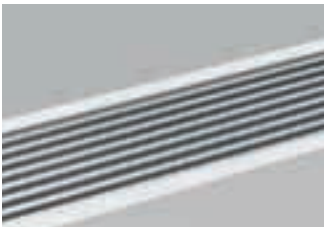


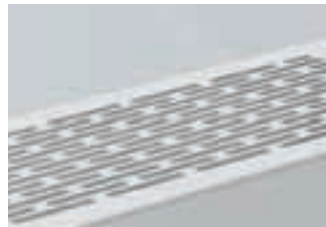
## Free-standing convectors with natural convection KORALINE LK

### Classification of the free-standing convectors

- **KORALINE LK Exclusive** design of zinc galvanised steel – with aluminium grid (silver eloxal coat) see image
- **KORALINE LK InPool** pool design – chemical proof stainless steel AISI 316 for wet environment coated in RAL 9010 colour shade
- **KORALINE LK Economic** zinc galvanised steel – design with embossed cover grid – see sketch (not available for pool applications)



Version KORALINE LK Exclusive and LK InPool



Version KORALINE LK Economic

### Standard delivery contains

- sheathing of zinc galvanised steel sheet coated in shade RAL 9010 – white
- unpainted aluminium cover grid, silver – in version Exclusive and InPool. On Economic (LE) embossed in the free-standing convectors sheathing
- Al/Cu heat exchanger for universal connection (side or bottom) with low water content, air vent and uniquely shaped lamellas for a higher heat output
- stand on floor covering, see sketch on page 28
- the unit is packed in a durable packaging and contains an installation manual
- mounting instructions

### KORALINE PLAN

Design version PLAN with completely flat front panel is available up to the height of 30 cm (only for versions KORALINE LK Exclusive and InPool).

### Specification

casing element height (mm)	90, 150, 300, 450, 600
width (mm)	180, 240
length (mm)	800, 1 000, 1 200, 1 400, 1 600, 1 800, 2 000, 2 200, 2 400, 2 600, 2 800, 3 000
heat output (W)	from 473 to 4 733
max. working pressure (bar)	12
max. working temperature	110 °C
max. surface temperature	40 °C
connecting thread	inner G 1/2"
connection method	recommended bottom connection, side

**Version KORALINE LK Exclusive** • zinc galvanised steel sheet coated in colour shade RAL 9010 with aluminium anodized grid without surface finish

**Version KORALINE LK InPool** • chemical proof stainless steel AISI 316 for humid environment coated in RAL 9010 with with aluminium anodized grid without surface finish

**Version KORALINE LK Economic** • zinc galvanised steel sheet coated in colour shade RAL 9010 with an embossed grid, which is part of the sheathing



### Optional specification

- set for bottom connection comprising the thermostatic valve and the thermostatic head Danfoss including extension pieces, see page 29
- stands on subfloor or wall suspending brackets, see sketch on page 28
- if more than 5 pieces are ordered another colour shade can be chosen according to RAL scale (the change must be consulted with the manufacturer)
- pool design suitable for humid environment e.g. swimming pools areas
- pool design KORALINE LK InPool – using stainless steel AISI 316 coated in white colour shade RAL 9010
- for increased performance a version with forced convection can be chosen, see page 72

# Elements' sections

## Side connection

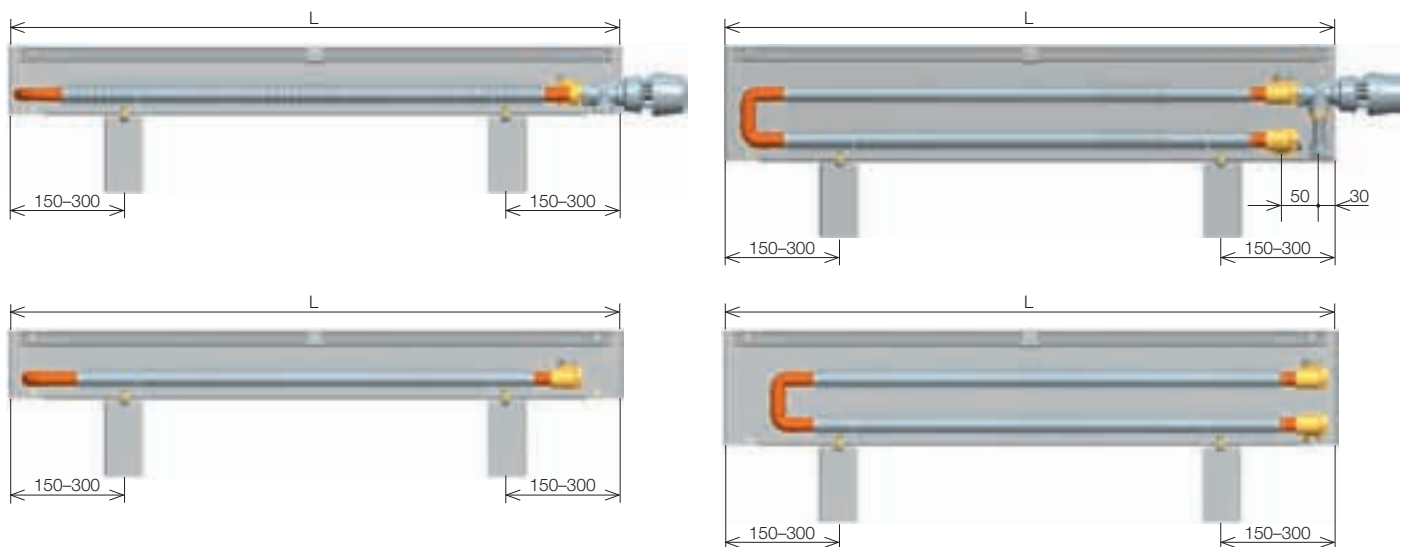
width	18 cm	18 cm	24 cm	24 cm
height	9 cm	15 cm	9 cm	15 cm

## Bottom connection

width	18 cm	18 cm	24 cm	24 cm
height	9 cm	15 cm	9 cm	15 cm

Height without stands. KORALINE LK in version Exclusive and Economic mounted convectors are produced for versatile side/bottom connection. The connection type can be selected on site during installation. In the case of bottom connection the manufacturer recommends you to use a set that contains a Danfoss thermostatic valve and thermostatic head, incl. an extension adaptor. In case another valve type is used the connecting spacing of 50 mm between the input and output will not be achieved – it applies for the height of 15 cm; for the height of 9 cm, the spacing is according to the sketch, see the height (the dimensions are given in mm).

## Sketches of KORALINE LK with stands on floor covering



KORALINE LK in version Exclusive and Economic mounted convectors are supplied with stands on floor covering as standard. Another possibility of anchoring to the building structure is the use of stands on subfloor or the use of wall brackets (see the illustration on page 28). Dimensions are given in mm.



For more detailed dimensional sketches including calculating the stands' distances see page 28.

# Weights and volumes of water of the free-standing convectors

Type	9/18	9/24	15/18	15/24	30/18	30/24	45/18	45/24	60/18	60/24
kg/linear meter	6.5	8.1	9.2	11.5	12.9	15.4	16.7	19.2	20.5	23.1
stainless steel kg/linear meter	7	8.7	10	12.4	14.5	17.1	19	21.8	23.6	26.4
l/linear meter	0.5	0.75	1	1.6	1	1.6	1	1.6	1	1.6

The listed weights are without a packaging.



Heat outputs (W) at  $t_{w1}/t_{w2}/t_i =$  at  $75/65/20\text{ }^{\circ}\text{C}$  ( $\Delta t=50$ ) and  $65/55/20\text{ }^{\circ}\text{C}$  ( $\Delta t=40$ )/EN 442

Width (cm)	$\Delta t$	Length L (cm)												
		80	100	120	140	160	180	200	220	240	260	280	300	
Height 9	18	$\Delta t$ 50	385	508	631	754	877	1001	1123	1246	1369	1492	1615	1738
		$\Delta t$ 40	288	380	472	564	656	749	840	932	1024	1116	1208	1300
	24	$\Delta t$ 50	574	757	940	1123	1307	1491	1673	1855	2038	2221	2404	2587
		$\Delta t$ 40	429	566	703	840	977	1116	1252	1388	1524	1661	1798	1935
Height 15	18	$\Delta t$ 50	589	743	897	1052	1207	1362	1517	1671	1826	1980	2135	2290
		$\Delta t$ 40	440	555	671	787	903	1019	1134	1250	1366	1481	1597	1713
	24	$\Delta t$ 50	916	1145	1374	1603	1833	2061	2290	2519	2748	2977	3206	3435
		$\Delta t$ 40	685	856	1028	1199	1371	1542	1713	1884	2056	2227	2398	2569
Height 30	18	$\Delta t$ 50	760	950	1140	1330	1520	1710	1900					
		$\Delta t$ 40	568	711	853	995	1137	1279	1421					
	24	$\Delta t$ 50	1112	1390	1668	1946	2224	2502	2780					
		$\Delta t$ 40	832	1040	1248	1456	1664	1871	2079					
Height 45	18	$\Delta t$ 50	857	1071	1285	1499	1714	1927	2141					
		$\Delta t$ 40	641	801	961	1121	1282	1441	1601					
	24	$\Delta t$ 50	1274	1593	1911	2230	2549	2869	3188					
		$\Delta t$ 40	953	1192	1429	1668	1907	2146	2385					
Height 60	18	$\Delta t$ 50	934	1168	1401	1635	1870	2104	2338					
		$\Delta t$ 40	699	874	1048	1223	1399	1574	1749					
	24	$\Delta t$ 50	1374	1717	2060	2403	2746	3089	3432					
		$\Delta t$ 40	1028	1284	1541	1797	2054	2311	2567					

- The free-standing convectors KORALINE LK Economic are made only in height of 9, 15 and 30 cm and the 18 and 24 cm widths

## Correction factor $k_t$ for a variant temperature difference $\Delta t$ (K)

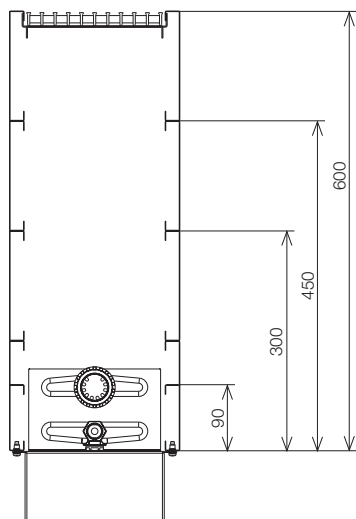
$\Delta t$ (K)	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
$k_t$	0.287	0.326	0.367	0.410	0.453	0.498	0.544	0.591	0.639	0.688	0.737	0.788	0.839	0.892	0.946	1.000
$\Delta t$ (K)	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	
$k_t$	1.055	1.111	1.167	1.224	1.282	1.341	1.401	1.460	1.521	1.582	1.644	1.676	1.770	1.834	1.898	

See the formula and example of conversion to a variant temperature difference on page 91.

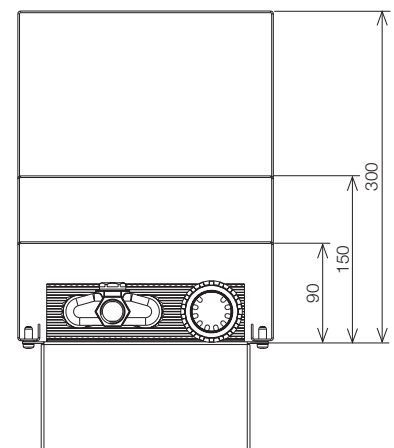
- temperature exponent  $m = 1.364$

## Heights of the free-standing convectors KORALINE LK

KORALINE LK Exclusive



KORALINE LK Economic  
(maximum height 300 mm)



# Free-standing convectors installation

## KORALINE LK

### Installation instructions

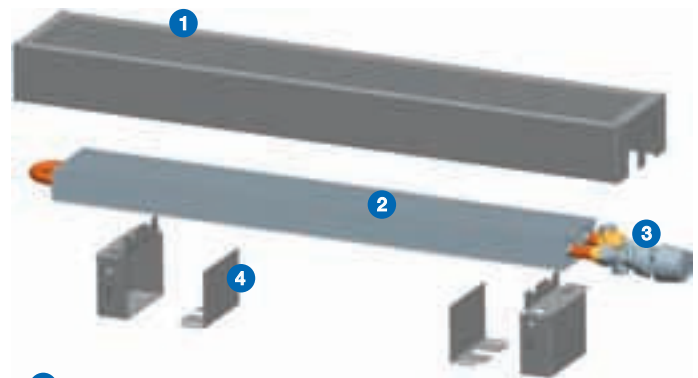
#### Stand models

- a) **wall-mounted** – attachment to the wall. Recommended positioning 10 cm above the floor covering. The delivered brackets (2 pieces) allow a height and length tolerance of approx. 2 cm. The mounting spacings are indicated on the sketch.
- b) **stand type** – attachment to the floor. Stands on rough and floor covering can be chosen. The subfloor version allows a height tolerance of about 5 cm. The floor mounting spacing is given on the sketch.

### Installation procedure (valid for all models)

The first step consists in measurement and drilling for the brackets or stands. The heat exchanger is then positioned and connected to the heating system. Finally, the cover with the cover grid is put on and screwed onto the brackets or the stands. The free standing convectors KORALINE LK Exclusive and InPool grids are removable for easy cleaning. More detailed information is available in the installation instructions. The elements are supplied assembled.

### Free-standing convectors assembly



- 1 cover with the cover grid
- 2 Al/Cu heat exchanger
- 3 Thermostatic head + valve
- 4 stand + stand cover

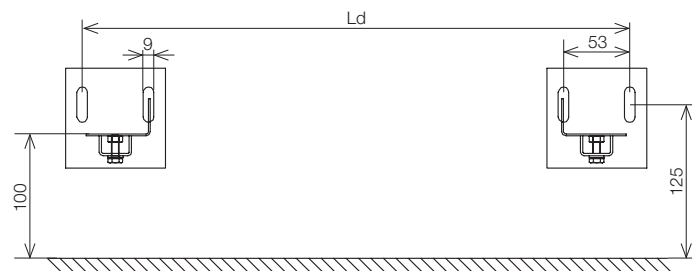
### Mounting location

#### Floor anchoring diagram



L = Convectors length  
 $L_d = L - 300$  mm (up to the convectors length of 1 400 mm)  
 $L_d = L - 400$  mm (up to the convectors length of 2 000 mm)  
 $L_d = L - 600$  mm (above the convectors length of 2 000 mm)

#### Wall anchoring diagram



L = Convectors length  
 $L_d = L - 247$  mm (up to the convectors length of 1 400 mm)  
 $L_d = L - 347$  mm (up to the convectors length of 2 000 mm)  
 $L_d = L - 547$  mm (above the convectors length of 2 000 mm)

### Overview of stands and brackets for free standing convectors KORALINE attachment

width 18 cm	width 24 cm	width 18 cm	width 24 cm	width 18 cm	width 24 cm
wall-mounted brackets		floor covering stand*		subfloor stand	

After suspending the free-standing convectors the distance between the wall and the element is 10–30 mm.

\* part of supply

# Contents of the set for connection of KORALINE LK Kv values for the Danfoss RA-N 15 UK 1/2" valve



## RA-N 15 valve

- thermostatic valve  
Danfoss RA-N 15 1/2"
- valve body allowing  
presetting of flow
- flow can be set without using tools
- basic setting is selectable in 7 stages
- maximum working pressure 10 bar
- maximum working temperature 120 °C
- threadless connection with the thermostatic head



## Thermostatic head

- thermostatic gas-steam head  
Danfoss RA 2980
- the fastest response time
- anti-theft lock
- temperature setting limiting/blocking pins



## Extension pieces

- used for height compensation between the input and output of the heat exchanger screw union
- stainless-steel design
- connection thread G 1/2", inner
- A straight piece for two row exchangers  
(height of the free standing convectors 15 cm and more)
- B angled piece for single-row exchangers  
(height of the free standing convectors 9 cm)




A



B

Preset stage	1	2	3	4	5	6	7	N
Kv	0.16	0.20	0.25	0.36	0.47	0.59	0.74	0.81

This valve type is used in optional accessories supplied for the free standing convectors.

 Note: The connecting set elements are packed as a complete set and cannot be supplied separately.

# Ordering codes Free-standing convectors KORALINE LK

	Type K natural convection P PLAN*	Versions			Length (cm)	Height (cm)	Width (cm)	Colour
		X Exclusive	P InPool	E Economic				
Exclusive	white steel/unpainted exchanger	L	K	X	...	..	..	- 10
InPool	stainless steel for humid environment white/unpainted exchanger*	L	K	P	...	..	..	- 10
Economic	white steel/unpainted exchanger	L	K	E	...	..	..	- 10

\* P PLAN from one steel sheet  
(only for KORALINE LK Exclusive  
and LK InPool heights 30, 45, 60)

Free-standing convectors  
KORALINE LK

