# Licon OKN • OKNB

NEW DESIGN

## WALL-MOUNTED CONVECTORS
natural convection

Apart from its design the wall-mounted convectors also offer many other advantages: efficient operation, higher performance at smaller dimensions, faster onset of heat. You won't burn yourself with our convectors! Surface max. temperature is 40 °C and the heat is transferred to the space of the room, and not into the wall :-). PLAN – design solution of wall-mounted convector with complete straight front plate.

# Wall-mounted convectors with natural convection
# Licon OKN • OKNB

The wall-mounted convectors Licon OKN are standard wall-mounted convectors with a long history, used in households as well as in commercial premises. The modern design, easy mounting and economical operation are the reasons why they are so popular with our customers. With regard to the unique design of the heat exchanger used they achieve higher outputs even at small dimensions of the element. The great advantage of the wall-mounted convectors OKN is their very low surface temperature of 40 °C and no heat dissipation into the wall.

## Wall-mounted convectors' grouping
• OKN
• OKNB (InPool) – element intended for humid environment
• OKN PLAN – element with complete straight front wall

## Standard delivery contains
• sheathing of zinc galvanised steel sheet coated in shade RAL 9010 – white
• Al/Cu heat exchanger with low water content, air vent and uniquely shaped lamellas for a higher heat output
• version with the bottom or side connection (according to the code in the order), the exchanger is fitted with an air vent
• set for suspension of the element on the wall containing dowels, screws and suspension brackets
• the set is packed in durable packaging and contains installation instructions

## Specification

| depth *(mm)* | 60, 120 |
|---|---|
| height *(mm)* | 450, 600 |
| lengths *(mm)* | 4 00, 6 00, 8 00, 1 000, 1 200, 1 400, 1 600, 1 800, 2 000 |
| outputs *(W)* | from 266 to 2 598 |
| max. working pressure *(MPa)* | 1.2 |
| max. working temperature | 110 °C |
| max. surface temperature | 40 °C |
| connecting thread | inner G 1/2" |
| connection method | recommended bottom connection, side |

Version Economic (OKN) • sheathing of zinc galvanised steel sheet coated in shade RAL 9010
Version InPool (OKNB) • sheathing made of stainless steel AISI 316 and coated with RAL 9010 colour; intended for humid environment

## Selectable specification
• in case of ordering more than 5 pieces it is possible to choose another colour shade finish according to the RAL scale (the manufacturer must be consulted about the change)
• all-stainless steel design suitable for humid environments such as swimming pools, stainless steel AISI 316 coated in white colour shade RAL 9010
• in case of low temperature gradient or lack of performance the OKIOC unit can be used, which is fitted with forced convection, see page 76
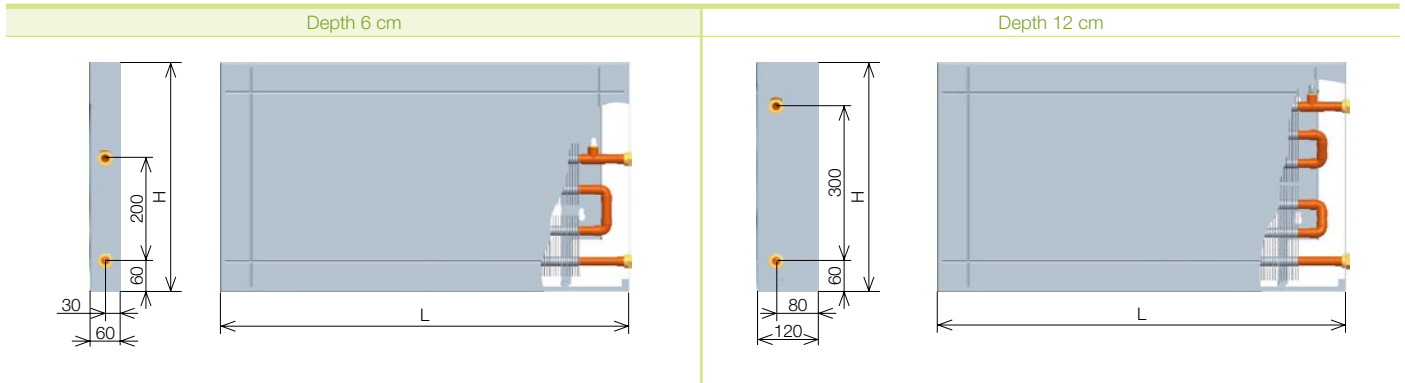
## Design version
## Licon OKN PLAN
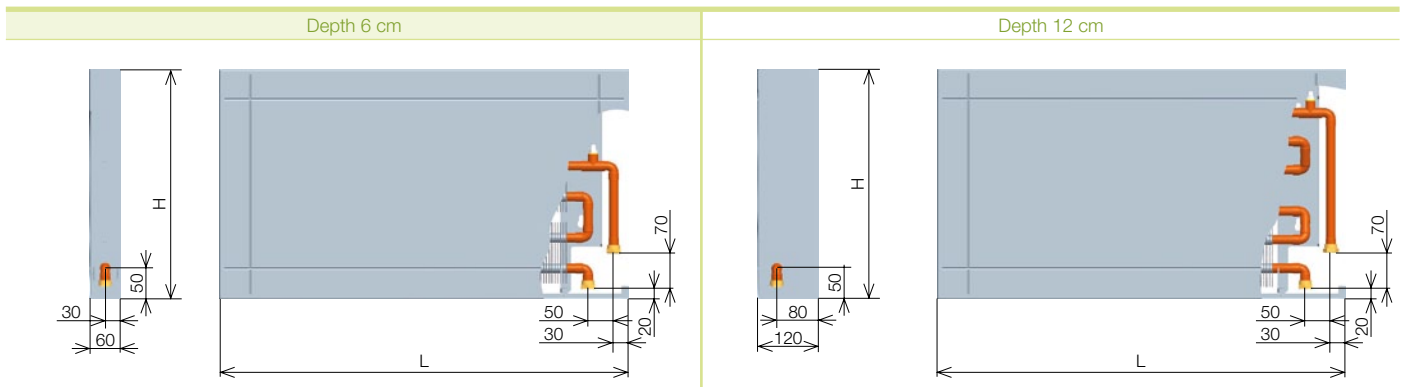PLAN with an absolutely straight front plate.

# Elements' sections

## Side connection

| Depth 6 cm | Depth 12 cm |
|---|---|



## Bottom connection

| Depth 6 cm | Depth 12 cm |
|---|---|



*OKN is available in right or left version. The connecting side must be indicated in the order. In the schematic representations the dimensions are expressed in mm.*

# Heating 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) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| Height 45 | 6 | Δt 50 | 266 | 400 | 533 | 665 | 799 | 933 | 1065 | 1199 | 1332 |
| | | Δt 40 | 199 | 299 | 399 | 498 | 598 | 698 | 797 | 897 | 997 |
| | 12 | Δt 50 | 449 | 675 | 902 | 1127 | 1354 | 1578 | 1804 | 2030 | 2258 |
| | | Δt 40 | 336 | 505 | 675 | 843 | 1013 | 1181 | 1350 | 1519 | 1690 |
| Height 60 | 6 | Δt 50 | 291 | 436 | 582 | 727 | 873 | 1018 | 1159 | 1304 | 1450 |
| | | Δt 40 | 218 | 327 | 435 | 544 | 653 | 762 | 867 | 976 | 1085 |
| | 12 | Δt 50 | 519 | 779 | 1039 | 1298 | 1558 | 1818 | 2078 | 2338 | 2598 |
| | | Δt 40 | 388 | 583 | 777 | 972 | 1166 | 1360 | 1555 | 1749 | 1944 |

• temperature exponent m = 1.3



## Design solutions

The wall-mounted heating elements OKN, OKNB have on their front face a significant design element, which consists of one design section in the lengths from 40 to 120 cm, two sections in the lengths from 140 to 180 cm and three sections in the length of 200 cm.

# 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 89.*

# Weights and water volumes of wall-mounted convectors

## OKNB pool version

Convectors intended for use at pools must be kept clean and regularly washed with clean water. More about the service and warranty conditions on www.licon.cz in the download section.

| Type | 45/6 | 45/12 | 60/6 | 60/12 |
|------|------|-------|------|-------|
| kg/linear meter | 15 | 16 | 18 | 19 |
| l/1 linear meter | 1 | 1,5 | 1 | 1,5 |

*The listed weights are without a packaging.*

# Installation of convectors Licon OKN • OKNB

## Installation instructions

It is recommended to always position the wall-mounted heating element on a peripheral wall, 10 cm above the floor. Elements are suspended on the wall with the use of dowels and screws included in the packaging. See the sketch of element anchorage for the method of suspension on the wall. The elements are supplied assembled.

## Anchoring diagram
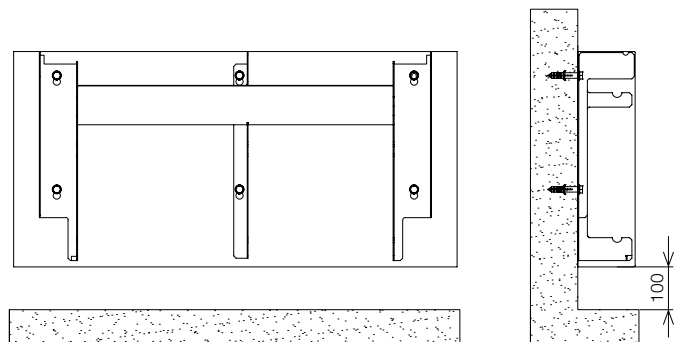


# Ordering codes Wall-mounted convectors OKN • OKNB

|  |  |  | length | height | width | Sheathing finish PLAN of one piece no design |
|---|---|---|---|---|---|---|
| Economic | steel/unpainted exchanger | OKN | - ... / | ... / | .. | - SP |
| InPool | stainless steel for humid environment white/ unpainted exchanger * | OKNB | - ... / | ... / | .. | - SP |

*\* custom-made design*

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Water inlet
SP bottom, right
SL bottom, left
BP side, right
BL side, left

*ORDERING CODE: OKN length/height/depth (in cm) connection (B-side, S-bottom) connection side (L-left, P-right) PLAN version (PLAN) Example: OKN 140/60/9 SP = OKN convector element, length 140 cm, height 60 cm, depth 6 cm, bottom connection on the right side*