KORADO, a.s.
Bří Hubálků 869
560 02 Česká Třebová
Czech Republic

e-mail: info@korado.cz
www.korado.com

KORADO®

# Convectors

LICON®
member of KORADO Group

1/2014

# KORAFLEX

## FLOOR CONVECTORS
## (natural convection)

French windows will stand out, winter garden entries or balconies will completely open up. Heating units radiators are not occupying interior doorways space. Unobtrusive, effective and aesthetically designed heating system for residential houses, shops and administrative buildings. Excellent use of floors for heating, visually inconspicuous.

# Floor convectors with natural convection KORAFLEX FK • FK InPool

KORAFLEX FK convectors are is intended for embedding in floors, especially in places prohibiting installation of higher radiators, e.g. in front of french windows, winter garden entries, hall entrances, exits etc., in public buildings (shops, administrative buildings etc.), as well as in residential houses. Various colored designs of the floor grids are making convectors suitable for each interior.

- Natural convection convectors
- Wide type & design range
- Easy to clean and maintain
- The floor convectors are intended for dry environment, for humid environment use version FK InPool

## Specifications

| | |
|---|---|
| depth *(mm)* | 90, 110, 150, 190, 300, 450 |
| width *(mm)* | 160, 200, 280, 340, 420 |
| length *(mm)* | 800 up to 3 000 (at 200 mm steps) |
| heat output *(W)* | from 87 to 4 100 |
| max. working pressure *(bar)* | 12 |
| max. working temperature | 110 °C |
| connecting thread | inner G 1/2" |

Version Economic • basic version in black coated galvanized steel case, exchanger without surface finishes
Version Exclusive • black coated galvanized steel case, black coated exchanger
Version Inox • case made of stainless steel AISI 304, unpainted exchanger (only for dry environment)
Version InPool • case made of stainless steel AISI 316, unpainted exchanger (for humid environment)


## Standard delivery contains

- version Economic – black coated zinc galvanised steel case
- unpainted heat exchanger with low water content, air vent and uniquely shaped lamellas for higher heat output
- anodized Al frame, U profile, in colour of natural aluminium
- fixing anchors to fix the case channel to the floor
- a pair of flexible stainless steel hoses for easy connection
- chipboard cover, protecting the exchanger against dust and dirt on the building site
- 25 mm height adjustment screws to compensate for the floor asperity
- mounting instructions
- the set is packed in a strong and durable packaging

## Optional specification

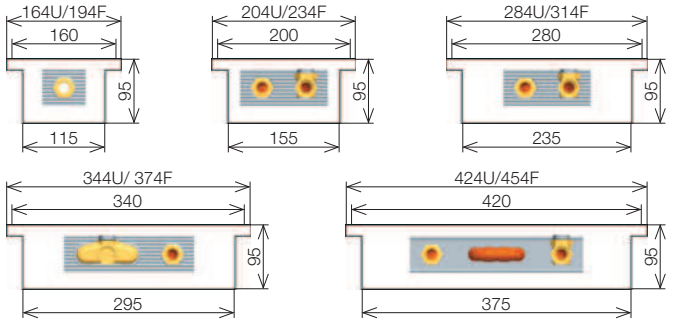
- Exclusive – black coated zinc galvanised steel (identical with the design type Economic), black coated heat exchanger
- InPool – the case design in stainless steel AISI 304, unpainted exchanger (only for dry environment)
- Inox – the case design in stainless steel AISI 316, unpainted exchanger (only for dry environment)
- pool design FK InPool are standard designed with a drain hole
- colour of the anodized Al frame – natural aluminium, light and dark bronze in the F profile or light or dark bronze for U profile, see sketch page 23
- lockable screwing thermostatic valve and thermostatic shut off valve head
- cover plate with increased rigidity
- Insufficient performance? Look for version with OC with forced convection, see page 48

*Floor grids page 18.*

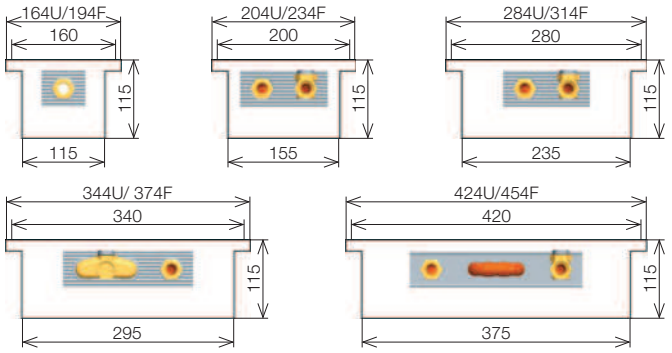
*Note: Pool design available only for depths 9 and 11 and widths 20, 28, 34 and 42 cm.*

# Cross section

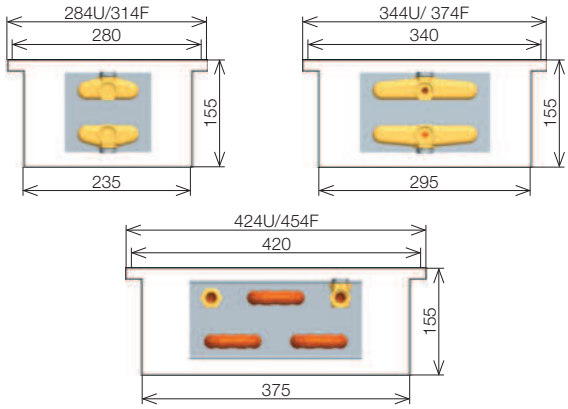
## Depth 9 cm



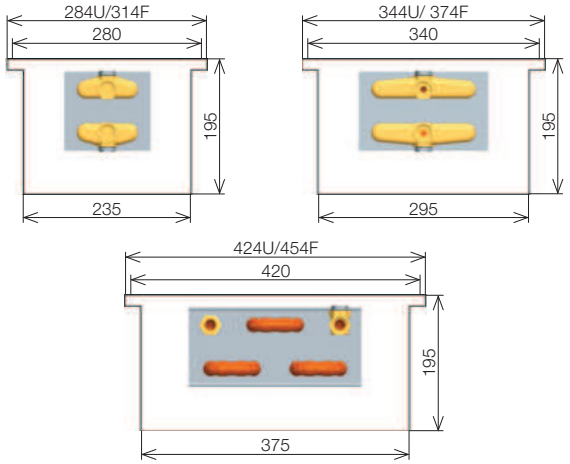

## Depth 11 cm



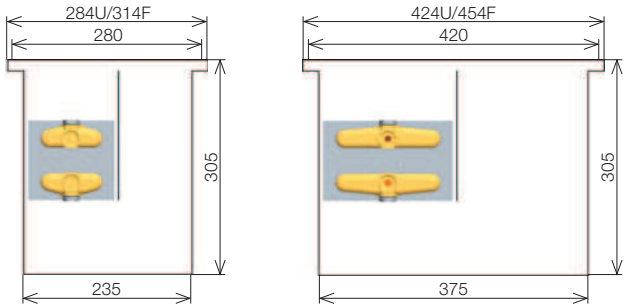

## Depth 15 cm



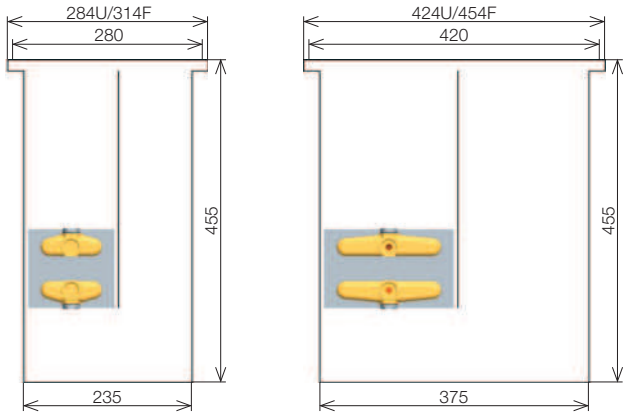

## Depth 19 cm




## Depth 30 cm

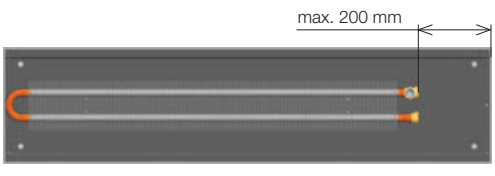



## Depth 45 cm



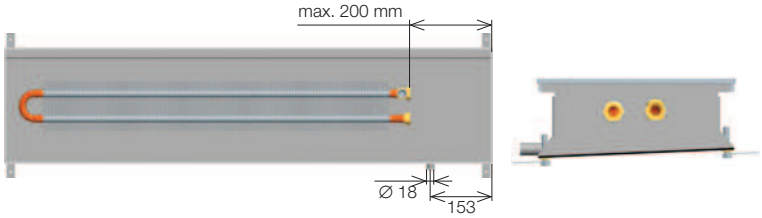

# Heat exchanger placement

## Standard design




*The specified dimensions do not include the decorative frame.*

## Koraflex FK InPool (pool version)



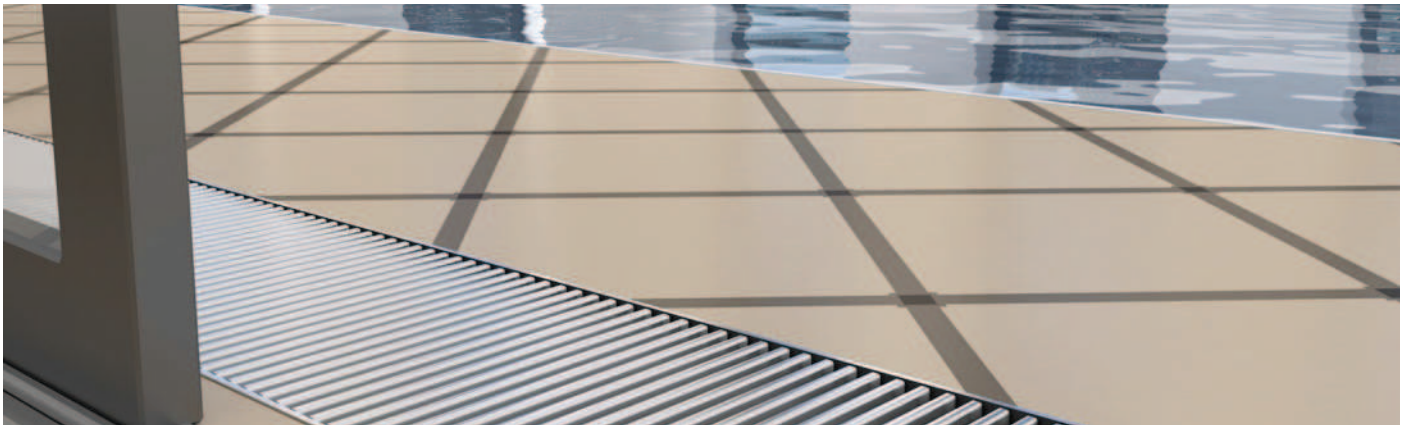

*Suitable for interiors with increased humidity, must be fitted with Al or Stainless steel Cross grid, see page 19 and 22 • Pool design available only in depths 9 and 11 and widths 20, 28, 34 and 42 cm* ***• Not possible to connect cases from more KORAFLEX FK InPool convectors.***

# 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

| Depth *(cm)* | | Δt | Length L *(cm)* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 |
| Width 16 | 9 | Δt 50 | 87 | 121 | 156 | 191 | 226 | 260 | 295 | 330 | 364 | 399 | 434 | 469 |
| | | Δt 40 | 65 | 91 | 117 | 143 | 169 | 195 | 221 | 247 | 273 | 299 | 325 | 351 |
| | 11 | Δt 50 | 100 | 140 | 180 | 220 | 260 | 300 | 340 | 380 | 420 | 460 | 500 | 540 |
| | | Δt 40 | 75 | 105 | 135 | 165 | 195 | 224 | 254 | 284 | 314 | 344 | 374 | 404 |
| Width 20 | 9 | Δt 50 | 110 | 154 | 197 | 241 | 285 | 329 | 373 | 417 | 461 | 505 | 549 | 592 |
| | | Δt 40 | 82 | 115 | 148 | 181 | 213 | 246 | 279 | 312 | 345 | 378 | 410 | 443 |
| | 11 | Δt 50 | 127 | 178 | 229 | 280 | 330 | 381 | 432 | 483 | 534 | 584 | 635 | 686 |
| | | Δt 40 | 95 | 133 | 171 | 209 | 247 | 285 | 323 | 361 | 399 | 437 | 475 | 513 |
| Width 28 | 9 | Δt 50 | 161 | 226 | 290 | 355 | 419 | 484 | 548 | 612 | 677 | 741 | 806 | 870 |
| | | Δt 40 | 121 | 169 | 217 | 265 | 314 | 362 | 410 | 458 | 506 | 555 | 603 | 651 |
| | 11 | Δt 50 | 174 | 244 | 313 | 383 | 453 | 522 | 592 | 662 | 731 | 801 | 871 | 940 |
| | | Δt 40 | 130 | 182 | 234 | 287 | 339 | 391 | 443 | 495 | 547 | 599 | 651 | 703 |
| | 15 | Δt 50 | 245 | 344 | 442 | 540 | 638 | 736 | 834 | 932 | 1031 | 1129 | 1227 | 1325 |
| | | Δt 40 | 184 | 257 | 330 | 404 | 477 | 551 | 624 | 698 | 771 | 845 | 918 | 991 |
| | 19 | Δt 50 | 267 | 374 | 480 | 587 | 694 | 801 | 908 | 1014 | 1121 | 1228 | 1335 | 1441 |
| | | Δt 40 | 200 | 280 | 359 | 439 | 519 | 599 | 679 | 759 | 839 | 919 | 999 | 1078 |
| | 30 | Δt 50 | 313 | 439 | 564 | 690 | 815 | 940 | 1066 | 1191 | 1317 | 1442 | 1567 | 1693 |
| | | Δt 40 | 235 | 328 | 422 | 516 | 610 | 704 | 797 | 891 | 985 | 1079 | 1173 | 1266 |
| | 45 | Δt 50 | 483 | 676 | 870 | 1063 | 1256 | 1449 | 1642 | 1836 | 2029 | 2222 | 2415 | 2609 |
| | | Δt 40 | 361 | 506 | 651 | 795 | 940 | 1084 | 1229 | 1373 | 1518 | 1663 | 1807 | 1952 |
| Width 34 | 9 | Δt 50 | 226 | 316 | 406 | 497 | 587 | 677 | 768 | 858 | 948 | 1039 | 1129 | 1219 |
| | | Δt 40 | 169 | 236 | 304 | 372 | 439 | 507 | 574 | 642 | 709 | 777 | 845 | 912 |
| | 11 | Δt 50 | 242 | 339 | 436 | 533 | 630 | 727 | 824 | 921 | 1018 | 1115 | 1212 | 1308 |
| | | Δt 40 | 181 | 254 | 326 | 399 | 471 | 544 | 616 | 689 | 761 | 834 | 906 | 979 |
| | 15 | Δt 50 | 315 | 440 | 566 | 692 | 818 | 944 | 1070 | 1196 | 1321 | 1447 | 1573 | 1699 |
| | | Δt 40 | 235 | 330 | 424 | 518 | 612 | 706 | 800 | 895 | 989 | 1083 | 1177 | 1271 |
| | 19 | Δt 50 | 360 | 503 | 647 | 791 | 935 | 1079 | 1223 | 1367 | 1510 | 1654 | 1798 | 1942 |
| | | Δt 40 | 269 | 377 | 484 | 592 | 700 | 807 | 915 | 1022 | 1130 | 1238 | 1345 | 1453 |
| Width 42 | 9 | Δt 50 | 318 | 445 | 573 | 700 | 827 | 954 | 1081 | 1209 | 1336 | 1463 | 1590 | 1718 |
| | | Δt 40 | 238 | 333 | 428 | 524 | 619 | 714 | 809 | 904 | 1000 | 1095 | 1190 | 1285 |
| | 11 | Δt 50 | 337 | 472 | 606 | 741 | 876 | 1011 | 1146 | 1280 | 1415 | 1550 | 1685 | 1819 |
| | | Δt 40 | 252 | 353 | 454 | 555 | 655 | 756 | 857 | 958 | 1059 | 1160 | 1260 | 1361 |
| | 15 | Δt 50 | 433 | 606 | 779 | 952 | 1125 | 1298 | 1471 | 1644 | 1817 | 1990 | 2163 | 2337 |
| | | Δt 40 | 324 | 453 | 583 | 712 | 842 | 971 | 1101 | 1230 | 1360 | 1489 | 1619 | 1748 |
| | 19 | Δt 50 | 471 | 660 | 848 | 1037 | 1225 | 1413 | 1602 | 1790 | 1979 | 2167 | 2356 | 2544 |
| | | Δt 40 | 353 | 494 | 635 | 776 | 917 | 1058 | 1199 | 1340 | 1481 | 1622 | 1763 | 1904 |
| | 30 | Δt 50 | 546 | 765 | 983 | 1202 | 1420 | 1638 | 1857 | 2075 | 2294 | 2512 | 2731 | 2949 |
| | | Δt 40 | 409 | 572 | 736 | 899 | 1062 | 1226 | 1389 | 1553 | 1716 | 1880 | 2043 | 2207 |
| | 45 | Δt 50 | 759 | 1063 | 1367 | 1670 | 1974 | 2278 | 2581 | 2885 | 3189 | 3492 | 3796 | 4100 |
| | | Δt 40 | 568 | 795 | 1022 | 1250 | 1477 | 1704 | 1931 | 2159 | 2386 | 2613 | 2840 | 3067 |

• temperature exponent m = 1.3



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

## FK

| 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

*For the formula and example of conversion for a variant temperature difference see page 91.*

# Weights and water volumes of floor convectors

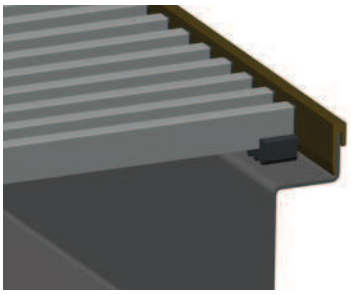
| steel type | 9/16 | 9/20 | 9/28 | 9/34 | 9/42 | 11/16 | 11/20 | 11/28 | 11/34 | 11/42 | 15/28 | 15/34 | 15/42 | 19/28 | 19/34 | 19/42 | 30/28 | 30/42 | 45/28 | 45/42 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kg/linear meter | 4.1 | 5.12 | 5.96 | 7.24 | 8.47 | 4.43 | 5.54 | 6.4 | 7.7 | 9 | 8.59 | 10.53 | 12 | 9.47 | 11.5 | 12.96 | 13.9 | 18.45 | 17.7 | 22.3 |
| stainless steel kg/linear meter | – | 5.07 | 5.94 | 7.24 | 8.5 | – | 5.47 | 6.36 | 7.7 | 9 | – | – | – | – | – | – | – | – | – | – |
| l/linear meter | 0.18 | 0.4 | 0.4 | 0.6 | 0.8 | 0.18 | 0.4 | 0.4 | 0.6 | 0.8 | 0.8 | 1.2 | 1.6 | 0.8 | 1.2 | 1.6 | 0.8 | 1.2 | 0.8 | 1.2 |

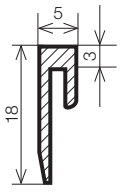
*The listed weights are without a packaging.*

# Aluminium frame profiles

## Standard design – U frame

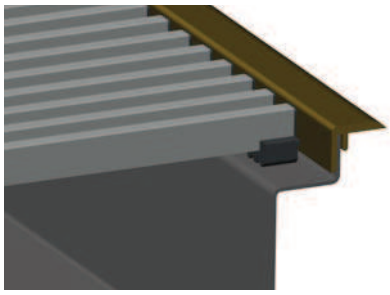
Standard design contains silver U profile. Profile colour is equal with grid colour, for other colours see page 19.

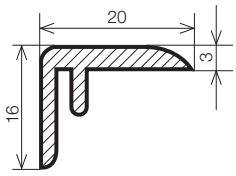





## Selectable version – F frame

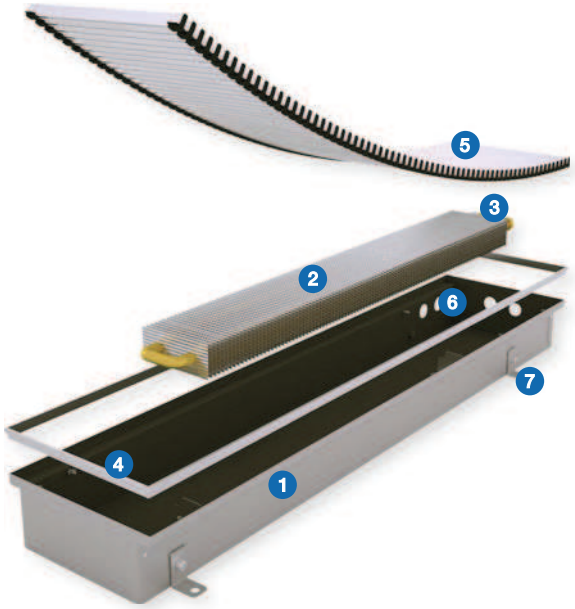
When the selectable frame F is ordered, it is attached separately to convectors (not installed on convectors). Frame colours are identical with aluminium grid colours.






*Frame colour is equal with grid colour presented on page 19.*
*The sketches dimensions are given in mm.*

# Convectors breakdown



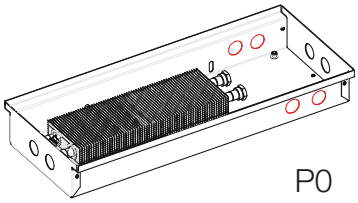

1. convectors case according to the selected material
2. heat exchanger
3. air vent
4. cover frame (U or F)
5. floor grid
6. connecting holes
7. fixing anchors

# Connecting the floor convectors KORAFLEX

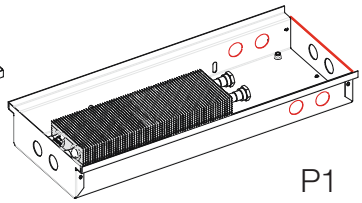
## Cases' types according to water inlets' location and lowering of faces for batch assembly

Lowering of the cases' faces is used where it is not desirable to see the connections between the convectors (long rows of convectors, i.e. administative buildings, hotels etc.). When ordering the walkable grid it is necessary to mention that it is the PM, which will be used for the convectors with the lowered face.

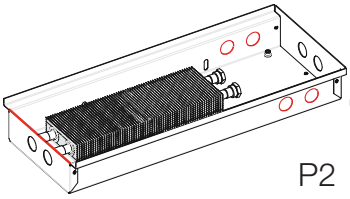
Note: The KORAFLEX FK InPool convectors individual cases cannot be mutually interconnected. These are made only in P0 design.



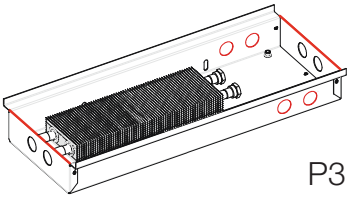
**P0**
Without lowering of faces
standard design



**P1**
Face lowering
at the inlet side



**P2**
Face lowering on
the opposite side of the inlets

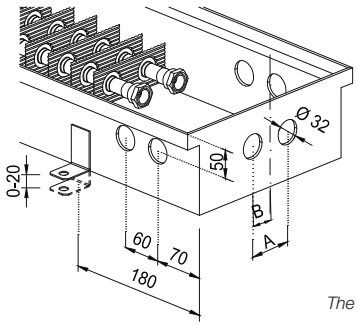


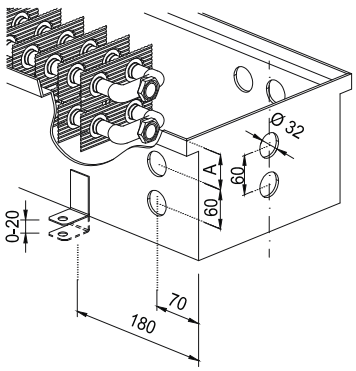
**P3**
Lowering
of both faces

# Connection dimensions

FK 9/20, 9/28, 11/20, 11/28: A = 6 cm
FK 9/42, 11/42, 15/42, 19/42: A = 18 cm
FK 9/34, 11/34: A = 9 cm, B = 3 cm

FK 15/28, 15/34, 19/28, 19/34, 45/28, 45/42: A = 5 cm
FK 30/28, 30/42: A = 12 cm




*The sketches dimensions are given in mm.*

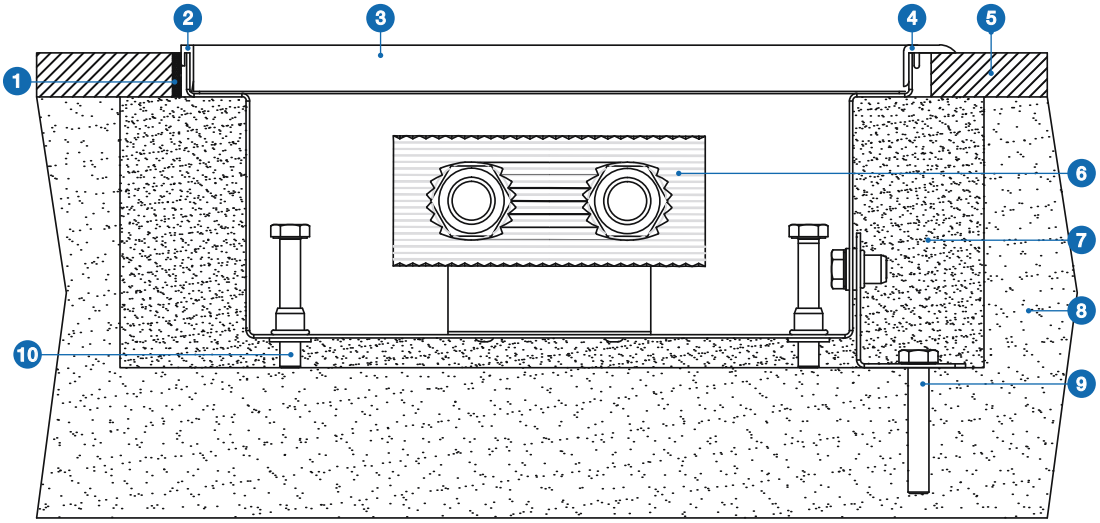
# Convectors installation KORAFLEX

## Building recommendation

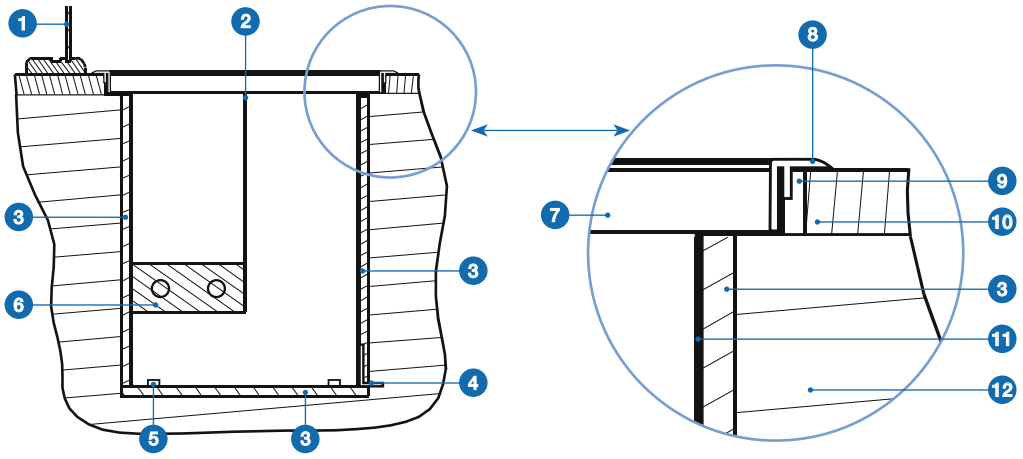
Several general principles must be fulfilled for proper function of the convectors.

- To interconnect the exchanger and the distributing pipeline, the standard stainless-steel hoses with stainless-steel jacketing must be used (unless recommended otherwise) which always form a part of the delivery. In practice they provide a better access under the heat exchanger without having to dismantle the heating system, e.g. during cleaning.
- A correctly installed convectors is mounted horizontally and the top edges of the convectors case are not warped or deflected to ensure proper functioning of the walk-on grid and allows venting of the heat exchanger.
- Correctly installed convectors decorative frame at the floor covering is within the margin of +2 mm.
- We recommend to keep the cover board in its place for the full duration of the building work to prevent dirt getting inside the convectors. The standard board supplied is not walkable. A higher load bearing capacity board can be ordered.
- The height adjustment screws are only used for horizontal levelling of the convectors case.
- During concreting the convectors must be fixed to the floor with the use of fixing anchors screws that will prevent vertical shifting of the convectors during subsequent pouring of concrete. The convectors can be vertically loaded during concrete pouring. During concreting the convectors must be strutted to prevent deformation of the case. When using other casting material (e.g. anhydride) seal thoroughly all passages into the convectors to prevent it from flooding.
- Convectors with stainless steel case, designed for humid environments and identified as KORAFLEX FK InPool have a standard built-in water drainage. It must be interconnected during the installation with a pipe with secured slope to drain the waste water. We recommend to fit the drain with the odour trap.
- For further versions for KORAFLEX FK built-in see page 71 (Possibility to imbed in floors according to floor types).

## Cross section of the correct embedding and location of the convectors




1. jointing material (silicon)
2. U frame
3. walkable grid
4. F frame
5. floor covering
6. exchanger
7. concrete fill
8. subfloor
9. fixing anchor
10. height adjustment screw

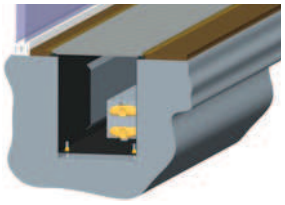


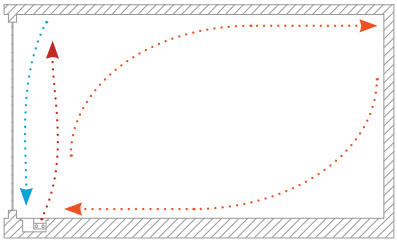

1. window
2. partition
3. insulation
4. fixing anchor
5. height adjustment screw
6. exchanger
7. lamella of the grid
8. decorative frame
9. expansion joint
10. floor covering
11. metal plating
12. subfloor

# Recommended location of the heat exchanger KORAFLEX FK depth 30 and 45 cm

## Location of the exchanger at the room side

Descending stream of cool air enters the convectors case. The rising flow of heated air then supports natural air circulation in the room and creates a screen in front of the window area. This arrangement is suitable in rooms where the convectors is the only heating source and where the share of window heat losses in the total heat loss of the room is about 70–100 %.

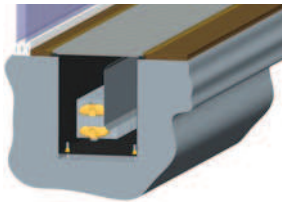


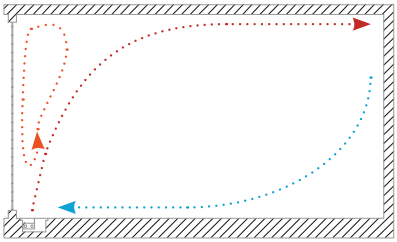


$$\frac{\text{Q of the window}}{\text{Q of the convectors}} = 70\text{–}100\ \%$$

## Location of the exchanger at the window side

This location is suitable in rooms where heat losses on the part of the room prevail and there is only a small share of window losses (20 % at the most). The distance between the convectors and the window must be as small as possible.





$$\frac{\text{Q of the convectors}}{\text{Q of the window}} = \text{up to } 20\ \%$$

# Ordering codes KORAFLEX FK • KORAFLEX FK InPool

| | | | Length (cm) | Depth (cm) | Width (cm) | | Location of supply water (case type) P on the right (looking out of room) | | | | | Frame finish 0 not fitted with a frame* 1 aluminium/silver 2 aluminium/bronze* 3 aluminium/light bronze* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Economic | black steel case/unpainted exchanger | FKE | ... | .. | .. | - | N | P | 0 | R | U | 1 |
| Exclusive | black steel case/black exchanger* | FKX | ... | .. | .. | - | N | P | 0 | R | U | 1 |
| Inox | stainless steel case AISI 304/unpainted exchanger | FKI | ... | .. | .. | - | N | P | 0 | R | U | 1 |
| InPool | stainless steel case AISI 316/unpainted exchanger* | FKP | ... | .. | .. | - | N | P | 0 | R | U | 1 |

** custom-made design*
*KORAFLEX FK InPool cannot be mutually interconnected*

Floor convectors KORAFLEX FK

Convectors case's face finish
0 without lowering of faces
1 lowering face on the supply side*
2 face lowering on opposite side of the supply*
3 lowering of both faces*

Grid design
R lateral
L longitudinal

Frame type
N not fitted with a frame*
U U profile
F F profile*

## Ordering example

KORAFLEX FK, length 120 cm, depth 11 cm, width 34 cm with the black exchanger and F shape frame, bronze eloxal coat = Exclusive Finish

Ordering code – FKX1201134-NP0RF2

If the order does not specify the decorative frame, design of the case and the heat exchanger, the body will be made of black coated steel sheet with silver exchanger, and fitted with a silver frame in the shape of U.

*Floor grids page 18*

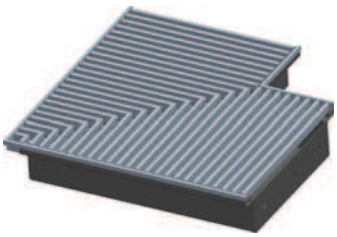
# Floor convectors' design finishes KORAFLEX

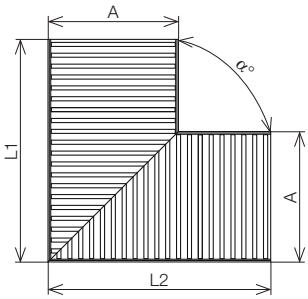
## Specifications

| | |
|---|---|
| corner (angle) parts maximum design depth *(cm)* | 7 |
| Arch design depth *(cm)* | 7, 9, 11, 15 and 19 |
| production possibilities must be evaluated individually | |
| case design | black zinc galvanised steel |
| grid design | aluminium, wood, stainless steel |
| the floor grid must be always ordered together with the design convectors | |

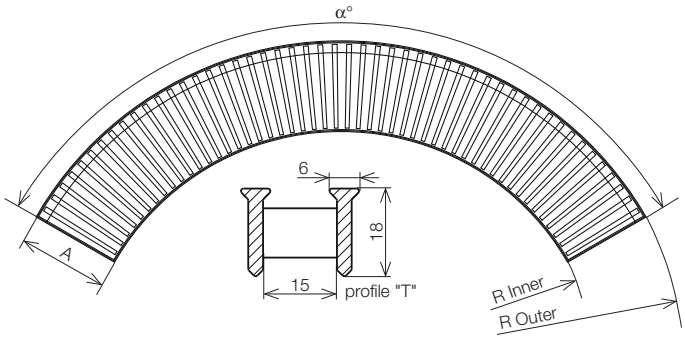
To ensure a perfect interconnection of floor convectors KORAFLEX in the rooms' corners it is best to use corner parts RD. The corner piece comes complete with a corner cover grid piece for all offered versions, see page 18.
The corner piece has no effect on the heat performance of the heating body and only serves as a visual complement. The corner pieces must be ordered together with the adjacent floor convectors including PM. No heat exchanger can be placed in the corner part, therefore it does not heat.

## Corner






## Arch




The minimum internal radius of the arc version must be more than 300 cm. Use type "T" profile aluminium grids on a spring when fitting the arch version with the aluminium grids, see image and U frame. (F frame could not be used due to design reasons).

## Dimensional series

| | | | | | |
|---|---|---|---|---|---|
| width of channel A *(cm)* | 16 | 20 | 28 | 34 | 42 |
| length L1, L2 *(cm)* | 20 | 30 | 40 | 50 | 50 |

# Ordering codes for corner part of KORAFLEX

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Lenght (cm) | Depth (cm) | Width (cm) | | Grid design | Frame type | | Frame finish | | | |
| FR | P | ... | .. | .. | - | R | 10 | 1 | U | 1 | 0 | |

*Ordering example:*
*The corner part lenght 30 cm, depth 7 cm, width 20 cm with aluminium lateral light bronze cover and U profile bronze.*
*FRP300720-R111U20*

**Type of angle**
P Right angle
S Another angle

**Material and colours of lamellas**
10 aluminium silver
11 aluminium bronze
12 aluminium light bronze
20 beech
21 oak
22 mahogany
30 stainless steel Roll (for dry environment)
40 stainless steel Cross (for dry environment)
41 stainless steel Cross (for humidity environment)

**Grid design**
R lateral
L longitudinal

**Frame type**
N not fitted with a frame*
U U profile
F F profile*

**Lamellas' joint design**
0 no joint (PM Cross)
1 black plastic strip (PM AL)
2 black joint (wood)
3 beige joint (wood)
4 stainless steel for dry environment

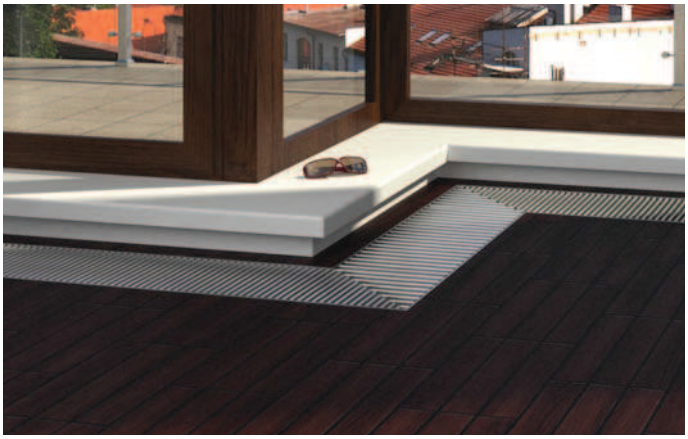
**Frame finish**
0 not fitted with a frame*
1 aluminium/silver
2 aluminium/bronze*
3 aluminium/light bronze*

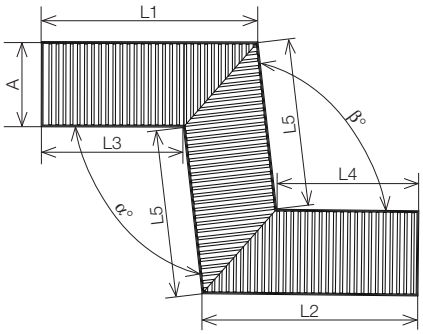
**Surface finish of the lamellas**
0 without any finish
1 clear varnish coat*

It is necessary to consult custom-made designs with the manufacturer before sending the order.
Heat outputs can not be in any way guaranteed, the manufacturer may on request carry out an expert estimate of the possible heat output.

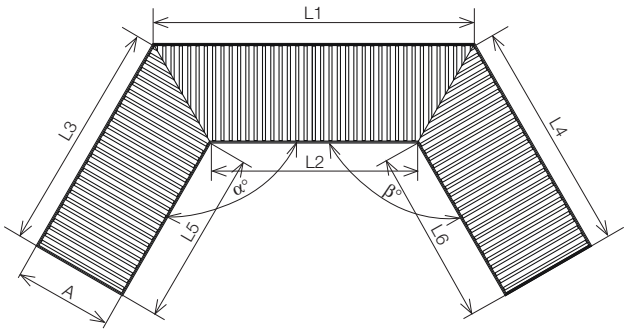
To order a corner design you must specify the angle α and the total width (A), which must correspond with the widths of the produced floor mounted cases. It is necessary to specify the angle α for all shapes, including the arched design, and the inner or outer radius (R – inner, R – outer) and the overall width (A) that must correspond with the widths of the produced floor mounted cases.

## Corner Z





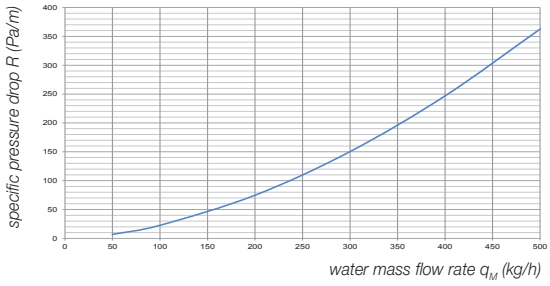

## Corner U




# Pressure losses of convectors

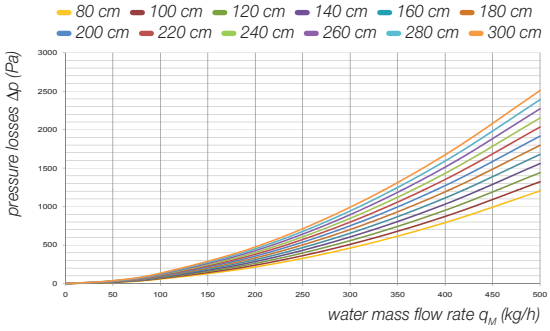
## KORAFLEX FK 9/16, 11/16
## KORABASE 10

KORABASE 10



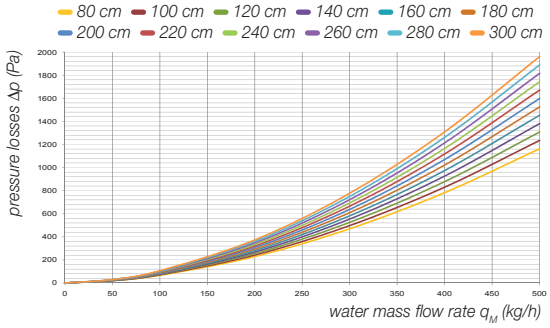

## KORAFLEX FK 9/20, 9/28, 11/20, 11/28
## KORALINE 9/18 and 9/24, KORABASE 20
## KORAFLEX FV 8/28, 9/28, 11/28
## KORAFLEX FV InPool 13/34

KORABASE 20



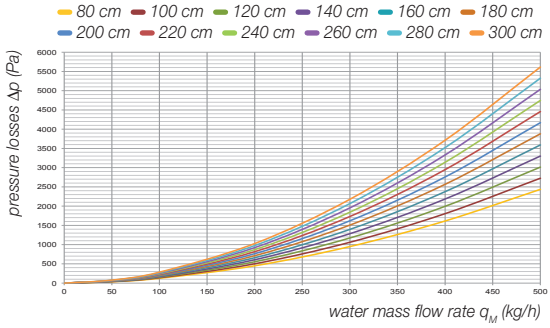

## KORAFLEX 9/34, 11/34
## KORAFLEX FV 11/34, KORABASE 30

KORABASE 30



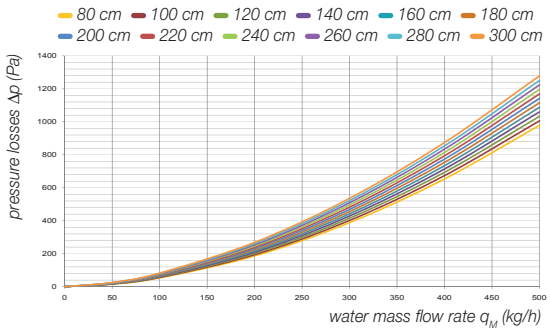

## KORAFLEX FK 9/42, 11/42
## KORAFLEX FV 11/42

KORABASE 40



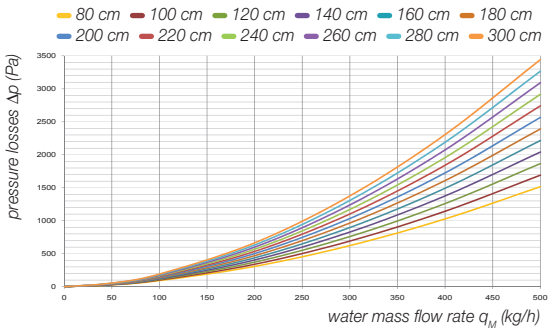

## KORAFLEX FK 15/28, 19/28, 30/28, 45/28
## KORALINE LK 15/18, 30/18, 45/18, 60/18
## KORABASE 22

KORABASE 22



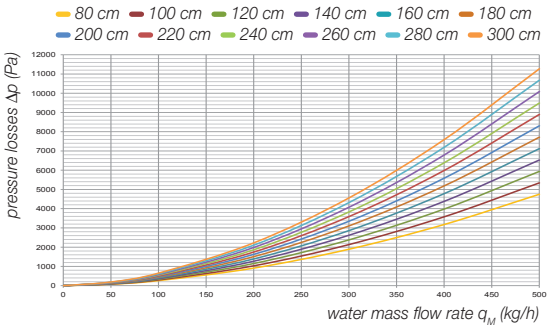

## KORAFLEX FK 15/34, 19/34, 30/42, 45/42
## KORALINE LK 15/24, 45/24, 60/24
## KORABASE 33

KORABASE 33



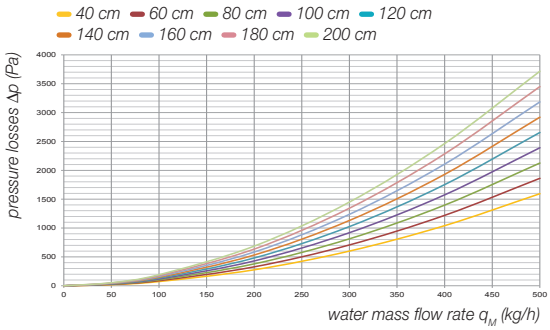
## KORAFLEX FK 15/42, 19/42

KORABASE 44



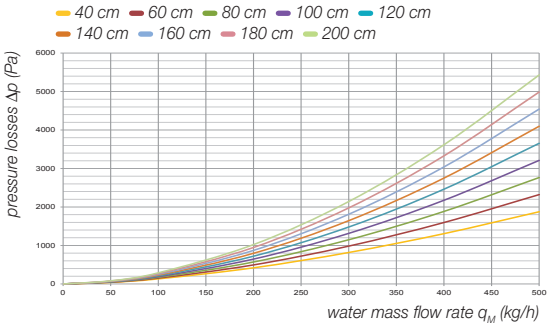

## KORAWALL WK 45/6, 60/6

Heat exchanger for KORAWALL 6



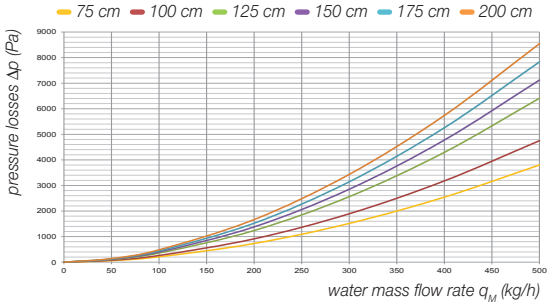

## KORAWALL WK 45/12, 60/12

Heat exchanger KORAWALL 12



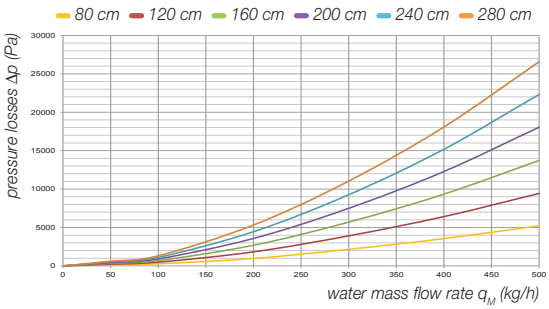

## KORAWALL WI 45/11

Heat exchanger KORAWALL WI 45/11



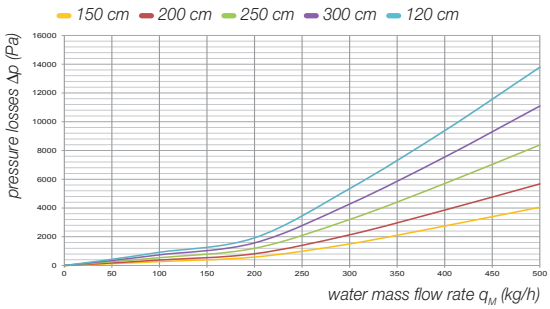

## KORAFLEX FI 11/20

Heat exchanger KORAFLEX FI 11/20



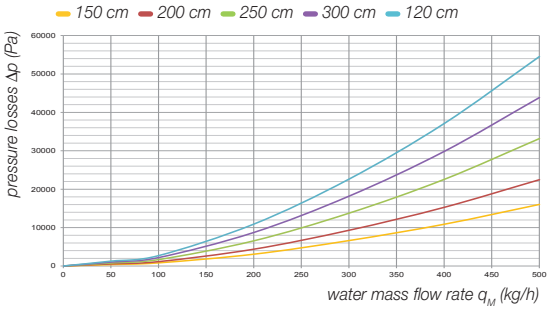

## KORAFLEX FI 13/34

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.