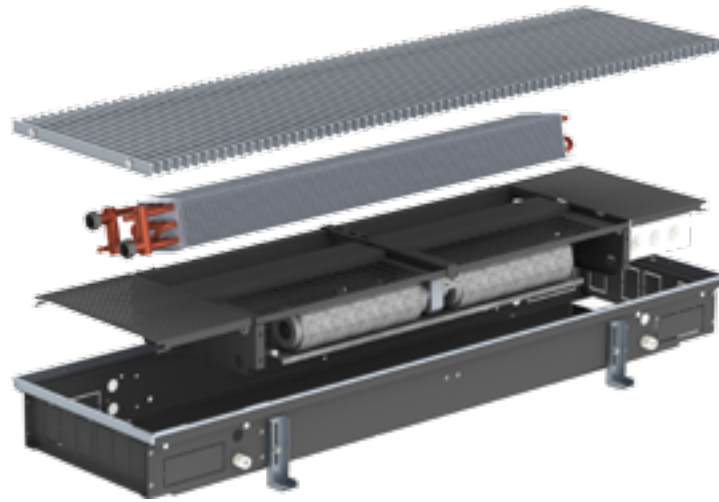


**PKH** | HEATING or COOLING

- 2-pipe system for heating or cooling
- Condensate drain included

Length: 1200 to 3000 mm  
 Height: 130 or 150 mm  
 Heat output: 1105 - 13006 W  
 Cooling output: 406 - 4757 W

Fans / Controls  
 230 V AC - 3 speed transformer  
 230 V AC - control 0-10 V  
 24 V EC - control 0-10 V  
 12 V AC - on request

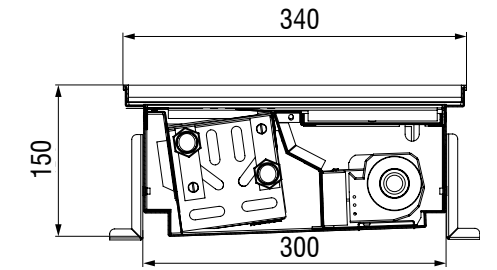
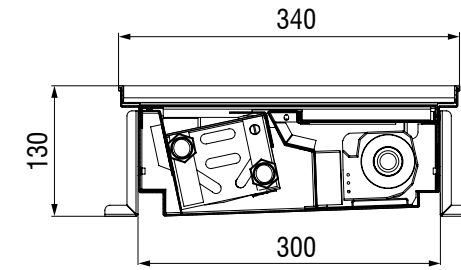


	PKH-130						PKH-150						
	LPHW			LPCW			LPHW			LPCW			
	90/70/20 °C	75/65/20 °C	55/45/20 °C	6/12/26 °C	10/15/26 °C	12/16/26 °C	90/70/20 °C	75/65/20 °C	55/45/20 °C	6/12/26 °C	10/15/26 °C	12/16/26 °C	
<b>L = 1200 mm (1 fan)</b>						<b>L = 1200 mm (1 fan)</b>							
Fan speed	MIN	1706	1501	852	496	366	321	2662	2251	1355	721	516	461
	MED	2358	2063	1154	534	459	409	3521	2933	1759	921	653	632
	MAX	3377	2926	1650	760	571	527	4474	3849	2287	1205	900	816
<b>L = 2000 mm (2 fans)</b>						<b>L = 2000 mm (2 fans)</b>							
Fan speed	MIN	3446	3032	1721	1002	739	648	5377	4547	2737	1456	1042	931
	MED	4763	4167	2331	1079	927	826	7112	5925	3553	1860	1319	1277
	MAX	6754	5852	3300	1657	1245	1149	8948	7698	4574	2627	1962	1779
<b>L = 2600 mm (3 fans)</b>						<b>L = 2700 mm (3 fans)</b>							
Fan speed	MIN	4606	4053	2300	1339	988	867	7187	6078	3659	1947	1393	1245
	MED	6367	5570	3116	1442	1239	1104	9507	7919	4749	2487	1763	1706
	MAX	9118	7900	4455	2052	1542	1423	12080	10392	6175	3254	2430	2203
<b>L = 3000 mm (3 fans)</b>						<b>L = 3000 mm (3 fans)</b>							
Fan speed	MIN	4975	4377	2484	1446	1067	936	7762	6564	3951	2102	1505	1344
	MED	6876	6016	3365	1557	1338	1193	10267	8553	5129	2686	1904	1843
	MAX	9847	8532	4811	2216	1665	1537	13046	11224	6669	3514	2624	2379

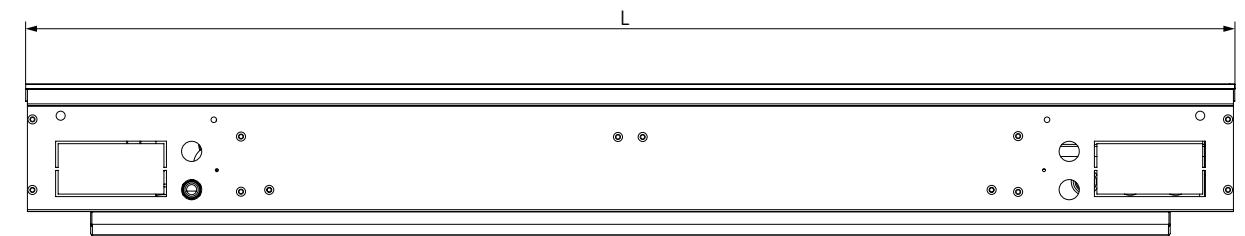
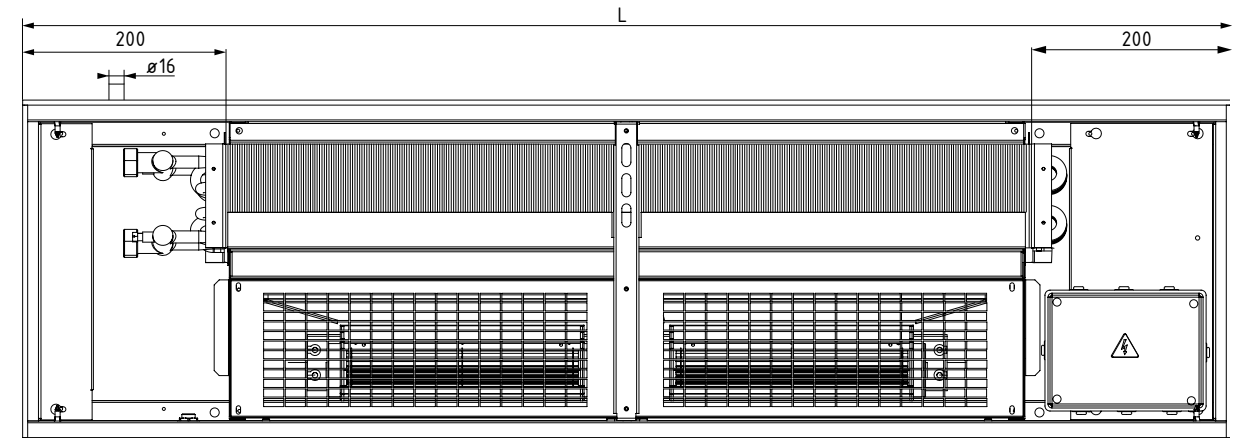
Dimensions - PKH

PKH-130

PKH-150



\*water connections R1/2"

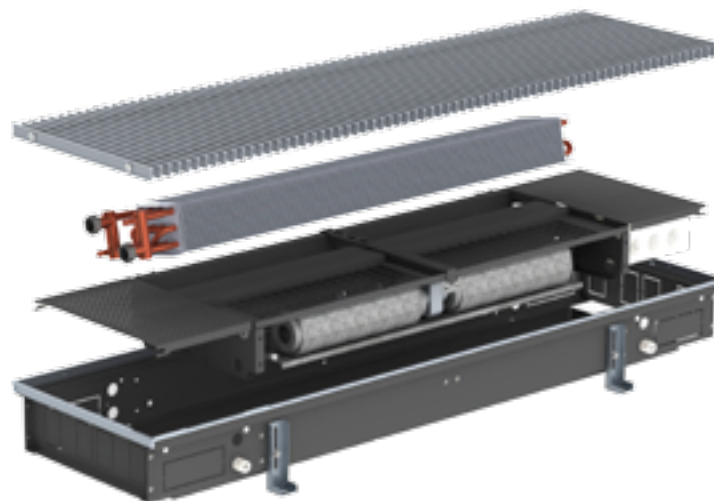


**PKH-4C** | HEATING and/or COOLING

- 4-pipe system for heating and/or cooling
- Condensate drain included

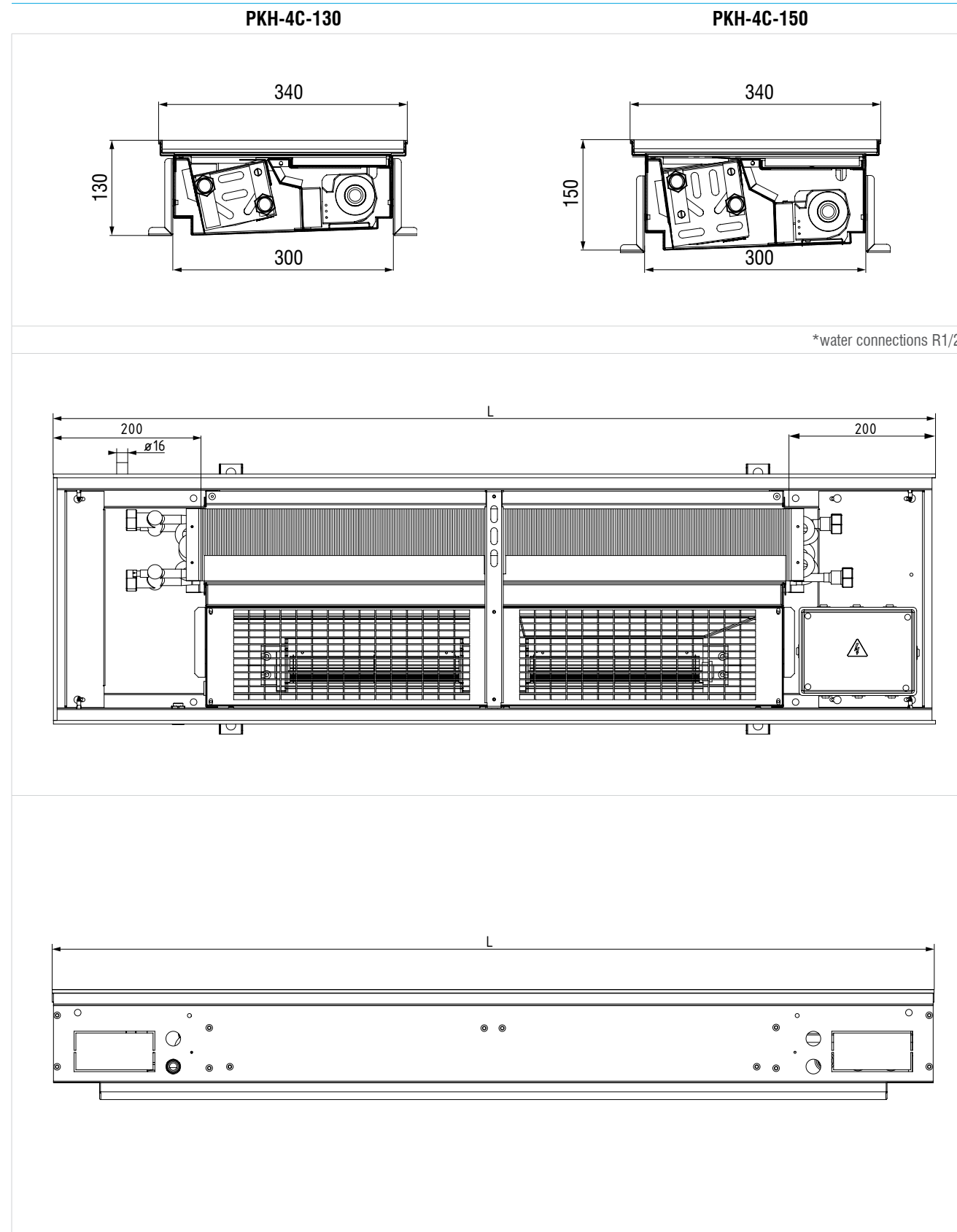
Length: 1200 to 3000 mm  
 Height: 130 or 150 mm  
 Heat output: 941 - 9181 W  
 Cooling output: 440 - 4439 W

Fans / Controls  
 230 V AC - 3 speed transformer  
 230 V AC - control 0-10 V  
 24 V EC - control 0-10 V  
 12 V AC - on request



	PKH-4C-130						PKH-4C-150						
	LPHW			LPCW			LPHW			LPCW			
	90/70/20 °C	75/65/20 °C	55/45/20 °C	6/12/26 °C	10/15/26 °C	12/16/26 °C	90/70/20 °C	75/65/20 °C	55/45/20 °C	6/12/26 °C	10/15/26 °C	12/16/26 °C	
<b>L = 1200 mm (1 fan)</b>						<b>L = 1200 mm (1 fan)</b>							
Fan speed	MIN	1433	1296	723	474	325	281	1739	1586	613	652	449	393
	MED	1915	1620	933	528	403	340	2199	1906	865	779	551	487
	MAX	2401	2100	1162	661	489	413	2600	2287	1133	1045	720	670
<b>L = 2000 mm (2 fans)</b>						<b>L = 2000 mm (2 fans)</b>							
Fan speed	MIN	2895	2618	1460	957	657	568	3513	3204	1238	1317	907	794
	MED	3868	3272	1885	1067	814	687	4442	3850	1747	1574	1113	984
	MAX	4802	4200	2324	1441	1066	900	5200	4574	2266	2278	1570	1461
<b>L = 2600 mm (3 fans)</b>						<b>L = 2700 mm (3 fans)</b>							
Fan speed	MIN	3869	3499	1952	1280	878	759	4695	4282	1655	1760	1212	1061
	MED	5171	4374	2519	1426	1088	918	5937	5146	2336	2103	1488	1315
	MAX	6483	5670	3137	1785	1320	1115	7020	6175	3059	2822	1944	1809
<b>L = 3000 mm (3 fans)</b>						<b>L = 3000 mm (3 fans)</b>							
Fan speed	MIN	4179	3779	2108	1382	948	819	5071	4625	1788	1901	1309	1146
	MED	5584	4724	2721	1540	1175	991	6412	5558	2522	2272	1607	1420
	MAX	7001	6124	3388	1927	1426	1204	7582	6669	3304	3047	2100	1954

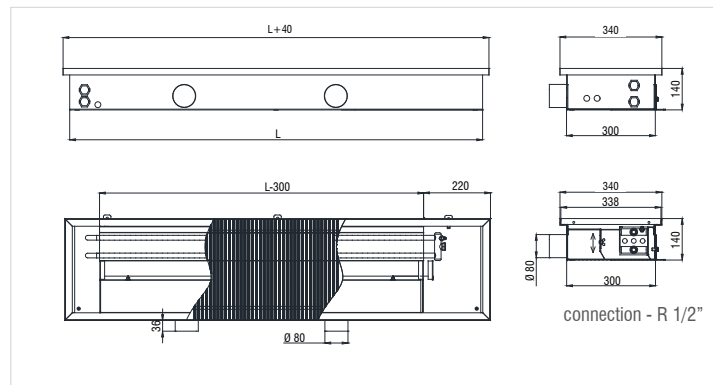
Dimensions - PKH-4C



OPTIONS

Fresh air supply - PKS

- fresh air supply connection with a flow damper.



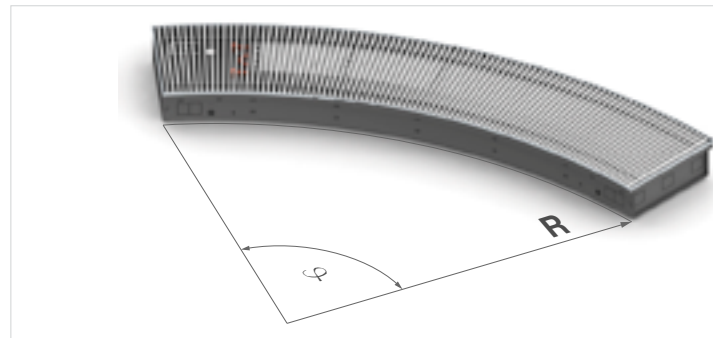
EBM EC - electronically controled motors

- electronic control
- up to 30% more efficient than conventional motors
- low noise levels
- remote control via ModBus



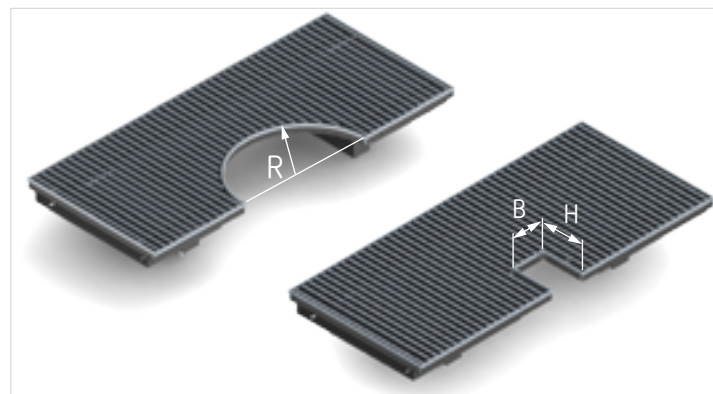
Curved section (QL-518)

**Ordering key:** QL-518 110 2 1000 90  
 Convector height  
 70, 110, 130, 140, 150  
 No. of rows  
 1, 2, 3  
 Radius R  
 Angle  $\phi$



Empty section with round/rectangular cut-out (QL-517)

**Ordering key:** QL-517 110 2 80x120  
 Convector height  
 70, 110, 130, 140, 150  
 No. of rows  
 1, 2, 3  
 Cut-out dimensions R / BxH

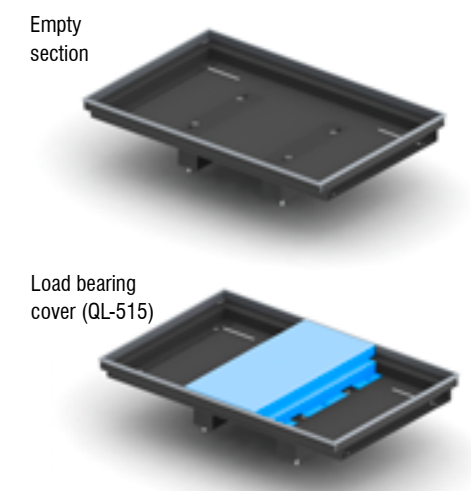
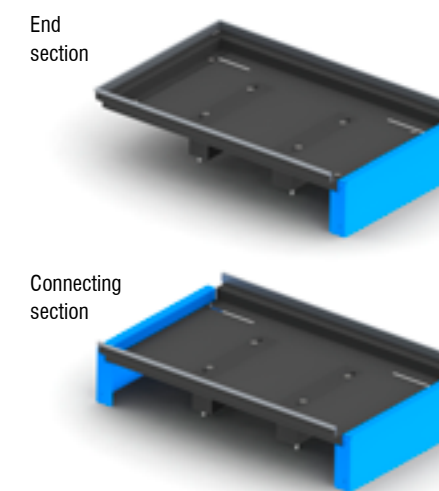
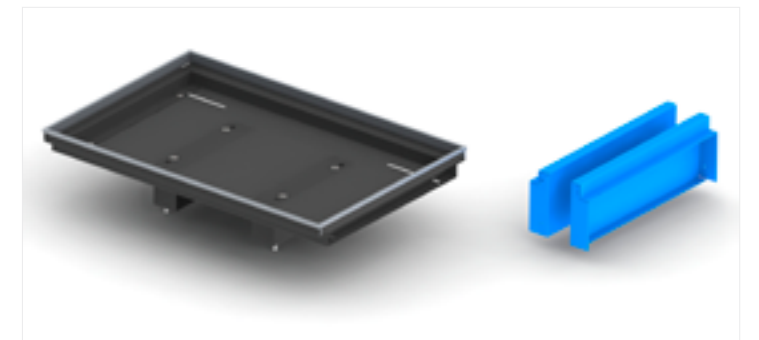


OPTIONS

Connecting section QL-512

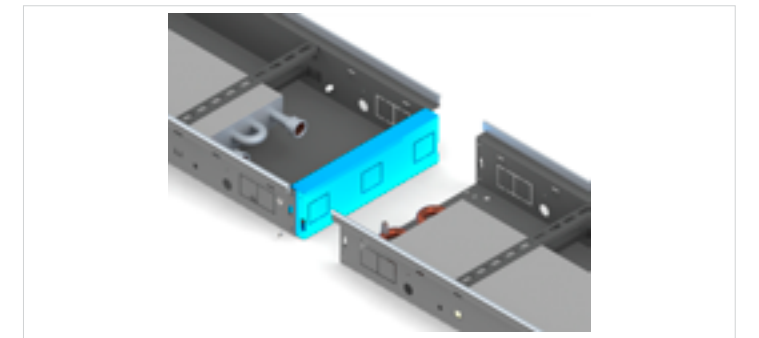
- Universal connection module
- Fully customizable module (4 different possibilities)
- All modules can be shortened on site up to 100mm
- Available lengths: 250, 500 and 1000 mm
- Option: load bearing cover (QL-515)

**Ordering key:** QL-512 110 2 R  
 Convector height  
 70, 110, 130, 140, 150  
 No. of rows  
 1, 2, 3  
 Grille type (R - roll-up / F - linear)



Connection piece (QL-516)

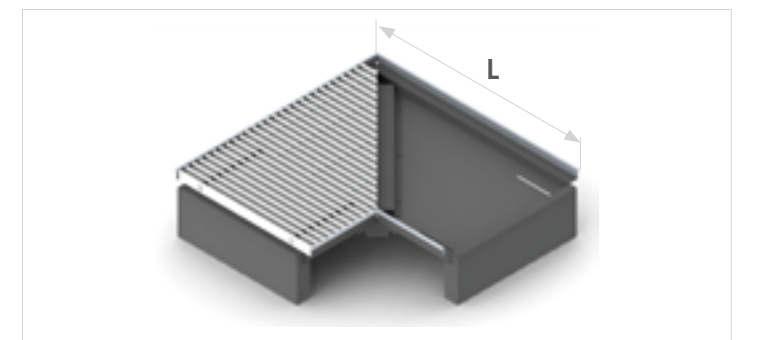
**Ordering key:** QL-516 110 2  
 Convector height  
 70, 110, 130, 140, 150  
 No. of rows  
 1, 2, 3



Corner connection (QL-519 roll up grille / QL-520 linear grille)

**Ordering key:** QL-519 110 2  
 Convector height  
 70, 110, 130, 140, 150  
 No. of rows  
 1, 2, 3

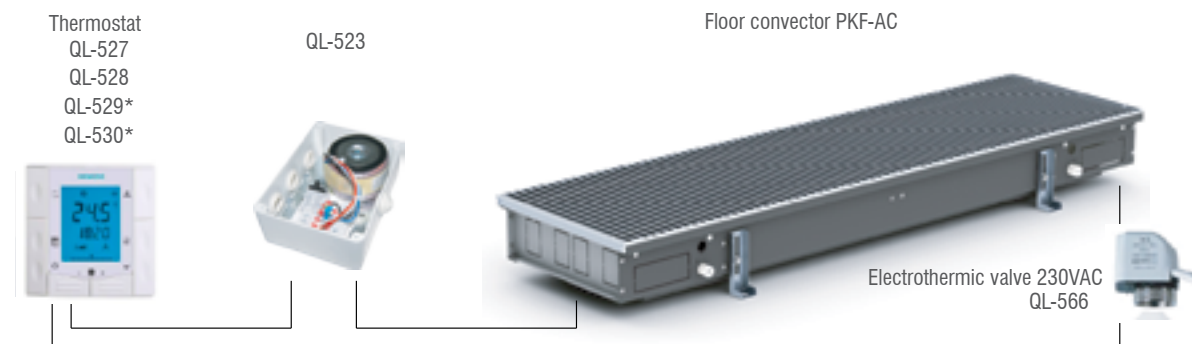
No. of rows	1-row	2-row	3-row
L	300	400	500





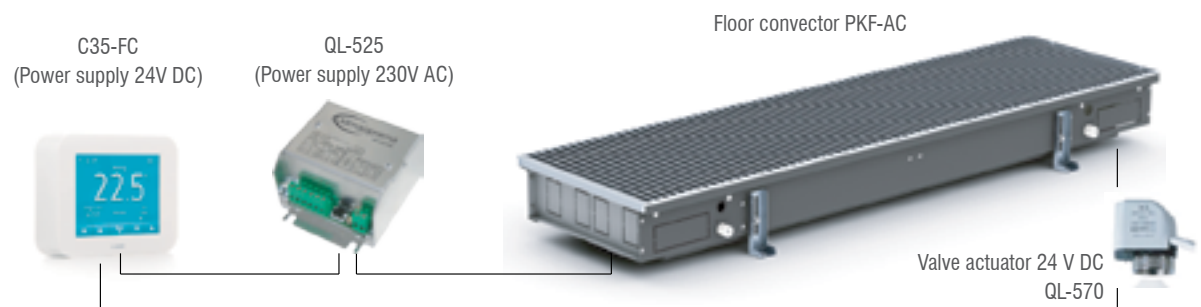
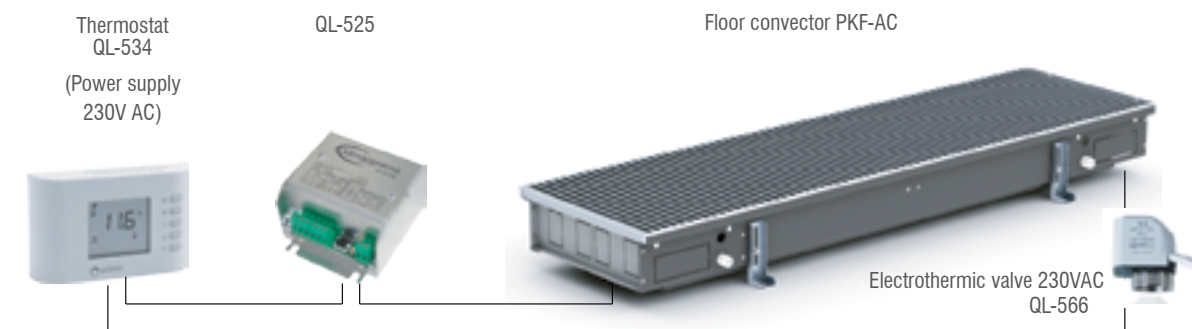
CONTROL OPTIONS

Standard control - 230V (3-speed regulation)



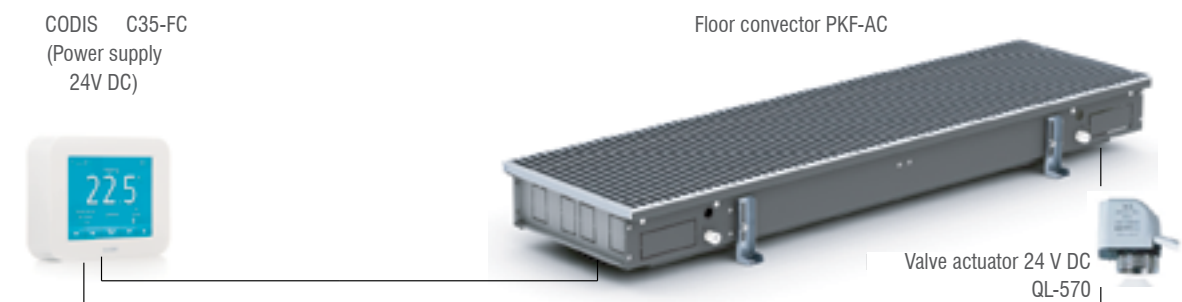
\* Relay plate must be included

Option - 230V (0-10V regulation)



\*\*Power supply 24V DC should be provided externally

Option - 24V EC (0-10V regulation)

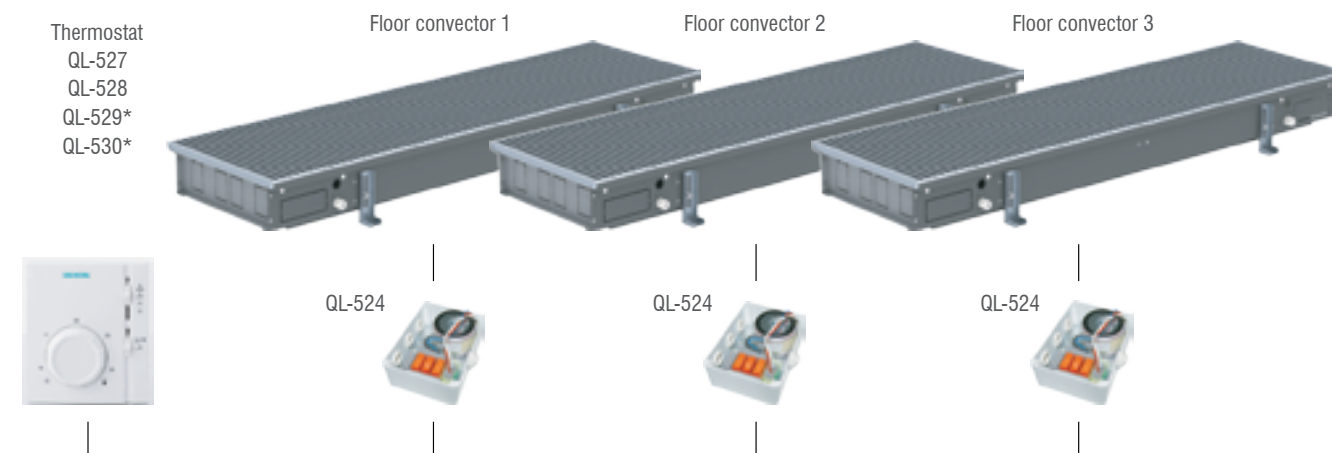


\*\*Power supply 24V DC should be provided externally

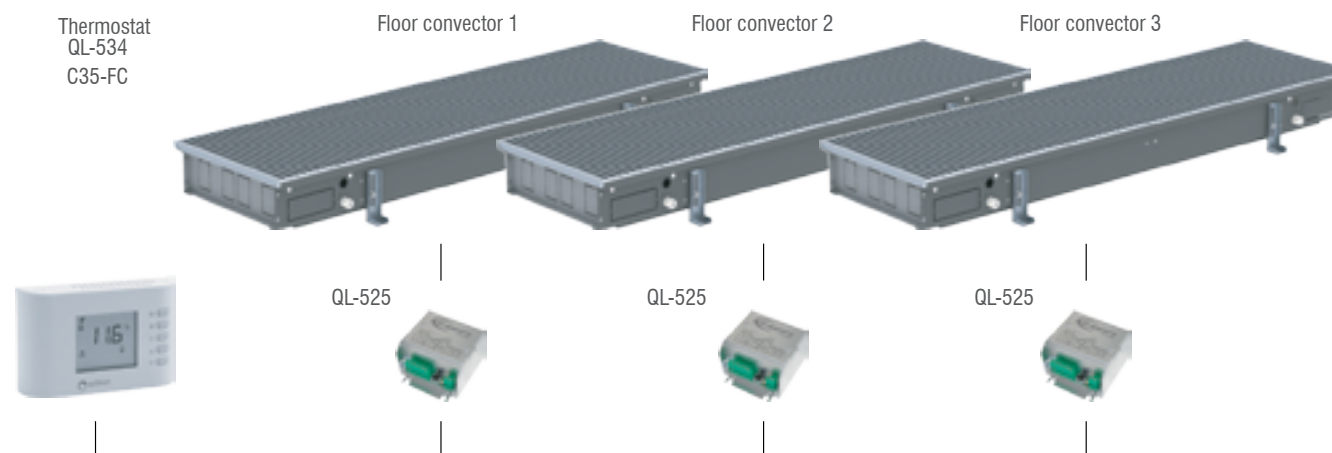
Connecting multiple convectors with one thermostat

- Relay plate QL-524
- Number of relay plates is equal to number of autotransformers that control the group of convectors
- Power supply, motors and electrothermic valves are connected to relay plate
- Relay plate is placed together with the autotransformer in the junction box
- If thermostats QL-529 or QL-530 are used, connection of the relay plate is necessary

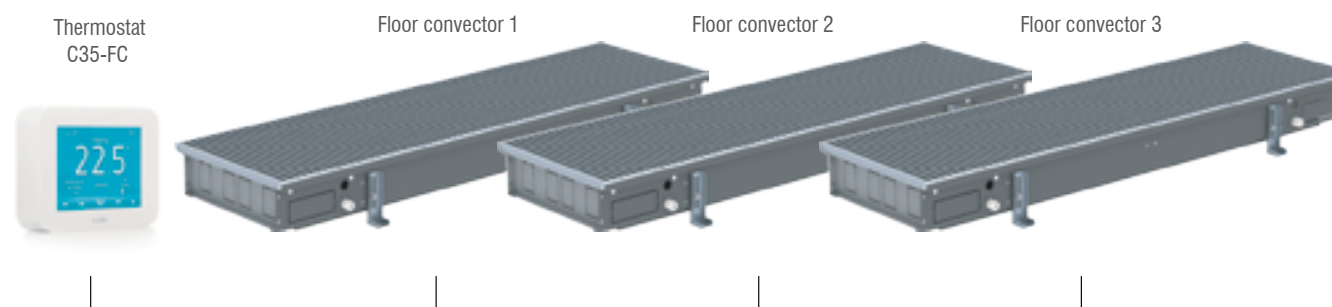
230V AC (3-speed regulation)



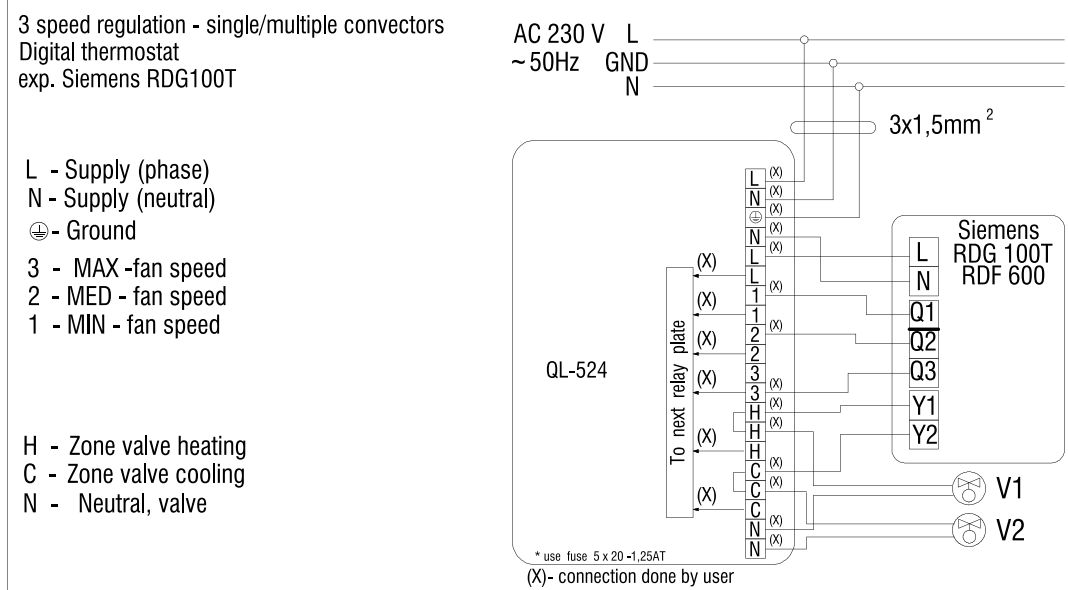
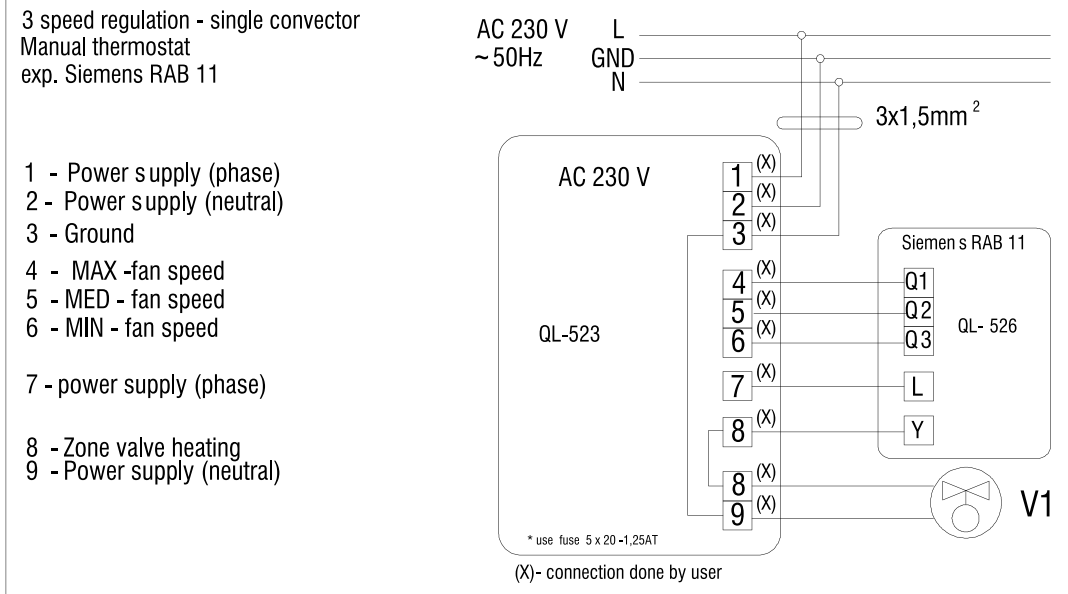
230V AC (0-10V regulation)



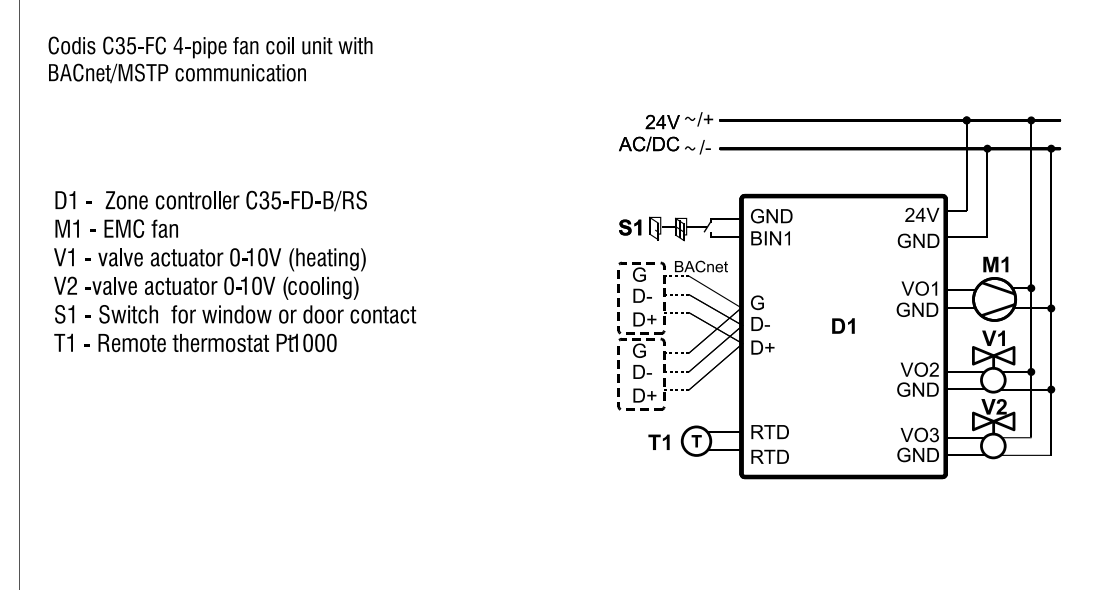
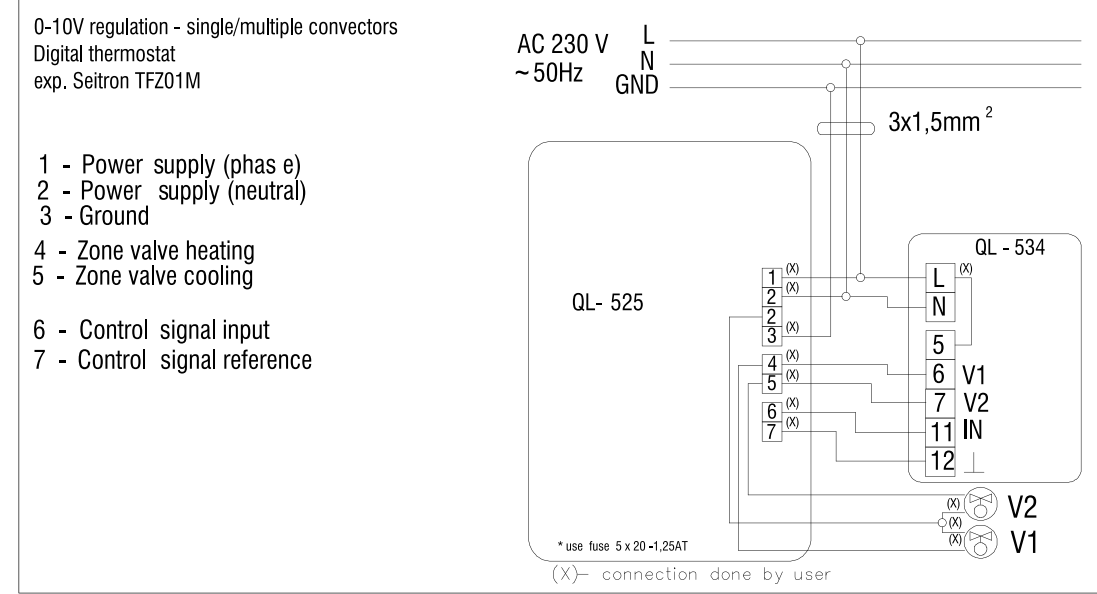
24V EC (0-10V regulation)



WIRING DIAGRAMS



WIRING DIAGRAMS



ACCESSORIES

Image	Description	Ordering code	Suitable for
	Roll-up al. grille	QL-501-1	All models
		QL-501-2	All models
		QL-501-3	All models
	Roll-up al. grille - anodized	QL-502-2	All models
		QL-502-3	All models
		QL-503-1	All models
	Roll-up al. grille - RAL...	QL-503-2	All models
		QL-503-3	All models
			Linear al. grille
QL-504-2	All models		
QL-504-3	All models		
Linear al. grille - anodized	QL-505-1		All models
	QL-505-2		All models
	QL-505-3		All models
Linear al. grille - RAL...	QL-506-1		All models
	QL-506-2		All models
	QL-506-3		All models
	Roll-up al. grille - beech	QL-507-1	All models
		QL-507-2	All models
		QL-507-3	All models
	Roll-up al. grille - oak	QL-508-1	All models
		QL-508-2	All models
		QL-508-3	All models
	Roll-up al. grille - cherry	QL-509-1	All models
		QL-509-2	All models
		QL-509-3	All models
	Roll-up grille - inox	QL-510-1	All models
		QL-510-2	All models
		QL-510-3	All models

ACCESSORIES

Image	Description	Ordering code	Suitable for		
	Optional F frame	QL-511	All models		
	Inactive section set (Length=0,25m)	QL-512-701	PKN 70	1-row	
		QL-512-702		2-row	
				3-row	
		QL-512-111	PKN 110 / PKF 110	1-row	
		QL-512-112		2-row	
		QL-512-113		3-row	
		QL-512-132	PKH 130	1-row	
		QL-512-141		2-row	
		QL-512-142		3-row	
		QL-512-143	PKN 140 / PKF 140	1-row	
		QL-512-152		2-row	
				3-row	
		QL-512-152	PKH 150	1-row	
		QL-513-701		PKN 70	2-row
		QL-513-702			3-row
	QL-513-703	1-row			
	QL-513-111	PKN 110 / PKF 110	2-row		
	QL-513-112		3-row		
	QL-513-113		1-row		
	QL-513-132	PKH 130	2-row		
	QL-513-141		3-row		
	QL-513-142		1-row		
	QL-513-143	PKN 140 / PKF 140	2-row		
	QL-513-152		3-row		
			1-row		
	QL-513-152	PKH 150	2-row		
	QL-514-701		PKN 70	3-row	
QL-514-702	1-row				
QL-514-703	2-row				
QL-514-111	PKN 110 / PKF 110	3-row			
QL-514-112		1-row			
QL-514-113		2-row			
QL-514-133	PKH 130	3-row			
QL-514-141		1-row			
QL-514-142		2-row			
QL-514-143	PKN 140 / PKF 140	3-row			
QL-514-153		1-row			
		2-row			
	Load bearing cover	QL-515-701	All models	3-row	
		QL-515-702		1-row	
		QL-515-703		2-row	
	Casing connection piece	QL-516-701	PKN 70	3-row	
		QL-516-702		1-row	
		QL-516-703		2-row	
		QL-516-111	PKN 110 / PKF 110	3-row	
		QL-516-112		1-row	
		QL-516-113		2-row	
		QL-516-132	PKH 130	3-row	
		QL-516-141		1-row	
		QL-516-142		2-row	
	QL-516-143	PKN 140 / PKF 140	3-row		
	QL-516-152		1-row		
			2-row		
	PKH 150	3-row			

ACCESSORIES

Image	Description	Ordering code	Suitable for			
	Cut out section	QL-517-701	<b>PKN 70</b>	1-row		
		QL-517-702		2-row		
				3-row		
				QL-517-111	<b>PKN 110 / PKF 110</b>	1- row
			QL-517-112	2-row		
			QL-517-113	3-row		
				QL-517-132	<b>PKH 130</b>	
				QL-517-141	<b>PKN 140 / PKF 140</b>	1-row
				QL-517-142		2-row
		QL-517-143	3-row			
		QL-517-152	<b>PKH 150</b>			
	Curved section	QL-518	<b>All models</b>			
	Corner section 90° Roll up grille	QL-519-701	<b>PKN 70</b>	1-row		
		QL-519-702		2-row		
		QL-519-703		3-row		
			QL-519-111	<b>PKN 110 / PKF 110</b>	1- row	
			QL-519-112		2-row	
			QL-519-113		3-row	
			QL-519-132	<b>PKH 130</b>		
			QL-519-141	<b>PKN 140 / PKF 140</b>	1-row	
			QL-519-142		2-row	
		QL-519-143	3-row			
		QL-519-152	<b>PKH 150</b>			
		Corner section 90° Roll up grille	QL-520-701	<b>PKN 70</b>	1-row	
			QL-520-702		2-row	
			QL-520-703		3-row	
			QL-520-111	<b>PKN 110 / PKF 110</b>	1- row	
		QL-520-112	2-row			
		QL-520-113	3-row			
		QL-520-132	<b>PKH 130</b>			
		QL-520-141	<b>PKN 140 / PKF 140</b>	1-row		
		QL-520-142		2-row		
	QL-520-143	3-row				
	QL-520-152	<b>PKH 150</b>				

ACCESSORIES

Image	Description	Ordering code	Suitable for
	Filter G2	QL-521	<b>PKF, PKH, PKH-4C</b>
	External casing insulation	QL-522	<b>All models</b>
	Control box AT6	QL523	<b>PKF, PKH, PKH-4C</b>
	Control box AT6-Relay	QL-524	<b>PKF, PKH, PKH-4C</b>
	Silent drive (230V AC; 0-10V)	QL-525	<b>PKF, PKH, PKH-4C</b>
	Room thermostat RAA21	QL-526	<b>PKN</b>
	Thermostat 3-step	QL-527	<b>PKF, PKH</b>
	Thermostat 3-step	QL-528	<b>PKH-4C</b>
	Thermostat digital	QL-594	<b>PKF, PKH</b>
	Thermostat digital.	QL-530	<b>PKF, PKH, PKH-4C</b>
	Frame for RDF thermostat	QL-531	<b>PKF, PKH, PKH-4C</b>
	Remote control for RDG and RDF	QL-532	<b>PKF, PKH, PKH-4C</b>
	Thermostat digital	QL-533	<b>PKF, PKH, PKH-4C</b>
	Thermostat digital 0-10V	QL-534	<b>PKF, PKH, PKH-4C</b>
	FC controller, temperature sensor	C35-FC	<b>PKF, PKH, PKH-4C</b>
	FC controller, temperature sensor, BACnet	C35-FC-B/RS	<b>PKF, PKH, PKH-4C</b>
	FC controller, temperature sensor, humidity sensor	C35-FC-H	<b>PKF, PKH, PKH-4C</b>
	FC controller, temperature sensor, humidity sensor, BACnet	C35-FC-H-B/RS	<b>PKF, PKH, PKH-4C</b>



ACCESSORIES

Image	Description	Ordering code	Suitable for
	Service valve 1/2" Service valve 3/4"	QL-535 QL-536	<b>All models</b>
	Radiator valve straight 1/2" Radiator valve angled 1/2"	QL-537 QL-538	<b>All models</b>
	Thermostatic valve straight 1/2" Thermostatic valve straight 3/4"	QL-539 QL-540	<b>All models</b>
	Thermostatic valve angular 1/2" Thermostatic valve angular 3/4"	QL-541 QL-542	<b>All models</b>
	Lockshield valve straight 1/2" Lockshield valve straight 3/4"	QL-543 QL-544	<b>All models</b>
	Lockshield valve angled 1/2" Lockshield valve angled 3/4"	QL-545 QL-546	<b>All models</b>
	3-way valve 3p 1/2" 3-way valve 3p 3/4"	QL-547 QL-548	<b>All models</b>
	4-way valve 4p 1/2" 4-way valve 4p 3/4"	QL-549 QL-550	<b>All models</b>
	Balancing valve 1/2" Balancing valve 3/4"	QL-551 QL-552	<b>All models</b>
	Flexible couplings 1/2" Flexible couplings 3/4"	QL-553 QL-554	<b>All models</b>
	Thermostat head	QL-555	<b>All models</b>
	Thermostate head - RAL 9016	QL-556	<b>All models</b>
	Thermostate head - RAL 9005	QL-557	<b>All models</b>

ACCESSORIES

Image	Description	Ordering code	Suitable for	
	Thermostate head - metal matte	QL-558	<b>All models</b>	
	Thermostate head - metal chrome	QL-559	<b>All models</b>	
	Thermostate head - white chrome	QL-560	<b>All models</b>	
	Cable temperature sensor	QL-561	<b>All models</b>	
	Thermostat head with remote regulator	2m	QL-562	<b>All models</b>
		5m	QL-563	<b>All models</b>
		8m	QL-564	<b>All models</b>
	Thermostat head with remote regulator and temperature sensor	QL-565		<b>All models</b>
		QL-566		<b>All models</b>
		QL-567		
		QL-568		
QL-569				
	Valve actuator 24V DC; 0-10V	QL-570	<b>All models</b>	
	Condensate pump set	QL-571	<b>All models</b>	
	Magnet switch - window/door	QL-572	<b>All models</b>	
	Transformer terminal box AC 230V-DC 24V-100 W	QL-595	<b>PKF, PKH, PKH-4C</b>	
	Transformer terminal box AC 230V-DC 24V-75 W	QL-596	<b>PKF, PKH, PKH-4C</b>	
	Transformer terminal box AC 230V-DC 24V-50 W	QL-597	<b>PKF, PKH, PKH-4C</b>	



**Floor convector selection**

For given height and width of glass surface, heat transfer coefficient K and outside temperature, we can calculate convector selection parameters.

Example:

- from diagram 1,  $\Delta t_L = 7$  K
- from diagram 2 cold air velocity  $v = 0,36$  m/s.
- from diagram 3 airflow rate,  $V_L = 52$  m<sup>3</sup>/h

To prevent cold air intrusion in room, necessary heat output per meter length is determined by:

$$Q_{\text{convector}} > Q_{\text{falling air}}$$

$$Q_{\text{falling air}} = \frac{V_L \cdot c_L \cdot b \cdot \Delta t_L \cdot \rho}{3600}$$

Inserting known values

- $V_L = 52$  m<sup>3</sup>/h
- $c_L = 1,006$  kJ/kgK
- $b = 1$  m (glass width)
- $\Delta t_L = 7$  K
- $\rho = 1,2$  kg/m<sup>3</sup>

$$Q_{\text{falling air}} = 0,122 \text{ kW}$$

In accordance with result above, a floor convector with minimal length of 1m and minimal heat output of 0,122kW can be selected.

Diagram 1: Temperature difference of glass surface, at room temperature 20°C

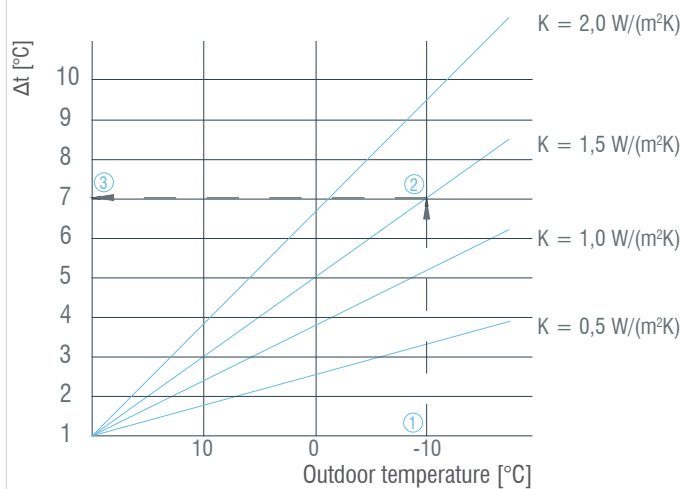


Diagram 2: Cold air velocity

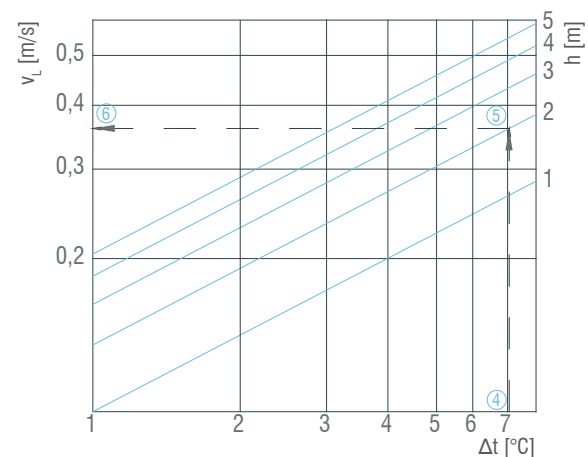
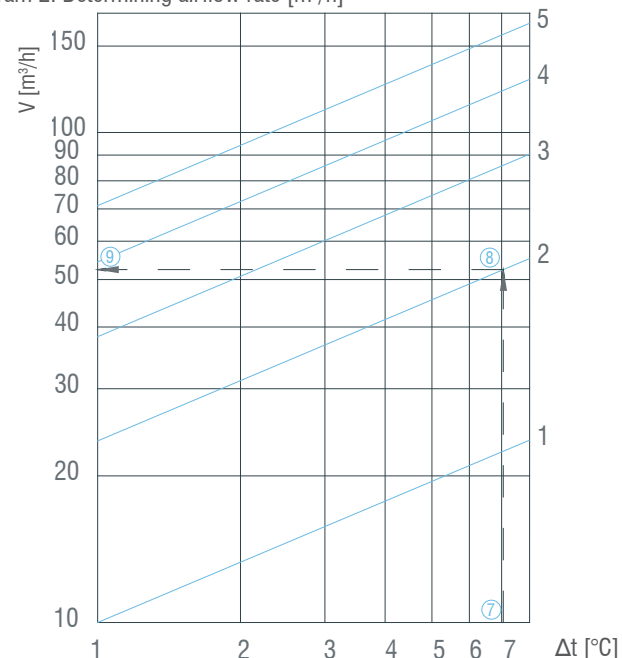


Diagram 2: Determining airflow rate [m³/h]



**Standard delivery:**

Steel and aluminium parts powder coated in RAL 9005		Leveling mounts for height adjusting and casing fixing	
Efficient low volume heat exchanger with bleed valve 1/4"		Protective wooden cover	
Silent 230V AC or 24V EC tangential fans		PVC foil and carton box packaging with polystyrene corner and side protection	
Leveling screws		Installation and operation manual	
Standard U frame			

Ordering key

Type  
**PKN / PKF / PKH / PKH-4C**

**PKN - 70 - 1 - 2000**

Accessories

**- QL-xxx**

Casing height  
**70** (PKN); **110** (PKN, PKF); **130** (PKH, PKH-4C), **140** (PKN, PKF); **150** (PKH, PKH-4C)  
**1**- row width 210/250 mm  
**2**- row width 300/340 mm  
**3**- row width 400/440 mm  
Casing length [mm]