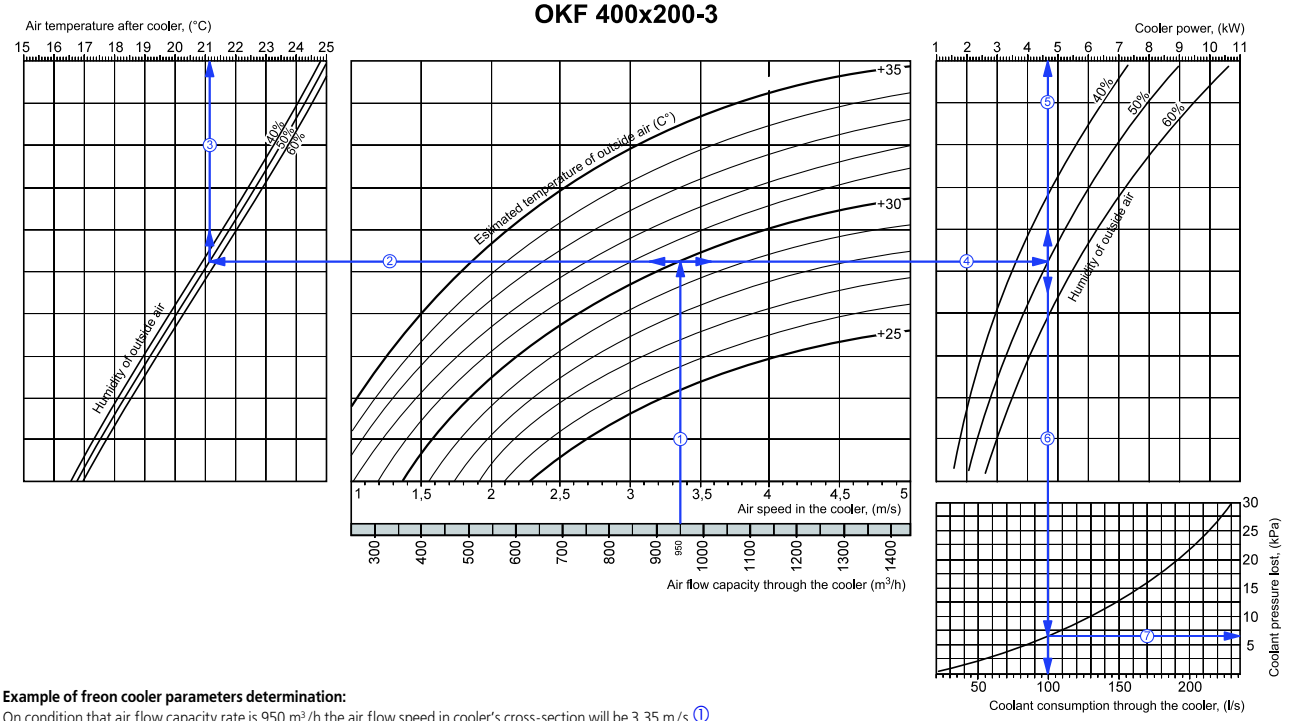
Type	Dimensions, mm											
	B	B1	B2	B3	H	H1	H2	H3	H4	L	L1	L2
OKF 400x200-3-2,5	400	420	438	528	200	220	238	70	273	395	165	60
OKF 500x250-3-2,5	500	520	538	628	250	270	288	120	323	395	165	60
OKF 500x300-3-2,5	500	520	538	628	300	320	338	175	373	395	165	60
OKF 600x300-3-2,5	600	620	638	728	300	320	338	170	373	395	165	60
OKF 600x350-3-2,5	600	620	638	728	350	370	388	220	423	395	165	60
OKF 700x400-3-2,5	700	720	738	858	400	420	438	250	473	395	160	75
OKF 800x500-3-2,5	800	820	838	958	500	520	538	340	573	395	160	75
OKF 900x500-3-2,5	900	920	938	1058	500	520	538	350	573	395	160	75
OKF 1000x500-3-2,5	1000	1020	1038	1158	500	520	538	350	573	395	160	75





OKF 400x200-3

OKF 400x200-3



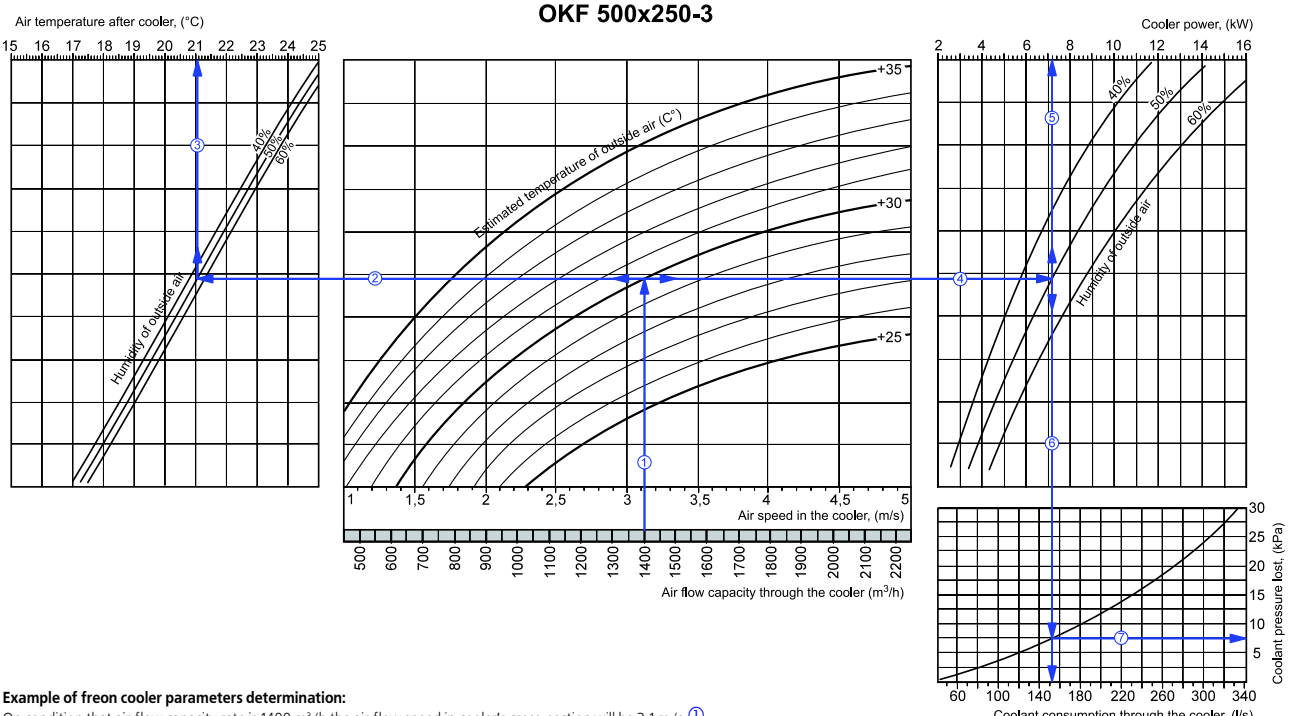
Example of freon cooler parameters determination:

On condition that air flow capacity rate is 950 m³/h the air flow speed in cooler's cross-section will be 3,35 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (21,1°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (4,7 kW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (100 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (6,5 kPa).

OKF 500x250-3

OKF 500x250-3

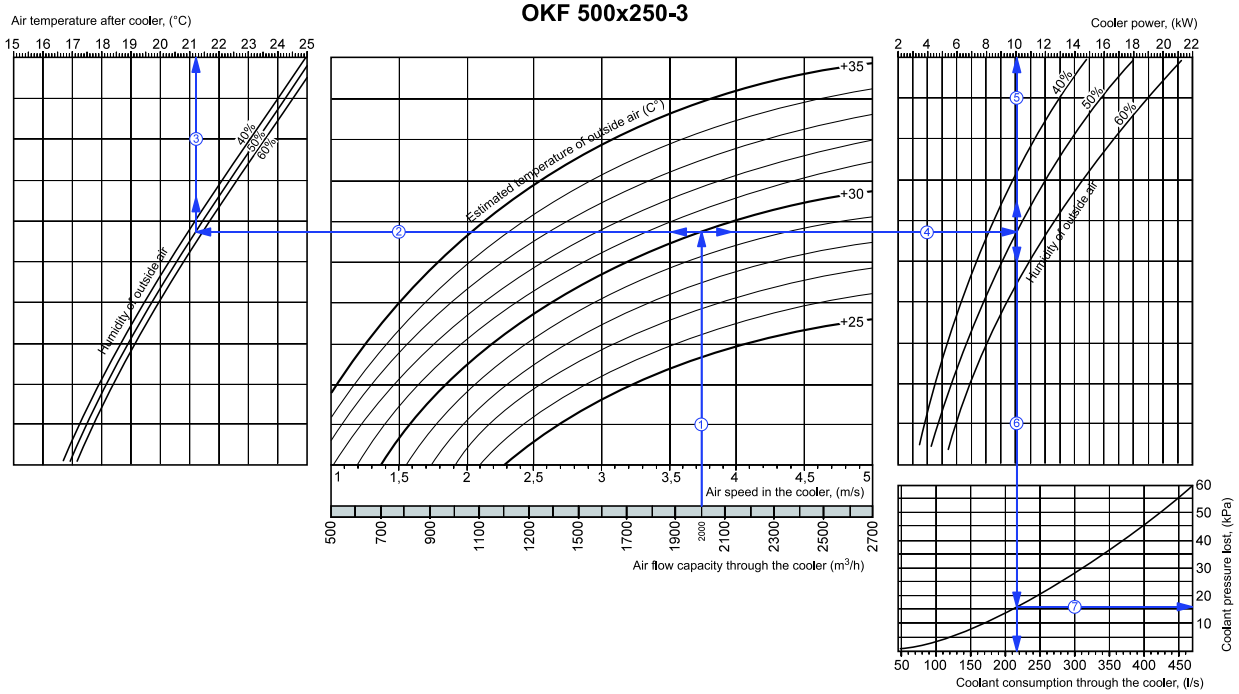


Example of freon cooler parameters determination:

On condition that air flow capacity rate is 1400 m³/h the air flow speed in cooler's cross-section will be 3,1 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (21,1°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (7,2 kW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (152 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (7,5 kPa).

OKF 500x300-3

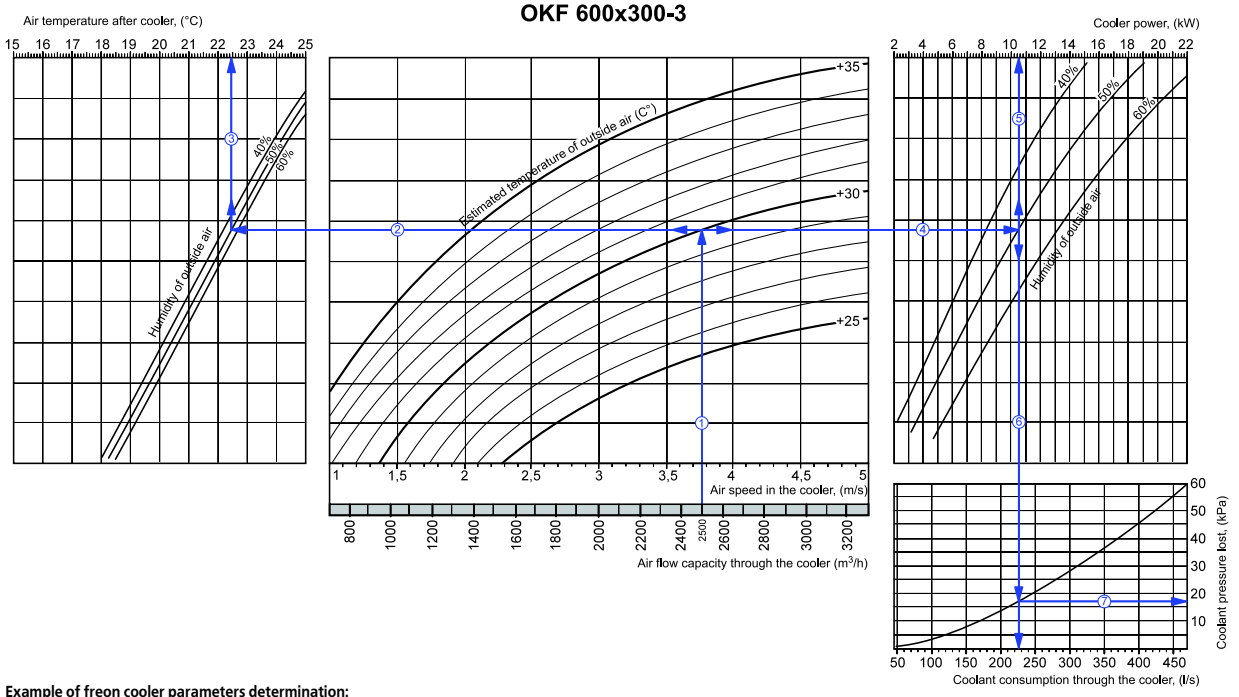


Example of freon cooler parameters determination:

On condition that air flow capacity rate is 2000 m³/h the air flow speed in cooler's cross-section will be 3,25 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (21,2°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (10 kW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (215 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (16 kPa).

OKF 600x300-3

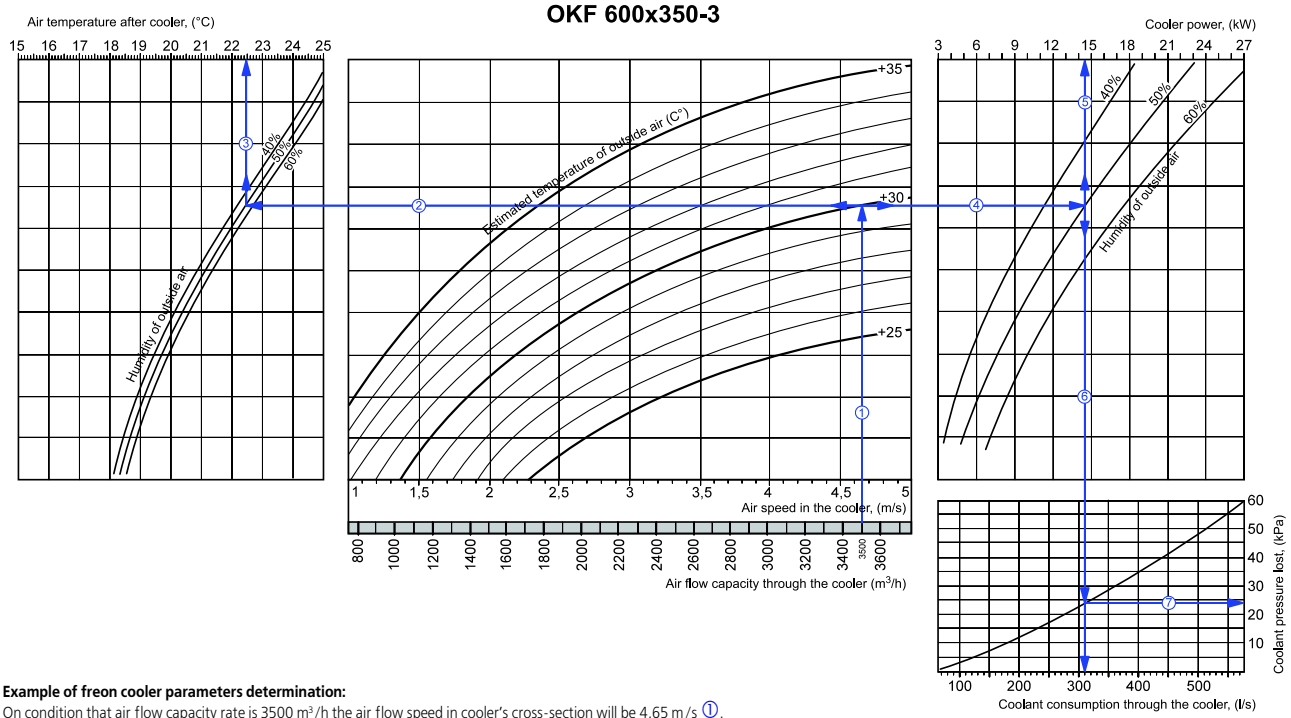


Example of freon cooler parameters determination:

On condition that air flow capacity rate is 2500 m³/h the air flow speed in cooler's cross-section will be 3,75 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (22,5°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (10,5 kW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (225 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (17 kPa).

OKF 600x350-3

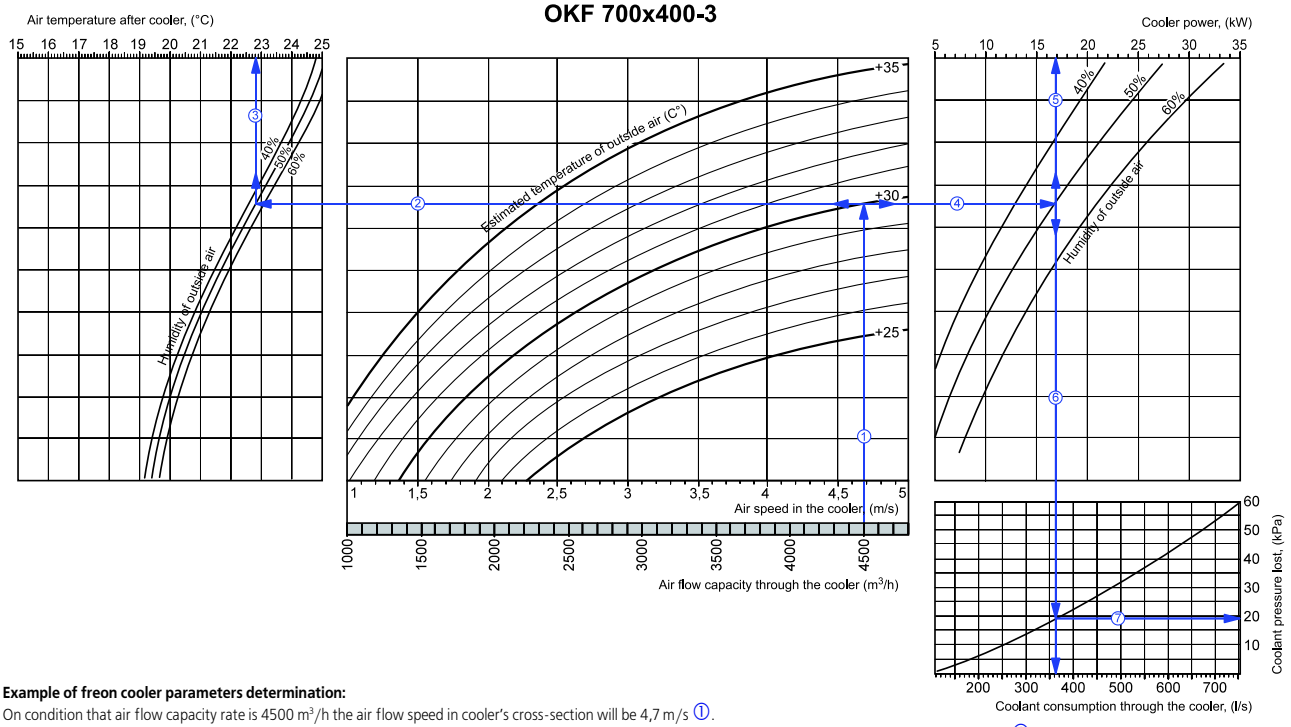


Example of freon cooler parameters determination:

On condition that air flow capacity rate is 3500 m³/h the air flow speed in cooler's cross-section will be 4,65 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (22,5°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (14,5 kW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (310 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (24 kPa).

OKF 700x400-3

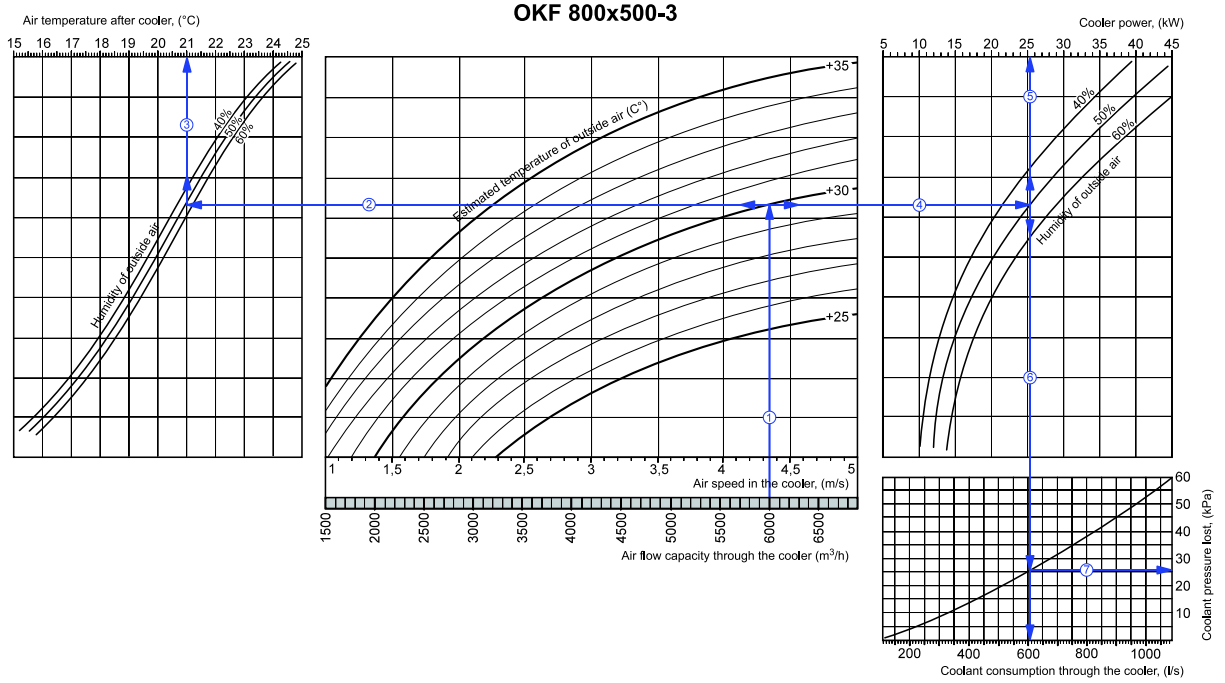


Example of freon cooler parameters determination:

On condition that air flow capacity rate is 4500 m³/h the air flow speed in cooler's cross-section will be 4,7 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (22,8°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (17 kW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (360 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (19 kPa).

OKF 800x500-3

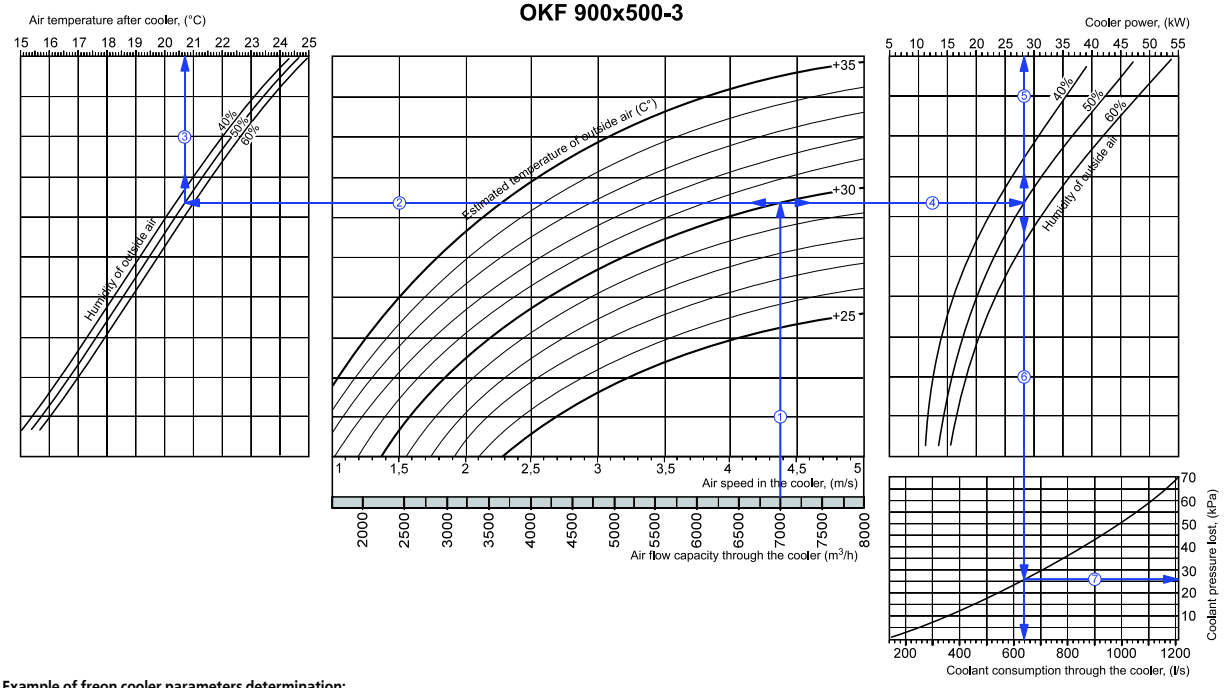


Example of freon cooler parameters determination:

On condition that air flow capacity rate is 6000 m³/h the air flow speed in cooler's cross-section will be 4,35 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (20,7°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (25,5 кW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (605 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (26 кPa).

OKF 900x500-3

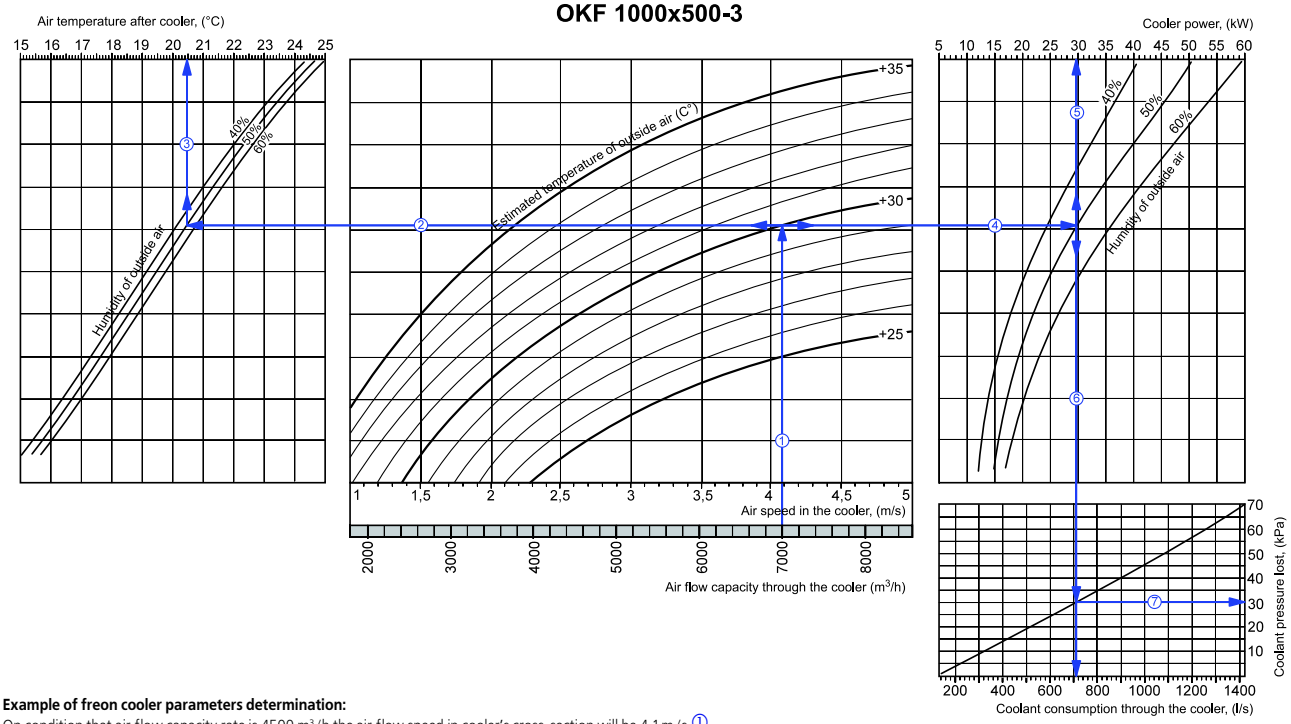


Example of freon cooler parameters determination:

On condition that air flow capacity rate is 7000 m³/h the air flow speed in cooler's cross-section will be 4,4 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (20,7°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (28 кW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (640 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (26 кPa).

OKF 1000x500-3



Example of freon cooler parameters determination:

On condition that air flow capacity rate is 4500 m³/h the air flow speed in cooler's cross-section will be 4,1 m/s ①.

- In order to determine the highest possible temperature of cooled air you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example,+30°C) to draw the line to the left ② until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the axis of air temperature after the cooler (20,5°C) ③.
- In order to determine cooler capacity you need from the point of intersection of two lines which stand for air flow capacity rate ① and estimated summer temperature (for example+30°C) extend a line to the right ④ until it intersects the line of outer air humidity (f.e. 50%) and then erect a perpendicular to the cooler capacity axis (30 кW) ⑤.
- In order to determine the required of water flowing consumption through the cooler you need to drop a perpendicular ⑥ on the axis of consumption of water flowing through the cooler (710 l/s).
- In order to determine the water pressure drop in the cooler you need to find the intersection point between the line ⑥ which stand for pressure lose graph and then construct a perpendicular ⑦ to the right until it reaches the axis of water pressure drop (30 кPa).

Series
KOM

Application

Back valve with spring-loaded blades allows shutting off the round air ducts automatically and also prevention the back air flow draught while the ventilation system is not operating. The valve blades are opened by the air flow pressure and then are closed by spring.

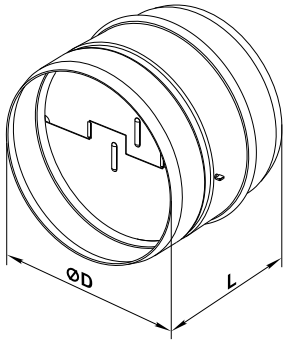
Design

The valve case is made of galvanized steel sheet and the blades are made of sheet aluminum. Each valve has two spring-loaded leafs.

Mounting

Design of the valve allows fixing it on the round air ducts by means of clamps. Rotation axis of valve leafs must be vertical. Direction of air flow should be taken into consideration while installing the valve in ventilation system.

Type	Dimensions, mm		Weight, kg
	ØD	L	
KOM 100	99	80	0,18
KOM 125	124	100	0,27
KOM 150	149	115	0,38
KOM 160	159	120	0,42
KOM 200	199	145	0,63
KOM 250	249	165	0,90
KOM 315	314	190	1,31



Legend:

Series	Flange diameter , mm
KOM	100; 125; 150; 160; 200; 250; 315