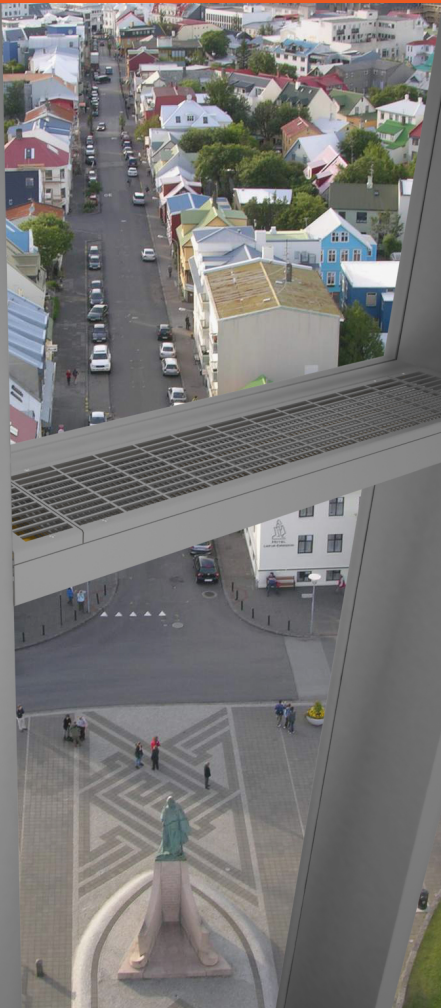


# KORAWALL KORASPACE

Wall-mounted convectors, Facade convectors



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## Convector with natural convection

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**KORAWALL**  
WALL-MOUNTED  
CONVECTORS



**KORAFLEX**  
TRENCH HEATERS



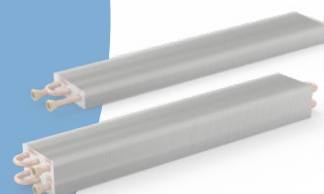
**KORALINE**  
FREE-STANDING  
CONVECTORS



**KORASPACE**  
FACADE  
CONVECTORS



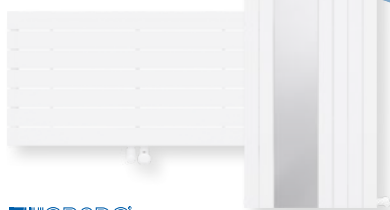
**KORABASE**  
HEAT  
EXCHANGERS



**RADIK**  
PANEL HEATERS



**KORATHERM**  
CUSTOMIZED DESIGN  
HEATING UNITS



**KORALUX**  
TOWEL RAILS



VENTILATION UNITS AND  
CENTRAL RECUPERATION  
**KORASMART**  
**KORAVENT**  
**VENTBOX**



## PRODUCT PORTFOLIO

We offer a very wide range of products under one brand enabling comprehensive solutions for all types of building and space, all of which contribute to maximum compatibility, simplicity of design and service, individual solutions and financial savings.

# Convectors with natural convection

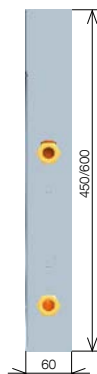
KORAWALL OKN\* OKN Plan wall-mounted convectors

KORAWALL OKN  
Bottom connection  
Width 60 mm and 120 mm

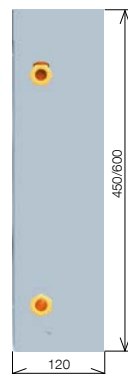


(see pages 6–9)

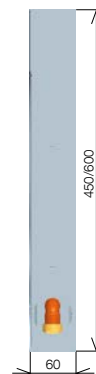
Side connection  
Width 60 mm



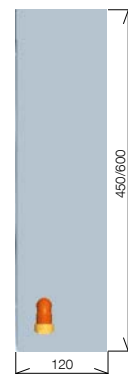
Side connection  
Width 120 mm



Bottom connection  
Width 60 mm



Bottom connection  
Width 120 mm



KORASPACE FK facade convectors

Installation  
on horizontal  
crosspiece,  
between vertical  
supports



(see pages 10–13)

Installation  
on vertical  
support



Measurements shown in mm.









# [ KORAWALL OCN KORAWALL OCN PLAN

## WALL-MOUNTED CONVECTORS with natural convection

In addition to modern design, KORAWALL convectors offer efficient operation, higher performance with small dimensions and rapid heat availability. Safety is paramount, and KORAWALL convectors operate with a max. surface temperature of 40 °C. Heat is transferred directly into the room without heat loss into the walls. Available in PLAN model – a design solution with a perfectly flat front panel.



## KORAWALL OKN KORAWALL OKN Plan

KORAWALL OKN wall-mounted convectors are standard wall-mounted convectors with a long history, used in households as well as in commercial premises. Modern design, easy installation and economical operation are some of the reasons why they are so popular with our customers. The unique design of our heat exchangers achieves higher outputs even with small dimensions of the element. Low surface temperature of 40 °C and no heat dissipation into the wall are great advantages of KORAWALL OKN wall-mounted convectors.

Wall-mounted convector designs available:

- KORAWALL OKN
- KORAWALL OKN PLAN – element with flat front panel

### Standard contents

- casing made of galvanized RAL 9016 white lacquered steel
- Al/Cu heat exchanger with low water content, bleed valve and uniquely shaped fins for higher heat output
- bottom or side connection (according to the order code)
- installation set for fixing the convector to the wall – dowels, screws and suspension brackets
- durable packaging, installation instructions

### Specifications

height [mm]	450, 600
width [mm]	60, 120
length [mm]	400, 600, 800, 1 000, 1 200, 1 400, 1 600, 1 800, 2 000
heat output [W]	from 266 to 2 598
max. operating pressure [bar]	12
max. operating temperature (°C)	110
max. surface temperature (°C)	40
connecting thread	inner G 1/2"
connection	bottom and side connection

Economic OKN and design OKN Plan models available.

### Optional

- other RAL colour chart lacquers available. Please consult with our staff prior to ordering.
- thermostatic valve and other regulation accessories – see p. 22

### Note:

- in case of a very low temperature gradient or insufficient heat output of a convector with natural convection we recommend using a convector with forced convection (OKIOC model line – see p. 16)

### Design version KORAWALL OKN PLAN

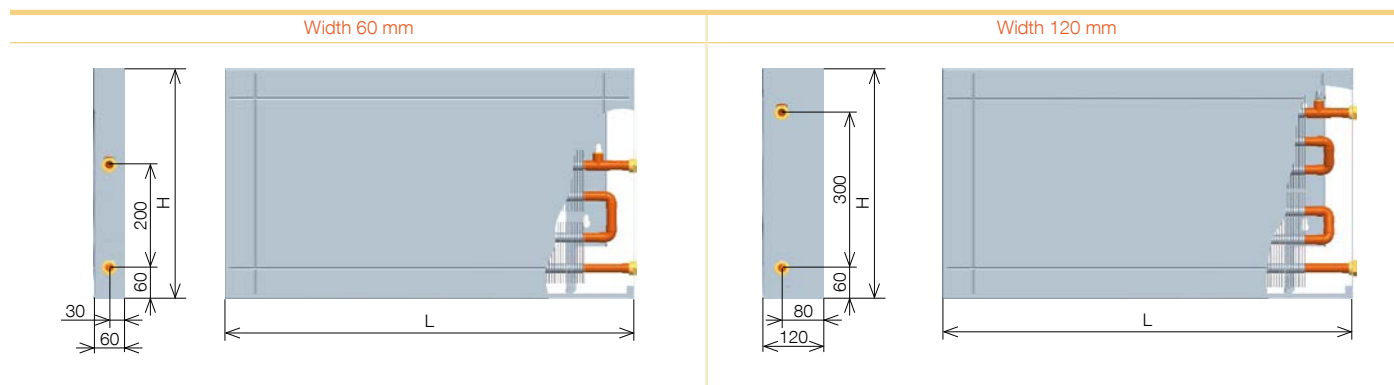
PLAN with perfectly flat front panel.



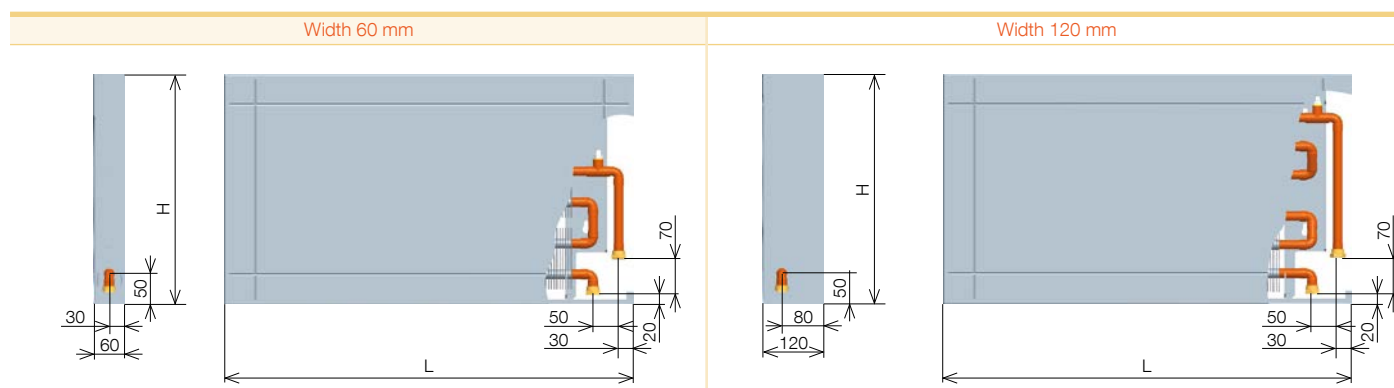


# KORAWALL convector sections

## Side connection



## Bottom connection



KORAWALL convectors are available with right or left connections. The required connection side must be specified in the order. Measurements shown in mm.

## Heat output

Heat output (W) at  $t_1/t_2/t_i$  = at 75/65/20 °C ( $\Delta t=50$ ) and 65/55/20 °C ( $\Delta t=40$ ) / EN 442

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

- temperature exponent  $m = 1.3$



## Design solutions

KORALINE OKN wall-mounted convectors display a significant design element on their front panel, repeated on longer convectors. A single pattern appears on lengths from 40 to 120 cm, two patterns on lengths of 140 to 180 cm and three patterns on models 200 cm in length.



- temperature exponent  $m = 1.3$

## Weights and water volumes of wall-mounted convectors

# KORAWALL OKN convector installation

Technical drawing of a window frame assembly. The main view shows a cross-section of the frame with dimensions: 90, 240, 370, 260, 100, and L. The frame is labeled with '100 H = 450' and '100 H = 600 50'. The frame is shown in a cross-section view, with the main body being 240 units high and 370 units wide. The frame is mounted on a wall, with a 100 unit gap between the frame and the wall. The frame is labeled with '100 H = 450' and '100 H = 600 50'. The frame is shown in a cross-section view, with the main body being 240 units high and 370 units wide. The frame is mounted on a wall, with a 100 unit gap between the frame and the wall. The frame is labeled with '100 H = 450' and '100 H = 600 50'.

Order code  
KORAWALL OKN wall-mounted convectors

## KORAWALL – WALL-MOUNTED CONNECTORS WITH NATURAL CONVECTION



# [ KORASPACE FK

## FACADE CONVECTORS with natural convection

Facade convectors are an ideal and effective solution for installations in buildings with large glass walls, where the transfer of the cold in the winter season considerably affects the interior microclimate. Facade convectors enable architects to achieve interesting designs while meeting operational and heating requirements of the entire building.





## KORASPACE FK

KORASPACE facade convectors are installed directly onto the facade, thereby preventing the direct transmission of cold air into the interior of the building. Warm air rising from the convector mixes with descending cool air to create a thermal barrier, providing greater comfort without causing condensation on the glass surface.

- design freedom
- high-performance Al/Cu heat exchangers
- excellent controllability and rapid temperature rise
- no heat transmission to the external facade
- space for further, parallel distribution systems

### Standard contents

- casing made of galvanized RAL 9007 grey lacquered steel
- heat exchanger with low water content and uniquely shaped fins
- connecting elements
- durable packaging, installation instructions

### Specifications

height [mm]	56
width [mm]	120, 150, 180
length [mm]	800 up to 3 000 (graduated by 200 mm)
heat output [W]	from 154 to 1 369
max. operating pressure [bar]	12
max. operating temperature (°C)	110
max. surface temperature (°C)	40
connecting thread	inner G 1/2"

**ECONOMIC version** • gray RAL 9007 lacquered casing, non-lacquered heat exchanger

**EXCLUSIVE version** • gray RAL 9007 lacquered casing, RAL 9007 lacquered heat exchanger

### Optional

- Exclusive version
- other RAL colour chart lacquers available. Please consult with our staff prior to ordering.
- thermostatic valve and other regulation accessories – see p. 22



# KORASPACE convector sections

## Available sizes

KORASPACE FK-xxx/6/12-J1	KORASPACE FK-xxx/6/15-J2	KORASPACE FK-xxx/6/18-J2
height 56 mm	height 56 mm	height 56 mm
width 114 mm	width 150 mm	width 174 mm
with internal space for pipings	without internal space for pipings	with internal space for pipings

## Heat output

Heat output (W) at  $t_1/t_2/t_i$  = at 75/65/20 °C ( $\Delta t=50$ ) and 65/55/20 °C ( $\Delta t=40$ ) / EN 442

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

15 cm and 18 cm wide convectors use the same heat exchanger, therefore the heat outputs are equal. The 18 cm wide convector has extra space for pipings.

## Correction factor $k_t$ for different temperature gradients $\Delta t$ [K]

$\Delta t$ [K]	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
$k_t$	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
$\Delta t$ [K]	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
$k_t$	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
$\Delta t$ [K]	50	51	52	53	54	55	56	57	58	59	60					
$k_t$	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 formulas and examples, see page 28.

## Weights and water volumes of facade convectors

Type	6/12	6/15	6/18
[kg/m]	3.9	4.8	5.3
[l/m]	0.2	0.42	0.42

Weights shown not including packaging.

# KORASPACE FK convector installation

Installation  
on horizontal  
crosspiece,  
between vertical  
supports



Installation  
on vertical  
supports



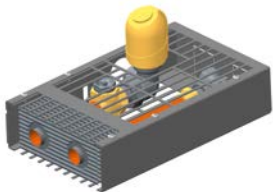
## Installation procedure

Main load-bearing U-shaped part is fixed to the supporting elements of the facade. Consequently the heat exchanger is inserted and connected to the heating system. The assembly is

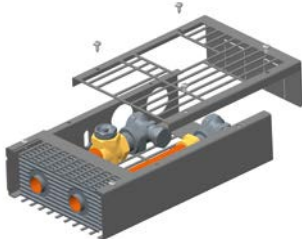
completed by fitting the upper and end parts and screwing all parts of the convector together.

## KORASPACE FK convector components

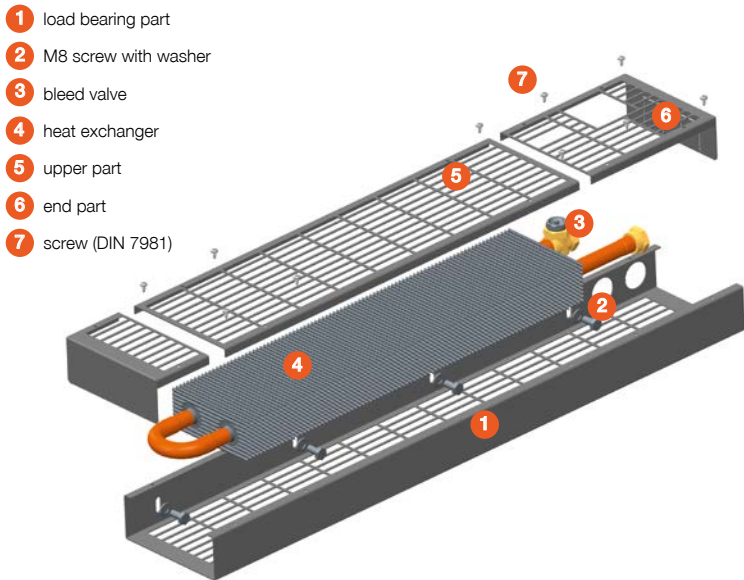
Installation with thermostatic valve  
and thermoelectric drive



Installation with lockshield



**Note:** Facade convectors are exclusively a project solution – we always recommend to consult the way of installation to the facade with our staff.



# Order code KORASPACE FK facade convectors

				length			height			width			Type of installation		
													A on horizontal crosspiece, between vertical supports		
													B on vertical supports		
Economic	lacquered steel casing/non-lacquered exchanger	FK	-	...	/	...	/	..	-	1	A	1			
Exclusive	lacquered steel casing/lacquered exchanger	FK	-	...	/	...	/	..	-	1	A	5			

Facade convectors  
KORASPACE FK

Casing

1 grey RAL9007 lacquered  
galvanized steel

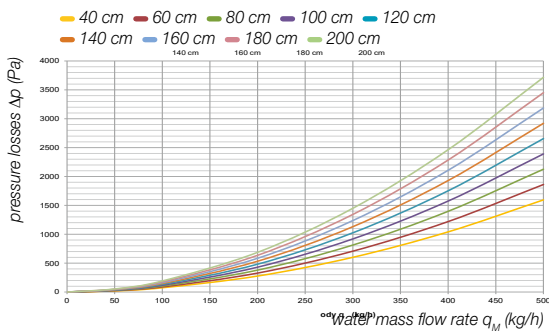
Heat exchanger colour

1 non-lacquered  
5 RAL9007 lacquered

# Convector pressure losses

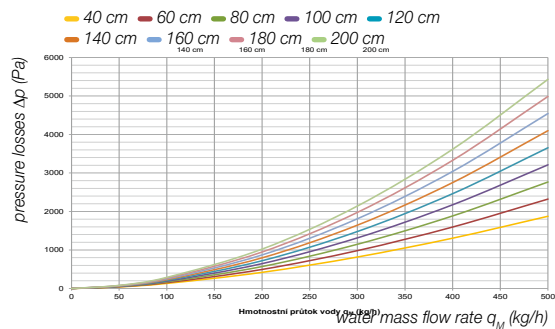
## KORAWALL OKN 45/6, OKN 60/6

Heat exchanger OKN 6



## KORAWALL OKN 45/12, OKN 60/12

Heat exchanger OKN 12



## Temperature gradient conversions – example

OKN 140/60/6  
Teplovodní zdroj

$$\Delta t = (t_1 + t_2) / 2 - t_a$$

- $t_1$  input water temperature (°C)
- $t_2$  output water temperature (°C)
- $t_a$  ambient air temperature (°C)
- $\Delta t$  temperature gradient [K]

Conversion coefficient  $k_t$  can be found in this catalogue in the technical data section for each convector model.

Values given: KORAWALL OKN 140/60/6 convector

$t_1/t_2/t_a$ : 75/65/20 °C

nominal heat output  $Q_n = 1\,018\text{ W}$  should be converted for the temperature gradient  $\Delta t = 30\text{ K}$

heat output at  $\Delta t = 30\text{ K}$ :

$$Q = Q_n \times \text{conversion coefficient } k_t = 1\,018 \times 0.515 = 525\text{ W}$$

## Quality

LICON HEAT s.r.o. is a certified ISO 9001 Quality Management supplier. Heat outputs are measured according to ČSN EN 16430 standards at the HLK Stuttgart (DE) and SZU Brno (CZ) testing facilities. Products comply with current legislation. The certification process was completed at the Engineering Test Institute, Brno (CZ).

## Maintenance

Convectors must be kept clean. Before the start of the heating season it is especially important to remove all dirt and dust from the convector. Convectors with fans must be checked for mechanical blockages (items which have fallen in, layers of dust, etc.). For further details relating to the maintenance of individual types of convectors, please refer to the installation instructions or the Operating and warranty Conditions.

All materials relating to convectors are available to download at [www.licon.cz](http://www.licon.cz)

## Guarantee

The warranty period is two years. 10 year guarantee against exchanger leaks. For full details of operating and warranty conditions, please visit our web pages. LICON HEAT s.r.o. reserves the right to alter specifications without notice. The full text of our General Terms and Conditions can be found on our web pages.

## Transport and storage instructions

Units must be handled with care during transport and must be well secured and anchored to prevent movement and damage. Transport and storage areas must be dry and not exposed to the weather. Goods must not be stacked.



LICON HEAT s.r.o. reserves the right to alter specifications without notice.



Natural convection



Heating



Forced convection



Quiet operation



Cooling



Dry-cooling



Environmentally friendly



Minimal Energy consumption



Higher performance



Information





# References



UBS Pleyad Business Centre  
Saint-Denis, France



MCBA Museum,  
Lausanne, Switzerland



Residence du Lac,  
Morges, Switzerland



Museum Munch Oslo,  
Norway



Lachta Centre,  
Saint Petersburg, Russia



Neva Towers,  
Moscow, Russia



Zolotoy Ostrov Moscow,  
Russia



Fyrstikkalléen 1 AS Oslo,  
Norway



The Circle – airport,  
Zurich, Switzerland



Panorama City,  
Bratislava, Slovakia



NÚSCH Children's Cardiac  
Centre, Bratislava, Slovakia



Panorama Business center,  
Bratislava, Slovakia



Einsteinova Business Centre,  
Bratislava, Slovakia



Harpa Concert Hall,  
Reykjavik, Iceland

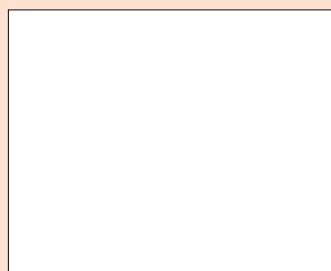


Nordea Headquarters,  
Copenhagen, Denmark

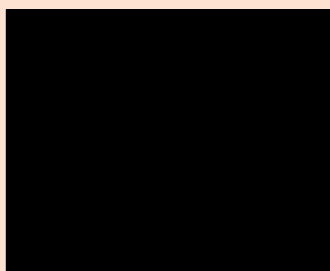


Marina Lipno apartments,  
Czech Republic





code 10  
White RAL 9016



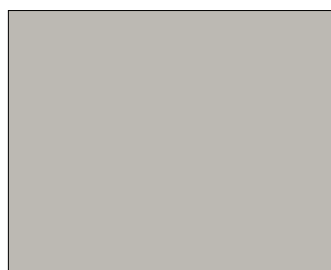
code 39  
Black RAL 9005



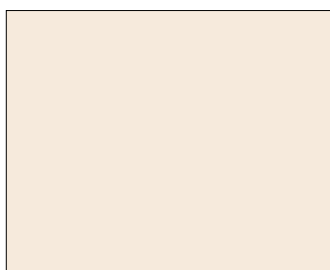
code 14  
Jasmine



code 16  
Bahama



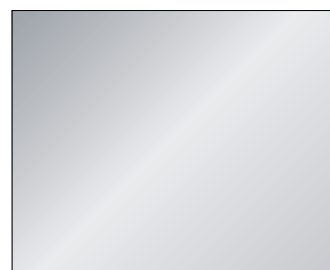
code 22  
Manhattan



code 26  
Pergamon



code 32  
Anthrazit Metallic



code 35  
Silber RAL 9006



code 37  
Red RAL 3001



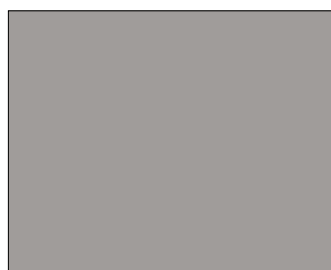
code 40  
Alloy Black



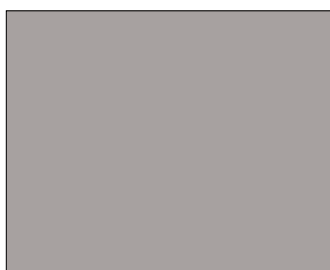
code 42  
Gold



code 45  
Pearl Brown



code 47  
RAL 9007



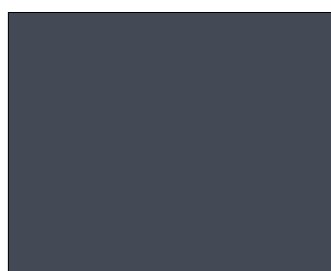
code 48  
RAL 9006



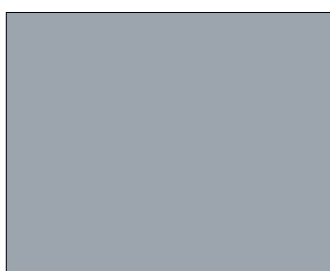
code 49  
RAL 7024



code 51  
RAL 7016



code 54  
RAL 7015



code 57  
RAL 7040

## Notice:

There is a potential for variations in colour between the colour chart and heating units. RAL 9016 white is the standard lacquer. Other colours shown in the colour chart are available at 30% surcharge. Heating units may be ordered with other RAL colour chart colours at 40% surcharge.



member of KORADO Group

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