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KORADO®

Convectors

LICON®
member of KORADO Group

1/2014

KORASPACE

FACADE CONVECTORS
(natural convection)

Facade convectors are ideal and effective solution for installations in buildings with large glass walls where the transmission of cold in winter season considerably affects the interior microclimate. Novelty in the heat loss solution will enable the architects and designers to realize their ideas in the design and operation of the entire building, including heating.

Facade convectors with natural convection KORASPACE

The facade convectors KORASPACE by their direct location on the facade prevent penetration of the cold air into the interior space. The warm air rising from the convectors mixes with the cold air and creates a thermal screen which provides greater thermal comfort of the indoor space and prevents condensation forming on the glass surface.

- design freedom
- high-perfomance Al/Cu heat exchangers
- excellent controllability and fast heating start-up
- without heat transfer to the external facade
- additional space for placement of other through-running distribution

Standard delivery contains

- sheathing of RAL 9007 coated zinc galvanised steel
- heat exchanger with low water content and uniquely shaped lamellas, air vent
- connecting material
- the set is packed in durable packaging and contains installation instructions
- mounting instructions

Specification

width *(mm)*	120, 150, 180
depth *(mm)*	56
length *(mm)*	800 up to 3 000 (at 200 mm steps)
max. working pressure *(bar)*	12
max. working temperature	110 °C
connecting thread	inner G 1/2"

Version KORASPACE Economic • grey coated sheathing (RAL 9007) and unpainted exchanger
Version KORASPACE Exclusive • grey coated sheathing (RAL 9007) and coated exchanger (RAL 9007)
Version KORASPACE InPool • sheathing of the stainless steel AISI 316 and unpainted exchanger

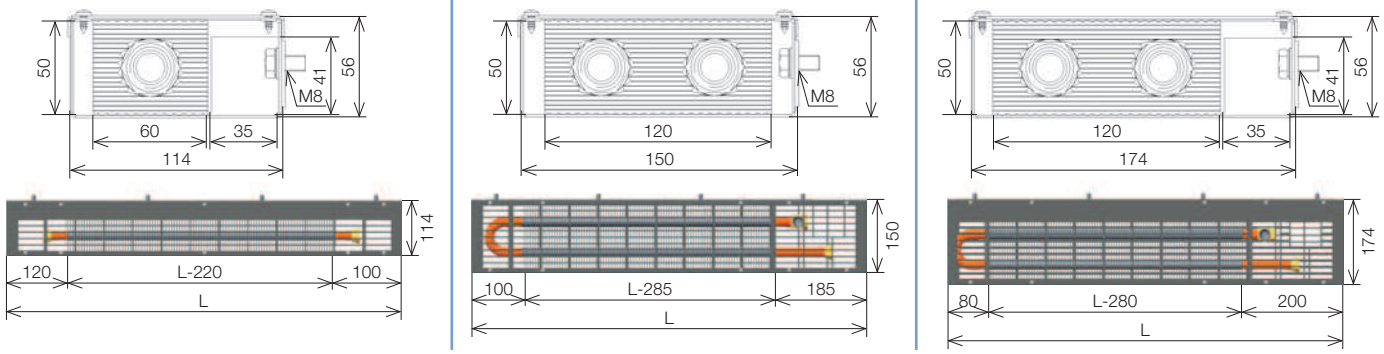
Selectable specification

- version Exclusive or InPool (using stainless steel AISI 316)
- coated heat exchanger
- if more than 5 pieces are ordered, another colour shade may be ordered according to the RAL scale (the change must be consulted with the manufacturer)
- possibility to order thermoelectric drive or thermostatic valve head and shut-off valves

Elements' sections

Overview of manufactured types

KORASPACE-xxx/6/12	KORASPACE-xxx/6/15	KORASPACE-xxx/6/18
depth 5.6 cm	depth 5.6 cm	depth 5.6 cm
width 11.4 cm	width 15 cm	width 17.4 cm
with optional integrated piping operation	without integrated piping operation	with optional integrated piping operation



Heat outputs

Heat outputs (W) at tw1/tw2/ti = at 75/65/20 °C (Δt=50) and 65/55/20 °C (Δt=40)/EN 442

Height *(cm)*	Width *(cm)*	Δt	Length L *(cm)*											
			80	100	120	140	160	180	200	220	240	260	280	300
Height 6	12	Δt 50	154	202	251	300	349	397	446	495	543	592	641	690
		Δt 40	115	151	188	224	261	297	334	370	407	443	480	516
Height 6	15	Δt 50	305	401	498	595	692	788	885	982	1078	1175	1272	1369
		Δt 40	228	300	373	445	517	590	662	735	807	879	952	1024
Height 6	18	Δt 50	305	401	498	595	692	788	885	982	1078	1175	1272	1369
		Δt 40	228	300	373	445	517	590	662	735	807	879	952	1024

Heat outputs of the widths of 15 and 18 are the same due to using the same exchanger. In addition the width of 18 comprises space for piping.

Correction factor kt for a variant temperature difference Δt (K)

Δt (K)	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
kt	0.265	0.284	0.304	0.324	0.344	0.364	0.385	0.406	0.427	0.449	0.471	0.493	0.515	0.537	0.560	0.583

Δt (K)	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
kt	0.606	0.629	0.652	0.676	0.700	0.724	0.748	0.773	0.797	0.822	0.847	0.872	0.897	0.923	0.948	0.974

Δt (K)	50	51	52	53	54	55	56	57	58	59	60
kt	1.000	1.026	1.052	1.079	1.105	1.132	1.159	1.186	1.213	1.240	1.267

- temperature exponent m = 1.3

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

Weights and water volumes of wall-mounted convectors

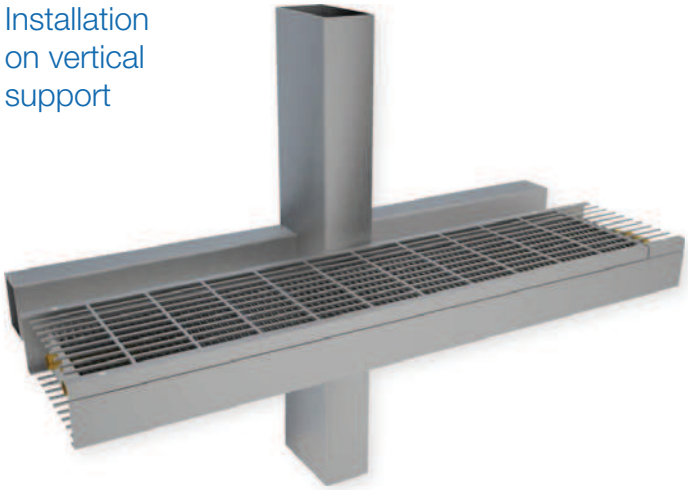
Type	6/12	6/15	6/18
kg/linear meter	3.9	4.8	5.3
l/1 linear meter	0.2	0.42	0.42

The listed weights are without a packaging.

Facade convectors installation KORASPACE

Installation on horizontal crosspiece, between vertical supports

Installation on vertical support



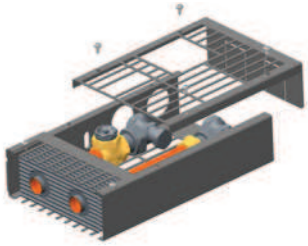
Facade convectors installation technique

Main load bearing U shape part is fixed to the facade's carrying elements. Then the heat exchanger is inserted and connected to the heating system. Last step consists of positioning the top part and screwing of all parts together. Subject to agreement it is possible to make design modifications for the particular installation.

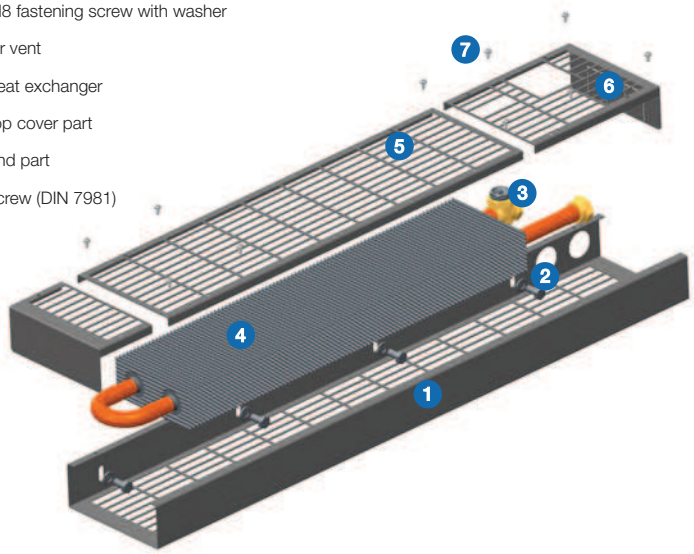
Convectors KORASPACE assembly

Connections with thermostatic valve and thermoelectric drive

Connections with shut-off valve



1. carrier part
2. M8 fastening screw with washer
3. air vent
4. heat exchanger
5. top cover part
6. end part
7. screw (DIN 7981)



Ordering codes Facade convectors KORASPACE

				Length (cm)	Height (cm)	Width (cm)	On facade installation technique A on horizontal crosspiece, between vertical supports B on vertical support		Colour*
Economic	grey steel/unpainted exchanger	SE	- ...	56	..	-	A	-	10
Exlusive	grey steel/grey coated exchanger	SX	- ...	56	..	-	A	-	10
InPool	grey coated stainless steel for humid environment/unpainted exchanger*	SP	- ...	56	..	-	A	-	10

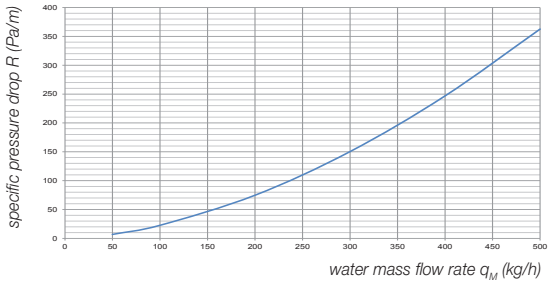
** standard for the product RAL 9007*

Facade convectors KORASPACE

Pressure losses of convectors

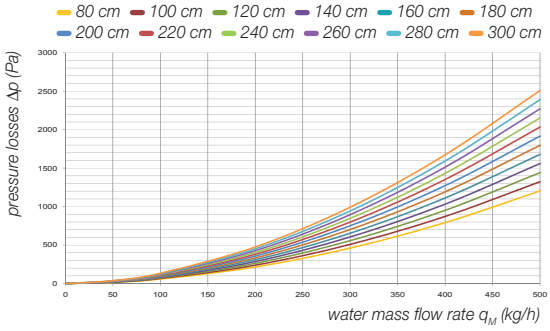
KORAFLEX FK 9/16, 11/16
KORABASE 10

KORABASE 10



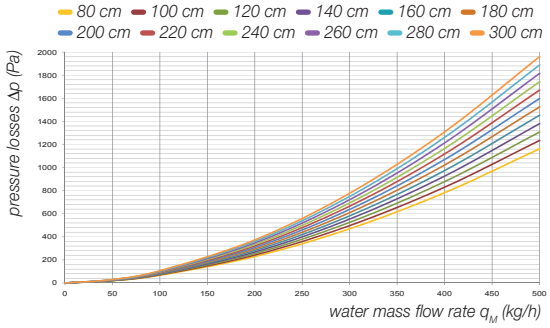
KORAFLEX FK 9/20, 9/28, 11/20, 11/28
KORALINE 9/18 and 9/24, KORABASE 20
KORAFLEX FV 8/28, 9/28, 11/28
KORAFLEX FV InPool 13/34

KORABASE 20



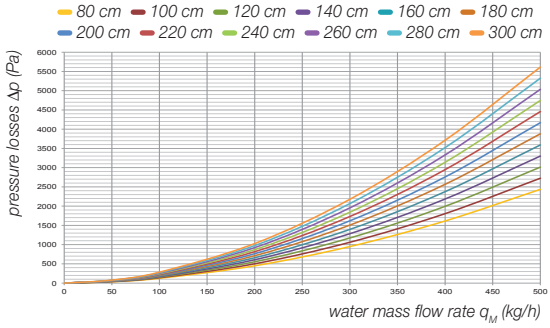
KORAFLEX 9/34, 11/34
KORAFLEX FV 11/34, KORABASE 30

KORABASE 30



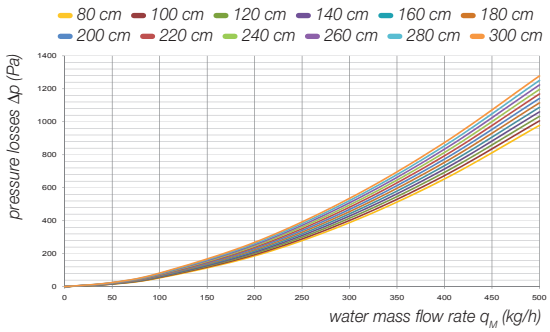
KORAFLEX FK 9/42, 11/42
KORAFLEX FV 11/42

KORABASE 40



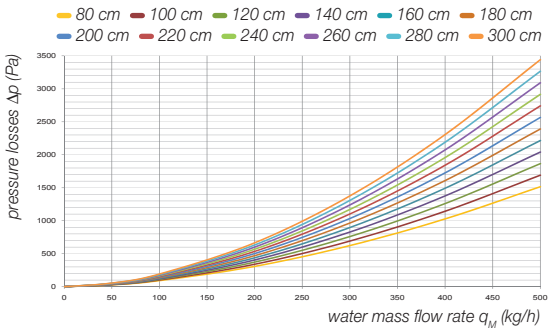
KORAFLEX FK 15/28, 19/28, 30/28, 45/28
KORALINE LK 15/18, 30/18, 45/18, 60/18
KORABASE 22

KORABASE 22



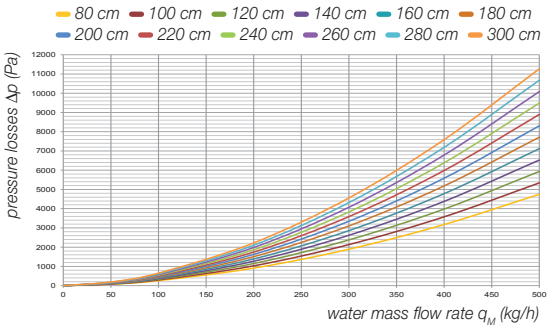
KORAFLEX FK 15/34, 19/34, 30/42, 45/42
KORALINE LK 15/24, 45/24, 60/24
KORABASE 33

KORABASE 33



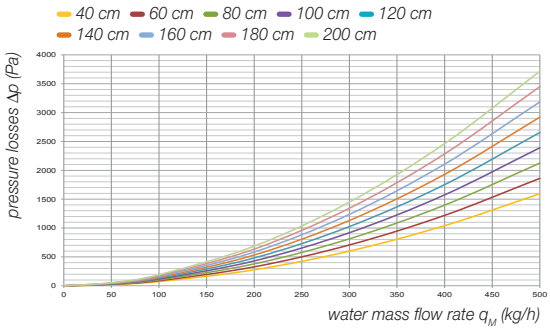
KORAFLEX FK 15/42, 19/42

KORABASE 44



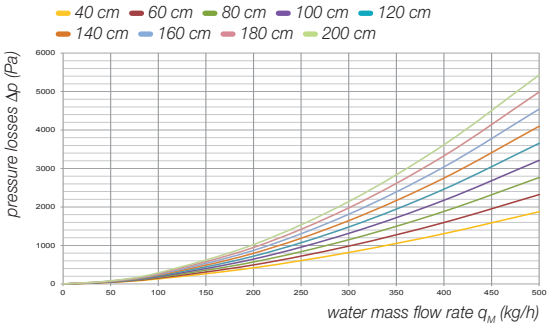
KORAWALL WK 45/6, 60/6

Heat exchanger for KORAWALL 6



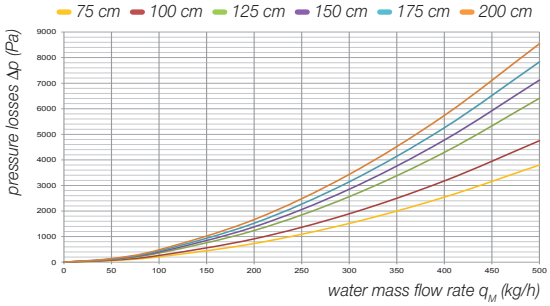
KORAWALL WK 45/12, 60/12

Heat exchanger KORAWALL 12



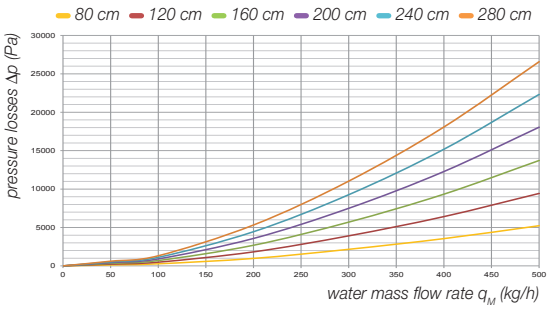
KORAWALL WI 45/11

Heat exchanger KORAWALL WI 45/11



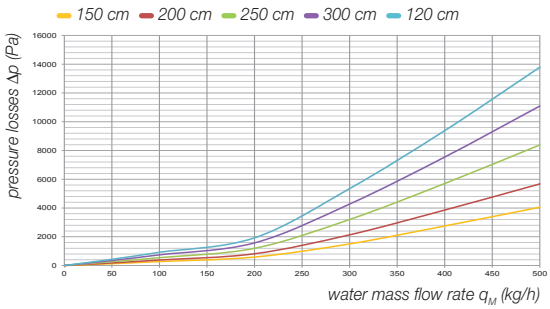
KORAFLEX FI 11/20

Heat exchanger KORAFLEX FI 11/20



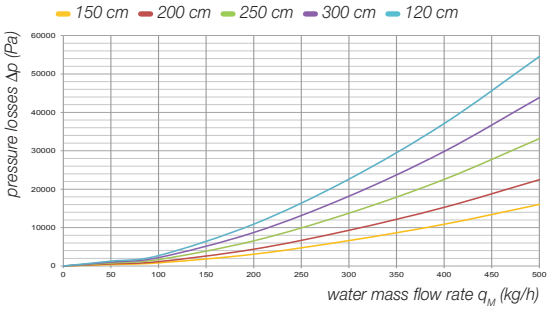
KORAFLEX FI 13/34

Heat exchanger KORAFLEX FI 13/34



KORAFLEX FW 13/34

Heat exchanger KORAFLEX FW 13/34



** Pressure losses of KORALINE LV are available on request.*

Examples of conversion to a variant temperature difference

$\Delta t = (tw1 + tw2)/2 - ti$

Where: tw1 is the inlet water temperature (°C)
tw2 is the outlet water temperature (°C)
ti is the air temperature (°C)
Δt is the cooling of water (K)

The resistance coefficient is valid for both 1/2" connections. You will find the kt factor in the table of correction factors of the particular element.

Entered: KORABASE 22/140 heating element
Rated operating condition: 75/65/20 °C
Qn = 1 198 W should be converted to the temperature difference Δt = 40 K
Q = Qn × factor kt = 1 198 × 0.748 = 896 W

Entered: KORAWALL WK 140/60/6 heating element
Computational operating status: 75/65/20 °C
Qn = 1 018 W should be converted to the temperature difference Δt = 30 K
Q = Qn × factor kt = 1 018 × 0.515 = 525 W

General information about products

Heating elements are produced using the state-of-the-art technologies. Most production operations are executed on CNC machines. The surface of elements is treated with powder coating of epoxy-polystyrene paints on an environment-friendly line. In-house production of high performance heat exchangers (copper pipe, aluminium lamellas) guarantees high quality and wide variety of products offered. To achieve an "invisible" impression you can order a black coated exchanger.

The case supplied as the standard is made of a black coated galvanised steel sheet. For use in wet environments you can order a case of a high corrosion resistance stainless steel. Thanks to our advanced production technology we are able to produce atypical dimensions, including angled and arc convectors' designs.

The shortest possible delivery periods are offered, from 3 to 10 working days. Guaranteed warranty and after-warranty service.

Transport and storage instruction

During transport the elements must be handled with extreme care and must be secured against motion and damage. The transport and storage area must be dry and protected from climatic influences.

Maintenance

The convectors must be kept clean and especially before the heating season any dirt and dust should be removed from the convectors. The fan convectors must be checked if the fans are not mechanically blocked (by fallen objects, a layer of dust, etc.).

Quality

Manufacturer is a holder of the certified quality management system as per ISO 9001:2008. The products are manufactured and tested according to EN 422. By using CE mark the producer confirms that the convectors are in conformity with the characteristics stated in the Declaration of Performance issued in conformity with the directive of EP and the Council (EU) No. 305/2011. This conformity was approved by the notified body No.1015, Strojírenský zkušební ústav, s.p. Brno.

HLK STUTTGART

Proven heating and cooling performances

EN EURONORM 442

DEKRA Management kvality Jsme certifikovaní

Warranties

The products are subject to 2-year warranty. 10-year warranty is provided for the tightness of the heat exchanger. Full service and warranty terms and conditions are available on demand.

Manufacturer KORADO, a.s. is not responsible for damage caused by improper installation, or damages arising from poor electrical or thermal installations (such as fluctuating voltage or hydraulic pressure which deviates significantly from normal values).

Manufacturer reserves the right to change technical specifications without a prior notice.